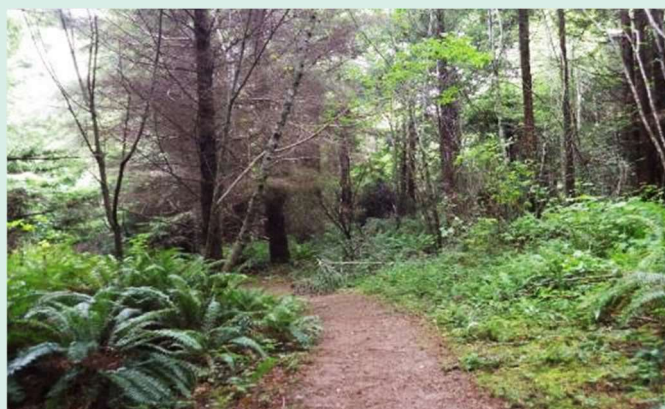


FINAL REPORT ◦ SEPTEMBER 2019

Special-Status Plant Surveys for the McKay Community Forest Trail Plan Implementation Project Humboldt County, California



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Cover photos (clockwise from upper left): Dense forest understory vegetation within Mid-McKay trail planning unit (May 2019), dispersed trail near Ryan Creek to be incorporated into the trail system (July 2019), special-status plant *Pleuropogon refractus* (nodding semaphore grass) observed within the South-McKay trail planning unit (May 2019), and *Picea sitchensis* (Sitka spruce) in the Mid-McKay trail planning unit (July 2019).

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1 PROJECT DESCRIPTION

1.1 Background

In August 2014, Humboldt County acquired 1,000 acres of forestland from the Green Diamond Resource Company as the first phase of developing the McKay Community Forest (MCF) located southeast of Eureka, California (Figure 1). Humboldt County Department of Public Works is proposing to construct a system of trails in the MCF that will include hiking trails, mountain biking trails, multi-use trails, and multi-use roads. Multi-use roads will be utilized as trails but will also serve as roads and hauling routes to support timber harvesting that will be conducted in the future as part of the overall management of the MCF. The first portion of the trail system is proposed to be implemented in 2019/2020 (Project), additional trail construction will be planned for and implemented in the future. In support of this phased trail implementation, Stillwater Sciences (Stillwater) conducted protocol-level special-status plant surveys along the proposed trail alignments throughout a portion of the MCF.

1.2 Project Location and Survey Area

The MCF is located southeast of the city of Eureka adjacent to the unincorporated communities of Cutten, Myrtle town, and Ridgewood Heights within Humboldt County within the Freshwater Creek watershed of the Eureka Plain hydrologic unit, which includes Ryan Creek and Ryan Slough (Figure 1). The Project is located in Sections 31 and 36 of Township 5 North, Range 1 West and Sections 1, 2, 11, 12, and 13 of Township 4 North, Range 1 West of the Eureka, Fields Landing, and Arcata South U.S. Geological Survey (USGS) 7.5-minute topographic quadrangles. Elevations range from approximately 10 feet [ft] to 310 ft above mean sea level.

The special-status plant survey area (Survey Area) includes the following trail units within the MCF (Figure 1):

- Redwood Acres (all trail segments except RA-18, RA-19, and RA-20)
- Northridge (all trail segments)
- Mid-McKay (all trail segments)
- South McKay (SM-01 and SM-02)

1.3 Purpose of the Special-status Plant Survey

The purpose of the survey was to document the presence of any special-status plant species or sensitive natural communities within the Survey Area. Special-status plant species are defined as those listed, proposed, or under review as threatened or endangered under the federal Endangered Species Act of 1973 (FESA) and/or the California Endangered Species Act (CESA); designated as rare under the California Native Plant Protection Act (CNPPA); and/or taxa that meet the criteria for listing as described in Section 15380 of the California Environmental Quality Act of 1970 (CEQA) Guidelines, including species listed on California Department of Fish and Wildlife's (CDFW's) *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2018a), plants with a California Rare Plant Rank (CRPR) of 1, 2, 3, or 4, and/or considered a locally significant species (i.e., rare or uncommon in the county or region). Sensitive natural communities are defined as those natural community types (i.e., legacy natural communities in CDFW's California Natural Diversity Database [CNDDDB], vegetation alliances and/or associations) with a state ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018b) or in the CNDDDB (CDFW 2019).

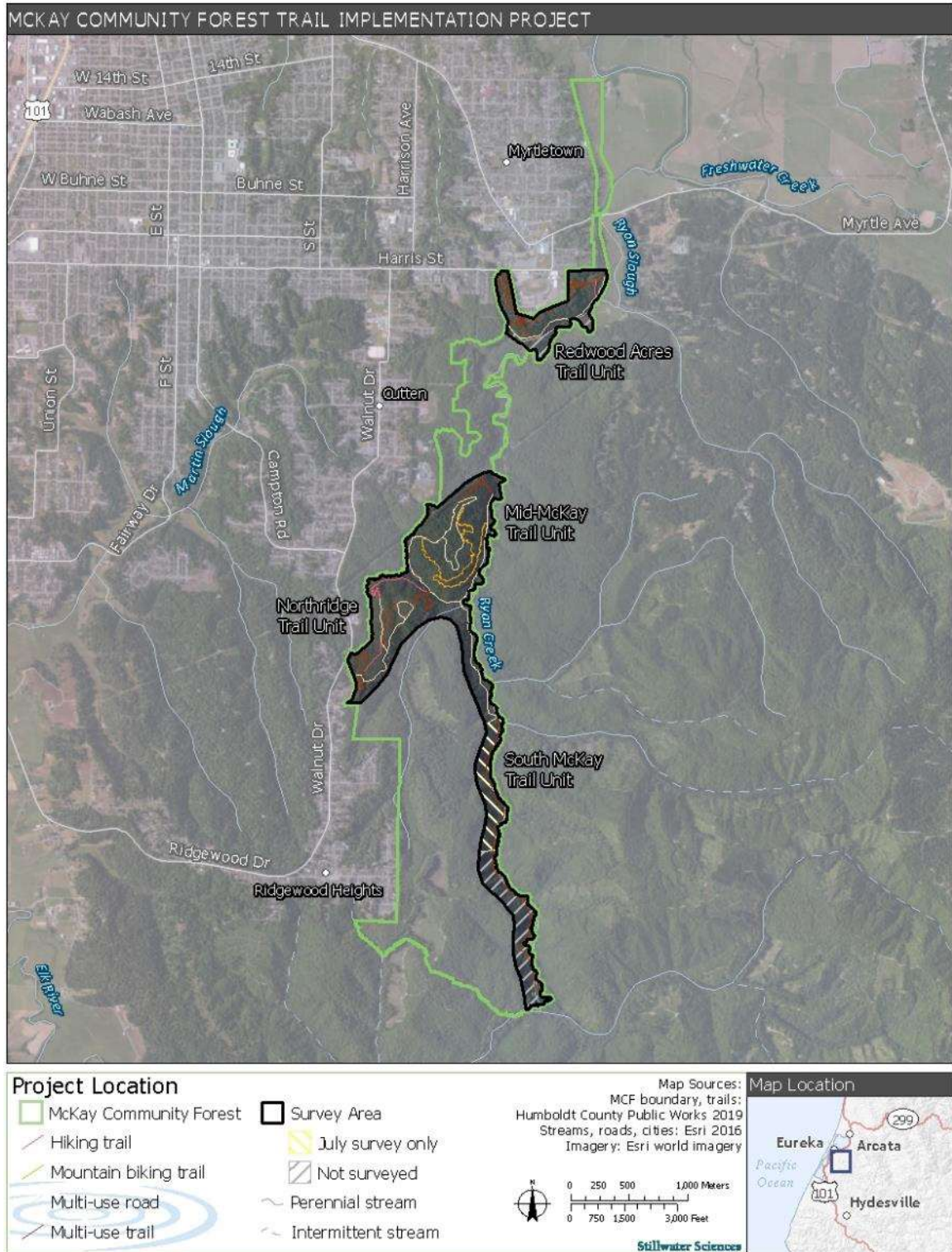


Figure 1. Survey Area and trail units within the MCF.

2 METHODS

2.1 Establishing the List of Species that Could Occur in the Survey Area

A list of special-status plants and sensitive natural communities that may occur in the Survey Area was developed by querying the following resources:

- The U.S. Fish and Wildlife Service (USFWS) online *Information for Planning and Consultation* (IPaC) (USFWS 2019),
- The California Native Plant Society's (CNPS) online *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2019a), and
- CDFW's CNDDDB (CDFW 2019).

The USFWS, CNPS, and CNDDDB database queries were each based on a search of the USGS 7.5-minute quadrangles in which the Project is located (Eureka, Fields Landing, and Arcata South), and the surrounding quadrangles (Fortuna, Ferndale, Hydesville, Tyee City, Arcata North, Blue Lake, Korbel, Cannibal Island, McWhinney Creek, and Iaqua Buttes) (Project Vicinity). Appendix A lists special-status plant species and sensitive natural communities identified from the sources described above.

The potential for special-status plant species or sensitive natural communities listed in Appendix A to occur in the Survey Area was determined by: (1) reviewing the current distribution of each species (i.e., whether it overlaps with the Project); (2) reviewing the documented occurrence information from the CNDDDB; (3) reviewing existing information on vegetation in the CALVEG geodatabase (USDA Forest Service 2019) and soils in the USGS regional geologic map (McLaughlin et al. 2000); (4) comparing the habitat associations of each species with the habitat conditions documented in and adjacent to the Survey Area; and (5) using professional judgment to evaluate habitat quality and the relevance of occurrence data, or lack thereof.

This review and analysis resulted in the following categories of the likelihood for a special-status species to occur in the Survey Area:

- None: the Survey Area is outside the species' current distributional or elevation range and/or the species' required habitat is lacking from the Survey Area (e.g., coastal dunes).
- Low: the species' known distribution or elevation range is within the Project Vicinity, but not the Survey Area, and/or the species' required habitat is of very low quality or quantity in the Survey Area.
- Moderate: the species' known distribution or elevation range overlaps with the Survey Area and/or the species' required habitat occurs in the Survey Area.
- High: the species has been documented in the Survey Area and/or its required habitat occurs in the Survey Area and is of high quality.

A total of 65 special-status plant species were documented as occurring within the Project Vicinity (Appendix A). Based on habitat associations along with landform, soils, and known elevation range within the Survey Area, 22 out of the 65 special-status plant species have low potential to occur, 5 have moderate potential to occur, and 1 has high potential to occur in the Survey Area (Table 1 and Appendix A). No legacy natural communities identified from the CNDDDB queries have the potential to occur within the Survey Area (Appendix A).

Table 1. Special-status plant species with potential to occur in the Survey Area.

Scientific name (common name)	Status¹ (Federal/State/ CRPR)	Family	Blooming period²	Habitat associations	Likelihood of occurrence
<i>Cardamine angulata</i> (seaside bittercress)	None/None/ 2B.1	Brassicaceae	(January) March–July	Wet areas, streambanks in lower montane coniferous forest and North Coast coniferous forest. 80–3,000 ft.	Low: Streambanks in North Coast coniferous forest are present within the Survey Area. A few occurrences are within 5 miles of the Project.
<i>Carex arcta</i> (northern clustered sedge)	None/None/ 2B.2	Cyperaceae	June– September	Bogs and fens and mesic North Coast coniferous forest. 195–4,595 ft.	Low: North Coast coniferous forest is present within the Survey Area. The only occurrence is reported from a 1912 collection at an unknown location near Eureka (CDFW 2019).
<i>Carex leptalea</i> (bristle-stalked sedge)	None/None/ 2B.2	Cyperaceae	March–July	Bogs and fens, mesic meadows and seeps, and marshes and swamps. 0– 2,295 ft.	Low: Marsh habitat is present within the Survey Area. Only one nearby occurrence, documented near Humboldt Hill from a 1918 collection.
<i>Carex lyngbyei</i> (Lyngbye's sedge)	None/None/ 2B.2	Cyperaceae	April–August	Brackish or freshwater marshes and swamps. 0–35 ft.	High: Several populations documented along the banks of Ryan Slough/Ryan Creek in the Survey Area (CDFW 2019).
<i>Carex praticola</i> (northern meadow sedge)	None/None/ 2B.2	Cyperaceae	May–July	Moist to wet meadows and seeps, coastal prairie, and North Coast coniferous forest. 0–10,500 ft.	Low: North Coast coniferous forest is present in the Survey Area. The one reported occurrence located near Stephen Hill logging camp/near Ryan Slough is from a 1915 collection (CDFW 2019).
<i>Chrysosplenium glechomifolium</i> (Pacific golden saxifrage)	None/None/ 4.3	Saxifragaceae	February– June	Streambanks, sometimes seeps, sometimes roadsides in North Coast coniferous forest, and riparian forest. 30–720 ft.	Low: Streambanks, North Coast coniferous forest and riparian forest are present within the Survey Area. No reported occurrences or CNDDDB records for this species within 10 miles of the Project.

Scientific name (common name)	Status ¹ (Federal/State/ CRPR)	Family	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Coptis laciniata</i> (Oregon goldthread)	None/None/ 4.2	Ranunculaceae	(February) March–May (September– November)	Mesic meadows and seeps and streambanks in North Coast coniferous forest. 0–3,280 ft.	Low: Streambanks and North Coast coniferous forest are present within the Survey Area. The nearest reported occurrence is approximately 10 miles from the Project along the banks of Lawrence Creek.
<i>Epilobium septentrionale</i> (Humboldt County fuchsia)	None/None/ 4.3	Onagraceae	July– September	Sandy or rocky broadleaf upland forest, and North Coast coniferous forest. 145–5,905 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Erythronium revolutum</i> (coast fawn lily)	None/None/ 2B.2	Liliaceae	March–July (August)	Mesic streambanks in bogs and fens, broadleaf upland forest, and North Coast coniferous forest. 0–5,250 ft.	Low: Streambanks and North Coast coniferous forest are present within the Survey Area. Two reported occurrences within 3–10 miles of the Project, nearest of which is associated with Freshwater Creek.
<i>Fissidens pauperculus</i> (minute pocket moss)	None/None/ 1B.2	Fissidentaceae	n/a (moss)	Damp coastal soil in North Coast coniferous forest. 30–3,360 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Multiple occurrences within 5 miles of the Project.
<i>Lathyrus palustris</i> (marsh pea)	None/None/ 2B.2	Fabaceae	March– August	Mesic bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, and North Coast coniferous forest. 0–330 ft.	Low: Marsh and North Coast coniferous forest habitats are present within the Survey Area. Two reported occurrences within 5 miles of the Project: one near the Elk River Slough and the other associated with a bog (CDFW 2019).
<i>Lilium kelloggii</i> (Kellogg’s lily)	None/None/ 4.3	Liliaceae	May–August	Openings and roadsides in lower montane coniferous forest, and North Coast coniferous forest. 5–4,265 ft.	Low: Openings and roadsides within North Coast coniferous forest are present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.

Scientific name (common name)	Status ¹ (Federal/State/ CRPR)	Family	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Lilium occidentale</i> (western lily)	FE/CE/1B.1	Liliaceae	June–July	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps, and openings in North Coast coniferous forest. 5–605 ft.	Low: Openings and roadsides within North Coast coniferous forest and marshes are present in the Survey Area. One documented occurrence within 1 mile of the Project.
<i>Lilium rubescens</i> (redwood lily)	None/None/ 4.2	Liliaceae	April–August (September)	Sometimes serpentinite or roadsides in broadleaf upland forest, chaparral, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest. 95–6,265 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Listera cordata</i> (heart-leaved twayblade)	None/None/ 4.2	Orchidaceae	February– July	Bogs and fens, lower montane coniferous forest, and North Coast coniferous forest. 15–4,495 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Lycopodium clavatum</i> (running- pine)	None/None/ 4.1	Lycopodiaceae	June–August (September)	Often edges, openings, and roadsides in mesic lower montane coniferous forest, marshes and swamps, and mesic North Coast coniferous forest. 145–4,020 ft.	Low: Openings and roadsides within North Coast coniferous forest are present in the Survey Area. All nearby occurrences are at least 4 miles to the east of the Project.
<i>Mitellastra caulescens</i> (leafy-stemmed mitrewort)	None/None/ 4.2	Saxifragaceae	(March) April– October	Sometimes roadsides in mesic broadleaf upland forest, lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest. 15–5,575 ft.	Low: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrence is over 5 miles from the Project.
<i>Monotropa uniflora</i> (ghost- pipe)	None/None/ 2B.2	Ericaceae	June–August (September)	Broadleafed upland forest and North Coast coniferous forest. 30–1,805 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Reported occurrence is within 1 mile of the Project near Redwood Acres Fairgrounds.

Scientific name (common name)	Status ¹ (Federal/State/ CRPR)	Family	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Montia howellii</i> (Howell's montia)	None/None/ 2B.2	Montiaceae	(February) March–May	Sometimes roadsides in vernal mesic meadows and seeps, North Coast coniferous forest, and vernal pools. 0–2,740 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrence is within 1 mile of the Project.
<i>Packera bolanderi</i> var. <i>bolanderi</i> (seacoast ragwort)	None/None/ 2B.2	Asteraceae	(January– April) May– July (August)	Sometimes roadsides in coastal scrub and North Coast coniferous forest. 95–2,135 ft.	Low: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrence is over 10 miles from the Project.
<i>Piperia candida</i> (white-flowered rein orchid)	None/None/ 1B.2	Orchidaceae	(March) May– September	Sometimes serpentinite in broadleaf upland forest, lower montane coniferous forest, and North Coast coniferous forest. 95–4,300 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Pityopus californicus</i> (California pinefoot)	None/None/ 4.2	Ericaceae	(March– April) May– August	Mesic areas in broadleaf upland forest, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest. 45–7,300 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Pleuropogon refractus</i> (nodding semaphore grass)	None/None/ 4.2	Poaceae	(March) April–August	Mesic lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, and riparian forest. 0–5,250 ft.	Low: North Coast coniferous forest and riparian forest are present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Ribes laxiflorum</i> (trailing black currant)	None/None/ 4.3	Grossulariaceae	March–July (August)	Sometimes roadsides in North Coast coniferous forest. 15–4,575 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of Project.
<i>Sidalcea malachroides</i> (maple-leaved checkerbloom)	None/None/ 4.2	Malvaceae	(March) April–August	Often in disturbed areas in broadleaf upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, and riparian woodland. 0–2,395 ft.	Moderate: Riparian forest and North Coast coniferous forest are present within the Survey Area. Nearest reported population is within 1 mile of the Project near the confluence of Ryan Creek and Ryan Slough (CDFW 2019).

Scientific name (common name)	Status ¹ (Federal/State/ CRPR)	Family	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Sidalcea malviflora</i> subsp. <i>patula</i> (Siskiyou checkerbloom)	None/None/ 1B.2	Malvaceae	May–August	Often roadcuts in coastal bluff scrub, coastal prairie, and North Coast coniferous forest. 45–2,885 ft.	Low: North Coast coniferous forest is present in the Survey Area. The most recent nearby occurrences were documented 1944 and 1949. The population along the bluffs near Bucksport was said to have been “verging on extinction” in 1944.
<i>Sidalcea oregana</i> subsp. <i>eximia</i> (coast checkerbloom)	None/None/ 1B.2	Malvaceae	June–August	Lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest. 15–4,395 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrences are 1 to 5 miles from the Project.
<i>Usnea longissima</i> (Methuselah's beard lichen)	None/None/ 4.2	Parmeliaceae	N/A (lichen)	On tree branches; usually on old growth hardwoods and conifers in broadleaf upland forest, and North Coast coniferous forest. 160–4,790 ft.	Low: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrences are 5 to 10 miles from the Project.

¹ Status:

Federal

FE Federally listed as endangered
None No federal status

State

CE California State listed as endangered
None No state status

California Rare Plant Rank

List 1B Plants rare, threatened, or endangered in California and elsewhere
List 2B Plants rare, threatened, or endangered in California, but more common elsewhere
List 4 Plants of limited distribution, a watch list

CNPS Threat Ranks:

0.1 Seriously threatened in California (high degree/immediacy of threat)
0.2 Fairly threatened in California (moderate degree/immediacy of threat)
0.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)

² Months in parentheses are uncommon; N/A = Not applicable

2.2 Pre-field Review

A pre-field review was conducted in May 2019 to:

- Review key identifying characteristics and life history stages (e.g., bloom time) of the targeted special-status plant species and sensitive natural communities with potential to occur in the Survey Area,
- Create maps of known locations for targeted special-status plant species and sensitive natural communities within the Survey Area, and
- Prepare and plan for field surveys.

The timing of life history stages for each targeted plant species (Table 1) was reviewed to determine survey periods that would coincide with the phenological stage (e.g., flowering or fruiting) during which the special-status species were most easily identified in the field. A spring survey (i.e., May) and a summer survey (i.e., July) captured all pertinent bloom periods.

To familiarize surveyors with key characteristics and natural variation of those characteristics of each special-status plant species, information was obtained through a review of: (1) CNPS (2019a) and CDFW (2019) data; (2) photographs on CalPhotos (University of California, Berkeley 2019); and (3) key characteristics using the online *Jepson eFlora* (Jepson Flora Project 2019).

Information on known occurrences of special-status plant species and sensitive natural communities was compiled and plotted in Geographic Information System (GIS) and printed onto field maps.

2.3 Field Surveys

2.3.1 Vegetation mapping

Vegetation mapping was conducted concurrent with the survey for targeted plant species. Dominant vegetation types and their plant associates as well as overall health of the stand were noted. Boundaries of each preliminary vegetation alliance were delineated on field maps. A minimum map unit standard of 1/2 acre (21,780 square ft) was used for identifying individual vegetation cover types. These cover types were compared to the habitat associations of each species identified within the Project Vicinity (Appendix A) to determine the potential to occur in the Survey Area (see Section 2.1).

Each preliminary vegetation alliance was keyed using the vegetation composition data and the online edition of *A Manual of California Vegetation* (CNPS 2019b) to determine final vegetation alliances, which were digitized into a GIS shapefile and checked against CDFW's *California Sensitive Natural Communities List* (CDFW 2018b) to determine if they have a state rank of S1, S2, or S3 indicating a special-status natural community.

2.3.2 Special-status plant surveys

The surveys for special-status plant species were conducted by a qualified botanist and an ecologist with: (1) experience conducting floristic surveys; (2) knowledge of plant taxonomy and plant community ecology and classification; (3) familiarity with the plant species of the area; (4) familiarity with appropriate state and federal statutes related to plants and plant collecting; and (5)

experience with analyzing impacts of a project on native plant species and natural communities. The survey followed the methods of the *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (USFWS 1996) and *Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018c). Specifically, surveys were comprehensive for vascular plants such that “every plant taxon that occurs on site is identified to the taxonomic level necessary to determine rarity and listing status” (CDFG 2009). If identification was not possible in the field, the plants were collected for identification in the laboratory (using the “1 in 20” rule, Wagner 1991). All plant species were identified following the taxonomy of the *Jepson eFlora* (Jepson Flora Project 2019).

The location and population boundaries of any identified special-status species were recorded in the field using a handheld Geographic Positioning System (GPS) unit. Information collected for each population included the following:

- numbers of individuals,
- phenology,
- habitat description (e.g., surrounding plant communities, dominant species, associated species, substrates/soils, aspects/slopes),
- relative condition of the population (i.e., a qualitative assessment of site quality and occurrence viability [excellent, good, fair, or poor]), and
- recognizable risk factors.

In addition, photographs were taken to document diagnostic floral characteristics, growth forms, and habitat characteristics of special-status species. The GPS data were post-processed and corrected, then incorporated into a GIS database.

3 RESULTS

Vegetation mapping and special-status plant species were performed on May 20–22, 2019, May 29–30, 2019, and July 8–12, 2019. Two sensitive natural communities and three special-status plants were identified in the Survey Area as discussed in subsequent sections. A comprehensive list of all vascular plant species observed during these surveys is provided in Appendix B.

3.1 Vegetation Mapping

Four vegetation cover types¹ were mapped within the Survey Area² and are summarized in Table 2, presented in Figures 2–6, and described below.

Table 2. Vegetation cover types and acreage in the Survey Area.

Vegetation cover type	State status ¹	Area (acres)
<i>Sequoia sempervirens</i> Forest Alliance	S3	340.6
Riparian forest (<i>Acer macrophyllum</i> and <i>Alnus rubra</i> Forest Alliances)	S3/None ²	30.5
<i>Holcus lanatus</i> – <i>Anthoxanthum odoratum</i> Semi-natural Herbaceous Alliance	None	3.2
Developed ³	NA	9.7

¹ Listing definitions:

None Semi-natural alliances are nonnative stands and therefore have no state rank by CDFW.

S3 Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation.

² *Acer macrophyllum* Forest Alliance has a state status of S3; *Alnus rubra* Forest Alliance does not have a state status.

³ Defined as paved, graveled, graded, or maintained areas within the Survey Area (primarily existing road network and active recreational trails).

¹ Scientific names used in this section conform to the classification system in the *Manual of California Vegetation, Online Edition* (CNPS 2019b), which was used to map vegetation in the Survey Area.

² No surveys were conducted on the SM-02 trail in the South McKay trail unit in May due to time and access constraints; a portion of SM-02 was surveyed in July (Figures 1 and 6).

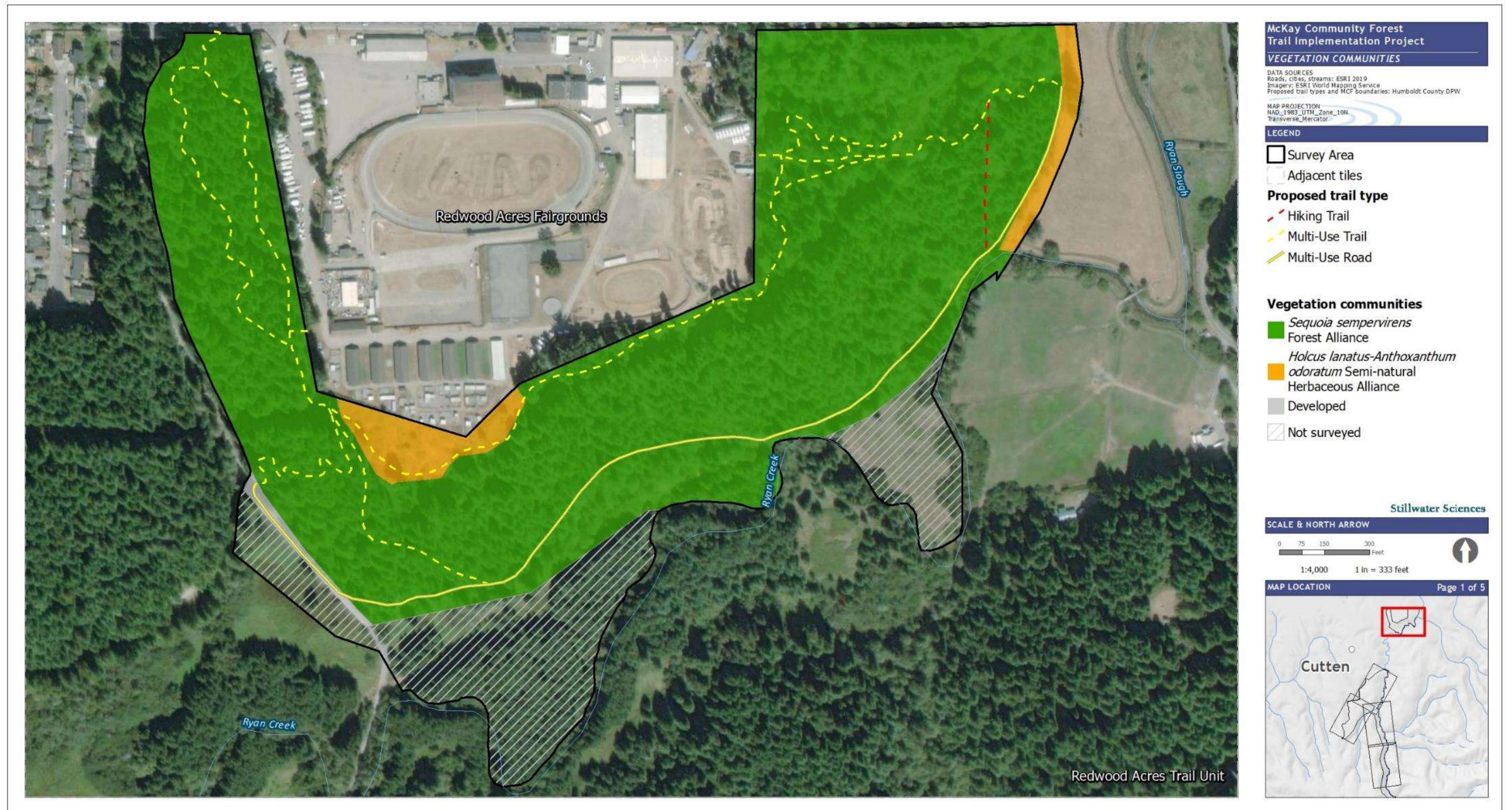


Figure 2. Vegetation communities documented within the Survey Area (Tile 1 of 5).



Figure 3. Vegetation communities documented within the Survey Area (Tile 2 of 5).

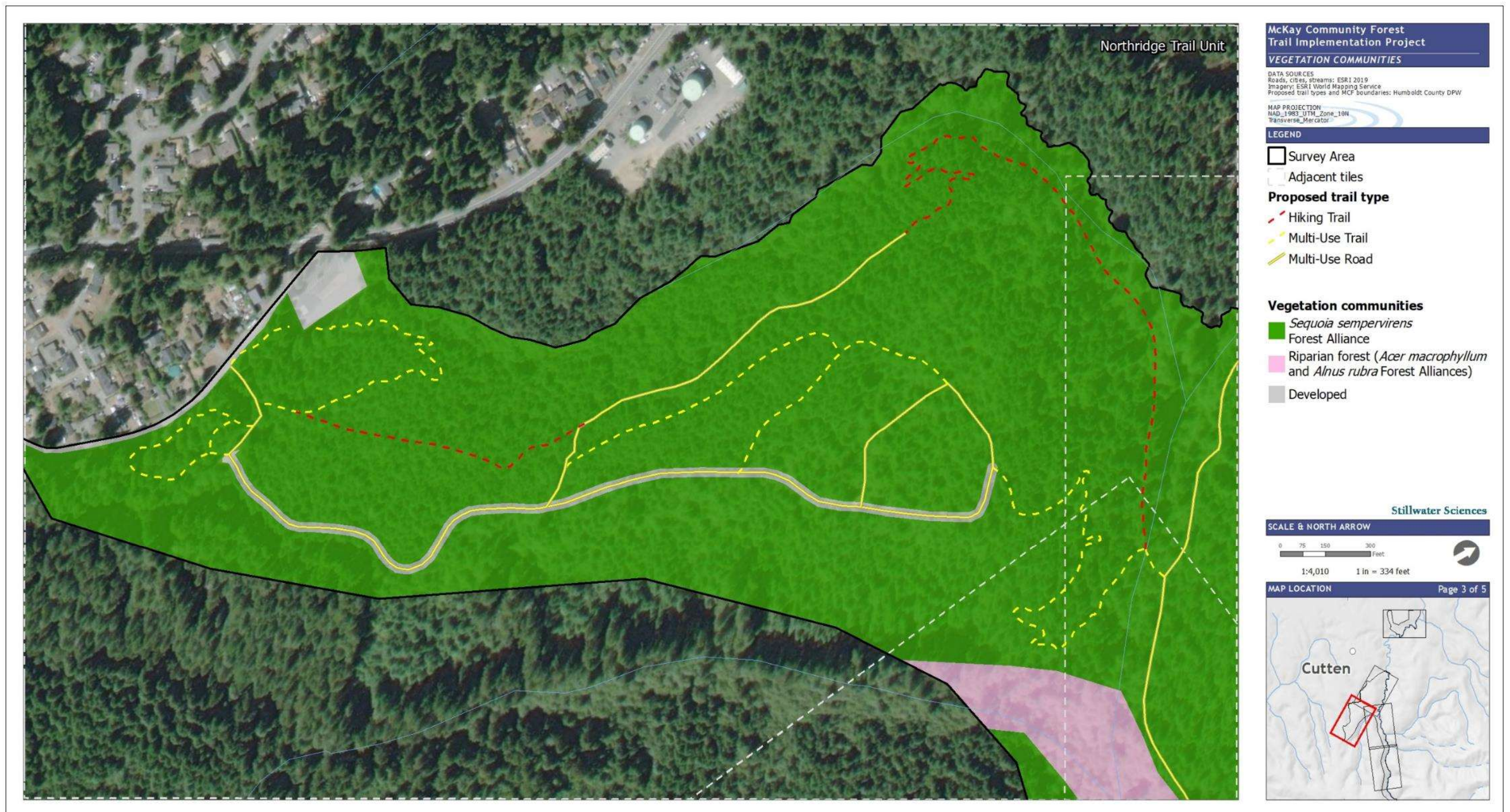


Figure 4. Vegetation communities documented within the Survey Area (Tile 3 of 5).



Figure 5. Vegetation communities documented within the Survey Area (Tile 4 of 5).



Figure 6. Vegetation communities documented within the Survey Area (Tile 5 of 5).

3.1.1 *Sequoia sempervirens* Forest Alliance



The *Sequoia sempervirens* Forest Alliance is a sensitive natural community (S3) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018b). *Sequoia sempervirens* (coast redwood) is a native conifer in the Cupressaceae family. In the Survey Area, *Sequoia sempervirens* was dominant in the tree canopy of this alliance which also included *Picea sitchensis* (Sitka spruce), *Abies grandis* (grand fir), and *Pseudotsuga menziesii* (Douglas-fir). Areas to the north near Ryan Creek in the Redwood Acres trail unit had moderate coverage by *Abies grandis* and stands within Mid-McKay, Northridge, and South McKay trail units had a large *Picea sitchensis* component. This *Sequoia sempervirens* Forest Alliance was historically logged and most of the stand ranges in age from 40–90 years old.

Tree canopy in the *Sequoia sempervirens* Forest Alliance was continuous with a sparse to moderate vine and shrub layer of *Vaccinium ovatum* (California huckleberry), *Vaccinium parvifolium* (red huckleberry), *Rubus spectabilis* (salmonberry), *Rubus parviflorus* (thimbleberry), *Sambucus racemosa* var. *racemosa* (red elderberry), *Rubus ursinus* (California blackberry), *Gaultheria shallon* (salal), *Marah oregana* (coast man-root), and *Lonicera involucrata* (twinberry). Moderate to high fern cover was observed in some stands and included *Pteridium aquilinum* var. *pubescens* (western brackenfern), *Athyrium filix-femina* var. *cyclosorum* (common lady fern), *Struthiopteris spicant* (deer fern), *Polystichum munitum* (western swordfern), and *Polypodium scolopendri* (leather-leaf fern). Herbaceous forbs within the understory included *Prosartes smithii* (Smith's fairy-bells), *Maianthemum dilatatum* (two-leaved false-Solomon's-seal), *Pectiantia ovalis* (oval-leaved mitella), *Tolmiea diplomenziesii* (pig-a-back plant), *Boykinia occidentalis* (western boykinia), *Viola sempervirens* (redwood violet), and *Stachys mexicana* (Mexican hedgenettle). In addition, various *Bromus* spp. (bromes), *Festuca* spp. (fescues), *Carex* spp. (sedges), *Juncus* spp. (rushes) and *Luzula comosa* var. *comosa* (Pacific wood-rush) were observed in the understory (Appendix B).

In various locations, this alliance had continuous cover over established riparian hardwoods along Ryan Creek and its tributaries. These lower elevation multi-storied riparian areas developed a mid-story canopy primarily composed of *Alnus rubra* (red alder) and *Frangula purshiana* (cascara). Herbaceous understory had high cover by hydrophytic vegetation including *Lysichiton americanus* (yellow skunk-cabbage), *Erythranthe dentata* (tooth-leaved monkeyflower), *Scoliopus bigelovii* (California fetid adder's tongue), *Claytonia sibirica* (candy flower), *Viola glabella* (stream violet), *Oenanthe sarmentosa* (water parsley), *Tolmiea diplomenziesii*, *Ranunculus repens* (common creeping buttercup), *Ranunculus sardous* (Sardinian buttercup), and *Equisetum arvense* (common horsetail).

Multiple active “social trails” (trails not developed by Humboldt County Department of Public Works) and roads, as well as decommissioned legacy roads, are dispersed throughout this alliance. Ground disturbance from foot and bike traffic was observed at these locations and herbaceous and/or shrub cover was absent (i.e., bare ground) to sparse in these pathways depending upon severity of use. Nonnative, invasive weed species (listed as high or moderate weeds by California Invasive Plant Council [Cal-IPC]) were established in areas previously altered by historical logging (i.e., decommissioned skid trails and roads) and included *Cortaderia*

jubata (purple pampas grass), *Ilex aquifolium* (English holly), *Hedera helix* (English ivy), *Rubus armeniacus* (Himalayan blackberry), *Erica lusitanica* (Spanish heather), and *Cotoneaster* spp. (various cotoneasters).

Three special-status plant species, *Carex lyngbyei* (Lyngbye's sedge), *Pleuropogon refractus* (nodding semaphore grass) and *Chrysosplenium glechomifolium* (Pacific golden saxifrage), were identified within this vegetation type.

3.1.2 Riparian forest (*Acer macrophyllum* and *Alnus rubra* Forest Alliances)



Riparian forest was located along Ryan Creek and its tributaries and includes hardwood tree and shrub-dominated areas. Tree overstory was primarily composed of big-leaf maple (*Acer macrophyllum*) and red alder (*Alnus rubra*). Additional riparian species included Pacific willow (*Salix lasiandra*), *Frangula purshiana*, *Salix hookeriana* (dune willow), and *Fraxinus latifolia* (Oregon ash). This riparian vegetation type was characterized by *Acer macrophyllum* Forest Alliance, a sensitive natural community (S3) on CDFW's *California Sensitive Natural Communities List* (CDFW 2018b), and

Alnus rubra Forest Alliance (Table 2, Figure 2). Herbaceous plant associates are similar in composition to riparian areas discussed in the *Sequoia sempervirens* Forest Alliance (see Section 3.1.1). In areas where conifers (*Picea sitchensis*, *Sequoia sempervirens*, and *Abies grandis*) were within the riparian overstory, the vegetation was typed and mapped within the *Sequoia sempervirens* Forest Alliance (Section 3.1.1) (Figure 2).

One population of the special-status plant species *Pleuropogon refractus* was identified within this vegetation type.

3.1.3 *Holcus lanatus*-*Anthoxanthum odoratum* Semi-natural Herbaceous Alliance



Holcus lanatus (common velvet grass) and *Anthoxanthum odoratum* (sweet vernal grass) are both nonnative perennial grasses in the Poaceae family and have a moderate weed rating from Cal-IPC. Both species occur along coastal terraces and moist pastures in central and northern California. This semi-natural alliance is located along the higher elevation, full-exposure terrace associated with the PG&E transmission line corridor adjacent to Redwood Acres and along the grazed pastureland adjacent to the Ryan Creek/Ryan Slough (Figure 2). Additional grasses observed within the

terrace location included *Festuca arundinacea* (tall fescue), *Elymus trachycaulus* subsp. *trachycaulus* (slender wheat grass), *Elymus glaucus* subsp. *glaucus* (blue wild-rye), *Aira caryophyllea* (silver hair grass), and *Dactylis glomerata* (orchardgrass). Herbaceous plant associates included *Lotus corniculatus* (birds-foot trefoil) and *Hypochaeris radicata* (rough cat's-ear). In addition, patches of *Baccharis pilularis* (coyote brush) and *Rubus armeniacus* have established at this location.

No special-status plant species were identified within this vegetation type.

3.2 Special-status Plant Surveys

A comprehensive list of all plant species observed within the Survey Area is provided in Appendix B. Three special-status plant species were documented in the Survey Area: *Carex lyngbyei*, *Pleuropogon refractus*, and *Chrysosplenium glechomifolium* (Figures 7–9). Details of each special-status plant occurrence are provided in Table 3. Completed CNDDDB forms for all 2019 documented occurrences are provided in Appendix C.

Table 3. Special-status plant occurrence in the Survey Area.

Species name	Status ¹ (Federal/ State/CRPR)	Existing CNDDDB occurrence?	Population size
<i>Carex lyngbyei</i> (Lyngbye's sedge)	-/-/2B.2	Yes, CNDDDB occurrence 30	2,393 ft ² / ~100 individuals
<i>Pleuropogon refractus</i> (nodding semaphore grass)	-/-/4.2	No	265 ft ² / ~25 individuals
<i>Chrysosplenium glechomifolium</i> (Pacific golden saxifrage)	-/-/4.3	No	~3,500 ft ² / >1000 individuals

¹ Status:

- No status

California Rare Plant Rank (CRPR)

List 2B Plants rare, threatened, or endangered in California, but more common elsewhere

List 4 Plants of limited distribution, a watch list

CNPS Threat Ranks:

0.2 Fairly threatened in California (moderate degree/immediacy of threat)

0.3 Not very threatened in California (low degree/immediacy of threat or no current threats known)

3.2.1 *Carex lyngbyei* (Lyngbye's sedge)

Carex lyngbyei is a perennial rhizomatous herb in the Cyperaceae family with a California Rare Plant Rank (CRPR) of 2B.2 (i.e., plants rare, threatened, or endangered in California, but more common elsewhere; fairly threatened in California). It is limited to the North and Central Coast at 0–33 ft elevation (Jepson Flora Project 2019). In California, it is known to occur in Del Norte, Humboldt, Mendocino, Marin, and Napa counties (CNPS 2019a). *Carex lyngbyei* occurs in brackish and freshwater marshes and swamps and blooms from April through August (CNPS 2019a). Approximately 100 individuals were observed within the previously



documented CNNDDB occurrence (Table 3; CDFW 2019) located along the banks of Ryan Creek in the Redwood Acres trail unit (Figure 7). Ryan Creek transitions to Ryan Slough just downstream of this location (Figure 7). This sedge formed a few narrow, dense patches along the lower eroding banks near the active channel of Ryan Creek. Additional herbaceous plants along the banks including *Juncus lescurii* (San Francisco rush), *Symphyotrichum chilense* (Pacific aster), and *Potentilla anserina*. Prevalent nonnatives along the upper bank and levee included *Rubus armeniacus*, *Sonchus asper* (prickly sow thistle), *Festuca arundinacea*, and *Lotus corniculatus*.

Ryan Creek and all *Carex lyngbyei* patches are separated from proposed trails RA-07 and RA-08 by a forested elevated berm that included *Sequoia sempervirens*, *Abies grandis*, and *Salix* spp. (Figure 7).

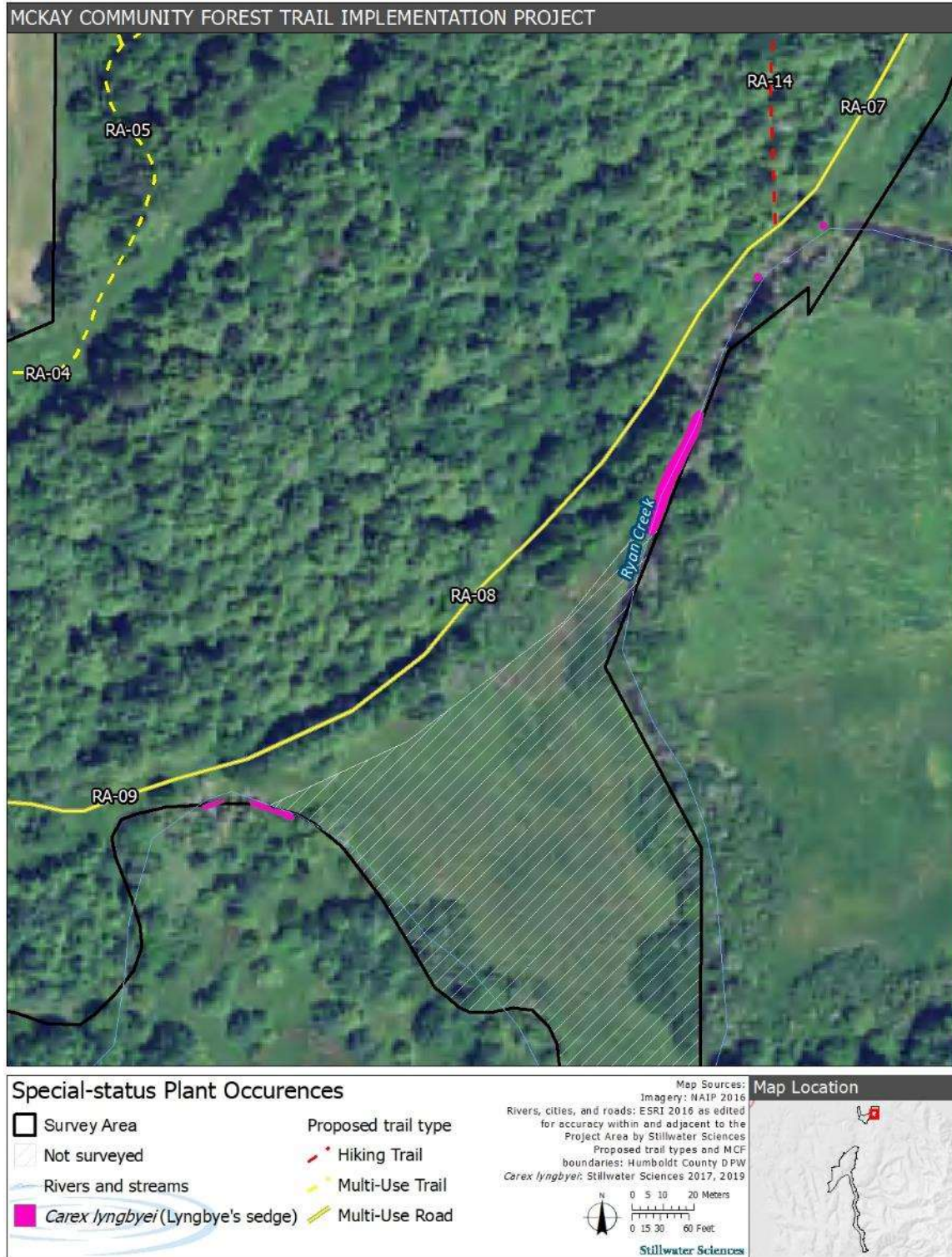


Figure 7. Mapped populations of *Carex lyngbyei* (CRPR 2B.2) in the Survey Area.

3.2.2 *Pleuropogon refractus* (Nodding semaphore grass)

Pleuropogon refractus is a perennial rhizomatous grass in the Poaceae family with a CRPR of 4.2 (i.e., plants of limited distribution, a watch list; fairly threatened in California) (CNPS 2019a). In California, this species is known to occur in Del Norte, Humboldt, Mendocino, and Marin counties at 0–5,249 ft elevation. Habitats include North Coast coniferous forest, meadows and seeps, and riparian forest.



Multiple *Pleuropogon refractus* occurrences were noted throughout the Survey Area during the May and July 2019 botanical surveys (Table 3, Figure 8). All 2019 sightings were newly documented occurrences for this species. These occurrences were composed of a small number of individuals (typically 1 to 3 individuals) on or adjacent to former timber roads within the Survey Area. Herbaceous plant associates included *Ranunculus repens*, *Urtica dioica* (stinging nettle), *Galium aparine* (goose grass), *Carex obnupta* (slough sedge), *Asarum caudatum* (wild ginger), *Athyrium filix-femina* var. *cyclosum*, and *Claytonia sibirica*. *Pleuropogon refractus* occurrences were documented in the Survey Area within the proposed South McKay, Mid-McKay, and Northridge trail units (Figure 8).

Pleuropogon refractus in the Survey Area was located on or immediately adjacent to the proposed trails MM-01, BG-01, and SM-01.

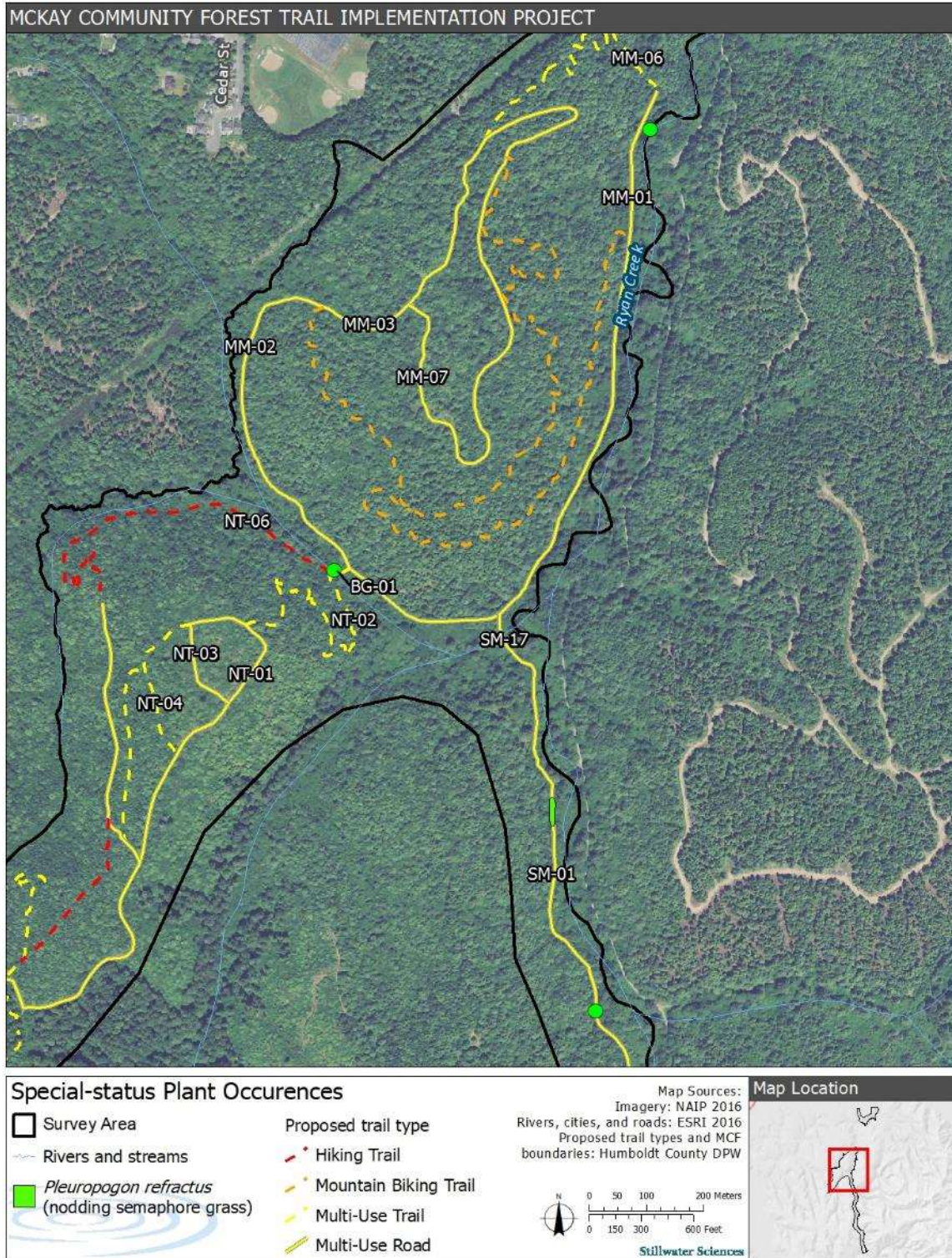


Figure 8. Mapped populations of *Pleuropogon refractus* (CRPR 4.2) in the Survey Area.

3.2.3 *Chrysosplenium glechomifolium* (Pacific golden saxifrage)

Chrysosplenium glechomifolium is a perennial stoloniferous herb in the Saxifragaceae family with a CRPR of 4.3 (i.e., plants of limited distribution, a watch list; not very threatened in California) (CNPS 2019a). In California, this species is known to occur in Del Norte, Humboldt, and Mendocino counties at 32–2,100 ft elevation. Habitats include streambanks, sometimes seeps or roadsides within North Coast coniferous forests and riparian forest.



Several occurrences ranging from 5 to over 1,000 individuals was observed in small to extensive patches along the Ryan Creek floodplain in the Survey Area during the May and July 2019 botanical surveys (Table 3, Figure 9). There were over 1,000 individuals observed in 2019 and all were newly documented occurrences for this species. The stoloniferous herb was located on and adjacent (i.e., within 15 ft) to a former timber road within the Mid-McKay trail unit in the Survey Area (Figure 9). The overstory canopy was characterized within the *Sequoia sempervirens* Forest Alliance riparian area along Ryan Creek and a tributary to Ryan Creek (Figure 9). Herbaceous plant associates included *Ranunculus repens*, *Prunella vulgaris* (common selfheal), *Tolmiea diplomenziesii*, *Oenanthe sarmentosa*, *Athyrium filix-femina* var. *cyclosum*, *Nasturtium officinale* (water cress), and *Claytonia sibirica*.

Chrysosplenium glechomifolium in the Survey Area was located on or immediately adjacent to the proposed trails MM-01, MM-02, and MM-03 (Figure 9).

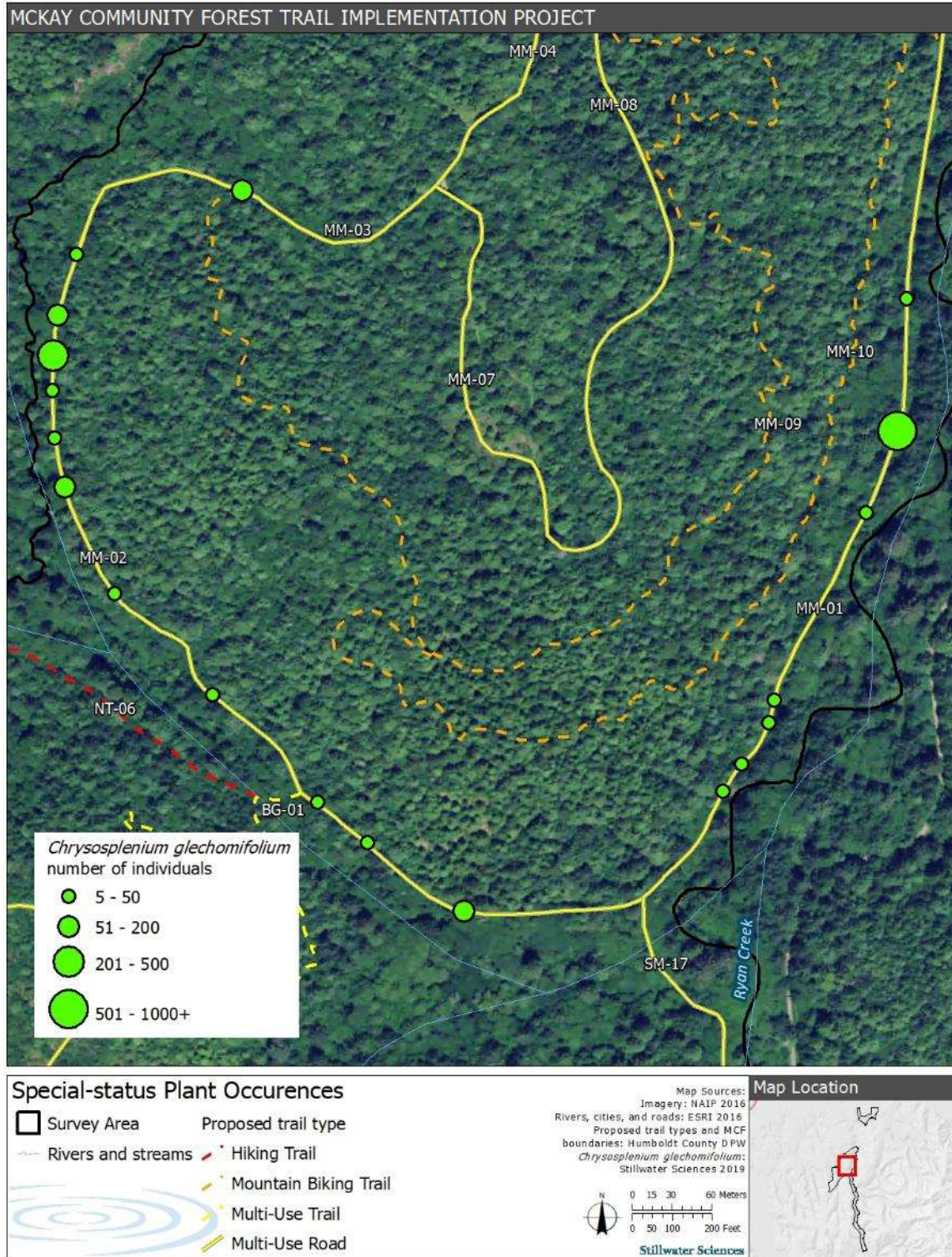


Figure 9. Mapped populations of *Chrysosplenium glechomifolium* (CRPR 4.3) in the Survey Area.

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Appendices

Appendix A

Special-status Plant and CDFW Sensitive Natural Communities Scoping Lists

Table A-1. Scoping list of special-status plant species in the Project Vicinity.

Scientific name (common name)	Status¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period²	Habitat associations	Likelihood of occurrence
<i>Abronia umbellata</i> var. <i>breviflora</i> (pink sand-verbena)	None/None/ 1B.1	CNPS, CDFW	Nyctaginaceae	perennial herb	June–October	Coastal dunes. 0–35 ft.	None: No suitable habitat is present within the Survey Area.
<i>Angelica lucida</i> (sea-watch)	None/None/ 4.2	CNPS	Apiaceae	perennial herb	May– September	Coastal bluff scrub, coastal dunes, coastal scrub, and coastal salt marshes and swamps. 0–490 ft.	None: No suitable habitat is present within the Survey Area.
<i>Anomobryum julaceum</i> (slender silver moss)	None/None/ 4.2	CNPS, CDFW	Bryaceae	bryophyte (moss)	N/A (nonvascular)	Damp rock and soil on outcrops, usually on roadcuts in broadleaf upland forest, lower montane coniferous forest, and North Coast coniferous forest. 325–3,280 ft.	None: Survey Area is outside of the known elevation range.
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> (coastal marsh milk- vetch)	None/None/ 1B.2	CNPS, CDFW	Fabaceae	perennial herb	(April) June– October	Mesic coastal dunes, coastal scrub, and along streamsides in coastal salt marshes and swamps. 0–100 ft.	None: No suitable habitat is present within the Survey Area.
<i>Astragalus rattanii</i> var. <i>rattanii</i> (Rattan's milk- vetch)	None/None/ 4.3	CNPS	Fabaceae	perennial herb	April–July	Gravelly streambanks in chaparral, cismontane woodland, and lower montane coniferous forest. 95–2,705 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Astragalus umbraticus</i> (Bald Mountain milk-vetch)	None/None/ 2B.3	CNPS	Fabaceae	perennial herb	May–August	Sometimes roadside in cismontane woodland, lower montane coniferous forest. 490–4,100 ft.	None: Survey Area is outside of the known elevation range.
<i>Bryoria pseudocapillaris</i> (false gray horsehair lichen)	None/None/ 3.2	CNPS, CDFW	Parmeliaceae	fruticose lichen (epiphytic)	n/a (lichen)	Usually on conifers in coastal dunes (SLO County) and on immediate coast in North Coast coniferous forest. 0–295 ft.	None: No suitable habitat is present within the Survey Area.
<i>Bryoria spiralifera</i> (twisted horsehair lichen)	None/None/ 1B.1	CNPS	Parmeliaceae	fruticose lichen (epiphytic)	n/a (lichen)	Usually on conifers on immediate coast in North Coast coniferous forest. 0–100 ft.	None: No suitable habitat is present within the Survey Area.
<i>Cardamine angulata</i> (seaside bittercress)	None/None/ 2B.1	CNPS, CDFW	Brassicaceae	perennial herb	(January) March–July	Wet areas, streambanks in lower montane coniferous forest and North Coast coniferous forest. 80–3,000 ft.	Low: Streambanks in North Coast coniferous forest are present within the Survey Area. A few occurrences are within 5 miles of the Project.
<i>Carex arcta</i> (northern clustered sedge)	None/None/ 2B.2	CNPS, CDFW	Cyperaceae	perennial herb	June– September	Bogs and fens and mesic North Coast coniferous forest. 195–4,595 ft.	Low: North Coast coniferous forest is present within the Survey Area. The only occurrence is reported from a 1912 collection at an unknown location near Eureka (CDFW 2019).

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Carex leptalea</i> (bristle-stalked sedge)	None/None/ 2B.2	CNPS, CDFW	Cyperaceae	perennial rhizomatous herb	March–July	Bogs and fens, mesic meadows and seeps, and marshes and swamps. 0–2,295 ft.	Low: Marsh habitat is present within Survey Area. Only one nearby occurrence, documented near Humboldt Hill from a 1918 collection.
<i>Carex lyngbyei</i> (Lyngbye's sedge)	None/None/ 2B.2	CNPS, CDFW	Cyperaceae	perennial rhizomatous herb	April–August	Brackish or freshwater marshes and swamps. 0–35 ft.	High: Several populations documented along the banks of Ryan Slough/Ryan Creek in the Survey Area (CDFW 2019).
<i>Carex praticola</i> (northern meadow sedge)	None/None/ 2B.2	CNPS, CDFW	Cyperaceae	perennial herb	May–July	Moist to wet meadows and seeps, coastal prairie, and north coastal coniferous forest. 0–10,500 ft.	Low: North Coast coniferous forest is present in the Survey Area. The one reported occurrence located near Stephen Hill logging camp/near Ryan Slough is from a 1915 collection (CDFW 2019).
<i>Castilleja ambigua</i> var. <i>humboldtiensis</i> (Humboldt Bay owl's-clover)	None/None/ 1B.2	CNPS, CDFW	Orobanchaceae	annual herb (hemiparasitic)	April–August	Coastal salt marshes and swamps. 0–10 ft.	None: No suitable habitat is present within the Survey Area.
<i>Castilleja litoralis</i> (Oregon coast paintbrush)	None/None/ 2B.2	CNPS, CDFW	Orobanchaceae	perennial herb (hemiparasitic)	June	Sandy coastal bluff scrub, coastal dunes, and coastal scrub. 45–330 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Chloropyron maritimum</i> subsp. <i>palustre</i> (Point Reyes bird's- beak)	None/None/ 1B.2	CNPS, CDFW	Orobanchaceae	annual herb (hemiparasitic)	June–October	Coastal salt marshes and swamps. 0–35 ft.	None: No suitable habitat is present within the Survey Area.
<i>Chrysosplenium glechomifolium</i> (Pacific golden saxifrage)	None/None/ 4.3	CNPS	Saxifragaceae	perennial herb	February– June	Streambanks, sometimes seeps, sometimes roadsides in North Coast coniferous forest, and riparian forest. 30–720 ft.	Low: Streambanks, North Coast coniferous forest and riparian forest are present within the Survey Area. No reported occurrences or CNDDDB records for this species within 10 miles of the Project.
<i>Clarkia amoena</i> subsp. <i>whitneyi</i> (Whitney's farewell- to-spring)	None/None/ 1B.1	CNPS, CDFW	Onagraceae	annual herb	June–August	Coastal bluff scrub and coastal scrub. 30–330 ft.	None: No suitable habitat is present within the Survey Area.
<i>Collinsia corymbosa</i> (round-headed Chinese-houses)	None/None/ 1B.2	CNPS, CDFW	Plantaginaceae	annual herb	April–June	Coastal dunes. 0–65 ft.	None: No suitable habitat is present within the Survey Area.
<i>Collomia tracyi</i> (Tracy's collomia)	None/None/ 4.3	CNPS	Polemoniaceae	annual herb	June–July	Rocky, sometimes serpentinite in broadleaf upland forest and lower montane coniferous forest. 980–6,890 ft.	None: Survey Area is outside of the known elevation range.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Coptis laciniata</i> (Oregon goldthread)	None/None/ 4.2	CNPS, CDFW	Ranunculaceae	perennial rhizomatous herb	(February) March–May (September– November)	Mesic meadows and seeps and streambanks in North Coast coniferous forest. 0–3,280 ft.	Low: Streambanks and North Coast coniferous forest are present within the Survey Area. The nearest reported occurrence is approximately 10 miles from the Project along the banks of Lawrence Creek.
<i>Downingia willamettensis</i> (Cascade Downingia)	None/None/ 2B.2	CNPS, CDFW	Campanulaceae	annual herb	June–July (September)	On lake margins in cismontane woodland and valley and foothill grassland, as well as, vernal pools. 45–3,640 ft.	None: No suitable habitat is present within the Survey Area.
<i>Epilobium oreganum</i> (Oregon fireweed)	None/None/ 1B.2	CNPS	Onagraceae	perennial herb	June– September	Mesic bogs and fens, lower montane coniferous forest, meadows and seeps, and upper montane coniferous forest. 1,640–7,350 ft.	None: Survey Area is outside of the known elevation range.
<i>Epilobium septentrionale</i> (Humboldt County fuchsia)	None/None/ 4.3	CNPS	Onagraceae	perennial herb	July– September	Sandy or rocky broadleaf upland forest, and North Coast coniferous forest. 145–5,905 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Erysimum menziesii</i> (Menzies' wallflower)	FE/CE/1B.1	CNPS, CDFW, USFWS	Brassicaceae	perennial herb	March– September	Coastal dunes. 0–115 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Erythronium oregonum</i> (giant fawn lily)	None/None/ 2B.2	CNPS, CDFW	Liliaceae	perennial herb	March–June (July)	Sometimes serpentine, rocky openings in cismontane woodland, and meadows and seeps. 325–3,775 ft.	None: Survey Area is outside of the known elevation range.
<i>Erythronium revolutum</i> (coast fawn lily)	None/None/ 2B.2	CNPS, CDFW	Liliaceae	perennial bulbiferous herb	March–July (August)	Mesic streambanks in bogs and fens, broadleaf upland forest, and North Coast coniferous forest. 0–5,250 ft.	Low: Streambanks and North Coast coniferous forest are present within the Survey Area. Two reported occurrences within 3–10 miles of the Project, nearest of which is associated with Freshwater Creek.
<i>Fissidens pauperculus</i> (minute pocket moss)	None/None/ 1B.2	CNPS, CDFW	Fissidentaceae	moss	n/a (moss)	Damp coastal soil in North Coast coniferous forest. 30–3,360 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Multiple occurrences within 5 miles of the Project.
<i>Gilia capitata</i> subsp. <i>pacifica</i> (Pacific gilia)	None/None/ 1B.2	CNPS, CDFW	Polemoniaceae	annual herb	April–August	Coastal bluff scrub, openings in chaparral, coastal prairie, and valley and foothill grassland. 15–5,465 ft.	None: No suitable habitat is present within the Survey Area.
<i>Gilia millefoliata</i> (dark-eyed gilia)	None/None/ 1B.2	CNPS, CDFW	Polemoniaceae	annual herb	April–July	Coastal dunes. 5–100 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Glehnia littoralis</i> subsp. <i>leiocarpa</i> (American glehnia)	None/None/ 4.2	CNPS	Apiaceae	perennial herb	May–August	Coastal dunes. 0–65 ft.	None: No suitable habitat is present within the Survey Area.
<i>Hesperevax</i> <i>sparsiflora</i> var. <i>brevifolia</i> (short-leaved evax)	None/None/ 1B.2	CNPS, CDFW	Asteraceae	annual herb	March–June	Sandy coastal bluff scrub, coastal dunes, and coastal prairie. 0–705 ft.	None: No suitable habitat is present within the Survey Area.
<i>Hesperolinon</i> <i>adenophyllum</i> (glandular western flax)	None/None/ 1B.2	CNPS	Linaceae	annual herb	May–August	Usually serpentinite in chaparral, cismontane woodland, and valley and foothill grassland. 490–4,315 ft.	None: Survey Area is outside of the known elevation range.
<i>Iliamna</i> <i>latibracteata</i> (California globe mallow)	None/None/ 1B.2	CNDDB	Malvaceae	perennial herb	June–August	Often in burned areas in montane chaparral, lower montane coniferous forest, mesic North Coast coniferous forest, and along stream banks in riparian scrub. 195–6,560 ft.	None: Survey Area is outside of the known elevation range.
<i>Lasthenia</i> <i>californica</i> subsp. <i>macrantha</i> (perennial goldfields)	None/None/ 1B.2	CNPS, CDFW	Asteraceae	perennial herb	January– November	Coastal bluff scrub, coastal dunes, and coastal scrub. 15–1,705 ft.	None: No suitable habitat is present within the Survey Area.
<i>Lathyrus japonicus</i> (seaside pea)	None/None/ 2B.1	CNPS, CDFW	Fabaceae	perennial rhizomatous herb	May–August	Coastal dunes. 0–100 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Lathyrus palustris</i> (marsh pea)	None/None/ 2B.2	CNPS, CDFW	Fabaceae	perennial herb	March– August	Mesic bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, and North Coast coniferous forest. 0–330 ft.	Low: Marsh and North Coast coniferous forest habitats are present within the Survey Area. Two reported occurrences within 5 miles of the Project: one near the Elk River Slough and the other associated with a bog (CDFW 2019).
<i>Layia carnosa</i> (beach layia)	FE/CE/1B.1	CNPS, CDFW, USFWS	Asteraceae	annual herb	March–July	Coastal dunes and sandy coastal scrub. 0–195 ft.	None: No suitable habitat is present within the Survey Area.
<i>Lilium kelloggii</i> (Kellogg’s lily)	None/None/ 4.3	CNPS	Liliaceae	perennial bulbiferous herb	May–August	Openings and roadsides in lower montane coniferous forest, and North Coast coniferous forest 5–4,265 ft.	Low: Openings and roadsides within North Coast coniferous forest are present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Lilium occidentale</i> (western lily)	FE/CE/1B.1	CNPS, CDFW, USFWS	Liliaceae	perennial bulbiferous herb	June–July	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, freshwater marshes and swamps, and openings in North Coast coniferous forest. 5–605 ft.	Low: Openings and roadsides within North Coast coniferous forest and marshes are present in the Survey Area. One documented occurrence within 1 mile of the Project.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Lilium rubescens</i> (redwood lily)	None/None/ 4.2	CNPS	Liliaceae	perennial bulbiferous herb	April–August (September)	Sometimes serpentinite, sometimes roadsides in broadleaf upland forest, chaparral, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest. 95–6,265 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Listera cordata</i> (heart-leaved twayblade)	None/None/ 4.2	CNPS	Orchidaceae	perennial herb	February– July	Bogs and fens, lower montane coniferous forest, and North Coast coniferous forest. 15–4,495 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Lycopodium clavatum</i> (running- pine)	None/None/ 4.1	CNPS, CDFW	Lycopodiaceae	perennial rhizomatous herb	June–August (September)	Often edges, openings, and roadsides in mesic lower montane coniferous forest, marshes and swamps, and mesic North Coast coniferous forest. 145–4,020 ft.	Low: Openings and roadsides within North Coast coniferous forest are present in the Survey Area. All nearby occurrences are at least 4 miles to the east of the Project.
<i>Mitellastra caulescens</i> (leafy-stemmed mitrewort)	None/None/ 4.2	CNPS, CDFW	Saxifragaceae	perennial rhizomatous herb	(March) April– October	Sometimes roadsides in mesic broadleaf upland forest, lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest. 15–5,575 ft.	Low: North coast coniferous forest is present in the Survey Area. Nearest reported occurrence is over 5 miles from the Project.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Monotropa uniflora</i> (ghost-pipe)	None/None/ 2B.2	CNPS, CDFW	Ericaceae	perennial herb (achlorophyllous)	June–August (September)	Broadleaved upland forest and North Coast coniferous forest. 30–1,805 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Reported occurrence is within one mile of the Project near Redwood Acres Fairgrounds.
<i>Montia howellii</i> (Howell’s montia)	None/None/ 2B.2	CNPS, CDFW	Montiaceae	annual herb	(February) March–May	Sometimes roadsides in vernally mesic meadows and seeps, North Coast coniferous forest, and vernal pools. 0–2,740 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrence is within 1 mile of the Project.
<i>Noccaea fendleri</i> subsp. <i>californica</i> (Kneeland Prairie pennycress)	FE/None/1B.1	CNPS, CDFW, USFWS	Brassicaceae	perennial herb	May–June	Serpentinite coastal prairie. 2,490–2,675 ft.	None: Survey Area is outside of the known elevation range and there is no suitable habitat present within the Survey Area.
<i>Oenothera wolfii</i> (Wolf’s evening- primrose)	None/None/ 1B.1	CNPS, CDFW	Onagraceae	perennial herb	May–October	Sandy, usually mesic areas in coastal bluff scrub, coastal dunes, coastal prairie, and lower montane coniferous forest. 5–2,625 ft.	None: No suitable habitat is present within the Survey Area.
<i>Packera bolanderi</i> var. <i>bolanderi</i> (seacoast ragwort)	None/None/ 2B.2	CNPS, CDFW	Asteraceae	perennial rhizomatous herb	(January– April) May– July (August)	Sometimes roadsides in coastal scrub and North Coast coniferous forest. 95–2,135 ft.	Low: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrence is over 10 miles from the Project.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Piperia candida</i> (white-flowered rein orchid)	None/None/ 1B.2	CNPS, CDFW	Orchidaceae	perennial herb	(March) May– September	Sometimes serpentinite in broadleaf upland forest, lower montane coniferous forest, and North Coast coniferous forest. 95–4,300 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Pityopus californicus</i> (California pinefoot)	None/None/ 4.2	CNPS	Ericaceae	perennial herb (achlorophyllous)	(March– April) May– August	Mesic areas in broadleaf upland forest, lower montane coniferous forest, North Coast coniferous forest, and upper montane coniferous forest. 45–7,300 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Pleuropogon refractus</i> (nodding semaphore grass)	None/None/ 4.2	CNPS	Poaceae	perennial rhizomatous herb	(March) April–August	Mesic lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, and riparian forest. 0–5,250 ft.	Low: North Coast coniferous forest and riparian forest are present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of the Project.
<i>Polemonium carneum</i> (Oregon polemonium)	None/None/ 2B.2	CNPS, CDFW	Polemoniaceae	perennial herb	April– September	Coastal prairie, coastal scrub, and lower montane coniferous forest. 0–6,005 ft.	None: No suitable habitat is present within the Survey Area.
<i>Puccinellia pumila</i> (dwarf alkali grass)	None/None/ 4.3	CNPS, CDFW	Poaceae	perennial herb	July	Coastal salt marshes and swamps. 0–35 ft.	None: No suitable habitat is present within the Survey Area.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Ribes laxiflorum</i> (trailing black currant)	None/None/ 4.3	CNPS	Grossulariaceae	perennial deciduous shrub	March–July (August)	Sometimes roadsides in North Coast coniferous forest. 15–4,575 ft.	Low: North Coast coniferous forest is present in the Survey Area. No reported occurrences or CNDDDB records within 10 miles of Project.
<i>Sidalcea malachroides</i> (maple-leaved checkerbloom)	None/None/ 4.2	CNPS, CDFW	Malvaceae	perennial herb	(March) April–August	Often in disturbed areas in broadleaf upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, and riparian woodland. 0–2,395 ft.	Moderate: Riparian forest and North Coast coniferous forest are present within the Survey Area. Nearest reported population is within 1 mile of the Project near the confluence of Ryan Creek and Ryan Slough (CDFW 2019).
<i>Sidalcea malviflora</i> subsp. <i>patula</i> (Siskiyou checkerbloom)	None/None/ 1B.2	CNPS, CDFW	Malvaceae	perennial rhizomatous herb	May–August	Often roadcuts in coastal bluff scrub, coastal prairie, and North Coast coniferous forest. 45–2,885 ft.	Low: North Coast coniferous forest is present in the Survey Area. The most recent nearby occurrences were documented 1944 and 1949. The population along the bluffs near Bucksport was said to have been “verging on extinction” in 1944.
<i>Sidalcea oregana</i> subsp. <i>eximia</i> (coast checkerbloom)	None/None/ 1B.2	CNPS, CDFW	Malvaceae	perennial herb	June–August	Lower montane coniferous forest, meadows and seeps, and North Coast coniferous forest. 15–4,395 ft.	Moderate: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrences are 1 to 5 miles from the Project.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Silene scouleri</i> subsp. <i>scouleri</i> (Scouler's catchfly)	None/None/ 2B.2	CNPS, CDFW	Caryophyllaceae	perennial herb	(March–May) June–August (September)	Coastal bluff scrub, coastal prairie, and valley and foothill grassland. 0–1,970 ft.	None: No suitable habitat is present within the Survey Area.
<i>Spergularia canadensis</i> var. <i>occidentalis</i> (western sand- spurrey)	None/None/ 2B.1	CNPS, CDFW	Caryophyllaceae	annual herb	June–August	Coastal salt marshes and swamps. 0–10 ft.	None: No suitable habitat is present within the Survey Area.
<i>Tiarella trifoliata</i> var. <i>trifoliata</i> (trifoliate laceflower)	None/None/ 3.2	CNPS	Saxifragaceae	perennial rhizomatous herb	(May) June– August	Edges and moist shady streambanks in lower montane coniferous forest, and North Coast coniferous forest. 555–4,920 ft.	None: Survey Area is outside of the known elevation range.
<i>Trichodon cylindricus</i> (cylindrical trichodon)	None/None/ 2B.2	CNPS, CDFW	Ditrichaceae	moss	N/A (moss)	Sandy, exposed soil and roadbanks in broadleaf upland forest, meadows and seeps, and upper montane coniferous forest. 160–6,570 ft.	None: No suitable habitat is present within the Survey Area.
<i>Usnea longissima</i> (Methuselah's beard lichen)	None/None/ 4.2	CNPS, CDFW	Parmeliaceae	fruticose lichen (epiphytic)	N/A (lichen)	On tree branches; usually on old growth hardwoods and conifers in broadleaf upland forest, and North Coast coniferous forest. 160–4,790 ft.	Low: North Coast coniferous forest is present in the Survey Area. Nearest reported occurrences are 5 to 10 miles from the Project.

Scientific name (common name)	Status ¹ (Federal, State, CRPR)	Source	Family	Lifeform	Blooming period ²	Habitat associations	Likelihood of occurrence
<i>Viola palustris</i> (alpine marsh violet)	None/None/ 2B.2	CNPS, CDFW	Violaceae	perennial rhizomatous herb	March– August	Coastal bogs and fens and mesic coastal scrub. 0–490 ft.	None: No suitable habitat is present within the Survey Area.

¹ Status:

Federal

FE Federally listed as endangered
None No federal status

State

CE California State listed as endangered
None No state status

California Rare Plant Rank

List 1B Plants rare, threatened, or endangered in California and elsewhere
List 2B Plants rare, threatened, or endangered in California, but more common elsewhere
List 4 Plants of limited distribution, a watch list

CNPS Threat Ranks:

0.1 Seriously threatened in California (high degree/immediacy of threat)
0.2 Fairly threatened in California (moderate degree/immediacy of threat)
0.3 Not very threatened in California (low degree/immediacy of threats or no current threats known)

² Months in parentheses are uncommon; N/A = Not applicable

Table A-2. Scoping list of CDFW sensitive natural communities in the Project Vicinity

Sensitive natural community	State Status ¹	Description	Suitable habitat present in Survey Area?
Coastal terrace prairie	S3	A dense, tall grassland (up to 3 ft tall) dominated by both sod and tussock-forming perennial grasses. Most stands are quite patchy and variable in composition, reflecting local differences in available soil moisture capacity (Holland 1986).	No
Northern coastal salt marsh	S3	Highly productive, herbaceous and suffrutescent, salt-tolerant hydrophytes forming moderate to dense cover and up to 3 ft tall. Usually segregated horizontally with <i>Spartina</i> nearer to open water, <i>Salicornia</i> at mid-littoral elevations, and a richer mixture closer to high ground. Located within hydric soils subject to regular tidal inundation by salt water for a at least part of each year (Holland 1986). Composed of cordgrass series, pickleweed series, and saltgrass series (Sawyer and Keeler-Wolf 1995).	No
Northern foredune grassland	S1	A sparse grassland (10–50% total cover) of the upper strand and foredunes dominated by <i>Elymus mollis</i> and <i>Poa douglasii</i> . (Holland 1986). Composed of European beachgrass series and native dunegrass series (Sawyer and Keeler-Wolf 1995).	No
Sitka spruce forest	S1	Old-growth stands of Sitka spruce forests are rare in northern California. Dense forest dominated by coniferous evergreen trees up to 115 ft tall. Dense understory of broadleaved trees, shrubs, and perennial herbs, including several species of ferns (Holland 1986).	No
Upland Douglas-fir forest	S3	A tall (200 ft), mixed-age climax forest dominated (>80%) by Douglas-fir (Holland 1986). Composed of Douglas-fir-tanoak series and the Douglas-fir series (Sawyer and Keeler-Wolf 1995).	No

¹ **State status**

- S1 Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state
- S3 Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

Appendix B

Comprehensive List of Vascular Plant Species Observed in the Survey Area

Table B-1. Comprehensive list of vascular plant species observed within the Survey Area during the May and July 2019 botanical surveys.

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Abies grandis</i>	grand fir	Pinaceae	Native	None
<i>Acer circinatum</i>	vine maple	Sapindaceae	Native	None
<i>Acer macrophyllum</i>	big-leaf maple	Sapindaceae	Native	None
<i>Achillea millefolium</i>	common yarrow	Asteraceae	Native	None
<i>Achlys californica</i>	deer's foot	Berberidaceae	Native	None
<i>Achlys triphylla</i> subsp. <i>triphylla</i>	sweet after death	Berberidaceae	Native	None
<i>Acmispon americanus</i> var. <i>americanus</i>	American bird's-foot trefoil	Fabaceae	Native	None
<i>Adenocaulon bicolor</i>	trail plant	Asteraceae	Native	None
<i>Adiantum aleuticum</i>	five-finger fern	Pteridaceae	Native	None
<i>Agrostis exarata</i>	spike bent grass	Poaceae	Native	None
<i>Aira caryophyllea</i>	silver hair grass	Poaceae	Naturalized	None
<i>Alnus rubra</i>	red alder	Betulaceae	Native	None
<i>Alopecurus geniculatus</i>	water foxtail	Poaceae	Native	None
<i>Anthoxanthum occidentale</i>	California sweet grass	Poaceae	Native	None
<i>Anthoxanthum odoratum</i>	sweet vernal grass	Poaceae	Naturalized	Limited
<i>Asarum caudatum</i>	wild ginger	Aristolochiaceae	Native	None
<i>Athyrium filix-femina</i> var. <i>cyclosorum</i>	common lady fern	Athyriaceae	Native	None
<i>Avena fatua</i>	wild oat	Poaceae	Naturalized	Moderate
<i>Avena sativa</i>	cultivated oat	Poaceae	Naturalized	None
<i>Baccharis pilularis</i>	coyote brush	Asteraceae	Native	None
<i>Bellis perennis</i>	English daisy	Asteraceae	Naturalized	None
<i>Berberis nervosa</i>	Cascades barberry	Berberidaceae	Native	None
<i>Boykinia occidentalis</i>	western boykinia	Saxifragaceae	Native	None
<i>Brassica nigra</i>	black mustard	Brassicaceae	Naturalized	Moderate
<i>Briza maxima</i>	rattlesnake grass	Poaceae	Naturalized	Limited
<i>Briza minor</i>	small quaking grass	Poaceae	Naturalized	None
<i>Bromus carinatus</i>	California brome	Poaceae	Native	None
<i>Bromus hordeaceus</i>	soft chess	Poaceae	Naturalized	Limited
<i>Bromus vulgaris</i>	Columbia brome	Poaceae	Native	None
<i>Callitriche heterophylla</i> var. <i>bolanderi</i>	variable-leaved water starwort	Plantaginaceae	Native	None
<i>Calystegia silvatica</i> subsp. <i>disjuncta</i>	large bindweed	Convolvulaceae	Naturalized	None
<i>Cardamine oligosperma</i>	few-seeded bitter cress	Brassicaceae	Native	None
<i>Carduus pycnocephalus</i> subsp. <i>pycnocephalus</i>	Italian thistle	Asteraceae	Naturalized	Moderate
<i>Carex bolanderi</i>	Bolander's sedge	Cyperaceae	Native	None

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Carex gynodynamis</i>	Wonder-woman sedge	Cyperaceae	Native	None
<i>Carex harfordii</i>	Harford's sedge	Cyperaceae	Native	None
<i>Carex hendersonii</i>	Henderson's sedge	Cyperaceae	Native	None
<i>Carex lyngbyei</i>	Lyngbye's sedge	Cyperaceae	Native, CRPR 2B.2	None
<i>Carex obnupta</i>	slough sedge	Cyperaceae	Native	None
<i>Carex subbracteata</i>	small-bracted sedge	Cyperaceae	Native	None
<i>Centaurium tenuiflorum</i>	slender centaury	Gentianaceae	Naturalized	None
<i>Cerastium fontanum</i> subsp. <i>vulgare</i>	common mouse-ear chickweed	Caryophyllaceae	Naturalized	None
<i>Cerastium glomeratum</i>	sticky mouse-ear chickweed	Caryophyllaceae	Naturalized	None
<i>Chamerion angustifolium</i> subsp. <i>circumvagum</i>	fireweed	Onagraceae	Native	None
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	Saxifragaceae	Native, CRPR 4.3	None
<i>Cirsium arvense</i>	Canada thistle	Asteraceae	Naturalized	Moderate
<i>Cirsium vulgare</i>	bull thistle	Asteraceae	Naturalized	Moderate
<i>Claytonia sibirica</i>	candy flower	Montiaceae	Native	None
<i>Clintonia andrewsiana</i>	Andrew's clintonia	Liliaceae	Native	None
<i>Conium maculatum</i>	poison hemlock	Apiaceae	Naturalized	Moderate
<i>Convolvulus arvensis</i>	bindweed, orchard morning- glory	Convolvulaceae	Naturalized	None
<i>Cortaderia jubata</i>	purple pampas grass	Poaceae	Naturalized	High
<i>Cotoneaster franchetii</i>	Franchet's cotoneaster	Rosaceae	Naturalized	Moderate
<i>Cotoneaster lacteus</i>	late cotoneaster	Rosaceae	Naturalized	Moderate
<i>Crataegus monogyna</i>	one-seeded hawthorn	Rosaceae	Naturalized	Limited
<i>Crepis capillaris</i>	smooth hawkbeard	Asteraceae	Naturalized	None
<i>Crocsmia ×crocsmiiflora</i>	montbretia	Iridaceae	Naturalized	Limited
<i>Cynosurus echinatus</i>	bristly dogtail grass	Poaceae	Naturalized	Moderate
<i>Cytisus scoparius</i>	Scotch broom	Fabaceae	Naturalized	High
<i>Dactylis glomerata</i>	orchardgrass	Poaceae	Naturalized	Limited
<i>Daucus carota</i>	Queen Anne's lace	Apiaceae	Naturalized	None
<i>Digitalis purpurea</i>	purple foxglove	Plantaginaceae	Naturalized	Limited
<i>Eleocharis macrostachya</i>	pale spikerush	Cyperaceae	Native	None
<i>Elymus glaucus</i> subsp. <i>glaucus</i>	blue wildrye	Poaceae	Native	None
<i>Elymus trachycaulus</i> subsp. <i>trachycaulus</i>	slender wheat grass	Poaceae	Native	None
<i>Epilobium ciliatum</i>	fringed willowherb	Onagraceae	Native	None
<i>Equisetum arvense</i>	common horsetail	Equisetaceae	Native	None
<i>Equisetum telmateia</i> subsp. <i>braunii</i>	giant horsetail	Equisetaceae	Native	None
<i>Erica lusitanica</i>	Spanish heath	Ericaceae	Naturalized	Limited
<i>Erigeron canadensis</i>	horseweed	Asteraceae	Native	None
<i>Erythranthe dentata</i>	tooth-leaved monkeyflower	Phrymaceae	Native	None
<i>Euonymus occidentalis</i>	western burning bush	Celastraceae	Native	None

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Festuca arundinacea</i>	tall fescue	Poaceae	Naturalized	Moderate
<i>Festuca bromoides</i>	brome fescue	Poaceae	Naturalized	None
<i>Festuca perennis</i>	rye grass	Poaceae	Naturalized	Moderate
<i>Festuca subulata</i>	bearded fescue	Poaceae	Native	None
<i>Festuca subuliflora</i>	crinkle-awn fescue	Poaceae	Native	None
<i>Foeniculum vulgare</i>	fennel	Apiaceae	Naturalized	Moderate
<i>Frangula purshiana</i>	casacara	Rhamnaceae	Native	None
<i>Fraxinus latifolia</i>	Oregon ash	Oleaceae	Native	None
<i>Fuchsia magellanica</i>	hardy fuschia	Onagraceae	Naturalized	None
<i>Galium aparine</i>	goose grass	Rubiaceae	Native	None
<i>Galium trifidum</i> subsp. <i>columbianum</i>	threepetal bedstraw	Rubiaceae	Native	None
<i>Gaultheria shallon</i>	salal	Ericaceae	Native	None
<i>Geranium dissectum</i>	cutleaf geranium	Geraniaceae	Naturalized	Limited
<i>Glyceria ×occidentalis</i>	western manna grass	Poaceae	Naturalized	None
<i>Glyceria elata</i>	fowl manna grass	Poaceae	Native	None
<i>Gnaphalium palustre</i>	western marsh cudweed	Asteraceae	Native	None
<i>Goodyera oblongifolia</i>	rattlesnake-plantain	Orchidaceae	Native	None
<i>Hedera helix</i>	English ivy	Araliaceae	Naturalized	High
<i>Helminthotheca echioides</i>	bristly ox-tongue	Asteraceae	Naturalized	Limited
<i>Heracleum maximum</i>	cow parsnip	Apiaceae	Native	None
<i>Hieracium albiflorum</i>	white hawkweed	Asteraceae	Native	None
<i>Holcus lanatus</i>	common velvet grass	Poaceae	Naturalized	Moderate
<i>Hydrophyllum tenuipes</i>	slenderfoot waterleaf, pacific waterleaf	Boraginaceae	Native	None
<i>Hypericum perforatum</i> subsp. <i>perforatum</i>	Klamathweed	Hypericaceae	Naturalized	Limited
<i>Hypochaeris radicata</i>	rough cat's-ear	Asteraceae	Naturalized	Moderate
<i>Ilex aquifolium</i>	English holly	Aquifoliaceae	Naturalized	Limited
<i>Iris douglasiana</i>	Douglas's iris	Iridaceae	Native	None
<i>Juncus bolanderi</i>	Bolander's rush	Juncaceae	Native	None
<i>Juncus bufonius</i>	toad rush	Juncaceae	Native	None
<i>Juncus effusus</i>	soft or lamp rush	Juncaceae	Native	None
<i>Juncus lescurii</i>	San Francisco rush	Juncaceae	Native	None
<i>Juncus occidentalis</i>	western rush	Juncaceae	Native	None
<i>Juncus patens</i>	spreading rush	Juncaceae	Native	None
<i>Juncus xiphioides</i>	iris-leaved rush	Juncaceae	Native	None
<i>Lapsana communis</i>	common nipplewort	Asteraceae	Naturalized	None
<i>Leontodon saxatilis</i>	hairy hawkbit	Asteraceae	Naturalized	None
<i>Leucanthemum vulgare</i>	ox-eye daisy	Asteraceae	Naturalized	Moderate

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Linum bienne</i>	pale flax	Linaceae	Naturalized	None
<i>Lonicera hispidula</i>	pink honeysuckle	Caprifoliaceae	Native	None
<i>Lonicera involucrata</i>	twinberry	Caprifoliaceae	Native	None
<i>Lotus corniculatus</i>	bird's-foot trefoil	Fabaceae	Naturalized	None
<i>Luzula comosa</i> var. <i>comosa</i>	Pacific wood-rush	Juncaceae	Native	None
<i>Lysichiton americanus</i>	yellow skunk-cabbage	Araceae	Native	None
<i>Lysimachia arvensis</i>	scarlet pimpernel	Myrsinaceae	Naturalized	None
<i>Lysimachia latifolia</i>	Pacific starflower	Myrsinaceae	Native	None
<i>Maianthemum dilatatum</i>	false lily of the valley	Ruscaceae	Native	None
<i>Maianthemum racemosum</i>	feathery false lily of the valley	Ruscaceae	Native	None
<i>Marah oregana</i>	coast man-root	Cucurbitaceae	Native	None
<i>Medicago arabica</i>	spotted burclover	Fabaceae	Naturalized	None
<i>Medicago polymorpha</i>	California burclover	Fabaceae	Naturalized	Limited
<i>Melica subulata</i>	Alaskan oniongrass	Poaceae	Native	None
<i>Melilotus albus</i>	white sweetclover	Fabaceae	Naturalized	None
<i>Mentha pulegium</i>	pennyroyal	Lamiaceae	Naturalized	Moderate
<i>Morella californica</i>	wax myrtle	Myricaceae	Native	None
<i>Myosotis discolor</i>	changing forget-me-not	Boraginaceae	Naturalized	None
<i>Nasturtium officinale</i>	water cress	Brassicaceae	Native	None
<i>Oemleria cerasiformis</i>	Indian plum	Rosaceae	Native	None
<i>Oenanthe sarmentosa</i>	water parsely	Apiaceae	Native	None
<i>Osmorhiza berteroi</i>	sweetcicely	Apiaceae	Native	None
<i>Oxalis oregana</i>	redwood sorrel	Oxalidaceae	Native	None
<i>Parentucellia viscosa</i>	yellow glandweed	Orobanchaceae	Naturalized	Limited
<i>Pectiantia ovalis</i>	coastal miterwort	Saxifragaceae	Native	None
<i>Petasites frigidus</i> var. <i>palmatus</i>	western sweet coltsfoot	Asteraceae	Native	None
<i>Picea sitchensis</i>	Sitka spruce	Pinaceae	Native	None
<i>Pinus radiata</i>	Monterey pine	Pinaceae	Native	None
<i>Plantago lanceolata</i>	English plantain	Plantaginaceae	Naturalized	Limited
<i>Plantago major</i>	common plantain	Plantaginaceae	Naturalized	None
<i>Pleuropogon refractus</i>	nodding semaphore grass	Poaceae	Native, CRPR 4.2	None
<i>Poa annua</i>	annual blue grass	Poaceae	Naturalized	None
<i>Polypodium scouleri</i>	leather-leaf fern	Polypodiaceae	Native	None
<i>Polystichum munitum</i>	western sword fern	Dryopteridaceae	Native	None
<i>Populus trichocarpa</i>	black cottonwood	Salicaceae	Native	None
<i>Potentilla anserina</i>	silverweed cinquefoil	Rosaceae	Native	None
<i>Prosartes smithii</i>	large flower fairybells	Liliaceae	Native	None
<i>Prunella vulgaris</i> var. <i>lanceolata</i>	lance selfheal	Lamiaceae	Native	None
<i>Prunella vulgaris</i> var. <i>vulgaris</i>	common selfheal	Lamiaceae	Naturalized	None
<i>Prunus cerasifera</i>	cherry plum	Rosaceae	Naturalized	Limited
<i>Prunus laurocerasus</i>	cherry laurel	Rosaceae	Nonnative	None

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Pseudotsuga menziesii</i> var. <i>menziesii</i>	Douglas-fir	Pinaceae	Native	None
<i>Pteridium aquilinum</i> var. <i>pubescens</i>	hairy brackenfern	Dennstaedtiaceae	Native	None
<i>Ranunculus lobbii</i>	Lobb's aquatic buttercup	Ranunculaceae	Native	None
<i>Ranunculus repens</i>	creeping buttercup	Ranunculaceae	Naturalized	Limited
<i>Ranunculus sardous</i>	hairy buttercup	Ranunculaceae	Naturalized	None
<i>Ranunculus uncinatus</i>	woodland buttercup	Ranunculaceae	Native	None
<i>Raphanus sativus</i>	radish	Brassicaceae	Naturalized	Limited
<i>Rhododendron macrophyllum</i>	California rhododendron	Ericaceae	Native	None
<i>Ribes menziesii</i>	canyon gooseberry	Grossulariaceae	Native	None
<i>Ribes sanguineum</i>	red-flowering currant	Grossulariaceae	Native	None
<i>Rosa nutkana</i> subsp. <i>nutkana</i>	Nootka rose	Rosaceae	Native	None
<i>Rubus armeniacus</i>	Himalayan blackberry	Rosaceae	Naturalized	High
<i>Rubus leucodermis</i>	whitebark raspberry	Rosaceae	Native	None
<i>Rubus parviflorus</i>	thimbleberry	Rosaceae	Native	None
<i>Rubus spectabilis</i>	salmonberry	Rosaceae	Native	None
<i>Rubus ursinus</i>	California blackberry	Rosaceae	Native	None
<i>Rumex acetosella</i>	sheep sorrel	Polygonaceae	Naturalized	Moderate
<i>Rumex conglomeratus</i>	clustered dock	Polygonaceae	Naturalized	None
<i>Rumex crispus</i>	curly dock	Polygonaceae	Naturalized	Limited
<i>Rumex pulcher</i>	fiddle dock	Polygonaceae	Naturalized	None
<i>Salix hookeriana</i>	coastal willow	Salicaceae	Native	None
<i>Salix lasiandra</i>	Pacific willow	Salicaceae	Native	None
<i>Salix lasiolepis</i>	arroyo willow	Salicaceae	Native	None
<i>Salix scouleriana</i>	Scouler's willow	Salicaceae	Native	None
<i>Salix sitchensis</i>	Sitka willow	Salicaceae	Native	None
<i>Sambucus racemosa</i>	red elderberry	Adoxaceae	Native	None
<i>Sanicula crassicaulis</i>	Pacific blacksnakeroot	Apiaceae	Native	None
<i>Scirpus microcarpus</i>	panicked bulrush	Cyperaceae	Native	None
<i>Scoliopus bigelovii</i>	California fetid adderstongue	Liliaceae	Native	None
<i>Scrophularia californica</i>	California figwort	Scrophulariaceae	Native	None
<i>Senecio vulgaris</i>	common groundsel	Asteraceae	Naturalized	None
<i>Sequoia sempervirens</i>	coastal redwood	Cupressaceae	Native	None
<i>Silybum marianum</i>	blessed milkthistle	Asteraceae	Naturalized	Limited
<i>Solanum americanum</i>	American black nightshade	Solanaceae	Native	None
<i>Sonchus asper</i> subsp. <i>asper</i>	prickly sow thistle	Asteraceae	Naturalized	None
<i>Sonchus oleraceus</i>	common sow thistle	Asteraceae	Naturalized	None
<i>Stachys mexicana</i>	Mexican hedgenettle	Lamiaceae	Native	None
<i>Struthiopteris spicant</i>	deer fern	Blechnaceae	Native	None
<i>Symphotrichum chilense</i>	Pacific aster	Asteraceae	Native	None
<i>Taraxacum officinale</i>	common dandelion	Asteraceae	Naturalized	None
<i>Thuja plicata</i>	western red cedar	Cupressaceae	Native	None

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Scientific name	Common name	Family	Native status	Cal-IPC Rating
<i>Tolmiea diplomenziesii</i>	pig-a-back plant	Saxifragaceae	Native	None
<i>Toxicodendron diversilobum</i>	western poison oak	Anacardiaceae	Native	None
<i>Trifolium dubium</i>	little hop clover	Fabaceae	Naturalized	None
<i>Trifolium pratense</i>	red clover	Fabaceae	Naturalized	None
<i>Trifolium repens</i>	white clover	Fabaceae	Naturalized	None
<i>Trillium ovatum</i>	white or western trillium	Melanthiaceae	Native	None
<i>Typha latifolia</i>	broad-leaved cattail	Typhaceae	Native	None
<i>Umbellularia californica</i>	California laurel bay	Lauraceae	Native	None
<i>Urtica dioica</i>	stinging nettle	Urticaceae	Native	None
<i>Vaccinium ovatum</i>	California huckleberry	Ericaceae	Native	None
<i>Vaccinium parvifolium</i>	red huckleberry	Ericaceae	Native	None
<i>Vancouveria hexandra</i>	white inside-out flower	Berberidaceae	Native	None
<i>Vancouveria planipetala</i>	redwood ivy	Berberidaceae	Native	None
<i>Veronica americana</i>	American brooklime	Plantaginaceae	Native	None
<i>Vicia americana</i> subsp. <i>americana</i>	American vetch	Fabaceae	Native	None
<i>Vicia gigantea</i>	giant vetch	Fabaceae	Native	None
<i>Vicia sativa</i>	garden vetch	Fabaceae	Naturalized	None
<i>Vicia tetrasperma</i>	sparrow vetch	Fabaceae	Naturalized	None
<i>Viola glabella</i>	stream violet, smooth yellow violet	Violaceae	Native	None
<i>Viola sempervirens</i>	evergreen violet, redwood violet	Violaceae	Native	None
<i>Zantedeschia aethiopica</i>	calla-lily	Araceae	Naturalized	None

Appendix C

**CNDDDB Forms for Special-status Plant Species in the
Survey Area**

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 05/22/2019

California Native Species Field Survey Form

Scientific Name: <u>Carex lyngbyei</u>	
Common Name: <u>Lyngbye's sedge</u>	
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No If not found, why? _____	Reporter: <u>Emmalien Craydon & Emily King Teraoka</u>
Total No. Individuals: <u>~5</u> Subsequent Visit? <input type="radio"/> Yes <input type="radio"/> No	Address: <u>Stillwater Sciences</u>
Is this an existing NDDDB occurrence? <u>30</u> <input type="checkbox"/> No <input type="checkbox"/> Unk. Yes, Occ. # _____	<u>850 G Street, Suite K Arcata, CA 95521</u>
Collection? If yes: _____ Number _____ Museum / Herbarium _____	E-mail Address: <u>Emmalien@stillwatersci.com</u>
	Phone: <u>707-822-9607, Ext. 210</u>

Plant Information	Animal Information																					
Phenology: <table style="width: 100%;"> <tr> <td style="text-align: center;">60</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> <tr> <td style="text-align: center;">% vegetative</td> <td style="text-align: center;">% flowering</td> <td style="text-align: center;">% fruiting</td> </tr> </table>	60	30	30	% vegetative	% flowering	% fruiting	<table style="width: 100%;"> <tr> <td style="text-align: center;"># adults</td> <td style="text-align: center;"># juveniles</td> <td style="text-align: center;"># larvae</td> <td style="text-align: center;"># egg masses</td> <td style="text-align: center;"># unknown</td> </tr> <tr> <td><input type="checkbox"/> wintering</td> <td><input type="checkbox"/> breeding</td> <td><input type="checkbox"/> nesting</td> <td><input type="checkbox"/> rookery</td> <td><input type="checkbox"/> burrow site</td> </tr> <tr> <td><input type="checkbox"/> lek</td> <td><input type="checkbox"/> other</td> <td colspan="3"></td> </tr> </table>	# adults	# juveniles	# larvae	# egg masses	# unknown	<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site	<input type="checkbox"/> lek	<input type="checkbox"/> other			
60	30	30																				
% vegetative	% flowering	% fruiting																				
# adults	# juveniles	# larvae	# egg masses	# unknown																		
<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site																		
<input type="checkbox"/> lek	<input type="checkbox"/> other																					

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
 Along the bank of Ryan Creek

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Arcata South Elevation: ~10 ft

T 5N R 1W Sec N3, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Geo 7x

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 9ft meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 40°46'41.97"N; 124° 7'16.40"W

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:
Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Understory plant associates. Rubus leucodemis, Ranunculus repens, Polystichum munitum, Pteridium aquilinum var. pubescens, Heracleum maximum
 Riparian overstory comprised of Picea sitchensis, Acer macrophyllum, and Alnus rubra

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: light recreational use/trails nearby

Visible disturbances: none

Threats: Erosion of Ryan Slough bank

Comments: Nearby future recreational trail

<p>Determination: (check one or more, and fill in blanks)</p> <p><input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u></p> <p><input type="checkbox"/> Compared with specimen housed at: _____</p> <p><input type="checkbox"/> Compared with photo / drawing in: _____</p> <p><input type="checkbox"/> By another person (name): _____</p> <p><input type="checkbox"/> Other: _____</p>	<p>Photographs: (check one or more)</p> <table style="width: 100%;"> <tr> <td></td> <td style="text-align: center;">Slide</td> <td style="text-align: center;">Print</td> <td style="text-align: center;">Digital</td> </tr> <tr> <td>Plant / animal</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no</p>		Slide	Print	Digital	Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Slide	Print	Digital														
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>														

CDFWSDDB1747 Rev. 7/16/2015

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McKay Community Forest Trail Plan Implementation Project*

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 05/21/2019

California Native Species Field Survey Form

Scientific Name: <u>Carex lyngbyei</u>	
Common Name: <u>Lyngbye's sedge</u>	
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No If not found, why? _____	Reporter: <u>Emmalien Craydon & Emily King Teraoka</u>
Total No. Individuals: <u>>100</u> Subsequent Visit? <input checked="" type="radio"/> Yes <input type="radio"/> No	Address: <u>Stillwater Sciences</u>
Is this an existing NDDDB occurrence? <u>30</u> <input type="checkbox"/> No <input type="checkbox"/> Unk. Yes, Occ. # _____	<u>850 G Street, Suite K Arcata, CA 95521</u>
Collection? If yes: _____ Number _____ Museum / Herbarium _____	E-mail Address: <u>Emmalien@stillwatersci.com</u>
	Phone: <u>707-822-9607, Ext. 210</u>

Plant Information	Animal Information
Phenology: % vegetative: <u>60</u> % flowering: <u>40</u> % fruiting: <u>30</u>	# adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown _____ <input type="checkbox"/> wintering <input type="checkbox"/> breeding <input type="checkbox"/> nesting <input type="checkbox"/> rookery <input type="checkbox"/> burrow site <input type="checkbox"/> lek <input type="checkbox"/> other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
Along the lower bank of Ryan Creek

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Arcata South Elevation: ~21 ft

T 5N R 1W Sec N3, _____ 1/4 of _____ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S GPS Make & Model: Trimble Geo 7x

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 4ft meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: From 40°46'39.25"N; 124° 7'17.89"W To 40°46'40.56"N; 124° 7'17.17" along Ryan Creek

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Plant associates along upper banks of Ryan Creek: Lonicera involucrata, Equisetum arvense, Cytisus scoparius, Scirpus microcarpus. Overstory canopy primarily Abies grandis and Sequoia sempervirens.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: dispersed recreation along old timber roads and trails

Visible disturbances: bank erosion and nonnatives nearby

Threats: bank erosion

Comments: Nonnative Cytisus scoparius along the upper edge. Population bordered along narrow band at waters edge. Future recreational trail system nearby.

<p>Determination: <i>(check one or more, and fill in blanks)</i></p> <p><input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u></p> <p><input type="checkbox"/> Compared with specimen housed at: _____</p> <p><input checked="" type="checkbox"/> Compared with photo / drawing in: <u>CalPhotos 2019</u></p> <p><input type="checkbox"/> By another person (name): _____</p> <p><input type="checkbox"/> Other: _____</p>	<p>Photographs: <i>(check one or more)</i></p> <table style="width: 100%;"> <tr> <td></td> <td>Slide</td> <td>Print</td> <td>Digital</td> </tr> <tr> <td>Plant / animal</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no</p>		Slide	Print	Digital	Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
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For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 07/08/2019

California Native Species Field Survey Form

Clear Form		Print Form
Scientific Name: <u>Carex lyngbyei</u>		
Common Name: <u>Lyngbye's sedge</u>		
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No <small>If not found, why?</small>		Reporter: <u>Emmalien Craydon & Victoria Bryant</u>
Total No. Individuals: <u>>100</u>	Subsequent Visit? <input type="radio"/> Yes <input type="radio"/> No	Address: <u>Stillwater Sciences</u>
Is this an existing NDDDB occurrence? <u>30</u> <input type="checkbox"/> No <input type="checkbox"/> Unk. <small>Yes, Occ. #</small>		<u>850 G Street, Suite K Arcata, CA 95521</u>
Collection? If yes: _____ <small>Number Museum / Herbarium</small>		E-mail Address: <u>Emmalien@stillwatersci.com</u>
		Phone: <u>707-822-9607, Ext. 210</u>

Plant Information	Animal Information																					
Phenology: <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;">100</td> <td style="text-align: center;">0</td> <td style="text-align: center;">0</td> </tr> <tr> <td style="text-align: center;">% vegetative</td> <td style="text-align: center;">% flowering</td> <td style="text-align: center;">% fruiting</td> </tr> </table>	100	0	0	% vegetative	% flowering	% fruiting	<table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"># adults</td> <td style="text-align: center;"># juveniles</td> <td style="text-align: center;"># larvae</td> <td style="text-align: center;"># egg masses</td> <td style="text-align: center;"># unknown</td> </tr> <tr> <td><input type="checkbox"/> wintering</td> <td><input type="checkbox"/> breeding</td> <td><input type="checkbox"/> nesting</td> <td><input type="checkbox"/> rookery</td> <td><input type="checkbox"/> burrow site</td> </tr> <tr> <td><input type="checkbox"/> lek</td> <td><input type="checkbox"/> other</td> <td colspan="3"></td> </tr> </table>	# adults	# juveniles	# larvae	# egg masses	# unknown	<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site	<input type="checkbox"/> lek	<input type="checkbox"/> other			
100	0	0																				
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<input type="checkbox"/> lek	<input type="checkbox"/> other																					

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
 Along the bank of Ryan Creek

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Arcata South Elevation: ~8-15 ft

T 4N R 1W Sec N1, ___ 1/4 of ___ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T ___ R ___ Sec ___, ___ 1/4 of ___ 1/4, Meridian: H M S GPS Make & Model: Garmin Oregon 600

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 8 ft meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 40°46'42.54"N; 124° 7'15.48"W

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Plant associates along banks of creek: Potentilla anserina, Galium aparine. Along upper bank upland transition plant associates included: Juncus lescourii, Symphytorichum chilense, Festuca arundinaceae, Anthoxanthum odoratum, Sonchus asper, Prunus sp., Rubus armeniacus, Salix sp., Lotus corniculatus. Overstory Sequoia sempervirens

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: cattle grazing in nearby agricultural fields (creek banks are not accessible to cattle)

Visible disturbances: Erosion- natural processes

Threats: Bank erosion along Ryan Creek

Comments: Future recreational trail system nearby

Determination: <i>(check one or more, and fill in blanks)</i>	Photographs: <i>(check one or more)</i>
<input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u>	Plant / animal <input type="checkbox"/> Slide <input type="checkbox"/> Print <input checked="" type="checkbox"/> Digital
<input type="checkbox"/> Compared with specimen housed at: _____	Habitat <input type="checkbox"/> Slide <input type="checkbox"/> Print <input checked="" type="checkbox"/> Digital
<input checked="" type="checkbox"/> Compared with photo / drawing in: <u>CalPhotos</u>	Diagnostic feature <input type="checkbox"/> Slide <input type="checkbox"/> Print <input checked="" type="checkbox"/> Digital
<input type="checkbox"/> By another person (name): _____	May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no
<input type="checkbox"/> Other: _____	

CDFWSDDB1747 Rev. 7/16/2015

*Special-Status Plant Surveys for the
McKay Community Forest Trail Plan Implementation Project*

Mail to:
California Natural Diversity Database
California Dept. of Fish & Wildlife
1416 9th Street, Suite 1266
Sacramento, CA 95814
Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 05/24/2019

California Native Species Field Survey Form

Scientific Name: <u>Pleuropogon refractus</u>	
Common Name: <u>nodding semaphore grass</u>	
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No If not found, why? _____	Reporter: <u>Emmalien Craydon & Emily King Teraoka</u>
Total No. Individuals: <u>2</u> Subsequent Visit? <input type="radio"/> Yes <input type="radio"/> No	Address: <u>850 G Street, Suite K Arcata, CA 95521</u>
Is this an existing NDDDB occurrence? <input checked="" type="checkbox"/> No <input type="checkbox"/> Unk. Yes, Occ. # _____	E-mail Address: <u>Emmalien@stillwatersci.com</u>
Collection? If yes: <u>1</u> Number _____ Museum / Herbarium _____	Phone: <u>707-822-9607, Ext. 210</u>

Plant Information	Animal Information
Phenology: % vegetative: <u>0</u> % flowering: <u>100</u> % fruiting: <u>0</u>	# adults _____ # juveniles _____ # larvae _____ # egg masses _____ # unknown _____
	<input type="checkbox"/> wintering <input type="checkbox"/> breeding <input type="checkbox"/> nesting <input type="checkbox"/> rookery <input type="checkbox"/> burrow site <input type="checkbox"/> lek <input type="checkbox"/> other

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
Within the riparian area along a tributary to Ryan Creek

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Eureka Elevation: 114 ft

T 4N R 1W Sec N1, _____ 1/4 of _____ 1/4, Meridian: H M S O Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S O GPS Make & Model: Trimble Geo 7x

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 9 ft _____ meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: 40°45'19.85"N; 124° 8'16.28"W

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:
Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Plant associates Tolmiea diplomenziesii, Arthyrrium filix-femina, Oenanthe sarmentosa, Erythranthe dentata, Sambucus racemosa, Stachys mexicana, Polystichum munitum, and Carex spp. Overstory riparian composed of Alnus rubra and Picea sitchensis.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: community trail network; low recreation use evident

Visible disturbances: Herbivory

Threats: trampling

Comments: Near the future recreational trail network

<p>Determination: (check one or more, and fill in blanks)</p> <p><input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u></p> <p><input type="checkbox"/> Compared with specimen housed at: _____</p> <p><input checked="" type="checkbox"/> Compared with photo / drawing in: <u>CalPhotos 2019</u></p> <p><input type="checkbox"/> By another person (name): _____</p> <p><input type="checkbox"/> Other: _____</p>	<p>Photographs: (check one or more)</p> <table style="width: 100%;"> <tr> <td></td> <td>Slide</td> <td>Print</td> <td>Digital</td> </tr> <tr> <td>Plant / animal</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no</p>		Slide	Print	Digital	Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Slide	Print	Digital														
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														

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Fax: (916) 324-0475 email: CNDDDB@wildlife.ca.gov

For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 07/10/2019

California Native Species Field Survey Form

Scientific Name: <i>Pleuropogon refractus</i>	
Common Name: nodding semaphore grass	
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No If not found, why? _____	Reporter: Emmalien Craydon, Victoria Bryant
Total No. Individuals: <u>4</u> Subsequent Visit? <input type="radio"/> Yes <input type="radio"/> No	Address: 850 G Street, Suite K Arcata, CA 95521
Is this an existing NDDDB occurrence? <input checked="" type="checkbox"/> No <input type="checkbox"/> Unk. Yes, Occ. # _____	E-mail Address: Emmalien@stillwatersci.com
Collection? If yes: _____ Number _____ Museum / Herbarium _____	Phone: 707-822-9607, Ext. 210

Plant Information	Animal Information																					
Phenology: <table style="width: 100%; text-align: center;"> <tr> <td>75</td> <td>25</td> <td>0</td> </tr> <tr> <td>% vegetative</td> <td>% flowering</td> <td>% fruiting</td> </tr> </table>	75	25	0	% vegetative	% flowering	% fruiting	<table style="width: 100%;"> <tr> <td># adults</td> <td># juveniles</td> <td># larvae</td> <td># egg masses</td> <td># unknown</td> </tr> <tr> <td><input type="checkbox"/> wintering</td> <td><input type="checkbox"/> breeding</td> <td><input type="checkbox"/> nesting</td> <td><input type="checkbox"/> rookery</td> <td><input type="checkbox"/> burrow site</td> </tr> <tr> <td><input type="checkbox"/> lek</td> <td><input type="checkbox"/> other</td> <td colspan="3"></td> </tr> </table>	# adults	# juveniles	# larvae	# egg masses	# unknown	<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site	<input type="checkbox"/> lek	<input type="checkbox"/> other			
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<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site																		
<input type="checkbox"/> lek	<input type="checkbox"/> other																					

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
Along the upper bank of Ryan Creek only a few individuals in one clump

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Eureka Elevation: 64 feet

T 4N R 1W Sec N1, ___ 1/4 of ___ 1/4, Meridian: H M S Source of Coordinates (GPS, topo. map & type): GPS

T ___ R ___ Sec ___, ___ 1/4 of ___ 1/4, Meridian: H M S GPS Make & Model: Garmin Oregon 600

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 8 ft meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: W124°07.885', N40°45.753'

Habitat Description (plants & animals) plant communities, dominants, associates, substrates/soils, aspects/slope:
Animal Behavior (Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):

Herbaceous plant associates: *Festuca subulata*, *Bromus vulgaris*, *Ranunculus repens*, *Rubus leucodermis*, *Boykinia occidentalis*, *Scirpus microcarpus*, *Carex* spp.
Riparian Overstory: *Alnus rubra*, *Picea sitchensis*, *Acer macrophyllum*

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: Recreational hiking

Visible disturbances: Light trail use nearby

Threats: Off-path, low likelihood of trampling

Comments: Future recreational trail system nearby

<p>Determination: (check one or more, and fill in blanks)</p> <p><input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u></p> <p><input type="checkbox"/> Compared with specimen housed at: _____</p> <p><input type="checkbox"/> Compared with photo / drawing in: _____</p> <p><input type="checkbox"/> By another person (name): _____</p> <p><input type="checkbox"/> Other: _____</p>	<p>Photographs: (check one or more)</p> <table style="width: 100%;"> <tr> <td></td> <td>Slide</td> <td>Print</td> <td>Digital</td> </tr> <tr> <td>Plant / animal</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no</p>		Slide	Print	Digital	Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Slide	Print	Digital														
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														

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For Office Use Only	
Source Code: _____	Quad Code: _____
Elm Code: _____	Occ No.: _____
EO Index: _____	Map Index: _____

Date of Field Work (mm/dd/yyyy): 07/30/2019

California Native Species Field Survey Form

Scientific Name: <u>Chrysosplenium glechomifolium</u>	
Common Name: <u>Pacific golden saxifrage</u>	
Species Found? <input checked="" type="radio"/> Yes <input type="radio"/> No If not found, why? _____	Reporter: <u>Emmalien Craydon & Emily King Teraoka</u>
Total No. Individuals: <u>1,000+</u> Subsequent Visit? <input type="radio"/> Yes <input type="radio"/> No	Address: <u>850 G Street, Suite K Arcata, CA 95521</u>
Is this an existing NDDDB occurrence? <input checked="" type="checkbox"/> No <input type="checkbox"/> Unk. Yes, Occ. # _____	E-mail Address: <u>Emmalien@stillwatersci.com</u>
Collection? If yes: _____ Number _____ Museum / Herbarium _____	Phone: <u>707-822-9607, Ext. 210</u>

Plant Information	Animal Information																					
Phenology: <table style="width: 100%; text-align: center;"> <tr> <td><u>0</u></td> <td><u>100</u></td> <td><u>0</u></td> </tr> <tr> <td>% vegetative</td> <td>% flowering</td> <td>% fruiting</td> </tr> </table>	<u>0</u>	<u>100</u>	<u>0</u>	% vegetative	% flowering	% fruiting	<table style="width: 100%; text-align: center;"> <tr> <td># adults</td> <td># juveniles</td> <td># larvae</td> <td># egg masses</td> <td># unknown</td> </tr> <tr> <td><input type="checkbox"/> wintering</td> <td><input type="checkbox"/> breeding</td> <td><input type="checkbox"/> nesting</td> <td><input type="checkbox"/> rookery</td> <td><input type="checkbox"/> burrow site</td> </tr> <tr> <td><input type="checkbox"/> lek</td> <td><input type="checkbox"/> other</td> <td colspan="3"></td> </tr> </table>	# adults	# juveniles	# larvae	# egg masses	# unknown	<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site	<input type="checkbox"/> lek	<input type="checkbox"/> other			
<u>0</u>	<u>100</u>	<u>0</u>																				
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<input type="checkbox"/> wintering	<input type="checkbox"/> breeding	<input type="checkbox"/> nesting	<input type="checkbox"/> rookery	<input type="checkbox"/> burrow site																		
<input type="checkbox"/> lek	<input type="checkbox"/> other																					

Location Description (please attach map AND/OR fill out your choice of coordinates, below)
 Within the riparian area along Ryan Creek floodplain; on borders and adjacent to former timber road

County: Humboldt Landowner / Mgr: Humboldt County

Quad Name: Eureka Elevation: 65-170 ft

T 4N R 1W Sec N1, _____ 1/4 of _____ 1/4, Meridian: H M S O Source of Coordinates (GPS, topo. map & type): GPS

T _____ R _____ Sec _____, _____ 1/4 of _____ 1/4, Meridian: H M S O GPS Make & Model: Garmin Oregon 600

DATUM: NAD27 NAD83 WGS84 Horizontal Accuracy: 26ft meters/feet

Coordinate System: UTM Zone 10 UTM Zone 11 OR Geographic (Latitude & Longitude)

Coordinates: Multiple locations see attached map

Habitat Description (plants & animals) *plant communities, dominants, associates, substrates/soils, aspects/slope:*
Animal Behavior *(Describe observed behavior, such as territoriality, foraging, singing, calling, copulating, perching, roosting, etc., especially for avifauna):*

Plant associates Tolmiea diplomenziesii, Arthyrium filix-femina, Oenanthe sarmentosa, Erythranthe dentata, Sambucus racemosa, Stachys mexicana, Polystichum munitum, and Carex spp. Overstory riparian composed of Alnus rubra and Picea sitchensis.

Please fill out separate form for other rare taxa seen at this site.

Site Information Overall site/occurrence quality/viability (site + population): Excellent Good Fair Poor

Immediate AND surrounding land use: along existing community trail network; within Ryan Creek floodplain

Visible disturbances: some light trampling but overall thriving population along current trail network (former timber road)

Threats: trampling, future recreational trail network

Comments: _____

<p>Determination: <i>(check one or more, and fill in blanks)</i></p> <p><input checked="" type="checkbox"/> Keyed (cite reference): <u>Jepson eFlora (2019)</u></p> <p><input type="checkbox"/> Compared with specimen housed at: _____</p> <p><input checked="" type="checkbox"/> Compared with photo / drawing in: <u>CalPhotos 2019</u></p> <p><input type="checkbox"/> By another person (name): _____</p> <p><input type="checkbox"/> Other: _____</p>	<p>Photographs: <i>(check one or more)</i></p> <table style="width: 100%; text-align: center;"> <tr> <td></td> <td>Slide</td> <td>Print</td> <td>Digital</td> </tr> <tr> <td>Plant / animal</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Habitat</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td>Diagnostic feature</td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table> <p>May we obtain duplicates at our expense? <input checked="" type="radio"/> yes <input type="radio"/> no</p>		Slide	Print	Digital	Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Habitat	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>														

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