

**Special Status Plant Survey Report
Northcoast Highway Solar Project
Fortuna, Humboldt County, California**

**Hydesville, California, USGS 7.5-minute Topographic Quadrangle Map
Township 2 North, Range 1 East, Section 19 NW**

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ACRONYMS

ABSL	Above Sea Level
APN	Assessor's Parcel Number
Cal-IPC	California Invasive Plant Council
CCR	California Code of Regulations
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
cm	Centimeter
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
FGC	California Fish and Game Code
GPS	Global Positioning System
Hwy	Highway
IPaC	Information for Planning and Consultation
m	meter
MWac	Mega-Watt, Alternating Current
NRCS	Natural Resource Conservation Service
SCS	Soil Conservation Service
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Service

SECTION 1: INTRODUCTION

At the request of EPDR, Kristiaan Stuart has prepared a special status plant survey report, for the Northcoast Highway Solar Project (Project) with focused surveys conducted in June of 2023 and reconnaissance level surveys conducted in May of 2020 and October of 2022. The purpose of this survey report is to identify any special status state, federal and/or CNPS ranked plants and sensitive natural communities within the Project area. The Project area is defined as all areas that may potentially be directly impacted by construction of the project, encompassing the footprint of the Project and any other areas that could be impacted by construction equipment and/or personnel (equipment staging areas, material storage and disposal sites, etc.). The Project area boundary is intended to include a sufficient buffer around the Project to account for any potential future modifications to project design. The entire project area is approximately 72.88-acres in area (Exhibits 1, 3 & 5).

1.1 Project Location

The site is located on open pasture and cropland approximately 0.8 miles west of Hydesville, Humboldt County, California, adjacent to and south of Hwy 36 and west of River Bar Road within the Hydesville, CA USGS 7.5-minute quadrangle topographic map (Exhibit 1). The legal description of the project area is, Township 2 N, Range 1 E, Section 19 NW (Hydesville, CA, USGS 7.5 Minute Quadrangle). The Project's approximate center GPS coordinates are: 40.543145, -124.116441 (WGS 84).

1.2 Project Description

EDPR is proposing to develop an approximately 2.0-MWac photovoltaic solar energy generation facility and associated power line (Project) on approximately 11-acres of a 72.88-acre series of parcels, identified as APN: 204-171-047-000, 204-081-007-000, 204-081-004-000, & 204-081-002-000, located near Hydesville, Humboldt County, CA (Exhibit 6).

Exhibit 1 – Topographic View

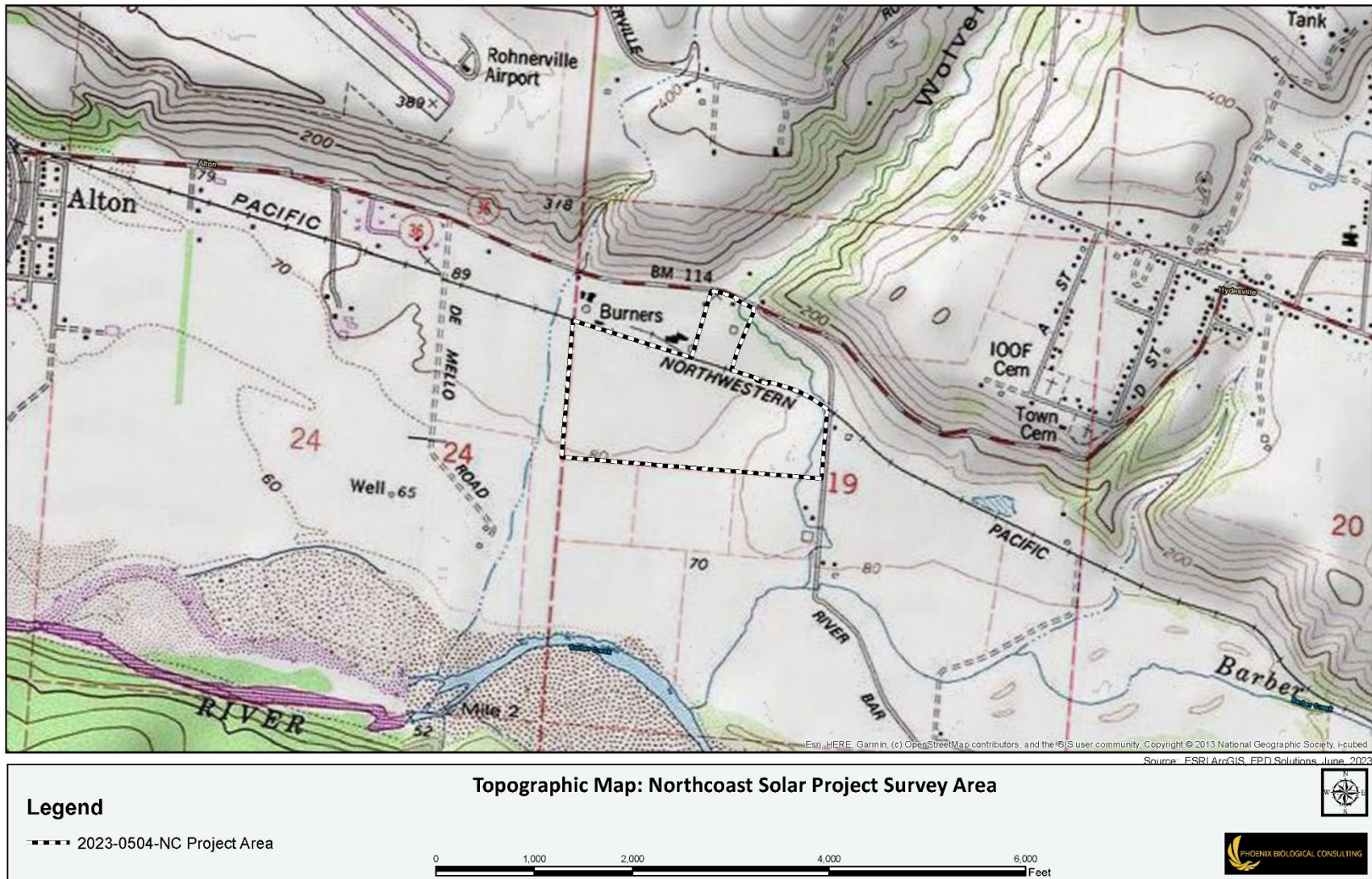


Exhibit 2 - Regional View

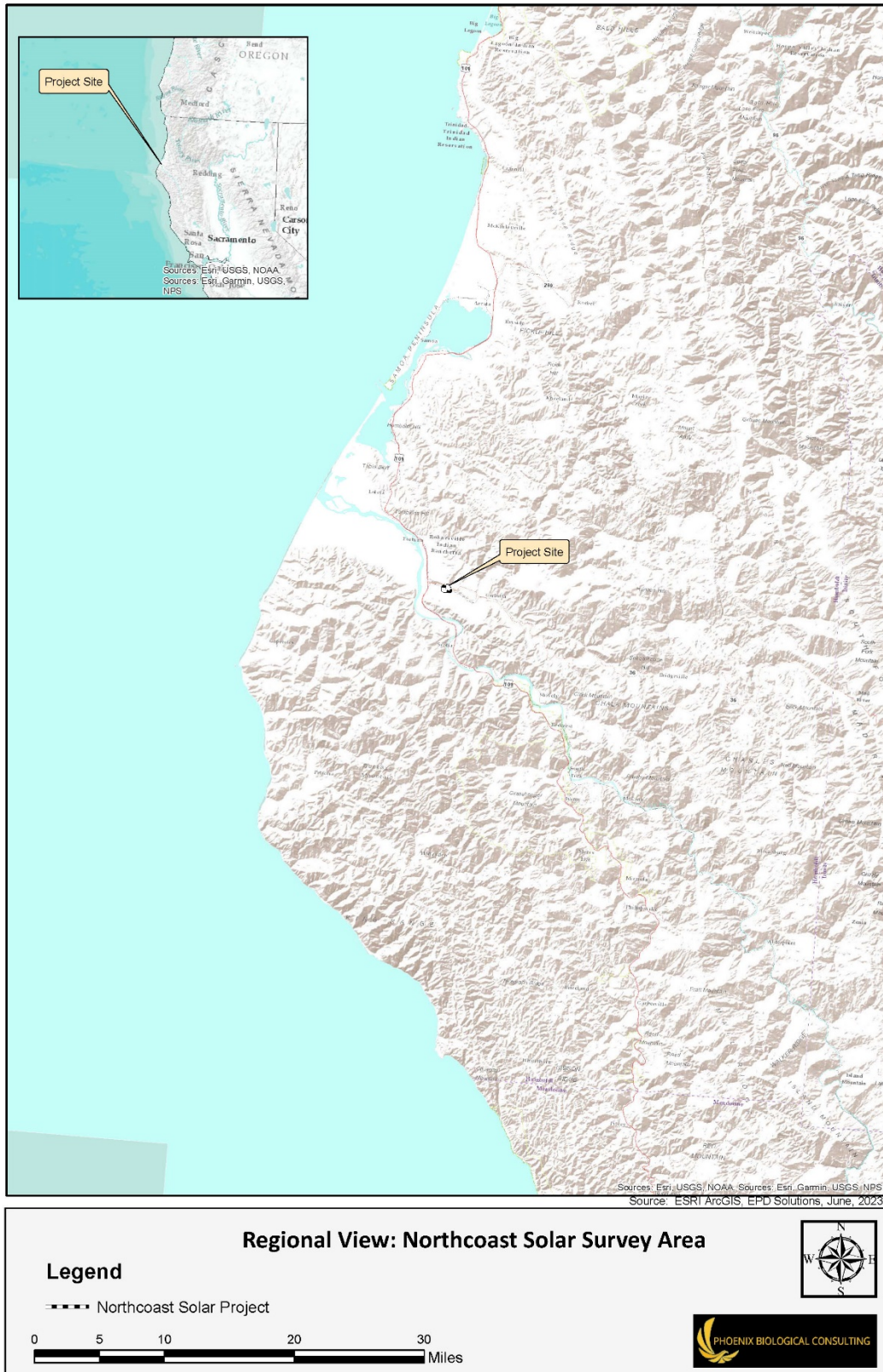


Exhibit 3 – Parcels within Study Area

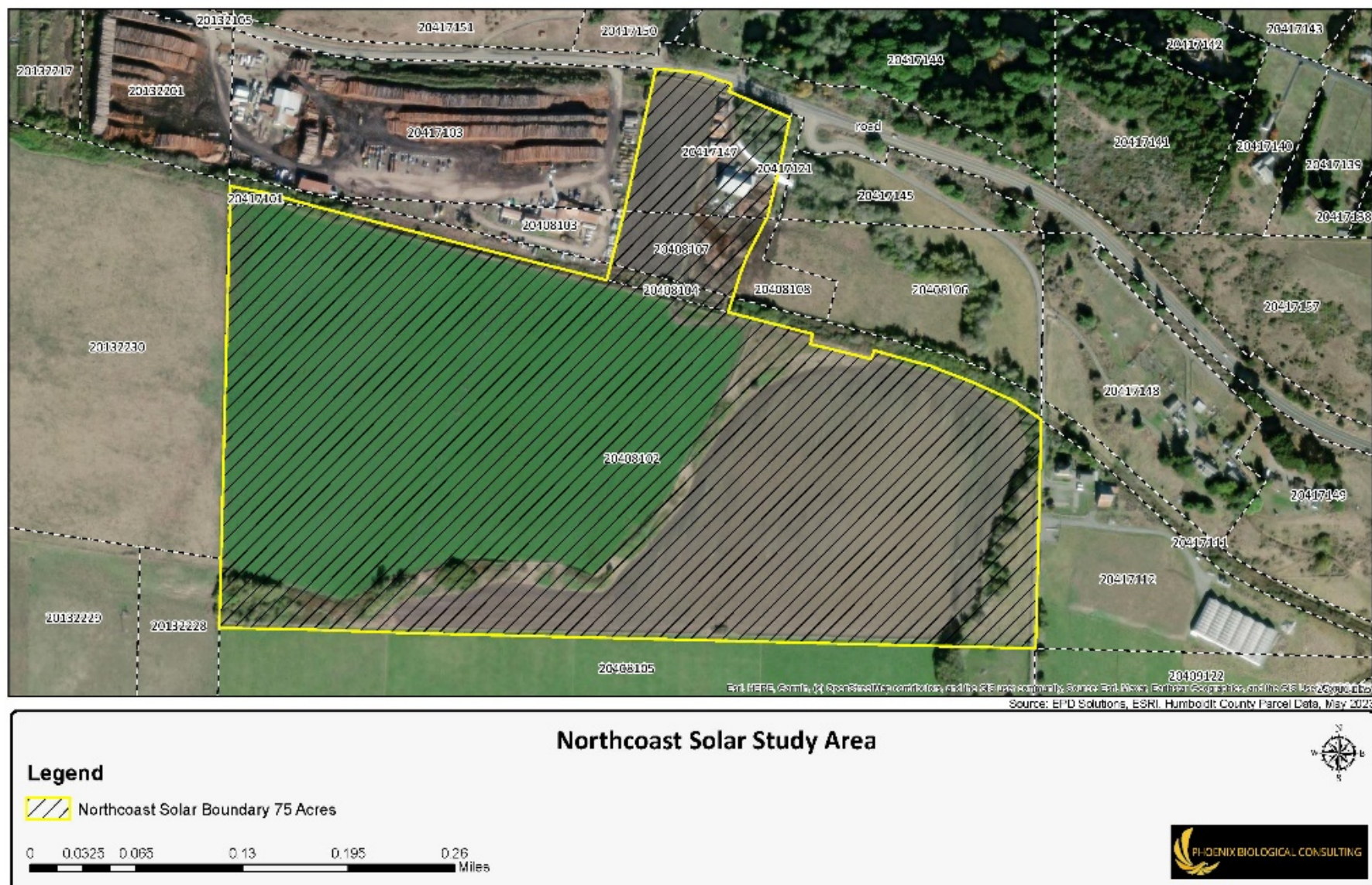


Exhibit 4 –Soils Map



Exhibit 5 – Plant Communities

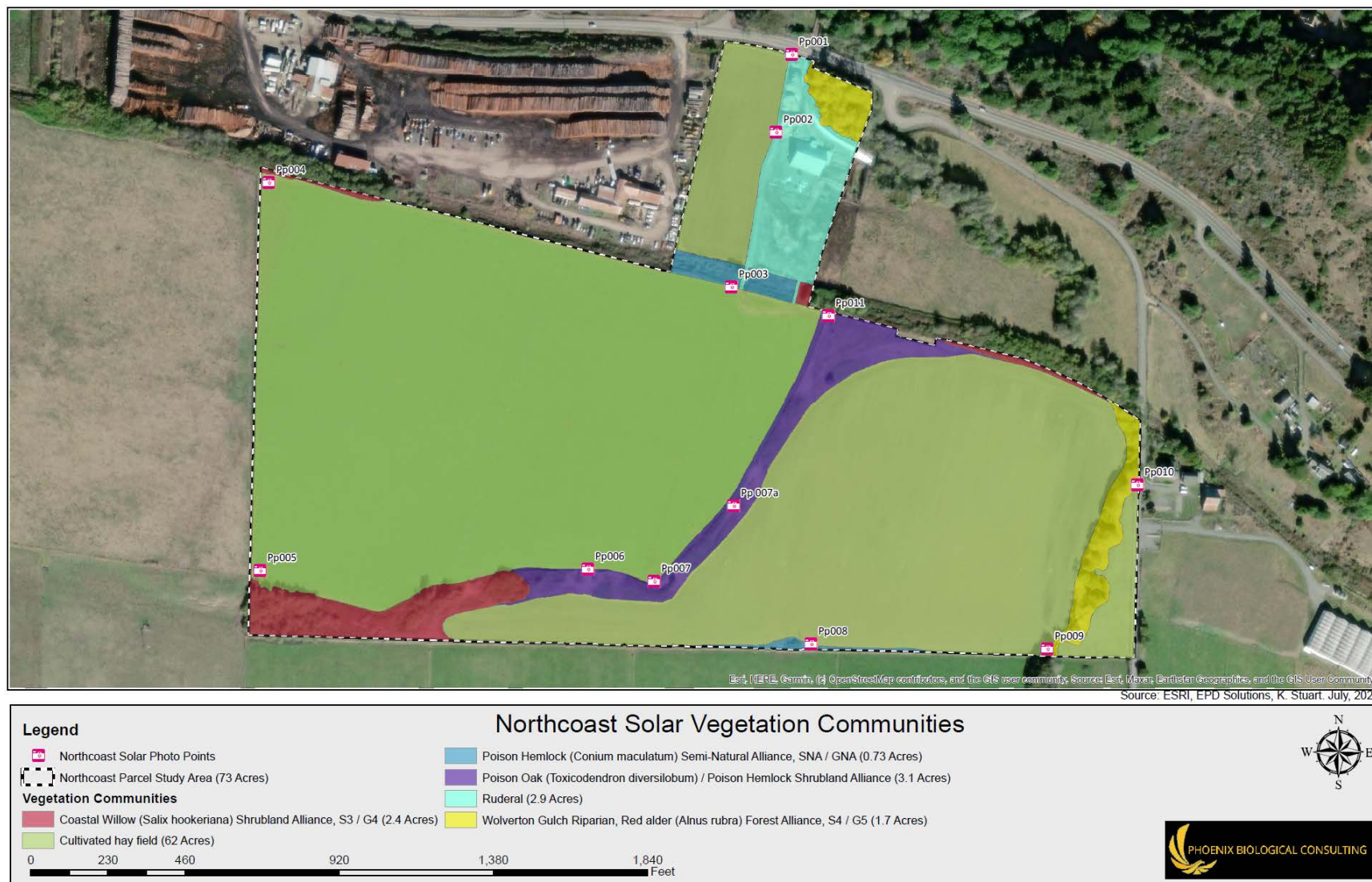
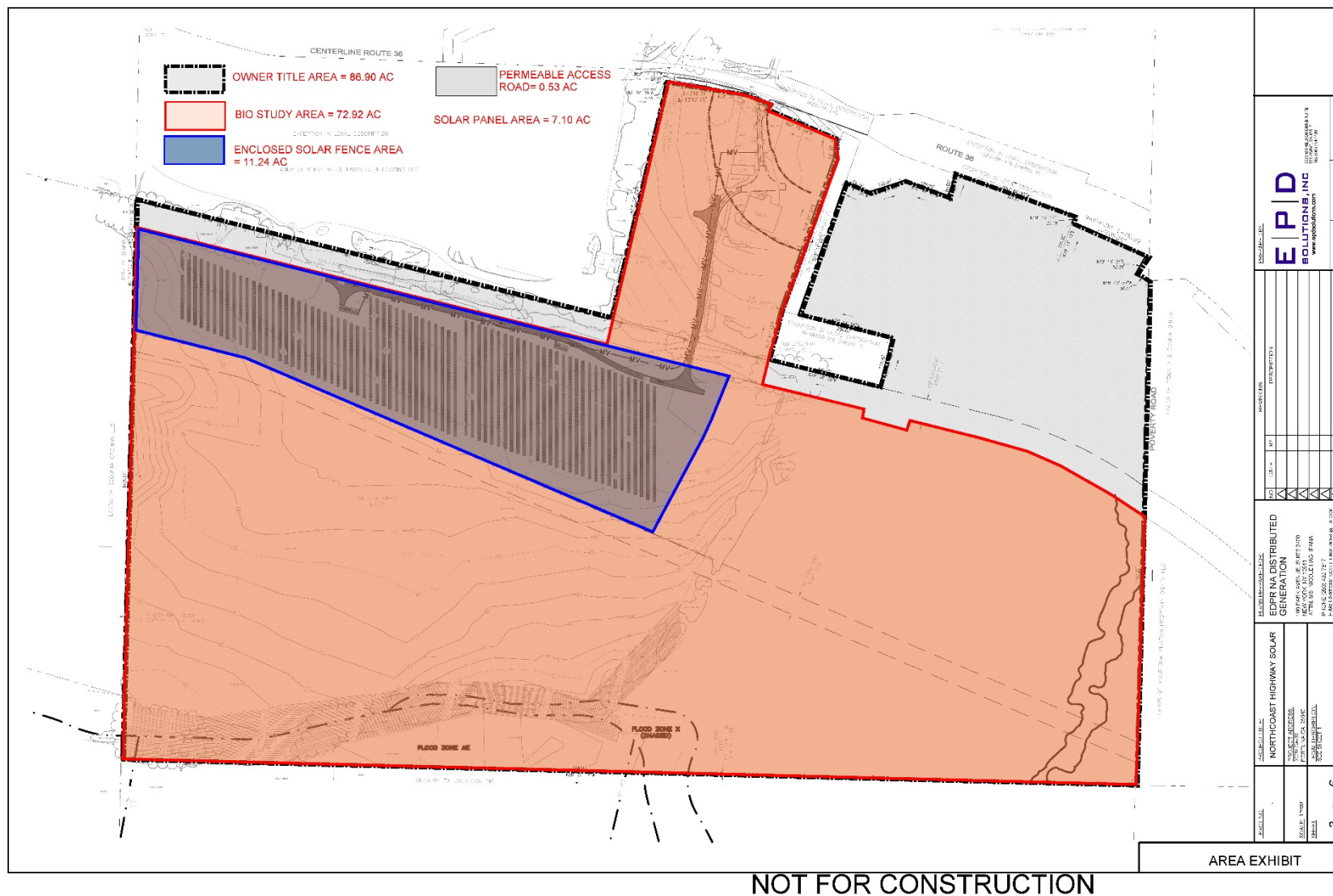


Exhibit 6 - Preliminary Site Plan



SECTION 2: REGULATORY SETTING

2.1 State and Federal Special Status Plant Species

2.1.1 Federal Endangered Species Act (FESA)

The federal Endangered Species Act (FESA) designates and provides for protection of threatened and endangered plant and animal species and their critical habitat. “Take” of a federally listed species is prohibited without an incidental take permit, which may be obtained through Section 7 consultation (between federal agencies) or a Section 10 Habitat Conservation Plan. The FESA defines “take” as: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. 16 U.S.C. 1542(b).

2.1.2 California Endangered Species Act (CESA)

The California Endangered Species Act (CESA) prohibits the take of listed species, except as otherwise provided in state law. Take for CESA is defined as it is in FESA; however, unlike FESA, CESA also applies the take prohibitions to species petitioned for listing as state candidates rather than only those listed species. State lead agencies are required to consult with the California Department of Fish and Wildlife (CDFW), to ensure that any actions undertaken by the lead agency are not likely to jeopardize the continued existence of any state-listed species or result in destruction or degradation of required habitat. CDFW is authorized to enter a Memorandum of Understanding (MOU) with individuals, public agencies, universities, zoological gardens, and scientific or educational institutions to import, export, take, or possess listed species for scientific, educational, or management purposes.

2.1.3 California Fish and Game Code (FGC) Sections 2080 and 2081

Section 2080 of the State Fish and Game Code states “No person shall import into this state, export out of this state, or take, possess, purchase, or sell within this state, any species, or any part or product thereof, that the commission determines to be an endangered species or threatened species, or attempt any of those acts, except as otherwise provided in this chapter [Chapter 1.5, Endangered Species], or the Native Plant Protection Act, or the California Desert Native Plants Act.” Pursuant to Section 2081 of the FGC, the CDFW may authorize individuals or public agencies universities, zoological gardens, and scientific or educational institutions, to import, export, take, or possess any endangered species, threatened species, or candidate species for scientific, educational, or management purposes. The department may authorize, by permit, the take of endangered species, threatened species, and candidate species if all of the following conditions are met: (1) The take is incidental to an otherwise lawful activity. (2) The impacts of the authorized take shall be minimized and fully mitigated. The measures required to meet this obligation shall be roughly proportional in extent to the impact of the authorized taking on the species. Where various measures are available to meet this obligation, the measures required shall maintain the applicant's objectives to the greatest extent possible. All required measures shall be capable of successful implementation. For purposes of this section only, impacts of taking include all impacts on the species that result from any act that would cause the proposed taking. (3) The permit is consistent with any regulations adopted pursuant to Sections 2112 and 2114. (4) The applicant shall ensure adequate funding

to implement the measures required by paragraph (2), and for monitoring compliance with, and effectiveness of, those measures.

2.1.4 California Native Plant Protection Act (CNPPA)

California's Native Plant Protection Act (NPPA) of 1977 requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of the NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The project proponent is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

2.1.5 California Environmental Quality Act (CEQA)

During CEQA review, public agencies must evaluate and disclose impacts to plant species protected under CESA and the CNPPA, and in most cases must mitigate all significant impacts to these species to a level of less than significance. In addition, during the CEQA process, public agencies must also address plant species that may not be listed under CESA or the CNPPA, but that may nevertheless meet the definition of rare or endangered provided in CEQA through the California Native Plant Society and with botanical experts throughout the state to maintain an Inventory of Rare and Endangered Plants, and the similar Special Vascular Plants, Bryophytes, and Lichens List. Species on these lists may meet the CEQA definition of rare or endangered.

SECTION 3: METHODOLOGY

Study methods included reconnaissance site visits in March 2020 and October 2022 and background information review. Prior to conducting the field visit and focused plant surveys in June 2023, pre-field investigations were conducted to establish the location of special status plant species and sensitive habitats in or near the project area.

3.1 Pre-field Review

The following reference materials were reviewed prior to the field investigation:

- Stuart, Kristiaan and Ryan Young. 2020. Aquatic Resources Delineation, North Coast Highway Solar Project, Fortuna, Humboldt County, California.
- Stuart, Kristiaan and Ryan Young. 2022. Biological Habitat Assessment, North Coast Highway Solar Project, Fortuna, Humboldt County, California.
- Google Earth aerial imagery for imagery data: May 02, 2023, July 2022, April 2019, May 2014 and July 2004.
- Netronline, Historic aerial imagery to 1940 (June 2023).
- Rarefind 5, California Natural Diversity Database (CNDDB) 9-quadrangle Query Results.
- USFWS Information, Planning, and Conservation System Query (IPaC, June 2023).
- United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) Web Soil Survey (June 2023).
- California Native Plant Society, 9-quadrangle Rare Plant Inventory, (June 2023).
- Calflora Database (Calflora, June 2023).
- CalPhotos: Plants Database (June 2023).
- Jepson eFlora (June 2023).

All queries were completed prior to field surveys. USFWS data sources were queried for the specific project area. CNDDB and CNPS queries included special status plant occurrence data from within the Hydesville, California USGS 7.5-minute topographic quadrangle and any additional occurrences from within five miles of the site. Other sources of information used to evaluate the project area include aerial photographs, topographic maps, geologic maps, climatic data, and general project plans. A complete list of the regionally occurring special status plant species reported from the scientific literature review and database queries was compiled for the project area. The CNDDB, CNPS, and IPaC queries report 36 special status plant species from the vicinity that are ranked California Rare Plant Rank (CRPR) 1 or 2, and/or are federally or state listed. Additional CRPR 4 species are reported from the area; however, Rank 4 species are considered “watch list” species and these species do not typically warrant analysis under

CEQA unless they are part of a unique community, from the type locality, or have local designation as rare or significant.

A thorough review of the CNDDDB, IPaC and CNPS was conducted to determine which species occur within an adjoining nine quadrangle area of the site (Tables 1 and 2; Exhibit 7). Thirty-six (36) sensitive plant species and two (2) sensitive habitat types were detected within the search radius. Eight (8) special-status plant species were determined to have a low potential to be within the Project area and two (2) sensitive habitat types were identified within the Project area.

Table 1: CNDDDB, IPaC and CNPS Results for Special-status Plant Species

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Abronia umbellata</i> var. <i>breviflora</i> pink sand-verbena	----	----	1B.1	Perennial herb. Coastal dune habitat. Bloom period: June- October 0-10m	No potential to occur. No suitable habitat in or near project area.
<i>Cardamine angulata</i> seaside bittercress	----	----	2B.1	Perennial herb. Occurs in mesic areas and streambanks in coniferous forest. Blooming period: March-July 25-915m	No potential to occur. No suitable habitat in or near project area.
<i>Carex arcta</i> northern clustered sedge	----	----	2B.2	Perennial herb. Occurs in hydric areas in coniferous forest. Blooming period: March-July 60-1400m	No potential to occur. No suitable habitat in or near project area.
<i>Carex leptalea</i> bristle-stalked sedge	----	----	2B.2	Perennial herb. Occurs in hydric areas incl. meadows, seeps, marshes and bogs. Bloom period: March- July 0-700m	No potential to occur. No suitable habitat in or near project area.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Carex lyngbyei</i> Lyngbye's sedge	----	----	2B.2	Perennial herb. Occurs in hydric areas incl. marshes and swamps. Bloom period: April-August 0-10m	No potential to occur. No suitable habitat in or near project area.
<i>Castilleja ambigua</i> var. <i>humboldtiensis</i> Humboldt Bay owl's-clover	----	----	1B.2	Annual herb. Occurs in saline marshes and swamps. Blooming period: April-August 0-3m	No potential to occur. No suitable habitat in or near project area.
<i>Castilleja litoralis</i> Oregon coast paintbrush	----	----	2B.2	Perennial herb. Occurs in coastal dune and scrub habitats. Blooming period: June-July 15-100m	No potential to occur. No suitable habitat in or near project area.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak	----	----	1B.2	Annual herb. Occurs in coastal saline marshes and swamps. Blooming period: June-Oct. 0-10m	No potential to occur. No suitable habitat in or near project area.
<i>Clarkia amoena</i> ssp. <i>whitneyi</i> Whitney's farewell-to-spring	----	----	1B.1	Annual herb. Occurs in coastal bluff and scrub habitats. Blooming period: June-August 10-100m	No potential to occur. No suitable habitat in or near project area.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Coptis laciniata</i> Oregon goldthread	----	----	4.2	Perennial herb. Occurs in mesic meadows, seeps and streambanks in coniferous forest. Blooming period: March-May 0-1000m	No potential to occur. No suitable habitat in or near project area.
<i>Downingia willamettensis</i> Cascade downingia	----	----	2B.2	Annual herb. Occurs at edges of lakes, ponds, vernal pools. Blooming period: June - July <200m, 650m	No potential to occur. No suitable habitat in or near project area.
<i>Erysimum menziesii</i> Menzies' wallflower	FE	SE	1B.1	Perennial herb. Coastal dune habitat. Bloom period: March-Sept. 0-35m	No potential to occur. No suitable habitat in or near project area.
<i>Erythronium oregonum</i> giant fawn lily	----	----	2B.2	Perennial herb. Rocky, serpentine, openings in meadows and seeps of cismontane woodlands. Blooming period: March-June 100-1150m	No potential to occur. No suitable habitat in or near project area.
<i>Erythronium revolutum</i> coast fawn lily	----	----	2B.2	Perennial herb. Mesic habitats within streambanks, bogs, fens of broadleaf and north coast coniferous forests. Blooming period: March-July 0-1600m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate area around Wolverton Gulch.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Fissidens pauperculus</i> minute pocket moss	----	----	1B.2	Moss. Mesic conditions in north coast coniferous forest. Blooming period: NA 10-1024m	No potential to occur. No suitable habitat in or near project area.
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	----	----	1B.2	Annual herb. Occurs in coastal bluff scrub, chaparral, prairie and valley and foothill grassland habitats. Blooming period: April-Aug. 5-1665m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate area around Wolverton Gulch.
<i>Gilia millefoliata</i> dark-eyed gilia	----	----	1B.2	Annual herb. Coastal dune habitat. Bloom period: April-July 2-30m	No potential to occur. No suitable habitat in or near project area.
<i>Hesperis matronalis</i> var. <i>brevifolia</i> short-leaved evax	----	----	1B.2	Annual herb. Coastal dune, bluff scrub and prairie habitats. Bloom period: March-June 0-215m	No potential to occur. No suitable habitat in or near project area.
<i>Lathyrus japonicus</i> seaside pea	----	----	2B.1	Perennial herb. Coastal dune habitat. Bloom period: May-Aug. 1-30m	No potential to occur. No suitable habitat in or near project area.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Lathyrus palustris</i> marsh pea	----	----	2B.2	Perennial herb. Mesic sites in marshes, swamps, lower montane and north coast coniferous forests. Bloom period: March-Aug. 1-100m	No potential to occur. No suitable habitat in or near project area.
<i>Layia carnosa</i> beach layia	FE	SE	1B.1	Annual herb. Coastal dune and scrub habitat. Bloom period: March-July 0-60m	No potential to occur. No suitable habitat in or near project area.
<i>Lilium occidentale</i> western lily	FE	SE	1B.1	Perennial herb. Coastal dune and scrub habitat. Bloom period: June-August 5 to 45m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate areas around Wolverton Gulch.
<i>Lycopodium clavatum</i> running-pine	----	----	4.1	Perennial herb. Mesic areas of openings and roadsides of lower montane and north coast coniferous forest and marshes and swamps. Blooming period: June-Aug. 45-1225m	No potential to occur. No suitable habitat in or near project area.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Mitellastrum caulescens</i> leafy-stemmed mitrewort	----	----	4.2	Perennial herb. Mesic areas, broadleaf upland forests, lower montane and north coast coniferous forest and marshes and swamps. Blooming period: April-Oct. 5-1700m	No potential to occur. No suitable habitat in or near project area.
<i>Montia howellii</i> Howell's montia	----	----	2B.2	Annual herb. Vernally mesic: vernal pool, meadow and seep and north coast coniferous forest habitats. Bloom period: March-May 0-835m	No potential to occur. No suitable habitat in or near project area.
<i>Navarretia leucocephala</i> ssp. <i>bakeri</i> Baker's navarretia	----	----	1B.1	Annual herb. Vernal pools. Bloom period: April-July 0-640m	No potential to occur. No suitable habitat in or near project area.
<i>Noccaea fendleri</i> ssp. <i>californica</i> Kneeland Prairie pennycress	FE	----	1B.1	Annual herb. Coastal prairie habitat. Bloom period: May-June 760-815m	No potential to occur. No suitable habitat in or near project area. Outside of known elevation range.
<i>Packera bolanderi</i> var. <i>bolanderi</i> seacoast ragwort	----	----	2B.2	Perennial herb. Coastal scrub and north coast coniferous forest. Blooming period: May-July 30-650m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate area around Wolverton Gulch.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Piperia candida</i> white-flowered rein orchid	----	----	1B.2	Perennial herb. Broadleaf upland forests, lower montane and north coast coniferous forest and marshes and swamps. Blooming period: May- Sept. 30-1310m	No potential to occur. No suitable habitat in or near project area.
<i>Platismatia lacunosa</i> Crinkled rag lichen	----	----	2B.3	Lichen. Inhabits different substrates (bark, wood, stones, mosses) in coastal rainforests. Blooming period: NA Elevation range: unknown.	No potential to occur. No known occurrences in or near project vicinity. Only 2 occurrences known in California.
<i>Polemonium carneum</i> Oregon polemonium	----	----	2B.2	Perennial herb. Coastal prairie and scrub, and lower montane coniferous forest habitats. Bloom period: April- Sept. 0-1830m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate area around Wolverton Gulch.
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	----	----	4.2	Perennial herb. Broadleaf upland forest, coastal prairie and scrub, north coast coniferous forest and riparian woodland. Blooming period: April- Aug. 0-730m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields and immediate area around Wolverton Gulch.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
<i>Sidalcea malviflora</i> ssp. <i>patula</i> Siskiyou checkerbloom	----	----	1B.2	Perennial herb. Coastal prairie and bluff scrub, north coast coniferous forest. Blooming period: May-Aug. 15-880m	Low potential to occur. Marginal habitat may occur in the margins of the agricultural fields, the immediate area around Wolverton Gulch and the ruderal / fence line area adjacent to Hwy 36.
<i>Sidalcea oregana</i> ssp. <i>eximia</i> coast checkerbloom	----	----	1B.2	Perennial herb. Meadows and seeps, lower montane and north coast coniferous forest. Blooming period: June-Aug. 5-1340m	Low potential to occur. Marginal habitat may occur in areas between the upper grazed (ruderal) and lower agricultural fields.
<i>Spergularia canadensis</i> var. <i>occidentalis</i> western sand-spurrey	----	----	2B.1	Annual herb. Coastal saline marsh and swamp habitat. Bloom period: June-Aug. 0-3m	No potential to occur. No suitable habitat in or near project area. Outside of known elevation range.
<i>Usnea longissima</i> Methuselah's beard lichen	----	----	4.2	Lichen. Broadleaf upland and north coast coniferous forest. Blooming period: NA 50-1460m	No potential to occur. No suitable habitat in or near project area. Outside of known elevation range.

Scientific Name Common Name	USFWS	CDFW	CNPS	Life & Habitat Description	Potential to Occur
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Table Key

— = No listing

FE = Listed as Endangered under the Federal Endangered Species Act

FT = Listed as Threatened under the Federal Endangered Species Act

FC = Candidate for listing (Threatened or Endangered) under Federal Endangered Species Act

FD = Delisted in accordance with the Federal Endangered Species Act

SE = Listed as Endangered under the California Endangered Species Act

ST = Listed as Threatened under the California Endangered Species Act

SSC = Species of Special Concern as identified by CDFW

FP = Listed as Fully Protected under California FGC

SR = Species identified as Rare by CDFW

CNPS - California Rare Plant Rank (CRPR)

1A - Presumed Extinct in California

1B - Rare, Threatened, or Endangered in California and elsewhere.

2A - Plants Presumed Extirpated in California, but common elsewhere.

2B - Rare, Threatened, or Endangered in California, but more common elsewhere.

3 - Need more information (a Review List)

4 - Plants of Limited Distribution (a Watch List)

CRPR Threat Code Extension

.1 - Seriously endangered in California (over 80% of occurrences threatened / high degree and immediacy of threat)

.2 - Fairly endangered in California (20-80% occurrences threatened)

.3 - Not very endangered in California (<20% of occurrences threatened)

Table 2: CNDDDB, CNPS and FGC Results for Sensitive Habitat Types

Sensitive Natural Communities	Habitat Description	Rarity (CA/Global)	Potential to Occur
<i>Salix hookeriana</i> - <i>Salix sitchensis</i> - <i>Spiraea douglasii</i> Shrubland Alliance Coastal dune willow - Sitka willow - Douglas spiraea thickets	Coastal streams, tidal swamps, riparian areas, and areas near the ocean where water stands and seasonally floods as in deflation plains and swales among stabilized dunes, lagoon margins, and floodplains. Soils are alluvial and often mucky.	S3/G4	Present. Habitat areas that exceed 50% cover of Coastal willow (<i>Salix hookeriana</i>) are present in the Project area. The codominant species in this alliance are however not present.
<i>Alnus rubra</i> Forest Alliance Red alder forest	Stream and river backwaters, banks, bottoms, flood plains, mouths, terraces, and slopes of all aspects.	S4/G5	Present. This riparian habitat is associated with Wolverton Gulch, a small perennial stream located within the Project area. All riparian areas in California are sensitive habitats per FGC (§1600 <i>et seq.</i>)
Northern Coastal Salt Marsh (52110)*	Salt-tolerant herbaceous and woody stemmed species forming moderate to dense stands up to 3 feet tall. Typically found along protected inland margins of bays, lagoons and estuaries. Soils are hydric and subject to regular tidal inundation by salt water. Representative species may include: salt grass (<i>Distichlis spicata</i>), dwarf spikerush (<i>Eleocharis parvula</i>), frankenia (<i>Frankenia sp.</i>), dune rush (<i>Juncus lescurii</i>), and glass wort (<i>Salicornia pacifica</i>).	S3.2/G3	This habitat type is not present in the Project area.

Upland Douglas Fir Forest (82420)*	A tall mixed aged forest dominated by Douglas fir (<i>Pseudotsuga menziesii</i>). Sites are sub-mesic to sub-xeric on moderately deep, well drained soils. Range extends from Mendocino County north to British Columbia in elevations up to 6,000 feet. Annual precipitation ranges from 23 to 120 inches.	S3.1/G4	This habitat type is not present in the Project area.
G-Rank/S-Rank = Global Rank and State Rank as per NatureServe and CDFW's CNDDDB RareFind 5. G1 or S1 - Critically Imperiled Globally or Subnationally (state) G2 or S2 - Imperiled Globally or Subnationally (state) G3 or S3 - Vulnerable to extirpation or extinction Globally or Subnationally (state) G4 or S4 - Apparently secure Globally or Subnationally (state) G5 or S5 - Secure Globally or Subnationally (state) * - community codes per Holland (1986) as used in the CNDDDB.			

3.2 Field Investigation

Floristic level botanical resources surveys were conducted by biologist, Kristiaan Stuart on March 22, 2020, October 15, 2022 and June 17 and 18, 2023. These surveys were conducted to evaluate the Project area for biological resources, including on-site vegetation communities, potentially jurisdictional waters of the U.S., and to assess the potential for occurrence of special-status plant and wildlife species within the Project area. The surveys conducted were floristic in nature, that is all vascular plant species observed onsite were identified to the lowest possible taxonomic level given their phenological stage (vegetative, flowering and fruiting) to determine the presence or absence of special status plant species.

During these surveys vegetation communities and other biological resources were noted on an aerial photograph of the project area. Photographs were taken within the project area during the surveys (Appendix B). All plant species observed within and adjacent to the project were noted in a field notebook and are included in Appendix A. Mr. Stuart used a 10x, and 14x loupe, Jepson eFlora diagnostic printouts of select sensitive species, and a Jepson Manual (1993) to aid in identifying plant specimens while conducting the field surveys. Plant specimens that could not be identified to the lowest taxonomic level in the field were collected in sealed plastic bags, refrigerated on-site and later examined in-office with a 10x-40x stereo, dissecting microscope to discern microscopic taxonomic features. Plant species names and taxonomy followed the Jepson eFlora (Jepson Flora Project (eds.) 2023, online). Botanical resource surveys were focused in the habitat areas at the margins of the agricultural (cropland) areas and in the ruderal areas as these are known habitat for select sensitive vascular plant species. The

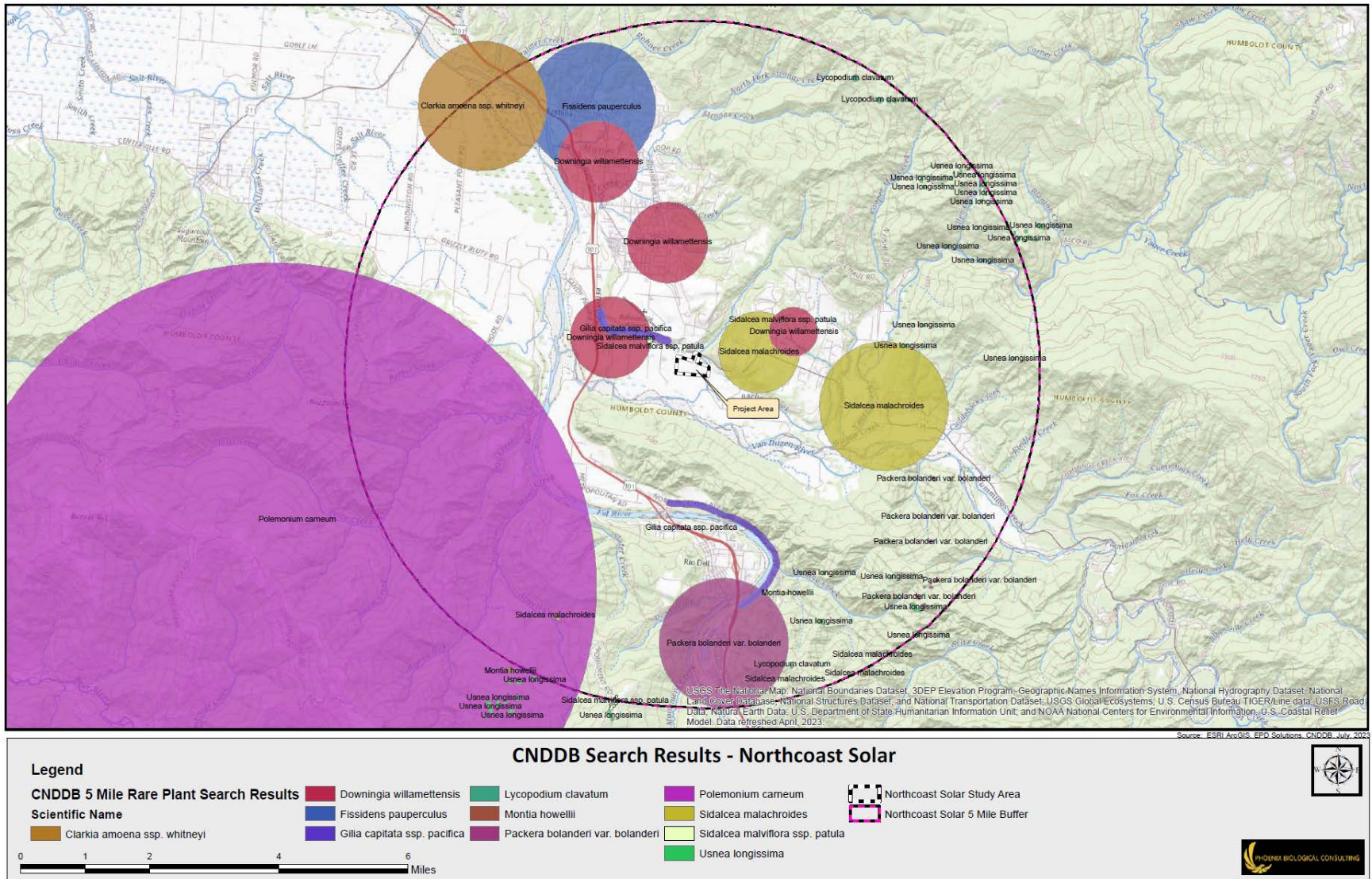
June 2023 surveys were specifically timed to be able to capture any potential sensitive plant species within their floral or most identifiable period.

The riparian habitat areas bordering Wolverton Gulch were mapped in the field using a Trimble Geo7x and a Trimble Geo XH 6000 sub-meter accurate global positioning systems (GPS) and aerial photography. The riparian areas were recorded with the Trimble GPS units by walking the boundary while collecting continuous data points. These data were post processed in Trimble GPS Pathfinder Office software and exported into a GIS and further visually corrected if needed.

3.2.1 Reference Species

On June 17, 2023, Mr. Stuart visited two reference populations of special status plant species, Siskiyou checkerbloom (*Sidalcea malviflora* ssp. *patula*) and Western lily (*Lilium occidentale*). The Siskiyou checkerbloom reference site (CNDDB Occurrence Number 16) is located 0.5 mile from the Project area on the north side of Hwy 36 approximately five feet from the roadway (Exhibit 7). Phenology was at a post floral stage and the foliage was beginning to desiccate. The leaf morphology and texture however were visible and useful for potential visual detection during the botanical surveys. Three Western lily reference sites were visited with only one site (CNDDB Occurrence Number 24) at the Table Bluff Ecological Reserve, located 13 miles northwest of the Project area, having observable specimens. These plants were pre-floral in their phenology with whorled leaves up to 25 cm in height.

Exhibit 7 – CNDDDB 5-Mile Radius Rare Plant Search Results



SECTION 4: ENVIRONMENTAL SETTING

4.1 Field Conditions

The Project is located southern Humboldt County in and adjacent to the historic floodplain of the lower Van Duzen River. The region is within the northern Coast Ranges geomorphic province of California, a region characterized by the irregular, alluvial topography of the Franciscan Complex and is situated in these quaternary sediments of the Eel River watershed area.

The east margin of the project area is situated along the lower Wolverton Gulch, a small perennial stream which is a tributary of the Van Duzen River. The project area is separated topographically by an upper terrace and a lower remnant of the historic Van Duzen floodplain. The elevation difference between these two large areas is approximately 23 feet which transitions quickly as a small cliff that runs from west to northeast through the project area and is erroneously represented in the National Wetland Inventory geodata as two separate wetland features. The upper alluvial terrace area and lower relict floodplain are currently in use as irrigated and cultivated hay fields and have alternated between pastureland and cultivated fields since at least 1940 based on historic aerial imagery.

A narrow area (APN 204-081-004-000) between the main body of the project area and the Project's northernmost segment is a historic railroad right of way originally established in or slightly before 1907. This area, except for a narrow access area, was not surveyed in previous surveys due to access limitations. Access to this area was granted for this survey effort and the area to the southeast, labeled in Exhibit 5 – Plant Communities as Ruderal, Poison Hemlock (*Conium maculatum*) Semi-Natural Alliance and Coastal Willow (*Salix hookeriana*) Shrubland Alliance were surveyed for the presence of state and federal jurisdictional aquatic resources. The area to the northwest, in the same APN, however, was not surveyed on foot due to the type and density of vegetation and a barbed wire perimeter fence posing a physical barrier. This area was surveyed at its perimeter and from aerial imagery. The historic railway right of way is largely dominated by willow shrub habitat, dense stands of poison oak, poison hemlock and California blackberry, with two intersections of ruderal and seasonally wet areas at soft access roads.

The upper terrace and lower floodplain areas are situated at an elevation ranging from 71 feet ABSL at the southern property line to 124 feet ABSL (22 to 38 meters ABSL, respectively) where the northeast corner of the Project area meets Hwy 36.

4.2 Climate

Climate conditions in the project area are described as Mediterranean with cool wet winters with seldom freezing conditions and cool summers within the influence of the coastal fog belt with higher temperatures in the eastern coastal mountain foothills.

The average annual rainfall for the Project vicinity since the year 2000 is 44.18 inches (NWS Station: Scotia). The total annual rainfall for the Project vicinity in 2020 was 24.53-inches, in 2021 was 38.69-inches, in 2022 was 29.05-inches, and from January to June 2023 was 39.56-inches. Cumulative precipitation conditions from January to June 2023 were significantly wetter than the previous three years, 2000 through 2022. Weather conditions during the June 18, 2023, survey were dense morning fog to open sky with no clouds by 1pm, light winds from the west at 2.5 to 5.2 mph and air temperature of 65.5° Fahrenheit.

4.3 Soils

The project area contains three soil series as mapped by the USDA Natural Resources Conservation Service (Exhibit 4). The soils within the project area include:

- Weott, 0 to 2 percent slopes, hydric
- Loleta, 2 to 5 percent slopes, hydric
- Jollygiant, 0 to 2 percent slopes, non-hydric

4.2.1 Weott, 0 to 2 percent slopes

The Weott series (hs3l) is a very poorly drained alluvial silt loam soil with a depth to restrictive layer of greater than 80 inches. This soil occurs in elevations ranging from 0 to 150 feet in depressions, back swamps and floodplain steps and occurs in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Weott, 0 to 2 percent slopes is classified as a hydric soil.

4.2.2 Loleta, 2 to 5 percent slopes

The Loleta series (hs3x) is a poorly drained alluvial loam soil with a depth to restrictive layer of greater than 80 inches. These soils occur in elevations ranging from 10 to 160 feet in fan remnants and alluvial fans and occurs in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Loleta, 2 to 5 percent slopes is classified as a hydric soil.

4.2.3 Jollygiant, 0 to 2 percent slopes

The Jollygiant series (n7ln) is a somewhat poorly drained alluvial silty clay loam soil to 33-inches with a depth to restrictive layer of greater than 80 inches. These soils occur in elevations ranging from 0 to 160 feet on stream terraces and alluvial fans and occur in regions with mean annual precipitation of 35 to 80 inches and a frost free period of 275 to 330 days. Jollygiant, 0 to 2 percent slopes is *not* classified as a hydric soil.

4.4 Hydrology

Wolverton Gulch, a small perennial stream enters the Project area in the northeastern corner and flows to the southeast for approximately 220 feet before leaving the Project area. This northeastern segment of the stream has steep embankments and is characterized by dense riparian vegetation with a dominance of red alder, coastal willow, and red elderberry. Wolverton Gulch reenters the Project area on the southeastern

margin and runs south for approximately 785 feet. This lower stream segment begins as dense riparian habitat, with the same riparian species as the northeastern segment, and gradually becomes less dense towards the southern border.

The historic railway runs east to west with a slightly concave basin and is hydrologically unique in the Project area. Believed to be due to the subsurface railway ballast and the concave contour this area is wet longer than the surrounding areas as evidenced by species such as poison hemlock, California blackberry, coastal willow and annual species such as toad rush (*Juncus bufonius* var. *bufonius*) and woolly marbles (*Psilocarphus brevissimus*) located in more disturbed areas. Adjacent irrigation likely keeps the historic railway area wetter longer than would occur naturally.

All cropland areas are consistently irrigated throughout the Project area which may influence habitat areas on the margins of these cropland areas by keeping them wetter for longer periods than would occur naturally.

4.5 Plant Communities

Six different plant communities were identified in the project area (Exhibit 5) during the October 2022 and June 2023 surveys.

Cultivated and irrigated hay is currently located throughout the Project area and is the dominant vegetation cover (Exhibit 5, Table 3). Based on historic aerial imagery this area has been under cultivation since approximately 1940 and readily rotates the crop type from season to season and year to year. From the May 2020 surveys to the June 2023 surveys, this active cropland has alternated from corn (*Zea mays*), mustard (*Brassica* sp.), white clover (*Trifolium repens*), oat (*Avena fatua*), rye grass (*Festuca perennis*), fallow and grazed pasture. Other plant species associated with this area include sparse forbs including curly doc (*Rumex crispus*), red stemmed filaree (*Erodium cicutarium*) cheeseweed mallow (*Malva parviflora*) and oxeye daisy (*Leucanthemum vulgare*). Agricultural areas are not state or globally ranked and therefore are not sensitive natural communities.

Poison Oak (*Toxicodendron diversilobum*) / Poison Hemlock (*Conium maculatum*) Shrubland Alliance is a patchy mosaic of native and non-native plant species with the non-native species occurring in areas with higher disturbance, such as access routes between pastures. Representative species include poison oak (*Toxicodendron diversilobum*), poison hemlock (*Conium maculatum*), wild teasel (*Dipsacus fullonum*), coyote brush (*Baccharis pilularis*), California blackberry (*Rubus ursinus*), Himalayan blackberry (*Rubus armeniacus*), stinging nettle (*Urtica dioica*), California wild rose (*Rosa californica*), jointed charlock (*Raphanus raphanistrum*), carrot (*Daucus carota*), milkthistle (*Silybum marianum*). The *Toxicodendron diversilobum* Shrubland Alliance is not considered sensitive by its state or global ranking at S4 and G5, respectively.

Ruderal habitat areas occur in areas with a high degree of disturbance from mowing, farm equipment routes, intensive livestock stock areas, and woodpile sites. Plant species in this area are largely annual weedy species. Representative species include spiny cocklebur (*Xanthium spinosum*), purple sand spurry (*Spergularia rubra*), field bindweed (*Convolvulus arvensis*), dodder (*Cuscuta* sp.), bull thistle (*Cirsium*

vulgare), and barnyard grass (*Echinochloa crus-galli*). This habitat is not state or globally ranked and is not a sensitive natural community.

Coastal Willow (*Salix hookeriana*) Shrubland Alliance is located along the historic railway right of way and in the lower southwestern project corner. The dominant species is the coastal willow (*Salix hookeriana*) with sub-dominant species including red elderberry (*Sambucus racemosa*), California blackberry, thimbleberry (*Rubus parviflorus*) and coast man-root (*Marah oregana*). The membership rule for this alliance is a dominance of coastal willow greater than 50-percent. This alliance is considered a sensitive natural community with a State Rarity and Global Rarity of S3 and G4, respectively.

Wolverton Gulch Riparian, Red alder (*Alnus rubra*) Forest Alliance is associated with the Wolverton Gulch riparian areas. The dominant species include red alder (*Alnus rubra*), arroyo willow (*Salix lasiolepis*), red elderberry (*Sambucus racemosa* var. *racemosa*), California blackberry and sandbar willow (*Salix exigua*). Sub-dominant herbaceous species include stinging nettle, giant scouring rush (*Equisetum hyemale* ssp. *affine*), iris leaved rush (*Juncus xiphioides*), watercress (*Nasturtium officinale*), and marsh purslane (*Ludwigia peploides*). This alliance is not considered sensitive by its state or global rank, S4 and G5, respectively, but is considered sensitive by the state of California Fish and Game Code (§1600 *et seq.*) as a riparian habitat area.

Poison Hemlock (*Conium maculatum*) Semi-Natural Alliance is located between the northern and southern segments of the Project area and within the historic railroad right of way. The dominant species include poison hemlock, California blackberry, Himalayan blackberry, and poison oak. Sub-dominant species include red elderberry, coastal willow, and stinging nettle. This alliance is not state or globally ranked and is not a sensitive natural community.

Table 3 - Plant Communities in the Project Area

Plant Community	Approximate Area (acres)
Cultivated Hay	61.97
Poison Oak (<i>Toxicodendron diversilobum</i>) / Poison Hemlock Shrubland Alliance	3.12
Ruderal	2.88
Coastal Willow (<i>Salix hookeriana</i>) Shrubland Alliance	2.43
Wolverton Gulch Riparian, Red alder (<i>Alnus rubra</i>) Forest Alliance	1.75
Poison Hemlock (<i>Conium maculatum</i>) Semi-Natural Alliance	0.73
Total	72.88

SECTION 5: RESULTS

The entire 72.88-acre Project area was evaluated for the presence of special status plant species and sensitive natural communities. From the three survey efforts previously described, no state, federal or CNPS special status plant species were discovered during the survey efforts. A compendium of all plants recorded in the project area can be found in Appendix A. Appendix B contains representative photographs of site vegetation and site conditions. Of the 124 plant species identified in the Project area, a single species of dodder (*Cuscuta sp.*) was not identifiable to the species taxonomic level due to it being in a vegetative phenological state during the June 2023 survey. There are no documented sensitive species in the *Cuscuta* genera that occur in Humboldt County.

Of the six plant communities identified in the Project area, one (*Salix hookeriana* Shrubland Alliance) has a state rank of S3 and one (Wolverton Gulch Riparian, *Alnus rubra* Forest Alliance) is considered sensitive due to it being protected under California Fish and Game Code as a riparian habitat. Neither of these sensitive plant communities will be impacted based on the proposed project design (Exhibit 6).

SECTION 6: REFERENCES

- Calflora: Information on California plants for education, research and conservation, with data contributed by public and private institutions and individuals. [web application]. 2023. Berkeley, California: The Calflora Database [a non-profit organization]. Available at: <https://www.calflora.org/> (Accessed: June, 2023).
- California Department of Fish and Wildlife, Rarefind 5 Natural Diversity Database. Habitat and Data Analysis Branch. Sacramento, CA, 2023.
- California Native Plant Society. 2023. A Manual of California Vegetation, Online Edition. <http://www.cnps.org/cnps/vegetation/>; searched June-July 2023. California Native Plant Society, Sacramento, CA.
- California Native Plant Society, Rare Plant Program. 2023. Inventory of Rare and Endangered Plants of California (online edition, v9.5). Website <http://www.rareplants.cnps.org> [accessed June 2023].
- California Invasive Plant Council (Cal-IPC). 2023. California Invasive Plant Inventory. Cal-IPC Publication 2023.
- California Invasive Plant Council: Berkeley, CA. Available: www.cal-ipc.org.
- CalPhotos: A database of photos of plants, animals, habitats and other natural history subjects [web application]. BSCIT, University of California, Berkeley. Available: <http://calphotos.berkeley.edu/>. (Accessed: June 2023).
- Hickman, J. C., Ed. 1993. The Jepson Manual, Higher Plants of California. University of California Press.
- Jepson Flora Project (eds.) 2023, Jepson eFlora, <https://ucjeps.berkeley.edu/eflora/>, accessed on June 16-25, 2023.
- National Oceanic and Atmospheric Administration - National Weather Service. 2023. Monthly Precipitation Data from the Year 2000 to June 2023, for Scotia, CA. Available at: <https://www.weather.gov/wrh/Climate?wfo=eka>
- Netronline. 2023. Historic Aerials. Available at: <https://www.historicaerials.com>
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Accessed [June/2023]. Available at: <https://websoilsurvey.nrcs.usda.gov/app/>
- United States Fish and Wildlife Service. 2000. Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed, and Candidate Plants. January 2000.

APPENDIX A: LIST OF PLANT SPECIES OBSERVED

Scientific Name	Common Name	Status (State/Federal/CNPS)	Origin*
<i>Achillea millefolium</i>	Yarrow	-- / -- / --	Native
<i>Agrostis capillaris</i>	Colonial bentgrass	-- / -- / --	Non-native, NL
<i>Alnus rubra</i>	Red alder	-- / -- / --	Native
<i>Alopecurus geniculatus</i>	Marsh foxtail	-- / -- / --	Native
<i>Amaranthus retroflexus</i>	Rough pigweed	-- / -- / --	Non-native, NL
<i>Anthriscus caucalis</i>	Bur chervil	-- / -- / --	Non-native, NL
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	Western lady fern	-- / -- / --	Native
<i>Avena fatua</i>	Wild oat (cultivated)	-- / -- / --	Non-native, Moderate
<i>Baccharis pilularis</i>	Coyote brush	-- / -- / --	Native
<i>Brassica rapa</i>	Common mustard	-- / -- / --	Non-native, Limited
<i>Briza minor</i>	Little rattlesnake grass	-- / -- / --	Non-native, NL
<i>Bromus catharticus</i>	Rescue grass	-- / -- / --	Non-native, NL
<i>Bromus diandrus</i>	Ripgut brome	-- / -- / --	Non-native, Moderate
<i>Bromus sitchensis</i> var. <i>carinatus</i>	California brome	-- / -- / --	Native
<i>Capsella bursa-pastoris</i>	Shepherd's purse	-- / -- / --	Non-native, NL
<i>Cardamine oligosperma</i>	Bitter cress	-- / -- / --	Native
<i>Castilleja rubicundula</i> ssp. <i>lithospermoides</i>	Cream sacs	-- / -- / --	Native
<i>Ceanothus oliganthus</i>	Hairy ceanothus	-- / -- / --	Native
<i>Ceanothus thyrsiflorus</i>	Blueblossom	-- / -- / --	Native
<i>Cerastium glomeratum</i>	Large mouse ears	-- / -- / --	Non-native, NL
<i>Chamerion angustifolium</i>	Fireweed	-- / -- / --	Native
<i>Cicuta douglasii</i>	Western water hemlock	-- / -- / --	Native
<i>Cirsium vulgare</i>	Bull thistle	-- / -- / --	Non-native, Moderate
<i>Conium maculatum</i>	Poison hemlock	-- / -- / --	Non-native, Moderate
<i>Convolvulus arvensis</i>	Field bindweed	-- / -- / --	Non-native, NL
<i>Cortaderia jubata</i>	Andean pampas grass	-- / -- / --	Non-native, High
<i>Cuscuta</i> sp.	Dodder	-- / -- / --	Native
<i>Cyperus esculentus</i>	Yellow nutgrass	-- / -- / --	Native
<i>Datura stramonium</i>	Jimsonweed	-- / -- / --	Non-native, NL
<i>Daucus carota</i>	Queen Anne's lace	-- / -- / --	Non-native, NL
<i>Dipsacus fullonum</i>	Wild teasel	-- / -- / --	Non-native, Moderate

Appendix A - Plants

Special Status Plant Report

Scientific Name	Common Name	Status (State/Federal/CNPS)	Origin*
<i>Dryopteris arguta</i>	California wood fern	-- / -- / --	Native
<i>Dryopteris expansa</i>	Common wood fern	-- / -- / --	Native
<i>Echinochloa crus-galli</i>	Barnyard grass	-- / -- / --	Non-native, NL
<i>Elymus triticoides</i>	Beardless wild rye	-- / -- / --	Native
<i>Epilobium brachycarpum</i>	Tall annual willowherb	-- / -- / --	Native
<i>Epilobium ciliatum</i>	Slender willow herb	-- / -- / --	Native
<i>Equisetum arvense</i>	Common horsetail	-- / -- / --	Native
<i>Equisetum hyemale ssp. affine</i>	Giant scouring rush	-- / -- / --	Native
<i>Erigeron canadensis</i>	Canada horseweed	-- / -- / --	Native
<i>Erodium cicutarium</i>	Red stemmed filaree	-- / -- / --	Non-native, Limited
<i>Euphorbia maculata</i>	Spotted spurge	-- / -- / --	Non-native, NL
<i>Festuca perennis</i>	Italian rye grass	-- / -- / --	Non-native, Moderate
<i>Foeniculum vulgare</i>	Fennel	-- / -- / --	Non-native, Moderate
<i>Galium aparine</i>	Cleavers bedstraw	-- / -- / --	Native
<i>Galium porrigens var. porrigens</i>	Climbing bedstraw	-- / -- / --	Native
<i>Geranium dissectum</i>	Wild geranium	-- / -- / --	Non-native, Limited
<i>Geranium molle</i>	Dovefoot geranium	-- / -- / --	Non-native, NL
<i>Gilia tricolor</i>	Bird's eye gilia	-- / -- / --	Native
<i>Gnaphalium palustre</i>	Lowland cudweed	-- / -- / --	Native
<i>Hedera helix</i>	English ivy	-- / -- / --	Non-native, High
<i>Helminthotheca echioides</i>	Bristly ox-tongue	-- / -- / --	Non-native, Limited
<i>Heuchera micrantha</i>	Alumroot	-- / -- / --	Native
<i>Hordeum murinum ssp. leporinum</i>	Foxtail barley	-- / -- / --	Non-native, NL
<i>Juncus balticus ssp. ater</i>	Baltic rush	-- / -- / --	Native
<i>Juncus bufonius var. bufonius</i>	Toad rush	-- / -- / --	Native
<i>Juncus effusus ssp. pacificus</i>	Pacific rush	-- / -- / --	Native
<i>Juncus xiphioides</i>	Iris leaved rush	-- / -- / --	Native
<i>Kickxia elatine</i>	Fluellin	-- / -- / --	Non-native, NL
<i>Lamium amplexicaule</i>	Henbit deadnettle	-- / -- / --	Non-native, NL
<i>Lemna minor</i>	Smaller duckweed	-- / -- / --	Native
<i>Leucanthemum vulgare</i>	Oxeye daisy	-- / -- / --	Non-native, Moderate
<i>Lonicera involucrata var. ledebourii</i>	Coast twinberry	-- / -- / --	Native
<i>Lotus corniculatus</i>	Bird's foot trefoil	-- / -- / --	Non-native, NL
<i>Ludwigia peploides</i>	Marsh purslane	-- / -- / --	Non-native, High

Scientific Name	Common Name	Status (State/Federal/CNPS)	Origin*
<i>Lythrum hyssopifolia</i>	Hyssop loosestrife	-- / -- / --	Non-native, Moderate
<i>Malva nicaeensis</i>	Bull mallow	-- / -- / --	Non-native, NL
<i>Malva parviflora</i>	Cheeseweed mallow	-- / -- / --	Non-native, NL
<i>Marah oregana</i>	Coast man-root	-- / -- / --	Native
<i>Matricaria discoidea</i>	Pineapple weed	-- / -- / --	Native
<i>Mentha pulegium</i>	Pennyroyal	-- / -- / --	Non-native, Moderate
<i>Nasturtium officinale</i>	Watercress	-- / -- / --	Native
<i>Nemophila menziesii</i>	Baby blue eyes	-- / -- / --	Native
<i>Parentucellia viscosa</i>	Yellow glandweed	-- / -- / --	Non-native, Limited
<i>Persicaria lapathifolia</i>	Common knotweed	-- / -- / --	Native
<i>Phalaris aquatica</i>	Harding grass	-- / -- / --	Non-native, Moderate
<i>Plantago elongata</i>	Coastal plantain	-- / -- / --	Native
<i>Plantago lanceolata</i>	English plantain	-- / -- / --	Non-native, Limited
<i>Plantago major</i>	Common plantain	-- / -- / --	Non-native, NL
<i>Poa annua</i>	Annual blue grass	-- / -- / --	Non-native, NL
<i>Poa compressa</i>	Canada blue grass	-- / -- / --	Non-native, NL
<i>Polygonum austiniiae</i>	Rebecca knotweed	Austin's -- / -- / --	Native
<i>Polypogon monspeliensis</i>	Rabbitsfoot grass	-- / -- / --	Non-native, Limited
<i>Polystichum munitum</i>	Western swordfern	-- / -- / --	Native
<i>Potamogeton natans</i>	Floating leaved pondweed	-- / -- / --	Native
<i>Prunus avium</i>	Sweet cherry	-- / -- / --	Non-native, NL
<i>Psilocarphus brevissimus</i>	Woolly marbles	-- / -- / --	Native
<i>Ranunculus aquatilis</i>	Whitewater crowfoot	-- / -- / --	Native
<i>Ranunculus muricatus</i>	Buttercup	-- / -- / --	Non-native, NL
<i>Ranunculus occidentalis</i> var. <i>occidentalis</i>	Western buttercup	-- / -- / --	Native
<i>Raphanus sativus</i>	Jointed charlock	-- / -- / --	Non-native, Limited
<i>Rosa californica</i>	California wild rose	-- / -- / --	Native
<i>Rubus armeniacus</i>	Himalayan blackberry	-- / -- / --	Non-native, High
<i>Rubus parviflorus</i>	Thimbleberry	-- / -- / --	Native
<i>Rubus ursinus</i>	California blackberry	-- / -- / --	Native
<i>Rumex acetosella</i>	Common sheep sorrel	-- / -- / --	Non-native, Moderate
<i>Rumex crispus</i>	Curly dock	-- / -- / --	Non-native, Limited

Scientific Name	Common Name	Status (State/Federal/CNPS)	Origin*
<i>Salix exigua</i>	Sandbar willow	-- / -- / --	Native
<i>Salix hookeriana</i>	Coastal willow	-- / -- / --	Native
<i>Salix lasiolepis</i>	Arroyo willow	-- / -- / --	Native
<i>Sambucus racemosa</i> var. <i>racemosa</i>	Pacific red elderberry	-- / -- / --	Native
<i>Scrophularia californica</i>	California bee plant	-- / -- / --	Native
<i>Senecio aronicoides</i>	California groundsel	-- / -- / --	Native
<i>Silybum marianum</i>	Milk thistle	-- / -- / --	Non-native, Limited
<i>Sisyrinchium bellum</i>	Western blue eyed grass	-- / -- / --	Native
<i>Solanum americanum</i>	White nightshade	-- / -- / --	Native
<i>Spergularia rubra</i>	Purple sand spurry	-- / -- / --	Non-native, NL
<i>Stachys ajugoides</i>	Hedge nettle	-- / -- / --	Native
<i>Stachys mexicana</i>	Mexican Hedge-nettle	-- / -- / --	Native
<i>Taraxacum officinale</i> ssp. <i>officinale</i>	Common dandelion	-- / -- / --	Non-native, NL
<i>Toxicodendron diversilobum</i>	Poison oak	-- / -- / --	Native
<i>Trifolium dubium</i>	Shamrock clover	-- / -- / --	Non-native, NL
<i>Trifolium hirtum</i>	Rose clover	-- / -- / --	Non-native, Limited
<i>Trifolium repens</i>	White clover (cultivated)	-- / -- / --	Non-native, NL
<i>Umbellularia californica</i>	California bay	-- / -- / --	Native
<i>Urtica dioica</i>	Stinging nettle	-- / -- / --	Native
<i>Veronica anagallis-aquatica</i>	Water speedwell	-- / -- / --	Non-native, NL
<i>Veronica peregrina</i>	Neckweed	-- / -- / --	Native
<i>Veronica persica</i>	Bird's eye speedwell	-- / -- / --	Non-native, NL
<i>Vicia sativa</i> ssp. <i>sativa</i>	Spring vetch	-- / -- / --	Non-native, NL
<i>Vinca major</i>	Vinca	-- / -- / --	Non-native, Moderate
<i>Xanthium spinosum</i>	Spiny cocklebur	-- / -- / --	Non-native, NL
<i>Xanthium strumarium</i>	Rough cocklebur	-- / -- / --	Native
<i>Zea mays</i>	Cultivated corn	-- / -- / --	Non-native, NL

* California Invasive Plant Council (Cal-IPC) Ratings (2023):

NL – Not Listed

High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.

Moderate – These species have substantial and apparent-but generally not severe-ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally

Scientific Name	Common Name	Status (State/Federal/CNPS)	Origin*
dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.			
Limited – These species are invasive but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.			

APPENDIX B: REPRESENTATIVE SITE PHOTOGRAPHS

	Property entrance. Facing south across Hwy 36. October 15, 2022.
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**Photo Point 1 –
At property
entrance looking
west. October
15, 2022.**



**Photo Point 1 – At
property entrance
looking south.
October 15, 2022.**



Photo Point 1 – At property entrance looking east. Hwy 36 far left. October 15, 2022.



Photo Point 2 – View south of cultivated corn field and access road. October 15, 2022.

	Photo Point 2 – View west of cultivated corn field. October 15, 2022.
	View south of access road from upper corn field to upper white clover field. Coastal willow, Himalayan blackberry, poison oak and poison hemlock in foreground. October 15, 2022.



**Photo Point 3 –
View west of
cultivated white
clover field and
fence line. White
clover, poison oak,
poison hemlock
and spike
bentgrass in view.
October 15, 2022.**



**Photo Point 3 –
View south of
cultivated white
clover field.
October 15, 2022.**



Photo Point 3 –
View east of
cultivated white
clover field, access
road and fence
line. White clover,
poison hemlock
and Himalayan
blackberry in view.
October 15, 2022.



Photo Point 4 –
View south of
adjacent property
at fence line.
Coastal willow and
poison hemlock in
view. October 15,
2022.

	Photo Point 4 – View west of white clover field and adjacent property at fence line. October 15, 2022.
	Photo Point 4 – View east of hidden fence line and white clover field. Coastal willow and white clover in view. October 15, 2022.



**Photo Point 5 –
View north of
adjacent property
(left) and white
clover field.
October 15, 2022.**



**Photo Point 5 –
View west of
adjacent property
corner at fence
line. Poison
hemlock and
Himalayan
blackberry in view.
October 15, 2022.**

	Photo Point 5 – View southeast of upper property corner. Coastal willow and Himalayan blackberry in view. October 15, 2022.
	Photo Point 5 – View east of white clover field and upper fence line (far right). October 15, 2022.



**Photo Point 6 –
View west of
upper fence line
and white clover
field (right).
October 15, 2022.**



**Photo Point 6 –
View south of
fence line, lower
corn field and
adjacent property.
October 15, 2022.**



**Photo Point 6 –
View east of fence
line, white clover
field (left), lower
corn field and
adjacent property.
October 15, 2022.**



**Photo Point 7 –
View west of fence
line, and clover
field (right).
October 15, 2022.**



**Photo Point 7 –
View north of
fence line, and
clover field (left).
October 15, 2022.**



**Photo Point 7a -
Access road from
upper white clover
field to lower corn
field. October 15,
2022.**



**Photo Point 8 -
View west of
previous well head
site and corn field.
October 15, 2022.**



**Photo Point 8 -
View east of
southern fence
line, corn field and
adjacent property.
October 15, 2022.**



**Photo Point 9 -
View east of
Wolverton Gulch
and access road to
eastern field.
October 15, 2022.**



**Photo Point 9 -
View north of
west bank of
Wolverton Gulch
and adjacent corn
field. Red alder
riparian corridor in
view. October 15,
2022.**



East of Photo Point 9 - View north of east bank of Wolverton Gulch. October 15, 2022.



East of Photo Point 9 - View north of east riparian margin of Wolverton Gulch and adjacent field. October 15, 2022.



**Photo Point 10 -
View north of
fence line, River
Bar Rd and
adjacent property.
Red alder,
Himalayan
blackberry in view.
October 15, 2022.**



**Photo Point 10 -
View south of
fence line, River
Bar Rd, cultivated
hay field and
Wolverton Gulch
riparian
vegetation.
October 15, 2022.**



**Photo Point 11 -
View south of
fence line, lower
corn fields (left)
and upper white
clover field.
October 15, 2022.**



**Photo Point 11 -
View west of fence
line and white
clover field.
Coastal willow and
white clover in
view. October 15,
2022.**



**Photo Point 11 -
View east of fence
line (left), ruderal
area and lower
corn field. October
15, 2022.**



**June 17, 2023.
Active irrigation in
lower hayfield**

	June 17, 2023 Active irrigation in lower hayfield
	June 17, 2023 Irrigation head in lower hayfield (40.543634, - 124.113177).

	June 17, 2023. Ruderal habitat, access road / seasonal wet area. (40.544146, - 124.115401)
	June 17, 2023. Ruderal stock pasture south of barn.



June 18, 2023.
Wetland
investigation site
002. View east.
Poison Hemlock
Alliance Historic
railroad rail in
foreground
(40.544236, -
124.115879).



June 18, 2023.
Wolverton Gulch,
Red Alder Alliance
at concrete box
culvert and Hwy
36, looking south.
(40.546012, -
124.115143).



**June 18, 2023.
Wolverton
streambed looking
south. (40.545951,
-124.115156).**