

Appendix F. Biological Surveys – Species, Personnel, and Dates



Survey Date(s)	Survey Type	Personnel	Organization
March 26, 2019	Special-Status Animal Habitat Assessment	Christine Hamilton (biologist)	Caltrans
April 15, 2019	Botanical Survey	Jeff Barrett (botanist), Jon Lee (botanist)	Caltrans
April 16, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Christine Hamilton (biologist), Jon Lee (botanist)	Caltrans
April 17, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Jacob Hillard (botanist), Jon Lee (botanist)	Caltrans
April 18, 2019	Botanical Survey	Jeff Barrett (botanist), Felicia Zimmerman (project coordinator), Christine Hamilton (biologist), Jon Lee (botanist), Jacob Hillard (botanist)	Caltrans
April 19, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Christine Hamilton (biologist), Jacob Hillard (botanist)	Caltrans
April 26, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Felicia Zimmerman (project coordinator), Kellie Eldridge (botanist)	Caltrans
May 1, 2019	Botanical Survey	Jeff Barrett (botanist), Christine Hamilton (biologist), Jon Lee (botanist), Jacob Hillard (botanist)	Caltrans
May 2, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Jon Lee (botanist), Felicia Zimmerman,	Caltrans
May 3, 2019	Botanical Survey	Jeff Barrett (botanist), Amanda Lee (project coordinator), Christine Hamilton (biologist), Felicia Zimmerman (project coordinator)	Caltrans
May 15, 2019	Botanical Survey	Jeff Barrett (botanist), Christine Hamilton (biologist), Amanda Lee (project coordinator), Jon Lee (botanist)	Caltrans
May 16, 2019	Botanical Survey	Jeff Barrett (botanist), Christine Hamilton (biologist), Ali Thiel (biologist), Jon Lee (botanist)	Caltrans
May 22-24, 2019	Aquatic Resources Delineation	Jordan Mayor (wetland ecologist), Margaret Widdowson (botanist/wetland ecologist)	ICF
June 11-12, 2019	Botanical Survey	Jeff Barrett (botanist), Jon Lee (botanist), Jacob Hillard (botanist), Christine Hamilton (biologist)	Caltrans

Survey Date(s)	Survey Type	Personnel	Organization
June 13, 2019	Botanical Survey	Jeff Barrett (botanist), Jon Lee (botanist), Jacob Hillard (botanist),	Caltrans
June 19, 2019	Botanical Survey	Jeff Barrett (botanist), Jacob Hillard (botanist), Jon Lee (botanist), Kellie Eldridge (botanist)	Caltrans
June 23-26, 2019	Aquatic Resources Delineation	Jordan Mayor (wetland ecologist), Zach Larson (biologist)	ICF
July 17-18, 2019	Aquatic Resources Delineation	Jordan Mayor (wetland ecologist), Margaret Widdowson (botanist/wetland ecologist)	ICF
July 23-24, 2019	Botanical Survey	Jeff Barrett (botanist), Jon Lee (botanist), Jacob Hillard (botanist), Jeremy Pohlman (biologist)	Caltrans
July 25, 2019	Botanical Survey	Jeff Barrett (botanist), Jon Lee (botanist), Jeremy Pohlman (biologist), Felicia Zimmerman (project coordinator)	Caltrans
July 29, 2019	Botanical Survey	Jeff Barrett (botanist), Ali Thiel (biologist)	Caltrans
July 30, 2019	Botanical Survey	Jeff Barrett (botanist), Ali Thiel (biologist), Stacey Zolnoski (archaeologist)	Caltrans
July 31, 2019	Botanical Survey	Jeff Barrett (botanist), Ali Thiel (biologist), Kellie Eldridge (botanist)	Caltrans
October 8, 2019	Aquatic Resources Assessment	Robert Meade (senior biologist), Jeff Barrett (botanist), Kellie Eldridge (botanist)	Caltrans
October 25, 2019	Aquatic Resources Delineation	Jeff Barrett (botanist), Kellie Eldridge (botanist), Alexandra Thiel (biologist)	Caltrans

Appendix G. Special-Status Plant Species with the Potential to Occur in the Project Vicinity



Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Sea-watch/ <i>Angelica lucida</i>	CRPR 4.2	Coastal bluff scrub, coastal dunes, coastal scrub, marshes and swamps (coastal salt). Occurs from 0 to 150 meters in elevation; blooms May–September.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
False gray horsehair lichen/ <i>Bryoria pseudocapillaris</i>	CRPR 3.2	Coastal dunes (San Luis Obispo County), North Coast coniferous forest (immediate coast). Occurs from 0 to 90 meters in elevation.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Twisted horsehair lichen/ <i>Bryoria spiralifera</i>	CRPR 4.2	North Coast coniferous forest. Occurs from 0 to 30 meters in elevation.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Bolander's reed grass/ <i>Calamagrostis bolanderi</i>	CRPR 4.2	Bogs and fens, broadleaved upland forest, closed-cone coniferous forest, coastal scrub, meadows and seeps (mesic), marshes and swamps (freshwater), North Coast coniferous forest. Occurs from 0 to 455 meters in elevation; blooms May–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Thurber's reed grass/ <i>Calamagrostis crassiglumis</i>	CRPR 2B.1	Coastal scrub, freshwater marsh, marsh and swamp, wetland. Occurs from 0 to 50 meters in elevation; blooms May–August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Leafy reed grass/ <i>Calamagrostis foliosa</i>	SR, CRPR 4.2	Coastal bluff scrub, North Coast coniferous forest. Occurs from 0 to 1,220 meters in elevation; blooms May–September.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Spiral-spored gilded-head pin lichen/ <i>Calicium adpersum</i>	CRPR 2B.1	Lower montane coniferous forest, North Coast coniferous forest.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Seaside bittercress/ <i>Cardamine angulata</i>	CRPR 2B.1	Lower montane coniferous forest, North Coast coniferous forest, wetlands. Occurs from five to 915 meters in elevation; blooms January–July.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Northern clustered sedge/ <i>Carex arcta</i>	CRPR 2B.2	Bogs and fens, North Coast coniferous forest, Wetlands. Occurs from 60 to 1,400 meters in elevation; blooms June–September.	P	Low: Small amount of suitable habitat is present with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Buxbaum's sedge <i>Carex buxbaumii</i>	CRPR 4.2	Bogs and fens, meadows and seeps, marshes and swamps.	P	Low: Minor amount of suitable habitat present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Bristle-stalked sedge <i>Carex leptalea</i>	CRPR 2B.2	Bogs and fens, freshwater marsh, marshes and swamps, meadows and seeps, wetlands.	P	Low: Minor amount of suitable habitat present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Northern meadow sedge <i>Carex praticola</i>	CRPR 2B.2	Meadows and seeps, wetlands.	P	Low: Minor amount of suitable habitat present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Green yellow sedge <i>Carex viridula</i> ssp. <i>viridula</i>	CRPR 2B.3	North Coast coniferous forests; bogs and fens, marshes and swamps, wetlands.	P	Low: Minor amount of suitable habitat at present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Nuttall's saxifrage/ <i>Cascadia nuttallii</i>	CRPR 2B.1	North Coast coniferous forest. Occurs from 35 to 80 meters in elevation; blooms in May.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Johnny-nip/ <i>Castilleja ambigua</i> ssp. <i>ambigua</i>	CRPR 4.2	Coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps, valley and foothill grassland, vernal pool margins. Occurs from 0 to 435 meters in elevation; blooms March–August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Oregon coast paintbrush <i>Castilleja litoralis</i>	CRPR 2B2	Coastal bluff scrub, coastal dunes, and coastal scrub.	P	Moderate: suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County)
Oregon coast paintbrush/ <i>Castilleja litoralis</i>	CRPR 2B.2	Coastal bluff scrub, coastal dunes, coastal scrub. Occurs from five to 255 meters in elevation; blooms June–July.	P	Moderate: suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County)
Pacific golden-saxifrage/ <i>Chrysoplenium glechomifolium</i>	CRPR 4.3	North Coast coniferous forest, riparian forest. Occurs from 10 to 455 meters in elevation.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Oregon goldthread/ <i>Coptis laciniata</i>	CRPR 4.2	Meadows and seeps, North Coast coniferous forest (streambanks). Occurs from 0 to 1,000 meters in elevation; blooms February–November.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Naked flag moss/ <i>Discelium nudum</i>	CRPR 2B.2	Coastal bluff scrub (soil, on clay banks). Occurs from 10 to 50 meters in elevation.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Black crowberry/ <i>Empetrum nigrum</i>	CRPR 2B.2	Coastal bluff scrub, coastal prairie. Occurs from 3 to 200 meters in elevation; blooms April–June.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Del Norte buckwheat/ <i>Eriogonum nudum</i> var. <i>paralinum</i>	CRPR 2B.2	Coastal bluff scrub, coastal prairie. Occurs from five to 80 meters in elevation; blooms June–September.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Coast fawn lily/ <i>Erythronium</i> <i>revolutum</i>	CRPR 2B.2	Bogs and fens, broadleafed upland forest, North Coast coniferous forest. Occurs from 0 to 1,600 meters in elevation; blooms March August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Minute pocket moss/ <i>Fissidens</i> <i>pauperculus</i>	CRPR 1B.2	North Coast coniferous forest (damp coastal soil). Occurs from 10 to 1,024 meters in elevation.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Pacific gilia/ <i>Gilia capitata</i> ssp. <i>pacifica</i>	CRPR 1B.2	Coastal bluff scrub, chaparral (openings), coastal prairie, valley and foothill grassland. Occurs from five to 1,665 meters in elevation; blooms April–August.	P	Low: Minor amount of suitable habitat is present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County)
Harlequin lotus/ <i>Hosackia gracilis</i>	CRPR 4.2	Broadleafed upland forest, coastal bluff scrub, closed-cone coniferous forest, Cismontane woodland, coastal prairie, coastal scrub, meadows and seeps, marshes and swamps, North Coast coniferous forest, valley and foothill grassland (wetlands, roadsides). Occurs from 0 to 700 meters in elevation; blooms March–July.	P	Low: Minor amount of suitable habitat is present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County)

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
California globe mallow/ <i>Iliamna latibracteata</i>	CRPR 1B.2	Chaparral (montane), lower montane coniferous forest, North Coast coniferous forest (mesic), riparian scrub (streambanks). Occurs from 60 to 2,000 meters in elevation; blooms June–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Thompson's iris/ <i>Iris thompsonii</i>	CRPR 4.3	Lower montane coniferous forest, North Coast coniferous forest. Occurs from 90 to 600 meters in elevation; blooms March–August.	P	Low: Small amount of suitable habitat is present, with a few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Small groundcone/ <i>Kopsiopsis hookeri</i>	CRPR 2B.3	North Coast coniferous forest. Occurs from 90 to 1,435 meters in elevation; blooms April–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Marsh pea/ <i>Lathyrus palustris</i>	CRPR 2B.2	Bogs and fens, coastal prairie, coastal scrub, lower montane coniferous forest, marshes and swamps, North Coast coniferous forest. Occurs from 1 to 140 meters in elevation; blooms March–August.	P	Low: Minor amount of suitable habitat is present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County)
Kellogg's lily/ <i>Lilium kelloggii</i>	CRPR 4.3	Lower montane coniferous forest, North Coast coniferous forest. Occurs from 3 to 1,300 meters in elevation; blooms May–August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Western lily/ <i>Lilium occidentale</i>	FE/SE/ CRPR 1B.1	Bogs and fens, coastal bluff scrub, coastal prairie, coastal scrub, marshes and swamps (freshwater), North Coast coniferous forest (openings). Occurs from 2 to 185 meters in elevation; blooms June– July.	P	Low: Minor amount of suitable habitat is present, or few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County)
Vollmer's lily/ <i>Lilium pardalinum</i> ssp. <i>vollmeri</i>	CRPR 4.3	Bogs and fens, meadows and seeps (mesic). Occurs from 30 to 1,680 meters in elevation; blooms June–August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Heart-leaved twayblade/ <i>Listera cordata</i>	CRPR 4.2	Bogs and fens, lower montane coniferous forest, North Coast coniferous forest. Occurs from five to 1,370 meters in elevation; blooms February–July.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Coast Range lomatium/ <i>Lomatium martindalei</i>	CRPR 2B.3	Coastal bluff scrub, lower montane coniferous forest, meadows and seeps. Occurs from 240 to 3,000 meters in elevation; blooms May– August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Inundated bog club- moss <i>Lycopodiella inundata</i>	CRPR 2B.2	Lower montane coniferous forests; bogs and fens, marshes and swamps.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Running-pine/ <i>Lycopodium clavatum</i>	CRPR 4.1	Lower montane coniferous forest (mesic), marshes and swamps, North Coast coniferous forest (mesic). Occurs from 45 to 1,225 meters in elevation; blooms June– September.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Leafy-stemmed miterwort/ <i>Mitellastra caulescens</i>	CRPR 4.2	Broadleafed upland forest, lower montane coniferous forest, meadows and seeps, North Coast coniferous forest. Occurs from five to 1,700 meters in elevation; blooms March–October.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Woodnymph/ <i>Moneses uniflora</i>	CRPR 2B.2	Broadleafed upland forest, North Coast coniferous forest. Occurs from 50-1,100 meters in elevation; blooms May–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Ghost-pipe/ <i>Monotropa uniflora</i>	CRPR 2B.2	Broadleafed upland forest, North Coast coniferous forest. Occurs from 10 to 855 meters in elevation; blooms June–September.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Howell's montia/ <i>Montia howellii</i>	CRPR 2B.2	Meadows and seeps, North Coast coniferous forest, vernal pools. Occurs from 0 to 1,215 meters in elevation; blooms January–May.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Wolf's evening- primrose/ <i>Oenothera wolfii</i>	CRPR 1B.1	Coastal bluff scrub, coastal dunes, coastal prairie, lower montane coniferous forest. Occurs from 0- to 800 meters in elevation; blooms May–October.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Suksdorf's wood- sorrel/ <i>Oxalis suksdorfii</i>	CRPR 4.3	Broadleafed upland forest, North Coast coniferous forest. Occurs from 15 to 700 meters in elevation; blooms May–August.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Seacoast ragwort/ <i>Packera bolanderi</i> var. <i>bolanderi</i>	CRPR 2B.2	Coastal scrub, North Coast coniferous forest. Occurs from 30 to 915 meters in elevation; blooms January–August.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
White-flowered rein orchid/ <i>Piperia candida</i>	CRPR 1B.2	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest. Occurs from 20 to 1,615 meters in elevation; blooms March–September.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
California pinefoot/ <i>Pityopus californicus</i>	CRPR 4.2	Broadleaved upland forest, lower montane coniferous forest, North Coast coniferous forest, upper montane coniferous forest. Occurs from 15 to 2,225 meters in elevation; blooms March–August.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Nodding semaphore grass/ <i>Pleuropogon refractus</i>	CRPR 4.2	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, riparian forest. Occurs from 0 to 1,600 meters in elevation; blooms March–August.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Oregon polemonium/ <i>Polemonium carneum</i>	CRPR 2B.2	Coastal prairie, coastal scrub, lower montane coniferous forest. Occurs from 0 to 1,830 meters in elevation; blooms April–September.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Angel's hair lichen/ <i>Ramalina thrausta</i>	CRPR 2B.1	North Coast coniferous forest. Occurs from 75 to 430 meters in elevation.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Trailing black currant/ <i>Ribes laxiflorum</i>	CRPR 4.3	North Coast coniferous forest. Occurs from five to 1,395 meters in elevation; blooms March–August.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Great burnet/ <i>Sanguisorba officinalis</i>	CRPR 2B.2	Bogs and fens, broadleaved upland forest, marshes and swamps, meadows and seeps, North Coast coniferous forest, riparian forest, ultramafic, wetlands. Occurs from 60 to 1,400 meters in elevation; blooms July–October.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).

Common Name/ Scientific Name	Status ^a	Habitat Requirements and Blooming Period	Habitat Present/ Absent ^b	Rationale
Maple-leaved checkerbloom/ <i>Sidalcea malachroides</i>	CRPR 4.2	Broadleafed upland forest, coastal prairie, coastal scrub, North Coast coniferous forest, riparian woodland. Occurs from 0 to 765 meters in elevation; blooms March–August.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Siskiyou checkerbloom/ <i>Sidalcea malviflora ssp. patula</i>	CRPR 1B.2	Coastal bluff scrub, coastal prairie, North Coast coniferous forest. Occurs from five to 1,255 meters in elevation; blooms April–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Coast checkerbloom/ <i>Sidalcea oregana ssp. eximia</i>	CRPR 1B.2	Lower montane coniferous forest, meadows and seeps, North Coast coniferous forest, wetlands. Occurs from five to 1,805 meters in elevation; blooms June–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Scouler's catchfly/ <i>Silene scouleri</i> ssp. <i>scouleri</i>	CRPR 2B.2	Coastal bluff scrub, coastal prairie, valley and foothill grassland. Occurs from 0 to 600 meters in elevation; blooms March–September.	P	Low: Small amount of suitable habitat is present, with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Trifoliolate laceflower/ <i>Tiarella trifoliata</i> var. <i>trifoliata</i>	CRPR 3.2	Lower montane coniferous forest, North Coast coniferous forest (edges, moist shady banks, streambanks). Occurs from 170 to 1,500 meters in elevation; blooms May–August.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Cylindrical trichodon/ <i>Trichodon cylindricus</i>	CRPR 2B.2	Broadleafed upland forest, meadows and seeps, upper montane coniferous forest. Occurs from 50 to 2,002 meters in elevation.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Coastal triquetrella/ <i>Triquetrella californica</i>	CRPR 1B.2	Coastal bluff scrub, coastal scrub. Occurs from 10 to 100 meters in elevation.	P	Moderate: Suitable habitat is present, and occurrences are recorded from the region (coastal Del Norte County and northern coastal Humboldt County).
Methuselah's beard lichen/ <i>Usnea longissima</i>	CRPR 4.2	Broadleafed upland forest, North Coast coniferous forest. Occurs from 45 to 1,465 meters in elevation.	P	High: Suitable habitat is present, and occurrences are recorded within five miles of ESL.
Alpine marsh violet/ <i>Viola palustris</i>	CRPR 2B.2	Bogs and fens, coastal scrub, wetlands. Occurs from 0 to 150 meters in elevation; blooms March–August.	P	Low: Small amount of suitable habitat is present with few to no occurrences recorded from the region (coastal Del Norte County and northern coastal Humboldt County).

^a Status:

- FE = Federal Endangered.
- SE = State Endangered.
- SR = State Rare.

California Rare Plant Rank (CRPR)

- 1B = Rank 1B species: rare, threatened, or endangered in California and elsewhere.
- 2B = Rank 2B species: rare, threatened, or endangered in California but more common elsewhere.
- 3 = Review List: Plants about which more information is needed.
- 4 = Watch List: Plants of limited distribution.

Threat rank extensions:

- .1 = Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat).
- .2 = Moderately threatened in California (20%-80% occurrences threatened/ moderate degree and immediacy of threat).
- .3 = Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats).

^b Habitat Present/Absent:

- P = Present (species is present).
- HP = Habitat present (habitat is, or may be present).
- CH = Critical habitat present.

Appendix H. Special-Status Wildlife Species with Potential to Occur in the Project Vicinity



Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/ Absent ^b	Rationale
Amphibians					
Pacific (coastal) tailed-frog	<i>Ascaphus truei</i>	SSC	Typically found in cold, clear, perennial rocky streams in wet forests, but may also utilize intermittent creeks. This species is not known to use ponds or lakes. This species may occur in uplands during precipitation events.	P	Intermittent streams mapped at or near SL-16, SL-21, B-16, B-20, B-35, and B-36 may provide aquatic habitat during winter and spring months when water is present.
Northern red-legged frog	<i>Rana aurora</i>	SSC	Humid forest, woodlands, grasslands, and stream sides in northwestern California, usually near dense riparian vegetation.	P	Intermittent streams mapped at or near SL-16, SL-21, B-16, B-20, B-35, and B-36 may provide aquatic habitat during winter and spring months when water is present. May occur in forested uplands during the wet season near these same locations.
Foothill yellow-legged frog	<i>Rana boylei</i>	SCT	Species occurs throughout the North and South Coast Ranges, south to the Transverse Range, across northern California to the west slope of the Cascade Range, and south through the foothills of the Sierra Nevada. Occurs up to 6,000 feet in the northern Sierra Nevada. Inhabits forest streams and rivers with sunny, sandy, and rocky banks, with deep pools, and shallow riffles. Occurs in both perennial and intermittent streams.	P	Intermittent streams mapped at or near SL-16, SL-21, B-16, B-20, B-35, and B-36 may provide aquatic habitat during winter and spring months when water is present.
Southern torrent salamander	<i>Rhyacotriton variegatus</i>	SSC	Occurs along the coast in cold and well-shaded perennial streams and seeps in hardwood and coniferous forests. Eggs are laid in flowing water and adults are typically found among moss-covered pebbles and rocks within or adjacent to flowing water.	P	Intermittent streams mapped at or near SL-16, SL-21, B-16, B-20, B-35, and B-36 may provide aquatic habitat during winter and spring months when water is present.
Reptiles					
Green sea turtle, East Pacific Distinct Population Segment (DPS)	<i>Chelonia mydas</i>	FT	Does not nest on beaches of northern California (NMFS and USFWS 2007); may occur in open water habitat off the coast line of Del Norte County.	A	No habitat in BSA.
Leatherback sea turtle	<i>Dermochelys coriacea</i>	FE	No known nesting sites on the coast of California (NMFS 2019); may occur in open water habitat off the coast of Del Norte County.	A	No habitat in BSA.
Western pond turtle	<i>Emys marmorata</i>	SSC	Occurs throughout California west of the Sierra-Cascade crest; found from sea level to 6,000 feet; does not occur in desert regions except along the Mojave River and its tributaries; occupies ponds, marshes, rivers, streams, and irrigation canals with muddy or rocky bottoms.	A	No habitat in BSA.
Olive ridley sea turtle	<i>Lepidochelys olivacea</i>	FE	Mainly pelagic in tropical/temperate regions of Pacific, South Atlantic, and Indian Oceans but has been known to inhabit coastal areas, including bays and estuaries.	A	No habitat in BSA.
Birds					

Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/Absent ^b	Rationale
Marbled murrelet	<i>Brachyramphus marmoratus</i>	FT/SE	Nests in old-growth coniferous forests, up to 6 miles inland, often in Douglas-fir. Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz.	P, CH	May occur in mature forested habitat within the BSA. Known from project vicinity. Some project locations within critical habitat.
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>	FT/SSC	Coastal beaches, sandy areas near estuaries, salt ponds, river mouths, and levees along inland salt ponds. Nests on the ground, mainly in the open in sandy areas. The BSA is not within critical habitat for this species.	A	No foraging or nesting habitat in BSA.
Northern harrier	<i>Circus hudsonius</i>	SSC	Nests on the ground among herbaceous vegetation, such as grasses or cattails; forages in grasslands, agricultural fields, and marshes. Breeding range encompasses much of lowland California; winter range expands to include the remaining lowland areas.	A	No foraging or nesting habitat in BSA.
Yellow-billed cuckoo	<i>Coccyzus americanus</i>	FT/SE	Prefers riparian woodlands composed of various compositions with a dense understory along slow-moving watercourses. Typically requires 25–99 acres of expansive riparian habitat for breeding.	A	No foraging or nesting habitat in BSA.
Black swift	<i>Cypseloides niger</i>	SSC	Colonial breeder on cliffs behind or adjacent to waterfalls and sea-bluffs above the surf; forages widely.	A	No foraging or nesting habitat in BSA.
White-tailed kite	<i>Elanus leucurus</i>	SFP	Forages in grasslands, meadows, or marshes. Nests in woodlands and mature riparian habitat types.	A	No foraging or nesting habitat in BSA.
Tufted puffin	<i>Fratercula cirrhata</i>	SSC	Feeds in the ocean; nests along the coast on islands, islets, and mainland cliffs.	A	No foraging or nesting habitat in BSA.
Bald eagle	<i>Haliaeetus leucocephalus</i>	FD/SE/SFP	Nests in large, old-growth, or dominant live trees. Nests typically located 50–200 feet above ground. Forages primarily in large inland fish-bearing waters with adjacent large trees or snags, and occasionally in uplands with abundant rabbits, other small mammals, or carrion.	A	Unlikely to occur in BSA; no foraging habitat and marginal nesting habitat.
Fork-tailed storm-petrel	<i>Oceanodroma furcata</i>	SSC	Colonial nester on islands. Forages over the open ocean.	A	No foraging or nesting habitat in BSA.
Short-tailed albatross	<i>Phoebastria (=Diomedea) albatrus</i>	FE/SSC	Pelagic species. Does not breed or nest in California; only known breeding sites in Western Pacific Ocean islands. During nonbreeding season, may occur in northern California along the shelf break of the continental shelf (USFWS 2008).	A	No foraging or nesting habitat in BSA.
Northern spotted owl	<i>Strix occidentalis caurina</i>	FT/ST	Mature old growth forests, conifers, wooded canyons; BSA is not within critical habitat for this species. Coniferous forests with a multilayered, multispecies canopy with moderate to high canopy closure; large snags (standing dead trees); an abundance of large, dead wood on the ground; and open space within and below the upper canopy to fly.	P	May occur in mature forested habitat within BSA. Known from project vicinity.

Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/ Absent ^b	Rationale
Little willow flycatcher	<i>Empidonax Traillii brewsteri</i>	SE	Prefers mountain meadows and riparian habitats. Nests near the edges of vegetation clumps and near streams in mountain meadows and riparian habitats.	A	No foraging or nesting habitat in BSA.
Long-eared owl	<i>Asio otus</i>	SSC	Require adjacent open land, productive of mice and the presence of old nests of crows, hawks, or magpies for breeding.	A	No foraging or nesting habitat in BSA.
Olive-sided flycatcher	<i>Contopus cooperi</i>	SSC	Summer resident; Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	A	Species is a summer resident to the area and would not be present during project activities.
Peregrine falcon	<i>Falco peregrinus anatum</i>	SFP	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, humanmade structures. Nest consists of a scrape or a depression or ledge in an open site.	A	No foraging or nesting habitat in BSA.
Purple martin	<i>Progne subis</i>	SSC	Summer resident; Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine.	A	Species is a summer resident to the area and would not be present during project activities.
Vaux's swift	<i>Chaetura vauxi</i>	SSC	Summer resident; Redwood, Douglas-fir, & other coniferous forests. Nests in large hollow trees & snags. Often nests in flocks.	A	Species is a summer resident to the area and would not be present during project activities.
Yellow-breasted chat	<i>Icteria virens</i>	SSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian habitat, consisting of willow, blackberry, wild grape; forages and nests within 10 feet of ground.	A	No suitable habitat in BSA.
Yellow warbler	<i>Setophaga petechial</i>	SSC	Prefers riparian plant associations near water. Frequently found nesting and foraging in willow shrubs and thickets, and in other riparian plants including cottonwoods, sycamores, ash, and alders.	A	No suitable habitat in BSA.
Mammals					
Ring-tailed cat	<i>Bassariscus astutus</i>	SFP	Coniferous forests and riparian areas in California. Inhabit rock crevices, tree hollows, and cliffs.	P	Suitable habitat in BSA.
Sonoma tree vole	<i>Arborimus pomo</i>	SSC	Occurs in old-growth and other forests, mainly Douglas-fir, redwood, and montane hardwood-conifer habitats.	P	Suitable habitat in BSA.
White-footed vole	<i>A. albigipes</i>	SSC	In California, only known from Humboldt and Del Norte Counties. Found in coastal forests dominated by redwood, Douglas-fir, and also occurs in riparian forest cover types. Occupies habitat near small streams with dense alder and deciduous trees and shrubs.	P	Suitable habitat in BSA.
Sei whale	<i>Balaenoptera borealis</i>	FE	Worldwide cosmopolitan distribution in subtropical, temperate, and subpolar waters; usually observed in deeper waters of oceanic areas far from coastline.	A	No suitable habitat in BSA.

Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/Absent ^b	Rationale
Blue whale	<i>Balaenoptera musculus</i>	FE	Worldwide, often near the edges of physical features where krill tend to concentrate.	A	No suitable habitat in BSA.
Fin whale	<i>Balaenoptera physalus</i>	FE	Deep, offshore waters of all major oceans; less common in the tropics.	A	No suitable habitat in BSA.
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	SSC	Primarily roosts in caves and cave-like roosting habitat, such as tunnels and mines. Very sensitive to disturbances and may abandon a roost after one onsite visit. Reported to use buildings in the northern and coastal portions of range. Also reported to use bridges (typically the cavernous spaces underneath) and hollow trees as roost sites. In California, occurs in inland deserts, moist cool redwood forests, oak woodlands of the inner Coast Ranges and Sierra Nevada foothills, and lower- to mid-elevation mixed coniferous forests.	P	Mature redwood trees with cavities may provide suitable roosting sites; may forage throughout the BSA.
North Pacific right whale	<i>Eubalaena japonica</i>	FE	North Pacific Ocean; seasonally migratory; colder waters for feeding, migrating to warmer waters for breeding and calving; may move far out to sea during feeding seasons but gives birth in coastal areas.	A	No suitable habitat present in BSA.
Humboldt marten	<i>Martes caurina humboldtensis</i>	FPT/SE	Coastal old-growth forests and serpentine areas.	P	Suitable habitat in BSA. Known from project vicinity.
Humpback whale	<i>Megaptera novaeangliae</i>	FT	All major oceans; central California population migrates from winter calving and mating areas off Mexico to summer and fall feeding areas off coastal California. Humpback whales occur from late April to early December.	A	No suitable habitat present in BSA.
Southern resident killer whale	<i>Orcinus orca</i>	FE	All oceans; most abundant in colder waters but also occurs in temperate water; presence and occurrence common but unpredictable in coastal California.	A	No suitable habitat present in BSA.
Fisher, West Coast DPS / Northern California Evolutionary Significant Unit (ESU)	<i>Pekania pennanti</i>	FPT/SSC	Requires forest with dense canopy and a complex structure that includes lots of down wood, moderate shrub cover, dead trees, and intermixed hardwood trees. Relies on dens created by large trees, snags, logs, rock piles, and root burrows.	P	Suitable habitat in BSA. Known from project vicinity.
Sperm whale	<i>Physeter catodon [microcephalus]</i>	FE	Open ocean far from land and uncommon in waters less than 984 feet (300 meters) deep; live at surface of the ocean but dive deep to catch giant squid.	A	No suitable habitat present in BSA.
Fish					
Green sturgeon, southern DPS	<i>Acipenser medirostris</i>	FT	Marine and estuarine environments, Sacramento River; San Francisco Bay-Delta, Humboldt Bay, offshore waters to 110 meters (360 feet) from Monterey Bay to the United States-Canada border.	A	No suitable habitat present in BSA.

Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/ Absent ^b	Rationale
Tidewater goby	<i>Eucyclogobius newberryi</i>	FE/SSC	Inhabits lagoons and estuaries with still or slow-moving water less than 3 feet deep. Salinity levels typically less than 12 parts per thousand, although they have been found in water with salinity from 0 to 42 parts per thousand, temperatures from 8 to 25degrees Celsius (°C) (46–77°F). Typically occurs over a sandy or mixed sandy/silty bottom with sparse vegetation.	A	No suitable habitat present in BSA.
Coho salmon, Southern Oregon/Northern California Coast ESU	<i>Oncorhynchus kisutch</i>	FT/ST	Found in perennial streams with water temperatures of 12–14°C. Not commonly found in streams where summer temperatures exceed 22–25°C. Requires deep pools, riffles, and runs with adequate canopy cover.	A	No suitable habitat present in BSA.
Chinook salmon, California Coastal ESU	<i>Oncorhynchus tshawytscha</i>	FT	Spends between 1 and 5 years in the ocean before returning to natal rivers to spawn. Typically enters freshwater river systems after large winter storm events. Spawns between October and December in the upper mainstems of rivers and the lower reaches of coastal creeks (Moyle et al. 2008) composed of a mixture of small cobble and large gravel.	A	No suitable habitat present in BSA.
Steelhead, Northern California DPS	<i>O. mykiss irideus</i>	FT, SCE	Live as adults in ocean habitats and migrate into rivers and streams to spawn (Moyle 2002). Steelhead spawn in gravel and small cobble substrates usually associated with riffle-and-run habitat types in coldwater streams.	A	No suitable habitat present in BSA.
Coast cutthroat trout	<i>O. clarkii</i>	SSC	Occupies coastal streams with some populations migrating to the ocean where they typically stay near the coastline and the mouths of larger rivers. In freshwater, found in small, low gradient streams and estuaries.	A	No suitable habitat present in BSA.
Steelhead, Klamath mountains province DPS	<i>O. mykiss irideus</i>	SSC	Spawns in gravel and small cobble substrates usually associated with riffle-and-run habitat types in coldwater streams.	A	No suitable habitat present in BSA.
Eulachon	<i>Thaleichthys pacificus</i>	FT	Spawns in lower reaches of rivers during peak spring flow events. Adults in the southern DPS are semelparous. Needs sand or coarse gravel for spawning substrate. Larvae are transported to estuaries and then to the ocean.	A	No suitable habitat present in BSA.
Invertebrates					
Oregon silverspot butterfly	<i>Speyeria zerene hippolyta</i>	FT	Found in marine terrace and coastal headland meadows, stabilized dunes, and montane grasslands found on Mount Hebo and Fairview Mountain in Oregon (USFWS 2001). Requires early blue violet (<i>Viola adunca</i>), the larval host plant and nectar plants for adult butterflies.	A	No suitable habitat present in BSA; BSA south of known range.

Common Name	Scientific Name	Status ^a	Habitat Requirements	Habitat Present/Absent ^b	Rationale
Western bumble bee	<i>Bombus occidentalis</i>	SCE	Primarily found in shrubland and grassland. Typically nests in underground abandoned rodent burrows or other cavities.	A	No suitable habitat present in BSA.

^a Status:

Federal

- FE = listed as endangered under the federal Endangered Species Act.
- FT = listed as threatened under the federal Endangered Species Act.
- FD = removed from federal Endangered Species Act list.
- FPT = Federally proposed threatened.

State

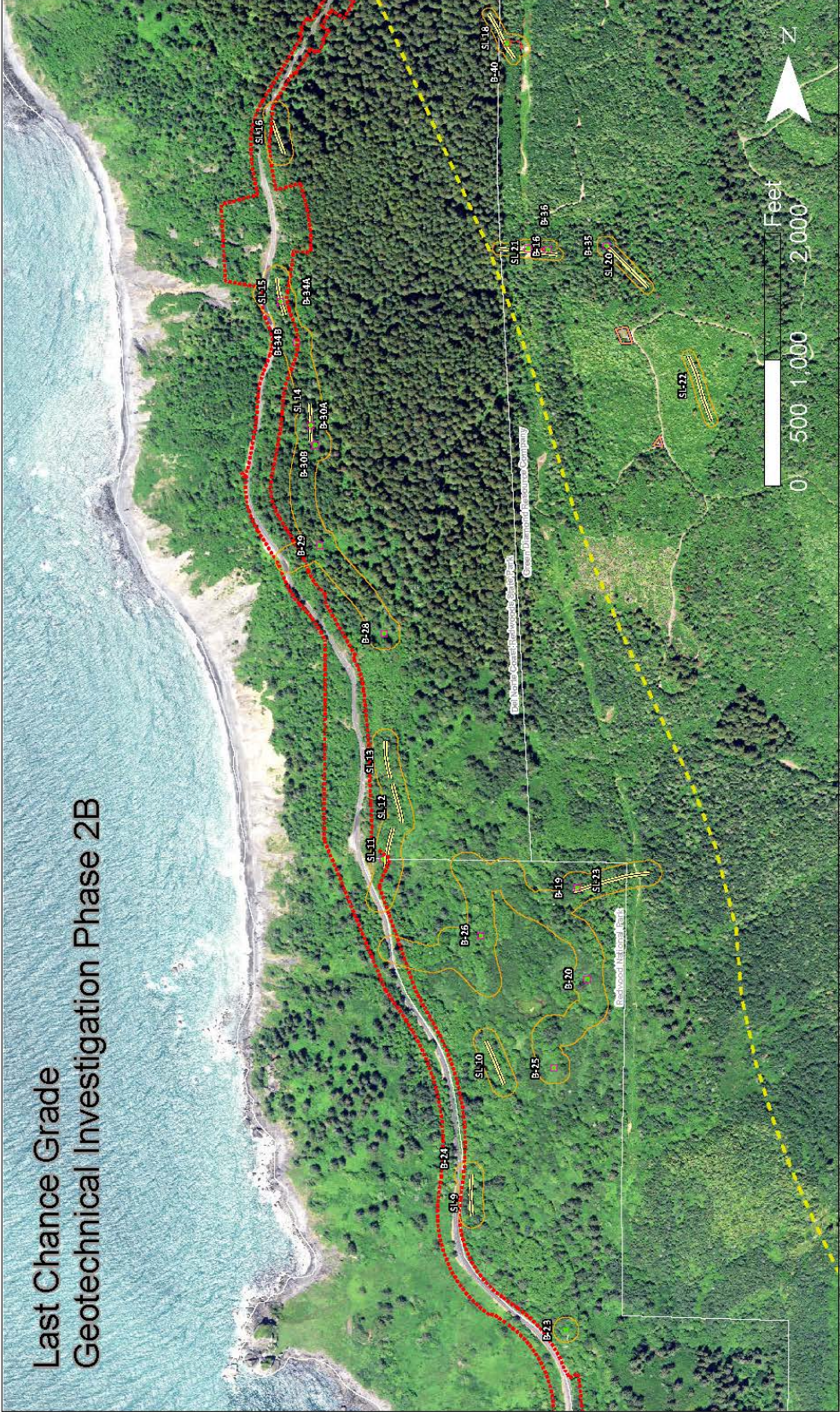
- ST = listed as threatened under the California Endangered Species Act.
- SFP = designated as a fully protected species under the CFGC.
- SCE = State candidate endangered.
- SCT = State candidate threatened.
- SSC = State species of special concern.

^b Habitat Present/Absent:

- A = absent (no habitat present).
- P = present (species is present).
- HP = habitat present (habitat is or may be present).
- CH = project footprint is in designated critical habitat.

Appendix I. Wetland and Vegetation Mapping within the ESL

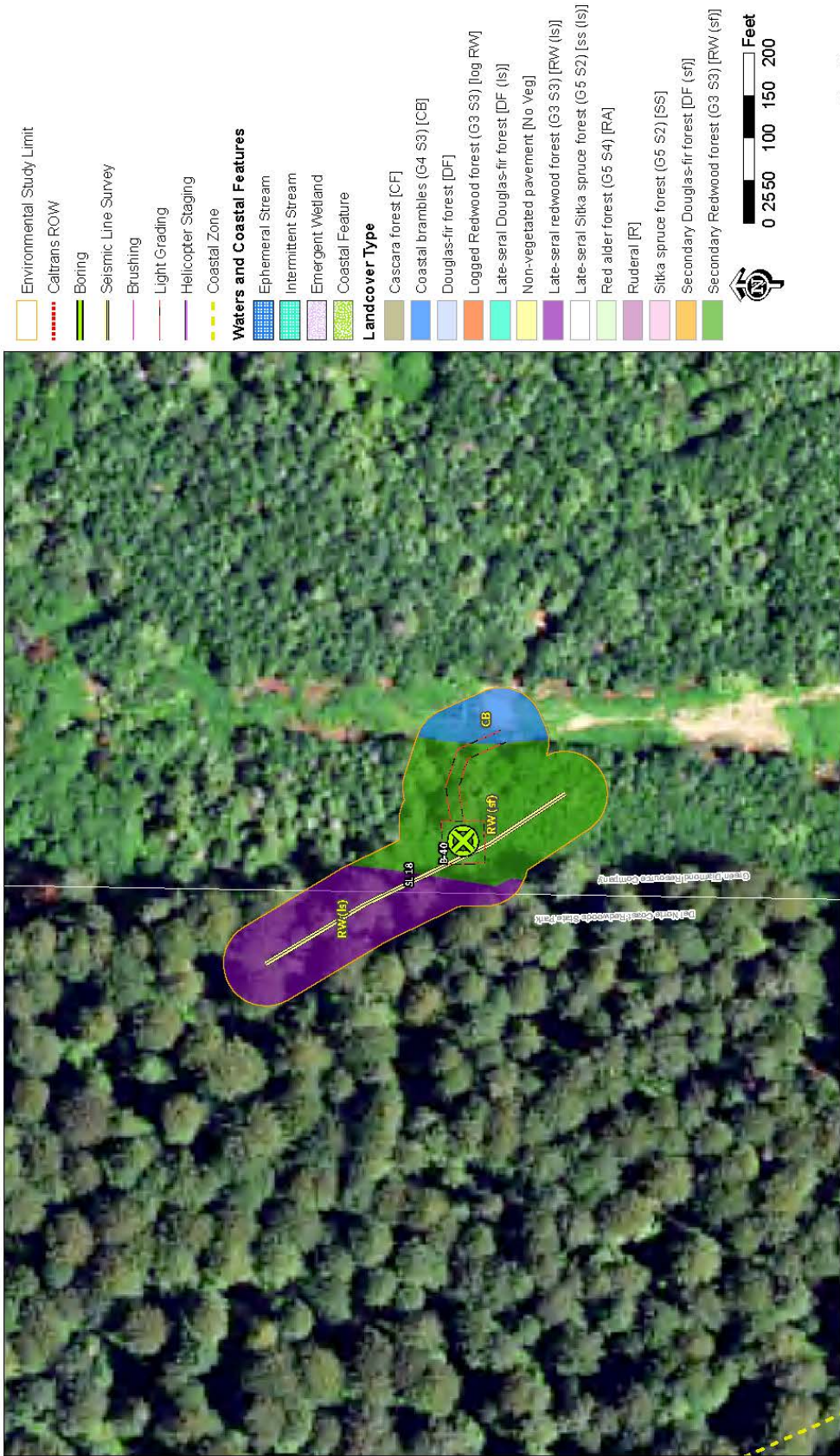






- Environmental Study Limit
- Caltrans ROW
- Boring
- Seismic Line Survey
- Brushing
- Light Grading
- Helicopter Staging
- Coastal Zone
- Waters and Coastal Features**
- Ephemeral Stream
- Intermittent Stream
- Emergent Wetland
- Coastal Feature
- Landcover Type**
- Cascara forest [CF]
- Coastal brambles (G4 S3) [CB]
- Douglas-fir forest [DF]
- Logged Redwood forest (G3 S3) [log RW]
- Late-seral Douglas-fir forest [DF (ls)]
- Non-vegetated pavement [No Veg]
- Late-seral redwood forest (G3 S3) [RW (ls)]
- Late-seral Sitka spruce forest (G5 S2) [ss (s)]
- Red alder forest (G5 S4) [RA]
- Ruderal [R]
- Sitka spruce forest (G5 S2) [SS]
- Secondary Douglas-fir forest [DF (sf)]
- Secondary Redwood forest (G3 S3) [RW (sf)]





- Environmental Study Limit
- Caltrans ROW
- Boring
- Seismic Line Survey
- Brushing
- Light Grading
- Helicopter Staging
- Coastal Zone

- Waters and Coastal Features**
- Ephemeral Stream
 - Intermittent Stream
 - Emergent Wetland
 - Coastal Feature

- Landcover Type**
- Cascara forest [CF]
 - Coastal brambles (G4 S3) [CB]
 - Douglas-fir forest [DF]
 - Logged Redwood forest (G3 S3) [log RW]
 - Late-seral Douglas-fir forest [DF (S)]
 - Non-vegetated pavement [No Veg]
 - Late-seral redwood forest (G3 S3) [RW (S)]
 - Late-seral Sitka spruce forest (G5 S2) [SS (S)]
 - Red alder forest (G6 S4) [RA]
 - Ruderal [R]
 - Sitka spruce forest (G6 S2) [SS]
 - Secondary Douglas-fir forest [DF (sf)]
 - Secondary Redwood forest (G3 S3) [RW (sf)]

