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Biological Study

Wetland & Biological Resources Assessment

(Revised October, 2018)

of

**APNs 057-210-039 & 057-210-040 on Gateway Road East in
the Napa Valley Gateway Business Park,
Napa County, California**

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1.0 Introduction

Barnett Environmental has revised a previously prepared (2016) *Wetland and Biological Resources Assessment* (WBRA) of an approximately 5.52-acre project site (APNs 057-210-039 and 057-210-040) located on Gateway Road East in the Napa Valley Gateway Business Park (Napa County, California) on behalf of Scannell Properties. 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 35 to 50 feet elevation above mean sea level and approximate geographic coordinates 38°13' 32.81" North latitude and 122°15'36.96" West longitude. The Study Area is bounded Sheehy Creek to the north, State Route 29 to the east, and industrial buildings to the south and west.

In addition to a formal delineation of all 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(s);
- 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 potential 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 Series Topographic Map - Cuttings/Cordelia Quadrangles

FIGURE 1: STUDY AREA LOCATION

NAPA GATEWAY BUSINESS PARK PROJECT • NAPA COUNTY, CALIFORNIA

Not to Specific Scale



Date: October 5, 2018

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 (nonscyclical) 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; Figure 2); EcoAtlas’ *California Aquatic Resources Inventory* (CARI; Figure 3); 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 revisited the site in September of 2018 to update the previous (2015) wetlands delineation by conducting a new (September 2018) Level 3, Routine Onsite jurisdictional determination of 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 (Appendix D);
- b) U.S. Fish and Wildlife Service’s iPac Database of federally-listed special-status species in Napa County (Appendix E); and
- c) the California Native Plant Society’s *Inventory of Rare & Endangered Plants in California*.

We surveyed the Study Area on September 21, 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.



U.S. Fish and Wildlife Service National Wetlands Inventory



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other
- Project Boundary

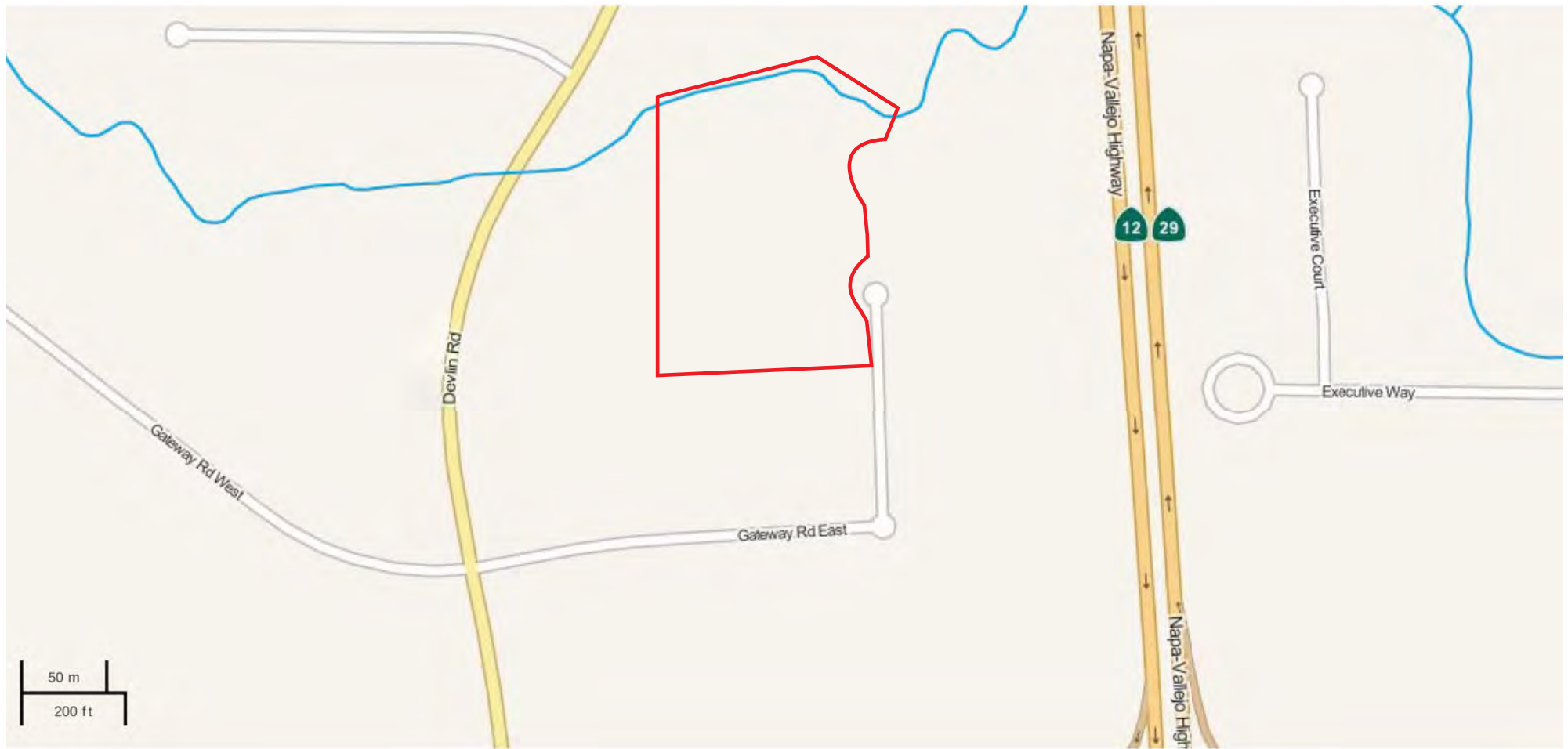
This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

FIGURE 2: NATIONAL WETLANDS INVENTORY (NWI) OF THE STUDY AREA

Not to Specific Scale



Date: October 5, 2018



Legend








- | | |
|--|---|
|  Pond and Associated Vegetation |  Fluvial Channel |
|  Lake, Reservoir and Associated Vegetation |  Slope and Seep Wetlands |
|  Playa |  Vernal Pool |
|  Project Boundary | |

FIGURE 3: CALIFORNIA AQUATIC RESOURCES INVENTORY (CARI) OF THE STUDY AREA



4.0 Existing Conditions

4.1 Soils

Soils underlying the entire property are mapped as Haire loam 2 to 9 percent slopes (Figure 4 and 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 watershed San Pablo (HUC 18050002), but the local hydrologic regime is generally driven by direct precipitation and sheet flow (storm runoff). Sheehy Creek is an unconfined, low-gradient stream system along the northern border of the project area. It is a tributary of the Napa River, located less than 1.5 miles to the west-northwest of the project site.

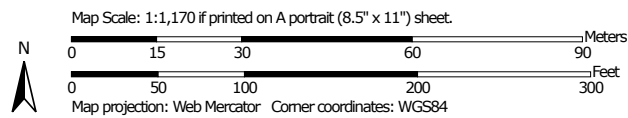
A drainage swale that originates on the eastern edge of the adjacent parcel to the east (APN 057-200-001), along State Highway 29, enters the subject property just north of the Gateway Road East cul-de-sac and continues across the site in a west-northwesterly direction toward Sheehy Creek. Sometime during 2010, an American Canyon Water District water line ruptured at this location on the west side of State Route 29 (letter from Bruce Barnett to USACE San Francisco District Regulatory Program dated November 2, 2016). This event caused large amounts of surface water to leak across the lower-lying grasslands to the west, creating this swale through erosional processes and maintaining wet conditions in it during the rainy season, as evidenced by visibly saturated soils (darker area within the field) on satellite images accessed using 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 at this location. Normal hydrological conditions were subsequently restored, as shown in recent GE images reflecting a distinct absence of saturated soils. No surface water or saturated soils were observed in this topographical depression during the site visit on September 21, 2018, suggesting that the feature had indeed dried up.

4.3 Wetlands & Other Waters of the United States

The NWI and CARI maps (Figures 2 and 3, respectively) show no wetlands or other waters on the project site. A previous delineation in 2015, however, mapped 0.082 acre of “swale” and 0.011 acre of “seasonal wetland” in the project area (Figure 5), most likely due seasonal ponding



Source: USDA Natural Resources Conservation Service



Napa County, California (CA055)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
146	Haire loam, 2 to 9 percent slopes	5.6	100.0%
Totals for Area of Interest		5.6	100.0%

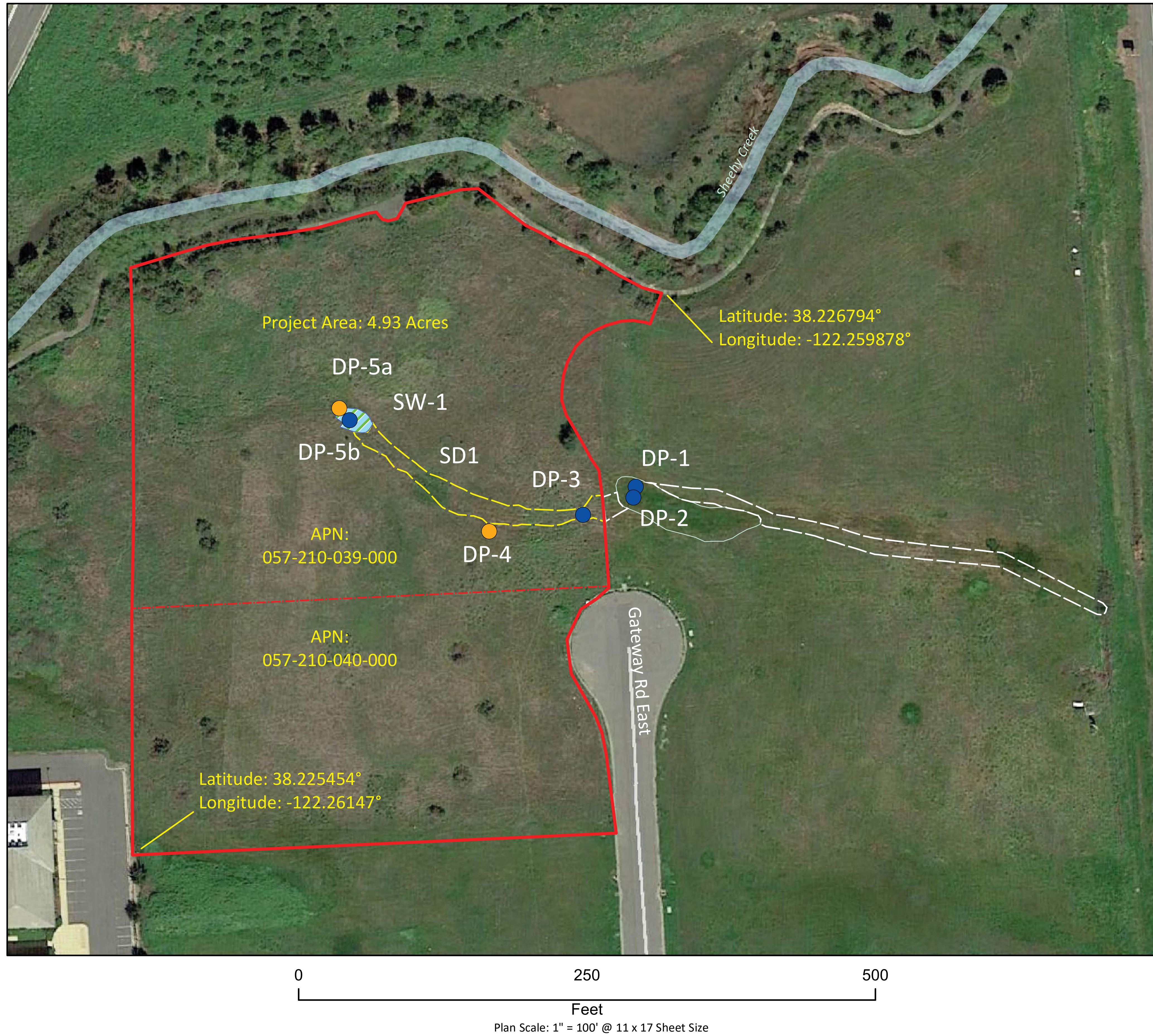
FIGURE 4: STUDY AREA SOILS

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Not to Specific Scale

Date: October 5, 2018





Vicinity Map



Not to Scale

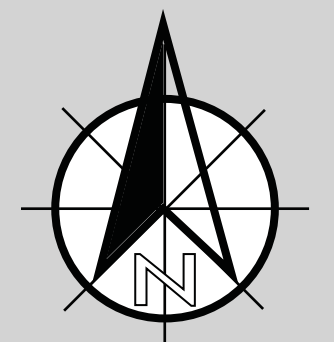
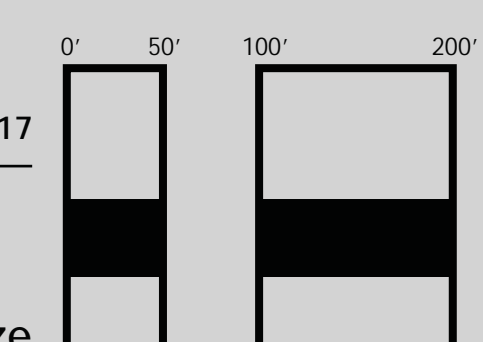
Potential Waters of the US

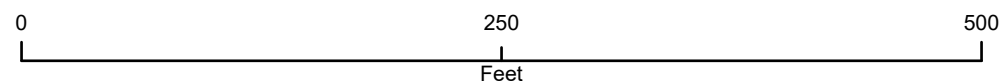
Description	Area (Sq Feet)	Area (Acres)
Seasonal Wetland		
SW1	496	0.011
Swale		
SD1	3563	0.082
Total:	4059	0.093

Legend

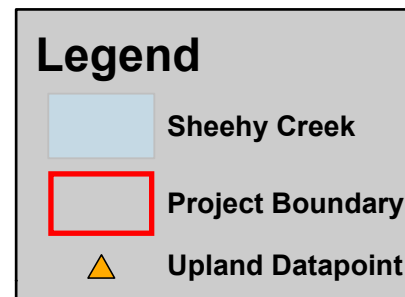
	Seasonal Wetland
	Project Boundary
	Swale
	Swale Offsite
	Ponded Depression Offsite
	Upland Data Point
	Wetland Data Point

FIGURE 5: 2016 STUDY AREA WETLANDS AND "OTHER WATERS OF THE U.S."

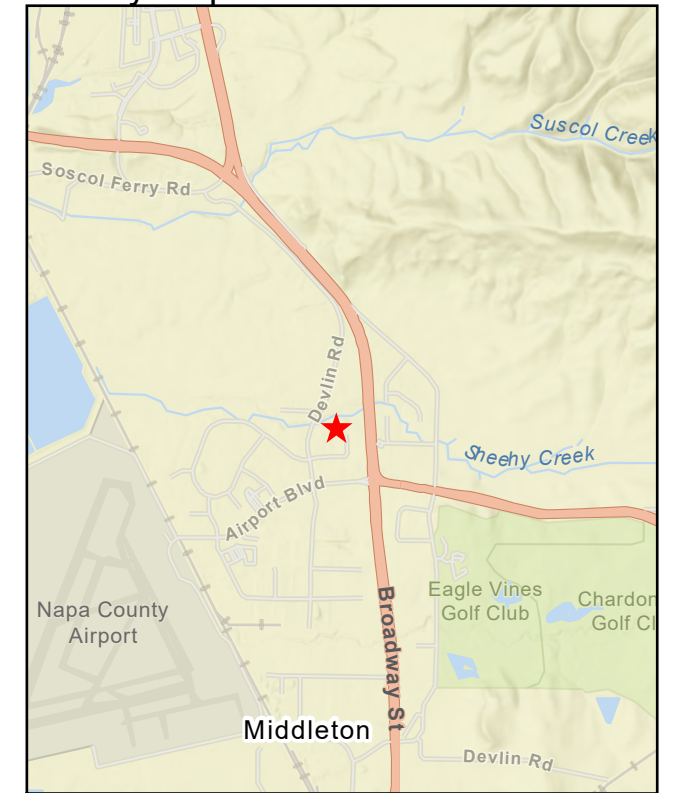




Plan Scale: 1" = 100' @ 11x17 Sheet Size



Vicinity map



Vicinity map - Not to Scale

Data Points

Name	Comment
Data Point	
DP2a	upland within swale
DP2b	upland outside swale
DP3a	upland within swale
DP3b	upland outside swale
DP4a	upland within topographic depression
DP4b	upland within topographic depression

FIGURE 6: 2018 STUDY AREA WETLANDS AND "OTHER WATERS OF THE U.S."

NAPA GATEWAY PROJECT • NAPA COUNTY, CALIFORNIA

Date: October 9, 2018



within this depression during the rainy season. During the September 21, 2018 site visit, the vegetation, soils and hydrology of these areas were re-examined using three pairs of sampling points (DP2A/DP2B, DP3A/DP3B and DP4A/DP4B, respectively; copies of data sheets provided in Appendix B). Hydrophytic vegetation was not present at any 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 swale (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. These findings imply that the areas previously mapped as “swale” and “seasonal wetland” are no longer apparent on the site (Figure 6).

The Army Corps of Engineers verified the previous delineation (PJD) on July 13, 2017 for the 0.093 acre of wetlands found on the project site back in May 2016. Based on our recent site survey, however, we will request a re-verification of this delineation due to changed conditions.

4.4 Vegetation

The northern boundary of the property contains a valley foothill riparian corridor associated with Sheehy Creek. Evidence of an old blacktop path, irrigation lines and hardware cloth cages around some trees and shrubs, suggests that this area was part of an earlier mitigation planting when the creek was relocated during expansion of the Napa Valley Gateway Business Park in 2003–2004.

The western portion of this creek section consists of fairly dense riparian willow scrub habitat while the eastern portion consists of emergent marsh wetland, with some scattered riparian trees and shrubs present. The riparian willow scrub component consists of 0.334 acre of a woody overstory dominated by arroyo willow (*Salix lasiolepis*); with sub-dominant red willow (*Salix laevigata*), coast live oak (*Quercus agrifolia*) and Fremont’s cottonwood (*Populus fremontii*). There was a discontinuous shrub layer of coyote brush (*Baccharis pilularis*) and California blackberry (*Rubus ursinus*), but a well-defined herbaceous layer was largely absent.

Emergent marsh habitat in the open portions of the channel and along the terraced banks of the creek was largely dominated by well-defined stands of common tule (*Schoenoplectus acutus* var. *occidentalis*).

The dominant vegetation on the nearly level to slightly undulating terrain south of Sheehy Creek consists of highly degraded grassland, dominated by non-native annuals such as medusa-head grass (*Elymus caput-medusae*), soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), rat-tail fescue (*Festuca myuros*) and wild oat (*Avena* sp.). A non-native perennial, Harding grass (*Phalaris aquatica*) is locally co-dominant. The site appears to have been periodically disced over the years, resulting in establishment of plant species characteristic of ruderal (i.e., disturbed) habitats, including fennel (*Foeniculum vulgare*) and bull thistle (*Cirsium vulgare*). Native forbs (i.e., wildflowers) were conspicuously absent.

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 species except the American crow (*Corvus brachyrhynchos*) and scrub jay (*Aphelocoma californica*) were observed during the September 2018 field survey. Wildlife likely to use the Study Area, however, include those species adapted to annual grasslands and riverine/riparian 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 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-shoulder kite (*Elanus axillaris*), and the prairie falcon (*Falco mexicanus*) are typical in annual grasslands of this region.

Riverine and riparian habitats can support a variety of aquatic and riparian wildlife, including: western pond turtle (*Emys marmorata*), common garter snake (*Thamnophis sirtalis*), pacific tree frog (*Pseudacris regilla*), bullfrog (*Rana catesbeiana*), and a variety of bird species including: wild turkey, killdeer, Anna's hummingbird, mourning dove, California quail, house wren, wood duck, great blue heron, cattle egret, snowy egret, American robin, acorn woodpecker, Stellar's jay, dipper, and Swainson's thrush. A number of raptors could also nest and/or forage along this watercourse, including the: white tailed kite (*Elanus leucurus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), red-tailed hawk (*Buteo jamaicensis*), rough-legged hawk (*Buteo lagopus*), Swainson's hawk (*Buteo swainsoni*), and great horned owl (*Bubo virginianus*).

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 6 and summarized in Table 1. The output of the USFWS *iPac* Database is provided as Appendix E.

Five special-status plant species – Tiburon paintbrush (*Castilleja affinis* var. *neglecta*), soft salty bird’s-beak (*Chloropyron molle* ssp. *molle*), Contra Costa goldfields (*Lasthenia conjugens*), mason’s lilaopsis (*Lilaeopsis masonii*), and two-forked clover (*Trifolium amoenum*) – could potentially occur in the vicinity of the Study Area, along with nine special-status animal species, including the: valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), vernal pool fairy shrimp (*Branchinecta lynchi*), California red-legged frog (*Rana draytonii*), Swainson’s hawk (*Buteo swainsoni*), western snowy plover (*Charadrius alexandrinus nivosus*), California black rail (*Laterallus jamaicensis coturniculus*), California clapper rail (*Rallus longirostris obsoletus*), bank swallow (*Riparia riparia*), and salt-marsh harvest mouse (*Reithrodontomys raviventris*).

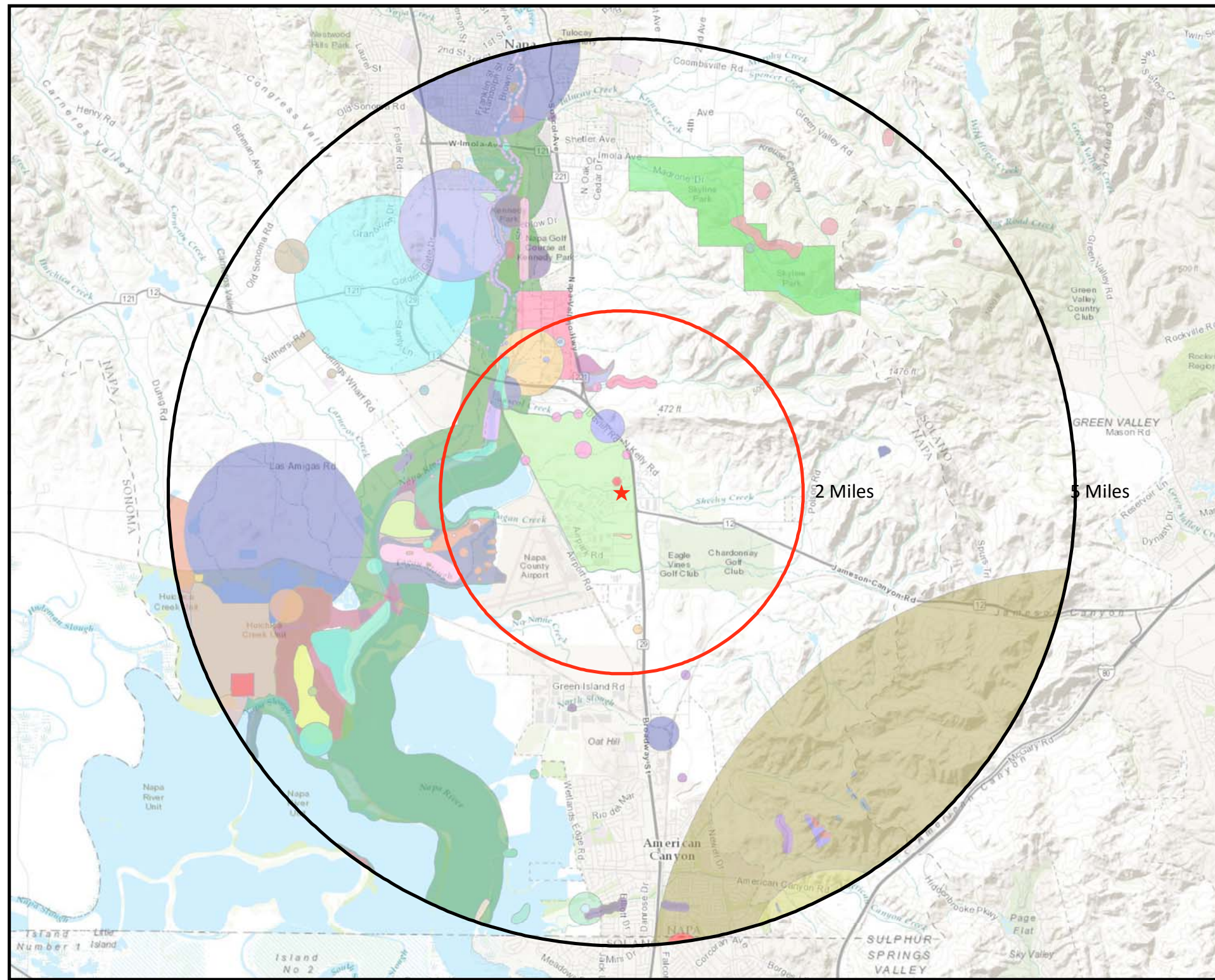
5.1 Critical Habitat for Special-status Species

The Federal Endangered Species Act (FESA) requires the federal government designate critical habitat for any listed species, which 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).

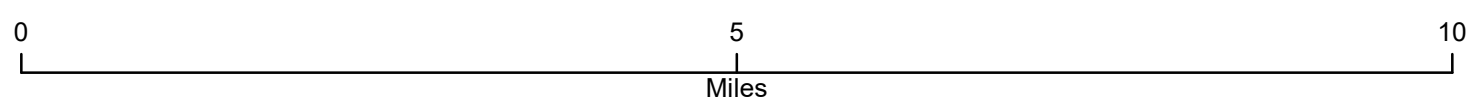
5.2 Special-status Plants

Five special-status plant species – Tiburon paintbrush (*Castilleja affinis* var. *neglecta*), soft salty bird’s-beak (*Chloropyron molle* ssp. *molle*), Contra Costa goldfields (*Lasthenia conjugens*), mason’s lilaopsis (*Lilaeopsis masonii*), and two-forked clover (*Trifolium amoenum*) – could potentially occur in the vicinity of the Study Area.

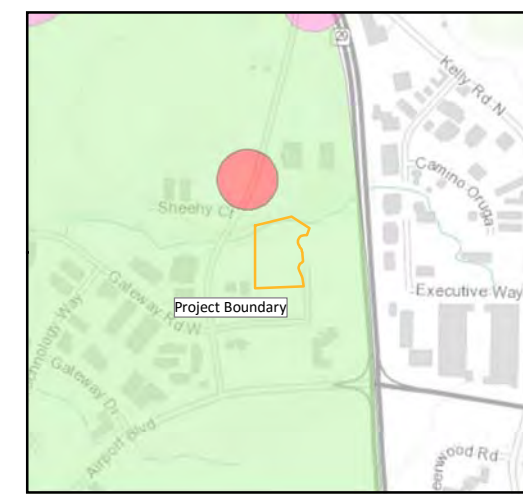
1. **Tiburon paintbrush** – (*Castilleja affinis* spp. *neglecta*; CNPS List 1B.2) is a perennial herb of the broomrapes family (*Orobanchaceae*). It is a federally listed as endangered, California rare species, and on the CNPS List 1B that is found in valley and foothill grasslands, as well as, rocky serpentine sites below 1,000 feet in elevation. This species has a blooming period from April to June. Tiburon paintbrush is threatened by development, gravel mining, grazing, and non-native plants. This species was not observed during the field survey conducted in September 2018. In addition, results of a CNDDDB search revealed no recorded occurrences of soft Tiburon paintbrush within two miles of the project site (Figure 7).



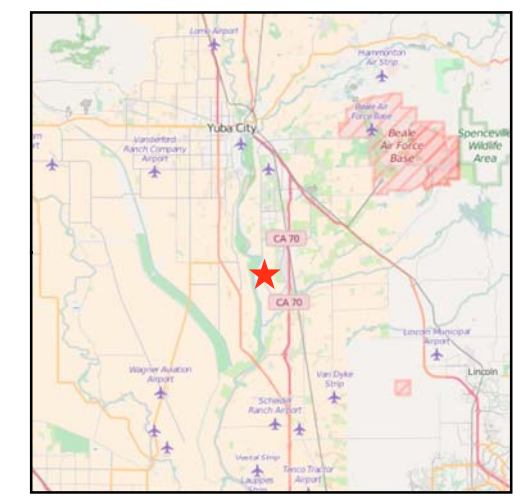
- | | |
|----------------------------------|--|
| American Badger | Burrowing Owl |
| An Isopod | Callipe Silverspot Butterfly |
| California Black Rail | Dwarf Downingia |
| California Clapper Rail | Ferruginous Hawk |
| California Red-Legged Frog | Golden Eagle |
| Coastal Brackish Marsh | Holly-Leaved Ceanothus |
| Contra Costa Goldfields | Legenere |
| Delta Tule Pea | Longfin Smelt |
| Greene's Narrow-Leaved Daisy | Northern Harrier |
| Lyngbye's Sedge | Oval-Leaved Viburnum |
| Marin Knotweed | Pallid Bat |
| Mason's Lilaeopsis | Saline Clover |
| Northern California Black Walnut | Salt-Marsh Harvest Mouse |
| Northern Coastal Salt Marsh | Saltmarsh Common Yellowthroat |
| Northern Vernal Pool | Soft Salty Bird's-Beak |
| San Joaquin Spearscale | Steelhead - Central California Coast DPS |
| San Pablo Song Sparrow | Tricolored Blackbird |
| Serpentine Bunchgrass | Two-Fork Clover |
| Suisun Marsh Aster | Vernal Pool Fairy Shrimp |
| Swainson's Hawk | Western Bumble Bee |
| Tiburon Paintbrush | Western Pond Turtle |
| Alkali Milk-Vetch | Western Snowy Plover |
| Big-Scale Balsamroot | Project Location |



Map Scale: One Inch = 2 Miles @ 11x17 Sheet Size



Vincinity Map - Not to Scale



Vincinity Map - Not to Scale

FIGURE 7: CALIFORNIA NATIONAL DIVERSITY DATABASE (CNDDDB) RECORDED SPECIES OBSERVANCES WITHIN FIVE MILES OF THE STUDY AREA



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

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Plants					
Tiburon paintbrush <i>Castilleja affinis</i> var. <i>neglecta</i>	FE	CT	1B	Found in valley and foothill grasslands, as well as, rocky serpentine sites.	Likely Absent Lacks potential suitable habitat. Rocky and serpentine soils. No recorded occurrences within two miles of the study area.
Soft salty bird's-beak <i>Chloropyron molle</i> ssp. <i>molle</i>	FE	CR	1B	Coastal salt marsh and wetlands.	Likely Absent. No salt marsh located within the project area. Species were not observed during the biological assessment.
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE	-	1B	Valley and foothill grassland, vernal pools, alkaline playa, and cismontane woodland.	Likely Absent. Lacks potential suitable habitat. No vernal pools or cismontane woodland habitats located in study area. No recorded occurrences within two miles of the study area.
Mason's lilaeopsis <i>Lilaeopsis masonii</i>	-	CR	1B	Freshwater and brackish marshes, and riparian scrub.	Likely Absent. No riparian scrub or freshwater marsh located within the project area.
Two-fork clover <i>Trifolium amoenum</i>	FE	-	1B	Valley and foothill grasslands and coastal bluff scrub. Sometimes on serpentine soils, open sunny sites, swales. Most recently cited on roadside and eroding cliff face.	Likely Absent Lacks potential suitable habitat. No recorded occurrences within two miles of the study area.
Insects					
Valley elderberry longhorn beetle <i>Desmocerus californicus dimorphus</i>	FT	-	-	Riparian and oak woodlands. Requires the presence of blue elderberry shrubs.	Absent. No host plant (elderberry) observed on or near the Study Area.
Invertebrates					
Vernal pool fairy shrimp <i>Branchinecta lynchi</i>	FE	-		Valley and foothill grasslands and vernal pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Absent: Lacks potential suitable habitat. Requires vernal pool habitat or other ephemeral pools. No recorded occurrences within study area.

Species	Federal	State	CNPS	Habitat	Potential for Occurrence
Amphibians, Fish, and Reptiles					
California red-legged frog <i>Rana draytonii</i>	FT	-		Prefers lowlands and foothills in or near permanent sources of deep water with dense shrubby or emergent vegetation.	Likely Absent: Project site lacks suitable habitat (i.e deep water). Requires 11-20 weeks of permanent water for larval development.
Birds					
Swainson's hawk <i>Buteo swainsoni</i>	-	CT		Great Basin grassland, riparian forest and woodlands, valley and foothill grassland. Breeds in grasslands with scattered trees, juniper-sage flats, savannahs, & agricultural or ranch lands with groves or lines of trees.	Potentially Present: Project Area is surrounded by vacant (grassland) commercial lots in the business park that could provide marginal foraging habitat for this raptor. Additionally, the riparian habitat adjacent to Sheehy Creek could provided suitable nesting habitat.
Western snowy plover <i>Charadrius alexandrinus nivosus</i>	FT	-		Found on sandy beaches, salt pond levees, and shores of large alkali lakes. Needs sandy, gravelly or friable for nesting.	Absent. Lacks suitable habitat (i.e sandy beaches, salt pond levees, and alkali lakes). Needs sandy or gravel substrate for nesting purposes.
California black rail <i>Laterallus jamaicensis coturniculus</i>	-	CT	-	Inhabits freshwater marshes, wet meadows, and shallow margins of saltwater marshes bordering larger bays.	Likely Absent. Lacks suitable habitat (i.e freshwater marshes, wet meadows, and salt marshes). No California black rails were observed during the biological assessment.
California clapper rail <i>Rallus longirostris obsoletus</i>	FE	CE		Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs.	Likely Absent. Lacks suitable habitat (i.e salt-water and brackish marshes). No California clapper rails were observed during the biological assessment.
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.	Likely Absent. Requires open water and vertical banks/cliffs. Lacks suitable nesting substrate (i.e sandy soils) to dig nesting holes.

species was not observed during the field survey conducted in September 2018. In addition, results of a CNDDDB search revealed no recorded occurrences of two-forked clovers within two miles of the project site (Figure 7).

Though these species could potentially use the Study Area vicinity for some portion(s) of their life cycle, our field surveys found no indication of their use of the proposed project area itself. The historic and ongoing disturbance of the site likely precludes their presence in this area. It seem that, because of a lack of suitable habitats for these species, their likelihood of occurring within the Study Area are remote. Neither species were observed during our filed surveys in September 2018. There are no recorded occurrences of these species in the CNDDDB either within or immediately adjacent to the Study Area (Figure 7).

5.3 Special-Status Wildlife

Federally Listed Species

Of the nine special-status species with a potential to occur on the project site, six are federally listed, but are not known to occur within the Study Area or surrounding vicinity (CNDDDB, Table 1). These include:

1. **Valley elderberry longhorn beetle** (*Desmocerus californicus dimorphus*) – This beetle is listed as threatened by the U. S. Fish and Wildlife Service. Live blue elderberry shrubs (*Sambucus mexicana*) are this boring beetle's exclusive host plant. They are primarily associated with riparian corridors and moist oak woodlands at elevations below 2,500 feet. Exit holes made by the emerging adults are distinctive small oval openings (approx. ¼-inch width). Adults eat elderberry foliage until about June when they mate. Females lay eggs in crevices in the bark before dying a short time later. Upon hatching the larvae then begin to tunnel into the tree where they spend 1-2 years eating the interior wood, which is their sole food source. No live blue elderberry scrubs were observed within the Study Area therefore it is unlikely that valley elderberry longhorn beetles occur here. No elderberry shrubs were observed during September 2018 field survey. The CNDDDB results revealed no recorded occurrence of valley elderberry longhorn beetle within two miles of the project site (Figure 7).
2. **Vernal pool fairy shrimp** (*Branchinecta lynchi*) – This crustacean, listed as threatened by the U. S. Fish and Wildlife Service, ranges in size from 0.43 to 0.98 inches and occurs in vernal pools, seasonal wetlands and wetland swales through most of the Central Valley to Tulare County. The habitats can be grass- or mud-bottomed, with clear to tea-colored water, and can be underlain by claypan or basalt-flow hardpan in grasslands. Vernal pool fairy shrimp have a lifespan of two months, from January to early March. Females lay drought-resistant eggs that embed into the soil and hatch the next winter when the pools refill. Though no fairy shrimp were observed during the field survey conducted in September 2018, their presence or absence cannot be determined without FWS-protocol surveys. However, a CNDDDB query (Figure 7) revealed that there was a single recorded occurrences of fairy shrimp within a two mile radius of the Study Area.

3. **California red-legged frog (*Rana draytonii*)** – California red-legged frog is a federally listed threatened species. This species is approximately two to five inches long with reddish coloring on the underside of the legs and belly. Their back and head have a rough texture that can range from red to brown and /or gray coloring with folds running down the side of its back. The back and top of the legs are covered in small black spots and large dark blotches. They also tend to have a dark mask and a tan or light colored stripe above the jaw that extends to the shoulder. Their diet consists of mainly invertebrates however, on occasion, they will consume smaller amphibians and mammals. California red-legged frogs like slow-moving or standing deep ponds, pools, and streams. Tall vegetation, like grasses, cattails, and shrubs, provide protection from predators and the sun. This species breeds around November and continue through April. The females lay large egg masses and the males fertilize the eggs. The eggs hatch and the larvae go through metamorphosis throughout the summer. California red-legged frog are threatened by invasive species like non-native bullfrogs, habitat loss, and overexploitation of water resources. No red-legged frogs were observed during the field survey conducted by Barnett biologist in September 2018. The CNDDDB results revealed no occurrences of this species within two miles of the project site. (Figure 7).
4. **Western snowy plover (*Charadrius nivosus*)** – This Western snowy plover is a federally listed threatened species. This species is approximately six to seven inches long and can weigh up to two ounces. The upperparts are greyish brown and the underparts white in all plumage with dark patches on sides of neck reaching around onto the top of its chest. Additionally, the western snowy plover has moderately long dark legs and a dark black beak. Their diet consists of terrestrial and aquatic invertebrates. They tend to inhabit barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, river bars, along alkaline or saline lakes, reservoirs, and ponds. Their nests consists of natural or scraped depressions on dry ground usually lined with pebbles, shell fragments, fish bones, mud chips, vegetation fragments, or invertebrate skeletons. Female western snowy plover lay two to six eggs per clutch and young are able to leave the nest as soon as down dries. Threatened by habitat alterations and increased recreational use of beaches. No western snowy plover were observed during the field survey conducted by Barnett biologist in September 2018. The CNDDDB results revealed no occurrences of this species within two miles of the project site. (Figure 7).
5. **California clapper rail (*Charadrius nivosus*)** – The California clapper rail is federally and state listed as endangered. This species have short tails, short rounded wings, and a long, slightly down-curved bill. Their plumage varies but always has grayish edges on brown-centered back feathers, olive wing coverts, and dull stripes on flanks. California clapper rail's diet consists of mostly crustaceans, but also small fish, insects, seeds, bird eggs, and slugs. Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay. Associated with abundant growths of pickleweed, but feeds away from cover on invertebrates from mud-bottomed sloughs. Breeding season is from mid-March through August where a female lays between four to fourteen eggs per clutch. Nest are composed of twigs and are located on the ground among plant roots. The incubation period is 18 to 29 days. This species is threatened by land development and shoreline fill. No California clapper rails were observed during the field survey conducted by Barnett

biologist in September 2018. The CNDDDB results revealed no occurrences of this species within two miles of the project site. (Figure 7).

6. **Salt marsh harvest mouse (*Reithrodontomys raviventris*)** – The salt marsh harvest mouse is federally and state listed as endangered. This species has dark brown fur above and a pinkish cinnamon or tawny belly, with a bicolored tail. An adult is approximately five to seven inches long, two to four inches tall, and weighs less than an ounce. Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is their primary habitat. Their diets consists of seeds and plants, especially pickleweed and glasswort. Ball-like nest are found on the ground and are comprised of dry grasses and sedges. The female has an average liter size of four young and can have up to two litters a year. No salt marsh harvest mice were observed during the field survey conducted by Barnett biologist in September 2018. The CNDDDB results revealed no occurrences of this species within two miles of the project site. (Figure 7).

California (State) Listed Species

State listed species are plants and animals that are legally protected under the California Endangered Species Act (CESA). Only three such species (of the nine total special-status species in Table 2 above have the potential to occur in the Study Area:

1. **Swainson's hawk (*Buteo swainsoni*)** – The Swainson's hawk is a California threatened species. It is a large (1.75 - 2 pounds), broad-winged bird-of-prey (raptor) that frequents open country. It is a long distance migrator that nests in the Central Valley from March 1 to September 15 and over-winters 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. Unlike some other local raptors, urban areas or dense vegetation do not provide suitable foraging habitat for this hawk. Sacramento, Yolo, and San Joaquin Counties support most of the Central Valley Swainson's hawk breeding population. Narrow riparian systems and scattered Valley oak trees, combined with suitable agricultural foraging habitat, provide high-quality habitat conditions in Sacramento County, where an estimated 100 pairs nest. Swainson's hawks are monogamous and actively nest from March through July. Nests of twigs and grasses are constructed in isolated trees or bushes, shelterbelts, riparian groves, or abandoned homesteads, approximately nine to 15 ft above the ground in cottonwood, poplar, oak and the occasional pine tree in the Central Valley. The incubation period is 34 to 35 days, with fledging at about 38 to 46 days. No Swainson's hawks were observed during the field survey conducted in September 2018. A CNDDDB query revealed six documented occurrences of Swainson's hawk within a two-mile radius of the Study Area (Figure 7). A focused survey during the hawk's breeding period would reveal its presence or absence within the Study Area.
2. **Bank swallow (*Riparia riparia*)** – The bank swallow is a California threatened species. It is approximately five inches long with a brown back and white underside with a narrow brown band on the breast. Additionally, this species has a short black bill and brown legs. Their primary diet consists of a variety of insects such as beetles, wasps, winged ants, small bees, moths, stone flies, dragonflies, and more. This species often forages in flocks while in

flight, and typically flies rather low, doing much of the feed over water. Bank swallows nests in colonies in vertical banks of sand or dirt, may be along riverbanks, lake shores, road cuts, gravel pits or similar sites. These colonies are often dense with entrances to holes no more than a foot apart. Their nests are typically two to three feet long and consist of grass, weeds, rootlets, with a lining of feathers added after the eggs are laid. Breeding occurs from late March through the end of September. On average the female lays four to five eggs which incubate for approximately 14 to 16 days with the young dispersing about 18 to 24 days after hatching. No bank swallows were observed during the field survey conducted in September 2018. A CNDDDB query revealed no documented occurrences of bank swallow within a two-mile radius of the Study Area (Figure 7).

3. **California black rail** (*Laterallus jamaicensis coturniculus*) – The California black rail is a California threatened species. This species is very small approximately four to six inches in length and weighs about an ounce. Black rails are blackish above, with white speckling, chestnut nape, and greyish underneath with white barring on flanks. Habitats consists of salt marshes, shallow freshwater marshes, wet meadows, and flooded grassy vegetation. Their diet primarily consists of small invertebrates and seeds. Black rails build well concealed nests on the ground, and often under dense vegetation. Breeding occurs during the summer and they usually lay between five to eight eggs per clutch. No California black rails were observed during the field survey conducted in September 2018. The CNDDDB query revealed no recorded occurrences of black rails within two miles of the Study Area (Figure 7).

6.0 Conclusion

The project area no longer contains wetland and “other waters of the United States” according to the recent field survey. In July 2017, Barnett Environmental received preliminary jurisdiction verification for the 0.093 acre of wetlands found on the project site back in May 2016. Due to the changed conditions we will need to request a re-verification. A query of the California Natural Diversity Database (Rarefind) resulted in no records of any species of special concern within or immediately adjacent to the Napa Gateway project. While the species listed in Table 1 may potentially occupy the site based on habitat requirements, historic and ongoing disturbance may preclude presence of these species.

7.0 References

- Barnett Environmental (2016) *Biological & wetland resources assessment of APNs 057-210-039 and 057-210-040 on Gateway Road East in the Gateway Business Park at the Napa County Airport in Napa, California*. Prepared for The Pacheco Company, Inc., dated May 23, 2016.
- California Department of Fish and Wildlife. *California Natural Diversity Database. RareFind 5*. <https://www.wildlife.ca.gov/Data/CNDDDB/Maps-and-Data> [accessed September 17, 2018].

- California Native Plant Society, Rare Plant Program (2018) *Inventory of Rare and Endangered Plants of California* (online edition, v8-03 0.39). <http://www.rareplants.cnps.org> [accessed September 17, 2018].
- Jepson Flora Project [eds.] (2018) *Jepson eFlora*, <http://ucjeps.berkeley.edu/eflora/> [accessed September 19, 2018].
- Lichvar, R.W., D.L. Banks, W.N. Kirchner & N.C. Melvin (2016) The National Wetland Plant List: 2016 wetland ratings. *Phytoneuron* 2016-30: 1–17.
- San Francisco Estuary Institute (last updated Dec. 28, 2017) *California Aquatic Resource Inventory (CARI) version 0.3 GIS data*. <https://www.sfei.org/data/california-aquatic-resource-inventory-cari-version-03-gis-data#sthash.Shog8meF.dpbs>
- Sawyer, J.O., T. Keeler-Wolf & J.M. Evens (2009) *Manual of California vegetation*, 2nd ed. California Native Plant Society, Sacramento, CA. 1300 pp.
- U.S. Army Corps of Engineers, Environmental Laboratory (1987) *Wetlands Delineation Manual*. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/delineation_manual.pdf
- U.S. Army Corps of Engineers, Wetlands Regulatory Assistance Program (2008) *Regional Supplement to the Corps of Engineers Delineation Manual: Arid West Region (Version 2.0)*. Final report ERDC/EL TR-08-28, U.S. Army Engineer Research and Development Center, Vicksburg, MS. <http://www.spk.usace.army.mil/Portals/12/documents/regulatory/pdf/trel08-28.pdf>
- U.S. Army Corps of Engineers. NWPL - National Wetland Plant List. http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html [accessed July 25, 2018].
- U. S. Fish and Wildlife Service. *IPaC Information for Planning and Consultation*. <https://ecos.fws.gov/ipac/> [accessed September 22, 2018].
- U. S. Fish and Wildlife Service (last updated June 25, 2018) *National Wetlands Inventory*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.
<https://www.fws.gov/wetlands/>
- U.S. Natural Resources Conservation Service. *Soil Data Access (SDA) Hydric Soils List*. https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcseprd1316620.html [accessed September 17, 2018].
- U.S. Natural Resources Conservation Service. *Web Soil Survey*. <https://websoilsurvey.sc.egov.usda.gov/> [accessed September 17, 2018]

APPENDIX A – Natural Resources Conservation Service (NRCS) Soil Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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



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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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

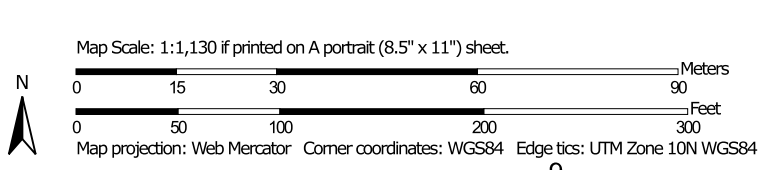
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.























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.

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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—Oct 31, 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.

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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

References

- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

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.

<u>Tree Stratum</u> (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 = _____
<u>Sapling/Shrub Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				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.
<u>Herb Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
_____ = Total Cover				
<u>Woody Vine Stratum</u> (Plot size: _____)				
1. _____				
2. _____				
_____ = Total Cover				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Hydrophytic Vegetation Present? Yes _____ No _____				
Remarks: _____ _____ _____				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: APNs 057-210-039 & 057-210-040 City/County: Napa County Sampling Date: 21 Sept. 2018
 Applicant/Owner: Scannell State: CA Sampling Point: DP2B
 Investigator(s): R. Douglas Stone Section, Township, Range: S1 NW1/4, T4N R4W
 Landform (hillslope, terrace, etc.): upland adjacent to swale Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): LRR C Lat: 38°13'34.65"N Long: 122°15'36.43"W Datum: NAD 83
 Soil Map Unit Name: Haire loam, 2 to 9 percent slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: A broken water line along State Route 29 caused artificially wet conditions in this swale (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until repairs were done in 2014.	

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: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>100</u> x 4 = <u>400</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>400</u> (B) Prevalence Index = B/A = <u>4.0</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Phalaris aquatica</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	
2. <u>Bromus hordeaceus</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
3. <u>Festuca myuros</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:

SOIL

Sampling Point: DP2B

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		
6	10YR3/2	>95	10YR 5/6	<5	C	PL	loam	

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:

Soil exhibits oxidized rhizospheres, but does not meet the technical descriptions of Depleted Matrix (F3) or Redox Dark Surface (F6).

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? (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: APNs 057-210-039 & 057-210-040 City/County: Napa County Sampling Date: 21 Sept. 2018
 Applicant/Owner: Scannell State: CA Sampling Point: DP3A
 Investigator(s): R. Douglas Stone Section, Township, Range: S1 NW1/4, T4N R4W
 Landform (hillslope, terrace, etc.): low-gradient swale Local relief (concave, convex, none): slightly concave Slope (%): 2
 Subregion (LRR): LRR C Lat: 38°13'34.53"N Long: 122°15'37.73"W Datum: NAD 83
 Soil Map Unit Name: Haire loam, 2 to 9 percent slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: A broken water line along State Route 29 caused artificially wet conditions in this swale (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until repairs were done in 2014.	

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: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>10</u> (A) <u>40</u> (B) Prevalence Index = B/A = <u>4.0</u>
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Elymus caput-medusae</u>	<u>80</u>	<u>Yes</u>	_____	
2. <u>Bromus diandrus</u>	<u>10</u>	_____	_____	
3. <u>Bromus hordeaceus</u>	<u>10</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>		
Remarks:				
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.				
Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>				

SOIL

Sampling Point: DP3A

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		
6	10YR 3/2	<95	10YR 4/6	<5	C	M	loam	

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"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> 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 <input checked="" type="checkbox"/>
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Remarks:
 Soil exhibits Fe/Mn concentrations and oxidized rhizospheres, but does not meet the technical descriptions of Depleted Matrix (F3) or Redox Dark Surface (F6).

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"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <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 checked="" 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 <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Time-series satellite images (Google Earth) indicate that a broken water line along State Route 29 created artificially wet conditions (saturated soils during the normally dry summer months) in this swale from the years 2010 or possibly earlier until 2014 when repairs were done. Normal hydrological conditions have since been restored (saturated soils present only after winter rains and during the spring season).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: APNs 057-210-039 & 057-210-040 City/County: Napa County Sampling Date: 21 Sept. 2018
 Applicant/Owner: Scannell State: CA Sampling Point: DP3B
 Investigator(s): R. Douglas Stone Section, Township, Range: S1 NW1/4, T4N R4W
 Landform (hillslope, terrace, etc.): upland adjacent to swale Local relief (concave, convex, none): none Slope (%): 2
 Subregion (LRR): LRR C Lat: 38°13'34.53"N Long: 122°15'37.73"W Datum: NAD 83
 Soil Map Unit Name: Haire loam, 2 to 9 percent slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: A broken water line along State Route 29 caused artificially wet conditions in this swale (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until repairs were done in 2014.	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Elymus caput-medusae</u>	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <u>Bromus diandrus</u>	_____	_____	_____	
3. <u>Bromus hordeaceus</u>	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>5</u> (A) <u>20</u> (B) Prevalence Index = B/A = <u>4.0</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators: <input type="checkbox"/> Dominance Test is >50% <input type="checkbox"/> Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
1. <u>Elymus caput-medusae</u>	<u>90</u>	<u>Yes</u>	_____	
2. <u>Bromus diandrus</u>	<u>5</u>	_____	_____	
3. <u>Bromus hordeaceus</u>	<u>5</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:

SOIL

Sampling Point: DP3B

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		
6	10YR 3/2							

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: APNs 057-210-039 & 057-210-040 City/County: Napa County Sampling Date: 21 Sept. 2018
 Applicant/Owner: Scannell State: CA Sampling Point: DP4A
 Investigator(s): R. Douglas Stone Section, Township, Range: S1 NW1/4, T4N R4W
 Landform (hillslope, terrace, etc.): seasonally wet depression Local relief (concave, convex, none): concave Slope (%): 2
 Subregion (LRR): LRR C Lat: 38°13'35.37"N Long: 122°15'38.90"W Datum: NAD 83
 Soil Map Unit Name: Haire loam, 2 to 9 percent slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: A broken water line along State Route 29 caused artificially wet conditions in this swale (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until repairs were done in 2014.	

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: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.5</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>50</u> x 3 = <u>150</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>100</u> (A) <u>350</u> (B) Prevalence Index = B/A = <u>3.5</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Herb Stratum (Plot size: _____)				
1. <u>Cynodon dactylon</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	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)
2. <u>Hordeum marinum</u>	<u>39</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>Festuca perennis</u>	<u>10</u>		<u>FAC</u>	
4. <u>Rumex crispus</u>	<u>1</u>		<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/>
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Remarks:

SOIL

Sampling Point: DP4A

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		
6	10YR 3/2	95	7.5YR 5/6	5	C	M	loam	

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"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Vernal Pools (F9)	

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 <input checked="" type="checkbox"/>
--	---

Remarks:
 Soil exhibits Fe/Mn concentrations and oxidized rhizospheres, but does not meet the technical descriptions of Depleted Matrix (F3) or Redox Dark Surface (F6).

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 checked="" 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"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Sediment Deposits (B2) (Riverine)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Drift Deposits (B3) (Riverine)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> FAC-Neutral Test (D5)	<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
--	--

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
 Remarks:
 Time-series satellite images (Google Earth) indicate that a broken water line along State Route 29 created artificially wet conditions (saturated soils during the normally dry summer months) in this depression from the years 2010 or possibly earlier until 2014 when repairs were done. Normal hydrological conditions have since been restored (saturated soils present only after winter rains and during the spring season).

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: APNs 057-210-039 & 057-210-040 City/County: Napa County Sampling Date: 21 Sept. 2018
 Applicant/Owner: Scannell State: CA Sampling Point: DP4B
 Investigator(s): R. Douglas Stone Section, Township, Range: S1 NW1/4, T4N R4W
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____
 Subregion (LRR): LRR C Lat: 38°13'35.37"N Long: 122°15'38.90"W Datum: NAD 83
 Soil Map Unit Name: Haire loam, 2 to 9 percent slopes 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 <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: A broken water line along State Route 29 caused artificially wet conditions in this swale (saturated soils during the normally dry summer months) from the years 2010 or possibly earlier until repairs were done in 2014.	

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: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>10</u> (A) <u>40</u> (B) Prevalence Index = B/A = <u>4.0</u>
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Elymus caput-medusae</u>	<u>80</u>	<u>Yes</u>	_____	
2. <u>Bromus diandrus</u>	<u>10</u>	_____	_____	
3. <u>Bromus hordeaceus</u>	<u>10</u>	_____	<u>FACU</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				

Hydrophytic Vegetation Indicators:
 ___ Dominance Test is >50%
 ___ Prevalence Index is ≤3.0¹
 ___ Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 ___ Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No _____

Remarks:

Appendix C. List of Plant Species Observed On-site (Sept. 21, 2018)

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>*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>Helenium puberulum</i>	sneezeweed	FACW
Asteraceae	<i>*Helminthotheca echioides</i>	bristly ox-tongue	FAC
Asteraceae	<i>Pseudognaphalium stramineum</i>	Chilean cudweed	FAC
Asteraceae	<i>*Sonchus</i> sp.	sow-thistle	
Asteraceae	<i>*Tragopogon porrifolius</i>	salsify	NI
Convolvulaceae	<i>*Convolvulus arvensis</i>	bindweed	NI
Cyperaceae	<i>Schoenoplectus acutus</i> var. <i>occidentalis</i>	hardstem bulrush, tule	OBL
Equisetaceae	<i>Equisetum telmateia</i> subsp. <i>braunii</i>	giant horsetail	FACW
Fabaceae	<i>Acmispon wrangelianus</i>	Chilean bird's-foot trefoil	NI
Fabaceae	<i>*Vicia villosa</i>	winter vetch	NI
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	NI
Gentianaceae	<i>*Centaurium tenuiflorum</i>	slender centaury	FACW
Juncaceae	<i>Juncus mexicanus</i>	Mexican rush	FACW
Menthaceae	<i>*Mentha x piperita</i>	peppermint	FACW
Onagraceae	<i>Epilobium ciliatum</i>	slender willow-herb	FACW
Plantaginaceae	<i>*Plantago lanceolata</i>	English plantain	FAC
Poaceae	<i>*Avena</i> sp.	wild oat	NI
Poaceae	<i>*Bromus diandrus</i>	ripgut grass	NI
Poaceae	<i>*Bromus hordeaceus</i>	soft chess	FACU
Poaceae	<i>*Cynodon dactylon</i>	Bermuda grass	FACU
Poaceae	<i>*Elymus caput-medusae</i>	Medusa-head grass	NI

Poaceae	<i>Elymus triticoides</i>	beardless wild rye	FAC
Poaceae	* <i>Festuca perennis</i>	rye-grass	FAC
Poaceae	* <i>Festuca myuros</i>	rat-tail fescue	FACU
Poaceae	* <i>Hordeum marinum</i> subsp. <i>gussoneanum</i>	Mediterranean barley	FAC
Poaceae	* <i>Phalaris aquatica</i>	Harding grass	FACU
Polygonaceae	* <i>Rumex crispus</i>	curly dock	FAC
Polygonaceae	* <i>Rumex pulcher</i>	fiddle dock	FAC
Rosaceae	<i>Rosa californica</i>	California wild rose	FAC
Rosaceae	* <i>Rubus armeniacus</i>	Himalayan blackberry	FAC
Rosaceae	<i>Rubus ursinus</i>	California blackberry	FAC
Salicaceae	<i>Populus fremontii</i>	Fremont's cottonwood	FAC
Salicaceae	<i>Salix laevigata</i>	red willow	FACW
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	FACW
Sapindaceae	<i>Aesculus californica</i>	California buckeye	NI

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 – CNDDDB Records



Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: (Federal Listing Status is (Endangered or Threatened) or State Listing Status is (Endangered or Threatened or Rare)) and Quad is (Cordelia (381222) or Cuttings Wharf (381223) or Napa (381223)) and Habitat is (Aquatic or Riparian woodland or Valley & foothill grassland or Wetland)

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	750 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	2392 S:5	0	2	2	0	0	1	0	5	5	0	0
<i>Castilleja affinis var. neglecta</i> Tiburon paintbrush	G4G5T1T2 S1S2	Endangered Threatened	Rare Plant Rank - 1B.2 SB_UCBBG-UC Berkeley Botanical Garden	550 550	9 S:1	1	0	0	0	0	0	0	1	1	0	0
<i>Charadrius alexandrinus nivosus</i> western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	5 10	122 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	1	2	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	60 230	33 S:3	0	0	1	0	2	0	2	1	1	1	1
<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	241 S:8	0	3	0	0	0	5	5	3	8	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



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>Oncorhynchus mykiss irideus</i> steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	0 600	39 S:3	0	0	1	2	0	0	0	3	3	0	0
<i>Rallus longirostris obsoletus</i> California clapper rail	G5T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	1 7	98 S:9	1	1	1	0	0	6	8	1	9	0	0
<i>Rana draytonii</i> California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	80 650	1377 S:14	1	5	5	1	0	2	1	13	14	0	0
<i>Reithrodontomys raviventris</i> salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	1 10	141 S:13	0	5	0	0	0	8	9	4	13	0	0
<i>Riparia riparia</i> bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	25 25	296 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	45 S:2	0	0	0	0	0	2	0	2	2	0	0
<i>Syncaris pacifica</i> California freshwater shrimp	G1 S1	Endangered Endangered	IUCN_EN-Endangered	120 120	18 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	20 100	26 S:3	0	0	0	0	1	2	3	0	2	1	0

APPENDIX E – USFWS IPaC

Napa County Aripport Project

IPaC Trust Resources Report

Generated May 05, 2016 04:33 PM MDT, IPaC v3.0.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



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U.S. Fish & Wildlife Service

IPaC Trust Resources Report



NAME

Napa County Aripport Project

LOCATION

Napa County, California

IPAC LINK

<https://ecos.fws.gov/ipac/project/RQDLP-D4NBN-DUHIH-GPV6C-KV4HO4>



U.S. Fish & Wildlife Service Contact Information

Trust resources in this location are managed by:

Sacramento Fish And Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

(916) 414-6600

Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the [Endangered Species Program](#) of the U.S. Fish & Wildlife Service.

This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

[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 either from the Regulatory Documents section in IPaC or from the local field office directly.

The list of species below are those that may occur or could potentially be affected by activities in this location:

Amphibians

California Red-legged Frog *Rana draytonii*

Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=D02D

Birds

California Clapper Rail *Rallus longirostris obsoletus* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B04A

California Least Tern *Sterna antillarum browni* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B03X

Northern Spotted Owl *Strix occidentalis caurina* Threatened

CRITICAL HABITAT

There is final critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B08B

Western Snowy Plover *Charadrius alexandrinus nivosus* Threatened

CRITICAL HABITAT

There is final critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B07C

Crustaceans

California Freshwater Shrimp *Syncaris pacifica* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K01W

Conservancy Fairy Shrimp *Branchinecta conservatio* Endangered

CRITICAL HABITAT

There is final critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03D

Vernal Pool Fairy Shrimp *Branchinecta lynchi* Threatened

CRITICAL HABITAT

There is final critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=K03G

Fishes

Delta Smelt *Hypomesus transpacificus* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E070

Steelhead *Oncorhynchus (=Salmo) mykiss* Threatened

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E08D

Tidewater Goby *Eucyclogobius newberryi* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=E071

Flowering Plants

Contra Costa Goldfields *Lasthenia conjugens* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=Q122

Showy Indian Clover *Trifolium amoenum* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=Q238

Soft Bird's-beak *Cordylanthus mollis* ssp. *mollis* Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=Q0GT

Insects

Callippe Silverspot Butterfly *Speyeria callippe callippe* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=I019

San Bruno Elfin Butterfly *Callophrys mossii bayensis* Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=I00Q

Mammals

Salt Marsh Harvest Mouse *Reithrodontomys raviventris*

Endangered

CRITICAL HABITAT

No critical habitat has been designated for this species.

http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=A03Y

Critical Habitats

There are no critical habitats in this location

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish & Wildlife Service.^[1] There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

1. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

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>
- Conservation measures for birds
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Year-round bird occurrence data
<http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php>

The following species of migratory birds could potentially be affected by activities in this location:

Allen's Hummingbird <i>Selasphorus sasin</i>	Bird of conservation concern
Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0L1	
Bald Eagle <i>Haliaeetus leucocephalus</i>	Bird of conservation concern
Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B008	
Bell's Sparrow <i>Amphispiza belli</i>	Bird of conservation concern
Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=BOHE	
Black Oystercatcher <i>Haematopus bachmani</i>	Bird of conservation concern
Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0KJ	

Black Rail <i>Laterallus jamaicensis</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B09A	Bird of conservation concern
Black Skimmer <i>Rynchops niger</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0EO	Bird of conservation concern
Burrowing Owl <i>Athene cunicularia</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0NC	Bird of conservation concern
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B080	Bird of conservation concern
Fox Sparrow <i>Passerella iliaca</i> Season: Wintering	Bird of conservation concern
Lawrence's Goldfinch <i>Carduelis lawrencei</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0J8	Bird of conservation concern
Least Bittern <i>Ixobrychus exilis</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B092	
Lesser Yellowlegs <i>Tringa flavipes</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0MD	Bird of conservation concern
Lewis's Woodpecker <i>Melanerpes lewis</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HQ	Bird of conservation concern
Long-billed Curlew <i>Numenius americanus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B06S	Bird of conservation concern
Marbled Godwit <i>Limosa fedoa</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0JL	Bird of conservation concern
Mountain Plover <i>Charadrius montanus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B078	Bird of conservation concern
Nuttall's Woodpecker <i>Picoides nuttallii</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?sPCODE=B0HT	Bird of conservation concern

Oak Titmouse <i>Baeolophus inornatus</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MJ	Bird of conservation concern
Olive-sided Flycatcher <i>Contopus cooperi</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0AN	Bird of conservation concern
Peregrine Falcon <i>Falco peregrinus</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FU	Bird of conservation concern
Rufous-crowned Sparrow <i>Aimophila ruficeps</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0MX	Bird of conservation concern
Short-billed Dowitcher <i>Limnodromus griseus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JK	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Snowy Plover <i>Charadrius alexandrinus</i> Season: Breeding	Bird of conservation concern
Swainson's Hawk <i>Buteo swainsoni</i> Season: Breeding http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B070	Bird of conservation concern
Tricolored Blackbird <i>Agelaius tricolor</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B06P	Bird of conservation concern
Western Grebe <i>aechmophorus occidentalis</i> Year-round http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0EA	Bird of conservation concern
Whimbrel <i>Numenius phaeopus</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JN	Bird of conservation concern
Yellow Rail <i>Coturnicops noveboracensis</i> Season: Wintering http://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0JG	Bird of conservation concern

Wildlife refuges and fish hatcheries

There are no refuges or fish hatcheries in 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](#).

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.

This location overlaps all or part of the following wetlands:

Riverine

[R3UBHx](#)

6.79 acres

A full description for each wetland code can be found at the National Wetlands Inventory website: <http://107.20.228.18/decoders/wetlands.aspx>