

APPENDIX B

Biological Constraints Memo

May 25, 2021

JN 182984

CITY OF LONG BEACH

Development Services | Planning Bureau

Sergio Gutierrez

411 West Ocean Boulevard, 3rd Floor

Long Beach, California 90802

SUBJECT: Biological Constraints Memorandum for the Cal Water Well and Water Treatment Plant – City of Long Beach, Los Angeles County, California

Dear Mr. Gutierrez,

Michael Baker International, Inc. (Michael Baker) is pleased to submit this technical memorandum to the City of Long Beach documenting the results of a biological constraints analysis for the proposed Cal Water Well and Water Treatment Plant (project) located in the City of Long Beach (City), Los Angeles County (County), California. Michael Baker conducted a literature review and field survey to characterize existing site conditions and assess the potential for special-status¹ biological resources to occur on or within the immediate vicinity of the project site that could pose a constraint to implementation of the proposed project.

Project Location

The approximate 16,268-square foot property (from here on referred to as the “development site”) is located at 6157 Long Beach Boulevard (Assessor’s Parcel Number [APN] 7307-008-053) in the City of Long Beach (refer to Figure 1, *Regional Vicinity*). The project also proposes water and sewer infrastructure improvements in the public rights-of-way of Long Beach Boulevard, Victoria Street, and Barclay Street and thus, these areas are also included in the overall project footprint. Together, the development site and public rights-of-way are referred to as the “project site” (refer to Figure 2, *Project Site*). The project site is depicted in Section 36 of Township 3 South, Range 13 West on the United States Geological Survey’s (USGS) *Long Beach, California 7.5-minute quadrangle*.

Project Description

The project proposes to construct a water well (DOM 301) and a water treatment plant on the development site. As part of the project, conveyance pipelines would also be constructed in the Long Beach Boulevard,

¹ As used in this report, “special-status” refers to plant and wildlife species that are Federally-/State-listed, proposed, or candidates; plant species that have been designated a California Rare Plant Rank by the California Native Plant Society; wildlife species that are designated by the California Department of Fish and Wildlife as Fully Protected, Species of Special Concern, or Watch List species; and other State/locally rare vegetation communities.

Victoria Street, and Barclay Street rights-of-way to link two nearby existing water wells, DOM 272 and DOM 297, to the proposed treatment plant. Groundwater produced at the two existing wells and the proposed well would be delivered to the proposed water treatment plant on-site and then to the local distribution system, including Cal Water's existing Dominguez District system and the County's distribution system along Victoria Street. The proposed treatment plant would enhance the quality of the water delivered to Cal Water customers, while the construction of the new water well and the collection and distribution mains would improve supply reliability and help meet emergency water demands (e.g., fire flows).

Methodology

Literature Review and Record Searches

Literature reviews and records searches were conducted to determine which special-status biological resources may occur on or within a 5-mile radius of the project site. Previous special-status plant and wildlife species occurrence records within the U.S. Geological Survey (USGS) *Long Beach, South Gate, Inglewood, and Torrance, California* 7.5-minute quadrangles were determined through a query of the California Department of Fish and Wildlife's (CDFW) California Natural Diversity Database (CNDDDB; CDFW 2021) and the California Native Plant Society's Online Inventory of Rare and Endangered Plants of California (CNPS Online Inventory; CNPS 2021). The U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Consultation (IPaC) online database was also reviewed to identify biological resources protected by the USFWS that are known or expected to occur on or within the project vicinity (USFWS 2021a). In addition, Michael Baker reviewed any publicly available reports, survey results, and literature detailing the biological resources previously observed on or within the vicinity of the project site to gain an understanding of existing site conditions, confirm previous species observations, and note the extent of any disturbances that have occurred within the project site that would otherwise limit the distribution of special-status biological resources. Other sources included the USFWS Environmental Conservation Online System Critical Habitat Mapper (USFWS 2021b), the U.S. Department of Agriculture/Natural Resources Conservation Service (USDA) Web Soil Survey (USDA 2021), and historic/current aerial photographs (Google 2021).

Habitat Assessment

Michael Baker biologists Ryan Winkleman and Frances Yau conducted a field survey on April 21, 2021. The survey was conducted between the hours of 0700 and 0800 hours, with temperatures consistent at 59 degrees Fahrenheit, winds consistent at 3 miles per hour, and skies overcast to partially sunny. Vegetation communities occurring within the project site were mapped on an aerial photograph and classified in accordance with the vegetation descriptions provided in *A Manual of California Vegetation* (Sawyer *et al.*, 2009) and cross referenced with the vegetation descriptions provided by Holland (1986). In addition, site characteristics such as soil condition, topography, hydrology, anthropogenic disturbances, indicator species, condition of on-site vegetation communities, and the presence of potentially regulated jurisdictional features were noted as appropriate. Michael Baker used Geographic Information Systems (GIS) ArcView software to digitize the mapped vegetation communities and then transferred these data onto an aerial photograph to further document existing conditions and quantify the acreage of each vegetation community.

All plant and wildlife species observed, as well as dominant plant species within each vegetation community, were recorded in a field notebook. Plant species observed during the field survey were

identified by visual characteristics and morphology in the field while unusual and less familiar plant species were photographed and later identified using taxonomical guides. Plant species nomenclature and taxonomy used in this report follows the Jepson Flora Project (2021) and scientific names are provided immediately following common names of plant species (first reference only). Wildlife detections were made through aural and visual detection, as well as observation of sign including scat, trails, tracks, burrows, and nests. Field guides used to assist with identification of species during the field survey included *The Sibley Guide to Birds* (Sibley 2014) for birds, *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003) for herpetofauna, and *A Field Guide to Mammals of North America* (Reid 2006) for mammals. Although common names of wildlife species are well standardized, scientific names are provided immediately following common names of wildlife species in this report (first reference only).

Results

Existing Site Conditions

The project site is flat and located at an elevation of approximately 41 feet above mean sea level. According to the *Custom Soil Resource Report for Los Angeles County, California, Southeastern Part* (USDA 2021), the project site is underlain by the following soil units: Urban land-Biscailuz-Hueneme, drained complex, 0 to 2 percent slopes (1005), and Urban land-Metz-Pico complex, 0 to 2 percent slopes (1001). The development site is currently vacant and undeveloped with non-native vegetation covering the disturbed site (refer to Attachment B, *Site Photographs*).

Vegetation Communities/Land Cover Types

On-site vegetation mapping within the project site revealed the following land cover types as described below: disturbed and developed (refer to Figure 3, *Land Cover Types*).

Disturbed

The disturbed land cover type includes the entirety of the development site. Disturbed areas are defined generally as unpaved areas that lack sufficient vegetation to be categorized as a natural vegetation community. Although vegetation may be present, it is generally non-native weeds and typically shows signs of being maintained (e.g., mowing, weed-wacking). All plants growing within the development site were non-native, with some of the most common species including wild oats (*Avena fatua*), coastal heron's bill (*Erodium cicutarium*), common barley (*Hordeum vulgare*), prickly lettuce (*Lactuca serriola*), cheeseweed (*Malva parviflora*), and spiny sowthistle (*Sonchus asper*).

Developed

The remainder of the project site is characterized as developed. Developed areas are generally defined as those that are either paved or that have been adequately built upon such that naturally-occurring vegetation cannot occur. These areas may include ornamental vegetation as well. Within the project site, developed areas include the public rights-of-way of Long Beach Boulevard, Victoria Street, and Barclay Street. Common ornamental vegetation observed in the developed areas include eastern American black walnut (*Juglans nigra*), wax-leaf privet (*Ligustrum japonicum*), southern magnolia (*Magnolia grandiflora*), passionflower (*Passiflora caerulea*), fountaingrass (*Pennisetum setaceum*), and Mexican fan palm (*Washingtonia robusta*).

Wildlife

Due to the ecologically disturbed nature of the project site and surrounding developments, habitat within the project site is marginally suitable for supporting various wildlife species, particularly those that are accustomed and acclimated to urbanized environments. Some of the more commonly-observed wildlife species during the survey included rock pigeon (*Columba livia*), American crow (*Corvus brachyrhynchos*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), house sparrow (*Passer domesticus*), black phoebe (*Sayornis nigricans*), and Eurasian collared-dove (*Streptopelia decaocto*). Refer to Attachment C, *Plant and Wildlife Species Observed List*, for a full list of observed wildlife species.

Biological Constraints

The following section identifies various types of biological constraints that are known to be present in the region and discusses whether they pose a risk to the project.

Special-Status Biological Resources

Special-Status Plants

Twenty-nine (29) special-status plant species have been recorded in the USGS *Long Beach, South Gate, Inglewood, and Torrance, California* 7.5-minute quadrangles by the CNDDDB, CNPS Online Inventory, and IPaC online database (refer to Attachments D through F, as well as Figure 4, *Special-Status Species/Habitat Documented within a 5-mile Radius*). Of these 29 species, all have a low potential to occur or are not expected to occur within the project site based on a review of specific habitat preferences, known distributions, and elevation ranges. The site is dominated by non-native plants and appears to be regularly mowed. Therefore, special-status plants are not considered to be a constraint to project implementation.

Special-Status Wildlife

Twenty-three (23) special-status wildlife species have been recorded in the USGS *Long Beach, South Gate, Inglewood, and Torrance, California* 7.5-minute quadrangles by the CNDDDB and IPaC online database (refer to Attachments D and F, as well as Figure 4, *Special-Status Species/Habitat Documented within a 5-mile Radius*). Of these 23 species, all have a low potential to occur or are not expected to occur within the project site based on a review of specific habitat preferences, known distributions, and elevation ranges. The site is located in an urbanized and built out environment, is dominated by non-native plants, and appears to be regularly mowed. Therefore, special-status wildlife species are not considered to be a constraint to project implementation.

Special-Status Vegetation Communities

No special-status vegetation communities have been reported in the *Long Beach, South Gate, Inglewood, and Torrance, California* 7.5-minute quadrangles by the CNDDDB. Additionally, no special-status vegetation communities were observed during Michael Baker's April 2021 field survey. Therefore, special-status vegetation communities are not considered to be a constraint to project implementation.

Critical Habitat

Under the definition used by the Federal Endangered Species Act, "Critical Habitat" refers to specific areas within the geographical range of a species that were occupied at the time it was listed that contain the physical or biological features that are essential to the survival and eventual recovery of that species and that may require special management considerations or protection, regardless of whether the species is still

extant in the area. Areas that were not known to be occupied at the time a species was listed can also be designated as Critical Habitat if they contain one or more of the physical or biological features that are essential to that species' conservation and if the occupied areas are inadequate to ensure the species' recovery. According to the most recent final designations from the USFWS at the time of this writing, the project site does not fall within designated Critical Habitat for any federally listed species (refer to Figure 4, *Special-Status Species/Habitat Documented within a 5-mile Radius*). Therefore, no impacts would occur to designated Critical Habitat from the project.

Conclusion and Recommendations

The project proposes to construct a water well and a water treatment plant on the development site and install conveyance pipelines in the Long Beach Boulevard, Victoria Street, and Barclay Street rights-of-way to link two adjacent existing water wells to the proposed treatment plant. As described below, development of the proposed project would not result in any significant impacts to special-status biological resources.

Based on Michael Baker's vegetation mapping in April 2021, the entire project site constitutes either disturbed or developed land cover types. Vegetation within the development site is entirely non-native, including planted ornamental species. Based on the results of the field survey, records search, and a review of specific habitat preferences, occurrence records, known distributions, and elevation ranges, it was determined that all special-status species identified by the CNDDDB, CNPS, and IPaC database either have a low potential or are not expected to occur within the project site. However, to maintain compliance with the Migratory Bird Treaty Act and the California Fish and Game Code, if construction occurs between January 1 and August 31 a pre-construction nesting bird clearance survey should be conducted by a qualified biologist within a biologically defensible buffer zone (to be determined by the biologist) surrounding the project site to determine if nesting birds are present that may be impacted by construction.

Please feel free to contact me at (949) 330-4105 or at frances.yau@mbakerintl.com, or Ryan Winkleman at (949) 533-0918 or at ryan.winkleman@mbakerintl.com should you have any questions or require further information regarding this report.

Sincerely,



Frances Yau
Biologist
Natural Resources and Regulatory Permitting



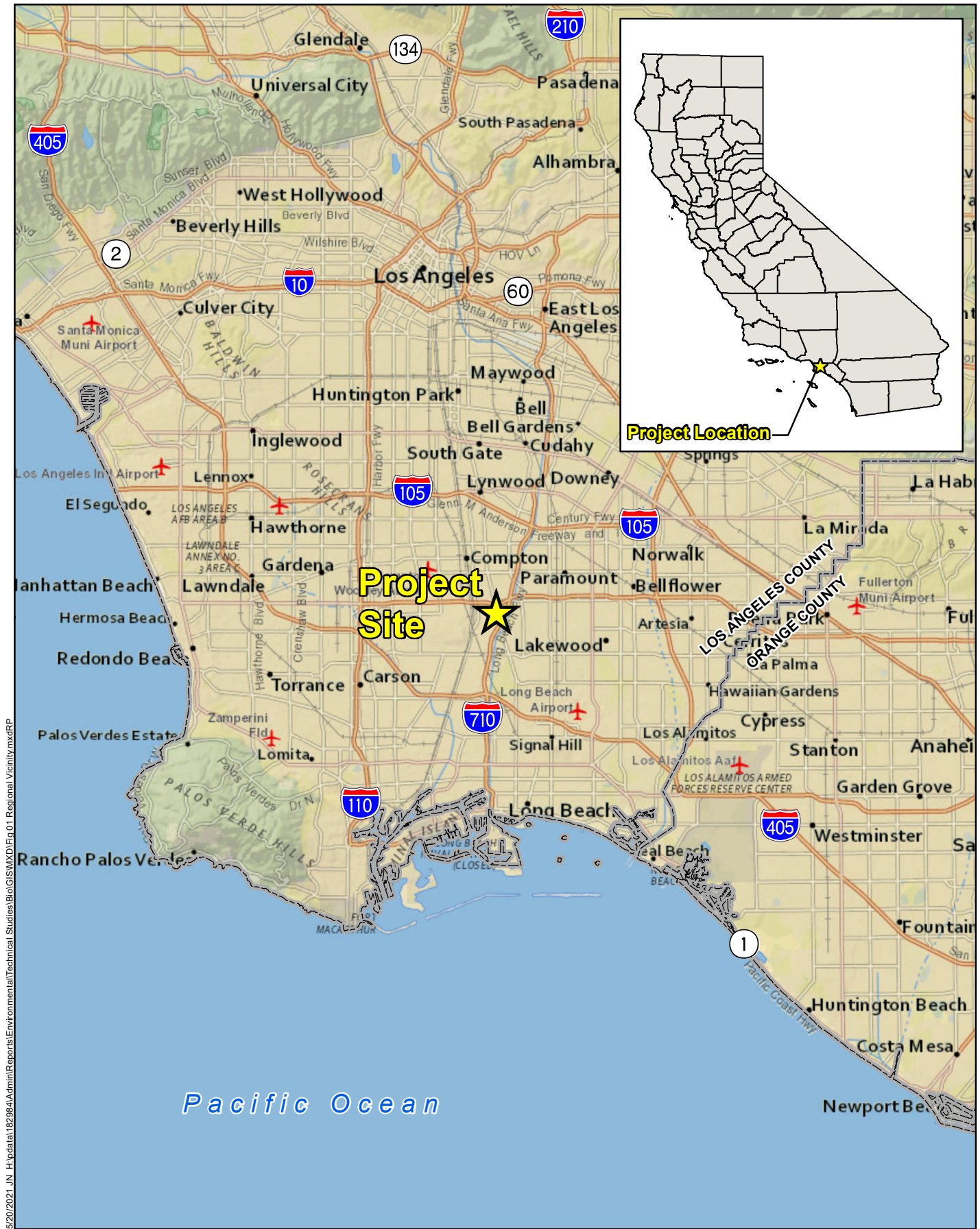
Ryan Winkleman
Senior Biologist/Project Manager
Natural Resources and Regulatory Permitting

Attachments:

- A. *Project Figures*
- B. *Site Photographs*
- C. *Plant and Wildlife Species Observed List*
- D. *CDFW CNDDDB Species List*
- E. *CNPS Species List*
- F. *USFWS IPaC Species List*
- G. *References*

Attachment A

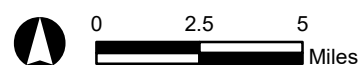
Project Figures



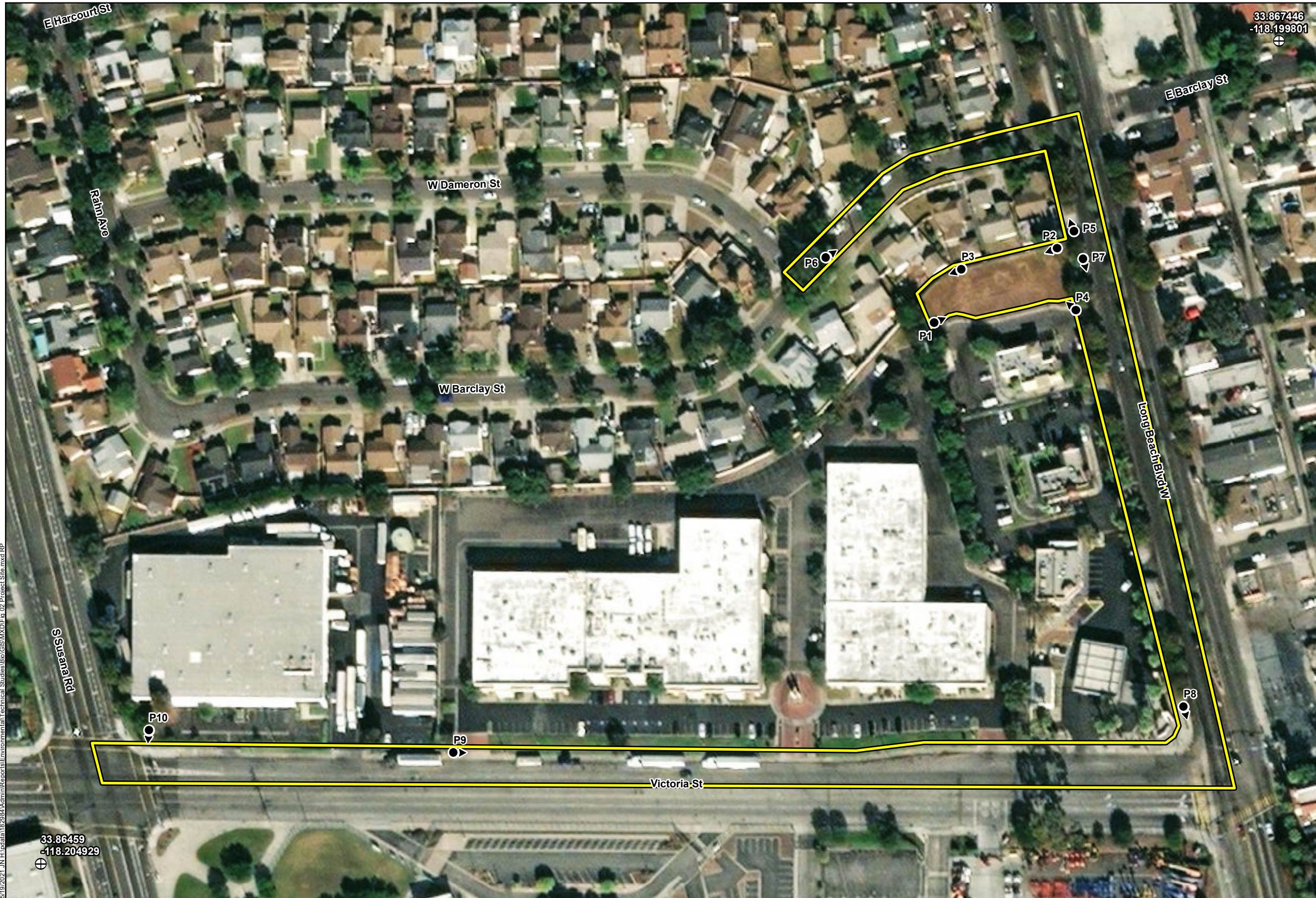
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CAL WATER WELL AND WATER TREATMENT PLANT
 BIOLOGICAL CONSTRAINTS MEMORANDUM
Regional Vicinity

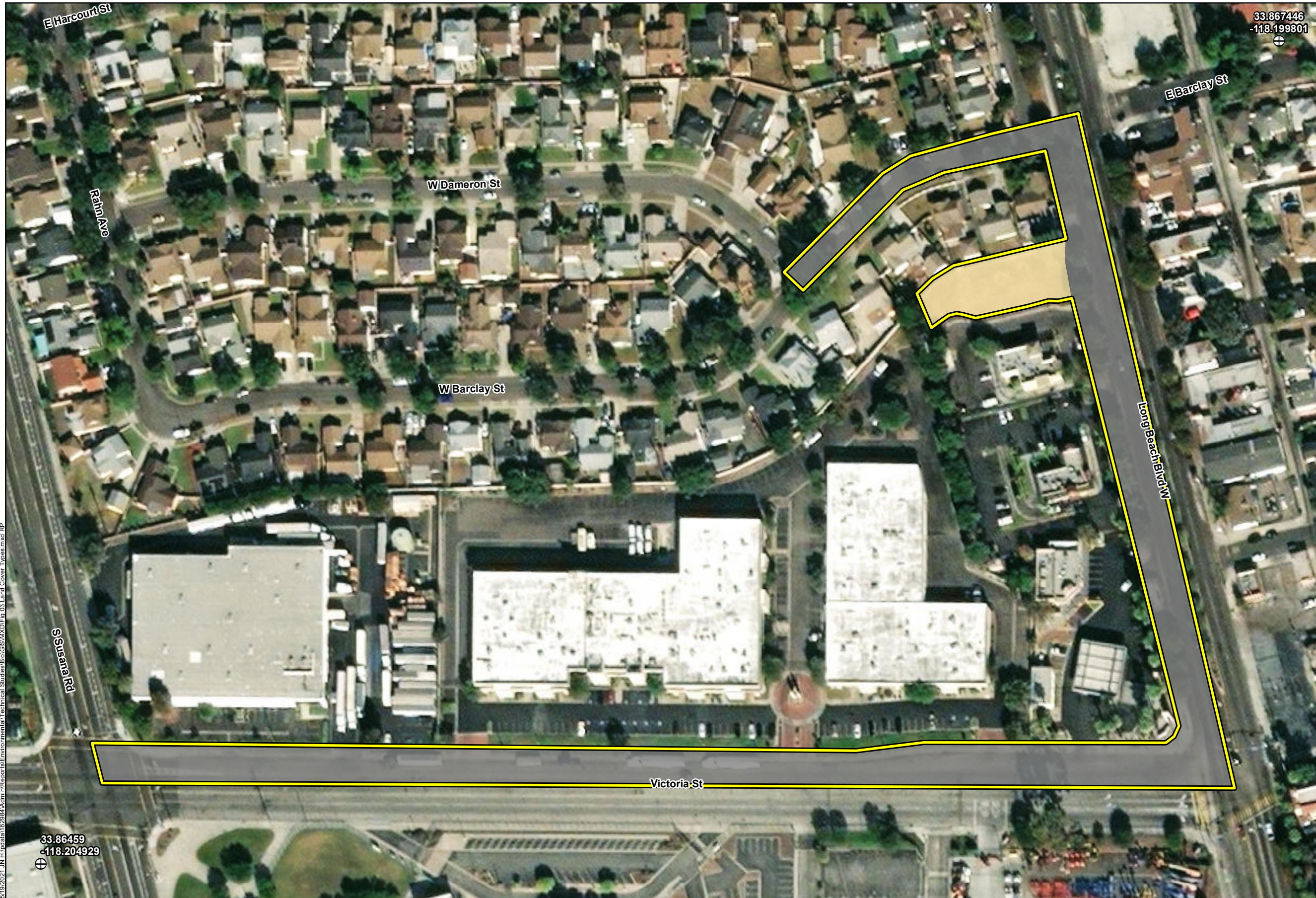
Figure 1



Source: ArcGIS Online, 2018




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Legend

- Project Site
- Disturbed (0.29 acre)
- Developed (2.95 acres)
- ⊕ Reference Point

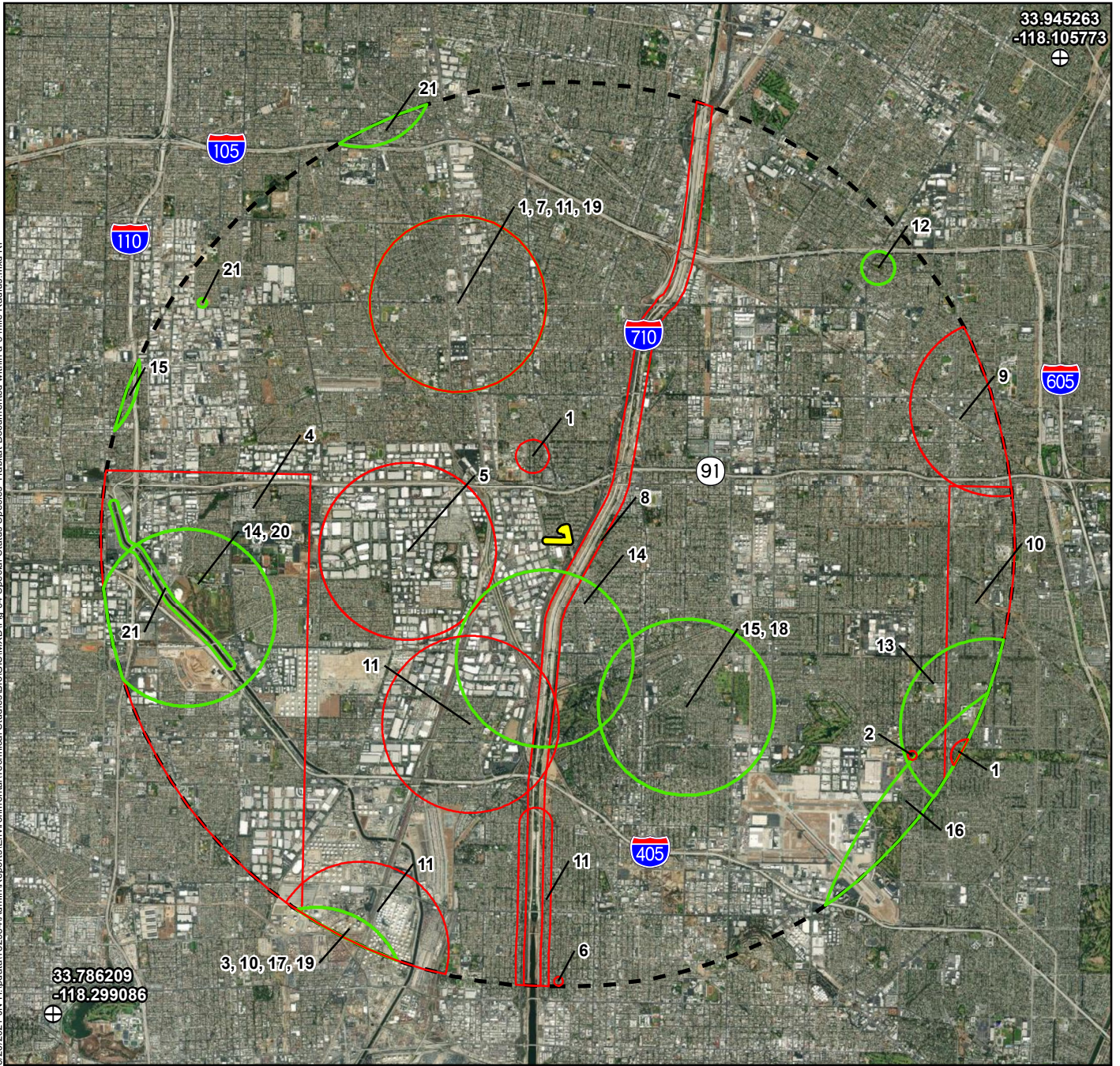


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Feet

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33.945263
-118.105773

5/20/2021, J:\H:\p\data\182984\Admin\Reports\Environmental\Technical Studies\BIO\GIS\MXD\Fig_04_Special-Status Species_Habitat_Documented within a 5-mile Radius.mxd, RP



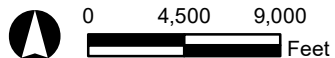
Legend

- Project Site
- Animal
- Plant
- 5-mile Radius Buffer
- Reference Point

ID	Animal	ID	Animal	ID	Plant	ID	Plant
1	coast horned lizard	7	southwestern willow flycatcher	12	Brand's star phacelia	17	Lyon's pentachaeta
2	monarch - California overwintering population	8	western ridged mussel	13	California Orcutt grass	18	Parish's brittlescale
3	Pacific pocket mouse	9	western spadefoot	14	Coulter's goldfields	19	prostrate vernal pool navarretia
4	Palos Verdes blue butterfly	10	western tidal-flat tiger beetle	15	Coulter's saltbush	20	San Bernardino aster
5	San Gabriel chestnut	11	western yellow-billed cuckoo	16	Horn's milk-vetch	21	southern tarplant
6	silver-haired bat						

CAL WATER WELL AND WATER TREATMENT PLANT
BIOLOGICAL CONSTRAINTS MEMORANDUM

Special-Status Species/Habitat
Documented within a 5-mile Radius



Source: Esri, 2018, CDFW, 2020

Figure 4

Attachment B

Site Photographs



Photograph 1 – Facing east from the southwest corner of the development site looking across the property dominated by non-native vegetation.



Photograph 2 – Facing west looking across the property from the northeast corner of the development site.



Photograph 3 – Facing west looking towards the western portion of the development site.



Photograph 4 – Facing northwest towards the fenced off development site.



Photograph 5 – Facing north on the western pedestrian sidewalk along Long Beach Boulevard where water conveyance pipelines would be installed.



Photograph 6 – Facing northeast along Barclay Street within a residential neighborhood. Water conveyance pipelines are proposed within the right-of-way.



Photograph 7 – Facing south on the western pedestrian sidewalk along Long Beach Boulevard, adjacent to the development site. Water conveyance pipelines are proposed within the Long Beach Boulevard right-of-way.



Photograph 8 – Facing south towards the Long Beach Boulevard and Victoria Street intersection where water conveyance pipelines would be installed.



Photograph 9 – Facing east on the northern pedestrian sidewalk along Victoria Street. Water conveyance pipelines are proposed within the right-of-way.



Photograph 10 – Facing south towards the Victoria Street and Susana Road intersection where water conveyance pipelines are proposed within the right-of-way.

Attachment C

Plant and Wildlife Species Observed List

Table C-1: Plant and Wildlife Species Observed List		
Scientific Name*	Common Name	Cal-IPC Rating**
Plants		
<i>Agave americana</i> *	American century plant	
<i>Avena fatua</i> *	wild oats	Moderate
<i>Chenopodium album</i> *	lambs quarters	
<i>Erodium cicutarium</i> *	coastal heron's bill	Limited
<i>Eucalyptus</i> sp.*	gum tree	
<i>Hordeum vulgare</i> *	common barley	
<i>Juglans nigra</i> *	eastern American black walnut	
<i>Lactuca serriola</i> *	prickly lettuce	
<i>Ligustrum japonicum</i> *	wax-leaf privet	
<i>Liquidambar styraciflua</i> *	sweetgum	
<i>Magnolia grandiflora</i> *	southern magnolia	
<i>Malva parviflora</i> *	cheeseweed	
<i>Passiflora caerulea</i> *	passionflower	
<i>Pennisetum setaceum</i> *	fountaingrass	Moderate
<i>Sonchus asper</i> *	spiny sowthistle	
<i>Ulmus parviflora</i> *	Chinese elm	
<i>Urtica urens</i> *	dwarf nettle	
<i>Washingtonia robusta</i> *	Mexican fan palm	Moderate
Wildlife		
<i>Aphelocoma californica</i>	California scrub-jay	
<i>Columba livia</i> *	rock pigeon	
<i>Corvus brachyrhynchos</i>	American crow	
<i>Felis catus</i> *	domestic cat	
<i>Haemorhous mexicanus</i>	house finch	
<i>Larus occidentalis</i>	western gull	
<i>Mimus polyglottos</i>	northern mockingbird	
<i>Passer domesticus</i> *	house sparrow	
<i>Psaltriparus minimus</i>	American bushtit	
<i>Psittacara</i> sp.*	parakeet	
<i>Sayornis nigricans</i>	black phoebe	
<i>Streptopelia decaocto</i> *	Eurasian collared-dove	
<i>Zosterops simplex</i> *	Swinhoe's white-eye	

* Non-native species

** **California Invasive Plant Council (Cal-IPC) Ratings**

Moderate These species have substantial and apparent—but generally not severe—ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.

Limited These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Attachment D

CDFW CNDDDB Species List



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Long Beach (3311872)) OR South Gate (3311882) OR Torrance (3311873) OR Inglewood (3311883)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Anniella stebbinsi Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
Aphanisma blitoides aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
Astragalus hornii var. hornii Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex coulteri Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
Atriplex pacifica south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Centromadia pungens ssp. laevis smooth tarplant	PDAST4R0R4	None	None	G3G4T2	S2	1B.1
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
Cicindela latesignata latesignata western beach tiger beetle	IICOL02113	None	None	G2G4T1T2	S1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	Candidate	None	G4T2T3	S2S3	
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Eryngium aristulatum</i> var. <i>parishii</i> San Diego button-celery	PDAPI0Z042	Endangered	Endangered	G5T1	S1	1B.1
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
<i>Glaucopsyche lygdamus palosverdesensis</i> Palos Verdes blue butterfly	IILEPG402A	Endangered	None	G5T1	S1	
<i>Glyptostoma gabrielense</i> San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
<i>Gonidea angulata</i> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<i>Habroscelimorpha gabbii</i> western tidal-flat tiger beetle	IICOL02080	None	None	G2G4	S1	
<i>Isocoma menziesii</i> var. <i>decumbens</i> decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
<i>Lasionycteris noctivagans</i> silver-haired bat	AMACC02010	None	None	G3G4	S3S4	
<i>Lasthenia glabrata</i> ssp. <i>coulteri</i> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<i>Microtus californicus stephensi</i> south coast marsh vole	AMAFF11035	None	None	G5T2T3	S1S2	SSC
<i>Nama stenocarpa</i> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<i>Navarretia fossalis</i> spreading navarretia	PDPLM0C080	Threatened	None	G2	S2	1B.1
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
<i>Nemacaulis denudata</i> var. <i>denudata</i> coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
<i>Nyctinomops femorosaccus</i> pocketed free-tailed bat	AMACD04010	None	None	G5	S3	SSC
<i>Nyctinomops macrotis</i> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<i>Orcuttia californica</i> California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
<i>Pelecanus occidentalis californicus</i> California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
<i>Pentachaeta lyonii</i> Lyon's pentachaeta	PDAST6X060	Endangered	Endangered	G1	S1	1B.1
<i>Perognathus longimembris pacificus</i> Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
<i>Phacelia stellaris</i> Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<i>Polioptila californica californica</i> coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T3Q	S2	SSC
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Sidalcea neomexicana</i> salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<i>Siphateles bicolor mohavensis</i> Mohave tui chub	AFCJB1303H	Endangered	Endangered	G4T1	S1	FP
<i>Spea hammondi</i> western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
<i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<i>Streptocephalus woottoni</i> Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
<i>Suaeda esteroa</i> estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
<i>Symphotrichum defoliatum</i> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 53

Attachment E

CNPS Species List



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

Plant List

21 matches found. [Click on scientific name for details](#)

Search Criteria

Found in Quads 3311872, 3311873 3311882 and 3311883;

[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
Astragalus tener var. titi	coastal dunes milk-vetch	Fabaceae	annual herb	Mar-May	1B.1	S1	G2T1
Atriplex coulteri	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
Atriplex parishii	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
Calochortus catalinae	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
Calystegia peirsonii	Peirson's morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	4.2	S4	G4
Camissoniopsis lewisii	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	3	S4	G4
Centromadia parryi ssp. australis	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	1B.2	S1	G4?T1
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Isocoma menziesii var. decumbens	decumbent goldenbush	Asteraceae	perennial shrub	Apr-Nov	1B.2	S2	G3G5T2T3
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Nama stenocarpa	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
Navarretia fossalis	spreading navarretia	Polemoniaceae	annual herb	Apr-Jun	1B.1	S2	G2
Navarretia prostrata	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
Nemacaulis denudata var. denudata	coast woolly-heads	Polygonaceae	annual herb	Apr-Sep	1B.2	S2	G3G4T2
Orcuttia californica	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Pentachaeta lyonii	Lyon's pentachaeta	Asteraceae	annual herb	(Feb)Mar-	1B.1	S1	G1

				Aug			
Phacelia hubbyi	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
Phacelia stellaris	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
Suaeda esteroa	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct(Jan)	1B.2	S2	G3
Symphyotrichum defoliatum	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2

Suggested Citation

California Native Plant Society, Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website <http://www.rareplants.cnps.org> [accessed 17 May 2021].

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Contributors

[The Calflora Database](#)
[The California Lichen Society](#)
[California Natural Diversity Database](#)
[The Jepson Flora Project](#)
[The Consortium of California Herbaria](#)
[CalPhotos](#)

Questions and Comments

rareplants@cnps.org

Attachment F

USFWS IPaC Species List

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 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

Pacific Pocket Mouse *Perognathus longimembris pacificus* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8080>

Birds

NAME

STATUS

California Least Tern *Sterna antillarum browni* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8104>

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 Act¹ and the Bald and Golden Eagle Protection Act².

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

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

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/nationwidestandardconservationmeasures.pdf>

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.)
<p>Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637</p>	Breeds Feb 1 to Jul 15
<p>Black Skimmer <i>Rynchops niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234</p>	Breeds May 20 to Sep 15
<p>Burrowing Owl <i>Athene cucularia</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/9737</p>	Breeds Mar 15 to Aug 31
<p>Clark's Grebe <i>Aechmophorus clarkii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Jan 1 to Dec 31

- 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>
- 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>
- Long-billed Curlew** *Numenius americanus* 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/5511>
- Marbled Godwit** *Limosa fedoa* 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/9481>
- 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>
- Short-billed Dowitcher** *Limnodromus griseus* 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/9480>

Song Sparrow <i>Melospiza melodia</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Feb 20 to Sep 5
Spotted Towhee <i>Pipilo maculatus clementae</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/4243	Breeds Apr 15 to Jul 20
Whimbrel <i>Numenius phaeopus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 10

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

- 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.

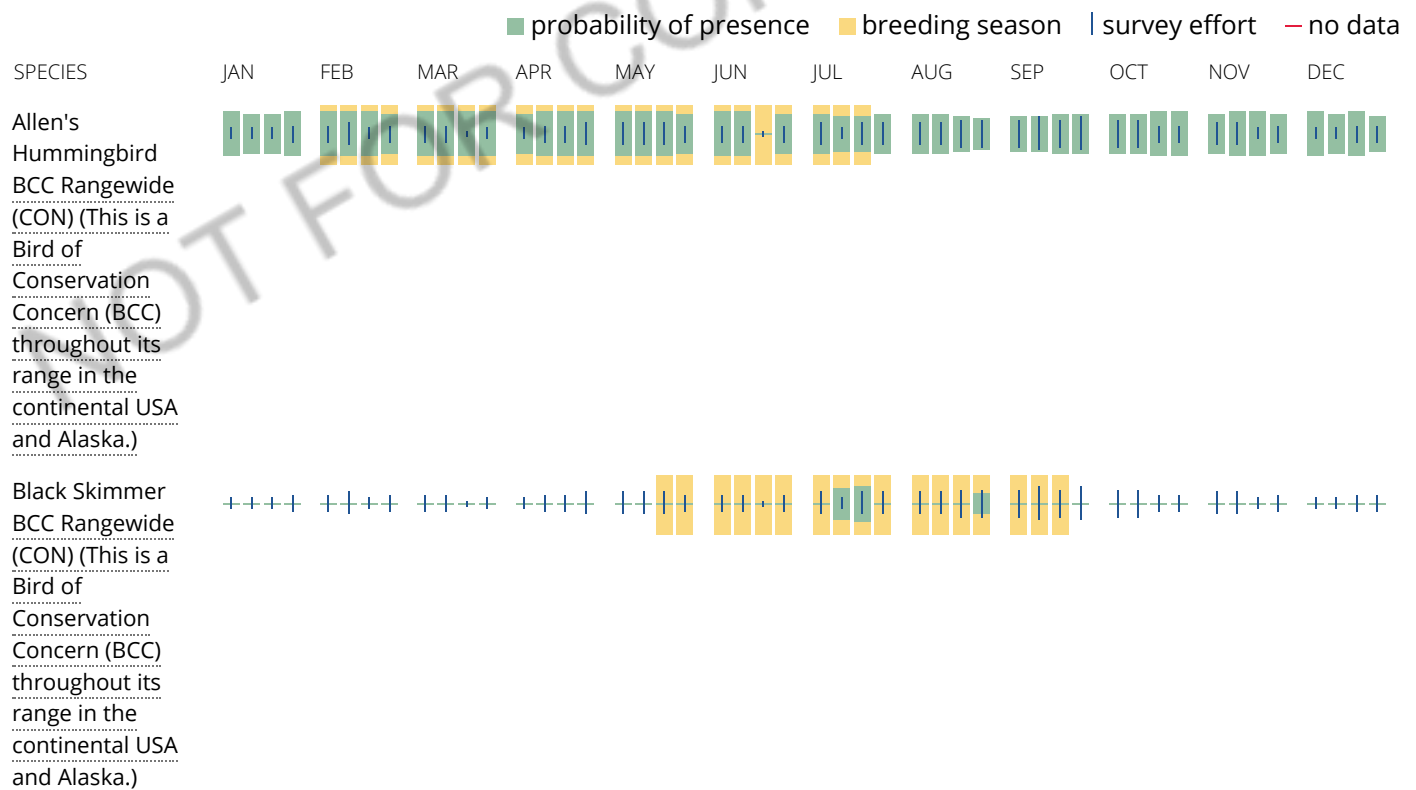
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (-)

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

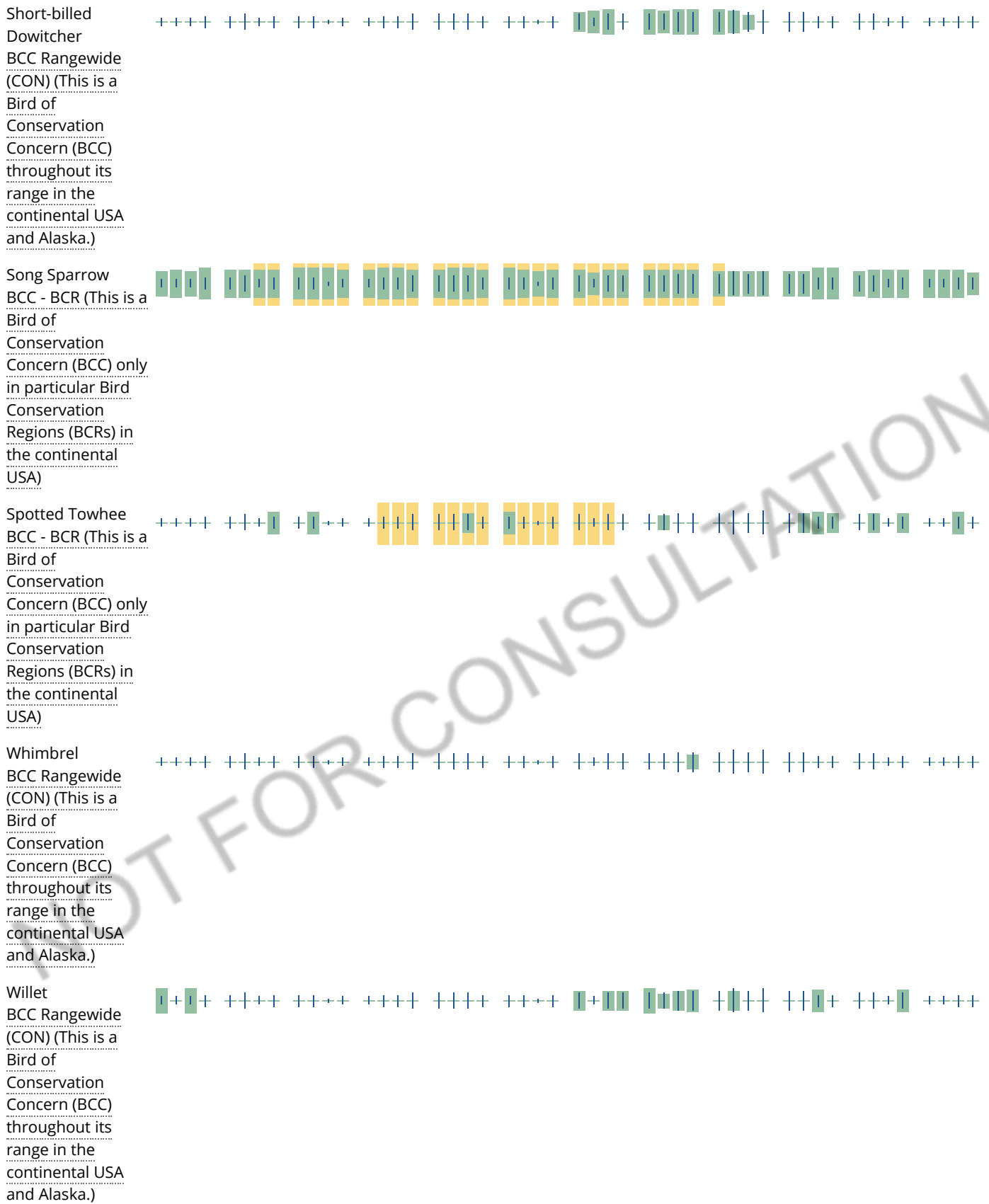
Survey Timeframe

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.









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](#) 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](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

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.

NOT FOR CONSULTATION

Attachment G

References

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