



## **Botanical Survey Results**

VZIR Inc, (APN: 107-103-014 & 107-103-015)

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## 1. INTRODUCTION

This botanical survey was conducted to address potential impacts to sensitive botanical resources from commercial cannabis cultivation at 42458 Mattole Road (APN: 107-103-014 & 107-103-015) near Honeydew.

The project includes expansion of existing cultivation on the property including new greenhouses and a pond. The project also includes a lot line adjustment (Appendix A).

## 2. DEFINITIONS

### 2.1. Special Status Plants

Special status plants include those listed as rare, threatened, or endangered under the federal Endangered Species Act and/or the California Endangered Species Act. Additionally, impacts to taxa with California Rare Plant Ranks (CRPR) of 1A, 1B, 2A, and 2B must be analyzed in environmental documents related to the California Environmental Quality Act (CEQA), or those considered functionally equivalent to CEQA. Impacts to plants with CRPRs of 3 and 4 should also be addressed. Protection measures for populations of these taxa may be warranted if they are determined to have local or biological significance.

### 2.2. Special Status Plant Communities

Special status plant communities are communities with limited distribution that may be vulnerable to environmental impacts. Updated information on California natural communities, including rarity rankings, is provided in *A Manual of California Vegetation Online Edition* (CNPS 2021). Natural communities with G or S ranks of 3 or lower are considered sensitive.

### 2.3. Invasive Plants

Invasive species are non-native plants and animals whose introduction causes or is likely to cause environmental or economic damage or harm to human health. Invasive species can cause a decline of endangered species and native diversity through direct competition and by alteration of ecological processes. The California Invasive Plant Council (Cal-IPC) maintains a list of plants considered invasive in California (Cal-IPC 2022). For the purposes of this report only plants with Cal-IPC ratings of “High” were considered.

## 3. ENVIRONMENTAL SETTING

### 3.1. Project Location

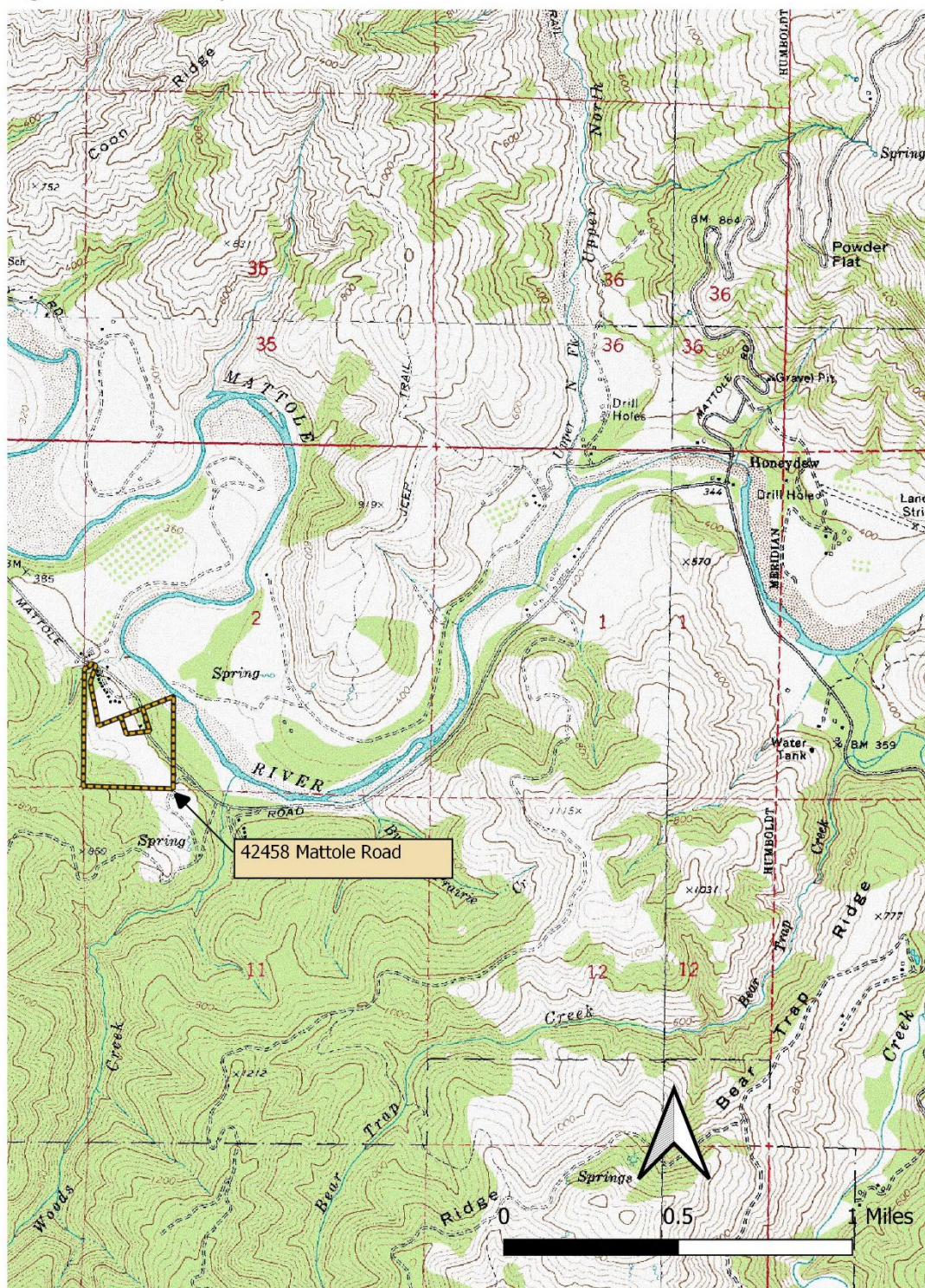
The parcel is located at 42458 Mattole Road on the Shubrick Peak USGS quadrangle in Humboldt County (Figure 1).

### 3.2. Soil, Topography, Hydrology

There are no serpentine, volcanic, or other unique soil types on the parcel. The soil types mapped in the project area are composed of alluvium from sediment rock or mixed sources



Figure 1. Location Map.



(United States Department of Agriculture, Natural Resource Conservation Service 2022) (Appendix B).

The project area is on a relatively flat terrace along the Mattole River. The elevation is approximately 400 feet above sea level. There are two Class III and one Class II tributaries of the Mattole on the property.

### 3.3. Vegetation

The southern part of the project area has already been graded and disturbed by previous cultivation and includes sparse ruderal vegetation. The proposed new development in the north part of the property is in a mowed grassland with predominantly non-native grasses including sweet vernal grass (*Anthoxanthum odoratum*), tall fescue (*Festuca arundinacea*), dogtail grass (*Cynosurus echinatus*), and velvet grass (*Holcus lanatus*). There is a relatively small California oatgrass (*Danthonia californica*) component. Other native plants in the grassland include miniature lupine (*Lupinus bicolor*) and soap root (*Chloroglaum pomeridianum*). There is a small stream through the grassland with a small associated wetland with spreading rush (*Juncus patens*), feta sedge (*Carex feta*), and pennyroyal (*Mentha pulegium*). There are also small stands of Douglas-fir (*Pseudotsuga menziesii*) and California black oak (*Quercus kelloggii*) in the grassland. The adjacent habitat includes coniferous forest with a canopy of Douglas-fir, much of which was recently logged under a fire safety exemption. There are also thickets of Himalayan blackberry (*Rubus armeniacus*) and stands of coyote brush (*Baccharis pilularis*) that boarder the field.

## 4. METHODS

### 4.1. Scoping

A list of special status plants that could potentially occur in the project area was generated by consulting the *California Natural Diversity Database* (CDFW 2022) and the *CNPS Inventory of Rare and Endangered Plants* (CNPS 2022a). The scoping list includes special status plants with documented occurrences on the Shubrick Peak USGS quadrangle or adjacent quadrangles (Table 1).

Special status natural communities that have potential to occur on the parcel include, but are not limited to, oak woodlands and special status native grassland communities. A full list of special status natural communities that occur in northwestern California queried from *A Manual of California Vegetation Online Edition* (CNPS 2022b) is provided in Appendix B.

### 4.2. Survey

The survey was conducted by Kyle Wear, M.A. on April 13, and July 2, 2022. Mr. Wear has over 25 years of experience conducting floristic surveys and other botanical work in northern California.



Table 1. Special Status Plant Scoping List.

<b>Scientific Name Common Name</b>	<b>Listing Status</b>	<b>Blooming Period</b>	<b>Habitat</b>	<b>Potential to Occur in Project Area</b>
<i>Antennaria suffrutescens</i> evergreen everlasting	4.3	Jan-Jul	Lower montane coniferous forest (Serpentine)	None-occurs on serpentine
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> coastal marsh milk-vetch	1B.2	(Apr)Jun- Oct	Coastal dunes, Coastal scrub, Marshes and swamps	None-occurs in immediate coastal habitat
<i>Calamagrostis foliosa</i> leafy reed grass	4.2	May-Sep	Coastal bluff scrub, North Coast coniferous forest- Rocky	Unlikely-no typical rocky habitat
<i>Castilleja litoralis</i> Oregon coast paintbrush	2B.2	Jun	Coastal bluff scrub, Coastal dunes, Coastal scrub-Sandy	Unlikely-occurs in more coastal habitat
<i>Ceanothus gloriosus</i> var. <i>exaltatus</i> glory brush	4.3	Mar- Jun(Aug)	Chaparral	Unlikely-maybe some potential around forest edge, roadsides
<i>Clarkia amoena</i> ssp. <i>whitneyi</i> Whitney's farewell-to- spring	1B.1	Jun-Aug	Coastal bluff scrub, Coastal scrub	None-occurs in immediate coastal habitat
<i>Epilobium septentrionale</i> Humboldt County fuchsia	4.3	Jul-Sep	Broadleafed upland forest, North Coast coniferous forest- Rocky (sometimes), Sandy (sometimes)	Unlikely-no typical rocky habitat
<i>Erigeron biolettii</i> streamside daisy	3	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest- Mesic, Rocky	Unlikely-no mesic rocky habitat
<i>Erysimum concinnum</i> bluff wallflower	1B.2	Feb-Jul	Coastal bluff scrub, Coastal dunes, Coastal prairie	None-occurs in immediate coastal habitat
<i>Erythronium revolutum</i> coast fawn lily	2B.2	Mar- Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest- Mesic, Streambanks	Unlikely-not associated with grasslands
<i>Gilia capitata</i> ssp. <i>pacifica</i> Pacific gilia	1B.2	Apr-Aug	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Moderate-in grassland
<i>Gilia millefoliata</i> dark-eyed gilia	1B.2	Apr-Jul	Coastal dunes	None-occurs in immediate coastal habitat
<i>Hemizonia congesta</i> ssp. <i>tracyi</i> Tracy's tarplant	4.3	(Mar)May -Oct	Coastal prairie, Lower montane coniferous forest, North Coast coniferous forest-	Moderate-in grassland

<b>Scientific Name Common Name</b>	<b>Listing Status</b>	<b>Blooming Period</b>	<b>Habitat</b>	<b>Potential to Occur in Project Area</b>
			Openings, Serpentine (sometimes)	
<i>Hesperivax sparsiflora</i> <i>var. brevifolia</i> short-leaved evax	1B.2	Mar-Jun	Coastal bluff scrub, Coastal dunes, Coastal prairie	None-occurs in immediate coastal habitat
<i>Iris longipetala</i> coast iris	4.2	Mar- May(Jun)	Coastal prairie, Lower montane coniferous forest, Meadows and seeps- Mesic	Moderate-in grassland, along watercourse
<i>Lasthenia californica ssp.</i> <i>macrantha</i> perennial goldfields	1B.2	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub	None-occur in immediate coastal habitat
<i>Lathyrus glandulosus</i> sticky pea	4.3	Apr-Jun	Cismontane woodland	Moderate-forest edges, roads
<i>Lathyrus palustris</i> marsh pea	2B.2	Mar-Aug	Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest- Mesic	Unlikely, maybe some potential in small wetland
<i>Layia carnosa</i> beach layia	1B.1, CE, FT	Mar-Jul	Coastal dunes, Coastal scrub	None-occurs in immediate coastal habitat
<i>Leptosiphon latisectus</i> broad-lobed leptosiphon	4.3	Apr-Jun	Broadleaved upland forest, Cismontane woodland	Moderate-maybe some potential in grassland, forest edges
<i>Lilium rubescens</i> redwood lily	4.2	Apr- Aug(Sep)	Broadleaved upland forest, Chaparral, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest- Roadsides (sometimes), Serpentine (sometimes)	Moderate-along roads
<i>Listera cordata</i> heart-leaved twayblade	4.2	Feb-Jul	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest-	Unlikely-not associated with grassland, more potential in adjacent forest understory
<i>Montia howellii</i> Howell's montia	2B.2	(Feb)Mar- May	Meadows and seeps, North Coast coniferous forest, Vernal pools- Roadsides (sometimes), Vernally Mesic	Moderate-on roads, disturbed areas
<i>Piperia candida</i> white-flowered rein orchid	1B.2	(Mar)May -Sep	Broadleaved upland forest, Lower montane coniferous forest, North	Unlikely-not associated with grasslands, more potential in adjacent forest understory

<b>Scientific Name Common Name</b>	<b>Listing Status</b>	<b>Blooming Period</b>	<b>Habitat</b>	<b>Potential to Occur in Project Area</b>
			Coast coniferous forest- Serpentine (sometimes)	
<i>Pityopus californicus</i> California pinefoot	4.2	(Mar- Apr)May- Aug	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest, Upper montane coniferous forest- Mesic	Unlikely-not associated with grasslands, more potential in adjacent forest understory
<i>Pleuropogon refractus</i> nodding semaphore grass	4.2	(Mar)Apr- Aug	Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest- Mesic	Unlikely-typically in more mesic riparian habitat
<i>Rhynchospora globularis</i> round-headed beaked- rush	2B.1	Jul-Aug	Marshes and swamps	Unlikely-no marshes or swamps
<i>Ribes roezlii</i> var. <i>amictum</i> hoary gooseberry	4.3	Mar-Apr	Broadleafed upland forest, Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Moderate-forest edge, open areas
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	4.2	(Mar)Apr- Aug	Broadleafed upland forest, Coastal prairie, Coastal scrub, North Coast coniferous forest, Riparian woodland- Disturbed areas (often)	Moderate-along streams, disturbed areas
<i>Sidalcea malviflora</i> ssp. <i>patula</i> Siskiyou checkerbloom	1B.2	(Mar)May -Aug	Coastal bluff scrub, Coastal prairie, North Coast coniferous forest	Moderate-in grassland
<i>Usnea longissima</i> Methuselah's beard lichen	4.2		Broadleafed upland forest, North Coast coniferous forest	Moderate-on tree branches

#### SPECIAL STATUS PLANT LISTING STATUS

##### Endangered Species Act (ESA)

**FE:** Federally Endangered

**FT:** Federally Threatened

**FR:** Federally Rare

##### California Endangered Species Act (CESA)

**CE:** California Endangered

**CT:** California Threatened

**CR:** California Rare

##### California Rare Plant Ranks

**1A:** Plants Presumed Extirpated in California and Either Rare or Extinct Elsewhere

**1B:** Plants Rare, Threatened, or Endangered in California and Elsewhere

**2A:** Plants Presumed Extirpated in California, But Common Elsewhere

**2B:** California Rare Plant Rank 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere

**3.** Review List: Plants about which more information is needed.

**4.** Watch List: Plants of limited distribution



#### Threat Ranks

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% 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)

The survey was floristic and followed methods outlined in *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW 2018). A survey coverage map is provided in Figure 2. All plants were identified to the taxonomic level necessary to determine whether they are special status. Plant taxonomy generally follows *The Jepson Manual Vascular Plants of California, Second Edition* (Baldwin et. al. 2012), however the plant list may include more recent name changes. Plant communities were classified according to *A Manual of California Vegetation Online Edition* (CNPS 2022b).

The surveys were conducted at the time of year when plants on the scoping list with potential to occur on the parcel would be recognizable and identifiable (generally, but not necessarily during the blooming period) and when other common plants would be identifiable so that a comprehensive plant list of the project area could be compiled.

## **5. RESULTS**

### **5.1. Special Status Plants**

No special status plants were encountered in the project area. A list of all plants recorded on the surveys is provided in Table 2.

### **5.2. Special Status Natural Communities**

The vegetation described in Section 3.3 is not consistent with any special status natural communities. The cover of California oatgrass is well below the minimum of 10% required to meet the membership rules for Idaho fescue - California oatgrass grassland (*Festuca idahoensis* - *Danthonia californica* Herbaceous Alliance).

### **5.3. Invasive Plants**

Himalayan blackberry (*Rubus armeniacus*) was observed on the property. Himalayan blackberry has a Cal-IPC rating of High.

## **6. POTENTIAL FOR FALSE NEGATIVE SURVEYS**

Potential factors that could result in lack of detection of special status plants include plants that have a seed bank on the site but currently no above ground individuals, grazing, disease, disturbance, and adverse climatic conditions.

Seeds of some species can persist for years or decades in the soil until suitable conditions occur for germination. Legumes such as Humboldt County milk-vetch (*Astragalus agnicidus*) can

Figure 2. Survey Coverage Map.

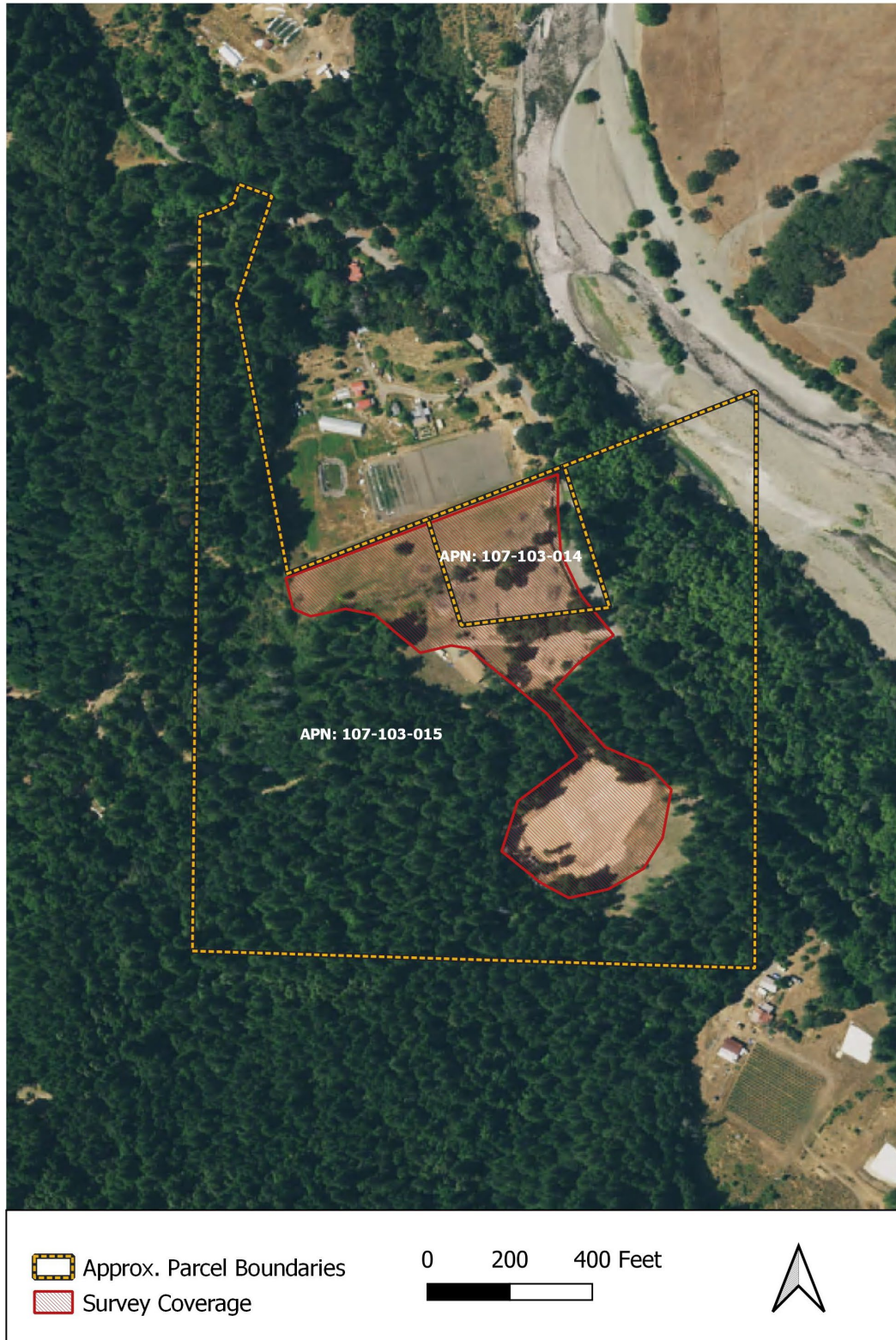


Table 2. Plant List.

Scientific Name	Common Name
<i>Acmispon americanus</i> var. <i>americanus</i>	lotus
<i>Agrostis</i> sp.	bent grass
<i>Anisocarpus madioides</i>	woodland madia
<i>Anthemis cotula</i>	mayweed
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Arbutus menziesii</i>	Pacific madrone
<i>Arctostaphylos columbiana</i>	hairy manzanita
<i>Avena barbata</i>	slender wild oat
<i>Baccharis pilularis</i>	coyote brush
<i>Brassica nigra</i>	black mustard
<i>Briza maxima</i>	rattlesnake grass
<i>Bromus vulgaris</i>	narrow-flowered brome
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Carex feta</i>	feta sedge
<i>Ceanothus thyrsiflorus</i>	blue blossom
<i>Chloroglaum pomeridianum</i>	soaproot
<i>Cirsium vulgare</i>	bull thistle
<i>Clarkia</i> sp.	clarkia
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Clinopodium douglasii</i>	yerba buena
<i>Conium maculatum</i>	poison hemlock
<i>Corylus cornuta</i> ssp. <i>californica</i>	California hazelnut
<i>Croton setigerus</i>	dove weed
<i>Cynosurus echinatus</i>	dogtail grass
<i>Cyperus eragrostis</i>	nut-grass
<i>Danthonia californica</i>	California oatgrass
<i>Festuca arundinacea</i>	tall fescue
<i>Festuca myuros</i>	rattail sixweeks grass
<i>Festuca perennis</i>	rye grass
<i>Fraxinus latifolia</i>	Oregon ash
<i>Heteromeles arbutifolia</i>	toyon
<i>Holcus lanatus</i>	common velvet grass
<i>Hypochaeris radicata</i>	hairy cat's-ear
<i>Iris purdyi</i>	Purdy's iris
<i>Juncus bufonius</i>	common toad rush
<i>Juncus patens</i>	spreading rush
<i>Lepidium</i> sp.	peppergrass or pepperwort
<i>Leucanthemum vulgare</i>	ox-eye daisy

Scientific Name	Common Name
<i>Linum bienne</i>	western blue flax
<i>Lithrum</i> sp.	loostripe
<i>Lonicera hispidula</i>	hairy honeysuckle
<i>Lotus corniculatus</i>	birdfoot trefoil
<i>Lupinus bicolor</i>	miniature lupine
<i>Melilotus albus</i>	white sweetclover
<i>Mentha pulegium</i>	pennyroyal
<i>Morella californica</i>	wax myrtle
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	tanoak
<i>Plantago lanceolata</i>	English plantain
<i>Poa annua</i>	annual bluegrass
<i>Polygala californica</i>	California milkwort
<i>Polygonum aviculare</i>	prostrate knotweed
<i>Polystichum munitum</i>	sword fern
<i>Pseudognaphalium luteoalbum</i>	weedy cudweed
<i>Pseudotsuga menziesii</i>	Douglas-fir
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	bracken fern
<i>Quercus chrysolepis</i>	canyon live oak
<i>Quercus garryana</i>	Oregon white oak
<i>Quercus kelloggii</i>	California black oak
<i>Ranunculus repens</i>	creeping buttercup
<i>Rosa</i> sp.	rose
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Rubus ursinus</i>	California blackberry
<i>Rumex acetosella</i>	sheep sorrel
<i>Rumex crispus</i>	curly dock
<i>Sanicula crassicaulis</i>	Pacific snakeroot
<i>Silybum marianum</i>	milk thistle
<i>Solanum nigrum</i>	black nightshade
<i>Sonchus oleraceus</i>	common sow thistle
<i>Spergularia rubra</i>	purple sand spurry
<i>Stachys rigida</i>	rough hedgenettle
<i>Taraxacum officinale</i>	dandelion
<i>Torilis arvensis</i>	rattlesnake weed
<i>Toxicodendron diversilobum</i>	poison-oak
<i>Trifolium incarnatum</i>	crimson clover
<i>Trifolium dubium</i>	little hop clover
<i>Trifolium glomeratum</i>	clustered clover
<i>Trifolium repens</i>	white clover

Scientific Name	Common Name
<i>Umbellularia californica</i>	California-bay
<i>Vaccinium ovatum</i>	evergreen huckleberry
<i>Vicia sativa</i>	vetch
<i>Xanthium strumarium</i>	cocklebur

persist for years or decades in seed bank and emerge after logging or other environmental changes. Plants that grow from underground structures such as bulbs and tubers, including white-flowered rein orchid (*Piperia candida*) and lilies (*Lilium* spp.), can remain dormant or suppressed under unfavorable conditions.

Plants can also be consumed by livestock, deer, or invertebrates or succumb to disease. These factors could damage identifying characters such as flowers and leaves or remove entire above ground portions of the plants resulting in negative detections.

There was below normal 2021/22 rainfall accumulation in the months prior to the 2022 surveys. However, rainfall in April and May were relatively normal for the time of year. Temperature, which is the primary factor controlling plant phenology, was relatively normal.

## 7. IMPACT ASSEMENT AND RECOMMENDATIONS

The project will not impact special status plants or natural communities.

Information on Himalayan blackberry and potential control measures can be found at:  
[https://wric.ucdavis.edu/information/natural%20areas/wr\\_R/Rubus.pdf](https://wric.ucdavis.edu/information/natural%20areas/wr_R/Rubus.pdf)

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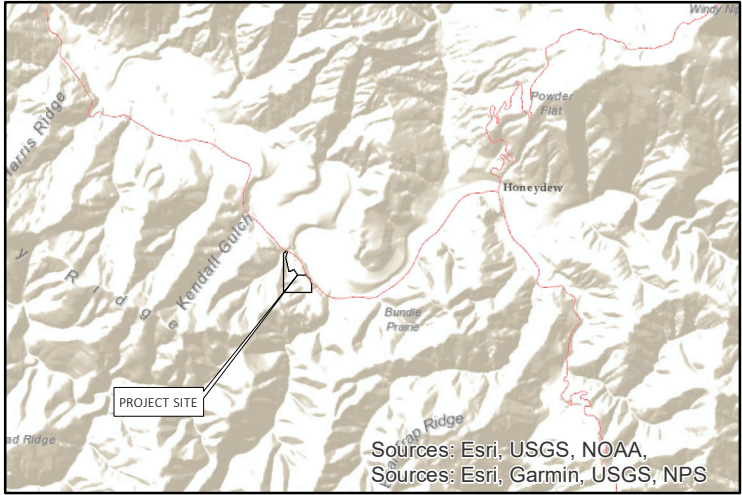
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# APPENDIX A

## Site Plan and Lot Line Adjustment Map



DIRECTIONS TO SITE

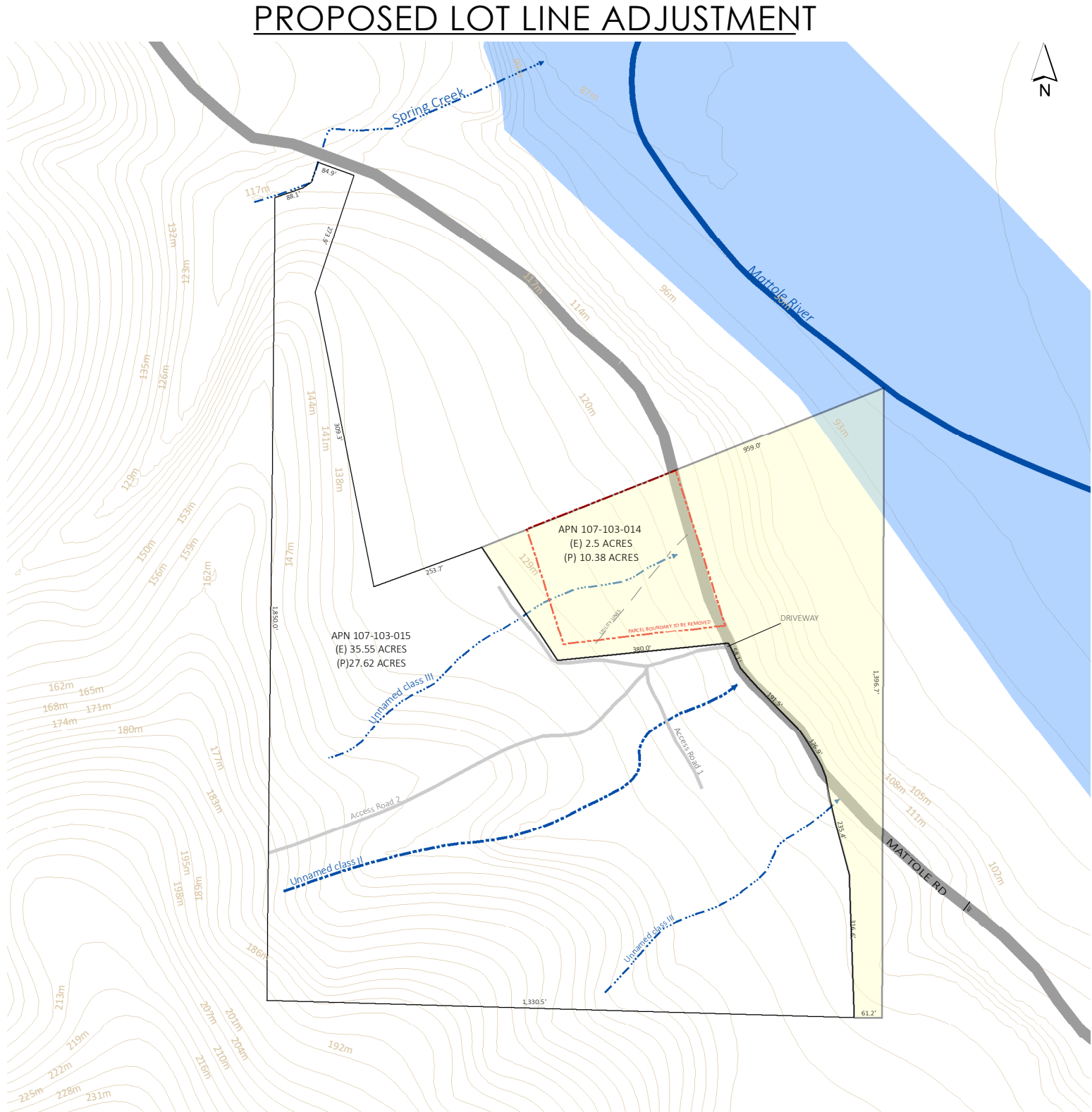
TAKE US-101 S FROM EUREKA TO EXIT 692 TOWARD FERNDALE/FERNBRIDGE. TURN RIGHT ONTO SINGLEY ROAD. CONTINUE ONTO FERNBRIDGE DRIVE, THEN TURN RIGHT ONTO CA-211 S. TURN RIGHT ONTO BLUFF STREET/OCEAN AVENUE. TURN LEFT ONTO WILDCAT AVENUE. KEEP RIGHT TO CONTINUE ON MATTOLE ROAD. CONTINUE ONTO FRONT STREET. TURN RIGHT ON MATTOLE ROAD AND THE PROJECT SITE WILL BE ON THE RIGHT.

PROJECT DESCRIPTION

A SPECIAL PERMIT APPLICATION (#16943) FOR 15,300 SQUARE FEET OF NEW MIXED LIGHT CULTIVATION AND APPURTENANT FACILITIES. THE APPLICANT PROJECTS ANNUAL WATER USAGE TO BE 180,000 GALLONS AND IS PROPOSING TO BUILD A 600,000 GALLON RAINWATER CATCHMENT POND. PROCESSING SUCH AS DRYING AND CURING WILL OCCUR ONSITE, HOWEVER, TRIMMING WILL TAKE PLACE AT A LICENSED THIRD-PARTY FACILITY UNTIL A COMMERCIAL ADA-COMPLIANT FACILITY IS CONSTRUCTED. ELECTRICITY WILL BE SOURCED FROM PG&E. THE PROJECT WILL REQUIRE FOUR EMPLOYEES. A LOT LINE ADJUSTMENT WILL BE INCLUDED TO ENSURE THE PARCEL MEETS MINIMUM SIZE REQUIREMENTS.

GENERAL NOTES

- 1. DRAWING SCALE AS NOTED. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- 2. THIS IS NOT A BOUNDARY SURVEY. BOUNDARY INFORMATION DEPICTED HAS BEEN OBTAINED FROM HUMBOLDT COUNTY GIS DATA AND ADJUSTED BASED ON SURVEY MARKERS FOUND IN THE FIELD AND CONVERSATIONS WITH THE APPLICANT/OWNER.



APPLICANT

VZIR, LLC (#16943)  
42458 MATTOLE ROAD  
PETROLIA, CA 95558  
APN 107-103-014

OWNER

VALENTIN VALKOV  
42458 MATTOLE ROAD,  
PETROLIA, CA 95558

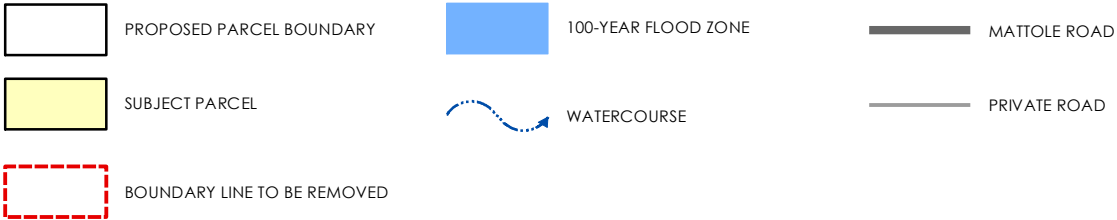
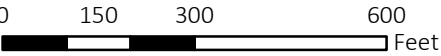
OWNER AGENT

PR PROFESSIONAL SERVICES  
3034 H Street, Suite B  
EUREKA, CA 95501  
(707)496-1455

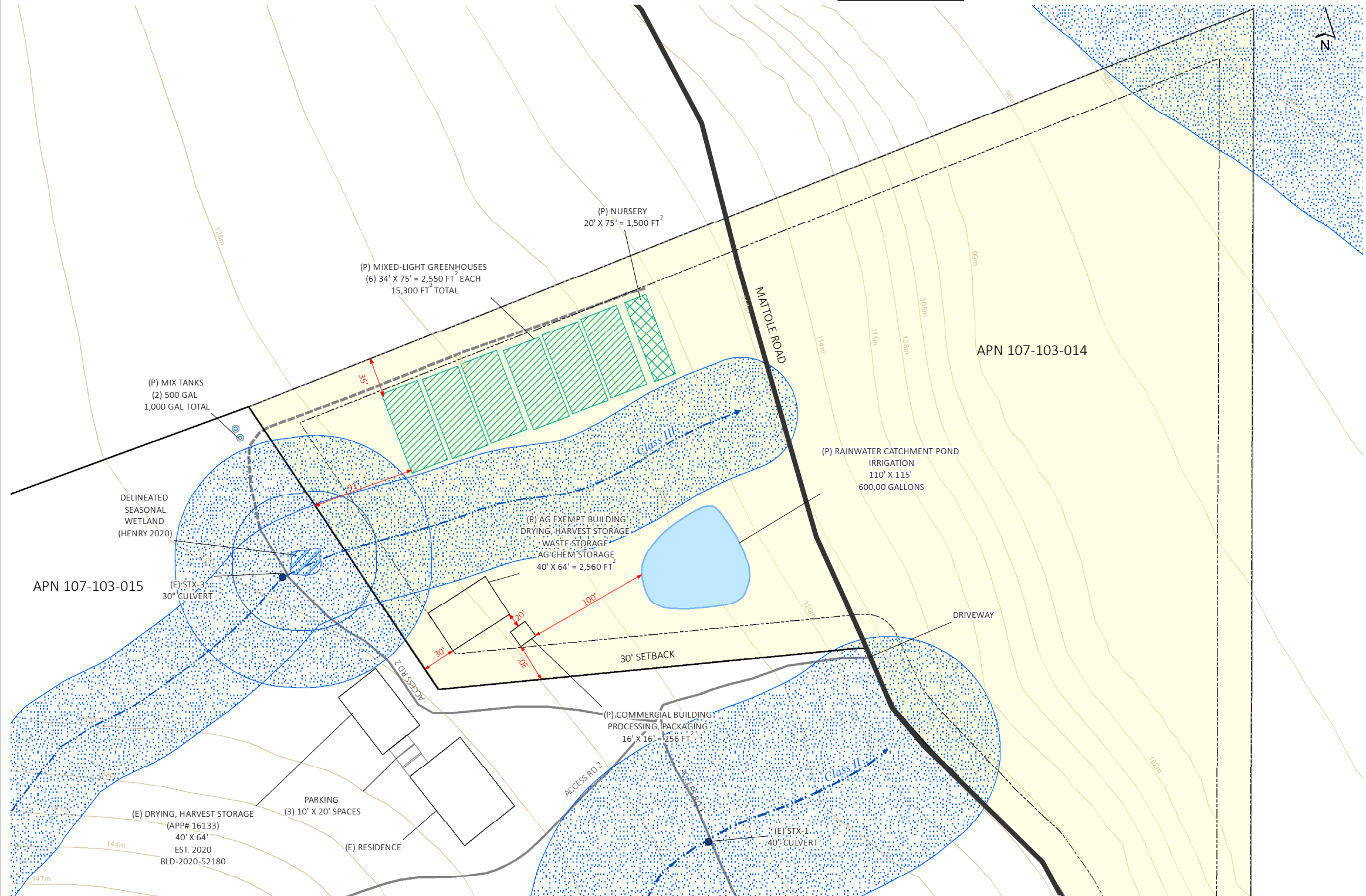
SITE ADDRESS

42458 MATTOLE ROAD  
PETROLIA, CA 95558

PREPARED BY CHRISTINA SUNDMAN  
FOR PR PROFESSIONAL SERVICES  
REVISED FEBRUARY 2, 2022  
SCALE 1:3,600 1 INCH = 300 FEET



SITE PLAN



APPLICANT

VZIR, LLC (#16943)  
VALENTIN VALKOV  
42458 MATTOLE ROAD,  
PETROLIA, CA 95545

OWNER

VALENTIN VALKOV  
42458 MATTOLE ROAD,  
PETROLIA, CA 95545

OWNER AGENT

PR PROFESSIONAL SERVICES  
3034 H STREET, SUITE B  
EUREKA, CA 95503  
(707)496-1455

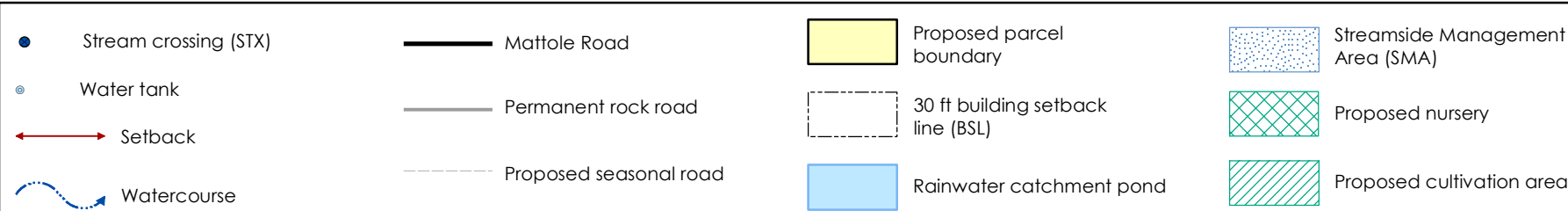
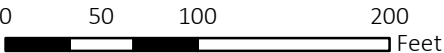
SITE ADDRESS

42458 MATTOLE ROAD  
PETROLIA, CA 95545  
APN 107-103-014

PREPARED BY CHRISTINA SUNDMAN  
FOR PR PROFESSIONAL SERVICES  
MARCH 31, 2022

SCALE 1:1,200 1 INCH = 100 FEET  
PARCEL: HUMBOLDT COUNTY GIS 2021

ABBREVIATIONS:  
STX: STREAM CROSSING  
ML: MIXED LIGHT



# APPENDIX B

## NRCA Soil Map



# Soil Map—Humboldt County, South Part, California



**Natural Resources  
Conservation Service**

Web Soil Survey  
National Cooperative Soil Survey

7/2/2022  
Page 1 of 3

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Humboldt County, South Part, California

Survey Area Data: Version 10, Sep 6, 2021

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
100	Water and Fluvents, 0 to 2 percent slopes	0.8	1.6%
134	Fluvents, 0 to 2 percent slopes, occasionally flooded	3.6	7.2%
144	Garberville-Parkland complex, 0 to 2 percent slopes	6.6	13.2%
151	Parkland-Garberville complex, 2 to 9 percent slopes	7.1	14.3%
159	Grannycreek-Parkland complex, 2 to 5 percent slopes	5.2	10.4%
567	Crazycoyote-Sproulis-Caperidge complex, 15 to 50 percent slopes	4.6	9.2%
5505	Crazycoyote-Sproulis-Canoe creek complex, 30 to 50 percent slopes	22.0	44.2%
<b>Totals for Area of Interest</b>		<b>49.8</b>	<b>100.0%</b>

# APPENDIX C

## Special Status Natural Community Scoping List

Scientific Name	Common Name	Global rarity	State rarity
<i>Abies grandis</i>	Grand fir forest	G4	S2.1
<i>Abronia latifolia</i> - <i>Ambrosia chamissonis</i>	Dune mat	G3	S3
<i>Acer macrophyllum</i>	Bigleaf maple forest and woodland	G4	S3
<i>Acer negundo</i>	Box-elder forest and woodland	G5	S2.2
<i>Aesculus californica</i>	California buckeye groves	G3	S3
<i>Alnus incana</i>	Mountain alder thicket	G4	S3
<i>Alnus viridis</i>	Sitka alder thickets	G5	S3?
<i>Alopecurus geniculatus</i>	Water foxtail meadows	G3?	S3?
<i>Arbutus menziesii</i>	Madrone forest	G4	S3.2
<i>Arctostaphylos bakeri</i>	Stands of Baker manzanita	G1	S1.2
<i>Arctostaphylos</i> ( <i>canescens</i> , <i>manzanita</i> , <i>stanfordiana</i> )	Hoary, common, and Stanford manzanita chaparral	G3	S3
<i>Arctostaphylos montana</i>	Mount Tamalpais manzanita chaparral	G2	S2
<i>Arctostaphylos</i> ( <i>nummularia</i> , <i>sensitiva</i> )	Glossy leaf manzanita chaparral	G2	S2
<i>Arctostaphylos patula</i> - <i>Arctostaphylos nevadensis</i>	Green leaf manzanita - Pinemat manzanita chaparral	G5	S3
<i>Argentina egedii</i>	Pacific silverweed marshes	G4	S2
<i>Bolboschoenus maritimus</i>	Salt marsh bulrush marshes	G4	S3
<i>Bromus carinatus</i> - <i>Elymus glaucus</i>	California brome - blue wildrye prairie	G3	S3
<i>Calamagrostis nutkaensis</i>	Pacific reed grass meadows	G4	S2
<i>Calocedrus decurrens</i>	Incense cedar forest and woodland	G4	S3.2
<i>Carex</i> ( <i>aquaticus</i> , <i>lenticularis</i> )	Water sedge and lakeshore sedge meadows	G5	S3
<i>Carex barbarae</i>	White-root beds	G2?	S2?
<i>Carex densa</i>	Dense sedge marshes	G2?	S2?
<i>Carex echinata</i>	Star sedge fens	G4?	S3?
<i>Carex integra</i>	Small-fruited sedge meadows	G4?	S2?
<i>Carex luzulina</i>	Woodland sedge fens	G3	S2?
<i>Carex nudata</i>	Torrent sedge patches	G3	S3
<i>Carex obnupta</i>	Slough sedge swards	G4	S3
<i>Carex</i> ( <i>pansa</i> , <i>praegracilis</i> )	Sand dune sedge swaths	G4?	S3?
<i>Carex serratodens</i>	Twotooth sedge seeps	G3	S3?
<i>Ceanothus</i> ( <i>oliganthus</i> , <i>tomentosus</i> )	Hairy leaf - woolly leaf ceanothus chaparral	G3	S3
<i>Cephalanthus occidentalis</i>	Button willow thickets	G5	S2
<i>Chamaecyparis lawsoniana</i>	Port Orford cedar forest and woodland	G3	S3.1
<i>Chrysolepis chrysophylla</i>	Golden chinquapin thickets	G2	S2
<i>Chrysolepis sempervirens</i>	Bush chinquapin chaparral	G4	S3.3

Scientific Name	Common Name	Global rarity	State rarity
<i>Corylus cornuta</i> var. <i>californica</i>	Hazelnut scrub	G3	S2?
<i>Darlingtonia californica</i>	California pitcher plant fens	G4?	S3
<i>Deschampsia cespitosa</i> - <i>Hordeum brachyantherum</i> - <i>Danthonia californica</i>	Coastal tufted hair grass - Meadow barley - California oatgrass wet meadow	GNR	S3
<i>Equisetum</i> ( <i>arvense</i> , <i>variegatum</i> , <i>hyemale</i> )	Field horsetail - scouringrush horsetail - variegated scouringrush wet meadow	GNR	S3
<i>Eriophyllum staechadifolium</i> - <i>Erigeron glaucus</i> - <i>Eriogonum latifolium</i>	Seaside woolly-sunflower - seaside daisy - buckwheat patches	G3	S3
<i>Festuca idahoensis</i> - <i>Danthonia californica</i>	Idaho fescue - California oatgrass grassland	GNR	S3
<i>Frangula californica</i> - <i>Rhododendron occidentale</i> - <i>Salix breweri</i>	California coffee berry - western azalea scrub - Brewer's willow	G3	S3
<i>Frankenia salina</i>	Alkali heath marsh	G4	S3
<i>Fraxinus latifolia</i>	Oregon ash groves	G4	S3.2
<i>Garrya elliptica</i>	Coastal silk tassel scrub	G3?	S3?
<i>Glyceria</i> — <i>occidentalis</i>	Northwest manna grass marshes	G3?	S3?
<i>Grindelia</i> ( <i>camporum</i> , <i>stricta</i> )	Gum plant patches	G2	S2
<i>Hesperocyparis macnabiana</i>	McNab cypress woodland and forest	G3	S3.2
<i>Hesperocyparis pigmaea</i>	Mendocino pygmy cypress woodland	G1	S1
<i>Hesperocyparis sargentii</i>	Sargent cypress woodland	G3	S3.2
<i>Heterotheca</i> ( <i>oregona</i> , <i>sessiliflora</i> )	Goldenaster patches	G3	S3
<i>Hydrocotyle</i> ( <i>ranunculoides</i> , <i>umbellata</i> )	Mats of floating pennywort	G4	S3?
<i>Isoetes</i> ( <i>bolanderi</i> , <i>echinospora</i> , <i>howellii</i> , <i>nuttallii</i> , <i>occidentalis</i> )	Quillwort beds	G3	S3?
<i>Juglans hindsii</i> and Hybrids	Hinds's™ walnut and related stands	G1	S1.1
<i>Juncus lescurii</i>	Salt rush swales	G3	S2?
<i>Juncus</i> ( <i>oxymeris</i> , <i>xiphioides</i> )	Iris-leaf rush seeps	G2?	S2?
<i>Leymus cinereus</i> - <i>Leymus triticoides</i>	Ashy ryegrass - creeping ryegrass turfs	G3	S3
<i>Leymus mollis</i>	Sea lyme grass patches	G4	S2
<i>Lupinus chamissonis</i> - <i>Ericameria ericoides</i>	Silver dune lupine - mock heather scrub	G3	S3
<i>Morella californica</i>	Wax myrtle scrub	G3	S3
<i>Nassella</i> spp. - <i>Melica</i> spp.	Needle grass - Melic grass grassland	G3	S3
<i>Notholithocarpus densiflorus</i>	Tanoak forest	G4	S3.2
<i>Nuphar lutea</i>	Yellow pond-lily mats	G5	S3?
<i>Oenanthe sarmentosa</i>	Water-parsley marsh	G4	S2?
<i>Picea sitchensis</i>	Sitka spruce forest and woodland	G5	S2
<i>Pinus balfouriana</i>	Foxtail pine woodland	G3	S3

Scientific Name	Common Name	Global rarity	State rarity
<i>Pinus contorta</i> ssp. <i>contorta</i>	Beach pine forest and woodland	G5	S3
<i>Pinus muricata</i> - <i>Pinus radiata</i>	Bishop pine - Monterey pine forest and woodland	G3	S3.2
<i>Populus fremontii</i> - <i>Fraxinus velutina</i> - <i>Salix gooddingii</i>	Fremont cottonwood forest and woodland	G4	S3.2
<i>Populus trichocarpa</i>	Black cottonwood forest and woodland	G5	S3
<i>Pseudotsuga menziesii</i> - <i>Calocedrus decurrens</i>	Douglas fir - incense cedar forest and woodland	G3	S3
<i>Pseudotsuga menziesii</i> - <i>Notholithocarpus densiflorus</i>	Douglas fir - tanoak forest and woodland	G3	S3
<i>Quercus garryana</i> (tree)	Oregon white oak woodland and forest	G4	S3
<i>Quercus lobata</i>	Valley oak woodland and forest	G3	S3
<i>Quercus parvula</i> var. <i>shrevei</i>	Shreve oak forests	G2	S2
<i>Quercus wislizeni</i> - <i>Quercus chrysolepis</i> (shrub)	Canyon live oak - Interior live oak chaparral	G4	S3
<i>Rhododendron columbianum</i>	Western Labrador-tea thickets	G4	S2?
<i>Rubus</i> ( <i>parviflorus</i> , <i>spectabilis</i> , <i>ursinus</i> )	Coastal brambles	G4	S3
<i>Ruppia</i> ( <i>cirrhusa</i> , <i>maritima</i> )	Ditch-grass or widgeon-grass mats	G4?	S2
<i>Salix gooddingii</i> - <i>Salix laevigata</i>	Goodding's willow - red willow riparian woodland and forest	G4	S3
<i>Salix hookeriana</i>	Coastal dune willow thickets	G4	S3
<i>Salix lucida</i> ssp. <i>lasiandra</i>	Shining willow groves	G4	S3.2
<i>Salix sitchensis</i>	Sitka willow thickets	G4	S3?
<i>Sarcocornia pacifica</i> ( <i>Salicornia depressa</i> )	Pickleweed mats	G4	S3
<i>Schoenoplectus</i> ( <i>acutus</i> , <i>californicus</i> )	Hardstem and California bulrush marshes	GNR	S3
<i>Schoenoplectus americanus</i>	American bulrush marsh	G5	S3.2
<i>Scirpus microcarpus</i>	Small-fruited bulrush marsh	G4	S2
<i>Selaginella</i> ( <i>bigelovii</i> , <i>wallacei</i> )	Bushy spikemoss mats	G4	S3
<i>Sequoia sempervirens</i>	Redwood forest and woodland	G3	S3.2
<i>Sparganium</i> ( <i>angustifolium</i> )	Mats of bur-reed leaves	G4	S3?
<i>Spartina foliosa</i>	California cordgrass marsh	G3	S3.2
<i>Stuckenia</i> ( <i>pectinata</i> ) - <i>Potamogeton</i> spp.	Pondweed mats	G3	S3?
<i>Torreyochloa pallida</i>	Floating mats of weak manna grass	G3	S3?
<i>Trifolium variegatum</i>	White-tip clover swales	G3?	S3?
<i>Tsuga heterophylla</i>	Western hemlock forest	G5	S2
<i>Umbellularia californica</i>	California bay forest and woodland	G4	S3
<i>Vaccinium uliginosum</i>	Bog blueberry wet meadows	G4	S3

Scientific Name	Common Name	Global rarity	State rarity
Vitis arizonica - Vitis girdiana	Wild grape shrubland	G3	S3
Zostera (marina, pacifica) Pacific Aquatic	Eelgrass beds	GNR	S3

### Global (G) Rankings

**G1** = Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than 2,000 acres.

**G2** = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.

**G3** = 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.

**G4** = Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat.

**G5** = Population or stand demonstrably secure to ineradicable due to being commonly found in the world

### State (S) Rankings

**S1** = Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres

S1.1 = very threatened

S1.2 = threatened

S1.3 = no current threats known

**S2** = 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres

S2.1 = very threatened

S2.2 = threatened

S2.3 = no current threats known

**S3** = 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres

S3.1 = very threatened

S3.2 = threatened

S3.3 = no current threats known

**S4** = Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e. there is some threat, or somewhat narrow habitat.

**S5** = Demonstrably secure to ineradicable in California.