



Technical Memorandum

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From	Sara Moriarty-Graves - GHD Wildlife Biologist	Ref. No.	12572691 Manila Drainage Project
Subject	Manila Drainage Project - Wildlife Habitat Assessment Technical Memorandum		

1. Introduction/Purpose

The Manila Community Services District (hereafter “Manila CSD”) proposes to make drainage improvements (hereafter “Project”) throughout the community of Manila, California (**Appendix A, Figure 1**). 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 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 environmental permitting, GHD evaluated the potential for sensitive wildlife species (federally- or state-listed or special status wildlife) to occur within the Project Study Boundary (PSB; **Appendix A, Figure 2**). In addition, potential Project impacts to these resources (if any), were evaluated.

Special status species and resources are the primary focus of this evaluation. Common species or resources without special protections are not considered. Potential impacts to special status plants, sensitive natural communities, and wetlands are evaluated in separate reports.

2. Survey Methods

2.1 Database Searches (CNDDDB, IPaC, and EFH)

Database searches for special status wildlife records in the Project vicinity (seven-quad search area) were conducted by GHD on May 23, 2022. A nine-quad search was not completed due to the adjacency of the Pacific Ocean. The seven-quad search area was centered on the Project U.S. Geological Survey 7.5-

minute quadrangle (Eureka) and including the surrounding six quadrangles (Tyee City, Arcata North, Arcata South, McWhinney Creek, Field's Landing, Cannibal Island). Database searches (**Appendix B**) included:

- The California Natural Diversity Database (CNDDB; plant species and sensitive habitat records were excluded; CDFW 2022a). CNDDB results within a 3-mile radius are included in **Appendix A, Figure 3**.
- A resources list was obtained from the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC; USFWS 2022a) for the PSB on July 6, 2022.
- An Essential Fish Habitat (EFH) Mapper Report was obtained from NOAA Fisheries (2022a) for the PSB on June 6, 2022.

The National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region California Species Tool is no longer publicly available. However, the potential for known federally-listed species managed by NMFS are included in **Table 1**.

2.2 Site Visit

A reconnaissance-level site visit was conducted by Sara Moriarty-Graves, GHD Wildlife Biologist (hereafter surveyor), on May 24, 2022, from 07:00 to 12:30. Weather during the survey included overcast to cloudy skies, about 50 degrees Fahrenheit, with light air to a gentle breeze (Beaufort scale 1-3).

The surveyor walked the entire PSB on Peninsula Drive (**Appendix A, Figure 2**). Due to property access constraints in residential areas, portions of the PSB were inaccessible. Inaccessible areas were assessed audibly by species' sounds and visually with binoculars.

Where property access and the habitat allowed the surveyor to walk without risk of damaging nests or dens and surrounding vegetation, the survey included a physical search of the area. This included inspecting the ground, shrubs, culverts, holes, and trees for the presence of any wildlife species. Additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, whitewash, scat, tracks, etc. Where the habitat was dense or otherwise impenetrable or inaccessible, observations were made from fixed locations. This reconnaissance-level survey was conducted to identify general wildlife resources and habitat as well as wildlife activity in the PSB. No protocol-level surveys for special status wildlife were conducted at this time.

3. Results

3.1 Summary of General Biological Resources

The Project is located in the community of Manila, California, in residential areas, along roadways, railroad tracks, areas owned by Manila CSD (such as the Manila Community Park), and in undeveloped drainage areas. Residential homes are primarily located along Peninsula Drive, and the railroad tracks are mainly adjacent to the road. Adjacent land use includes residential private property, recreation in the Samoa and Manila Dunes, few private businesses, and the Redwood Coast Montessori school at the Manila Community Center.

Most of the vegetation on either side of the railroad tracks is composed of a dense shrub understory with native and non-native species, and deciduous trees, including willow (*Salix sp.*) and the occasional alder (*Alnus rubra*). Peninsula Drive is predominantly lined by herbaceous shrubs where houses were not present, landscaped vegetation on residential properties, and few mature conifer trees, including Monterey pines (*Pinus radiata*). Drainage ditches with stagnant water were present in portions of the PSB along Peninsula Drive on the east side of State Route 255. The Project area within the Manila Community Park includes undeveloped vegetated areas with minimal water present. Portions of the Project extend to Humboldt Bay shoreline, which is a tidally inundated marsh with bird species present. On the southern end of the Project west of State Route 255, adjacent areas more commonly contained shrubs, forbs, and coastal dune habitat.

3.2 Habitat Conservation Plans and Natural Community Conservation Plans

Habitat Conservation Plans (HCPs) and Natural Community Conservation Plans (NCCPs) are site-specific plans to address effects on sensitive species of plants and animals. The PSB does not overlap any existing active or proposed HCPs or NCCPs according to a current list from the USFWS (USFWS 2022b) and the CDFW list of Natural Community Conservation Plans (CDFW 2022b).

3.3 Critical Habitat and Essential Fish Habitat

The PSB does not overlap any federally designated critical habitat. Assuming ground disturbance does not require any in-water work in Humboldt Bay, Critical Habitat and Essential Fish Habitat would not be affected. However, if ground disturbance does extend into Humboldt Bay and in-water work is required, Essential Fish Habitat for Groundfish, Coho Salmon, Chinook Salmon, and coastal pelagic species would be disturbed.

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) requires that Essential Fish Habitat (EFH) be identified for all federally managed species including all species managed by the Pacific Fisheries Management Council (PFMC). EFH has been defined for the purposes of the MSFCMA as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” NOAA Fisheries has further added the following interpretations to clarify this definition:

- “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish, and may include areas historically used by fish where appropriate;
- “Substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities;
- “Necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and
- “Spawning, breeding, feeding, or growth to maturity” covers the full life cycle of a species.

Adverse effect means any effect that reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), or site-specific or habitat-wide effects, including individual, cumulative, or synergistic consequences of actions.

The PFMC is responsible for managing commercial fisheries resources along the coast of Washington, Oregon, and California. The PFMC is “guided by the principle that there should be no net loss of the productive capacity of marine, estuarine, and freshwater habitats that sustain commercial, recreational, and tribal salmon fisheries beneficial to the nation” (PFMC 2021). EFH applies to species within the PSB for the proposed Project. Under the MSFCMA, Humboldt Bay is designated as EFH within the Pacific Coast for Groundfish and coastal pelagic species. Humboldt Bay and land within the PSB are also designated EFH for Coho Salmon and Chinook Salmon.

3.4 Habitat Connectivity

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Maintaining the continuity of established wildlife corridors is important to: (a) sustain species with specific foraging requirements, (b) preserve a species’ distribution potential, and (c) retain genetic diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

No Essential Connectivity Areas have been identified within the PSB, and the nearest is approximately 20 miles east (CDFW 2022c). However, based on the observation of the riparian habitat, dense understory, and deciduous tree canopy cover, the area within and adjacent to the Manila Community Park has the potential to function as a riparian corridor for bird species. Shrub cover along drainage areas, roads, and railroad tracks may facilitate the movement of songbird species, provide nesting habitat, and provide cover from predator species by acting as a hedgerow (Hinsley and Bellamy 2000). Although these features facilitate connectivity, this is a highly disturbed area by recreationalists in the Manila Community Park and vehicular traffic, which can negatively influence reproductive success (Holm and Laursen 2011). Residential roads and State Route 255 may also be barriers to certain species’ movement.

The PSB is not located within or near a “natural landscape block” identified in the California Essential Habitat Connectivity Project. The nearest natural landscape block is located approximately 14 miles northeast of the PSB (CDFW 2022c). There is hydrologic connectivity between small portions of the PSB and the margins of Humboldt Bay. The Project does not include any elements that would impede migration of native resident or migratory fish. The Project also does not include any elements that would result in a new barriers to terrestrial wildlife movement. The Project would not interfere with the migration of birds, bats, or other species.

3.5 Special Status Wildlife

3.5.1 Wildlife Species Observed On-site

Various species (mainly birds) were observed within the PSB during the May 24, 2022, reconnaissance-level site visit. One special status bird species (Great Egret; California Department of Forestry and Fire Protection Sensitive) was observed flying over the study area. Additionally, one special status insect (Western Bumble Bee; United States Forest Service Sensitive) was observed.

Tables of all wildlife species detected during the site visit are presented in **Tables D1** and **D3 (Appendix D)**. **Table D2** is a list of avian breeding codes, associated bird behaviour, and breeding status. **Tables D1** and **D3** are not intended to be comprehensive lists of all species that could occur within the PSB as no protocol level surveys have been conducted.

3.5.2 Federally-listed Wildlife Species

Twenty federally-listed or candidate wildlife species that are regulated by the USFWS and NOAA Fisheries under the federal Endangered Species Act (ESA) were identified during scoping in the Project vicinity (i.e., the seven-quad search area). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, it was determined that the PSB does not provide suitable habitat for any of these species, and justification for exclusion from further consideration is detailed in **Table 1**. The Monarch butterfly (overwintering, pop. 1) is a federal candidate and has a low potential to occur in the area based on general habitat in the PSB and lack of milkweed (*Asclepias syriaca*) being present. The nearest known overwintering location is in northern Mendocino County (Western Monarch Count 2022).

3.5.3 State-Listed Wildlife Species

Ten state-listed wildlife species (seven of which are also federally-listed) that are regulated by the CDFW under the California Endangered Species Act (CESA) were identified during scoping in the Project vicinity (i.e., the seven-quad search area). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, the PSB does not provide suitable habitat for eight of these species, and justification for exclusion from further consideration is detailed in **Table 1**. The Bald Eagle is a state endangered species and has a moderate potential to occur within or adjacent to the PSB. However, suitable nesting habitat is not available within the PSB, and the species would be more likely to fly over. The Bank Swallow is a state threatened species and has a moderate potential to occur based on known occurrences and the suitable habitat within and directly adjacent to the PSB.

3.5.4 Other Special Status Wildlife Species

Thirty-nine other special status wildlife species were identified during scoping in the Project vicinity (i.e., the seven-quad search area). These species are considered special status species based on a global or state rank, or special designations from various agencies (including CDF, USFS, and BLM; see **Table 1** for details on designations). Based on habitat evaluations during the reconnaissance survey, and a database and literature review, the PSB does not provide suitable habitat for 27 of these species, and justification for exclusion from further consideration is detailed in **Table 1**. Two mammals (Townsend’s Big-eared Bat and Long-Eared Myotis), eight bird species, and one amphibian (Northern Red-legged Frog) have a moderate to high potential to occur within the PSB during construction. One special status bird (Great Egret) and one insect (Western Bumble Bee) were observed during the reconnaissance site visit. Potential impacts are discussed in **Section 4**.

Based on occurrence records, habitat availability, and the reconnaissance site visit, 14 special status wildlife species (including two state-listed bird species; Bald Eagle and Bank Swallow) have a moderate or higher potential to occur within or nearby the PSB. Nonetheless, trees and shrubs on-site (especially within the northern portion of the PSB north of the Manila Community Park) may provide suitable nesting habitat for common avian species protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (FGC). Representative photos of habitat in the PSB taken on May 24, 2022, are included in **Appendix C**.

Table 1 Special Status Wildlife Species Potential to Occur within the Project Study Boundary (PSB)

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
Mammals								
<i>Aplodontia rufa humboldtiana</i>	Humboldt Mountain Beaver	None	None	G5TNR	SNR		Coastal scrub; Redwood; Riparian forest. Coast Range in southwestern Del Norte County and northwestern Humboldt County. Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Low potential. The habitat structure and extent is marginally suitable for the species. No observations have been recorded nearby (iNaturalist 2022).
<i>Arborimus albipes</i>	White-footed Vole	None	None	G3G4	S2	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	North coast coniferous forest; Redwood; Riparian forest. Mature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs. Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	Low potential. No suitable habitat of mature coastal forest stands is present within the PSB. However, the PSB is located near a stream with a dense understory.
<i>Arborimus pomo</i>	Sonoma Tree Vole	None	None	G3	S3	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	North coast coniferous forest; Old growth; Redwood North coast fog belt from Oregon border to Sonoma County. In Douglas-fir, redwood and montane	No potential. No suitable habitat of old growth or Douglas fir stands is present within the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							hardwood-conifer forests. Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	
<i>Balaenoptera borealis</i>	Sei Whale	FE	None			MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Balaenoptera musculus</i>	Blue Whale	FE	None	G3G4	N1	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Balaenoptera physalus</i>	Fin Whale	FE	None	G3G4	N2	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Corynorhinus townsendii</i>	Townsend's Big-eared Bat	None	None	G4	S2	BLM_S-Sensitive CDFW_SSC-Species of	Broadleaved upland forest; Chaparral; Chenopod scrub;	Moderate potential. The species was detected in October

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
						Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	Great Basin grassland; Great Basin scrub; Joshua tree woodland; Lower montane coniferous forest; Meadow & seep; Mojavean desert scrub; Riparian forest; Riparian woodland; Sonoran desert scrub; Sonoran thorn woodland; Upper montane coniferous forest; alley & foothill grassland. Throughout California in a wide variety of habitats. Most common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	2021 directly adjacent to the PSB (BAMVT 2022). Marginally suitable roosting areas present within the PSB. This species is known to roost in buildings and alternatively larger trees, and forages around edge habitat and riparian corridors (Fellers and Pierson 2002). No work on buildings is being conducted and few large trees are present within the PSB. However, if tree removal is to occur, measures should be considered to reduce disturbance.
<i>Erethizon dorsatum</i>	North American Porcupine	None	None	G5	S3	IUCN_LC-Least Concern	Broadleaved upland forest; Cismontane woodland; Closed-cone coniferous forest; Lower montane coniferous forest; North coast coniferous forest; Upper montane coniferous forest. Forested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges. Wide variety of	Low potential. Habitat in the PSB is not preferred. However, an observation was recorded approximately 6 miles from the PSB on October 2, 2021 (iNaturalist 2022).

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							coniferous and mixed woodland habitat.	
<i>Eschrichtius robustus</i>	Gray Whale	None	None	G4	N4	MMPA Protected	Marine	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Eubalaena japonica</i>	North Pacific Right Whale	FE	None	G1	N1	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Eumetopias jubatus</i>	Steller Sea Lions	None	None	G3	S2	MMPA Protected	Marine and bay.	No potential. There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the species to occur (no mudflat habitat).
<i>Martes caurina humboldtensis</i>	Humboldt Marten	Threatened	Endangered	G4G5T1	S1	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest; Old growth; Redwood. Occurs only in the coastal redwood zone from the Oregon border south to Sonoma County. Associated with late-successional	No potential. There is no suitable old growth forest needed for foraging or denning within or nearby the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							coniferous forests, prefer forests with low, overhead cover.	
<i>Megaptera novaeangliae</i>	Humpback Whale	FE	None	G4	N3	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Myotis evotis</i>	Long-eared Myotis	None	None	G5	S3	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_M-Medium Priority	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests. Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Moderate potential. The species was detected directly adjacent to the PSB one night in August 2021 (BAMVT 2022). The species is known to use conifer stumps and snags as day-roosts (Waldien et al. 2000). There is bark and snag habitat for nursery colonies within the PSB. If tree removal is to occur, measures should be considered to reduce disturbance.
<i>Orcinus orca</i>	Southern Resident Killer Whale	FE	None	G4G5T1	N1	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be

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								suitable for this species.
<i>Orcinus orca</i>	West Coast Transient Killer Whale	None	None	G4G5T3Q	NNR	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Pekania pennanti</i>	Fisher	None	None	G5	S2S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest; Old growth; Riparian forest. Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure. Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	No potential. There is no suitable old growth forest needed for foraging or denning within or nearby the PSB.
<i>Phoca vitulina richardii</i>	Pacific Harbor Seal	None	None	G5T5Q	N5	MMPA Protected	Marine and bay.	No potential. There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the species to occur. Observed Harbor Seal haul outs in Humboldt Bay are limited to mudflats, which are not

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
								present in the PSB (CDFW 2012).
<i>Phocoena phocoena</i>	Harbor Porpoise	None	None	G4G5	N4N5	MMPA Protected	Marine and bay.	Low potential. There is no work in marine habitat proposed and the sections of the PSB that extend into the Humboldt Bay are shallow. Numerous observations of the species have been recorded within 8 miles from the PSB at the entrance channel into the Humboldt Bay, as recent as June 6, 2022 (iNaturalist 2022). If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Physeter macrocephalus</i>	Sperm Whale	FE	None	G3G4	NU	MMPA Protected	Marine.	No potential. There is no work in marine habitat proposed. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Zalophus californianus</i>	California Sea Lion	None	None	G5	N4	MMPA Protected	Marine and bay.	No potential. There is no work in marine habitat proposed and the sections that extend into the Humboldt Bay are unsuitable for the

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
								species to occur. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species. Mudflats or docks are not present.
Birds								
<i>Accipiter striatus</i>	Sharp-shinned Hawk	None	None	G5	S4	CDFW_WL-Watch List IUCN_LC-Least Concern	Cismontane woodland; Lower montane coniferous forest; Riparian forest; Riparian woodland. Ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	Low potential. Marginally suitable habitat is located nearby the PSB and on the portion of the PSB that is on the northeast corner of the Manila Community Park. An observation was recorded within 4 miles of the PSB on May 14, 2022.
<i>Ardea alba</i>	Great Egret	None	None	G5	S4	CDF_S-Sensitive IUCN_LC-Least Concern	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland Colonial nester in large trees. Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Present. Observed flying over the study area during the site visit. Additionally, observations were recorded recently within one mile from the PSB (eBird 2022). Marginally suitable habitat within and adjacent to the PSB. Suitable nesting habitat is available in the portion of the PSB on the northeast corner of

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
								the Manila Community Park.
<i>Ardea herodias</i>	Great Blue Heron	None	None	G5	S4	CDF_S-Sensitive IUCN_LC-Least Concern	Brackish marsh; Estuary; Freshwater marsh; Marsh & swamp; Riparian forest; Wetland Colonial nester in tall trees, cliffsides, and sequestered spots on marshes. Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Moderate potential. Observations were recorded recently within one mile from the PSB (eBird 2022). Marginally suitable habitat is present within and nearby the PSB. Suitable nesting habitat is available in the portion of the PSB on the northeast corner of the Manila Community Park.
<i>Brachyramphus marmoratus</i>	Marbled Murrelet	Threatened	Endangered	G3	S2	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	Lower montane coniferous forest; Old growth; Redwood. Feeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz. Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	No potential. No suitable habitat of old growth stands is available within or nearby the PSB.
<i>Charadrius montanus</i>	Mountain Plover	None	None	G3	S2S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of	Chenopod scrub; valley & foothill grassland. Short grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers	No potential. No suitable habitat is present within the PSB. Species was recorded in an agricultural area within 5 miles from the PSB in 2012 (eBird 2022).

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
						Conservation Concern	grazed areas and areas with burrowing rodents.	
<i>Charadrius nivosus nivosus</i>	Western Snowy Plover	Threatened	None	G3T3	S2	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List	Great Basin standing waters; Sand shore; Wetland Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	No potential. No suitable habitat is present within the PSB.
<i>Circus hudsonius</i>	Northern Harrier	None	None	G5	S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	Coastal scrub; Great Basin grassland; Marsh & swamp; Riparian scrub; Valley & foothill grassland; Wetland Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Moderate potential. Numerous recent sightings have been recorded within one mile of the PSB (eBird 2022). Marginally suitable habitat for nesting in limited areas of the PSB, such as in the portion of the PSB on the northeast corner of the Manila Community Park. However, it is more likely for the species to fly over.
<i>Coccyzus americanus occidentalis</i>	Western Yellow-billed Cuckoo	FT	SE	G5T2T3	S1		Riparian forest. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	No potential. No suitable habitat is present in the study area.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
<i>Coturnicops noveboracensis</i>	Yellow Rail	None	None	G4	S1S2	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	Freshwater marsh; Meadow & seep. Summer resident in eastern Sierra Nevada in Mono County. Freshwater marshlands.	No potential. There is no suitable habitat within the area. One observation was recorded ~4 miles from the PSB in Eureka, California in 2013 (eBird 2022).
<i>Egretta thula</i>	Snowy Egret	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp; Meadow & seep; Riparian forest; Riparian woodland; Wetland. Colonial nester, with nest sites situated in protected beds of dense tules. Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Moderate potential. Several sightings have been recorded before March 2021 within one mile of the PSB (eBird 2022).
<i>Elanus leucurus</i>	White-Tailed Kite	None	None	G5	S3S4	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	Cismontane woodland; Marsh & swamp; Riparian woodland; Valley & foothill grassland; Wetland. Rolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Open grasslands, meadows, or marshes	Moderate potential. Several sightings have been recorded before April 2021 within one mile of the PSB (eBird 2022). Suitable nesting and perching habitat is directly adjacent to the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							for foraging close to isolated, dense-topped trees for nesting and perching.	
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Delisted	Endangered	G5	S3	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	Lower montane coniferous forest; Old growth. Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Moderate potential. The species has recently been observed in 2022 within one mile of the PSB (eBird 2022). However, suitable nesting habitat is not available within the PSB.
<i>Nannopterum auritum</i>	Double-Crested Cormorant	None	None	G5	S4	CDFW_WL-Watch List IUCN_LC-Least Concern	Riparian forest; Riparian scrub; Riparian woodland. Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Moderate Potential. Numerous observations have been observed within one mile of the PSB (eBird 2022).
<i>Nycticorax nycticorax</i>	Black-Crowned Night Heron	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp; Riparian forest; Riparian woodland; Wetland. Colonial nester, usually in trees, occasionally in tule patches. Rookery sites located adjacent to foraging areas: lake	Moderate potential. Numerous observations have been observed within one mile of the PSB before 2019 (eBird 2022).

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							margins, mud-bordered bays, marshy spots.	
<i>Pandion haliaetus</i>	Osprey	None	None	G5	S4	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	Riparian forest. Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Moderate potential. Numerous recent observations (last observation in April 2022; eBird 2022). Suitable foraging habitat adjacent to the PSB in the Humboldt Bay.
<i>Rallus obsoletus obsoletus</i>	California Ridgway's Rail	Endangered	Endangered	G3T1	S1	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	Brackish marsh; Marsh & swamp; Salt marsh; Wetland. Salt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	No potential. Humboldt County is outside of the currently known range.
<i>Riparia riparia</i>	Bank Swallow	None	Threatened	G5	S2	BLM_S-Sensitive IUCN_LC-Least Concern	Riparian scrub; Riparian woodland. Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Moderate potential. An observation was recorded within one mile of the PSB in August 2021 (eBird 2021). Suitable habitat is present within and nearby the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
<i>Strix occidentalis caurina</i>	Northern Spotted Owl	FT	ST	G3T3	S2S3		North coast coniferous forest; Old growth; Redwood. Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.	No potential. There is no suitable nesting habitat within or immediately adjacent to the PSB.
Reptiles								
<i>Chelonia mydas</i>	Green Sea Turtle (Pacific Region; Region 1)	FT	None	G3	S4		Generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting.	No potential. Although the species has been recorded on the Pacific coast, the species is more likely to occur in tropical waters south of California. The species was observed in Sonoma County, California (California Herps 2022). There is no suitable open beach or sloping platform for nesting within or nearby the PSB.
<i>Chelonia mydas</i>	Green Sea Turtle aka East Pacific Green Sea Turtle	FT	None	G3	S1	IUCN_EN-Endangered	Marine bay. Marine. Completely herbivorous; needs adequate supply of seagrasses and algae. Enters temperate waters in the summer.	No potential. Although the species has been recorded on the Pacific coast, the species is more likely to occur in tropical waters south of California. The species was observed in

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
								Sonoma County, California (California Herps 2022).
<i>Dermochelys coriacea</i>	Leatherback Sea Turtle	FE	None				Pelagic, living in the open ocean and occasionally entering the shallower water of bays and estuaries.	No potential. Although the Humboldt Bay encompasses the species range, observations and nesting locations have been recorded south of Sonoma County, California (California Herps 2022).
<i>Emys marmorata</i>	Western Pond Turtle	None	None	G3G4	S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Low Potential. Marginally suitable perennial aquatic or upland habitat is present within or nearby the PSB.
<i>Lepidochelys olivacea</i>	Olive Ridley Sea Turtle	FT	None				Marine. Found well out to sea and in protected, relatively shallow bays and lagoons and the shallow water between reefs and the shore.	Low potential. Humboldt County is considered a less common range for the species. However, the species was observed in Table Bluff, Humboldt County, California, in 2009 (California Herps 2022).
Amphibians								

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
<i>Ascaphus truei</i>	Pacific Tailed Frog	None	None	G4	S3S4	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	Aquatic; Klamath/North coast flowing waters; Lower montane coniferous forest; North coast coniferous forest; Redwood; Riparian forest. Occurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats. Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	No potential. No suitable perennial montane streams or coniferous forest habitat present within or nearby the PSB.
<i>Rana aurora</i>	Northern Red-Legged Frog	None	None	G4	S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	Klamath/North coast flowing waters; Riparian forest; Riparian woodland. Humid forests, woodlands, grasslands, and streamsides in northwestern California, usually near dense riparian cover. Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Moderate potential. An observation was recorded in March 2020 within one mile of the PSB (iNaturalist 2022). Suitable habitat is present in limited areas of the PSB, including the portion of the PSB in the northeast corner of the Manila Community Park.
<i>Rana boylei</i>	Foothill Yellow-Legged Frog	None	Endangered	G3	S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	Aquatic; Chaparral; Cismontane woodland; Coastal scrub; Klamath/North coast flowing waters; Lower montane coniferous forest;	No potential. No suitable shallow streams or substrate for egg-laying present in the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
						USFS_S-Sensitive	Meadow & seep; Riparian forest; Riparian woodland; Sacramento/San Joaquin flowing waters. Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	
<i>Rhyacotriton variegatus</i>	Southern Torrent Salamander	None	None	G3G4	S2S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	Lower montane coniferous forest; Old growth; Redwood; Riparian forest. Coastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest. Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	Low potential. No suitable permanent streams present within the PSB. An observation was recorded in March 2022 within one mile of the PSB (iNaturalist 2022).
Fish								
<i>Acipenser medirostris</i>	Green Sturgeon	None	None	G3	S1	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters. These are the most marine species of sturgeon.	No potential. No perennial aquatic habitat is present within the PSB. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	habitat would not be suitable for this species.
<i>Acipenser medirostris</i> pop. 1	Green Sturgeon - Southern DPS	FT	None	G3	S1	SSC	Coastal watersheds south of the Eel River with spawning confirmed in the Sacramento River system and present in Humboldt Bay. These are the most marine species of sturgeon. Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Low potential. The PSB extends to small portions of the Humboldt Bay. If in-water work occurs along the Humboldt Bay shoreline, shallow depths and salt marsh habitat would not be suitable for this species.
<i>Entosphenus tridentatus</i>	Pacific Lamprey	None	None	G4	S3	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters; South coast flowing waters. Found in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is	No Potential. No perennial aquatic habitat is present within or nearby the PSB. Anadromous habitat (freshwater tributary) is not present in or near the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							declining. Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	
<i>Eucyclogobius newberryi</i>	Tidewater Goby	Endangered	None	G3	S3	AFS_EN-Endangered IUCN_VU-Vulnerable	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters; South coast flowing waters. Brackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Low Potential. No suitable habitat is present within or nearby the PSB. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to Moderate.
<i>Lampetra richardsoni</i>	Western Brook Lamprey	None	None	G4G5	S3S4	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	Found in the Sacramento River basin northward into British Columbia. Requires fine gravel beds for spawning. Larvae burrow in fine sediment.	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles. Anadromous habitat (freshwater tributary) is not present in or near the PSB.
<i>Oncorhynchus clarkii clarkii</i>	Coast Cutthroat Trout	None	None	G5T4	S3	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern	Aquatic; Klamath/North coast flowing waters. Small coastal streams from the Eel River to the	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles. Anadromous

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
						USFS_S-Sensitive	Oregon border. Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	habitat (freshwater tributary) is not present in or near the PSB.
<i>Oncorhynchus tshawytscha</i>	Chinook Salmon – California Coastal ESU	Threatened					Rivers and streams south of the Klamath River to the Russian River.	No potential. There is no suitable rivers or streams within or nearby the PSB. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to Moderate .
<i>Oncorhynchus kisutch</i> pop. 2	Coho Salmon - Southern Oregon / Northern California ESU	Threatened	Threatened	G5T2Q	S2	AFS_TH-Threatened	Aquatic; Klamath/North coast flowing waters; Sacramento/San Joaquin flowing waters. Federal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California. State listing refers to populations between the Oregon border and Punta Gorda, California.	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to Moderate .
<i>Oncorhynchus mykiss irideus</i> pop. 16	Steelhead - Northern California DPS	Threatened	None	G5T2T3Q	S2S3	AFS_TH-Threatened	Aquatic; Sacramento/San Joaquin flowing waters. Coastal basins from Redwood Creek south to the Gualala River,	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							inclusive. Does not include summer-run steelhead.	shoreline, the potential to occur would increase to Moderate .
<i>Spirinchus thaleichthys</i>	Longfin Smelt	Candidate	Threatened	G5	S1		Aquatic; Estuary. Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles. If in-water work occurs along the Humboldt Bay shoreline, the potential to occur would increase to Moderate .
<i>Thaleichthys pacificus</i>	Eulachon	Threatened	None	G5	S2		Aquatic; Klamath/North coast flowing waters. Found in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	No Potential. No perennial aquatic habitat is present within the PSB or within 0.5 miles.
Insects								
<i>Bombus caliginosus</i>	Obscure Bumble Bee	None	None	G2G3	S1S2	IUCN_VU-Vulnerable	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include Baccharis, Cirsium, Lupinus,	Low Potential. The PSB falls within the species current range, but the preferred shrubland and grassland habitat is not available (Hatfield et al. 2014).

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							Lotus, Grindelia and Phacelia.	
<i>Bombus crotchii</i>	Crotch Bumble Bee	None	None	G2	S1S2		Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	No potential. The PSB does not fall within the species current range. The preferred grassland and scrub habitat is not available (Hatfield et al. 2015a).
<i>Bombus occidentalis</i>	Western Bumble Bee	None	None	G2G3	S1	USFS_S-Sensitive	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Present. Observed during the site visit at the railroad intersection with Sandy Road. The PSB falls within the species current range. Available habitat (open grassy areas and urban park) is available within the PSB (Hatfield et al. 2015b). Limited patches of nectar plants needed for foraging are present (Hatfield et al. 2015b).
<i>Cicindela hirticollis gravida</i>	Sandy Beach Tiger Beetle	None	None	G5T2	S2		Coastal dunes. Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico. Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not	No potential. No suitable sand habitat is available within the PSB.

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
							affected by wave action.	
<i>Danaus plexippus</i>	Monarch Butterfly – California overwintering, pop. 1	FC	None	G4T2T3	S2S3		Fields, roadside areas, open areas, wet areas or urban gardens. This species only lays eggs on milkweed. Overwintering tree habitat includes eucalyptus, Monterey pine, Monterey cypress, western sycamore, coast redwood, and coast live oak trees.	Low potential. General habitat is present within the PSB. An observation was recorded ~2.5 miles from the PSB in September 2021 (iNaturalist 2022). However, milkweed was not observed during the site visit.
<i>Scaphinotus behrensi</i>	Behrens' Snail-Eating Beetle	None	None	G2G4	S2S4		North coast coniferous forest. Found in extreme NW CA along the coast.	No potential. No suitable coniferous forest habitat is available within the PSB.
Mollusks								
<i>Anodonta californiensis</i>	California Floater	None	None	G3Q	S2?	USFS_S-Sensitive	Aquatic. Freshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. Generally in shallow water.	No potential. No suitable aquatic habitat or host fish available within the PSB.
<i>Margaritifera falcata</i>	Western Pearlshell	None	None	G4G5	S1S2		Aquatic. Prefers lower velocity waters.	No potential. No suitable aquatic habitat available within the PSB.
Footnotes: ¹ Rankings from CNDDB (January 2022). ² General habitat, and microhabitat column information, reprinted from CNDDB (January 2022).								
Column Header Categories and Abbreviations:								

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
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FESA: Listing status under the federal Endangered Species Act (ESA)

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

CESA: Listing status under the California state Endangered Species Act (CESA)

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

Global Rank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2022) (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. 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 2022d); ? = "Denotes inexact numeric rank" (NatureServe 2022); Q = "Questionable taxonomy that may reduce conservation priority" (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; 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.

Other Statuses (other federal or state listings may include):

AFS_TH (American Fisheries Society Threatened): "a taxon that is in imminent danger of becoming endangered throughout all or a significant portion of its range" (Jelks et al. 2008).

AFS_VU (American Fisheries Society Vulnerable): "a taxon that is in imminent danger of becoming threatened throughout all or a significant portion of its range" (Jelks et al. 2008).

BLM_S (Bureau of Land Management Sensitive): "(1) species listed or proposed for listing under the Endangered Species Act (ESA), and (2) species requiring special management consideration to promote their conservation and reduce the likelihood and need for future listing under the ESA, which are designated as Bureau sensitive by the State Director(s). All Federal candidate species, proposed species, and delisted species in the 5 years following delisting would be conserved as Bureau sensitive species." (CDFW 2022d);

CDF_S (California Department of Forestry and Fire Protection Sensitive): "those species that warrant special protection during timber operations" (CDFW 2022d);

CDFW_FP (CDFW Fully Protected Animal): "This classification was the State of California's initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, amphibians and reptiles, birds and mammals. Most of the species on these lists have subsequently been listed under the state and/or federal endangered species acts." (CDFW 2022d);

CDFW_SSC (CDFW Species of Special Concern): "It is the goal and responsibility of the Department of Fish and Wildlife to maintain viable populations of all native species. To this end, the Department has designated certain vertebrate species as 'Species of Special Concern' because declining population levels, limited ranges, and/or continuing threats have made them vulnerable to extinction. The goal of designating species as 'Species of Special Concern' is to halt or reverse their decline by calling attention to their plight and addressing the issues of concern early enough to secure their long-term viability" (CDFW 2022d);

CDFW_WL (California Department of Fish and Wildlife Watch List): "The CDFW maintains a list consisting of taxa that were previously designated as "Species of Special Concern" but no longer merit that status, or which do not yet meet SSC criteria, but for which there is concern and a need for additional information to clarify status" (CDFW 2022d);

Scientific Name	Common Name	FESA	CESA	GRank ¹	SRank ¹	Other Status ¹	Habitat ²	Potential to Occur
<p>IUCN_LC (International Union for Conservation of Nature Least Concern): “when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened” (IUCN 2012);</p> <p>IUCN_NT (International Union for Conservation of Nature Near Threatened): “when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future (IUCN 2012);</p> <p>IUCN_VU (International Union for Conservation of Nature Vulnerable): “when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable..., and it is therefore considered to be facing a high risk of extinction in the wild” (IUCN 2012);</p> <p>IUCN_EN (International Union for Conservation of Nature Endangered): “when the best available evidence indicates that it meets any of the criteria A to E for Endangered...,and it is therefore considered to be facing a very high risk of extinction in the wild” (IUCN 2012);</p> <p>MMC_SSC (Marine Mammal Commission Species of Special Concern): no definition available.</p> <p>NABCI_RWL (North American Bird Conservation Initiative Red Watch List): “species with extremely high vulnerability” (CDFW 2022d);</p> <p>NMFS_SC (National Marine Fisheries Service Species of Concern): “species about which NOAA’s NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the Endangered Species Act” (CDFW 2022d);</p> <p>USFS_S (U.S. Forest Service Sensitive): “plant and animal species identified by a Regional Forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density and/or significant current or predicted downward trends in habitat capability that would reduce a species’ existing distribution” (CDFW 2022d);</p> <p>USFWS_BCC (U.S. Fish and Wildlife Service Birds of Conservation Concern): “The goal of the Birds of Conservation Concern 2008 report is to accurately identify the migratory and non-migratory bird species (beyond those already designated as Federally Threatened or Endangered) that represent our highest conservation priorities and draw attention to species in need of conservation action” (CDFW 2022d);</p> <p>WBWG_H- (Western Bat Working Group High Priority): “those species considered the highest priority for funding, planning, and conservation actions. Information about status and threats to most species could result in effective conservation actions being implemented should a commitment to management exist. These species are imperiled or are at high risk of imperilment” (BCI 1998);</p> <p>WBWG_LM- (Western Bat Working Group Low Priority): “most of the existing data support stable populations of the species, and that the potential for major changes in status in the near future is considered unlikely. While there may be localized concerns, the overall status of the species is believed to be secure” (BCI 1998);</p> <p>WBWG_M- (Western Bat Working Group Medium Priority): “a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats” (BCI 1998);</p> <p>XERCES_IM (Xerces Society Imperiled): species “at high risk of extinction because of highly restricted range, rare populations (often 20 or fewer), steep declines, or other factors” (NatureServe 2022).</p>								
<p>Potential to Occur:</p> <p>No Potential: Habitat in and adjacent to the Project Area is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).</p> <p>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 Project Area.</p> <p>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 Project Area.</p> <p>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 on in the Project Area.</p> <p>Present: Detected or documented on-site.</p>								

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

4.1.1 Special Status Mammals

Two special status mammals (Townsend's Big-eared Bat and Long-eared Myotis) have a moderate potential to occur within or directly adjacent to the PSB. Townsend's Big-eared Bat and Long-eared Myotis have been detected adjacent to the PSB (BAMVT 2022). To protect these special status mammals, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts to special status mammals.

Measure BIO-1: Protect Special Status Bats

Removal of confirmed or presumed-occupied bat roost habitat would occur only during seasonal periods of bat activity (when bats are volant, i.e. able to leave roosts) between March 1 and April 15 or September 1 and October 15, when evening temps rise about 45 F, and when no rainfall greater than ½ inches has occurred in the last 24 hours.

If trees or structures cannot be removed during the volant period, i.e. Project activities occur during the bat maternity season which generally occur April 16th through August 30th, the City's qualified biologist shall conduct surveys within suitable habitat for special status bats. Survey methodology shall include visual examination with binoculars and may optionally utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.

Surveys shall be conducted by a qualified biologist within seven days prior to construction in any areas where potential maternity roosts may be disturbed/removed. The preconstruction surveys for bats may coincide with pre-construction surveys for other animals. Surveys shall include a visual inspection of the impact area and any large trees/snags with cavities or loose bark or crevices within infrastructure. If the presence of a maternity roost is confirmed, an appropriate buffer distance would be established in consultation with CDFW to ensure that construction noise would remain below disturbance thresholds for bats. If no bat utilization or roosts are found, then no further study or action is required. If bats are found to utilize the PSB, or presence is assumed, a bat specialist should be engaged to advise the best method to prevent impact.

Project-related lighting shall be minimized if any construction occurs at night, either contained within structures or limited by appropriate reflectors or shrouds and focused on areas needed for safety, security or other essential requirements.

4.1.2 Special Status, Migratory, and Nesting Birds

Ten special status birds (including one state endangered and one state threatened) were found to have a moderate or high potential to occur within the PSB, either for foraging or nesting, or both. If special status and/or native migratory birds are nesting in the PSB, or within 500 feet during construction activities, these species may be impacted by removal of nesting habitat, elevated levels of noise, and anthropogenic disturbance. To protect nesting special status birds, as well as native migratory bird species that are nesting, the following measure is recommended for inclusion into environmental documentation to reduce potential impacts to special status, migratory, and nesting birds.

Measure BIO-2: Protect Special Status, Migratory and Nesting Birds

Ground disturbance and vegetation clearing would be conducted, if possible, during the fall and/or winter months and outside of the avian nesting season (which is generally assumed to occur between March 15 – August 15) to avoid any direct effects to special-status and protected birds. If ground disturbance or vegetation clearing cannot be confined to the fall and/or winter outside of the nesting season, a qualified biologist would conduct pre-construction surveys within the vicinity of the PSB, to check for nesting activity of native birds and to evaluate the site for presence of raptors and special status bird species. The biologist would conduct at minimum a one-day pre-construction survey within the seven-day period prior to

vegetation removal and ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the nesting season, a qualified biologist would conduct a supplemental avian pre-construction survey before Project work is reinitiated.

If active nests are detected within the construction footprint, or within 500 feet of construction activities, the biologist would flag a buffer around each nest. Construction activities would avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 500 feet of the construction area, buffers would be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the CDFW and, if applicable, with USFWS. Buffer sizes would take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified biologist would monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified biologist, disturb nesting activities (e.g., excessive noise), would be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified biologist would immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed or nesting activity has ceased, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

4.1.3 Special Status Amphibians

One special status amphibian (Northern Red-Legged Frog) has a moderate potential to occur within the PSB given the habitat quality and available data. The following measure is recommended for inclusion into environmental documentation to reduce potential impacts to the Northern Red-Legged Frog.

Measure BIO-3: Protect Northern Red-legged Frog

The Manila CSD would retain a qualified biologist to perform a pre-construction survey for the Northern Red-legged Frog within seven days prior to commencement of ground disturbance. The survey would be limited to the Project footprint and within 50 feet of suitable habitat. The biologist would relocate any specimens that occur within the work-impact zone to nearby suitable habitat. In the event that a Northern Red-legged Frog is observed in an active construction zone, the contractor would halt construction activities in the area and the frog would be moved to a safe location in similar habitat outside of the construction zone. Construction within areas of standing water would be limited to the period of the year between July 1 and October 30 to avoid disturbance to breeding frogs. After July 1, a qualified biologist would inspect any work areas containing surface water (not including puddles resulting from rainfall) to ensure tadpoles or metamorphosing frogs are not present. If they are present, the qualified biologist would implement a rescue and relocation operation to move any tadpoles or metamorphosing frogs to a safe location in nearby suitable habitat. Mitigation Measure BIO-3 requires practicable avoidance and protection measures for Northern Red-legged Frogs during construction, thereby reducing any potential impacts.

4.1.4 Special Status Reptiles

No special status reptiles have a moderate or high potential to occur within the PSB given the lack of suitable habitat. Therefore, no measures are proposed at this time to offset potential impacts because special status reptiles would not be impacted by the Project.

4.1.5 Special Status Fish

No special status fish have a moderate or high potential to occur within the PSB given the lack of suitable perennial aquatic habitat. Therefore, no measures are proposed at this time to offset potential impacts

because these special status species are unlikely to be impacted by the Project. However, small portions of the PSB intersect with the Humboldt Bay, which is federally-designated Essential Fish Habitat for Groundfish, coastal pelagic species, Coho Salmon, and Chinook Salmon. More specifically, the portion of the PSB near the Manila Community Park is proposed to extend approximately 100 feet into the Humboldt Bay.

The PSB includes the shoreline margin of Humboldt Bay. This assessment assumes in-water work within Humboldt Bay would not occur, associated with planned culvert and drainage improvements near the shoreline. It is further assumed that fish relocation and dewatering would not be required. As a result, the potential for aquatic species to occur is avoided due to terrestrial habitat. The potential to impact and/or affect to special status aquatic species would be limited to indirect water quality impairments, which will be controlled with erosion control protocols during ground disturbance required under a Stormwater Pollution Prevention Plan (SWPPP). Additionally, temporary exclusion fencing should be installed along the shoreline near planned areas of ground disturbance to limit inadvertent disturbance near aquatic habitat. The temporary exclusion fencing should be shown in the final 100% construction planset. Equipment maintenance or refueling should not occur within 100 feet of the Humboldt Bay shoreline.

If it is determined that construction would require in-water work within the margins of Humboldt Bay, including the edge of the salt marsh shoreline, the potential for some aquatic species to occur would increase as noted in Table 1. Dewatering and fish relocation will be required to follow CDFW and NOAA Fisheries requirements, and consultation under Section 7 of the Endangered Species Act (ESA) and CESA would be required, in addition to environmental permits from jurisdictional resource agencies.

4.1.6 Special Status Insects

One special status insect (Western Bumble Bee) has a high potential to occur within the PSB based on an observation during the site visit. There are sparse areas foraging habitat (large areas of nectar plants) within the PSB. However, the Project will replace invasive vegetation with native vegetation within the bioswales along existing and proposed drainage paths, which would benefit the species (Xerces Society 2022). Typically, the species nests underground in abandoned rodent or other animal nests, but they have also been found aboveground among logs of railroad ties (Xerces Society 2022). If an occupied Western Bumble Bee nest is observed in an active construction zone, the contractor would halt construction activities surrounding the area. A biologist would observe the nest and a buffer would be established to protect the occupied nest.

5. Conclusion

Based on occurrence records, habitat availability, and the reconnaissance-level site visit, no federally-listed wildlife species are expected to occur within the PSB. One state-endangered (Bald Eagle) and one state-threatened (Bank Swallow) species have a moderate potential to occur within or nearby the PSB. Three special status mammals (Townsend's Big-eared Bat, Long-eared Myotis, Humboldt Mountain Beaver) have a moderate potential to occur. The Townsend's Big-eared Bat is considered sensitive by the Bureau of Land Management (BLM) and United States Forest Service (USFS), a species of special concern by CDFW, and a species of high priority by the Western Working Bat Group (WBWG). The Long-eared Myotis is considered sensitive by the BLM, and a species of medium priority by the WBWG. Eight special status birds, as well as native migratory birds, may forage or nest within the PSB or the surrounding 500 feet. This includes the Great Egret, which was observed during the site visit and is considered sensitive by the CDF. The Northern Red-legged Frog (a species of special concern by CDFW and sensitive by the USFS) and the Western Bumble Bee (sensitive by the USFS) have a moderate to high potential to occur. If work is to extend within the Humboldt Bay, the potential for special status fish species to be impacted will increase. With implementation of proposed avoidance and minimization measures, impacts would be avoided or reduced to less-than-significant levels.

6. Literature Cited

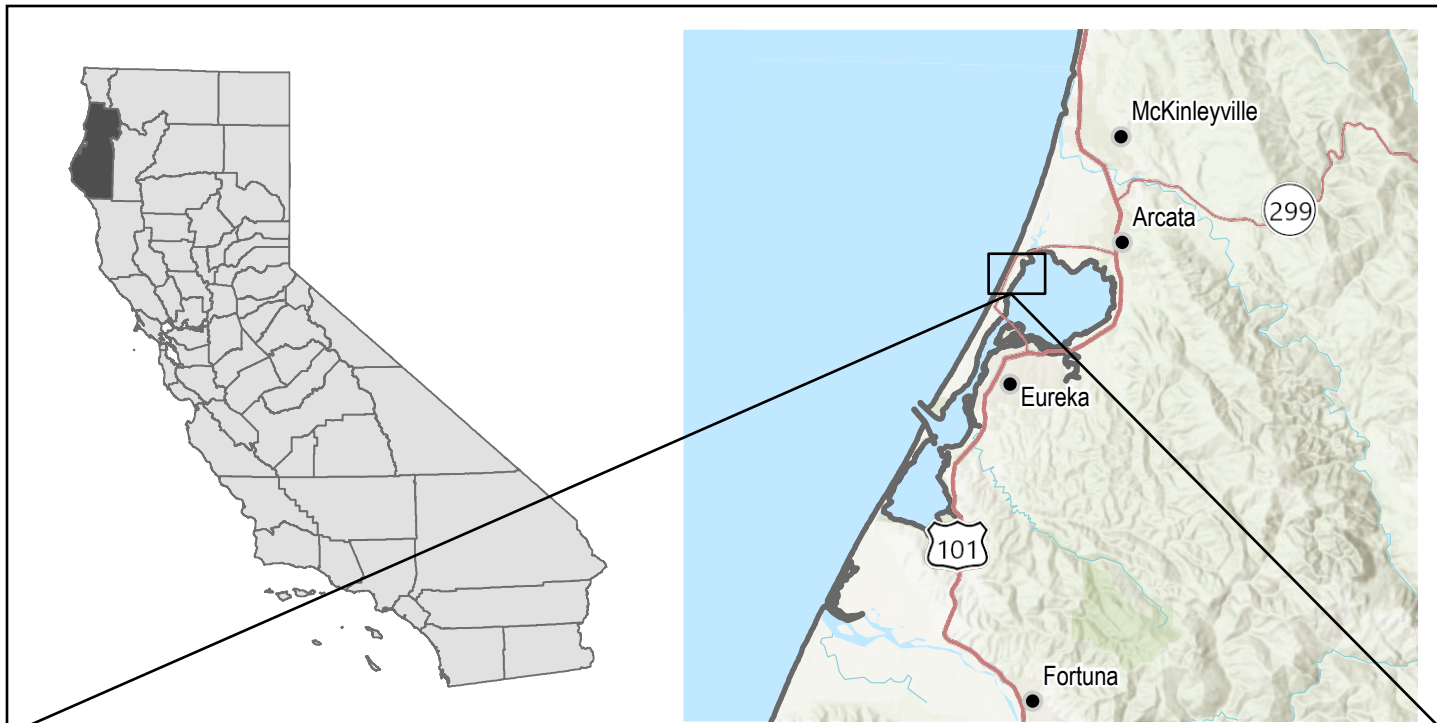
- Bat Acoustic Monitoring Visualization Tool (BAMVT). 2022. A companion to BatAmp. Conservation Biology Institute, Corvallis, Oregon, USA. <https://visualize.batamp.databasin.org/> (6/6/2022)
- California Department of Fish and Wildlife (CDFW). 2012. Harbor Seal Haulout Sites in Northern Humboldt Bay (map).
- California Department of Fish and Wildlife (CDFW). 2022a. California Natural Diversity Database (CNDDDB) RareFind 5. State of California, Natural Resources Agency, Department of Fish and Wildlife, Biogeographic Data Branch, Sacramento, California, USA. <https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx> (5/23/2022)
- California Department of Fish and Wildlife (CDFW). 2022b. NCCP plan summaries. State of California, Natural Resources Agency, Department of Fish and Wildlife, Habitat Conservation Planning Branch, Sacramento, California, USA. <https://wildlife.ca.gov/Conservation/Planning/NCCP/Plans> (5/25/2022)
- California Department of Fish and Wildlife (CDFW). 2022c. California Essential Habitat Connectivity Project. State of California, Natural Resources Agency, Habitat Conservation Planning Branch, Sacramento, California, USA. <https://wildlife.ca.gov/Conservation/Planning/Connectivity/CEHC> (6/23/2022)
- California Department of Fish and Wildlife (CDFW). 2022d. Metadata - Description of CNDDDB fields. State of California, Natural Resources Agency, Department of Fish and Wildlife Biogeographic Data Branch, Sacramento, California, USA. https://apps.wildlife.ca.gov/rarefind/view/RF_FieldDescriptions.htm (5/25/2022)
- California Herps. 2022. A Guide to the Amphibians and Reptiles of California. Available at: <http://www.californiaherps.com> (6/16/2022)
- eBird. 2022. eBird: an online database of bird distribution and abundance. eBird, Cornell Lab of Ornithology, Ithaca, New York, USA. <http://www.ebird.org> (5/23/2022)
- Fellers, G. M. and E. D. Pierson. 2002. Habitat use and foraging behavior of Townsend's big-eared bat (*Corynorhinus townsendii*) in coastal California: *Journal of Mammalogy* 83(1):167-177.
- Hatfield, R., Jepsen, S., Thorp, R., Richardson, L. and S. Colla. 2014. *Bombus caliginosus*. The IUCN Red List of Threatened Species 2014: e.T44937726A69000748. <https://dx.doi.org/10.2305/IUCN.UK.2014-3.RLTS.T44937726A69000748.en> (5/23/2022)
- Hatfield, R., Jepsen, S., Thorp, R., Richardson, L. and S. Colla. 2015a. *Bombus crotchii*. The IUCN Red List of Threatened Species 2015: e.T44937582A46440211. <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937582A46440211.en>. (5/23/2022)
- Hatfield, R., Jepsen, S., Thorp, R., Richardson, L., Colla, S., and S. Foltz Jordan. 2015b. *Bombus occidentalis*. The IUCN Red List of Threatened Species 2015: e.T44937492A46440201. <https://dx.doi.org/10.2305/IUCN.UK.2015-2.RLTS.T44937492A46440201.en> (5/23/2022)
- Hinsley, S. A. and P. E. Bellamy. 2000. The influence of hedge structure, management and landscape context on the value of hedgerows to birds: A review. *Journal of Environmental Management* 60(1):33-49.
- Holm, T. E. and K. Laursen. 2011. Car traffic along hedgerows affects breeding success of great tits *Parus major*. *Bird Study* 58(4):512-515.
- iNaturalist. 2022. Observations. California Academy of Sciences and National Geographic Society, iNaturalist Department, San Francisco, California, USA. <https://www.inaturalist.org> (5/23/2022)
- NatureServe. 2022. NatureServe Explorer: An online encyclopedia of life. NatureServe, Arlington, Virginia, USA. <http://explorer.natureserve.org> (5/23/2022)
- National Oceanic and Atmospheric Administration (NOAA) Fisheries. 2022a. *Essential Fish Habitat Mapper*. U.S. Department of Commerce, National Oceanic and Atmospheric Administration Fisheries, Portland, Oregon, USA. <https://www.habitat.noaa.gov/apps/efhmapper/> (6/6/2022)

- U.S. Fish and Wildlife Service (USFWS). 2022a. *IPaC - Information for Planning and Consultation*. Department of the Interior, U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, California, USA. <https://ecos.fws.gov/ipac/> (5/23/2022)
- U.S. Fish and Wildlife Service (USFWS). 2022b. *Habitat Conservation Plans*. Department of the Interior, U.S. Fish and Wildlife Service, Arcata Fish and Wildlife Office, Arcata, California, USA. <https://www.fws.gov/arcata/es/habconsplanning.html> (6/8/2022)
- Waldien, D. L., J. P. Hayes, E. B. Arnett. 2000. Day-roosts of female long-eared myotis in western Oregon: *The Journal of Wildlife Management* 64(3):785-796.
- Western Monarch Count. 2022. Find an overwintering site. Xerces Society for Invertebrate Conservation, Portland, Oregon, USA. <https://www.westernmonarchcount.org/find-an-overwintering-site-near-you/> (7/5/2022)
- Xerces Society. 2022. Western bumble bee. Xerces Society for Invertebrate Conservation, Portland, Oregon, USA. <https://xerces.org/endangered-species/species-profiles/at-risk-bumble-bees/western-bumble-bee> (6/8/2022)

Appendices

Appendix A

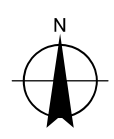
Figures



Legend

- Project Study Boundary
- Highways

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 Jun 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 April, 2022.; World Hillshade: Esri, CGIAR, USGS. Created by: jlopez4



Legend

- Project Study Boundary
- Roads
- Highways

Paper Size ANSI B

0 250 500 750 1,000

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**

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Print date: 10 Aug 2022 - 13:00

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. Created by: jlopez4

Data Disclaimer

Data within the CNDDB and Spotted Owl Database require biological expertise for proper analysis, interpretation, and application. It is the user's responsibility to ensure that the data obtained from CDFW are used correctly.

Legend

 Project Study Boundary

 3 mile buffer

Common Name

American peregrine falcon

California Ridgway's rail

Humboldt mountain beaver

North American porcupine

Pacific lamprey

bank swallow

black-crowned night heron

coast cutthroat trout

coho salmon - southern Oregon / northern California ESU

double-crested cormorant

eulachon

great blue heron

great egret

green sturgeon

green sturgeon - southern DPS

longfin smelt

mountain plover

northern harrier

northern red-legged frog

obscure bumble bee

sandy beach tiger beetle

snowy egret

steelhead - northern California DPS

tidewater goby

western brook lamprey

western bumble bee

western snowy plover

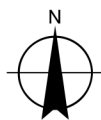
white-footed vole

yellow rail

Paper Size ANSI A

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Miles

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

**CNDDB Occurrences
Within A 3 Mile Radius**

Project No. 1257269
Revision No. -
Date Jun 2022

FIGURE 3

Appendix B

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

Scientific Name	Common Name	FESA	CESA	GRank	SRank	Other Status	Habitat	Taxon
<i>Aplodontia rufa humboldtiana</i>	Humboldt mountain beaver	None	None	G5TNR	SNR		Coastal scrub Redwood Riparian forestCoast Range in southwestern Del Norte County and northwestern Humboldt County.Variety of coastal habitats, including coastal scrub, riparian forests, typically with open canopy and thickly vegetated understory.	Mammals
<i>Arborimus albipes</i>	white-footed vole	None	None	G3G4	S2	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	North coast coniferous forest Redwood Riparian forestMature coastal forests in Humboldt and Del Norte counties. Prefers areas near small, clear streams with dense alder and shrubs.Occupies the habitat from the ground surface to the canopy. Feeds in all layers and nests on the ground under logs or rock.	Mammals
<i>Arborimus pomo</i>	Sonoma tree vole	None	None	G3	S3	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	North coast coniferous forest Oldgrowth RedwoodNorth coast fog belt from Oregon border to Sonoma County. In Douglas-fir, redwood and montane hardwood-conifer forests.Feeds almost exclusively on Douglas-fir needles. Will occasionally take needles of grand fir, hemlock or spruce.	Mammals
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	None	None	G4	S2	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	Broadleaved upland forest Chaparral Chenopod scrub Great Basin grassland Great Basin scrub Joshua tree woodland Lower montane coniferous forest Meadow & seep Mojavean desert scrub Riparian forest Riparian woodland Sonoran desert scrub Sonoran thorn woodland Upper montane coniferous forest Valley & foothill grasslandThroughout California in a wide variety of habitats. Most common in mesic sites.Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	Mammals
<i>Erethizon dorsatum</i>	North American porcupine	None	None	G5	S3	IUCN_LC-Least Concern	Broadleaved upland forest Cismontane woodland Closed-cone coniferous forest Lower montane coniferous forest North coast coniferous forest Upper montane coniferous forestForested habitats in the Sierra Nevada, Cascade, and Coast ranges, with scattered observations from forested areas in the Transverse Ranges.Wide variety of coniferous and mixed woodland habitat.	Mammals

<i>Martes caurina humboldtensis</i>	Humboldt marten	Threatened	Endangered	G4G5T1	S1	CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest Oldgrowth RedwoodOccurs only in the coastal redwood zone from the Oregon border south to Sonoma County.Associated with late-successional coniferous forests, prefer forests with low, overhead cover.	Mammals
<i>Myotis evotis</i>	long-eared myotis	None	None	G5	S3	BLM_S-Sensitive IUCN_LC-Least Concern WBWG_M-Medium Priority	Found in all brush, woodland and forest habitats from sea level to about 9000 ft. Prefers coniferous woodlands and forests.Nursery colonies in buildings, crevices, spaces under bark, and snags. Caves used primarily as night roosts.	Mammals
<i>Pekania pennanti</i>	Fisher	None	None	G5	S2S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	North coast coniferous forest Oldgrowth Riparian forestIntermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.Uses cavities, snags, logs and rocky areas for cover and denning. Needs large areas of mature, dense forest.	Mammals
<i>Accipiter striatus</i>	sharp-shinned hawk	None	None	G5	S4	CDFW_WL-Watch List IUCN_LC-Least Concern	Cismontane woodland Lower montane coniferous forest Riparian forest Riparian woodlandPonderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats. Prefers riparian areas.North-facing slopes with plucking perches are critical requirements. Nests usually within 275 ft of water.	Birds
<i>Ardea alba</i>	great egret	None	None	G5	S4	CDF_S-Sensitive IUCN_LC-Least Concern	Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest WetlandColonial nester in large trees.Rookery sites located near marshes, tide-flats, irrigated pastures, and margins of rivers and lakes.	Birds
<i>Ardea herodias</i>	great blue heron	None	None	G5	S4	CDF_S-Sensitive IUCN_LC-Least Concern	Brackish marsh Estuary Freshwater marsh Marsh & swamp Riparian forest WetlandColonial nester in tall trees, cliffsides, and sequestered spots on marshes.Rookery sites in close proximity to foraging areas: marshes, lake margins, tide-flats, rivers and streams, wet meadows.	Birds

<i>Brachyramphus marmoratus</i>	marbled murrelet	Threatened	Endangered	G3	S2	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	Lower montane coniferous forest Oldgrowth RedwoodFeeds near-shore; nests inland along coast from Eureka to Oregon border and from Half Moon Bay to Santa Cruz.Nests in old-growth redwood-dominated forests, up to six miles inland, often in Douglas-fir.	Birds
<i>Charadrius montanus</i>	mountain plover	None	None	G3	S2S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	Chenopod scrub Valley & foothill grasslandShort grasslands, freshly plowed fields, newly sprouting grain fields, and sometimes sod farms.Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.	Birds
<i>Charadrius nivosus nivosus</i>	western snowy plover	Threatened	None	G3T3	S2	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List	Great Basin standing waters Sand shore WetlandSandy beaches, salt pond levees and shores of large alkali lakes.Needs sandy, gravelly or friable soils for nesting.	Birds
<i>Circus hudsonius</i>	northern harrier	None	None	G5	S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	Coastal scrub Great Basin grassland Marsh & swamp Riparian scrub Valley & foothill grassland WetlandCoastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas.Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	Birds

<i>Coturnicops noveboracensis</i>	yellow rail	None	None	G4	S1S2	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	Freshwater marsh Meadow & seepSummer resident in eastern Sierra Nevada in Mono County.Freshwater marshlands.	Birds
<i>Egretta thula</i>	snowy egret	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp Meadow & seep Riparian forest Riparian woodland WetlandColonial nester, with nest sites situated in protected beds of dense tules.Rookery sites situated close to foraging areas: marshes, tidal-flats, streams, wet meadows, and borders of lakes.	Birds
<i>Elanus leucurus</i>	white-tailed kite	None	None	G5	S3S4	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	Cismontane woodland Marsh & swamp Riparian woodland Valley & foothill grassland WetlandRolling foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland.Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	Birds
<i>Haliaeetus leucocephalus</i>	bald eagle	Delisted	Endangered	G5	S3	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive	Lower montane coniferous forest OldgrowthOcean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Birds
<i>Nannopterum auritum</i>	double-crested cormorant	None	None	G5	S4	CDFW_WL-Watch List IUCN_LC-Least Concern	Riparian forest Riparian scrub Riparian woodlandColonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state.Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Birds

<i>Nycticorax nycticorax</i>	black-crowned night heron	None	None	G5	S4	IUCN_LC-Least Concern	Marsh & swamp Riparian forest Riparian woodland WetlandColonial nester, usually in trees, occasionally in tule patches.Rookery sites located adjacent to foraging areas: lake margins, mud-bordered bays, marshy spots.	Birds
<i>Pandion haliaetus</i>	osprey	None	None	G5	S4	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	Riparian forestOcean shore, bays, freshwater lakes, and larger streams.Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Birds
<i>Rallus obsoletus obsoletus</i>	California Ridgway's rail	Endangered	Endangered	G3T1	S1	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	Brackish marsh Marsh & swamp Salt marsh WetlandSalt water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Birds
<i>Riparia riparia</i>	bank swallow	None	Threatened	G5	S2	BLM_S-Sensitive IUCN_LC-Least Concern	Riparian scrub Riparian woodlandColonial nester; nests primarily in riparian and other lowland habitats west of the desert.Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	Birds
<i>Emys marmorata</i>	western pond turtle	None	None	G3G4	S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	Aquatic Artificial flowing waters Klamath/North coast flowing waters Klamath/North coast standing waters Marsh & swamp Sacramento/San Joaquin flowing waters Sacramento/San Joaquin standing waters South coast flowing waters South coast standing waters WetlandA thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation.Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Reptiles
<i>Ascaphus truei</i>	Pacific tailed frog	None	None	G4	S3S4	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	Aquatic Klamath/North coast flowing waters Lower montane coniferous forest North coast coniferous forest Redwood Riparian forestOccurs in montane hardwood-conifer, redwood, Douglas-fir and ponderosa pine habitats.Restricted to perennial montane streams. Tadpoles require water below 15 degrees C.	Amphibians

<i>Rana aurora</i>	northern red-legged frog	None	None	G4	S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	Klamath/North coast flowing waters Riparian forest Riparian woodlandHumid forests, woodlands, grasslands, and streamsidess in northwestern California, usually near dense riparian cover.Generally near permanent water, but can be found far from water, in damp woods and meadows, during non-breeding season.	Amphibian s
<i>Rana boylei</i>	foothill yellow-legged frog	None	Endangered	G3	S3	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	Aquatic Chaparral Cismontane woodland Coastal scrub Klamath/North coast flowing waters Lower montane coniferous forest Meadow & seep Riparian forest Riparian woodland Sacramento/San Joaquin flowing watersPartly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Amphibian s
<i>Rhyacotriton variegatus</i>	southern torrent salamander	None	None	G3G4	S2S3	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	Lower montane coniferous forest Oldgrowth Redwood Riparian forestCoastal redwood, Douglas-fir, mixed conifer, montane riparian, and montane hardwood-conifer habitats. Old growth forest.Cold, well-shaded, permanent streams and seepages, or within splash zone or on moss-covered rocks within trickling water.	Amphibian s
<i>Acipenser medirostris</i>	green sturgeon	None	None	G3	S1	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing watersThese are the most marine species of sturgeon. Abundance increases northward of Point Conception. Spawns in the Sacramento, Klamath, and Trinity Rivers.Spawns at temps between 8-14 C. Preferred spawning substrate is large cobble, but can range from clean sand to bedrock.	Fish
<i>Entosphenus tridentatus</i>	Pacific lamprey	None	None	G4	S3	AFS_VU-Vulnerable BLM_S-Sensitive CDFW_SSC-Species of Special Concern USFS_S-Sensitive	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters South coast flowing watersFound in Pacific Coast streams north of San Luis Obispo County, however regular runs in Santa Clara River. Size of runs is declining.Swift-current gravel-bottomed areas for spawning with water temps between 12-18 C. Ammocoetes need soft sand or mud.	Fish

<i>Eucyclogobius newberryi</i>	tidewater goby	Endangered	None	G3	S3	AFS_EN- Endangered IUCN_VU- Vulnerable	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing waters South coast flowing watersBrackish water habitats along the California coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River.Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	Fish
<i>Lampetra richardsoni</i>	western brook lamprey	None	None	G4G5	S3S4	CDFW_SSC- Species of Special Concern USFS_S-Sensitive		Fish
<i>Oncorhynchus clarkii clarkii</i>	coast cutthroat trout	None	None	G5T4	S3	AFS_VU- Vulnerable CDFW_SSC- Species of Special Concern USFS_S-Sensitive	Aquatic Klamath/North coast flowing watersSmall coastal streams from the Eel River to the Oregon border.Small, low gradient coastal streams and estuaries. Needs shaded streams with water temperatures <18C, and small gravel for spawning.	Fish
<i>Oncorhynchus kisutch pop. 2</i>	coho salmon - southern Oregon / northern California ESU	Threatened	Threatened	G5T2Q	S2	AFS_TH- Threatened	Aquatic Klamath/North coast flowing waters Sacramento/San Joaquin flowing watersFederal listing refers to populations between Cape Blanco, Oregon and Punta Gorda, Humboldt County, California.State listing refers to populations between the Oregon border and Punta Gorda, California.	Fish
<i>Oncorhynchus mykiss irideus pop. 16</i>	steelhead - northern California DPS	Threatened	None	G5T2T3 Q	S2S3	AFS_TH- Threatened	Aquatic Sacramento/San Joaquin flowing watersCoastal basins from Redwood Creek south to the Gualala River, inclusive. Does not include summer-run steelhead.	Fish
<i>Spirinchus thaleichthys</i>	longfin smelt	Candidate	Threatened	G5	S1		Aquatic EstuaryEuryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column.Prefer salinities of 15-30 ppt, but can be found in completely freshwater to almost pure seawater.	Fish
<i>Thaleichthys pacificus</i>	eulachon	Threatened	None	G5	S2		Aquatic Klamath/North coast flowing watersFound in Klamath River, Mad River, Redwood Creek, and in small numbers in Smith River and Humboldt Bay tributaries.Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand, and woody debris.	Fish

<i>Anodonta californiensis</i>	California floater	None	None	G3Q	S2?	USFS_S-Sensitive	AquaticFreshwater lakes and slow-moving streams and rivers. Taxonomy under review by specialists. Generally in shallow water.	Mollusks
<i>Margaritifera falcata</i>	western pearlshell	None	None	G4G5	S1S2		AquaticAquatic.Prefers lower velocity waters.	Mollusks
<i>Bombus caliginosus</i>	obscure bumble bee	None	None	G2G3	S1S2	IUCN_VU-Vulnerable	Coastal areas from Santa Barbara County to north to Washington state.Food plant genera include Baccharis, Cirsium, Lupinus, Lotus, Grindelia and Phacelia.	Insects
<i>Bombus crotchii</i>	Crotch bumble bee	None	None	G2	S1S2		Coastal California east to the Sierra-Cascade crest and south into Mexico.Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.	Insects
<i>Bombus occidentalis</i>	western bumble bee	None	None	G2G3	S1	USFS_S-Sensitive	Once common and widespread, species has declined precipitously from central CA to southern B.C., perhaps from disease.	Insects
<i>Cicindela hirticollis grvida</i>	sandy beach tiger beetle	None	None	G5T2	S2		Coastal dunesInhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to northern Mexico.Clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	Insects
<i>Scaphinotus behrensi</i>	Behrens' snail-eating beetle	None	None	G2G4	S2S4		North coast coniferous forestFound in extreme NW CA along the coast.	Insects



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](#).

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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.

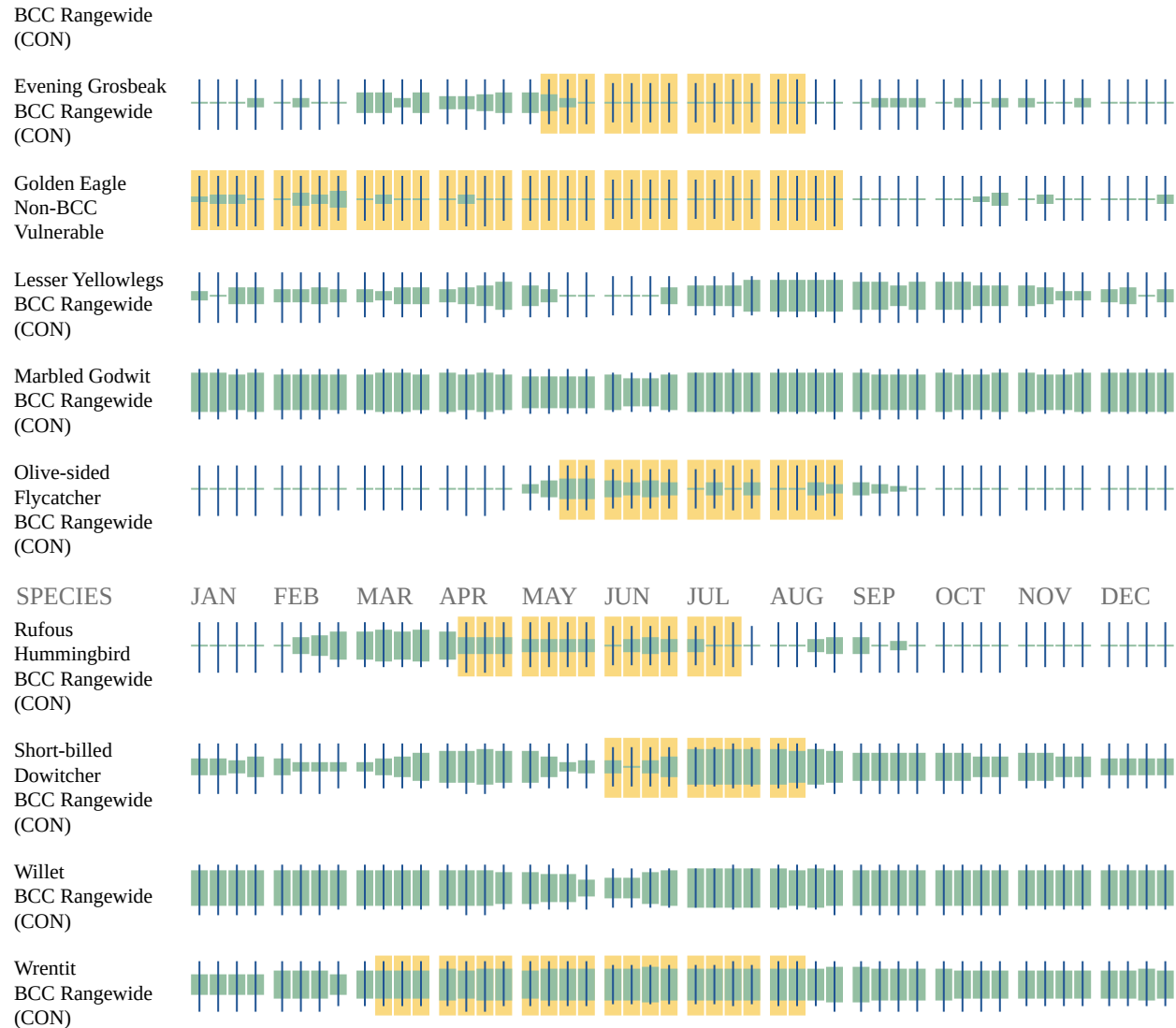
No Data (—)

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

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EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

[West Coast Regional Office](#)

[Alaska Regional Office](#)

Query Results

Degrees, Minutes, Seconds: Latitude = 40° 51' 2" N, Longitude = 125° 50' 11" W

Decimal Degrees: Latitude = 40.851, Longitude = -124.164

The query location intersects with spatial data representing EFH and/or HAPCs for the following species/management units.

EFH

No Essential Fish Habitats (EFH) were identified at the report location.

Salmon EFH

Link	HUC Name	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
	Mad-Redwood - Below	Chinook Salmon, Coho Salmon	All	Pacific	Pacific Coast Salmon Plan

HAPCs

No Habitat Areas of Particular Concern (HAPC) were identified at the report location.

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.

****For links to all EFH text descriptions see the complete data inventory: [open data inventory -->](#)**

Pacific Coastal Pelagic Species,

Jack Mackerel,

Pacific (Chub) Mackerel,

Pacific Sardine,

Northern Anchovy - Central Subpopulation,

Northern Anchovy - Northern Subpopulation,

Pacific Highly Migratory Species,

Bigeye Thresher Shark - North Pacific,

Bluefin Tuna - Pacific,

Dolphinfish (Dorado or Mahimahi) - Pacific,

Pelagic Thresher Shark - North Pacific,

Swordfish - North Pacific

Appendix C

Site Visit Photographs

North Elevation

☼ 159°S (T) ● 40°51'43"N, 124°9'22"W ±13ft ▲ 13ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 07:02:52

Photo C-1. View of the vegetation around Humboldt Bay from the northernmost portion of the PSB on Peninsula Drive, facing south.

West Elevation

☉ 97°E (T) ☉ 40°51'23"N, 124°9'35"W ±13ft ▲ 16ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 07:35:35

Photo C-2. View of existing tree and shrub vegetation at the intersection of the PSB with Sandy Road, facing east.

West Elevation

☉ 78°E (T) ☉ 40°51'27"N, 124°9'31"W ±16ft ▲ 11ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 07:58:52

Photo C-3. View of Humboldt Bay from near the Northwestern Pacific railroad tracks in the northern section of the PSB, facing east.

South West Elevation

☀ 53°NE (T) ● 40°51'27"N, 124°9'31"W ±13ft ▲ 11ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 08:00:36

Photo C-4. Aquatic habitat in Humboldt Bay, directly adjacent to the Northwestern Pacific railroad tracks in the northern section of the PSB (within 100 feet), facing northeast.

South Elevation

☉ 2°N (T) ☉ 40°51'30"N, 124°9'35"W ±134ft ▲ 27ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 08:16:27

Photo C-5. State Route 255, which intersects with portions of the PSB, facing north.

1956 Peninsula Dr Arcata CA

☉ 216°SW (T) ☉ 40°51'14"N, 124°9'42"W ±13ft ▲ 17ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 08:58:07

Photo C-6. View of roadside ditch with water and aquatic vegetation on Peninsula Drive, ~200 feet south of the intersection with Smigle Road.

1975 Peninsula Dr Arcata CA

☉ 10°N (T) ● 40°51'15"N, 124°9'42"W ±49ft ▲ 19ft



Photo C-7. View of house with active Violet-green Swallow nest (circled in red) on Peninsula Drive within 100 feet of the PSB, ~200 feet south of the intersection with Smigle Road, facing north.

120 Mill St Arcata CA

☼ 31°NE (T) ● 40°51'11"N, 124°9'40"W ±13ft ▲ 20ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 09:22:05

Photo C-8. View of the roadside vegetation in the PSB on Mill Street, facing northeast.



Photo C-9. Understory and canopy structure in a portion of the PSB, north of the Manila Community Park, facing east.

1785 Victor Blvd Arcata CA

☼ 325°NW (T) ☉ 40°51'0"N, 124°9'42"W ±22ft ▲ 17ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 10:34:08

Photo C-10. View of roadside water and vegetation within the PSB on Victor Boulevard.

1820 Peninsula Dr Arcata CA

☉ 23°NE (T) ☉ 40°51'1"N, 124°9'49"W ±16ft ▲ 16ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 10:58:20

Photo C-11. View of commonly seen deciduous tree, shrub, and grass vegetation structure along the Northwestern Pacific railroad tracks adjacent to Peninsula Drive.

1611 Peninsula Dr Arcata CA

☀ 50°NE (T) ● 40°50'44"N, 124°10'11"W ±16ft ▲ 22ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 11:58:05

Photo C-12. View of the Redwood Coast Montessori school, a section of the PSB to the west of State Route 255 and Peninsula Drive, facing northeast.

1500–1598 Pebble Ln Arcata CA

☼ 187°S (T) ☉ 40°50'47"N, 124°10'0"W ±13ft ▲ 18ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 11:42:48

Photo C-13. View of Pebble Lane, State Route 255, and mature trees adjacent to the roads, facing south.

1646 Peninsula Dr Arcata CA

☼ 244°SW (T) ● 40°50'45"N, 124°10'1"W ±13ft ▲ 23ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 11:45:18

Photo C-14. View of grass, shrub, and tree vegetation near the intersection of Pebble Road and Peninsula Drive.

1535 Peninsula Dr Arcata CA

☀ 19°N (T) ☉ 40°50'31"N, 124°10'9"W ±22ft ▲ 23ft



Photo C-15. View of mature pine trees along the southern end of Peninsula Drive in the PSB, facing north.

CA-255 Arcata CA

☉ 135°SE (T) ● 40°50'36"N, 124°10'0"W ±13ft ▲ 14ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 12:22:50

Photo C-16. View of one of the small subsections of the PSB off State Route 255, overlooking Humboldt Bay, facing southeast.

CA-255 Arcata CA

☉ 35°NE (T) ● 40°50'21"N, 124°10'8"W ±13ft ▲ 12ft



GHD
Sara Moriarty-Graves

Manila Drainage Project
24 May 2022, 12:28:43

Photo C-17. View of one of the small subsections in the southernmost portion of the PSB, with Northwestern Pacific railroad tracks, Humboldt Bay shoreline habitat, facing northeast.

Appendix D

On-site Species Lists

Table D1 Terrestrial Wildlife Observed On-site

Scientific Name	Common Name	Observation Type	Special Status
<i>Bombus occidentalis</i>	Western Bumble Bee	Observed	USFS Sensitive
<i>Felis catus</i>	Feral Cat	Observed	None; invasive

Table D2 List of avian breeding codes, associated bird behavior, and breeding status (the highest ranking code was recorded for each species during the survey)

Breeding Rank	Breeding Code	Description	Breeding Status
1	N	Active nest	Breeding
2	M	Carrying nesting material	Breeding
3	F	Carrying food or fecal sac	Breeding
4	D	Distraction display/feigning	Breeding
5	L	Local young fed by parents	Breeding
6	Y	Local young incapable of sustained flight	Breeding
7	C	Copulation or courtship observed	Breeding
8	T	Territorial behavior	Unconfirmed
9	S	Territorial song or drumming heard	Unconfirmed
10	E	Encountered in study area	Unconfirmed
11	O	Encountered flying over the study area	Unconfirmed

Table D3 Avian Species Detected On-site

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
MALL	Mallard	<i>Anas platyrhynchos</i>	Encountered in study area	E	FGC, MTBA
GREG	Great Egret	<i>Ardea alba</i>	Encountered flying over study area	O	CDF Sensitive, FGC, MTBA
ANHU	Anna's Hummingbird	<i>Calypte anna</i>	Encountered in study area	E	FGC, MTBA
WIWA	Wilson's Warbler	<i>Cardellina pusilla</i>	Encountered in the study area	E	FGC, MTBA
SWTH	Swainson's thrush	<i>Catharus ustulatus</i>	Territorial song or drumming heard	S	FGC, MTBA
WREN	Wrentit	<i>Chamaea fasciata</i>	Territorial song or drumming heard	S	FGC, MTBA
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	Encountered in the study area	E	FGC, MTBA
CORA	Common Raven	<i>Corvus corax</i>	Encountered in study area	E	FGC, MTBA
PSFL	Pacific-slope Flycatcher	<i>Empidonax difficilis</i>	Territorial song or drumming heard	S	FGC, MTBA
HOFI	House Finch	<i>Haemorhous mexicanus</i>	Territorial behavior	T	FGC, MTBA

Alpha Code	Common Name	Latin Name	Highest Breeding Status	Breeding Code	Special Status
PUFI	Purple Finch	<i>Haemorhous purpureus</i>	Territorial behavior	T	FGC, MTBA
BARS	Barn Swallow	<i>Hirundo rustica</i>	Territorial behavior	T	FGC, MTBA
NA	Gull	<i>Larus sp.</i>	Encountered in study area	E	FGC, MTBA
SOSP	Song Sparrow	<i>Melospiza melodia</i>	Carrying nesting material	M	FGC, MTBA
BHCO	Brown-headed Cowbird	<i>Molothrus ater</i>	Encountered in study area	E	None; invasive
WHIM	Whimbrel	<i>Numenius phaeopus</i>	Encountered in the study area	S	FGC, MTBA
HOSP	House Sparrow	<i>Passer domesticus</i>	Carrying nesting material	M	None; invasive
DOWO	Downy Woodpecker	<i>Picoides pubescens</i>	Territorial song or drumming heard	S	FGC, MTBA
CBCH	Chestnut-backed Chickadee	<i>Poecile rufescens</i>	Territorial behavior	T	FGC, MTBA
BLPH	Black Phoebe	<i>Sayornis nigricans</i>	Territorial song or drumming heard	S	FGC, MTBA
AMGO	American Goldfinch	<i>Spinus tristis</i>	Territorial behavior	T	FGC, MTBA
EUCD	Eurasian Collared-Dove	<i>Streptopelia decaocto</i>	Territorial song or drumming heard	S	None; invasive
VGSW	Violet-green Swallow	<i>Tachycineta thalassina</i>	Active nest	N	FGC, MTBA
GRYE	Greater Yellowlegs	<i>Tringa melanoleuca</i>	Encountered in the study area	E	FGC, MTBA
AMRO	American Robin	<i>Turdus migratorius</i>	Territorial behavior	T	FGC, MTBA
GCSP	Golden-crowned Sparrow	<i>Zonotrichia atricapilla</i>	Encountered in study area	E	FGC, MTBA
WCSP	White-crowned Sparrow	<i>Zonotrichia leucophrys</i>	Encountered in study area	E	FGC, MTBA

Definitions:

FGC = protected by California Fish and Game Code

MTBA = protected by the federal Migratory Bird Treaty Act