Botanical Survey Report
Wetland and Waters Evaluation and Delineation

Stross 2021
APN#
511-141-015
Humboldt County, CA.

Prepared by
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Eureka, CA.
September 2021

For
MAD RIVER PROPERTIES, INC.
MCKINLEYVILLE, CA.

Contents

Introduction

This report is intended to serve as documentation of survey and assessment of the habitat features found within the subject property and the potential of those habitats to be suitable or critical to the life history of vascular and non-vascular plant species considered sensitive, rare, threatened, or endangered (including candidate species) in the United States and/or The State of California. Seasonally appropriate botanical survey was completed to determine if rare, threatened, endangered, or sensitive plant species or listed sensitive vegetation communities are present in the surveyed area. This report is the result of in field survey, reviews of relevant scientific literature, and professional knowledge. This survey report is intended to satisfy any project needs for botanical survey and mitigation for rare or endangered plant species and sensitive vegetation communities under the California Environmental Quality Act (CEQA), California Endangered Species Act (CESA), Federal Endangered Species Act (FESA), and the Native Plant Protection Act (NPPA).

Additionally, the study area was assessed and surveyed for the presence of jurisdictional waters of both the State of California and of the United States of America as required by the federal Clean Water Act (CWA) and California's Porter-Cologne Water Quality Control Act, methodologies used are described in full below.

Summary of Findings

Botanical Survey Results

No sensitive, rare, threatened, or endangered plants were detected during floristically appropriate surveys in 2021.

No un-common species included in CRPR 3 or 4 were detected during surveys.

Sensitive natural vegetation communities were detected during surveys for this project (see Vegetation Location Map, Attachment D).

- **Picea sitchensis (Sitka spruce Forest and Woodland) Forest and Woodland Alliance G5, S2**

  This sensitive vegetation type occurs on the western and southern edges of the subject parcel in a contiguous forest stand mixed with Douglas' fir, redwood, red cedar, and grand fir. A small stand of spruce forest exists within the study area between the open field and Hooven Road on the east side of the parcel.

  At this time proposed development does not include the removal of any Sitka spruce Forest or Woodland. No impacts are expected to occur, and no additional management recommendations are presented here.

Wetland and Waters Investigation Results

One previously unmapped intermittent watercourse was found on the subject parcel during surveys in 2021. The small feature begins just below the open field and quickly passes off the parcel to the south. All waters are included on the Wetlands and Waters Location Map, Attachment D. No wetlands or significant wetland or riparian vegetation was detected on the subject parcel.

Any wetlands or watercourses located within the surveyed area may be considered jurisdictional by either CDFW, ACOE, or both. All identified features are included on the included Wetland and Waters Location Map in Attachment D. 2021 is a year with below average rainfall and often secondary indicators of jurisdictional wetland presence were used.

Recommend avoiding impacts to waters by adhering to all Federal, State, County, and local ordinances for permitted developments. In general development projects should remain outside of setbacks for waters, setback measurements should be done according to current guidelines enforced by the lead agency in any permitting situation.

Setting

The Stross 2021 project area surveyed in 2021 is located within APN #s

511-141-015

The approximately 16-acre study area is located within Humboldt County, on the Arcata North USGS 7.5' quadrangle north of the community of McKinleyville, CA.

The biogeographic region can be described using a three-tiered hierarchy of province, region, and sub-region. This site lies within the California Floristic Province, Northwestern California region, North Coast sub-region.

The study area is located on a relatively gentle, south facing slope on a low ridge between Duke and Norton Creeks. This area is on the first range of coastal hills east of the Pacific Ocean. Elevation on site ranges from 250 to approximately 450 feet above mean sea level.

Project area base maps courtesy of Google Earth, Humboldt County Web GIS, USFWS Wetland Mapper, and USDA Web Soil Survey are included as attachments at the end of this report.

Botanical survey and wetlands and waters evaluation are intended to map and delineate resources within and adjacent to areas of potential future development located within the project area.

Habitat Description

Habitat within the study area is composed of a large area of open maintained (mown) grassland dominated by several non-native grasses including sweet vernal grass (*Anthoxanthum odoratum*), velvet grass (*Holcus lanatus*), and bent grass (*Agrostis* sp.). Some native California brome grass (*Bromus sitchensis* var. *carinatus*) was present but not in enough quantity to qualify as a native grass community. This open grassland is surrounded by developed residence and landscaping to the north and by mature coniferous forest on the west, south, and partially on the east. The forest is dominated by Sitka spruce (*Picea sitchensis*) with redwood (*Sequoia sempervirens*), Douglas' fir (*Pseudotsuga menziesii*), western red cedar (*Thuja plicata*), grand fir (*Abies grandis*) and others. A small warehouse and office building is located in the southwest corner of the subject parcel and well maintained paved and gravel driveways and access roads lead from the county road (Hooven Road) into the parcel.

Some vegetation communities within the study area may be classified using the reference "A Manual of California Vegetation" (Sawyer 2009).

- **Picea sitchensis (Sitka spruce Forest and Woodland) Forest and Woodland Alliance G5, S2**

The vegetation types listed above is described as a "sensitive" vegetation type by CDFW and will be considered for conservation in any planned development. Other vegetation types on the surveyed parcel were either of mixed dominance or were composed of a mix of vegetation types with non-native species that are not classified into natural communities.

Methods

Wetlands and Waters

An assessment of potential impacts to adjacent watercourses or wetlands within 500 feet of the areas of potential development was conducted by interpretation of aerial photography and resource maps courtesy of Google Earth, the United States Geologic Survey (USGS) 7.5' Iaqua Buttes quadrangle map, Humboldt County Web GIS, and United States Fish and Wildlife Service (USFW) National Wetland Inventory. This assessment was supplemented by in field survey of the subject areas.

Any mapped watercourses were identified using the U.S. Army Corps of Engineers (ACOE) "Guide to Ordinary High Water Mark (OHWM) Delineation for Non-Perennial Streams in the Western Mountains, Valleys, and Coast Region of the United States" (Mercel, Licvar 2014).

Potential wetlands and wetland boundaries were assessed using guidelines outlined in the ACOE Wetland Delineation Manual Technical Report Y-87-1 (referred to as the 1987 manual) and the

Draft Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys and Coast Region. The 1987 manual provides technical guidelines for identifying wetlands, distinguishing them from non-wetlands, and provides methods for applying the technical guidelines. Three key provisions of the ACOE wetland definition include:

i. Inundated or saturated soil conditions resulting from permanent or periodic inundation by ground or surface water.

ii. A prevalence of vegetation typically adapted for life in saturated soil conditions (hydrophytic vegetation)

iii. The presence of "normal circumstances"

Explicit in the ACOE definition is the consideration of three environmental parameters: Hydrology, Vegetation, and Soils. Positive wetland indicators of all three parameters are normally present in wetlands. The ACOE methodology requires one positive indicator from each parameter in order to make a positive wetland determination. Indicators of wetland hydrology include drainage patterns, drift lines, sediment deposits, watermarks, and visual observations of saturated soils and/or inundation.

Areas which were obvious wetlands and areas sampled with three positive indicators of wetland setting would be identified as wetlands and be included on the wetlands and watercourse location maps, in Attachment D. Watercourses and wetlands are classified as either seasonal (Intermittent and Ephemeral) or Perennial.

Vegetation

The ACOE Manual (1987) directs that presence of a single individual of hydrophytic species does not mean that hydrophytic vegetation is present. However, hydrophytic vegetation is considered to be present if 50% of the dominant species have indicator status of OBL, FACW or FAC.

- Obligate (OBL)–usually occurs within a wetland (estimated probability 99%)
- Facultative-wet (FACW)–usually occurs in wetlands (estimated probability 67-99%)
- Facultative (FAC)–equally likely to occur in wetlands or non-wetlands (estimated probability 33-67%)
- Facultative-upland (FACU)–usually occurs in non-wetlands (estimated probability 1-33%)
- Upland (UPL)–occurs almost always in non-wetlands (estimated probability 99%)
- Non-Indicator (NI)-scored as an upland plant and calculated as such on wetland determination forms

The entire parcel was assessed first to determine the location of distinct plant community types. Wetland plot locations were selected to provide representative data within each type.

Dominant species were determined by estimating those having the greatest percentage of cover using the "50/20" rule. The "50/20" rule entails that for each sample point and associated plant community, dominant species are the most abundant species, when ranked in descending order of abundance and cumulatively totaled, that immediately exceed 50% of the total dominance measure for the stratum, plus any additional species comprising 20% or more of the total dominance measure for each stratum. Absolute cover contribution was estimated for each sample plot, due to layering of species and strata percent cover values may exceed 100%. For marginal sites the FAC neutral test and the Prevalence Index were also utilized, these calculations (shown on attached forms) further analyze vegetation community using all species in the plot not just the dominant species.

This wetland and waters evaluation also utilized techniques from the technical manual A Hydrogeomorphic Classification of Wetlands (Brinson 1993) wherein wetlands are classified by land position and hydrologic regime.

Soils

Current USDA soils maps were obtained from the USDA Web Soil Survey and are included in Attachment B. The majority of the project area falls into a soil map units labeled as:

1. Arcata and Candymountain soils 0-2 percent slopes.
2. Lepoil-Espa-Candymountain complex 15-20 percent slopes.

No soil pits were excavated during this investigation.

Hydrology

Each observation point for determination and delineation of watercourse and wetland boundaries was examined for indicators of wetland hydrology.

Indicators of wetland hydrology include drainage patterns, drift lines, sediment deposits, watermarks, and visual observations of saturated soils and/or inundation. Drainage patterns were determined by observing any signs of surface flow into or through the subject parcel throughout the survey period. Aerial imagery was used courtesy of Google Earth and Humboldt County Web GIS.

Botanical Survey Methods

Seasonally appropriate and floristically guided survey is intended to satisfy any project needs for botanical survey and mitigation for rare or endangered plant species and sensitive vegetation communities under the California Environmental Quality Act (CEQA). If sensitive plant species are detected within the project boundaries appropriate measures to avoid and/or mitigate impacts

to those species shall be developed by a qualified professional and delivered to the appropriate agencies for review. These same measures are listed in CEQA, Section 15370.

- Avoid the impact altogether by not taking a certain action
- Minimize impacts by limiting the degree or magnitude of the action
- Rectify the impact by repairing, rehabilitating, or restoring the impacted environment
- Reduce or eliminate the impact over time by preservation and maintenance operations during the life of the project
- Compensate for the impact by replacing or providing substitute resources or environments

Surveys for this project were conducted on 21 March, 2 May, and 19 June 2021. The surveys were conducted by Mr. James Regan. Mr. Regan holds a bachelors' degree in botany and has experience working as professional botanist and wetland delineator in northern California. Approximately 5 field hours were spent on surveys within the 16-acre project area. Maps showing survey routes are included as Attachment B. Surveys were done as an intuitive assessment of potential habitats based on personal knowledge and visible environmental features such as canopy cover, slope, soil texture, aspect, hydrologic features, and associated tree, shrub, and herbaceous plant species (if present). The botanical survey was floristic in nature and seasonally appropriate. This survey protocol is based on the publication "Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities" (CDFG 2018). A list of sensitive plant species that have the potential to occur in this area is provided in Attachment A. This list is the result of a compilation of occurrence data from the California Native Plant Society (CNPS) and California Natural Diversity Database (CNDDB). Sources were queried for the Arcata North USGS 7.5' quadrangle and the 8 quadrangles immediately adjacent. Plant species with potential habitat within the project area are noted. All other species listed are described as existing in habitat types that are not found within the project area. Plant species ranked by the CNPS as California Rare Plant Rank (CRPR) 1 and 2 with potential habitat within the project area are considered the primary focus of seasonal surveys. CRPR list 3 and 4 plants are recorded and reported if found within the project area and will be considered for mitigation if appropriate. A complete list of species encountered is found in Attachment C.

Results/Recommendations

Sensitive Plant Species

No sensitive, rare, threatened, or endangered plants were detected during floristically appropriate surveys in 2021.

No un-common species included in CRPR 3 or 4 were detected during surveys.

Sensitive natural vegetation communities were detected during surveys for this project (see Vegetation Location Map, Attachment D).

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At this time proposed development does not include the removal of any Sitka spruce Forest or Woodland. No impacts are expected to occur, and no additional management recommendations are presented here.

Wetland and Waters Investigation

One previously unmapped intermittent watercourse was found on the subject parcel during surveys in 2021. The small feature begins just below the southern boundary of the open field and quickly passes off the parcel to the south, likely to join Norton Creek. All waters are included on the Wetlands and Waters Location Map, Attachment D.

No wetlands or significant wetland or riparian vegetation was detected on the subject parcel.

Newly mapped watercourses in the subject area showed at least two of the three primary indicators of OHWM which include a break in slope, a change in sediment profile, or a change in vegetation. Seasonal (Intermittent and Ephemeral) creeks within the parcel are generally characterized by a small change in slope from upland to the seasonally active channel and a change in sediment from fines and organics outside the OHWM and loose gravels and small cobble within. Intermittent streams had some flow during the survey period and were identified by duration of flow, channel morphology, and connection to higher order creeks or wetlands. The identified watercourse had surface water and evidence of flow during the June survey visit, well past the last significant rain event.

Any wetlands or watercourses located within the surveyed area may be considered jurisdictional by either CDFW, ACOE, or both. All identified features are included on the included Wetland and Waters Location Map in Attachment D. 2021 is a year with below average rainfall and often secondary indicators of jurisdictional wetland presence were used.

Recommend avoiding impacts to waters by adhering to all Federal, State, County, and local ordinances for permitted developments. In general development projects should remain outside of setbacks for waters, setback measurements should be done according to current guidelines enforced by the lead agency in any permitting situation.

Conditions and Limitations

This report is based on conditions observed and recorded during field visits in 2021. This report has not been reviewed nor has concurrence with the conclusions been obtained. Verification by agencies may be necessary in the future. Land use practices and regulations can change thereby affecting conditions and delineation results described herein.

This report and accompanying maps and data should be transmitted to the appropriate agents for review and included in any application for permits necessary for completion of any proposed development projects on the subject property.

The location and extent of mapped features is approximate. Maps are not to scale. In field survey and monumentation of pertinent features for buffering or mitigation planning may be required prior to the initiation of permitted activities.

Significance of wetlands and the necessity for mitigation during development is decided by regional agents of the appropriate federal, state, and local agencies if and when the site is reviewed for permitting purposes.

This report was prepared for exclusive use; consultants are not liable for any actions arising out of the reliance of any third party on the information contained in this report.

Please feel free to call with any questions.

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Attachment A
List of Potentially Occurring Sensitive Plant Species

Stross 2021 – List of Potentially Occurring Sensitive Plant Species

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Abronia umbellata var. breviflora	pink sand-verbena	1B.1	G4G5T2	S2	None	None	Jun-Oct	Coastal dunes	No
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	1B.2	G2T2	S2	None	None	(Apr)Jun-Oct	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides)	No
Astragalus umbraticus	Bald Mountain milk-vetch	2B.3	G4	S2	None	None	May-Aug	Cismontane woodland, Lower montane coniferous forest	Potential
Bryoria spiralifera	twisted horsehair lichen	1B.1	G3	S1S2	None	None		North Coast coniferous forest (immediate coast)	Potential
Cardamine angulata	seaside bittercress	2B.2	G4G5	S3	None	None	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest	Potential
Carex arcta	northern clustered sedge	2B.2	G5	S1	None	None	Jun-Sep	Bogs and fens, North Coast coniferous forest (mesic)	No
Carex lenticularis var. limnophila	lagoon sedge	2B.2	G5T5	S1	None	None	Jun-Aug	Bogs and fens, Marshes and swamps, North Coast coniferous forest	No
Carex leptalea	bristle-stalked sedge	2B.2	G5	S1	None	None	Mar-Jul	Bogs and fens, Meadows and seeps (mesic), Marshes and swamps	No

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Carex lyngbyei	Lyngbye's sedge	2B.2	G5	S3	None	None	Apr-Aug	Marshes and swamps (brackish or freshwater)	No
Carex praticola	northern meadow sedge	2B.2	G5	S2	None	None	May-Jul	Meadows and seeps (mesic)	Potential
Carex viridula ssp. viridula	green yellow sedge	2B.3	G5T5	S2	None	None	(Jun)Jul-Sep(Nov)	Bogs and fens, Marshes and swamps (freshwater), North Coast coniferous forest (mesic)	No
Castilleja ambigua var. humboldtiensis	Humboldt Bay owl's-clover	1B.2	G4T2	S2	None	None	Apr-Aug	Marshes and swamps (coastal salt)	No
Castilleja litoralis	Oregon coast paintbrush	2B.2	G3	S3	None	None	Jun-Jul	Coastal bluff scrub, Coastal dunes, Coastal scrub	No
Castilleja mendocinensis	Mendocino Coast paintbrush	1B.2	G2	S2	None	None	Apr-Aug	Coastal bluff scrub, Closed-cone coniferous forest, Coastal dunes, Coastal prairie, Coastal scrub	No
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	1B.2	G4?T2	S2	None	None	Jun-Oct	Marshes and swamps (coastal salt)	No
Collinsia corymbosa	round-headed Chinese-houses	1B.2	G1	S1	None	None	Apr-Jun	Coastal dunes	No
Discelium nudum	naked flag moss	2B.2	G4G5	S1	None	None		Coastal bluff scrub (soil, on clay banks)	No
Empetrum nigrum	black crowberry	2B.2	G5	S1?	None	None	Apr-Jun	Coastal bluff scrub, Coastal prairie	Potential

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Erigeron bloomeri var. nudatus	Waldo daisy	2B.3	G5T4	S3	None	None	Jun-Jul	Lower montane coniferous forest, Upper montane coniferous forest	Potential
Erysimum menziesii	Menzies? wallflower	1B.1	G1	S1	CE	FE	Mar-Sep	Coastal dunes	No
Erythronium oregonum	giant fawn lily	2B.2	G4G5	S2	None	None	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps	Potential
Erythronium revolutum	coast fawn lily	2B.2	G4G5	S3	None	None	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Potential
Fissidens pauperculus	minute pocket moss	1B.2	G3?	S2	None	None		North Coast coniferous forest (damp coastal soil)	Potential
Gilia capitata ssp. pacifica	Pacific gilia	1B.2	G5T3	S2	None	None	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	Yes
Gilia millefoliata	dark-eyed gilia	1B.2	G2	S2	None	None	Apr-Jul	Coastal dunes	No
Hesperevax sparsiflora var. brevifolia	short-leaved evax	1B.2	G4T3	S2	None	None	Mar-Jun	Coastal bluff scrub (sandy), Coastal dunes, Coastal prairie	Yes
Juncus nevadensis var. inventus	Sierra rush	2B.2	G5T3T4	S1	None	None	Jul-Nov	Bogs and fens	No
Lasthenia californica ssp. macrantha	perennial goldfields	1B.2	G3T2	S2	None	None	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub	No
Lathyrus japonicus	seaside pea	2B.1	G5	S2	None	None	May-Aug	Coastal dunes	NO

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Lathyrus palustris	marsh pea	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	Potential
Layia carnosa	beach layia	1B.1	G2	S2	CE	FE	Mar-Jul	Coastal dunes, Coastal scrub (sandy)	No
Lilium occidentale	western lily	1B.1	G1	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
Lycopodiella inundata	inundated bog club-moss	2B.2	G5	S1?	None	None	Jun-Sep	Bogs and fens (coastal), Lower montane coniferous forest (mesic), Marshes and swamps (lake margins)	No
Monotropa uniflora	ghost-pipe	2B.2	G5	S2	None	None	Jun-Aug(Sep)	Broadleafed upland forest, North Coast coniferous forest	Potential
Montia howellii	Howell's montia	2B.2	G3G4	S2	None	None	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools	Potential
Oenothera wolfii	Wolf's evening-primrose	1B.1	G2	S1	None	None	May-Oct	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	Potential
Packera bolanderi var. bolanderi	seacoast ragwort	2B.2	G4T4	S2S3	None	None	(Jan-Apr)May-Jul(Aug)	Coastal scrub, North Coast coniferous forest	Potential

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Piperia candida	white-flowered rein orchid	1B.2	G3	S3	None	None	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest	Potential
Polemonium carneum	Oregon polemonium	2B.2	G3G4	S2	None	None	Apr-Sep	Coastal prairie, Coastal scrub, Lower montane coniferous forest	Yes
Romanzoffia tracyi	Tracy's romanzoffia	2B.3	G4	S2	None	None	Mar-May	Coastal bluff scrub, Coastal scrub	Potential
Sidalcea malviflora ssp. patula	Siskiyou checkerbloom	1B.2	G5T2	S2	None	None	(Apr)May-Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	Yes
Sidalcea oregana ssp. eximia	coast checkerbloom	1B.2	G5T1	S1	None	None	Jun-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Yes
Silene scouleri ssp. scouleri	Scouler's catchfly	2B.2	G5T4T5	S2S3	None	None	(Mar-May)Jun-Aug(Sep)	Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Potential
Spergularia canadensis var. occidentalis	western sand-spurrey	2B.1	G5T4	S1	None	None	Jun-Aug	Marshes and swamps (coastal salt)	No
Trichodon cylindricus	cylindrical trichodon	2B.2	G4	S2	None	None		Broadleafed upland forest, Meadows and seeps, Upper montane coniferous forest	Potential
Viola palustris	alpine marsh violet	2B.2	G5	S1S2	None	None	Mar-Aug	Bogs and fens (coastal), Coastal scrub (mesic)	Potential

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Angelica lucida	sea-watch	4.2	G5	S3	None	None	May-Sep	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	No
Astragalus rattanii var. rattanii	Rattan's milk-vetch	4.3	G4T4	S4	None	None	Apr-Jul	Chaparral, Cismontane woodland, Lower montane coniferous forest	No
Bryoria pseudocapillaris	false gray horsehair lichen	3.2	G3	S2	None	None		Coastal dunes (SLO Co.), North Coast coniferous forest (immediate coast)	Potential
Calamagrostis bolanderi	Bolander's reed grass	4.2	G4	S4	None	None	May-Aug	Bogs and fens, Broadleafed upland forest, Closed-cone coniferous forest, Coastal scrub, Meadows and seeps (mesic), Marshes and swamps (freshwater), North Coast coniferous forest	Potential
Carex buxbaumii	Buxbaum's sedge	4.2	G5	S3	None	None	Mar-Aug	Bogs and fens, Meadows and seeps (mesic), Marshes and swamps	No
Chrysosplenium glechomifolium	Pacific golden saxifrage	4.3	G5?	S3	None	None	Feb-Jun(Jul)	North Coast coniferous forest, Riparian forest	Potential
Coptis laciniata	Oregon goldthread	4.2	G4?	S3?	None	None	(Feb)Mar-May(Sep-Nov)	Meadows and seeps, North Coast coniferous forest (streambanks)	No
Epilobium septentrionale	Humboldt County fuchsia	4.3	G4	S4	None	None	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest	No
Glehnia littoralis ssp. leiocarpa	American glehnia	4.2	G5T5	S2S3	None	None	May-Aug	Coastal dunes	No

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Lilium kelloggii	Kellogg's lily	4.3	G3	S3	None	None	May-Aug	Lower montane coniferous forest, North Coast coniferous forest	Potential
Listera cordata	heart-leaved twayblade	4.2	G5	S4	None	None	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	Yes
Lycopodium clavatum	running-pine	4.1	G5	S3	None	None	Jun-Aug(Sep)	Lower montane coniferous forest (mesic), Marshes and swamps, North Coast coniferous forest (mesic)	Yes
Lycopus uniflorus	northern bugleweed	4.3	G5	S4	None	None	Jul-Sep	Bogs and fens, Marshes and swamps	No
Mitellastra caulescens	leafy-stemmed mitrewort	4.2	G5	S4	None	None	(Mar)Apr-Oct	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	Potential
Pityopus californicus	California pinefoot	4.2	G4G5	S4	None	None	(Mar-Apr)May-Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest	Potential
Pleuropogon refractus	nodding semaphore grass	4.2	G4	S4	None	None	(Mar)Apr-Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest	Potential
Ribes laxiflorum	trailing black currant	4.3	G5?	S3	None	None	Mar-Jul(Aug)	North Coast coniferous forest	Potential

Scientific Name	Common Name	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Habitat in Project Area
Sidalcea malachroides	maple-leaved checkerbloom	4.2	G3	S3	None	None	(Mar)Apr-Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland	Yes
Tiarella trifoliata var. trifoliata	trifoliate laceflower	3.2	G5T5	S2S3	None	None	(May)Jun-Aug	Lower montane coniferous forest, North Coast coniferous forest	Potential
Usnea longissima	Methuselah's beard lichen	4.2	G4	S4	None	None		Broadleafed upland forest, North Coast coniferous forest	Yes

Rank Definitions

Global Conservation Status Definitions

Listed below are definitions for interpreting NatureServe global (range-wide) conservation status ranks. These ranks are assigned by NatureServe scientists or by a designated lead office in the NatureServe network.

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 or elimination due to very restricted range, very few populations, steep declines, or other factors.

G3 **Vulnerable**—At moderate risk of extinction or elimination due to a restricted range, relatively few populations, 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.

G#G# **Range Rank**—A numeric range rank (e.g., G2G3, G1G3) is used to indicate the range of uncertainty about the exact status of a taxon or ecosystem type. Ranges cannot skip more than two ranks (e.g., GU should be used rather than G1G4).

Infraspecific Taxon Conservation Status Ranks

T# **Infraspecific Taxon** (trinomial)—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 outlined above. For example, the global rank of a critically imperiled subspecies of an otherwise widespread and common species would be G5T1. A T subrank cannot imply the subspecies or variety is more abundant than the species. For example, a G1T2 subrank should not occur. A vertebrate animal population, (e.g., listed under the U.S. Endangered Species Act or assigned candidate status) may be tracked as an infraspecific taxon and given a T-rank; in such cases a Q is used after the T-rank to denote the taxon's informal taxonomic status.

Subnational (S) Conservation Status Ranks

S1 **Critically Imperiled**—Critically imperiled in the jurisdiction because of extreme rarity or because of some factor(s) such as very steep declines making it especially vulnerable to extirpation from the jurisdiction.

S2 **Imperiled**—Imperiled in the jurisdiction because of rarity due to very restricted range, very few populations, steep declines, or other factors making it very vulnerable to extirpation from jurisdiction.

S3 **Vulnerable**—Vulnerable in the jurisdiction due to a restricted range, relatively few populations, 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 jurisdiction.

S#S# **Range Rank** — A numeric range rank (e.g., S2S3 or S1S3) is used to indicate any range of uncertainty about the status of the species or ecosystem. Ranges cannot skip more than two ranks (e.g., SU is used rather than S1S4).

Rank Qualifiers

? **Inexact Numeric Rank**—Denotes inexact numeric rank; this should not be used with any of the Variant Global Conservation Status Ranks or GX or GH.

Q **Questionable taxonomy that may reduce conservation priority**— Distinctiveness of this entity as a taxon or ecosystem type 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. The "Q" modifier is only used at a global level and not at a national or subnational level.

The California Rare Plant Ranks

1A. Presumed extirpated in California and either rare or extinct elsewhere
1B. Rare or Endangered in California and elsewhere
2A. Presumed extirpated in California, but more common elsewhere
2B. Rare or Endangered in California, but more common elsewhere
3. Plants for which we need more information - Review list
4. Plants of limited distribution - Watch list

1A: Plants Presumed Extirpated in California and either rare or extinct elsewhere
The plants of Rank 1A are presumed extirpated because they have not been seen or collected in the wild in California for
many years. This rank includes those plant taxa that are both presumed extinct, as well as those plants which are presumed
extirpated in California and rare elsewhere. 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.

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere (Includes Rare Plant Ranks 1B.1, 1B.2, 1B.3)
The plants of Rank 1B are rare throughout their range with the majority of them 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 plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2A: Plants Presumed Extirpated in California, but more common elsewhere
The plants of Rank 2A are presumed extirpated because they have not been seen or collected in the wild in California for
many years. This rank includes only those plant taxa that are presumed extirpated in California, but that are more common
elsewhere in their range. Note: Plants of both Rank 1A and 2A are presumed extirpated in California; the only difference is the
status of the plants outside of the state.

2B: Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

(Includes Rare Plant Ranks 2B.1, 2B.2, 2B.3)
The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in
other states or countries are not eligible for consideration under the provisions of the **Federal** Endangered Species Act;
however they are eligible for consideration under the **California** Endangered Species Act. This rank is meant to highlight the
importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species
whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in
California; the only difference is the status of the plants outside of the state.

3: Plants about which more information is needed, a review list. Many of the plants constituting California Rare Plant Rank 3 meet the definitions of the California Endangered Species Act of the California 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: Plants of limited distribution, a watch list. Plants with a California Rare Plant Rank of 4 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 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 impact significance 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.

Threat Ranks:
The California Rare Plant Ranks (CRPR) use a decimal-style threat rank. The threat rank is an extension added onto the CRPR
and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. So
most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in
ascertaining threats for these species. Rank 1A and 2A plants also do not have threat code extensions since there are no known
extant populations of the plants in California.

Threat Code extensions and their meanings:
.1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)

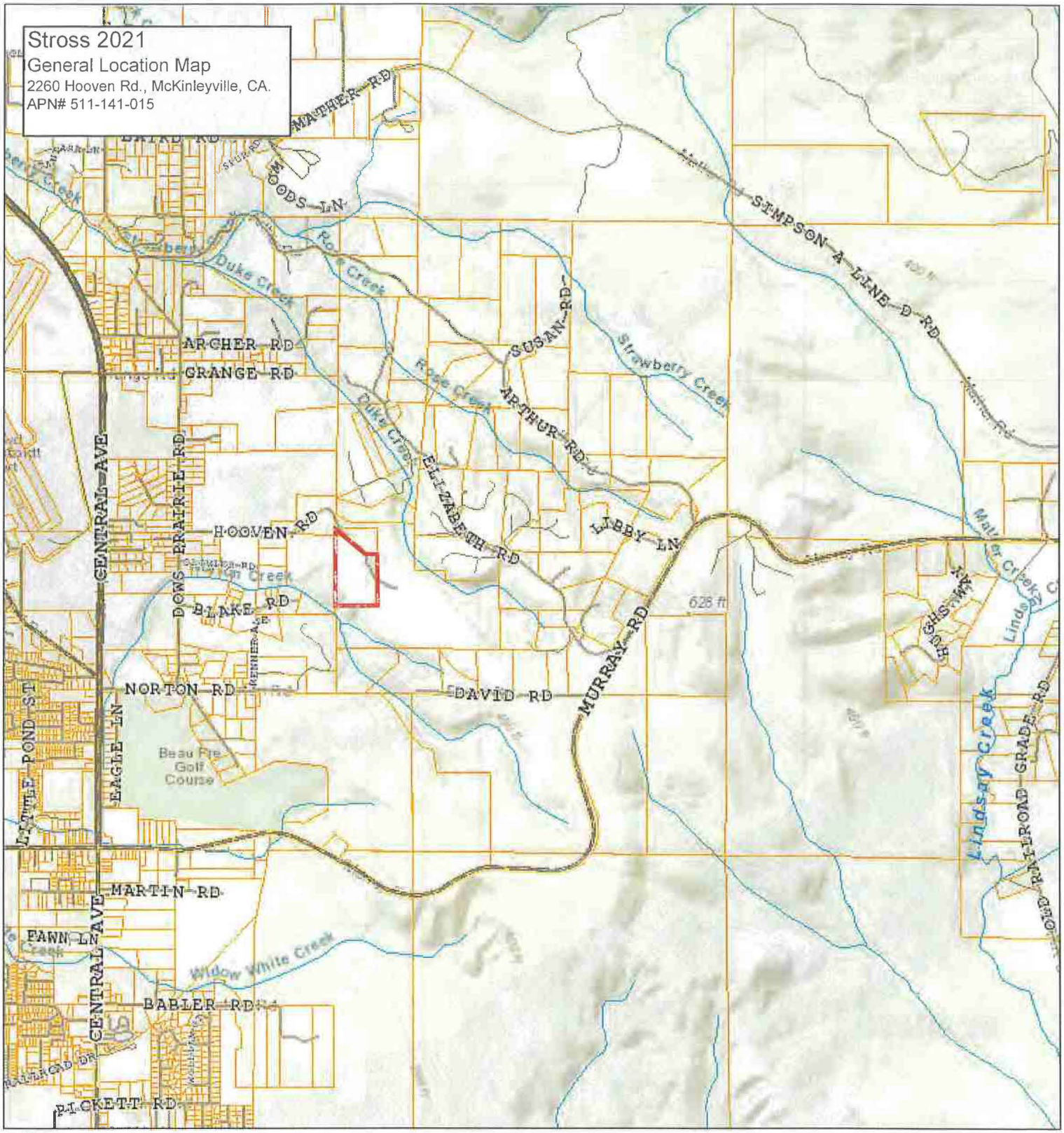
.2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
.3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current
threats known)

FESA and CESA abbreviation definitions

CR – California Rare
CE – California Endangered
FE – Federally Endangered

Attachment B

General Location Map, Humboldt County Topographic Parcel Map, Humboldt County Orthographic Parcel Map, USFWS Wetland Map, USGS Soil Report, Survey Route Map



Stross 2021

Humboldt County Planning and Building Department

0 1,400 2,800 5,600 Feet

0 0.25 0.5 1 Miles

RF= 1:36,112 1 in = 3,009 ft

Printed: September 28, 2021 Web AppBuilder 2.0 for ArcGIS

Highways and Roads
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads

- Private or Unclassified
- Major River or Stream

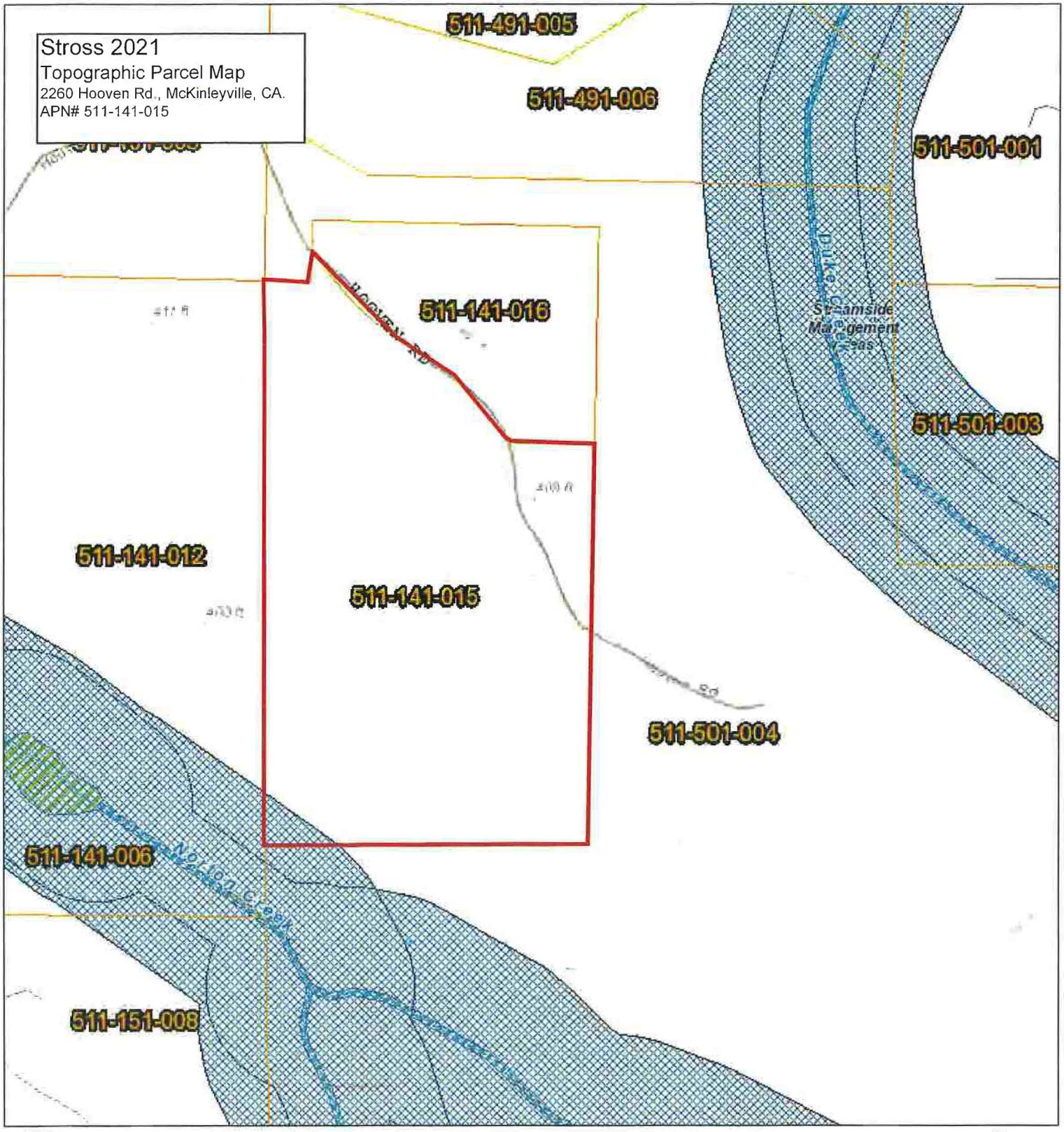
Blue Line Streams
- Perennial 1-3
- Perennial >4

- Intermittent
- Subsurface
- City Boundary
- City Boundary (750K)
- Counties
- Parcels (no APN labels)

Subject Parcel

Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: Humboldt County GIS, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Stross 2021

Humboldt County Planning and Building Department

0 180 360 720 Feet

0 0.0325 0.065 0.13 Miles

RF= 1:4,514 1 in = 376 ft

N W E S

Highways and Roads
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads

- Private or Unclassified
- Major River or Stream

Blue Line Streams
- Perennial 1-3
- Perennial >4

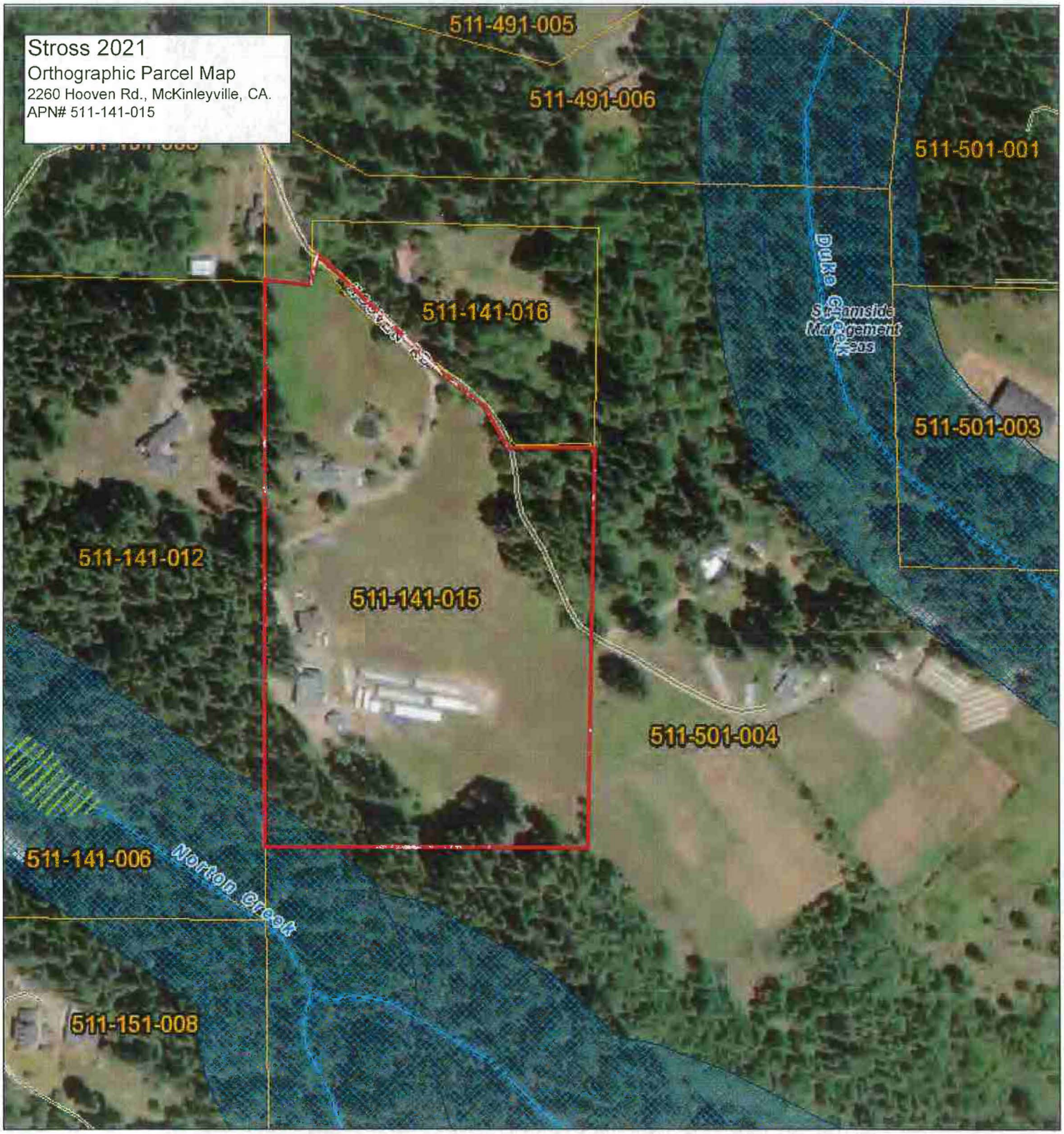
- Intermittent
- Subsurface
- City Boundary
- Counties
- Parcels
- Streamside Management Areas

Subject Parcel

Printed: September 28, 2021 Web AppBuilder 2.0 for ArcGIS

Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: NRCS, Humboldt County GIS, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Stross 2021

Humboldt County Planning and Building Department

0 180 360 720 Feet

0 0.0325 0.065 0.13 Miles

RF= 1:4,514 1 in = 376 ft

N W E S

Printed: September 28, 2021 Web AppBuilder 2.0 for ArcGIS

Map Disclaimer:
While every effort has been made to assure the accuracy of this information, it should be understood that it does not have the force & effect of law, rule, or regulation. Should any difference or error occur, the law will take precedence.

Source: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, NRCS, Humboldt County GIS, Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

Highways and Roads
- Principal Arterials
- Minor Arterials
- Major Collectors
- Minor Collectors
- Local Roads

- Private or Unclassified
- Major River or Stream

Blue Line Streams
- Perennial 1-3
- Perennial >4
- Intermittent
- Subsurface
- City Boundary
- Counties
- Parcels
- Streamside Management Areas

Subject Parcel

U.S. Fish and Wildlife Service

National Wetlands Inventory

Stross 2021

September 28, 2021

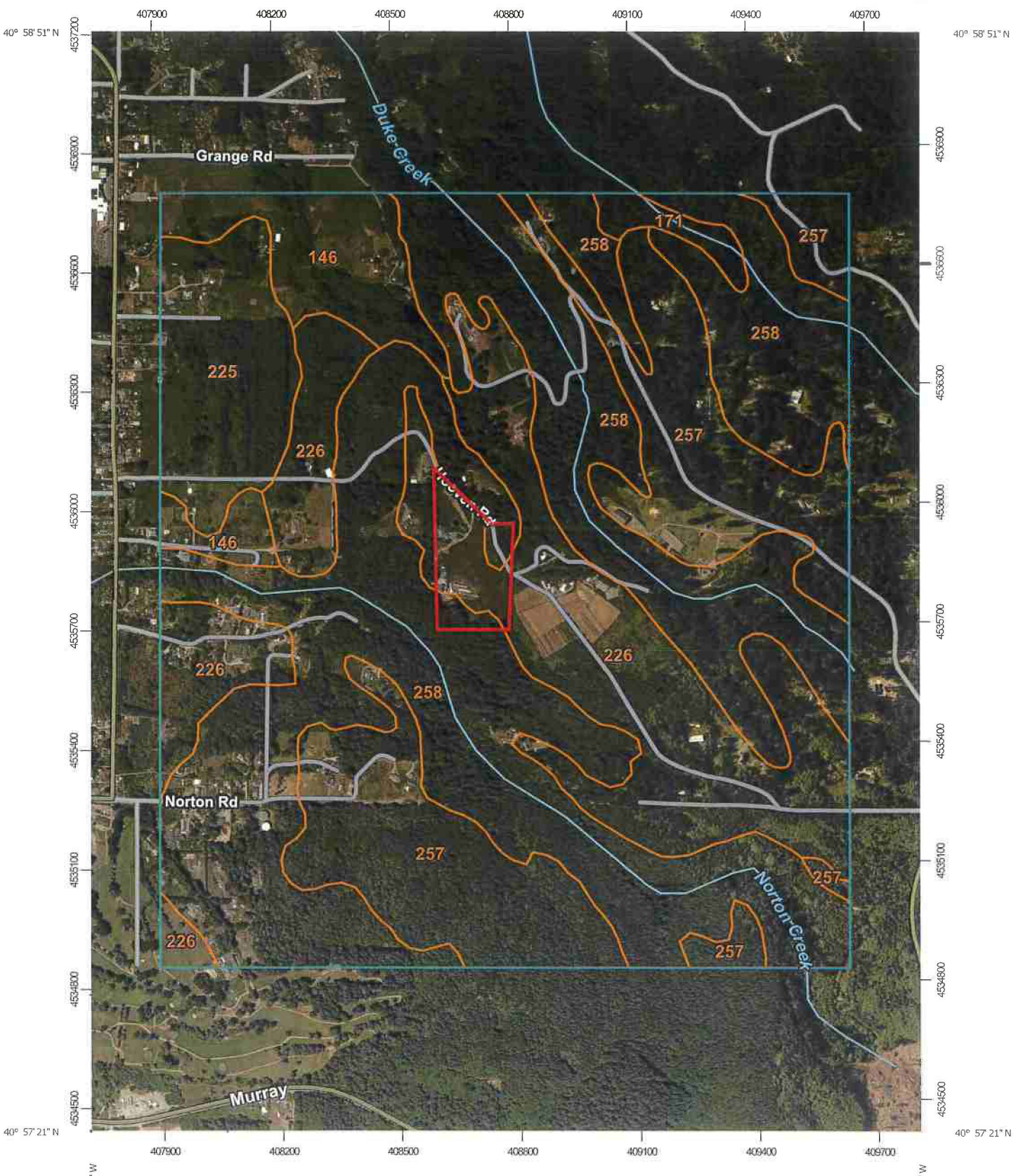
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine
- Subject Parcel

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

National Wetlands Inventory (NWI)
This page was produced by the NWI mapper

Soil Map—Humboldt County, Central Part, California
(Stross 2021)



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
- Subject Parcel

MAP INFORMATION

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

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 6, Jun 1, 2020

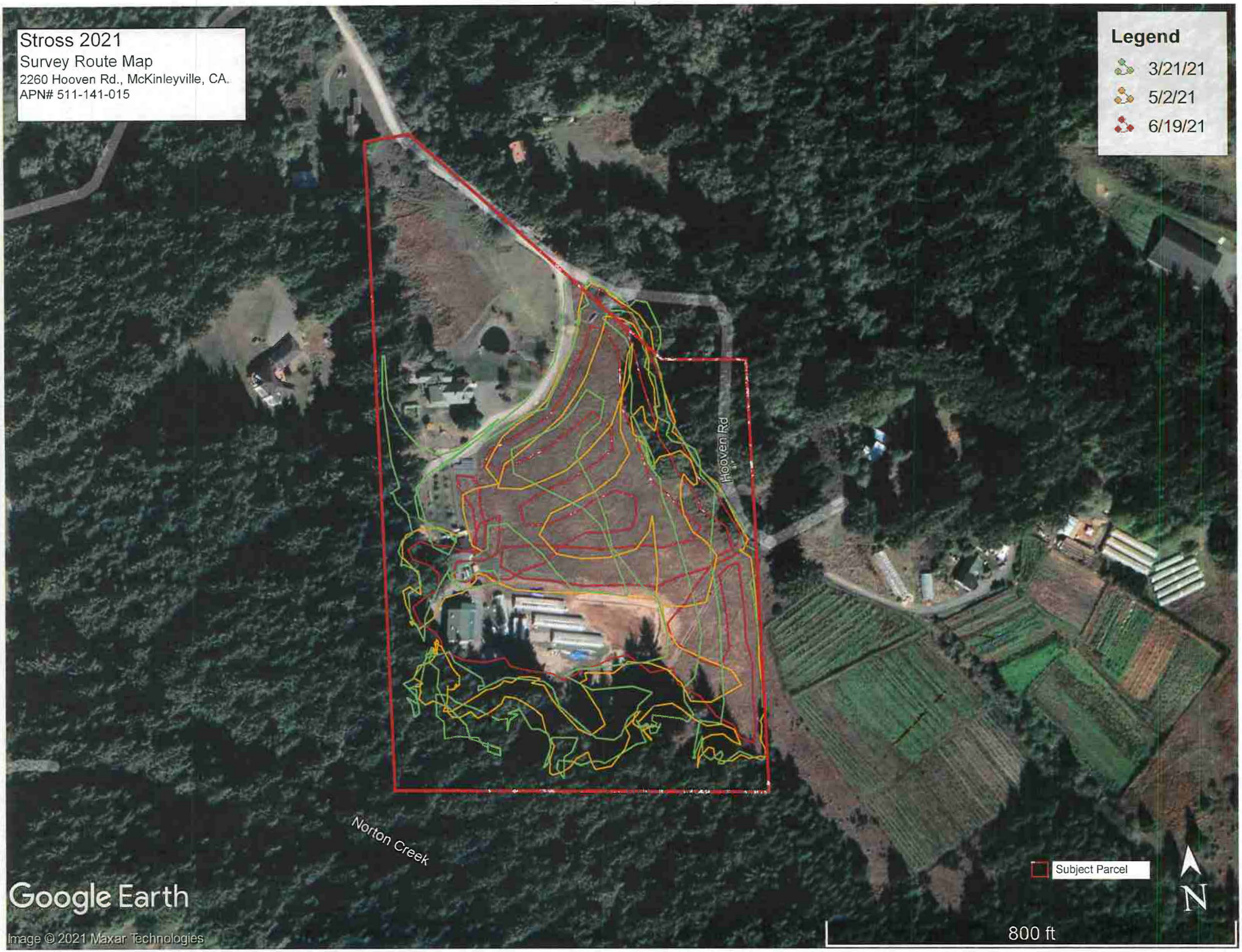
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 8, 2019—Jun 21, 2019

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
146	Halfbluff-Tepona-Urban Land, 2 to 9 percent slopes	46.1	5.5%
171	Worswick-Arlynda complex 0 to 2 percent slopes	8.1	1.0%
225	Arcata and Candymountain soils, 0 to 2 percent slopes	53.5	6.4%
226	Arcata and Candymountain soils, 2 to 9 percent slopes	180.1	21.4%
257	Lepoil-Candymountain complex, 2 to 15 percent slopes	160.1	19.1%
258	Lepoil-Espa-Candymountain complex, 15 to 50 percent slopes	391.7	46.7%
Totals for Area of Interest		**839.6**	**100.0%**


Stross 2021
Survey Route Map
2260 Hooven Rd., McKinleyville, CA.
APN# 511-141-015
Legend
3/21/21
5/2/21
6/19/21
Hooven Rd
Norton Creek
Subject Parcel
N
800 ft
Google Earth
Image © 2021 Maxar Technologies

Attachment C

Comprehensive Species List

Tree Layer	
Abies grandis	grand fir
Alnus rubra	red alder
Frangula purshiana	cascara
Ilex aquifolium	English holly
Picea sitchensis	Sitka spruce
Pinus radiata	Monterey pine
Pseudotsuga menziesii var. menziesii	Douglas-fir
Sequoia sempervirens	coast redwood (planted, dying)
Thuja plicata	western red cedar
Tsuga heterophylla	western hemlock
Umbellularia californica	California-bay
Shrub Layer	
Cotoneaster sp	Cotoneaster
Cytisus scoparius	Scotch broom
Gaultheria shallon	salal
Lonicera involucrata var. ledebourii	black twinberry
Morella californica	wax myrtle
Rhododendron macrophyllum	California rose-bay
Rubus armeniacus	Himalayan blackberry
Rubus spectabilis	salmonberry
Rubus ursinus	Pacific bramble or California blackberry
Sambucus racemosa var. racemosa	red elderberry
Vaccinium ovatum	evergreen huckleberry
Vaccinium parvifolium	red huckleberry
Herbaceous Layer	
Acaena novae-zelandiae	biddy biddy
Actaea rubra	baneberry
Agapanthus sp.	agapanthus
Agrostis sp.	bent grass
Anthoxanthum odoratum	sweet vernal grass
Athyrium filix-femina	lady fern
Bromus sitchensis var. carinatus	California brome
Cardamine oligosperma	western bittercress
Cerastium glomeratum	mouse ear chickweed
Chaenopodium sp.	lambsquarters
Cirsium vulgare	bull thistle
Claytonia sibirica	Siberian candyflower
Corallorhiza maculata	spotted coralroot

Cortaderia jubata	weedy pampas grass
Crepis capillaris	smooth hawk's beard
Daucus carota	wild carrot or Queen Anne's lace
Epilobium ciliatum	northern willow herb
Erigeron canadensis	horseweed
Eschscholzia californica	California poppy
Foeniculum vulgare	fennel
Fragaria chiloensis	beach strawberry
Galium aparine	goose grass
Galium parisiense	wall bedstraw
Geranium dissectum	cut-leaved geranium
Geranium robertianum	Robert's geranium
Hedera helix	English ivy
Holcus lanatus	common velvet grass
Hypochaeris radicata	hairy cat's-ear
Iris douglasiana	Douglas iris
Juncus bufonius	common toad rush
Lathyrus latifolius	sweet pea
Leontodon saxatilis	hawkbit
Leucanthemum vulgare	ox-eye daisy
Lupinus rivularis	riverbank lupine
Luzula parviflora	small-flowered wood rush
Lysmachia latifolia	Pacific star flower
Maianthemum dilatatum	false lily-of-the-valley
Medicago polymorpha	bur clover
Melilotus albus	white sweetclover
Narcissus sp.	domestic daffodil
Osmorhiza berteroi	mountain sweet-cicely
Oxalis corniculata	creeping wood-sorrel
Oxalis oregana	redwood sorrel
Phyllostachys sp.	bamboo
Plantago lanceolata	English plantain
Poa annua	annual bluegrass
Polystichum munitum	sword fern
Prosartes smithii	Smith's fairy bells
Prunella vulgaris	self-heal
Pseudognaphalium luteoalbum	weedy cudweed
Pteridium aquilinum var. pubescens	western bracken fern
Ranunculus repens	creeping buttercup
Ranunculus sp.	buttercup
Raphanus sativus	wild radish

Rumex acetosella	sheep sorrel
Sonchus oleraceus	common sow thistle
Spergula arvensis	stickwort
Spergularia rubra	purple sand spurry
Stachys sp.	hedge-nettle
Stellaria crispa	crisp chickweed
Stellaria media	common chickweed
Struthiopteris spicant	deer fern
Taraxacum officinale	dandelion
Trifolium subterraneum	subterranean clover
Trillium ovatum	western trillium
Trisetum cernuum	nodding oatgrass
Triticum sp.	wheat-grass
Vancouveria hexandra	northern inside-out flower
Veronica serpyllifolia ssp. humifusa	thyme-leaved speedwell
Vicia hirsuta	hairy vetch
Vicia sp.	vetch
Viola sempervirens	evergreen violet

Attachment D

Wetland and Waters Location Map


Stross 2021
Wetlands and Waters Map
2260 Hooven Rd., McKinleyville, CA.
APN# 511-141-015
Legend
Intermittent Stream
Hooven Rd
Hooven Rd
Duke Creek
Top Intermittent Stream
Norton Creek
Subject Parcel
N
700 ft
Google Earth
Image © 2021 Maxar Technologies