Botanical Survey Report

Prepared for:

Kalifornia Green Akres, LC.
Humboldt County APN 216-271-013-000
NCRWQCB WDID# 1B16571CHUM
CMMLUO APPS #11682

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Original: June 2020
UPDATE: May 2021

NRM
NATURAL RESOURCES MANAGEMENT
CORPORATION

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I. Summary of Findings and Conclusions

This Botanical Report is an update to a previous report completed in June of 2020, and reviews proposed relocation of a cannabis cultivation area on the project parcel Humboldt County APN 216-271-013-000 to determine potential impacts on special status plants plant and or sensitive natural communities. See Table 1 for a list of reviewed plant species. The proposed project areas, or 'relocation receiver sites,' have undergone significant prior disturbance. The Study Area was established to cover the portion of the parcel for which review was requested by Humboldt County as part of the relocation process.

No special status plant species were found within the Study Area. The project area lies within a grassland opening within a matrix of Oregon white oak woodland, or *Quercus garryana* (tree) Forest & Woodland Alliance, a sensitive natural community with a rank of S3. However, no impacts to this community are proposed. We have determined that there are likely to be no impacts to special status plant species, or sensitive natural communities due to proposed development activity.

II. Introduction

This Report reviews the project described below in sufficient detail to determine potential impacts to any plant species that are listed, candidates for listing or proposed for listing under the ESA, CESA, and the California Native Plant Protection Act (NPPA) and or meet the definition of rare, endangered or special status under the California Environmental Quality Act (CEQA), hereinafter referred to as special status plants. Furthermore, this report reviews potential impacts to sensitive natural communities, as defined by the California Department of Fish and Wildlife (CDFW) Vegetation Classification and Mapping Program's current list (CDFW 2020a). We conducted seasonally appropriate botanical surveys to determine the presence or absence of special status species or sensitive natural communities within the proposed project areas. Survey findings are useful in assessing the potential for significant negative impacts on botanical resources and are critical in mitigating those impacts to a less than significant level. Special status plant species with the known potential to occur in the project area are listed in Table 1.

Historically, the parcel has been the site of cannabis cultivation. The Study Area reviewed here encompasses the areas proposed as cannabis cultivation relocation sites. All proposed project areas have undergone significant prior disturbance. See Figures 2 and 3.

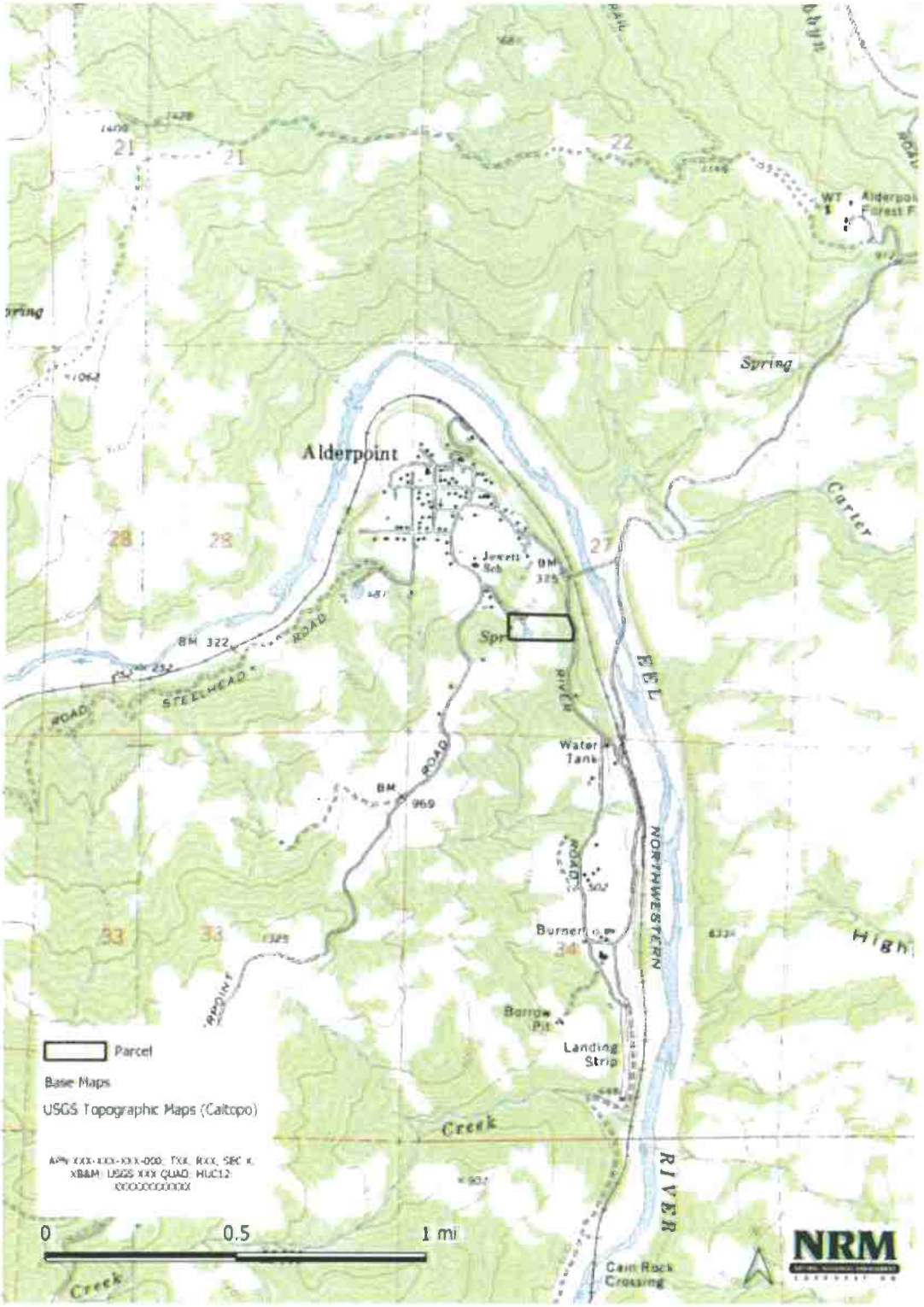

Figure 1. Parcel Location Map for APN 216-271-013-000

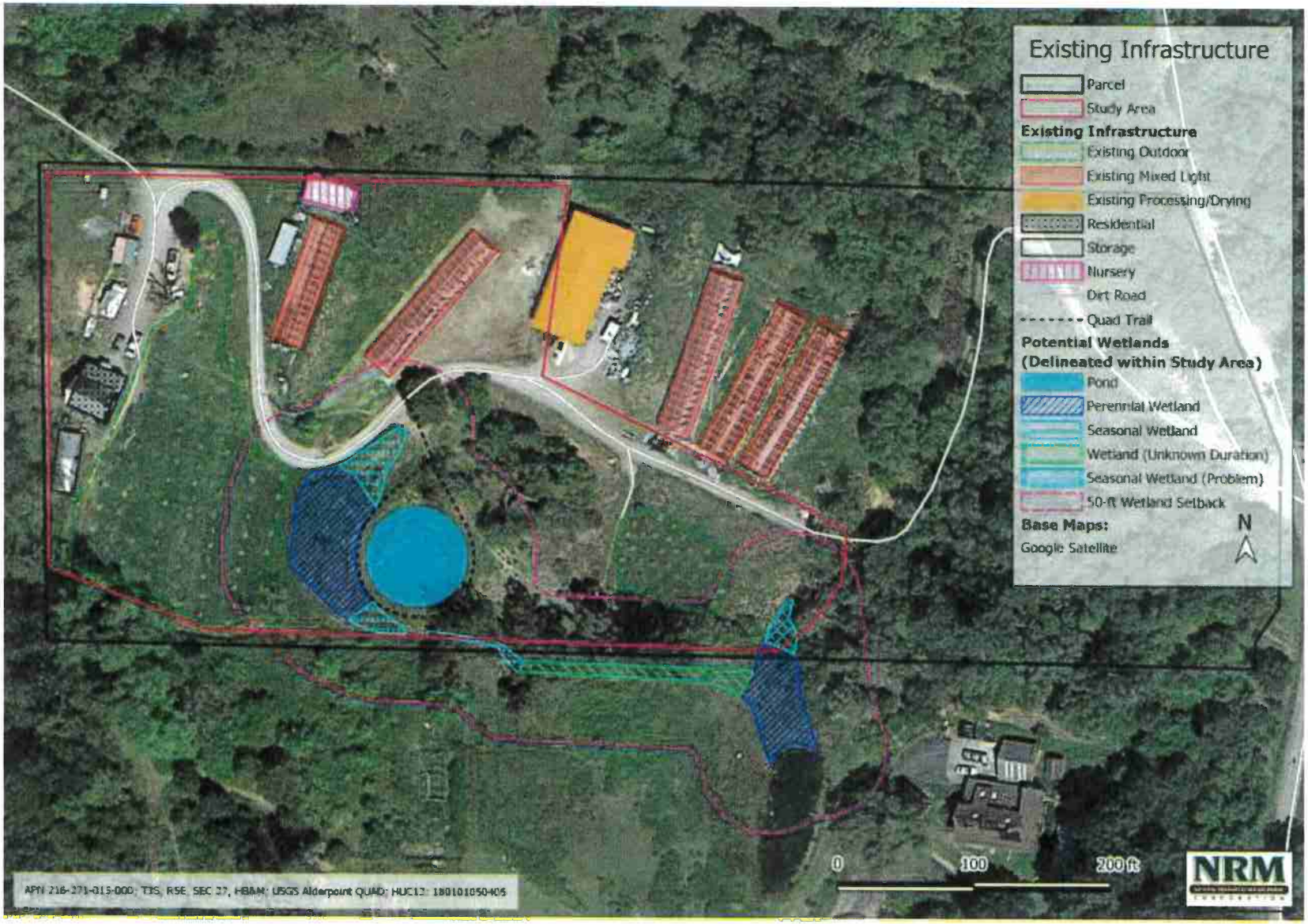

Figure 2. Existing Infrastructure and Parcel Map

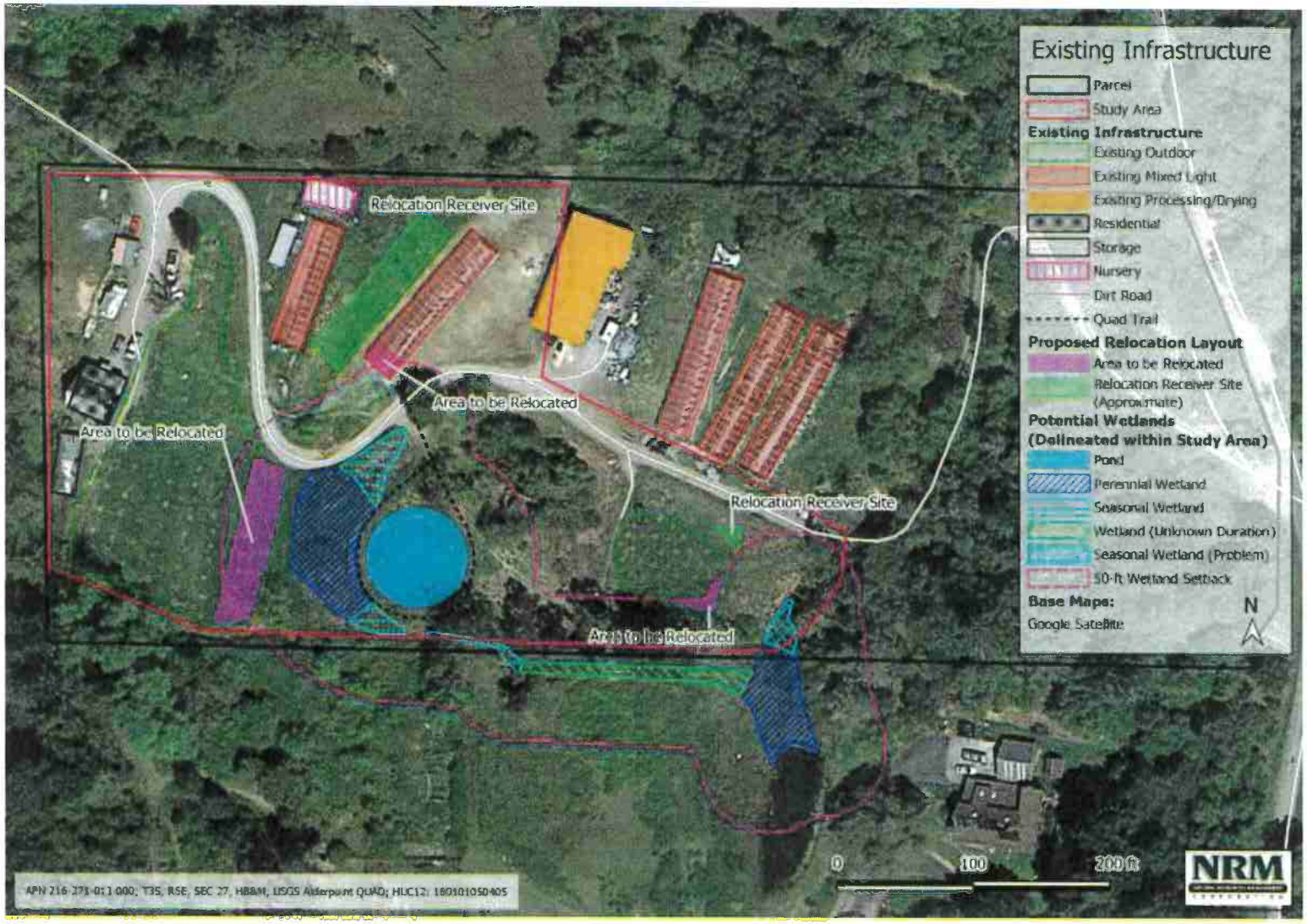

Figure 3. Proposed Relocation Map

III. Background and Project Understanding

The Study Area reviewed here encompasses the area proposed to receive cannabis cultivation relocation sites. Please see Cannabis Relocation Report (July 2020) for project background. See Figure 3.

IV. Environmental Setting

Topography and Hydrology

The 20-acre project parcel occupies an east-facing slope above the mainstem Eel River. The parcel is between 400 feet and 600 feet in elevation. The mainstem Eel River lies approximately 300 feet downslope to the east. See Figure 1.

An existing pond is depicted as a perennial spring and pond on the USGS topographic quadrangle map (Figures 2 and 3). This pond has no apparent stream inlet or outlet and therefore appears to be fed by a spring. No other watercourses are mapped on the parcel. The pond is artificially bermed and ringed by a dirt fill access road. The pond drains through a culvert towards the neighboring parcel to the south.

Historic Land Use

The project area has been used historically as a cultivation site, and the entire project footprint has been significantly disturbed and altered by prior grading and heavy agricultural land use.

Vegetation

The project site is within the USDA Ecoregion Section M261Bb: Sierran Forest - Alpine Meadows Province/ Northern California Coast Ranges Section/ Central Franciscan subsection (CALVEG 2004).

The Study Area lies within a grassland portion of a regional mosaic of cismontane oak woodland, mixed evergreen forest, and foothill and valley grassland (Holland 1986). However, much of the Study Area is disturbed by both historic and recent agricultural activity. Most of the herbaceous vegetation on-site consists of ruderal, weedy species, with most areas dominated by fennel (*Foeniculum vulgare*) and/or weedy pasture grasses such as tall fescue (*Festuca arundinacea*), harding grass (*Phalaris aquatica*) wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*) and colonial bentgrass (*Agrostis capillaris*). The invasive shrub Himalayan blackberry (*Rubus armeniacus)* also dominates large areas.

However, the historic pond (described above) and a good portion of the hillslope above the pond is dominated by thick stands of field horsestail (*Equisetum arvense*, FACW), with patches of pennyroyal (*Mentha pulegium*, OBL), cattail (*Typha latifolia*, OBL) watercress (*Nasturtium officinale*, OBL) and nutsedge (*Cyperus eragrostis*, FACW).

The oak woodlands directly adjacent to the project area are made up of approximately 10% California black oak (Quercus kelloggii) and 90% Oregon white oak (*Quercus garryana*), with California Buckeye (*Aesculus californica*) Douglas-fir (*Pseudotsuga menziesii*), madrone (*Arbutus menziesii*), and California bay (*Umbellularia californica*) also present.

Mixed evergreen forests in the general area are largely comprised of Douglas-fir, tanoak (*Notholithocarpus densiflorus*) and California bay.

Soils

Soils within the Study Area are mapped by the Natural Resources Conservation Service (NRCS) as Map Unit 673—Coolyork-Yorknorth complex, 30 to 50 percent slopes (NRCS 2020) See NRCS soil map in Appendix C. The NRCS describes these soil series as follows:

> "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 C" (NRCS 2020).
>
> "The Yorknorth series consists of very deep, moderately well drained soils that formed in material weathered from chloritic schist and other sedimentary and metamorphic rocks. Yorknorth soils are on hills and mountains and have slopes of 2 to 50 percent. The mean annual precipitation is about 1650 millimeters and the mean annual temperature is about 14 degrees C" (NRCS 2020).

V. Methods

Pre-Field Review

Prior to the surveys, the current inventories of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California (CNPS 2021a) and the California Natural Diversity Database CNDDB Quickview tool (CNDDB 2021) were consulted to determine which special status plant species may occur within the project area and to compile a target species list. A nine-quad query of CNDDB and CNPS Inventory records resulted in 43 listed vascular and nonvascular plant species (Table 1). These scoping strategies are consistent with California Department of Fish and Wildlife protocols (CDFW 2018d) and the California Environmental Quality Act (State of California 2001). The following resources were consulted:

- California Natural Communities List (CDFW 2020a);
- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2021a);
- Special Vascular Plants, Bryophytes, Lichens List (CDFW 2021b);
- California Natural Diversity Database (CNDDB) Quickview Query (CNDDB 2021).
- The Jepson Manual, 2nd Edition (Baldwin et al. 2012);
- Jepson eFlora (Jepson Flora Project 2021);
- The California Native Plant Society's Online Inventory of Rare and Endangered Plants of California (CNPS 2021a);
- A Manual of California Vegetation (Sawyer et al. 2009)
- A Manual of California Vegetation, Online Edition (CNPS 2021b);
- Consortium of California Herbaria (CCH 2021);
- Calflora online database (Calflora 2021).

Botanical taxonomy and nomenclature conform to The Jepson Manual, 2nd Edition (Baldwin et al. 2012) and recent circumscriptions in the Jepson eFlora (Jepson Flora Project 2021). Common names of plant species are derived from The Calflora Database (Calflora 2021). Nomenclature for special-status plant species conforms to the Inventory of Rare and Endangered Plants of California (CNPS 2021) and Special Vascular Plants, Bryophytes

and Lichens List (CDFW 2021b). Vegetation communities described herein conform to A Manual of California Vegetation (Sawyer et al. 2009) or A Manual of California Vegetation, Online Edition (CNPS 2021b), and/or the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), where applicable.

Reference Populations

The following reference populations were visited preceding surveys:

Pacific Gilia (*Gilia capitata ssp. pacifica*): Lord Ellis Summit Quad, Snow Camp Rd; 2800 ft elevation; visited 2020-06-01; plants 80% in flower, 20% in bud.

Howell's Montia (*Montia howellii*): Blocksberg Quad, on private property; 1680 ft elevation; visited 2021-04-16; hundreds of plants in full bloom.

Siskiyou checkerbloom (*Sidalcea malviflora ssp. patula*): Hydesville Quad, on Johnson Rd; elevation 400 ft; visited 2021-04-15: population 10 % in flower; visited again 2021-04-30; Population 70% in flower.

Table 1. Special status plant species known from nine-quad area surrounding project (Table Data from CNDDB 2021, CNPS 2021a).

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Micro Habitat	Elevation Low (ft)	Elevation High (ft)
Allium hoffmanii	Beegum onion	4.3	G4	S4	None	None	Jun-Jul	Lower montane coniferous forest (serpentinite)		3605	5905
Anisocarpus scabridus	scabrid alpine tarplant	1B.3	G3	S3	None	None	(Jun)Jul-Aug(Sep)	Upper montane coniferous forest (metamorphic, rocky)		5410	7545
Arctostaphylos hispidula	Howell's manzanita	4.2	G4	S3	None	None	Mar-Apr	Chaparral (serpentinite or sandstone)		390	4100
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	1B.3	G5T3	S3	None	None	(Jan)Mar-May(Jul)	Chaparral, Cismontane woodland, Lower montane coniferous forest	volcanic	1295	5300
Arnica spathulata	Klamath arnica	4.3	G3?	S3	None	None	May-Aug	Lower montane coniferous forest (serpentinite)		2095	5905
Astragalus rattanii var. rattanii	Rattan's milk-vetch	4.3	G4T4	S4	None	None	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	gravelly streambanks	95	2705
Brasenia schreberi	watershield	2B.3	G5	S3	None	None	Jun-Sep	Marshes and swamps (freshwater)		95	7220
Calycadenia micrantha	small-flowered calycadenia	1B.2	G2	S2	None	None	Jun-Sep	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland	Roadsides, rocky, talus, scree, sometimes serpentinite, sparsely vegetated areas	15	4920
Carex praticola	northern meadow sedge	2B.2	G5	S2	None	None	May-Jul	Meadows and seeps (mesic)		0	10500

Carex scabriuscula	Siskiyou sedge	4.3	G4G5	S4	None	None	May-Jul	Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic, sometimes serpentinite seeps	2325	7695
Claytonia serpenticola	Serpentine spring beauty	4.3	G3	S3	None	None	No Data	No Data	No Data	No Data	No Data
Collomia tracyi	Tracy's collomia	4.3	G4	S4	None	None	Jun-Jul	Broadleafed upland forest, Lower montane coniferous forest	rocky, sometimes serpentinite	980	6890
Cryptantha rostellata	red-stemmed cryptantha	4.2	G4	S3	None	None	Apr-Jun	Cismontane woodland, Valley and foothill grassland	Often gravelly, volcanic openings; often roadsides	130	2625
Cypripedium fasciculatum	clustered lady's-slipper	4.2	G4	S4	None	None	Mar-Aug	Lower montane coniferous forest, North Coast coniferous forest	usually serpentinite seeps and streambanks	325	7990
Cypripedium montanum	mountain lady's-slipper	4.2	G4	S4	None	None	Mar-Aug	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest		605	7300
Epilobium oreganum	Oregon fireweed	1B.2	G2	S2	None	None	Jun-Sep	Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic	1640	7350
Epilobium septentrionale	Humboldt County fuchsia	4.3	G4	S4	None	None	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	sandy or rocky	145	5905
Erigeron maniopotamicus	Mad River fleabane daisy	1B.2	G2?	S2?	None	None	May-Aug	Lower montane coniferous forest, Meadows and seeps (open, dry)	open, disturbed	4180	4920

									areas (road cuts); rocky		
Erigeron robustior	robust daisy	4.3	G3	S3	None	None	Jun-Jul	Lower montane coniferous forest, Meadows and seeps	sometimes serpentinite	655	2000
Erythronium revolutum	coast fawn lily	2B.2	G4G5	S3	None	None	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Mesic, streambanks	0	5250
Eucephalus glabratus	Siskiyou aster	4.3	G4	S3	None	None	Jul-Sep	Lower montane coniferous forest, Upper montane coniferous forest	rocky openings	390	8875
Frangula purshiana ssp. ultramafica	Caribou coffeeberry	1B.2	G4T2T3	S2S3	None	None	May-Jul	Chaparral, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	serpentinite	2705	6330
Fritillaria glauca	Siskiyou fritillaria	4.2	G3G4	S3	None	None	(Apr-May)Jun-Jul	Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest	serpentinite, talus slopes	5690	8005
Fritillaria purdyi	Purdy's fritillary	4.3	G4	S4	None	None	Mar-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	usually serpentinite	570	7400
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	G5T3	S2	None	None	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland		15	5465
Hemizonia congesta ssp. tracyi	Tracy's tarplant	4.3	G5T4	S4	None	None	May-Oct	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest	openings, sometimes serpentinite	390	3935
Howellia aquatilis	water howellia	2B.2	G3	S2	None	FT	Jun	Marshes and swamps (freshwater)		3555	4230

Lilium rubescens	redwood lily	4.2	G3	S3	None	None	Apr-Aug(Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Sometimes serpentinite, sometimes roadsides	95	6265
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	4.3	G4T4	S3S4	None	None	Jun-Aug	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	often serpentinite	225	9020
Listera cordata	heart-leaved twayblade	4.2	G5	S4	None	None	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest		15	4495
Lupinus constancei	The Lassics lupine	1B.1	G1	S1	None	None	Jul	Lower montane coniferous forest (serpentinite)		4920	6560
Montia howellii	Howell's montia	2B.2	G3G4	S2	None	None	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	vernally mesic, sometimes roadsides	0	2740
Navarretia leucocephala ssp. bakeri	Baker's navarretia	1B.1	G4T2	S2	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic	15	5710
Piperia candida	white-flowered rein orchid	1B.2	G3	S3	None	None	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	sometimes serpentinite	95	4300
Pityopus californicus	California pinefoot	4.2	G4G5	S4	None	None	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	mesic	45	7300

Ptilidium californicum	Pacific fuzz wort	4.3	G4G5	S3S4	None	None	May-Aug	Lower montane coniferous forest, Upper montane coniferous forest	Usually epiphytic on trees, fallen and decaying logs, and stumps; rarely on humus over boulders	3740	5905
Sabulina decumbens	The Lassics sandwort	1B.2	G1	S1	None	None	Jul	Lower montane coniferous forest, Upper montane coniferous forest	serpentinite	4920	5495
Sanicula tracyi	Tracy's sanicle	4.2	G4	S4	None	None	Apr-Jul	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	openings	325	5200
Sedum laxum ssp. flavidum	pale yellow stonecrop	4.3	G5T3Q	S3	None	None	May-Jul	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Serpentinite or volcanic	1490	6560
Tracyina rostrata	beaked tracyina	1B.2	G2	S2	None	None	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland		295	2590
Usnea longissima	Methuselah's beard lichen	4.2	G4	S4	None	None		Broadleafed upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers	160	4790
Viburnum ellipticum	oval-leaved viburnum	2B.3	G4G5	S3?	None	None	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest		705	4595

*Listing codes are as follows (CNPS 2020a):California Rare Plant Rank (CRPR) 1B = rare, threatened, or endangered in CA and elsewhere; 2B = rare, threatened, or endangered in CA, but more common elsewhere; 3 = plants about which more information is needed; a review list; 4 = of limited distribution or infrequent throughout a broader area in

California. Ranks at each level also include a threat rank and are determined as follows: 0.1-Seriously threatened in California; 0.2-Moderately threatened in California; 0.3-Not very threatened in California. Global Ranking (GRank) - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range: G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres; G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres; G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres; G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat; G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world. State Rank (SRank) The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank: S1: Fewer than 6 viable occurrences worldwide/ statewide, and/ or up to 518 hectares; S2: 6-20 viable occurrences worldwide/ statewide, and/ or more than 518-2,590 hectares; S3: 21-100 viable occurrences worldwide/ statewide, and/or more than 2,590-12,950 hectares; S4: Greater than 100 viable occurrences worldwide/ statewide, and/or more than 12,950 hectares; S5: Demonstrably secure because of its worldwide/ statewide abundance. Additional Threat Ranks: 0.1=Very threatened; 0.2=Threatened; 0.3= No current threat known. CESA: California Endangered Species Act: CR: state-listed (NPPA) RARE; CE = state-listed ENDANGERED; FESA: Federal Endangered Species Act: FE = federally listed ENDANGERED

Field Survey

On June 17th, 2020 and April 21st, 2021, NRM botanist Claire Brown conducted site visits to assess potential impacts of proposed cannabis cultivation relocation on special status plant species and sensitive natural communities. Claire has a B.S. in Ecology and Evolutionary Biology from the University of Tennessee, has eight years of experience as a botanist in California, including five years of experience conducting rare plant surveys on the North Coast. The project was surveyed for all terrestrial and aquatic plant species present. This survey was conducted for approximately 3 hours on a warm, sunny afternoon.

The plant surveys were floristic in nature and followed the 2018 California Department of Fish and Wildlife (CDFW) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018d). The survey was timed to coincide with expected bloom windows for the target species with potential to occur at the site elevation and within habitat and soil types present. See Table 1. The Study Area (Figure 2) was covered systematically, with emphasis on finding suitable habitat for target species while achieving thorough coverage. The Study Area was limited to the portion of the parcel for which review was requested by Humboldt County as part of the relocation process. Species encountered in the field were identified to the taxonomic level necessary for a rare species determination. A species list was recorded and is found in Appendix C.

Vegetation types within and around the project area were identified and recorded according to the conventions of A Manual of California Vegetation (Sawyer et al. 2009) or A Manual of California Vegetation, Online Edition (CNPS 2020b), and/or the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), where applicable. CDFW's California Natural Communities list (CDFW 2018a) was referenced to determine if sensitive communities were included in the vegetation alliances and associations found on-site. Location data for vegetation community types was recorded in the field using a Garmin etrex 30 GPS unit.

Additionally, Claire Brown conducted an investigation of aquatic resources and wetland delineation on September 17, 2018, and April 21, 2021. The surveys were conducted in accordance with the 1987 Corps of Engineers Wetland Delineation Manual and the 2010 Regional Supplement: Western Mountains, Valleys and Coast Region (Version 2.0)" (USACE, 1987 and 2010).The results of this delineation are found in an Aquatic Resources Delineation Report and are not included here. However, the delineated features can be seen in Figures 2, 3 and 4.

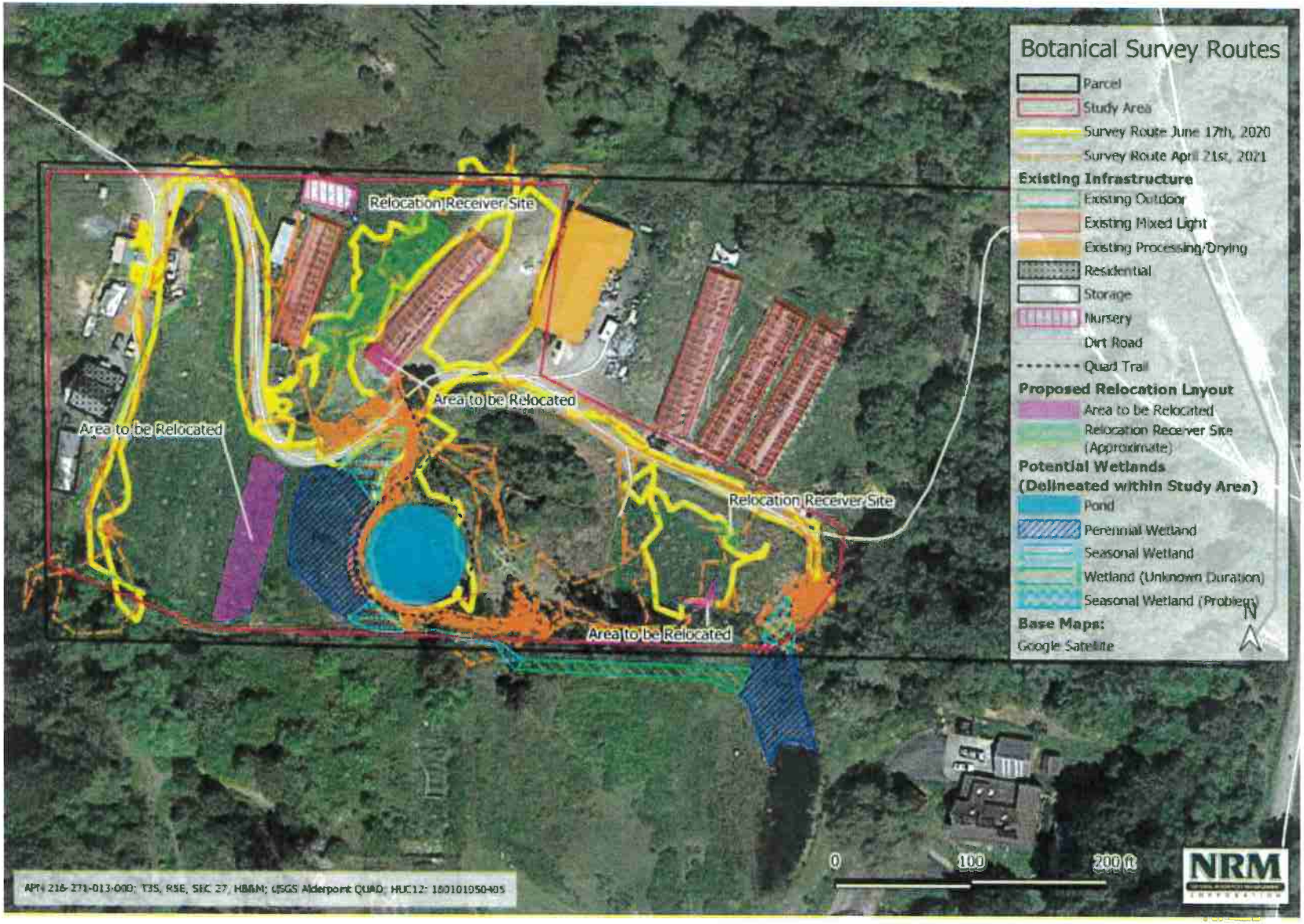

Figure 4. Botanical Survey Route

VI. Botany: Survey Results and Discussion

Special Status Plants

Results

No special status plants were identified during surveys. Overall results are summarized in Table 2. The habitat within the Study Area had been heavily disturbed previously.

Discussion

Special emphasis was placed on surveying for beaked tracyina (*Tracyina rostrata*) as the Study Area presents potential habitat, Pacific gilia (*Gilia capitata ssp. pacifica*), as this plant can be found in disturbed areas, and Howell's montia (*Montia howelii*), since this plant can be found in vernally moist disturbed roadways. However, no populations were found. Survey timing should have been such as to detect these species if present. The April 2021 survey was possibly towards the end of the time frame of likely detectability for Howell's montia, but special care was taken to detect it. There is always a possibility, especially with annual plants, that species could be present in the seed bank and not visible in any given year. Effort was made to space surveys over the growing season in order to capture the greatest amount of floristic diversity on site. However, it is always possible that additional species were present and were missed. Table 2 summarizes survey results.

Table 2. Summary of botanical survey results (Table Data: CNDDB 2020, CNPS 2021a)

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period		Habitat	Micro Habitat	Elevation Low (ft)	Elevation High (ft)	Habitat present within Study Area?	Species Detected?
Allium hoffmanii	Beegum onion	4.3	G4	S4	None	None	Jun-Jul		Lower montane coniferous forest (serpentinite)		3605	5905	No	No
Anisocarpus scabridus	scabrid alpine tarplant	1B.3	G3	S3	None	None	(Jun)Jul-Aug(Sep)		Upper montane coniferous forest (metamorphic, rocky)		5410	7545	No	No
Arctostaphylos hispidula	Howell's manzanita	4.2	G4	S3	None	None	Mar-Apr		Chaparral (serpentinite or sandstone)		390	4100	No	No
Arctostaphylos manzanita ssp. elegans	Konocti manzanita	1B.3	G5T3	S3	None	None	(Jan)Mar-May(Jul)		Chaparral, Cismontane woodland, Lower montane coniferous forest	volcanic	1295	5300	No	No
Arnica spathulata	Klamath arnica	4.3	G3?	S3	None	None	May-Aug		Lower montane coniferous forest (serpentinite)		2095	5905	No	No
Astragalus rattanii var. rattanii	Rattan's milk-vetch	4.3	G4T4	S4	None	None	Apr-Jul		Chaparral, Cismontane woodland, Lower montane	gravelly streambanks	95	2705	Yes	No

									coniferous forest					
Brasenia schreberi	watershield	2B.3	G5	S3	None	None	Jun-Sep		Marshes and swamps (freshwater)		95	7220	Possible in Pond	No
Calycadenia micrantha	small-flowered calycadenia	1B.2	G2	S2	None	None	Jun-Sep		Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland	Roadsides, rocky, talus, scree, sometimes serpentinite, sparsely vegetated areas	15	4920	Marginal	No
Carex praticola	northern meadow sedge	2B.2	G5	S2	None	None	May-Jul		Meadows and seeps (mesic)		0	10500	Marginal	No
Carex scabriuscula	Siskiyou sedge	4.3	G4G5	S4	None	None	May-Jul		Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic, sometimes serpentinite seeps	2325	7695	Marginal	No
Claytonia serpenticola	Serpentine spring beauty	4.3	G3	S3	None	None	No Data		No Data	No Data	No Data	No Data	No	No
Collomia tracyi	Tracy's collomia	4.3	G4	S4	None	None	Jun-Jul		Broadleafed upland forest, Lower montane coniferous forest	rocky, sometimes serpentinite	980	6890	No	No
Cryptantha rostellata	red-stemmed cryptantha	4.2	G4	S3	None	None	Apr-Jun		Cismontane woodland, Valley and foothill grassland	Often gravelly, volcanic openings;	130	2625	Yes	No

									often roadsides					
Cypripedium fasciculatum	clustered lady's-slipper	4.2	G4	S4	None	None	Mar-Aug		Lower montane coniferous forest, North Coast coniferous forest	usually serpentinite seeps and streambanks	325	7990	No	No
Cypripedium montanum	mountain lady's-slipper	4.2	G4	S4	None	None	Mar-Aug		Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, North Coast coniferous forest		605	7300	No	No
Epilobium oreganum	Oregon fireweed	1B.2	G2	S2	None	None	Jun-Sep		Bogs and fens, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	mesic	1640	7350	Marginal	No
Epilobium septentrionale	Humboldt County fuchsia	4.3	G4	S4	None	None	Jul-Sep		Broadleafed upland forest, North Coast coniferous forest	sandy or rocky	145	5905	No	No

Erigeron maniopotamicus	Mad River fleabane daisy	1B.2	G2?	S2?	None	None	May-Aug		Lower montane coniferous forest, Meadows and seeps (open, dry)	open, disturbed areas (road cuts); rocky	4180	4920	No	No
Erigeron robustior	robust daisy	4.3	G3	S3	None	None	Jun-Jul		Lower montane coniferous forest, Meadows and seeps	sometimes serpentinite	655	2000	No	No
Erythronium revolutum	coast fawn lily	2B.2	G4G5	S3	None	None	Mar-Jul(Aug)		Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Mesic, streambanks	0	5250	No	No
Eucephalus glabratus	Siskiyou aster	4.3	G4	S3	None	None	Jul-Sep		Lower montane coniferous forest, Upper montane coniferous forest	rocky openings	390	8875	No	No
Frangula purshiana ssp. ultramafica	Caribou coffeeberry	1B.2	G4T2T3	S2S3	None	None	May-Jul		Chaparral, Lower montane coniferous forest, Meadows and seeps, Upper montane coniferous forest	serpentinite	2705	6330	No	No

Fritillaria glauca	Siskiyou fritillaria	4.2	G3G4	S3	None	None	(Apr-May)Jun-Jul		Alpine boulder and rock field, Subalpine coniferous forest, Upper montane coniferous forest	serpentinite, talus slopes	5690	8005	No	No
Fritillaria purdyi	Purdy's fritillary	4.3	G4	S4	None	None	Mar-Jun		Chaparral, Cismontane woodland, Lower montane coniferous forest	usually serpentinite	570	7400	No	No
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	G5T3	S2	None	None	Apr-Aug		Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland		15	5465	Yes	No
Hemizonia congesta ssp. tracyi	Tracy's tarplant	4.3	G5T4	S4	None	None	May-Oct		Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest	openings, sometimes serpentinite	390	3935	Yes	No
Howellia aquatilis	water howellia	2B.2	G3	S2	None	FT	Jun		Marshes and swamps (freshwater)		3555	4230	No	No
Lilium rubescens	redwood lily	4.2	G3	S3	None	None	Apr-Aug(Sep)		Broadleafed upland forest, Chaparral, Lower montane	Sometimes serpentinite, sometimes roadsides	95	6265	Marginal	No

									coniferous forest, North Coast coniferous forest, Upper montane coniferous forest					
Lilium washingtonianum ssp. purpurascens	purple-flowered Washington lily	4.3	G4T4	S3S4	None	None	Jun-Aug		Chaparral, Lower montane coniferous forest, Upper montane coniferous forest	often serpentinite	225	9020	Marginal	No
Listera cordata	heart-leaved twayblade	4.2	G5	S4	None	None	Feb-Jul		Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest		15	4495	No	No
Lupinus constancei	The Lassics lupine	1B.1	G1	S1	None	None	Jul		Lower montane coniferous forest (serpentinite)		4920	6560	No	No
Montia howellii	Howell's montia	2B.2	G3G4	S2	None	None	(Jan-Feb)Mar-May		Meadows and seeps, North Coast coniferous forest, Vernal pools	vernally mesic, sometimes roadsides	0	2740	yes	No

Navarretia leucocephala ssp. bakeri	Baker's navarretia	1B.1	G4T2	S2	None	None	Apr-Jul		Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools	Mesic	15	5710	No	No
Piperia candida	white-flowered rein orchid	1B.2	G3	S3	None	None	(Mar)May-Sep		Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	sometimes serpentinite	95	4300	No	No
Pityopus californicus	California pinefoot	4.2	G4G5	S4	None	None	(Mar-Apr)May-Aug		Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	mesic	45	7300	No	No
Ptilidium californicum	Pacific fuzz wort	4.3	G4G5	S3S4	None	None	May-Aug		Lower montane coniferous forest, Upper montane coniferous forest	Usually epiphytic on trees, fallen and decaying logs, and stumps;	3740	5905	No	No

									rarely on humus over boulders				
Sabulina decumbens	The Lassics sandwort	1B.2	G1	S1	None	None	Jul		Lower montane coniferous forest, Upper montane coniferous forest	serpentinite	4920	5495	No	No
Sanicula tracyi	Tracy's sanicle	4.2	G4	S4	None	None	Apr-Jul		Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	openings	325	5200	Marginal	No
Sedum laxum ssp. flavidum	pale yellow stonecrop	4.3	G5T3Q	S3	None	None	May-Jul		Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Serpentinite or volcanic	1490	6560	No	No
Tracyina rostrata	beaked tracyina	1B.2	G2	S2	None	None	May-Jun		Chaparral, Cismontane woodland, Valley and		295	2590	Yes-somewhat marginal	No

									foothill grassland					
Usnea longissima	Methuselah's beard lichen	4.2	G4	S4	None	None			Broadleafed upland forest, North Coast coniferous forest	On tree branches; usually on old growth hardwoods and conifers	160	4790	No	No
Viburnum ellipticum	oval-leaved viburnum	2B.3	G4G5	S3?	None	None	May-Jun		Chaparral, Cismontane woodland, Lower montane coniferous forest		705	4595	Marginal	No

*Listing codes are as follows (CNPS 2020a):California Rare Plant Rank (CRPR) 1B = rare, threatened, or endangered in CA and elsewhere; 2B = rare, threatened, or endangered in CA, but more common elsewhere; 3 = plants about which more information is needed; a review list; 4 = of limited distribution or infrequent throughout a broader area in California. Ranks at each level also include a threat rank and are determined as follows: 0.1-Seriously threatened in California; 0.2-Moderately threatened in California; 0.3-Not very threatened in California. Global Ranking (GRank) - The global rank (G-rank) is a reflection of the overall condition of an element throughout its global range: G1 = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres; G2 = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres; G3 = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres; G4 = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat; G5 = Population or stand demonstrably secure to ineradicable due to being commonly found in the world. State Rank (SRank) The state rank (S-rank) is assigned much the same way as the global rank, except state ranks in California often also contain a threat designation attached to the S-rank: S1: Fewer than 6 viable occurrences worldwide/ statewide, and/ or up to 518 hectares; S2: 6-20 viable occurrences worldwide/ statewide, and/ or more than 518-2,590 hectares; S3: 21-100 viable occurrences worldwide/ statewide, and/or more than 2,590-12,950 hectares; S4: Greater than 100 viable occurrences worldwide/ statewide, and/or more than 12,950 hectares; S5: Demonstrably secure because of its worldwide/ statewide abundance. Additional Threat Ranks: 0.1=Very threatened; 0.2=Threatened; 0.3= No current threat known. CESA: California Endangered Species Act: CR: state-listed (NPPA) RARE; CE = state-listed ENDANGERED; FESA: Federal Endangered Species Act: FE = federally listed ENDANGERED

Sensitive Natural Communities

Results and Discussion

The project area lies within a matrix of Oregon white oak woodland, or *Quercus garryana* (tree) Forest & Woodland Alliance, a sensitive natural community with a rank of S3. Historical satellite imagery (1998-2019) available in Google Earth (Google Earth Pro 2020), indicates some Oregon white oak woodland was cleared for cultivation between 2014 and 2016. However, no additional tree clearing is proposed, and so there will be no direct impacts to this sensitive community from the proposed project.

The majority of the Study Area is dominated by ruderal, weedy, nonnative species. Wetlands well be protected via setbacks required by the State Water Resources Control Board.

VII. Management Recommendations

- Strict adherence to Humboldt County Commercial Cannabis Land Use Ordinance (CCLUO) 2.0 regarding performance standard for noise at cultivation sites (55.4.12.6) for generator use, when implemented into operations in the future. Generator will need to be housed in a ventilated and sound-insulated box to reduce noise pollution.
- No rodenticides shall be used.
- No further wildlife or botanical surveys are needed to disclose or avoid impacts.

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Appendix A: Photos taken June 17, 2020

Photo 1. Looking north over relocation receiver site within Study Area

Photo 2. Looking south over relocation receiver site within Study Area

Photo 3. Looking southeast over eastern relocation receiver site within Study Area

Photo 4. Looking north over western part of Study Area

Appendix B. Floristic Plant List

FAMILY	SCIENTIFIC NAME	COMMON NAME	LIFEFORM	STATUS
ANACARDIACEAE	*Toxicodendron diversilobum*	Poison oak	Vine, Shrub	native
APIACEAE	*Daucus carota*	Carrot	Perennial herb	invasive
	Foeniculum vulgare	Fennel	Perennial herb	invasive
	Sanicula crassicaulis	Pacific sanicle	Perennial herb	native
	Torilis arvensis	Field hedge parsley	Annual herb	invasive
ASTERACEAE	*Bellis perennis*	English lawn daisy	Perennial herb	invasive
	Carduus pycnocephalus	Italian thistle	Annual herb	invasive
	Cichorium intybus	Chicory	Perennial herb	non-native
	Cirsium vulgare	Bullthistle	Perennial herb	invasive
	Helminthotheca echioides	Bristly ox-tongue	Annual, Perennial herb	invasive
	Hypochaeris glabra	Smooth cats ear	Annual herb	invasive
	Hypochaeris radicata	Hairy cats ear	Perennial herb	invasive
	Lactuca serriola	Prickly lettuce	Annual herb	invasive
	Lactuca virosa	Wild lettuce	Biennial herb	non-native
	Senecio vulgaris	Common groundsel	Annual herb	non-native
	Soliva sessilis	South american soliva	Annual herb	non-native
	Sonchus oleracea	sowthistle	Annual herb	invasive
	Taraxacum officinale	Red seeded dandelion	Perennial herb	invasive
	Tragopogon porrifolius	Salsify	Perennial herb	non-native
BORAGINACEAE	*Symphytum Xuplandicum*	Russian comfrey	Perennial herb	non-native
BRASSICACEAE	*Brassica nigra*	Black mustard	Annual herb	invasive
	Brassica rapa	Common mustard	Annual herb	invasive
	Cardamine hirsuta	Hairy bitter cress	Annual herb	non-native
	Lepidium didymum	Lesser swine cress	Annual herb	non-native
	Nasturtium officinale	Watercress	Perennial herb (aquatic)	native
	Raphanus sativus	Jointed charlock	Annual, Biennial herb	invasive
CAPRIFOLIACEAE	*Lonicera hispidula*	Pink honeysuckle	Vine, Shrub	native
CARYOPHYLLACEAE	*Cerastium glomeratum*	Large mouse ears	Annual herb	non-native
	Spergularia rubra	Purple sand spurry	Annual, Perennial herb	non-native
	Stellaria media	Chickweed	Annual herb	non-native
CONVOLVULACEAE	*Convolvulus arvensis*	Field bindweed	Perennial herb, Vine	invasive

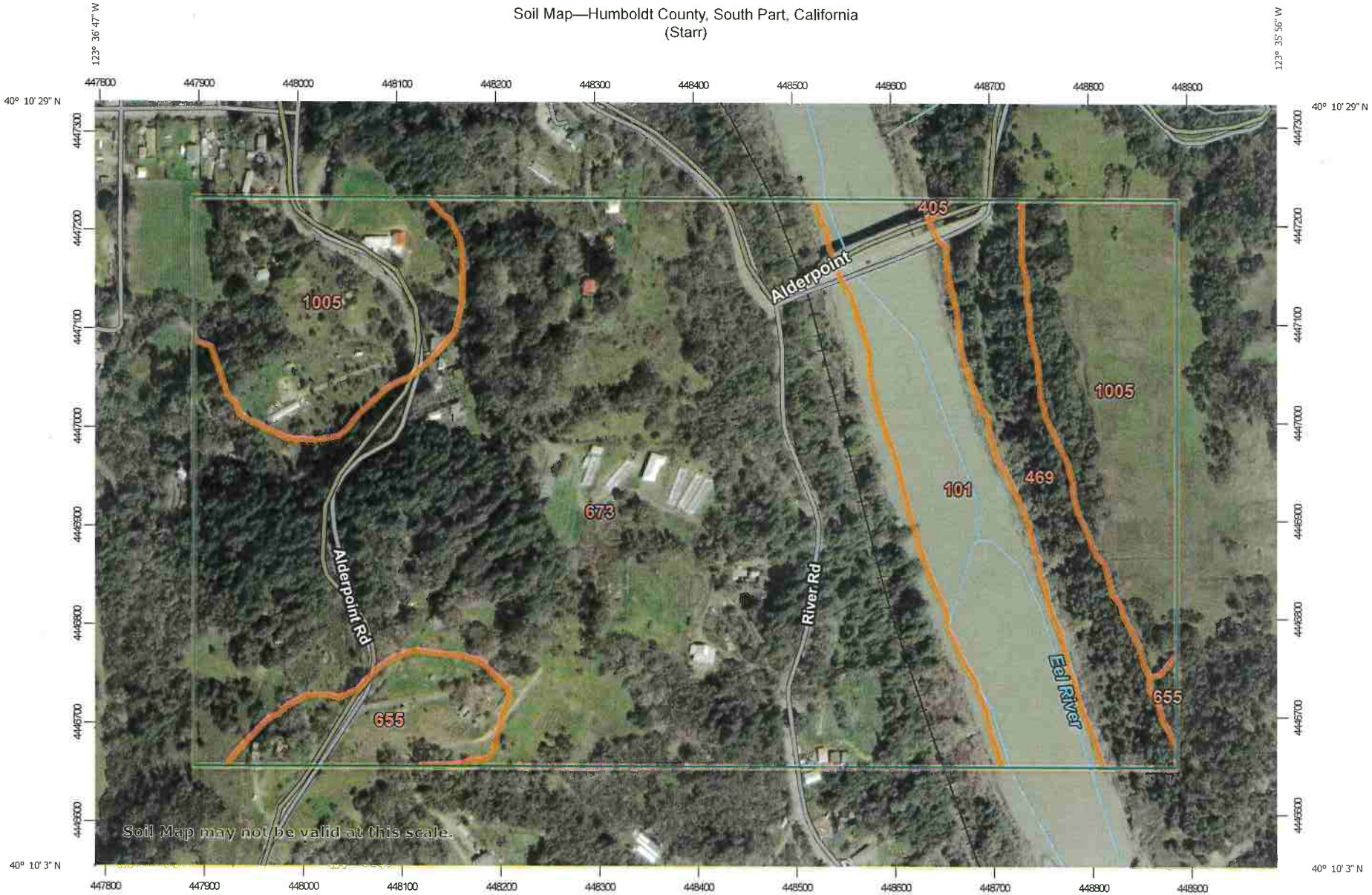
CRASSULACEAE	*Crassula tillaea*	Mediterranean pygmy weed	Annual herb	non-native
CUCURBITACEAE	*Marah oregana*	Coast man-root	Perennial herb, Vine	native
CYPERACEAE	*Cyperus eragrostis*	Tall cyperus	Perennial grasslike herb	native
DENNSTAEDTIACEAE	*Pteridium aquilinum*	Western brackenfern	Fern	native
EQUISETACEAE	*Equisetum telmateia ssp. braunii*	Giant horsetail	Fern	native
ERICACEAE	*Arbutus menziesii*	Madrono	Tree	native
FABACEAE	*Acmispon parviflorus*	Hill lotus	Annual herb	native
	Lathyrus latifolius	Sweet pea	Perennial herb	non-native
	Medicago polymorpha	California burclover	Annual herb	invasive
	Trifolium repens	White clover	Perennial herb	non-native
FAGACEAE	*Quercus chrysolepis*	Gold cup live oak	Tree	native
	Quercus garryana	Oregon oak	Tree	native
GENTIANACEAE	*Centaurium c.f. tenuiflorum*	Slender centaury	Annual herb	non-native
GERANIACEAE	*Erodium botrys*	Big heron bill	Annual herb	non-native
	Erodium cicutarium	Coastal heron's bill	Annual herb	invasive
	Erodium moschatum	Whitestem filaree	Annual herb	invasive
	Geranium dissectum	Wild geranium	Annual herb	invasive
	Geranium molle	Crane's bill geranium	Annual, Perennial herb	invasive
IRIDACEAE	*Sisyrinchium bellum*	Blue eyed grass	Perennial herb	native
JUNCACEAE	*Juncus bufonius*	Common toad rush	Annual grasslike herb	native
	Juncus effusus ssp. pacificus	Pacific rush	Perennial grasslike herb	native
LAMIACEAE	*Lamium purpureum*	Purple dead nettle	Annual herb	non-native
	Mentha pulegium	Pennyroyal	Perennial herb	invasive
	Stachys rigida var. quercetorum	Rough hedgenettle	Perennial herb	native
LAURACEAE	*Umbellularia californica*	California bay	Tree	native
LYTHRACEAE	*Lythrum hyssopifolia*	Hyssop loosestrife	Annual, Perennial herb	invasive
MALVACEAE	*Malva neglecta*	Dwarf mallow	Annual, Perennial herb	non-native
	Modiola caroliniana	Carolina bristle mallow	Perennial herb	non-native
MONTIACEAE	*Claytonia parviflora ssp. parviflora*	Miner'slettuce	Annual herb	native
MYRSINACEAE	*Lysimachia arvensis*	Scarlet pimpernel	Annual herb	non-native
MYRTACEAE	*Eucalyptus globulus*	Blue gum	Tree	invasive
ONAGRACEAE	*Epilobium ciliatum*	Slender willow herb	Perennial herb	native

OROBANCHACEAE	*Parentucellia viscosa*	Yellow parentucellia	Annual herb	invasive
PAPAVERACEAE	*Eschscholzia californica*	California poppy	Annual, Perennial herb	native
PHRYMACEAE	*Erythranthe guttata*	Yellow monkey flower	Annual, Perennial herb (rhizomatous)	native
PLANTAGINACEAE	*Plantago lanceolata*	Ribwort	Perennial herb	invasive
	Veronica arvensis	Speedwell	Annual herb	non-native
POACEAE	*Avena barbata*	Slim oat	Annual, Perennial grass	invasive
	Briza minor	Little rattlesnake grass	Annual grass	non-native
	Bromus catharticus var. elatus	Chilean Brome	Annual, Perennial grass	non-native
	Bromus diandrus	Ripgut brome	Annual grass	invasive
	Bromus hordeaceus	Soft chess	Annual grass	invasive
	Bromus sterilis	Sterile brome	Annual grass	non-native
	Cynodon dactylon	Bermuda grass	Perennial grass	invasive
	Dactylis glomerata	Orchardgrass	Perennial grass	invasive
	Elymus glaucus	Blue wildrye	Perennial grass	native
	Festuca arundinacea	Reed fescue	Perennial grass	invasive
	Festuca bromoides	Brome fescue	Annual grass	non-native
	Festuca myuros	Rattail sixweeks grass	Annual grass	invasive
	Festuca perennis	Italian rye grass	Annual, Perennial grass	invasive
	Festuca rubra	Red fescue	Perennial grass	native
	Hordeum murinum	Foxtail barley	Annual grass	invasive
	Hordeum murinum ssp. murinum	Wall barley	Annual grass	non-native
	Phalaris arundinacea	Reed canarygrass	Perennial grass	native
	Poa annua	Annual blue grass	Annual grass	non-native
POLYGONACEAE	*Polygonum aviculare*	Prostrate knotweed	Annual, Perennial herb	non-native
	Rumex acetosella	Sheep sorrel	Perennial herb	invasive
	Rumex c.f. crispus	Curly dock	Perennial herb	invasive
	Rumex pulcher	Fiddleleaf dock	Perennial herb	non-native
RANUNCULACEAE	*Ranunculus muricatus*	Buttercup	Annual, Perennial herb	non-native
	Ranunculus c.f. sardous	Hairy buttercup	Perennial herb	non-native
ROSACEAE	*Fragaria vesca*	Wild strawberry	Perennial herb	native
	Rubus armeniacus	Himalayan blackberry	Shrub	invasive
	Rubus parviflorus	Thimbleberry	Vine, Shrub	native
	Rubus ursinus	California blackberry	Vine, Shrub	native

SCROPHULARIACEAE	*Verbascum c.f. blattaria*	Moth mullein	Perennial herb	non-native
TYPHACEAE	*Typha latifolia*	Broadleaf cattail	Perennial herb (aquatic)	native
VITACEAE	*Vitis californica*	California wild grape	Vine, Shrub	native

Appendix C. NRCS Soil Map (NRCS 2020)

Soil Map—Humboldt County, South Part, California
(Starr)



Map Scale: 1:5,470 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 250 500 1000 1500

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Humboldt County, South Part, California
Survey Area Data: Version 9, Jun 1, 2020

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
101	Typic Udifluvents-Fluvents complex, 0 to 2 percent slopes	15.2	10.7%
405	Tannin-Wohly-Rockyglen complex, 30 to 50 percent slopes	0.1	0.1%
469	Tannin-Burgsblock-Rockyglen complex, 50 to 75 percent slopes	10.2	7.2%
655	Yorknorth-Witherell complex, 15 to 30 percent slopes	5.9	4.1%
673	Coolyork-Yorknorth complex, 30 to 50 percent slopes	84.2	59.1%
1005	Parkland, dry-Garberville, dry complex, 2 to 9 percent slopes	26.8	18.8%
Totals for Area of Interest		**142.5**	**100.0%**