

# Technical Memorandum

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**DATE:** August 10, 2022  
**TO:** Kirsten Walker (Walker Construction Management)  
**CC:** Jerry Roe, Travis McCleary (Sapere Environmental, LLC)  
**SUBJECT:** Results of Rare Plant Survey  
75 Horseshoe Hill Road, Bolinas CA  
APN 098-250-015

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This memorandum summarizes the results of a rare plant survey of a proposed project site located at 75 Horseshoe Hill Road in the town of Bolinas, Marin County, California. The project was evaluated by Sapere Environmental and Wood Biological Consulting to identify any biological constraints associated with development of equestrian facilities on the property. The initial biological reconnaissance survey identified the potential for occurrence of two special-status plant species based on presence of marginally suitable habitat and known occurrences in the region, and recommended a focused rare plant survey be conducted by a qualified botanist during the appropriate time for identification of each species.

## Rare Plant Survey Area

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The proposed project site is the vacant portion of a parcel of land, approximately 6.56 acres, currently used as a pasture for grazing several horses. The pasture adjoins a residence and ceramic studio and several small outbuildings. The rare plant survey area (*i.e.*, the survey area) consists of the project parcel. Figures 1 and 2 (attached) show the location of the project and the vegetation types. Vegetation within the survey area is mainly non-native annual grassland dominated by annual grass and herbaceous plant species. Non-native woodland occupies the margins of part of the pasture. Ruderal and ornamental vegetation occurs on the margins of the developed residence and driveway. These vegetation and cover types are described in greater detail below.

## Survey Methods

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A habitat assessment of the project area was performed by a qualified botanist (Chris Rogers, Wood Biological Consulting) on March 1, 2022, during which habitat suitability for special-status plant species was evaluated. Prior to the field survey, reports of known occurrences were obtained from queries of the California Natural Diversity Database (CNDDDB, 2022) and the California Native Plant Society Rare Plant Inventory (CNPS, 2022). Both queries included the Bolinas USGS 7.5-minute quadrangle and all six adjoining quadrangles (Double Point, Inverness, Novato, Point Bonita, San Geronimo, and San Rafael<sup>1</sup>). In addition, the U.S. Fish and Wildlife Service Information for Planning and Consultation also was queried (USFWS, 2022). Calflora

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<sup>1</sup> A typical query includes nine quadrangles; in this case, the Bolinas quadrangle abuts the Pacific Ocean.

(2022) also provided information on recent reported observations of special status species not yet reflected in the other databases.

These database queries identified 102 special-status plant species with potential to occur in the survey area based on geography (*i.e.*, proximity to known occurrences). Of these, 94 species were considered to have no potential to occur because suitable habitat is not present in the survey area, such as wetlands, forests, coastal dunes or scrub, serpentine or other specialized soils. This includes several species documented from the vicinity of Bolinas, as shown on Figure 3. Special-status perennial herbs, shrubs or trees that were determined to be absent during the initial site survey were eliminated from further consideration. Results of the database queries are attached.

Two species, congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) and two-fork clover (*Trifolium amoenum*), were considered to have moderate potential to occur on the site because of the presence of grassland habitat and relatively nearby occurrences, although the continuously grazed disturbed condition reduced the likelihood of occurrence. Six other species (bent-flowered fiddleneck, Oakland star tulip, harlequin lotus, bristly leptosiphon, large-flowered leptosiphon, and Scouler's catchfly) were considered to have low potential to occur based on the presence of grassland habitat. Continuous grazing of the project parcel significantly reduces the likelihood that these species would occur there. Additionally, several do not have known occurrences in the survey area vicinity (*i.e.*, within several miles). Table 1 summarizes all species considered to have low or moderate potential to occur.

A second survey was conducted on May 23, 2022, coinciding with the flowering period of both species with moderate potential to occur, as well as many other species considered unlikely to occur. All plant species detected during the survey were identified to a level sufficient to determine whether or not they were special-status species. Particular attention was given to species in the same genera as special-status species with the potential to occur, *i.e.*, the genus *Trifolium*. Table 2 lists all plant species observed in the survey area.

## Vegetation Types

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### ***Non-native Woodland***

Stands of predominantly naturalized non-native tree species form small woodlands along the perimeter of the survey area. The trees include Monterey pine, bishop pine, silver dollar gum, Lombardy poplar, and Siberian elm. Few individuals of native trees, including coast live oak, California bay, arroyo willow, and planted redwood also are present. Understory shrubs also are mainly non-native species, including golden wattle, star acacia, short leaf box, and woolly cotoneaster. The understory herbaceous vegetation is generally sparse, consisting of shade-tolerant species that also occur in non-native annual grassland.

Non-native woodland is not classified by Sawyer, *et al.* (2009), and would be classified as an upland habitat according to Cowardin, *et al.* (1979).

### **Non-native Annual Grassland**

Non-native annual grassland is dominated by non-native annual grasses and weedy annual and perennial forbs, primarily of Mediterranean origin, which have largely replaced native perennial grasslands and wildflower fields as a result of human disturbance. Within the survey area, many decades of use as a livestock pasture have replaced the native vegetation with introduced non-native species. A few native wildflowers and grasses, representing remnants of the original vegetation, also are present, but are not typically dominant. Non-native annual grassland is the dominant vegetation type, covering approximately 4.3 acres of the 6.56 acre parcel (see Figure 2). The dominant grasses are hare barley, Mediterranean barley, velvet grass slender oat, and little quaking grass, all of which are non-native species. Common non-native forbs include common dandelion, English plantain, creeping capeweed, narrow-leaved flax, and red stem filaree, also all non-native.

Within the survey area, non-native annual grassland conforms most closely to the natural community Annual Brome Grasslands (*Bromus [diandrus, hordeaceus]-Brachypodium distachyon* Semi-Natural Herbaceous Stands, as described in Sawyer, et al. (2009). This is described as Non-native Grassland by Holland (code 42200; Holland, 1986) and the CDFW (CA vegetation code 42.026.00; CDFW, 2022a).

Non-native annual grasslands as found on site would be classified as an upland (Cowardin, et al, 1979). As a common, widespread and non-natural plant association, non-native annual grassland has no global or State rarity ranking (CDFW, 2022b). Unless found to harbor special-status species, impacts to non-native annual grassland would not typically meet the significance criteria pursuant to CEQA guidelines.

### **Ruderal**

Ruderal vegetation occurs where native vegetation has been completely removed by grading, cultivation, continuous weed management, or other surface disturbances. Left undeveloped, such areas typically become recolonized by non-native and often invasive plant species. Ruderal sites are typically dominated by herbaceous species, although scattered woody shrubs and trees may also begin to appear if left undisturbed long enough. Ruderal sites are characteristic of road sides, fallow agricultural fields, vacant lots, and landslides.

Within the survey area, ruderal vegetation occurs in areas subject to repeated disturbance, such as the driveway and parking areas, corrals for livestock, and portions of the residential yard. These areas support a sparse cover of primarily non-native annual grasses and forbs, including slender oat, velvet grass, sheep sorrel, and common groundsel, among others.

### **Ornamental**

Ornamental plant associations are those dominated by plant species introduced by humans and established or maintained by human disturbances or activities (Holland and Keil, 1990). Some are entirely artificial such as areas under active cultivation (e.g., rowcrops, orchards, vineyards, ornamental landscaping). Others include areas used as rangeland or pasture, and areas

influenced by urban or suburban landscaping or plantings. On such sites, the native vegetation has typically been removed by clearing in preparation for cultivation, landscaping, or development. Cleared areas that are planted with or colonized by non-indigenous plant species can create distinct communities dominated by annual grasses and forbs, shrubs, or trees. Some of these communities are only perpetuated with direct human intervention such as irrigation or grazing, while others have naturalized and are able to persist without artificial means. In some situations, introduced non-indigenous species invade native habitats, altering the composition of the native understory or canopy, or both.

Within the survey area, anthropogenic habitats include areas of lawns and maintained gardens, as well as less formal landscaped areas along the access road to the summit of the hill. On the road-side and interspersed into the oaks are plantings of a variety of Cootamundra wattle, blackwood acacia, Aleppo pine, non-indigenous Monterey pine and coast redwood, Tasmanian blue gum, Australia tea tree, deodar cedar, French broom, and dense shrub cover of rock rose. Areas along the roadway and banks near the main house have been planted with periwinkle, which has spread into the understory of the oaks, in some cases forming a herbaceous monoculture to the exclusion of the native understory species.

This vegetation type is not classified by Sawyer et al. (2009); it would be classified as an upland following Cowardin et al. (1979). Unless found to support special-status plant or animal species, or as otherwise regulated under local tree or zoning ordinances, impacts to anthropogenic habitats typically would not be regarded as significant pursuant to CEQA guidelines (see discussion in Section 4.1).

### ***Developed***

Developed areas consist of areas where natural or non-natural plant assemblages have been removed and replaced by structures and hardscapes such as road paving, walkways, and patios. Unpaved areas regularly utilized for the storage of equipment, vehicles, construction materials and refuse are also characterized as developed. Developed portions of the survey area include the residence and yard, outbuildings, driveway, and parking areas.

### **Rare Plant Survey Results**

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No special-status plant species were observed or are expected to occur on the project site. Each species for which potentially suitable habitat is present is summarized below. Annual grassland habitat on the site is considered marginally suitable due to ongoing grazing, which has replaced most native annual grassland plant species with non-native and invasive species. Additionally, special-status plant species observed in the vicinity of the project site occur in environmental settings that differ from the survey area, such as tidal and freshwater wetlands, chaparral, coastal scrub and dunes, serpentine soils and rocky outcrops. Table 1 (attached) summarizes the plant species considered to have at least moderate potential to occur in the survey area. Table 2 lists all plant species observed.

### **Bent-Flowered Fiddleneck (*Amsinckia lunaris*)**

#### ***Status, Distribution and Habitat Requirements***

Bent-flowered fiddleneck (FESA: none; CESA: none; CRPR: 1B.2) is an annual herbaceous species of the borage family (Boraginaceae). It has orange flowers with two red marks and is differentiated from other species in the genus by its five lobed calyx and bilateral corolla with a bent tube. Bent-flowered fiddleneck flowers from March to June. Bent-flowered fiddleneck occurs in coastal bluff scrub, and in cismontane woodlands and valley and foothill grasslands typically from 10-1640 ft in elevation. It is known from Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, Sonoma and Yolo counties (CNDDDB, 2022). Bent-flowered fiddleneck is not listed under FESA; therefore, Critical Habitat has not been designated for the species.

#### ***Potential Occurrence in the Survey Area***

Marginally suitable grassland habitat for bent-flowered fiddleneck is present within the survey area. However, the continuous grazing of the parcel has significantly reduced the native flora and suitability of the habitat for this species. Portions of the site that are dominated by non-native woodland do not provide suitable habitat. The nearest occurrence of bent-flowered fiddleneck is 3.75 miles east of the survey area near the Laurel Dell Trailhead on West Ridgecrest Boulevard, at an elevation of 1,900 ft (Calflora, 2022). Elsewhere in Marin County, it is known from several collections on well-drained slopes in Fairfax, San Geronimo, at the head of Nicasio Creek, and on the Tomales Bluffs (Howell et al., 2007).

#### ***Project-Related Effects***

Bent-flowered fiddleneck was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

### **Oakland Star Tulip (*Calochortus umbellatus*)**

#### ***Status, Distribution and Habitat Requirements***

Oakland star tulip (FESA: none; CESA: none; CRPR: 4.2) is a bulb-forming perennial geophyte in the lily family (Liliaceae). It produces erect white to pale pink-lilac colored flowers. Flowering occurs March through May. Oakland star-tulip occurs in chaparral, cismontane woodland, broadleaved upland forest, lower montane coniferous forest and valley and foothill grassland. Populations are concentrated in Alameda, Contra Costa, and Marin counties.

#### ***Potential Occurrence in the Survey Area***

Marginally suitable habitat for Oakland star-tulip is present in the survey area within the non-native annual grassland, although its likelihood is diminished by ongoing grazing, which has displaced the majority of native plant species in the grassland on the site. Because it is a CRPR 4 species, occurrences are not tracked in the CNDDDB. The nearest contemporary observations of the species in Marin County are all located east of Bolinas Ridge, more than five miles east of the survey area.

**Potential Project-Related Effects**

Oakland star tulip was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

**Hayfield tarplant (*Hemizonia congesta* ssp. *congesta*)**

**Status, Distribution and Habitat Requirements**

Hayfield tarplant (FESA: none; CESA: none; CRPR: 1B.2), also known as congested-headed hayfield tarplant, is an annual herb in the sunflower family (Asteraceae). The plant has strongly scented puberulent leaves with aromatic glands. Flower heads are clustered and hemispherical, with 5–13 white ray flowers and 5–60 white disk flowers. Flowering occurs April through November. Congested-headed hayfield tarplant is not listed under FESA; as such, Critical Habitat has not been designated for the species.

Hayfield tarplant is restricted to valley and foothill grasslands or coastal scrub, sometimes found on roadsides, at 66-1837 ft in elevation. It is known from Del Norte, Humboldt, Mendocino, Marin, San Francisco, San Mateo, and Sonoma counties (CNDDDB, 2022), as well as the East Bay and the Sierra foothills.

**Potential Occurrence in the Survey Area**

Marginally suitable grassland habitat for hayfield tarplant is present within the survey area, although the likelihood of its occurrence is diminished by continuous grazing and removal of the majority of native vegetation. The nearest occurrence is 1.6 miles southeast of the survey area in Point Reyes National Seashore near Bolinas Point (CNDDDB, 2022). Elsewhere in Marin County, it is known from scattered populations in the valley of the San Andreas Rift Zone (4.2 miles northeast of the survey area; Calfora 2022), one population near Point Reyes Station (11.5 miles northeast of the survey area), and several populations located east of Bolinas Ridge (CNDDDB, 2022). A known population in the Loma Verde Preserve near Novato was checked to confirm the species was flowering at the time of the focused survey.

**Potential Project-Related Effects**

Hayfield tarplant was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

**Harlequin lotus (*Hosackia gracilis*)**

**Status, Distribution and Habitat Requirements**

Harlequin lotus (FESA: none; CESA: none; CRPR: 4.2) is a perennial herbaceous plant in the pea family (Fabaceae) with spreading or upright form and multi-colored flowers. Flowering occurs March through July. It grows in coastal scrub, closed-cone pine forest, mixed evergreen forest, and often in wetlands within these vegetation types. It occurs along the coast from British Columbia to San Luis Obispo counties.

***Potential Occurrence in the Survey Area***

Marginally suitable habitat for harlequin lotus occurs in the non-native woodland in the survey area, which includes small stands of closed-cone Monterey pine and Bishop pine.

***Potential Project-Related Effects***

Harlequin lotus was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

**Bristly leptosiphon (*Leptosiphon aureus*)**

***Status, Distribution and Habitat Requirements***

Bristly leptosiphon (FESA: none: CESA: none: CRPR: 4.2) is a low-growing, annual herb in the phlox family (Polemoniaceae). It has opposite, palmately-compound leaves with needle-like leaflets. This species blooms between April and July, forming head-like inflorescences of yellow flowers, each with a thread-like tube and abruptly spreading corolla lobes. Bristly leptosiphon occurs in chaparral, cismontane woodland, coastal prairie and valley and foothill grassland. It is distributed from Humboldt County to San Mateo County on the coast, including Marin County, and inland to Alameda and Fresno counties. Bristly leptosiphon is not listed under FESA; as such, Critical Habitat has not been designated for the species.

***Potential Occurrence in the Survey Area***

Marginally suitable grassland habitat for bristly leptosiphon is present within the survey area, although more typically it occurs in grassy openings within chaparral and coastal scrub habitats, which are not present in the survey area. Its likelihood is further diminished by ongoing grazing, which has displaced the majority of native plant species in the grassland on the site. As a CRPR 4 species, bristly leptosiphon occurrences are not tracked in the CNDDDB. The nearest contemporary observations of the species in Marin County are in Point Reyes National Seashore, 14 miles northwest of the survey area (Calflora, 2022).

***Potential Project-Related Effects***

Bristly leptosiphon was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

**Large-flowered leptosiphon (*Leptosiphon grandiflorus*)**

***Status, Distribution and Habitat Requirements***

Large-flowered leptosiphon (FESA: none: CESA: none: CRPR: 4.2) is a low-growing, annual herb in the phlox family (Polemoniaceae). It has opposite, palmately-compound leaves with needle-like leaflets. This species blooms between April and August, with white to light pink flowers, each with a thread-like tube and spreading corolla lobes. Bristly leptosiphon occurs in coastal dunes, coastal scrub, closed-cone pine forest, foothill woodland, coastal prairie, and valley grassland. It occurs along the coast from Mendocino to Santa Barbara counties, and inland

to Alameda, Contra Costa, Santa Clara, Merced and Fresno counties. Bristly leptosiphon is not listed under FESA; as such, Critical Habitat has not been designated for the species.

***Potential Occurrence in the Survey Area***

Marginally suitable grassland habitat for large-flowered leptosiphon is present within the survey area, although more typically it occurs in grassy openings within chaparral and coastal scrub habitats, which are not present in the survey area. Bristly leptosiphon occurrences are not tracked in the CNDDDB. The nearest contemporary observations of the species in Marin County are east of Bolinas Ridge, *i.e.*, on Pine Mountain Fire Road and Carson Ridge, five miles northeast of the survey area (Calflora, 2022).

***Potential Project-Related Effects***

Bristly leptosiphon was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

**Scouler’s catchfly (*Silene scouleri* ssp. *scouleri*)**

***Status, Distribution and Habitat Requirements***

Scouler’s catchfly (FESA: none; CESA: none; CRPR 2B.2) is a perennial herbaceous plant in the phlox family (Polemoniaceae). It occurs in coastal bluff scrub, coastal prairie and grasslands from 0–1,970 feet elevation. It occurs in California, Oregon, Washington, Idaho and Montana. Within California, it ranges along the coast from Del Norte to Humboldt County, and Marin to San Mateo County. Scouler’s catchfly is not listed under FESA; as such, Critical Habitat has not been designated for the species.

***Potential Occurrence in the Survey Area***

Marginally suitable grassland habitat for Scouler’s catchfly is present within the survey area, although more typically it occurs in openings within coastal scrub habitats, which are not present in the survey area. There are two recent occurrences on Point Reyes Peninsula, between 14 and 20 miles northwest of the survey area. Relatively recent and historic occurrences are documented from the San Francisco peninsula (CNDDDB, 2022; Calflora, 2022).

***Potential Project-Related Effects***

Scouler’s catchfly was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted. The May 2022 biological survey occurred slightly before the peak flowering season of this species (June-August), but the perennial species would have been detectable. None were observed, nor were any other species in the genus *Silene*. Therefore, the likelihood of this species occurring on the site is low.

**Two-fork clover (*Trifolium amoenum*)**

***Status, Distribution and Habitat Requirements***

Two-fork clover (FESA: Endangered; CESA: none; CRPR: 1B.1), also referred to as showy Indian clover is an herb in the legume or pea family (Fabaceae). It is a robust, hairy annual with



conspicuous stipules and widely obovate leaflets. Flowers consist of purple corollas with white tips. Flowering occurs April through June.

Two-fork clover is historically known from coastal bluff scrub and valley and foothill grasslands, sometimes on serpentine-derived soils, from 16-1360 ft. In elevation the absence of any observations for several decades, it was considered possibly extinct until rediscovered in Marin county in 1993. Previously, it had been collected from about 20 locations in seven counties (USFWS, 2012). In Marin County, much of the habitat that was suitable at the time of its federal listing has since been altered and is now unsuitable due to urbanization, agricultural operations, and changes in the biological community and hydrological conditions. Some attempts at reintroduction to suitable sites within its historic range, including at Bodega Marine Laboratory and Ring Mountain Preserve, have been undertaken with mixed results.

Two-fork clover was collected in “Bolinas” in 1925 (CNDDDB, 2022); more specific location information was not recorded. CNDDDB documents additional historic observations, including 3.3 miles ESE of the survey area at Stinson Beach (Occ. #3; 1927); 7.0 miles ENE near Phoenix Lake (Occ. #29; 1933), and 11.3 miles E near Corte Madera (Occ. #22; 1961). More recent occurrences have been recorded near Dillon Beach and Ring Mountain Preserve in Corte Madera (Calflora, 2022). In 2016, several two-fork clover plants were reported from 555 Birch Road in Bolinas (Calflora, 2022), a single-family residential parcel one mile SSW of the survey area. However, the mapped location is on the ocean bluff at the south end of Birch Road, at its intersection with Ocean Parkway. Several close-up photos of this occurrence show floral and leaf characters that are inconsistent with two-fork clover, which suggest the observed plants were more likely red clover (*Trifolium pratense*), which is common and non-native.

Two-fork clover was listed as Endangered under the Federal Endangered Species Act (FESA) in 1997. It is a CRPR 1B.1 species, indicating that it is endangered in California, distributed in one to several highly restricted occurrences, is endemic to California and endangered throughout its range. Recovery efforts include seed reintroduction at sites near Dillon Beach and Bodega Marine Laboratory (USFWS 2012) and on Ring Mountain near Corte Madera<sup>2</sup>. Although two-fork clover is listed under FESA, Critical Habitat has not been designated for the species, and there is no Recovery Plan.

#### **Potential Occurrence in the Survey Area**

Marginally suitable grassland habitat for two-fork clover is present within the survey area. The site has been in continuous use as pasture land for several decades, resulting in annual removal, by grazing, of a substantial portion of the vegetation cover and shifting dominance to non-native annual species (Table 2 lists 97 plant species observed on the site, of which 73 (76%) are non-native). Non-native plant density and the effects of herbivores are cited as important site management considerations for successful re-introduction (USFWS, 2012). Conversely, sites

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<sup>2</sup> <https://www.govalpha.com/document/notice-of-funding-opportunity-fy16-docx-259600/>

with moderate to heavy grazing and a predominance of non-native plants indicates relatively low suitability of the survey area to support two-forked clover.

***Potential Project-Related Effects***

Two-fork clover was not detected during the appropriately-timed survey, and it is presumed absent from the survey area. No further surveys or avoidance and minimization measures are warranted.

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## References

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**Attachments:**

Figure 1 – Project Location

Figure 2 – Vegetation Types in the Survey area

Figure 3 - Special Status Plants in the Vicinity of the Survey Area

Table 1 – Special-Status Plants with Potential to Occur in the Survey Area

Table 2 – Plant Species Observed in Survey area

Representative Photos

Results of Database Queries

Figure 1 – Project Location





**Legend**

- Parcel Boundary (6.56 acres)
- Non-Native Annual Grassland (4.28 acres)
- Non-Native Woodland (1.32 acres)
- Developed/Ornamental/Ruderal (0.96 acres)



**Figure 2. Vegetation Types in the Survey Area**  
75 Horseshoe Hill Road  
Version: August 10, 2022

**Figure 3 – Special-Status Plants in the Vicinity of the Survey Area**

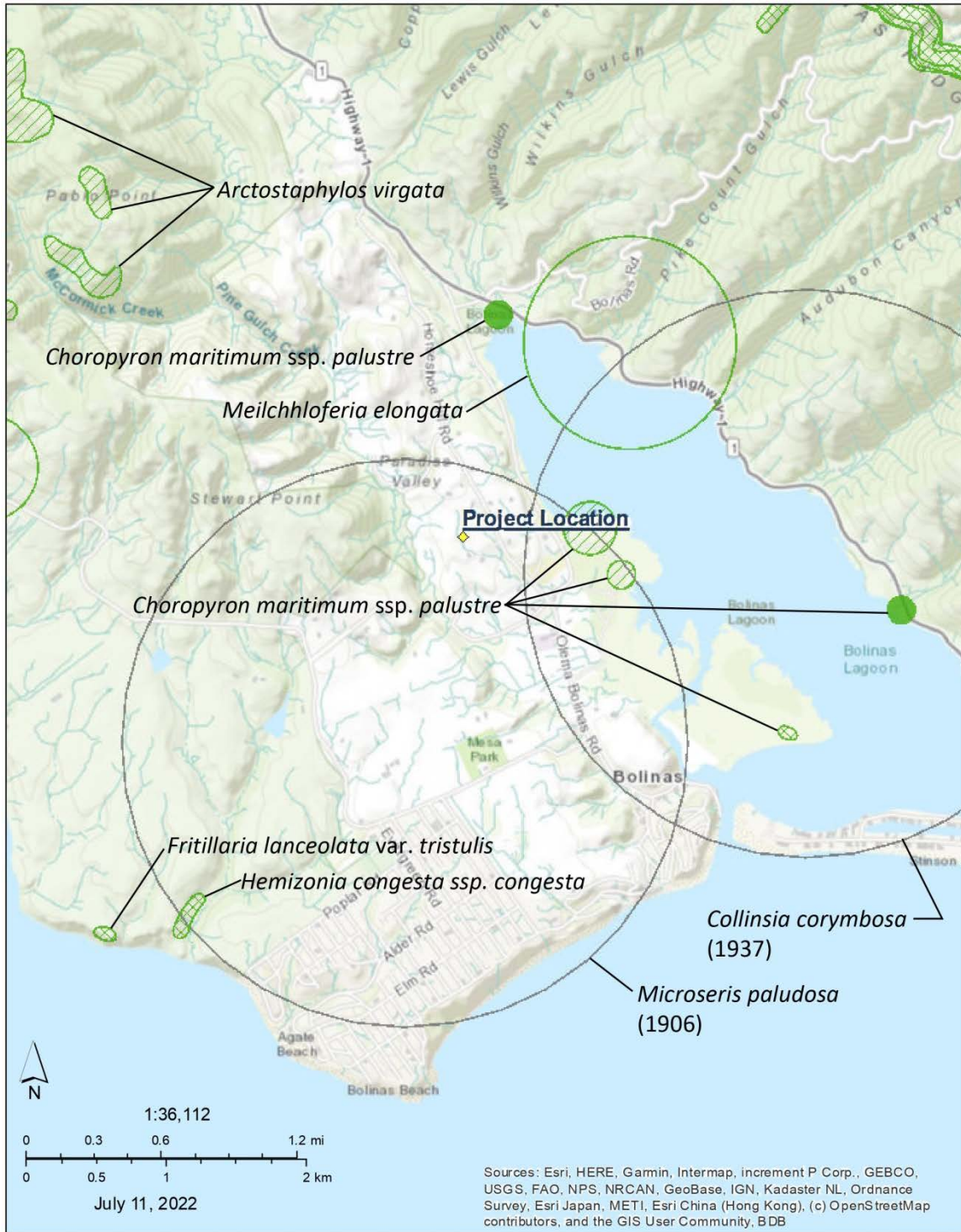


Table 1 - Special-Status Plants with Potential to Occur in the Survey Area

| Scientific name<br>Common name   | Status <sup>a</sup> |       |      | Flowering<br>Period | Habitat  | Potential to Occur   |
|--|---------------------|-------|------|---------------------|--|--|
|  | Federal             | State | CRPR |                     |  |  |
| <i>Amsinckia lunaris</i><br>bent-flowered fiddleneck                                 | --                  | --    | 1B.2 | March-June          | Coastal bluff scrub, cismontane woodland, valley and foothill grassland.   | <b>Low.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey.           |
| <i>Calochortus umbellatus</i><br>Oakland star-tulip                                  | --                  | --    | 4.2  | March-May           | Chaparral, cismontane woodland, lower montane coniferous forest, broad-leafed upland forest, valley and foothill grassland. Often on serpentine. | <b>Low.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey.           |
| <i>Hemizonia congesta</i> ssp. <i>congesta</i><br>congested-headed hayfield tarplant | --                  | --    | 1B.2 | April-Nov           | Valley and foothill grassland, coastal scrub, fallow fields, roadsides.  | <b>Moderate.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey.      |
| <i>Hosackia gracilis</i><br>Harlequin lotus  | --                  | --    | 4.2  | March-July          | Coastal scrub, closed-cone pine forest, mixed evergreen forest, and often in wetlands  | <b>Low.</b> Non-native woodland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey. |
| <i>Leptosiphon acicularis</i><br>bristly leptosiphon                                 | --                  | --    | 4.2  | April-July          | Chaparral, cismontane woodland, coastal prairie, valley and foothill grassland.  | <b>Low.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey.           |
| <i>Leptosiphon grandiflorus</i><br>large-flowered leptosiphon                        | --                  | --    | 4.2  | April-August        | Coastal dunes, coastal scrub, closed-cone pine forest, foothill woodland, coastal prairie, and valley grassland                                  | <b>Low.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing. Not detected during appropriately-timed survey.           |



| Scientific name<br>Common name                                    | Status <sup>a</sup> |       |      | Flowering<br>Period         | Habitat  | Potential to Occur  |
|---|---------------------|-------|------|-----------------------------|--|---|
|   | Federal             | State | CRPR |                             |  |   |
| <i>Silene scouleri</i> ssp. <i>scouleri</i><br>Scouler's catchfly | --                  | --    | 2B.2 | (March) June-<br>Aug (Sept) | Coastal bluff scrub, coastal prairie, valley and foothill grassland.                   | <b>Low.</b> Grassland habitat in survey areas is marginally suitable due to continuous grazing. No coastal scrub present. |
| <i>Trifolium amoenum</i><br>showy Indian clover                   | FE                  | --    | 1B.2 | April-June                  | Coastal bluff scrub and valley and foothill grasslands, sometimes on serpentine soils. | <b>Moderate.</b> Grassland habitat in survey area is marginally suitable due to continuous grazing.<br>Nearest occurrence |

<sup>a</sup>Status:

FE – Federal Endangered

CRPR – California Rare Plant Rank

1B.2 – Plants rare, threatened, or endangered in California and elsewhere; seriously threatened in California

2B.2 – Plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California

4.2 – Plants of limited distribution; fairly threatened in California

Table 2 - Plant Species Observed in the Survey Area

| Family           | Scientific Name <sup>a</sup>                        | Common Name              |
|------------------|---|--------------------------|
| Agavaceae        | <i>Agave</i> sp.*                                   | agave (cultivar)         |
| Alliaceae        | <i>Allium triquetrum</i> *                          | white-flowered onion     |
| Anacardiaceae    | <i>Toxicodendron diversilobum</i>                   | poison oak               |
| Apiaceae         | <i>Conium maculatum</i> *                           | poison hemlock           |
| Araceae          | <i>Arum italicum</i> *                              | Italian lords and ladies |
| Araliaceae       | <i>Hedera helix</i> *                               | English ivy              |
| Asteraceae       | <i>Arctotheca prostrata</i> *                       | creeping capeweed        |
|                  | <i>Baccharis pilularis</i> ssp. <i>consanguinea</i> | coyote brush             |
|                  | <i>Calendula arvensis</i> *                         | field marigold           |
|                  | <i>Carduus pycnocephala</i> *                       | Italian thistle          |
|                  | <i>Cirsium vulgare</i> *                            | bull thistle             |
|                  | <i>Senecio vulgaris</i> *                           | common groundsel         |
|                  | <i>Silybum marianum</i> *                           | milk thistle             |
|                  | <i>Soliva sessilis</i> *                            | common soliva            |
|                  | <i>Sonchus asper</i> *                              | sow thistle              |
|                  | <i>Taraxacum officinale</i> *                       | common dandelion         |
| Brassicaceae     | <i>Brassica nigra</i> *                             | black mustard            |
|                  | <i>Lepidium didymum</i> *                           | lesser swinecress        |
| Caryophyllaceae  | <i>Cerastium glomeratum</i> *                       | mouse-ear chickweed      |
|                  | <i>Silene gallica</i> *                             | common catchfly          |
|                  | <i>Spergularia rubra</i> *                          | red sand spurry          |
| Celastraceae     | <i>Maytenus boaria</i> *                            | mayten tree              |
| Convolvulaceae   | <i>Dichondra donelliana</i>                         | California ponysfoot     |
| Cucurbitaceae    | <i>Marah fabacea</i>                                | California manroot       |
| Cupressaceae     | <i>Sequoia sempervirens</i> <sup>b</sup>            | coast redwood            |
| Euphorbiaceae    | <i>Euphorbia peplus</i> *                           | petty spurge             |
| Fabaceae         | <i>Acacia longifolia</i> *                          | golden wattle            |
|                  | <i>Acacia verticillata</i> *                        | star acacia              |
|                  | <i>Genista monspessulana</i> *                      | French broom             |
|                  | <i>Trifolium dubium</i> *                           | little hop clover        |
|                  | <i>Trifolium repens</i> *                           | white clover             |
|                  | <i>Trifolium subterraneum</i> *                     | subterranean clover      |
|                  | <i>Vicia sativa</i> ssp. <i>nigra</i> *             | common vetch             |
| Fagaceae         | <i>Quercus agrifolia</i>                            | coast live oak           |
| Geraniaceae      | <i>Erodium botrys</i> *                             | long-beaked filaree      |
|                  | <i>Erodium cicutarium</i> *                         | red stem filaree         |
|                  | <i>Erodium moschatum</i> *                          | white-stem filaree       |
|                  | <i>Geranium dissectum</i> *                         | cut-leaf geranium        |
| Hippocastanaceae | <i>Aesculus hippocastanum</i> *                     | horse chestnut           |
| Iridaceae        | <i>Iris pseudacorus</i> *                           | yellow flag iris         |

| Family                 | Scientific Name <sup>a</sup>                       | Common Name               |
|------------------------|--|---------------------------|
|                        | <i>Romulea rosea</i> var. <i>australis</i> *       | rosy sand crocus          |
| Juncaceae              | <i>Juncus balticus</i>                             | Baltic rush               |
|                        | <i>Juncus bufonius</i>                             | toad rush                 |
| Lauraceae              | <i>Umbellularia californica</i>                    | California bay            |
| Lamiaceae              | <i>Mentha pulegium</i> *                           | pennyroyal                |
| Linaceae               | <i>Linum bienne</i> *                              | narrow-leaved flax        |
| Lythraceae             | <i>Lythrum hyssopifolia</i> *                      | hyssop loosestrife        |
| Malvaceae              | <i>Malva neglecta</i> *                            | dwarf mallow              |
| Montiaceae             | <i>Calandrinia menziesii</i>                       | red maids                 |
|                        | <i>Claytonia perfoliata</i> ssp. <i>perfoliata</i> | miner's lettuce           |
| Myrsinaceae            | <i>Lysimachia arvensis</i> *                       | scarlet pimpernel         |
| Myrtaceae              | <i>Eucalyptus polyanthemos</i> *                   | silver dollar gum         |
| Onagraceae             | <i>Tetrapteron graciliflorum</i>                   | hill sun cup              |
| Orobanchaceae          | <i>Triphysaria pusilla</i>                         | dwarf owl's clover        |
| Oxalidaceae            | <i>Oxalis pes-caprae</i> *                         | Bermuda buttercup         |
| Papaveraceae           | <i>Eschscholzia californica</i>                    | California poppy          |
|                        | <i>Fumaria capreolata</i> *                        | white ramping fumitory    |
| Plantaginaceae         | <i>Plantago lanceolata</i> *                       | English plantain          |
| Pinaceae               | <i>Pinus muricata</i>                              | bishop pine               |
|                        | <i>Pinus radiata</i> <sup>b</sup>                  | Monterey pine             |
| Pittosporaceae         | <i>Pittosporum tenuifolium</i> *                   | short leaf box            |
| Poaceae                | <i>Agrostis capillaris</i> *                       | colonial bentgrass        |
|                        | <i>Avena barbata</i> *                             | slender oat               |
|                        | <i>Briza maxima</i> *                              | rattlesnake grass         |
|                        | <i>Briza minor</i> *                               | little quaking grass      |
|                        | <i>Bromus diandrus</i> *                           | ripgut brome              |
|                        | <i>Bromus hordeaceus</i> *                         | soft chess                |
|                        | <i>Bromus sitchensis</i> var. <i>maritimus</i>     | maritime brome            |
|                        | <i>Cynosurus echinatus</i> *                       | dogtail grass             |
|                        | <i>Dactylis glomerata</i> *                        | orchard grass             |
|                        | <i>Ehrharta erecta</i> *                           | upright veldt grass       |
|                        | <i>Festuca arundinacea</i> *                       | reed fescue               |
|                        | <i>Festuca bromoides</i> *                         | brome fescue              |
|                        | <i>Festuca perennis</i> *                          | Italian ryegrass          |
|                        | <i>Holcus lanatus</i> *                            | velvet grass              |
|                        | <i>Hordeum brachyantherum</i>                      | meadow barley             |
|                        | <i>Hordeum marinum</i> ssp. <i>gussoneanum</i> *   | Mediterranean barley      |
|                        | <i>Hordeum murinum</i> ssp. <i>leporinum</i> *     | foxtail barley            |
|                        | <i>Poa annua</i> *                                 | annual bluegrass          |
|                        | <i>Polypogon monspeliensis</i> *                   | rabbitsfoot grass         |
|                        | Polygonaceae                                       | <i>Rumex acetosella</i> * |
| <i>Rumex crispus</i> * |  | curly dock                |
| <i>Rumex pulcher</i> * |  | fiddle dock               |

| Family               | Scientific Name <sup>a</sup>   | Common Name           |
|----------------------|--------------------------------|-----------------------|
|                      | <i>Rumex salicifolius</i>      | willow-leaved dock    |
| <b>Ranunculaceae</b> | <i>Ranunculus californicus</i> | California buttercup  |
|                      | <i>Ranunculus muricatus</i> *  | spiny buttercup       |
| <b>Rhamnaceae</b>    | <i>Frangula californica</i>    | coffeeberry           |
| <b>Rosaceae</b>      | <i>Cotoneaster pannosus</i> *  | woolly cotoneaster    |
|                      | <i>Prunus</i> sp.*             | fruit tree            |
|                      | <i>Rubus armeniacus</i> *      | Himalayan blackberry  |
|                      | <i>Rubus ursinus</i>           | California blackberry |
| <b>Rubiaceae</b>     | <i>Galium aparine</i>          | bedstraw              |
|                      | <i>Sherardia arvensis</i> *    | field madder          |
| <b>Salicaceae</b>    | <i>Populus nigra</i> *         | Lombardy poplar       |
|                      | <i>Salix lasiolepis</i>        | arroyo willow         |
| <b>Solanaceae</b>    | <i>Solanum americanum</i>      | white nightshade      |
| <b>Tropaeolaceae</b> | <i>Tropaeolum majus</i> *      | nasturtium            |
| <b>Ulmaceae</b>      | <i>Ulmus parvifolia</i> *      | Siberian elm          |

<sup>a</sup> Non-native species

<sup>b</sup> Native to California, but introduced on site

REPRESENTATIVE PHOTOS



▲ Grazed non-native annual grassland with non-native woodland in background.



▲ Grazed non-native annual grassland, toward residence in background.



▲ Interface of grazed non-native annual grassland (R) and non-native woodland (L).



▲ Non-native woodland with Monterey pine and acacia understory.



# Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Point Bonita) OR Inverness OR Double Point OR Novato OR San Rafael OR Bolinas OR San Geronimo (3812216) AND Taxonomic Group (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

| Species   | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <i>Abronia umbellata</i> var. <i>breviflora</i><br>pink sand-verbena                  | PDNYC010N4   | None           | None         | G4G5T2      | S2         | 1B.1                           |
| <i>Agrostis blasdalei</i><br>Blasdale's bent grass                                    | PMPOA04060   | None           | None         | G2          | S2         | 1B.2                           |
| <i>Alopecurus aequalis</i> var. <i>sonomensis</i><br>Sonoma alopecurus                | PMPOA07012   | Endangered     | None         | G5T1        | S1         | 1B.1                           |
| <i>Amorpha californica</i> var. <i>napensis</i><br>Napa false indigo                  | PDFAB08012   | None           | None         | G4T2        | S2         | 1B.2                           |
| <i>Amsinckia lunaris</i><br>bent-flowered fiddleneck                                  | PDBOR01070   | None           | None         | G3          | S3         | 1B.2                           |
| <i>Arctostaphylos montana</i> ssp. <i>montana</i><br>Mt. Tamalpais manzanita          | PDERI040J5   | None           | None         | G3T3        | S3         | 1B.3                           |
| <i>Arctostaphylos virgata</i><br>Marin manzanita                                      | PDERI041K0   | None           | None         | G2          | S2         | 1B.2                           |
| <i>Arenaria paludicola</i><br>marsh sandwort  | PDCAR040L0   | Endangered     | Endangered   | G1          | S1         | 1B.1                           |
| <i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i><br>coastal marsh milk-vetch | PDFAB0F7B2   | None           | None         | G2T2        | S2         | 1B.2                           |
| <i>Calamagrostis crassiglumis</i><br>Thurber's reed grass                             | PMPOA17070   | None           | None         | G3Q         | S2         | 2B.1                           |
| <i>Calystegia purpurata</i> ssp. <i>saxicola</i><br>coastal bluff morning-glory       | PDCON040D2   | None           | None         | G4T2T3      | S2S3       | 1B.2                           |
| <i>Campanula californica</i><br>swamp harebell  | PDCAM02060   | None           | None         | G3          | S3         | 1B.2                           |
| <i>Cardamine angulata</i><br>seaside bittercress                                      | PDBRA0K010   | None           | None         | G4G5        | S3         | 2B.1                           |
| <i>Carex comosa</i><br>bristly sedge  | PMCYP032Y0   | None           | None         | G5          | S2         | 2B.1                           |
| <i>Carex lyngbyei</i><br>Lyngbye's sedge  | PMCYP037Y0   | None           | None         | G5          | S3         | 2B.2                           |
| <i>Castilleja affinis</i> var. <i>neglecta</i><br>Tiburon paintbrush                  | PDSCR0D013   | Endangered     | Threatened   | G4G5T1T2    | S1S2       | 1B.2                           |
| <i>Castilleja ambigua</i> var. <i>humboldtiensis</i><br>Humboldt Bay owl's-clover     | PDSCR0D402   | None           | None         | G4T2        | S2         | 1B.2                           |
| <i>Ceanothus decornutus</i><br>Nicasio ceanothus                                      | PDRHA04440   | None           | None         | G1          | S1         | 1B.2                           |



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| Species  | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <b><i>Ceanothus gloriosus var. porrectus</i></b><br>Mt. Vision ceanothus             | PDRHA040F7   | None           | None         | G4T2        | S2         | 1B.3                           |
| <b><i>Ceanothus masonii</i></b><br>Mason's ceanothus                                 | PDRHA04200   | None           | Rare         | G1          | S1         | 1B.2                           |
| <b><i>Chloropyron maritimum ssp. palustre</i></b><br>Point Reyes salty bird's-beak   | PDSCR0J0C3   | None           | None         | G4?T2       | S2         | 1B.2                           |
| <b><i>Chorizanthe cuspidata var. cuspidata</i></b><br>San Francisco Bay spineflower  | PDPGN04081   | None           | None         | G2T1        | S1         | 1B.2                           |
| <b><i>Cicuta maculata var. bolanderi</i></b><br>Bolander's water-hemlock             | PDAPI0M051   | None           | None         | G5T4T5      | S2?        | 2B.1                           |
| <b><i>Cirsium andrewsii</i></b><br>Franciscan thistle                                | PDAST2E050   | None           | None         | G3          | S3         | 1B.2                           |
| <b><i>Cirsium hydrophilum var. vaseyi</i></b><br>Mt. Tamalpais thistle               | PDAST2E1G2   | None           | None         | G2T1        | S1         | 1B.2                           |
| <b><i>Collinsia corymbosa</i></b><br>round-headed Chinese-houses                     | PDSCR0H060   | None           | None         | G1          | S1         | 1B.2                           |
| <b><i>Dirca occidentalis</i></b><br>western leatherwood                              | PDTHY03010   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Entosthodon kochii</i></b><br>Koch's cord moss                                 | NBMUS2P050   | None           | None         | G1          | S1         | 1B.3                           |
| <b><i>Eriogonum luteolum var. caninum</i></b><br>Tiburon buckwheat                   | PDPGN083S1   | None           | None         | G5T2        | S2         | 1B.2                           |
| <b><i>Erysimum concinnum</i></b><br>bluff wallflower                                 | PDBRA160E3   | None           | None         | G3          | S2         | 1B.2                           |
| <b><i>Fissidens pauperculus</i></b><br>minute pocket moss                            | NBMUS2W0U0   | None           | None         | G3?         | S2         | 1B.2                           |
| <b><i>Fritillaria lanceolata var. tristulis</i></b><br>Marin checker lily            | PMLIL0V0P1   | None           | None         | G5T2        | S2         | 1B.1                           |
| <b><i>Fritillaria liliacea</i></b><br>fragrant fritillary                            | PMLIL0V0C0   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Gilia capitata ssp. chamissonis</i></b><br>blue coast gilia                    | PDPLM040B3   | None           | None         | G5T2        | S2         | 1B.1                           |
| <b><i>Gilia capitata ssp. tomentosa</i></b><br>woolly-headed gilia                   | PDPLM040B9   | None           | None         | G5T2        | S2         | 1B.1                           |
| <b><i>Gilia millefoliata</i></b><br>dark-eyed gilia                                  | PDPLM04130   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Grindelia hirsutula var. maritima</i></b><br>San Francisco gumplant            | PDAST470D3   | None           | None         | G5T1Q       | S1         | 3.2                            |
| <b><i>Helianthella castanea</i></b><br>Diablo helianthella                           | PDAST4M020   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Hemizonia congesta ssp. congesta</i></b><br>congested-headed hayfield tarplant | PDAST4R065   | None           | None         | G5T2        | S2         | 1B.2                           |





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| Species  | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|--|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <b><i>Hesperolinon congestum</i></b><br>Marin western flax                 | PDLIN01060   | Threatened     | Threatened   | G1          | S1         | 1B.1                           |
| <b><i>Heteranthera dubia</i></b><br>water star-grass                       | PMPON03010   | None           | None         | G5          | S2         | 2B.2                           |
| <b><i>Holocarpha macradenia</i></b><br>Santa Cruz tarplant                 | PDAST4X020   | Threatened     | Endangered   | G1          | S1         | 1B.1                           |
| <b><i>Horkelia cuneata var. sericea</i></b><br>Kellogg's horkelia          | PDROS0W043   | None           | None         | G4T1?       | S1?        | 1B.1                           |
| <b><i>Horkelia marinensis</i></b><br>Point Reyes horkelia                  | PDROS0W0B0   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Horkelia tenuiloba</i></b><br>thin-lobed horkelia                    | PDROS0W0E0   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Hypogymnia schizidiata</i></b><br>island tube lichen                 | NLT0032640   | None           | None         | G2G3        | S2         | 1B.3                           |
| <b><i>Kopsiopsis hookeri</i></b><br>small groundcone                       | PDORO01010   | None           | None         | G4?         | S1S2       | 2B.3                           |
| <b><i>Lasthenia californica ssp. macrantha</i></b><br>perennial goldfields | PDAST5L0C5   | None           | None         | G3T2        | S2         | 1B.2                           |
| <b><i>Layia carnosa</i></b><br>beach layia                                 | PDAST5N010   | Threatened     | Endangered   | G2          | S2         | 1B.1                           |
| <b><i>Leptosiphon rosaceus</i></b><br>rose leptosiphon                     | PDPLM09180   | None           | None         | G1          | S1         | 1B.1                           |
| <b><i>Lessingia micradenia var. micradenia</i></b><br>Tamalpais lessingia  | PDAST5S063   | None           | None         | G2T2        | S2         | 1B.2                           |
| <b><i>Lilaeopsis masonii</i></b><br>Mason's lilaeopsis                     | PDAPI19030   | None           | Rare         | G2          | S2         | 1B.1                           |
| <b><i>Lilium maritimum</i></b><br>coast lily                               | PMLIL1A0C0   | None           | None         | G2          | S2         | 1B.1                           |
| <b><i>Microseris paludosa</i></b><br>marsh microseris                      | PDAST6E0D0   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Mielichhoferia elongata</i></b><br>elongate copper moss              | NBMUS4Q022   | None           | None         | G5          | S3S4       | 4.3                            |
| <b><i>Navarretia rosulata</i></b><br>Marin County navarretia               | PDPLM0C0Z0   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Pentachaeta bellidiflora</i></b><br>white-rayed pentachaeta          | PDAST6X030   | Endangered     | Endangered   | G1          | S1         | 1B.1                           |
| <b><i>Phacelia insularis var. continentis</i></b><br>North Coast phacelia  | PDHYD0C2B1   | None           | None         | G2T2        | S2         | 1B.2                           |
| <b><i>Plagiobothrys glaber</i></b><br>hairless popcornflower               | PDBOR0V0B0   | None           | None         | GX          | SX         | 1A                             |
| <b><i>Pleuropogon hooverianus</i></b><br>North Coast semaphore grass       | PMPOA4Y070   | None           | Threatened   | G2          | S2         | 1B.1                           |



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| Species   | Element Code | Federal Status | State Status | Global Rank | State Rank | Rare Plant Rank/CDFW SSC or FP |
|---|--------------|----------------|--------------|-------------|------------|--------------------------------|
| <b><i>Polemonium carneum</i></b><br>Oregon polemonium                                       | PDPLM0E050   | None           | None         | G3G4        | S2         | 2B.2                           |
| <b><i>Polygonum marinense</i></b><br>Marin knotweed   | PDPGN0L1C0   | None           | None         | G2Q         | S2         | 3.1                            |
| <b><i>Quercus parvula var. tamalpaisensis</i></b><br>Tamalpais oak                          | PDFAG051Q3   | None           | None         | G4T2        | S2         | 1B.3                           |
| <b><i>Sagittaria sanfordii</i></b><br>Sanford's arrowhead                                   | PMALI040Q0   | None           | None         | G3          | S3         | 1B.2                           |
| <b><i>Sidalcea calycosa ssp. rhizomata</i></b><br>Point Reyes checkerbloom                  | PDMAL11012   | None           | None         | G5T2        | S2         | 1B.2                           |
| <b><i>Sidalcea hickmanii ssp. viridis</i></b><br>Marin checkerbloom                         | PDMAL110A4   | None           | None         | G3TH        | SH         | 1B.1                           |
| <b><i>Silene scouleri ssp. scouleri</i></b><br>Scouler's catchfly                           | PDCAR0U1MC   | None           | None         | G5T4T5      | S2S3       | 2B.2                           |
| <b><i>Stebbinsoseris decipiens</i></b><br>Santa Cruz microseris                             | PDAST6E050   | None           | None         | G2          | S2         | 1B.2                           |
| <b><i>Streptanthus batrachopus</i></b><br>Tamalpais jewelflower                             | PDBRA2G050   | None           | None         | G2          | S2         | 1B.3                           |
| <b><i>Streptanthus glandulosus ssp. pulchellus</i></b><br>Mt. Tamalpais bristly jewelflower | PDBRA2G0J2   | None           | None         | G4T2        | S2         | 1B.2                           |
| <b><i>Trifolium amoenum</i></b><br>two-fork clover  | PDFAB40040   | Endangered     | None         | G1          | S1         | 1B.1                           |
| <b><i>Triphysaria floribunda</i></b><br>San Francisco owl's-clover                          | PDSCR2T010   | None           | None         | G2?         | S2?        | 1B.2                           |
| <b><i>Triquetrella californica</i></b><br>coastal triquetrella                              | NBMUS7S010   | None           | None         | G2          | S2         | 1B.2                           |

Record Count: 73

# IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

## Location

Marin County, California



## Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

# Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

## Birds

| NAME  | STATUS     |
|---|------------|
| California Clapper Rail <i>Rallus longirostris obsoletus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/4240">https://ecos.fws.gov/ecp/species/4240</a>                  | Endangered |
| California Least Tern <i>Sterna antillarum browni</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/8104">https://ecos.fws.gov/ecp/species/8104</a>                         | Endangered |
| Marbled Murrelet <i>Brachyramphus marmoratus</i><br>There is final critical habitat for this species. The location of the critical habitat is not available.<br><a href="https://ecos.fws.gov/ecp/species/4467">https://ecos.fws.gov/ecp/species/4467</a> | Threatened |

Northern Spotted Owl *Strix occidentalis caurina* Threatened  
Wherever found  
There is final critical habitat for this species. The location of the critical habitat is not available.  
<https://ecos.fws.gov/ecp/species/1123>

Western Snowy Plover *Charadrius nivosus nivosus* Threatened  
There is final critical habitat for this species. The location of the critical habitat is not available.  
<https://ecos.fws.gov/ecp/species/8035>

Yellow-billed Cuckoo *Coccyzus americanus* Threatened  
There is final critical habitat for this species. The location of the critical habitat is not available.  
<https://ecos.fws.gov/ecp/species/3911>

## Reptiles

| NAME   | STATUS     |
|--|------------|
| Green Sea Turtle <i>Chelonia mydas</i><br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a> | Threatened |

## Amphibians

| NAME  | STATUS     |
|---|------------|
| California Red-legged Frog <i>Rana draytonii</i><br>Wherever found<br>There is final critical habitat for this species. The location of the critical habitat is not available.<br><a href="https://ecos.fws.gov/ecp/species/2891">https://ecos.fws.gov/ecp/species/2891</a> | Threatened |

## Fishes

| NAME   | STATUS     |
|--|------------|
| Delta Smelt <i>Hypomesus transpacificus</i><br>Wherever found<br>There is final critical habitat for this species. The location of the critical habitat is not available.<br><a href="https://ecos.fws.gov/ecp/species/321">https://ecos.fws.gov/ecp/species/321</a> | Threatened |
| Tidewater Goby <i>Eucyclogobius newberryi</i><br>Wherever found<br>There is final critical habitat for this species. The location of the critical habitat is not available.<br><a href="https://ecos.fws.gov/ecp/species/57">https://ecos.fws.gov/ecp/species/57</a> | Endangered |

## Insects

| NAME  | STATUS    |
|---|-----------|
| Monarch Butterfly <i>Danaus plexippus</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/9743">https://ecos.fws.gov/ecp/species/9743</a> | Candidate |

## Crustaceans

| NAME | STATUS |
|------|--------|
|------|--------|

California Freshwater Shrimp *Syncaris pacifica* Endangered  
Wherever found  
No critical habitat has been designated for this species.  
<https://ecos.fws.gov/ecp/species/7903>

## Flowering Plants

| NAME  | STATUS     |
|---|------------|
| Marin Dwarf-flax <i>Hesperolinon congestum</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/5363">https://ecos.fws.gov/ecp/species/5363</a>                    | Threatened |
| Showy Indian Clover <i>Trifolium amoenum</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/6459">https://ecos.fws.gov/ecp/species/6459</a>                      | Endangered |
| Sonoma Alopecurus <i>Alopecurus aequalis</i> var. <i>sonomensis</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/557">https://ecos.fws.gov/ecp/species/557</a> | Endangered |
| Tiburon Paintbrush <i>Castilleja affinis</i> ssp. <i>neglecta</i><br>Wherever found<br>No critical habitat has been designated for this species.<br><a href="https://ecos.fws.gov/ecp/species/2687">https://ecos.fws.gov/ecp/species/2687</a> | Endangered |

## Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

## Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have

Search Results

102 matches found. Click on scientific name for details

Search Criteria: Quad is one of [3712286:3712287:3812217:3812216:3812215:3712285:3712275]

| ▲ SCIENTIFIC NAME   | COMMON NAME                    | LIFEFORM                       | BLOOMING PERIOD | FED LIST | STATE LIST | GLOBAL RANK | STATE RANK | CA RARE PLANT RANK | GENERAL HABITATS  |
|---|--------------------------------|--------------------------------|-----------------|----------|------------|-------------|------------|--------------------|---|
| <a href="#">Abronia umbellata var. breviflora</a>           | pink sand-verbena              | annual herb                    | Jun-Oct         | None     | None       | G4G5T2      | S2         | 1B.1               | Coastal dunes   |
| <a href="#">Agrostis blasdalei</a>                          | Blasdale's bent grass          | perennial rhizomatous herb     | May-Jul         | None     | None       | G2          | S2         | 1B.2               | Coastal bluff scrub, Coastal dunes, Coastal prairie   |
| <a href="#">Alopecurus aequalis var. sonomensis</a>         | Sonoma alopecurus              | perennial herb                 | May-Jul         | FE       | None       | G5T1        | S1         | 1B.1               | Marshes and swamps, Riparian scrub  |
| <a href="#">Amorpha californica var. napensis</a>           | Napa false indigo              | perennial deciduous shrub      | Apr-Jul         | None     | None       | G4T2        | S2         | 1B.2               | Broadleafed upland forest, Chaparral, Cismontane woodland   |
| <a href="#">Amsinckia lunaris</a>                           | bent-flowered fiddleneck       | annual herb                    | Mar-Jun         | None     | None       | G3          | S3         | 1B.2               | Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland   |
| <a href="#">Arabis blepharophylla</a>                       | coast rockcress                | perennial herb                 | Feb-May         | None     | None       | G4          | S4         | 4.3                | Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub  |
| <a href="#">Arctostaphylos montana ssp. montana</a>         | Mt. Tamalpais manzanita        | perennial evergreen shrub      | Feb-Apr         | None     | None       | G3T3        | S3         | 1B.3               | Chaparral, Valley and foothill grassland  |
| <a href="#">Arctostaphylos virgata</a>                      | Marin manzanita                | perennial evergreen shrub      | Jan-Mar         | None     | None       | G2          | S2         | 1B.2               | Broadleafed upland forest, Chaparral, Closed-cone coniferous forest, North Coast coniferous forest                                  |
| <a href="#">Arenaria paludicola</a>                         | marsh sandwort                 | perennial stoloniferous herb   | May-Aug         | FE       | CE         | G1          | S1         | 1B.1               | Marshes and swamps  |
| <a href="#">Aspidotis carlotta-halliae</a>                  | Carlotta Hall's lace fern      | perennial rhizomatous herb     | Jan-Dec         | None     | None       | G3          | S3         | 4.2                | Chaparral, Cismontane woodland  |
| <a href="#">Astragalus breweri</a>                          | Brewer's milk-vetch            | annual herb                    | Apr-Jun         | None     | None       | G3          | S3         | 4.2                | Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland  |
| <a href="#">Astragalus nuttallii var. nuttallii</a>         | ocean bluff milk-vetch         | perennial herb                 | Jan-Nov         | None     | None       | G4T4        | S4         | 4.2                | Coastal bluff scrub, Coastal dunes  |
| <a href="#">Astragalus pycnostachyus var. pycnostachyus</a> | coastal marsh milk-vetch       | perennial herb                 | (Apr)Jun-Oct    | None     | None       | G2T2        | S2         | 1B.2               | Coastal dunes, Coastal scrub, Marshes and swamps  |
| <a href="#">Calamagrostis crassiglumis</a>                  | Thurber's reed grass           | perennial rhizomatous herb     | May-Aug         | None     | None       | G3Q         | S2         | 2B.1               | Coastal scrub, Marshes and swamps   |
| <a href="#">Calamagrostis ophitidis</a>                     | serpentine reed grass          | perennial herb                 | Apr-Jul         | None     | None       | G3          | S3         | 4.3                | Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland  |
| <a href="#">Calandrinia breweri</a>                         | Brewer's calandrinia           | annual herb                    | (Jan)Mar-Jun    | None     | None       | G4          | S4         | 4.2                | Chaparral, Coastal scrub  |
| <a href="#">Calochortus umbellatus</a>                      | Oakland star-tulip             | perennial bulbiferous herb     | Mar-May         | None     | None       | G3?         | S3?        | 4.2                | Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland           |
| <a href="#">Calochortus uniflorus</a>                       | pink star-tulip                | perennial bulbiferous herb     | Apr-Jun         | None     | None       | G4          | S4         | 4.2                | Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest  |
| <a href="#">Calystegia collina ssp. oxyphylla</a>           | Mt. Saint Helena morning-glory | perennial rhizomatous herb     | Apr-Jun         | None     | None       | G4T3        | S3         | 4.2                | Chaparral, Lower montane coniferous forest, Valley and foothill grassland   |
| <a href="#">Calystegia purpurata ssp. saxicola</a>          | coastal bluff morning-glory    | perennial herb                 | (Mar)Apr-Sep    | None     | None       | G4T2T3      | S2S3       | 1B.2               | Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest  |
| <a href="#">Campanula californica</a>                       | swamp harebell                 | perennial rhizomatous herb     | Jun-Oct         | None     | None       | G3          | S3         | 1B.2               | Bogs and fens, Closed-cone coniferous forest, Coastal prairie, Marshes and swamps, Meadows and seeps, North Coast coniferous forest |
| <a href="#">Cardamine angulata</a>                          | seaside bittercress            | perennial herb                 | (Jan)Mar-Jul    | None     | None       | G4G5        | S3         | 2B.2               | Lower montane coniferous forest, North Coast coniferous forest  |
| <a href="#">Carex comosa</a>                                | bristly sedge                  | perennial rhizomatous herb     | May-Sep         | None     | None       | G5          | S2         | 2B.1               | Coastal prairie, Marshes and swamps, Valley and foothill grassland  |
| <a href="#">Carex lyngbyei</a>                              | Lyngbye's sedge                | perennial rhizomatous herb     | Apr-Aug         | None     | None       | G5          | S3         | 2B.2               | Marshes and swamps  |
| <a href="#">Castilleja affinis var. neglecta</a>            | Tiburon paintbrush             | perennial herb (hemiparasitic) | Apr-Jun         | FE       | CT         | G4G5T1T2    | S1S2       | 1B.2               | Valley and foothill grassland   |
| <a href="#">Castilleja ambigua var. ambigua</a>             | johnny-nip                     | annual herb (hemiparasitic)    | Mar-Aug         | None     | None       | G4T4        | S3S4       | 4.2                | Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools                |
| <a href="#">Castilleja ambigua var. humboldtiana</a>        | Humboldt Bay paintbrush        | annual herb (hemiparasitic)    | Apr-Aug         | None     | None       | G4T2        | S2         | 1B.2               | Marshes and swamps  |

|  |                                    |                             |                   |      |      |        |      |      |   |  |
|--|------------------------------------|-----------------------------|-------------------|------|------|--------|------|------|---|--|
| <i>var. nummularioidensis</i>                | owls-clover                        | (nemiparasitic)             |                   |      |      |        |      |      |   |  |
| <i>Ceanothus decornutus</i>                  | Nicasio ceanothus                  | perennial shrub             | Mar-May           | None | None | G1     | S1   | 1B.2 | Chaparral   |  |
| <i>Ceanothus gloriosus var. exaltatus</i>    | glory brush                        | perennial evergreen shrub   | Mar-Jun(Aug)      | None | None | G4T4   | S4   | 4.3  | Chaparral   |  |
| <i>Ceanothus gloriosus var. gloriosus</i>    | Point Reyes ceanothus              | perennial evergreen shrub   | Mar-May           | None | None | G4T4   | S4   | 4.3  | Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal scrub  |  |
| <i>Ceanothus gloriosus var. porrectus</i>    | Mt. Vision ceanothus               | perennial evergreen shrub   | Feb-May           | None | None | G4T2   | S2   | 1B.3 | Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland  |  |
| <i>Ceanothus masonii</i>                     | Mason's ceanothus                  | perennial evergreen shrub   | Mar-Apr           | None | CR   | G1     | S1   | 1B.2 | Chaparral   |  |
| <i>Ceanothus pinetorum</i>                   | Kern ceanothus                     | perennial evergreen shrub   | May-Jul           | None | None | G3     | S3   | 4.3  | Lower montane coniferous forest, Subalpine coniferous forest, Upper montane coniferous forest   |  |
| <i>Chloropyron maritimum ssp. palustre</i>   | Point Reyes salty bird's-beak      | annual herb (hemiparasitic) | Jun-Oct           | None | None | G4?T2  | S2   | 1B.2 | Marshes and swamps  |  |
| <i>Chorizanthe cuspidata var. cuspidata</i>  | San Francisco Bay spineflower      | annual herb                 | Apr-Jul(Aug)      | None | None | G2T1   | S1   | 1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub  |  |
| <i>Cicuta maculata var. bolanderi</i>        | Bolander's water-hemlock           | perennial herb              | Jul-Sep           | None | None | G5T4T5 | S2?  | 2B.1 | Marshes and swamps  |  |
| <i>Cirsium andrewsii</i>                     | Franciscan thistle                 | perennial herb              | Mar-Jul           | None | None | G3     | S3   | 1B.2 | Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub  |  |
| <i>Cirsium hydrophilum var. vaseyi</i>       | Mt. Tamalpais thistle              | perennial herb              | May-Aug           | None | None | G2T1   | S1   | 1B.2 | Broadleafed upland forest, Chaparral, Meadows and seeps   |  |
| <i>Cistanthe maritima</i>                    | seaside cistanthe                  | annual herb                 | (Feb)Mar-Jun(Aug) | None | None | G3G4   | S3   | 4.2  | Coastal bluff scrub, Coastal scrub, Valley and foothill grassland   |  |
| <i>Collinsia corymbosa</i>                   | round-headed Chinese-houses        | annual herb                 | Apr-Jun           | None | None | G1     | S1   | 1B.2 | Coastal dunes   |  |
| <i>Cyrtopodium californicum</i>              | California lady-slipper            | perennial rhizomatous herb  | Apr-Aug(Sep)      | None | None | G4     | S4   | 4.2  | Bogs and fens, Lower montane coniferous forest  |  |
| <i>Dichondra occidentalis</i>                | western dichondra                  | perennial rhizomatous herb  | (Jan)Mar-Jul      | None | None | G3G4   | S3S4 | 4.2  | Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland  |  |
| <i>Dirca occidentalis</i>                    | western leatherwood                | perennial deciduous shrub   | Jan-Mar(Apr)      | None | None | G2     | S2   | 1B.2 | Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, North Coast coniferous forest, Riparian forest, Riparian woodland |  |
| <i>Elymus californicus</i>                   | California bottle-brush grass      | perennial herb              | May-Aug(Nov)      | None | None | G4     | S4   | 4.3  | Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland  |  |
| <i>Entosthodon kochii</i>                    | Koch's cord moss                   | moss                        |                   | None | None | G1     | S1   | 1B.3 | Cismontane woodland   |  |
| <i>Erigeron biolettii</i>                    | streamside daisy                   | perennial herb              | Jun-Oct           | None | None | G3?    | S3?  | 3    | Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest   |  |
| <i>Eriogonum luteolum var. caninum</i>       | Tiburon buckwheat                  | annual herb                 | May-Sep           | None | None | G5T2   | S2   | 1B.2 | Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland  |  |
| <i>Erysimum concinnum</i>                    | bluff wallflower                   | annual/perennial herb       | Feb-Jul           | None | None | G3     | S2   | 1B.2 | Coastal bluff scrub, Coastal dunes, Coastal prairie   |  |
| <i>Erysimum franciscanum</i>                 | San Francisco wallflower           | perennial herb              | Mar-Jun           | None | None | G3     | S3   | 4.2  | Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland  |  |
| <i>Fissidens pauperculus</i>                 | minute pocket moss                 | moss                        |                   | None | None | G3?    | S2   | 1B.2 | North Coast coniferous forest   |  |
| <i>Fritillaria lanceolata var. tristulis</i> | Marin checker lily                 | perennial bulbiferous herb  | Feb-May           | None | None | G5T2   | S2   | 1B.1 | Coastal bluff scrub, Coastal prairie, Coastal scrub   |  |
| <i>Fritillaria liliacea</i>                  | fragrant fritillary                | perennial bulbiferous herb  | Feb-Apr           | None | None | G2     | S2   | 1B.2 | Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland  |  |
| <i>Gilia capitata ssp. chamissonis</i>       | blue coast gilia                   | annual herb                 | Apr-Jul           | None | None | G5T2   | S2   | 1B.1 | Coastal dunes, Coastal scrub  |  |
| <i>Gilia capitata ssp. tomentosa</i>         | woolly-headed gilia                | annual herb                 | May-Jul           | None | None | G5T2   | S2   | 1B.1 | Coastal bluff scrub, Valley and foothill grassland  |  |
| <i>Gilia millefoliata</i>                    | dark-eyed gilia                    | annual herb                 | Apr-Jul           | None | None | G2     | S2   | 1B.2 | Coastal dunes   |  |
| <i>Grindelia hirsutula var. maritima</i>     | San Francisco gumplant             | perennial herb              | Jun-Sep           | None | None | G5T1Q  | S1   | 3.2  | Coastal bluff scrub, Coastal scrub, Valley and foothill grassland   |  |
| <i>Helianthella castanea</i>                 | Diablo helianthella                | perennial herb              | Mar-Jun           | None | None | G2     | S2   | 1B.2 | Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland                                  |  |
| <i>Hemizonia congesta ssp. congesta</i>      | congested-headed hayfield tarplant | annual herb                 | Apr-Nov           | None | None | G5T2   | S2   | 1B.2 | Valley and foothill grassland   |  |
| <i>Hesperolinon</i>                          | Marin western                      | annual herb                 | Apr-Jul           | FT   | CT   | G1     | S1   | 1B.1 | Chaparral, Valley and foothill grassland  |  |



|  |                             |  |                   |      |      |        |      |      |  |   |  |  |
|--|-----------------------------|--|-------------------|------|------|--------|------|------|--|---|--|--|
| <a href="#">congestum</a>                            | flax                        |  |                   |      |      |        |      |      |  |   |  |  |
| <a href="#">Heteranthera dubia</a>                   | water star-grass            | perennial herb (aquatic)               | Jul-Oct           | None | None | G5     | S2   | 2B.2 |  | Marshes and swamps  |  |  |
| <a href="#">Holocarpha macradenia</a>                | Santa Cruz tarplant         | annual herb                            | Jun-Oct           | FT   | CE   | G1     | S1   | 1B.1 |  | Coastal prairie, Coastal scrub, Valley and foothill grassland   |  |  |
| <a href="#">Horkelia cuneata var. sericea</a>        | Kellogg's horkelia          | perennial herb                         | Apr-Sep           | None | None | G4T1?  | S1?  | 1B.1 |  | Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub  |  |  |
| <a href="#">Horkelia marinensis</a>                  | Point Reyes horkelia        | perennial herb                         | May-Sep           | None | None | G2     | S2   | 1B.2 |  | Coastal dunes, Coastal prairie, Coastal scrub   |  |  |
| <a href="#">Horkelia tenuiloba</a>                   | thin-lobed horkelia         | perennial herb                         | May-Jul(Aug)      | None | None | G2     | S2   | 1B.2 |  | Broadleaved upland forest, Chaparral, Valley and foothill grassland   |  |  |
| <a href="#">Hosackia gracilis</a>                    | harlequin lotus             | perennial rhizomatous herb             | Mar-Jul           | None | None | G3G4   | S3   | 4.2  |  | Broadleaved upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland |  |  |
| <a href="#">Hypogymnia schizidiata</a>               | island tube lichen          | foliose lichen                         |                   | None | None | G2G3   | S2   | 1B.3 |  | Chaparral, Closed-cone coniferous forest  |  |  |
| <a href="#">Iris longipetala</a>                     | coast iris                  | perennial rhizomatous herb             | Mar-May(Jun)      | None | None | G3     | S3   | 4.2  |  | Coastal prairie, Lower montane coniferous forest, Meadows and seeps   |  |  |
| <a href="#">Juncus acutus ssp. leopoldii</a>         | southwestern spiny rush     | perennial rhizomatous herb             | (Mar)May-Jun      | None | None | G5T5   | S4   | 4.2  |  | Coastal dunes, Marshes and swamps, Meadows and seeps  |  |  |
| <a href="#">Kopsiopsis hookeri</a>                   | small groundcone            | perennial rhizomatous herb (parasitic) | Apr-Aug           | None | None | G4?    | S1S2 | 2B.3 |  | North Coast coniferous forest   |  |  |
| <a href="#">Lasthenia californica ssp. macrantha</a> | perennial goldfields        | perennial herb                         | Jan-Nov           | None | None | G3T2   | S2   | 1B.2 |  | Coastal bluff scrub, Coastal dunes, Coastal scrub   |  |  |
| <a href="#">Layia carnosa</a>                        | beach layia                 | annual herb                            | Mar-Jul           | FT   | CE   | G2     | S2   | 1B.1 |  | Coastal dunes, Coastal scrub  |  |  |
| <a href="#">Leptosiphon aureus</a>                   | bristly leptosiphon         | annual herb                            | Apr-Jul           | None | None | G4?    | S4?  | 4.2  |  | Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland  |  |  |
| <a href="#">Leptosiphon grandiflorus</a>             | large-flowered leptosiphon  | annual herb                            | Apr-Aug           | None | None | G3G4   | S3S4 | 4.2  |  | Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland   |  |  |
| <a href="#">Leptosiphon rosaceus</a>                 | rose leptosiphon            | annual herb                            | Apr-Jul           | None | None | G1     | S1   | 1B.1 |  | Coastal bluff scrub   |  |  |
| <a href="#">Lessingia hololeuca</a>                  | woolly-headed lessingia     | annual herb                            | Jun-Oct           | None | None | G2G3   | S2S3 | 3    |  | Broadleaved upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland  |  |  |
| <a href="#">Lessingia micradenia var. micradenia</a> | Tamalpais lessingia         | annual herb                            | (Jun)Jul-Oct      | None | None | G2T2   | S2   | 1B.2 |  | Chaparral, Valley and foothill grassland  |  |  |
| <a href="#">Lilaeopsis masonii</a>                   | Mason's lilaeopsis          | perennial rhizomatous herb             | Apr-Nov           | None | CR   | G2     | S2   | 1B.1 |  | Marshes and swamps, Riparian scrub  |  |  |
| <a href="#">Lilium maritimum</a>                     | coast lily                  | perennial bulbiferous herb             | May-Aug           | None | None | G2     | S2   | 1B.1 |  | Broadleaved upland forest, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Marshes and swamps, North Coast coniferous forest   |  |  |
| <a href="#">Microseris paludosa</a>                  | marsh microseris            | perennial herb                         | Apr-Jun(Jul)      | None | None | G2     | S2   | 1B.2 |  | Cismontane woodland, Closed-cone coniferous forest, Coastal scrub, Valley and foothill grassland  |  |  |
| <a href="#">Mielichhoferia elongata</a>              | elongate copper moss        | moss                                   |                   | None | None | G5     | S3S4 | 4.3  |  | Broadleaved upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Meadows and seeps, Subalpine coniferous forest   |  |  |
| <a href="#">Navarretia rosulata</a>                  | Marin County navarretia     | annual herb                            | May-Jul           | None | None | G2     | S2   | 1B.2 |  | Chaparral, Closed-cone coniferous forest  |  |  |
| <a href="#">Pentachaeta bellidiflora</a>             | white-rayed pentachaeta     | annual herb                            | Mar-May           | FE   | CE   | G1     | S1   | 1B.1 |  | Cismontane woodland, Valley and foothill grassland  |  |  |
| <a href="#">Perideridia gairdneri ssp. gairdneri</a> | Gairdner's yampah           | perennial herb                         | Jun-Oct           | None | None | G5T3T4 | S3S4 | 4.2  |  | Broadleaved upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools  |  |  |
| <a href="#">Phacelia insularis var. continentis</a>  | North Coast phacelia        | annual herb                            | Mar-May           | None | None | G2T2   | S2   | 1B.2 |  | Coastal bluff scrub, Coastal dunes  |  |  |
| <a href="#">Plagiobothrys glaber</a>                 | hairless popcornflower      | annual herb                            | Mar-May           | None | None | GX     | SX   | 1A   |  | Marshes and swamps, Meadows and seeps   |  |  |
| <a href="#">Pleuropogon hooverianus</a>              | North Coast semaphore grass | perennial rhizomatous herb             | Apr-Jun           | None | CT   | G2     | S2   | 1B.1 |  | Broadleaved upland forest, Meadows and seeps, North Coast coniferous forest   |  |  |
| <a href="#">Pleuropogon refractus</a>                | nodding semaphore grass     | perennial rhizomatous herb             | (Mar)Apr-Aug      | None | None | G4     | S4   | 4.2  |  | Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest, Riparian forest  |  |  |
| <a href="#">Polemonium carneum</a>                   | Oregon polemonium           | perennial herb                         | Apr-Sep           | None | None | G3G4   | S2   | 2B.2 |  | Coastal prairie, Coastal scrub, Lower montane coniferous forest   |  |  |
| <a href="#">Polygonum marinense</a>                  | Marin knotweed              | annual herb                            | (Apr)May-Aug(Oct) | None | None | G2Q    | S2   | 3.1  |  | Marshes and swamps  |  |  |

|  |                                   |                                       |                       |      |      |        |      |      |  |
|--|-----------------------------------|---------------------------------------|-----------------------|------|------|--------|------|------|--|
| <a href="#"><i>Quercus parvula</i> var. <i>tamalpaisensis</i></a>      | Tamalpais oak                     | perennial evergreen shrub             | Mar-Apr               | None | None | G4T2   | S2   | 1B.3 | Lower montane coniferous forest  |
| <a href="#"><i>Ranunculus lobbii</i></a>                               | Lobb's aquatic buttercup          | annual herb (aquatic)                 | Feb-May               | None | None | G4     | S3   | 4.2  | Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools                                    |
| <a href="#"><i>Sagittaria sanfordii</i></a>                            | Sanford's arrowhead               | perennial rhizomatous herb (emergent) | May-Oct(Nov)          | None | None | G3     | S3   | 1B.2 | Marshes and swamps   |
| <a href="#"><i>Sidalcea calycosa</i> ssp. <i>rhizomata</i></a>         | Point Reyes checkerbloom          | perennial rhizomatous herb            | Apr-Sep               | None | None | G5T2   | S2   | 1B.2 | Marshes and swamps   |
| <a href="#"><i>Sidalcea hickmanii</i> ssp. <i>viridis</i></a>          | Marin checkerbloom                | perennial herb                        | May-Jun               | None | None | G3TH   | SH   | 1B.1 | Chaparral  |
| <a href="#"><i>Silene scouleri</i> ssp. <i>scouleri</i></a>            | Scouler's catchfly                | perennial herb                        | (Mar-May)Jun-Aug(Sep) | None | None | G5T4T5 | S2S3 | 2B.2 | Coastal bluff scrub, Coastal prairie, Valley and foothill grassland  |
| <a href="#"><i>Stebbinsoseris decipiens</i></a>                        | Santa Cruz microseris             | annual herb                           | Apr-May               | None | None | G2     | S2   | 1B.2 | Broadleafed upland forest, Chaparral, Closed-cone coniferous forest, Coastal prairie, Coastal scrub, Valley and foothill grassland |
| <a href="#"><i>Streptanthus batrachopus</i></a>                        | Tamalpais jewelflower             | annual herb                           | Apr-Jul               | None | None | G2     | S2   | 1B.3 | Chaparral, Closed-cone coniferous forest   |
| <a href="#"><i>Streptanthus glandulosus</i> ssp. <i>pulchellus</i></a> | Mt. Tamalpais bristly jewelflower | annual herb                           | May-Jul(Aug)          | None | None | G4T2   | S2   | 1B.2 | Chaparral, Valley and foothill grassland   |
| <a href="#"><i>Toxicoscordion fontanum</i></a>                         | marsh zigadenus                   | perennial bulbiferous herb            | Apr-Jul               | None | None | G3     | S3   | 4.2  | Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps                             |
| <a href="#"><i>Trifolium amoenum</i></a>                               | two-fork clover                   | annual herb                           | Apr-Jun               | FE   | None | G1     | S1   | 1B.1 | Coastal bluff scrub, Valley and foothill grassland   |
| <a href="#"><i>Triphysaria floribunda</i></a>                          | San Francisco owl's-clover        | annual herb                           | Apr-Jun               | None | None | G2?    | S2?  | 1B.2 | Coastal prairie, Coastal scrub, Valley and foothill grassland  |
| <a href="#"><i>Triquetrella californica</i></a>                        | coastal triquetrella              | moss                                  |                       | None | None | G2     | S2   | 1B.2 | Coastal bluff scrub, Coastal scrub   |

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