

Biological Resource Assessment for APN 216-281-015

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Prepared For:

Humboldt Heritage Farms



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Introduction

This Biological Resource Assessment was prepared to provide data concerning the type and extent of biological resources under the jurisdiction of the California Department of Fish and Wildlife (CDFW) and US Fish and Wildlife Service (USFWS) that are currently or potentially present at the project location. The project includes commercial cannabis cultivation and associated activities (CMMLUO 11809). If required after agency review of the preliminary habitat assessment, protocol level surveys will be completed per recommendations by the Final Environmental Impact Report (FEIR) amendments to the Humboldt County Code Regulating Commercial Cannabis Activities.¹

Environmental Setting

Project Location

The property is located off Steelhead Road in Alderpoint of Humboldt County, California (Section 28, T3S, R5E). The project area is located on a north facing, 70.5-acre parcel within the U.S. Geological Survey's (USGS) Alderpoint 7.5-minute quadrangle map. Elevation is approximately 400-800 feet above sea level. Property is in the Lower Eel Watershed. The regional climate is Mediterranean in nature with warm summers and cool winters.

Soil, Topography, Hydrology

Three (3) soil types are mapped in the project areas on the Web Soil Survey. The property area is primarily composed of Tannin-Burgsblock-Rockyglen complex, 30 to 50 percent slopes (461), Coolyork-Yorknorth complex, 30 to 50 percent slopes (673), and Parkland, dry-Garberville, dry complex, 2 to 9 percent slopes (1005). These soils are not considered hydric and are on deep, well drained soils that formed in colluvium and residuum derived from sedimentary rock, sandstone and mudstone.

The project area is comprised primarily of the Parkland, dry-Garberville series. The Parkland series consists of very deep, moderately well drained soils formed in alluvium derived from mixed sedimentary sources including sandstone and mudstone. Parkland soils are on stream terraces and alluvial fans in mountain river valleys. Slope ranges from 0 to 9 percent. The mean annual precipitation is about 2160 mm and the mean annual air temperature is about 14 degrees Garberville soils occur on slightly higher positions and edges of terraces.

The Coolyork series consists of very deep, moderately well drained soils formed in residuum and colluvium derived from chloritic schist, mudstone and sandstone. Coolyork soils are on mountains and slopes range from 5 to 75 percent. The mean annual precipitation is about 1500 mm and the mean annual air temperature is about 13 degrees Coolyork soils have mollic epipedons and contain more than 35 percent clay in the particle size control section. These soils occur on linear to concave positions on backslopes. Yorknorth is an associated soil with Coolyork. Yorknorth soils have a mean annual soil temperature of 15 degrees C or greater and occur under grassland vegetation on linear and concave positions.

¹ [Final Environmental Impact Report :Amendments to the Humboldt County Code Regulating Commercial Cannabis Activities](https://humboldt.gov/DocumentCenter/View/62689/Humboldt-County-Cannabis-Program-Final-EIR-60mb-PDF). January 2018. Prepared by Ascent Environmental. (Accessed via <https://humboldt.gov/DocumentCenter/View/62689/Humboldt-County-Cannabis-Program-Final-EIR-60mb-PDF>)

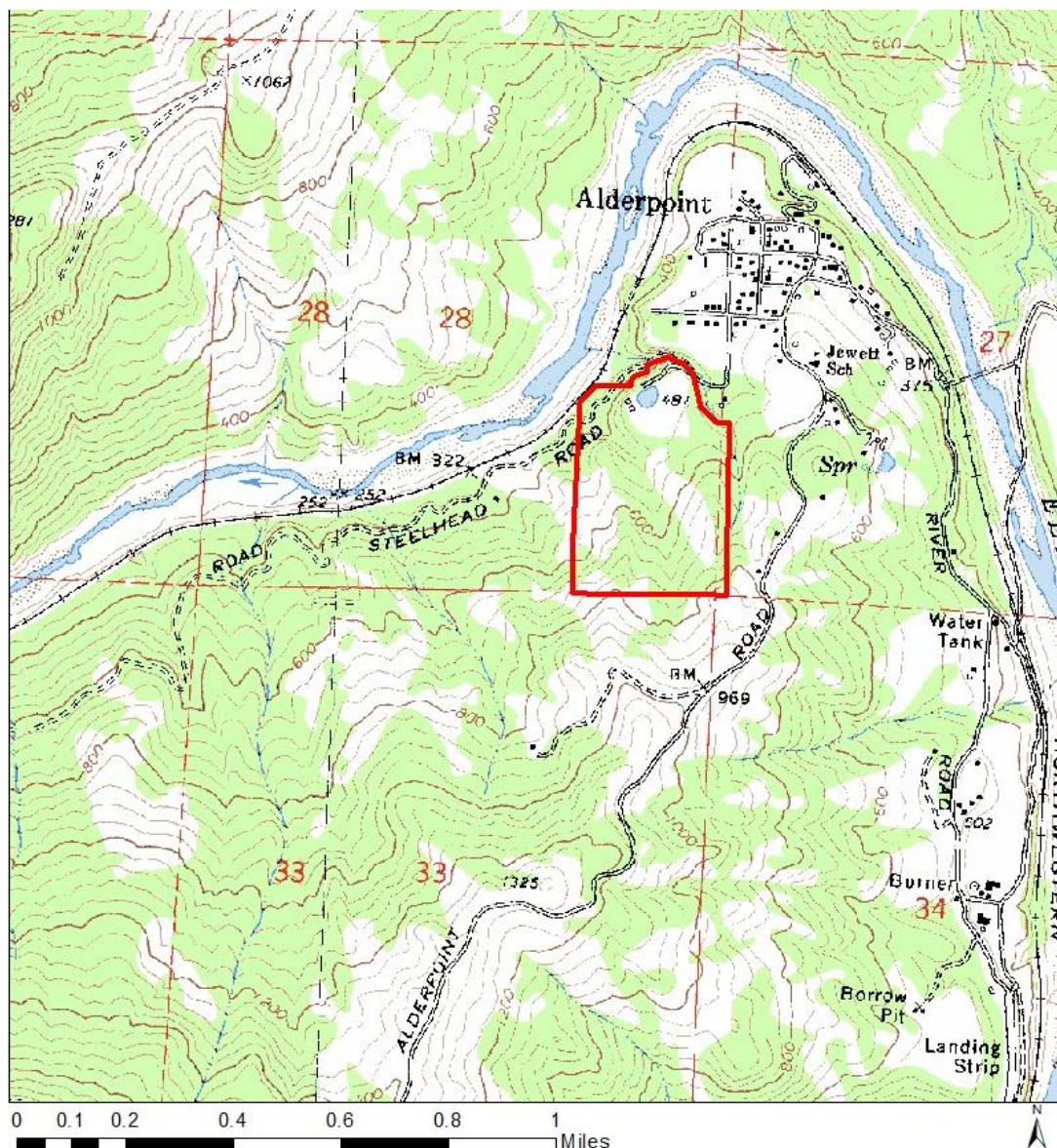


Figure 1. Project Location. Map created using ArcMap 10.6 and Humboldt County GIS layers.

The Tannin series consists of very deep, well drained soils formed in colluvium and residuum derived from sandstone and mudstone. Tannin soils are on mountains. Slope ranges from 9 to 75 percent. Mean annual precipitation is about 2160 mm and the mean annual temperature is about 13 degrees C. These soils contain less than 35 percent rock fragments and are found on linear to slightly concave or convex positions on summits, shoulders and backslopes on mountain slopes. Burgsblock and Rockyglen are other geographically associated soils with the Tannin series. Burgsblock soils contain more than 35 percent coarse fragments in the control section and are on linear to convex mountain slopes. Burgsblock soils are on mountains and have slopes of 15 to 75 percent. Rockyglen soils are on mountains with slopes that range from 9 to 100 percent. These soils occur on slightly to strongly convex positions.



Figure 2. Parcel boundaries and Soil Types²

The property is situated in the Lower Eel watershed with the Eel River flowing to the west. Per the Humboldt County GIS layer, the Streamside Management Area of an unnamed tributary extends into the northern portion of the project. Project areas are approximately 750 feet away from Eel River's streamside management area buffer. A class II watercourse tributary to the Eel River borders the northern portion of the parcel. A 0.63-acre palustrine (PUBH) wetland lies within the parcel, just south of Steelhead road and the primary access road. A 0.21-acre pond, that appears to be perennially inundated, is approximately also located on the property just south of the existing greenhouses. (Figure 3).

Field investigations revealed multiple Class II streams flowing towards the Eel River. (Figure 4)

The project area is mapped as possessing high levels of instability sloping at 0-30% approximately 400-800 feet above sea level. Other hazards are not mapped in or adjacent to the parcel on the Humboldt GIS database.

² Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. (Accessed via <https://websoilsurvey.sc.egov.usda.gov/>.)



Figure 3. Streamside Management Areas and National Wetland Inventory (NWI) wetlands mapped in and adjacent to project site³

³ Humboldt County GIS layer. (Accessed via: <http://webgis.co.humboldt.ca.us/HCEGIS2.0/>)



Figure 4. Field investigation mapping. Map created using ArcGIS 10.6 and CADD files supplied by GreenRoad Consulting

Methods

The California Natural Diversity Database (CNDDDB) RareFind and Spotted Owl Database, and California Native Plant Society (CNPS) databases were used to assess potential rare species. A habitat assessment was conducted by TransTerra Consulting Principal Biologist Tamara Camper on January 29, 2019. The assessment evaluated listed species and species of special concern (SOC). The study area was scanned for wildlife sign including tracks, scat, tree habitat (cavities, nests scrapes or accumulated vegetation) as well as special habitat types and habitats associated with rare plant species. The observations were concentrated around cultivation sites, roads and watercourses. The CNDDDB 9-Quad area was queried to generate occurrences of special-status animal species.

The assessment was conducted due to mandatory requirements for cannabis permitting, however the timing of the field visit did not coincide with ideal survey seasons based on phenology and life history cycles for all potential species. Full floristic surveys and/or protocol-level surveys were not conducted in the project area. Based on the timing of the survey, all plant species growing within the study area may not have been observed due to varying flowering phenologies and life forms, such as bulbs, biennials, and annuals. Other potentially dominant species within vegetation communities on site may be present during other times of the year. Therefore, the present study is not floristic in nature. Some of the plant species identified in this report are tentative due to the absence of morphological characters, resulting from immature reproductive structures or seasonal desiccation, which is required to make species-level determinations. Many wildlife species are also not identifiable between August and March and must be surveyed for during the reproductive season. Species-specific surveys will be conducted as appropriate and are further discussed below.

Results and Discussion

Vegetation

The project area is generally Mixed Evergreen Forest, Valley and Foothill Grassland, Cis-Montane Woodland and Riparian forest. Marshes and Riparian scrub as well as other wetland vegetation is also present. The forested areas are dominated by *Pseudotsuga menziesii* (Douglas fir), *Arbutus menziesii* (madrone), *Umbellularia californica* (California bay), *Notholithocarpus densiflorus* (tanoak), *Gaultheria shallon* (salal) and *Ceanothus* sp. (ceanothus). Openings are a mixture of native and non-native grasses and forbs including *Avena* sp (wild oats), *Bromus hordeaceus* (soft chess), *Holcus lanatus* (velvet grass), *Claytonia* sp. (claytonia), *Manzanita* sp. (manzanita), *Trifolium* sp. (clover) *Pteridium aquilinum* var. *pubescens* (western bracken fern), and *Rosa* sp. (rose). Riparian areas varied but were primarily dominated by *Alnus rhombifolia* (white alder), *Acer* sp. (maple) *Salix* sp. (willow), *Prunus* sp. (chokecherry), *Ribes* sp. (gooseberry), *Rubus* sp. (bramble), *Ranunculus* sp. (buttercup), *Nasturtium officinale* (watercress), and *Prunella vulgaris* (self heal).

Wetlands and SMA areas

As stated previously, there are numerous watercourses in the area, as well as natural and manmade wetlands. A jurisdictional wetland delineation was not requested or conducted for this assessment. The regulatory background for wetlands in Humboldt County is presented below.

U.S. Army Corps of Engineers (USACE)

The USACE Regulatory Branch regulates activities that may discharge dredged or fill materials into “waters of the U.S.” under Section 404 of the Federal Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. This permitting authority applies to all “waters of the U.S.” where the material (1) replaces any portion of a “waters of the U.S.” with dry land or (2) changes the bottom elevation of any portion of any “waters of the U.S.”. These fill materials include sand, rock, clay, construction debris, wood chips, and materials used to create any structure or infrastructure in these waters. The selection of disposal sites for dredged or fill material is done in accordance with guidelines specified in Section 404(b)(1) of the CWA, which were developed by the U.S. Environmental Protection Agency (USEPA).

Regional Water Quality Control Board (RWQCB)

The RWQCB is the primary agency responsible for protecting water quality in California through the regulation of discharges to surface waters under the CWA and the California Porter-Cologne Water Quality Control Act (Porter-Cologne Act). The RWQCB’s jurisdiction extends to all “waters of the State” and to all “waters of the U.S.,” including wetlands (isolated and non-isolated).

Section 401 of the CWA provides the RWQCB with the authority to regulate, through a Water Quality Certification, any proposed, federally permitted activity that may affect water quality. Among such activities are discharges of dredged or fill material permitted by the USACE pursuant to Section 404 of the CWA. Section 401 requires the RWQCB to provide certification that there is reasonable assurance an activity with the potential for discharge into navigable waters will not violate water quality standards. Water Quality Certification must be based on findings that the proposed discharge will comply with water quality standards, which contain numeric and narrative objectives found in each of the nine RWQCBs’ Basin Plans.

California Department of Fish and Wildlife

The CDFW has jurisdictional authority over wetland resources associated with rivers, streams, and lakes pursuant to the California Fish and Game Code (§§1600–1616). Activities of state and local agencies, as well as public utilities that are project proponents, are regulated by the CDFW under Section 1602 of the California Fish and Game Code.

Because the CDFW includes streamside habitats under its jurisdiction that, under the federal definition, may not qualify as wetlands on a project site, its jurisdiction may be broader than that of the USACE. Riparian forests in California often lie outside the plain of ordinary high water regulated under Section 404 of the CWA, and often do not have all three parameters (wetland hydrology, hydrophytic vegetation, and hydric soils) sufficiently present to be regulated as a wetland.

However, riparian forests are frequently included within CDFW regulatory jurisdiction under Section 1602 of the California Fish and Game Code.

The CDFW jurisdictional limits are not as clearly defined by regulation as those of the USACE. While they closely resemble the limits described by USACE regulations, they include riparian habitat supported by a river, stream, or lake regardless of the presence or absence of hydric and saturated soils conditions. In general, the CDFW extends jurisdiction from the top of a stream bank or to the outer limits of the

adjacent riparian vegetation (outer drip line), whichever is greater. Notification is generally required for any project that will take place within or near a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish and other aquatic plant and/or wildlife species. It also includes watercourses that have a surface or subsurface flow that support or have supported riparian vegetation.

Humboldt County-Streamside Management Area

“Streamside Management Areas” (SMAs) [Section 3432(5) of the Humboldt County 1984 General Plan] are defined in the Humboldt County General Plan (Page G-8) and include a natural resource area along both sides of streams containing the channel and adjacent land. Updates to the SMA guidance for cannabis activities are defined in the Environmental Impact Assessment Biological Resources Section⁴.

Project applicants proposing development activities within a SMA or wetland areas are required to include a site-specific biological report prepared consistent with these regulations. The written report prepared by a qualified biologist is subsequently referred to CDFW for review and comment. If required, after agency review of the preliminary habitat assessment, protocol level surveys will be completed per recommendations by the Final Environmental Impact Report (FEIR) amendments to the Humboldt County Code Regulating Commercial Cannabis Activities⁵.

Additional Laws and Policies

In addition to the above-mentioned policies, numerous other policies exist to protect wetlands, waters and biological resources including the California Environmental Quality Act (CEQA), California Endangered Species Act (CESA) and the Z’berg-Nejedly Forest Practice Act.

Northern Spotted Owl

In 2016, the California Fish and Game Commission approved the listing of the Northern Spotted Owl (*Strix occidentalis caurina*) as Threatened under the California Endangered Species Act. It has been listed as Threatened under the federal Endangered Species Act since 1990. Owl pairs typically nest in broken-top trees, tree cavities, debris accumulations or nests built by other wildlife (abandoned raptor nests or rodent nests). Females generally lay one to two eggs in spring and chicks fledge and leave nests in early fall. Generally older forests with dense canopy closure are preferred for nesting and roosting, however younger stands with similar structure are also utilized. Structural components of high-quality stands include multiple canopy layers, higher species density, larger overstory trees, live trees with deformities and woody debris in the understory. Prey species include flying squirrels, woodrats, rabbits, voles, shrews, gophers, smaller birds, bats and insects. Owls are threatened by Barred Owls, habitat loss, climate change and pathogens. ⁶

⁴ [Draft Environmental Impact Assessment Report Amendments to Humboldt County Code Regulating Commercial Cannabis Activities](https://humboldt.gov/DocumentCenter/View/58840/Section-311-Biological-Resources-Revised-DEIRPDF) (Access via <https://humboldt.gov/DocumentCenter/View/58840/Section-311-Biological-Resources-Revised-DEIRPDF>)

⁵ [Final Environmental Impact Report: Amendments to the Humboldt County Code Regulating Commercial Cannabis Activities, January 2018](https://humboldt.gov/DocumentCenter/View/62689/Humboldt-County-Cannabis-Program-Final-EIR60mb-PDF). Prepared by Ascent Environmental. (Accessed via <https://humboldt.gov/DocumentCenter/View/62689/Humboldt-County-Cannabis-Program-Final-EIR60mb-PDF>.)

⁶ [Northern Spotted Owls in California, California Department of Fish and Wildlife](https://www.wildlife.ca.gov/Conservation/Birds/Northern-Spotted-Owl) (Accessed via <https://www.wildlife.ca.gov/Conservation/Birds/Northern-Spotted-Owl>)

Northern Spotted Owl was not recorded in the CNDDDB database on the parcel or within 1 mile. Habitat was marginal on-site for nesting spotted owls due to stand age and structure, however conifer forest with deformed trees and species diversity is present.

CNDDDB and other Database Results

The CDFW CNDDDB, BIOS, Rarefind and CNPS databases were scoped before and after field site visit to determine habitat potential and known occurrences of rare or listed species of concern in or around the project area.

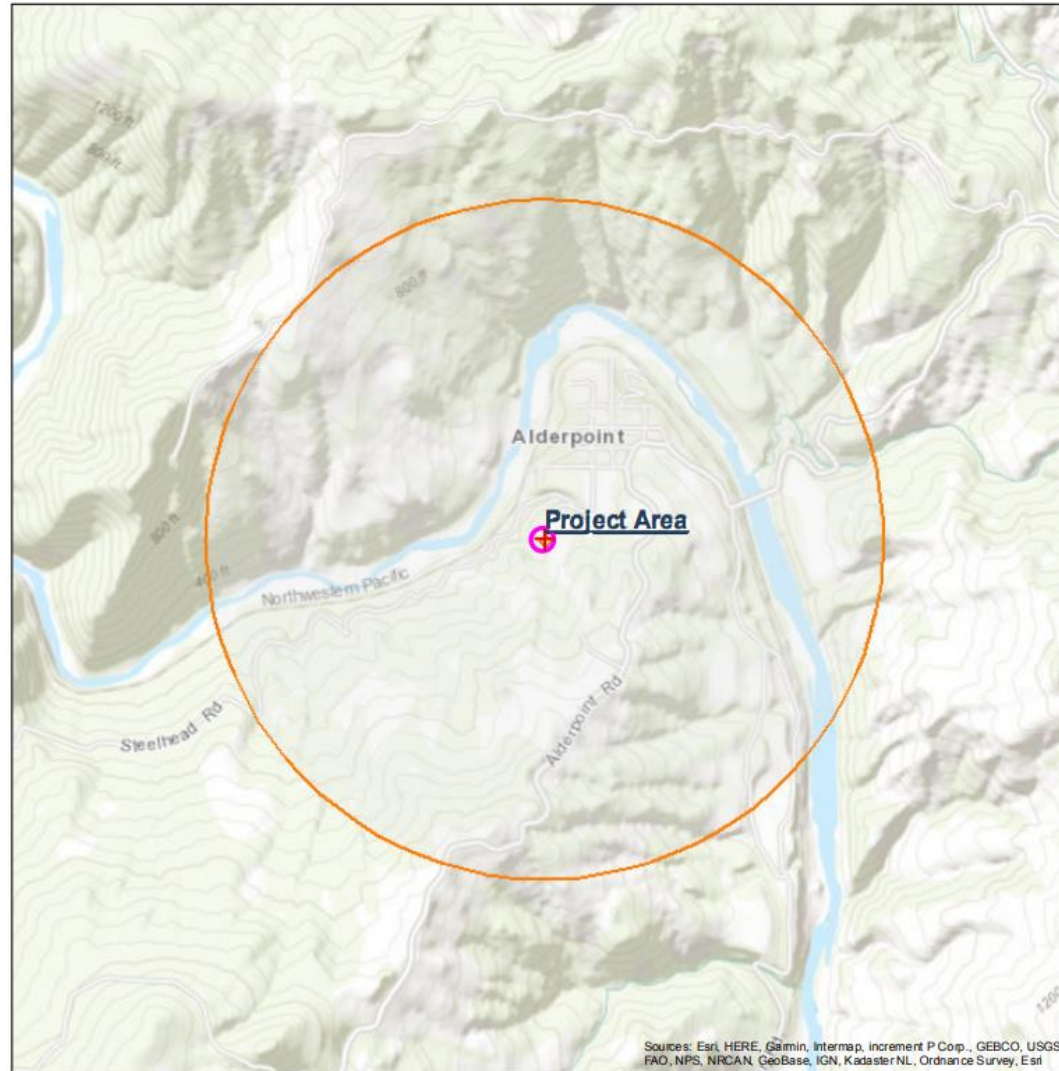
An observation was listed of *Rana boylei* (foothill yellow-legged frog) within the parcel. It was observed at the inlet to the man-made pond by Ryan Borque of CDFW. One gravid (egg carrying) female was observed on April 24, 2017. Bullfrogs were also observed in the area. Foothill yellow-legged frogs occupy partly-shaded streams and riffles with rocky substrate. They require at least some cobble for egg-laying and at least fifteen weeks to mature. The species is a candidate for threatened status under CESA.

Observations of *Tracyina rostrata* (beaked tracyina) have been made near the parcel and elsewhere in the Alderpoint quadrangle. The species is found in cis-montane woodlands, valley and foothill grasslands and chaparral. It generally occupies open, grassy meadows within oak woodlands from 150-750 meters. It is not state or federal listed but must be considered under CEQA 15380.b as the Rare Plant Rank is 1B.2.

The project area contains habitat for various rare or federally listed species. A complete list of occurrences of rare and species of concern are listed below in Table 1 and Table 2

Spotted Owl Map

- Spotted Owl Observations [ds704]**
- Positive Observation
 - Negative Observation
 - Activity Center
 - Not Valid Activity Center
 - ◇ Abandoned
 - Spotted Owl Observations Spider Diagram [ds705]
 - Northern Spotted Owl - Final Critical Habitat - USFWS [ds156]



Author: cnddb_com
Printed from <http://bios.dfg.ca.gov>

Figure 5. No occurrences of the Northern Spotted Owls were reported within one mile of the property area.

CNDDDB One Mile of Project Area Map

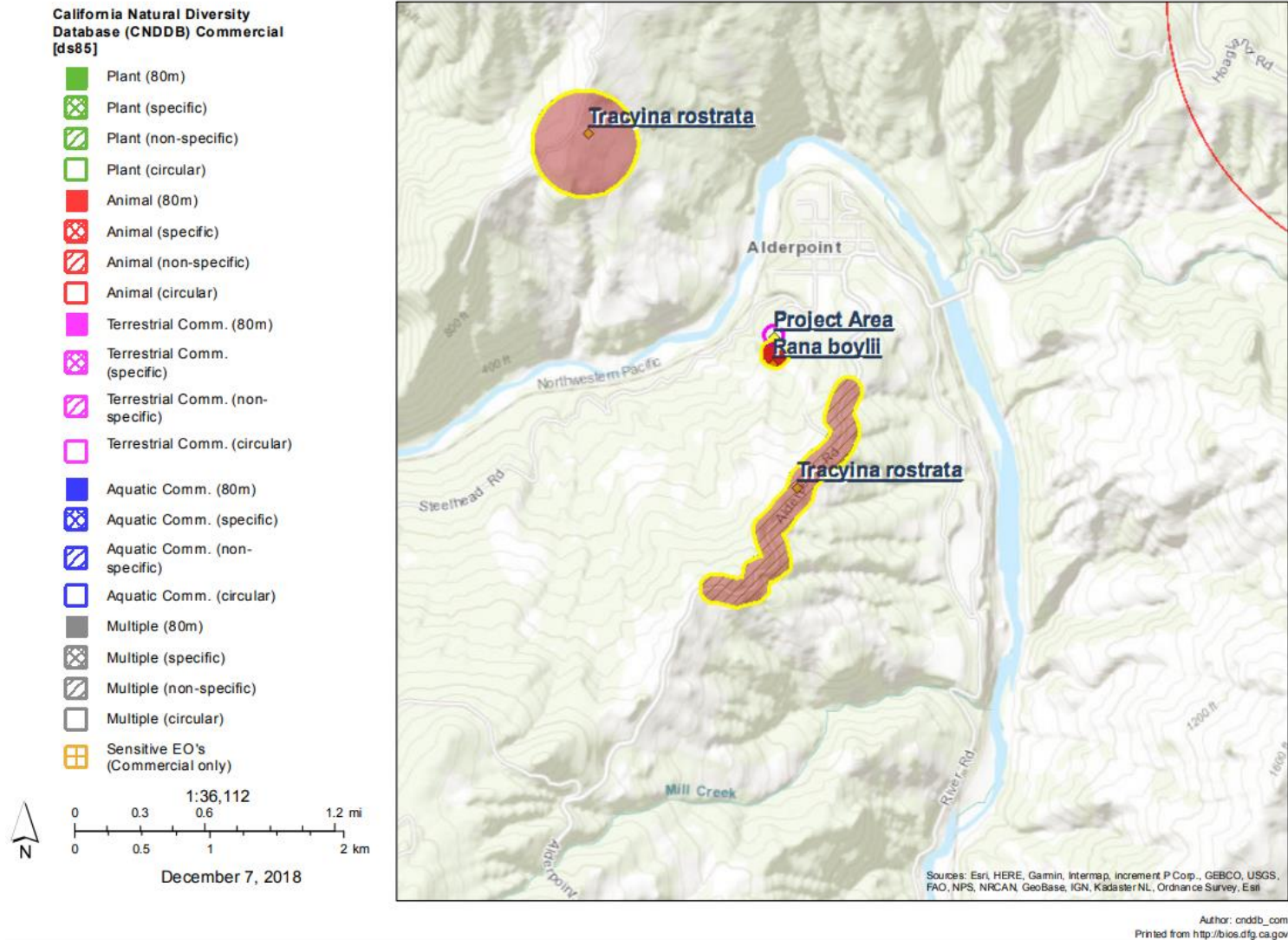


Figure 6. CNDDDB search results of observed rare plant and sensitive animal occurrences found one mile near property.

Table 1. CNDDDB nine-quad database results for the Alderpoint 7.5' quadrangle (plants listed in CNPS results).

Scientific Name	Common Name	Fed	Cal	General Habitat	Micro Habitat
Accipiter gentilis	northern goshawk	None	None	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.
Aquila chrysaetos	golden eagle	None	None	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.
Arboreomys pomosus	Sonoma tree vole	None	None	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.
Ascaphus truei	Pacific tailed frog	None	None	Occurs in montane hardwood-conifer, redwood, Douglas-fir & ponderosa pine habitats.	Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.
Bombus caliginosus	obscure bumble bee	None	None	Coastal areas from Santa Barbara county to north to Washington state.	Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.
Bombus occidentalis	western bumble bee	None	None	Once common & widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	
Emys marmorata	western pond turtle	None	None	A thoroughly aquatic turtle of 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.
Erethizon dorsatum	North American porcupine	None	None	Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.	Wide variety of coniferous and mixed woodland habitat.
Oncorhynchus mykiss irideus pop. 36	summer-run steelhead trout	None	None	No. Calif 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.

Scientific Name	Common Name	Fed	Cal	General Habitat	Micro Habitat
<i>Pandion haliaetus</i>	osprey	None	None	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.
<i>Pekania pennanti</i>	fisher - West Coast DPS	None	Threatened	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. Needs large areas of mature, dense forest.
<i>Rana boylei</i>	foothill yellow-legged frog	None	Candidate Threatened	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.
<i>Sabulina decumbens</i>	The Lassics sandwort	None	None	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>Sanicula tracyi</i>	Tracy's sanicle	None	None	Cismontane woodland, lower montane coniferous forest, upper montane coniferous forest.	Dry gravelly slopes or flats, usually in or at the margin of oak woodland with scattered trees. In openings. 100-1585 m.
<i>Sedum laxum</i> ssp. <i>flavidum</i>	pale yellow stonecrop	None	None	Broadleafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, upper montane coniferous forest.	Serpentine or basalt outcrops. 455-2000 m.
<i>Tracyina rostrata</i>	beaked tracyina	None	None	Cismontane woodland, valley and foothill grassland, chaparral.	Open grassy meadows usually within oak woodland and grassland habitats. 150-795 m.
<i>Usnea longissima</i>	Methuselah's beard lichen	None	None	North coast coniferous forest, broadleafed upland forest.	Grows in the "redwood zone" on tree branches of a variety of trees, including big leaf maple, oaks, ash, Douglas-fir, and bay. 45-1465 m in California.
<i>Viburnum ellipticum</i>	oval-leaved viburnum	None	None	Chaparral, cismontane woodland, lower montane coniferous forest.	215-1400 m.

Table 2. CNPS nine-quad database results for the Alderpoint 7.5' quadrangle

Scientific Name	Common Name	Lifeform	CRPR	Habitat	Micro Habitat
Allium hoffmanii	Beegum onion	perennial bulbiferous herb	4.3	Lower montane coniferous forest (serpentinite)	
Anisocarpus scabridus	scabrid alpine tarplant	perennial herb	1B.3	Upper montane coniferous forest (metamorphic, rocky)	
Arctostaphylos hispidula	Howell's manzanita	perennial evergreen shrub	4.2	Chaparral (serpentinite or sandstone)	
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	perennial evergreen shrub	1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	volcanic
Arnica spathulata	Klamath arnica	perennial rhizomatous herb	4.3	Lower montane coniferous forest (serpentinite)	
Astragalus rattanii var. rattanii	Rattan's milk-vetch	perennial herb	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	gravelly streambanks
Calycadenia micrantha	small-flowered calycadenia	annual herb	1B.2	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland	Roadsides, rocky, talus, scree, sometimes serpentinite, sparsely vegetated areas
Carex praticola	northern meadow sedge	perennial herb	2B.2	Meadows and seeps (mesic)	
Collomia tracyi	Tracy's collomia	annual herb	4.3	Broadleafed upland forest, Lower montane coniferous forest	rocky, sometimes serpentinite
Cypripedium fasciculatum	clustered lady's-slipper	perennial rhizomatous herb	4.2	Lower montane coniferous forest, North Coast coniferous forest	usually serpentinite seeps and streambanks
Epilobium oreganum	Oregon fireweed	perennial herb	1B.2	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic
Epilobium septentrionale	Humboldt County fuchsia	perennial herb	4.3	Broadleafed upland forest, North Coast coniferous forest	sandy or rocky
Erigeron maniopotamicus	Mad River fleabane daisy	perennial herb	1B.2	Lower montane coniferous forest, Meadows and seeps (open, dry)	open, disturbed areas (road cuts); rocky
Erythronium revolutum	coast fawn lily	perennial bulbiferous herb	2B.2	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Mesic, streambanks

<i>Eucephalus glabratus</i>	Siskiyou aster	perennial herb	4.3	Lower montane coniferous forest, Upper montane coniferous forest	rocky openings
<i>Howellia aquatilis</i>	water howellia	annual herb (aquatic)	2B.2	Marshes and swamps (freshwater)	
<i>Lilium rubescens</i>	redwood lily	perennial bulbiferous herb	4.2	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Sometimes serpentinite, sometimes roadsides
<i>Listera cordata</i>	heart-leaved twayblade	perennial herb	4.2	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	
<i>Lupinus constancei</i>	The Lassics lupine	perennial herb	1B.1	Lower montane coniferous forest (serpentinite)	
<i>Montia howellii</i>	Howell's montia	annual herb	2B.2	Meadows and seeps, North Coast coniferous forest, Vernal pools	vernally mesic, sometimes roadsides
<i>Ptilidium californicum</i>	Pacific fuzz wort	liverwort	4.3	Lower montane coniferous forest, Upper montane coniferous forest	Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders
<i>Sabulina decumbens</i>	The Lassics sandwort	perennial herb	1B.2	Lower montane coniferous forest, Upper montane coniferous forest	serpentinite
<i>Sanicula tracyi</i>	Tracy's sanicle	perennial herb	4.2	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	openings
<i>Sedum laxum</i> ssp. <i>flavidum</i>	pale yellow stonecrop	perennial herb	4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Serpentinite or volcanic
<i>Tracyina rostrata</i>	beaked tracyina	annual herb	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	
<i>Usnea longissima</i>	Methuselah's beard lichen	fruticose lichen (epiphytic)	4.2	Broadleafed upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers
<i>Viburnum ellipticum</i>	oval-leaved viburnum	perennial deciduous shrub	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	

Potential Direct and Indirect Impacts

The potential direct, indirect, and cumulative effects of the land clearing, residential development, and cultivation activities include removal of vegetation and canopy cover, disturbance and compaction of soil, alteration of hydrologic regime, sedimentation and erosion, increase in invasive species, and noise, solid and chemical waste pollution, visual impacts, and air quality impacts.

The proposed project will most likely include additional grading as well as work on water crossings. The proposed areas for new greenhouses are shown in an area with a historic palustrine wetland and other areas are potentially jurisdictional wetlands on-site. Increases in impervious surface may negatively impact water quality. These impacts will most likely be addressed through the Lake and Streambed Alteration Agreement (LSAA) and Water Resource Protection Plan (WRPP).

Agency personnel from CDFW and USFWS can further analyze the potential impacts and provide technical assistance for any listed species if additional activities are proposed that may result in take of a listed species including Northern Spotted Owl.⁷ If required, pre-construction reconnaissance surveys should follow the guidelines set forth in the Humboldt County Cannabis Program EIR, CDFW Survey and Monitoring Protocols and Guidelines⁸, USFWS Endangered Species Program⁹ and CNPS Botanical Survey Guidelines¹⁰

Recommendations

Follow all recommendations outlined by existing agency policies for minimizing impacts to natural resources. Impacts from light, noise and chemicals can be addressed in the operations plan and best management practices can be employed to minimize impacts. It is recommended that netting made of natural fibers be used in lieu of plastic netting for cultivation and erosion control to minimize entrapment. Additional disturbance, clearing, and road cuts would likely modify existing groundwater, and surface water patterns and could impact water quality and/or hydrophytic species.

Please contact me with any comments or concerns regarding this memorandum or future work required for your project. I can be reached at tami@trans-terra.com or (707) 845-7483. I have included my project experience as an attachment to this memorandum as it is often requested by agency personnel reviewing work of this nature. (Appendix A)

⁷ Transmittal of Guidance: Estimating the Effects of Auditory and Visual Disturbance to Northern Spotted Owls and Marbled Murrelet in Northwestern California: (Accessed via <https://www.fws.gov/arcata/es/birds/nso/documents/MAMUNSO%20Harassment%20Guidance%20NW%20CA%202006Jul31.pdf>)

⁸ California Department of Fish and Wildlife Survey and Monitoring Protocols and Guidelines (Accessed via <https://www.wildlife.ca.gov/conservation/survey-protocols>)

⁹ USFWS Arcata Fish and Wildlife Office Endangered Species Program (Accessed via <https://www.fws.gov/arcata/es/default.htm>)

¹⁰ California Native Plant Society (CNPS) Botanical Survey Guidelines (Accessed via https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf)

APPENDIX A-QUALIFICATIONS

Tamara Camper

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In-depth knowledge of biology, ecology, environmental laws, natural resources policy, and land use planning with experience implementing policies related to listed species including CEQA/NEPA, CESA/ESA and other regulations. Refined relationship-building and strategic thinking skills and experience working collaboratively with multiple agencies and stakeholders on a wide range of complex projects

Education

December 2007-M.A. Biology, **HUMBOLDT STATE UNIVERSITY**

December 1999-B.S. Environmental Science, **WESTERN WASHINGTON UNIVERSITY**

Experience

May 2018-Present-Principle-Environmental scientist, **TRANSTERRA CONSULTING LLC**
Principal Owner at TransTerra Consulting. Providing Environmental Consulting Services including Biological Assessments, Rare Species Surveys, Vegetation and Habitat Typing/Mapping, Stream and Wetland Surveys, Environmental Impact Assessments, Permitting, Land Use/Planning, and CEQA/NEPA Documents

November 2011-May 2018-Associate Environmental Planner, **CALTRANS**
Promoted through increasingly responsible positions based on performance and experience in Humboldt, Del Norte and Mendocino. Served as Coastal Liaison, Restoration Specialist and CEQA/NEPA Coordinator. Developed programmatic interagency guidelines, workload coordination, permit process training, budgets, contracts, and internal process efficiency. Wrote and reviewed environmental documents including EAs and IS-MNDs, BAs, Section 7 and 10 consultations, oversaw and conducted biological/wetland surveys, mitigation and monitoring work and reporting.

October 2008-November 2011-Biologist/Environmental Planner, **STREAMLINE PLANNING CONSULTANTS**
Provided natural resource and policy expertise for a wide-range of public and private projects affecting natural resources. Conducted stream/riparian assessments, botanical surveys, wetland delineation, impact assessments and mitigation/monitoring reports in accordance with CEQA, FPR, ESA, NEPA, the Water Quality Act, Coastal Act and other relevant laws for private landowners. Assisted with consultation, coordination and permit applications for listed species. Developed alternatives and mitigation design and negotiated sensitive and complex issues with multiple stakeholders.

March 2003-November 2008-Owner-Biologist, CAMPER CONSULTING

Provided botanical/wildlife surveys, wetland delineation, impact assessments and mitigation reports in accordance with CEQA and other relevant laws for private land owners. Extensive experience working on commercial and private timberlands for THP/NTMP work.

January 2001-March 2003-Wildlife Technician, CAMPBELL TIMBERLAND MANAGEMENT

Developed a botanical program including the coordination and conduction of botanical surveys, impact assessments, mitigation reports, monitoring studies. Maintained public relations and relationships with state and federal agency personnel. Developed and maintained GIS and other databases for survey findings. Assisted with NSO, anadromous fish and amphibian monitoring, surveying and habitat analysis.

March 2000-October 2000-Fisheries Technician, MENDOCINO REDWOOD COMPANY

Conducted anadromous fish and amphibian monitoring, surveying and habitat analysis. Utilized dive counts, electrofishing, sediment sampling, fish trapping, insect sampling and water quality monitoring to assess impacts to salmonids and other aquatic species in conjunction with the Department of Fish and Wildlife.

May 1998-January 1999-Botanical Propagation Specialist, SKAGIT ROSE FARMS

Identified, propagated and maintained an inventory of native plants of the Northwest Coastal Region. Researched and developed interpretive gardens of native plant ecosystems

Skills

- CEQA/NEPA Document Writing and Review
- Regulation and Policy Review and Guidance including Permitting and Mitigation
- Scientific Writing and Editing Research
- Design and Statistical Analysis
- Vegetation and Wetland Surveys
- ArcMap, Microsoft Office and Statistical Software
- Teamwork, Negotiations and Strategic Thinking
- Project Budget, Scope and Scheduling
- Contract Oversight and Management
- Navigation of Rough Terrain Wildlife,

Activities

Membership in Rotary Arcata Sunrise, California Native Plant Society, and The Wildlife Society. Various workshops and certifications including wetland delineation, vegetation mapping, monocot identification, hydric soils, CRAM training, negotiation techniques and conflict resolution, Lean Six Sigma