# A Biological Assessment for Commercial Cannabis Cultivation

For

Eric Stugard Properties Bell Springs Road Garberville, CA 95542 APN # 216-025-009, 216-025-002, 216-025-011, 216-025-016



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## **1.0 Introduction**

## 1.1 Purpose and Need

This biological assessment has been prepared for the Stugard properties on Bell Springs Road, Garberville, CA 95554, as a supplement 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 commercial cannabis through the Commercial Medical Marijuana Land Use Ordinance (CMMLUO), which requires permit applicants to assess all potentially significant impacts to biological resources from existing or proposed cannabis cultivation operations.

## 1.2 Project Sites and Biological Assessment Area

The project site is defined by seven cultivation areas ranging from 20,200 to 2,000 sq. ft within the four parcels 227-acre property under ownership of Eric Stugard (Humboldt County APN 216-025-009, 216-025-002, 216-025-011, 216-025-016 (figure 1). The Biological Assessment Area (BAA) is defined as the entire 227-acre parcel.

## 2.0 Regulatory Background

## 2.1 Cannabis Cultivation

With the passage of Proposition 64 in November 2016 (Medical Cannabis Regulation and Safety Act) cannabis was determined to be a commercial agricultural crop and was legalized for recreational use as well. 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 highwater 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 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 will 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 ordnance 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 March 15, 2019, using a 100' measuring tape for all distance measurements and a Theodolite application for measuring slope, elevation, and GPS locations. A portable decibel meter was used to determine both background and generator operation noise levels at the generator site. Leica binoculars (10 x 42) were used to identify any wildlife sightings. Portions of all aquatic and terrestrial habitats within the Stugard

BAA were assessed. Larger trees and snags were examined for potential raptor nests. Presence of invasive plant species were noted if seen during the survey.

#### **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 November query of the California Natural Diversity Database (CNDDB) for any sensitive species detections within 9 quadrangles, of which the Harris quad is at the center (CDFW 2019). These quadrangles include Harris, Garberville, Miranda, Fort Seward, Harris, Piercy, Alderpoint, Bell Springs, Jewett Rock and Noble Butte. 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 (November 2018), Special Animals List (November 2018), Special Vascular Plants Bryophytes and Lichens List (March 2019), and the California Native Plant Society (CNPS) Endangered and Rare Plants. The above lists were obtained from <a href="https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals">https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals</a>. The Interactive Distribution Map v2.02 available through Califora 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 227 acres under Eric Stugard's ownership. Terrestrial habitat on the property is dominated by early to mid-seral forest of the Douglas-Fir (*Pseudatsuga menziesii*) series (DFR), associated with Tanoak (*Notholithocarpus densiflorus*) and Madrone (*Arbutus menziesii*), and also including some Coastal Oak Woodland habitat (COW) and some Annual/Perennial Grasslands (A/PG, Mayer and Laudenslayer 1988). Photos of habitats on the BAA are included (Figure 10).

Annual mean rainfall in redwood regions is ~ 40" (https://wrcc.dri.edu/summary /climsmnca.html), although some areas may receive more than twice that amount. Elevation ranges from 2,040 to 2,840 feet above sea level. Measured slopes in the BAA vary from 5% to 40%. The BAA contains aquatic habitats in the form of primarily intermittent stream habitat in unnamed tributaries of Tom Long creek (Class II and I I I).

The BAA contains 6 different soil types: Tannin-Wohly-Rockyglen complex, 50-75% slopes; Holohan-Hollowtree-Casabonne complex, 30-50% slopes, Burgsblock-Coolyork-Tannin complex

15-30% slopes, Yorknorth-Witherell complex 15-30% slopes and 30-50% slopes, and Coolyork-Yorknorth complex 5-30% slopes (Figures 3, 3A, 3B).

Land use on the BAA is primarily restricted to cannabis cultivation. The biological assessment site visit on March 15, 2019 included an inventory of wildlife species observed. No mammals, amphibians, or fish were detected; 5 species of birds were observed or heard. The species detected were American Robin, Turkey Vulture, Dark-Eyed Junco, Downy Woodpecker, Scrub Jay. None of these species are considered sensitive under CESA or by CDFW.

#### 4.2 Site Description

The property is an assessed 227 acre property comprising four parcels located approximately 8.8 miles south southwest of Benbow, CA (Fig. 1). The property is within of Section 20, Township 5 south, Range 5 east, HB&M, as made known on the 7.5' USGS Harris Quadrangle Map. Existing development consists of a permanent and seasonal ATV road network, seven cannabis cultivation sites, and ten structures, which consist of two single family residences, four greenhouses and four hoop houses. A shipping container is used as an enclosed facility for the generator, which has the appropriate secondary containment required (Fig. 10, photo 10).

## 4.3 Commercial Cannabis Cultivation

The cannabis cultivation occurs at existing facilities located in the northwestern portion (A and B, Fig. 4), the east central portion (C and D, Fig. 4) Three additional cultivation sites are located along the south property boundary (E, F and G, Fig. 4). The seven sites combined contain a total cultivation area of approximately 58,300 square feet. A previously used site H was relocated to sites F and G, and the site has since been restored.

As a measure to minimize the cultivation sites "footprint" and reduce potential impacts to the adjacent Class III watercourse at sites A and B (Fig. 1), their combined square footage will be relocated to a flat, open ground site across the road from sites C and D (Fig. 10, photos 1-3). Sites A and B and their access road will be restored if necessary and abandoned for cannabis cultivation.

Water for irrigation is currently supplied from diversions of two springs on the property. Water from diversion is stored in ~ 57,000 gallons of water storage in hard plastic tanks. Additionally, two rain-catchment ponds hold approximately 1,165,000 gallons. Estimated water use is approximately 3,576 gals/wk. All water and fertilizers are applied by hand at agronomic rates to minimize runoff.

## 4.4 Sensitive Biological Communities 4.4.1 Aquatic Habitats

The BAA includes three Class I I and five Class I I I intermittent streams, tributaries of the Tom Long Creek and ultimately the main-stem Eel river. The intermittent streams may provide flowing water and pools as habitat for aquatic wildlife for at least a portion of the year. The streams have a rocky coarse sediment bed with low and moderate slope gradients and moderate canopy cover over much of its run. These stream systems may provide habitat for wildlife such as Coastal Giant Salamander (*Dicamptodon tenebrosus*) and Foothills Yellow-Legged Frog (*Rana boylii*), as well

as other species. The Eel 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 Red alder (Alnus rubra), Sword fem (Polystichum munitum), Willow spp. (Salix), Big Leaf Maple (Acer macrophyllus), California Bay (Umbellularia californica) 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 likely no potential for a seasonal wetland on the property. No wetland areas were observed in the project area during the March 15, 2019 visit.

#### 4.4.3 Sensitive Natural Communities

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

## 4.5 Sensitive and Protected Species

#### 4.5.1 Bird Species of Special Concern

Cooper's Hawk (Accipiter cooperii)

**Status:** CDFW - Watch list (WL); Federally protected under the Bald and Golden Eagle Act; State Rank – S4.

**Habitat:** Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.

**Status within BAA:** No occurrences within the BAA. Two listed historical listed occurrences within the 9-quad CNDDB report in the Miranda and Jewett Rock quads. The most recent in 2005 in the Miranda quad approximately 1.5 mi ENE of Miranda. 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:** Mature and old-growth forests with more than 60% closed canopy (Harris 2005). Uses old nests, and maintains alternate sites. North coast coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest. Usually nests on north slopes, near water. Red fir, lodgepole pine, Jeffrey pine, and aspens are typical nest trees.

**Status within BAA:** No occurrences within the BAA. Two listed historical listed occurrence within the 9-quad CNDDB report in the Alderpoint and Miranda quads. The most recent in 2007 in the Miranda quad on the east side of fish creek ~2.5 miles SSW of Miranda. No suitable nesting habitat exists 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. One listed historical listed occurrence within the 9-quad CNDDB report in the Garberville quad. No suitable nesting habitat exists 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, humanmade structures. Nest commonly consists of a scrape or a depression or ledge in an open site.

**Status within BAA:** No occurrences within the BAA. There was one listed occurrence within the 9-quad CNDDB report in the Miranda quad in 1996. No suitable nesting habitat exists within the BAA.

#### Northern Goshawk (Accipiter gentilis)

**Status:** CDFW – Species of special concern (SSC); Federal status – none; State status – none; State rank-S3

**Habitat:** North coast coniferous forest, subalpine coniferous forest, upper montane coniferous forest. Prefers older, mature coniferous forest. Uses old nests, and often maintains alternate nest sites.

**Status within BAA:** No occurrences within the BAA. There are no occurrences within the 9-quad CNDDB report. There is likely no suitable nesting habitat 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 tree-tops within 15 miles of a good fish-producing body of water.

**Status within BAA:** No occurrences within the BAA. There were three listed occurrences within the 9-quad CNDDB report in the Miranda, Garberville and Piercy quads. No suitable nesting habitat exists within the BAA.

#### Northern Spotted Owl (Strix occidentalis caurina)

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

**Habitat:** Mature coniferous forest stands with a complex mix 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 Fig. 5,6 and 7 and section 4.6.1

**Little Willow Flycatcher** (Empidonax traillii brewsteri)

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

**Habitat:** Mountain meadows and riparian habitats in the Sierra Nevada and Cascades. Nests near the edges of vegetation clumps and near streams.

**Status within BAA:** No occurrences within the BAA. There was one listed occurrence within the 9-quad CNDDB report, in the Miranda quad. Possible suitable nesting habitat may exist within the BAA.

#### 4.5.2 Animal Species of Special Concern

Foothill Yellow-Legged Frog (Rana boylii)

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 eight listed occurrences within the 9 quad CNDDB report in the Garberville, Miranda, Fort Seward, Bell Springs, Alderpoint, Harris, Piercy and Noble Butte. Potential suitable habitat may exist within the BAA.

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 were no occurrences within the 9-quad CNDDB report. Potential suitable habitat may exist within the BAA.

#### **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 Somona 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 three listed occurrences within the 9-quad CNDDB report in Alderpoint, Piercy and Noble Butte quads. Potential suitable habitat may exist within the BAA.

#### West Coast Fisher (Pekania pennanti)

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

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

**Status within BAA:** No listed occurrences within the BAA. There were four listed occurrences within the 9 quad CNDDB report Alderpoint, Miranda, Piercy and Noble Butte. Potential suitable habitat does not likely exist within the BAA.

#### Pallid Bat (Antrozous pallidus)

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

**Habitat:** Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, occasionally on buildings. Roosting sites are limiting factor in disturbance. Extremely sensitive to human disturbance (CDFW 2018).

**Status within BAA:** No listed occurrences within the BAA. There were two listed occurrences within the 9-quad CNDDB report, Garberville and Piercy. Potential suitable habitat may 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 four listed occurrences within the 9-quad CNDDB report, Garberville, Miranda, Harris. Potential suitable habitat does not likely exist within the BAA.

#### 4.5.3 Fish Species of Special Concern

Pacific Lamprey (Entosphenus tridentatus)

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

**Habitat:** Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Sizes of runs are declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.

**Status within BAA:** No listed occurrences within the BAA. There was one listed occurrence within the 9-quad CNDDB report in the Garberville 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 listed occurrences in five quads within the 9-quad CNDDB report in the Garberville, Miranda, Harris, Piercy, and Noble Butte quads. Potential suitable habitat does not likely exist within the BAA.

#### Steelhead – Klamath Mountains Province DPS (Oncorhynchus mykiss irideus) Pop 1

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 in Cool, swift, shallow water & clean loose gravel for spawning and suitably large pools in which to spend the summer (CDFW 2018).

**Status within BAA:** No listed occurrences within the BAA. There was on listed occurrence within the 9-quad CNDDB report in the Jewett Rock quad. Potential suitable habitat does not exist within the BAA.

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

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

**Habitat:** Coastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.

**Status within BAA:** No listed occurrences within the BAA. There were listed occurrences in eight quads within the 9-quad CNDDB report in the Garberville, Miranda, Fort Seward, Harris, Piercy, Alderpoint, Bell Springs, Jewett Rock and Noble Butte Rock quads. Potential suitable habitat does not exist within the BAA.

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

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. Suitable habitat generally is 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 listed occurrences in two quads within the 9-quad CNDDB report, Fort Seward and Alderpoint. Potential suitable habitat does not exist within the BAA.

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 were listed occurrences in three quads within the 9-quad CNDDB report, Garberville, Miranda, and Piercy. Potential suitable habitat does not exist within the BAA.

Tracyina rostrata		Beaked tracyina
Fed status – none	State status – none	CA rare plant rank – 1B.2

#### 4.5.4 Plant Species of Special Concern

USGS 7.5' Quad – Jewett Rock, Alderpoint, Fort Seward

Documented in BAA - no

Potential Habitat in BAA - no

Habitat – Cismontane woodland, valley and foothill grassland, chaparral.

Open grassy meadows usually within oak woodland and grassland habitats. 150-795 m.

Arabis mcdonaldiana		McDonald's rockcress	
Fed status – endangered	State status – endangered	CA rare plant rank – 1B.1	
USGS 7.5' Quad – Noble Bu	itte		
Documented in BAA - no		Potential Habitat in BAA - no	
Habitat – Lower montane co	niferous forest, upper montane co	niferous forest.	
Rocky outcrops, ridges, slop	es, and flats on serpentine. 150-18	30 m.	

Howellia aquatilis		Water howellia	
Fed status – threatened	State status – none	CA rare plant rank – 2B.2	
USGS 7.5' Quad – Fort Sev	ward, Alderpoint		
Documented in BAA - no		Potential Habitat in BAA - no	
Habitat – Freshwater mars	shes and swamps.		

Viburnum ellipticum		Oval-leaved viburnum	
Fed status – none	State status – none	CA rare plant rank – 2B.3	
USGS 7.5' Quad – Harri	s, Bell Springs		
Documented in BAA - n	0	Potential Habitat in BAA - no	
Habitat – Chaparral, cisn	nontane woodland, lower montane	coniferous forest.	

Silene campanulata

Red Mountain catchfly

ssp.campanulata

Fed status – none	State status – endangered	CA rare plant rank – 4.2
USGS 7.5' Quad – Noble Butte		
Documented in BAA - no		Potential Habitat in BAA - no
Habitat – Lower montane conife	erous forest. Rocky dry shallow se	erpentine soil. 425-1235 m.

Sedum laxum ssp. eastwoodiae		Red Mountain stonecrop	
Fed status – none	State status – none	CA rare plant rank – 1B.2	
USGS 7.5' Quad – Nobl	e Butte		
Documented in BAA - n	0	Potential Habitat in BAA - no	
Habitat – Lower montan	e coniferous forest. Serpentine soi	ls among rocks. 910-1130 m.	

Carex arcta		Northern clustered sedge	
Fed status – none	State status – none	CA rare plant rank – 2B.2	
USGS 7.5' Quad – Garb	perville		
Documented in BAA - n	10	Potential Habitat in BAA - no	
Habitat – Bogs and fens,	, north coast coniferous forest.		

Arctostaphylos stanfordiana ssp. raichei		Raiche's manzanita	
Fed status – none	State status – none	CA rare plant rank – 1B.1	
USGS 7.5' Quad – Nobl	e Butte		
Documented in BAA - n	0	Potential Habitat in BAA - no	
Habitat – Chaparral, low	er montane coniferous forest. Roc	ky, serpentine sites. Slopes and ridges. 485-1070	m.

Astragalus agnicidusHumboldt County milk-vetchFed status – noneState status – endangeredCA rare plant rank – 1B.1

USGS 7.5' Quad - Miranda

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.

Gentiana setigera		Mendocino gentian
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Noble	e Butte	
Documented in BAA - no	0	Potential Habitat in BAA - yes
Habitat – Lower montane	e coniferous forest, meadows and	seeps. Meadows, seeps and bogs. Serpentine substrates.
120-1070 m.		

Erythronium revolutum		Coast fawn lily	
Fed status – none	State status – none	CA rare plant rank – 2B.2	
USGS 7.5' Quad – Mirat	nda, Piercy, Garberville		
Documented in BAA - no	0	Potential Habitat in BAA - yes	
Habitat –Streambanks, b	ogs, and wet redwood and mixed e	vergreen forest understory.	

Sidalcea malviflora ssp.	patula	Siskiyou checkerbloom
Fed status – none	State status – none	CA rare plant rank – 1B.2
USGS 7.5' Quad – Garb	erville	
Documented in BAA - n	0	Potential Habitat in BAA - yes
Habitat – Coastal bluff s	crub, coastal prairie, north coast co	niferous forest. Open coastal forest; roadcuts. 5-1255 m.

Montia howellii		Howell's montia	
Fed status – none	State status – none	CA rare plant rank – 2B.2	

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USGS 7.5' Quad –Miranda, Fort Seward

Documented in BAA - no

Potential Habitat in BAA - no

Habitat – Moist to wet habitat, including vernal pools and meadows.

It sometimes grows in shallow standing water such as puddles.

Piperia candida		White-flowered rein orchid	
Fed status – none	State status – none	CA rare plant rank – 1B.2	
USGS 7.5' Quad –Noble	Butte, Miranda, Piercy		
Documented in BAA - n	0	Potential Habitat in BAA - yes	
Habitat – Northern Cali	fornia Coniferous forest.		

Kopsiopsis hookeri		Small groundcone
Fed status – none	State status – none	CA rare plant rank – 2B.3
USGS 7.5' Quad – Mirand	a	
Documented in BAA - no		Potential Habitat in BAA - yes
Habitat – North coast con	iferous forest. Open woods, shi	rubby places, generally on Gaultheria shallon. 120-1435 m.

Eriogonum kelloggii		Kellogg's buckwheat	
Fed status – none	State status – endangered	CA rare plant rank – 1B.2	
USGS 7.5' Quad – Noble	e Butte		
Documented in BAA - no	0	Potential Habitat in BAA - no	
Habitat – Lower monta	ne coniferous forest. Rocky, serpenti	ne sites. 910-1190 m.	

Ceanothus foliosus var. vineatus		Vine Hill ceanothus	
Fed status – none	State status – none	CA rare plant rank – 1B.1	
USGS 7.5' Quad – Noble	e Butte		

Habitat – Sandy, acidic soil in chaparral. 45-305 m.

Frangula purshiana ssp. ultramafica		Caribou coffeeberry	
Fed status – none	State status – none	CA rare plant rank – 1B.2	
USGS 7.5' Quad – Jewet	t Rock		
Documented in BAA - no	0	Potential Habitat in BAA - no	
Habitat – Lower montane	e coniferous forest, upper montane	coniferous forest, chaparral, meadows and seeps	
On serpentine.	725-1830 m		

## 4.6 Potential Impacts 4.6.1 Northern Spotted Owls

The cannabis cultivation operations at the Stugard property will be restricted to the existing roads, existing cultivation sites, and water storage areas. No significant habitat removal or modification is proposed under the current interim permit. Potential impacts to NSO within the BAA are limited to disturbance from noise from traffic accessing the site and the likely intermittent use of equipment such as generators, ATVs, and road maintenance equipment, as well as normal residential and recreational activities.

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 (NSO) and Marbled Murrelets in Northwestern California." The document provides likely disturbance distances to nesting owls and murrelets, based on ambient (background) 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 3** under appendix B, the **Northern Spotted Owl Sound and Visual Harassment Decision Support Tool**, best reflects the likely ambient sound conditions at the site and the equipment likely to be used during cultivation. Under this scenario, "The existing environment is characterized by the near absence of sounds associated with human activities and is typified by natural background sounds found in the species habitat (e.g., bird calls, light breezes through vegetation, distant stream flow). Typical action-generated sounds from cultivation under this scenario could include "larger gas-powered engines, large generators, amplified music, ATVs and small trucks at moderate speed on improved trails, and large chain saws. Would also include larger construction equipment such as backhoes, road graders etc."

This **scenario 3** closely approximates the likely ambient background noise at the site (35-45 dBs), and easily includes the potential maximum action-generated noise (76-87 dBs) from the cultivation activities.

A noise sampling test using a decibel meter was conducted at the generator site on the property. The nearest edge of forested habitat (~ 75 feet from generator exhaust was sampled for noise levels. The ambient background noise (no generator) was ~ 40 dBs; the three samples taken with the generator running were 46, 48, and 48 dBs. This range of decibels, 46-48 dBs, is well below the estimated maximum action generated noise level.

Use of smaller construction equipment for activities such as road maintenance are very unlikely to exceed estimated maximum noise levels, as such noise level estimates include the use of "larger construction equipment such as backhoes and road graders".

Under scenario 3, the predicted auditory disturbance distance that may impact nesting is 300 meters, with a low ambient background noise level (~ 35 dBs); with moderate ambient sounds (~ 45 dBs) at the site, the disturbance distance is 100 meters. 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 BAA does not appear to have appropriate habitat to support spotted owl nesting/roosting, as much of the property has been logged in the recent past. There are residual trees of appropriate size ( $\geq 11^{\circ}$  dbh), and larger, for nesting/roosting, but no consistent stands of nesting/roosting habitat. The nearest NSO critical habitat is approximately .25 miles to the southeast from the cultivation site E (Fig. 6). There is also critical habitat ~ .3 miles west of site B (Fig. 5), but as sites A and B will be relocated no potential disturbance from this area is expected.

The nearest known spotted owl activity center to sites C and D is approximately 0.47 miles to the west (Fig. 7). This activity center, HUM0993, is located in the center of a meadow and appears mis-classified as an activity center, as no habitat exists at the site for nesting or roosting NSO. An analysis of the spider diagram of the detections attributed to HUM0993 indicate the NSO activity center is likely located further west in forested critical habitat appropriate for roosting/nesting (Fig. 8).

Based on the estimated **maximum** disturbance distance of **300 meters**, and a visual disturbance distance of **100 meters**, and the likelihood that the nearest activity center (HUM0993) is likely located significantly further to the west in more appropriate forested habitat, there is a strong likelihood of no significant impact to Spotted Owl nesting/roosting habitat. As there is also abundant foraging habitat on this and other nearby public and private properties, cultivation activities will not likely impact foraging Spotted Owls.

#### 4.6.2 Marbled Murrelets

Nesting marbled murrelets prefer older forests with trees that support potential nesting "platforms", such as large mossy branches or significant canopy deformities. The forested habitat on the Stugard property generally does not have trees of sufficient age or canopy complexity to support breeding marbled murrelets. There is very likely no potential marbled murrelet nesting habitat located on the BAA. And as no habitat removal is planned for the BAA, noise disturbance should be considered as the only significant potential impact to nearby marbled murrelets habitat

The nearest potential breeding habitat for marbled murrelets is approximately 425 meters to the west from Sites F and G (Fig. 9), public land designated as critical habitat. Another critical habitat unit is located to the southeast, roughly the same distance from site E.

Under the document "Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls (NSO) and Marbled Murrelets in Northwestern California", **scenario 3** best approximates the likely ambient noise and disturbance levels at the Stugard property. Under **scenario 3**, the predicted maximum auditory disturbance distance that may impact nesting murrelets is **300 meters.** The nearest murrelet critical habitat to any cultivation site is greater than **400 meters**; cultivation activities at the Stugard property will not impact critical habitat for marbled murrelets.

#### 4.6.3 Sensitive/Nesting Birds

As no habitat removal is proposed at the cultivation sites, operations are unlikely to disturb nesting or sensitive birds, as impacts would generally be limited to noise disturbance only. No harm to nesting or sensitive birds is likely if any site conversion or habitat removal is conducted outside of the nesting season, generally March 1<sup>st</sup> to August 31<sup>st</sup>.

#### 4.6.4 Sensitive Fish/Amphibians

The Water Resources Protection Plan (WRPP) for the Stugard property outlines the necessary BMPs (Best Management Practices) needed to protect water quality from cultivation practices. Portions of roads will be rocked; one insufficient culvert will be replaced; several rolling dips and drainage features on roads will be installed to reduce erosive potential. Two pit toilets and several cisterns for water storage will be removed. Cultivation sites A and B will be closed and restored to minimize any potential impacts to watercourses. These BMP's, implemented properly, should protect water quality on the BAA and to downstream waters. There should be no deleterious effects to fish or other aquatic species.

#### 4.6.5 Sensitive Forest Carnivores

Forest carnivores (Fisher, Humboldt Marten) may use the Stugard 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 is planned for the BAA, there is a low likelihood of impacts to potential foraging habitats.

#### 4.6.6 Sensitive Plants

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

## **5.0 Recommendations**

All cannabis watering 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 and should be properly stored in secured facilities to prevent exposure to precipitation events and prevent access to wildlife.

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).

All restoration and water protection measures required under Water Resource Protection Plans (WRPPs) should be conducted with minimal ground disturbance, and all recommended erosion control (straw waddles, seed and mulch) should be installed before any significant precipitation events 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.

Conduct nesting bird surveys if any significant vegetation removal or habitat alteration is planned within the nesting bird season (generally March 1 - August 31). When 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 significant habitat conversion or cultivation expansion is initiated.

Any proposed significant construction should occur outside of the critical nesting period for Spotted owls, March 1<sup>st</sup> to July 9<sup>th</sup>. If any operations, beyond typical maintenance and cultivation activities, and 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.

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

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# 7.0 Appendix



Figure 1. Stugard Parcel Topo Map



Figure 2. Stugard Photo Parcel Map with Cultivation Sites and Pond Locations



Figure 3. Web Soil Survey



#### Figure 3A. Web Soil Survey Map Unit Legend

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Soil Map—Humboldt County, South Part, California; and Mendocino County, Western Part, California

Web Soil Survey for the Stugard Property

# Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
402	Tannin-Wohly-Rockyglen complex, 50 to 75 percent slopes	6.0	2.2%
408	Holohan-Hollowtree- Casabonne complex, 30 to 50 percent slopes, MLRA 5	160.5	59.3%
451	Burgsblock-Coolyork-Tannin complex, 15 to 30 percent slopes	41.6	15.4%
655	Yorknorth-Witherell complex, 15 to 30 percent slopes	29.4	10.8%
662	Yorknorth-Witherell complex, 30 to 50 percent slopes	0.5	0.2%
671	Coolyork-Yorknorth complex, 5 to 30 percent slopes	32.0	11.8%
Subtotals for Soil Survey A	rea	269.8	9.66
Totals for Area of Interest		270.8	100.0%
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
165	Holohan-Hollowfree- Casabonne complex, 30 to 50 percent slopes, MLRA 5	1.0	0.4%
Subtotals for Soil Survey At	rea	1.0	0.4%
Totals for Area of Interest		270.8	100.0%



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Web Soil Survey National Cooperative Soil Survey

USDA Natural Resources Conservation Service



Figure 4. Aquatic Habitats on Stugard Property





Figure 5. Nearest NSO Critical Habitat to Stugard Site B

Nearest NSO Critical Habitat to Stugard Site E



Figure 6. Nearest NSO Critical Habitat to Stugard Site E



Figure 7. Nearest NSO Activity Center to Stugard Property



Figure 8. Spider Diagram of NSO HUM0993



Figure 9. Nearest Marbled Murrelet Critical Habitat to Stugard Property



1. Cultivation Site "A"



2. Cultivation Site "B"



3. Cultivation Sites "C" and "D"



4. Cultivation Site "E"



5. Cultivation Sites "F" and "G"





7. Pond #2



8. Portion of Water Tank Storage Area at Pond #1



9. Additional Water Storage at Pond #1



10. Diesel Generator with Storage with Secondary Containment



11. Water Tank Storage at Sites F and G



12. Forested Habitat on Stugard Property



13. Forested Habitat Alongside Sites C and D



14. Habitat Nearby Site E