
Botanical Survey Results

Shadowlight Ranch
Rock Pit Cultivation Site

HUMBOLDT COUNTY, CA

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1. INTRODUCTION

This report includes the results of a botanical survey conducted on a portion of the Shadowlight Ranch near Garberville. The purpose of the survey was to identify special status plants and natural communities at the “Rock Pit” proposed new cultivation area to fulfill the recommendation in the November 12, 2018 letter for a seasonally appropriate botanical survey of the site. The Rock Pit site was not included in the 2018 botanical survey conducted by Natural Resources Management Corporation (NRM). The primary purpose of this survey was to survey the Rock Pit, but additional surveys were conducted at three other existing cultivation areas and one new proposed building site; this additional survey coverage is partially redundant with the 2018 NRM survey.

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. Natural communities recognized as sensitive are provided on the CDFW Sensitive *Natural Communities List* (CDFW 2018). The list is based on the vegetation classification in *A Manual of California Vegetation, 2nd Edition* (Sawyer et al. 2009). Natural communities with G or S ranks of 3 or lower are considered sensitive. However, they may not warrant protection under CEQA unless they are considered high quality. Human disturbance, invasive species, logging, and grazing are common factors considered when judging whether the stand is high quality and warrants protection.

3. ENVIRONMENTAL SETTING

3.1. Project Location

The ranch is located off Wallan Road approximately 1.2 miles east of Garberville on the Garberville USGS quadrangle in Humboldt County.

3.2. Soil, Topography, and Hydrology

The soil type mapped at the Rock Pit is Yorknorth-Witherell complex, 15 to 30 percent slopes (USDA, NRCS 2020). The soil type is derived from sandstone and schist parent material. The

project area is on a relatively flat ridgeline on an otherwise approximately 15% west-facing slope. The elevation is approximately 900 feet above sea level. There area drains into Bear Canyon, a tributary of the South Fork Eel River.

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 2020) and the *CNPS Inventory of Rare and Endangered Plants* (CNPS 2020). The scoping list includes special status plants with documented occurrences on the Garberville USGS quadrangle or adjacent quadrangles; the list may include other taxa know to occur in habitat similar to the project area in Humboldt County (Table 1).

4.2. Survey

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

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). The Rock Pit and additional areas were surveyed on May 20, 2020. Approximately 3 hours were spent on the survey. The timing of the survey was seasonally appropriate for the site; all plants with potential to occur on the site would have been recognizable and identifiable at the time of the survey. A survey coverage map is provided in Figure 1. 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, 2nd Edition* (Sawyer et al. 2009).

5. RESULTS AND DISCUSSION

5.1. Special Status Plants

No special status plants were encountered on the survey. A list of all plants encountered is provided in Table 2.

5.2. Special Status Plant Communities

There are no special status plant communities in the project area. There are stands of Oregon white oak (*Quercus garryana*), but the stands are relatively small or mixed with Douglas-fir and other hardwoods and were determined not to meet the criteria for Oregon white oak woodland (*Quercus garryana* Woodland Alliance). The grasslands include stands California oatgrass (*Danthonia californica*) and purple needlegrass (*Stipa pulchra*). However, the stands are small and mixed with non-native grasses and other non-native herbaceous species and were determined not to be special status native grassland communities.

The Rock Pit site is a disturbed area used for rock quarrying. The areas adjacent to the Rock Pit and in the other survey areas include a mosaic of mixed conifer and hardwood stands and grasslands. The mixed conifer and hardwood stands include Douglas-fir (*Pseudotsuga menziesii*), Oregon white oak (*Quercus garryana*), California bay (*Umbellularia californica*), madrone (*Arbutus menziesii*), buckeye (*Aesculus californica*), and tanoak (*Notholithocarpus densiflorus* var. *densiflorus*). Common understory plants include sword fern (*Polystichum munitum*), Pacific snakeroot (*Sanicula crassicaulis*), hair honeysuckle (*Lonicera hispidula*), sweet cicily (*Osmorhiza berteroi*), and white hawkweed (*Hieracium albiflorum*). The grasslands are dominated by non-native grasses including rattlesnake grass (*Briza maxima*), ripgut (*Bromus diandrus*), orchard grass (*Dactylis glomerata*), harding grass (*Phalaris aquatica*), soft chess (*Bromus hordeaceus*), and dogtail grass (*Cynosurus echinatus*).

6. REFERENCES

Baldwin, B. C., D. H. Goldman, D. J. Keil, R. Patterson, and T.J. Roasatti. Eds. 2012. *The Jepson Manual, Vascular Plants of California, Second Edition*. University of California Press. Berkeley, CA.

California Department of Fish and Wildlife (CDFW). 2020. *California Natural Diversity Database (CNDDDB)*. <https://www.wildlife.ca.gov/Data/CNDDDB>

CDFW. 2018. *California Sensitive Natural Communities List*. <https://www.wildlife.ca.gov/Data/VegCAMP/Natural-Communities>

CDFW. 2018. *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities*. <https://www.wildlife.ca.gov/Conservation/Survey-Protocols#377281280-plants>

California Native Plant Society (CNPS). 2020. *Inventory of Rare and Endangered Plants*. <http://www.rareplants.cnps.org>

Sawyer, J.O., T. Keeler-Wolf and J.M Evans. 2009. *A Manual of California Vegetation, 2nd Edition*. California Native Plant Society. Sacramento, CA.

United States Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS). 2020. *Web Soil Survey*. <https://websoilsurvey.sc.egov.usda.gov>

Table 1. Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat-Micro Habitat	Potential to Occur in Survey Area
<i>Arabis mcdonaldiana</i>	McDonald's rockcress	1B.1, CE, FE	May-Jul	Lower montane coniferous forest, Upper montane coniferous forest-serpentinite	None. Occurs on serpentine soil.
<i>Arctostaphylos stanfordiana</i> ssp. <i>raichei</i>	Raiche's manzanita	1B.1	Feb-Apr	Chaparral, Lower montane coniferous forest (openings)-rocky, often serpentinite	Unlikely. Area lacks chaparral, lower montane coniferous forest, and serpentine
<i>Astragalus agnicidus</i>	Humboldt County milk-vetch	1B.1	Apr-Sep	Broadleafed upland forest, North Coast coniferous forest-openings, disturbed areas, sometimes roadsides	High. Potential is disturbed areas and along roads.
<i>Castilleja litoralis</i>	Oregon coast paintbrush	2B.2	Jun-Jul	Coastal bluff scrub, Coastal dunes, Coastal scrub-sandy	None. Occur in immediate coastal habitat.
<i>Castilleja mendocinensis</i>	Mendocino Coast paintbrush	1B.2	Apr-Aug	Coastal bluff scrub, Closed-cone coniferous forest, Coastal dunes, Coastal prairie, Coastal scrub	None. Occur in immediate coastal habitat.
<i>Ceanothus foliosus</i> var. <i>vineatus</i>	Vine Hill ceanothus	1B.1	Mar-May	Chaparral	Unlikely. Area lacks chaparral
<i>Eriogonum kelloggii</i>	Kellogg's buckwheat	1B.2, CE	(May)Jun-Aug	Lower montane coniferous forest (rocky, serpentinite)	None. Occurs on serpentine soil.
<i>Erythronium oregonum</i>	giant fawn lily	2B.2	Mar-Jun(Jul)	Cismontane woodland, Meadows and seeps-sometimes serpentinite, rocky, openings	Unlikely. Area lacks typical mesic rock habitat. High potential along streams elsewhere on parcel.
<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. Area lacks typical mesic rock habitat. High potential along streams elsewhere on parcel.

Table 1 (Cont.). Special Status Plant Scoping List.

Scientific Name	Common Name	Listing Status	Blooming Period	Habitat-Micro Habitat	Potential to Occur in Survey Area
<i>Gentiana setigera</i>	Mendocino gentian	1B.2	(Apr-Jul)Aug-Sep	Lower montane coniferous forest, Meadows and seeps-mesic	Unlikely. Area is not lower montane coniferous forest.
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	Apr-Aug	Coastal bluff scrub, Chaparral (openings), Coastal prairie, Valley and foothill grassland	High. Often occurs in rocky areas in grasslands.
<i>Howellia aquatilis</i>	water howellia	2B.2, FT	Jun	Marshes and swamps (freshwater)	None. Area lacks suitable open water. Higher potential in ponds elsewhere on property.
<i>Kopsiopsis hookeri</i>	small groundcone	2B.3	Apr-Aug	North Coast coniferous forest	Moderate. Potential in conifer stands.
<i>Montia howellii</i>	Howell's montia	2B.2	(Jan-Feb)Mar-May	Meadows and seeps, North Coast coniferous forest, Vernal pools-vernally mesic, sometimes roadsides	Moderate. Potential along roads.
<i>Piperia candida</i>	white-flowered rein orchid	1B.2	(Mar)May-Sep	Broadleaved upland forest, Lower montane coniferous forest, North Coast coniferous forest-sometimes serpentinite	Moderate -High. Potential on roadcuts and forest/woodland understory.
<i>Pleuropogon hooverianus</i>	North Coast semaphore grass	1B.1, CT	Apr-June	Broadleaved upland forest, Meadows and seeps, North Coast coniferous forest-open areas, mesic.	Moderate. Potential in grasslands.
<i>Sedum laxum</i> ssp. <i>eastwoodiae</i>	Red Mountain stonecrop	1B.2	May-Jul	Lower montane coniferous forest (serpentinite)	None. Occurs on serpentine soil.
<i>Tracyina rostrata</i>	beaked tracyina	1B.2	May-Jun	Chaparral, Cismontane woodland, Valley and foothill grassland	High. Potential in grasslands.
<i>Viburnum ellipticum</i>	oval-leaved viburnum	2B.3	May-Jun	Chaparral, Cismontane woodland, Lower montane coniferous forest	Moderate-Unlikely. Some potential in mixed woodlands.

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

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)

Figure 1. Survey Coverage Map.

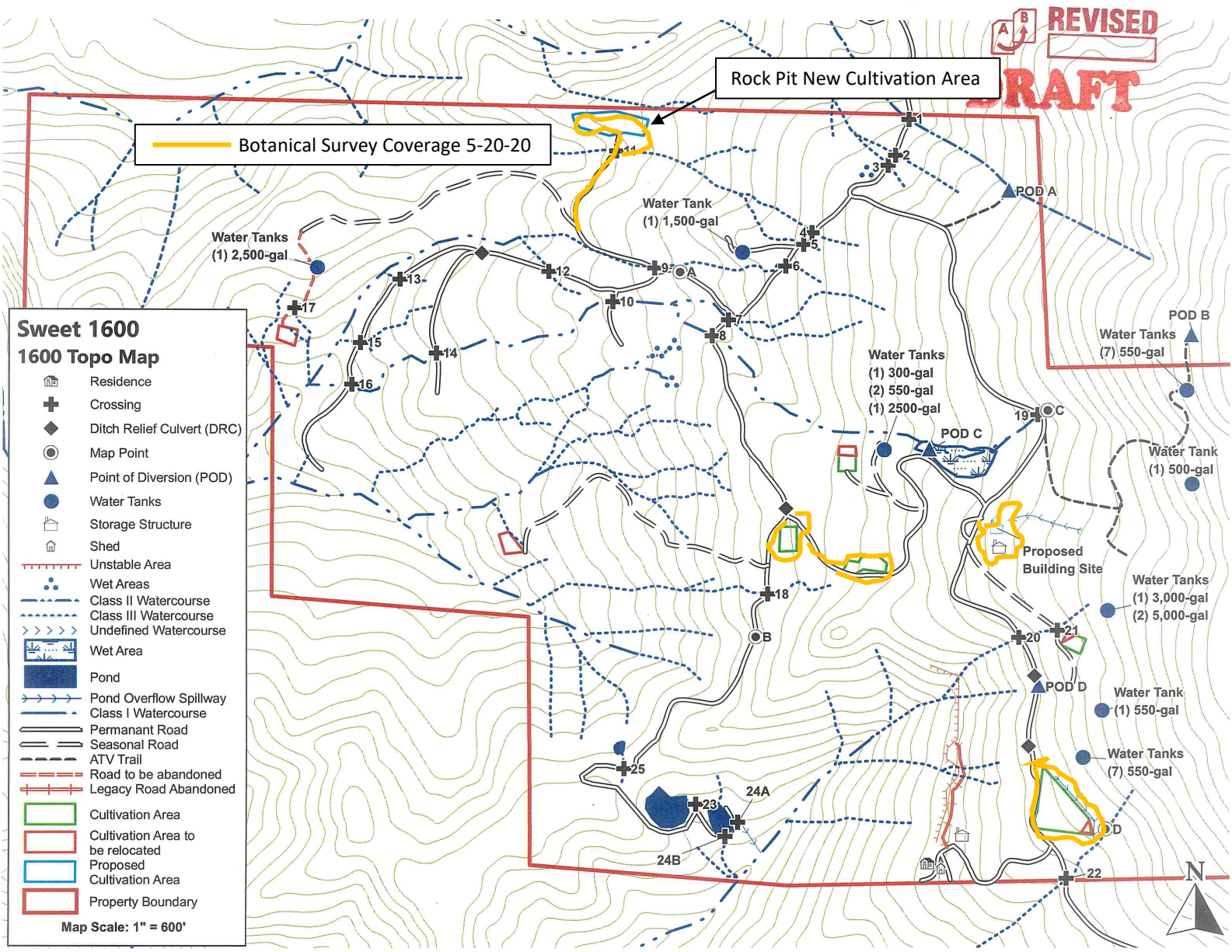


Table 2. List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Acer macrophyllum</i>	bigleaf maple
<i>Achillea millefolium</i>	common yarrow
<i>Acmispon americanus var. americanus</i>	lotus
<i>Acmispon parviflorus</i>	lotus
<i>Adiantum jordanii</i>	California maidenhair fern
<i>Aesculus californica</i>	California buckeye
<i>Agrostis sp.</i>	bent grass
<i>Aira caryophyllea</i>	European hairgrass
<i>Anisocarpus madioides</i>	woodland madia
<i>Anthoxanthum odoratum</i>	sweet vernal grass
<i>Arbutus menziesii</i>	Pacific madrone
<i>Arctostaphylos manzanita ssp. manzanita</i>	common manzanita
<i>Arrhenatherum elatius</i>	tall oatgrass
<i>Avena barbata</i>	slender wild oat
<i>Baccharis pilularis</i>	coyote brush
<i>Briza maxima</i>	rattlesnake grass
<i>Bromus carinatus</i>	California brome
<i>Bromus diandrus</i>	riggut grass
<i>Bromus hordeaceus</i>	soft chess
<i>Bromus laevipes</i>	woodland brome
<i>Cardamine californica</i>	milk maids
<i>Carduus pycnocephalus</i>	Italian thistle
<i>Cerastium glomeratum</i>	mouse ear chickweed
<i>Chamomilla suaveolens</i>	pineapple weed
<i>Chloroglaum pomeridianum</i>	soaproot
<i>Cichorium intybus</i>	chicory
<i>Claytonia perfoliata</i>	miner's lettuce
<i>Clinopodium douglasii</i>	yerba buena
<i>Cryptantha sp.</i>	cryptantha
<i>Cynoglossum grande</i>	hound's-tongue
<i>Cynosurus echinatus</i>	dogtail grass
<i>Cyperus eragrostis</i>	nut-grass
<i>Dactylis glomerata</i>	orchard grass
<i>Danthonia californica</i>	California oatgrass
<i>Dichelostemma capitatum</i>	blue dicks
<i>Elymus glaucus ssp. glaucus</i>	blue wildrye
<i>Epilobium minutum</i>	minute willow-herb
<i>Erodium botrys</i>	long-beaked storksbill
<i>Festuca arundinacea</i>	tall fescue

Table 2 (Cont.). List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Festuca myuros</i>	rattail sixweeks grass
<i>Festuca perennis</i>	rye grass
<i>Galium aparine</i>	goose grass
<i>Galium californicum</i>	California bedstraw
<i>Heteromeles arbutifolia</i>	toyon
<i>Hieracium albiflorum</i>	white hawkweed
<i>Holcus lanatus</i>	common velvet grass
<i>Hordeum jubatum</i>	foxtail barley
<i>Hordeum marinum</i>	Mediterranean barley
<i>Hypericum perforatum</i>	St. John's-wort
<i>Hypochaeris radicata</i>	hairy cat's-ear
<i>Iris purdyi</i>	Purdy's iris
<i>Juncus effusus</i>	common rush
<i>Juncus patens</i>	spreading rush
<i>Lasthenia californica</i> ssp. <i>californica</i>	California Goldfields
<i>Lathyrus vestitus</i>	wood pea
<i>Leontodon saxatilis</i>	hawkbit
<i>Lepidium campestre</i>	cow cress
<i>Linum bienne</i>	western blue flax
<i>Logfia gallica</i>	narrow-leaved filago
<i>Lonicera hispidula</i>	hairy honeysuckle
<i>Lupinus bicolor</i>	miniature lupine
<i>Melica</i> sp.	oniongrass
<i>Mentha pulegium</i>	pennyroyal
<i>Notholithocarpus densiflorus</i> var. <i>densiflorus</i>	tanoak
<i>Osmorhiza berteroi</i>	sweet-cicely
<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>	goldback fern
<i>Phalaris aquatica</i>	harding grass
<i>Pharodendron serotinum</i> ssp. <i>tomentosum</i>	mistletoe
<i>Plantago lanceolata</i>	English plantain
<i>Polypodium glycyrrhiza</i>	licorice fern
<i>Polystichum munitum</i>	sword fern
<i>Prunella vulgaris</i>	self-heal
<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

Table 2 (Cont.). List of Plants Encountered in the Project Area.

Scientific Name	Common Name
<i>Quercus garryana</i>	Oregon white oak
<i>Quercus kelloggii</i>	California black oak
<i>Rosa sp.</i>	rose
<i>Rubus leucodermis</i>	white-stemmed raspberry
<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>Sisyrinchium bellum</i>	blue-eyed-grass
<i>Spergularia rubra</i>	purple sand spurry
<i>Stachys ajugoides</i>	hedge nettle
<i>Stellaria media</i>	common chickweed
<i>Stipa pulchra</i>	purple needlegrass
<i>Torilis arvensis</i>	rattlesnake weed
<i>Trifolium dubium</i>	little hop clover
<i>Trifolium glomeratum</i>	clustered clover
<i>Trifolium pratense</i>	red clover
<i>Trifolium repens</i>	white clover
<i>Trifolium subterraneum</i>	subterranean clover
<i>Trifolium variegatum</i>	variagated clover
<i>Triphysaria pusilla</i>	dwarf orthocarpus
<i>Umbellularia californica</i>	California-bay
<i>Vaccinium ovatum</i>	evergreen huckleberry
<i>Vicia sativa</i>	vetch
<i>Vicia villosa</i>	hairy vetch
<i>Viola ocellata</i>	two-eyed violet
<i>Viola sempervirens</i>	evergreen violet
<i>Whipplea modesta</i>	modesty