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Biological Study

Wetland & Biological Resources Assessment

at

115 Gateway Road East

in the

Napa Valley Gateway Business Park

in

Napa, California 94558

(APNs 057-200-002 and 057-200-003)

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1.0 Introduction

Barnett Environmental has completed a *Wetland and Biological Resources Assessment* (WBRA) of an approximately 4.36-acre project site (APNs 057-200-002 and 057-200-003) located at 115 Gateway Road East in the Napa Valley Gateway Business Park (Napa County, California) on behalf of INNOVA. The site is in the NW quarter of Section 1, Township 4 North, Range 4 West of the Cuttings Wharf, California 7.5-minute USGS quadrangle (Figure 1). It lies within the San Pablo Bay watershed (Hydrologic Unit Code 18050002) at approximately 50 to 70 feet elevation above mean sea level and approximate geographic coordinates 38°13'32" North latitude and 122°15'33" West longitude. The Study Area is bounded to the north by undeveloped land, on the east by State Route 29, to the south by commercial development, and on the west by Gateway Road East.

In addition to an assessment of wetlands and “other waters of the U.S.” within the Study Area according to U.S. Army Corps of Engineers (1987) protocol, this report:

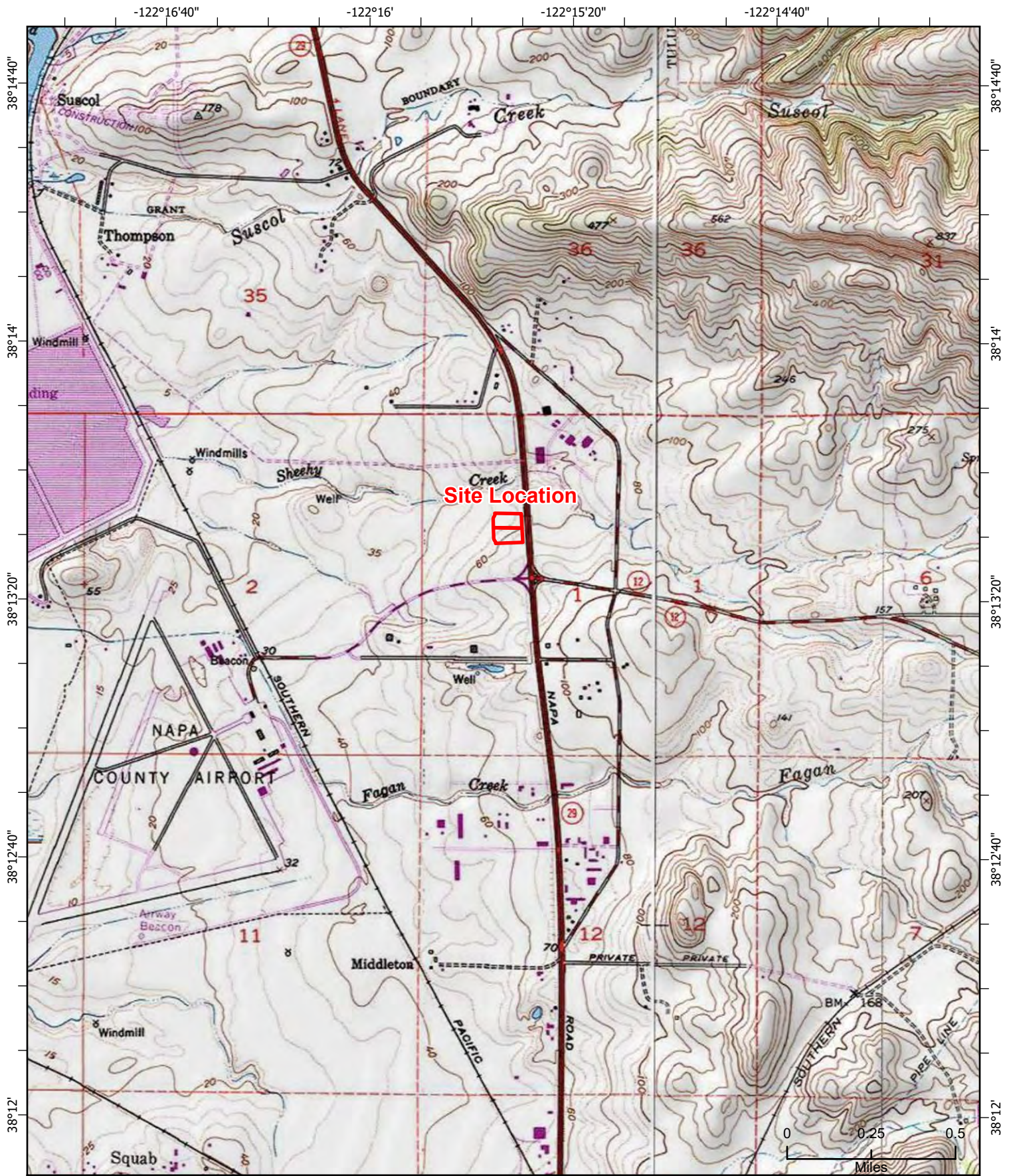
- Identifies and describes the biological communities present;
- Records all plant and animal species observed during the field survey;
- Evaluates and identifies sensitive habitats and special-status plant and animal species that may occur in the Study Area and could be affected by project activities; and
- Provides conclusions and recommendations for mitigating potentially adverse impacts to identified resources.

2.0 Regulatory Setting

The following federal and California state laws, regulations and/or policies provide the legal framework guiding the protection of wetland and biological resources.

2.1 Relevant Federal Laws & Regulations

Federal Endangered Species Act (FESA) – The FESA, enacted in 1973, prohibits the taking, possession, sale, or transport of endangered species. Under the FESA, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as threatened or endangered. FESA is administered by both the National Marine Fisheries Service (NMFS) and the U.S. Fish & Wildlife Service (USFWS). NMFS is accountable for animals that are threatened or endangered (16 United States Code [USC] 1533[c]) and spend most of their lives in marine waters, including marine fish, most marine mammals, and anadromous fish such as Pacific salmon. The USFWS is accountable for all other federally-listed plants and animals.



Source: USGS 7.5-Minute Topographic Quadrangle for Cuttings Wharf and Cordelia, CA

Copyright © 2013 National Geographic Society, iCubed. Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, 1:24,000 (original report)10/4/2018.

FIGURE 1 - STUDY AREA LOCATION

115 GATEWAY ROAD E PROJECT • NAPA COUNTY, CALIFORNIA



Pursuant to the requirements of FESA, a federal agency reviewing a project within its jurisdiction must determine whether any federally listed threatened or endangered species could be present in the Permit Area and whether the project will have a potentially significant impact on such species. In addition, federal agencies are required to determine whether the project is likely to jeopardize the continued existence of any species proposed for listing under FESA or result in the destruction or adverse modification of critical habitat proposed for such species (16 USC 1536[3], [4]).

Projects that would result in a “take” of any federally-listed threatened or endangered species are required to obtain authorization from NMFS and/or USFWS through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of FESA, depending on whether the federal government is involved in permitting or funding the project. The Section 7 authorization process is used to determine if a project with a federal nexus would jeopardize the continued existence of a listed species and what mitigation measures would be required to avoid jeopardizing the species. The Section 10(a) process allows take of endangered species or their habitat in non-federal activities.

Migratory Bird Treaty Act – The Migratory Bird Treaty Act (MBTA) regulates or prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 Code of Federal Regulations (CFR) Section 10.13. The MBTA is an international treaty for the conservation and management of bird species that migrate through more than one country, and is enforced in the United States by the USFWS. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 CFR 20. The MBTA was amended in 1972 to include protection for migratory birds of prey (raptors).

Bald and Golden Eagle Protection Act – The federal Bald and Golden Eagle Protection Act regulates or prohibits the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22). "Take" includes to pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb (16 U.S.C. 668c; 50 CFR 22.3).

Federal Clean Water Act (CWA)

Section 401 – The State Water Resources Control Board (SWRCB) has authority over wetlands and “other waters of the U.S.” through Section 401 (Water Quality Certification) of the CWA.

The CWA requires that an applicant for a Section 404 permit (to discharge dredged or fill material into waters of the United States) must first obtain a certificate from the appropriate state agency stating that the fill is consistent with the State’s water quality standards and criteria. In California, the authority to grant certification or waive the requirement for a permit is delegated by the SWRCB to the nine regional boards. The San Francisco Bay Regional Water Quality Control Board is the appointed authority for Section 401 compliance in the project site. A request for certification or waiver is submitted to the regional board at the same time an application is filed with the USACE. The regional board has 60 days to review the application and act on it. Because no USACE permit is valid under the CWA unless “certified” by the state, these boards may effectively veto or add conditions to any USACE permit.

Section 404 - Section 404 of the CWA identifies the U.S. Army Corps of Engineers (USACE) as the principal authority to regulate activity that could discharge fill or dredge material or otherwise adversely modify wetlands or Waters of the U.S. (WOUS). The USACE implements the federal policy embodied in Executive Order 11990, which is intended to result in no net loss of wetland values or function. U.S. Congress has authorized the Environmental Protection Agency (EPA) to have a specific oversight role over USACE's authority.

2.2 Relevant State Laws & Regulations

California Endangered Species Act (CESA) – The CESA was enacted in 1984 and gave the California Fish and Wildlife Commission (CFWC) responsibility for maintaining a list of threatened and endangered species, while the California Department of Fish & Wildlife (CDFW) is responsible for enforcement. CDFW also maintains lists of Species of Special Concern, defined as species, subspecies, or distinct populations of an animal native to California that currently satisfy one or more of the following (not necessarily mutually exclusive) criteria:

- is extirpated from the State or, in the case of birds, in its primary seasonal or breeding role;
- is listed as Federally-, but not State-, threatened or endangered;
- meets the State definition of threatened or endangered but has not formally been listed;
- is experiencing, or formerly experienced, serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status;
- has naturally small populations exhibiting high susceptibility to risk from any factor(s), that if realized, could lead to declines that would qualify it for State threatened or endangered status.

CESA prohibits the take of California listed animals and plants in most cases, but CDFW may issue incidental take permits under special conditions. Pursuant to the requirements of CESA, a State agency reviewing a project within its jurisdiction must determine whether any state-listed endangered or threatened species could be present in the project site and determine whether the project would have a potentially significant impact on such species. In addition, CDFW encourages consultation on any project that could affect a listed or candidate species.

CA Fish and Game Code

Sections 1600-1616 – Under Sections 1600-1616 of the California Fish and Game Code, the CDFW regulates activities that would alter the flow, bed, channel, or bank of streams and lakes. The limits of CDFW's jurisdiction are defined in the code as the “... *bed, channel or bank of any river, stream, or lake designated by the department in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit* ...” (Section 1601). In practice, the CDFW usually marks its jurisdictional limit at the top of the stream or bank, or at the outer edge of the riparian vegetation, whichever is wider.

The CDFW also derives its authority to oversee activities that affect wetlands from state legislation. This authority includes Sections 1600-1616 of the Fish and Game Code (lake and

streambed alteration agreements), Section 30411 of the California Coastal Act (CDFW becomes the lead agency for the study and identification of degraded wetlands within the Coastal Zone), CESA (protection of state listed species and their habitats - which could include wetlands), and the Keene-Nejedly California Wetlands Preservation Act of 1976 (states a need for an affirmative and sustained public policy program directed at wetlands preservation, restoration, and enhancement). In general, the CDFW asserts authority over wetlands within the state either through review and comment on USACE Section 404 permits, review and comment on CEQA documents, protection of state listed species, or through stream and lakebed alteration agreements.

Sections 1900-1913 – These Sections embody the Native Plant Protection Act, which is intended to preserve, protect, and enhance endangered or rare native plants in the state. The act directs CDFW to establish criteria for determining which native plants are rare or endangered. Under Section 1901, a species is endangered when its prospects for survival and reproduction are in immediate jeopardy from one or more causes. A species is rare when, although not threatened with immediate extinction, it is in such small numbers throughout its range that it may become endangered if its present environment worsens. Under the act, CDFW may adopt regulations governing the taking, possessing, propagation or sale of any endangered or rare native plant.

Section 1913 of that Act allows landowners to take actions that will destroy rare or endangered plants, provided that, where the CDFW has previously notified the owner “that a rare or endangered plant is growing” on his or her land, the owner notifies CDFW “at least 10 days in advance of hanging the land” to allow the state agency to come and “salvage” the plants. Subject to this requirement, section 1913 states that “the presence of rare or endangered plants” on a property shall not restrict (1) timber operations conducted pursuant to an approved timber harvest plan, (2) “required mining assessment work pursuant to federal or state mining laws,” (3) “the removal of endangered or rare native plants from a canal, lateral ditch, building site, or road, other right-of-way by the owner of the land or his agent,” or (4) “the performance by a public agency or publicly or privately owned public utility of its obligation to provide service to the public.”

Sections 3503, 3503.5, 3513 – Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. Fish and Game Code Section 3503.5 protects all birds-of-prey (raptors) and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act.

Sections 3511, 4700, 5050, and 5515 – Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as “fully protected.” Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the Fish and Game Code or any other law may be construed to authorize the issuance of permits or licenses to take any fully protected species. No such permits or licenses heretofore issued may have any force or effect for any such purpose, except that the Fish and Game Code may authorize the collecting of such species for scientific research. Legally imported and fully protected species or parts thereof may be possessed under a permit issued by CDFW.

Porter-Cologne Water Quality Control Act – The Porter-Cologne Water Quality Control Act established the SWRCB and each Regional Water Quality Control Board (RWQCB) as the principal state agencies for coordinating and controlling water quality in California. Responsibility for the protection of water quality in California rests with the SWRCB and nine RWQCBs. The SWRCB establishes statewide policies and regulations for the implementation of water quality control programs mandated by federal and state water quality statutes and regulations. Pursuant to the Act, each of California’s nine regional boards must prepare and periodically update basin plans that set forth water quality standards for surface and groundwater, as well as actions to control point and non-point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to achieve wetlands protection through enforcement of water quality standards.

The Porter-Cologne Water Quality Control Act provides that “All discharges of waste into the waters of the State are privileges, not rights.” Waters of the State are defined in Section 13050(e) of the Porter-Cologne Water Quality Control Act as “...any surface water or groundwater, including saline waters, within the boundaries of the state.” All dischargers are subject to regulation under the Porter-Cologne Water Quality Control Act, including both point and nonpoint source dischargers. The RWQCB has the authority to implement water quality protection standards through the issuance of permits for discharges to waters at locations within its jurisdiction, which would include the project site. As noted above, the RWQCB is the appointed authority for Section 401 compliance in the project site. If the USACE determines that they have no regulatory authority on the project site and they also determine that a CWA Section 404 permit is not required, then the project proponent could still be responsible for obtaining the appropriate CWA Section 401 permit or waiver from RWQCB for impacts to Waters of the State.

California Oak Woodlands Conservation Act of 2001 – acknowledges the importance of private land stewardship to the conservation of the state’s valued oak woodlands. The Act establishes the California Oak Woodlands Conservation Program, which aims to conserve oak woodlands existing in the state’s working landscapes by providing education and incentives to private landowners. The program provides technical and financial incentives to private landowners to protect and promote biologically functional oak woodlands.

California Environmental Quality Act – Although specific federal and state statutes protect threatened and endangered species, California Environmental Quality Act (CEQA) Guidelines Section 15380(b) provides that a species not listed on the federal or state list of protected species may be considered rare or endangered if the species can be shown to meet certain criteria. These criteria have been modeled after the definition in FESA and the section of the California Fish and Game Code dealing with rare or endangered plants and animals, and allows a public agency to undertake a review to determine if a significant effect on a species that has not yet been listed by either the USFWS or CDFW (i.e., species of special concern) would occur. Whether a species is rare, threatened, or endangered can be legally significant because, under CEQA Guidelines Section 15065, an agency must find an impact to be significant if a project would “substantially reduce the number or restrict the range of an endangered, rare, or threatened species.” Thus, CEQA provides an agency with the ability to protect a species from a project’s potential impacts

until the respective government agencies have an opportunity to designate the species as protected, if warranted.

3.0 Methodology

Prior to our field survey, we queried the U.S. Fish & Wildlife Service's *National Wetlands Inventory* (NWI) as part of their *Information for Planning & Consulting* (iPac); EcoAtlas' *California Aquatic Resources Inventory* (CARI); and the U.S. Natural Resources Conservation Service's (NRCS) *Web Soil Survey* and *Hydric Soils List for Napa County, California* to determine whether any wetlands or "other waters of the U.S.", "waters of the State", or soils compatible with wetland resources are likely to occur on the site.

We then conducted a Level 3 jurisdictional wetland determination for the project site in accordance with the 1987 U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* and 2008 *Arid West Regional Supplement*.

In addition, we queried the following online resources for information on the Study Area's potential plant and wildlife resources:

- a) California Department of Fish & Wildlife's Natural Diversity Database (RareFind 5) for observations of special-status plant and animal species within five miles of the Study Area;
- b) U.S. Fish and Wildlife Service's iPac Database of federally-listed special-status species in Napa County; and
- c) the California Native Plant Society's *Inventory of Rare & Endangered Plants in California*.

We surveyed the Study Area on September 18, 2018 for special-status plants and wildlife and/or habitats that could support them, and recorded observations of: (1) dominant vegetation communities, (2) observed plant and wildlife species (with emphasis on rare and endangered species) or their sign (nests, burrows, tracks, scat); and (3) the suitability of onsite habitats and those immediately adjoining the Project Area to support special-status plant or animal species. To characterize on-site habitat types we used the *Manual of California Vegetation* (Sawyer, Keeler-Wolf, and Evens, 2009). The site assessment consisted of walking the entire Study Area to note current habitat conditions, surrounding land uses, general habitat types, and wildlife species.

4.0 Existing Conditions

4.1 Soils

Soils underlying the entire Project Area are mapped as Haire loam, 2 to 9 percent slopes (Figure 2; Appendix A). This is a moderately well drained, alluvial soil with very slow permeability and high runoff potential. On uncultivated or undeveloped sites, it generally supports annual grassland. Haire loam, 2 to 9 percent slopes is not itself classified as a hydric soil, but it appears on the *Hydric Soils List* for Napa County, California because 5 percent of the area in this map unit is made up of clay soils of the Clear Lake series.

4.2 Hydrology

The study area is located within the San Pablo Bay watershed (HUC 18050002), but the local hydrologic regime is generally driven by direct precipitation and sheet flow (storm runoff) in a northwesterly direction corresponding to the local topography. No streams, surface water or areas of saturated soil were observed during the site visit on September 18, 2018. The nearest stream channel is Sheehy Creek located ca. 0.1 mile to the north of the site and flowing west towards its confluence with the Napa River ca. 1.5 miles to the west-northwest.

It has been reported that sometime during the year 2010, an American Canyon Water District water line ruptured along the west side of State Route 29, adjacent to the project site at an elevation of ca. 62 feet above m.s.l. (letter from Bruce Barnett to USACE San Francisco District Regulatory Program dated November 2, 2016). This event caused surface water to leak across the northeastern portion of the site, creating artificially wet conditions in this area, as confirmed by visible evidence of saturated soils (darker area within the field) on satellite images accessed on Google Earth (GE). In particular, a time-series of images seems to indicate the presence of saturated soil conditions during the normally dry summer season, and further suggests that the water leak may have started earlier than previously reported (GE images recorded on 11 July 2004, 31 August 2008, 09 August 2009, 14 Sept. 2009, 23 Sept. 2009, 6 Sept. 2011, 17 July 2012, 23 August 2012, 01 Sept. 2012, and 24 July 2013, respectively). Another GE image from 23 August 2014 shows repairs in progress to the ruptured water line on the west side of State Route 29. Normal hydrological conditions have now been restored, evidenced by recent GE images indicating absence or saturated soils during the normally dry summer months.

4.3 Wetlands & Other Waters of the United States

The NWI and CARI maps (Figures 3 and 4, respectively) suggest an absence of wetlands or waters of the U.S. on the project site. This was also confirmed by on-site inspection of vegetation, soils and hydrology at two sampling points DP1A and DP1B, located in or near a low-lying flat in the northeastern portion of the site (mapped in Figure 5 with copies of data sheets provided in Appendix B).

Hydrophytic vegetation was not present at either of these sampling points (failed both the Dominance Test and the Prevalence Index). While the soils exhibit Fe/Mn concentrations and oxidized rhizospheres, they do not meet the technical descriptions of either Depleted Matrix (F3)

or Redox Dark Surface (F6) in the 2008 *Arid West Supplement* to the Corps' *Wetlands Delineation Manual*. Time-series satellite images indicate that a broken water line along State Route 29 caused artificially wet conditions in this area (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until 2014 (see section 4.2 Hydrology). However, it is also evident that saturated soils are normally present only during the winter and spring seasons.

4.4 Vegetation

The vegetation over the entire project site consists of highly degraded annual grassland, dominated by non-native annuals such as soft chess (*Bromus hordeaceus*) and wild oat (*Avena* sp.) and with very few native plants. A non-native perennial, Harding grass (*Phalaris aquatica*) is also locally co-dominant. The site appears to have been periodically disked over the years, resulting in establishment of plant species characteristic of ruderal (i.e., disturbed) habitats, including bristly ox-tongue (*Helminthotheca echioides*), bindweed (*Convolvulus arvensis*), and English plantain (*Plantago lanceolata*).

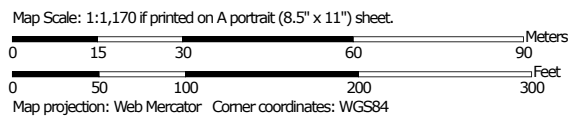
A complete list of vascular plant species observed on the project site, along with their wetland indicator status, is provided in Appendix C.

4.5 Wildlife

No wildlife except the American crow (*Corvus brachyrhynchos*) was observed during the September 2018 field survey. Wildlife likely to use the Study Area, however, include those species adapted to annual grassland habitats. Annual grasslands provide suitable habitat for reptiles such as the western fence lizard (*Sceloporus occidentalis*), common garter snake (*Thamnophis sirtalis*), and western rattlesnake (*Crotalus viridis*). Mammals associated with this habitat include black-tailed jackrabbit (*Lepus californicus*), California ground squirrel (*Spermophilus beecheyi*), western harvest mouse (*Reithrodontomys megalotis*), and California vole (*Microtus californicus*). Common birds found within grasslands include the western scrub jay (*Aphelocoma californica*), western meadowlark (*Sturnella neglecta*), killdeer (*Charadrius vociferus*), and western kingbird (*Tyrannus verticalis*). Raptors such as burrowing owl (*Athene cunicularia*) and short-eared owl (*Asio flammeus*), northern harrier (*Circus cyaneus*), American kestrel (*Falco sparverius*), black-shouldered kite (*Elanus axillaris*), and prairie falcon (*Falco mexicanus*) are typical of annual grasslands in this region.



Source: USDA Natural Resources Conservation Service



Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
146	Haire loam, 2 to 9 percent slopes	4.9	100.0%
Totals for Area of Interest		4.9	100.0%

FIGURE 2: STUDY AREA SOILS

115 NAPA GATEWAY ROAD EAST PROJECT • NAPA COUNTY, CALIFORNIA

Not to Specific Scale

Date: October 1, 2018





Wetlands

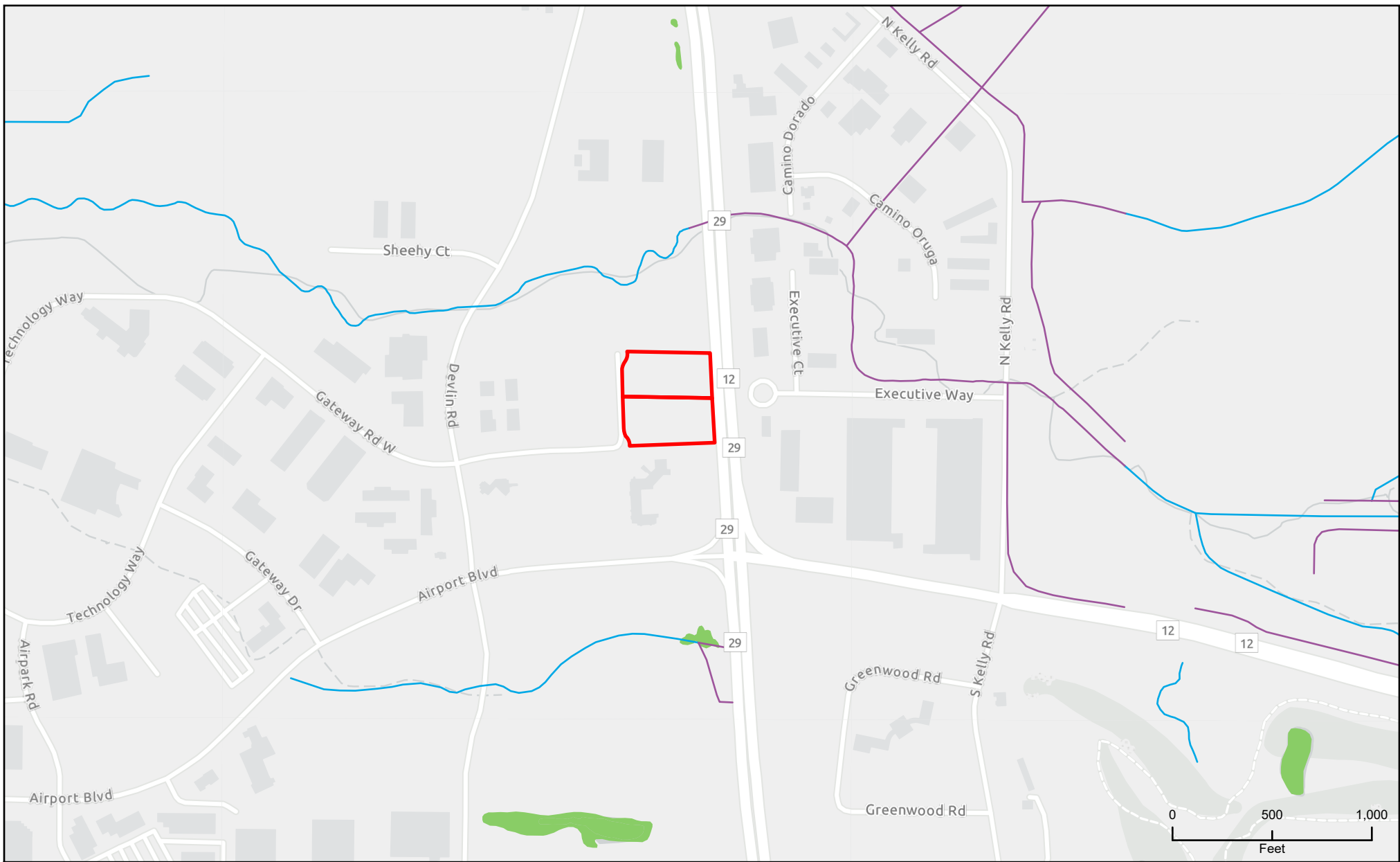
- Freshwater Emergent Wetland
- Freshwater Pond
- Riverine
- Site

U. S. Fish and Wildlife Service. Publication date May 2018. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>. Accessed June 9, 2018. Base Map USDA FSA, GeoEye, CNES/Airbus DS, USDA FSA, DigitalGlobe, GeoEye, CNES/Airbus DS. Scale 1:8,000 original report, 10/4/2018.

FIGURE 3 - NATIONAL WETLANDS INVENTORY (NWI) WETLANDS

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Rivers, streams, canal/ditch Lakes and Wetlands Site
 — Fluvial Natural ■ Pond and associated vegetation
 — Fluvial Unnatural

San Francisco Estuary Institute (SFEI). 2017.
 "California Aquatic Resource Inventory (CARI)
 version 0.3." Accessed June 9, 2018. Original
 report scale 1:8,000, 10/4/2018

FIGURE 4: CALIFORNIA AQUATIC RESOURCES INVENTORY (CARI) WETLANDS

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- Site
- DP1a - upland within topographic depression
- DP1b - upland outside topographic depression

SFEI & Quantum Spatial, Microsoft. Field data collected September 21, 2018. Scale 1:1,200, original report. 10/5/2018

FIGURE 5 - Study Area Wetlands and "Other Waters of the U.S."

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5.0 Special-status Species

Special-status species are those that fall into one or more of the following categories:

- Listed as endangered or threatened under the federal Endangered Species Act (or formally proposed for such listing),
- Listed as endangered, threatened or rare under the California Endangered Species Act (or proposed for such listing),
- Designated a Species of Concern by the Sacramento District of the U.S. Fish and Wildlife Service,
- Designated as rare, protected, or fully protected pursuant to California Fish and Game Code,
- Designated a Species of Special Concern by the California Department of Fish and Wildlife,
- Defined as rare or endangered under the California Environmental Quality Act (CEQA), or
- Placed on List 1 or List 2 maintained by the California Native Plant Society.

A query of the California Natural Diversity Database (RareFind 5) resulted in no records of any special-status species within the Study Area (Appendix D). In addition, there were no special-status species observed during the site visit on September 18, 2018. CNDDDB occurrences within a 2- and 5-mile radius of the project site are mapped in Figure 5. The output of the USFWS *iPac* Database is provided as Appendix E.

Special-status species with potential to occur in the study area are evaluated in Table 1 below. To summarize these findings, there are two special-status plant species with low potential to occur in the project vicinity, including the big-scale balsamroot (*Balsamorhiza macrolepis*) and the two-forked clover (*Trifolium amoenum*). In addition, there are 10 special-status animal species with low or moderate potential to occur in the vicinity of the Study Area, including the foothill yellow-legged frog (*Rana boylei*), western pond turtle (*Emys marmorata*), tricolored blackbird (*Agelaius tricolor*), golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsonii*), northern harrier (*Circus cyaneus*), American peregrine falcon (*Falco peregrinus anatum*), pallid bat (*Antrozous pallidus*), and American badger (*Taxidea taxus*). Though these special-status animals could potentially use the project vicinity for some portion(s) of their life cycle, our field surveys found no indication of their use of the site itself. Historic and ongoing disturbance of the site likely precludes their presence.

Table 1: Special Status Species with Potential to Occur in the Study Area

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Plants						
Alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	—	—	1B.2	Alkaline flats & playas, vernal moist grassland, vernal pools.	None	No suitable habitat on-site.
Big-scale balsamroot <i>Balsamorhiza macrolepis</i>	—	—	1B.2	Open grassy or rocky slopes, valleys; elevation ≤ 1400 m.	Low	Nearest known occurrences 4 miles to the SE (hills E of American Canyon) & 5 miles to the E (Green Valley, Solano Co.).
Narrow-anthered brodiaea <i>Brodiaea leptandra</i>	—	—	1B.2	Open mixed-evergreen forest, chaparral, gravelly soil; elevation: 40–1220 m.	None	No suitable habitat on-site.
Lyngbye’s sedge <i>Carex lyngbyei</i>	—	—	2B.2	Brackish marshes, mainly coastal.	None	No suitable habitat on-site.
Tiburon paintbrush <i>Castilleja affinis</i> var. <i>neglecta</i>	FE	CT	1B.2	Valley and foothill grassland (rocky sites on serpentine, elevation 120–400 m).	None	No suitable habitat on-site.
Holly-leaved ceanothus <i>Ceanothus purpureus</i>	—	—	1B.2	Volcanic substrates, slopes, chaparral; elevation 145–670 m.	None	No suitable habitat on-site.
Soft salty bird’s-beak <i>Chloropyron molle</i> subsp. <i>molle</i>	FE	CR	1B.2	Coastal salt marsh.	None	No suitable habitat on-site.
Dwarf downingia <i>Downingia pusilla</i>	—	—	2B.2	Vernal pools & roadside ditches.	None	No suitable habitat on-site. Nearest known occurrence 0.8 mile to the NNW (along Hwy. 29 between Suscol & Sheehy creeks).
Greene’s narrow-leaved daisy <i>Erigeron greenei</i>	—	—	1B.2	Chaparral, woodland, coniferous forest (on serpentine or volcanic substrates); elevation (100–) 500–1600 m.	None	No suitable habitat on-site.
San Joaquin spearscale <i>Extriplex joaquiniana</i>	—	—	1B.2	Alkaline meadows & playas, alkali sink scrub.	None	No suitable habitat on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Plants						
Northern California black walnut <i>Juglans hindsii</i>	—	—	1B.1	Riparian forest or woodland on deep, alluvial soils.	None	No suitable habitat on-site.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE	—	1B.1	Vernal pools, swales, low depressions in valley and foothill grassland, woodland.	None	No suitable habitat on-site. Nearest known occurrence 1.3 miles to the NNW (Suscol Ridge).
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	—	—	1B.2	Freshwater and brackish marsh, also on slough margins.	None	No suitable habitat on-site.
Legenere <i>Legenere limosa</i>	—	—	1B.1	Vernal pools, vernal marshes, ponds, floodplains of intermittent streams (emergent or terrestrial).	None	No suitable habitat on-site. Nearest known occurrence 1.4 miles to the NNW (Suscol Ridge).
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	—	CR	1B.1	Brackish marshes, slough margins, streambanks.	None	No suitable habitat on-site.
Suisun Marsh aster <i>Symphyotrichum lentum</i>	—	—	1B.2	Freshwater and brackish marsh, also on slough margins.	None	No suitable habitat on-site.
Two-fork clover <i>Trifolium amoenum</i>	FE	—	1B.1	Seasonally moist, clay soils in valley grassland, coastal prairie.	Low	Old collections from "Napa" and "Napa Junction" (the latter locality is 2.5 miles to the SSE of the study area). Soils on-site are unsuitable for this sp., and the grassland habitat is already highly degraded with few native plants.
Saline clover <i>Trifolium hydrophilum</i>	—	—	1B.2	Salt marshes, open areas in alkaline soils, < 300 m elevation.	None	No suitable habitat on-site. Nearest known occurrence 1.25 miles to the N (Suscol Creek).
Oval-leaved viburnum <i>Viburnum ellipticum</i>	—	—	2B.3	Chaparral, yellow-pine forest, generally north-facing slopes, elevation 300–1400 m.	None	No suitable habitat on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Invertebrates						
San Bruno elfin butterfly <i>Callophrys mossii bayensis</i>	FE	—	—	Rocky slopes and ledges, especially north- and east-facing, in coastal grassland. Larval host plant is <i>Sedum spathulifolium</i> .	None	No suitable habitat on-site.
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	—	—	Riparian and oak woodlands. Host plant is elderberry (<i>Sambucus</i> spp.)	None	Host plant absent on-site (nearest occurrence is ~0.1 mile to the N along Sheehy Creek). Known occurrences of this beetle in Napa Co. are along streams draining towards the Central Valley (Putah, Suisun and Wooden Valley creeks).
Callippe silverspot butterfly <i>Speyeria callippe callippe</i>	FE	—	—	Coastal grassland and scrub. Larval host plant is <i>Viola pedunculata</i> . Hilltops and ridges play an important role in breeding behavior.	None	No suitable habitat on-site.
Conservancy fairy shrimp <i>Branchinecta conservatio</i>	FE	—	—	Vernal pools (especially larger, moderately turbid, cooler-water pools not drying down until June).	None	No suitable habitat on-site.
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FE	—	—	Vernal pools in valley and foothill grassland.	None	No suitable habitat on-site.
California freshwater shrimp <i>Syncaris pacifica</i>	FE	CE	—	Small, low-gradient, perennial streams, especially in shallow pools away from main streamflow. Winter: undercut banks with exposed roots. Summer: riparian vegetation overhanging.	None	No aquatic habitats on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Fishes, Amphibians and Reptiles						
Tidewater goby <i>Eucyclogobius newberryi</i>	FE	CSC	—	Cool, brackish water in lagoons created by coastal streams. Favorable habitat includes shallow open water with emergent vegetation.	None	No aquatic habitats on-site.
Delta smelt <i>Hypomesus transpacificus</i>	FT	CE	—	Mainly inhabiting the freshwater-saltwater mixing zone, except during spawning season (March–May), when it migrates upstream to fresh water (river channels, tidally influenced backwater sloughs).	None	No aquatic habitats on-site.
Steelhead, central California coast DPS <i>Oncorhynchus mykiss irideus</i> , population 8	FT	—	—	Anadromous (spawning in gravel-bottomed, fast-flowing, well-oxygenated rivers and streams; migrating to estuaries, then the ocean and back again to fresh water).	None	No aquatic habitats on-site.
Sacramento splittail <i>Pogonichthys macrolepidotus</i>	—	CSC	—	Slow-moving river sections, dead-end sloughs. Requires flooded vegetation for spawning and foraging for young.	None	No aquatic habitats on-site.
Longfin smelt <i>Spirinchus thaleichthys</i>	—	CT	—	Primarily in open water of estuaries; migrating to freshwater rivers to spawn.	None	No aquatic habitats on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Fishes, Amphibians and Reptiles						
Foothill yellow-legged frog <i>Rana boylei</i>	—	CSC	—	Partly-shaded, shallow streams and riffles in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying, and at least 15 weeks of permanent water for larval development.	Low	No stream habitats on-site. The nearest stream is Sheehy Cr. located ~0.1 mile to the north. Old museum collections from “Napa Junction” (2.5 miles SSE of the study area), this occurrence now possibly extirpated.
California red-legged frog <i>Rana draytonii</i>	FT	CSC	—	Lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent vegetation. Requires 11–20 weeks of permanent water for larval development. Must have access to estivation habitat.	None	No stream habitats on-site. The nearest stream is Sheehy Cr. located ~0.1 mile to the north.
Green sea turtle <i>Chelonia mydas</i>	FT	—	—	Marine (generally in warm tropical to subtropical waters), frequenting protected shores and bays with coral reefs, salt marshes, and nearshore seagrass beds. Eggs laid on sandy beaches.	None	No marine habitats on-site.
Western pond turtle <i>Emys marmorata</i>	—	CSC	—	Ponds, marshes, rivers, streams and irrigation ditches. Needs basking sites and suitable habitat for egg-laying (sandy banks or grassy open fields up to 0.5 km from water).	Low	No suitable habitat on-site. The nearest stream is Sheehy Cr. located ~0.1 mile to the north. Three known occurrences within 5 miles to the south (North Slough, American Canyon Cr., Walsh Cr.).

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Birds						
Tricolored blackbird <i>Agelaius tricolor</i>	—	CT	—	Cattail or tule marshes; forages mostly in open habitats (fields, pastures, farms). Highly colonial; breeds in large freshwater marshes, in dense stands of cattails or bulrushes.	Low	No suitable habitat on-site. Nearest emergent marsh habitat along Sheehy Cr. located ~0.1 mile to the north. Known occurrences 0.5 mile to the S (near Napa Co. Airport), 1.4 miles to the S (Middleton) & 1.9 miles to the NW (E side Napa River).
Golden eagle <i>Aquila chrysaetos</i>	—	CFP	—	Hunts in open or semi-open areas (avoids urban & agricultural development). Nesting in cliff-walled canyons, also large trees in open areas.	Low	Nest near Stanley (W side of Napa River) appeared to be occupied from 2003–2005, but nest tree was removed in 2008.
Burrowing owl <i>Athene cunicularia</i>	—	CSC	—	Valley & foothill grasslands. Nests underground, dependent upon burrowing mammals (i.e., California ground squirrel).	Low	No rodent or owl burrows observed on-site. One known occurrence close by (0.25 mile to the NW, along Devlin Road).
Swainson's hawk <i>Buteo swainsoni</i>	—	CT	—	Grasslands (for foraging) with scattered groves of trees (for nesting). Less common in heavily farmed country.	Moderate	Nesting recently observed at several localities in the project vicinity (per CNDDDB occurrence data).
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	CSC	—	Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable soil for nesting.	None	No suitable habitat on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Birds						
Northern harrier <i>Circus cyaneus</i>	—	CSC	—	Marshes, fields, prairies. Nests on ground in shrubby vegetation, usually at marsh edge, sometimes in dry open fields.	Low	Nearest known nesting habitat is 4 miles to the SW (in salt marsh on Coon Island, W of Napa River).
American peregrine falcon <i>Falco peregrinus anatum</i>	—	CFP	—	Open country, cliffs (mountains to coast); sometimes in cities. Often near water, especially along the coast. Limited by availability of nest sites and prey.	Low	Foraging habitat present in the project vicinity.
saltmarsh common yellowthroat <i>Geothlypis trichas sinuosa</i>	—	CSC	—	Salt- and freshwater marshes, requiring thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	None	No suitable habitat on-site. Nearest emergent marsh habitat along Sheehy Cr. located ~0.1 mile to the north.
California black rail <i>Laterallus jamaicensis coturniculus</i>	—	CT	—	Freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	None	No suitable habitat on-site. Nearest emergent marsh habitat along Sheehy Cr. located ~0.1 mile to the north.
San Pablo song sparrow <i>Melospiza melodia samuelis</i>	—	CSC	—	Inhabits tidal sloughs in <i>Salicornia marshes</i> ; nests in <i>Grindelia</i> bordering slough channels.	None	No suitable habitat on-site.
California Ridgway's rail <i>Rallus obsoletus obsoletus</i>	FE	CE	—	Salt-water and brackish marshes traversed by tidal sloughs. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	None	No suitable habitat on-site.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Birds						
bank swallow <i>Riparia riparia</i>	—	CT	—	Riparian scrub and woodland. Requires vertical banks/cliffs with fine textured/sandy soils near streams, rivers, lakes, ocean to dig nesting holes.	None	Lacks suitable nesting habitat in the project vicinity. Nearest riparian habitat is ~0.1 mile to the north (along Sheehy Creek).
California least tern <i>Sternula antillarum browni</i>	FE	CE	—	Breeds in barren to sparsely vegetated places (sandy or gravelly substrate, salt flats) along the coast. Hunts primarily in shallow estuaries and lagoons, or offshore. Migratory (wintering habitat still unknown).	None	No suitable habitat on-site.
Northern spotted owl <i>Strix occidentalis caurina</i>	FT	CT	—	Coniferous forests (old growth or in mixed stands of old and younger trees).	None	No suitable habitat on-site.
Mammals						
Pallid bat <i>Antrozous pallidus</i>	—	CSC	—	Arid to semi-arid habitats, often near water. Most common in open, dry areas with rocky areas for roosting.	Low	Foraging habitat present in the project vicinity. Known occurrences in Los Carneros area (W of Napa River) per CNDDDB.
Salt-marsh harvest mouse <i>Reithrodontomys raviventris</i>	FE	CE	—	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat.	None	No suitable habitat on-site.
American badger <i>Taxidea taxus</i>	—	CSC	—	Open grass- or agricultural lands with abundance of available prey (e.g., mice, squirrels, groundhogs) and friable soil for digging burrows.	Low	No rodent burrows observed on-site. In the project vicinity, known only from an old museum collection 3 miles SW of Napa.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence in Study Area	Rationale for Assessing Potential Occurrence
Mammals						
Suisun shrew <i>Sorex ornatus sinuosus</i>	—	CSC	—	Tidal marshes. Requires dense low-lying cover and driftwood, other litter above the mean high-tide line for nesting and foraging.	None	No suitable habitat on-site.

Special Status Species Codes:

Federal: *FE* = Federal Endangered *FT* = Federal Threatened

State: *CSC* = California Species of Special Concern *CE* = California Endangered
CFP = California Fully Protected *CT* = California Threatened
CR = California Rare

CNPS: *List 1B* = Rare, threatened or endangered in CA and elsewhere
List 2B = Rare, threatened, or endangered in CA, but more common elsewhere

Potential for Occurrence Codes:

None: *No suitable habitat for the special status species within the Study Area*

Very Low: *Either the special status species is known to occur within five miles but no suitable habitat exists in the Study Area, or the Study Area provides suitable habitat but the species is not known to occur within a five-mile radius.*

Low *Marginally suitable habitat exists in the Study Area and the special status species occurs within 5 miles but surrounding urban land use conditions and regularity of human activity make it unlikely that the species occurs in the Study Area.*

Moderate: *The special status species is known to occur within a five-mile radius and the Study Area contains suitable habitat, however surrounding urban land use conditions and onsite disturbance reduce the likelihood of occurrence.*

High: *The Study Area provides suitable habitat and there is either documentation of species occurrence within a five-mile radius or evidence gathered by a professional surveyor during an onsite field assessment.*

Present: *Species known to occur within the Study Area based on record search and/or evidence collected during onsite field surveys.*

5.1 Critical Habitat for Special-status Species

The Federal Endangered Species Act (FESA) requires the federal government designate critical habitat for any listed species. Critical habitat is defined as: (1) specific areas within the geographical area occupied by the species at the time of listing, if they contain physical or biological features essential to conservation, and those features may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by the species if the agency determines that the area itself is essential for conservation. There is no designated critical habitat within the Study Area (see Appendix E).

5.2 Special-status Plant Species

Two special-status plant species – big-scale balsamroot (*Balsamorhiza macrolepis*) and two-forked clover (*Trifolium amoenum*) – have low potential to occur in the project vicinity.

1. **Big-scale balsamroot** (*Balsamorhiza macrolepis*; CNPS List 1B.2) is a perennial herb of the sunflower family (*Asteraceae*). It is found on open grassy or rocky slopes and in valleys at elevations ≤ 1400 m. It is endemic to California in the Sierra Nevada foothills, the Sacramento Valley and the eastern part of the San Francisco Bay region. It is evidently uncommon within this rather wide range. This species was not observed during the site survey on September 18, 2018. In addition, results of a CNDDDB search revealed no recorded occurrences of big-scale balsamroot within 2 miles of the project site (Figure 5).
2. **Two-forked clover** (*Trifolium amoenum*; Federally endangered, CNPS List 1B.1) is an annual herb of the legume family (*Fabaceae*). It is found in moist, heavy soils in disturbed areas below 330 feet in elevation. It is threatened by urbanization and agricultural practices. This species was not observed during the site survey on September 18, 2018. In addition, results of a CNDDDB search revealed no recorded occurrences of two-forked clovers within 2 miles of the project site (Figure 5).

5.3 Special-status Wildlife

Federally Listed Species

Of the 10 special-status animal species with potential to occur on the project site, none are listed or proposed for such listing under the federal Endangered Species Act (see Appendix D).

California (State) Listed Species

Of the 10 special-status animal species with potential to occur on the project site, two are legally protected under the California Endangered Species Act (CESA).

1. **Tricolored blackbird** (*Agelaius tricolor*; California threatened) – The tricolored blackbird mainly occurs in lowland California with small nesting colonies found locally in Oregon, Washington, Nevada, and coastal Baja California. It nests from mid-March to early August in freshwater marshes dominated by cattails (*Typha* spp.) or tules (*Schoenoplectus* spp.) and forms the largest breeding colonies of any North American landbird. It preys on insects with preferred foraging habitats including crops such as rice, alfalfa, irrigated pastures, and ripening or cut grain fields (e.g., oats, wheat, silage), as well as annual grasslands, cattle feedlots, and dairies. The greatest threat to this species is loss and degradation of habitat due to urbanization and conversion to agricultural croplands unsuited to their needs. No tricolored blackbirds were observed during the site survey on September 18, 2016. A CNDDDB query revealed three nesting occurrences of tricolored blackbirds within a 2-mile radius of the Study Area (Figure 5). A focused survey during the blackbird's breeding period would reveal its presence or absence within the Study Area.

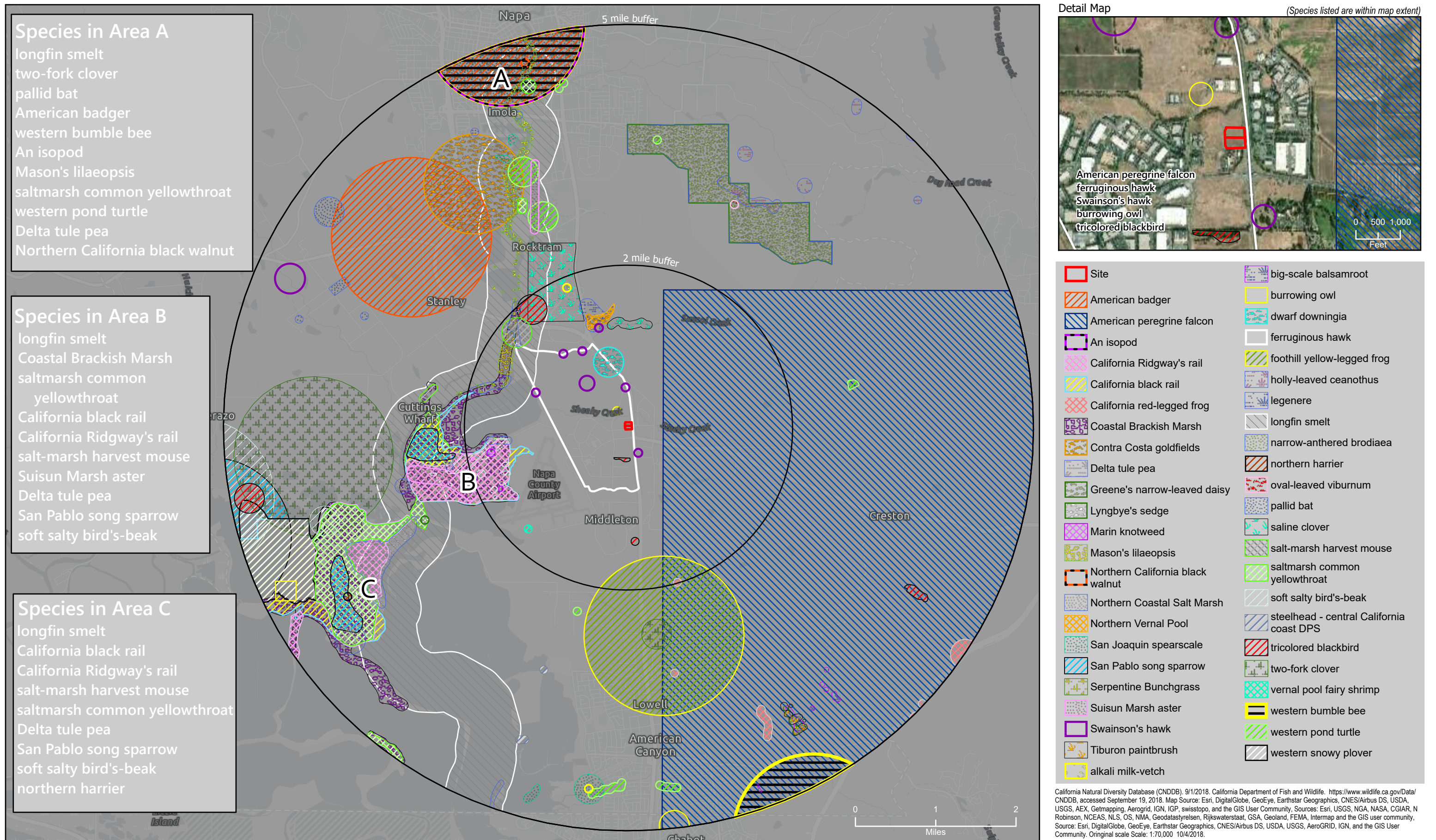


FIGURE 6 - CALIFORNIA NATIONAL DIVERSITY DATABASE (CNDDDB) Recorded Species Observations within Five Miles of the Study Area

2. **Swainson's hawk** (*Buteo swainsoni*; California threatened) – The Swainson's hawk is a broad-winged bird-of-prey (raptor) that frequents open country. It is a long distance migrator that nests in California's Central Valley from March 1 to September 15 and overwinters in Mexico or South America. This hawk forages almost exclusively in agricultural row-crops and grasslands. Its favored prey is voles and small rodents that are more readily available in suitable densities on agricultural lands. Nests are constructed in isolated trees, shelterbelts, riparian groves, or abandoned homesteads. The most recognized threat to Swainson's hawks is the loss of their native foraging and breeding grounds. No Swainson's hawks were observed during the site survey on September 18, 2016. A CNDDDB query revealed seven nesting occurrences of Swainson's hawk within a 2-mile radius of the Study Area (Figure 5). A focused survey during the hawk's breeding period would reveal its presence or absence within the Study Area.

6.0 Effects of Proposed Action

6.1 Effects of Proposed Action on Wetlands or "Other Waters of the U.S."

No wetlands and "other waters of the United States" were found within the Study Area (see section 4.3).

6.2 Effects of Proposed Action on Wildlife and Habitat

The following discussion of biological resources impacts and mitigation measures is based on implementation of the proposed project in comparison to existing conditions.

Rare plants

No special-status plant species were found during the site survey on September 18, 2018. Two such species – big-scale balsam-root (*Balsamorhiza macrolepis macrolepis*) and two-forked clover (*Trifolium amoenum*) – have some potential to occur in the project area, based on presence of suitable habitat and known occurrences within 5 miles of the site. However, the grassland habitats on-site are already highly degraded due to repeated disturbance, with native plants virtually absent. The likelihood of finding either species on-site is considered extremely low.

Special-status Wildlife Species

No special-status wildlife species were seen during the site survey on September 18, 2018. Of the 10 such species with potential to occur on the project site, none are federally listed, and two species – tricolored blackbird (*Agelaius tricolor*) and Swainson's hawk (*Buteo swainsoni*) – are listed under the California Endangered Species Act (CESA). Several nesting occurrences are known for each species within a 2-mile radius of the site, but on the site itself there are no suitable habitats for nesting. The loss of ca. 4 acres of potential foraging habitat would be unavoidable, but this foraging habitat is already in a highly degraded condition, and the extent to which it is still being utilized is unknown.

7.0 Conclusion

There are no wetlands or “other waters of the United States” on the project site. A query of the California Natural Diversity Database (RareFind 5) resulted in no records of any special-status species within the Study Area. Based on habitat requirements there are several such species with low to moderate potential of occurring on-site, but historic and ongoing disturbance may preclude their presence.

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Appendix A. Natural Resources Conservation Service (NRCS) Soil Report



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Napa County, California

115 Gateway Road East



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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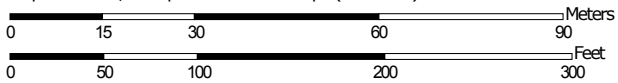
Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map




Map Scale: 1:1,230 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Napa County, California
 Survey Area Data: Version 11, Sep 12, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2015—Mar 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
146	Haire loam, 2 to 9 percent slopes	5.2	100.0%
Totals for Area of Interest		5.2	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Napa County, California

146—Haire loam, 2 to 9 percent slopes

Map Unit Setting

National map unit symbol: hdlh
Elevation: 20 to 2,400 feet
Mean annual precipitation: 25 to 30 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 220 to 260 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Haire and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haire

Setting

Landform: Terraces, alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, riser
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 22 inches: loam
H2 - 22 to 27 inches: sandy clay loam
H3 - 27 to 45 inches: clay
H4 - 45 to 60 inches: sandy clay

Properties and qualities

Slope: 2 to 9 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: CLAYPAN (R014XD089CA)
Hydric soil rating: No

Minor Components

Clear lake

Percent of map unit: 5 percent

Landform: Alluvial fans

Hydric soil rating: Yes

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Custom Soil Resource Report

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United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix B. Data Sheets for On-site Wetland Determination

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: _____ Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____ _____ _____				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

- 1 cm Muck (A9) (LRR C)
- 2 cm Muck (A10) (LRR B)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No _____
--	--

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (2 or more required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Other (Explain in Remarks)
	<input type="checkbox"/> Water Marks (B1) (Riverine)
	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
	<input type="checkbox"/> Drainage Patterns (B10)
	<input type="checkbox"/> Dry-Season Water Table (C2)
	<input type="checkbox"/> Crayfish Burrows (C8)
	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
	<input type="checkbox"/> Shallow Aquitard (D3)
	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____	Wetland Hydrology Present? Yes _____ No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: _____ _____ _____	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: _____ Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators: ___ Dominance Test is >50% ___ Prevalence Index is ≤3.0 ¹ ___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: _____ _____ _____				

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5) (**LRR C**)
- 1 cm Muck (A9) (**LRR D**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)

- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Vernal Pools (F9)

Indicators for Problematic Hydric Soils³:

- 1 cm Muck (A9) (**LRR C**)
- 2 cm Muck (A10) (**LRR B**)
- Reduced Vertic (F18)
- Red Parent Material (TF2)
- Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1) (**Nonriverine**)
- Sediment Deposits (B2) (**Nonriverine**)
- Drift Deposits (B3) (**Nonriverine**)
- Surface Soil Cracks (B6)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)

- Salt Crust (B11)
- Biotic Crust (B12)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres along Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- Water Marks (B1) (**Riverine**)
- Sediment Deposits (B2) (**Riverine**)
- Drift Deposits (B3) (**Riverine**)
- Drainage Patterns (B10)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Shallow Aquitard (D3)
- FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____
 Water Table Present? Yes _____ No _____ Depth (inches): _____
 Saturation Present? Yes _____ No _____ Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes _____ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C. List of Plant Species Observed On-site

Wetland Plant Indicator Status Categories		
Indicator Category	Symbol	Ecological Description
Obligate Wetland Plant	OBL	Almost always occur in wetlands.
Facultative Wetland Plant	FACW	Usually occur in wetlands, but may occur in non-wetlands.
Facultative Plant	FAC	Occur in wetlands and non-wetlands.
Facultative Upland Plant	FACU	Usually occur in non-wetlands, but may occur in wetlands.
Upland Plant	UPL	Almost never occur in wetlands.
No Regional Indicator	NI	

* Based on the Army Corps of Engineers' National Wetland Plant List 2016 Wetland Ratings (Lichvar et al., 2016).

Family name	Species name	Vernacular name	Wetland indicator status
Apiaceae	* <i>Daucus carota</i>	Queen Anne's lace	UPL
Apiaceae	* <i>Foeniculum vulgare</i>	fennel	NI
Asteraceae	<i>Baccharis pilularis</i>	coyote brush	NI
Asteraceae	* <i>Cichorium intybus</i>	common chicory	FACU
Asteraceae	* <i>Cirsium vulgare</i>	bull thistle	FACU
Asteraceae	* <i>Helminthotheca echiioides</i>	bristly ox-tongue	FAC
Asteraceae	<i>Hemizonia congesta</i> subsp. <i>luzulifolia</i>	hayfield tarweed	NI
Asteraceae	* <i>Lactuca serriola</i>	prickly lettuce	FACU
Asteraceae	* <i>Sonchus</i> sp.	sow-thistle	
Brassicaceae	* <i>Hirschfeldia incana</i>	Mediterranean mustard	NI
Convolvulaceae	* <i>Convolvulus arvensis</i>	bindweed	NI
Cyperaceae	<i>Cyperus eragrostis</i>	tall flat-sedge	FACW
Plantaginaceae	* <i>Plantago lanceolata</i>	English plantain	FAC
Poaceae	* <i>Avena</i> sp.	wild oat	NI
Poaceae	* <i>Bromus hordeaceus</i>	soft chess	FACU
Poaceae	* <i>Cynodon dactylon</i>	Bermuda grass	FACU
Poaceae	* <i>Paspalum dilatatum</i>	dallis grass	FAC
Poaceae	* <i>Phalaris aquatica</i>	Harding grass	FACU
Polygonaceae	* <i>Rumex crispus</i>	curly dock	FAC
Rosaceae	* <i>Rubus armeniacus</i>	Himalayan blackberry	FAC

Wetland Indicator Status reflects the 2016 National Wetland Plant List (NWPL) for the Arid West (AW) region.

Nomenclature follows the Jepson e-flora (<http://ucjeps.berkeley.edu/eflora/>)

* denotes naturalized species

Appendix D. California Natural Diversity Database Report



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad> IS <(Cuttings Wharf (3812223))
> AND <(Federal Listing Status> IS <(Endangered> OR <Threatened)> OR <State Listing Status> IS <(Endangered> OR <Threatened> OR <Rare))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Branchinecta lynchi</i> vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	15 15	766 S:1	0	1	0	0	0	0	0	1	1	0	0
<i>Buteo swainsoni</i> Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	7 100	2465 S:7	0	2	2	0	0	3	0	7	7	0	0
<i>Charadrius alexandrinus nivosus</i> western snowy plover	G3T3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	5 10	138 S:2	2	0	0	0	0	0	1	1	2	0	0
<i>Chloropyron molle ssp. molle</i> soft salty bird's-beak	G2T1 S1	Endangered Rare	Rare Plant Rank - 1B.2	0 5	27 S:4	0	1	0	0	2	1	3	1	2	2	0
<i>Hypomesus transpacificus</i> Delta smelt	G1 S1	Threatened Endangered	AFS_TH-Threatened IUCN_EN-Endangered	0 0	27 S:3	0	3	0	0	0	0	2	1	3	0	0
<i>Lasthenia conjugens</i> Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBBG-UC Berkeley Botanical Garden	100 100	33 S:1	0	0	1	0	0	0	0	1	1	0	0
<i>Laterallus jamaicensis coturniculus</i> California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	0 5	303 S:7	0	3	1	0	0	3	1	6	7	0	0
<i>Lilaeopsis masonii</i> Mason's lilaeopsis	G2 S2	None Rare	Rare Plant Rank - 1B.1	2 10	197 S:2	1	1	0	0	0	0	1	1	2	0	0
<i>Oncorhynchus mykiss irideus pop. 8</i> steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	0 3	44 S:2	0	0	0	2	0	0	0	2	2	0	0



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
<i>Rallus obsoletus obsoletus</i> California Ridgway's rail	G5T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	1 7	99 S:9	1	1	1	0	0	6	8	1	9	0	0
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	1 10	144 S:12	0	5	0	0	0	7	9	3	12	0	0
<i>Riparia riparia</i> bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	25 25	297 S:1	0	0	0	0	0	1	1	0	1	0	0
<i>Spirinchus thaleichthys</i> longfin smelt	G5 S1	Candidate Threatened	CDFW_SSC-Species of Special Concern	0 0	46 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Syncaris pacifica</i> California freshwater shrimp	G2 S2	Endangered Endangered	IUCN_EN-Endangered	120 120	20 S:1	1	0	0	0	0	0	1	0	1	0	0
<i>Trifolium amoenum</i> two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_RSABG-Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	20 65	26 S:2	0	0	0	0	1	1	2	0	1	1	0

Appendix E. U.S. Fish & Wildlife Service IPaC Report

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

Napa County, California



Local office

Sacramento Fish And Wildlife Office

☎ (916) 414-6600

📠 (916) 414-6713

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

Endangered species

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

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

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

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

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

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

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

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

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

Mammals

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

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
Northern Spotted Owl <i>Strix occidentalis caurina</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/1123	Threatened
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 <i>Hypomesus transpacificus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/321	Threatened
Tidewater Goby <i>Eucyclogobius newberryi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/57	Endangered

Insects

NAME	STATUS
<p>Callippe Silverspot Butterfly <i>Speyeria callippe callippe</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3779</p>	Endangered
<p>San Bruno Elfin Butterfly <i>Callophrys mossii bayensis</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3394</p>	Endangered

Crustaceans

NAME	STATUS
<p>California Freshwater Shrimp <i>Syncaris pacifica</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7903</p>	Endangered
<p>Conservancy Fairy Shrimp <i>Branchinecta conservatio</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8246</p>	Endangered
<p>Vernal Pool Fairy Shrimp <i>Branchinecta lynchi</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498</p>	Threatened

Flowering Plants

NAME	STATUS
<p>Contra Costa Goldfields <i>Lasthenia conjugens</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7058</p>	Endangered
<p>Showy Indian Clover <i>Trifolium amoenum</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6459</p>	Endangered
<p>Soft Bird's-beak <i>Cordylanthus mollis</i> ssp. <i>mollis</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8541</p>	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.)

<p>Allen's Hummingbird <i>Selasphorus sasin</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637</p>	Breeds Feb 1 to Jul 15
<p>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 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>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
<p>Lawrence's Goldfinch <i>Carduelis lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464</p>	Breeds Mar 20 to Sep 20
<p>Long-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</p>	Breeds elsewhere
<p>Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481</p>	Breeds elsewhere

<p>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</p>	Breeds Apr 1 to Jul 20
<p>Oak Titmouse <i>Baeolophus inornatus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656</p>	Breeds Mar 15 to Jul 15
<p>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</p>	Breeds elsewhere
<p>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</p>	Breeds elsewhere
<p>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</p>	Breeds Feb 20 to Sep 5
<p>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</p>	Breeds Apr 15 to Jul 20
<p>Tricolored Blackbird <i>Agelaius tricolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3910</p>	Breeds Mar 15 to Aug 10
<p>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</p>	Breeds elsewhere
<p>Willet <i>Tringa semipalmata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Wrentit <i>Chamaea fasciata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds Mar 15 to Aug 10

Probability of Presence Summary

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

“Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
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.

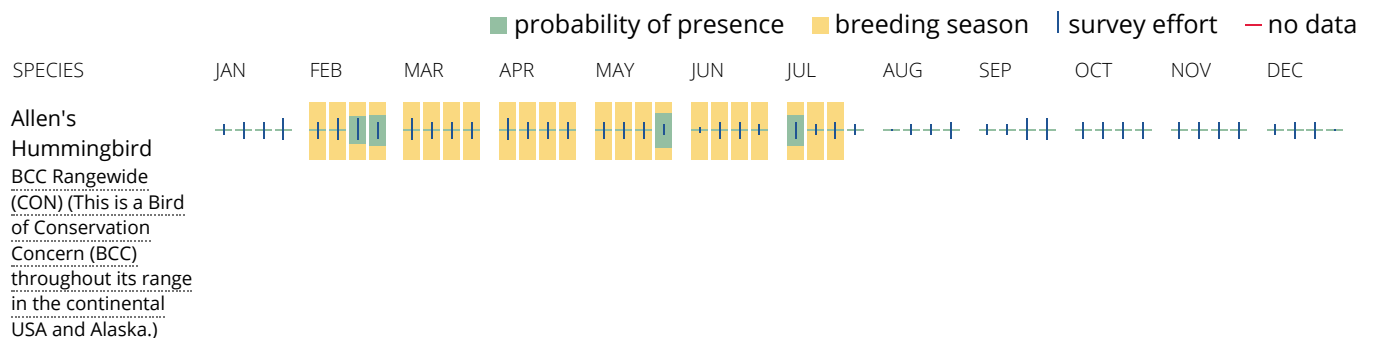
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

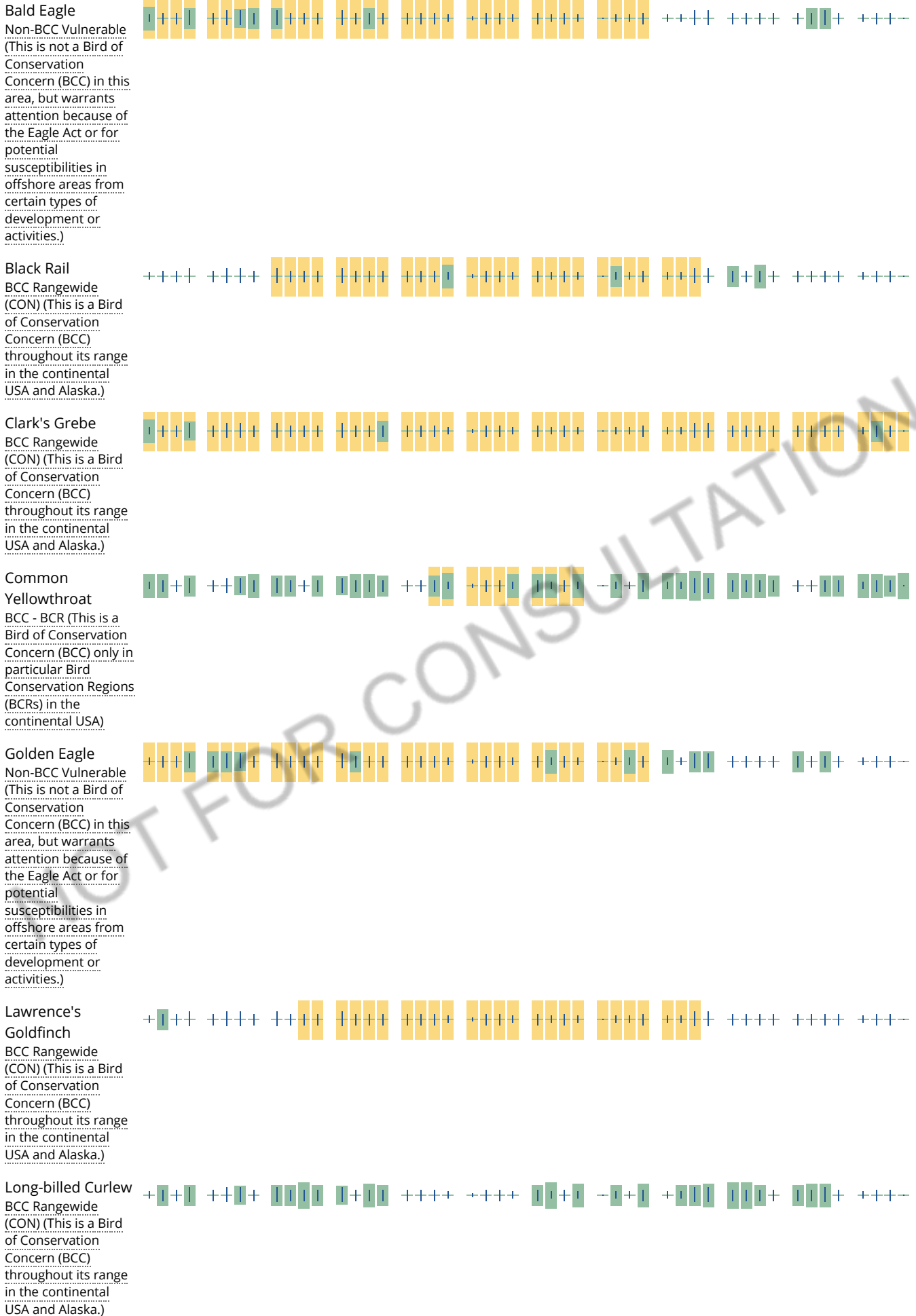
No Data (-)

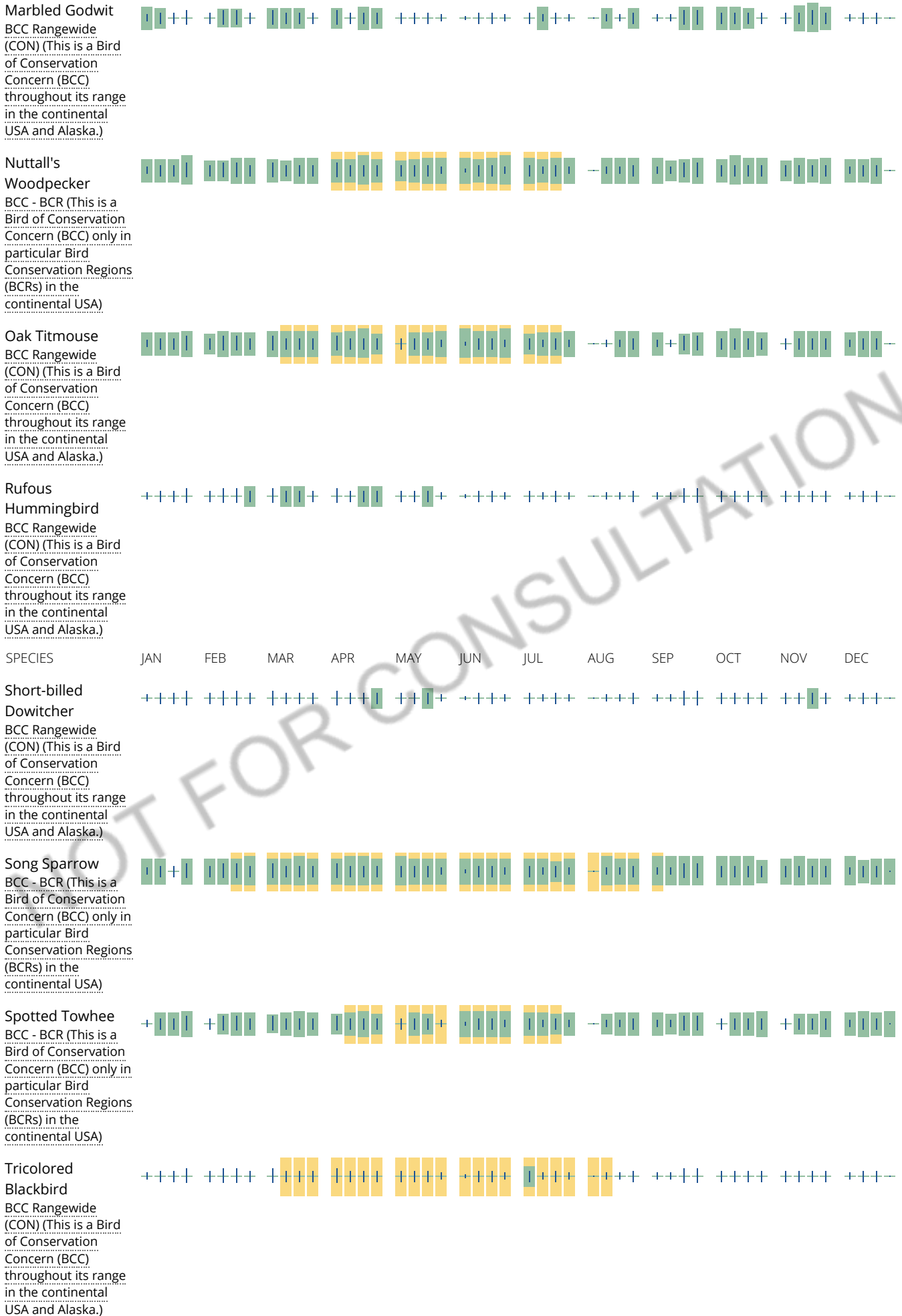
A week is marked as having no data if there were no survey events for that week.

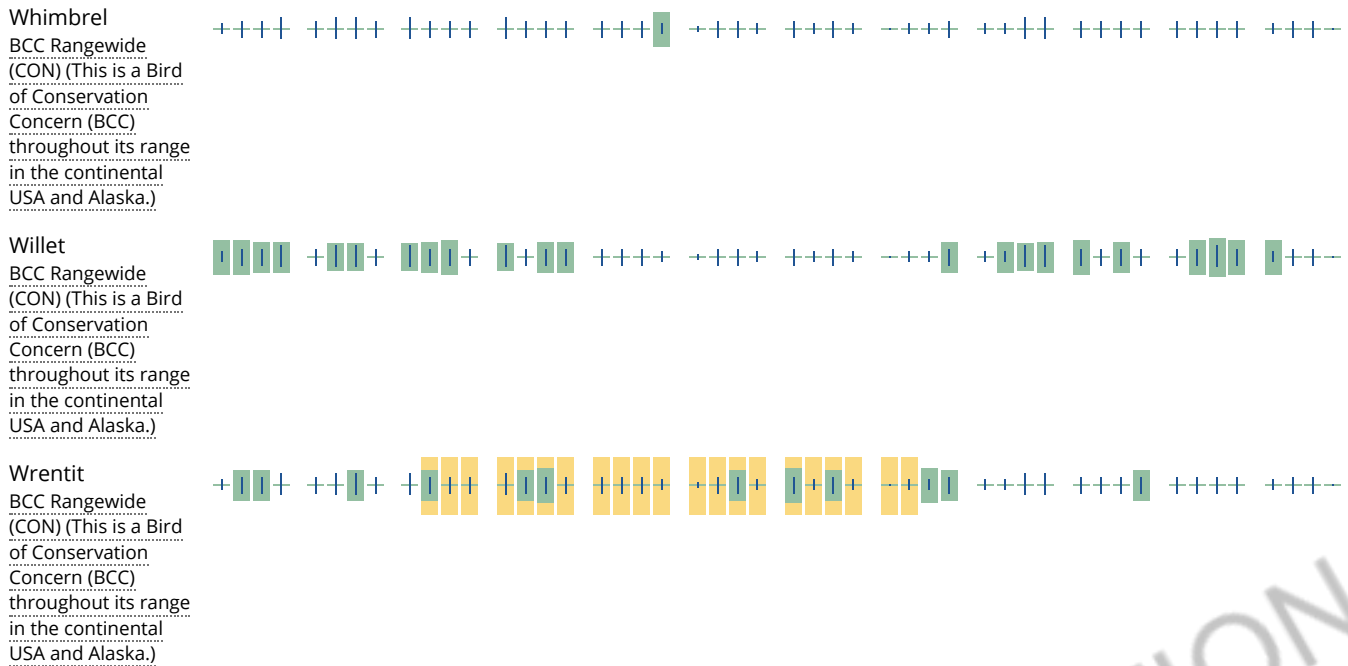
Survey Timeframe

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 [E-bird Explore Data Tool](#).

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

NOT FOR CONSULTATION

Appendix F. Site Photos

STUDY AREA PHOTOGRAPHS



1. Photograph taken at the southeast corner of the Study Area facing northwest.



2. Photograph taken along the western border of the Study Area facing east.

Barnett Environmental, Inc.
115 Gateway Road East; September 2018



3. Photograph taken along the eastern border facing west.



4. Photograph taken along the southern border facing north.

Barnett Environmental, Inc.
115 Gateway Road East; September 2018