



Technical Memorandum

12 September 2022

To	The Manila Community Services District	Tel	
Copy to	Brett Vivyan, GHD	Email	Jane.Cipra@ghd.com, Andrea.Hilton@ghd.com
From	Jane Cipra, GHD Botanist	Ref. No.	12572691
Subject	Manila Drainage Project – Botanical and Sensitive Natural Community Assessment Memorandum		

1. Introduction/Purpose

The Manila Community Services District (Manila CSD) proposes to make drainage improvements throughout the community of Manila, California (**Appendix A, Figures 1 and 2**). The Project will apply a community-wide approach to address persistent flooding and drainage problems caused by undersized, disconnected, and failing infrastructure. Simple solutions, consisting of vegetated bioswales, rain gardens, replacement of undersized and failing culverts, and new culverts in select locations are proposed. The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change. Bioswales will be graded and planted with native species along existing and new drainage paths. Existing undersized and or failing culverts will be replaced with new, larger capacity culverts ranging from 12 to 36 inches in diameter. New culverts will be installed in select locations, ranging from 18 to 24 inches in diameter. Rain gardens will be implemented along roadsides as well as at the Manila Community Center to replace a concrete courtyard.

To assist with preparation of the Project's California Environmental Quality Act (CEQA) document and required environmental permits, GHD evaluated the potential for rare plants (federally- or state-listed or state special status plant species), Sensitive Natural Communities (SNCs), and Environmentally Sensitive Habitat Areas (ESHA) to occur within the Project's Study Boundary (PSB); (**Appendix A, Figure 2**). In addition, potential Project impacts to these resources (if any), were evaluated. Common species or resources without special protections are not considered. Potential impacts to special status wildlife and wetlands are evaluated in separate reports. The purpose of this technical memorandum is to document the results of the May 3-4 and July 26, 2022 seasonally appropriate floristic surveys. Rare plants observed in the protocol level survey are shown in **Appendix A, Figure 3**.

2. Survey Methods

2.1 Database Searches (CNDDDB, CNPS, and IPaC)

Database searches for special status plant records in the Project vicinity (seven-quad search area) were conducted by GHD on March 21, 2022. The seven-quad search area was centered on the Project Study Boundary (PSB) U.S. Geological Survey 7.5-minute quadrangle (Eureka) and the surrounding six quadrangles (Tyee City, Arcata North, Arcata South, McWhinney Creek, Field's Landing, Cannibal Island). Database searches included:

- The California Natural Diversity Database (CNDDDB; wildlife records were excluded; CDFW 2022a, **Appendix B**).
- The California Native Plant Society Rare Plant Inventory
- A resources list was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC; USFWS 2022) for the PSB on June 6, 2022.

2.2 Field Surveys

GHD botanists Jane Cipra and Christian Hernandez conducted spring and summer floristic surveys for special status plants according to *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* by the California Natural Resources Agency, Department of Fish and Wildlife (CDFW 2018) and *General Rare Plant Survey Guidelines* by the *Endangered Species Recovery Program* (USFWS 2002). The special status plant survey was conducted by walking the PSB and identifying all plant species encountered to the lowest taxonomic level necessary for rare plant identification. Nomenclature follows *The Jepson Manual* (Baldwin et al. 2012).

GHD Botanist Jane Cipra has an M.A. in Biology from Humboldt State University, with over fifteen years of experience conducting special status plant surveys. GHD Botanist Christian Hernandez has a degree in Plant Ecology from Humboldt State University and two years of experience conducting biological and botanical surveys.

Jane Cipra and Christian Hernandez conducted seasonally appropriate botanical surveys on May 3rd and 4th and July 26th, 2022. During the spring survey, the weather was overcast to sunny and approximately 60 degrees Fahrenheit. During the summer survey the weather was sunny and approximately 65 degrees Fahrenheit. A list of species observed within the PSB is provided in **Appendix C**.

The total spring survey effort was 32 person-hours, and the total summer survey effort was 12 person-hours. The summer survey did not cover as much area as the as spring survey, as the PSB reduced between the two surveys. All potentially suitable habitat for rare species was resurveyed during the July 2022 survey. Habitats and special status plants were photo-documented onsite (**Appendix D**). Special status plants were mapped using points and polygons collected in the field with an Eos Arrow 100 Submeter Global Positioning System (GPS) Receiver with Global Navigation Satellite System (GNSS) and an iPad running ArcGIS Collector software in the WGS84 datum.

1.1.1 Sensitive Natural Communities and Environmentally Sensitive Habitat Areas

Vegetation communities onsite were evaluated for potential inclusion as Sensitive Natural Communities (SNCs) and Environmentally Sensitive Habitat Areas (ESHA). All potential SNCs and ESHA in the PSB are also within one-parameter or three-parameter wetlands and were there not evaluated further. Aside from one-parameter and three-parameter SNCs, no additional SNCs were observed.

3. Results

3.1 Summary of General Biological Resources

During the protocol level botanical survey, 194 species of vascular plants were observed in the PSB. Of all plants observed, 74 species were native to the local area and 120 were non-native species, equalling 61% non-native species.

Based on occurrence records, field surveys, site visits, and habitat availability, four special status plant species have a high potential to occur in the PSB, and one California Native Plant Society (CNPS) ranked plant is present in the PSB: Lyngbye's sedge (*Carex lyngbyei*) ranked as 2B.2 (2B = Plants rare, threatened, or endangered in California, but more common elsewhere; .2 = Moderately threatened in California.) Field surveys also yielded the observation and

delineation of wetlands within the PSB. See the separate Aquatic Resources Delineation Report for further information about these wetlands.

3.2 Special Status Plants

Table 1 summarizes the potential for special status plants documented in the surrounding 7-quad area to occur within the PSB. See the Species Descriptions section for a discussion of special status plants observed on-site as well as those with a High or Moderate Potential to occur.

Table 1 Potential for Special Status Plants to Occur in the PSB

Scientific Name	Common Name	Status, CRPR ²	Global Rank ²	State Rank ²	Habitat Requirements ¹	Potential to Occur in the PSB
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	1B.1	G4G5 T2	S2	Coastal dunes	Low potential. Marginally suitable habitat is present.
<i>Angelica lucida</i>	sea-watch	4.2	G5	S3	Coastal bluff scrub, Coastal dunes, Coastal scrub, Marshes and swamps	Low potential. Marginally suitable habitat is present.
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	1B.2	G2T2	S2	Coastal dunes, Coastal scrub, Marshes and swamps	Low potential. This plant has not been observed on the Samoa peninsula since 1925.
<i>Carex leptalea</i>	bristle-stalked sedge	2B.2	G5	S1	Bogs and fens, Marshes and swamps, Meadows and seeps	Low potential. The nearest non-historic occurrence (from 2011) is 15.5 miles north of the PSB.
<i>Carex lyngbyei</i>	Lyngbye's sedge	2B.2	G5	S3	Marshes and swamps	Present. This species was observed in two areas within the PSB.
<i>Carex praticola</i>	northern meadow sedge	2B.2	G5	S2	Meadows and seeps	Low potential. This species has not been observed in the Humboldt Bay Area since 1915.
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	1B.2	G4T2	S2	Marshes and swamps	High potential. The southern-most portion of the PSB is located within a CNDDDB occurrence of this species (from 1978). Suitable habitat is present in the eastern edges of the PSB.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	1B.2	G4?T2	S2	Marshes and swamps	High potential. The eastern end of the PSB near Mill street is located within a CNDDDB occurrence of this species (from 1987). Suitable habitat is present in the eastern edges of the PSB.
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	4.3	G5?	S3	North Coast coniferous forest, Riparian forest	No potential. The PSB is outside of the elevational range for this species (35-720 ft).
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	1B.2	G1	S1	Coastal dunes	No potential. There are no confirmed observations of this species in the Humboldt Bay Area.
<i>Eleocharis parvula</i>	small spikerush	4.3	G5	S3	Marshes and swamps	Low potential. Suitable habitat is present but this species is not known to occur in the Manila area.
<i>Erysimum menziesii</i>	Menzies' wallflower	FE, SE, 1B.1	G1	S1	Coastal dunes	Low potential. Very marginal habitat is present in the PSB.

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Scientific Name	Common Name	Status, CRPR ²	Global Rank ²	State Rank ²	Habitat Requirements ¹	Potential to Occur in the PSB
<i>Erythronium revolutum</i>	coast fawn lily	2B.2	G4G5	S3	Bogs and fens, Broadleafed upland forest, North Coast coniferous forest	Low potential. The nearest occurrence (from 2018) is 9.5 miles southeast of the PSB.
<i>Fissidens pauperculus</i>	minute pocket moss	1B.2	G3?	S2	North Coast coniferous forest	No potential. The PSB is outside of the elevational range for this species (35-3,360 ft).
<i>Gilia capitata</i> ssp. <i>pacifica</i>	Pacific gilia	1B.2	G5T3	S2	Chaparral, Coastal bluff scrub, Coastal prairie, Valley and foothill grassland	Low potential. This species has not been observed in the Humboldt Bay Area since 1905.
<i>Gilia millefoliata</i>	dark-eyed gilia	1B.2	G2	S2	Coastal dunes	Low potential. Very marginal habitat is present in the PSB.
<i>Glehnia littoralis</i> ssp. <i>leiocarpa</i>	American glehnia	4.2	G5T5	S2S3	Coastal dunes	Low potential. Very marginal habitat is present in the PSB.
<i>Hesperervax sparsiflora</i> var. <i>brevifolia</i>	short-leaved evax	1B.2	G4T3	S3	Coastal bluff scrub, Coastal dunes, Coastal prairie	Low potential. The nearest confirmed occurrence (from 2018) is 4.3 miles southwest of the PSB. Very marginal habitat is present in the PSB.
<i>Hosackia gracilis</i>	harlequin lotus	4.2	G3G4	S3	Broadleafed upland forest, Cismontane woodland, Closed-cone/North Coast coniferous forest, Coastal bluff scrub, prairie/scrub, Marshes, swamps, meadows, and seeps, grassland	Low potential. This species is not mapped in CNDDDB. Marginally suitable habitat is present.
<i>Lasthenia californica</i> ssp. <i>macrantha</i>	perennial goldfields	1B.2	G3T2	S2	Coastal bluff scrub, Coastal dunes, Coastal scrub	No potential. There are no confirmed observations of this species in the Humboldt Bay Area.
<i>Lathyrus japonicus</i>	seaside pea	2B.1	G5	S2	Coastal dunes	Low potential. This species has not been observed in the Humboldt Bay Area since 1925.
<i>Lathyrus palustris</i>	marsh pea	2B.2	G5	S2	Bogs and fens, Coastal prairie/scrub, Lower montane/North Coast coniferous forest, Marshes and swamps	Low potential. The only known occurrence of this species in the Humboldt Bay Area is an observation (from 2003) in the Samoa area.
<i>Layia carnosa</i>	beach layia	FT, SE, 1B.1	G2	S2	Coastal dunes, Coastal scrub	Low potential. Marginally suitable habitat is present in the PSB.
<i>Lilium kelloggii</i>	Kellogg's lily	4.3	G3	S3	Lower montane coniferous forest, North Coast coniferous forest	No potential. No suitable habitat is present in the PSB.
<i>Lilium occidentale</i>	western lily	FE, SE, 1B.1	G1	S1	Bogs and fens, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, North Coast coniferous forest	No potential. This conspicuous species is not known to occur on the Samoa peninsula.
<i>Listera cordata</i>	heart-leaved twayblade	4.2	G5	S4	Bogs and fens, Lower montane coniferous forest, North Coast coniferous forest	No potential. No suitable habitat is present in the PSB.

Scientific Name	Common Name	Status, CRPR ²	Global Rank ²	State Rank ²	Habitat Requirements ¹	Potential to Occur in the PSB
<i>Mitellastrca caulescens</i>	leafy-stemmed mitrewort	4.2	G5	S4	Broadleafed upland forest, Lower montane coniferous forest, Meadows and seeps, North Coast coniferous forest	No potential. No suitable habitat is present in the PSB.
<i>Monotropa uniflora</i>	ghost-pipe	2B.2	G5	S2	Broadleafed upland forest, North Coast coniferous forest	No potential. The PSB is outside of the elevational range for this species (35-1,805 ft).
<i>Montia howellii</i>	Howell's montia	2B.2	G3G4	S2	Meadows and seeps, North Coast coniferous forest, Vernal pools	Low potential. The nearest occurrence (from 2019) is 3.5 miles east of the PSB. Marginally suitable habitat is present.
<i>Oenothera wolfii</i>	Wolf's evening-primrose	1B.1	G2	S1	Coastal bluff scrub, Coastal dunes, Coastal prairie, Lower montane coniferous forest	Low potential. A CNDDDB occurrence (from 2001) is 0.2 mile south of the PSB; however, this occurrence is likely an escaped garden variety (DeWoody 2008).
<i>Pleuropogon refractus</i>	nodding semaphore grass	4.2	G4	S4	Lower montane/North Coast coniferous forest, Meadows and seeps, Riparian forest	Low potential. This species is not mapped in CNDDDB. Marginally suitable habitat is present.
<i>Puccinellia pumila</i>	dwarf alkali grass	2B.2	G4?	SH	Marshes and swamps	No potential. This species was last observed at the mouth of the Eel River in 1938.
<i>Ribes laxiflorum</i>	trailing black currant	4.3	G5?	S3	North Coast coniferous forest	No potential. No suitable habitat is present in the PSB.
<i>Sidalcea malachroides</i>	maple-leaved checkerbloom	4.2	G3	S3	Broadleafed upland forest, Coastal prairie/scrub, North Coast coniferous forest, Riparian woodland	Low potential. The nearest occurrence of this species (from 1999) is 2.5 miles south of the PSB.
<i>Sidalcea oregana</i> ssp. <i>eximia</i>	coast checkerbloom	1B.2	G5T1	S1	Lower montane/North Coast coniferous forest, Meadows and seeps	Low potential. The nearest extant occurrence (from 2001) is 7.0 miles northeast of the PSB.
<i>Silene scouleri</i> ssp. <i>scouleri</i>	Scouler's catchfly	2B.2	G5T4T5	S2S3	Coastal bluff scrub/prairie, Valley and foothill grassland	Low potential. This species is not mapped in CNDDDB. Marginally suitable habitat is present in the PSB.
<i>Spergularia canadensis</i> var. <i>occidentalis</i>	western sand-spurrey	2B.1	G5T4	S1	Marshes and swamps	High potential. There are two uncertain observations in CNDDDB located 1.2 miles southwest of the PSB. Suitable habitat is present in the PSB.
<i>Sulcaria spiralifera</i>	twisted horsehair lichen	1B.2	G3G4	S2	Coastal dunes, North Coast coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
<i>Viola palustris</i>	alpine marsh violet	2B.2	G5	S1S2	Bogs and fens, Coastal scrub	Low potential. This species has not been observed in the Humboldt Bay Area since 1923.

Footnotes:

1 General habitat, and microhabitat column information, reprinted from CNDDDB (March 2022).

2 Rankings from CNDDDB (October 2021).

Status Abbreviations:

FE Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted

SE State Endangered; SD = State Delisted; ST = State Threatened.

CRPR: CNPS rankings for rare plants (CNPS 2022) - 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2B = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list); n/a = not applicable; Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2022b).

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2022 (ranking according to degree of global imperilment - G1 = Critically Imperilled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperilled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2022b); ? = " Denotes inexact numeric rank" (NatureServe 2022; Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

SRank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperilled—Critically imperilled 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; S2 = Imperilled—Imperilled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very 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; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

Potential to Occur:

No potential: Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low potential: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found in the PSB.

Moderate potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found in the PSB.

High potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found in the PSB

Present: Detected or documented on-site.

3.2.1 Species Descriptions

Species described below have a high potential to occur within the PSB (**Table 1**). No species were determined to have moderate potential. All rare plant species that are present or have a high probability of occurring in the PSB are salt marsh species that are found along the shore of Humboldt Bay. No rare plants were expected or observed in the upland or freshwater habitats of in the PSB.

Humboldt Bay owl's-clover (*Castilleja ambigua* var. *humboldtiensis*) CRPR 1B.2

Humboldt Bay owl's-clover has no state or federal listing status but is ranked 1B.2 on the CRPR list, as it is threatened by coastal development and non-native plants (CNPS 2022). This annual hemiparasitic herb that blooms April through August is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. A small population of approximately 1,000 plants was observed approximately 50 feet outside of the PSB on the shore of Humboldt Bay between Mill Street and Manila Avenue (**Appendix A, Figure 3**). There is also a historic CNDDDB occurrence (from 1978) overlapping the southern-most portions of the PSB. This species was not observed within the PSB.

Lyngbye's sedge (*Carex lyngbyei*) CRPR 2B.2

Lyngbye's sedge has no state or federal listing status but is ranked 2B.2 on the CRPR list, as it is threatened by grazing, non-native plants, and habitat disturbance (CNPS 2022). This perennial rhizomatous herb that blooms April through August is found in marshes and on the banks of tidal sloughs between 0 and 35 feet in elevation. A dense stand of approximately 320 square feet was observed inside the PSB on the shore of Humboldt Bay between Mill Street and Manila Avenue, and another stand of approximately 180 square feet was observed within the PSB on the shore of Humboldt Bay off of Victor Boulevard (**Appendix A, Figure 3**). Both stands extended outside of the PSB totalling approximately 1,820 square feet.

Point Reyes salty bird's-beak (*Chloropyron maritimum* ssp. *palustre*) 1B.2

Point Reyes salty bird's-beak has no state or federal listing status but is ranked 1B.2 on the CRPR list, as it is threatened by development, foot traffic, non-native plants, hydrological alterations, and cattle grazing (CNPS 2022). This annual hemiparasitic herb that blooms June through October is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. There is a historic CNDDDB occurrence (from 1987) overlapping the eastern-most portion of the PSB near Mill Street. This CNDDDB occurrence was confirmed within 10 feet of the PSB on July 26, 2022, but this species was not observed within the PSB (**Appendix A, Figure 3**).

Western sand-spurrey (*Spergularia canadensis* var. *occidentalis*) 2B.1

Western sand spurrey has no state or federal listing status but is ranked 2B.1 on the CRPR list, as it is threatened by coastal development (CNPS 2022). This annual herb that blooms June through August is found in coastal salt marshes and swamps between 0 and 10 feet in elevation. There is a CNDDDB occurrence from an unknown date attributed to a vague location in the area of Samoa, California, approximately 1.5 miles southwest of the PSB. This species was not observed in the PSB or nearby.

3.3 Critical Habitat

The PSB does not overlap any United States Fish and Wildlife Service (USFWS)-designated critical habitat.

3.4 SNCs and ESHA

The PSB contains several vegetation communities which are considered SNCs and may also be considered ESHA (Table 2). However, all SNCs and potential ESHA present are also considered one- or three-parameter wetlands in the Coastal Zone and so were not further evaluated or mapped for mitigation purposes. SNCs present are briefly summarized below. No upland SNCs or ESHA were identified in the PSB.

Table 2 Sensitive Natural Communities present in the PSB

Habitat Type	Global Rank ¹	State Rank ¹	Characteristic species ¹
Lyngbye's sedge swathes	GNR	S1	<i>Carex lyngbyei</i>
Pickleweed mats	G4	S3	<i>Sarcocornia pacifica</i> (<i>Salicornia depressa</i>)
Hardstem and California bulrush marshes	G4	S3	<i>Schoenoplectus californicus</i>
Coastal dune willow thickets	G4	S3	<i>Salix hookeriana</i> is dominant in the low tree canopy with <i>Baccharis pilularis</i> , <i>Morella californica</i> , <i>Rubus</i> spp., and <i>Salix lasiolepis</i>
Salmonberry – Wax myrtle scrub	G5	S3	<i>Morella californica</i> is dominant in the shrub canopy with <i>Rubus ursinus</i> in the understory. No <i>Rubus spectabilis</i> is present in the PSB.
Salal-berry brambles: <i>Rubus ursinus</i> association		Sensitive	<i>R. ursinus</i> dominant in the shrub canopy

Footnotes:

¹ Characteristic species and rankings from A Manual of California Vegetation (Sawyer et al. 2009).

Column Header Categories and Abbreviations:

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021) (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. (NatureServe 2022)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) – 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; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very 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.

4. Potential Impacts to Special Status Plants and SNCs and Proposed Avoidance and Minimization Measures

4.1.1 Special Status Plants

Lyngbye's sedge is present in the PSB and Humboldt Bay owl's-clover and Point Reyes salty bird's-beak are within 10 feet of the PSB. To protect these special status plants, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts.

Measure BIO-1: Protect Special Status Plants

Avoidance and minimization measures for special status plant species are addressed collectively for all species. The following measures are recommended:

- The locations of any special status plant populations mapped herein shall be clearly identified in the contract documents (plans and specifications).
- If special status plant populations are detected where construction would have unavoidable impacts, seed will be collected prior to construction and redistributed following construction during the appropriate season. On-site seed collection from the impacted species will be prioritized. If on-site seed collection is infeasible due to blooming period conflicts with the planned construction season, off-site seed collection will occur from a suitable nearby area.

5. Conclusion

Based on occurrence records and habitat availability, four special status plants have a high probability of occurring in the PSB. One special status species was observed in the PSB: Lyngbye's sedge. Two additional special status species were observed immediately outside the PSB: Humboldt Bay owl's-clover and Point Reyes salty bird's-beak. With implementation of the proposed avoidance and minimization measures (specifically, Measure BIO-1), impacts will be avoided or reduced.

All potential SNCs and ESHA in the PSB are also within one- or three-parameter wetlands and were mapped and classified as wetlands. Please see the separate Aquatic Resources Delineation for more information on these wetlands.

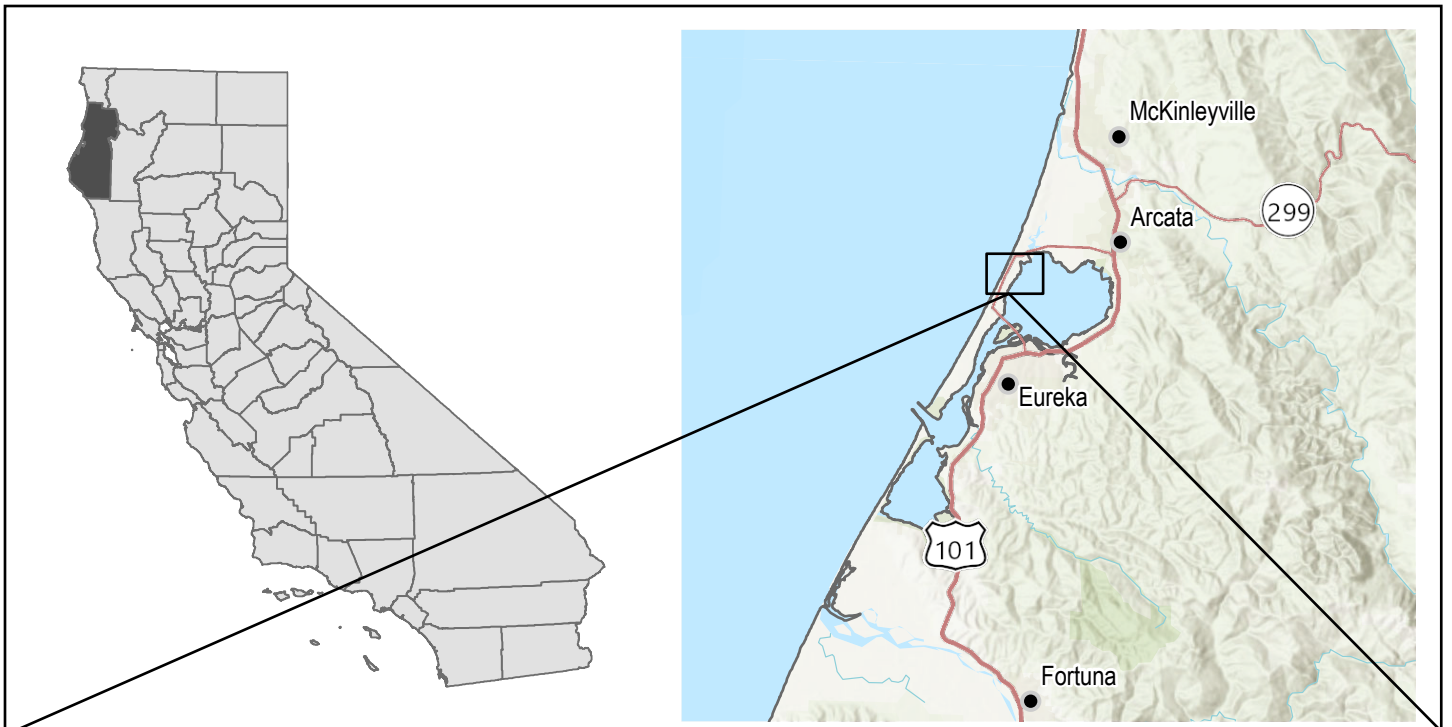
6. Literature Cited

- Baldwin, B. D., D. Goldman, D. Keil, R. Patterson, T. Rosatti, D. Wilken. 2012. *The Jepson Manual/ Second Edition*. University of California Press. Berkeley, California, USA.
- California Department of Fish and Wildlife (CDFW). 2018. Protocols for surveying and evaluating impacts to special status native plant populations and sensitive natural communities. State of California, Natural Resources Agency, Department of Fish and Wildlife, Sacramento, California, USA.
- California Department of Fish and Wildlife (CDFW). 2022a. *California Natural Diversity Database (CNDDDB)*. USGS 7.5 Minute Quadrangles. State of California, Natural Resources Agency, Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, California, USA. <https://www.wildlife.ca.gov/Data/CNDDDB> (3/21/2022)
- California Native Plant Society (CNPS), Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website <https://www.rareplants.cnps.org> (Accessed 3/21/2022)
- DeWoody, J., L. Arguello, D. Imper, R.D. Westfall, and V.D. Hipkins. 2008. Genetic evidence of hybridization between *Oenothera wolffii* (Wolf's evening primrose) and *O. glazioviana*, a garden escape. *Madrono*, 55: 132-142.
- NatureServe. 2022. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.1. NatureServe, Arlington, Virginia. <http://explorer.natureserve.org>
- Sawyer, J.O., T. Keeler-Wolf, and J.M. Evans. 2009. *A Manual of California Vegetation, Second Edition*. California Native Plant Society. Sacramento, California, USA.
- U.S. Fish and Wildlife Service (USFWS). 2002. General Rare Plant Survey Guidelines by the Endangered Species Recovery Program.
- U.S. Fish and Wildlife Service (USFWS). 2022. *IPaC - Information for Planning and Consultation*. Department of the Interior, U.S. Fish and Wildlife Service. <https://ecos.fws.gov/ipac/> (6/07/2022)

Appendices

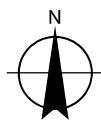
Appendix A

Figures



Paper Size ANSI A
0 500 1,000 1,500
Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet



**Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project**

Project No. 12572691
Revision No. -
Date Aug 2022

Vicinity Map

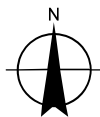
FIGURE 1

Data source: World Imagery (Clarity). This work is licensed under the Esri Master License Agreement. View Summary | View Terms of Use. Export: This layer is not intended to be used to export tiles for offline. Data Collection and Editing: This layer may be used in various ArcGIS apps to support data collection and editing, with the results used internally or shared with others, as described for these use cases.; World Topographic Map - labelless: California State Parks, Esri, HERE, Garmin, SafeGraph, FAO, METI/NASA, USGS, Bureau of Land Management, EPA, NPS; transportation: USGS The National Map; National Transportation Dataset; U.S. Census Bureau - TIGER/Line; U.S. Forest Service. Data Refreshed July, 2022.; World Hillshade: Esri, CGIAR, USGS. Created by: jlopez4



Paper Size ANSI A
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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

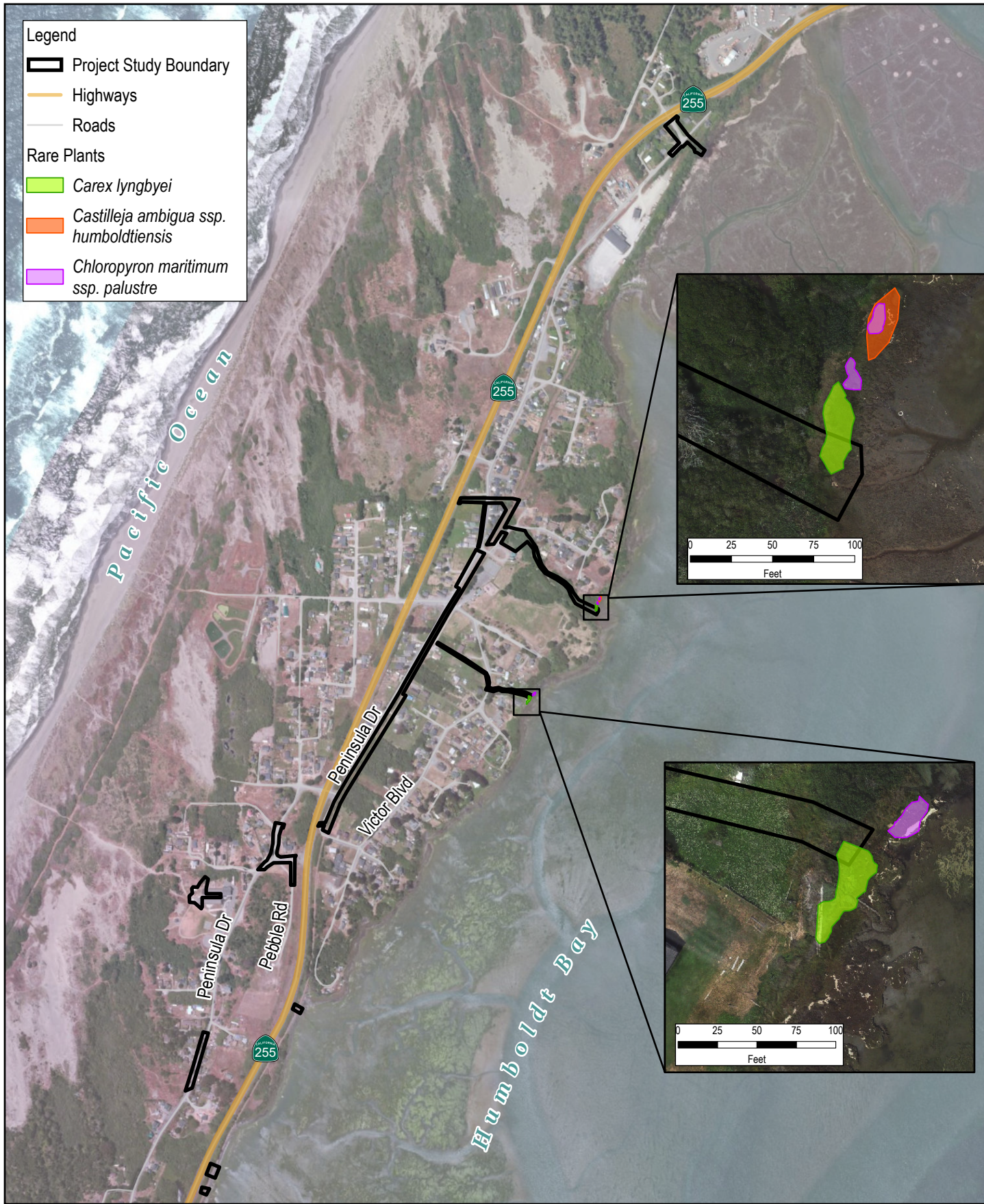


Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project

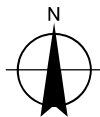
Project No. 1257269
Revision No. -
Date Aug 2022

Project Study Boundary

FIGURE 2



Paper Size ANSI A
0 250 500 750 1,000
Feet



**Manila Community Services District
Manila Flood Reduction &
Drainage Enhancement Project**

Project No. 1257269
Revision No. -
Date Aug 2022

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

Rare Plants

FIGURE 3

Appendix B

**Database Searches (CNDDDB, CNPS,
IPaC)**



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad< IS >(Eureka (4012472)> OR <Arcata North (4012481)> OR <Arcata South (4012471)> OR <Tyee City (4012482)> OR <McWhinney Creek (4012461)> OR <Fields Landing (4012462)> OR <Cannibal Island (4012463))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Abronia umbellata</i> var. <i>breviflora</i> pink sand-verbena	G4G5T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	5 236	61 S:16	0	9	2	1	1	3	7	9	15	1	0
<i>Accipiter striatus</i> sharp-shinned hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	200 580	22 S:2	0	0	2	0	0	0	0	2	2	0	0
<i>Acipenser medirostris</i> pop. 1 green sturgeon - southern DPS	G2T1 S1	Threatened None	AFS_VU-Vulnerable IUCN_NT-Near Threatened	0 0	14 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Anodonta californiensis</i> California floater	G3Q S2?	None None	USFS_S-Sensitive	41 41	6 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Aplodontia rufa humboldtiana</i> Humboldt mountain beaver	G5TNR SNR	None None		50 1,700	28 S:16	0	0	0	0	0	16	14	2	16	0	0
<i>Arborimus albipes</i> white-footed vole	G3G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	15 15	3 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Arborimus pomo</i> Sonoma tree vole	G3 S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	40 1,600	222 S:7	0	0	0	0	0	7	7	0	7	0	0
<i>Ardea alba</i> great egret	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	4 194	43 S:6	1	0	0	0	0	5	4	2	6	0	0
<i>Ardea herodias</i> great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	4 450	156 S:13	6	0	0	0	0	7	7	6	13	0	0
<i>Ascaphus truei</i> Pacific tailed frog	G4 S3S4	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	100 1,027	491 S:8	0	0	0	0	0	8	5	3	8	0	0



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California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i> coastal marsh milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley		24 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Bombus caliginosus</i> obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	0 2,100	181 S:8	0	0	0	0	0	8	8	0	8	0	0
<i>Bombus crotchii</i> Crotch bumble bee	G2 S1S2	None None		10 10	437 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Bombus occidentalis</i> western bumble bee	G2G3 S1	None None	USFS_S-Sensitive	10 2,100	306 S:9	0	0	0	0	0	9	9	0	9	0	0
<i>Brachyramphus marmoratus</i> marbled murrelet	G3 S2	Threatened Endangered	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	1,200 1,800	110 S:4	0	2	0	0	0	2	4	0	4	0	0
<i>Cardamine angulata</i> seaside bittercress	G4G5 S3	None None	Rare Plant Rank - 2B.1	310 310	38 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Carex arcta</i> northern clustered sedge	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	200 500	13 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Carex leptalea</i> bristle-stalked sedge	G5 S1	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	300 300	8 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Carex lyngbyei</i> Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	0 20	37 S:22	2	3	9	0	0	8	7	15	22	0	0
<i>Carex praticola</i> northern meadow sedge	G5 S2	None None	Rare Plant Rank - 2B.2		14 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Castilleja ambigua</i> var. <i>humboldtensis</i> Humboldt Bay owl's-clover	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 65	31 S:21	2	8	2	0	0	9	10	11	21	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Castilleja litoralis</i> Oregon coast paintbrush	G3 S3	None None	Rare Plant Rank - 2B.2	50 500	44 S:3	0	0	0	0	0	3	2	1	3	0	0
<i>Charadrius montanus</i> mountain plover	G3 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	4 7	90 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Charadrius nivosus nivosus</i> western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List	10 23	138 S:5	0	1	0	0	0	4	3	2	5	0	0
<i>Chloropyron maritimum ssp. palustre</i> Point Reyes salty bird's-beak	G4?T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 10	80 S:17	2	6	1	1	0	7	10	7	17	0	0
<i>Cicindela hirticollis grvida</i> sandy beach tiger beetle	G5T2 S2	None None		10 10	34 S:1	0	0	0	0	1	0	1	0	0	0	1
<i>Circus hudsonius</i> northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	6 6	54 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Coastal Terrace Prairie</i> Coastal Terrace Prairie	G2 S2.1	None None		160 160	8 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Collinsia corymbosa</i> round-headed Chinese-houses	G1 S1	None None	Rare Plant Rank - 1B.2		13 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	30 250	635 S:3	0	0	0	0	0	3	3	0	3	0	0



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California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Coturnicops noveboracensis</i> yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	4 24	45 S:4	0	0	0	0	0	4	3	1	4	0	0
<i>Egretta thula</i> snowy egret	G5 S4	None None	IUCN_LC-Least Concern	4 47	20 S:3	1	0	0	0	0	2	1	2	3	0	0
<i>Elanus leucurus</i> white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	23 60	184 S:3	0	1	0	0	0	2	0	3	3	0	0
<i>Emys marmorata</i> western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	3 400	1404 S:9	1	3	1	0	0	4	2	7	9	0	0
<i>Entosphenus tridentatus</i> Pacific lamprey	G4 S3	None None	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	14 43	9 S:5	0	0	0	0	0	5	1	4	5	0	0
<i>Erethizon dorsatum</i> North American porcupine	G5 S3	None None	IUCN_LC-Least Concern	13 817	523 S:9	0	0	0	0	0	9	4	5	9	0	0
<i>Erysimum menziesii</i> Menzies' wallflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	5 30	19 S:6	2	2	1	1	0	0	0	6	6	0	0
<i>Erythronium revolutum</i> coast fawn lily	G4G5 S3	None None	Rare Plant Rank - 2B.2		172 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Eucyclogobius newberryi</i> tidewater goby	G3 S3	Endangered None	AFS_EN-Endangered IUCN_VU-Vulnerable	0 12	127 S:10	1	1	0	1	0	7	1	9	10	0	0



Summary Table Report

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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Falco peregrinus anatum</i> American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected	40 902	73 S:8	0	5	0	0	0	3	1	7	8	0	0
<i>Fissidens pauperculus</i> minute pocket moss	G3? S2	None None	Rare Plant Rank - 1B.2 USFS_S-Sensitive	100 650	22 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Gilia capitata ssp. pacifica</i> Pacific gilia	G5T3 S2	None None	Rare Plant Rank - 1B.2	250 250	91 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Gilia millefoliata</i> dark-eyed gilia	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	5 50	54 S:11	1	4	1	0	0	5	6	5	11	0	0
<i>Haliaeetus leucocephalus</i> bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	29 580	332 S:3	1	1	0	0	0	1	0	3	3	0	0
<i>Hesperovax sparsiflora var. brevifolia</i> short-leaved evax	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	10 15	72 S:6	0	1	1	0	0	4	2	4	6	0	0
<i>Lampetra richardsoni</i> western brook lamprey	G4G5 S3S4	None None	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	35 350	4 S:4	0	0	0	0	0	4	1	3	4	0	0
<i>Lasthenia californica ssp. macrantha</i> perennial goldfields	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive		59 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Lathyrus japonicus</i> seaside pea	G5 S2	None None	Rare Plant Rank - 2B.1 IUCN_LC-Least Concern	5 200	24 S:3	0	0	0	0	0	3	3	0	3	0	0
<i>Lathyrus palustris</i> marsh pea	G5 S2	None None	Rare Plant Rank - 2B.2	10 10	13 S:2	0	0	0	0	0	2	1	1	2	0	0
<i>Layia carnosa</i> beach layia	G2 S2	Threatened Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden	10 40	25 S:6	0	3	1	0	0	2	1	5	6	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Lilium occidentale</i> western lily	G1G2 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank	30 350	16 S:9	0	3	1	1	3	1	3	6	6	3	0
<i>Lycopodium clavatum</i> running-pine	G5 S3	None None	Rare Plant Rank - 4.1	160 1,860	120 S:35	2	10	13	3	0	7	34	1	35	0	0
<i>Margaritifera falcata</i> western pearlshell	G4G5 S1S2	None None		75 317	78 S:2	0	0	0	0	0	2	2	0	2	0	0
<i>Martes caurina humboldtensis</i> Humboldt marten	G4G5T1 S1	Threatened Endangered	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	1,100 1,100	44 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Mitellastrum caulescens</i> leafy-stemmed mitrewort	G5 S4	None None	Rare Plant Rank - 4.2	1,200 1,200	21 S:1	0	1	0	0	0	0	1	0	1	0	0
<i>Monotropa uniflora</i> ghost-pipe	G5 S2	None None	Rare Plant Rank - 2B.2	100 100	115 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Montia howellii</i> Howell's montia	G3G4 S2	None None	Rare Plant Rank - 2B.2	39 1,600	123 S:14	0	5	2	3	3	1	3	11	11	3	0
<i>Myotis evotis</i> long-eared myotis	G5 S3	None None	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_M-Medium Priority	40 429	139 S:2	0	1	0	0	0	1	2	0	2	0	0
<i>Nannopterum auritum</i> double-crested cormorant	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	10 10	39 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	G3 S3.2	None None		0 0	53 S:11	1	0	0	0	0	10	11	0	11	0	0
<i>Northern Foredune Grassland</i> Northern Foredune Grassland	G1 S1.1	None None		50 50	1 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Nycticorax nycticorax</i> black-crowned night heron	G5 S4	None None	IUCN_LC-Least Concern	4 194	37 S:8	1	0	0	0	0	7	6	2	8	0	0
<i>Oenothera wolffii</i> Wolf's evening-primrose	G2 S1	None None	Rare Plant Rank - 1B.1 SB_BerrySB-Berry Seed Bank	10 25	29 S:2	0	0	0	0	0	2	2	0	2	0	0



Summary Table Report

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Oncorhynchus clarkii clarkii</i> coast cutthroat trout	G5T4 S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern USFS_S-Sensitive	5 317	45 S:16	0	0	1	0	0	15	10	6	16	0	0
<i>Oncorhynchus kisutch pop. 2</i> coho salmon - southern Oregon / northern California ESU	G5T2Q S2	Threatened Threatened	AFS_TH-Threatened	35 117	10 S:6	0	0	2	0	0	4	1	5	6	0	0
<i>Oncorhynchus mykiss irideus pop. 16</i> steelhead - northern California DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	35 117	12 S:4	0	1	1	0	0	2	0	4	4	0	0
<i>Pandion haliaetus</i> osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	10 1,240	504 S:80	14	25	7	2	1	31	72	8	79	1	0
<i>Pekania pennanti</i> Fisher	G5 S2S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	41 555	555 S:5	0	3	0	0	0	2	0	5	5	0	0
<i>Puccinellia pumila</i> dwarf alkali grass	G5 SH	None None	Rare Plant Rank - 2B.2	15 15	2 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	G3T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List		99 S:2	0	0	0	0	2	0	2	0	0	0	2
<i>Rana aurora</i> northern red-legged frog	G4 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	4 800	292 S:57	0	4	0	1	0	52	14	43	57	0	0
<i>Rana boylei</i> foothill yellow-legged frog	G3 S3	None Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	7 2,100	2478 S:11	2	1	0	0	0	8	3	8	11	0	0
<i>Rhyacotriton variegatus</i> southern torrent salamander	G3G4 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	200 1,200	416 S:8	0	0	1	0	0	7	5	3	8	0	0
<i>Riparia riparia</i> bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	50 114	298 S:3	0	1	0	0	0	2	2	1	3	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Scaphinotus behrensi</i> Behrens' snail-eating beetle	G2G4 S2S4	None None		400 400	4 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	G3 S3	None None	Rare Plant Rank - 4.2	100 1,650	136 S:26	2	4	7	10	0	3	26	0	26	0	0
<i>Sidalcea malviflora ssp. patula</i> Siskiyou checkerbloom	G5T2 S2	None None	Rare Plant Rank - 1B.2	50 300	60 S:6	0	0	3	0	0	3	3	3	6	0	0
<i>Sidalcea oregana ssp. eximia</i> coast checkerbloom	G5T1 S1	None None	Rare Plant Rank - 1B.2	20 200	19 S:5	0	0	2	0	0	3	4	1	5	0	0
<i>Silene scouleri ssp. scouleri</i> Scouler's catchfly	G5T4T5 S2S3	None None	Rare Plant Rank - 2B.2		23 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Sitka Spruce Forest</i> Sitka Spruce Forest	G1 S1.1	None None		160 160	4 S:1	0	0	1	0	0	0	1	0	1	0	0
<i>Spergularia canadensis var. occidentalis</i> western sand-spurrey	G5T4 S1	None None	Rare Plant Rank - 2B.1	5 10	4 S:4	0	0	1	0	0	3	3	1	4	0	0
<i>Spirinchus thaleichthys</i> longfin smelt	G5 S1	Candidate Threatened		0 10	46 S:6	0	0	0	0	0	6	5	1	6	0	0
<i>Sulcaria spiralifera</i> twisted horsehair lichen	G3G4 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	30 43	18 S:3	0	0	0	0	0	3	1	2	3	0	0
<i>Thaleichthys pacificus</i> eulachon	G5 S2	Threatened None			10 S:2	0	0	0	0	1	1	2	0	1	1	0
<i>Trichodon cylindricus</i> cylindrical trichodon	G4G5 S2	None None	Rare Plant Rank - 2B.2		14 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Usnea longissima</i> Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	520 2,100	206 S:16	0	3	1	6	0	6	15	1	16	0	0
<i>Viola palustris</i> alpine marsh violet	G5 S1S2	None None	Rare Plant Rank - 2B.2	100 100	10 S:2	0	0	0	0	0	2	2	0	2	0	0

Search Results

49 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [4012472:4012471:4012481:4012482:4012462:4012463:4012461]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
<i>Abronia umbellata</i> var. <i>breviflora</i>	pink sand-verbena	Nyctaginaceae	annual herb	Jun-Oct	None	None	G4G5T2	S2	1B.1
<i>Angelica lucida</i>	sea-watch	Apiaceae	perennial herb	Apr-Sep	None	None	G5	S3	4.2
<i>Astragalus pycnostachyus</i> var. <i>pycnostachyus</i>	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr)Jun-Oct	None	None	G2T2	S2	1B.2
<i>Astragalus rattanii</i> var. <i>rattanii</i>	Rattan's milk-vetch	Fabaceae	perennial herb	Apr-Jul	None	None	G4T4	S4	4.3
<i>Cardamine angulata</i>	seaside bittercress	Brassicaceae	perennial herb	(Jan)Mar-Jul	None	None	G4G5	S3	2B.2
<i>Carex arcta</i>	northern clustered sedge	Cyperaceae	perennial herb	Jun-Sep	None	None	G5	S1	2B.2
<i>Carex leptalea</i>	bristle-stalked sedge	Cyperaceae	perennial rhizomatous herb	Mar-Jul	None	None	G5	S1	2B.2
<i>Carex lyngbyei</i>	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2
<i>Carex praticola</i>	northern meadow sedge	Cyperaceae	perennial herb	May-Jul	None	None	G5	S2	2B.2
<i>Castilleja ambigua</i> var. <i>humboldtensis</i>	Humboldt Bay owl's-clover	Orobanchaceae	annual herb (hemiparasitic)	Apr-Aug	None	None	G4T2	S2	1B.2
<i>Castilleja litoralis</i>	Oregon coast paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Jun	None	None	G3	S3	2B.2
<i>Chloropyron maritimum</i> ssp. <i>palustre</i>	Point Reyes salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	None	None	G4?T2	S2	1B.2
<i>Chrysosplenium glechomifolium</i>	Pacific golden saxifrage	Saxifragaceae	perennial herb	Feb-Jun	None	None	G5?	S3	4.3
<i>Collinsia corymbosa</i>	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	None	None	G1	S1	1B.2
<i>Eleocharis parvula</i>	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3
<i>Erysimum menziesii</i>	Menzies' wallflower	Brassicaceae	perennial herb	Mar-Sep	FE	CE	G1	S1	1B.1
<i>Erythronium revolutum</i>	coast fawn lily	Liliaceae	perennial bulbiferous herb	Mar-Jul(Aug)	None	None	G4G5	S3	2B.2
<i>Fissidens pauperculus</i>	minute pocket moss	Fissidentaceae	moss		None	None	G3?	S2	1B.2

<u><i>Gilia capitata</i> ssp. <i>pacifica</i></u>	Pacific gilia	Polemoniaceae	annual herb	Apr-Aug	None	None	G5T3	S2	1B.2
<u><i>Gilia millefoliata</i></u>	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	None	None	G2	S2	1B.2
<u><i>Glehnia littoralis</i> ssp. <i>leiocarpa</i></u>	American glehnia	Apiaceae	perennial herb	May-Aug	None	None	G5T5	S2S3	4.2
<u><i>Hesperevax sparsiflora</i> var. <i>brevifolia</i></u>	short-leaved evax	Asteraceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2
<u><i>Hosackia gracilis</i></u>	harlequin lotus	Fabaceae	perennial rhizomatous herb	Mar-Jul	None	None	G3G4	S3	4.2
<u><i>Lasthenia californica</i> ssp. <i>macrantha</i></u>	perennial goldfields	Asteraceae	perennial herb	Jan-Nov	None	None	G3T2	S2	1B.2
<u><i>Lathyrus glandulosus</i></u>	sticky pea	Fabaceae	perennial rhizomatous herb	Apr-Jun	None	None	G3	S3	4.3
<u><i>Lathyrus japonicus</i></u>	seaside pea	Fabaceae	perennial rhizomatous herb	May-Aug	None	None	G5	S2	2B.1
<u><i>Lathyrus palustris</i></u>	marsh pea	Fabaceae	perennial herb	Mar-Aug	None	None	G5	S2	2B.2
<u><i>Layia carnosa</i></u>	beach layia	Asteraceae	annual herb	Mar-Jul	FT	CE	G2	S2	1B.1
<u><i>Lilium kelloggii</i></u>	Kellogg's lily	Liliaceae	perennial bulbiferous herb	May-Aug	None	None	G3	S3	4.3
<u><i>Lilium occidentale</i></u>	western lily	Liliaceae	perennial bulbiferous herb	Jun-Jul	FE	CE	G1G2	S1	1B.1
<u><i>Listera cordata</i></u>	heart-leaved twayblade	Orchidaceae	perennial herb	Feb-Jul	None	None	G5	S4	4.2
<u><i>Lycopodium clavatum</i></u>	running-pine	Lycopodiaceae	perennial rhizomatous herb	Jun-Aug(Sep)	None	None	G5	S3	4.1
<u><i>Mitellastris caulescens</i></u>	leafy-stemmed mitrewort	Saxifragaceae	perennial rhizomatous herb	(Mar)Apr-Oct	None	None	G5	S4	4.2
<u><i>Monotropa uniflora</i></u>	ghost-pipe	Ericaceae	perennial herb (achlorophyllous)	Jun-Aug(Sep)	None	None	G5	S2	2B.2
<u><i>Montia howellii</i></u>	Howell's montia	Montiaceae	annual herb	(Feb)Mar-May	None	None	G3G4	S2	2B.2
<u><i>Oenothera wolffii</i></u>	Wolf's evening-primrose	Onagraceae	perennial herb	May-Oct	None	None	G2	S1	1B.1
<u><i>Pityopus californicus</i></u>	California pinefoot	Ericaceae	perennial herb (achlorophyllous)	(Mar-Apr)May-Aug	None	None	G4G5	S4	4.2
<u><i>Pleuropogon refractus</i></u>	nodding semaphore grass	Poaceae	perennial rhizomatous herb	(Mar)Apr-Aug	None	None	G4	S4	4.2
<u><i>Puccinellia pumila</i></u>	dwarf alkali grass	Poaceae	perennial herb	Jul	None	None	G5	SH	2B.2
<u><i>Ribes laxiflorum</i></u>	trailing black currant	Grossulariaceae	perennial deciduous shrub	Mar-Jul(Aug)	None	None	G5?	S3	4.3
<u><i>Sidalcea malachroides</i></u>	maple-leaved checkerbloom	Malvaceae	perennial herb	(Mar)Apr-Aug	None	None	G3	S3	4.2
<u><i>Sidalcea malviflora</i> ssp. <i>patula</i></u>	Siskiyou checkerbloom	Malvaceae	perennial rhizomatous herb	(Mar)May-Aug	None	None	G5T2	S2	1B.2
<i>Sidalcea oreana</i> ssp.	coast	Malvaceae	perennial herb	Jun-Aug	None	None	G5T1	S1	1B.2

<u><i>Silene scouleri</i> ssp. <i>scouleri</i></u>	Scouler's catchfly	Caryophyllaceae	perennial herb	(Mar-May)Jun-Aug(Sep)	None	None	G5T4T5	S2S3	2B.2
<u><i>Spergularia canadensis</i> var. <i>occidentalis</i></u>	western sand-spurrey	Caryophyllaceae	annual herb	Jun-Aug	None	None	G5T4	S1	2B.1
<u><i>Sulcaria spiralis</i></u>	twisted horsehair lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G3G4	S2	1B.2
<u><i>Trichodon cylindricus</i></u>	cylindrical trichodon	Ditrichaceae	moss		None	None	G4G5	S2	2B.2
<u><i>Usnea longissima</i></u>	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		None	None	G4	S4	4.2
<u><i>Viola palustris</i></u>	alpine marsh violet	Violaceae	perennial rhizomatous herb	Mar-Aug	None	None	G5	S1S2	2B.2

Showing 1 to 49 of 49 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website <https://www.rareplants.cnps.org> [accessed 16 August 2022].



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

Phone: (707) 822-7201 Fax: (707) 822-8411



In Reply Refer To:

Project Code: 2022-0060814

Project Name: Manila Drainage Project

July 06, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/birds/policies-and-regulations.php>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - USFWS National Wildlife Refuges and Fish Hatcheries
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arcata Fish And Wildlife Office

1655 Heindon Road

Arcata, CA 95521-4573

(707) 822-7201

Project Summary

Project Code: 2022-0060814

Event Code: None

Project Name: Manila Drainage Project

Project Type: Drainage Project

Project Description: The Project, led by the Manila CSD, will incorporate multi-objective, multi-benefit project components that address flood reduction, ecosystem services, and resiliency to sea level rise and climate change.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@40.850741600000006,-124.16146390263467,14z>



Counties: Humboldt County, California

Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Pacific Marten, Coastal Distinct Population Segment <i>Martes caurina</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/9081	Threatened

Birds

NAME	STATUS
Marbled Murrelet <i>Brachyramphus marmoratus</i> Population: U.S.A. (CA, OR, WA) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover <i>Charadrius nivosus nivosus</i> Population: Pacific Coast population DPS-U.S.A. (CA, OR, WA), Mexico (within 50 miles of Pacific coast) There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Green Sea Turtle <i>Chelonia mydas</i> Population: East Pacific DPS No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened

Fishes

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Beach Layia <i>Layia carnosa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6728	Threatened
Menzies' Wallflower <i>Erysimum menziesii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2935	Endangered
Western Lily <i>Lilium occidentale</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/998	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

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

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Sep 30

NAME	BREEDING SEASON
Black Oystercatcher <i>Haematopus bachmani</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Swift <i>Cypseloides niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone <i>Arenaria melanocephala</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Cassin's Finch <i>Carpodacus cassinii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Evening Grosbeak <i>Coccothraustes vespertinus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 15 to Aug 10
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Jan 1 to Aug 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Olive-sided Flycatcher <i>Contopus cooperi</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31

NAME	BREEDING SEASON
Rufous Hummingbird <i>selasphorus rufus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds Apr 15 to Jul 15
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds Jun 1 to Aug 10
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

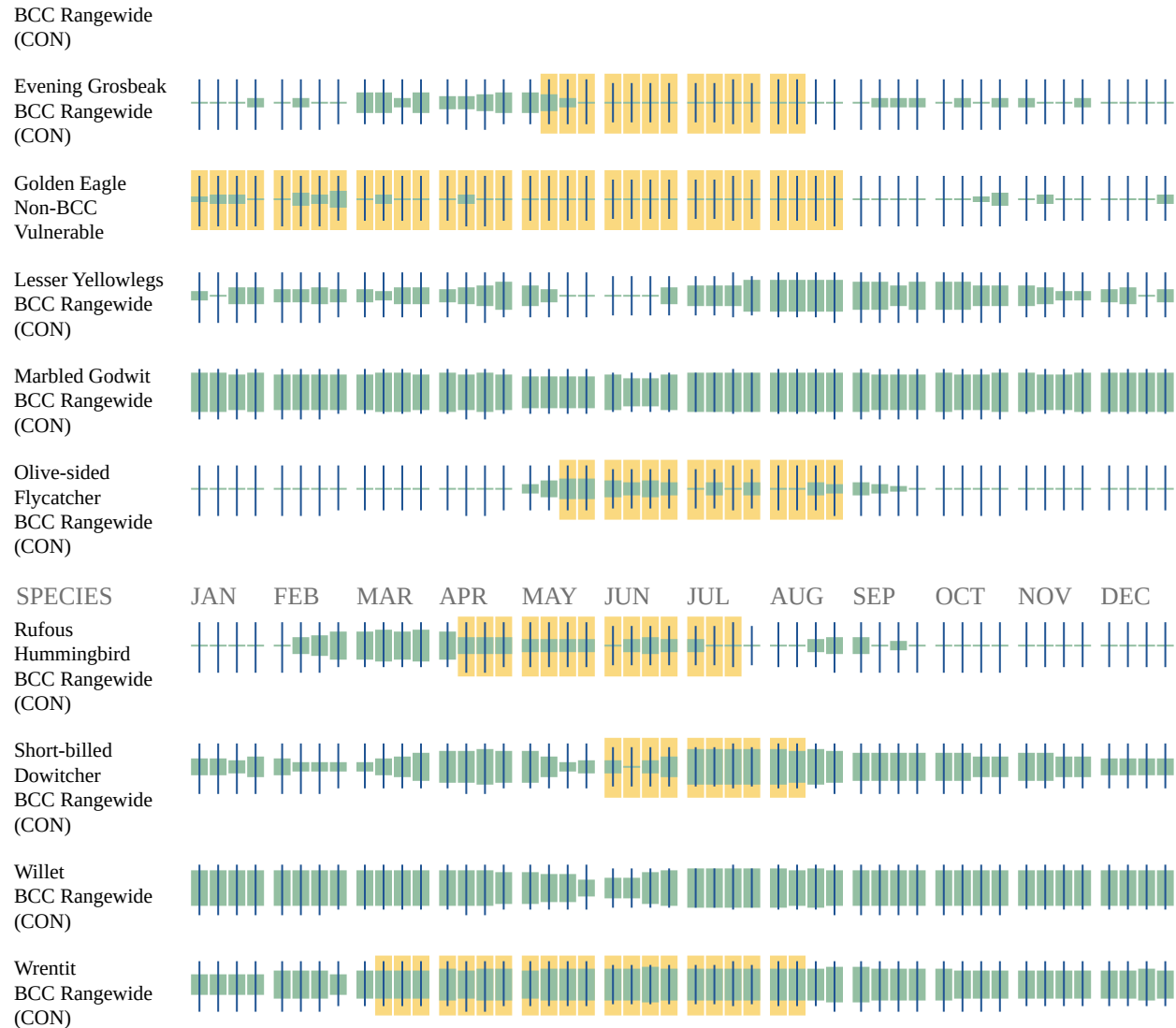
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

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

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in

the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of

certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: GHD

Name: Sara Moriarty-Graves

Address: 718 3rd Street

City: Eureka

State: CA

Zip: 95501

Email: sara.moriarty-graves@ghd.com

Phone: 7072983909

Appendix C

List of Plant Species Observed on Site

Table C1 Plant species observed on-site, sorted by Family.

Scientific Name	Common Name	Native	Family
<i>Agave</i> sp.	agave	Non-native	Agavaceae
<i>Carpobrotus chilensis</i>	sea fig	Non-native	Aizoaceae
<i>Alisma triviale</i>	Northern water plantain	Native	Alismataceae
<i>Atriplex prostrata</i>	spear-leaved orache	Non-native	Amaranthaceae
<i>Salicornia pacifica</i>	pickleweed	Native	Amaranthaceae
<i>Allium triquetrum</i>	three-cornered leek	Non-native	Amaryllidaceae
<i>Allium unifolium</i>	ornamental onion	Non-native	Amaryllidaceae
<i>Amarillis belladonna</i>	naked ladies	Non-native	Amaryllidaceae
<i>Daucus carota</i>	wild carrot	Native	Apiaceae
<i>Hydrocotyl ranunculoides</i>	floating pennywort	Non-native	Apiaceae
<i>Oenanthe sarmentosa</i>	water parsley	Native	Apiaceae
<i>Vinca major</i>	periwinkle	Non-native	Apocynaceae
<i>Ilex aquifolium</i>	English holly	Non-native	Aquifoliaceae
<i>Lemna</i> sp.	duckweed	Native	Araceae
<i>Lysichiton americanus</i>	skunk cabbage	Native	Araceae
<i>Zantedescia aethiopica</i>	calla lily	Non-native	Araceae
<i>Hedera helix</i>	English ivy	Non-native	Araliaceae
<i>Cordyline australis</i>	New Zealand cabbage tree	Non-native	Asparagaceae
<i>Arctotheca calendula</i>	Cape weed	Non-native	Asteraceae
<i>Baccharis pilularis</i>	coyote brush	Native	Asteraceae
<i>Bellis perennis</i>	daisy	Non-native	Asteraceae
<i>Chamomilla swaveolus</i>	chamomile	Non-native	Asteraceae
<i>Cirsium vulgare</i>	bull thistle	Non-native	Asteraceae
<i>Conyza canadensis</i>	horseweed	Non-native	Asteraceae
<i>Corethrogyne filaginifolia</i>	sandaster	Native	Asteraceae
<i>Delairea odorata</i>	cape/German ivy	Non-native	Asteraceae
<i>Gamochaeta ustulata</i>	featherweed	Native	Asteraceae
<i>Gnaphalium palustre</i>	cudweed	Native	Asteraceae
<i>Helminthotheca echioides</i>	prickly oxtongue	Non-native	Asteraceae
<i>Hypochaeris radicata</i>	cat's ear	Non-native	Asteraceae
<i>Jaumea carnosa</i>	marsh jaumea	Native	Asteraceae
<i>Leucanthemum vulgare</i>	oxe eye daisy	Non-native	Asteraceae
<i>Matricaria discoidea</i>	pineapple weed	Native	Asteraceae
<i>Solidago spathulata</i>	goldenrod	Native	Asteraceae
<i>Soliva sessilis</i>	field burweed	Non-native	Asteraceae
<i>Sonchus oleraceus</i>	prickly lettuce	Non-native	Asteraceae
<i>Symphyotrichum chilense</i> var. <i>chilense</i>	common California aster	Native	Asteraceae
<i>Taraxacum officinale</i>	dandelion	Non-native	Asteraceae
<i>Athyrium filix-femina</i>	lady fern	Native	Athyriaceae

Scientific Name	Common Name	Native	Family
<i>Alnus rubra</i>	red alder	Native	Betulaceae
<i>Echium candicans</i>	tower of jewels	Non-native	Boraginaceae
<i>Symphytum officianalis</i>	comfrey	Non-native	Boraginaceae
<i>Brassica rapa</i>	common mustard	Non-native	Brassicaceae
<i>Cardamine hirsuta</i>	hairy bittercress	Native	Brassicaceae
<i>Raphanus raphanistrum</i>	wild radish	Non-native	Brassicaceae
<i>Lonicera involucrata</i>	twinberry	Native	Caprifoliaceae
<i>Lonicera japonica</i>	Japanese honeysuckle	Non-native	Caprifoliaceae
<i>Cardionema ramosissimum</i>	sand mat	Native	Caryophyllaceae
<i>Limonium californicum</i>	sea lavender	Native	Caryophyllaceae
<i>Polycarpha tetraphyllum</i>	fourleaf allseed	Non-native	Caryophyllaceae
<i>Silene gallica</i>	common catchfly	Non-native	Caryophyllaceae
<i>Spergula arvensis</i>	spurry	Non-native	Caryophyllaceae
<i>Spergularia rubra</i>	red sandspurry	Non-native	Caryophyllaceae
<i>Stellaria media</i>	chickweed	Non-native	Caryophyllaceae
<i>Calystegia sepium</i>	morning glory	Non-native	Convolvulaceae
<i>Crassula connata</i>	pigmy weed	Native	Crassulaceae
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	Non-native	Cupressaceae
<i>Sequoia sempervirens</i>	redwood	Native	Cupressaceae
<i>Carex lyngbyei</i> (CRPR 2B.2)	Lyngbye's sedge	Native	Cyperaceae
<i>Carex obnupta</i>	slough sedge	Native	Cyperaceae
<i>Cyperus eragrostis</i>	tall flatsedge	Native	Cyperaceae
<i>Eleocharis sp.</i>	spikesedge	Native	Cyperaceae
<i>Isolepis cernua</i>	low bulrush	Native	Cyperaceae
<i>Schoenoplectus californicus</i>	California bulrush	Native	Cyperaceae
<i>Scirpus microcarpus</i>	small fruit bulrush	Native	Cyperaceae
<i>Pteridium aquilinum</i>	brackenfern	Native	Dennstaedtiaceae
<i>Dryopteris arguta</i>	wood fern	Native	Dryopteridaceae
<i>Polystichum munitum</i>	Western sword fern	Native	Dryopteridaceae
<i>Equisetum laevigatum</i>	smooth horsetail	Native	Equisetaceae
<i>Equisetum telmateia</i>	great horsetail	Native	Equisetaceae
<i>Acacia dealbata</i>	silver wattle	Non-native	Fabaceae
<i>Acacia melanoxylon</i>	Australian blackwood	Non-native	Fabaceae
<i>Acmispon parviflorus</i>	small-flowered lotus	Native	Fabaceae
<i>Cytisus scoparius</i>	Scotch broom	Non-native	Fabaceae
<i>Fumaria capreolata</i>	white-ramping fumitory	Non-native	Fabaceae
<i>Lathyrus latifolius</i>	sweet pea	Non-native	Fabaceae
<i>Lathyrus tingitanus</i>	tangier pea	Non-native	Fabaceae
<i>Lotus corniculatus</i>	big trefoil	Non-native	Fabaceae
<i>Lupinus arboreus</i>	yellow bush lupine	Non-native	Fabaceae

Scientific Name	Common Name	Native	Family
<i>Lupinus bicolor</i>	miniature lupine	Native	Fabaceae
<i>Medicago arabica</i>	spotted medic	Non-native	Fabaceae
<i>Medicago polymorpha</i>	burr clover	Non-native	Fabaceae
<i>Trifolium arvense</i>	hare's foot clover	Non-native	Fabaceae
<i>Trifolium dubium</i>	lesser trefoil	Non-native	Fabaceae
<i>Trifolium pratense</i>	red clover	Non-native	Fabaceae
<i>Trifolium repens</i>	white clover	Non-native	Fabaceae
<i>Trifolium subterraneum</i>	subterranean clover	Non-native	Fabaceae
<i>Trifolium wormskioldii</i>	cows clover	Non-native	Fabaceae
<i>Vicia behnghalense</i>	purple vetch	Non-native	Fabaceae
<i>Vicia hirsuta</i>	hairy vetch	Non-native	Fabaceae
<i>Vicia nigricans</i>	giant vicia	Non-native	Fabaceae
<i>Vicia sativa</i>	common vetch	Non-native	Fabaceae
<i>Erodium cicutarium</i>	redstem filaree	Non-native	Geraniaceae
<i>Erodium moschatum</i>	whitestem filaree	Non-native	Geraniaceae
<i>Geranium dissectum</i>	cutleaf geranium	Non-native	Geraniaceae
<i>Geranium molle</i>	dove's foot geranium	Non-native	Geraniaceae
<i>Geranium robertianum</i>	herb robert	Non-native	Geraniaceae
<i>Malva neglecta</i>	cheeseweed	Non-native	Geraniaceae
<i>Escallonia rubra</i>	red claws	Non-native	Grossulariaceae
<i>Crocasmia</i> sp.	crocasmia	Non-native	Iridaceae
<i>Iris douglasiana</i>	Douglas iris	Native	Iridaceae
<i>Iris pseudacorus</i>	bearded iris	Non-native	Iridaceae
<i>Juncus balticus</i>	wire rush	Native	Juncaceae
<i>Juncus bolanderi</i>	Bolander's rush	Native	Juncaceae
<i>Juncus breweri</i>	Brewer's rush	Native	Juncaceae
<i>Juncus bufonius</i>	toad rush	Native	Juncaceae
<i>Juncus effusus</i>	common rush	Native	Juncaceae
<i>Juncus hesperius</i>	bog rush	Native	Juncaceae
<i>Juncus lescurii</i>	dune rush	Native	Juncaceae
<i>Triglochin maritima</i>	saltmarsh arrowgrass	Native	Juncaginaceae
<i>Mentha pulegium</i>	pennyroyal	Non-native	Lamiaceae
<i>Mentha spicata</i>	spearmint	Non-native	Lamiaceae
<i>Prunella vulgaris</i>	common self-heal	Non-native	Lamiaceae
<i>Stachys chamissonis</i>	coastal hedgenettle	Native	Lamiaceae
<i>Stachys rigida</i>	rough hedgenettle	Native	Lamiaceae
<i>Linum bienne</i>	blue flax	Non-native	Linaceae
<i>Malva arborea</i>	tree mallow	Non-native	Malvaceae
<i>Melianthus major</i>	honey flower	Non-native	Melanthaceae
<i>Claytonia perfoliata</i>	niner's lettuce	Native	Montiaceae

Scientific Name	Common Name	Native	Family
<i>Morella californica</i>	California wax myrtle	Native	Myricaceae
<i>Eucalyptus globulus</i>	blue gum	Non-native	Myrtaceae
<i>Fuchsia</i> sp.	fuchsia	Non-native	Myrtales
<i>Epilobium ciliatum</i>	northern willow herb	Native	Onagraceae
<i>Oxalis articulata</i>	pink oxalis	Non-native	Oxalidaceae
<i>Eschscholzia californica</i>	California poppy	Native	Papaveraceae
<i>Eschscholzia californica</i> ssp. <i>maritima</i>	seaside California poppy	Native	Papaveraceae
<i>Erythranthe guttata</i>	yellow monkey flower	Native	Phrymaceae
<i>Picea sitchensis</i>	Sitka spruce	Native	Pinaceae
<i>Pinus contorta</i>	beach pine	Native	Pinaceae
<i>Pinus radiata</i>	Monterey pine	Non-native	Pinaceae
<i>Plantago coronopus</i>	cutleaf plantago	Non-native	Plantaginaceae
<i>Plantago lanceolata</i>	ribwort plantain	Non-native	Plantaginaceae
<i>Plantago major</i>	broadleaf plantain	Non-native	Plantaginaceae
<i>Triphysaria pusilla</i>	dwarf owl's clover	Native	Plantaginaceae
<i>Veronica anagallis-aquatica</i>	water speedwell	Non-native	Plantaginaceae
<i>Veronica arvensis</i>	wall speedwell	Non-native	Plantaginaceae
<i>Agrostis stolonifera</i>	creeping bentgrass	Non-native	Poaceae
<i>Aira caryophyllea</i>	silver hairgrass	Non-native	Poaceae
<i>Alopecurus saccatus</i>	Pacific foxtail	Native	Poaceae
<i>Anthoxanthum odoratum</i>	vernal sweet grass	Non-native	Poaceae
<i>Avena barbata</i>	slender wild oat	Non-native	Poaceae
<i>Avena sativa</i>	oats	Non-native	Poaceae
<i>Briza maxima</i>	rattlesnake grass	Non-native	Poaceae
<i>Bromus carinatus</i>	California brome	Native	Poaceae
<i>Bromus catharticus</i>	rescue grass	Non-native	Poaceae
<i>Bromus diandrus</i>	ripgut brome	Non-native	Poaceae
<i>Bromus hordaceus</i>	hairy brome	Non-native	Poaceae
<i>Cortaderia jubata</i>	pampas grass	Non-native	Poaceae
<i>Dactylis glomerata</i>	orchard grass	Non-native	Poaceae
<i>Distichlis spicata</i>	salt grass	Native	Poaceae
<i>Festuca arundinacea</i>	reed fescue	Non-native	Poaceae
<i>Festuca bromoides</i>	fescue	Non-native	Poaceae
<i>Festuca perenne</i>	Italian rye grass	Non-native	Poaceae
<i>Glyceria declinata</i>	small sweet grass	Non-native	Poaceae
<i>Hainardia cylindrica</i>	hard grass	Non-native	Poaceae
<i>Holcus lanatus</i>	soft chess	Non-native	Poaceae
<i>Hordeum</i> sp.	barley	Non-native	Poaceae
<i>Phleum pratense</i>	timothy grass	Non-native	Poaceae
<i>Phyllostachys</i> sp.	bamboo	Non-native	Poaceae

Scientific Name	Common Name	Native	Family
<i>Poa annua</i>	annual bluegrass	Non-native	Poaceae
<i>Poa confinis</i>	coastline bluegrass	Native	Poaceae
<i>Poa macrantha</i>	seashore bluegrass	Native	Poaceae
<i>Poa pratensis</i>	Kentucky bluegrass	Non-native	Poaceae
<i>Spartina densiflora</i>	dense cordgrass	Non-native	Poaceae
<i>Eriogonum latifolium</i>	beach buckwheat	Native	Polygonaceae
<i>Muehlenbeckia</i> sp.	wire vine	Non-native	Polygonaceae
<i>Polygonum paronychia</i>	beach knotweed	Native	Polygonaceae
<i>Rumex acetosella</i>	sheep sorrel	Non-native	Polygonaceae
<i>Rumex crispus</i>	curly dock	Non-native	Polygonaceae
<i>Rumex occidentalis</i>	western dock	Native	Polygonaceae
<i>Polypodium calirhiza</i>	California polypody	Native	Polypodiaceae
<i>Lysimachia arvensis</i>	scarlet pimpernel	Non-native	Primulaceae
<i>Lysimachia arvensis</i>	scarlet pimpernel	Non-native	Primulaceae
<i>Ranunculus repens</i>	buttercup	Non-native	Ranunculaceae
<i>Frangula purshiana</i>	cascara sagrada	Native	Rhamnaceae
<i>Cotoneaster</i> sp.	cotoneaster	Non-native	Rosaceae
<i>Crataegus monogyna</i>	common hawthorn	Non-native	Rosaceae
<i>Fragaria chiloensis</i>	beach strawberry	Native	Rosaceae
<i>Potentilla anserina</i>	silverweed	Native	Rosaceae
<i>Prunus</i> sp.	apple	Non-native	Rosaceae
<i>Rosa</i> sp.	ornamental rose	Non-native	Rosaceae
<i>Rubus armeniacus</i>	Himalayan blackberry	Non-native	Rosaceae
<i>Rubus ursinus</i>	California blackberry	Native	Rosaceae
<i>Galium aparine</i>	cleavers	Non-native	Rubiaceae
<i>Salix hookeriana</i>	Hooker's willow	Native	Salicaceae
<i>Salix lasiandra</i>	shining willow	Native	Salicaceae
<i>Salix lasiolepis</i>	arroyo willow	Native	Salicaceae
<i>Myriophyllum aquaticum</i>	parrot feather	Non-native	Saxifragaceae
<i>Tolmiea menziesii</i>	piggyback plant	Native	Saxifragaceae
<i>Buddleja davidii</i>	butterfly bush	Non-native	Scrophulariaceae
<i>Scrophularia californica</i>	California figwort	Native	Scrophulariaceae
<i>Tropaeolum majus</i>	garden nasturtium	Non-native	Tropaeolaceae
<i>Typha latifolia</i>	broadleaved cattail	Native	Typhaceae
<i>Soleirolia soleirolii</i>	baby's tears	Non-native	Urticaceae

Appendix D

Site Visit Photographs



Photo D-1. Lyngbye's sedge population on the shore of Humboldt Bay. View southeast from 40.851846°, -124.158772°.



Photo D-2. View north of Point Reyes salty bird's-beak population from 40.851922°, -124.158706°.



Photo D-3. View north of Humboldt Bay owl's-clover population from 40.851948°, -124.158651°.



Photo D-4. Close-up of Point Reyes salty bird's-beak.



Photo D-5. View of a culvert on the shore of Humboldt Bay. No rare plants were observed at this location.



Photo D-6. View of second culvert on the shore of Humboldt Bay. No special status plants were observed at this location.



Photo D-7. Herbaceous plant community along railroad tracks in the PSB. No special status plants were observed along the railroad tracks.



Photo D-8. Herbaceous plant community and Hooker's willows along railroad tracks. No special status plant species were observed along the railroad tracks.



Photo D-9. Understory and canopy structure in a portion of the PSB, north of the Manila Community Park, facing east. No special status plant species were observed in wooded areas.



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