

Appendix B

Biological Resources



Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (San Francisco North (3712274) OR San Francisco South (3712264) OR Hunters Point (3712263) OR San Rafael (3712285) OR San Quentin (3712284) OR Richmond (3712283) OR Point Bonita (3712275) OR Oakland West (3712273))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Accipiter cooperii</i> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<i>Adela oplerella</i> Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
<i>Allium peninsulare var. franciscanum</i> Franciscan onion	PMLIL021R1	None	None	G5T2	S2	1B.2
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Amorpha californica var. napensis</i> Napa false indigo	PDFAB08012	None	None	G4T2	S2	1B.2
<i>Amsinckia lunaris</i> bent-flowered fiddleneck	PDBOR01070	None	None	G3	S3	1B.2
<i>Antrozous pallidus</i> pallid bat	AMACC10010	None	None	G5	S3	SSC
<i>Archoplites interruptus</i> Sacramento perch	AFCQB07010	None	None	G2G3	S1	SSC
<i>Arctostaphylos franciscana</i> Franciscan manzanita	PDERI040J3	Endangered	None	G1	S1	1B.1
<i>Arctostaphylos imbricata</i> San Bruno Mountain manzanita	PDERI040L0	None	Endangered	G1	S1	1B.1
<i>Arctostaphylos montana ssp. montana</i> Mt. Tamalpais manzanita	PDERI040J5	None	None	G3T3	S3	1B.3
<i>Arctostaphylos montana ssp. ravenii</i> Presidio manzanita	PDERI040J2	Endangered	Endangered	G3T1	S1	1B.1
<i>Arctostaphylos montaraensis</i> Montara manzanita	PDERI042W0	None	None	G1	S1	1B.2
<i>Arctostaphylos pacifica</i> Pacific manzanita	PDERI040Z0	None	Endangered	G1	S1	1B.1
<i>Arctostaphylos pallida</i> pallid manzanita	PDERI04110	Threatened	Endangered	G1	S1	1B.1
<i>Arctostaphylos virgata</i> Marin manzanita	PDERI041K0	None	None	G2	S2	1B.2
<i>Ardea alba</i> great egret	ABNGA04040	None	None	G5	S4	
<i>Ardea herodias</i> great blue heron	ABNGA04010	None	None	G5	S4	
<i>Arenaria paludicola</i> marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1



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California Natural Diversity Database



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<i>Asio flammeus</i> short-eared owl	ABNSB13040	None	None	G5	S3	SSC
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Banksula incredula</i> incredible harvestman	ILARA14100	None	None	G1	S1	
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
<i>Caecidotea tomalensis</i> Tomales isopod	ICMAL01220	None	None	G2	S2S3	
<i>Calamagrostis crassiglumis</i> Thurber's reed grass	PMPOA17070	None	None	G3Q	S2	2B.1
<i>Callophrys mossii bayensis</i> San Bruno elfin butterfly	IILEPE2202	Endangered	None	G4T1	S1	
<i>Calochortus tiburonensis</i> Tiburon mariposa-lily	PMLIL0D1C0	Threatened	Threatened	G1	S1	1B.1
<i>Calystegia purpurata</i> ssp. <i>saxicola</i> coastal bluff morning-glory	PDCON040D2	None	None	G4T2T3	S2S3	1B.2
<i>Carex comosa</i> bristly sedge	PMCYP032Y0	None	None	G5	S2	2B.1
<i>Carex praticola</i> northern meadow sedge	PMCYP03B20	None	None	G5	S2	2B.2
<i>Castilleja affinis</i> var. <i>neglecta</i> Tiburon paintbrush	PDSCR0D013	Endangered	Threatened	G4G5T1T2	S1S2	1B.2
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant	PDAST4R0P2	None	None	G3T2	S2	1B.2
<i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<i>Chloropyron maritimum</i> ssp. <i>palustre</i> Point Reyes salty bird's-beak	PDSCR0J0C3	None	None	G4?T2	S2	1B.2
<i>Chorizanthe cuspidata</i> var. <i>cuspidata</i> San Francisco Bay spineflower	PDPGN04081	None	None	G2T1	S1	1B.2
<i>Chorizanthe robusta</i> var. <i>robusta</i> robust spineflower	PDPGN040Q2	Endangered	None	G2T1	S1	1B.1
<i>Cicindela hirticollis gravida</i> sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
<i>Circus hudsonius</i> northern harrier	ABNKC11011	None	None	G5	S3	SSC



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California Natural Diversity Database



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<i>Cirsium andrewsii</i> Franciscan thistle	PDAST2E050	None	None	G3	S3	1B.2
<i>Cirsium hydrophilum var. vaseyi</i> Mt. Tamalpais thistle	PDAST2E1G2	None	None	G2T1	S1	1B.2
<i>Cirsium occidentale var. compactum</i> compact cobwebby thistle	PDAST2E1Z1	None	None	G3G4T2	S2	1B.2
<i>Clarkia franciscana</i> Presidio clarkia	PDONA050H0	Endangered	Endangered	G1	S1	1B.1
<i>Coastal Brackish Marsh</i> Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<i>Coastal Terrace Prairie</i> Coastal Terrace Prairie	CTT41100CA	None	None	G2	S2.1	
<i>Collinsia corymbosa</i> round-headed Chinese-houses	PDSCR0H060	None	None	G1	S1	1B.2
<i>Collinsia multicolor</i> San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Coturnicops noveboracensis</i> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<i>Danaus plexippus pop. 1</i> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Dirca occidentalis</i> western leatherwood	PDTHY03010	None	None	G2	S2	1B.2
<i>Dufourea stagei</i> Stage's dufourine bee	IIHYM22010	None	None	G1G2	S1	
<i>Egretta thula</i> snowy egret	ABNGA06030	None	None	G5	S4	
<i>Elanus leucurus</i> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Enhydra lutris nereis</i> southern sea otter	AMAJF09012	Threatened	None	G4T2	S2	FP
<i>Erethizon dorsatum</i> North American porcupine	AMAFJ01010	None	None	G5	S3	
<i>Eriogonum luteolum var. caninum</i> Tiburon buckwheat	PDPGN083S1	None	None	G5T2	S2	1B.2
<i>Eucyclogobius newberryi</i> tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC



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<i>Euphydryas editha bayensis</i> Bay checkerspot butterfly	IILEPK4055	Threatened	None	G5T1	S1	
<i>Extriplex joaquinana</i> San Joaquin spearscale	PDCHE041F3	None	None	G2	S2	1B.2
<i>Falco peregrinus anatum</i> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<i>Fissidens pauperculus</i> minute pocket moss	NBMUS2W0U0	None	None	G3?	S2	1B.2
<i>Fritillaria lanceolata var. tristulis</i> Marin checker lily	PMLIL0V0P1	None	None	G5T2	S2	1B.1
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Geothlypis trichas sinuosa</i> saltmarsh common yellowthroat	ABPBX1201A	None	None	G5T3	S3	SSC
<i>Gilia capitata ssp. chamissonis</i> blue coast gilia	PDPLM040B3	None	None	G5T2	S2	1B.1
<i>Gilia millefoliata</i> dark-eyed gilia	PDPLM04130	None	None	G2	S2	1B.2
<i>Grindelia hirsutula var. maritima</i> San Francisco gumplant	PDAST470D3	None	None	G5T1Q	S1	3.2
<i>Helianthella castanea</i> Diablo helianthella	PDAST4M020	None	None	G2	S2	1B.2
<i>Helminthoglypta nickliniana bridgesi</i> Bridges' coast range shoulderband	IMGASC2362	None	None	G3T1	S1S2	
<i>Hemizonia congesta ssp. congesta</i> congested-headed hayfield tarplant	PDAST4R065	None	None	G5T2	S2	1B.2
<i>Hesperevax sparsiflora var. brevifolia</i> short-leaved evax	PDASTE5011	None	None	G4T3	S2	1B.2
<i>Hesperolinon congestum</i> Marin western flax	PDLIN01060	Threatened	Threatened	G1	S1	1B.1
<i>Heteranthera dubia</i> water star-grass	PMPON03010	None	None	G5	S2	2B.2
<i>Hoita strobilina</i> Loma Prieta hoita	PDFAB5Z030	None	None	G2?	S2?	1B.1
<i>Holocarpha macradenia</i> Santa Cruz tarplant	PDAST4X020	Threatened	Endangered	G1	S1	1B.1
<i>Horkelia cuneata var. sericea</i> Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
<i>Horkelia marinensis</i> Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
<i>Horkelia tenuiloba</i> thin-lobed horkelia	PDROS0W0E0	None	None	G2	S2	1B.2



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<i>Hydroporus leechi</i> Leech's skyline diving beetle	IICOL55040	None	None	G1?	S1?	
<i>Hydroprogne caspia</i> Caspian tern	ABNNM08020	None	None	G5	S4	
<i>Hypogymnia schizidiata</i> island tube lichen	NLT0032640	None	None	G2G3	S2	1B.3
<i>Ischnura gemina</i> San Francisco forktail damselfly	IIODO72010	None	None	G2	S2	
<i>Kopsiopsis hookeri</i> small groundcone	PDORO01010	None	None	G4?	S1S2	2B.3
<i>Lasionycteris noctivagans</i> silver-haired bat	AMACC02010	None	None	G5	S3S4	
<i>Lasiurus blossevillii</i> western red bat	AMACC05060	None	None	G5	S3	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Layia carnosa</i> beach layia	PDAST5N010	Endangered	Endangered	G2	S2	1B.1
<i>Leptosiphon rosaceus</i> rose leptosiphon	PDPLM09180	None	None	G1	S1	1B.1
<i>Lessingia germanorum</i> San Francisco lessingia	PDAST5S010	Endangered	Endangered	G1	S1	1B.1
<i>Lessingia micradenia var. micradenia</i> Tamalpais lessingia	PDAST5S063	None	None	G2T2	S2	1B.2
<i>Lichnanthe ursina</i> bumblebee scarab beetle	IICOL67020	None	None	G2	S2	
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
<i>Masticophis lateralis euryxanthus</i> Alameda whipsnake	ARADB21031	Threatened	Threatened	G4T2	S2	
<i>Melospiza melodia pusillula</i> Alameda song sparrow	ABPBXA301S	None	None	G5T2?	S2S3	SSC
<i>Melospiza melodia samuelis</i> San Pablo song sparrow	ABPBXA301W	None	None	G5T2	S2	SSC
<i>Microcina leei</i> Lee's micro-blind harvestman	ILARA47040	None	None	G1	S1	
<i>Microcina tiburona</i> Tiburon micro-blind harvestman	ILARA47060	None	None	G1	S1	
<i>Microseris paludosa</i> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2



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<i>Microtus californicus sanpabloensis</i> San Pablo vole	AMAFF11034	None	None	G5T1T2	S1S2	SSC
<i>Monardella sinuata ssp. nigrescens</i> northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
<i>Mylopharodon conocephalus</i> hardhead	AFCJB25010	None	None	G3	S3	SSC
<i>Navarretia rosulata</i> Marin County navarretia	PDPLM0C0Z0	None	None	G2	S2	1B.2
<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<i>Northern Maritime Chaparral</i> Northern Maritime Chaparral	CTT37C10CA	None	None	G1	S1.2	
<i>Nycticorax nycticorax</i> black-crowned night heron	ABNGA11010	None	None	G5	S4	
<i>Nyctinomops macrotis</i> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<i>Oncorhynchus kisutch pop. 4</i> coho salmon - central California coast ESU	AFCHA02034	Endangered	Endangered	G4	S2?	
<i>Pentachaeta bellidiflora</i> white-rayed pentachaeta	PDAST6X030	Endangered	Endangered	G1	S1	1B.1
<i>Phalacrocorax auritus</i> double-crested cormorant	ABNFD01020	None	None	G5	S4	WL
<i>Plagiobothrys chorisianus var. chorisianus</i> Choris' popcornflower	PDBOR0V061	None	None	G3T1Q	S1	1B.2
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
<i>Plagiobothrys glaber</i> hairless popcornflower	PDBOR0V0B0	None	None	GH	SH	1A
<i>Plebejus icarioides missionensis</i> Mission blue butterfly	IILEPG801A	Endangered	None	G5T1	S1	
<i>Pleuropogon hooverianus</i> North Coast semaphore grass	PMPOA4Y070	None	Threatened	G2	S2	1B.1
<i>Polemonium carneum</i> Oregon polemonium	PDPLM0E050	None	None	G3G4	S2	2B.2
<i>Polygonum marinense</i> Marin knotweed	PDPGN0L1C0	None	None	G2Q	S2	3.1
<i>Pomatiopsis binneyi</i> robust walker	IMGASJ9010	None	None	G1	S1	
<i>Quercus parvula var. tamalpaisensis</i> Tamalpais oak	PDFAG051Q3	None	None	G4T2	S2	1B.3
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	ABNME05011	Endangered	Endangered	G5T1	S1	FP



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<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	G3	S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	AMAFF02040	Endangered	Endangered	G1G2	S1S2	FP
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Sanicula maritima</i> adobe sanicle	PDAP11Z0D0	None	Rare	G2	S2	1B.1
<i>Scapanus latimanus insularis</i> Angel Island mole	AMABB02032	None	None	G5THQ	SH	
<i>Scapanus latimanus parvus</i> Alameda Island mole	AMABB02031	None	None	G5THQ	SH	SSC
<i>Senecio aphanactis</i> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<i>Serpentine Bunchgrass</i> Serpentine Bunchgrass	CTT42130CA	None	None	G2	S2.2	
<i>Sidalcea calycosa ssp. rhizomata</i> Point Reyes checkerbloom	PDMAL11012	None	None	G5T2	S2	1B.2
<i>Sidalcea hickmanii ssp. viridis</i> Marin checkerbloom	PDMAL110A4	None	None	G3TH	SH	1B.1
<i>Silene scouleri ssp. scouleri</i> Scouler's catchfly	PDCAR0U1MC	None	None	G5T4T5	S2S3	2B.2
<i>Silene verecunda ssp. verecunda</i> San Francisco campion	PDCAR0U213	None	None	G5T1	S1	1B.2
<i>Sorex vagrans halicoetes</i> salt-marsh wandering shrew	AMABA01071	None	None	G5T1	S1	SSC
<i>Spergularia macrotheca var. longistyla</i> long-styled sand-spurrey	PDCAR0W062	None	None	G5T2	S2	1B.2
<i>Speyeria callippe callippe</i> callippe silverspot butterfly	IILEPJ6091	Endangered	None	G5T1	S1	
<i>Spirinchus thaleichthys</i> longfin smelt	AFCHB03010	Candidate	Threatened	G5	S1	
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
<i>Sternula antillarum browni</i> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<i>Streptanthus batrachopus</i> Tamalpais jewelflower	PDBRA2G050	None	None	G2	S2	1B.3
<i>Streptanthus glandulosus ssp. niger</i> Tiburon jewelflower	PDBRA2G0T0	Endangered	Endangered	G4T1	S1	1B.1



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<i>Streptanthus glandulosus ssp. pulchellus</i> Mt. Tamalpais bristly jewelflower	PDBRA2G0J2	None	None	G4T2	S2	1B.2
<i>Suaeda californica</i> California seablite	PDCHE0P020	Endangered	None	G1	S1	1B.1
<i>Symphyotrichum lentum</i> Suisun Marsh aster	PDASTE8470	None	None	G2	S2	1B.2
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Thaleichthys pacificus</i> eulachon	AFCHB04010	Threatened	None	G5	S3	
<i>Thamnophis sirtalis tetrataenia</i> San Francisco gartersnake	ARADB3613B	Endangered	Endangered	G5T2Q	S2	FP
<i>Trachusa gummifera</i> San Francisco Bay Area leaf-cutter bee	IIHYM80010	None	None	G1	S1	
<i>Trifolium amoenum</i> two-fork clover	PDFAB40040	Endangered	None	G1	S1	1B.1
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Triphysaria floribunda</i> San Francisco owl's-clover	PDSCR2T010	None	None	G2?	S2?	1B.2
<i>Triquetrella californica</i> coastal triquetrella	NBMUS7S010	None	None	G2	S2	1B.2
<i>Tryonia imitator</i> mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	
<i>Valley Needlegrass Grassland</i> Valley Needlegrass Grassland	CTT42110CA	None	None	G3	S3.1	
<i>Vespericola marinensis</i> Marin hesperian	IMGASA4140	None	None	G2	S2	
<i>Viburnum ellipticum</i> oval-leaved viburnum	PDCPR07080	None	None	G4G5	S3?	2B.3
<i>Xanthocephalus xanthocephalus</i> yellow-headed blackbird	ABPBXB3010	None	None	G5	S3	SSC
<i>Zapus trinotatus orarius</i> Point Reyes jumping mouse	AMAFH01031	None	None	G5T1T3Q	S1S3	SSC

Record Count: 162

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

Plant List

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

Search Criteria

Found in Quads 3712285, 3712284, 3712283, 3712275, 3712274, 3712273 3712264 and 3712263;

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Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank	State Listing Status	Federal Listing Status	Habitats	Lowest Elevation	Highest Elevation	CA Endemic
Amorpha californica var. napensis	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	1B.2	S2	G4T2			<ul style="list-style-type: none"> Broadleafed upland forest (openings) Chaparral Cismontane woodland Coastal bluff scrub 	120 m	2000 m	yes
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3			<ul style="list-style-type: none"> Cismontane woodland Valley and foothill grassland 	3 m	500 m	yes
Arabis blepharophylla	coast rockcress	Brassicaceae	perennial herb	Feb-May	4.3	S4	G4			<ul style="list-style-type: none"> Broadleafed upland forest Coastal bluff scrub Coastal prairie Coastal scrub 	3 m	1100 m	yes
Arctostaphylos franciscana	Franciscan manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	1B.1	S1	G1		FE	<ul style="list-style-type: none"> Coastal scrub (serpentine) 	60 m	300 m	yes
Arctostaphylos imbricata	San Bruno Mountain manzanita	Ericaceae	perennial evergreen shrub	Feb-May	1B.1	S1	G1		CE	<ul style="list-style-type: none"> Chaparral Coastal scrub 	275 m	370 m	yes
Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	1B.3	S3	G3T3			<ul style="list-style-type: none"> Chaparral Valley and foothill grassland 	160 m	760 m	yes
Arctostaphylos montana ssp. ravenii	Presidio manzanita	Ericaceae	perennial evergreen shrub	Feb-Mar	1B.1	S1	G3T1		CE FE	<ul style="list-style-type: none"> Chaparral Coastal prairie Coastal scrub 	45 m	215 m	yes
Arctostaphylos montaraensis	Montara manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.2	S1	G1			<ul style="list-style-type: none"> Chaparral (maritime) Coastal scrub 	80 m	500 m	yes
Arctostaphylos pacifica	Pacific manzanita	Ericaceae	evergreen shrub	Feb-Apr	1B.1	S1	G1		CE	<ul style="list-style-type: none"> Chaparral Coastal scrub 	330 m	330 m	yes
Arctostaphylos pallida	pallid manzanita	Ericaceae	perennial evergreen	Dec-Mar	1B.1	S1	G1		CE FT	<ul style="list-style-type: none"> Broadleafed 	185 m	465 m	yes

shrub

upland forest

<u>Arctostaphylos virgata</u>	Marin manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.2	S2	G2												<ul style="list-style-type: none"> • Closed-cone coniferous forest • Chaparral • Cismontane woodland • Coastal scrub • Broadleaved upland forest • Closed-cone coniferous forest • Chaparral • North Coast coniferous forest 	60 m	700 m	yes
<u>Arenaria paludicola</u>	marsh sandwort	Caryophyllaceae	perennial stoloniferous herb	May-Aug	1B.1	S1	G1	CE	FE										<ul style="list-style-type: none"> • Marshes and swamps (freshwater or brackish) 	3 m	170 m	
<u>Aspidotis carlotta-halliae</u>	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	Jan-Dec	4.2	S3	G3												<ul style="list-style-type: none"> • Chaparral • Cismontane woodland • Chaparral • Cismontane woodland 	100 m	1400 m	yes
<u>Astragalus breweri</u>	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	4.2	S3	G3												<ul style="list-style-type: none"> • Meadows and seeps • Valley and foothill grassland (open, often gravelly) 	90 m	730 m	yes
<u>Astragalus nuttallii var. nuttallii</u>	ocean bluff milk-vetch	Fabaceae	perennial herb	Jan-Nov	4.2	S4	G4T4												<ul style="list-style-type: none"> • Coastal bluff scrub • Coastal dunes 	3 m	120 m	yes
<u>Astragalus tener var. tener</u>	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1												<ul style="list-style-type: none"> • Playas • Valley and foothill grassland (adobe clay) • Vernal pools 	1 m	60 m	yes
<u>Calamagrostis crassiglumis</u>	Thurber's reed grass	Poaceae	perennial rhizomatous herb	May-Aug	2B.1	S2	G3Q												<ul style="list-style-type: none"> • Coastal scrub (mesic) • Marshes and swamps (freshwater) • Chaparral (open, often north-facing slopes) • Lower montane coniferous forest 	10 m	60 m	
<u>Calamagrostis ophitidis</u>	serpentine reed grass	Poaceae	perennial herb	Apr-Jul	4.3	S3	G3												<ul style="list-style-type: none"> • Meadows and seeps • Valley and foothill grassland 	90 m	1065 m	yes
<u>Calandrinia breweri</u>	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4												<ul style="list-style-type: none"> • Chaparral • Coastal scrub 	10 m	1220 m	
<u>Calochortus tiburonensis</u>	Tiburon mariposa lily	Liliaceae	perennial bulbiferous herb	Mar-Jun	1B.1	S1	G1	CT	FT										<ul style="list-style-type: none"> • Valley and foothill grassland (serpentine) 	50 m	150 m	yes

Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S3?	G3?				<ul style="list-style-type: none"> • Broadleafed upland forest • Chaparral • Cismontane woodland • Lower montane coniferous forest • Valley and foothill grassland • Coastal bluff scrub • Coastal dunes • Coastal scrub • North Coast coniferous forest • Coastal prairie • Marshes and swamps (lake margins) • Valley and foothill grassland • Meadows and seeps (mesic) • Valley and foothill grassland (serpentinite) • Coastal bluff scrub • Coastal prairie • Coastal scrub • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	100 m	700 m	yes
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	Convolvulaceae	perennial herb	(Mar)Apr-Sep	1B.2	S2S3	G4T2T3				<ul style="list-style-type: none"> • Coastal scrub • North Coast coniferous forest • Coastal prairie • Marshes and swamps (lake margins) • Valley and foothill grassland • Meadows and seeps (mesic) • Valley and foothill grassland (serpentinite) • Coastal bluff scrub • Coastal prairie • Coastal scrub • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	0 m	105 m	yes
Carex comosa	bristly sedge	Cyperaceae	perennial rhizomatous herb	May-Sep	2B.1	S2	G5				<ul style="list-style-type: none"> • Valley and foothill grassland • Meadows and seeps (mesic) • Valley and foothill grassland (serpentinite) • Coastal bluff scrub • Coastal prairie • Coastal scrub • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	0 m	625 m	
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	May-Jul	2B.2	S2	G5				<ul style="list-style-type: none"> • Meadows and seeps (mesic) • Valley and foothill grassland (serpentinite) • Coastal bluff scrub • Coastal prairie • Coastal scrub • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	0 m	3200 m	
Castilleja affinis var. neglecta	Tiburon paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	1B.2	S1S2	G4G5T1T2	CT	FE		<ul style="list-style-type: none"> • Valley and foothill grassland (serpentinite) • Coastal bluff scrub • Coastal prairie • Coastal scrub • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	60 m	400 m	yes
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	4.2	S3S4	G4T4				<ul style="list-style-type: none"> • Marshes and swamps • Valley and foothill grassland • Vernal pools margins 	0 m	435 m	
Ceanothus gloriosus var. exaltatus	glory brush	Rhamnaceae	perennial evergreen shrub	Mar-Jun(Aug)	4.3	S4	G4T4				<ul style="list-style-type: none"> • Chaparral • Lower montane coniferous forest • Subalpine coniferous forest • Upper montane coniferous forest • Closed-cone coniferous forest • Chaparral • Coastal scrub 	30 m	610 m	yes
Ceanothus pinetorum	Kern ceanothus	Rhamnaceae	perennial evergreen shrub	May-Jul	4.3	S3	G3				<ul style="list-style-type: none"> • Subalpine coniferous forest • Upper montane coniferous forest • Closed-cone coniferous forest • Chaparral • Coastal scrub 	1600 m	2745 m	yes
Ceanothus rigidus	Monterey ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr(Jun)	4.2	S4	G4				<ul style="list-style-type: none"> • Closed-cone coniferous forest • Chaparral • Coastal scrub 	3 m	550 m	yes
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2				<ul style="list-style-type: none"> • Chaparral • Coastal prairie • Meadows and seeps 	0 m	420 m	yes

Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	1B.2	S2	G4?T2				<ul style="list-style-type: none"> • Marshes and swamps (coastal salt) • Valley and foothill grassland (vernally mesic) 	0 m	10 m	
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	1B.2	S1	G2T1				<ul style="list-style-type: none"> • Marshes and swamps (coastal salt) • Coastal bluff scrub • Coastal dunes • Coastal prairie • Coastal scrub 	3 m	215 m	yes
Chorizanthe robusta var. robusta	robust spineflower	Polygonaceae	annual herb	Apr-Sep	1B.1	S1	G2T1	FE			<ul style="list-style-type: none"> • Chaparral (maritime) • Cismontane woodland (openings) • Coastal dunes • Coastal scrub 	3 m	300 m	yes
Chorizanthe valida	Sonoma spineflower	Polygonaceae	annual herb	Jun-Aug	1B.1	S1	G1	CE	FE		<ul style="list-style-type: none"> • Coastal prairie (sandy) 	10 m	305 m	yes
Cirsium andrewsii	Franciscan thistle	Asteraceae	perennial herb	Mar-Jul	1B.2	S3	G3				<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal bluff scrub • Coastal prairie • Coastal scrub 	0 m	150 m	yes
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	Asteraceae	perennial herb	May-Aug	1B.2	S1	G2T1				<ul style="list-style-type: none"> • Broadleafed upland forest • Chaparral • Meadows and seeps 	240 m	620 m	yes
Cirsium occidentale var. compactum	compact cobwebby thistle	Asteraceae	perennial herb	Apr-Jun	1B.2	S2	G3G4T2				<ul style="list-style-type: none"> • Chaparral • Coastal dunes • Coastal prairie • Coastal scrub 	5 m	150 m	yes
Cistanthe maritima	seaside cistanthe	Montiaceae	annual herb	(Feb)Mar-Jun(Aug)	4.2	S3	G3G4				<ul style="list-style-type: none"> • Coastal bluff scrub • Coastal scrub • Valley and foothill grassland 	5 m	300 m	
Clarkia franciscana	Presidio clarkia	Onagraceae	annual herb	May-Jul	1B.1	S1	G1	CE	FE		<ul style="list-style-type: none"> • Coastal scrub • Valley and foothill grassland (serpentine) 	25 m	335 m	yes
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	1B.2	S1	G1				<ul style="list-style-type: none"> • Coastal dunes 	0 m	20 m	yes
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	1B.2	S2	G2				<ul style="list-style-type: none"> • Closed-cone coniferous forest • Coastal scrub 	30 m	250 m	yes
Cypripedium californicum	California lady's-slipper	Orchidaceae	perennial rhizomatous	Apr-Aug(Sep)	4.2	S4	G4				<ul style="list-style-type: none"> • Bogs and fens 	30 m	2750 m	

			herb														
<u>Dirca occidentalis</u>	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2							<ul style="list-style-type: none"> • Lower montane coniferous forest • Broadleaved upland forest • Closed-cone coniferous forest • Chaparral • Cismontane woodland • North Coast coniferous forest • Riparian forest • Riparian woodland • Broadleaved upland forest • Cismontane woodland • North Coast coniferous forest • Riparian woodland 	25 m	425 m	yes
<u>Elymus californicus</u>	California bottle-brush grass	Poaceae	perennial herb	May-Aug(Nov)	4.3	S4	G4							<ul style="list-style-type: none"> • Cismontane woodland • North Coast coniferous forest • Riparian woodland 	15 m	470 m	yes
<u>Equisetum palustre</u>	marsh horsetail	Equisetaceae	perennial rhizomatous herb	unk	3	S1S3	G5							<ul style="list-style-type: none"> • Marshes and swamps • Chaparral • Cismontane woodland 	45 m	1000 m	
<u>Eriogonum luteolum var. caninum</u>	Tiburon buckwheat	Polygonaceae	annual herb	May-Sep	1B.2	S2	G5T2							<ul style="list-style-type: none"> • Coastal prairie • Valley and foothill grassland • Bogs and fens • Meadows and seeps • Upper montane coniferous forest 	0 m	700 m	yes
<u>Eriophorum gracile</u>	slender cottongrass	Cyperaceae	perennial rhizomatous herb (emergent)	May-Sep	4.3	S4	G5							<ul style="list-style-type: none"> • Chaparral • Coastal dunes • Coastal scrub • Valley and foothill grassland • Chenopod scrub • Meadows and seeps • Playas • Valley and foothill grassland 	1280 m	2900 m	
<u>Erysimum franciscanum</u>	San Francisco wallflower	Brassicaceae	perennial herb	Mar-Jun	4.2	S3	G3							<ul style="list-style-type: none"> • Coastal scrub • Valley and foothill grassland • Chenopod scrub • Meadows and seeps • Playas • Valley and foothill grassland 	0 m	550 m	yes
<u>Extriplex joaquinana</u>	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2							<ul style="list-style-type: none"> • North Coast coniferous forest (damp coastal soil) • North Coast coniferous forest (damp coastal soil) 	1 m	835 m	yes
<u>Fissidens pauperculus</u>	minute pocket moss	Fissidentaceae	moss		1B.2	S2	G3?							<ul style="list-style-type: none"> • North Coast coniferous forest (damp coastal soil) 	10 m	1024 m	
<u>Fritillaria lanceolata var. tristulis</u>	Marin checker lily	Liliaceae	perennial bulbiferous herb	Feb-May	1B.1	S2	G5T2							<ul style="list-style-type: none"> • Coastal bluff scrub • Coastal prairie 	15 m	150 m	yes

Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2			<ul style="list-style-type: none"> • Coastal scrub • Cismontane woodland • Coastal prairie • Coastal scrub • Valley and foothill grassland 	3 m	410 m	yes
Gilia capitata ssp. chamissonis	blue coast gilia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G5T2			<ul style="list-style-type: none"> • Coastal dunes • Coastal scrub 	2 m	200 m	yes
Gilia capitata ssp. tomentosa	woolly- headed gilia	Polemoniaceae	annual herb	May-Jul	1B.1	S1	G5T1			<ul style="list-style-type: none"> • Coastal bluff scrub • Valley and foothill grassland 	10 m	220 m	yes
Gilia millefoliata	dark-eyed gilia	Polemoniaceae	annual herb	Apr-Jul	1B.2	S2	G2			<ul style="list-style-type: none"> • Coastal dunes 	2 m	30 m	
Grindelia hirsutula var. maritima	San Francisco gumplant	Asteraceae	perennial herb	Jun-Sep	3.2	S1	G5T1Q			<ul style="list-style-type: none"> • Coastal bluff scrub • Coastal scrub • Valley and foothill grassland • Broadleaved upland forest • Chaparral 	15 m	400 m	yes
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2			<ul style="list-style-type: none"> • Cismontane woodland • Coastal scrub • Riparian woodland • Valley and foothill grassland 	60 m	1300 m	yes
Hemizonia congesta ssp. congesta	congested- headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	1B.2	S2	G5T2			<ul style="list-style-type: none"> • Valley and foothill grassland 	20 m	560 m	yes
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	annual herb	Mar-Jun	1B.2	S2	G4T3			<ul style="list-style-type: none"> • Coastal bluff scrub (sandy) • Coastal dunes • Coastal prairie 	0 m	215 m	
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	1B.1	S1	G1	CT	FT	<ul style="list-style-type: none"> • Chaparral • Valley and foothill grassland 	5 m	370 m	yes
Heteranthera dubia	water star- grass	Pontederiaceae	perennial herb (aquatic)	Jul-Oct	2B.2	S2	G5			<ul style="list-style-type: none"> • Marshes and swamps (alkaline, still or slow-moving water) • Chaparral 	30 m	1495 m	
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May- Jul(Aug- Oct)	1B.1	S2?	G2?			<ul style="list-style-type: none"> • Cismontane woodland • Riparian woodland 	30 m	860 m	yes
Holocarpha macradenia	Santa Cruz tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1	CE	FT	<ul style="list-style-type: none"> • Coastal prairie • Coastal scrub • Valley and foothill grassland 	10 m	220 m	yes

Horkelia cuneata var. sericea	Kellogg's horkelia	Rosaceae	perennial herb	Apr-Sep	1B.1	S1?	G4T1?			<ul style="list-style-type: none"> • Closed-cone coniferous forest • Chaparral (maritime) • Coastal dunes • Coastal scrub • Coastal dunes • Coastal prairie • Coastal scrub 	10 m	200 m	yes
Horkelia marinensis	Point Reyes horkelia	Rosaceae	perennial herb	May-Sep	1B.2	S2	G2			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub 	5 m	755 m	yes
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial herb	May-Jul(Aug)	1B.2	S2	G2			<ul style="list-style-type: none"> • Broadleafed upland forest • Chaparral • Valley and foothill grassland • Closed-cone coniferous forest • Chaparral • Coastal prairie • Lower montane coniferous forest • Meadows and seeps • North Coast coniferous forest • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	50 m	500 m	yes
Hypogymnia schizidiata	island rock lichen	Parmeliaceae	foliose lichen (null)		1B.3	S1	G2			<ul style="list-style-type: none"> • Closed-cone coniferous forest • Chaparral • Coastal prairie • Lower montane coniferous forest • Meadows and seeps • North Coast coniferous forest • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	360 m	405 m	
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May	4.2	S3	G3			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	0 m	600 m	yes
Kopsiopsis hookeri	small groundcone	Orobanchaceae	perennial rhizomatous herb (parasitic)	Apr-Aug	2B.3	S1S2	G4?			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	90 m	885 m	
Layia carnosa	beach layia	Asteraceae	annual herb	Mar-Jul	1B.1	S2	G2	CE	FE	<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	0 m	60 m	
Leptosiphon acicularis	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	4.2	S4?	G4?			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	55 m	1500 m	yes
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	4.2	S3S4	G3G4			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	5 m	1220 m	yes
Leptosiphon rosaceus	rose leptosiphon	Polemoniaceae	annual herb	Apr-Jul	1B.1	S1	G1			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	0 m	100 m	yes
Lessingia germanorum	San Francisco lessingia	Asteraceae	annual herb	(Jun)Jul-Nov	1B.1	S1	G1	CE	FE	<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	25 m	110 m	yes
	woolly-	Asteraceae	annual herb	Jun-Oct	3	S2S3	G3?			<ul style="list-style-type: none"> • Broadleafed upland forest • Coastal prairie • Coastal scrub • Coastal dunes • Coastal scrub (sandy) • Chaparral • Cismontane woodland • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Closed-cone coniferous forest • Cismontane woodland • Coastal dunes • Coastal prairie • Coastal scrub • Valley and foothill grassland • Coastal bluff scrub • Coastal scrub (remnant dunes) 	15 m	305 m	yes

Lessingia hololeuca	headed lessingia																	Broadleaved upland forest • Coastal scrub • Lower montane coniferous forest • Valley and foothill grassland • Chaparral • Valley and foothill grassland			
Lessingia micradenia var. micradenia	Tamalpais lessingia	Asteraceae	annual herb	(Jun)Jul-Oct	1B.2	S2	G2T2											• Chaparral • Valley and foothill grassland	100 m	500 m	yes
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial evergreen shrub	Apr-Sep	1B.2	S2	G2Q											• Chaparral • Cismontane woodland	15 m	355 m	yes
Meconella oregana	Oregon meconella	Papaveraceae	annual herb	Mar-Apr	1B.1	S2	G2G3											• Coastal prairie • Coastal scrub	250 m	620 m	
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4											• Broadleaved upland forest • Chaparral • Cismontane woodland • Valley and foothill grassland • Closed-cone coniferous forest	45 m	825 m	yes
Microseris paludosa	marsh microseris	Asteraceae	perennial herb	Apr-Jun(Jul)	1B.2	S2	G2											• Cismontane woodland • Coastal scrub • Valley and foothill grassland • Chaparral (SCR Co.) • Coastal dunes • Coastal scrub • Lower montane coniferous forest (SCR Co., ponderosa pine sandhills)	5 m	355 m	yes
Monardella sinuata ssp. nigrescens	northern curly-leaved monardella	Lamiaceae	annual herb	(Apr)May-Jul(Aug-Sep)	1B.2	S2	G3T2											• Cismontane woodland • Lower montane coniferous forest • Meadows and seeps • Valley and foothill grassland • Vernal pools	0 m	300 m	yes
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2											• Closed-cone coniferous forest • Meadows and seeps • Valley and foothill grassland • Vernal pools	5 m	1740 m	yes
Navarretia rosulata	Marin County navarretia	Polemoniaceae	annual herb	May-Jul	1B.2	S2	G2											• Closed-cone coniferous forest • Chaparral	200 m	635 m	yes
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	1B.1	S1	G1	CE	FE									• Cismontane	35 m	620 m	yes

Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	4.2	S3S4	G5T3T4			woodland • Valley and foothill grassland (often serpentinite) • Broadleaved upland forest • Chaparral • Coastal prairie • Valley and foothill grassland • Vernal pools • Coastal bluff scrub • Closed-cone coniferous forest • Chaparral	0 m	610 m	yes
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	4.2	S3	G3			• Cismontane woodland • Coastal scrub • Lower montane coniferous forest • Chaparral • Coastal prairie • Coastal scrub	3 m	915 m	yes
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.2	S1	G3T1Q			• Coastal prairie • Coastal scrub	3 m	160 m	yes
Plagiobothrys diffusus	San Francisco popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.1	S1	G1Q	CE		• Coastal prairie • Valley and foothill grassland • Meadows and seeps (alkaline) • Marshes and swamps (coastal salt)	60 m	360 m	yes
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	Mar-May	1A	SH	GH			• Broadleaved upland forest • Meadows and seeps • North Coast coniferous forest • Coastal prairie • Coastal scrub • Lower montane coniferous forest	15 m	180 m	yes
Pleuropogon hooverianus	North Coast semaphore grass	Poaceae	perennial rhizomatous herb	Apr-Jun	1B.1	S2	G2	CT		• Marshes and swamps (coastal salt or brackish) • Lower montane coniferous forest	10 m	671 m	yes
Polemonium carneum	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	2B.2	S2	G3G4			• Marshes and swamps (coastal salt or brackish) • Lower montane coniferous forest	0 m	1830 m	
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	3.1	S2	G2Q			• Lower montane coniferous forest	0 m	10 m	yes
Quercus parvula var. tamalpaisensis	Tamalpais oak	Fagaceae	perennial evergreen shrub	Mar-Apr	1B.3	S2	G4T2			• Cismontane woodland • North Coast	100 m	750 m	yes
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4				15 m	470 m	

<u>Sanicula maritima</u>	adobe sanicle	Apiaceae	perennial herb	Feb-May	1B.1	S2	G2	CR	coniferous forest • Valley and foothill grassland • Vernal pools • Chaparral • Coastal prairie • Meadows and seeps • Valley and foothill grassland • Chaparral	30 m	240 m	yes
<u>Senecio aphanactis</u>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3		Cismontane woodland • Coastal scrub	15 m	800 m	
<u>Sidalcea calycosa ssp. rhizomata</u>	Point Reyes checkerbloom	Malvaceae	perennial rhizomatous herb	Apr-Sep	1B.2	S2	G5T2		• Marshes and swamps (freshwater, near coast)	3 m	75 m	yes
<u>Silene scouleri ssp. scouleri</u>	Scouler's catchfly	Caryophyllaceae	perennial herb	(Mar-May)Jun-Aug(Sep)	2B.2	S2S3	G5T4T5		• Coastal bluff scrub • Coastal prairie • Valley and foothill grassland • Coastal bluff scrub • Chaparral • Coastal prairie • Coastal scrub • Valley and foothill grassland	0 m	600 m	
<u>Silene verecunda ssp. verecunda</u>	San Francisco campion	Caryophyllaceae	perennial herb	(Feb)Mar-Jun(Aug)	1B.2	S1	G5T1		• Coastal bluff scrub • Chaparral • Coastal prairie • Coastal scrub • Valley and foothill grassland	30 m	645 m	yes
<u>Spergularia macrotheca var. longistyla</u>	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May(Jun)	1B.2	S2	G5T2		• Meadows and seeps • Marshes and swamps • Broadleaved upland forest • Closed-cone coniferous forest	0 m	255 m	yes
<u>Stebbinsoseris decipiens</u>	Santa Cruz microseris	Asteraceae	annual herb	Apr-May	1B.2	S2	G2		• Chaparral • Coastal prairie • Coastal scrub • Valley and foothill grassland • Chaparral	10 m	500 m	yes
<u>Streptanthus albidus ssp. peramoenus</u>	most beautiful jewelflower	Brassicaceae	annual herb	(Mar)Apr-Sep(Oct)	1B.2	S2	G2T2		Cismontane woodland • Valley and foothill grassland • Closed-cone coniferous forest • Chaparral	95 m	1000 m	yes
<u>Streptanthus batrachopus</u>	Tamalpais jewelflower	Brassicaceae	annual herb	Apr-Jul	1B.3	S2	G2		• Closed-cone coniferous forest • Chaparral	305 m	650 m	yes
<u>Streptanthus glandulosus ssp. niger</u>	Tiburon jewelflower	Brassicaceae	annual herb	May-Jun	1B.1	S1	G4T1	CE FE	• Valley and foothill grassland (serpentinite)	30 m	150 m	yes
<u>Streptanthus glandulosus ssp.</u>	Mt. Tamalpais bristly	Brassicaceae	annual herb	May-Jul(Aug)	1B.2	S2	G4T2		• Chaparral • Valley and	150 m	800 m	yes

pulchellus	jewelflower										foothill grassland			
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	1B.1	S1	G1	FE			• Marshes and swamps (coastal salt)	0 m	15 m	yes
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2				• Marshes and swamps (brackish and freshwater)	0 m	3 m	yes
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1	FE			• Coastal bluff scrub • Valley and foothill grassland (sometimes serpentinite)	5 m	415 m	yes
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2				• Marshes and swamps • Valley and foothill grassland (mesic, alkaline) • Vernal pools	0 m	300 m	yes
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	1B.2	S2?	G2?				• Coastal prairie • Coastal scrub • Valley and foothill grassland	10 m	160 m	yes
Triquetrella californica	coastal triquetrella	Pottiaceae	moss		1B.2	S2	G2				• Coastal bluff scrub • Coastal scrub	10 m	100 m	
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5				• Chaparral • Cismontane woodland • Lower montane coniferous forest	215 m	1400 m	

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Questions and Comments

rareplants@cnps.org

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

Marin County, California



Local offices

Sacramento Fish And Wildlife Office

☎ (916) 414-6600


📅 (916) 414-6713


Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

San Francisco Bay-Delta Fish And Wildlife

 (916) 930-5603

 (916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

[http://kim_squires@fws.gov](mailto:kim_squires@fws.gov)

NOT FOR CONSULTATION

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

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

Mammals

NAME

STATUS

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

Southern Sea Otter *Enhydra lutris nereis* Threatened
 No critical habitat has been designated for this species.
Marine mammal
<https://ecos.fws.gov/ecp/species/8560>

Birds

NAME	STATUS
California Clapper Rail <i>Rallus longirostris obsoletus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Short-tailed Albatross <i>Phoebastria (=Diomedea) albatrus</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/433	Endangered
Western Snowy Plover <i>Charadrius nivosus nivosus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

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

Amphibians

NAME	STATUS
California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened

Fishes

NAME	STATUS
------	--------

Delta Smelt *Hypomesus transpacificus* Threatened
 There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/321>

Tidewater Goby *Eucyclogobius newberryi* Endangered
 There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/57>

Insects

NAME

STATUS

Bay Checkerspot Butterfly *Euphydryas editha bayensis* Threatened
 There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/2320>

Callippe Silverspot Butterfly *Speyeria callippe callippe* Endangered
 There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
<https://ecos.fws.gov/ecp/species/3779>

Mission Blue Butterfly *Icaricia icarioides missionensis* Endangered
 There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
<https://ecos.fws.gov/ecp/species/6928>

San Bruno Elfin Butterfly *Callophrys mossii bayensis* Endangered
 There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
<https://ecos.fws.gov/ecp/species/3394>

Flowering Plants

NAME

STATUS

Franciscan Manzanita *Arctostaphylos franciscana* Endangered
 There is **final** critical habitat for this species. Your location is outside the critical habitat.
<https://ecos.fws.gov/ecp/species/5350>

Marin Dwarf-flax *Hesperolinon congestum* Threatened
 No critical habitat has been designated for this species.
<https://ecos.fws.gov/ecp/species/5363>

Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2229	Endangered
Presidio Clarkia <i>Clarkia franciscana</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/3890	Endangered
Presidio Manzanita <i>Arctostaphylos hookeri</i> var. <i>ravenii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7216	Endangered
San Francisco Lessingia <i>Lessingia germanorum</i> (=L.g. var. <i>germanorum</i>) No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8174	Endangered
Sonoma Sunshine <i>Blennosperma bakeri</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1260	Endangered
White-rayed Pentachaeta <i>Pentachaeta bellidiflora</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7782	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 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.)

Allen's Hummingbird *Selasphorus sasin*

Breeds Feb 1 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/9637>

<p>Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626</p>	Breeds Jan 1 to Aug 31
<p>Black Oystercatcher <i>Haematopus bachmani</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9591</p>	Breeds Apr 15 to Oct 31
<p>Black Rail <i>Laterallus jamaicensis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7717</p>	Breeds Mar 1 to Sep 15
<p>Black Turnstone <i>Arenaria melanocephala</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Burrowing Owl <i>Athene cunicularia</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>California Spotted Owl <i>Strix occidentalis occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7266</p>	Breeds Mar 10 to Jun 15
<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
<p>Common Yellowthroat <i>Geothlypis trichas sinuosa</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/2084</p>	Breeds May 20 to Jul 31
<p>Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680</p>	Breeds Jan 1 to Aug 31

Long-billed Curlew <i>Numenius americanus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Nuttall's Woodpecker <i>Picoides nuttallii</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15
Red-throated Loon <i>Gavia stellata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Rufous Hummingbird <i>selasphorus rufus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
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 *Tringa semipalmata*

Breeds elsewhere

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

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.

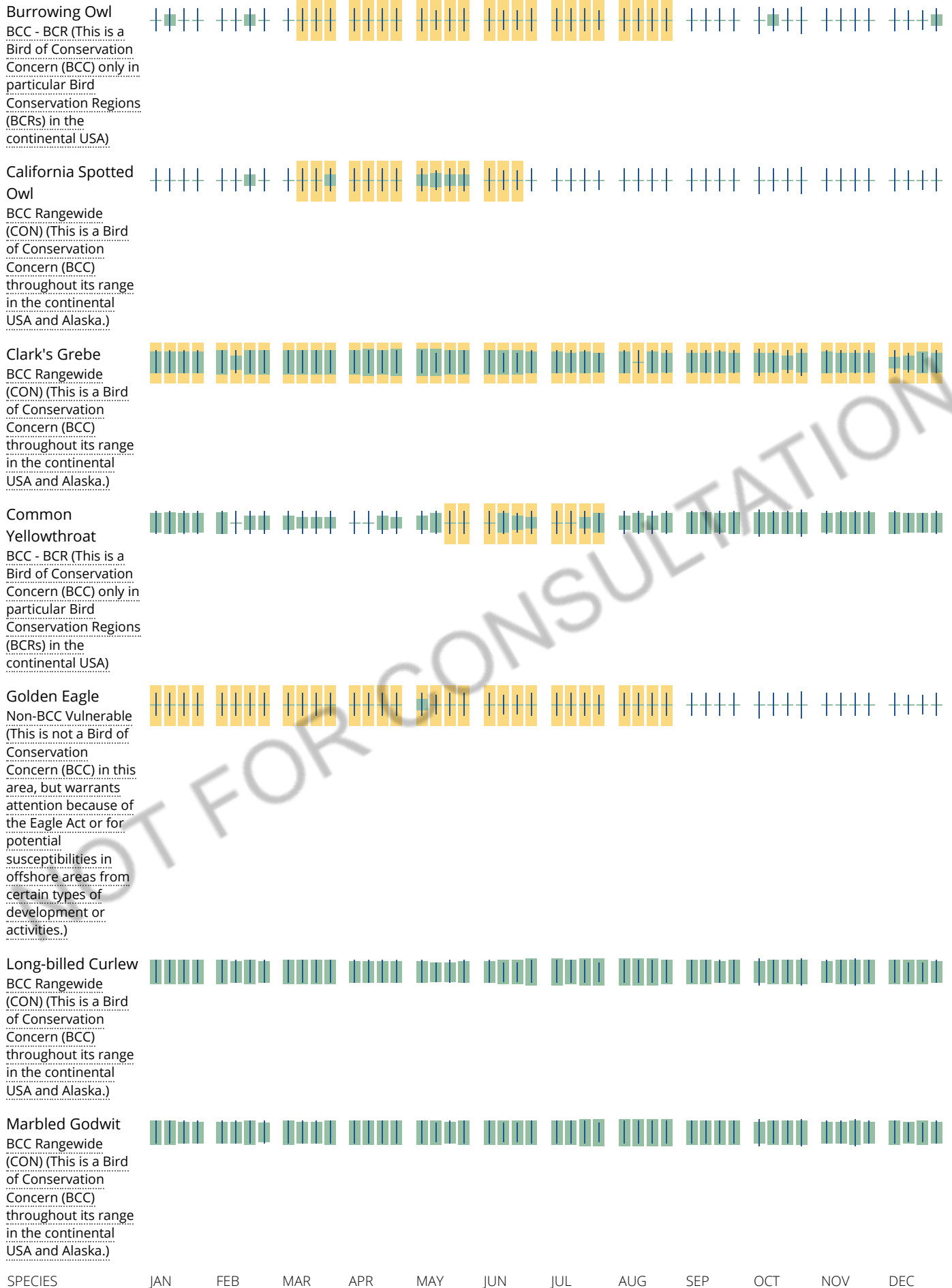
No Data (-)

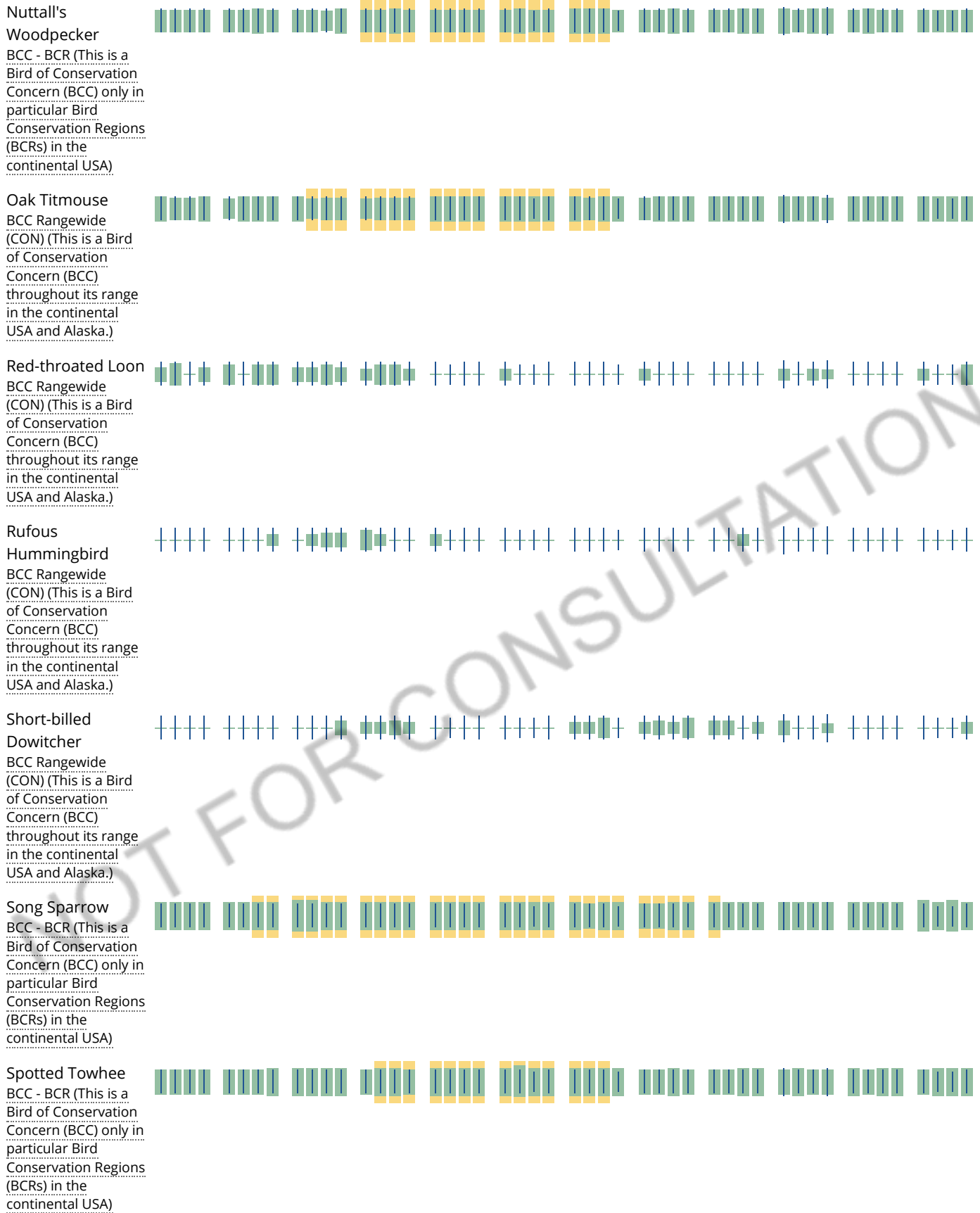
A week is marked as having no data if there were no survey events for that week.

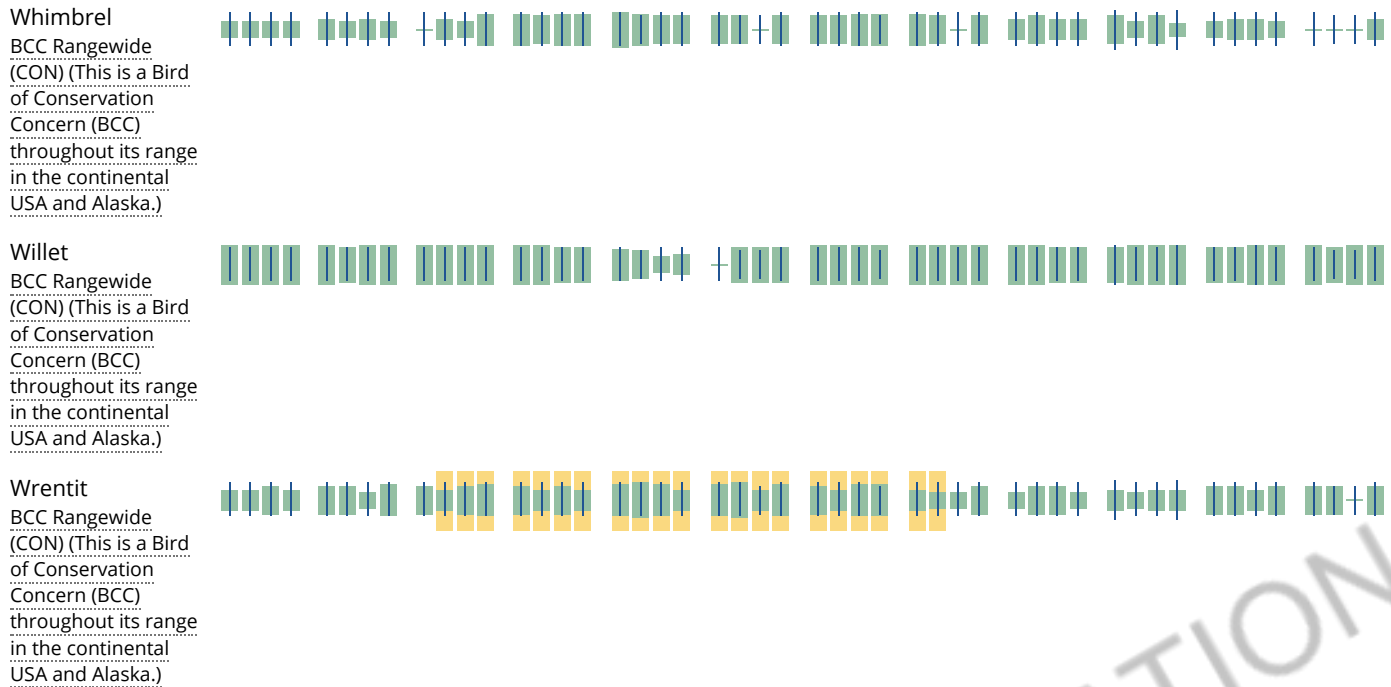
Survey Timeframe

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.









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 to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10

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

NOT FOR CONSULTATION

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walrus, polar bears, manatees, and dugongs] and NOAA Fisheries³ [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the [Marine Mammals](#) page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take (to harass, hunt, capture, kill, or attempt to harass, hunt, capture or kill) of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. [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 marine mammals under the responsibility of the U.S. Fish and Wildlife Service are potentially affected by activities in this location:

NAME

Southern Sea Otter *Enhydra lutris nereis*
<https://ecos.fws.gov/ecp/species/8560>

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:

ESTUARINE AND MARINE DEEPWATER

[E1UBL](#)

ESTUARINE AND MARINE WETLAND

[E2USN](#)

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 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