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November 10, 2020

George Cunningham
1001 Rose Bowl Drive
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Subject: Biological Resources Assessment for the Brookside Golf Course Improvement Project

Dear Mr. Cunningham :

This letter report documents the results of biological resources assessment at the proposed Brookside Golf Course Improvement Project site. The project site and 100-foot survey buffer area constitute the survey area. This report provides an overview of the survey area, methodology used for the assessment, results, conclusions, and recommended minimization measures.

Project Location

The survey area is located within the U.S. Geological Survey (USGS) Pasadena, California 7.5-minute topographic quadrangles (quad) in the City of Pasadena, Los Angeles County, California, at the base of the San Rafael Hills (**Figure 1 – Regional Location**). More specifically, it is situated within the Brookside Golf Course; bound to the north, south and west by associated golf course amenities and to the east by Rosemont Avenue and Rose Bowl Drive (**Figure 2 – Project Location**). A concrete channelized portion of the Arroyo Seco traverses the western boundary of the survey area, located immediately adjacent to the project site. Interstate 210 is located within 1 mile to the north and east, and the California State Route 134 is situated within 1 mile to the south.

Topography within the survey area has been heavily modified through the development and maintenance of the Brookside Golf Course and is relatively flat. Elevation ranges from approximately 860 feet above mean sea level (amsl) in the northwest corner of the survey area and 840 feet amsl in the southeast corner of the survey area.

Project Description

The Rose Bowl Operating Company (RBOC) proposes to relocate and expand the existing driving range and construct a new miniature golf facility within the Brookside Golf Course. The expanded driving range and new miniature golf course would remain in the same general location as the existing driving range that is between the Arroyo Seco and the Brookside Clubhouse.

The proposed expansion of the driving range would include an increase from 20 to 60 hitting bays and the miniature golf course would include 36 holes. The proposed project would remain a championship layout and the reduction in size would be designed to improve the pace of play. In order to accommodate the expanded driving range and new miniature golf course, tree removal and relocation and surficial grading would be required.

SOURCE: ESRI, 2020; ESA, 2020

Brookside Golf Course Improvements Project

Figure 1
Regional Location

ESA

SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 2
Project Location

ESA

Methods

The following resources were queried to reveal special-status plants and wildlife to that have been reported within the Pasadena United States Geological Survey (USGS) Quadrangle map and surrounding eight (8) quadrangles that include Burbank, Chilao Flat, Condor Peak, El Monte, Hollywood, Los Angeles, Mt. Wilson and Sunland:

- California Department of Fish and Wildlife (CDFW). 2020a. California Natural Diversity Data Base (CNDDB). Accessed October 22, 2020.
- California Department of Fish and Wildlife (CDFW). 2020b. California Natural Community List. Sacramento, CA: CDFW, Natural Heritage Division, November 8, 2019. Accessed October 22, 2020. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153398&inline
- California Native Plant Society (CNPS). 2020. Inventory of Rare and Endangered Vascular Plants of California. Accessed October 22, 2020.
- U.S. Fish and Wildlife Service (USFWS). 2020a. Critical Habitat Portal. Accessed October 22, 2020. https://fws.maps.arcgis.com/home/webmap/viewer.html?webmap=9d8de5e265 ad4fe09893cf75b8dbfb77
- U.S. Fish and Wildlife Service (USFWS). 2020b. Accessed October 22, 2020. https://ecos.fws.gov/ipac/location/HEJJ2LUXB5EBVO3TDFU4UHPFXI/resources

A field visit was conducted to verify the conditions of the survey area. In addition, a detailed desktop analysis of aerial imagery and review of the available database information was completed to verify adjacent land uses (Google Earth Pro 2020). The information that was gathered was used to determine the potential for special-status species and other sensitive biological resources to occur within the project site and survey area.

All native and non-native plant communities and land uses were characterized and delineated on aerial photographs and then digitized on aerial maps using a Geographic Information System software (ArcGIS). The plant communities and land use within the survey area were described based on vegetation type and/or other visual characteristics. The Manual of California Vegetation, Second Edition (Sawyer 2009), a common tool used to characterize vegetation, was merely used as a guide, because alliances listed in the publication did not accurately describe the communities present within the survey area. A detailed description of each plant community and land use is provided below. Representative photos were taken during the field assessment conducted on September 23, 2020 and are provided at the end of this report (**Attachment A – Photographic Exhibit**).

Results

Plant Communities and Land Use

Three distinct areas were identified within the survey area that include landscaped vegetation, developed land use and unvegetated concrete-lined channel (**Figure 3 – Plant Communities and Land Use**), each of which are described in detail below.

Landscaped Vegetation. Landscaped vegetation is present throughout the majority of the project site and survey area. This community is characterized by a collection of common (non-native) turf grasses planted along course fairway and putting greens, that may include bent grass (*Agrostis* sp.), Bermuda grass (*Cynodon dactylon*), perennial ryegrass (*Lolium perenne*) and Zoysia grass (*Zoysia japonica*), among others, interspersed with various ornamental trees and landscaping. Trees within the project site are documented within a protected tree report (ESA 2020). As indicated in the protected tree report, the trees located within the survey area include native species such as coast live oak (*Quercus agrifolia*), California sycamore (*Platanus racemosa*), California bay laurel (*Umbellularia californica*) and white alder (*Alnus rhombifolia*); and non-native species such as Chinese elm (*Ulmus parvifolia*), carob (*Ceratonia siliqua*), red ironbark (*Eucalyptus sideroxylon*) American sweetgum (*Liquidambar styraciflua*).

Unvegetated Concrete-Lined Channel. The Arroyo Seco traverses the western portion of the survey, immediately adjacent to the project site. This portion of the drainage consists of concrete-lined channel and is entirely devoid of vegetation.

Developed. Developed land use generally includes the golf course facilities, that includes the golf course and the paved golf cart/pedestrian pathways, driving range platform and the club house.

Common Fish and Wildlife

Avian species expected to forage and breed within the landscaped vegetation located in the survey area include, but are not limited to, Anna's hummingbird (*Calypte anna*), house finch (*Carpodacus mexicanus*), American kestrel (*Falco sparverius*), California towhee (*Melozone crissalis*), Northern mockingbird (*Mimus polyglottos*), spotted towhee (*Pipilo maculatus*), bushtit (*Psaltriparus minimus*), lesser goldfinch (*Spinus psaltria*), Bewick's wren (*Thryomanes bewickii*) and mourning dove (*Zenaida macroura*). No evidence of raptor nesting was observed within the tree located in the survey area; however, it should be noted that a specific search of predated nest material was not conducted.

California ground squirrels (*Otospermophilus beecheyi*) and Botta's pocket gopher (*Thomomys bottae*) could burrow within friable soil available within the survey area and utilize it to forage and breed; however, it is expected that the golf course maintenance staff control these ground dwellers on the golf course and driving range. Various other mammal species that include coyote (*Canis latrans*), Virginia opossum (*Didelphis virginiana*), mule deer (*Odocoileus hemionus*) and raccoon (*Procyon lotor*) are expected to utilize the Arroyo Seco for local movement and to a limited degree, may forage within the landscaped vegetation of the golf course during nighttime hours when it is closed.

SOURCE: Mapbox, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 3
Plant Communities and Land Use

ESA

Sensitive Biological Resources

Special-status Wildlife. Special-status wildlife is defined as those animals that, because of their recognized rarity or vulnerability to various forms of habitat loss or population decline, are considered by federal, state, or other agencies to be under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation and others have been designated as special-status on the basis of adopted local policies (e.g., city and county) or the educated opinion of respected resource interest groups (e.g., Western Bat Working Group). Special-status wildlife is defined as any of the following:

- Wildlife listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under the federal Endangered Species Act (FESA) or the California Endangered Species Act (CESA).
- Wildlife that meet the definitions of rare or endangered under California Environmental Quality Act (CEQA) Guidelines Section 15380.
- Wildlife designated by CDFW as species of special concern, included on the Watch List or considered "Special Animals."
- Wildlife fully protected in California (Fish and Game Code Sections 3511, 4700, and 5050).
- Bird species protected by the Migratory Bird Treaty Act (MBTA).
- Bat species considered priority by the Western Bat Working Group (WBWG).

Special-status Plants. Special-status plants are defined as those plants that, because of their recognized rarity or vulnerability to various causes of habitat loss or population decline, are recognized by federal, state, or other agencies as under threat from human-associated developments. Some of these species receive specific protection that is defined by federal or state endangered species legislation. Others have been designated as special-status on the basis of adopted policies and expertise of state resource agencies or organizations with acknowledged expertise, or policies adopted by local governmental agencies such as Counties, Cities, and special districts to meet local conservation objectives. Special-status plants are defined as any of the following:

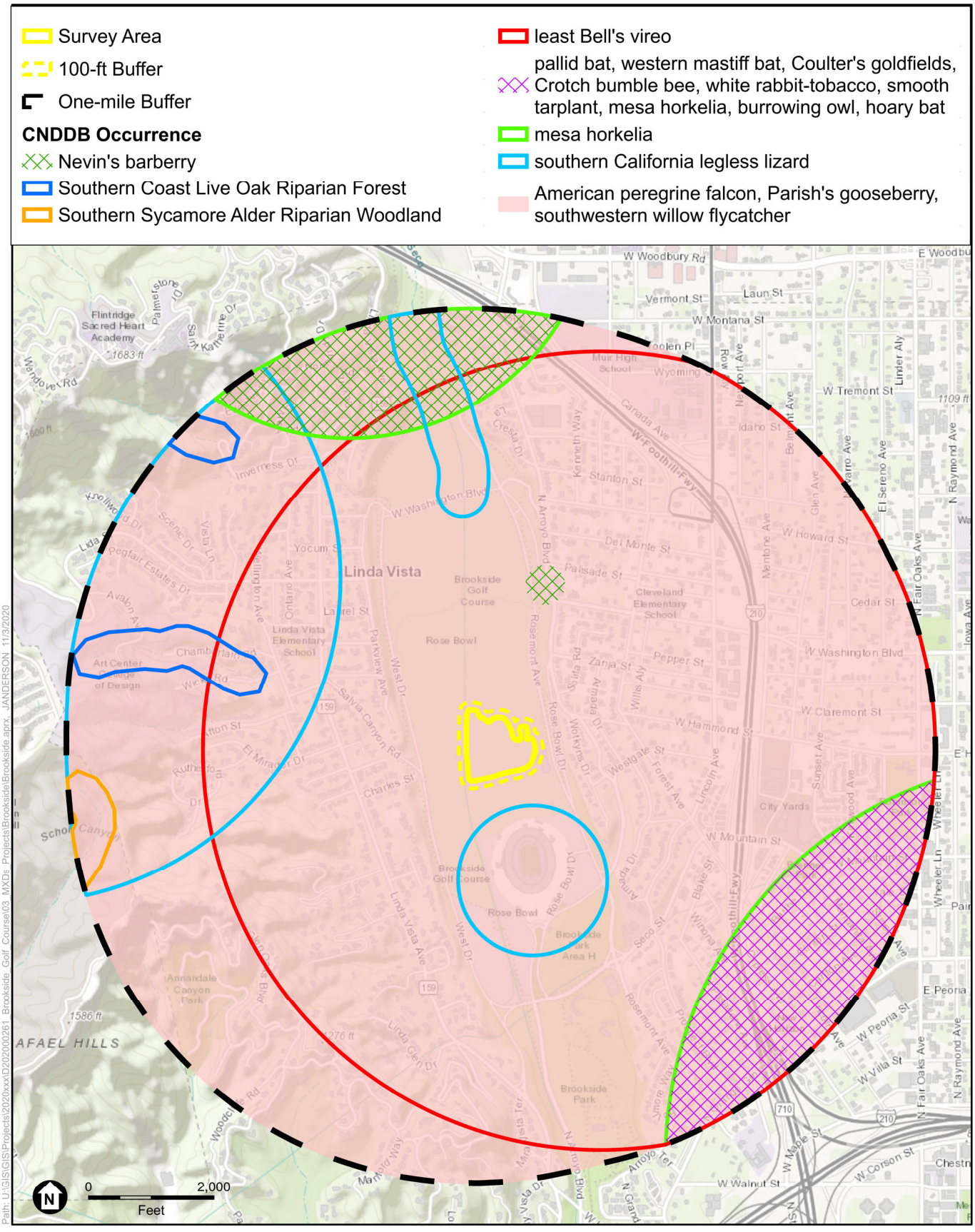
- Plants listed or proposed for listing as threatened or endangered, or are candidates for possible future listing as threatened or endangered, under FESA or CESA.
- Plants that meet the definitions of rare or endangered under State CEQA Guidelines Section 15380.
- Plants considered by the CNPS to be rare, threatened, or endangered (Rank 1A, 1B, 2A and 2B plants) in California.
- Plants listed by the CNPS as plants for which more information is needed to determine their status and plants of limited distribution (Rank 3 and 4 plants).

- Plants listed as rare under the California Native Plant Protection Act (Fish and Game Code 1900 et seq.).

The special-status plant and wildlife species listed in **Table 3 – Potentially Occurring Special-Status Species in the Survey Area** below were determined to have varying levels of potential to occur based on the following criteria:

- **None:** The survey area currently does not habitat for a particular species; therefore, they are not expected to occur onsite.
- **Low Potential:** The survey area supports limited habitat for a particular species. For example, the appropriate vegetation assemblage may be present while the substrate preferred by the species may be absent.
- **Moderate Potential:** The survey area provides marginal habitat for a particular species. For example, the habitat may be heavily disturbed and/or may not support all stages of a species life cycle; however, it is present nonetheless.
- **High Potential:** The survey area provides suitable habitat conditions for a particular species and/or known populations occur in the immediate area.
- **Present:** The species was observed within the survey area during the site visit.

Numerous special-status species and habitat occurrences have been documented within the eight-USGS quadrangle query of the CNDDB, CNPS and IPaC databases (**Attachment B – Database Review**), of which, nine (9) special-status wildlife species and six (6) special-status plant species have been reported within or immediately adjacent to the survey area that includes: southern California legless lizard (*Anniella stebbinsi*), pallid bat (*Antrozous pallidus*), western burrowing owl (*Athene cunicularia*), Crotch's bumblebee (*Bombus crotchii*), southwestern willow flycatcher (*Empidonax traillii* ssp. extimus), Greater western mastiff bat (*Eumops perotis* ssp. *californicus*), American Peregrine falcon (*Falco peregrinus* ssp. *anatum*), hoary bat (*Lasiurus cinereus*) least Bell's vireo (*Vireo bellii* ssp. *pusillus*), Nevin's barberry (*Berberis nevinii*), smooth tarplant (*Centromadia pungens* ssp. *laevis*), Mesa horkelia (*Horkelia cuneata* var. *puberula*), Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*), white rabbit-tobacco (*Pseudognaphalium leucocephalum*) and Parish's gooseberry (*Ribes divaricatum* var. *parishii*) (See **Figure 4 – CNDDB**). While these species have been previously documented within or in close proximity to the survey area (most in the early- to mid-1900's), in its current state, suitable habitat (i.e., native plant communities, suitable roost sites, etc.) is not present. Nonetheless, one special-status species has potential to occur, Cooper's hawk (*Accipiter cooperii*), which has a moderate potential to forage and breed within 500 feet of the project site.



SOURCE: ESRI; CNDDB, 2020; ESA, 2020.

Brookside Golf Course Improvements Project

Figure 4
CNDDB

ESA

TABLE 1
POTENTIALLY OCCURRING SPECIAL-STATUS PLANT AND WILDLIFE SPECIES WITHIN THE SURVEY AREA

Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Wildlife				
Birds				
Cooper's hawk	*Accipiter cooperii*	None/WL, SA/None	Cismontane woodland, riparian forest and woodland and upper montane coniferous forest.	**Moderate.** Suitable foraging habitat is present throughout much of the landscaped golf greens and nesting habitat is present within the many of the ornamental trees planted within the survey area. This species may nest within 500 feet of the project site.
burrowing owl	*Athene cunicularia*	FSC/SSC, SA/None	Open scrub and grassland communities that allow for optimal visibility when foraging. Generally, this species prefers fossorial mammal burrows for use as wintering and breeding refuge; however, may also use disused material or infrastructure (e.g., concrete/metal pipes, culverts, debris piles, etc.) for this purpose. This species readily utilizes disturbed areas to forage and breed.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1895. However, suitable habitat for this species does not currently exist onsite.
Southwestern willow flycatcher	*Empidonax traillii* ssp. *extimus*	FE/SE,WL, SA/None	Riparian vegetation. This species is generally associated with open water.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 1906. However, suitable habitat for this species does not currently exist onsite.
American peregrine falcon	*Falco peregrinus* ssp. *anatum*	BCC/FP,SA/None	Utilizes various habitat types such as chaparral, forest and woodland communities for foraging. Nests on skyscrapers, water towers, cliffs, power pylons and other tall structures (Cornell 2020).	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 2005. However, suitable habitat for this species does not exist onsite.
least Bell's vireo	*Vireo bellii* ssp. *pusillus*	FE/SE,SA/None	Riparian vegetation.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the west of the survey area, in 1911. However, suitable habitat for this species does not currently exist onsite.

Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Mammals				
Pallid bat	*Antrozous pallidus*	None/SSC, SA/WBWG-H	Grasslands, shrublands, woodlands, and coniferous forests; most common in open, dry habitat with rocky areas for roosting, as well as abandon buildings and medal clad structures Species is known to roost in cavities of oak trees (WBWG 2020).	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1910. However, suitable habitat for this species does not currently exist onsite.
Greater western mastiff bat	*Eumops perotis* ssp. *californicus*	None/SSC, SA/WBWG-H	Chaparral, cismontane woodland, coastal scrub and valley and foothill grassland. Roosts in small colonies in rock fissures in high cliff faces (WBWG 2020).	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1941. However, suitable habitat for this species does not currently exist onsite.
Hoary bat	*Lasiurus cinereus*	None/SA/WBWG-M	Roosts in coniferous and/or deciduous trees, commonly along the edge of clearings (WBWG 2020).	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1945. However, suitable habitat for this species does not currently exist onsite.
Reptiles				
Southern California legless lizard	*Anniella stebbinsi*	None/SSC,SA	Chaparral, coastal dunes and coastal scrub. This species is regularly found associated with woodrat middens.	**None.** This species was observed within and southeast of the survey area, in 1941. However, suitable habitat for this species no longer exists onsite.
Invertebrates				
Crotch bumble bee	*Bombus crotchii*	None/SA/None	Coastal scrub and chaparral.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the survey area, in 1933. However, suitable habitat for this species does not currently exist onsite.
Plants				
Nevin's barberry	*Berberis nevinii*	FE/SE/1B	Sandy/gravelly soils along washes, associated within coastal sage scrub and chaparral communities.	**None.** This species was observed immediately adjacent to the Brookside Golf Course, approximately 1,500 feet to the north of the project site, in1927. However, suitable habitat for this species does not currently exist onsite.

Common Name	Scientific Name	Status (Federal/State/Other)	Habitat	Potential to Occur
Smooth tarplant	*Centromadia pungens* ssp. *laevis*	None/None/1B	Shadescale scrub, alkali sink and valley grassland.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1901. However, suitable habitat for this species does not currently exist onsite.
Mesa horkelia	*Horkelia cuneata* var. *puberula*	None/None/1B	Dry, sandy soils within coastal sage scrub and chaparral communities.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1901. However, suitable habitat for this species does not currently exist onsite.
Coulter's goldfields	*Lasthenia glabrata* ssp. *coulteri*	None/None/1B	Alkali sink, coastal salt marsh, freshwater wetlands and wetland-riparian.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the southeast of the project site, in 1882. However, suitable habitat for this species does not currently exist onsite.
White rabbit-tobacco	*Pseudognaphalium leucocephalum*	None/None/2B		**None.** This species was observed within the vicinity of the Brookside Golf Course, to the south of the project site, within 1908. However, suitable habitat for this species does not currently exist onsite.
Parish's gooseberry	*Ribes divaricatum* var. *parishii*	None/None/1A	Moist woodland.	**None.** This species was observed within the vicinity of the Brookside Golf Course, to the west of the project site, in 1893. However, suitable habitat for this species does not currently exist onsite.

Federal/State/Other Status: FE – federally endangered, FP – Fully Protected, FSC – Federal Species of Concern; SA – State Special Animal, SE – State endangered, BCC – Federal Bird of Conservation Concern; SSC – State Species of Special Concern, WL – State watch List; WBWG – Western Bat Working Group List (M – medium priority, H – High Priority); California Native Plant Society (CNPS): 1A – Plants presumed extinct in California; 1B – Plants rare, threatened or endangered in California and elsewhere; 2B – Plants rare, threatened, or endangered in California, but more common elsewhere.

Protected Trees

Numerous trees protected under Title 8, Chapter 8.52 of the Pasadena Municipal Code are present throughout the survey area and may be impacted by the project. A protected tree survey was conducted on October 5 and 6, 2020, the results of which have been compiled and analyzed in a tree report (ESA 2020).

Critical Habitat

Under FESA, to the extent feasible, the USFWS and National Marine Fisheries Service (NMFS) are required to designate critical habitat for endangered and threatened species. Critical habitat is defined as areas of land, water, and air space containing the physical and biological features essential for the survival and recovery of endangered and threatened species. Designated critical habitat includes sites for breeding and rearing, movement or migration, feeding, roosting, cover, and shelter. Designated critical habitats require special management and protection of existing resources, including water quality and quantity, host animals and plants, food availability, pollinators, sunlight, and specific soil types. Critical habitat designates this suitable habitat, occupied or not, as essential to the survival and recovery of the species.

There is no critical habitat in the vicinity of the survey area.

Migration Corridors

The project site and immediate surroundings contain landscaping and regularly maintained trees associated with the Brookside Golf Course. The Central Arroyo Seco flows north-south along the western portion of the project site and provides connectivity to the Upper Arroyo/Hahamongna Watershed Park to the north of the project site, upstream of Devils Gate Dam. The Central Arroyo Seco provides a suitable corridor for native resident species to move through the area, particularly medium to large mammals such as coyote, bear, deer and mountain lion. Coyote and deer have been frequently observed in the area by local residents due to the Project location's proximity to Los Angeles National Forest (ESA 2015). Mountain lion (*Puma concolor*) have the potential to move through the project site using the Central Arroyo Seco and surrounding recreation areas (Wilson, 2015). Additionally, the Rose Bowl Operating Committee (RBOC) observed a black bear (*Ursus americanus*), near the golf course in 2013, at night, near the ponds that occur on the golf course that currently is enclosed by an 8-foot tall fence (RBOC pers. comm. 2015).

While the project site and vicinity provide opportunities for local wildlife movement, the immediate surroundings are entirely developed and frequently used for recreational purposes and various events that are held at the Rose Bowl. The channelized portion of the Arroyo Seco that traverses the western boundary of the project site could support wildlife movement.

Aquatic Resources

The Arroyo Seco is likely regulated by the United States Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB) and CDFW; however, with the implementation of a Stormwater Pollution Prevention Plan (SWPPP) and the appropriate Best Management Practices (BMP's), the proposed project activities are not expected to have a significant effect on aquatic resources.

Regulatory Setting

Federal and State Endangered Species Acts

FESA provides guidance for conserving federally listed species and the ecosystems upon which they depend. Section 9 of the FESA and its implementing regulations prohibit the "take" of any federally-listed endangered or threatened plant or animal species, unless otherwise authorized by federal regulations. "Take" includes the destruction of a listed species' habitat. Section 9 also prohibits a number of specified activities with respect to endangered and threatened plants.

CESA mandates that state agencies not approve a project that would jeopardize the continued existence of species if reasonable and prudent alternatives are available that would avoid a jeopardy finding. CESA also prohibits the take of any fish, wildlife, or plant species listed as endangered or threatened, or designated as candidates for listing, under CESA. Similar to the FESA, CESA contains a procedure for the CDFW to issue an incidental take permit authorizing the take of listed and candidate species incidental to an otherwise lawful activity, subject to specified conditions.

Migratory Bird Treaty Act

The MBTA prohibits the take of native birds "by any means or manner to pursue, hunt, take, capture (or) kill" any migratory birds except as permitted by regulations issued by the USFWS. The term "take" is defined by USFWS regulation to mean to "pursue, hunt, shoot, wound, kill, trap, capture or collect" any migratory bird or any part, nest or egg of any migratory bird covered by the conventions, or to attempt those activities.

Sections 3503, 3503.5 and 3513 of the California Fish and Game Code

Section 3503 of the California Fish and Game Code prohibits the killing of birds or the destruction of bird nests. Birds of prey are protected under Section 3503.5 of the California Fish and Game Code, which provides that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Section 3513 of the California Fish and Game Code prohibits any take or possession of birds that are designated by the Migratory Bird Treaty Act as migratory nongame birds except as allowed by federal rules and regulations promulgated pursuant to the MBTA. Migratory birds include all native

birds in the United States, except those non-migratory game species such as quail and turkey that are managed by individual states.

Clean Water Act

In accordance with Section 404 of the Clean Water Act (CWA), the USACE regulates discharge of dredged or fill material into waters of the U.S. Waters of the U.S. and their lateral limits are defined in 33 CFR 328.3(a) and includes navigable waters of the U.S., interstate waters, all other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Waters of the U.S. are often categorized as "jurisdictional wetlands" (i.e., wetlands over which the USACE exercises jurisdiction under Section 404) and "other waters of the United States" when habitat values and characteristics are being described. "Fill" is defined as any material that replaces any portion of a water of the U.S. with dry land or that changes the bottom elevation of any portion of a water of the U.S. Any activity resulting in the placement of dredged or fill material within waters of the United States requires a permit from USACE. In accordance with Section 401 of the CWA, projects that apply for a Section 404 permit for discharge of dredged or fill material must obtain water quality certification from the appropriate RWQCB indicating that the proposed project would uphold State of California water quality standards.

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a lake, stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include, but are not limited to, excavation or fill placed within a channel, vegetation clearing, installation of culverts and bridge supports, and bank reinforcement. As part of the notification process, the CDFW requires documentation of any trees to be removed as part of the project. Trees that have a trunk diameter at breast height (dbh) of greater than two inches are subject to regulation by the CDFW via the Streambed Alteration Agreement.

City of Pasadena Tree Protection Ordinance

The City of Pasadena's City Trees and Tree Protection Ordinance under Title 8, Chapter 8.52 of the Pasadena Municipal Code provides protection for the following trees, broadly defined as "protected tree(s)":

- Landmark tree – A tree designated as a landmark under Chapter 17.62 of the municipal code as a tree of historic or cultural significance and of importance to the community due to various factors.
- Landmark-eligible tree – A tree which meets the criteria for designation as a landmark tree
- Mature tree – An otherwise non-protected tree with a diameter-at-breast height (DBH) of 19 inches or greater (except for trees in RS or RM-12 Zones.

- Native tree – Any tree with a trunk more than 8 inches in diameter at a height of 4 ½ feet above natural grade that is one of the following species: *Quercus agrifolia* (coast live oak), *Quercus engelmannii* (Engelmann oak), *Quercus chrysolepis* (canyon oak), *Platanus racemosa* (California sycamore), *Juglans californica* (California walnut), *Quercus berberidifolia* (scrub oak), *Quercus lobata* (valley oak), *Umbellularia californica* (California bay), *Populus fremontii* (cottonwood), *Alnus rhombifolia* (California alder), *Populus trichocarpa* (black cottonwood), *Salix lasiolepis* (arroyo willow), and *Aesculus californica* (California buckeye)".

- Public Tree – A tree located in a place or area under ownership or control of the City, including but without limitation streets, parkways, open space, parkland and including city owned property under the operation control of another entity by virtue of a lease, license, operating or other agreement.

Arroyo Seco Master Plans

The City of Pasadena maintains three Master Plans for the Arroyo Seco: The Hahamongna Watershed Park Master Plan (for the Upper Arroyo area); the Central Arroyo Master Plan; and the Lower Arroyo Master Plan. The project site is located within the Central Arroyo Seco Plan Area and is therefore subject to the provisions set forth within that plan.

Central Arroyo Master Plan. The Central Arroyo Master Plan Advisory Committee developed the Central Arroyo Master Plan in 2003 based on community input, interviews with public agencies, analysis of the Recreation Loop, and a review of pertinent City plans. The Master Plan was adopted by the City Council as of September 26, 2005. The Master Plan was designed to modify and enhance existing facilities and to provide recommendations for areas within the Central Arroyo, including the area surrounding the Rose Bowl. Recommendations generally fall into the following topic areas: Brookside Park (including both hillside areas and group picnic areas); Rosemont Pavilion; the Recreation Loop; Recreation Trails, Landscape and Aesthetic Improvements; Parking; Flood Protection; Permitting Process; Management and Maintenance; Land and Conservation Acquisition; Accessibility and Security; and Implementation. Many of these recommendations have components that outline the protection and/or restoration of biological resources that persist within the plan area.

Conclusions and Recommended Minimization Measures

Special-Status Species and Nesting Birds

Cooper's hawk and other native bird species may nest within 500 feet of the project site and may be affected by project construction. Moreover, nighttime lighting associated with the driving range improvements and proposed miniature golf course may contribute to existing nighttime lighting. The minimization measures below are recommended to avoid impacts to nesting birds during construction, including indirect impacts that may be created by additional nighttime light sources during operation.

- If construction activities occur within the bird nesting season (generally defined as February 15 through September 15), a qualified biologist shall conduct a nesting bird survey within 3 days prior to the proposed

start date, to identify any active nests (including Cooper's hawk) within 500 feet of the project site. If an active nest is found, the nest shall be avoided and a suitable buffer zone shall be delineated in the field such that no impacts shall occur until the chicks have fledged the nest as determined by a qualified biologist. Construction buffers shall be 300 feet for passerines and up to 500 feet for any raptor species; however, avoidance buffers may be reduced at the discretion of the biologist, depending on the location of the nest and species tolerance to human presence and construction-related noises and vibrations.

- To minimize potential indirect impact to nesting birds that may utilize ornamental/landscape vegetation onsite and/or wildlife movement along the Arroyo Seco, nighttime lighting associated with the driving range and miniature golf course shall be shielded downward to limit spillage onto these sensitive receptors.

Aquatic Resources

The Arroyo Seco is located outside of the project site. The implementation of a Stormwater Pollution Prevention Plan (SWPPP) and Best Management Practices (BMP's) would avoid and/or minimize any inadvertent impacts to this water course, including water quality. As such, the proposed project activities are not expected to have a significant effect on aquatic resources.

Migration Corridors

Wildlife is expected to utilize the Arroyo Seco and while it is situated within the survey area, the project is not expected to have an impact on wildlife movement. Specifically, no direct effects to the Arroyo Seco would occur from construction activities. Indirect impacts to wildlife movement would be minimized by restricting construction activities between the hours of 1900 and 0700, when wildlife is least likely to move through the survey area.

Nighttime light spillage associated with the operation of the driving range and proposed miniature golf course is not expected to significantly disrupt wildlife movement when considering existing conditions. Nonetheless, nighttime lighting should be shielded away from the Arroyo Seco to reduce any potential affects it may have on wildlife movement.

Protected Trees

Protected trees are present within the project site and may be impacted as a result of construction activities. The Brookside Golf Course Improvements Project Tree Report (ESA 2020) includes an inventory of the protected trees that may be affected by the project and provides appropriate mitigation to offset these potential impacts.

Central Arroyo Seco Master Plan

In accordance with Section 4.5 Landscape and Aesthetic Improvements of the Central Arroyo Seco Master Plan, certain areas identified for native plant restoration shall be incorporated into the landscape design of the project.

References

Cornell Lab of Ornithology. 2020. All About Birds. Accessed at: https://www.allaboutbirds.org/

Environmental Science Associates (ESA). 2020. Brookside Golf Course Improvements Project, Tree Report. October 2020.

Environmental Science Associates (ESA). 2015. Arroyo Seco Music and Arts Festival Project, Draft EIR.

Google Earth Pro. 2020

Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento. 1300 pp.

Western Bat Working Group (WBWG). 2020. Species Info. Accessed at http://wbwg.org/western-bat-species/

Wilson, Larry, *Proving that Lions Roam in Pasadena: Larry Wilson,* Pasadena Star-News. June 23, 2015.

On behalf of ESA, it has been a pleasure preparing this information for you. Please do not hesitate to contact Robbie Sweet or Greg Ainsworth at (805) 914-1500 if you have any questions or comments regarding this report.

Sincerely,

Robbie Sweet
Senior Associate Biologist

Greg Ainsworth
Director, Biological Resources

Attachments: Attachment A – Representative Site Photographs
Attachment B– Database Review - CNDDB, CNPS and IPaC

Attachment A

Representative Site Photographs

Photo 1 (E). Photograph depicts the project site from its western boundary.

Photo 2 (S). Photograph depicts the project site from its northern boundary.

Photo 3 (W). Photograph depicts the project site from its southeastern boundary.

Photo 4 (E). Photograph depicts the project site from its southern boundary.

Photo 5 (N). Photograph depicts the Arroyo Seco, situated along the western project boundary.

Photo 6 (S). Photograph depicts the Arroyo Seco, situated along the western project boundary.

Attachment B

Database Review – CNDDB, CNPS and IPaC

CALIFORNIA DEPARTMENT OF FISH and WILDLIFE **RareFind**

Query Summary:
Quad IS (Burbank (3411823) OR Chilao Flat (3411831) OR Condor Peak (3411832) OR El Monte (3411811) OR Hollywood (3411813) OR Los Angeles (3411812) OR Mt. Wilson (3411821) OR Sunland (3411833) OR Pasadena (3411822))

Print Close

CNDDB Element Query Results

Scientific Name	Common Name	Taxonomic Group	Element Code	Total Occs	Returned Occs	Federal Status	State Status	Global Rank	State Rank	CA Rare Plant Rank	Oth Stat
Aimophila ruficeps canescens	southern California rufous-crowned sparrow	Birds	ABPBX91091	235	1	None	None	G5T3	S3	null	CDFW_WI List
Anaxyrus californicus	arroyo toad	Amphibians	AAABB01230	139	5	Endangered	None	G2G3	S2S3	null	CDFW_SS Species of Concern, IUCN_EN- Endangere
Anniella spp.	California legless lizard	Reptiles	ARACC01070	119	19	None	None	G3G4	S3S4	null	CDFW_SS Species of Concern
Anniella stebbinsi	Southern California legless lizard	Reptiles	ARACC01060	417	34	None	None	G3	S3	null	CDFW_SS Species of Concern, USFS_S-S
Antrozous pallidus	pallid bat	Mammals	AMACC10010	420	7	None	None	G5	S3	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S WBWG_H Priority
Arctostaphylos glandulosa ssp. gabrielensis	San Gabriel manzanita	Dicots	PDERI042P0	35	12	None	None	G5T3	S3	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Arenaria paludicola	marsh sandwort	Dicots	PDCAR040L0	16	1	Endangered	Endangered	G1	S1	1B.1	SB_SBBG Barbara Bo Garden
Arizona elegans occidentalis	California glossy snake	Reptiles	ARADB01017	260	3	None	None	G5T2	S2	null	CDFW_SS Species of Concern
Aspidoscelis tigris stejnegeri	coastal whiptail	Reptiles	ARACJ02143	148	10	None	None	G5T5	S3	null	CDFW_SS Species of Concern
Astragalus brauntonii	Braunton's milk-vetch	Dicots	PDFAB0F1G0	42	4	Endangered	None	G2	S2	1B.1	SB_CalBG California/I Santa Ana

											Garden, Sl Santa Barb Botanic Ga
Athene cunicularia	burrowing owl	Birds	ABNSB10010	1989	2	None	None	G4	S3	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFWS_B of Conserv Concern
Atriplex parishii	Parish's brittlescale	Dicots	PDCHE041D0	15	1	None	None	G1G2	S1	1B.1	SB_CRES Diego Zoo Native Ger Bank, USFS_S-S
Atriplex serenana var. davidsonii	Davidson's saltscale	Dicots	PDCHE041T1	27	2	None	None	G5T1	S1	1B.2	SB_CalBG California/I Santa Ana Garden
Berberis nevinii	Nevin's barberry	Dicots	PDBER060A0	32	7	Endangered	Endangered	G1	S1	1B.1	SB_CalBG California/I Santa Ana Garden, Sl Santa Barb Botanic Ga
Bombus crotchii	Crotch bumble bee	Insects	IIHYM24480	288	8	None	Candidate Endangered	G3G4	S1S2	null	null
Buteo swainsoni	Swainson's hawk	Birds	ABNKC19070	2535	1	None	Threatened	G5	S3	null	BLM_S-Se IUCN_LC-Concern, USFWS_B of Conserv Concern
California Walnut Woodland	California Walnut Woodland	Woodland	CTT71210CA	76	2	None	None	G2	S2.1	null	null
Calochortus clavatus var. gracilis	slender mariposa-lily	Monocots	PMLIL0D096	143	2	None	None	G4T2T3	S2S3	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Calochortus palmeri var. palmeri	Palmer's mariposa-lily	Monocots	PMLIL0D122	111	7	None	None	G3T2	S2	1B.2	BLM_S-Se SB_CalBG California/I Santa Ana Garden, Sl Santa Barb Botanic Ga USFS_S-S
Calochortus plummerae	Plummer's mariposa-lily	Monocots	PMLIL0D150	230	49	None	None	G4	S4	4.2	SB_CalBG California/I Santa Ana Garden
Calochortus striatus	alkali mariposa-lily	Monocots	PMLIL0D190	113	1	None	None	G3?	S2S3	1B.2	BLM_S-Se SB_CalBG California/I Santa Ana Garden, USFS_S-S
Calochortus weedii var. intermedius	intermediate mariposa-lily	Monocots	PMLIL0D1J1	140	2	None	None	G3G4T2	S2	1B.2	SB_CalBG California/I Santa Ana

											Garden, USFS_S-S
Calystegia felix	lucky morning-glory	Dicots	PDCON040P0	10	2	None	None	G1Q	S1	1B.1	null
Carolella busckana	Busck's gallmoth	Insects	IILEM2X090	4	1	None	None	G1G3	SH	null	null
Castilleja gleasoni	Mt. Gleason paintbrush	Dicots	PDSCR0D140	33	16	None	Rare	G2	S2	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Catostomus santaanae	Santa Ana sucker	Fish	AFCJC02190	28	2	Threatened	None	G1	S1	null	AFS_TH-Threatene IUCN_VU-Vulnerable
Centromadia parryi ssp. australis	southern tarplant	Dicots	PDAST4R0P4	94	6	None	None	G3T2	S2	1B.1	SB_CalBG California/I Santa Ana Garden, SI San Diego CRES Nat Seed Bank SB_SBBG Barbara Bo Garden
Centromadia pungens ssp. laevis	smooth tarplant	Dicots	PDAST4R0R4	126	1	None	None	G3G4T2	S2	1B.1	SB_CalBG California/I Santa Ana Garden
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Dicots	PDPGN040J1	21	3	None	Endangered	G2T1	S1	1B.1	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Chorizanthe parryi var. parryi	Parry's spineflower	Dicots	PDPGN040J2	150	3	None	None	G3T2	S2	1B.1	BLM_S-Se SB_CalBG California/I Santa Ana Garden, USFS_S-S
Cladium californicum	California saw-grass	Monocots	PMCYP04010	13	1	None	None	G4	S2	2B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Birds	ABNRB02022	165	1	Threatened	Endangered	G5T2T3	S1	null	BLM_S-Se NABCI_RV Watch List USFS_S-S USFWS_E of Conserv Concern
Corynorhinus townsendii	Townsend's big-eared bat	Mammals	AMACC08010	635	3	None	None	G3G4	S2	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S WBWG_H Priority

Coturnicops noveboracensis	yellow rail	Birds	ABNME01010	45	1	None	None	G4	S1S2	null	CDFW_SS Species of Concern, I Least Con NABCI_RV Watch List USFS_S-S USFWS_E of Conserv Concern
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Dicots	PDCUS01111	6	1	None	None	G5T4?	SH	2B.2	null
Cypseloides niger	black swift	Birds	ABNUA01010	46	1	None	None	G4	S2	null	CDFW_SS Species of Concern, I Least Con NABCI_YV Yellow Wa USFWS_E of Conserv Concern
Diadophis punctatus modestus	San Bernardino ringneck snake	Reptiles	ARADB10015	14	1	None	None	G5T2T3	S2?	null	USFS_S-S
Dodecahema leptoceras	slender-horned spineflower	Dicots	PDPGN0V010	41	6	Endangered	Endangered	G1	S1	1B.1	SB_CalBG California/I Santa Ana Garden
Dudleya multicaulis	many-stemmed dudleya	Dicots	PDCRA040H0	154	2	None	None	G2	S2	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Empidonax traillii extimus	southwestern willow flycatcher	Birds	ABPAE33043	70	2	Endangered	Endangered	G5T2	S1	null	NABCI_RV Watch List
Emys marmorata	western pond turtle	Reptiles	ARAAD02030	1398	13	None	None	G3G4	S3	null	BLM_S-Se CDFW_SS Species of Concern, IUCN_VU-Vulnerable USFS_S-S
Eumops perotis californicus	western mastiff bat	Mammals	AMACD02011	296	9	None	None	G5T4	S3S4	null	BLM_S-Se CDFW_SS Species of Concern, WBWG_H Priority

Falco peregrinus anatum	American peregrine falcon	Birds	ABNKD06071	58	1	Delisted	Delisted	G4T4	S3S4	null	CDF_S-Se CDFW_FP Protected, USFWS_E of Conserv Concern
Galium grande	San Gabriel bedstraw	Dicots	PDRUB0N0V0	9	3	None	None	G1	S1	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Gila orcuttii	arroyo chub	Fish	AFCJB13120	49	1	None	None	G2	S2	null	AFS_VU-Vulnerable CDFW_SS Species of Concern, USFS_S-S
Glyptostoma gabrielense	San Gabriel chestnut	Mollusks	IMGASB1010	24	15	None	None	G2	S2	null	null
Gonidea angulata	western ridged mussel	Mollusks	IMBIV19010	157	2	None	None	G3	S1S2	null	null
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Dicots	PDAST4N102	7	3	None	None	G5TX	SX	1A	null
Horkelia cuneata var. puberula	mesa horkelia	Dicots	PDROS0W045	103	14	None	None	G4T1	S1	1B.1	USFS_S-S
Icteria virens	yellow-breasted chat	Birds	ABPBX24010	100	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con
Imperata brevifolia	California satintail	Monocots	PMPOA3D020	32	1	None	None	G4	S3	2B.1	SB_CalBG California/I Santa Ana Garden, SI Santa Barb Botanic Ga USFS_S-S
Lasionycteris noctivagans	silver-haired bat	Mammals	AMACC02010	139	1	None	None	G5	S3S4	null	IUCN_LC-Concern, WBWG_M Priority
Lasiurus blossevillii	western red bat	Mammals	AMACC05060	128	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_H Priority
Lasiurus cinereus	hoary bat	Mammals	AMACC05030	238	10	None	None	G5	S4	null	IUCN_LC-Concern, WBWG_M Priority
Lasiurus xanthinus	western yellow bat	Mammals	AMACC05070	58	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_H Priority
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Dicots	PDAST5L0A1	111	1	None	None	G4T2	S2	1B.1	BLM_S-Se SB_CalBG

											California/I Santa Ana Garden, SI Santa Barb Botanic Ga
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Dicots	PDBRA1M114	142	5	None	None	G5T3	S3	4.3	null
Lepus californicus bennettii	San Diego black-tailed jackrabbit	Mammals	AMAEB03051	103	1	None	None	G5T3T4	S3S4	null	CDFW_SS Species of Concern
Linanthus concinnus	San Gabriel linanthus	Dicots	PDPLM090D0	43	4	None	None	G2	S2	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Malacothamnus davidsonii	Davidson's bush-mallow	Dicots	PDMAL0Q040	83	36	None	None	G2	S2	1B.2	SB_CalBG California/I Santa Ana Garden
Microtus californicus stephensi	south coast marsh vole	Mammals	AMAFF11035	7	1	None	None	G5T1T2	S1S2	null	CDFW_SS Species of Concern
Muhlenbergia californica	California muhly	Monocots	PMPOA480A0	5	1	None	None	G4	S4	4.3	null
Nasturtium gambelii	Gambel's water cress	Dicots	PDBRA270V0	13	1	Endangered	Threatened	G1	S1	1B.1	SB_CalBG California/I Santa Ana Garden, SI Santa Barb Botanic Ga
Navarretia prostrata	prostrate vernal pool navarretia	Dicots	PDPLM0C0Q0	61	1	None	None	G2	S2	1B.2	null
Neotoma lepida intermedia	San Diego desert woodrat	Mammals	AMAFF08041	132	2	None	None	G5T3T4	S3S4	null	CDFW_SS Species of Concern
Nyctinomops macrotis	big free-tailed bat	Mammals	AMACD04020	32	2	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con WBWG_M Medium-H Priority
Onychomys torridus ramona	southern grasshopper mouse	Mammals	AMAFF06022	28	2	None	None	G5T3	S3	null	CDFW_SS Species of Concern
Open Engelmann Oak Woodland	Open Engelmann Oak Woodland	Woodland	CTT71181CA	2	2	None	None	G2	S2.2	null	null
Opuntia basilaris var. brachyclada	short-joint beavertail	Dicots	PDCAC0D053	199	7	None	None	G5T3	S3	1B.2	BLM_S-Se SB_CalBG California/I Santa Ana Garden, USFS_S-S
Orobanche valida ssp. valida	Rock Creek broomrape	Dicots	PDORO040G2	12	1	None	None	G4T2	S2	1B.2	USFS_S-S

Palaeoxenus dohrni	Dohrn's elegant eucnemid beetle	Insects	IICOL5K010	3	1	None	None	G3?	S3?	null	null
Phacelia stellaris	Brand's star phacelia	Dicots	PDHYD0C510	15	1	None	None	G1	S1	1B.1	SB_CalBG California/I Santa Ana Garden
Phrynosoma blainvillii	coast horned lizard	Reptiles	ARACF12100	784	21	None	None	G3G4	S3S4	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con
Polioptila californica californica	coastal California gnatcatcher	Birds	ABPBJ08081	883	16	Threatened	None	G4G5T2Q	S2	null	CDFW_SS Species of Concern, NABCI_YV Yellow Wa
Pseudognaphalium leucocephalum	white rabbit-tobacco	Dicots	PDAST440C0	62	6	None	None	G4	S2	2B.2	null
Quercus dumosa	Nuttall's scrub oak	Dicots	PDFAG050D0	180	1	None	None	G3	S3	1B.1	BLM_S-Se SB_CRES Diego Zoo Native Ger Bank, USFS_S-S
Rana muscosa	southern mountain yellow-legged frog	Amphibians	AAABH01330	186	14	Endangered	Endangered	G1	S1	null	CDFW_WI List, IUCN_ Endangere USFS_S-S
Rhinichthys osculus ssp. 3	Santa Ana speckled dace	Fish	AFCJB3705K	13	1	None	None	G5T1	S1	null	AFS_TH-Threatene CDFW_SS Species of Concern, USFS_S-S
Ribes divaricatum var. parishii	Parish's gooseberry	Dicots	PDGRO020F3	5	4	None	None	G5TX	SX	1A	null
Riparia riparia	bank swallow	Birds	ABPAU08010	298	2	None	Threatened	G5	S2	null	BLM_S-Se IUCN_LC-Concern
Riversidian Alluvial Fan Sage Scrub	Riversidian Alluvial Fan Sage Scrub	Scrub	CTT32720CA	30	7	None	None	G1	S1.1	null	null
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Dicots	PDLAM1U0A1	43	1	None	None	G4T3	S3	1B.2	SB_CalBG California/I Santa Ana Garden, USFS_S-S
Setophaga petechia	yellow warbler	Birds	ABPBX03010	78	2	None	None	G5	S3S4	null	CDFW_SS Species of Concern, USFWS_B of Conserv Concern
Sidalcea neomexicana	salt spring checkerbloom	Dicots	PDMAL110J0	30	3	None	None	G4	S2	2B.2	USFS_S-S

Southern California Arroyo Chub/Santa Ana Sucker Stream	Southern California Arroyo Chub/Santa Ana Sucker Stream	Inland Waters	CARE2330CA	4	1	None	None	GNR	SNR	null	null
Southern Coast Live Oak Riparian Forest	Southern Coast Live Oak Riparian Forest	Riparian	CTT61310CA	246	33	None	None	G4	S4	null	null
Southern Cottonwood Willow Riparian Forest	Southern Cottonwood Willow Riparian Forest	Riparian	CTT61330CA	111	4	None	None	G3	S3.2	null	null
Southern Mixed Riparian Forest	Southern Mixed Riparian Forest	Riparian	CTT61340CA	14	4	None	None	G2	S2.1	null	null
Southern Sycamore Alder Riparian Woodland	Southern Sycamore Alder Riparian Woodland	Riparian	CTT62400CA	230	52	None	None	G4	S4	null	null
Spea hammondii	western spadefoot	Amphibians	AAABF02020	1409	6	None	None	G3	S3	null	BLM_S-Se CDFW_SS Species of Concern, IUCN_NT-Threatene
Symphyotrichum defoliatum	San Bernardino aster	Dicots	PDASTE80C0	102	2	None	None	G2	S2	1B.2	SB_CalBG California/I Santa Ana Garden, SI San Diego CRES Nat Seed Bank USFS_S-S
Symphyotrichum greatae	Greata's aster	Dicots	PDASTE80U0	56	21	None	None	G2	S2	1B.3	SB_CalBG California/I Santa Ana Garden
Taricha torosa	Coast Range newt	Amphibians	AAAAF02032	88	3	None	None	G4	S4	null	CDFW_SS Species of Concern
Taxidea taxus	American badger	Mammals	AMAJF04010	594	1	None	None	G5	S3	null	CDFW_SS Species of Concern, I Least Con

Thamnophis hammondii	two-striped gartersnake	Reptiles	ARADB36160	184	7	None	None	G4	S3S4	null	BLM_S-Se CDFW_SS Species of Concern, I Least Con USFS_S-S
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Ferns	PPTHE05192	27	3	None	None	G5T3	S2	2B.2	USFS_S-S
Vireo bellii pusillus	least Bell's vireo	Birds	ABPBW01114	503	19	Endangered	Endangered	G5T2	S2	null	IUCN_NT- Threatene NABCI_YW Yellow Wa
Walnut Forest	Walnut Forest	Forest	CTT81600CA	6	1	None	None	G1	S1.1	null	null

CNPS California Native Plant Society

Inventory of Rare and Endangered Plants

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

75 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2A, 2B, 3, 4], FESA is one of [Endangered, Threatened, Cand
CESA is one of [Endangered, Threatened, Rare, Not Listed], Found in Quads 3411833, 3411832, 3411831,
3411822, 3411821, 3411813, 3411812 and 3411811;
Lifeform is one of [Tree, Shrub, Leaf succulent, Herb, Vine, Stem succulent, Lichen, Moss, Liverwort],
Duration is one of [ann, per, ephem],
Bloom Time is one of [January, February, March, April, May, June, July, August, September, October, Nove

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthoscyphus parishii var. parishii	Parish's oxytheca	Polygonaceae	annual herb	Jun-Sep	4.2	S3S4	G4? T3T4
Arctostaphylos glandulosa ssp. gabrielensis	San Gabriel manzanita	Ericaceae	perennial evergreen shrub	Mar	1B.2	S3	G5T3
Arctostaphylos parryana ssp. tumescens	interior manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	4.3	S3S4	G4T3T4
Arenaria paludicola	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1
Asplenium vespertinum	western spleenwort	Aspleniaceae	perennial rhizomatous herb	Feb-Jun	4.2	S4	G4
Astragalus brauntonii	Braunton's milk-vetch	Fabaceae	perennial herb	Jan-Aug	1B.1	S2	G2
Astragalus pycnostachyus var. lanosissimus	Ventura marsh milk-vetch	Fabaceae	perennial herb	(Jun)Aug-Oct	1B.1	S1	G2T1
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Atriplex serenana var. davidsonii	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1

Berberis nevinii	Nevin's barberry	Berberidaceae	perennial evergreen shrub	(Feb)Mar-Jun	1B.1	S1	G1
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calochortus clavatus var. gracilis	slender mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun (Nov)	1B.2	S2S3	G4T2T3
Calochortus palmeri var. palmeri	Palmer's mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jul	1B.2	S2	G3T2
Calochortus plummerae	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
Calochortus weedii var. intermedius	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
Calystegia felix	lucky morning-glory	Convolvulaceae	annual rhizomatous herb	Mar-Sep	1B.1	S1	G1Q
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May (Jun)	3	S4	G4
Castilleja gleasoni	Mt. Gleason paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	May-Jun (Sep)	1B.2	S2	G2
Castilleja plagiotoma	Mojave paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	4.3	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Centromadia pungens ssp. laevis	smooth tarplant	Asteraceae	annual herb	Apr-Sep	1B.1	S2	G3G4T2
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
Chorizanthe parryi var. parryi	Parry's spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S2	G3T2
Cladium californicum	California sawgrass	Cyperaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G4
Clinopodium mimuloides	monkey-flower savory	Lamiaceae	perennial herb	Jun-Oct	4.2	S3	G3
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	Convolvulaceae	annual vine (parasitic)	Jul-Oct	2B.2	SH	G5T4?
Diplacus johnstonii	Johnston's monkeyflower	Phrymaceae	annual herb	(Apr)May-Aug	4.3	S4	G4
Dodecahema leptoceras	slender-horned spineflower	Polygonaceae	annual herb	Apr-Jun	1B.1	S1	G1
Dudleya multicaulis	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
Erythranthe diffusa	Palomar monkeyflower	Phrymaceae	annual herb	Apr-Jun	4.3	S3	G4
Frasera neglecta	pine green-gentian	Gentianaceae	perennial herb	May-Jul	4.3	S4	G4
Galium angustifolium ssp. gabrielense	San Antonio Canyon bedstraw	Rubiaceae	perennial herb	Apr-Aug	4.3	S3	G5T3

Galium grande	San Gabriel bedstraw	Rubiaceae	perennial deciduous shrub	Jan-Jul	1B.2	S1	G1
Galium jepsonii	Jepson's bedstraw	Rubiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G3
Galium johnstonii	Johnston's bedstraw	Rubiaceae	perennial herb	Jun-Jul	4.3	S4	G4
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1A	SH	G5TH
Heuchera caespitosa	urn-flowered alumroot	Saxifragaceae	perennial rhizomatous herb	May-Aug	4.3	S3	G3
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Horkelia cuneata var. puberula	mesa horkelia	Rosaceae	perennial herb	Feb-Jul (Sep)	1B.1	S1	G4T1
Hulsea vestita ssp. gabrielensis	San Gabriel Mountains sunflower	Asteraceae	perennial herb	May-Jul	4.3	S3	G5T3
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	2B.1	S3	G4
Juglans californica	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Lepechinia fragrans	fragrant pitcher sage	Lamiaceae	perennial shrub	Mar-Oct	4.2	S3	G3
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	Liliaceae	perennial bulbiferous herb	Mar-Jul (Aug)	4.2	S4?	G4T4?
Linanthus concinnus	San Gabriel linanthus	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2
Linanthus orcuttii	Orcutt's linanthus	Polemoniaceae	annual herb	May-Jun	1B.3	S2	G3
Lupinus peirsonii	Peirson's lupine	Fabaceae	perennial herb	Apr-Jun	1B.3	S3	G3
Malacothamnus davidsonii	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
Monardella australis ssp. cinerea	gray monardella	Lamiaceae	perennial rhizomatous herb	Jul-Aug	4.3	S3	G4T3
Muhlenbergia californica	California muhly	Poaceae	perennial rhizomatous herb	Jun-Sep	4.3	S4	G4
Nasturtium gambelii	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Opuntia basilaris var. brachyclada	short-joint beavertail	Cactaceae	perennial stem succulent	Apr-Jun (Aug)	1B.2	S3	G5T3
Orobanche valida ssp. valida	Rock Creek broomrape	Orobanchaceae	perennial herb (parasitic)	May-Sep	1B.2	S2	G4T2
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4

Phacelia mohavensis	Mojave phacelia	Hydrophyllaceae	annual herb	Apr-Aug	4.3	S4	G4Q
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Pseudognaphalium leucocephalum	white rabbit-tobacco	Asteraceae	perennial herb	(Jul)Aug-Nov(Dec)	2B.2	S2	G4
Quercus dumosa	Nuttall's scrub oak	Fagaceae	perennial evergreen shrub	Feb-Apr (May-Aug)	1B.1	S3	G3
Quercus durata var. gabrielensis	San Gabriel oak	Fagaceae	perennial evergreen shrub	Apr-May	4.2	S3	G4T3
Quercus engelmannii	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
Ribes divaricatum var. parishii	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	1A	SX	G5TX
Romneya coulteri	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul (Aug)	4.2	S4	G4
Rupertia rigida	Parish's rupertia	Fabaceae	perennial herb	Jun-Aug	4.3	S4	G4
Scutellaria bolanderi ssp. austromontana	southern mountains skullcap	Lamiaceae	perennial rhizomatous herb	Jun-Aug	1B.2	S3	G4T3
Senecio astephanus	San Gabriel ragwort	Asteraceae	perennial herb	May-Jul	4.3	S3	G3
Sidalcea neomexicana	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
Sidotheca caryophylloides	chickweed oxytheca	Polygonaceae	annual herb	Jul-Sep (Oct)	4.3	S4	G4
Spermolepis lateriflora	western bristly scaleseed	Apiaceae	annual herb	Mar-Apr	2A	SH	G5
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov (Dec)	1B.2	S2	G2
Symphyotrichum greatae	Greata's aster	Asteraceae	perennial rhizomatous herb	Jun-Oct	1B.3	S2	G2
Thelypteris puberula var. sonorensis	Sonoran maiden fern	Thelypteridaceae	perennial rhizomatous herb	Jan-Sep	2B.2	S2	G5T3

Suggested Citation

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Questions and Comments

rareplants@cnps.org

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining 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

Los Angeles County, California

Local office

Carlsbad Fish And Wildlife Office

(760) 431-9440
(760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

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 species

[1] 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 Fisheries[2]).

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.
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:

Birds

NAME	STATUS
California Condor Gymnogyps californianus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193	Endangered
Least Bell's Vireo Vireo bellii pusillus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945	Endangered

Flowering Plants

NAME	STATUS
Braunton's Milk-vetch Astragalus brauntonii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5674	Endangered
Nevin's Barberry Berberis nevinii There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8025	Endangered

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.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservati

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that

occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird Selasphorus sasin This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle Haliaeetus leucocephalus 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

Black Swift Cypseloides niger — Breeds Jun 15 to Sep 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8878

Black-chinned Sparrow Spizella atrogularis — Breeds Apr 15 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9447

California Spotted Owl Strix occidentalis occidentalis — Breeds Mar 10 to Jun 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/7266

California Thrasher Toxostoma redivivum — Breeds Jan 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
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/2084

Costa's Hummingbird Calypte costae — Breeds Jan 15 to Jun 10
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/9470

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
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

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Lewis's Woodpecker Melanerpes lewis — Breeds Apr 20 to Sep 30
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9408

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
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

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
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/4243

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

White Headed Woodpecker Picoides albolarvatus — Breeds May 1 to Aug 15
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/9411

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

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

Probability of Presence ( )

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by

the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

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

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.

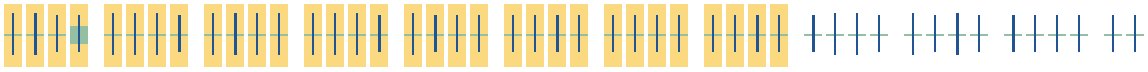
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

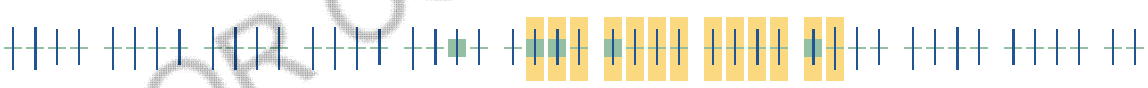
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Allen's Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

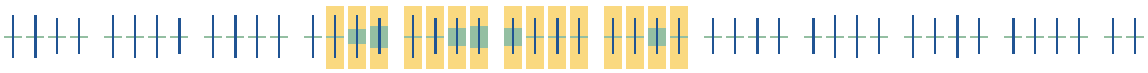
Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black Swift
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

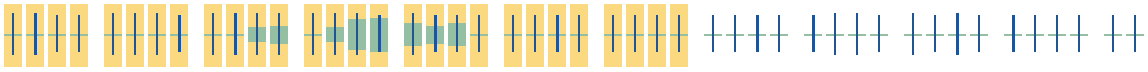


Black-chinned Sparrow
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



California Spotted Owl
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

California Thrasher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Common Yellowthroat
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

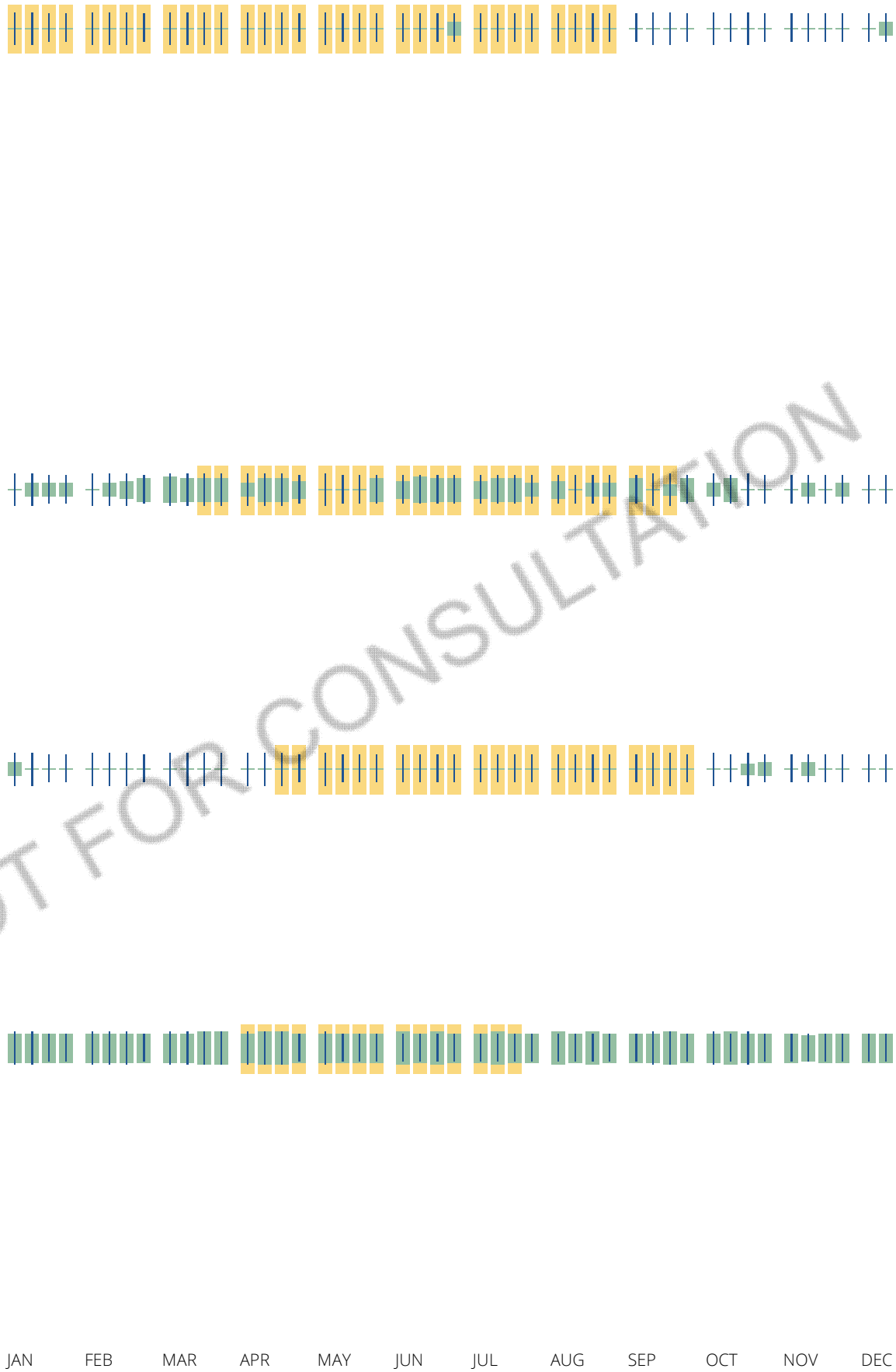
Costa's Hummingbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Golden Eagle
Non-BCC Vulnerable (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.)

Lawrence's Goldfinch
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Lewis's Woodpecker
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nuttall's Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

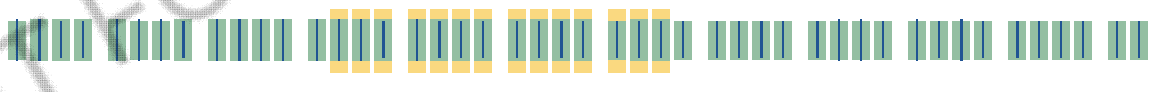


Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rufous Hummingbird
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

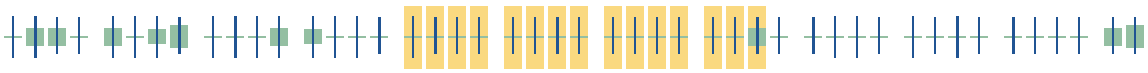
Song Sparrow
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Spotted Towhee
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

White Headed Woodpecker
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Wrentit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

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

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

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

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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

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:

FRESHWATER POND

PUBHx

RIVERINE

R4SBCx

A full description for each wetland code can be found at the National Wetlands Inventory website

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 tuberficid 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.