



P.O. Box 733, Hydesville, CA 95547 . (707) 768-3743 . (707) 768-3747 fax

Botanical Survey Report

MeeMeeMine LLC Parcel Subdivision

APN: 308-271-001
280 Table Bluff Road- Loleta, CA
Humboldt County

Prepared by:
Cameron Tavis and Mark Pera

Prepared for:
Jon Flyer
MeeMeeMine LLC Co

Signature:

Mark Pera

Date: August 8, 2025

Executive Summary

This document discusses the findings of floristic surveys for the proposed MeeMeeMine LLC Subdivision and a proposed development site (study area). The proposed subdivision would divide the property into two separate parcels. The entire property has evidence of current and historical grazing.

The study area being assessed lies in the eastern half of the subject parcel. The proposed development site would be situated in a mowed non-native grass field. The remaining area of the proposed parcel contains Sitka spruce forest. This assessment assumes that all potential impacts from the development will be limited to the proposed development site and areas immediately surrounding it.

Botanical surveys were conducted and consistent with CDFW protocols (CDFW 2018). No listed rare or endangered plants (CNPS List 1 or 2) were detected in the study area. A discrete stand of Coastal willow (*Salix hookeriana*) noticed during an agency site visit January 16, 2025 was commented that it may be a one-parameter wetland (i.e., Environmentally Sensitive Habitat Area). While there is a slight intersect with the study area and a 100-foot buffer, the proposed development footprint is outside this buffer.

Introduction

This report was generated to provide information and results regarding special status plants and communities as well as other Environmentally Sensitive Habitat Areas (ESHA) at 280 Table Bluff Road- Loleta, CA (APN: 308-271-001).

Environmentally Sensitive Habitat Areas are defined by the California Coastal Act (CCA) as:

“...any area in which plant or animal life or their habitats are rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.”

Rare, threatened and endangered plants as well as special status natural communities are considered to be ESHA under the CCA and Humboldt County LCP.

Under Section 30240 of the California Coastal Act,

“Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.”

Special status plants are plants that meet one or more criteria as outlined by the CDFW in their “Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities.” A plant is considered to be special status if it is listed as rare, threatened or endangered under the Federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and those that are considered to meet the criteria of rare or endangered under the California Environmental Quality Act (CEQA) Guideline §15380. Additionally, plants tracked by the California Natural Diversity Database (CNDDB) with California Rare Plant Ranks of 1A, 1B, 2A, and 2B meet the criteria whereas plants with CRPRs of 3 and 4 generally do not unless declining trends or other information may require consideration.

According to the California Department of Fish and Wildlife (CDFW), sensitive natural communities are those of limited distribution that are typically vulnerable to the environmental effects of projects. Natural communities that are considered sensitive can be found using CDFW's *List of California Terrestrial Natural Communities*. Those with G or S ranks of 3 or lower are considered sensitive by the CDFW.

Setting

The proposed subdivision is located in Section 8, Township 3 North, Range 1 West; HB&M approximately 1 mile north of the community of Loleta, CA in Humboldt County, on the Fields Landing USGS 7.5' quadrangle. This property lies within the California Floristic Province, Northwestern California region, and North Coast sub-region. Elevation ranges from approximately 200 to 300 feet. Slopes on the property are gentle to moderate and primarily east facing. The proposed development site is composed entirely of a non-native grassland, which is mowed frequently by the landowner. The remaining area of the parcel contains Sitka spruce forest. The proposed development site is approximately 0.5 acres. The proposed subdivision would create a parcel of approximately 7.5 acres.

Methods

Emilie Wallin and Mark Pera conducted the botanical surveys for the MeeMeeMine LLC Table Bluff Subdivision on April 23, 2025 and July 4, 2025. Emilie Wallin holds a B.S. in Botany from Cal Poly Humboldt, where she has taken relevant courses such as plant taxonomy, agrostology, phycology, principles of ecology, and introductory botany. She has 2 years of botany experience in Northern California. Mark Pera has a B.S. in Forestry with a concentration in Resource Management from Humboldt State University. Mark has taken relevant courses including dendrology, general botany, and silviculture. Mark has 6 years of botany experience in Northern California.

Prior to the late season field visit, Katie Ferguson, CNDDDB Botanist CDFW replied to a prior query indicating that there are no mapped Western Lily (*Lilium occidentale*) occurrences within or in the immediate vicinity of the project area. The location of a nearby reference population to assess phenology for Western Lily was given and visited on July 4 prior to the late season survey. A single stem lily was observed approximately 1.5m tall, buds were swollen but not opening.

The surveys were floristic in nature and seasonally appropriate, with an initial survey conducted during the spring on 04/23/2025 timed for early-blooming species and a second survey during the summer for later-blooming species, 07/04/2025. Approximately 3 cumulative field hours were spent on surveys. Surveys included systematic assessment of all potential habitats in the area based on maps, aerial photos, and visible environmental features such as canopy cover, slope, soil texture, aspect, hydrologic features, and associated vegetation. This survey protocol is based on the Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018).

A list of potential rare plants on CNPS lists 1 and 2 found within the 8-quad area as listed in CDFW BIOS and CNPS Inventory of Rare and Endangered Plants is available in Attachment A. Only 8 quads are included as the property lies within the Fields Landing quadrangle, which is adjacent to

the Pacific Ocean, thus, there is no existing quadrangle to be surveyed for the Northwest of Fields Landing. Attachment B contains rare plant rank definitions. Attachment C contains all maps. Attachment D contains photos. Attachment E is the observed species list. Attachment F contains the soils report generated from USDA Natural Resources Conservation Service Web Soil Survey.

Results

No listed rare or endangered plants (CNPS List 1 or 2) were detected in the study area. The blooming period for this area appeared to correspond with expected flowering and fruiting ranges as recorded by CNPS and surveys were timed appropriately. All potential rare plant habitats were surveyed, and false negative surveys are unlikely. No additional surveys are necessary, and no project specific mitigation is recommended.

A discrete stand of Coastal willow (*Salix hookeriana*) noticed during an agency site visit January 16, 2025 was commented that it may be a one-parameter wetland (i.e., Environmentally Sensitive Habitat Area). While there is a slight intersect with the study area and a 100-foot buffer, the proposed development footprint is outside this buffer. To avoid the need for additional studies, it is recommended that development not encroach upon protective buffers.

Prior to the late season field visit, Katie Ferguson, CNDDDB Botanist CDFW replied to a prior query indicating that there are no mapped Western Lily (*Lilium occidentale*) occurrences within or in the immediate vicinity of the project area. The location of a nearby reference population for Western Lily was given and visited to assess phenology on July 4 prior to the late season survey. A single stem lily was observed at that location approximately 1.5m tall, buds were swollen but not opening. The late-season visit was optimally timed to discover mature growth and flowering of Western lily. This showy and obvious plant makes it easy to detect if it were present within or adjacent to the study area. It was not observed within or adjacent to the study area.

References

Baldwin, B.G., D.H. Goldman, D. J. Keil, R. Patterson, T. J. Rosatti, and D. H. Wilken, editors. 2012. *The Jepson Manual: Vascular Plants of California, second edition*. University of California Press, Berkeley.

[CDFW] California Department of Fish and Game, 2018. "Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" State of California.

California Department of Fish and Wildlife, Natural Diversity Database, BIOS. 2025. California Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, CA. <<https://apps.wildlife.ca.gov/bios/?tool=cnddbQuick>>.

California Native Plant Society, Rare Plant Program. 2025. Rare Plant Inventory (online edition, v9.5.1). Website <https://www.rareplants.cnps.org>

Hill, S. R. 2018. *Plant Species Evaluation Form*. USFS. Retrieved April 17, 2025, from <https://rareplantfiles.cnps.org/scc/SidalceaMalvifloraPatulaSpProfileSCC20180723.pdf>

Jepson Flora Project (eds.) Most recent version. Jepson eFlora. Available at: <http://ucjeps.berkeley.edu/eflora>

Niehaus, T.F., 1976. A field guide to Pacific States wildflowers: Washington, Oregon, California and adjacent areas. Houghton Mifflin.

Pojar, J. and MacKinnon, A., 1994. Plants of the Pacific Northwest Coast. Lone Pine, Vancouver, BC.

Sawyer, J. O., T. Keeler Wolf, and J. M. Evens. 2009. A Manual of California Vegetation Online, 2nd edition. California Native Plant Society, Sacramento, CA. <<http://vegetation.cnps.org/>>.

Smith Jr, J.P., 2014. Field guide to grasses of California (Vol. 110). Univ of California Press.

Stuart, J.D. and Sawyer, J.O., 2001. Trees and shrubs of California (Vol. 62). Univ of California Press.

Wilson, B.L., 2008. Field guide to the Sedges of the Pacific Northwest/by Barbara L. Wilson...[et al.]. Oregon State University Press.

Attachment A: List of Potentially Occurring Sensitive Plant Species

ScientificName	Common Name	Family	Lifefrom	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Potential
Abronia umbellata var. breviflora	pink sand-verbena	Nyctaginaceae	annual herb	1B.1	G4G5 T2	S2	None	None	Jun-Oct	Coastal dunes	None- no habitat
Angelica lucida	sea-watch	Apiaceae	perennial herb	4.2	G5	S3	None	None	Apr-Sep	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	None- no habitat
Anomobryum julaceum	slender silver moss	Bryaceae	moss	4.2	G5	S2	None	None		Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	None- no habitat
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	perennial herb	1B.2	G2T2	S2	None	None	(Apr-May) Jun-Oct	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	None- no habitat
Cardamine angulata	seaside bittercress	Brassicaceae	perennial herb	2B.2	G4G5	S3	None	None	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest	None- no habitat
Carex arcta	northern clustered sedge	Cyperaceae	perennial herb	2B.2	G5	S1	None	None	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)	Potential
Carex leptalea	bristle-stalked sedge	Cyperaceae	perennial rhizomatous herb	2B.2	G5	S1	None	None	Mar-Jul	Bogs and fens, Marshes and swamps, Meadows and seeps (mesic)	Potential
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	2B.2	G5	S3	None	None	Apr-Aug	Marshes and swamps (brackish, freshwater)	None- no habitat
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	2B.2	G5	S2	None	None	May-Jul	Meadows and seeps (mesic)	Potential
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	1B.2	G5T2	S2	None	None	Apr-Aug	Marshes and swamps (coastal salt)	None- no habitat
Castilleja litoralis	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	2B.2	G3	S3	None	None	Jun	Coastal bluff scrub, Coastal dunes, Coastal scrub	None- no habitat
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	1B.2	G4?T2	S2	None	None	Jun-Oct	Marshes and swamps (coastal salt)	None- no habitat
Chrysosplenium glechomifolium	Pacific golden saxifrage	Saxifragaceae	perennial herb	4.3	G5?	S3	None	None	Feb-Jun	North Coast coniferous forest, Riparian forest	None- no habitat
Clarkia amoena ssp. whitneyi	Whitney's farewell-to-spring	Onagraceae	annual herb	1B.1	G5T1	S1	None	None	Jun-Aug	Coastal bluff scrub, Coastal scrub	None- no habitat
Collinsia corymbosa	round-headed collinsia	Plantaginaceae	annual herb	1B.2	G1	S1	None	None	Apr-Jun	Coastal dunes	None- no habitat

<i>Collomia tracyi</i>	Tracy's collomia	Polemoniaceae	annual herb	4.3	G4	S4	None	None	Jun-Jul	Broadleaved upland forest, Lower montane coniferous forest	None- no habitat
<i>Downingia willamettensis</i>	Cascade downingia	Campanulaceae	annual herb	2B.2	G4	S2	None	None	Jun-Jul(Sep)	Cismontane woodland, Valley and foothill grassland, Vernal pools	Potential
<i>Eleocharis parvula</i>	small spikerush	Cyperaceae	perennial herb	4.3	G5	S3	None	None	(Apr)Jun-Aug(Sep)	Marshes and swamps	None- no habitat
<i>Erysimum menziesii</i>	Menzies' wallflower	Brassicaceae	perennial herb	1B.1	G1	S1	CE	FE	Mar-Sep	Coastal dunes	None- no habitat
<i>Erythronium revolutum</i>	coast fawn lily	Liliaceae	perennial bulbiferous herb	2B.2	G4G5	S3	None	None	Mar-Jul(Aug)	Bogs and fens, Broadleaved upland forest, North Coast coniferous forest	None- no habitat
<i>Fissidens pauperculus</i>	minute pocket moss	Fissidentaceae	moss	1B.2	G3?	S2	None	None		North Coast coniferous forest	None- no habitat
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	Polemoniaceae	annual herb	1B.2	G5T3	S3	None	None	Apr-Aug	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Potential
<i>Gilia millefoliata</i>	dark-eyed gilia	Polemoniaceae	annual herb	1B.2	G2	S2	None	None	Apr-Jul	Coastal dunes	None- no habitat
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	Apiaceae	perennial herb	4.2	G5T5	S2S3	None	None	May-Aug	Coastal dunes	None- no habitat
<i>Hemizonia congesta</i> ssp. <i>tracyi</i>	Tracy's tarplant	Asteraceae	annual herb	4.3	G5T4	S4	None	None	(Mar-Apr) May-Oct	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest	None- no habitat
<i>Hesperexax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	Asteraceae	annual herb	1B.2	G4T3	S3	None	None	Mar-Jun	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	None- no habitat
<i>Hosackia gracilis</i>	harlequin lotus	Fabaceae	perennial rhizomatous herb	4.2	G3G4	S3	None	None	Mar-Jul	Northern Coastal Scrub, Closed-cone Pine Forest, Mixed Evergreen Forest, wetland-riparian	Potential
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	Asteraceae	perennial herb	1B.2	G3T2	S2	None	None	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub	None- no habitat
<i>Lathyrus glandulosus</i>	sticky pea	Fabaceae	perennial rhizomatous herb	4.3	G3	S3	None	None	Apr-Jun	Cismontane woodland	None- no habitat
<i>Lathyrus japonicus</i>	seaside pea	Fabaceae	perennial rhizomatous herb	2B.1	G5	S2	None	None	May-Aug	Coastal dunes	None- no habitat
<i>Lathyrus palustris</i>	marsh pea	Fabaceae	perennial herb	2B.2	G5	S2	None	None	Mar-Aug	Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest	None- no habitat
<i>Layia carnosa</i>	beach layia	Asteraceae	annual herb	1B.1	G2	S2	CE	FT	Mar-Jul	Coastal dunes, Coastal scrub (sandy)	None- no habitat
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i>	Kellogg's lewisia	Montiaceae	perennial herb	3.2	G3G4 T2T3Q	S2S3	None	None	(Apr)May-Aug	Upper montane coniferous forest	None- no habitat

<i>Lilium kelloggii</i>	Kellogg's lily	Liliaceae	perennial bulbiferous herb	4.3	G3	S3	None	None	(Feb)May-Aug	Lower montane coniferous forest, North Coast coniferous forest	None- no habitat
<i>Lilium occidentale</i>	western lily	Liliaceae	perennial bulbiferous herb	1B.1	G1G2	S1	CE	FE	Jun-Jul	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest (openings)	Potential
<i>Lilium rubescens</i>	redwood lily	Liliaceae	perennial bulbiferous herb	4.2	G3	S3	None	None	(Mar) Apr-Aug (Sep)	Broadleafed upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	None- no habitat
<i>Listera cordata</i>	heart-leaved twayblade	Orchidaceae	perennial herb	4.2	G5	S4	None	None	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	None- no habitat
<i>Lycopodium clavatum</i>	running-pine	Lycopodiaceae	perennial rhizomatous herb	4.1	G5	S3	None	None	Jun-Aug (Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	None- no habitat
<i>Mitellastrum caulescens</i>	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	4.2	G5	S4	None	None	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	None- no habitat
<i>Monotropa uniflora</i>	ghost-pipe	Ericaceae	perennial herb (achlorophyllous)	2B.2	G5	S2	None	None	Jun-Aug (Sep)	Broadleafed upland forest, North Coast coniferous forest	None- no habitat
<i>Montia howellii</i>	Howell's montia	Montiaceae	annual herb	2B.2	G3G4	S2	None	None	(Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	None- no habitat
<i>Oenothera wolfii</i>	Wolf's evening-primrose	Onagraceae	perennial herb	1B.1	G2	S1	None	None	May-Oct	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	Potential
<i>Packera bolanderi</i> var. <i>bolanderi</i>	seacoast ragwort	Asteraceae	perennial rhizomatous herb	2B.2	G4T4	S2S3	None	None	(Jan-Apr) May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	None- no habitat
<i>Pityopus californicus</i>	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	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	None- no habitat
<i>Pleuropogon refractus</i>	nodding semaphore grass	Poaceae	perennial rhizomatous herb	4.2	G4	S4	None	None	(Feb-Mar) Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	None- no habitat
<i>Polemonium carneum</i>	Oregon polemonium	Polemoniaceae	perennial herb	2B.2	G3G4	S2	None	None	Apr-Sep	Coastal prairie, Coastal scrub, Lower montane coniferous forest	Potential
<i>Puccinellia pumila</i>	dwarf alkali grass	Poaceae	perennial herb	2B.2	G5	SH	None	None	Jul	Marshes and swamps (coastal salt)	None- no habitat

<i>Ribes laxiflorum</i>	trailing black currant	Grossulariaceae	perennial deciduous shrub	4.3	G5?	S3	None	None	Mar-Jul(Aug)	North Coast coniferous forest	Potential
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	Malvaceae	perennial herb	4.2	G3	S3	None	None	(Mar) Apr-Aug	Broadleaved upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	Potential
<i>Sidalcea malviflora</i> ssp. <i>patula</i>	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	1B.2	G4G5 T2	S2	None	None	(Mar-Apr) May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	Potential
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	Malvaceae	perennial herb	1B.2	G5T1	S1	None	None	Jun-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	None- no habitat
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	Caryophyllaceae	perennial herb	2B.2	G5T4T5	S2S3	None	None	(Mar-May) Jun-Aug (Sep)	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Potential
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand-spurrey	Caryophyllaceae	annual herb	2B.1	G5T4	S1	None	None	Jun-Aug	Marshes and swamps (coastal salt)	None- no habitat
<i>Sulcaria spiralifera</i>	twisted horsehair lichen	Parmeliaceae	fruticose lichen (epiphytic)	1B.2	G3G4	S2	None	None		Coastal dunes (SLO Co.), North Coast coniferous forest (immediate coast)	None- no habitat
<i>Usnea longissima</i>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)	4.2	G5	S4	None	None		Broadleaved upland forest, North Coast coniferous forest	None- no habitat
<i>Viola palustris</i>	alpine marsh violet	Violaceae	perennial rhizomatous herb	2B.2	G5	S1S2	None	None	Mar-Aug	Bogs and fens (coastal), Coastal scrub (mesic)	None- no habitat

Attachment B: Rare Plant Rank Definitions

CONSERVATION STATUS DEFINITIONS

Fed List*

This field indicates the plant's legal status under the Federal Endangered Species Act (ESA).

- FE** **Federally Endangered:** The classification provided to a plant in danger of extinction within the foreseeable future throughout all or a significant portion of its range.
- FT** **Federally Threatened:** The classification provided to a plant which is likely to become an Endangered species within the foreseeable future throughout all or a significant portion of its range.
- PE** **Proposed Endangered:** The classification provided to a plant that is proposed for federal listing as Endangered in the Federal Register under Section 4 of the Endangered Species Act.
- PT** **Proposed Threatened:** The classification provided to a plant that is proposed for federal listing as Threatened in the Federal Register under Section 4 of the Endangered Species Act.
- FC** **Federal Candidate:** The classification provided to a plant that has been studied by the United States Fish and Wildlife Service, and the Service has concluded that it should be proposed for addition to the list of Federally Endangered and Threatened species.
- None** The plant has no federal listing status under ESA.
- FD** **Federally Delisted:** The plant was previously listed as Endangered or Threatened but is no longer on the list of Federally Endangered and Threatened species.

State List*

This field indicates the plant's legal status under the California Endangered Species Act (CESA).

- CE** **State Listed as Endangered:** The classification provided to a native species or subspecies in serious danger of becoming extinct throughout all or a significant portion of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease.
- CT** **State Listed as Threatened:** The classification provided to a native species or subspecies that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of special protection and management efforts.
- CR** **State Listed as Rare:** The classification provided to a native plant species, subspecies, or variety when, although not presently threatened with extinction, it occurs in such small numbers throughout its range that it may become endangered if its present environment worsens. This designation stems from the Native Plant Protection Act of 1977.
- CC** **Candidate for State Listing:** The classification provided to a native species or subspecies that the Fish and Game Commission has formally noticed as being under review by the Department of Fish and Wildlife for addition to the list of endangered or threatened species, or a species for which the commission has published a notice of proposed regulation to add the species to the list of endangered or threatened species.
- None** The plant has no state listing status under CESA.
- CD** **State Delisted:** The plant was previously listed as Endangered, Threatened or Rare but is no longer listed by the State of California.

Global Rank*

The Global Rank (G-rank) is an indication of the overall condition and imperilment of an element throughout its global range. It is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, with weighting being heavier on the rarity factors. The Global Ranks are assigned by NatureServe in coordination with the state program(s) where the element occurs.

- GX** **Presumed Extinct** — Not located despite intensive searches and virtually no likelihood of rediscovery.
- GH** **Possibly Extinct** — Known from only historical occurrences but still some hope of rediscovery. There is evidence that the species may be extinct or the ecosystem may be eliminated throughout its range, but not enough to state this with certainty. Examples of such evidence include 1) that a species has not been documented in approximately 20–40 years despite some searching or some evidence of significant habitat loss or degradation; 2) that a species or ecosystem has been searched for unsuccessfully, but not thoroughly enough to presume that it is extinct or eliminated throughout its range.
- G1** **Critically Imperiled** — At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors.
- G2** **Imperiled** — At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.

- G3** **Vulnerable** — At moderate risk of extinction or elimination due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
- G4** **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- G5** **Secure** — Common; widespread and abundant.
- GNR** **Unranked** — Global rank not yet assessed.
- GU** **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
- G#G#** **Range Rank** — A numeric range rank (e.g., G2G3) is used to indicate the range of uncertainty about the exact status of a taxon or community.
- G#T#** **Infraspecific Taxon** — The status of infraspecific taxa (subspecies or varieties) are indicated by a "T-rank" following the species' Global Rank. Rules for assigning T-ranks follow the same principles as those for Global Ranks. However, a T-rank cannot imply the subspecies or variety is more abundant than the species. In such cases, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety.
- ?** **Qualifier: Inexact Numeric Rank** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.
- Q** **Qualifier: Questionable Taxonomy** — The distinctiveness of this entity as a taxon or community at the current level is questionable; resolution of this uncertainty may result in change from a species to a subspecies or hybrid, or inclusion of this taxon or type in another taxon or type, with the resulting taxon having a lower-priority (numerically higher) conservation status rank.
- C** **Qualifier: Captive or Cultivated Only** — The taxon or community at present is presumed or possibly extinct or eliminated in the wild across its entire native range but is extant in cultivation, in captivity, as a naturalized population (or populations) outside its native range, or as a reintroduced population or ecosystem restoration, not yet established.

State Rank*

The State Rank (S-rank) is an indication of the condition and imperilment of an element throughout its range within the state. As with the G-rank, it is a letter+number score that reflects a combination of Rarity, Threat and Trend factors, weighted more heavily on rarity. The State Ranks are assigned by the CNDDDB biologists using standard natural heritage methodology.

- SX** **Presumed Extirpated** — Species is believed to be extirpated from the state. Not located despite intensive searches of historical sites and other appropriate habitat, and virtually no likelihood that it will be rediscovered.
- SH** **Possibly Extirpated (Historical)** — Species occurred historically in the state, and there is some possibility that it may be rediscovered. All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists.
- S1** **Critically Imperiled** — Critically imperiled in the state because of extreme rarity (often 5 or fewer occurrences) or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the state.
- S2** **Imperiled** — Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the nation or state.
- S3** **Vulnerable** — Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.
- S4** **Apparently Secure** — Uncommon but not rare; some cause for long-term concern due to declines or other factors.
- S5** **Secure** — Common, widespread, and abundant in the state.
- SNR** **Unranked** — State conservation status not yet assessed.
- SU** **Unrankable** — Currently unrankable due to a lack of information or due to substantially conflicting information about status or trends.
- S#S#** **Range Rank** — A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.
- ?** **Qualifier: Inexact or Uncertain** — A question mark represents a rank qualifier, denoting an inexact or uncertain numeric rank.

Note: References to older ranks may contain a decimal "threat" rank of .1, .2, or .3, where .1 indicates very threatened status, .2 indicates moderate threat, and .3 indicates few or no current known threats.

CA Rare Plant Rank (CRPR)

California Rare Plant Ranks (CRPRs) are a ranking system developed by the California Native Plant Society (CNPS) to define and categorize rarity in the California flora. All plants that are assigned to a California Rare Plant Rank category are tracked by the CNDDDB; however, element occurrence (EO) information is only maintained for CRPR 1 and 2 plants, and some CRPR 3 plants. Most CRPR 3 and 4 plants that have EO information in this Inventory and the CNDDDB were previously assigned to CRPR 1 or 2; their EO data reflect their prior rank and have generally not been updated since the date of their change to CRPR 3 or 4.

Major changes to California Rare Plant Ranks (e.g., additions, changes, and deletions) undergo the CNPS Rare Plant Status Review process. This is a joint effort by CNPS, the CNDDDB, Regional Plant Status Review Groups, the Status Review Forum, and botanical experts throughout the world. Once consensus is reached, then additions, changes, or deletions in California Rare Plant Ranks are made to this Inventory and

the CNDDDB. For a flow chart of the status review process, see Rare Plant Data in California: The Cooperative Relationship between the California Natural Diversity Database and the California Native Plant Society.

- 1A Presumed Extirpated or Extinct** — Plants presumed extirpated in California and either rare or extinct elsewhere. These plants have not been seen or collected in the wild in California for many years. A plant is extinct if it no longer occurs anywhere. A plant that is extirpated from California has been eliminated from California, but may still occur elsewhere in its range.

All of the plants constituting California Rare Plant Rank 1A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Should these taxa be rediscovered, any impacts to individual plants or their habitat must be analyzed during preparation of environmental documents relating to the California Environmental Quality Act (CEQA), or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

- 1B Rare or Endangered** — **Plants rare, threatened, or endangered in California and elsewhere.** These plants are rare throughout their entire range with the majority also being endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of taxa in the CNPS Inventory, with more than 1,000 plants assigned to this category of rarity.

All of the plants constituting California Rare Plant Rank 1B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

- 2A Extirpated in California** — **Plants presumed extirpated in California but common elsewhere.** These plants are presumed extirpated because they have not been observed or documented in California for many years. This list only includes plants that are presumed extirpated in California, but are common elsewhere in their range outside of the state.

All of the plants constituting California Rare Plant Rank 2A meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Should these species be rediscovered, any impacts proposed to individuals or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

- 2B Rare or Endangered in California** — **Plants rare, threatened, or endangered in California but common elsewhere.** Except for being common beyond the boundaries of California, 2B plants would have been ranked 1B. From the federal perspective, plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act. With California Rare Plant Rank 2B, we recognize the importance of protecting the geographic range of widespread species. In this way we protect the diversity of our own state's flora and help maintain evolutionary processes and genetic diversity within species.

All of the plants constituting California Rare Plant Rank 2B meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Impacts to these species or their habitat must be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

- 3 Needs Review** — **Plants about which more information is needed.** These plants are united by one common theme— we lack the necessary information to assign them to one of the other ranks or to reject them. Nearly all of the plants constituting California Rare Plant Rank 3 are taxonomically problematic, yet if taxonomically valid would demonstrably qualify for rank 1B or 2B. For each California Rare Plant Rank 3 plant we have provided the known information and indicated in the "Notes" section of the Inventory record where assistance is needed. Data regarding distribution, endangerment, ecology, and taxonomic validity are welcomed and can be submitted by emailing the Rare Plant Program at rareplants@cnps.org.

Many of the plants constituting California Rare Plant Rank 3 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and are eligible for state listing. Impacts to these species or their habitat should be analyzed during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, as they may meet the definition of Rare or Endangered under CEQA Guidelines §15125 (c) and/or §15380.

- 4 Uncommon in California — Plants of limited distribution, a watch list.** These plants are of limited distribution or infrequent throughout a broader area in California, and their status should be monitored regularly. Should the degree of endangerment or rarity of a California Rare Plant Rank 4 plant change, we will transfer it to a more appropriate rank.

Some of the plants constituting California Rare Plant Rank 4 meet the definitions of the California Endangered Species Act of the California Department of Fish and Game Code, and few, if any, are eligible for state listing. Nevertheless, many of them are significant locally, and we strongly recommend that California Rare Plant Rank 4 plants be evaluated for significant impacts during preparation of environmental documents relating to CEQA, or those considered to be functionally equivalent to CEQA, based on CEQA Guidelines §15125 (c) and/or §15380. This may be particularly appropriate for:

The type locality of a California Rare Plant Rank 4 taxon;
Occurrences at the periphery of a species' range;
Areas where the taxon is especially uncommon;
Areas where the taxon has sustained heavy losses (declining);
Occurrences exhibiting unusual morphology or occurring on unusual substrates;
Species maintained on BLM, USFWS, or USFS sensitive species lists; and
Taxa associated with a habitat that is declining in California at a significant rate.

To assist in evaluating CRPR 4 taxa for CEQA consideration, see the technical memorandum on Considerations for Including CRPR 4 Plant Taxa in CEQA Biological Resource Impact Analysis prepared by the Rare Plant Program Committee.

Threat Rank

California Rare Plant Ranks at each level also include a threat rank (e.g., CRPR 4.3) and are assigned as follows:

- 0.1 Seriously threatened in California** — Over 80% of occurrences threatened / high degree and immediacy of threat.
0.2 Moderately threatened in California — 20-80% of occurrences threatened / moderate degree and immediacy of threat.
0.3 Not very threatened in California — Less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known.

Notes:

Threat ranks do not are provided for general research purposes only and do not indicate differences in conservation assessment. For example, a CRPR 1B.3 plant has the same conservation status as a CRPR 1B.1 plant, and it is mandatory that both be fully considered during preparation of environmental documents relating to CEQA.

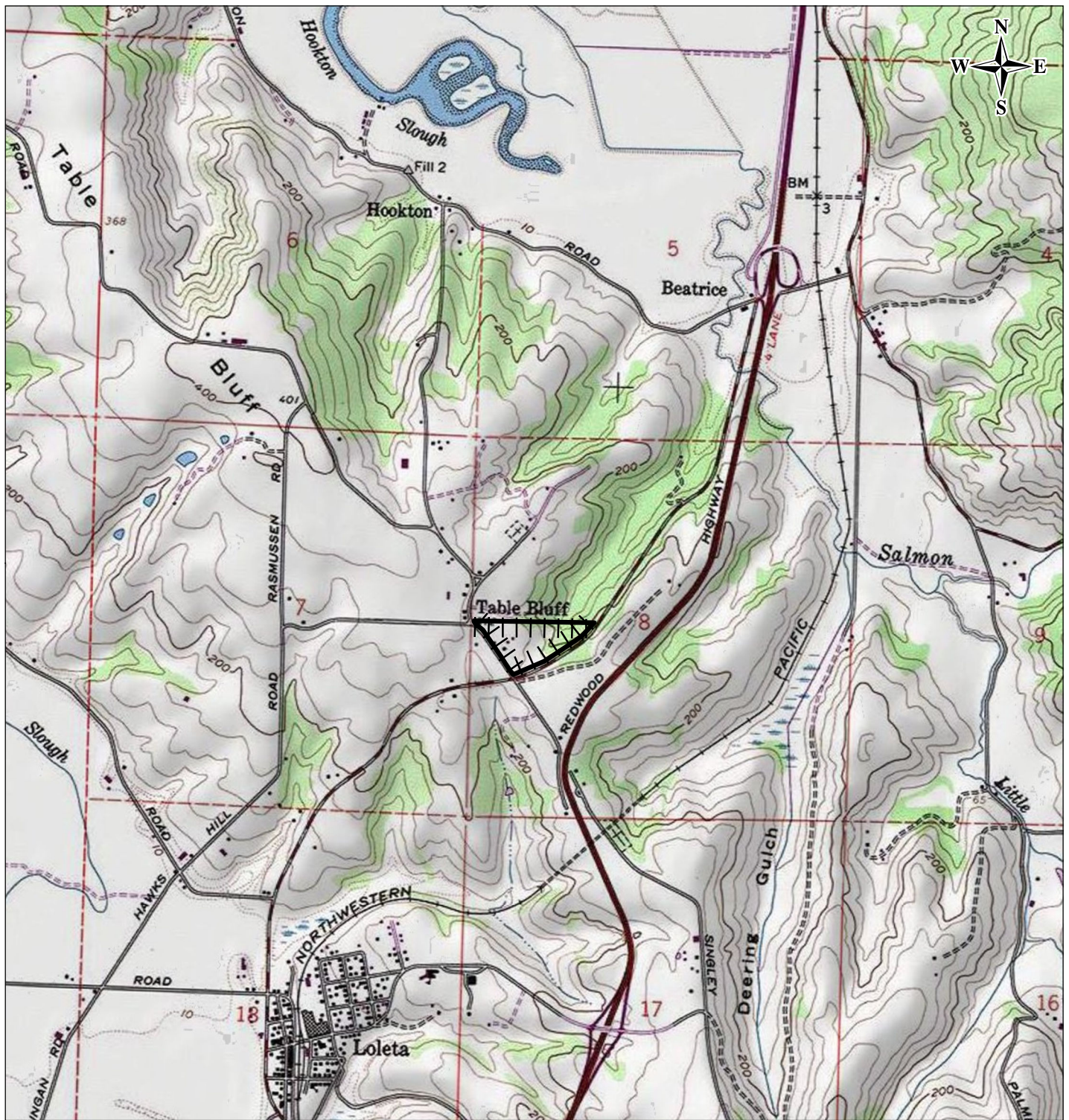
The threat ranking criteria described above represent only the starting point for the assessment of threat level. Other factors, such as habitat vulnerability and specificity, distribution, and condition of occurrences, are also considered in assigning threat ranks.

In many cases, the threat rank has not been reassessed since the date the taxon was first added to this Inventory or underwent its last Status Review. For these taxa, the assigned threat ranking may not accurately reflect the current level of threat.

Considered but Rejected

A category of Considered but Rejected (CBR) exists for plants that either previously had a CRPR, or that were considered for addition to this Inventory but were rejected for one or more reasons. Any plant that is deleted from a CRPR category in this Inventory is not fully removed and is instead changed to the CBR category. Rejected plants are searchable by selecting the "Considered But Rejected" button in the California Rare Plant Rank section of simple and advanced search. A brief description of the reason why the plant was rejected is included for each CBR entry.

Attachment C: Maps



MeeMeeMine LLC
General Location Map

APN 308-271-001-000

Section 8; T3N; R1W; HB&M
Humboldt County
Blake Mountain 7.5' USGS Quadrangle



Parcel Boundary

0 900 1,800 3,600
Feet

Contour Interval: 40'
1 inch = 2,000 feet

Hohman And Associates Forestry Consultants
Date: 8/8/2025



MeeMeeMine LLC
General Location Map

APN 308-271-001-000

Section 8; T3N; R1W; HB&M
Humboldt County
Blake Mountain 7.5' USGS Quadrangle



Parcel Boundary

0 900 1,800 3,600
Feet

Contour Interval: 40'
1 inch = 2,000 feet

Hohman And Associates Forestry Consultants
Date: 8/8/2025



MeeMeeMine LLC
Botanical Survey Map

APN 308-271-001-000

Section 8; T3N; R1W; HB&M
Humboldt County
Fields Landing 7.5' USGS Quadrangle

EW_SurveyTrack_04-23-2025

MP_SurveyTrack_07-04-2025

Parcel Subdivision Line



Study Area



APN 308-271-001

0 100 200 400
Feet

1 inch = 200 feet

Contour Interval: 40'

Hohman And Associates Forestry Consultants

Date: 8/8/2025



MeeMeeMine LLC
Willow Occurrence Map

APN 308-271-001-000

Section 8; T3N; R1W; HB&M
Humboldt County
Fields Landing 7.5' USGS Quadrangle



Willow



100 foot buffer

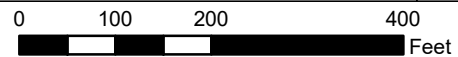


Study Area



Parcel Subdivision Line

APN 308-271-001

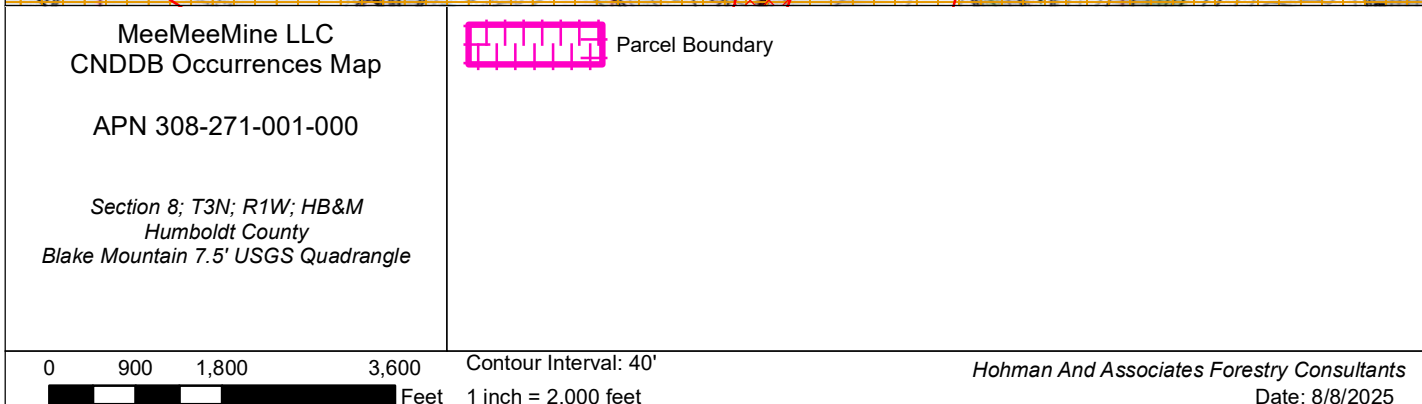


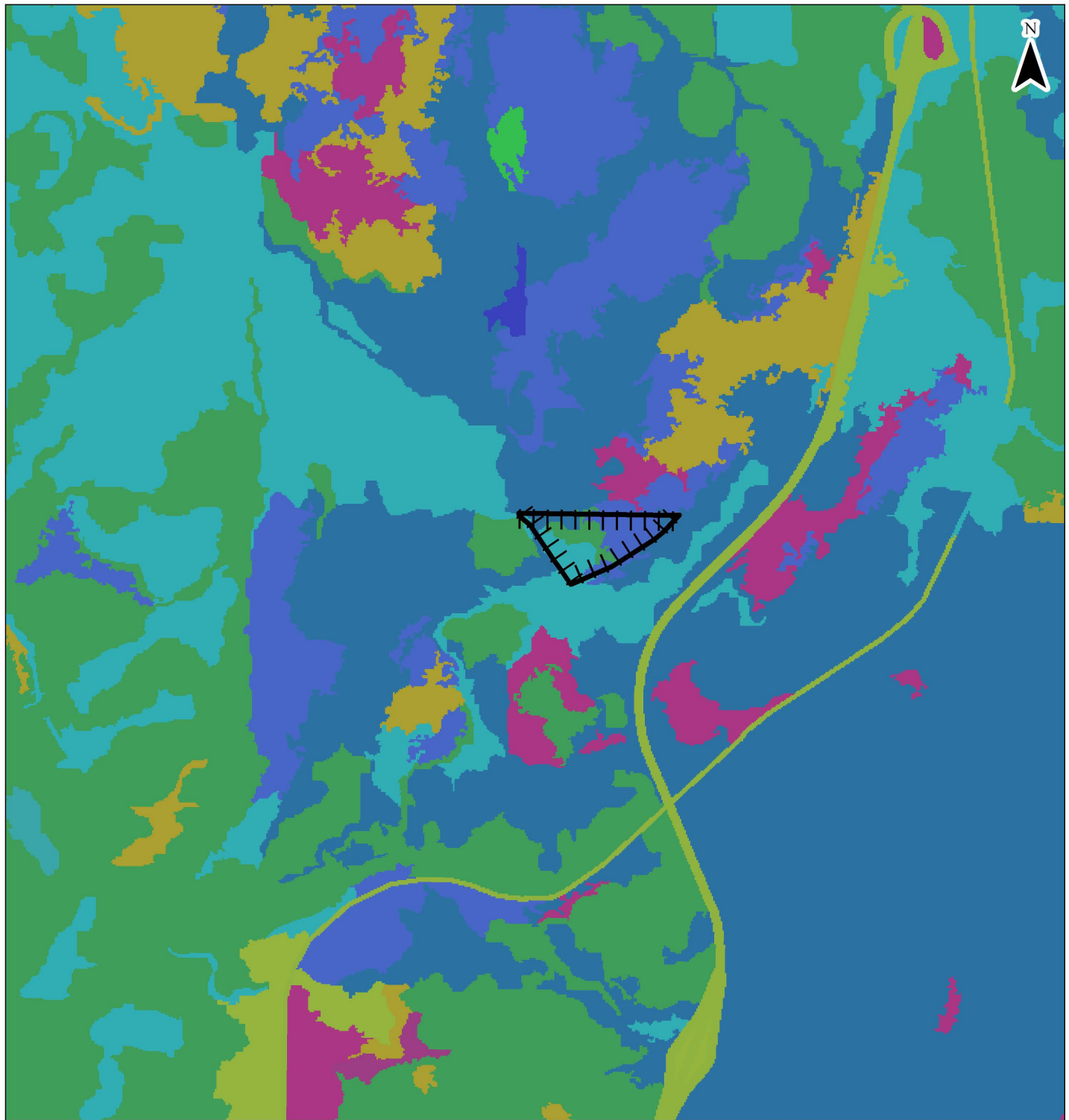
1 inch = 200 feet

Contour Interval: 40'

Hohman And Associates Forestry Consultants

Date: 8/8/2025





MeeMeeMine LLC
CalVeg Cover Type

APN - 308-271-001-000

Section 8; T3N; R1W; HB&M
Humboldt County
Fields Landing 7.5' USGS Quadrangle



Parcel Boundary



Agriculture (General)



Annual Grasses and Forbs



Coyote Brush



Eucalyptus



Monterey Cypress



Pastures and Crop
Agriculture



Perennial Grasses and
Forbs



Red Alder



Sitka Spruce



Urban-related Bare Soil



Urban/Developed (General)



Willow (Shrub)

0 650 1,300 2,600
Feet

Contour Interval: 40'
1 inch = 1,500 feet

Hohman And Associates Forestry Consultants
Date: 7/8/2024

Attachment D: Photos



Reference site Western Lily (*Lilium occidentale*) overview with habitat. (photo date 07/04/2025)



Reference site Western Lily (*Lilium occidentale*) close-up. (photo date 07/04/2025)



Gate is study area access on Table Bluff Road. Distant view intersection is Eel River Drive. *(photo date 07/04/2025)*



Northwest study area viewing southerly. (*photo date 07/04/2025*)



Southwest study area viewing northerly. (*photo date 07/04/2025*)

Attachment E: Plant Species Observed

Scientific Name	Common Name	Status	Form	Family
<i>Alopecurus pratensis</i>	Meadow foxtail	naturalized	Perennial herb	Poaceae
<i>Anthoxanthum odoratum</i>	Sweet vernal grass	invasive non-native	Annual, Perennial grass	Poaceae
<i>Arctotheca calendula</i>	Cape weed	invasive non-native	Annual, Perennial herb	Asteraceae
<i>Arctotheca sp.</i>	Cape weed	invasive non-native	Perennial herb	Asteraceae
<i>Athyrium filix-femina</i>	Common Ladyfern	native	fern	Athyriaceae
<i>Barbarea orthoceras</i>	Winter cress	native	Perennial herb	Brassicaceae
<i>Bellis perennis</i>	English lawn daisy	non-native	Perennial herb	Asteraceae
<i>Bromus diandrus</i>	Ripgut brome	invasive non-native	Annual grass	Poaceae
<i>Cardamine hirsuta</i>	Hairy bitter cress	non-native	Annual herb	Brassicaceae
<i>Carex leptopoda</i>	Slender footed sedge	native	Perennial Herb	Cyperaceae
<i>Cirsium spp</i>	thistle species	non-native	perennial herb	Asteraceae
<i>Cytisus scoparius</i>	Scotch broom	invasive non-native	Shrub	Fabaceae
<i>Digitalis purpurea</i>	Foxglove	invasive non-native	Perennial herb	Plantaginaceae
<i>Euphorbia lathyris</i>	Gopher plant	invasive non-native	Annual, Perennial herb	Euphorbiaceae
<i>Euphorbia peplus</i>	Petty spurge	non-native	Annual herb	Euphorbiaceae
<i>Fragaria chiloensis</i>	Beach strawberry	native	Perennial herb	Rosaceae
<i>Galium aparine</i>	Cleavers	native	Annual herb	Rubiaceae
<i>Geranium dissectum</i>	Wild geranium	invasive non-native	Annual herb	Geraniaceae
<i>Geranium yeoi</i>		naturalized	Biennial herb	Geraniaceae
<i>Hedera helix</i>	English Ivy	invasive non-native	Vine, Shrub	Araliaceae
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	native	Tree	Cupressaceae
<i>Holcus lanatus</i>	Common velvetgrass	invasive non-native	Perennial grass	Poaceae
<i>Hypochaeris radicata</i>	Hairy cats ear	invasive non-native	Perennial herb	Asteraceae
<i>Iris purdyi</i>	Purdy's iris	native	Perennial herb	Iridaceae
<i>Kniphofia uvaria</i>	Redhot poker	invasive non-native	Perennial herb	Asphodelaceae
<i>Lapsana communis</i>	Common nipplewort	non-native	Annual herb	Asteraceae
<i>Leucanthemum vulgare</i>	Oxe eye daisy	invasive non-native	Perennial herb	Asteraceae
<i>Linum bienne</i>	Flax	non-native	Annual herb	Linaceae
<i>Marah oregana</i>	Coast man-root	native	Perennial herb, Vine	Cucurbitaceae
<i>Plantago lanceolata</i>	Ribwort	invasive non-native	Perennial herb	Plantaginaceae
<i>Poa annua</i>	Annual blue grass	non-native	Annual grass	Poaceae
<i>Poa bulbosa</i>	Bulbous blue grass	non-native	Perennial grass	Poaceae
<i>Polystichum munitum</i>	Western sword fern	native	Fern	Dryopteridaceae
<i>Pteridium aquilinum</i>	Western brackenfern	native	Fern	Dennstaedtiaceae
<i>Ranunculus occidentalis</i>	Western buttercup	native	Perennial herb	Ranunculaceae
<i>Ranunculus repens</i>	Crowfoot buttercup	invasive non-native	Perennial herb	Ranunculaceae

<i>Raphanus raphanistrum</i>	Jointed charlock	non-native	Annual, Perennial herb	Brassicaceae
<i>Rosa spp</i>	Rose species	non-native	woody perennial	Rosaceae
<i>Rubus ursinus</i>	California blackberry	native	Vine, Shrub	Rosaceae
<i>Rumex acetosella</i>	Sheep sorrel	invasive non-native	Perennial herb	Polygonaceae
<i>Silybum marianum</i>	Milk thistle	invasive non-native	Annual, Perennial herb	Asteraceae
<i>Stellaria media</i>	Chickweed	non-native	Annual herb	Caryophyllaceae
<i>Trifolium subterraneum</i>	Subterranean clover	non-native	Annual herb	Fabaceae
<i>Vicia hirsuta</i>	Hairy vetch	non-native	Annual herb, Vine	Fabaceae

Attachment E: Soils Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Humboldt County, Central Part, California**

APN 308-271-001



August 8, 2025

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Preface	2
How Soil Surveys Are Made	5
Soil Map	8
Soil Map.....	9
Legend.....	10
Map Unit Legend.....	11
Map Unit Descriptions.....	11
Humboldt County, Central Part, California.....	13
230—Hookton-Tablebluff complex, 2 to 9 percent slopes.....	13
233—Cannonball-Candymountain-Lepoil complex, 30 to 50 percent slopes.....	15
References	19

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

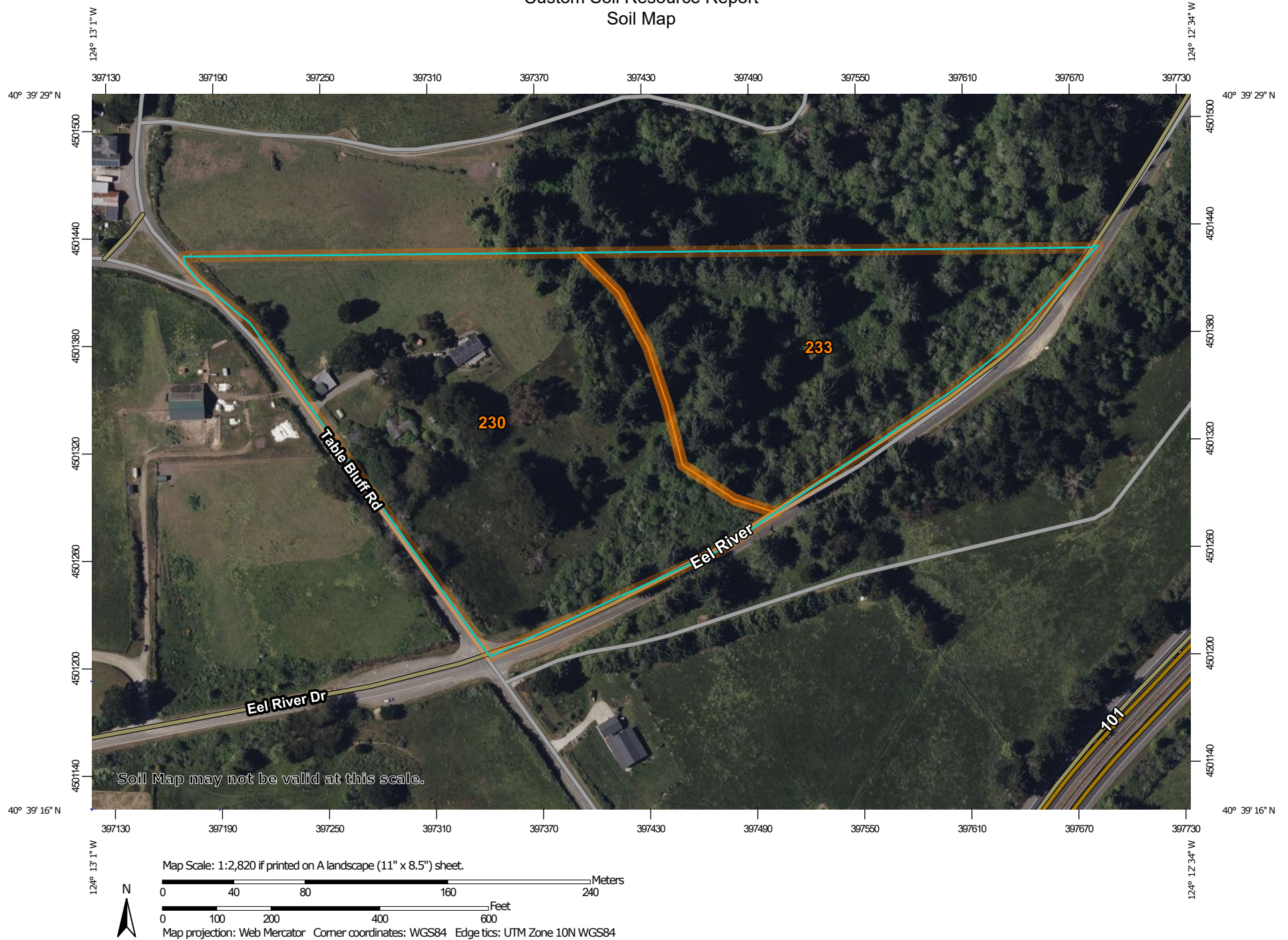
Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

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, Central Part, California

Survey Area Data: Version 11, Aug 28, 2024

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

Date(s) aerial images were photographed: Jun 1, 2022—Jun 19, 2022

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
230	Hookton-Tablebluff complex, 2 to 9 percent slopes	9.7	61.8%
233	Cannonball-Candymountain-Lepoil complex, 30 to 50 percent slopes	6.0	38.2%
Totals for Area of Interest		15.7	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Humboldt County, Central Part, California

230—Hookton-Tablebluff complex, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: 2ljdr

Elevation: 30 to 820 feet

Mean annual precipitation: 41 to 53 inches

Mean annual air temperature: 52 to 55 degrees F

Frost-free period: 270 to 330 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Hookton and similar soils: 45 percent

Tablebluff and similar soils: 40 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hookton

Setting

Landform: Erosion remnants

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A1 - 0 to 4 inches: loam

A2 - 4 to 15 inches: loam

Bt - 15 to 27 inches: clay loam

Bw1 - 27 to 39 inches: clay loam

Bw2 - 39 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)

Depth to water table: About 10 to 20 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.9 inches)

Interpretive groups

Land capability classification (irrigated): 2e

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D

Ecological site: R004BA203CA - Riparian

Hydric soil rating: No

Description of Tablebluff

Setting

Landform: Erosion remnants
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian deposits over mixed alluvium

Typical profile

Ap1 - 0 to 6 inches: silty clay loam
Ap2 - 6 to 11 inches: silty clay loam
AB - 11 to 16 inches: silt loam
Bt1 - 16 to 20 inches: silty clay loam
Bt2 - 20 to 29 inches: silty clay loam
Bt3 - 29 to 42 inches: silty clay loam
Bt4 - 42 to 49 inches: silty clay loam
Bt5 - 49 to 73 inches: clay loam

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.2 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F004B1101CA - Low elevation marine and floodplain terraces
Hydric soil rating: No

Minor Components

Urban land, residential

Percent of map unit: 5 percent
Landform: Marine terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Cannonball

Percent of map unit: 5 percent
Landform: Marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California huckleberry/western swordfern, marine terraces, marine deposits, sandy loam and loam

Hydric soil rating: No

Megwil,

Percent of map unit: 5 percent

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F004BX120CA - Redwood-Sitka spruce/California huckleberry-salmonberry/western swordfern-deer fern, marine terraces, loam

Hydric soil rating: No

233—Cannonball-Candymountain-Lepoil complex, 30 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2ljdp

Elevation: 10 to 820 feet

Mean annual precipitation: 42 to 50 inches

Mean annual air temperature: 52 to 54 degrees F

Frost-free period: 275 to 325 days

Farmland classification: Not prime farmland

Map Unit Composition

Cannonball and similar soils: 40 percent

Candymountain and similar soils: 30 percent

Lepoil and similar soils: 15 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cannonball

Setting

Landform: Erosion remnants

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed marine deposits

Typical profile

A1 - 0 to 9 inches: silt loam

A2 - 9 to 28 inches: silt loam

ABt - 28 to 35 inches: silt loam

Custom Soil Resource Report

Bt1 - 35 to 47 inches: sandy clay loam
Bt2 - 47 to 59 inches: gravelly sandy clay loam
Btg - 59 to 75 inches: gravelly silty clay loam

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F004B1101CA - Low elevation marine and floodplain terraces
Hydric soil rating: No

Description of Candymountain

Setting

Landform: Hills on marine terraces
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope
Down-slope shape: Linear
Across-slope shape: Convex, linear
Parent material: Mixed marine deposits derived from sedimentary rock

Typical profile

Oi - 0 to 6 inches: slightly decomposed plant material
A1 - 6 to 9 inches: sandy loam
A2 - 9 to 17 inches: sandy loam
A3 - 17 to 28 inches: sandy loam
Bw - 28 to 37 inches: fine sandy loam
C1 - 37 to 47 inches: loamy fine sand
C2 - 47 to 63 inches: sand
C3 - 63 to 71 inches: sand

Properties and qualities

Slope: 30 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 9.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: F004B1101CA - Low elevation marine and floodplain terraces

Hydric soil rating: No

Description of Lepoil

Setting

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed alluvium

Typical profile

A - 0 to 7 inches: loam

AB - 7 to 19 inches: loam

Bt1 - 19 to 31 inches: loam

Bt2 - 31 to 45 inches: loam

Bt3 - 45 to 55 inches: loam

Bt4 - 55 to 63 inches: clay loam

Properties and qualities

Slope: 30 to 50 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 2.00 in/hr)

Depth to water table: About 39 to 59 inches

Frequency of flooding: None

Frequency of ponding: None

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: B

Ecological site: F004B1101CA - Low elevation marine and floodplain terraces

Hydric soil rating: No

Minor Components

Timmons

Percent of map unit: 7 percent

Landform: Marine terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Ecological site: F004BX121CA - Redwood-Sitka spruce/salal-California

huckleberry/western swordfern, marine terraces, marine deposits, sandy loam
and loam

Hydric soil rating: No

Custom Soil Resource Report

Tepona

Percent of map unit: 5 percent

Landform: Terraces

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Urban land, residential

Percent of map unit: 3 percent

Landform: Marine terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Linear

Hydric soil rating: No

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf