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Biological Habitat Evaluation Report



El Portal Retail Apartments Project City of San Pablo, California

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February 2025

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1.0 INTRODUCTION

This report presents the methods and results of a biological habitat evaluation conducted by Vollmar Natural Lands Consulting, Inc. (VNLC) for the El Portal Retail Apartments Project (Project). The Study Area is located within the City of San Pablo, in Contra Costa County, California (**Figure 1**). The project involves the proposed construction of a 10,500 square foot (sq. ft.), two-story retail and multi-family residential building.

This habitat evaluation was conducted to identify and characterize existing conditions, as well as to assess the potential for special-status species and sensitive habitats to occur within the project disturbance areas. In the absence of minimization and avoidance measures, the project could result in disturbance to the regulated biological resources listed below. None of the special-status species are listed as threatened or endangered at either the federal or state level:

- Ten non-listed special-status animal species: northwestern pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), and big free-tailed bat (*Nyctinomops macrotis*), Cooper's hawk (*Accipiter cooperii*), sharp-shinned hawk (*Accipiter striatus*), yellow warbler (*Setophaga petechia*); and
- Other active nests of bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code.

The implementation of recommended minimization and avoidance measures would reduce potential impacts to habitats and features to less-than-significant levels, and avoid take of special-status species.

Sensitive habitats potentially impacted by the project are limited to riparian habitat within the setback zone from San Pablo Creek, which is typically located more than 25 feet from the top of bank for slopes greater than 2 to 1. The City of San Pablo regulates development within stream corridors and floodplains. While the southern edge of the proposed building is located just outside of the creek setback as indicated in the site plans, the proposed 23-foot asphalt driveway south of the building is located within the creek setback zone.

2.0 EXTENT AND LOCATION OF THE STUDY AREA

The project site boundary consists of a 0.57-acre area within Assessor's Parcel Number 416-041-014-0. The Study Area includes the project site boundary as well as an approximately 25-foot buffer surrounding the boundary, including approximately 233 linear feet of San Pablo Creek to the south. The site is mapped within the Richmond U.S. Geological Survey (USGS) 7½ minute topographic quadrangle and may be accessed by exiting and turning west on El Portal Drive



Legend






-  Highway
-  County Boundary
-  Water Body
-  Urbanized Area
-  Project Study Area

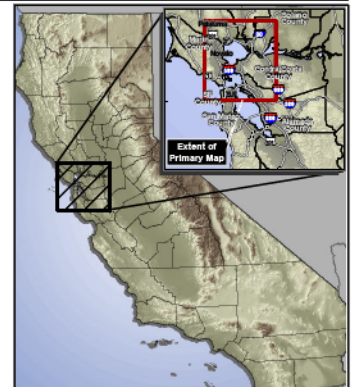
FIGURE 1
Regional Vicinity Map

El Portal Retail Apartments Project
City of San Pablo, California



1:316,800

(1 inch = 5 miles, at letter layout)



Data Sources: VNLC 2020
TIGER, 2012 | USGS, Various | GAP, 1998 | DWR, 2001
GIS/Carbography by: J. Schweitzer & I. Posson August 2020
Map File: Vicinity_A-P_2020-0806.mxd

from Interstate 80, then following El Portal Drive for 0.6 mile until 2834 El Portal Drive is reached. The Study Area and project area are depicted on **Figure 2**.

The Study Area is located along an urbanized portion of San Pablo Creek, which is a perennial stream at the project site. Surrounding land use consists of a mix of residential and commercial development. A large cemetery is located just south of the site, across San Pablo Creek. Though the site is currently undeveloped and encompasses some native vegetation, it is highly disturbed and dominated by introduced plants, including many highly invasive weeds and escaped garden plants. The Study Area is described in more detail in **Section 4.0** below.

3.0 METHODS

3.1 Preliminary Review

Prior to conducting field surveys, the project ecologists compiled and reviewed existing information pertaining to the Study Area. Specifically, the ecologists compiled and reviewed the latest version of the California Natural Diversity Database (CNDDDB) (CDFW 2020, 2025), the California Native Plant Society (CNPS) Inventory of Rare Plants (CNPS 2020, 2025), and a U.S. Fish and Wildlife Service (USFWS) Information Planning and Consultation System (IPaC) list (USFWS 2020, 2025). Site aerial imagery, previous design reports, project description, and general regional conditions were also reviewed prior to the site survey.

3.2 Targeted Sensitive Biological Resources

Special-status animal species targeted and analyzed in this report include those listed by the USFWS and/or California Department of Fish and Wildlife (CDFW) as threatened or endangered, as well as those proposed for listing or that are candidates for listing as threatened or endangered. The listing of “Endangered, Rare, or Threatened” is defined in Section 15380 of the *California Environmental Quality Act (CEQA) Guidelines*. Section 15380(b) states that a species of animal or plant is “endangered” when its survival and reproduction in the wild are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, disease, or other factors. A species is “rare” when either “(A) although not presently threatened with extinction, the species is existing in such small numbers throughout all or a significant portion of its range that it may become endangered if its environment worsens; or (B) the species is likely to become endangered within the foreseeable future throughout all or a portion of its range and may be considered ‘threatened’ as that term is used in the Federal Endangered Species Act” (ESA).

Animal species are designated as “Fully Protected,” “Species of Special Concern,” or “Watch List” by the CDFW. Although these species have no legal status under the California Endangered Species Act (CESA), the CDFW recommends their protection as their populations are generally declining and they could be listed as threatened or endangered (under CESA) in the future. “Fully Protected” species generally may not be taken or possessed at any time. The



Data Sources: USGS, various | ESRI, various
 VNLC, 2020 | SFEI BAARI 2015 | TIGER, 2012
 GIS/Cartography by J. Schweitzer, I. Poisson, August 2020
 Map File: Site_472_B-L_2020-0527.mxd

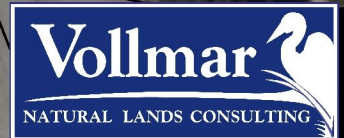


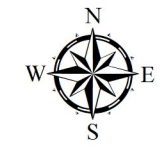
FIGURE 2 Project Site Map

El Portal Retail Apartments Project
 City of San Pablo, California

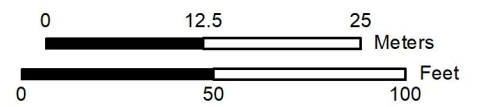
Legend

- Road Centerline
- Stream
- ▭ Project Site Boundary (0.57 ac.)
- ▭ Study Area Boundary (1.11 ac.)*
- Top of Bank**
- ▭ Development
- ▭ Mixed Riparian Forest
- ▭ Ruderal Herbaceous Upland

* 25-ft Buffer Around Project Site
 ** Approximate



1:600
 (1 in = 50 ft at tabloid layout)



CDFW may only authorize take for necessary scientific research and may authorize live capture and relocation of “fully protected” birds to protect livestock. The “Species of Special Concern” designation is meant to call attention to the plight of the species and address the issues of concern early enough to secure their long-term viability. “Watch List” species were previously designated as “Species of Special Concern” but no longer meet that status, or do not yet meet that status but there is concern and need for more information to clarify status.

Birds are designated by the USFWS as “Birds of Conservation Concern.” Although these species have no legal status under ESA, the USFWS recommends their protection as their populations are generally declining, and they could be listed as threatened or endangered (under ESA) in the future.

Special-status plants include species that are designated rare, threatened, or endangered as well as candidate species for listing by the USFWS. Special-status plants also include species considered rare or endangered under the conditions of Section 15380 of the CEQA Guidelines, such as those plant species identified by the CNPS as California Rare Plant Rank (CRPR) 1A, 1B, and 2 in the Inventory of Rare and Endangered Vascular Plants of California. Finally, special-status plants may include other species that are considered sensitive or of special concern due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included as CRPR List 3 in the CNPS Inventory.

For the purposes of this report, ‘sensitive plant communities’ include those designated as such by the CDFW, either in the CNDDDB, the list of California Sensitive Natural Communities (CDFW 2019), or as sensitive alliances classified in the Manual of California Vegetation (MCV) (Sawyer et al. 2009, CNPS 2025). Alliances included within the MCV that are designated as global or state rank (“G” or “S”) 1-3 are considered “rare or threatened” at the global and/or state level, and are therefore considered sensitive.

In addition, wetland and riparian habitats, regardless of MCV status, are considered sensitive. Wetlands, streams, and permanent and intermittent drainages are subject to the jurisdiction of the U.S. Army Corps of Engineers (ACOE) under Section 404 of the Federal Clean Water Act (CWA). The CDFW also generally has jurisdiction over these resources, together with other aquatic features that provide an existing fish and wildlife resource pursuant to Sections 1602-1603 of the California Fish and Game Code. The CDFW asserts jurisdiction to the outer edge of vegetation associated with a riparian corridor. The Regional Water Quality Control Board (RWQCB) also generally has jurisdiction over streams and wetlands. Any grading, excavation, or filling of jurisdictional drainage corridors or wetlands would require a Section 404 permit and will require mitigation.

Local regulations regarding waterway protection measures and tree removal also warrant consideration for this project. The City of San Pablo has protection measures for waterways (San Pablo Creek), as set forth in ordinance measure 17.38.070 and San Pablo General Plan 2030

implementing policy OSC-I-10. According to the General Plan, the recommended creek setback is a “25 foot setback from the top of bank if slope is flatter than 2 to 1,” or “25 foot setback from the top of 2-1 angle if slope is greater than 2 to 1” (City of San Pablo 2011).

Ordinance measure 17.48.120 provides specific guidance regarding tree protection and removal (City of San Pablo 2020). This ordinance outlines which trees are exempt from tree protection, which trees warrant protection, situations that require approval for removal, and replacement for removed trees.

3.3 Field Survey

An initial habitat assessment survey was conducted within the Study Area on May 29, 2020, and a follow-up survey was conducted February 14, 2025. The initial survey was conducted by VNLC Senior Ecologist Jake Schweitzer and VNLC Staff Ecologist Ivy Poisson, while the follow-up survey was conducted by Jake Schweitzer. During both surveys, the ecologists traversed the entire Study Area and recorded all dominant plant taxa and commonly observed animal species, along with general ecological conditions and notable habitat features. An effort was made to find any special-status plants identifiable at the time of year (i.e., mid-spring blooming species and woody perennial species). In addition, the survey involved a search for habitat with potential to support special-status species (e.g. nesting potential, mammal burrows). The purpose of the 2025 follow-up survey was to confirm that conditions had not changed since 2020, as the proposed project was put on hold after the 2020 survey. Photographs detailing representative site conditions and habitats were also collected from across the Study Area, and the same locations photographed in 2020 were photographed again in 2025 (**Appendix A**).

4.0 EXISTING SITE CONDITIONS

The Study Area consists of an undeveloped vacant lot between El Portal Drive and San Pablo Creek. The site is located in the lower portion of the San Pablo Creek watershed, at an elevation of approximately 60 to 70 feet (18 meters) above sea level (USGS 1997). The lot encompasses approximately 230-foot linear stretch of San Pablo Creek and its surrounding upland habitat. San Pablo Creek within the Study Area is a narrow (5-10 feet wide along its bed) perennial Strahler sixth order stream with approximately 30-foot tall steep banks. The stream banks support a mature riparian tree canopy and understory dominated by a majority of non-native plant species which are well-shaded by the canopy. The banks consist of a mix of natural soils and riprap. At the time of the initial field survey (May 29, 2020), there was approximately 1-2 feet of water in the creek bed, although the water was fairly stagnant. Being earlier in the wet season, the water was at least one foot deeper in 2025 compared to 2020. Based on the water depth as well as the stream order and the observed vegetation, it is presumed that the stream flows all year long, or at least encompasses perennial pools, during years of normal precipitation.

The northern part of the Study Area that is proposed for development includes a flat, fenced-in patch of ruderal herbaceous upland vegetation. This area is just north of the top of San Pablo

Creek's northern bank. Soils throughout the Study Area are mapped as Conejo clay loam, 0 to 2 percent slopes (USDA 2025). This soil type is derived from Holocene alluvium and features a surface texture of 31.4 percent clay, 33.8 percent silt, and 34.4 percent sand. It has a pH rating of 7.0 (ibid).

The Study Area is almost completely surrounded by urban development, with El Portal Drive and single-family residential development to the north, businesses to the east, and St. Joseph Cemetery and San Pablo Creek to the southwest. San Pablo Creek continues northwest and empties into San Pablo Bay, approximately 3 miles away from the Study Area.

The plant communities present in the Study Area are detailed in the following section.

4.1 Plant Communities

The Study Area is in an urbanized area that is subject to disturbance, and such disturbed areas do not easily conform to existing classification systems for plant communities. As a result, rather than classifying the vegetation according to the Manual of California Vegetation (Sawyer et al. 2009, CNPS 2025) or other standardized systems, this report uses a nomenclature that describes the generalized nature of the onsite habitats. The Study Area can be broken down into two distinct plant communities based on topographic changes and species composition: ruderal herbaceous upland and mixed riparian forest. The plant communities and their constituent plant taxa are described below. The only difference noted during the 2025 survey as compared to the 2020 survey is that the deciduous woody plant species had not yet leafed out and the herb layer consisted primarily of vegetative material—the only plants in flower are species that typically bloom in winter. The most conspicuous plant that was not visible during the 2020 survey in May is Bermuda buttercup (*Oxalis pes-caprae*), an invasive perennial herb that is associated with moist and often shaded conditions. This was present throughout the Study Area in 2025.

4.1.1 Ruderal Herbaceous Upland

This plant community is located entirely within the proposed building footprint, in the flat upland area adjacent to El Portal Road. At the time of the habitat survey, it was evident that the site had recently been mowed. The remaining identifiable species included an even mix of introduced species that are characteristic of disturbed conditions. Species observed include slim oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), Italian thistle (*Carduus pycnocephalus*), poison hemlock (*Conium maculatum*), Italian ryegrass (*Festuca perennis*), bristly ox-tongue (*Helminthotheca echioides*), short podded mustard (*Hirschfeldia incana*), kikuyu grass (*Pennisetum clandestinum*), English plantain (*Plantago lanceolata*) and wild radish (*Raphanus sativus*). There were no native species observed in this area. This plant community is not considered sensitive and is not afforded protection by any environmental regulatory agency. No special habitat elements with potential to support special-status wildlife were observed within this plant community—there were no large mammal burrows, rock outcroppings, wetlands, or similar features.

4.1.2 Mixed Riparian Forest

The mixed riparian forest is located along the steep creek banks, and consists of a blend of native and introduced species in the tree and herbaceous stratum. The upper and drier portion of the bank is dominated by blue gum (*Eucalyptus globulus*), a tree that is considered invasive by the California Invasive Plant Council (Cal-IPC) (2020, 2025). Moving down the bank towards the stream, the tree stratum consists of native species that are characteristic of moist habitats, including riparian habitats (i.e., associated primarily with stream corridors). These species include California buckeye (*Aesculus californica*), Oregon ash (*Fraxinus latifolia*), Northern California black walnut (*Juglans hindsii*), arroyo willow (*Salix lasiolepis*), and California bay (*Umbellularia californica*). The understory is dominated by herbaceous/vine species that are rated by the Cal-IPC as high or moderate, and there were almost no native species observed. Cape ivy (*Delairea odorata*; Cal-IPC High), English ivy (*Hedera helix*; Cal-IPC High), and Himalayan blackberry (*Rubus armeniacus*; Cal-IPC High) were the most dominant species, followed by a mix of panic veldt grass (*Ehrharta erecta*; Cal-IPC Moderate), wild radish (*Raphanus sativus*; Cal-IPC Limited), common periwinkle (*Vinca minor*), Kikuyu grass (*Pennisetum clandestinum*; Cal-IPC Limited), fennel (*Foeniculum vulgare*; Cal-IPC Moderate), and Italian thistle (*Carduus pycnocephalus*; Cal-IPC Moderate). A small population of the native giant horsetail (*Equisetum telmateia*) was observed along the vegetated creek margins. Since the tree stratum was fairly mixed between these species, there were no vegetation alliances that fit the community observed within the Study Area. This plant community is not considered sensitive and is not afforded protection by any environmental regulatory agency.

As stated previously, the plant species composition transitions from upland to facultative wetland species relative to the proximity to San Pablo Creek, or decrease in elevation. Blue gum and California buckeye are found closer to the top of bank, or drier portions of the creek bank adjacent to the upland area. Northern California black walnut and California bay trees are facultative plants (equally likely to be found in upland and wetland habitat) found in the middle elevation of the creek bank, with arroyo willow and California bay (wetland facultative species: more likely to be found in wetland, less likely to be found in upland) at the lower elevations closer to the creek. The majority of the herbaceous/vine species are upland or facultative species. Himalayan blackberry and Cape ivy are facultative species. English ivy is listed as a facultative upland species, and giant horsetail is considered a facultative wetland species. Potential jurisdictional Waters are further discussed below in **Section 4.2**.

4.2 Potential Jurisdictional Waters

The Study Area encompasses San Pablo Creek and the surrounding mixed riparian forest. While a formal wetland delineation was not conducted as part of this field survey, vegetative indicators of both riparian and wetland habitat were observed during the site reconnaissance visit (see **Section 4.1.2** above). San Pablo Creek features defined bed and bank topography, and is confluent with San Pablo Bay, which is a traditional navigable water and a water body of federal significance.

Therefore, the stream would likely be considered jurisdictional as an other Water of the United States by the ACOE, and would also be considered a Water of the State (i.e., by CDFW and RWQCB) at least to the tops of the stream banks. Beyond the top of bank there are no riparian trees and no areas featuring a majority of hydrophytic plant species, so the area is not under the jurisdiction at either the federal level or state level.

5.0 SPECIAL-STATUS SPECIES

This section provides background information and lists recommended avoidance and/or minimization measures to reduce the potential for the project to impact special-status species and sensitive habitats within the Study Area. Only listed species and/or special-status species with the greatest potential to occur within the Study Area are addressed.

In addition to all avoidance measures listed, all construction personnel involved in the project shall attend environmental awareness training prior to the commencement of potential project disturbance activities. The training shall be conducted by a qualified biologist and shall involve the presentation of sensitive species and habitats documented or potentially occurring in the Study Area. The training should include handouts that describe each resource with respect to listing status, habitat preferences, distinguishing physical characteristics, causes of its decline, and potential protection and avoidance measures. Information should be documented within a paper handout to be distributed among construction personnel, and should include photographs of the resources in order to facilitate identification by the personnel.

Figure 3 shows the distribution of special-status animal species and plant species that are documented in the surrounding area. These and other special-status species known from the project region are listed in **Appendix B**, along with their regulatory status, habitat requirements, and an evaluation of their potential to occur in the Study Area.

Based on the habitat requirements of these species, there are no federally listed species with potential to occur in the Study Area. Ten non-listed special-status animal species have potential to occur within or immediately adjacent to the Study Area (see **Appendix B, Table 1**), as well as multiple birds that fall under the Migratory Bird Treaty Act (MBTA). There are no special status plant species with potential to occur in the Study Area, due to absence of suitable habitat or low quality (severely degraded) habitat.

5.1 Listed Species

There are no listed plant or animal species with potential to occur in the Study Area.

The Study Area is not located within designated critical habitat for any listed plants or animals. There is Alameda whipsnake critical habitat approximately 1 mile southeast of the Study Area; however, there is no suitable habitat for Alameda whipsnake within the Study Area or surrounding habitats.

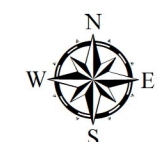
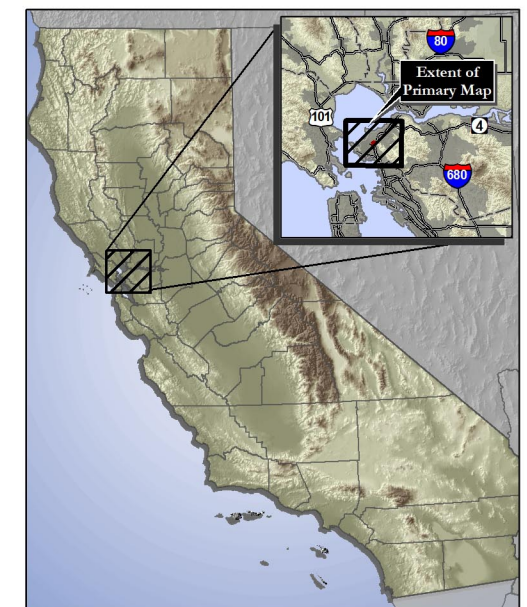
FIGURE 3
Special-status Species Map

El Portal Retail Apartments Project
 City of San Pablo, California



Legend

- CNDDDB Special-status Animal
- ▲ CNDDDB Special-status Plant
- Stream
- Study Area Boundary (0.57 ac.)



1:63,360
 (1 in = 1 mile at tabloid layout)



Data Sources: USGS, various | ESRI, various
 VNL, 2019 | MHLT, various | TIGER, 2012
 GIS/Cartography by R. Foss, August 2019
 Map File: CNDDDB_472_B-L_2020-0803.mxd



5.2 Non-listed Special-Status Animal species

Ten special-status species that are not federally or state listed are documented from the vicinity of the Study Area and have some potential to be impacted by project related activities. These include western pond turtle (*Actinemys marmorata*), pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*), hoary bat (*Lasiurus cinereus*), big free-tailed bat (*Nyctinomops macrotis*), Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), and yellow warbler (*Setophaga petechia*).

None of the species listed above are state or federally listed as endangered or threatened. However, their designation as special-status species by CDFW warrants consideration, and avoidance and minimization measures are recommended.

5.2.1 Western Pond Turtle

Western pond turtle is a California Species of Special Concern. This turtle primarily inhabits aquatic habitats, including ponds, slow moving streams, lakes, marshes, and canals. The species frequently basks on logs or other objects out of the water. As shown in **Figure 3**, the closest western pond turtle documentation is about 4.5 miles from the Study Area, within a different watershed.

The Study Area provides marginal habitat for western pond turtle. The stream is disturbed by a homeless camp and a dense riparian canopy precludes basking sites along the creek bank. However, the Study Area does provide dispersal habitat, as western pond turtle may disperse through the low flow or dry channel to move between larger pools or ponds. Therefore, it is possible that individual turtles may be present during construction activities. The following avoidance measures are recommended to avoid impacts from project activities.

Recommended Avoidance Measures

- Measure 1: The applicant will minimize potential adverse effects to the western pond turtle by limiting, to the maximum extent possible, the number of access routes, construction areas, equipment staging, storage, parking, and stockpile areas. Prior to the date of initial ground disturbance at the project site, silt fencing shall be installed along the entire length of the bank top adjacent to the site, as well as along the sides of the site, extending to El Portal Drive. The fencing shall be inspected by a qualified biologist prior to the onset of construction activity and once per week during the timeframe of the project construction.

5.2.2 Pallid Bat, Townsend's Big-Eared Bat, Silver-Haired Bat, Western Red Bat, Hoary Bat, and Big Free-Tailed Bat

Pallid bat is a California Species of Special Concern and listed as "high" priority by the Western Bat Working Group (WBWG). Townsend's big-eared bat is a California Species of Special Concern and listed as "high" priority by the WBWG. Silver-haired bat is listed as "medium" by

the WBWG. Western red bat is California Species of Special Concern and listed as “high” priority by the WBWG. Hoary bat is listed as “medium” by the WBWG. Big free-tailed bat is a California Species of Special Concern and listed as “high” priority by the WBWG.

The presence of a permanent water source and open grassland to the south of the Study Area (St. Joseph’s Cemetery) provide ideal foraging habitat for these bat species, and dense clusters of trees provide cover. As these bat species utilize tree cavities, crevices, and exfoliating bark and/or bark fissures for roosting, trees within and near the Study Area with such features could provide roosting habitat. Breeding typically occurs in the fall or winter seasons. Therefore, tree removal could result in the loss of an active bat roost.

Recommended Avoidance Measures

Measure 2: A qualified biologist shall conduct a roosting bat habitat evaluation prior to the commencement of construction activities. The evaluation shall determine if any trees proposed for removal or that are located near the work sites provide potential bat roosting habitat. If suitable roost trees or an active roost are confirmed, then a site-specific bat protection plan shall be developed by a qualified biologist to prevent disturbance of an active maternity or hibernation roost.

5.2.3 Cooper’s Hawk, Sharp-Shinned Hawk, Yellow Warbler

Both Cooper’s hawk and sharp-shinned hawk are on CDFW’s Watch List. Yellow warbler is a California Species of Special Concern. There is potentially suitable habitat present within the mixed riparian forest within the Study Area for these species.

Recommended Avoidance Measures

Measure 3: If construction activities would commence anytime during the nesting/breeding season of native bird species potentially nesting in the Study Area (typically February through August in the project region), a pre-construction survey for nesting birds should be conducted by a qualified biologist within two weeks of the commencement of construction activities.

If active nests are found in areas that could be directly affected or are within 500 feet of construction and would be subject to prolonged construction-related noise, a no-disturbance buffer zone should be created around active nests during the breeding season or until a qualified biologist determines that all young have fledged. The size of the buffer zone and types of construction activities restricted within it should be determined through coordination with the CDFW, taking into account factors such as the following:

- 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;

- Distance and amount of vegetation or other screening between the construction site and the nest; and
- Sensitivity of individual nesting species and behaviors of the nesting birds.

5.3 Migratory and Nesting Birds

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 704) and the California Fish and Game Code (Section 3503) prohibit the take of migratory birds as well as disturbance to the active nests of most native birds. As stated previously, the trees in the Study Area could support nests of multiple migratory bird species, including raptors. Tree or vegetation removal could result in direct loss of birds protected by the MBTA. Additionally, construction-related noise could result in the abandonment of an active nest in trees adjacent to the Study Area, including potential nests of special-status bird species. Measure 4, as described above, should be implemented to avoid and minimize impacts to migratory and nesting bird species.

5.4 Non-listed Special-Status Plant Species

No special-status plants have previously been documented within the Study Area, and no such species were observed within the Study Area during the May 2020 or February 2025 reconnaissance-level site surveys. Given the level of disturbance from invasive plants and human impacts (e.g., homeless camping), the Study Area does not contain suitable habitat for any federal or state listed species (**Appendix B, Table 2**).

Soils in the Study Area are alluvial soils derived from sedimentary rock, and feature high silt and clay content (USDA 2020, 2025). Most special-status plants associated with unique soil types in the region are associated with serpentinite rock, are highly alkaline, or feature notably high clay content.

The Study Area does support suitable habitat for two plant species with special-status designation, though neither are state or federally listed species (**Appendix B, Table 2**). The onsite mixed riparian forest and ruderal herbaceous upland provides potential habitat for the following special-status plant species: western leatherwood (*Dirca occidentalis*) (CRPR 1B.2) and congested-headed hayfield tarplant (*Hemizonia congesta* ssp. *congesta*) (CRPR 1B.2). Given that most of the site is extremely disturbed, these species have low potential to occur on the site. In addition, these species were not observed during the reconnaissance-level surveys in May and February. Hayfield tarplant would have been identifiable during the May 2020 survey, and western leatherwood would have been identifiable during the February 2025 survey. Given that these species were not observed during the survey, they are presumed to be absent from the Study Area. Therefore, no additional surveys or any avoidance measures for special-status plants are necessary or recommended.

5.5 Potential Jurisdictional Waters

Though no formal wetland delineation was conducted in the Study Area, San Pablo Creek would likely be considered jurisdictional by the ACOE as a Navigable Water with other Waters of the United States. In the event that measures are not included as part of the project to protect San Pablo Creek, these aquatic resources could be impacted by project activities. Therefore, the following avoidance measures are recommended.

Recommended Avoidance Measures

- Measure 5: Prior to the commencement of construction activities that could result in fill or direct disturbance to a jurisdictional wetland or stream, the project proponent shall obtain all required permits/agreements from the ACOE, CDFW, and RWQCB, and comply with all specified requirements contained in those permits. It is likely that avoidance and minimization measures and/or mitigation measures would be required to reduce impacts to San Pablo Creek and its associated wetland and riparian habitats.

- Measure 6: Ensure that all proposed project components conform with the creek setback recommendations set forth in the San Pablo General Plan 2030.

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**APPENDIX A:
REPRESENTATIVE PHOTOGRAPHS
OF THE STUDY AREA**
(Recorded May 27, 2020 and February, 2025)

Representative Photographs of the Study Area



Ruderal herbaceous upland habitat at street level;
proposed development area. 2020. Facing west.



Ruderal herbaceous upland habitat in 2025. Facing west.

Representative Photographs of the Study Area



Transition from ruderal herbaceous upland to mixed riparian forest (steep stream corridor). Top of bank shown in 2020. Facing east.



Transition from ruderal herbaceous upland to mixed riparian forest
Top of bank shown in 2025. Facing east.

Representative Photographs of the Study Area



Understory within mixed riparian forest dominated by English ivy and Cape ivy. 2020. Facing southeast.



English ivy and Cape ivy. 2025. Facing southeast.

Representative Photographs of the Study Area



Homeless encampment below bridge located on the western boundary of the Study Area. 2020. Facing southwest.



Homeless encampment below bridge 2025. Facing southwest

Representative Photographs of the Study Area



San Pablo Creek. 2020. Facing east.



San Pablo Creek. 2025. Facing east.

Representative Photographs of the Study Area



San Pablo Creek. Facing west.



San Pablo Creek. Facing west.

**APPENDIX B:
SPECIAL-STATUS SPECIES TABLES**

TABLE 1. Special-status Animals Documented within the Vicinity of the Study Area

Note: Taxa with higher potential to occur in the Study Area, based on presence of habitat, are shaded in gray.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
INVERTEBRATES			
western bumble bee <i>Bombus occidentalis</i>	-/SC/-	Nests in underground cavities such as animal burrows, or rarely in above ground locations such as in cavities in logs. Requires blooming plants that supply adequate nectar and pollen from February through November.	Not Expected: Suitable nesting cavities are not present within the Study Area.
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE/-/-	Steep, north-facing slopes within the fog belt. Larval host plant is stonecrop (<i>Sedum spathulifolium</i>).	Not Expected: All known populations are restricted to San Mateo County, where several populations are known from San Bruno Mountain, Milagra Ridge, the San Francisco Peninsula Watershed, and Montara Mountain. The nearest CNDDB documentation is from San Bruno Mountain which is 20 miles from the Study Area. The larval host plant has not been observed within the Study Area; however, a comprehensive plant survey was not conducted.
bay checkerspot butterfly <i>Euphydryas editha bayensis</i>	FT/-/-	Shallow serpentine soils that support primary larval host plant species dwarf plantain (<i>Plantago erecta</i>) and secondary larval host plant - purple owl's clover (<i>Castilleja densiflora</i> or <i>C. exserta</i>).	Not Expected: Suitable habitat and primary larval host plants are not observed to be within the Study Area; however, a comprehensive plant survey was not conducted.
mission blue butterfly <i>Plebejus icarioides missionensis</i>	FE/-/-	Coastal chaparral and grasslands. Most known populations occur on Twin Peaks in San Francisco, Golden Gate National Recreation Area (Marin Headlands), and San Bruno Mountain.	Not Expected: Suitable habitats are not present within the Study Area, and Study Area is not near known population centers for this species.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE/-/-	Habitats with presence of Johnny jump up (<i>Viola pendunculata</i>), typically in sloped terrain. Potentially suitable habitats include foothill woodland, northern oak woodland, and coastal sage scrub.	Not Expected: Suitable habitats are not present within the Study Area. In addition, presence of larval plant was not observed at the time of visit; however, a comprehensive plant survey was not conducted.
FISH			
Sacramento perch <i>Archoplites interruptus</i>	-/-/SSC	Sloughs, lakes, warm reservoirs, and slow-moving rivers. Known to occur in Clear Lake and Alameda Creek/ Calaveras Reservoir.	Not Expected: Study Area is not within the current extant and historic ranges for this species.
tidewater goby <i>Eucyclogobius newberryi</i>	FE/-/-	Lagoons with cool brackish water and freshwater input from coastal streams. Shallow open water with emergent vegetation.	Not Expected: Study Area is not within the current extant and historic ranges for this species.
Delta smelt <i>Hypomesus transpacificus</i>	FT/SE/-	Found in aquatic/estuarine habitats. Restricted to the tidal portions of the Sacramento-San Joaquin Delta. May occur in Suisun Bay, Carquinez Strait & San Pablo Bay during wet years with high Delta outflow. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	Not Expected: There is no suitable habitat within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	-/-/SSC	Anadromous species. Shallow and vegetated riverine and lacustrine habitats for spawning. Year-round occupation of estuaries; notably, Suisun Marsh and Petaluma River estuary.	Not Expected: Although the reach of San Pablo Creek provides suitable habitat (shallow, with dense vegetation), the Study Area is not within the current extant and historic ranges for this species.
longfin smelt <i>Spirinchus thaleichthys</i>	FC/ST/-	Pelagic-estuarine habitats, typically found in the middle or deeper parts of the water column. Does not occur within non-tidal riverine habitats.	Not Expected: There is no suitable habitat within the Study Area.
eulachon <i>Thaleichthys pacificus</i>	FT/-/-	Anadromous species. Occurs primarily in coastal marine waters. Preferred spawning habitat at the lower reaches of large northern coastal rivers. Occurs very rarely (and in low abundance) within the tidal reaches of the San Francisco Bay estuary watershed.	Not Expected: There is no suitable habitat present within the Study Area; San Pablo Creek is not considered a “large coastal river”. Although the Study Area is within historical range of this species, it is rare for the species to occur within the San Francisco Bay estuaries. There is one CNDDDB occurrence documented in San Pablo Bay in 2003 (collections of eulachons in 1999, 2001, and 2003). Guadalupe River is the only feature with known/documented eulachon, also in 2003 (Leidy 2007).
AMPHIBIANS			
California tiger salamander <i>Ambystoma californiense</i>	FT/ST/-	Grasslands and low foothills, with vernal pools for breeding.	Not Expected: There are no suitable breeding pools or ponds within the Study Area, and the Study Area is surrounded by urban development and riparian corridors, and thus does not provide suitable dispersal habitat.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
California giant salamander <i>Dicamptodon ensatus</i>	-/-/SSC	Wet coastal forests in or near clear, cold permanent and semi-permanent high-gradient streams and seepages.	Not Expected: There is no suitable habitat present within the Study Area. The reach of San Pablo Creek within the Study Area is a low-gradient stream surrounded by urban development.
California red-legged frog <i>Rana draytonii</i>	FT/-/SSC	Marshes, stream pools, reservoirs, ponds. Uses both riparian and upland habitats for foraging, shelter, cover, and non-dispersal movement.	Not Expected: There is no suitable habitat present within the Study Area due to extensive urban development surrounding the reach of San Pablo Creek within the Study Area. In addition, the lack of pools (breeding habitat) within the creek and highly channelized banks cause rapid storm flows that are inhospitable for this species.
foothill yellow-legged frog <i>Rana boylei</i>	-/SE/SSC	Rocky, high gradient streams and rivers with rocky substrate and open, sunny banks; forests, chaparral, woodland.	Not Expected: There is no suitable habitat present within the Study Area. San Pablo Creek is a low-gradient stream surrounded by urban development and is densely vegetated, lacking open and sunny banks.
REPTILES			
Alameda whipsnake <i>Masticophis lateralis euryxanthus</i>	FT/ST/-	Chaparral, northern coastal sage scrub and coastal sage. Grassland habitats are used by before and after mating season in the spring.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
western pond turtle <i>Actinemys marmorata</i>	-/-/SSC	Perennial ponds, deep slow-moving streams, marshes and lakes are habitat for this species at 6,000 ft. and below in elevation. However, eggs are laid in loose soil on land in oak woodlands, mixed coniferous forests, broadleaf forests and grasslands, usually within 400 ft. of ponds, lakes, slow streams and marshes with vegetated borders, rocks, or logs. Logs, rocks, cattail mats, and exposed banks are required for basking.	Potential (low): Study area may provide marginal dispersal habitat for this species. The dense canopy and understory within the mixed riparian forest does not offer basking habitat, and deep pools were not observed for the reach of San Pablo Creek within the Study Area.
BIRDS			
Cooper's hawk <i>Accipiter cooperii</i>	-/-/WL	Forest and woodlands. Nests in dense woods located on flat ground rather than hillslopes.	Potential (low): Marginally suitable nesting habitat in mixed riparian forest due to steep banks that are less ideal for nesting. Nearest CNDDDB occurrence is approximately 4.5 miles southwest of the Study Area.
sharp-shinned hawk <i>Accipiter striatus</i>	-/-/WL	Prefers dense woods, usually nests in coniferous, deciduous or mixed forests.	Potential: Suitable habitat in mixed riparian forest. Nearest CNDDDB occurrence is more than 5 miles away from the Study Area.
tricolored blackbird <i>Agelaius tricolor</i>	FCC/ST/SSC	Large freshwater marshes. Forages in open habitats such as pastures, agricultural fields, and grasslands with scattered seasonal wetlands.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
golden eagle <i>Aquila chrysaetos</i>	FCC/-/FP	Forages in open terrain such as grassland, desert, savannah, or young forests and shrub habitat. Constructs large nests on platforms of steep cliffs or in large trees in open areas.	Not Expected: There is no suitable habitat present within the Study Area.
great egret <i>Ardea alba</i>	-/-/SA	Freshwater, brackish, and marine wetlands. Trees and shrubs needed for breeding season.	Not Expected: There is no suitable habitat present within the Study Area. Typically found in nearshore environments with larger bodies of water.
great blue heron <i>Ardea herodias</i>	-/-/SA	Breeding colonies located near isolated swamps, islands, lakes, ponds, reservoirs that are bordered by forests (typical feeding habitat). May forage in grasslands and agricultural fields.	Not Expected: There is no suitable habitat present within the Study Area.
short-eared owl <i>Asio flammeus</i>	-/-/SSC	Large, open areas with low vegetation.	Not Expected: There is no suitable habitat present within the Study Area.
western burrowing owl <i>Athene cunicularia</i>	FCC/-/SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel. Suitable habitats include coastal prairie, coastal scrub, Great Basin grassland, Great Basin scrub, Mojavean desert scrub, Sonoran Desert scrub, and valley & foothill grassland	Not Expected: The small section of ruderal herbaceous upland within the Study Area does not provide suitable habitat for burrowing owls, and no ground squirrels or burrows were observed.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
cackling (=Aleutian Canada) goose <i>Branta hutchinsii leucopareia</i>	-/-/WL	Wintering habitat include lakes, marshes, and fields.	Not Expected: There is no suitable habitat present within the Study Area.
western snowy plover <i>Charadrius nivosus nivosus</i>	FT/-/SSC	Coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries	Not Expected: There is no suitable habitat present within the Study Area.
northern harrier <i>Circus hudsonius</i>	-/-/SSC	Nests on ground or in vegetation. Typical habitat includes sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrublands.	Not Expected: There is no suitable habitat present within the Study Area.
yellow-billed cuckoo <i>Coccyzus americanus occidentalis</i>	FT/SE/-	Large, contiguous blocks of riparian habitat with dense, deciduous vegetation needed for nesting. Typical suitable nesting habitat in California include willow-cottonwood forest that spans over 200 acres.	Not Expected. There is no suitable nesting habitat present within the Study Area due to the small and fragmented nature of the riparian habitat.
yellow rail <i>Coturnicops noveboracensis</i>	-/-/SSC	Shallow fresh or brackish marsh, or coastal salt marsh. May also occupy rice fields or damp meadows near coast.	Not Expected: There is no suitable habitat present within the Study Area.
white-tailed kite <i>Elanus leucurus</i>	-/-/FP	Savannas, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields.	Not Expected: There is no suitable habitat present within the Study Area.
saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	-/-/SSC	Nests in tall grasses, tules, and willow thickets. Typically found in freshwater marshes in summer and salt or brackish marshes in fall and winter.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
bald eagle <i>Haliaeetus leucocephalus</i>	-/SE/FP	Nests in forested areas adjacent to large bodies of water, away from developed areas.	Not Expected: There is no suitable habitat present within the Study Area due to extensive development.
California black rail <i>Laterallus jamaicensis coturniculus</i>	-/ST/FP	Nests in marshes and wet meadows with stable, shallow water (muted tidal activity).	Not Expected: There is no suitable habitat present within the Study Area.
Suisun song sparrow <i>Melospiza melodia maxillaris</i>	-/-/SSC	Year-round, nonmigratory species confined to tidal salt and brackish marches located along the Carquinez Strait and Suisun Bay east of Antioch.	Not Expected: There is no suitable habitat present within the Study Area.
Alameda song sparrow <i>Melospiza melodia pusillula</i>	-/-/SSC	Year-round, nonmigratory species located in salt marshes along the edge of the San Francisco Bay extending north to the City of El Cerrito.	Not Expected: There is no suitable habitat present within the Study Area.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	-/-/SSC	Year-round, nonmigratory species located in tidal and muted tidal salt marshes around San Pablo Bay and select areas in north San Francisco Bay.	Not Expected: There is no suitable habitat present within the Study Area. Nearby CNDDDB occurrences of this species along the San Pablo Creek date back to the 40s and have low mapping accuracy.
osprey <i>Pandion haliaetus</i>	-/-/WL	Nests in open and elevated sites near any expanse of shallow and well-stocked body of water for fishing.	Not Expected: There is no suitable habitat present within the Study Area.
double-crested cormorant <i>Phalacrocorax auritus</i>	-/-/WL	Nests in tree clusters in or near water; water body needs to be large enough to support fish diet.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
California clapper rail (Ridgeway's rail) <i>Rallus lonirostris obsoletus</i>	FE/SE/FP	Salt and brackish water marsh.	Not Expected: There is no suitable habitat present within the Study Area.
bank swallow <i>Riparia riparia</i>	-/ST/-	Open lowland areas near bodies of water (rivers, streams, ocean coasts, reservoirs). Nests in vertical cliffs or banks, or in sand/gravel quarries or road cuts.	Not Expected: There is no suitable habitat present within the Study Area.
yellow warbler <i>Setophaga petechia</i>	-/-/SSC	Edges of marshes or swamps, willow-lined streams, thickets, orchards, farmlands, forest edges, and rarely suburban yards and gardens.	Potential (low). Suitable habitat is present within mixed riparian forest; however, there are no documented CNDDDB occurrences within 5 miles of the Study Area. Nearest CNDDDB occurrence is over 20 miles away.
California least tern <i>Sternula antillarum browni</i>	FE/SE/FP	Nests along the coast from San Francisco Bay south to northern Baja California. Colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	Not Expected: There is no suitable habitat present within the Study Area.
yellow-headed blackbird <i>Xanthocephalus xanthocephalus</i>	-/-/SSC	Nests in tall emergent vegetation like cattails, bulrushes, or reeds. Forages in surrounding grasslands, croplands, or savannah.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
MAMMALS			
pallid bat <i>Antrozous pallidus</i>	-/-/SSC, WBWG: H	Variety of habitats; prefer open dry lands with rocky areas for roosting.	Potential: Any onsite trees with suitable cavities may provide potential roosting habitat. Species is documented from within an estimated distance of 3.5 miles northeast of the Study Area (though occurrence date is from 1936, and the exact collection location is also unknown).
San Francisco dusky-footed woodrat <i>Neotoma fuscipes annectens</i>	-/-/SSC	Woodland and chaparral habitats. Woodrats build nests which are often the result of work by several generations of woodrats, by piling up sticks, rocks, and other available material.	Not Expected: No woodrat nests were observed within the Study Area, and no documentations within 5 miles.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	-/-/SSC, WBWG: H	Pine forest or desert scrub near caves or other rock formations that provide crevices. Less common roosting habitat includes buildings, bridges, and hollow trees. Foraging habitat typically include edge habitat (wooded habitat) along streams.	Potential (low): Large trees within Study Area provide potential roosting habitat (not preferred). Large clearing south of Study Area (St. Joseph's Cemetery), combined with presence of mixed riparian forest within the Study Area, provide ideal foraging habitat.
southern sea otter <i>Enhydra lutris nereis</i>	FT/-/FP	Nearshore marine habitats with presence of kelp beds.	Not Expected: There is no suitable habitat present within the Study Area.
silver-haired bat <i>Lasionycteris noctivagans</i>	-/-/WBWG:M	Maternity roosts can be found in conifer and mixed conifer/hardwood forests within natural tree hollows, cavities excavated by other species, and in loose bark. Forages along riparian zones, over open meadows, and above tree canopies.	Potential: Large trees within Study Area provide potential roosting habitat. Large clearing south of Study Area (St. Joseph's Cemetery), combined with presence of mixed riparian forest within the Study Area, provide ideal foraging and roosting habitat.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
western red bat <i>Lasiurus blossevillii</i>	-/-/SSC, WBWG:H	Edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. Intact riparian habitat may be preferred. Occasionally use caves.	Potential: Large trees within Study Area provide potential roosting habitat. Large clearing south of Study Area (St. Joseph's Cemetery), combined with presence of mixed riparian forest within the Study Area, provide ideal foraging and roosting habitat.
hoary bat <i>Lasiurus cinereus</i>	-/-/WBWG:M	Roosts at edge of clearings for coniferous and deciduous woodland/forests. Less likely roosting habitat includes caves, rock ledges, and buildings.	Potential: Large trees within Study Area provide potential roosting habitat. Large clearing south of Study Area (St. Joseph's Cemetery), combined with presence of mixed riparian forest within the Study Area, provide ideal foraging and roosting habitat.
San Pablo vole <i>Microtus californicus sanpabloensis</i>	-/-/SSC	Salt and brackish marsh habitats with dense vegetation cover.	Not Expected: There is no suitable habitat present within the Study Area. Nearest CNDDDB occurrence is approximately 2.5 miles downstream of San Pablo Creek, in a portion of the creek that is subject to greater tidal influence (and therefore presence of preferred salt marsh plant species).
big free-tailed bat <i>Nyctinomops macrotis</i>	-/-/SSC, WBWG:H	Rugged, rocky habitats in arid landscapes. Desert shrub, woodlands, and evergreen forests. Typically associated with lowlands. Primary roosts include cliff crevices, and secondary roosts may include tree cavities, caves, and buildings.	Potential (low): Study Area does not contain primary roosting habitat; secondary roosting habitat present in mixed riparian forest. Nearest occurrence located 7 miles south, documented over 100 years ago.
salt marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE/SE/FP	Salt marshes.	Not Expected: There is no suitable habitat present within the Study Area.
Alameda Island mole <i>Scapanus latimanus parvus</i>	-/-/SSC	Known occurrences restricted to Alameda island.	Not Expected: There is no suitable habitat present within the Study Area.

Common Name <i>Scientific Name</i>	Federal/State /Other Status ¹	Preferred Habitat	Potential to Occur within the Study Area
Suisun shrew <i>Sorex ornatus sinuosus</i>	-/-/SSC	Salt and brackish marshes around the northern margins of San Pablo and Suisun bays.	Not Expected: There is no suitable habitat present within the Study Area.
salt-marsh wandering shrew <i>Sorex vagrans halicoetes</i>	-/-/SSC	Small remnant stands of salt marsh found around the southern arm of the San Francisco Bay in San Mateo, Santa Clara, Alameda, and Contra Costa Counties.	Not Expected: There is no suitable habitat present within the Study Area.
American badger <i>Taxidea taxus</i>	-/-/SSC	Suitable habitat is characterized by herbaceous, shrub, and open stages of most habitats with dry, friable soils.	Not Expected: No documentations within 5 miles of Study Area, and soils not notably friable.

¹ Rarity status definitions:

FT – Federal Threatened;
 FE – Federal Endangered;
 FCC – Federal Bird of Conservation Concern;
 ST – State Threatened;
 SE – State Endangered;
 SC – State Candidate;

SSC – CDFW Species Special Concern;
 SA – CDFW Special Animal List;
 FP – CDFW Fully Protected;
 WL – CDFW Watch List;
 WBWG:M or H or LM – Western Bat Working Group, Medium Rank, High Rank or Low-Medium.

TABLE 2. Special-status Plants Documented within the Vicinity of the Study Area

Note: Taxa with higher potential to occur in the Study Area, based on presence of habitat, are shaded in gray

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Amsinckia lunaris</i> bent-flowered fiddleneck (Boraginaceae)	annual herb	1B.2,-,-	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland; Microhabitat: none 5-1640 feet; Mar-Jun	Not Expected. Study Area does not provide suitable habitat for species.
<i>Androsace elongata ssp. acuta</i> California androsace (Primulaceae)	annual herb	4.2,-,-	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland; Microhabitat: none 490-4280 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Arabis blepharophylla</i> coast rockcress (Brassicaceae)	perennial herb	4.3,-,-	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Microhabitat: rocky 5-3610 feet; Feb-May	Not Expected. Microhabitat within Study Area not present.
<i>Arctostaphylos franciscana</i> Franciscan manzanita (Ericaceae)	perennial evergreen shrub	1B.1,-,E	Coastal scrub (serpentine); Microhabitat: none 195-985 feet; Feb-Apr	Not Expected. Study Area outside of species' elevation range.
<i>Arctostaphylos montana ssp. ravenii</i> Presidio manzanita (Ericaceae)	perennial evergreen shrub	1B.1,E,E	Chaparral, Coastal prairie, Coastal scrub; Microhabitat: serpentine outcrop 145-705 feet; Feb-Mar	Not Expected. Study Area does not provide suitable habitat for species.
<i>Arctostaphylos pallida</i> pallid manzanita (Ericaceae)	perennial evergreen shrub	1B.1,E,T	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub; Microhabitat: siliceous shale, sandy or gravelly 605-1525 feet; Dec-Mar	Not Expected. Study Area outside of species' elevation range.
<i>Arenaria paludicola</i> marsh sandwort (Caryophyllaceae)	perennial stoloniferous herb	1B.1,E,E	Marshes and swamps (freshwater or brackish); Microhabitat: sandy, openings 5-560 feet; May-Aug	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Aspidotis carlotta-halliae</i> Carlotta Hall's lace fern (Pteridaceae)	perennial rhizomatous herb	4.2,-,-	Chaparral, Cismontane woodland; Microhabitat: usually serpentinite 325-4595 feet; Jan-Dec	Not Expected. Study Area does not provide suitable habitat for species.
<i>Astragalus nuttallii</i> var. <i>nuttallii</i> ocean bluff milk-vetch (Fabaceae)	perennial herb	4.2,-,-	Coastal bluff scrub, Coastal dunes; Microhabitat: none 5-395 feet; Jan-Nov	Not Expected. Study Area does not provide suitable habitat for species.
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch (Fabaceae)	annual herb	1B.2,-,-	Playas, Valley and foothill grassland (adobe clay), Vernal pools; Microhabitat: alkaline 0-195 feet; Mar-Jun	Not Expected. Study Area does not provide suitable habitat for species.
<i>Balsamorhiza macrolepis</i> big-scale balsamroot (Asteraceae)	perennial herb	1B.2,-,-	Chaparral, Cismontane woodland, Valley and foothill grassland; Microhabitat: sometimes serpentinite 145-5100 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Blepharizonia plumosa</i> big tarplant (Asteraceae)	annual herb	1B.1,-,-	Valley and foothill grassland; Microhabitat: Usually clay. 95-1655 feet; Jul-Oct	Not Expected. Study Area outside of species' elevation range.
<i>Calamagrostis ophitidis</i> serpentine reed grass (Poaceae)	perennial herb	4.3,-,-	Chaparral (open, often north-facing slopes), Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland; Microhabitat: serpentinite, rocky 295-3495 feet; Apr-Jul	Not Expected. Study Area outside of species' elevation range.
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern (Liliaceae)	perennial bulbiferous herb	1B.2,-,-	Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland; Microhabitat: none 95-2755 feet; Apr-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Calochortus tiburonensis</i> Tiburon mariposa lily (Liliaceae)	perennial bulbiferous herb	1B.1,T,T	Valley and foothill grassland (serpentinite); Microhabitat: none 160-490 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Calochortus umbellatus</i> Oakland star-tulip (Liliaceae)	perennial bulbiferous herb	4.2,-,-	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland; Microhabitat: often serpentinite 325-2295 feet; Mar-May	Not Expected. Study Area outside of species' elevation range.
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory (Convolvulaceae)	perennial herb	1B.2,-,-	Coastal bluff scrub, Coastal dunes, Coastal scrub, North Coast coniferous forest; Microhabitat: none 0-345 feet; (Mar)Apr-Sep	Not Expected. Habitat within Study Area not suitable.
<i>Carex comosa</i> bristly sedge (Cyperaceae)	perennial rhizomatous herb	2B.1,-,-	Coastal prairie, Marshes and swamps (lake margins), Valley and foothill grassland; Microhabitat: none 0-2050 feet; May-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Carex praticola</i> northern meadow sedge (Cyperaceae)	perennial herb	2B.2,-,-	Meadows and seeps (mesic); Microhabitat: none 0-10500 feet; May-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush (Orobanchaceae)	perennial herb (hemiparasitic)	1B.2,T,E	Valley and foothill grassland (serpentinite); Microhabitat: none 195-1310 feet; Apr-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Castilleja ambigua</i> var. <i>ambigua</i> johnny-nip (Orobanchaceae)	annual herb (hemiparasitic)	4.2,-,-	Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Valley and foothill grassland, Vernal pools margins; Microhabitat: none 0-1425 feet; Mar-Aug	Not Expected. Study Area does not provide suitable habitat for species.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant (Asteraceae)	annual herb	1B.1,-,-	Valley and foothill grassland (alkaline); Microhabitat: none 0-755 feet; May-Oct(Nov)	Not Expected. Study Area does not provide suitable habitat for species.
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes bird's-beak (Orobanchaceae)	annual herb (hemiparasitic)	1B.2,-,-	Marshes and swamps (coastal salt); Microhabitat: none 0-35 feet; Jun-Oct	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Chloropyron molle</i> ssp. <i>molle</i> soft bird's-beak (Orobanchaceae)	annual herb (hemiparasitic)	1B.2,CR,E	Marshes and swamps (coastal salt); Microhabitat: none 0-10 feet; Jun-Nov	Not Expected. Study Area does not provide suitable habitat for species.
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower (Polygonaceae)	annual herb	1B.2,-,-	Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub; Microhabitat: sandy 5-705 feet; Apr-Jul(Aug)	Not Expected. Study Area does not provide suitable habitat for species.
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower (Polygonaceae)	annual herb	1B.1,-,E	Chaparral (maritime), Cismontane woodland (openings), Coastal dunes, Coastal scrub; Microhabitat: sandy or gravelly 5-985 feet; Apr-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock (Apiaceae)	perennial herb	2B.1,-,-	Marshes and swamps Coastal, fresh or brackish water; Microhabitat: none 0-655 feet; Jul-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Cirsium andrewsii</i> Franciscan thistle (Asteraceae)	perennial herb	1B.2,-,-	Broadleafed upland forest, Coastal bluff scrub, Coastal prairie, Coastal scrub; Microhabitat: mesic, sometimes serpentinite 0-490 feet; Mar-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Cirsium hydrophilum</i> var. <i>vaseyi</i> Mt. Tamalpais thistle (Asteraceae)	perennial herb	1B.2,-,-	Broadleafed upland forest, Chaparral, Meadows and seeps; Microhabitat: serpentinite seeps 785-2035 feet; May-Aug	Not Expected. Study Area outside of species' elevation range.
<i>Clarkia concinna</i> ssp. <i>automixa</i> Santa Clara red ribbons (Onagraceae)	annual herb	4.3,-,-	Chaparral, Cismontane woodland; Microhabitat: none 295-4920 feet; (Apr)May-Jun(Jul)	Not Expected. Study Area outside of species' elevation range.
<i>Clarkia franciscana</i> Presidio clarkia (Onagraceae)	annual herb	1B.1,E,E	Coastal scrub, Valley and foothill grassland (serpentinite); Microhabitat: none 80-1100 feet; May-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Collinsia corymbosa</i> round-headed Chinese-houses (Plantaginaceae)	annual herb	1B.2,-,-	Coastal dunes; Microhabitat: none 0-65 feet; Apr-Jun	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Collinsia multicolor</i> San Francisco collinsia (Plantaginaceae)	annual herb	1B.2,-,-	Closed-cone coniferous forest, Coastal scrub; Microhabitat: sometimes serpentinite 95-820 feet; (Feb)Mar-May	Not Expected. Study Area outside of species' elevation range.
<i>Dirca occidentalis</i> western leatherwood (Thymelaeaceae)	perennial deciduous shrub	1B.2,-,-	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland; Microhabitat: mesic 80-1395 feet; Jan-Mar(Apr)	Low Potential, Not Observed. Marginally suitable mixed riparian forest present within Study Area due to dominance of introduced and invasive species in the understory. This species was not observed during reconnaissance visit.
<i>Eriogonum luteolum</i> var. <i>caninum</i> Tiburon buckwheat (Polygonaceae)	annual herb	1B.2,-,-	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland; Microhabitat: serpentinite, sandy to gravelly 0-2295 feet; May-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Eriophorum gracile</i> slender cottongrass (Cyperaceae)	perennial rhizomatous herb (emergent)	4.3,-,-	Bogs and fens, Meadows and seeps, Upper montane coniferous forest; Microhabitat: acidic 4195-9515 feet; May-Sep	Not Expected. Study Area outside of species' elevation range.
<i>Eryngium jepsonii</i> Jepson's coyote thistle (Apiaceae)	perennial herb	1B.2,-,-	Valley and foothill grassland, Vernal pools; Microhabitat: clay 5-985 feet; Apr-Aug	Not Expected. Study Area does not provide suitable habitat for species.
<i>Erysimum franciscanum</i> San Francisco wallflower (Brassicaceae)	perennial herb	4.2,-,-	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland; Microhabitat: often serpentinite or granitic, sometimes roadsides 0-1805 feet; Mar-Jun	Not Expected. Study Area does not provide suitable habitat for species.
<i>Extriplex joaquinana</i> San Joaquin spearscale (Chenopodiaceae)	annual herb	1B.2,-,-	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland; Microhabitat: alkaline 0-2740 feet; Apr-Oct	Not Expected. Study Area does not provide suitable habitat for species.
<i>Fissidens pauperculus</i> minute pocket moss (Fissidentaceae)	moss	1B.2,-,-	North Coast coniferous forest (damp coastal soil); Microhabitat: none 30-3360 feet;	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Fritillaria liliacea</i> fragrant fritillary (Liliaceae)	perennial bulbiferous herb	1B.2,-,-	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: Often serpentinite 5-1345 feet; Feb-Apr	Not Expected. Study Area does not provide suitable habitat for species.
<i>Gilia capitata</i> ssp. <i>chamissonis</i> blue coast gilia (Polemoniaceae)	annual herb	1B.1,-,-	Coastal dunes, Coastal scrub; Microhabitat: none 5-655 feet; Apr-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Gilia millefoliata</i> dark-eyed gilia (Polemoniaceae)	annual herb	1B.2,-,-	Coastal dunes; Microhabitat: none 5-100 feet; Apr-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Grindelia hirsutula</i> var. <i>maritima</i> San Francisco gumplant (Asteraceae)	perennial herb	3.2,-,-	Coastal bluff scrub, Coastal scrub, Valley and foothill grassland; Microhabitat: sandy or serpentinite 45-1310 feet; Jun-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Helianthella castanea</i> Diablo helianthella (Asteraceae)	perennial herb	1B.2,-,-	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland; Microhabitat: Usually rocky, axonal soils. Often in partial shade 195-4265 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Hemizonia congesta</i> ssp. <i>congesta</i> congested-headed hayfield tarplant (Asteraceae)	annual herb	1B.2,-,-	Valley and foothill grassland; Microhabitat: sometimes roadsides 65-1835 feet; Apr-Nov	Low Potential, Not Observed. Marginally suitable ruderal grassland present within Study Area due to dominance of introduced species and regular disturbance (mowing). This species was not observed during reconnaissance visit.
<i>Hesperolinon congestum</i> Marin western flax (Linaceae)	annual herb	1B.1,T,T	Chaparral, Valley and foothill grassland; Microhabitat: serpentinite 15-1215 feet; Apr-Jul	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Heteranthera dubia</i> water star-grass (Pontederiaceae)	perennial herb (aquatic)	2B.2,-,-	Marshes and swamps (alkaline, still or slow-moving water); Microhabitat: Requires a pH of 7 or higher, usually in slightly eutrophic waters 95-4905 feet; Jul-Oct	Not Expected. Study Area outside of species' elevation range.
<i>Hoita strobilina</i> Loma Prieta hoita (Fabaceae)	perennial herb	1B.1,-,-	Chaparral, Cismontane woodland, Riparian woodland; Microhabitat: usually serpentinite, mesic 95-2820 feet; May-Jul(Aug-Oct)	Not Expected. Study Area outside of species' elevation range.
<i>Holocarpha macradenia</i> Santa Cruz tarplant (Asteraceae)	annual herb	1B.1,E,T	Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: often clay, sandy 30-720 feet; Jun-Oct	Not Expected. Study Area does not provide suitable habitat for species.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia (Rosaceae)	perennial herb	1B.1,-,-	Closed-cone coniferous forest, Chaparral (maritime), Coastal dunes, Coastal scrub; Microhabitat: sandy or gravelly, openings 30-655 feet; Apr-Sep	Not Expected. Study Area does not provide suitable habitat for species.
<i>Hypogymnia schizidiata</i> island rock lichen (Parmeliaceae)	foliose lichen (null)	1B.3,-,-	Closed-cone coniferous forest, Chaparral; Microhabitat: On bark and wood of hardwoods and conifers 1180-1330 feet;	Not Expected. Study Area outside of species' elevation range.
<i>Iris longipetala</i> coast iris (Iridaceae)	perennial rhizomatous herb	4.2,-,-	Coastal prairie, Lower montane coniferous forest, Meadows and seeps; Microhabitat: mesic 0-1970 feet; Mar-May	Not Expected. Study Area does not provide suitable habitat for species.
<i>Isocoma arguta</i> Carquinez goldenbush (Asteraceae)	perennial shrub	1B.1,-,-	Valley and foothill grassland (alkaline); Microhabitat: none 0-65 feet; Aug-Dec	Not Expected. Study Area does not provide suitable habitat for species.
<i>Lasthenia conjugens</i> Contra Costa goldfields (Asteraceae)	annual herb	1B.1,-,E	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools; Microhabitat: mesic 0-1540 feet; Mar-Jun	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tulle pea (Fabaceae)	perennial herb	1B.2,-,-	Marshes and swamps (freshwater and brackish); Microhabitat: none 0-15 feet; May-Jul(Aug-Sep)	Not Expected. Study Area does not provide suitable habitat for species.
<i>Layia carnosa</i> beach layia (Asteraceae)	annual herb	1B.1,E,E	Coastal dunes, Coastal scrub (sandy); Microhabitat: none 0-195 feet; Mar-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Leptosiphon acicularis</i> bristly leptosiphon (Polemoniaceae)	annual herb	4.2,-,-	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland; Microhabitat: none 180-4920 feet; Apr-Jul	Not Expected. Study Area outside of species' elevation range.
<i>Leptosiphon rosaceus</i> rose leptosiphon (Polemoniaceae)	annual herb	1B.1,-,-	Coastal bluff scrub; Microhabitat: none 0-330 feet; Apr-Jul	Not Expected. Study Area does not provide suitable habitat for species.
<i>Lessingia germanorum</i> San Francisco lessingia (Asteraceae)	annual herb	1B.1,E,E	Coastal scrub (remnant dunes); Microhabitat: none 80-360 feet; (Jun)Jul-Nov	Not Expected. Study Area does not provide suitable habitat for species.
<i>Lessingia hololeuca</i> woolly-headed lessingia (Asteraceae)	annual herb	3,-,-	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland; Microhabitat: clay, serpentinite 45-1000 feet; Jun-Oct	Not Expected. Study Area does not provide suitable habitat for species.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis (Apiaceae)	perennial rhizomatous herb	1B.1,CR,-	Marshes and swamps (brackish or freshwater), Riparian scrub; Microhabitat: none 0-35 feet; Apr-Nov	Not Expected. Study Area outside of species' elevation range.
<i>Meconella oregana</i> Oregon meconella (Papaveraceae)	annual herb	1B.1,-,-	Coastal prairie, Coastal scrub; Microhabitat: none 820-2035 feet; Mar-Apr	Not Expected. Study Area outside of species' elevation range.
<i>Micropus amphibolus</i> Mt. Diablo cottonweed (Asteraceae)	annual herb	3.2,-,-	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland; Microhabitat: rocky 145-2705 feet; Mar-May	Not Expected. Study Area outside of species' elevation range.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Microseris paludosa</i> marsh microseris (Asteraceae)	perennial herb	1B.2,-,-	Closed-cone coniferous forest, Cismontane woodland, Coastal scrub, Valley and foothill grassland; Microhabitat: none 15-1165 feet; Apr-Jun(Jul)	Not Expected. Study Area does not provide suitable habitat for species.
<i>Monardella antonina</i> ssp. <i>antonina</i> San Antonio Hills monardella (Lamiaceae)	perennial rhizomatous herb	3,-,-	Chaparral, Cismontane woodland; Microhabitat: none 1045-3280 feet; Jun-Aug	Not Expected. Study Area outside of species' elevation range.
<i>Monolopia gracilens</i> woodland woolythreads (Asteraceae)	annual herb	1B.2,-,-	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland; Microhabitat: Serpentine 325-3935 feet; (Feb)Mar-Jul	Not Expected. Study Area outside of species' elevation range.
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta (Asteraceae)	annual herb	1B.1,E,E	Cismontane woodland, Valley and foothill grassland (often serpentinite); Microhabitat: none 110-2035 feet; Mar-May	Not Expected. Study Area outside of species' elevation range.
<i>Piperia michaelii</i> Michael's rein orchid (Orchidaceae)	perennial herb	4.2,-,-	Coastal bluff scrub, Closed-cone coniferous forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous forest; Microhabitat: none 5-3000 feet; Apr-Aug	Not Expected. Study Area does not provide suitable habitat for species.
<i>Plagiobothrys chorisianus</i> var. <i>chorisianus</i> Choris' popcornflower (Boraginaceae)	annual herb	1B.2,-,-	Chaparral, Coastal prairie, Coastal scrub; Microhabitat: mesic 5-525 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Plagiobothrys diffusus</i> San Francisco popcornflower (Boraginaceae)	annual herb	1B.1,E,-	Coastal prairie, Valley and foothill grassland; Microhabitat: none 195-1180 feet; Mar-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Polemonium carneum</i> Oregon polemonium (Polemoniaceae)	perennial herb	2B.2,-,-	Coastal prairie, Coastal scrub, Lower montane coniferous forest; Microhabitat: none 0-6005 feet; Apr-Sep	Not Expected. Study Area does not provide suitable habitat for species.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Polygonum marinense</i> Marin knotweed (Polygonaceae)	annual herb	3.1,-,-	Marshes and swamps (coastal salt or brackish); Microhabitat: none 0-35 feet; (Apr)May-Aug(Oct)	Not Expected. Study Area outside of species' elevation range.
<i>Ranunculus lobbii</i> Lobb's aquatic buttercup (Ranunculaceae)	annual herb (aquatic)	4.2,-,-	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools; Microhabitat: mesic 45-1540 feet; Feb-May	Not Expected. Study Area outside of species' elevation range.
<i>Sanicula maritima</i> adobe sanicle (Apiaceae)	perennial herb	1B.1,CR,-	Chaparral, Coastal prairie, Meadows and seeps, Valley and foothill grassland; Microhabitat: clay, serpentinite 95-785 feet; Feb-May	Not Expected. Study Area outside of species' elevation range.
<i>Senecio aphanactis</i> chaparral ragwort (Asteraceae)	annual herb	2B.2,-,-	Chaparral, Cismontane woodland, Coastal scrub; Microhabitat: sometimes alkaline 45-2625 feet; Jan-Apr(May)	Not Expected. Study Area does not provide suitable habitat for species.
<i>Silene verecunda</i> ssp. <i>verecunda</i> San Francisco campion (Caryophyllaceae)	perennial herb	1B.2,-,-	Coastal bluff scrub, Chaparral, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: sandy 95-2115 feet; (Feb)Mar-Jun(Aug)	Not Expected. Study Area outside of species' elevation range.
<i>Spergularia macrotheca</i> var. <i>longistyla</i> long-styled sand-spurrey (Caryophyllaceae)	perennial herb	1B.2,-,-	Meadows and seeps, Marshes and swamps; Microhabitat: Alkaline 0-835 feet; Feb-May(Jun)	Not Expected. Study Area outside of species' elevation range.
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris (Asteraceae)	annual herb	1B.2,-,-	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: open areas, sometimes serpentinite 30-1640 feet; Apr-May	Not Expected. Study Area does not provide suitable habitat for species.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewelflower (Brassicaceae)	annual herb	1B.2,-,-	Chaparral, Cismontane woodland, Valley and foothill grassland; Microhabitat: serpentinite 310-3280 feet; (Mar)Apr-Sep(Oct)	Not Expected. Study Area outside of species' elevation range.

Species Name	Lifeform	CRPR, CA, Fed	Habitat; Elevation Range, Blooming Period	Potential to Occur
<i>Streptanthus glandulosus</i> ssp. <i>niger</i> Tiburón jewelflower (Brassicaceae)	annual herb	1B.1,E,E	Valley and foothill grassland (serpentinite); Microhabitat: none 95-490 feet; May-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Stuckenia filiformis</i> ssp. <i>alpina</i> slender-leaved pondweed (Potamogetonaceae)	perennial rhizomatous herb (aquatic)	2B.2,-,-	Marshes and swamps (assorted shallow freshwater); Microhabitat: none 980-7055 feet; May-Jul	Not Expected. Study Area outside of species' elevation range.
<i>Suaeda californica</i> California seablite (Chenopodiaceae)	perennial evergreen shrub	1B.1,-,E	Marshes and swamps (coastal salt); Microhabitat: none 0-50 feet; Jul-Oct	Not Expected. Study Area outside of species' elevation range.
<i>Symphyotrichum lentum</i> Suisun Marsh aster (Asteraceae)	perennial rhizomatous herb	1B.2,-,-	Marshes and swamps (brackish and freshwater); Microhabitat: none 0-10 feet; (Apr)May-Nov	Not Expected. Study Area outside of species' elevation range.
<i>Trifolium amoenum</i> two-fork clover (Fabaceae)	annual herb	1B.1,-,E	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite); Microhabitat: none 15-1360 feet; Apr-Jun	Not Expected. Study Area does not provide suitable habitat for species.
<i>Trifolium hydrophilum</i> saline clover (Fabaceae)	annual herb	1B.2,-,-	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools; Microhabitat: none 0-985 feet; Apr-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Triphysaria floribunda</i> San Francisco owl's-clover (Orobanchaceae)	annual herb	1B.2,-,-	Coastal prairie, Coastal scrub, Valley and foothill grassland; Microhabitat: usually serpentinite 30-525 feet; Apr-Jun	Not Expected. Study Area outside of species' elevation range.
<i>Triquetrella californica</i> coastal triquetrella (Pottiaceae)	moss	1B.2,-,-	Coastal bluff scrub, Coastal scrub; Microhabitat: soil 30-330 feet;	Not Expected. Study Area does not provide suitable habitat for species.
<i>Viburnum ellipticum</i> oval-leaved viburnum (Adoxaceae)	perennial deciduous shrub	2B.3,-,-	Chaparral, Cismontane woodland, Lower montane coniferous forest; Microhabitat: none 705-4595 feet; May-Jun	Not Expected. Study Area outside of species' elevation range.

**APPENDIX C:
USFWS IPAC SEARCH RESULTS**

IPaC resource list

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Please note that the Federal Highways Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat Determination Key is temporarily offline for updates and will be available soon. We apologize for any inconvenience this may cause.

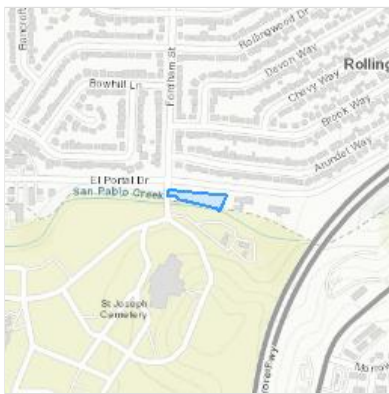
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ning the likelihood

and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

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

Location

Contra Costa County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

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

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

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

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

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

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

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

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

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

Mammals

NAME	STATUS
Salt Marsh Harvest Mouse <i>Reithrodontomys raviventris</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/613	Endangered

Birds

NAME	STATUS
California Least Tern <i>Sternula antillarum browni</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered

California Ridgway's Rail <i>Rallus obsoletus obsoletus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) <i>Masticophis lateralis euryxanthus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5524	Threatened
Northwestern Pond Turtle <i>Actinemys marmorata</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1111	Proposed Threatened

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
Foothill Yellow-legged Frog <i>Rana boylei</i> There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/5133	Threatened

Fishes

NAME	STATUS
Tidewater Goby <i>Eucyclogobius newberryi</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
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Monarch Butterfly <i>Danaus plexippus</i> Wherever found There is proposed critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/9743	Proposed Threatened
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Flowering Plants

NAME	STATUS
Pallid Manzanita <i>Arctostaphylos pallida</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8292	Threatened
Santa Cruz Tarplant <i>Holocarpha macradenia</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6832	Threatened

Critical habitats

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

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
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 Aug 31
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

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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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.

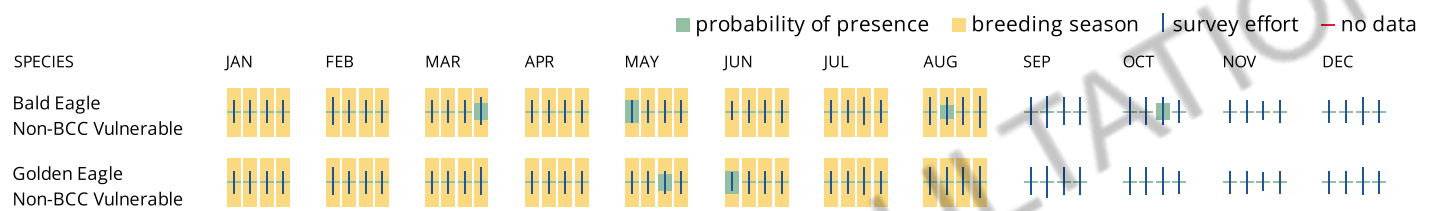
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence 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 an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 line or no data line (red horizontal) 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 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 and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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.

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
<p>Allen's Hummingbird <i>Selasphorus sasin</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9637</p>	Breeds Feb 1 to Jul 15
<p>Bald Eagle <i>Haliaeetus leucocephalus</i></p> <p>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.</p> <p>https://ecos.fws.gov/ecp/species/1626</p>	Breeds Jan 1 to Aug 31
<p>Belding's Savannah Sparrow <i>Passerculus sandwichensis beldingi</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/8</p>	Breeds Apr 1 to Aug 15
<p>Black Oystercatcher <i>Haematopus bachmani</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/9591</p>	Breeds Apr 15 to Oct 31
<p>Black Skimmer <i>Rynchops niger</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p> <p>https://ecos.fws.gov/ecp/species/5234</p>	Breeds May 20 to Sep 15
<p>Black Turnstone <i>Arenaria melanocephala</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Brandt's Cormorant <i>Urile penicillatus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Apr 15 to Sep 15
<p>Bullock's Oriole <i>Icterus bullockii</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p>	Breeds Mar 21 to Jul 25
<p>California Gull <i>Larus californicus</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 1 to Jul 31
<p>California Thrasher <i>Toxostoma redivivum</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Jul 31
<p>Clark's Grebe <i>Aechmophorus clarkii</i></p> <p>This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jun 1 to Aug 31
<p>Common Yellowthroat <i>Geothlypis trichas sinuosa</i></p> <p>This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA</p> <p>https://ecos.fws.gov/ecp/species/2084</p>	Breeds May 20 to Jul 31

<p>Elegant Tern <i>Thalasseus elegans</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8561</p>	Breeds Apr 5 to Aug 5
<p>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</p>	Breeds Jan 1 to Aug 31
<p>Heermann's Gull <i>Larus heermanni</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 31
<p>Lawrence's Goldfinch <i>Spinus lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464</p>	Breeds Mar 20 to Sep 20
<p>Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631</p>	Breeds Mar 1 to Jul 15
<p>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</p>	Breeds elsewhere
<p>Northern Harrier <i>Circus hudsonius</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8350</p>	Breeds Apr 1 to Sep 15
<p>Nuttall's Woodpecker <i>Dryobates nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410</p>	Breeds Apr 1 to Jul 20
<p>Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656</p>	Breeds Mar 15 to Jul 15
<p>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</p>	Breeds May 20 to Aug 31
<p>Red Knot <i>Calidris canutus roselaari</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8880</p>	Breeds elsewhere

Santa Barbara Song Sparrow <i>Melospiza melodia graminea</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5513	Breeds Mar 1 to Sep 5
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 elsewhere
Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Western Gull <i>Larus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 21 to Aug 25
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 "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "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.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

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.

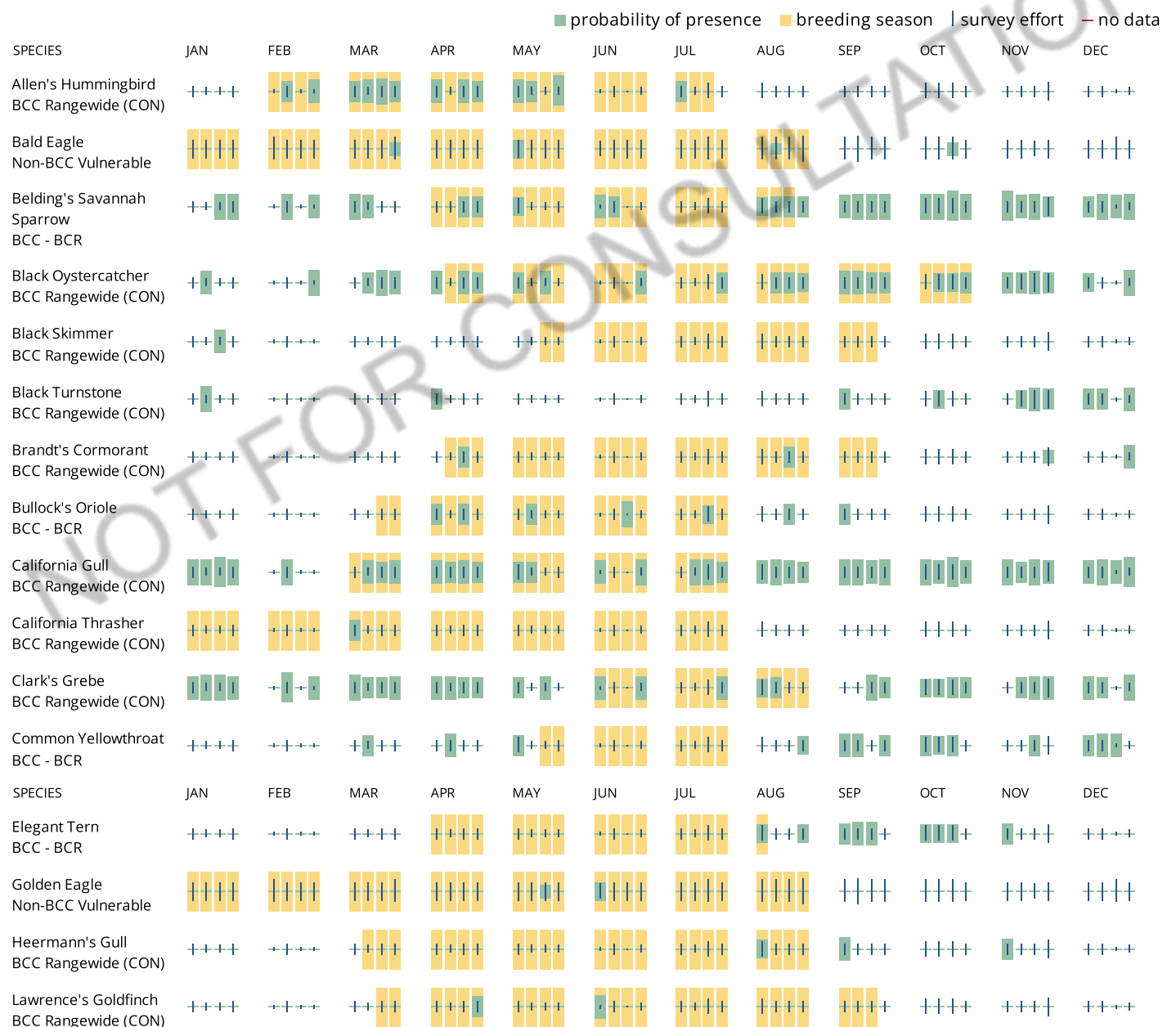
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Long-eared Owl BCC Rangewide (CON)												
Marbled Godwit BCC Rangewide (CON)					++++		++++					
Northern Harrier BCC - BCR												
Nuttall's Woodpecker BCC - BCR												
Oak Titmouse BCC Rangewide (CON)	++++											
Olive-sided Flycatcher BCC Rangewide (CON)	++++	++++	++++	++++					++++	++++	++++	++++
Red Knot BCC Rangewide (CON)	++++	++++	++++	++++	++++				++++	++++	++++	++++
Santa Barbara Song Sparrow BCC - BCR												
Short-billed Dowitcher BCC Rangewide (CON)		++++	++++				++++		++++			++++
Tricolored Blackbird BCC Rangewide (CON)	++++	++++			++++				++++		++++	++++
Western Grebe BCC Rangewide (CON)												
Western Gull BCC Rangewide (CON)												
Willet BCC Rangewide (CON)					++++							
Wrentit BCC Rangewide (CON)	++++											++++

Migratory Bird FAQs

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

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed 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 list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

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) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection 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, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for the species are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

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, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), 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 [Bald and Golden Eagle Protection 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 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 BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

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.

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 look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). 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 does not represent all birds present in your project area. 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 and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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 taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

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

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.

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 $0.05/0.25 = 0.2$.

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.

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.

Facilities

National Wildlife Refuge lands

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 at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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.

This location overlaps the following wetlands:

RIVERINE

[R3UBH](#)

A full description for each wetland code can be found at the [National Wetlands Inventory website](#)

NOTE: This initial screening does not replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.