

A Biological Assessment for Commercial Cannabis Cultivation

For

John Moreno
37999 Hwy 36,
Bridgeville, CA 95526
APN 210-101-011
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1.0 Introduction

1.1 Purpose and Need

This biological assessment has been prepared for the John Moreno property located at 37999 Hwy 36, Bridgeville, CA 95526, as a supplemental document to a commercial cannabis cultivation permit.

Through obligations of environmental review under the California Environmental Quality Act (CEQA), permits are required by both the State of California and Humboldt County for all cannabis cultivation and irrigation activities.

Humboldt County regulates cannabis production through the Commercial Medical Marijuana Land Use Ordinance (CMMLUO), which requires permit applicants to assess all potentially significant impacts to biological resources from existing or proposed cannabis cultivation operations. This project is submitted under Ordinance version 1.0.

1.2 Project Sites and Biological Assessment Area

The project sites are defined as the five cultivation areas located within the assessed 52.0-acre property under ownership of Bridgeville-36 LLC (APN 210-101-011, figure 2). The biological assessment area (BAA) is defined as the entire parcel. All occurrences of sensitive plant and animal species within the BAA are noted in the species accounts (4.5-4.5.5).

2.0 Regulatory Background

2.1 Cannabis Cultivation

With the passage of Proposition 64 in November 2016 (Medical Cannabis Regulation and Safety Act, MCRSA) cannabis was determined to be a commercial agricultural crop and was legalized for recreational use as well by the State of California. Cannabis production is regulated by the California Department of Food and Agriculture (CDFA) which administers the Cal Cannabis program regulating cannabis licensing from the state. This permitting process is subject to environmental review under The California Environmental Quality Act (CEQA).

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

2.2 Sensitive Biological Communities

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

2.2.1 Aquatic Habitats

Federal, State and local regulatory agencies have recognized aquatic habitats such as water bodies, waterways and wetlands as ecologically significant biological communities.

The Clean Water Act (CWA) authorizes the U.S. Army Corp of Engineers (ACOE) to regulate the "Waters of the United States" under section 404. These are defined as "waters susceptible to use in commerce, including interstate waters and wetlands, all other waters, and their tributaries (33 CFR 328.3). Non-wetland waters of a sufficient depth and inundated for a sufficient duration, which also exclude hydrophytic vegetation, are considered "other waters" and are usually defined by the high-water mark. These non-wetland waters include lakes, streams and rivers.

The state of California defines "Waters of the state", through the Porter-Cologne Act, as "any surface or groundwater, including saline waters, within the boundaries of the state." Within the state, the Regional Water Quality Control Board (RWQCB) is responsible for protecting all waters within its regulatory boundaries, with a special emphasis on wetlands, riparian areas, and headwaters. These sensitive areas that are not fully protected by the ACOE's section 404 are regulated by the RWQCB. State waters are also protected from cannabis cultivation impacts through Order 2015-0023 Waiver of Waste Discharge and General Water Quality Certification for Discharges of Waste from Cannabis and Associated Activities or Operations with Similar Environmental Effects in the North Coast Region. CDFW also exerts jurisdiction over lakes, streams and riparian areas through section 1600-1616 of the CDFG Code, and Humboldt County has additional jurisdiction through the Humboldt County General Plan (§BR-P5).

2.2.2 Sensitive Biological Communities

CDFW and the California Native Plant Society (CNPS) defines Sensitive Natural Communities as vegetation types with a state ranking of S1 to S3 by protocols established by the Nature Serve Heritage methodologies. This system uses the best science available to determine each community's range and distribution, and potential threats, to establish rarity. There are no specific protocols for mitigating impacts to sensitive communities, but they are considered for environmental review under CEQA checklist IVb.

The state ranking (S) is as follows:

1 –Critically imperiled –At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.

2 -Imperiled-At risk because of rarity due to very restricted range, very few populations, (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state/province.

3 -Vulnerable-At moderate risk of extinction due to a restricted range, relatively few populations, (often 80 or fewer), recent widespread declines, or other factors.

4 –Apparently Secure –Uncommon but not rare; some cause for long-term concern

due to declines or other factors.

5 – Secure–Common; widespread and abundant.

A global ranking (G) is also often used; for this assessment the state ranking should be sufficient for analysis.

2.2.3 Sensitive and Protected Species

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

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

CDFW has also developed a list of "Species of Special Concern" (SSC) that includes species whose populations, reproductive capacity, or habitat may be declining, as well as a number of "fully protected" species, listed by the state before CESA was enacted into law.

The Migratory Bird Treaty Act of 1918 (Canada, Mexico, Japan Russia) also extends federal protections to all nesting birds, regardless of sensitive status. Nesting adults, eggs, and young are protected by this treaty.

2.2.4 Invasive Species

Invasive plant and animal species can impact wildlife by competing with or replacing native species. This may degrade habitats important for forage or shelter. The current Humboldt County cannabis permitting ordinance includes language addressing the presence and removal of invasive plant species from cultivation sites. Site visits include an assessment of invasive species present and recommendations for removal as necessary.

3.0 Methods

3.1 Field Observations

All field data was recorded by Wildlife Biologist Brit O'Brien on June 23, 2021, using a 100' measuring tape for all distance measurements and a Theodolite application for measuring slope, elevation, and GPS locations. Leica binoculars (10x42) were used to identify any wildlife sightings. Portions of all aquatic and terrestrial habitats within the project area were assessed.

Larger trees and snags were examined for potential raptor nests. Presence of invasive species such as Scotch Broom (*Cytisus scoparius*), Pampas Grass (*Cortaderia selloana*) and Himalayan Blackberry (*Rubus armeniacus*) and others were noted if seen during the survey.

Brit O'Brien is a wildlife biologist with a Bachelor of Science in Wildlife Management from Humboldt State University. He has been conducting wildlife work, including protocol surveys and biological/habitat assessments for a variety of California wildlife species, primarily Marbled Murrelet and Northern Spotted Owl, since 1992. He established the consulting firm O'Brien Biological Consultants (OBC) in 2005. A complete SOQ for OBC can be provided upon request.

3.2 Review of Scientific Literature

Most of the scientific literature and reference material was sourced online through journals, databases or published public sources. Some general data was sourced from USFWS, USDA, and CDFW factsheets, CEQA reference material and naturalist field guides.

3.3 Agency Consultation

Much of the scientific literature referenced in this report was produced by various State and Federal agencies. As most of the necessary data and sources are available online and in other formats, no agencies were consulted on behalf of this assessment.

3.4 Sensitive Biological Communities

The Natural Resources Conservation Service Web Soil Survey (WSS) was analyzed for specific soil types that could support sensitive plant communities and/or any aquatic features within the BAA. Satellite imagery from USGS topographic maps, the National Agriculture Imagery Project, the Humboldt County Biological Resources Map, and the National Wetlands Inventory was used to scope for possible sensitive natural communities within the BAA.

Survey data from the site visit was analyzed with existing published literature and data to classify any potential sensitive biological communities per federal, state, and local jurisdictions. Classification of plant communities was conducted using *A Manual of California Vegetation, Online Editions* (CNPS).

3.5 Sensitive and Protected Species

The preliminary scoping procedure used to determine the listed plants and animals noted in this report included a July 2021 query of the California Natural Diversity Database (CNDDDB) for any sensitive species detections within 9 quadrangles, of which the Larabee Valley quad is at the center (CDFW 2021). These quadrangles also include Yager Junction, Showers Mtn., Blake Mountain, Bridgeville, Dinsmore, Myers Flat, Blocksburg, and Black Lassic. A general habitat assessment was performed as well. Given the habitat types listed within the BAA, a species list was developed for animals and plants utilizing the following: CDFW Endangered and Threatened (July 2021), Special Animals List (July 2021), Special Vascular Plants Bryophytes and Lichens List (July 2021), and the California Native Plant Society (CNPS) Endangered and Rare Plants. The above lists were obtained from <https://www.wildlife.ca.gov>

[/Data/CNDDDB/Plants-and-Animals](#). The Interactive Distribution Map v2.02 available through Calflora was used to check for potential occurrences within the BAA.

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

IA -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 on to 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 IA and 2A plants have no code extensions as 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 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 Results and Discussion

4.1 BAA Description

The BAA consists of the approximately 52 acres under Moreno's ownership. Terrestrial habitat on the property is primarily early to mid-seral forest of the Douglas-Fir series (DFR), common tree species including Douglas Fir (*Pseudotsuga menziesii*), Madrone (*Arbutus menziesii*), Ponderosa Pine (*Pinus ponderosa*), Oregon White Oak (*Quercus garryana*) and Tanoak (*Notholithocarpus densiflorus*) (Mayer and Laudenslayer 1988).

Annual mean rainfall in northern coastal California regions is ~ 40" (WRCC), although some areas may receive more than twice that amount. Elevation ranges from ~ 2,300 to 2,600 feet above sea

level. Measured slopes in the BAA vary from 0 % to 25%. The BAA contains aquatic habitats in the form of perennial and intermittent stream habitat (Class II and III), which drain to the Van Duzen River (Figure 2) Photos of the BAA are included (Figure 8).

The BAA primarily contains three soil types: **461**, Tannin-Burgsblock-Rockyglen complex, 30-50% slopes; **1001**, Frostvalley, 0-2% slopes; **1002**, Frostvalley-Mulecreek complex, 2-9% slopes.

Land use on the BAA is primarily restricted to cannabis cultivation. The biological assessment site visit on the afternoon of June 23rd, 2021, included an inventory of wildlife species observed. Nine species of birds were observed or heard. The species detected were American Goldfinch (*Spinus tristis*) American Robin (*Turdus migratorius*), Black Phoebe (*Sayornis nigricans*), Northern Flicker (*Colaptes auratus*), Common Raven (*Corvus corax*), Western Scrub Jay (*Aphelocoma californica*), Turkey Vulture (*Cathartes aura*), Spotted Towhee (*Pipilo maculatus*), and Dark-eyed Junco (*Junco hyemalis*). None of these species are considered sensitive. Raptor nests or appropriate supporting habitat were not discovered during the visit. No invasive plant species were noted at any of the cultivation or residential sites, or along any roads.

4.2 Site Description

The property is an assessed 52-acre parcel located approximately 1.5 miles northeast of Larabee valley, CA (Figure 1). The parcel is within Section 19, Township 1 North, Range 5 East, HB&M, as made known on the 7.5' USGS Quadrangle map, Larabee Valley. Existing development is limited to the road network, five adjacent cannabis cultivation sites, and several structures, which consists of one seasonal residence, and several storage/processing facilities.

4.3 Commercial Cannabis Cultivation

The cannabis cultivation consists of five mostly adjacent sites, located in the central clearing of the parcel (Fig. 2). The existing cultivation areas include ~ five greenhouses and outdoor container cultivation totaling ~ 54,000 square feet (TRC WRPP).

Water at the property is currently supplied from 3 surface points of diversion (POD). All water utilized for cannabis irrigation is derived from POD 2 located at a 150,000 gal. pond on the southern portion of the property. Another surface water diversion POD 1 (separate parcel) supplied water for domestic use, but it was destroyed in 2018 by highway construction, and temporarily replaced by POD 3. Water tanks store irrigation water for the cultivation sites. Total water tank storage is ~ 5,000 gals. Current water storage is insufficient to provide for all cannabis irrigation and domestic needs. Moreno has agreed to reduce the cultivation area to 1 acre (44,000 ft²) and to provide either a well or an additional pond to provide the necessary additional water. Water and fertilizers are applied by hand at agronomic rates to minimize runoff. No runoff was observed at any of the cultivation sites, and all cultivation was outside of the protective buffers for watercourses (TRC WRPP).

4.4 Sensitive Biological Communities

4.4.1 Aquatic Habitats

The BAA includes several Class III intermittent streams and one Class II perennial stream, all of which are tributaries of the main-stem Van Duzen River. The intermittent streams may provide flowing water as habitat for aquatic wildlife for only a portion of the year. The streams have rocky, coarse sediment beds with low to moderate slope gradients, and moderate to high canopy cover over most of their runs. These stream systems may provide habitat for wildlife such as Coastal Giant Salamander (*Dicamptodon tenebrosus*) and Foothills Yellow-Legged Frog (*Rana boylei*). The Van Duzen River provides habitat for Summer-run Steelhead (*Onchorhynchus mykiss irideus*, Klamath Mountains Province DPS), Coho Salmon (*Onchorhynchus kisutch*), and Western Pond Turtle (*Emys marmoratus*). Plant species associated with these riparian systems include often Red alder (*Alnus rubra*), Sword fern (*Polystichum munitum*), Big Leaf Maple (*Acer macrophyllum*), Leopard lily (*Lilium pardalinum*) and other vegetation associated with the Douglas-Fir vegetation series (Raphael, 1988).

4.4.2 Wetlands

The project area is located within the USACE Land Resources Region A, in the Western Mountains, Valleys and Coast Region. This region often experiences frequent and sustained rainfall events that can encourage growth of diverse wetland vegetation, but hydric indicators of wetland presence may often be absent at sites with present wetland vegetation species.

A review of the USFWS National Wetlands Inventory indicates there is low potential for a seasonal wetland on the property. No wetlands were found in the BAA, although several springs were observed during the June 23rd, 2021, visit.

4.4.3 Sensitive Natural Communities

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

4.5 Sensitive and Protected Species

4.5.1 Bird Species of Special Concern

Cooper's Hawk (*Accipiter cooperii*)

Status: CDFW - Watch list (WL); Federal status – none; State status – none; Rank – S4

Habitat: Various woodlands, primarily of open or discontinuous habitats. Nest sites often occur in riparian growths of deciduous trees, as in canyon bottoms on river floodplains.

Status within BAA: No listed occurrences within the BAA. There were two listed occurrences within the 9-quad CNDDDB report, Bridgeville and Myers Flat. Suitable nesting habitat likely exists within the BAA.

Northern Goshawk (*Accipiter gentilis*)

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

Habitat: Within, and in vicinity of, coniferous forest. Uses old nests, and maintains alternate sites. Usually nests on north slopes, near water. Red fir, Lodgepole pine, Jeffrey pine, and aspens are typical nest trees

Status within BAA: No listed occurrences within the BAA. Four listed occurrences within the 9-quad CNDDDB report, Yager Junction, Blocksburg, Blake Mountain, and Dinsmore. Suitable nesting habitat likely does not likely exist within the BAA.

Sharped-shinned Hawk (*Accipiter striatus*)

Status: CDFW – WL; Federal status – none; State status – none; State rank-S4

Habitat: Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.

Status within BAA: No listed occurrences within the BAA. One listed historical occurrence within the 9-quad CNDDDB report, the Redcrest quad in 2008, approximately 2 mi SSW of Grizzly Creek Redwoods State Park, south of the Van Duzen River. Suitable nesting habitat may potentially exist within the BAA.

Golden Eagle (*Aquila chrysaetos*)

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

Habitat: Broadleaved upland forest, Cismontane woodland, Coastal prairie: Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.

Status within BAA: No listed occurrences within the BAA. Three listed historical listed occurrences within two quads in the 9-quad CNDDDB report; Myers Flat and Bridgeville. The most recent occurred in 2003 in the Myers Flat quad, south of the Eel River ~0.6 miles West of Beatty Creek confluence. Suitable nesting habitat does not exist within the BAA.

Bald Eagle (*Haliaeetus leucocephalus*)

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

Habitat: Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.

Status within BAA: No occurrences within the BAA. No listed occurrences within the 9-quad CNDDDB report. No suitable nesting habitat likely exists within the BAA.

Marbled Murrelet (*Brachyramphus marmoratus*)

Status: CDFW - none; Federal status – Threatened; State status – Endangered; State rank-S1

Habitat: Seabird, feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Breeds in old-growth or remnant mature forests, up to 30 miles inland, often in Douglas-fir or Redwood habitats.

Status within BAA: No occurrences within the BAA. There were no occurrences within the 9-quad CNDDDB report. Suitable nesting habitat does not exist within the BAA.

American Peregrine Falcon (*Falco peregrinus anatum*)

Status: CDFW - FP; Federal status – Delisted; State status – Delisted; State rank-S3, S4

Habitat: Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures. Nest commonly consists of a scrape or a depression or ledge in an open site.

Status within BAA: No listed occurrences within the BAA. There was one listed occurrence within the 9-quad CNDDDB report, in Larabee Valley. Suitable nesting habitat does not likely exist within the BAA.

Willow Flycatcher (*Empidonax traillii*)

Status: CDFW – none; Federal status – none; State status – endangered; State rank – S1, S2

Habitat: Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 ft elevation. Requires dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.

Status within BAA: No occurrences within the BAA. There was one unprocessed occurrence within the 9-quad CNDDDB report, in the Dinsmore quad. Suitable nesting habitat does not likely exist within the BAA.

Yellow-breasted Chat (*Icteria virens*)

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

Habitat: Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forages and nests within 10 ft of ground.

Status within BAA: No occurrences within the BAA. There was one unprocessed occurrence within the 9-quad CNDDDB report, Myers Flat. Suitable nesting habitat may not exist within the BAA.

Osprey (*Pandion haliaetus*)

Status: CDFW - WL; Federal status – None; State status – None; State rank- S4

Habitat: Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in treetops within a short distance of a good fish-producing body of water.

Status within BAA: No occurrences within the BAA. There were four occurrences within the 9-quad CNDDDB report, in the Blocksburg, Blake Mountain, Dinsmore and Jager Junction quads. Suitable nesting habitat may potentially exist within the BAA.

Yellow Warbler (*Setophaga petechia*)

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

Habitat: Riparian plant associations in close proximity to water. Also nests in montane shrubbery in open conifer forests in Cascades and Sierra Nevada. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.

Status within BAA: No occurrences within the BAA. There was one unprocessed occurrence within the 9-quad CNDDDB report in the Myers Flat quad. Suitable nesting habitat potentially exists within the BAA.

Northern Spotted Owl (*Strix occidentalis caurina*)

Status: CDFW – SSC; Federal and State status – Threatened; State rank - S2, S3

Habitat: Unlogged, expansive, mature coniferous forest stands with lars and a complex array of vegetation types. Primarily inhabits old growth forests in the northern part of its range and landscapes with a mix of old and younger forest types in the southern part of its range (Klamath region and California). The subspecies' range is the Pacific coast from extreme southern British Columbia to Marin County in northern California. It nests in cavities or on platforms in large trees and will use abandoned nests of other species (USFWS 2011). Spotted owls form long-term pair bonds and remain in the same geographical areas year after year.

Status within BAA: See **Figure 7** and **4.6.1**

4.5.2 Amphibian Species of Special Concern

Pacific Tailed Frog (*Ascaphus truei*)

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

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

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

Northern Red-Legged Frog (*Rana aurora*)

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

Habitat: Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.

Status within BAA: No listed occurrences within the BAA. There were four occurrences within the 9-quad CNDDDB report, Blocksburg, Bridgeville, Larabee Valley, and Myers Flat. Potential suitable habitat may exist within the BAA.

Foothill Yellow-Legged Frog (*Rana boylei*)

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

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

Status within BAA: No listed occurrences within the BAA. There were occurrences within eight of the 9 quads of the CNDDDB report; Black Lassic, Blake Mountain, Dinsmore, Larabee Valley, Blocksburg, Myers Flat, Yager Junction and Bridgeville. Potential suitable habitat may exist within the BAA.

Southern Torrent Salamander (*Rhyacotriton variegatus*)

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

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

Status within BAA: No listed occurrences within the BAA. There were six occurrences within the 9-quad CNDDDB report; Bridgeville, Larabee Valley, and Myers Flat. Potential suitable habitat likely does not exist within the BAA.

Western Pond Turtle (*Emys marmorata*)

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

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

Status within BAA: No listed occurrences within the BAA. There were three occurrences within the 9-quad CNDDDB report; Blocksburg, Dinsmore, Myers Flat, and Larabee Valley. Potential suitable over-wintering habitat may exist within the BAA.

4.5.3 Mammal Species of Special Concern

Sonoma Tree Vole (*Arborimus pomo*)

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

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

Status within BAA: No listed occurrences within the BAA. There were five occurrences within the 9-quad CNDDDB report; Dinsmore, Myers Flat, Bridgeville, Jager Junction, and Larabee Valley. Potential suitable habitat may exist within the BAA.

Humboldt Marten (*Martes caurina humboldtensis*)

Status: CDFW – SSC; Federal status – none; State status–Endangered (Candidate); State rank –S1

Habitat: Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional coniferous forests, prefer forests with low, overhead cover.

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

Pacific Fisher (*Pekania pennanti*)

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

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

Status within BAA: No listed occurrences within the BAA. There were four occurrences within the 9 quad CNDDDB report Bridgeville, Jager Junction, Larabee Valley and Myers Flat. Most recent listed occurrence in the Larabee Valley quad at Butte Creek headwaters SE of Larabee Buttes ~2.1 mi SW of Hwy 36 at Run Down Acres Rd in 2009. Potential suitable habitat does not likely exist within the BAA.

American Badger (*Taxidea taxus*)

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

Habitat: Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.

Status within BAA: No listed occurrences within the BAA. There were three occurrences within the 9-quad CNDDDB report, Myers Flat, Yager Junction and Blocksburg. Potential suitable habitat likely does not exist within the BAA.

Townsend's big-eared bat (*Corynorhinus townsendii*)

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

Habitat: Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, occasionally on buildings. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.

Status within BAA: No listed occurrences within the BAA. There were two occurrences within the 9-quad CNDDDB report, Blake Mountain and Bridgeville. Potential suitable habitat may exist within the BAA.

Western Red Bat (*Lasiurus blossevillii*)

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

Habitat: Roosts primarily in trees, 20-40 ft above ground, from sea level up through mixed conifer forests. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging.

Status within BAA: No listed occurrences within the BAA. There was one occurrence within the 9-quad CNDDDB report, in the Weott quad in 2015 at Humboldt Redwoods State Park. Potential suitable habitat may exist within the BAA.

4.5.4 Fish Species of Special Concern

Coast Cutthroat Trout (*Oncorhynchus clarkii clarkii*)

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

Habitat: Aquatic, Klamath/North coast flowing waters. Small coastal streams from the Eel River to the Oregon border. Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.

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

Coho Salmon - Southern Oregon / Northern California ESU (*Oncorhynchus kisutch*) Pop 2

Status: Federal and State status –Threatened; State rank - S2

Habitat: Aquatic, Anadromous fish requiring cool rocky streambeds for breeding. Klamath/North coast flowing waters, Sacramento/San Joaquin flowing water. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California (CDFW 2018).

Status within BAA: No listed occurrences within the BAA. There were occurrences in three quads within the 9-quad CNDDDB report; Larabee Valley and Myers Flat. Potential suitable habitat likely does not exist within the BAA.

Steelhead – Klamath Mountains Province DPS (*Oncorhynchus mykiss irideus*) Pop 16

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

Habitat: Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer (CDFW 2018).

Status within BAA: No listed occurrences within the BAA. There were no occurrences in the 9-quad CNDDDB report. Potential suitable habitat may exist near to the BAA due to the Van Duzen River (Class I watercourse) running adjacent to the SW corner of Moreno’s property.

Steelhead – Northern California DPS (*Oncorhynchus mykiss irideus*) Pop 16

Status: CDFW – SSC; Federal and State status - Threatened; State rank - S2 S3

Habitat: Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer (CDFW 2018).

Status within BAA: No listed occurrences within the BAA. There were occurrences in eight quads within the 9-quad CNDDDB report, Blake Mountain, Black Lassic, Dinsmore, Showers Mtn., Bridgeville, Yager Junction, Larabee Valley and Blocksburg. Potential suitable habitat may exist near to the BAA due to the Van Duzen River (Class I watercourse) running adjacent to the SW corner of Moreno’s property.

Steelhead – Summer Run Steelhead (*Oncorhynchus mykiss irideus*) Pop 36

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

Habitat: Northern California coastal streams south to Middle Fork Eel River. Within range of Klamath Mtns province DPS & No. Calif DPS. Cool, swift, shallow water & clean loose gravel for spawning, & suitably large pools in which to spend the summer (CDFW 2018).

Status within BAA: There were unprocessed occurrences in two quads within the 9-quad CNDDDB report, Black Lassic and Blocksburg; there were processed occurrences in six of the other quads, including Blake Mountain, Bridgeville, Dinsmore, Yager Junction, Showers Mtn., and Larabee Valley. Potential suitable habitat may exist near to the BAA due to the Van Duzen River (Class I watercourse) running adjacent to the SW corner of Moreno’s property.

Chinook salmon - California coastal ESU (*Oncorhynchus tshawytscha*) Pop 17

Status: CDFW – SSC; Federal status - Threatened: State status – none; State rank - S1

Habitat: Aquatic, Klamath/North coast flowing waters. Spring-run chinook in the Trinity River and the Klamath River upstream of the mouth of the Trinity River. Major limiting factor for juvenile chinook salmon is temperature, which strongly effects growth and survival (CDFW 2018).

Status within BAA: No listed occurrences within the BAA. There was one unprocessed occurrence in four quads within the 9-quad CNDDDB report, Larabee Valley. Potential suitable habitat may exist near to the BAA due to the Van Duzen River (Class I watercourse) running adjacent to the SW corner of Moreno’s property.

4.5.5 Plant Species of Special Concern

<i>Packera bolanderi</i> var. <i>bolanderi</i>	Seacoast ragwort
Fed status – none	State status – none
USGS 7.5’ Quad – Myers Flat	CA rare plant rank – 2B.2
Documented in BAA - no	Potential Habitat in BAA - no
Habitat – Coastal scrub, north coast coniferous forest.	

<i>Hosackia yollaboliensis</i>	Yolla Bolly Mtns. bird's-foot trefoil
Fed status – none	State status – none
USGS 7.5’ Quad – Blake Mountain, Dinsmore	CA rare plant rank – 1B.2
Documented in BAA - no	Potential Habitat in BAA - yes
Habitat – Upper montane coniferous forest, meadows and seeps. 1580-2135 m.	

<i>Calycadenia micrantha</i>		Small flowered calycadenia
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Chaparral, valley and foothill grassland, meadows and seeps. Rocky talus or scree; sparsely vegetated areas. occasionally on roadsides; sometimes on serpentine. 435-1405 m.		

<i>Carex praticola</i>		Northern meadow sedge
Fed status – none	State status – none	CA rare plant rank – 2B.2
USGS 7.5' Quad – Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Meadows and seeps. Moist to wet meadows.		

<i>Astragalus agnicidus</i>		Humboldt County milk-vetch
Fed status – none	State status – endangered	CA rare plant rank – 1B.1
USGS 7.5' Quad – Bridgeville, Myers Flat		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Broadleafed upland forest, north coast coniferous forest. Disturbed openings in partially timbered forest lands; also along ridgelines; south aspects. 115-670 m.		

<i>Astragalus umbraticus</i>		Bald Mountain milk-vetch
Fed status – none	State status – none	CA rare plant rank – 2B.3
USGS 7.5' Quad – Showers Mtn.		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Cismontane woodland, lower montane coniferous forest. Dry open oak and pine woodlands; sometimes on roadsides. 210-1220 m.		

<i>Erigeron maniopotamicus</i>		Mad River fleabane daisy
Fed status –none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Dinsmore		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Meadows and seeps (open and dry), lower montane coniferous forest. Meadows and seeps (open and dry), lower montane coniferous forest.		

<i>Erythronium oregonum</i>		Giant fawn lily
Fed status – none	State status – none	CA rare plant rank – 2B.2
USGS 7.5' Quad – Yager Junction, Myers Flat		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat –Cismontane woodland, meadows and seeps.		

<i>Erythronium revolutum</i>		Coast fawn lily
Fed status – none	State status – none	CA rare plant rank – 2B.2
USGS 7.5' Quad – Myers Flat, Bridgeville, Yager Junction, Dinsmore, Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat –Streambanks, bogs, and wet redwood and mixed evergreen forest understory.		

<i>Lathyrus biflorus</i>		Two flowered pea
Fed status – none	State status – none	CA rare plant rank – 1B.1
USGS 7.5' Quad – Dinsmore		
Documented in BAA - no		Potential Habitat in BAA - no
Habitat – Lower montane coniferous forest. Endemic to serpentine. 1370-1385 m.		

<i>Arctostaphylos manzanita ssp. elegans</i>		Konocti manzanita
Fed status – none	State status – none	CA rare plant rank – 1B.3
USGS 7.5' Quad – Dinsmore		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Chaparral, cismontane woodland, lower montane coniferous forest. Volcanic soils. 225-1830 m.		

<i>Anisocarpus scabridus</i>		Scabrid alpine tarplant
Fed status – none	State status – none	CA rare plant rank – 1B.3
USGS 7.5' Quad – Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - no
Habitat – Upper montane coniferous forest. Open stony ridges, metamorphic scree slopes of mountain peaks, and cliffs in or near red fir forest. 1550-2350 m		

<i>Sabulina decumbens</i>		The Lassic sandwort
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - no
Habitat – Lower montane coniferous forest, upper montane coniferous forest. Endemic to serpentine. Only known from upper, north-facing slopes under Jeffrey pines. 1580-1680 m.		

<i>Sidalcea malviflora ssp. patula</i>		Siskiyou checkerbloom
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Myers Flat, Bridgeville, Yager Junction		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Coastal bluff scrub, coastal prairie, north coast coniferous forest. Open coastal forest; roadcuts. 5-1255 m.		

<i>Montia howellii</i>	Howell's montia	
Fed status – none	State status – none	CA rare plant rank – 2B.2
USGS 7.5' Quad – Myers Flat, Bridgeville, Yager Junction, Larabee Valley, Blocksburg		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Meadows and seeps, north coast coniferous forest, vernal pools		

<i>Howellia aquatilis</i>	Water howellia	
Fed status – threatened	State status – none	CA rare plant rank – 2B.2
USGS 7.5' Quad – Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Freshwater marshes and swamps. In clear ponds with other aquatics and surrounded by ponderosa pine forest and sometimes riparian associates. 1080-1375 m.		

<i>Lupinus constancei</i>	The Lassics lupine	
Fed status – none	State status – Endangered	CA rare plant rank – 1B.1
USGS 7.5' Quad – Black Lassic		
Documented in BAA - no		Potential Habitat in BAA - no
Habitat – Lower montane coniferous forest. Serpentine barrens. 1500-2000 m.		

<i>Lupinus elmeri</i>	South Fork Mountain lupine	
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - unlikely
Habitat – Lower montane coniferous forest, 1340-1800 m.		

<i>Thermopsis robusta</i>	Robust false lupine	
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – North Coast coniferous forest, broadleaved upland forest. Ridgetops; sometimes on serpentine. 365-1405 m.		

<i>Iliamna latibracteata</i>	California Globe Mallow	
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – North coast coniferous forest, chaparral, lower montane coniferous forest, riparian scrub (streambanks). Seepage areas in silty clay loam. 60-1655 m.		

<i>Kopsiopsis hookeri</i>	Small groundcone	
Fed status – none	State status – none	CA rare plant rank – 2B.3
USGS 7.5' Quad – Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – North coast coniferous forest. Open woods, shrubby places, generally on Gaultheria shallon. 120-1435 m.		

<i>Piperia candida</i>	White-flowered rein orchid	
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Myers Flat, Bridgeville, Showers Mtn., Larabee Valley, Blake Mountain		
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – Northern California Coniferous Forest.		

<i>Gilia capitata ssp. pacifica</i>	Pacific gilla	
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Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Myers Flat, Bridgeville, Jager Junction, Dinsmore		
Documented in BAA - no	Potential Habitat in BAA - no	
Habitat – Coastal bluff scrub, chaparral, coastal prairie, valley and foothill grassland.		

4.6 Potential Impacts

4.6.1 Northern Spotted Owl

The cannabis cultivation process at the Moreno property will be restricted to the existing roads and the existing cultivation sites. No habitat removal is proposed under the current interim permit. Potential impacts to NSO within the BAA are limited to disturbance from noise from vehicles accessing the site, traffic on highway 36, and the likely intermittent use of equipment such as generators, trucks, loaders etc.

The Arcata Fish and Wildlife Office (AFWO) has provided a 2006 guidance document regarding disturbance from noise-generated activities, "Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelets in Northwestern California." The document provides likely disturbance distances to nesting owls and murrelets, based on ambient sound levels at the site, the use of specific equipment, and visual line-of-sight distance to nests.

A review of the document suggests that scenario 7 under appendix B, the Northern Spotted Owl Sound and Visual Harassment Decision Support Tool, best reflects the likely ambient sound conditions at the Moreno site and the equipment likely to be used during cultivation. Under this scenario, "The existing environment is characterized by medium to very low levels of existing ambient sound associated with human activities, and is typified by small power tools, light to heavy vehicular traffic moving at slow to moderate speeds on improved roads, recreational activities, and many urban and rural residential and commercial activities." The typical action-generated sounds from cultivation under this scenario could include "large construction equipment, large gas-powered engines, ATVs and small trucks at high speed or on rough surfaces, and the largest chain saws." It would include projects located "along rural highways and other transportation facilities with moderate traffic and speeds." This scenario 7 closely approximates the likely ambient background noise from highway 36 at the site, and the potential action-generated noise from the cultivation activities.

Under scenario 7, the predicted auditory disturbance distance that may impact nesting Spotted Owls is 200 meters, with either low or moderate ambient sounds at the site. The visual line-of sight disturbance distance for nests is a maximum 100 meters, or less if vegetation obscures a view of the nest.

The Moreno BAA has very limited habitat that could support Spotted Owl nesting/roosting. The nearest critical habitat for the spotted owl is approximately 2.14 miles to the east from the nearest cultivation site (Figure 6). The nearest known spotted owl activity center (HUM0339) is approximately 0.54 miles to the southeast of the cultivation sites (Figure 7).

The property is also approximately 200 meters from highway 36, and noise disturbance from some traffic on the highway can be heard at the sites.

Based on the estimated auditory disturbance distance of 200 meters, and the visual disturbance distance of 100 meters, the presence of existing disturbance from highway 36, and the fact that the nearest activity center is 0.54 miles to the west, there is a strong likelihood of no significant impact to Spotted Owl nesting habitat. As there is abundant foraging habitat on nearby public and private properties, cultivation activities also will not likely impact roosting or foraging Spotted Owls.

4.6.2 Marbled Murrelet

Nesting marbled murrelets require older forests with trees that support potential nesting “platforms”, such as large mossy branches or significant canopy deformities. The forested habitat on the Moreno property does not have trees of sufficient age or canopy complexity to support breeding marbled murrelets. The nearest potential breeding habitat for marbled murrelets is approximately 14 miles to the southwest (Figure 5). There is little potential murrelet nesting habitat located on the BAA.

4.6.3 Sensitive/Nesting Birds

Cultivation activities at the existing project sites are unlikely to disturb nesting or sensitive birds, as impacts would generally be limited to noise disturbance only. As the cultivation is located in greenhouses or on open ground, generally away from potential nesting habitat, minimal noise disturbance should be expected. If any significant vegetation removal or habitat conversion is proposed during the bird nesting season, generally March 1st to August 31st, nesting bird surveys should be considered.

4.6.4 Sensitive Fish/Amphibians

The Water Resources Protection Plan outlines the necessary BMPs (Best Management Practices) needed to protect water quality from cultivation practices. These BMP’s, when implemented promptly and effectively, should generally protect water quality on the BAA, and to downstream waters. The five cultivation sites are well outside of protective buffers (>100’ for Class I and II watercourses, >50’ for Class III), and they are located on relatively flat ground with no evidence of irrigation water reaching any waterways.

In 2018, the Humboldt County Hazardous Materials Unit discovered several areas of spilled motor oil located on the BAA, as well as burn pits used to dispose of cultivation wastes and refuse from operations (TRC WRPP). These areas should receive immediate remediation to remove contaminated soils and burned wastes, and to restore the sites to their original condition as grassland/forest. Additional erosion BMP’s should be used to prevent runoff from these areas from reaching any waterbodies. When the recommendations of the WRPP are completed, and the waste sites are fully restored, there should be no deleterious effects to fish or other aquatic species from operations on the BAA.

4.6.5 Sensitive Forest Carnivores

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

4.6.6 Sensitive Plants

Use of the existing five cultivation sites will likely not affect sensitive plants, as activities should be generally limited to previously impacted areas, associated roads and residences. Any conversion of an existing cultivation site would likely involve some ground disturbance. Spring season floristic (botanical) surveys are effective at identifying sensitive plants for protection if site expansions are proposed.

5.0 Recommendations

All cultivation activities should be conducted to minimize potential runoff from the project sites. Any fertilizers or pesticides should be used in strict accordance with the manufacturer's directions. All fertilizers, pesticides, and other cultivation-related products or amendments should be properly stored in secured facilities to prevent exposure to precipitation events and to prevent access to wildlife.

All petroleum products should be stored in a facility with secondary containment and a permanent roof to prevent exposure to precipitation. Use of pumps or other equipment that uses petroleum products should be conducted in secondary containment to prevent any spills.

Pesticides used for cannabis cultivation should be limited to products endorsed by the Department of Pesticide Regulation's "Legal Pest Management Practices for Marijuana Growers in California" (DPR).

Any restoration and water protection measures required under Water Resource Protection Plans (WRPPs) should be conducted with minimal ground disturbance, and all recommended erosion control devices (straw bales, fiber rolls) should be installed before significant precipitation occurs.

All trash and food waste should be stored in animal proof containers and secured away from human habitation areas and disposed of off-site regularly.

Generators should be housed inside insulated enclosures to muffle noise and adhere to noise thresholds of the CCLUO (≤ 50 decibels of maximum noise exposure at 100 feet from noise source or to the edge of potential habitat).

Conduct nesting bird surveys if any tree removal or significant habitat alteration is planned within the nesting bird season (generally March 1-August 31). If necessary, use appropriate distance buffers for discovered active nests.

If invasive plants are discovered or become established on the property, efforts should be undertaken to remove them, including removing established plant colonies, and grubbing out any young plants annually.

Conduct springtime floristic (botanical) surveys for rare plants before any proposed cultivation site expansion is initiated.

Any proposed construction or maintenance of roads should occur outside of the critical nesting period for Spotted owls, Feb 1st to July 9th. If any operations with the potential to disturb Spotted owls are proposed during the critical nesting period, Spotted owl surveys should be conducted per specifications outlined in the Protocol for Surveying Proposed Management Activities That May Impact Northern Spotted Owls. Surveys should be conducted per Section 9.0, Surveys for Disturbance Only Projects.

The cannabis cultivation at the Moreno property has a very low likelihood of having significant impacts to sensitive wildlife or plant species as the process currently operates. Any proposed expansion should re-consider the potential for significant impacts to biological resources.

6.0 References

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Department of Pesticide Regulation (DPR)

<https://humboldt.gov/DocumentCenter/View/53255/Pesticide-Resources---Pest-Management-Practices-for-Marijuana-Growers?bidId=>

Western Regional Climate Center (WRCC). [https://wrcc.dri.edu/summary /climsmnca.html](https://wrcc.dri.edu/summary/climsmnca.html)

7.0 Appendix

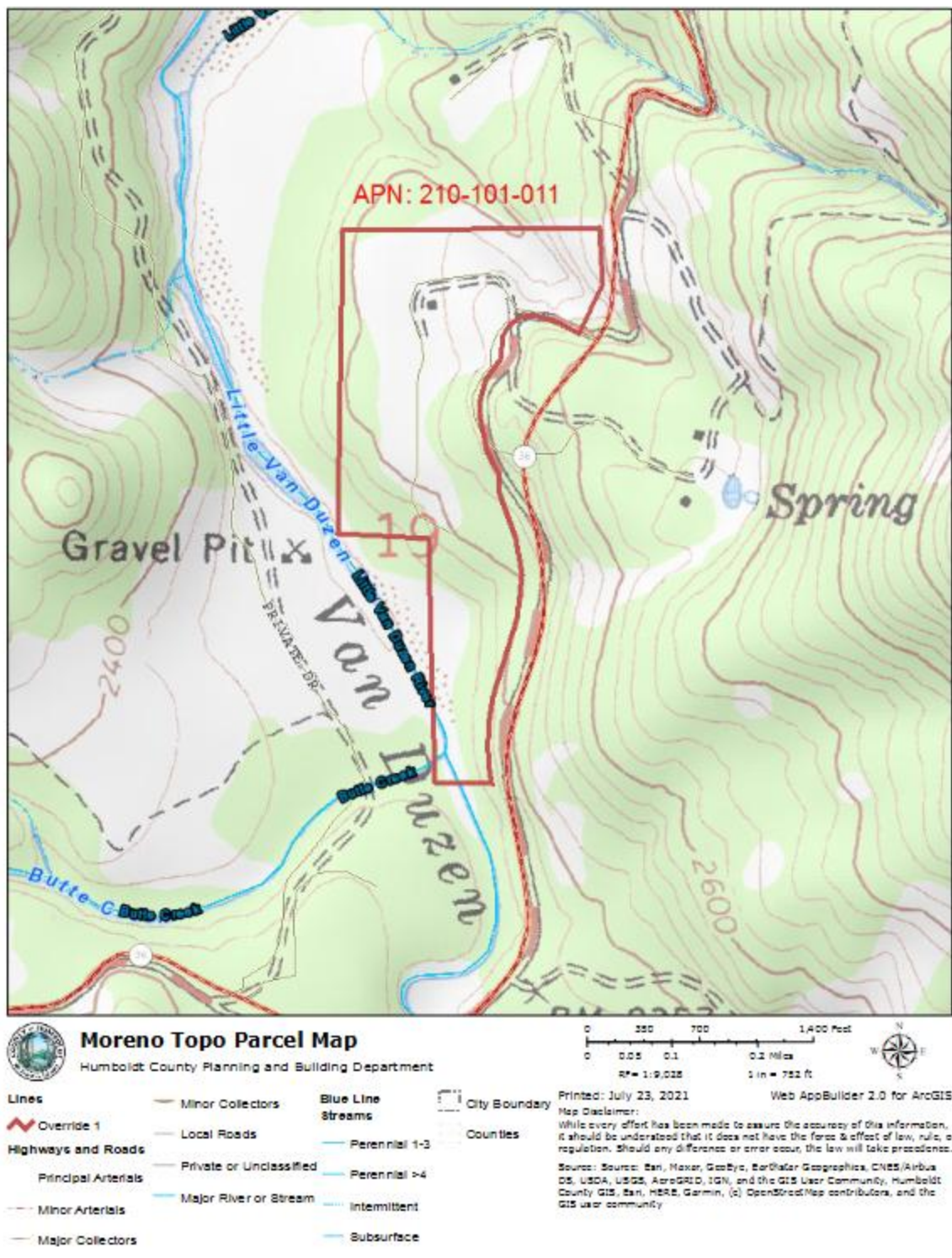


Figure 1. Topo Parcel Map for Moreno

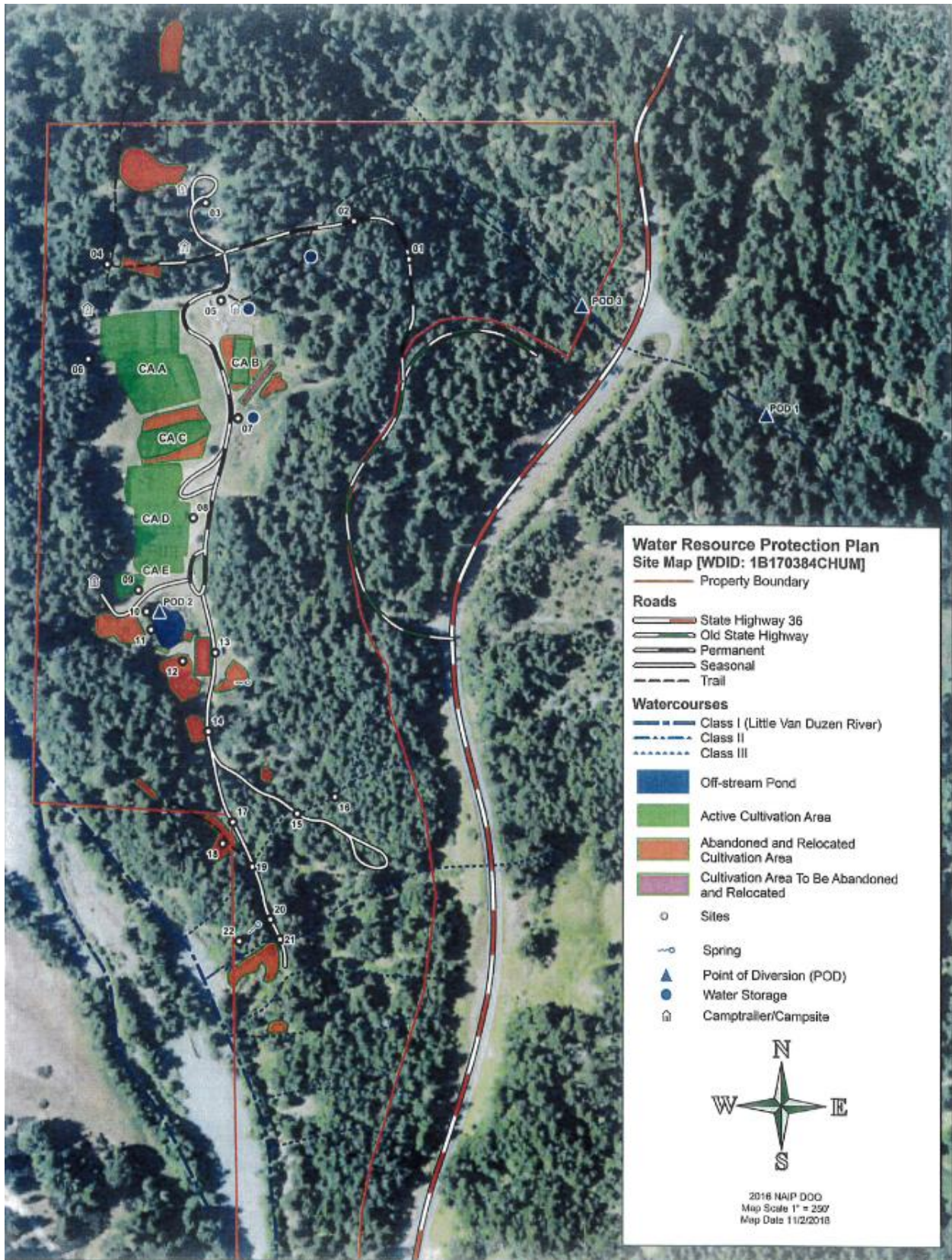


Figure 2. Photo Parcel Map for Moreno (Courtesy TRC)

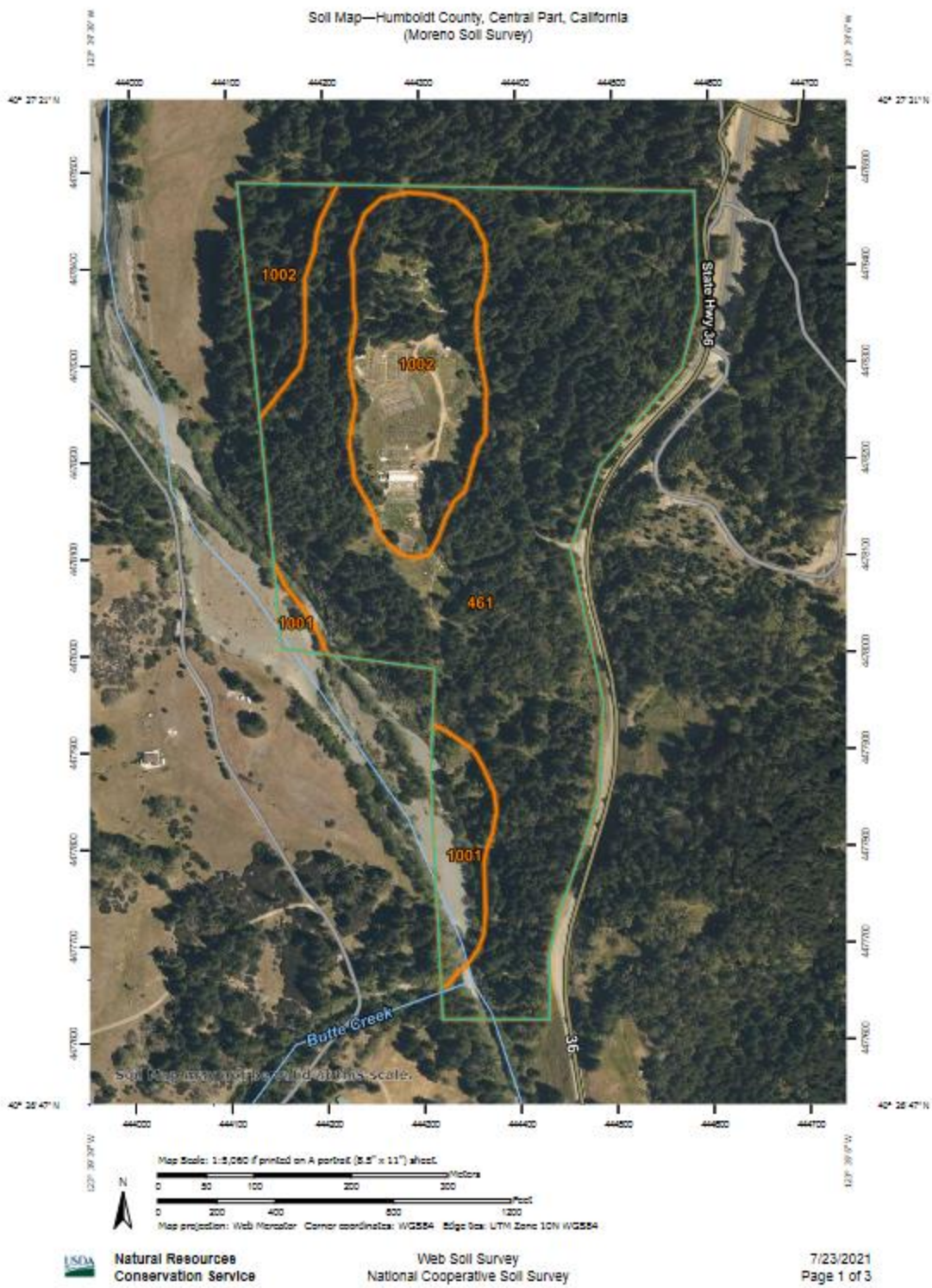


Figure 3. Web Soil Survey Map for Moreno

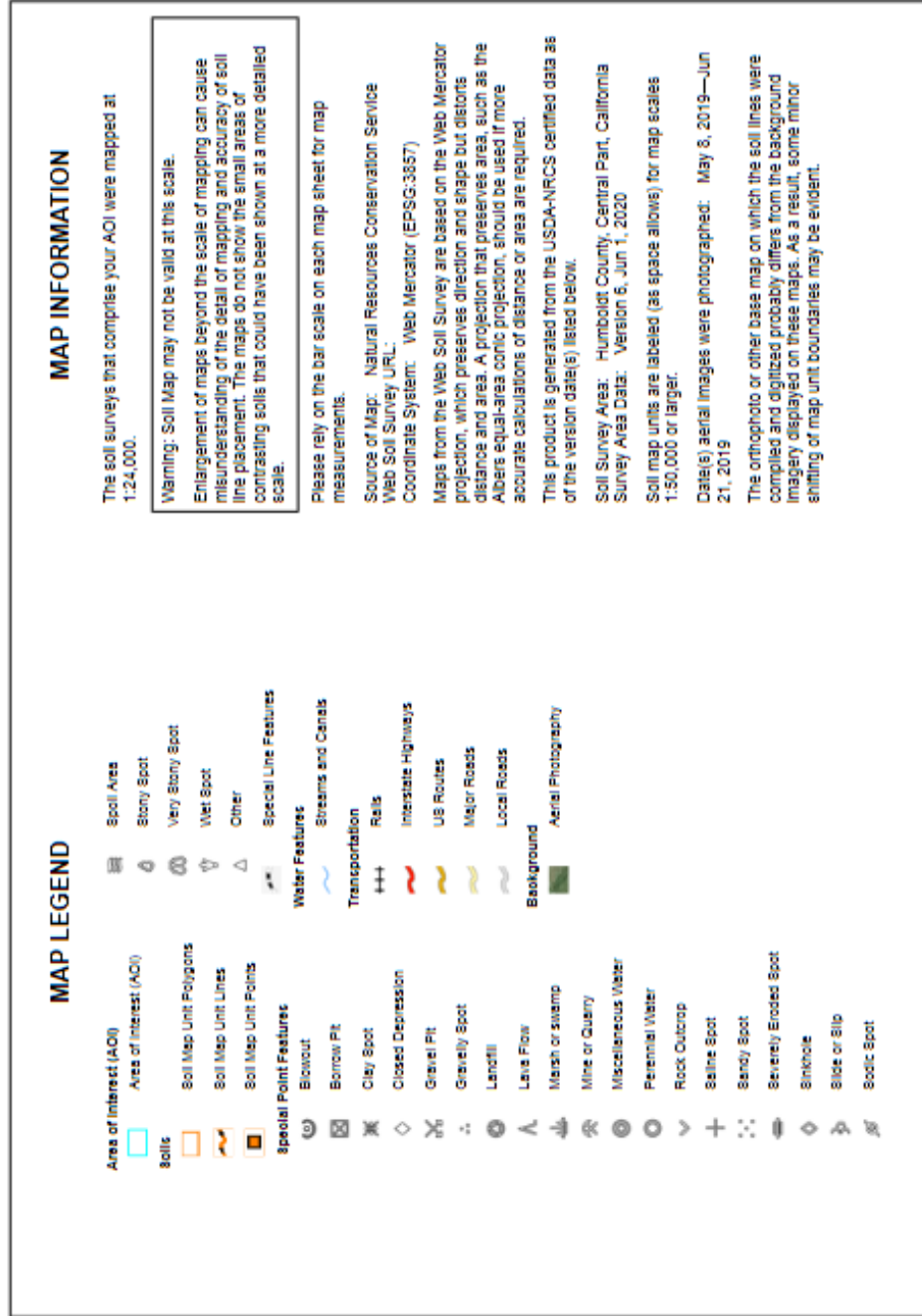


Figure 3A. Map Legend/Map Information for Moreno

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
461	Tannin-Burgblock-Rockyglen complex, 30 to 50 percent slopes	43.0	70.3%
1001	Frostvalley, 0 to 2 percent slopes	3.7	6.0%
1002	Frostvalley-Mulecreek complex, 2 to 9 percent slopes	14.4	23.6%
Totals for Area of Interest		61.2	100.0%

Figure 3B. Map Unit Legend for Moreno

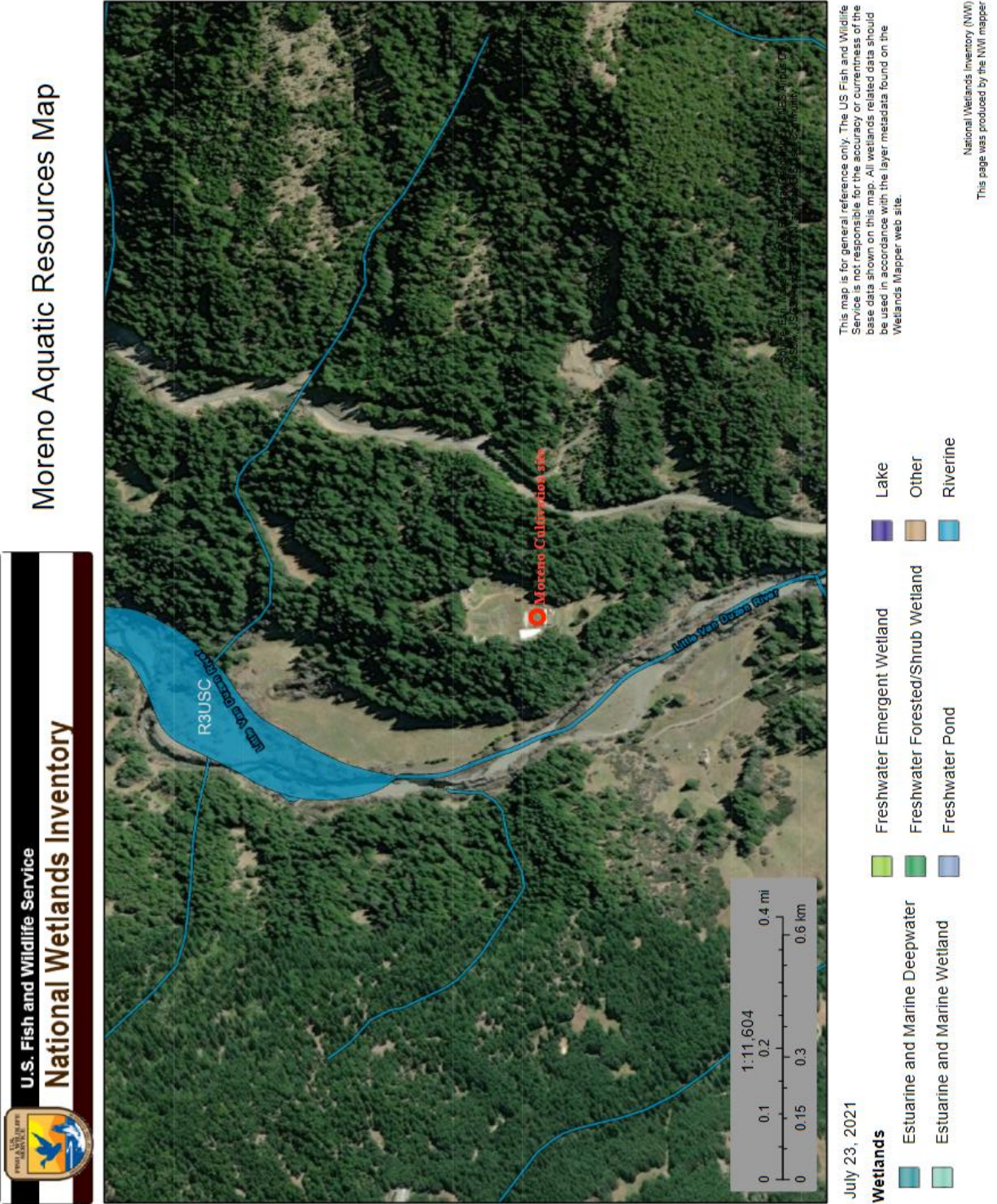


Figure 4. Aquatic Habitats at Moreno Property

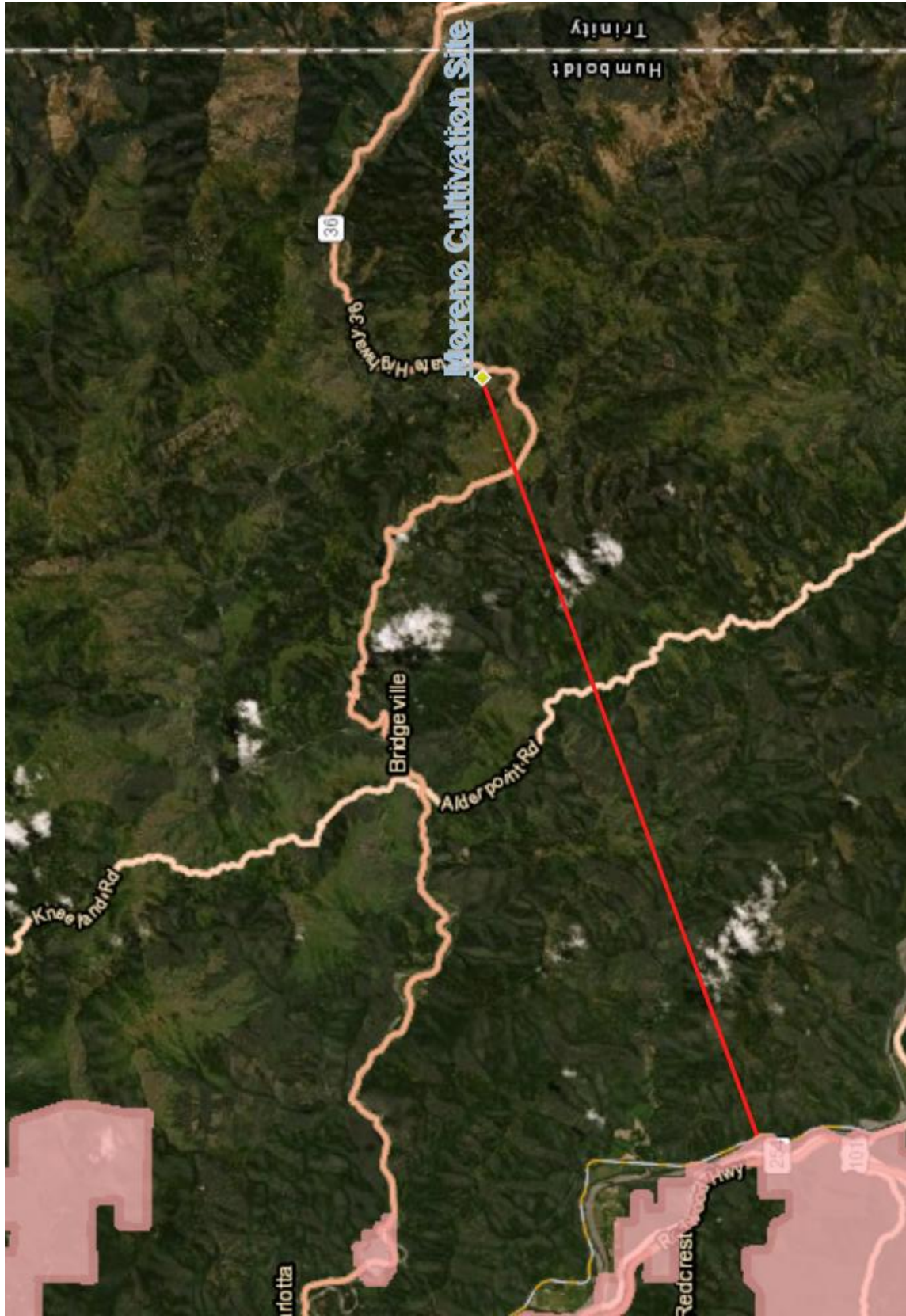
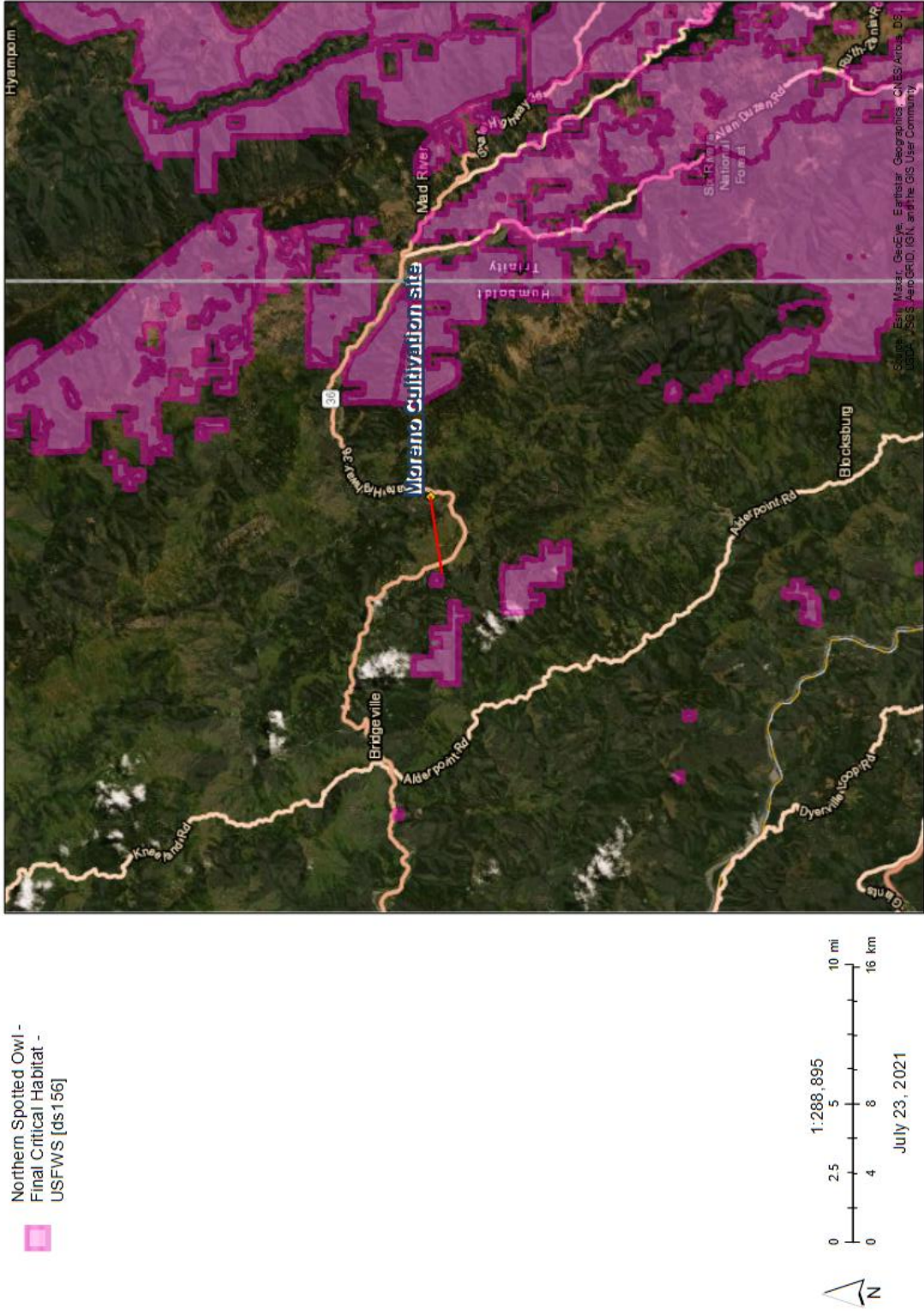


Figure 5. Nearest Marbled Murrelet Critical Habitat to Moreno Cultivation Areas

Nearest NSO Critical Habitat to Moreno Cultivation Site (2.14 Miles)



Author: wjdyler@yahoo.com
 Printed from <http://ibios.dfg.ca.gov>

Figure 6. Nearest NSO Critical Habitat to Moreno Cultivation Areas (~ 2.14 miles)

Figure 8. Photos of the BAA



1.0 Cultivation Area A



2.0 Portion of Cultivation Area D



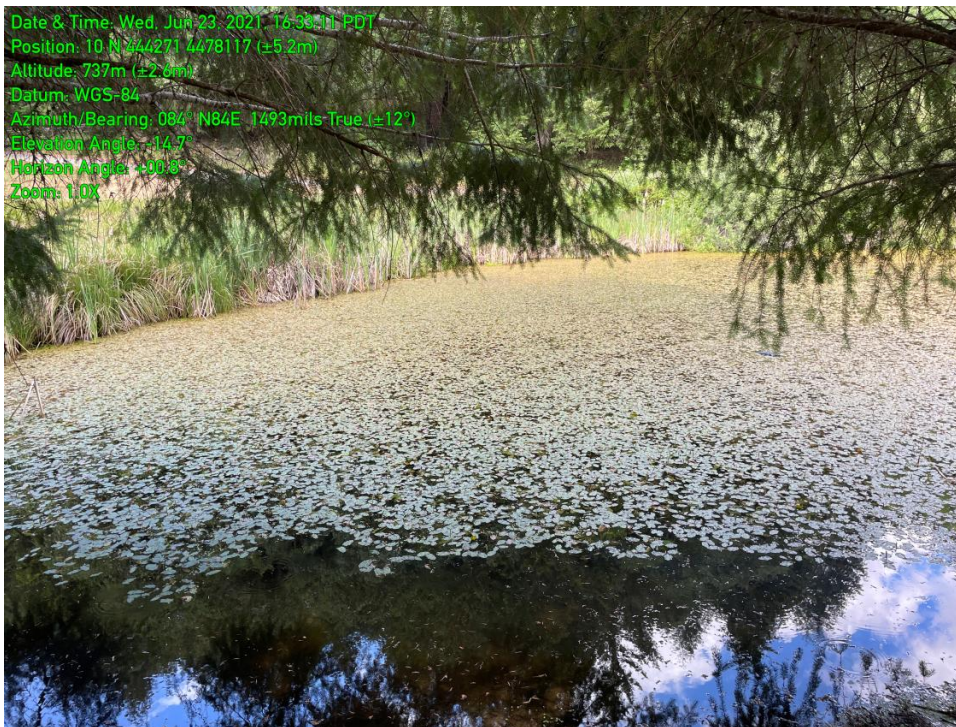
3.0 Portion of Cultivation Area A



4.0 Pump for Water Diversion at POD 2



5.0 Seasonal Residence



6.0 Pond for Cannabis Irrigation



7.0 Small Spring Adjacent to Lower Road



8.0 New Drainage Culvert and Rocked Drainage Area



9.0 Mulched Area of Disturbed Soils



10.0 Refuse Pile Along Road



11.0 Mulched Soils and Rocked Road



12.0 Small Stream on the North Boundary of Moreno Property



13.0 Example of Forested Habitat on Moreno Property



14.0 Canopy of Typical Forested Habitat on Moreno Property



15.0 Northern Half of Moreno Property



16.0 Southern Half of Moreno Property



17.0 Overview of Moreno's Cannabis Cultivation Area



18.0 Habitat Adjacent to Van Duzen River



19.0 Van Duzen River and Adjacent Habitat to Moreno



20.0 Highway 36 North, and Habitat Along Moreno Property



21.0 Coniferous Forest Adjacent to Moreno Cultivation Sites



22.0 Forested Habitat at the Southern Property Boundary of Moreno Property