

**Appendix C:
Biological Resources Analysis Supporting Information**

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Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
<i>Vireo bellii pusillus</i> least Bell's vireo	FE MBTA	SE	Summer resident of Southern California in low riparian woodland/scrub in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, <i>Baccharis</i> , mesquite.	None. The project site does not contain suitable riparian habitat to support this species. Princeville Channel is adjacent to the project site; however, it does not contain suitable habitat to support species.
Fish				
<i>Lavinia exilicauda harengus</i> Monterey hitch	—	— SSC	Tributaries to Monterey Bay, specifically the Salinas, Pajaro, & San Lorenzo drainages.	None. The project site does not contain suitable aquatic habitat to support this species. Princeville Channel is adjacent to the project site; however, it does not contain suitable habitat to support species.
<i>Oncorhynchus mykiss irideus</i> (pop. 8) steelhead (central California coast DPS)	FT	—	DPS includes all naturally spawned populations of steelhead (and their progeny) in streams from the Russian River to Aptos Creek, Santa Cruz County, California (inclusive). Also includes the drainages of San Francisco and San Pablo Bays.	None. The project parcel does not contain suitable aquatic habitat to support this species. Princeville Channel is adjacent to the project site; however, it does not contain suitable habitat to support species.
Mammals				
<i>Antrozous pallidus</i> pallid bat	—	— SSC	Inhabits low elevation (below 1,830 m./6,000 feet) rocky arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and higher elevation coniferous forests (below 2,100 m./7,000 feet). Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings.	None. The project site would not demolish the existing man-made structures or remove any trees. The project site is located approximately 50 feet from US-101 resulting in increased noise levels which further preclude this species.
<i>Taxidea taxus</i> American badger	—	— SSC	Found in drier open stages of most shrub, forest, and herbaceous habitats with friable soils. Requires sufficient food sources (rodents), friable soils, and open, uncultivated ground. Digs large burrows.	None. The project site is entirely developed and does not contain suitable habitat to support this species.
Reptiles				
<i>Emys marmorata</i> western pond turtle	—	— SSC	Occurs in ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	None. The project site does not contain suitable aquatic habitat to support this species. Princeville Channel is adjacent to the project site; however, it does not contain suitable habitat to support species.

Scientific Name Common Name	Status		Habitat Description ³	Potential to Occur and Rationale ⁴
	USFWS ¹	CDFW ²		
Code Designations				
¹ Federal Status: 2020 USFWS Listing			² State Status: 2020 CDFW Listing	
ESU = Evolutionary Significant Unit is a distinctive population. FE = Listed as endangered under the FESA. FT = Listed as threatened under the FESA. FC = Candidate for listing (threatened or endangered) under FESA. FD = Delisted in accordance with the FESA. FPD = Federally Proposed to be Delisted. MBTA = protected by the Migratory Bird Treaty Act — = Not federally listed			SE = Listed as endangered under the CESA. ST = Listed as threatened under the CESA. SSC = Species of Special Concern as identified by the CDFW. FP = Listed as fully protected under FGC. CFG = FGC =protected by FGC 3503.5 CE = Candidate endangered under the CESA. WL = Species monitored by CDFW “Watch List”. — = Not state listed	
³ Habitat Description: Habitat description adapted from CNDDDB or other specified source*. ⁴ Potential to Occur and Rationale: Location of recorded species occurrences determined by geospatial information from BIOS 5 or other specified source*.				
Sources: California Department of Fish and Wildlife (CDFW). 2021. CNDDDB RareFind 5 California Natural Diversity Database Query for Special-Status Species. Website: https://map.dfg.ca.gov/rarefind/view/RareFind.aspx . Accessed August 19, 2021. California Department of Fish and Wildlife (CDFW). 2021. Biogeographic Information and Observation System (BIOS 5). Website: https://map.dfg.ca.gov/bios/ . Accessed August 19, 2021.				

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Search:

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	FED LIST	STATE LIST	CA RARE PLANT RANK	GENERAL HABITATS	MICRO HABITATS	LOWEST ELEVATION	HIGHEST ELEVATION	BLOOMING PERIOD
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	None	None	4.2	Chaparral, Cismontane woodland, Coastal scrub	Rocky	80	1200	Mar-Jun
Allium howellii var. howellii	Howell's onion	Alliaceae	perennial bulbiferous herb	None	None	4.3	Valley and foothill grassland	Clay (sometimes), Serpentinite (sometimes)	50	2200	Mar-Apr
Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	None	None	1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest	Edges, Openings	60	760	Nov-May
Arctostaphylos hookeri ssp. hookeri	Hooker's manzanita	Ericaceae	perennial evergreen shrub	None	None	1B.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub	Sandy	60	536	Jan-Jun
Arctostaphylos pajaroensis	Pajaro manzanita	Ericaceae	perennial evergreen shrub	None	None	1B.1	Chaparral		30	760	Dec-Mar
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	None	None	1B.2	Playas, Valley and foothill grassland, Vernal pools	Alkaline	1	60	Mar-Jun

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<i>Balsamorhiza macrolepis</i>	big-scale balsamroot	Asteraceae	perennial herb	None	None	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland	Serpentine (sometimes)	45	1555	Mar-Jun
<i>Campanula exigua</i>	chaparral harebell	Campanulaceae	annual herb	None	None	1B.2	Chaparral		275	1250	May-Jun
<i>Castilleja rubicundula</i> var. <i>rubicundula</i>	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	None	None	1B.2	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland		20	910	Apr-Jun
<i>Ceanothus rigidus</i>	Monterey ceanothus	Rhamnaceae	perennial evergreen shrub	None	None	4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub		3	550	Feb-Apr(Jun)
<i>Centromadia parryi</i> ssp. <i>congdonii</i>	Congdon's tarplant	Asteraceae	annual herb	None	None	1B.1	Valley and foothill grassland		0	230	May-Oct(Nov)
<i>Chorizanthe pungens</i> var. <i>pungens</i>	Monterey spineflower	Polygonaceae	annual herb	FT	None	1B.2	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland		3	450	Apr-Jun(Jul-Aug)
<i>Cirsium fontinale</i> var. <i>campylon</i>	Mt. Hamilton thistle	Asteraceae	perennial herb	None	None	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland		100	890	(Feb)Apr-Oct
<i>Clarkia lewisii</i>	Lewis' clarkia	Onagraceae	annual herb	None	None	4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal scrub		30	1195	May-Jul

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<i>Collinsia multicolor</i>	San Francisco collinsia	Plantaginaceae	annual herb	None	None	1B.2	Closed-cone coniferous forest, Coastal scrub		30	275	(Feb)Mar-May
<i>Cordylanthus rigidus ssp. littoralis</i>	seaside bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	None	CE	1B.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal dunes, Coastal scrub		0	515	Apr-Oct
<i>Deinandra halliana</i>	Hall's tarplant	Asteraceae	annual herb	None	None	1B.1	Chenopod scrub, Cismontane woodland, Valley and foothill grassland		260	950	(Mar)Apr-May
<i>Delphinium californicum ssp. interius</i>	Hospital Canyon larkspur	Ranunculaceae	perennial herb	None	None	1B.2	Chaparral, Cismontane woodland, Coastal scrub		195	1095	Apr-Jun
<i>Dudleya abramsii ssp. setchellii</i>	Santa Clara Valley dudleya	Crassulaceae	perennial herb	FE	None	1B.1	Cismontane woodland, Valley and foothill grassland	Rocky, Serpentinite	60	535	Apr-Oct
<i>Eriastrum virgatum</i>	virgate eriastrum	Polemoniaceae	annual herb	None	None	4.3	Chaparral, Coastal bluff scrub, Coastal dunes, Coastal scrub		45	700	May-Jul
<i>Ericameria fasciculata</i>	Eastwood's goldenbush	Asteraceae	perennial evergreen shrub	None	None	1B.1	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub		30	275	Jul-Oct
<i>Eriogonum nortonii</i>	Pinnacles buckwheat	Polygonaceae	annual herb	None	None	1B.3	Chaparral, Valley and foothill grassland		300	975	(Apr)Aug(Sep)May-Jun

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<i>Eriogonum nudum</i> var. <i>indictum</i>	protruding buckwheat	Polygonaceae	perennial herb	None	None	4.2	Chaparral, Chenopod scrub, Cismontane woodland		150	1463	(Apr)May-Oct(Dec)
<i>Eryngium aristulatum</i> var. <i>hooveri</i>	Hoover's button-celery	Apiaceae	annual/perennial herb	None	None	1B.1	Vernal pools		3	45	(Jun)Jul(Aug)
<i>Erythranthe diffusa</i>	Palomar monkeyflower	Phrymaceae	annual herb	None	None	4.3	Chaparral, Lower montane coniferous forest		1220	1830	Apr-Jun
<i>Extriplex joaquinana</i>	San Joaquin spearscale	Chenopodiaceae	annual herb	None	None	1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland		1	835	Apr-Oct
<i>Fritillaria agrestis</i>	stinkbells	Liliaceae	perennial bulbiferous herb	None	None	4.2	Chaparral, Cismontane woodland, Pinyon and juniper woodland, Valley and foothill grassland		10	1555	Mar-Jun
<i>Fritillaria liliacea</i>	fragrant fritillary	Liliaceae	perennial bulbiferous herb	None	None	1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland		3	410	Feb-Apr
<i>Galium andrewsii</i> ssp. <i>gatense</i>	phlox-leaf serpentine bedstraw	Rubiaceae	perennial herb	None	None	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest		150	1450	Apr-Jul
<i>Hoita strobilina</i>	Loma Prieta hoita	Fabaceae	perennial herb	None	None	1B.1	Chaparral, Cismontane woodland, Riparian woodland		30	860	May-Jul(Aug-Oct)

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<i>Holocarpha macradenia</i>	Santa Cruz tarplant	Asteraceae	annual herb	FT	CE	1B.1	Coastal prairie, Coastal scrub, Valley and foothill grassland		10	220	Jun-Oct
<i>Horkelia cuneata</i> var. <i>sericea</i>	Kellogg's horkelia	Rosaceae	perennial herb	None	None	1B.1	Chaparral, Closed-cone coniferous forest, Coastal dunes, Coastal scrub		10	200	Apr-Sep
<i>Hosackia gracilis</i>	harlequin lotus	Fabaceae	perennial rhizomatous herb	None	None	4.2	Broadleafed upland forest, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal prairie, Coastal scrub, Marshes and swamps, Meadows and seeps, North Coast coniferous forest, Valley and foothill grassland		0	700	Mar-Jul
<i>Iris longipetala</i>	coast iris	Iridaceae	perennial rhizomatous herb	None	None	4.2	Coastal prairie, Lower montane coniferous forest, Meadows and seeps		0	600	Mar-May(Jun)
<i>Isocoma menziesii</i> var. <i>diabolica</i>	Satan's goldenbush	Asteraceae	perennial shrub	None	None	4.2	Cismontane woodland		15	400	Aug-Oct
<i>Legenere limosa</i>	legenere	Campanulaceae	annual herb	None	None	1B.1	Vernal pools		1	880	Apr-Jun

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<i>Leptosiphon ambiguus</i>	serpentine leptosiphon	Polemoniaceae	annual herb	None	None	4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland		120	1130	Mar-Jun
<i>Leptosiphon grandiflorus</i>	large-flowered leptosiphon	Polemoniaceae	annual herb	None	None	4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland		5	1220	Apr-Aug
<i>Lessingia hololeuca</i>	woolly-headed lessingia	Asteraceae	annual herb	None	None	3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland		15	305	Jun-Oct
<i>Lessingia micradenia</i> var. <i>glabrata</i>	smooth lessingia	Asteraceae	annual herb	None	None	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland		120	420	(Apr-Jun)Jul-Nov
<i>Lomatium parvifolium</i>	small-leaved lomatium	Apiaceae	perennial herb	None	None	4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Riparian woodland		20	700	Jan-Jun
<i>Malacothamnus aboriginum</i>	Indian Valley bush-mallow	Malvaceae	perennial deciduous shrub	None	None	1B.2	Chaparral, Cismontane woodland		150	1700	Apr-Oct

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<i>Malacothamnus arcuatus</i>	arcuate bush-mallow	Malvaceae	perennial deciduous shrub	None	None	1B.2	Chaparral, Cismontane woodland		15	355	Apr-Sep
<i>Monolopia gracilens</i>	woodland woollythreads	Asteraceae	annual herb	None	None	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland		100	1200	(Feb)Mar-Jul
<i>Navarretia prostrata</i>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	None	None	1B.2	Coastal scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools		3	1210	Apr-Jul
<i>Penstemon rattanii</i> var. <i>kleei</i>	Santa Cruz Mountains beardtongue	Plantaginaceae	perennial herb	None	None	1B.2	Chaparral, Lower montane coniferous forest, North Coast coniferous forest		400	1100	May-Jun
<i>Perideridia gairdneri</i> ssp. <i>gairdneri</i>	Gairdner's yampah	Apiaceae	perennial herb	None	None	4.2	Broadleafed upland forest, Chaparral, Coastal prairie, Valley and foothill grassland, Vernal pools		0	610	Jun-Oct

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<i>Piperia michaelii</i>	Michael's rein orchid	Orchidaceae	perennial herb	None	None	4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest		3	915	Apr-Aug
<i>Piperia yadonii</i>	Yadon's rein orchid	Orchidaceae	perennial herb	FE	None	1B.1	Chaparral, Closed-cone coniferous forest, Coastal bluff scrub		10	510	(Feb)May-Aug
<i>Plagiobothrys chorisianus</i> var. <i>hickmanii</i>	Hickman's popcornflower	Boraginaceae	annual herb	None	None	4.2	Chaparral, Closed-cone coniferous forest, Coastal scrub, Marshes and swamps, Vernal pools		15	390	Apr-Jun
<i>Plagiobothrys diffusus</i>	San Francisco popcornflower	Boraginaceae	annual herb	None	CE	1B.1	Coastal prairie, Valley and foothill grassland		60	360	Mar-Jun
<i>Plagiobothrys glaber</i>	hairless popcornflower	Boraginaceae	annual herb	None	None	1A	Marshes and swamps, Meadows and seeps		15	180	Mar-May
<i>Puccinellia simplex</i>	California alkali grass	Poaceae	annual herb	None	None	1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools		2	930	Mar-May

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Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	None	None	4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools		15	470	Feb-May
Rosa pinetorum	pine rose	Rosaceae	perennial shrub	None	None	1B.2	Cismontane woodland, Closed-cone coniferous forest		2	945	May-Jul
Streptanthus albidus ssp. peramoenus	most beautiful jewelflower	Brassicaceae	annual herb	None	None	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland		95	1000	(Mar)Apr-Sep(Oct)
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	None	None	1B.2	Marshes and swamps, Valley and foothill grassland, Vernal pools		0	300	Apr-Jun

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad IS (Chittenden (3612185) OR Gilroy (3712115) OR Mt. Madonna (3712116) OR Gilroy Hot Springs (3712114) OR San Felipe (3612184) OR Watsonville East (3612186) OR Prunedale (3612176) OR San Juan Bautista (3612175) OR Hollister (3612174))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Adela oplerella Opler's longhorn moth	IILEE0G040	None	None	G2	S2	
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	Threatened	G1G2	S1S2	SSC
Ambystoma californiense pop. 1 California tiger salamander - central California DPS	AAAAA01181	Threatened	Threatened	G2G3	S2S3	WL
Ambystoma macrodactylum croceum Santa Cruz long-toed salamander	AAAAA01082	Endangered	Endangered	G5T1T2	S1S2	FP
Aneides niger Santa Cruz black salamander	AAAAD01070	None	None	G3	S3	SSC
Anniella pulchra Northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G4	S3	SSC
Aquila chrysaetos golden eagle	ABNKC22010	None	None	G5	S3	FP
Arctostaphylos andersonii Anderson's manzanita	PDERI04030	None	None	G2	S2	1B.2
Arctostaphylos hookeri ssp. hookeri Hooker's manzanita	PDERI040J1	None	None	G3T2	S2	1B.2
Arctostaphylos pajaroensis Pajaro manzanita	PDERI04100	None	None	G1	S1	1B.1
Astragalus tener var. tener alkali milk-vetch	PDFAB0F8R1	None	None	G2T1	S1	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Balsamorhiza macrolepis big-scale balsamroot	PDAST11061	None	None	G2	S2	1B.2
Bombus caliginosus obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
Bombus crotchii Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	
Bombus occidentalis western bumble bee	IIHYM24250	None	Candidate Endangered	G2G3	S1	
Campanula exigua chaparral harebell	PDCAM020A0	None	None	G2	S2	1B.2



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>Castilleja rubicundula var. rubicundula</i> pink creamsacs	PDSCR0D482	None	None	G5T2	S2	1B.2
Central Maritime Chaparral Central Maritime Chaparral	CTT37C20CA	None	None	G2	S2.2	
<i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T1T2	S1S2	1B.1
<i>Chorizanthe pungens var. pungens</i> Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2
<i>Cirsium fontinale var. campylon</i> Mt. Hamilton thistle	PDAST2E163	None	None	G2T2	S2	1B.2
Coastal Brackish Marsh Coastal Brackish Marsh	CTT52200CA	None	None	G2	S2.1	
<i>Cordylanthus rigidus ssp. littoralis</i> seaside bird's-beak	PDSCR0J0P2	None	Endangered	G5T2	S2	1B.1
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G4	S2	SSC
<i>Deinandra halliana</i> Hall's tarplant	PDAST4R0C0	None	None	G3	S3	1B.2
<i>Delphinium californicum ssp. interius</i> Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
<i>Dicamptodon ensatus</i> California giant salamander	AAAAH01020	None	None	G3	S2S3	SSC
<i>Dipodomys venustus venustus</i> Santa Cruz kangaroo rat	AMAFD03042	None	None	G4T1	S1	
<i>Dudleya abramsii ssp. setchellii</i> Santa Clara Valley dudleya	PDCRA040Z0	Endangered	None	G4T2	S2	1B.1
<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>Ericameria fasciculata</i> Eastwood's goldenbush	PDAST3L080	None	None	G2	S2	1B.1
<i>Eriogonum nortonii</i> Pinnacles buckwheat	PDPGN08470	None	None	G2	S2	1B.3
<i>Eryngium aristulatum var. hooveri</i> Hoover's button-celery	PDAP10Z043	None	None	G5T1	S1	1B.1
<i>Eumops perotis californicus</i> western mastiff bat	AMACD02011	None	None	G4G5T4	S3S4	SSC
<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



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>Falco columbarius</i> merlin	ABNKD06030	None	None	G5	S3S4	WL
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Gonidea angulata</i> western ridged mussel	IMBIV19010	None	None	G3	S1S2	
<i>Helminthoglypta sequoicola consors</i> redwood shoulderband	IMGASC2421	None	None	G2T1	S1	
<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>Lasiurus blossevillii</i> western red bat	AMACC05060	None	None	G4	S3	SSC
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G3G4	S4	
<i>Lavinia exilicauda harengus</i> Monterey hitch	AFCJB19013	None	None	G4T2T4	S2S4	SSC
<i>Lavinia symmetricus subditus</i> Monterey roach	AFCJB19026	None	None	G4T2T3	S2S3	SSC
<i>Legenere limosa</i> legenere	PDCAM0C010	None	None	G2	S2	1B.1
<i>Lessingia micradenia var. glabrata</i> smooth lessingia	PDAST5S062	None	None	G2T2	S2	1B.2
<i>Linderiella occidentalis</i> California linderiella	ICBRA06010	None	None	G2G3	S2S3	
<i>Malacothamnus aboriginum</i> Indian Valley bush-mallow	PDMAL0Q020	None	None	G3	S3	1B.2
<i>Malacothamnus arcuatus</i> arcuate bush-mallow	PDMAL0Q0E0	None	None	G2Q	S2	1B.2
<i>Masticophis flagellum ruddocki</i> San Joaquin coachwhip	ARADB21021	None	None	G5T2T3	S2?	SSC
<i>Monolopia gracilens</i> woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
<i>Navarretia prostrata</i> prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
<i>Northern Coastal Salt Marsh</i> Northern Coastal Salt Marsh	CTT52110CA	None	None	G3	S3.2	
<i>Oncorhynchus mykiss irideus pop. 9</i> steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
<i>Optioservus canus</i> Pinnacles optioservus riffle beetle	IICOL5E020	None	None	G2	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>Penstemon rattanii</i> var. <i>kleei</i> Santa Cruz Mountains beardtongue	PDSCR1L5B1	None	None	G4T2	S2	1B.2
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<i>Piperia yadonii</i> Yadon's rein orchid	PMORC1X070	Endangered	None	G1	S1	1B.1
<i>Plagiobothrys diffusus</i> San Francisco popcornflower	PDBOR0V080	None	Endangered	G1Q	S1	1B.1
<i>Plagiobothrys glaber</i> hairless popcornflower	PDBOR0V0B0	None	None	GX	SX	1A
<i>Puccinellia simplex</i> California alkali grass	PMPOA53110	None	None	G3	S2	1B.2
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	ABNME05011	Endangered	Endangered	G3T1	S1	FP
<i>Rana boylei</i> foothill yellow-legged frog	AAABH01050	None	Endangered	G3	S3	SSC
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Reithrodontomys megalotis distichlis</i> Salinas harvest mouse	AMAFF02032	None	None	G5T1	S1	
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Rosa pinetorum</i> pine rose	PDROS1J0W0	None	None	G2	S2	1B.2
<i>Spea hammondi</i> western spadefoot	AAABF02020	None	None	G2G3	S3	SSC
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewelflower	PDBRA2G012	None	None	G2T2	S2	1B.2
<i>Sycamore Alluvial Woodland</i> Sycamore Alluvial Woodland	CTT62100CA	None	None	G1	S1.1	
<i>Taricha torosa</i> Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<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	
<i>Vulpes macrotis mutica</i> San Joaquin kit fox	AMAJA03041	Endangered	Threatened	G4T2	S2	

Record Count: 81

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

Santa Clara County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📅 (916) 414-6713

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

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. 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
<p>San Joaquin Kit Fox <i>Vulpes macrotis mutica</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2873</p>	Endangered

Birds

NAME	STATUS
<p>Least Bell's Vireo <i>Vireo bellii pusillus</i> Wherever found There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/5945</p>	Endangered
<p>Marbled Murrelet <i>Brachyramphus marmoratus</i> There is final critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/4467</p>	Threatened

Amphibians

NAME	STATUS
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California Red-legged Frog *Rana draytonii*

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/2891>

Threatened

California Tiger Salamander *Ambystoma californiense*

There is **final** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/2076>

Threatened

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

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*

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

<https://ecos.fws.gov/ecp/species/9637>

Breeds Feb 1 to Jul 15

Bald Eagle *Haliaeetus leucocephalus*

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

<https://ecos.fws.gov/ecp/species/1626>

Breeds Jan 1 to Aug 31

California Thrasher *Toxostoma redivivum*

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

Breeds Jan 1 to Jul 31

Common Yellowthroat *Geothlypis trichas sinuosa*

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>

Breeds May 20 to Jul 31

Golden Eagle *Aquila chrysaetos*

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

<https://ecos.fws.gov/ecp/species/1680>

Breeds Jan 1 to Aug 31

Lawrence's Goldfinch *Carduelis lawrencei*

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

<https://ecos.fws.gov/ecp/species/9464>

Breeds Mar 20 to Sep 20

Nuttall's Woodpecker *Picoides nuttallii*

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 *Baeolophus inornatus*

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

Olive-sided Flycatcher *Contopus cooperi*

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

<https://ecos.fws.gov/ecp/species/3914>

Breeds May 20 to Aug 31

Tricolored Blackbird *Agelaius tricolor*

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

<https://ecos.fws.gov/ecp/species/3910>

Breeds Mar 15 to Aug 10

Wrentit *Chamaea fasciata*

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

Breeds Mar 15 to Aug 10

Yellow-billed Magpie *Pica nuttalli*

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

<https://ecos.fws.gov/ecp/species/9726>

Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read 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.



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



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



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



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



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



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



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



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



Yellow-billed Magpie
 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.