

Usal Redwood Forest Company 2019 Botanical Resources Summary

Introduction

The primary focus of the Usal Redwood Forest botanical program is to perform quality floristic surveys and to provide a concise assessment detailing the survey results. The information collected is helping foresters and reviewers make sound management decisions concerning botanical resources.

The Usal Redwood Forest Company ownership is home to many species of vascular plants, non-vascular plants, and lichens. The roughly 50,000-acre ownership is mainly comprised of North Coast Coniferous Forest habitat community as described by Holland's *Preliminary Descriptions of the Terrestrial Plant Communities of California* (Holland 1986). Dominant tree species include coast redwood and Douglas-fir with a scattering of Western hemlock and grand fir. Common components of conifer stands on xeric sites are tanoak and Pacific madrone. Riparian areas provide habitat for red alder, willow, big-leaf maple, California bay, and California nutmeg. A wide range of shrubs occur on the ownership including huckleberry, rhododendron, thimbleberry, manzanita, coyote brush, ceanothus, salal, willows and poison oak.

Methods

Scoping strategies, survey methods, and impact assessments/mitigations were consistent with the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2019), *Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Plant Communities* (DFG 2000), *Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants* (CNPS 1998), *California Forest Practice Rules* (CAL FIRE 2019) and the *California Environmental Quality Act* (State of California revised 2001). Natural Communities were based on California Department of Fish and Wildlife's VegCAMPs classification.

The project areas were initially scoped with the current inventories of the California Natural Diversity Database (CNDDDB), (CDFW 2019) and *Rare Plant Inventory* (CNPS 2019) using a property-wide search method. This was accomplished by scoping the USGS 7.5 minute quadrangles managed by Usal Redwood Forest Company, and all contiguous quadrangles. Because the aforementioned inventories reflect the sensitive taxa and communities historically occurring in the specified quadrangles, the scoping list was combined with plant lists from local experts (Golec 2002; Sholars 2002) to generate a "Long List of Sensitive Taxa and Communities" that have historically occurred or could possibly occur within the quadrangles scoped. This list was shortened by assessing potential habitats identified through examining aerial photographs, evaluating habitat descriptions, and consulting with the RPFs. For example, species occurring only

in dune or coastal bluff scrub habitats were removed because the proposed project area does not contain dune or coastal bluff scrub habitat. The result was the Target Species and Plant Communities lists found below. Natural communities were classified using VegCAMP’s California Natural Community List (CDFW, 2019). CNDDDB inventory quadrangle data includes California Rare Plant Rank (CRPR) 1-3 plants. Rare plant listings considered for the scoping list were California Rare Plant Rank 1-3, and state and federal rare, threatened, and/or endangered. California Rare Plant Rank 4 plants were considered if they were also state or federally listed as Rare, Threatened, or Endangered. Occurrences were defined as populations separated by at least one-quarter air mile.

Floristic field surveys were conducted during sensitive plant blooming windows unless species were readily identifiable by vegetative characteristics, or reference sites were visited and sensitive plants were found blooming outside the expected windows. Floristic surveys were conducted using intuitively-controlled, habitat-focused techniques, with the majority of survey effort in potential sensitive plant habitat. Habitats within the project site were surveyed to inventory the plants present. All vascular plants observed were identified, as classified in *The Jepson Manual: vascular plants of California* (Baldwin, et al. 2012), to the taxonomic level necessary to exclude Target Species. Field mapping of sensitive natural communities, if present, is done to the association level as described by VegCAMP (CDFW, 2019) if proposed projects are within the boundaries of the sensitive natural community, otherwise natural communities are described to the Alliance level.

Findings and Discussion

In 2019, Usal Redwood Forest Company floristically surveyed 976 acres including four proposed Timber Harvesting Plans (See Table 1) and two stream restoration projects. Surveys in 2019 did not identify any new occurrences of sensitive plants or sensitive natural communities.

Table 1. Acres surveyed in 2019.

Project Name	Acres
Usal Beach THP	330
Bear Creek West THP	192
Upper Soldier THP	150
Iron Gate Gulch THP	168
Soldier Creek Restoration Project	58
Moody Creek Restoration Project	78
Total	976

Table 2. Target plant species on Usal Redwood Forest.

Scientific Name	Common Name	CRPR	CESA	FESA	Grank	Srank	Blooming Period	Habitat
<i>Arabis mcdonaldiana</i>	McDonald's rockcress	1B.1	CE	FE	G3	S3	May-Jul	Lower montane coniferous forest, Upper montane coniferous forest (serpentinite)
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	1B.1	None	None	G3T2	S2	Feb-Apr	Chaparral, Lower montane coniferous forest (openings; often serpentinite)
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	1B.1	CE	None	G2	S2	Apr-Sep	Broadleafed upland forest, North Coast coniferous forest (often disturbed roadsides)
<i>Cardamine angulata</i>	seaside bittercress	2B.2	None	None	G4G5	S3	(Jan)Mar-Jul	Lower montane coniferous forest, North Coast coniferous forest (wet areas; streambanks)
<i>Castilleja litoralis</i>	Oregon coast paintbrush	2B.2	None	None	G3	S3	Jun-Jul	Coastal bluff scrub, Coastal dunes, Coastal scrub (sandy)
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	1B.2	None	None	G2	S2	Apr-Aug	Coastal bluff scrub, Closed-cone coniferous forest, Coastal dunes, Coastal prairie, Coastal scrub
<i>Ceanothus foliosus</i> var. <i>vineatus</i>	Vine Hill ceanothus	1B.1	None	None	G3T1	S1	Mar-May	Chaparral
<i>Clarkia amoena</i> ssp. <i>whitneyi</i>	Whitney's farewell-to-spring	1B.1	None	None	G5T1	S1	Jun-Aug	Coastal bluff scrub, Coastal scrub
<i>Erigeron biolettii</i>	streamside daisy	3	None	None	G3?	S3?	Jun-Oct	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest (rocky, mesic)
<i>Eriogonum kelloggii</i>	Kellogg's buckwheat	1B.2	CE	None	G2	S2	(May)Jun-Aug	Lower montane coniferous forest (rocky, serpentinite)
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	None	None	G4G5	S2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps, sometimes serpentinite, rocky, openings
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	None	None	G4G5	S3	Mar-Jul(Aug)	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest (streambanks)

Table 2. Target species on Usal Redwood Forest (Continued)

Scientific Name	Common Name	CRPR	CESA	FESA	Grank	Srank	Blooming Period	Habitat
<i>Gentiana setigera</i>	Mendocino gentian	1B.2	None	None	G2	S2	(Apr-Jul)Aug-Sep	Lower montane coniferous forest, Meadows and seeps
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	None	None	G5T3	S2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland
<i>Hesperocyparis pygmaea</i>	pygmy cypress	1B.2	None	None	G1	S1		Closed-cone coniferous forest (usually podzol-like soil)
<i>Kopsiopsis hookeri</i>	small groundcone	2B.3	None	None	G4?	S1S2	Apr-Aug	North Coast coniferous forest
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	1B.2	None	None	G3T2	S2	Jan-Nov	Coastal bluff scrub, Coastal dunes, Coastal scrub
<i>Lathyrus palustris</i>	marsh pea	2B.2	None	None	G5	S2	Mar-Aug	Bogs and fens, Coastal prairie, Coastal scrub, Lower montane coniferous forest, Marshes and swamps, North Coast coniferous forest
<i>Lilium maritimum</i>	coast lily	1B.1	None	None	G2	S2	May-Aug	Broadleafed upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marshes and swamps (freshwater), North Coast coniferous forest
<i>Montia howellii</i>	Howell's montia	2B.2	None	None	G3G4	S2	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	None	None	G3	S3	(Mar)May-Sep	Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest (sometimes serpentinite)
<i>Sedum laxum</i> ssp. <i>eastwoodiae</i>	Red Mountain stonecrop	1B.2	None	None	G5T2	S2	May-Jul	Lower montane coniferous forest (serpentinite)
<i>Thermopsis robusta</i>	robust false lupine	1B.2	None	None	G2	S2	May-Jul	Broadleafed upland forest, North Coast coniferous forest
<i>Viburnum ellipticum</i>	oval-leaved viburnum	2B.3	None	None	G4G5	S3?	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest

Table 3. Rare Plant Communities with the Potential to Occur on Usal Redwood Forest (Draft List).

Scientific Name	Common Name	Global & State Rank
Woodland and Forest Alliances and Stands		
<i>Abies grandis</i> Alliance	Grand fir forest	G4 S2
<i>Acer macrophyllum</i> Alliance	Bigleaf maple forest	G4 S3
<i>Arbutus menziesii</i> Alliance	Madrone forest	G4 S3
<i>Chrysolepis chrysophylla</i> Alliance	Golden chinquapin thickets	G2 S2
<i>Lithocarpus densiflorus</i> Alliance	Tanoak forest	G4 S3
<i>Picea sitchensis</i> Alliance	Sitka spruce forest	G5 S2
<i>Pinus contorta</i> ssp. <i>contorta</i> Alliance	Beach pine forest	G5 S3
<i>Pinus muricata</i> Alliance	Bishop pine forest	G3 S3
<i>Sequoia sempervirens</i> Alliance	Redwood forest	G3 S3
<i>Tsuga heterophylla</i> Alliance	Western hemlock forest	G5 S2
<i>Umbellularia californica</i> Alliance	California bay forest	G4 S3
Shrubland Alliances and Stands		
<i>Arctostaphylos (nummularia, sensitiva)</i> Alliance	Glossy leaf manzanita chaparral	G2 S2
<i>Corylus cornuta</i> var. <i>californica</i> Alliance	Hazelnut scrub	G3 S2?
<i>Garrya elliptica</i> Provisional Alliance	Coastal silk tassel scrub	G3? S3?
<i>Diplacis aurantiacus</i> Alliance	Bush monkeyflower scrub	G3 S3?
<i>Holodiscus discolor</i> Alliance	Ocean spray brush	G4 S3
<i>Morella californica</i> Alliance	Wax myrtle scrub	G3 S3
<i>Rhododendron neoglandulosum</i> Alliance	Western Labrador-tea thickets	G4 S2?
<i>Rhododendron occidentale</i> Provisional Alliance	Western azalea patches	G3 S2?
<i>Rosa californica</i> Alliance	California rose briar patches	G3 S3
<i>Sphagnum Bog</i>	Sphagnum bog	G3 S1.2
<i>Salix sitchensis</i> Provisional Alliance	Sitka willow thickets	G4 S3?
Herbaceous Alliances and Stands		
<i>Calamagrostis nutkaensis</i> Alliance	Pacific reed grass meadows	G4 S2
<i>Camassia quamash</i> Alliance	Small camas meadows	G4? S3?
<i>Carex obnupta</i> Alliance	Slough sedge swards	G4 S3
<i>Danthonia californica</i> Alliance	California oat grass prairie	G4 S3
<i>Elymus glaucus</i> Alliance	Blue wild rye meadows	G3? S3?
<i>Festuca rubra</i> Alliance	Red fescue grassland	G4 S3?

<i>Festuca idahoensis</i> Alliance	Idaho fescue grassland	G4 S3?
<i>Glyceria occidentalis</i>	Northwest manna grass marshes	G3? S3?
<i>Grindelia (stricta)</i> Provisional Alliance	Gum plant patches	G3? S3?
<i>Hordeum brachyantherum</i> Alliance	Meadow barley patches	G4 S3?
<i>Juncus (oxymyris, xiphioides)</i> Provisional Alliance	Iris-leaf rush seeps	G2? S2?
<i>Leymus triticoides</i> Alliance	Creeping rye grass turfs	G4 S3
<i>Mimulus (guttatus)</i> Alliance	Common monkey flower seeps	G4? S3?
<i>Poa secunda</i> Alliance	Curley bluegrass grassland	G4 S3?
<i>Scirpus microcarpus</i> Alliance	Small-fruited bulrush marsh	G4 S2
<i>Woodwardia fimbriata</i>	Woodwardia thicket	G3 S3.2
Aquatic Vegetation		
<i>Hydrocotyle (ranunculoides, umbellata)</i> Alliance	Mats of floating pennywort	G4 S3?
<i>Nuphar lutea</i> Provisional Alliance	Yellow pond-lily mats	G5 S3?
<i>Oenanthe sarmentosa</i> Alliance	Water-parsley marsh	G4 S2?
<i>Sparganium (angustifolium)</i> Alliance	Mats of bur-reed leaves	G4 S3?

Listing and Rank Codes:

CRPR - 1A = Presumed extinct in CA, **1B** = Rare in CA and elsewhere, **2** = Rare in CA but more common elsewhere, **3** = More info needed, **4** = Watchlist. **.1** - Seriously endangered in California **.2** - Fairly endangered in California **.3** - Not very endangered in California. **GLOBAL RANKING - 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** = 21-100 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. **GX** = All sites are extirpated; this element is extinct in the wild. **GXC** = Extinct in the wild; exists in cultivation. **G1Q** = The element is very rare, but there is a taxonomic question associated. **T-rank** = Subspecies receive a T-rank attached to the G-rank. With the subspecies, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety. **GH** = All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists. **STATE RANKING - S1** = Less than 6 element occurrences (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** = 21-100 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. **NO THREAT RANK. S5** = Demonstrably secure to ineradicable in California. **NO THREAT RANK. SH** = All California sites are historical (not observed in at least 20 years, but suitable habitat still exists). **SX** = All California sites are extirpated.

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.

CAL FIRE (California Department of Forestry and Fire Protection). 2017. *Forest Practice Rules*. California Department of Forestry, Sacramento, CA.

CNPS (California Native Plant Society). 2001. *Botanical Survey Guidelines*. California Native Plant Society, Sacramento, CA.

CNPS (California Native Plant Society). 1998. *Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants*. California Native Plant Society, Sacramento, CA.

CNPS (California Native Plant Society). 1995. *Collection Guidelines and Documentation Techniques*. California Native Plant Society, Sacramento, CA.

CNPS (California Native Plant Society). 2019. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Accessed during January of 2017 from <http://www.cnps.org>

CDFW (California Department of fish and Wildlife). *California Natural Diversity Database (CNDDB)*, Commercial version, California Department of Fish and Wildlife, Sacramento, CA.

CDFW (California Department of Fish and Wildlife). 2019. California Natural Community List. <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>.

DFG (California Department of fish and Game). 2005. *Conservation of Sensitive Native Plant Resources Within the Timber Harvest Review Process and During Timber Harvesting Operations*. The Resources Agency, California Department of Fish and Game Sacramento, CA.

DFG (California Department of fish and Game). 2000. *Guidelines for Assessing the Effects of Proposed Developments on Rare, Threatened and Endangered Plants and Plant Communities*. The Resources Agency, California Department of Fish and Game Sacramento, CA.

DFG (California Department of fish and Game). 2009. *Protocols for Surveying and Evaluating Impacts to Special Status Native plant Populations and Natural Communities*. The Resources Agency, California Department of Fish and Game Sacramento, CA.

Golec, C. Unpublished document 2002. *Rare Plants of the North Coast Redwood Region*. Natural Resources Management Corporation, Eureka, CA.

Hickman, J.C. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley, CA.

Holland, R.F. Unpublished report 1986. *Preliminary Descriptions of the Terrestrial Plant Communities of California*. State of California, The Resources Agency, Department of Fish and Game, Natural Heritage Division, Sacramento, CA.

Sholars, T. Unpublished document 2002. *Rare Mendocino North Coast Coniferous Species (Redwood Forest)*.

State of California. 2001. *California Environmental Quality Act Guidelines*. Office of Planning and Research, Articles 5, 7, 9, 10 & 20.