

The Cove

Botanical Resource Assessment

Mt. Veeder Road

November 2017



Prepared for:

Napa County Regional Park and Open Space District

1195 Third Street, Room 210

Napa, CA 94559

By

Napa Botanical Survey Services

3549 Willis Drive

Napa CA 94558

Table of Contents

The Cove Botanical Assessment

Introduction -----	1
Field Survey Methodology -----	4
Survey Findings	
Vegetation Types Observed at The Cove -----	4
Potentially Occurring Special Status Plant Species -----	11
Other Noteworthy Plant Species-----	15
Invasive Plant Species -----	15
Discussion -----	16
References -----	17
A List of Vascular Plants Occurring on The Cove Property -----	18

Introduction

The Cove property is located on Mt. Veeder, a prominent peak on the Mt. Hood Range along the western border of Napa County. The property has been used as the Napa-Solano Girls Scout Camp for over 40 years and continues to be a site for scouting activities. The name of the property has its origin in the geographic position of the camp site, sheltered by steep mountain slopes that border three sides of a flattish dell. The Napa Regional Park and Open Space District has taken an option to take ownership with goals of preserving the property for education and recreation.

The 160 acre property is located near 3465 Mt. Veeder Road about 10 miles northwest of the City of Napa and 4 miles southwest of Yountville. It includes the summit of Mt. Veeder standing at 2677 ft. and reaches in excess of 1000 feet downslope to below the camping flat at an elevation of 1640 ft. It includes two legal parcels, straddling the ridgeline, overlooking the Napa Valley to the east and Sonoma Valley to the west. It is accessed by a partially paved road at Mt. Veeder Road, north of Lokoya Road. The *Enchanted Hills – Lighthouse for the Blind* property lies about ½ mile to the northeast. A fire road follows the ridgeline through the northwest and southeast quarters of the property. This is connected to *The Cove* campground by one fire road and a two foot trails. These trails pass over steep terrain, requiring careful attention to footing in some places.

Soils on the property originate from igneous substrates. Spanning the ridgeline, soils of the Kidd Series (Soil code 156, *Soil Survey*) occur on slopes of 30-75%. These are dark to grayish brown at the surface and moderately acidic (pH 5.8). The shallow soils were derived from rhyolite and are highly erosive if exposed. These conditions make for poor agricultural lands but valuable to wildlife and recreation. Much of the remainder of the property is covered with soils of the Aiken Series. These are basic volcanic soils. The best developed soils are found at the campground. Here the Aiken loam on 2-15 % slopes may be up to 60 inches in depth. A shallower variant of Aiken loam extends onto the surrounding 30-60% slopes. These acidic soils have a moderate erosion risk. Finally, below the camp, a small fraction of the property is covered with soil of the Forward Series, again derived from rhyolite. These grayish to gray-brown soils are slightly acidic (pH 6.5) and medium acidic to strongly acidic below. The soil layer is thin to moderate in depth with a high erosion potential. (1978. *A Soil Survey of Napa County*). These soils support forest communities through most of the property with the exception of brushland along the ridgeline and small patches of grassland over bedrock.

The steep terrain drains rapidly along ephemeral channels that flow into the camp area. In this area a spring supports water-loving vegetation but the sharper slopes below drain away the transient waters leaving a dry channel by late spring. From this seasonal stream, waters flow into Dry Creek and eventually into the Napa River.

Precipitation has not been recorded on the property but nearby vineyards have recorded an average of about 58 inches per year. Snowfall is occasional on the mountain although frequency has dropped off in recent years. The summers are hot and dry with limited influences of maritime breezes and fog due to elevation. Typical summer temperatures are in the 80's and 90's °F and winter temperate may drop below 20 °F occasionally.

The Cove property has been utilized for camping, education, relaxation and recreation for many decades although visitation is seasonal and short term. It has been minimally disturbed beyond the campground area. This botanist visited the property in the 1980s. Some limited expansion of structures and vegetation management has occurred within that time period. The lack or aged condition of existing fencing permits free movement of indigenous wildlife.

The purpose of this botanical study was to:

- Develop a list of potentially occurring rare plant species.
- Record special status plant species observations using a hand-held GPS unit.
- Assimilate an inventory of vascular plant species observed on the property highlighting all state, CNPS and locally-rare tax.
- Collect ground data to provide brief descriptions of observed vegetation alliances/associations, with comparison to a 2002 UC Davis - Information Center for the Environment (ICE) generated data.
- Photograph and describe representative habitats and significant species.
- Provide a discussion of the biodiversity and habitat quality of the property based on observed botanical resources.



Larvae of California Sister on *Chinquapin*, top of Mt. Veeder, The Cove

Insert Vicinity Map

Field Survey Methodology

Field surveys were completed during spring and summer of 2017 (March 18, April 18, June 3, and July 15). A total of 16.5 hours were spent in the field covering the blooming period of nearly all of the species observed. Accumulated rainfall during the 2016-17 season including the study period was well above average. Nearly twice the normal annual rainfall was recorded in the city of Napa.

Surveys encompassed the greatest extent and diversity of landscape possible. All vascular plants observed during the surveys were identified in the field or collected for precise identification in the home office. Taxonomy follows *The Jepson Manual, Vascular Plants of California*, Baldwin et al., 2012.

Survey Findings

The property has been minimally impacted by human activities. Road and trail management is localized and sporadic. Vegetation is managed in the campground area and may have eliminated at least one species from the inventory – Calypso Orchid (*Calypso bulbosa*, recorded in 1987). There is no evidence of grazing or logging although it is likely that the property was logged in the late 1800s or early 1900s. There has been some disturbance along the western property boundary from vineyard development. About 165 species of vascular plants were observed in 2017. Of these, 84 % are native including representatives of 55 plant families. Following is a description of findings regarding diversity of vegetation types and significant plant species. A complete list of vascular plant species can be found at the conclusion of this report.

Vegetation Types Observed at The Cove

The following identified vegetation types are based on preliminary definitions from 2002 data collected by a research team including UC Davis –Information for the Environment (ICE), NatureServe, California Department of Fish and Game, The California Native Plant Society, and Aerial Information Systems (AIS). The descriptions that follow were collected during the 2017 field surveys.

Gravel roads and trails along with deer trails were generally used to access the various vegetation types on the property but some portions of the property were accessed via off-trail hiking. Focused exploratory transects were used to search specific habitats such as that found on the steep western slopes covered by talus. One or more representative sites were selected and sampled for each vegetation type during the 2017 surveys.

At least 6 vegetation types were observed, including forest, woodland, and brushland habitats. Vegetation titles were adapted from *A Vegetation Map and Classification* (Thorne, Kennedy, Quinn and McCoy; 2003). A numerical code (i.e. 1223) is marked in bold following each formal Alliance title and was assigned in the classification system. Geographic coordinates for sampling location(s) follow the title. Locations are also indicated on the Vegetation and Rare Plants map on page 12. Descriptions

include percent canopy cover estimates collected at the sampling site (listed in brackets). Wetland vegetation is limited on the property and was not mapped. An asterisk following a botanical name indicates that species is not native.

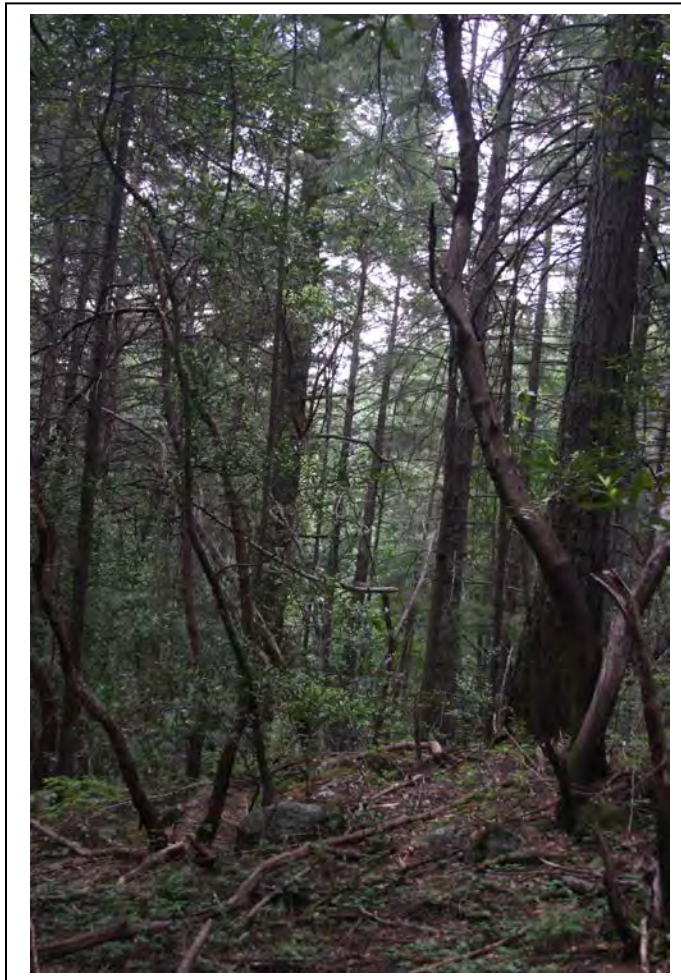
Forest

Douglas Fir Forest

Douglas Fir Alliance **2222**

Sampling Point: N38° 22' 38.2"/ W122° 26' 24.2"

This forest is dominated by Douglas Fir (*Pseudotsuga menziesii*, > 50% canopy) with trunk diameters (DBH) of 12-40 inches. The understory includes California Bay (*Umbellularia californica*) and Pacific Madrone (*Arbutus menziesii*) with Big-leaf Maple (*Acer macrophyllum*) occurring locally. California Hazelnut (*Corylus cornuta* var. *californica*), an open-branched shrub of 8-12 ft., is scattered to patchy. The herb layer is generally sparse including perennials such as Trail Plant, Mountain Sweet Cicely, Hairy Honeysuckle, California Blackberry, Sword Fern, Wood Fern and various grasses. Leaf and needle litter is prominent as are fallen branches and twigs. An invasive species, Purple Geranium (*Geranium purpureum*) occurs in places but is not widespread. Coast Redwood (*Sequoia sempervirens*) occurs in limited numbers (near N38° 22' 43.4"/ W122° 26' 43.9").

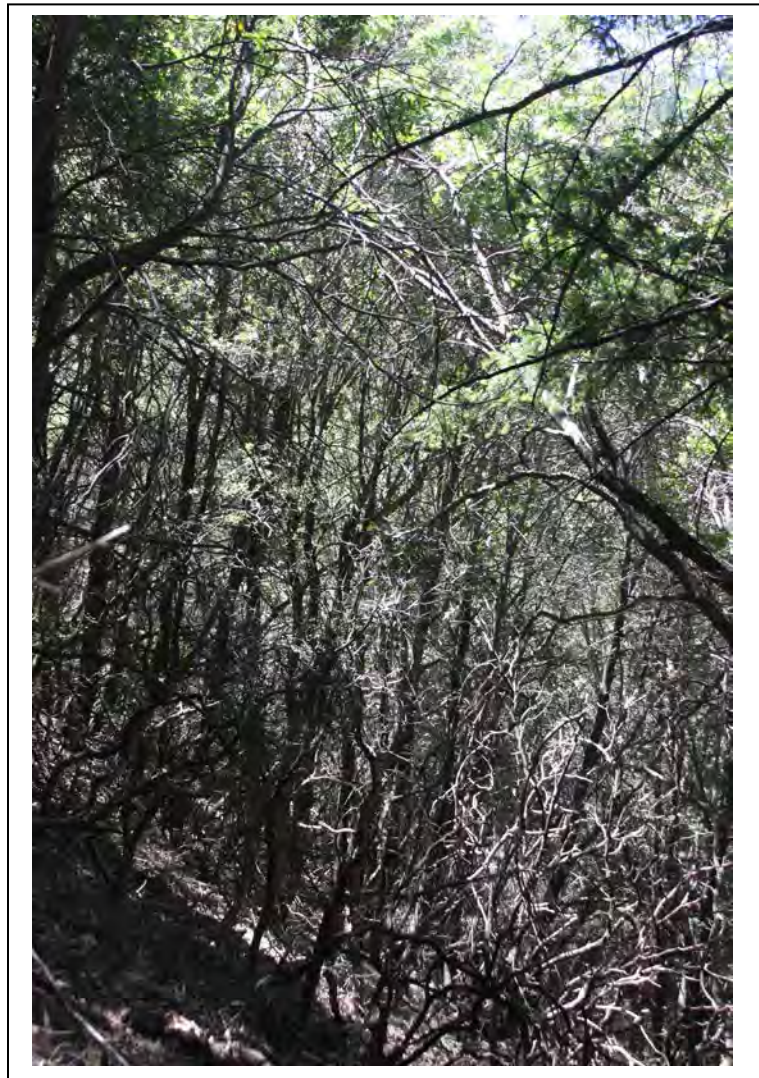


Mixed Evergreen Forest

Douglas Fir Alliance ?

Sampling Points: N38° 22' 22.2"/ W122° 26' 14.4", N38° 22' 31.8"/ W122° 26' 18.4" ..

This vegetation association was not outlined by ICE but might be considered a subtype or association within the *Douglas Fir Alliance*, 2222. The canopy is a co-dominated mix of Pacific Madrone (*Arbutus menziesii*, 25% canopy), Black Oak (*Quercus kelloggii*, 15%), Knobcone Pine (*Pinus attenuata*, 10%), and Douglas Fir (*Pseudotsuga menziesii*, 10%). In places there is a component of Canyon Live Oak and California Bay. The understory includes Hazelnut, and locally includes dead manzanita skeletons, remnants of an early seral stage. The herb layer includes a sparse layer of perennials such as Woodland Nemophila (*Nemophila heterophylla*), Wood Fern (*Dryopteris arguta*), Iris, Hill Star (*Lithophragma heterophylla*), California Buttercup (*Ranunculus californicus*) and occasional annuals such as Miner's Lettuce (*Claytonia perfoliata*) and Italian Thistle (*Carduus pycnocephalus* *).



Mixed Hardwood Forest

Mixed Oak Alliance 1223

Sampling Point: near N38° 22' 29.8"/ W122° 26' 34.5".

This vegetation type is dominated by Pacific Madrone (*Arbutus menziesii*, > 30% cover) with California Bay (*Umbellularia californica*, 10-20%) and Canyon Live Oak (*Quercus chrysolepis*, 10-15%) important associates. The understory includes Poison Oak (*Toxicodendron diversilobum*) and scattered Woodland Rose (*Rosa gymnocarpa*). The herb layer is comprised of leaf litter and exposed boulders.(6-3)



Knobcone Pine Forest

Knobcone Pine Alliance 2122

Sampling Points: N38° 22' 39.9"/ W122° 26' 43.3", N38° 22' 22.0"/ W122° 26' 21.5", N38° 22' 23.1"/ W122° 26' 35.7".

At the upper elevation of the slope and on the ridgeline, the forest includes Madrone, Douglas Fir, Canyon Live Oak and Knobcone Pine (*Pinus attenuata*). The latter dominates at the ridge top and on the west slope in exposed xeric conditions. These conditions are a product of the shallow rocky soils and not a function of poor rainfall. Canopy cover is 70-80% with > 90% of it being Knobcone Pine. The DBH is

generally in the 6-10 inch range but reaches up to 34 inches. Tree height is 35-60 ft. Associated with this vegetation type is California Nutmeg (*Torreya californica*), Stanford Manzanita (*Arctostaphylos stanfordiana* ssp. *stanfordiana*), Hoary Manzanita (*A. canescens*), Eastwood Manzanita (*A. glandulosa*) and Chinquapin (*Chrysolepis chrysophylla*), a species that is uncommon in Napa County. Here, the later species perhaps reaches its greatest size in the county. The understory is sparse to open brushy with Poison Oak, Bay, California Nutmeg, Douglas Fir and a few Tree Poppies (*Dendromecon californica*). There is a paucity of herbaceous vegetation. Fallen trees and branches are prominent. This community grades into chaparral. Coast Redwood is localized in this vegetation type. This is a fire adapted community with Knobcone Pine dependant on periodic fire for regeneration.



Chaparral

Mixed Manzanita Chaparral

Mixed Manzanita – (Interior Live Oak-California Bay-Chamise) West County Mapping Unit) 4302

Sampling Point: N38° 22' 21.7" / W122° 26' 26.2

Chaparral is highly limited near the western boundary of *The Cove* property. It grades into Knobcone Pine Forest and Mixed Hardwood Forest and exists as a fragment of a vegetation community that has been removed and converted to vineyard on the adjacent property. It is co-dominated by Hoary

manzanita (*Arctostaphylos canescens*) and Stanford Manzanita (*A. stanfordiana*) with Chaparral Pea (*Pickeringia montana*) occurring in patches. Other associated shrubs include Eastwood Manzanita (*A. galindulosa*), Shrub Interior Live Oak (*Quercus wislizenii* var. *frutescens*), Sonoma Ceanothus (*Ceanothus sonomensis*; rare), and Wavy-leaved Ceanothus (*C. foliosus*). Tree Poppy is uncommon. An herbaceous layer is virtually missing on the pale rocky ground.



Grasslands

Annual Grassland

California Annual Grasslands Alliance 7120

Sampling Points: downslope of N38° 22' 46.1"/ W122° 26' 36.3" and below N38° 22' 35.1"/ W122° 26' 37.2".

Limited areas of grassland occur on the property. These are found in forest clearings on steep (approx. 50%) slopes. Vegetation is sparse to dense. It includes scattered perennials/shrubs such as Silver Lupine (*Lupinus albifrons*), Bracken Fern (*Pteridium aquilinum*), and Purple Milkweed (*Asclepias cordifolia*) but is dominated by annuals such as Miniature Trefoil (*Acmispon micranthus*), Wine-cup Clarkia (*Clarkia purpurea* ssp. *quadrivulera*), Clover (*Trifolium* sp.), Slender Tarweed (*Madia gracilis*), California Buttercup (*Ranunculus californica*), Miner's Lettuce (*Claytonia perfoliata*), Oats (*Avena*

barbata *), Dogtail Grass (*Cynosurus echinatus*), Maltese Star Thistle (*Centaurea melitensis* *), and Nit Grass (*Gastridium phleoides* *).



Freshwater Marsh

Semi permanently – Permanently flooded Grasslands & Forbs **6400**

This vegetation type has not been subdivided or described in detail by ICE to include the plant association occurring on the property. A small spring fed channel occurs in the flattish area known as *The Cove*. The margins are inhabited by Giant Chain Fern (*Woodwardia fimbriata*), California Oenanthe (*Oenanthe sarmentosa*), and California Blackberry (*Rubus ursinus*). This area is fed by perennial surface flow which quickly disappears below ground at the lower edge of the flat. This habitat has been limited by vegetation management within the campground area.

Rock Outcrop 9001

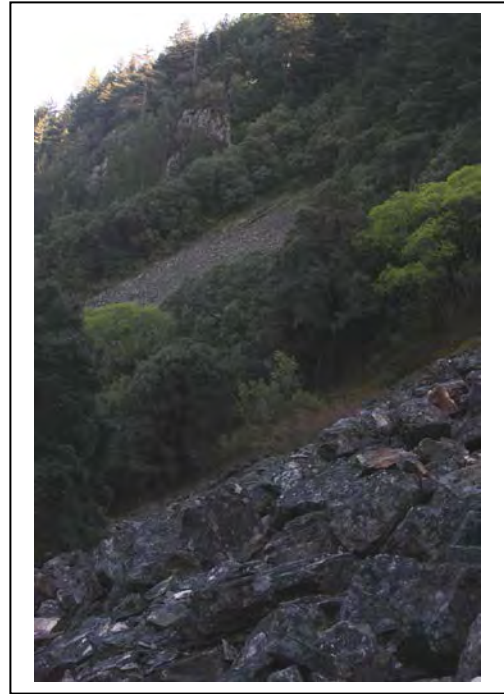
Sampling Point: N38° 22' 32.3" / W122° 26' 38.3".

Likewise, this vegetation type has not been fleshed out in detail by ICE. The title of "Rock Outcrop" is loosely used here to include two expansive blocks of talus on the eastern slope of Mt. Veeder. The large boulders, 1-4 feet in diameter, are securely wedged at a steep angle. These cover several acres but do

not appear to support woody or herbaceous plants. They do however provide stable habitat for a number of crustose lichens and mosses. This rock talus habitat is found in only a few places in Napa County including Three Peaks and Mt. St. Helena.



Moss and lichens encrusted on boulders



Potentially Occurring Species Status Plant Species

Several special status plants have been recorded along the Mt. Hood Range. The following is a list of species known to occur on the ridge to the north and south of Mt. Veeder.

Table 1. Special Status Plant Species

Scientific Name	Common Name	Habitat	Status
<i>Amorpha californica</i> var. <i>napensis</i>	Napa false Indigo	forest; shade	1B.2
<i>Ceanothus sonomensis</i>			
<i>Erigeron bioletti</i>	Stream-side Daisy	rock outcrops	3
<i>Leptosiphon latisectus</i>	Broad-lobed Leptosiphon	woodland, chap.;serp. and vol.	4.3
<i>Lilium rubescens</i>	Redwood Lily	forest, chaparral; shade	4.2
<i>Lomatium repostum</i>	Napa Lomatium	chaparral, forest; rocky	4.3
<i>Lupinus sericatus</i>	Cobb Mtn. Lupine	forest, chaparral; volcanic	1B.2
<i>Monardella viridis</i> ssp. <i>viridis</i>	Green Coyote Mint	chap., woodland, forest	4.3

Status Codes: CNPS lists - 1B = Rare and Endangered in California and elsewhere, 2 = Rare and Endangered in California but more common elsewhere, 3 = Taxonomy or distribution needs further study, 4 = Limited Distribution – A Watch List. Additional coding was added to the status of most species by CNPS in 2006, applying greater focus to rarity and threats to each species. A code of 1B.1 indicates the highest level of threat while 4.3 indicates the lowest. **Species entered in bold** were observed on the property during 2016 surveys. No species observed carry state or federal rarity or endangerment status.

Insert Vegetation and Rare Plant Map

Special Status Species Observed at The Cove

No State or Federally listed plant species were observed on the property. The following six special status species were observed during the 2017 surveys. (See Figure 2 on previous page.)

Amorpha californica var. *napensis* (Napa False Indigo) – CNPS List 1B.2 - This is a deciduous shrub 4-10 ft tall with slender ascending branches. It grows on Howell Mountain on the Napa Range and is more widespread on the Mt. Hood Range west of the Napa Valley. It can also be found in Sonoma, Marin and Monterey Counties. It grows on shaded slopes and flats. This species is most conspicuous when in flower from May to July. Locations: N38° 22' 24.7"/ W122° 26' 19.1"; 3 plants observed, these spreading and less than 2 ft. tall. N38° 22' 32.7"/ W122° 26' 21.6", 1 plant under Douglas Fir and Bay. Between N38° 22' 45.8"/ W122° 26' 37.5" and N38° 22' 45.7"/ W122° 26' 37.3", 1-2 plants in needle duff. N38° 22' 38.6"/ W122° 26' 32.4", 2 plants under Douglas Fir and Bay.

Ceanothus sonomensis (Sonoma Ceanothus) – CNPS List 1B.2 - This is an evergreen shrub that forms a low mound in open places or an openly branched plant among dense brush. It is endemic to Napa and Sonoma Counties occurring along the common boundary from south of Bismark Knob to the Mt. Hood area in Sonoma County. Flowers are produced from February to April. Locations: N38° 22' 21.8"/ W122° 26' 26.5", a single plant on trail through chaparral (slightly outside of property). Between N38° 22' 24.7"/ W122° 26' 44.1" and N38° 22' 25.8"/ W122° 26' 44.7", 9 plants in addition to a few dead plants occurring with Stanford and Hoary Manzanita (slightly outside of property. N38° 22' 33.7"/ W122° 26' 43.8", 3 plants among manzanita.

Erigeron bioletti (Streamside Daisy) – CNPS List 3 – This a perennial herb, 1-3 ft tall with few too many ascending hairy stems. Flowers are produced in small yellowish heads near the branch tips in late summer and fall. The plants are generally found around rock outcrops in open sun or partial shade. Locations: N38° 22' 35.1"/ W122° 26' 37.2", 4 plants. N38° 22' 23.7"/ W122° 26' 15.6", 3 plants observed in a small clearing among oaks, firs and manzanita. N38° 22' 35.3"/ W122° 26' 36.2", 3 plants in opening among fir, pine, oak and bay.

Lilium rubescens (Chaparral Lily) – CNPS List 4.2 – This is a perennial species with single herbaceous stem 3-6 ft. tall, growing from a bulb. The plants are favored by deer and often are grazed off before flowering. The showy white to pinkish flowers are produced in clusters of 2-many in June and July. Locations: Between N38° 22' 22.2"/ W122° 26' 14.4" and N38° 22' 28.9"/ W122° 26' 18.4", growing under pine and fir. N38° 22' 25.6"/ W122° 26' 20.4", 6 plants growing under pine and madrone. N38° 22' 45.0"/ W122° 26' 40.4", 3 immature plants in Douglas Fir Forest (June 3).

Lomatium repostum (Napa Lomatium) – CNPS List 4.3 – This is a perennial herb with a stout rootstock. The bluish leaves provide adaptation to sun exposure but it can also be found in partially shaded places among trees and shrubs. The yellow-green flowers are inconspicuous and produced in April and May. Plants that are immature or shaded may not produce flowers. This species prefers volcanic soils, particularly rhyolite. Besides Napa and Sonoma Counties, it also occurs in Lake and Solano Counties. Locations: N38° 22' 23.7"/ W122° 26' 20.9", 10-20 plants. N38° 22' 36.4"/ W122° 26' 42.3", 10+ plants observed.

Monardella viridis (Green Coyote Mint) – CNPS List 4.3 – This subshrub has a branched woody base and slender annual stems 8-16 inches tall. This species grows in several vegetation types preferring forest and chaparral. In Napa County it is widespread, growing on serpentine, volcanic and sedimentary soils. It is less common in Lake, Solano and Sonoma Counties. At *The Cove* it was observed along the ridge top in Mixed Manzanita Chaparral and Knobcone Pine Forests. Locations: N38° 22' 38.2"/ W122° 26' 43.6". N38° 22' 23.7"/ W122° 26' 20.9", 6 ft. diameter patch was observed.



Amorpha californica var. *napensis*



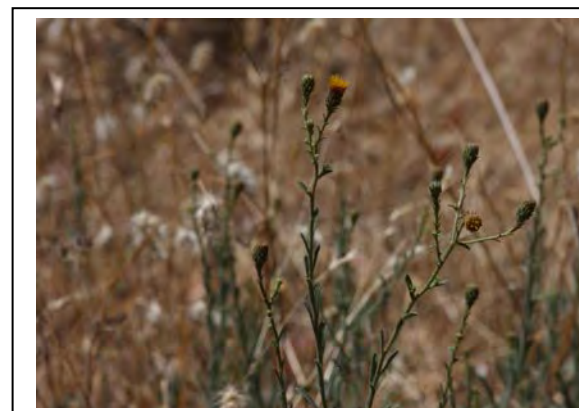
Ceanothus sonomensis *



Lilium rubescens



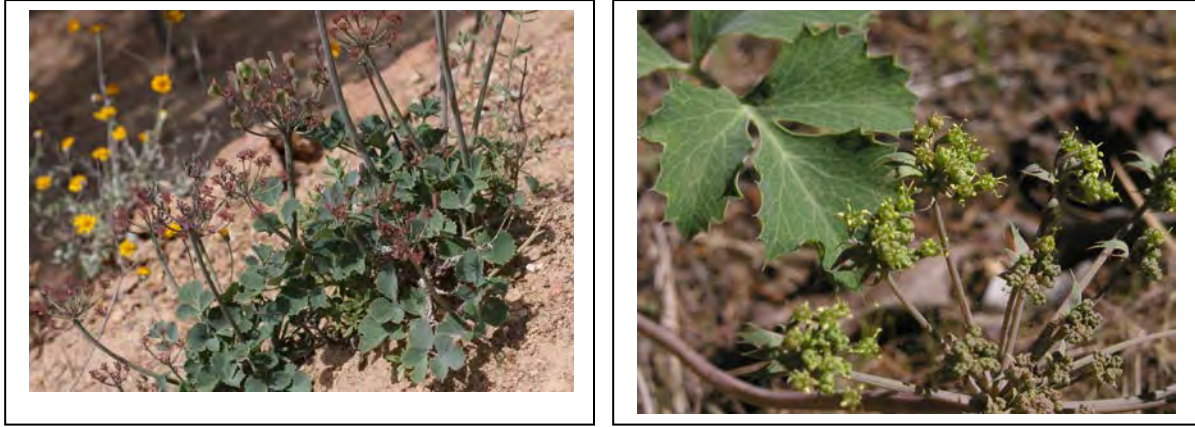
(immature plant *)



Erigeron bioletti *



Monardella viridis



Lomatium repostum

*Photo taken at The Cove

Other Noteworthy Species

Adiantum aleuticum (Five Finger Fern) – This species is rare in Napa County, occurring in localized patches on the Napa and Mt. Hood Ranges. It requires perennial stream flow and is thus isolated near springs or along stream banks in deep shaded canyons.

Chrysolepis chrysophylla var. *minor* (Chinquapin) – This species is highly localized in Napa County due to elevation limitations. It occurs above 1600 ft., from Bismark Knob to Mt. Veeder on the Mt. Hood Range and on Mt. St. Helena on the Napa Range. Its distribution is widespread through the coast ranges of California. Plants on the Cove property are particularly robust with some individuals exceeding 20 ft. in height and 6 inches in trunk diameter. By comparison, plants on Mt. St. Helena generally measure 6-12 ft. in height.

Invasive Plant Species

The total number of non-native species observed on *The Cove* property is 27 which comprises 16% of the total observed species. This low level of habitat pressure from non-native plant species is attributable to lack of ground disturbance and high canopy cover of woody species. A couple of the introduced species are highly competitive and worthy of discussion for management purposes.

Centaurea melitensis (Maltese Thistle) – This species is generally less conspicuous and problematic than Yellow Star Thistle but is invasive in grasslands and chaparral on slopes and ridges. It is confined to the few meadows on the property but there it competes with native annual species.

Rhagadiolus stellatus (Endive Daisy) – This species is invasive in semi-disturbed habitats in forest and woodland plant communities. It is confined to the camp area where activities have controlled native species and created a niche for invasion.

Geranium purpureum (Purple Geranium) - This is a simple to branched annual with a slightly fleshy base and slender roots. It is particularly aggressive in Napa County forests and woodlands where it can become a dominant species on the herb layer to the exclusion of most native plant taxa. It has been in the county for over 50 years but has made great strides in the last two decades. It is limited in distribution on *The Cove* property near the eastern boundary.

Discussion

The Cove, while not expansive, supports at least 6 special status plant species and over 138 native species. A few protected landscapes with similar habitats are compared below although some are significantly larger in area. Linda Falls Preserve (Land Trust) covers a similar area but inventory information may be incomplete. At the conclusion of the field work, the condition of The Cove property was considered excellent with relatively low impact from disturbance and exotic plant species. On October 8, 2017, fires started at a number of locations along the range and eventually burned onto *The Cove* property. The fire burned appears to have burned over 50% of the property. Ground assessment of the burn was conducted as part of this study but post-fire conditions set the stage for potential temporary and long term changes to the plant community composition. Fire promotes regeneration of decadent vegetation but also opens up habitats to invasive plant species.

Table 2. Biodiversity Comparison to Select Napa County Preserves

<u>Location</u>	<u>Acreage</u>	<u>Families</u>	<u>Species</u>	<u>% Native</u>	<u>Special Status Species</u>
Archer Taylor	280	74	308	81	5
Las Posadas State Forest	770	80	434	85	20
Linda Falls	100?	49	149	88	3
The Cove	165	55	165	84	6

Jake Ruygt
botanist

References

- State of California , The Resources Agency Department of Fish and Game. 2003. *Atlas of the Biodiversity of California*. California Department of Fish and Game. 103 pp.
- Baldwin, Goldman, Patterson, Rosatti and Wilken. 2012. *The Jepson Manual Vascular Plants of California*. University of California Press. Berkeley, California. 1568 pp.
- Hickman, James C., Editor. 1993. *The Jepson Manual. Higher Plants of California*. University of California Press. Berkeley, California. 1400 pp.
- Lambert, G. and Kashiwagi, J. 1978. *A Soil Survey of Napa County. California*. United States Department of Agriculture, Soil Conservation Service. California.
- Ruygt, J. 2014. *Napa County Flora*. Unpublished.
- Thorne, J.H., Kennedy, J.A., Quinn, J.F., and McCoy, M. 2003. *A New Vegetation of Napa County Using the Manual of California Vegetation Classification and its Comparison to Other Digital Vegetation Maps*. Information Center for the Environment. University of California, Davis. 106 pp.
- Tibor, David T. 2001. *Inventory of Rare and Endangered Plants of California.6. Special Publication 1 (Sixth Edition)*, California Native Plant Society. Berkeley, California. 387 pp.

Vascular Plants Observed at *The Cove*

Scientific Name	Common Name	Life Form	Blooms
<u>Ferns</u>			
Blechnaceae	<i>Deer Fern Family</i>	perennial	
<i>Woodwardia fimbriata</i>	Giant Chain Fern	perennial	
Dennstaedtiaceae	<i>Bracken Family</i>		
<i>Pteridium aquilinum</i>	Bracken Fern	perennial	
Dryopteridaceae	<i>Wood Fern Family</i>		
<i>Dryopteris arguta</i>	California Wood Fern	perennial	
<i>Polystichum imbricans</i> ssp. <i>imbricans</i>	Sword Fern	perennial	
<i>Polystichum minutum</i>	Western Sword Fern	perennial	
Polypodiaceae	<i>Polypody Family</i>		
<i>Polypodium calirhiza</i>	Nested Polypody	perennial	
Pteridaceae	<i>Brake Family</i>		
<i>Adiantum aleuticum</i>	Five-finger Fern	perennial	
<i>Pellaea andromedaefolia</i>	Coffee Fern	perennial	
<i>Pentagramma triangularis</i> ssp. <i>triang.</i>	Goldenback Fern	perennial	
<u>Conifers</u>			
Cupressaceae	<i>Cypress Family</i>		
<i>Sequoia sempervirens</i>	Coast Redwood	tree	Jan-Mar
Pinaceae	<i>Pine Family</i>		
<i>Pinus attenuata</i>	Knobcone Pine	tree	Mar-May
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas Fir	tree	
Taxaceae	<i>Yew Family</i>		
<i>Torreya californica</i>	California Nutmeg	tree	Apr-May
<u>Angiosperms</u>			
<u>Dicots</u>			
Adoxaceae	<i>Muskroot Family</i>		
<i>Sambucus nigra</i> ssp. <i>caerulea</i>	Desert Elderberry	shrub	Mar-Sept
Anacardiaceae	<i>Sumac Family</i>		
<i>Rhus aromatica</i>	Squaw Brush	shrub	Mar-Apr
<i>Toxicodendron diversilobum</i>	Poison Oak		
Apiaceae	<i>Carrot Family</i>		
<i>Angelica californica</i>	California Angelica	perennial	Apr-Jun
<i>Daucus pusillus</i>	Rattlesnake Weed	annual	Apr-Jun
<i>Heracleum maximum</i>	Cow Parsnip	perennial	Apr-Jul

Scientific Name	Common Name	Life Form	Blooms
<i>Lomatium repostum</i>	Napa Lomatium	perennial	Apr-May
<i>Oenanthe sarmentosa</i>	Pacific Oenanthe	perennial	May-Oct
<i>Osmorhiza berteroi</i>	Mountain Sweet Cicely	perennial	Mar-May
<i>Sanicula crassicaulis</i>	Pacific Snakeroot	perennial	Mar-May
<i>Scandix pectinverensis</i>	Spanish Needles *	annual	Apr-Jun
<i>Torilis arvensis</i>	Field Hedge Parsley *	annual	May-Jul
<i>Yabea microcarpa</i>	California Hedge Parsley	annual	Apr-Jun
Apocynaceae	<i>Dogbane Family</i>		
<i>Asclepias cordifolia</i>	Purple Milkweed	perennial	May-Jul
<i>Vinca major</i>	Large Periwinkle	perennial	Mar-Jul
Aristolochiaceae	Pipevine Family		
<i>Aristolochia californica</i>	California Pipevine	perennial	Jan-Apr
Asteraceae	<i>Sunflower Family</i>		
<i>Achillea millefolium</i>	Common Yarrow	perennial	Mar-Jun
<i>Adenocaulon bicolor</i>	Trail Plant	perennial	May-Jul
<i>Agoseria grandiflora</i> var. <i>garndiflora</i>	Grand Mountain Dandelion	perennial	May-Jul
<i>Arnica discoidea</i>	Rayless Arnica	perennial	May-Aug
<i>Baccharis pilularis</i> ssp. <i>consanguinea</i>	Coyote Brush	shrub	Oct-Jan
<i>Bellis perennis</i>	English Daisy *	perennial	Mar-Sept
<i>Carduus pycnocephalus</i> ssp. <i>pycnocephalus</i>	Italian Thistle *	annual	May-Jul
<i>Centaurea melitensis</i>	Maltese Star Thistle *	annual	May-Jun
<i>Cirsium occidentale</i> var. <i>venustum</i>	Red Thistle	perennial	May-Jul
<i>Erigeron bioletti</i>	Streamside Daisy	perennial	Jun-Sept
<i>Eurybia radulina</i>	Rough Aster	perennial	Jun-Sept
<i>Helianthella californica</i>	California Helianthella	perennial	Apr-Jun
<i>Hieracium albiflorum</i>	White-flowered Hawkweed	perennial	May-Aug
<i>Hypochaeris glabra</i>	Smooth Cat's Ear *	annual	Mar-Jun
<i>Hypochaeris radicata</i>	Hairy Cat's Ear *	perennial	May-Nov
<i>Logfia gallica</i>	Narrow-leaved Logfia *	annual	May-Jun
<i>Madia elegans</i>	Common Madia	annual	Jun-Oct
<i>Madia gracilis</i>	Slender Tarweed	annual	Apr-Aug
<i>Pseudognaphalium microcephalum</i>	White Everlasting	perennial	Jul-Oct
<i>Rhagadiolus stellatus</i>	Endive Daisy *	annual	Apr-May
<i>Solidago velutina</i> ssp. <i>californica</i>	California Goldenrod	perennial	Jun-Oct
Betulaceae	<i>Birch Family</i>		
<i>Corylus cornuta</i> ssp. <i>californica</i>	California Hazelnut	shrub	Jan-Apr
Boraginaceae	<i>Borage Family</i>		
<i>Cynoglossum grande</i>	Grande Hound's Tongue	perennial	Mar-Jun
<i>Nemophila heterophila</i>	Woodland Nemophila	annual	Mar-Jun
<i>Nemophila parviflora</i> var. <i>parviflora</i>	Small-flowered Nemophila	annual	Apr-Jun
<i>Phacelia imbricata</i> ssp. <i>imbricata</i>	Imbricate Phacelia	perennial	Mar-Jun

Scientific Name	Common Name	Life Form	Blooms
<i>Plagiobothrys nothofulvus</i>	Rusty Popcornflower	annual	Mar-May
Brassicaceae	<i>Mustard Family</i>		
<i>Cardamine californica</i> var. <i>californica</i>	California Milkmaids	perennial	Jan-May
<i>Cardamine oligosperma</i>	Few-seeded Bitter Cress	annual	Feb-May
<i>Lunaria annua</i>	Moonwort *	annual	Apr-May
Calycanthaceae	<i>Calycanthus Family</i>		
<i>Calycanthus occidentalis</i>	Spicebush	shrub	Apr-Aug
Caprifoliaceae	<i>Honeysuckle Family</i>		
<i>Lonicera hispidula</i>	Hairy Honeysuckle	shrub	Apr-Jul
Caryophyllaceae	<i>Pink Family</i>		
<i>Cerastium glomeratum</i>	Mouse-ear Chickweed *	annual	Feb-May
<i>Scleranthus annuus</i> ssp. <i>annuus</i>	German Knotgrass *	annual	Mar-Jun
<i>Silene gallica</i>	Windmill Pink *	annual	Feb-Jun
<i>Stellaria media</i>	Common Chickweed *	annual	Feb-Sept
Convolvulaceae	<i>Morning Glory Family</i>		
<i>Calystegia occidentalis</i> ssp. <i>occidentalis</i>	Modoc Morning Glory	perennial	Apr-Jul
Cornaceae	<i>Dogwood Family</i>		
<i>Cornus glabrata</i>	Creek Dogwood	shrub	May-Jun
Cucurbitaceae	<i>Gourd Family</i>		
<i>Marah fabacea</i>	California Manroot	perennial	Feb-May
Ericaceae	<i>Heath Family</i>		
<i>Arbutus menziesii</i>	Pacific Madrone	tree	Mar-May
<i>Arctostaphylos manzanita</i> ssp. <i>manzanita</i>	Common Manzanita	shrub	Jan-Apr
<i>Arctostaphylos canescens</i>	Hoary Manzanita	shrub	Jan-Apr
<i>Arctostaphylos glandulosa</i> ssp. <i>cushingiana</i>	Cushing Manzanita	shrub	Jan-Apr
<i>Arctostaphylos stanfordiana</i> ssp. <i>stanfordiana</i>	Stanford Manzanita	shrub	Feb-Apr
Fabaceae	<i>Pea Family</i>		
<i>Acmispon brachycarpus</i>	Hillside Trefoil	annual	Mar-Jun
<i>Acmispon micranthus</i>	San Diego Trefoil	annual	Mar-May
<i>Amorpha californica</i> ssp. <i>napensis</i>	Napa False Indigo	shrub	May-Jul
<i>Astragalus gambelianus</i>	Gambel's Locoweed	annual	Mar-Jun
<i>Lathyrus latifolius</i>	Everlasting Pea *	perennial	May-Sep
<i>Lathyrus vestitus</i> var. <i>vestitus</i>	Common Pacific Pea	perennial	Apr-Jun
<i>Lupinus pachylobus</i> ?	Mount Diablo Lupine	annual	Mar-Apr
<i>Rupertia physodes</i>	California Tea	perennial	Apr-Jun
<i>Trifolium ciliolatum</i>	Tree Clover	annual	Mar-Jun
<i>Trifolium</i> sp. (<i>oliganthum</i> or <i>wildenovii</i>)		annual	
<i>Trifolium microcephalum</i>	Maiden Clover	annual	Apr-Jun

Scientific Name	Common Name	Life Form	Blooms
<i>Vicia sativa</i> ssp. <i>nigra</i>	Common Vetch	annual	Apr-Jun
<i>Vicia villosa</i> ssp. <i>varia</i>	Woolly-podded Vetch	annual	Apr-Jun
Fagaceae	<i>Oak Family</i>		
<i>Chrysolepis chrysophylla</i> var. <i>minor</i>	Chinquapin	shrub	Jun-Sep
<i>Quercus agrifolia</i> var. <i>agrifolia</i>	Coast Live Oak	tree	Jan--Apr
<i>Quercus berberidifolia</i>	Scrub Oak	shrub	Mar-May
<i>Quercus chrysolepis</i>	Canyon Oak	tree	Apr-May
<i>Quercus kelloggii</i>	Black Oak	tree	Apr-May
<i>Quercus wislizenii</i> var. <i>frutescens</i>	Scrub Interior Live Oak	shrub	Mar-May
<i>Quercus X chasei</i>	Chase's Oak	tree	
Geraniaceae	<i>Geranium Family</i>		
<i>Erodium cicutarium</i>	Redstem Filaree *	annual	Feb-May
<i>Geranium molle</i>	Dove Geranium *	annual	Apr-Jun
<i>Geranium purpureum</i>	Purple Geranium *	annual	Mar-Jun
Grossulariaceae	<i>Currant Family</i>		
<i>Ribes roezlii</i> var. <i>cruentum</i>	Coast Range Gooseberry	shrub	Feb-May
Hydrangeaceae	<i>Hydrangea Family</i>		
<i>Whipplea modesta</i>	Modesty	perennial	Apr-Jun
Hypericaceae	<i>St. John's Wort Family</i>		
<i>Hypericum concinnum</i>	Gold Wire	perennial	May-Jul
Lamiaceae	<i>Mint Family</i>		
<i>Melissa officianalis</i>	Lemon Balm *	perennial	Jun-Sep
<i>Monardella villosa</i> ssp. <i>villosa</i>	Common Coyote Mint	shrub	Jun-Aug
<i>Monardella viridis</i>	Green Coyote Mint	shrub	Jun-Sep
<i>Scutellaria californica</i> ?	California Skullcap	perennial	Jun-Jul
<i>Stachys rigida</i> var. <i>quecetorum</i>	Rigid Hedge Nettle	perennial	Apr-Aug
<i>Stachy stricta</i>	Sonoma Hedge Nettle	perennial	May-Aug
Lauraceae	<i>Laurel Family</i>		
<i>Umbellularia californica</i>	California Bay	tree	Nov-May
Montiaceae	<i>Miner's Lettuce Family</i>		
<i>Claytonia parviflora</i> ssp. <i>parviflora</i>	Narrow-leaved Miner's Lettuce	annual	Feb-May
<i>Claytonia perfoliata</i> ssp. <i>perfoliata</i>	Miner's Lettuce	annual	Feb-May
Onagraceae	<i>Evening Primrose Family</i>		
<i>Clarkia concinna</i> ?	Red Ribbons	annual	May-Jul
<i>Clarkia purpurea</i> ssp. <i>quadrivulnera</i>	Winecup Clarkia	annual	May-Jul
<i>Epilobium brachycarpum</i>	Panicled Willow Herb	annual	May-Oct

Scientific Name	Common Name	Life Form	Blooms
Orobanchaceae	<i>Broomrape Family</i>		
<i>Pedicularis densiflora</i>	Indian Warrior	perennial	Jan-Jun
Papaveraceae	<i>Poppy Family</i>		
<i>Dendromecon rigida</i>	Tree Poppy	shrub	Apr-Jun
Phrymaceae	<i>Lopseed Family</i>		
<i>Mimulus aurantiacus</i>	Sticky Monkeyflower	shrub	Mar-Aug
Plantaginaceae	<i>Plantain Family</i>		
<i>Antirrhinum vexillocalyculatum</i> ssp. <i>vex.</i>	Wiry Snapdragon	annual	May-Jul
Polemoniaceae	<i>Phlox Family</i>		
<i>Gilia capitata</i> ssp. <i>capitata</i>	Globe Gilia	annual	Apr-Jul
<i>Leptosiphon ciliatus</i>	Whisker Brush	annual	Apr-Jul
Polygalaceae	<i>Milkwort Family</i>		
<i>Polygala californica</i>	California Milkwort	perennial	Mar-Jul
Polygonaceae	<i>Buckwheat Family</i>		
<i>Chrorizantha membranacea</i>	Pink Spineflower	annual	Apr-Jul
<i>Eriogonum nudum</i> var.	Nudestem Buckwheat	perennial	May-Oct
Ranunculaceae	<i>Buttercup Family</i>		
<i>Aquilegia formosa</i>	Crimson Columbine	perennial	Apr-Aug
<i>Delphinium nudicaule</i>	Red Larkspur	perennial	Mar-Jun
<i>Ranunculus californicus</i> var. <i>californicus</i>	California Buttercup	perennial	Feb-May
Rhamnaceae	<i>Buckthorn Family</i>		
<i>Ceanothus foliosus</i> var. <i>foliosus</i>	Wavy-leaf Ceanothus	shrub	Mar-May
<i>Ceanothus sonomensis</i>	Sonoma Ceanothus	shrub	Feb-Apr
<i>Frangula californica</i> var. <i>californica</i>	California Coffeeberry	shrub	May-Jul
Rosaceae	<i>Rose Family</i>		
<i>Adenostoma fasciculatum</i> var. <i>fasciculatum</i>	Chamise	shrub	May-Jun
<i>Aphanes occidentalis</i>	Western Dew-drop	annual	Mar-May
<i>Fragaria vesca</i>	Woodland Strawberry	perennial	Mar-Jun
<i>Holodiscus discolor</i>	Ocean Spray	perennial	May-Aug
<i>Prunus cerasifera</i>	Cherry Plum *	tree	Mar-Apr
<i>Rosa gymnocarpa</i>	Woodland Rose	shrub	Apr-Jul
<i>Rosa spithamea</i>	Ground Rose	shrub	May-Aug
<i>Rubus ursinus</i>	California Blackberry	shrub	Mar-Jul
Rubiaceae	<i>Bedstraw Family</i>		
<i>Galium aparine</i>	Cleavers	annual	Mar-Jun

Scientific Name	Common Name	Life Form	Blooms
<i>Galium californicum</i> ssp. <i>californicum</i>	California Bedstraw	perennial	Mar-Jul
<i>Galium parisiense</i>	Wall Bedstraw *	annual	Apr-Aug
<i>Galium porrigens</i> var. <i>porrigens</i>	Climbing Bedstraw	perennial	Mar-Jun
<i>Galium triflorum</i>	Fragrant Bedstraw	perennial	May-Jul
<i>Sherardia arvensis</i>	Field Madder *	annual	Jan-Jun
Sapindaceae	<i>Soapberry Family</i>		
<i>Acer macrophyllum</i>	Big-leaf Maple	tree	Mar-May
Saxifragaceae	<i>Saxifrage Family</i>		
<i>Lithophragma bolanderi</i>	Boland's Woodland Star	perennial	Mar-Jun
<i>Lithophragma heterophyllum</i>	Hill Star	perennial	Mar-Jun
<i>Lithophragma parviflorum</i> var. <i>parviflorum</i>	Small-flower Woodland Star	perennial	Apr-May
Solanaceae	<i>Night-shade Family</i>		
<i>Solanum xantii</i>	Purple Nightshade	shrub	Feb-Jul
Violaceae	<i>Violet Family</i>		
<i>Viola lobata</i> ssp. <i>lobata</i>	Pine Violet	perennial	Apr-Jul
<i>Viola ocellata</i>	Two-eyed Violet	perennial	Mar-Jun
Monocots			
Agavaceae	<i>Century Plant Family</i>		
<i>Chlorogalum pomeridianum</i> var. <i>pomeridianum</i>	Indian Soap	perennial	May-Aug
Cyperaceae	<i>Sedge Family</i>		
<i>Carex amplifolia</i>	Ample-leaved Sedge	perennial	Apr-Jun
<i>Carex densa</i>	Dense Sedge	perennial	Mar-Jun
<i>Carex leptopoda</i>	Short-scaled Sedge	perennial	Feb-Jun
<i>Carex multicaulis</i>	Many-stemmed Sedge	perennial	Mar-Apr
<i>Carex tumulicola</i> ?	Foothill Sedge	perennial	Apr-Jun
Iridaceae	<i>Iris Family</i>		
<i>Iris fernaldii</i>	Fernald's Iris	perennial	Apr-May
<i>Iris macrosiphon</i>	Bowl-tubed Iris	perennial	Apr-May
Juncaceae	<i>Rush Family</i>		
<i>Juncus balticus</i> ssp. <i>ater</i>	Baltic Rush	perennial	Apr-Aug
<i>Juncus patens</i>	Spreading Rush	perennial	Jun-Jul
Liliaceae	<i>Lily Family</i>		
<i>Fritillaria affinis</i>	Mission Bells	perennial	Feb-May
<i>Lilium pardalinum</i>	Chaparral Lily	perennial	Jun-Jul
<i>Prosartes hookeri</i>	Hooker's Fairy Bells	perennial	Mar-May
Melanthiaceae	<i>False Helebore Family</i>		

Scientific Name	Common Name	Life Form	Blooms
<i>Toxicoscordion fremontii</i>	Fremont's Star Lily	perennial	Feb-May
Orchidaceae	<i>Orchid Family</i>		
<i>Calypso bulbosa</i> (absent in 2017)	Fairy Slipper	perennial	Mar-Apr
<i>Corallorhiza maculata</i>	Spotted Coral Root	perennial	Apr-Jun
<i>Piperia sp.</i>	Ladies Tresses	perennial	May-Jul
Poaceae	<i>Grass Family</i>		
<i>Aira caryophyllea</i>	Hair Grass *	annual	Apr-Jun
<i>Avena barbata</i>	Wild Oats *	annual	Mar-Jun
<i>Bromus carinatus</i> var. <i>carinatus</i>	California Brome	perennial	Apr-Aug
<i>Bromus hordeaceus</i>	Soft Cheat *	annual	Apr-Jul
<i>Bromus tectorum</i>	Downy Brome *	annual	Apr-Jun
<i>Bromus vulgaris</i>	Narrow-flowered Brome	perennial	May-Aug
<i>Elymus glaucus</i> ssp. <i>glaucus</i>	Western Rye Grass	perennial	May-Aug
<i>Festuca californica</i>	California Fescue	perennial	Apr-Jul
<i>Gastridium phleoides</i>	Nit Grass *	annual	May-Sep
<i>Melica californica</i>	California Melic	perennial	Mar-May
<i>Melica geyeri</i>	Geyer's Onion Grass	perennial	Apr-Jul
<i>Melica torreyana</i>	Torrey's Melic	perennial	Mar-Jun
<i>Stipa pulchra</i>	Purple Needlegrass	perennial	Mar-May
Themidaceae	<i>Brodiaea Family</i>		
<i>Dichelostemma congestum</i>	Ookow	perennial	Apr-Jun
* non-native			

Figure 1: Vicinity Map



Key: Special Status Plant Species

- AMCAN** *Amorpha californica* ssp. *napensis*
- CESO** *Ceanothus sonomensis*
- ERBI** *Erigeron bioletti*
- LIRU** *Lilium rubescens*
- LORE** *Lomatium repostum*
- MOVI** *Monardella viridis*

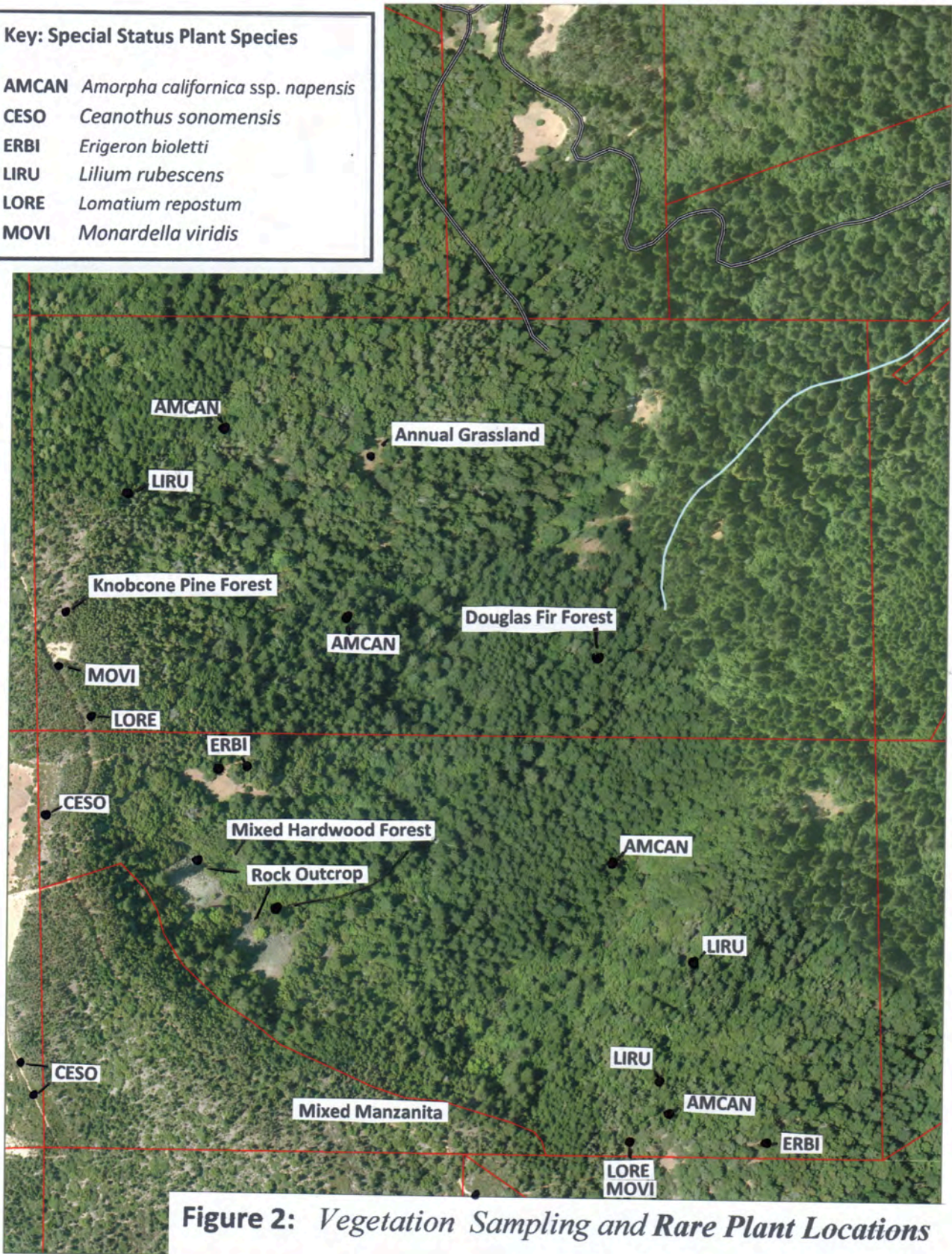
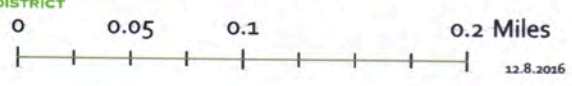


Figure 2: Vegetation Sampling and Rare Plant Locations



The Cove
Mount Veeder



- Legend**
- Streams
 - Parcels
 - Road Segment
 - Contours - 5'

