BIOLOGICAL RESOURCES REPORT

Napa Sanitation Floating Solar Power Generating Facility Project, 1515 Soscol Ferry Rd, Napa, CA

Prepared For:

Eva Pauly-Bowles
Laketricity and Dynamo Solar LLC
755 Baywood Drive, 2nd Floor
Petaluma, CA 94954

Project No. 1709

Prepared By:

Dana Riggs
Principal Biologist
Sol Ecology, Inc.
P.O. Box 5214
Petaluma, CA 94955
driggs@solecology.com
707-241-7718

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SOL ECOLOGY

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LIST OF ACRONYMS AND ABBREVIATIONS

AMM	Avoidance and Minimization Measures
CDFG/CDFW	California Department of Fish and Game/Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
ESA	Federal Endangered Species Act
kV	kilovolt
NRCS	Natural Resources Conservation Service
PV	Photovoltaic
RWQCB	Regional Water Quality Control Board
SMHM	Salt marsh harvest mouse
SR 12	California State Route 12
SR 221	California State Route 221
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

On June 19, 2020, and September 6, 2022, Sol Ecology, Inc. (Sol Ecology) performed a biological resources assessment at Napa Sanitation District (District) property and surrounding lands to evaluate the Floating Solar Power Generating Facility and Transmission Line Project (Project) in Napa, Napa County, California (Project Study Area, see Appendix A – Figure 1). In addition to the two assessment dates, protocol-level plant surveys were also performed within the Project Study Area on March 5, 2021, and on April 6, May 20, and June 30, 2022, throughout the Project Study Area. The proposed Project consists of two floating solar arrays on two of the District facilities lined wastewater ponds, an overhead transmission line from the wastewater ponds to the Tulucay PG&E substation located 2 miles northeast of the site, and minor expansion of the substation. Details on the proposed Project are described in Section 1.2.

The purpose of the assessment was to gather information necessary to complete a review of potential biological resource effects from development of the proposed Project, under the guidelines of the California Environmental Quality Act (CEQA) for the Napa County Planning Department. This report describes the results of the Project Study Area surveys and assessment for the presence of sensitive biological resources protected by local, state, and federal laws and regulations. This report also contains an evaluation of potential effects to sensitive biological resources that may occur from development of the proposed Project and potential mitigation measures to compensate for those effects as warranted. This report is based on information available at the time of the study and on-site conditions that were observed on the dates of the site visits.

1.1 Project Setting

The Project Study Area is located on the District property at 1515 Soscol Ferry Road in Napa County, accessed via Soscol Ferry Road, off California State Route 12 (SR 12). The approximately 57-acre Project Study Area is bounded to the northwest by the Napa River, to the south by Fagan Marsh State Marine Park, to the north by SR 12/State Highway 29, and to the east and west by farmland and shopping centers. The proposed transmission line will start at the north side of Pond 3 and run north to SR 12, cross California State Route 221 (SR 221), and connect to Tulucay PG&E substation to the northeast as shown in Figure 1. Surrounding land uses include the District lands, the Napa River, and open agricultural lands, intermixed with industrial and commercial development. The Project Study Area incorporates all areas of proposed development subject to direct or indirect effects of the proposed project.

1.2 Project Description

The Project consists of two floating photovoltaic (PV) arrays to be installed on two of the existing lined wastewater ponds facilities totaling approximately 56 acres. Pond 3's solar array design will consist of utilizing approximately 30 acres of existing idle pond space with an output of 18.6 MWp. Pond 4's solar array design will consist of approximately 30 acres of existing idle space and generate 16.1 MWp. The Dynamo Solar combined California Independent System Operator

approved grid tie interconnection total carbon free renewable power output for both ponds is 25 MW AC (alternating current).

The proposed arrays would cover approximately 40% of the surface area of Pond 3 and 45% of the water surface area of Pond 4. The total water surface area of Ponds 3 and 4 is approximately 140 acres. The total project coverage represents less than 20% of total surface area of all four (4) ponds at District facilities.

On-site ground and pond pre-assembly is minimal with ground assembly limited to setting tie-downs and pre-assembling the array-racking platform on existing paved or disturbed areas of the District property. Pond installation is limited to torquing and securing tie-down cable, array-racking platform shore assembly and floating the array into the water. The PV floating system is constructed with ultra-violet-stabilized materials, resilient to extreme wind and sun conditions (up to 130 mph). The design is constructed with project and site-specific condition tie-down anchoring systems: bottom, bank, and/or hybrid up to a depth of 180 feet. The solar design and method of installation optimizes power production due to the water's natural cooling effect on both panels and cables. The floating solar system is also designed to organically reduce top water evaporation and is configured for simple and quick pond decommissioning after its 25-year asset cycle.

The floating solar arrays will connect via floating electric cables to the seven inverter pads mounted adjacent to the pond. Inverter pad construction and assembly will take place only on portions of District property that is either paved or already disturbed. No construction or assembly/staging will occur outside of these paved or previously disturbed areas of District property.

Pond 3 is expected to house 40,000 PV modules and cover the entire floating racking assembly area. Pond 4 is expected to house 35,000 PV modules and cover the entire floating racking assembly area.

The Project will install a new dedicated electric substation with an approximate 80' x 80' fenced area within the existing District surplus maintenance area adjacent to the floating solar ponds. This existing previously disturbed surplus maintenance area will house a single control room, a single 60/34.5 kilovolt (kV) transformer, a battery building, 34.5kV switchgear equipment, raised support structures, isolation switches, utility metering, wiring/conductors, hardware, and various electrical apparatuses required for safe utility grid tie interconnection.

Power from the new solar substation will be exported via a new, overhead 60kV electric power line, approximately 2 miles in length, to PG&E's Tulucay Substation located northeast of the solar site (Appendix A, Figure 1). The preferred overhead transmission pole route is expected to install around 35 transmission poles that range in ground height from 65'- 95' tall; they will be located primarily on disturbed District owned land and cross open Caltrans right-of-way grassland to the north.

All new poles placed on District property will be placed in hardscape/developed areas to the extent feasible or in grassland/agricultural habitats and will be located along existing disturbed roadways or pathways on District land. Numerous routes were evaluated but eliminated due to environmental constraints such as liquefaction, impacts to bird nesting habitat, bird flyways, flood zones, the presence of suitable salt marsh harvest mouse habitat, existing utilities, and other similar issues. A small overhead line section will cross Southern Railroad via an existing or new easement and continue to an underground intersection expected at Hwy 12 in the Caltrans corridor handoff area and then transition to an overhead transmission pole configuration after the Hwy 12 crossing, then across Hwy 221 terminating at PG&E Tulucay Substation Point of Change of Ownership location. South of SR 29, the lines will cross over open agricultural fields and Soscol Ferry Road and Soscol Creek. Riparian trees lining the creek will be avoided. South of the creek, the line will continue a southerly course, then in an east/west configuration through the northern end of the Napa Sanitation District facility. Beyond the hardscape of the facility, the line will be situated along the upper eastern bank of the Napa River in a heavily disturbed area.

Per the CAISO Large Generator Interconnection Agreement, PG&E must expand the existing Tulucay Substation footprint an additional 150 feet by 260 feet on the southeast end of the existing substation footprint as shown in Figure 1 (Appendix A). The footprint expansion will require the removal of approximately 0.7 acres of vineyards and removal of approximately a one-acre area of native soil in order to accommodate the substation expansion. Additionally, the existing Tulucay Substation elevation is approximately 15 feet below grade of the adjacent vineyard property and will require significant grading in order to make the expansion area consistent with the existing substation. The expansion area is set back from the road and the lower elevation will further screen the substation facilities and will not be visible to typical vehicle traffic on Hwy 12 and Hwy 221. New perimeter fencing per PG&E corporate standards will also be required.

At full capacity, the solar arrays will generate an equivalent of electricity to power 5,113 typical households. Dynamo Solar estimates that the project will offset 15,500-tons equivalent CO2/year on average and over 385,840 tons over the lifetime of the system. The energy generated would supply/offset about 10% of the annual electricity used by Napa city residents.

2.0 METHODS

On June 19, 2020, and September 6, 2022, the Project Study Area was traversed on foot to determine the presence of: (1) plant communities both sensitive and non-sensitive, (2) special status plant and wildlife species, (3) presence of essential habitat elements for any special status plant or wildlife species, and (4) the presence and extent of wetland and non-wetland waters. All biological resources are evaluated for their potential to occur within the Project Study Area in Section 3.0 of this report.

2.1 Literature Review

To evaluate whether special status species or other sensitive biological resources (e.g., wetlands) could occur in the Project Study Area and vicinity, Sol Ecology biologists reviewed the following:

- California Native Plant Society's (CNPS's) Inventory of Rare and Endangered Plants of California search for U.S. Geological Survey (USGS) 7.5-minute Cuttings Wharf quadrangle and eight adjacent quadrangles (CNPS 2022a)
- CNPS's A Manual of California Vegetation Online Edition (CNPS 2022a)
- CNPS's A Manual of California Vegetation Online Edition (CNPS 2022b)
- California Natural Diversity Database (CNDDB) records search for USGS 7.5-minute Cuttings Wharf quadrangle and eight adjacent quadrangles (California Department of Fish and Wildlife [CDFW] 2022)
- U.S. Fish and Wildlife Service (USFWS) list of threatened and endangered species for the Project Area (USFWS 2022a);
- CDFG (California Department of Fish and Game) publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990);
- CDFG publication California Bird Species of Special Concern (Shuford and Gardali 2008);
- CDFW and University of California Press publication California Amphibian and Reptile Species of Special Concern (Thomson et al. 2016);
- Western Bat Working Group (WBWG) Online Species Accounts (WBWG 2015);
- USFWS National Wetlands Inventory, Wetlands Mapper (USFWS 2022b); and
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), Web Soil Survey (USDA 2019).

2.2 Field Survey

Sol Ecology biologists conducted a biological resources assessment and wetland delineation on June 19, 2020, and September 6, 2022. Field biologist qualifications are in Appendix C. Biologists walked throughout the entire Project Study Area identifying plant and wildlife species encountered and mapping vegetation communities. Vegetation communities were identified using the online version of *A Manual of California Vegetation* (CNPS 2022b). Dispersal habitat, foraging habitat, refugia or estivation habitat, and breeding (or nesting habitat) were noted for wildlife species.

A total of three protocol-level plant surveys were performed in Spring of 2022, on April 6, May 20, and June 30, plus one protocol-level in the prior year on March 25, 2021. Surveys were timed with blooming periods for plants with a potential to occur within the Project Study Area and were floristic in nature. Transect surveys were performed and the entire Project Study Area (including the transmission line alignment and nearby suitable habitats) were traversed on foot to examine suitable habitat for the presence of special status plants known to occur in the vicinity of the Project Study Area. The survey followed the protocol described in the 2018 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). All rare plant populations and sensitive communities, if found, were mapped using handheld Global Positioning System equipment with sub-meter accuracy. Plant species were recorded and identified to a taxonomic level sufficient to determine rarity using the second edition of the *Jepson Manual* (Baldwin et al. 2012). All plant species observed within the Project Study Area are included in Appendix D – Observed Species Table.

A reference population of Contra Costa goldfields (*Lasthenia conjugens*) was visited on March 31, 2021, to determine the phenological development of this target species. The reference population is located along Branscombe Road, south of Travis AFB and north of Highway 12, in Fairfield, California on the Wildlands North Suisun Mitigation Bank Property. Contra Costa goldfields were observed, in full bloom, during the reference population visit.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of Sol Ecology biologists with experience working with the species and habitats. If a special status species was observed during the site visit, its presence is recorded and discussed. For some threatened and endangered species, a site survey at the level conducted for this report may not be sufficient to determine presence or absence of a species to the specifications of regulatory agencies.

2.2.1 Wetland Delineation

A preliminary wetland delineation was conducted at the time of the June 19, 2020, site visit with subsequent plant identification performed in the spring of 2021 and 2022. Concurrently with the botanical and wildlife surveys, biologists identified wetland and non-wetland waters potentially subject to regulation by the federal government (U.S. Army Corps of Engineers [USACE]) and the state of California (Regional Water Quality Control Board [RWQCB] and CDFW). The delineation of wetland boundaries was based on the presence/absence of indicators of hydrophytic vegetation, hydric soil, and wetland hydrology, along with data obtained from the National Wetland Inventory and Bay Area Aquatic Resource Inventory electronic maps. The boundaries of non-wetland waters were identified by locating the ordinary high-water mark.

The USACE and RWQCB recognize a three-parameter approach to wetland delineation where a feature must contain hydrophytic vegetation, hydric soils, and wetland hydrology. The methodology for identifying wetland indicators followed the USACE Wetlands Delineation Manual (Environmental Laboratory 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Plant species within potential

wetlands were assigned a wetland status according to the USACE list of plant species that occur in wetlands (USACE 2018). This wetland plant classification system is based on the expected frequency of occurrence of each species in wetlands. The classification system has the following categories, which determine the frequency with which plants occur in wetlands:

OBL	Obligate, almost always found wetlands	>99% frequency
FACW	Facultative wetland, usually found in wetlands	67-99%
FAC	Facultative, equal in wetland or non-wetlands	34-67%
FACU	Facultative upland, usually found in non-wetlands	1-33%
UPL/NL	Not found in local wetlands	<1%
NI	Wetland preference unknown	

Species with OBL, FACW, and FAC classifications are considered hydrophytic vegetation. If more than 50 percent of the dominant plant species are hydrophytic, the area meets the hydrophytic vegetation criterion.

Soils in the Project Study Area were examined for hydric soil indicators according to the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Soils formed under wetland (anaerobic) conditions generally have a low chroma matrix color, designated 0, 1, or 2, and contain mottles or other redoximorphic features. Soil profiles were characterized by depth, color, redoximorphic features, and texture. Soil color and chroma were determined using a Munsell soil color chart to determine if the soils in a particular area could be considered hydric.

Positive indicators of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, oxidized root channels, and drift lines; or indirect indicators (secondary indicators) such as algal mats, shallow restrictive layers in the soil, or vegetation meeting the FAC-neutral test. Depressions, seeps, and topographic low areas were examined for these hydrological indicators.

On October 26, 2022, Sol Ecology biologists performed a tree survey in order to identify the number, species, relative size, and nesting habitat suitability of the trees that have potential to be impacted by the Project. Additionally, local regulations and ordinances were researched for applicable tree protections.

3.0 RESULTS

3.1 Existing Conditions and General Wildlife Use

Elevations in the Project Study Area range from approximately 0 to 40 meters (3 to 130 feet) above mean sea level. The Project Study Area encompasses four soil map units identified by the USDA, NRCS (USDA 2019):

- **Reyes silty clay loam:** This soil map unit consists of very deep, poorly drained soils that formed in alluvium along the margins of bays. It typically occurs in brackish or saltwater marshes adjacent to seawater or waterbodies subject to daily tidal influence. Reyes is listed as a California hydric soil. The natural vegetation that this soil typically supports consists of saltgrass (*Distichlis spicata*), bulrush (*Schoenoplectus* spp.), lambsquarters (*Chenopodium* and *Atriplex* spp.), coyote brush (*Baccharis pilularis*), and various annual grasses. Where Reyes soils occur, they have been largely reclaimed and used for oat hay, grain, and livestock pasture. Minor components include Clear Lake (5%), Haire (5%) and very poorly drained Reyes (5%).

- **Hambright rock-Outcrop complex, 30 to 75 percent slopes:** This soil map unit consists of shallow, well drained soils that were formed in material weathered from basic igneous rocks. It typically occurs on plateaus, basalt flows and hillslopes. It is the dominant soil type found throughout the Project Study Area. Hambright is not listed as a California hydric soil. The natural vegetation that this soil typically supports consists of annual grasses forbs, as well as occasional shrubs such as scrub oaks (*Quercus durata*, *Q. berberidifolia*) and coyote brush (*Baccharis pilularis*). Depending on localized conditions, some trees can be supported, such as California bay (*Umbellularia californica*), blue oak (*Quercus douglasii*) and coast live oak (*Quercus agrifolia*). It is often used for grazing. Where it occurs within the Project Study Area, the soil layer is very shallow, with rocky outcrops accounting for ~40% of the terrain.

- **Coombs gravelly loam, 2 to 5 percent slopes:** This soil map unit consists of well-drained, moderately slowly permeable soils on gravelly terraces that were formed in gravelly alluvium from mixed sources. It typically occurs on gently angled to nearly level slopes. Coombs is not listed as a California hydric soil. The natural vegetation that this soil typically supports consists of annual grasses and forbs, with occasional oak trees (*Quercus* spp.). Where this soil occurs, the majority of the land has been converted and is cultivated in orchards, vineyards, irrigated pasture and dryland grain. Minor components consist of Clear Lake (3%).

- **Bale clay loam, 0 to 2 percent slopes:** This soil map unit consists of very deep, moderately poorly drained soils that were formed in stratified, gravelly, and sandy alluvium from mixed sources. It typically occurs on level to gently sloping alluvial fans and terraces. Bale is not listed as a California hydric soil. However, it is noted for being somewhat poorly drained, with a water table close to the surface, and ponding often occurring for short

periods during the winter rainy season. The natural vegetation that this soil typically supports consists of oak (*Quercus* spp.), willow (*Salix* spp.), blackberry (*Rubus* spp.) and poison oak (*Toxicodendron diversilobum*), as well as annual grasses. However, where this soil map unit occurs, it has been largely converted, used primarily for wine grape production, orchards, and irrigated pasture. Minor components consist of Clear Lake (3%).

Vegetation communities present in the Project Study Area were classified using the online version of *A Manual of California Vegetation* (CNPS 2022b). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature. Vegetation communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations. Both sensitive and non-sensitive vegetation communities are depicted in Figures 2a and 2b (Appendix A). Two communities, coast live oak alliance and mixed oak alliance are present in the Project Study Area which included alternative routes considered during the study; these areas are not described further due to avoidance. Photographs of the Project Study Area are provided in Appendix E.

3.1.1 Non-Sensitive Natural Communities

<u>California Annual Grasslands</u>

California annual grassland occurs primarily in the northern portion of the Project Study Area and in patches around the District lands. This vegetation community is characterized by dense cover of non-native grass species; those observed include annual beard grass (*Polypogon monspeliensis*), common velvet grass (*Holcus lanatus*), harding grass (*Phalaris aquatica*), oats (*Avena* sp.), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail brome (*Bromus madritensis*), Italian rye grass (*Festuca perennis*), and wall barley (*Hordeum murinum*). Forb species observed in the California annual grassland include bindweed (*Convolvulus arvensis*), bristly ox-tongue (*Helminthotheca echioides*), prickly lettuce (*Lactuca serriola*), radish (*Raphanus sativus*), spikeweed (*Centromadia fitchii*), stinkwort (*Dittrichia graveolens*), and yellow star-thistle (*Centaurea solstitialis*). Portions of the Project Study Area also contain leased irrigated pasture lands managed by the District for agricultural purposes (depicted in Figure 2a as Upland Annual Grasslands & Forbs Formation).

<u>Developed and Disturbed Areas (Urban or Built Up)</u>

Developed and disturbed areas within the Project Study Area include buildings, landscaping, asphalt roads, gravel roads, dirt roads, and dirt paths. The vegetation is composed of a mix of common landscaping species and grasses and forbs previously mentioned in the California annual grassland community. Lined treatment ponds are also considered developed for the purposes of this report.

Non-jurisdictional Waters

In addition to the various jurisdictional aquatic resources within the Project Study Area, the two treatment ponds where the arrays will be located are considered non-jurisdictional given they are concrete lined. Additionally, a non-jurisdictional bioretention basin exists just north of the proposed floating array and east of the proposed transmission line within the developed portion of the treatment plant (labeled as non-jurisdictional treatment wetlands on Figure 2b). The transmission line will be installed along the western bank of this feature and poles will be placed on the bank outside any treatment areas. This feature, while exhibiting wetland conditions, was constructed in compliance with water treatment regulations and is therefore not within any state or federal wetlands jurisdiction. The transmission line will be located between the levee road and the treatment wetlands such that the height of the towers is comparable to the existing District transmission line located on the levee road.

3.1.2 Sensitive Natural Communities

Wetlands

Wetlands observed within the Project Study Area are defined using the wetland classification codes of the USFWS National Wetlands Inventory (USFWS 2020c) and as depicted in Appendix A, Figure 2b. The following wetlands were observed within the Project Study Area:

- Estuarine and Marine Wetland (Salt Marsh/Saltgrass-Pickleweed NFD Super Alliance)
- Freshwater Emergent Wetland

A sliver of salt marsh habitat (*Salicornia pacifica* Herbaceous Alliance) is located along the border of the Napa River to the west of the proposed transmission line which runs adjacent and parallel to the Napa River. As this portion of the river is positioned near the mouth of the river, where it meets San Francisco Bay, it experiences daily tidal action, including fluctuating periods of daily inundation and relatively high salinity levels. Thus, the vegetation that is within the range of daily tidal saturation is representative of typical coastal and estuarine salt marsh plant communities. Along the margins closest to the river, native hydrophilic species such as pickleweed (*Salicornia pacifica*), bulrush (*Schoenoplectus americanus*), and keeled bulrush (*Isolepis carinata*) are dominant. On low interior rises just beyond the margins, native perennial (often rhizomatous) halophytic forbs such as marsh jaumea (*Jaumea carnosa*), saltgrass (*Distichlis spicata*), seaside arrow grass (*Triglochin maritima*), and salt sand spurry (*Spergularia marina*) are dominant, often forming dense mats where conditions permit. This habitat is located on the western side of the levee road, while the transmission line is located to the east of the levee road; all of the salt marsh habitat located within the Project Study Area will be completely avoided by the project.

Immediately south of Soscol Ferry Rd., there is a stretch of freshwater wetland-type habitat positioned west of the path of the transmission line. Dominant plants throughout the more saturated portions of the wetland are the native torrent sedge (*Carex nudata*), bulrush (*Schoenoplectus americanus*), fringed willowherb (*Epilobium ciliatum* "var. *holosericeum*") and

rush (*Juncus* sp.). Within bare depressions and disturbed, saturated, or submerged portions there are occasional dense occurrences of startwort (*Callitriche* sp.) and rough-fruited buttercup (*Ranunculus muricatus*). In less saturated, slightly elevated portions of the wetland, non-native species such as milk thistle (*Silybum marianum*), pennyroyal (*Mentha pulegium*), hyssop loosestrife (*Lythrum hyssopifolia*), brass buttons (*Cotula coronopifolia*) and fat-hen (*Atriplex prostrata*) are relatively abundant.

Non-Wetland Waters

Non-wetland waters were also defined using the wetland classification codes of the USFWS National Wetlands Inventory. The following non-wetland waters were observed within the Project Study Area:

- Riverine – Intermittent Stream
- Riverine – Ephemeral Stream (with seasonal wetland habitat)

Suscol [Soscol] Creek, a jurisdictional Waters of the U.S., flows from east to west through the Project Study Area between Soscol Ferry Road and the District facilities. The creek originates in the hills approximately 3 miles east of the Project and is fed by several streams as it flows westward towards Napa River. Where Suscol Creek enters the Project Study Area on the east side of the transmission line, it is an intermittent stream surrounded by a discontinuous riparian habitat corridor. Approximately 1,500 feet downstream from this point, the riparian habitat ends and Suscol Creek becomes tidally influenced by Napa River. The vegetation on the banks of Suscol Creek remains sparse until it crosses under Soscol Ferry Road, flows through salt marsh habitat, and finally flows into Napa River. Within the Project Study Area, the creek flows intermittently with a few perennial pools and/or areas of perennial saturation in the vicinity. No standing water was observed where the proposed transmission line will cross. Poles will be placed on either side of the creek at least 35 feet from the outer limit of the top of bank and dripline of associated riparian habitat.

An unnamed ephemeral (seasonal) stream is also present to the north of Highway 12, which bisects the transmission line. Poles will also be placed at least 35 feet from the top of bank and/or limits of wetland vegetation associated with this feature. Water was observed in portions of the ephemeral stream during the March 25, 2021, rare plant survey. In addition, vernally mesic depressions were observed within the grassland vegetation community immediately adjacent to this feature. These depressions were dominated by Douglas' meadowfoam (*Limnanthes douglasii* ssp. *douglasii*), a plant that is listed as obligate by the U.S. Army Corps of Engineers (USACE), meaning that it is almost always found in wetlands (>99% frequency). Poles will be placed at least 50 feet from wetland and/or ephemeral stream habitats at this location.

Riparian Habitat (Valley Oak – Fremont Cottonwood – Coast Live Oak – Riparian Forest NFD Associated)

The riparian habitat present within the Project Study Area forms a corridor around Suscol Creek, and is fragmented in multiple places, both naturally, and by roads/bridges that cross the creek. In most places, the riparian habitat does not extend beyond the top of the banks of Suscol Creek, but where an access road crosses the creek, the riparian habitat canopy extends south approximately 60 feet beyond the top of the bank. Prevalent species within the riparian habitat include coast live oak (*Quercus agrifolia*), blue oak (*Quercus douglasii*), willow (*Salix* sp.), Fremont cottonwood (*Populus fremontii*), Himalayan blackberry (*Rubus armeniacus*), and California rose (*Rosa californica*).

3.2 Special Status Plants

Special status plants species include plant species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed species and those that are formal candidates for listing. Plant species on CNPS' Inventory of Rare and Endangered Plants of California with California Rare Plant Ranks of 1 and 2 are also considered special status plant species and must be considered under CEQA.

Based upon a review of the resources and databases given in Section 2.1, 52 special status plant species have been documented within a 9-quad search of the Project Study Area (Appendix B). 11 of these special status plant species have potential to occur in the Project Study Area as described in Table 1 below. Other special status plant species documented in the area are unlikely or have no potential to occur on the Project Study Area for one or more of the following reasons:

- Edaphic (soil) conditions (e.g., rocky, sandy soils) necessary to support the special status plants do not exist on site.
- Topographic conditions (e.g., slopes) necessary to support the special status plants do not exist on site.
- Unique pH conditions (e.g., serpentine) necessary to support the special status plant species are not present on the Project Study Area.
- Associated vegetation communities (e.g., cismontane woodland, chaparral, broadleaved upland forest) necessary to support the special status plants do not exist on site.

Table 1. Special Status Plants with Potential to Occur in the Project Study Area

Scientific Name/ Common Name	Status[1]	Habitat	Blooming Period	Potential for Occurrence
Astragalus tener var. *tener* Alkali milk-vetch	1B.2	Alkaline flats, vernally moist meadows.	Mar-Jun	**Low.** The Project Study Area lacks appropriate habitat.
Balsamorhiza macrolepis Big-scale balsamroot	1B.2	Open grassy or rocky slopes, valleys.	Mar-Jul	**Low.** The Project Study Area lacks appropriate habitat.
Carex lyngbyei Lyngbye's sedge	2B.2	Brackish areas.	May-Jul (fruiting)	**Low.** The Project Study Area lacks appropriate habitat.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	1B.1	Terraces, swales, floodplains, grassland, disturbed sites.	Jun-Oct	**Moderate.** The Project Study Area contains potentially suitable habitat.
Chloropyron molle ssp. *molle* Soft salty bird's-beak	FE 1B.2	Coastal salt marsh.	Jul-Nov	**Low.** The Project Study Area lacks appropriate habitat.
Doningia pusilla Dwarf downingia	2B.2	Vernal pools, roadside ditches.	Mar-May	**Low.** The Project Study Area lacks appropriate habitat.
Erigeron greenei Greene's narrow-leaved daisy	1B.2	Serpentine, sometimes rocky alluvium, chaparral, woodland, conifer forest.	May-Sep	**Low.** The Project Study Area lacks appropriate habitat.
Extriplex joaquinana San Joaquin spearscale	1B.2	Alkaline soils.	Apr-Sep	**Low.** The Project Study Area lacks appropriate habitat.
Helianthella castanea Diablo helianthella	1B.2	Open, grassy sites.	Apr-Jun	**Low.** While portions of the Project Study Area contain grassland habitat, these areas are more disturbed than what is suitable for this species.
Hemizonia congesta ssp. *congesta* Congested-headed hayfield tarplant	1B.2	Grassy sites, marsh edges.	May-Nov	**Moderate.** The Project Study Area contains potentially appropriate habitat.
Lasthenia conjugens Contra Costa goldfields	FE	Mesic grassland, seasonal wetlands.	Mar-Jun	**Low.** The Project Study Area contains limited mesic grassland habitat primarily north of Highway 12 within a seasonal drainage.

[1] FE – Federally Endangered
California Rare Plant Rank
1B – Plants rare, threatened, or endangered in California and elsewhere.
2B – Plants rare, threatened, or endangered in California but more common elsewhere.
0.1 – Seriously threatened in California
0.2 – Moderately threatened in California

Protocol-level rare plant surveys were performed on March 25, 2021, and on April 6, May 20, and June 30, 2022, which corresponded with the blooming period for those species with potential to occur in the Project Study Area. Surveys encompassed all grassland and wetland habitats present on or adjacent to the Project Study Area. Nearby reference populations were visited on March 30, 2021, and March 31, 2022, to determine the phenological development of one of the target special status plant species, Contra Costa goldfields. The 2021 reference population was located along Branscombe Road, south of Travis AFB and north of Highway 12, in Fairfield, California on the Wildlands North Suisun Mitigation Bank Property. The 2022 reference population was located north of Soscol Creek Road and east of Highway 221 on volcanic claypan vernal pool habitat in Napa, California. Contra Costa goldfields were observed, in full bloom, during both reference population visits.

Adverse conditions from yearly weather patterns, as well as disease, drought, predation, fire, herbivory, or other disturbances may preclude the presence of certain plants in a given year. No evidence of disease, predation, fire, herbivory, or other disturbances was observed.

3.3 Special Status Wildlife

In addition to wildlife listed as federal or state endangered and/or threatened, federal and state candidate species, CDFW Species of Special Concern, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW Special-status Invertebrates are all considered special-status species. Although these species generally have no special legal status, they are given special consideration under CEQA. The federal Bald and Golden Eagle Protection Act also provides broad protections to both eagle species that are roughly analogous to those of listed species. Bat species are also evaluated for conservation status by the Western Bat Working Group (WBWG), a non-governmental entity; bats named as a “High Priority” or “Medium Priority” species for conservation by the WBWG are typically considered special-status and also considered under CEQA; bat roosts are protected under CDFW Fish and Game Code. In addition to regulations for special-status species, most native birds in the United States (including non-status species) are protected by the federal Migratory Bird Treaty Act of 1918 (MBTA) and the California Fish and Game Code, i.e., sections 3503, 3503.5 and 3513. Under these laws, deliberately destroying active bird nests, eggs, and/or young is illegal.

Based on the databases given in Section 2.1, 33 special status wildlife species have been documented within a 9-quad search of the Project Study Area (Appendix B). Based on the presence of biological communities described above, the Project Study Area has the potential to support 10 of these species, four of which are federal and/or state listed species special status wildlife species (Table 2). A discussion of potential effects or unlikelihood for effects to occur is also provided in Section 4.1.

The remaining species found in the review of background literature were determined to be unlikely to occur due to absence of suitable habitat elements in and immediately adjacent to the Project Study Area.

Habitat elements that were evaluated but found to be absent from the immediate area of the Project Study Area or surrounding habitats subject to potential indirect effects include the following:

- No suitable aquatic habitat (streams, wetlands, marshes, vernal pools, etc.) habitat on or immediately adjacent to the Project Study Area (e.g., western pond turtle, steelhead, foothill yellow-legged frog, fairy shrimp, etc.); these areas and their associated species will be avoided by the proposed project.
- No suitable coastal habitat (e.g., for green sea turtle, obscure bumble bee, or San Bruno elfin butterfly).
- No documented or observed rookeries (e.g., great blue heron, night heron etc.).
- No suitable structures, cliffs, or rocky outcrops (e.g., for pallid bat).
- Outside of the potential range or no records within five miles of the Project Study Area (e.g., California least tern, western snowy plover, Callippe silverspot butterfly, or Ridgway's Rail).

Table 2. Special Status Wildlife with Potential to Occur in the Project Study Area

Scientific Name/ Common Name	Status[1]	Habitat	Potential for Occurrence
Amphibians and Reptiles			
Emys marmorata western pond turtle	SSC	Found in ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Require basking sites such as partially submerged logs, vegetation mats, or open mud banks, and suitable upland habitat for egg-laying.	**Low.** Suitable habitat is present in marsh habitat and potentially in portions of Suscol Creek and other waters surrounding the site. However, all suitable habitats will be completely avoided. There is no suitable nesting substrate present in the Project Study Area.
Birds			
Agelaius tricolor tricolored blackbird	ST, BCC	Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields and/or fallow agricultural fields for foraging.	**Moderate.** Occurrences within 1.5 miles of the Project Study Area. Suitable foraging habitat present on and adjacent to the site; there is limited habitat suitable for nesting adjacent to the site.
Athene cunicularia burrowing owl	SSC, BCC	Year-round resident and winter visitor. Occurs in open, dry grasslands and scrub habitats with low-growing vegetation, perches, and abundant mammal burrows. Preys upon insects and small vertebrates. Nests and roosts in old mammal burrows, most commonly those of ground squirrels.	**Low.** The nearest burrowing owl occurrence is approximately 3 miles west of the Project Study Area. Limited nesting habitat is present due to land use practices on the site. This species may overwinter and/or forage on the site.
Buteo swainsoni Swainson's hawk	ST, BCC	Summer resident. Nests in tree groves and isolated trees in riparian and agricultural areas. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa.	**Presumed Present.** Multiple occurrences on the border of the Project Study Area. Suitable grassland foraging and possible nesting habitat present on site; most of the trees located in or near the project footprint are not suitable for Swainson's hawk (e.g., eucalyptus, etc.).

Scientific Name/ Common Name	Status[1]	Habitat	Potential for Occurrence
Elanus leucurus White-tailed kite	CFP	Year-round resident in foothills and valley margins with scattered oaks and river bottomlands or marshes next to deciduous woodland. Commonly forages in open grasslands, meadows, or marshes containing or near to dense topped trees for nesting and perching.	**High.** Trees and shrubs provide suitable nesting habitat. Occurrences of nesting activity are documented 1.4 miles North of the Project Study Area.
Laterallus jamaicensis coturniculus California black rail	ST, CFP	Year-round resident in marshes (saline to freshwater) with dense vegetation within four inches of the ground. Prefers larger, undisturbed marshes that have an extensive upper zone and are close to a major water source. Extremely secretive.	**Low.** Occurrences within 0.9 miles of the Project Study Area. Preferred habitat is not present.
Melospiza melodia samuelis Samuels (San Pablo) song sparrow	BCC, SSC	Year-round resident of tidal marshes along the north side of San Francisco and San Pablo Bays. Typical habitat is dominated by pickleweed, with gumplant and other shrubs present in the upper zone for nesting.	**Moderate**. Occurrences within 2 miles of the Project Study Area. Suitable grassland and wetland foraging habitat present on and adjacent to the site.
Mammals			
Reithrodontomys raviventris, salt-marsh harvest mouse	FE, SE, CFP	Endemic to emergent salt and brackish wetlands of the San Francisco Bay Estuary. Pickleweed marshes are primary habitat; also occurs in various other wetland communities with dense vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**Low.** Documented to occur in salt marsh habitat west of transmission line route to the north of the District office. The transmission line has been routed to avoid this area entirely.
Antrozous pallidus Pallid bat	SSC, WBWG	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, forages along river channels. Roost sites include crevices in rocky outcrops and cliffs, caves, mines, trees, and various human structures such as bridges, barns, and buildings. Very sensitive to disturbance of roosting sites.	**Moderate.** Pallid bat may be present in trees in the Project Study Area, particularly in larger oaks, cottonwoods, and/or eucalyptus trees present on the District property; however tree removal is not planned as part of the Project. If tree removal or trimming becomes necessary, mitigation measures have been incorporated to avoid impacts to bats.

Scientific Name/ Common Name	Status[1]	Habitat	Potential for Occurrence
Lasiurus blossevillii western red bat	SSC, WBWG	Highly migratory and typically solitary, roosting primarily in the foliage of trees or shrubs. Roosts are usually in broad-leaved trees including cottonwoods, sycamores, alders, and maples. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	**Moderate.** Western red bat may be present in trees located in the Project Study Area particularly in riparian areas and/or larger cottonwoods present on the District property. If tree removal or trimming becomes necessary, mitigation measures have been incorporated to avoid impacts to bats.
Lasiurus cinereus hoary bat	WBWG	Prefers open forested habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Feeds primarily on moths. Requires water.	**Moderate.** Hoary bat may be present in trees located in the Project Study Area, particularly in riparian areas present on the District property. If tree removal or trimming becomes necessary, mitigation measures have been incorporated to avoid impacts to bats.

1 FE/SE – Federal/State Endangered
FT/ST – Federal/State Threatened
SCE/CT – State Candidate Endangered/Threatened
CFP – California Fully Protected
SSC – Species of Special Concern
BCC – Bird of Conservation Concern
WBWG – Western Bat Working Group

4.0 POTENTIAL EFFECTS AND MITIGATION

The assessment of effects under CEQA is based on the change caused by the Project relative to the existing conditions at the proposed Project Study Area. In applying CEQA Appendix G, the terms "substantial" and "substantially" are used as the basis for significance determinations in many of the thresholds but are not defined qualitatively or quantitatively in CEQA or in technical literature. In some cases, the determination requires application of best professional judgment based on knowledge of site conditions as well as the ecology and physiology of biological resources present in a given area. The CEQA and State CEQA Guidelines defines "significant effect on the environment" as "a substantial adverse change in the physical conditions which exist in the area affected by the proposed project." Pursuant to Appendix G, Section IV of the State CEQA Guidelines, the proposed Project would have a significant effect on biological resources if it would:

A. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service.

B. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service.

C. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

D. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites.

E. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance.

F. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

4.1 Analysis of Potential Effects

The proposed project has been designed to avoid any potentially sensitive habitat areas, including habitats suitable for special status species to the maximum extent feasible. The floating array system, access roads, and all staging and stockpile areas will occur within existing developed areas only including paved and compacted gravel areas and the concrete lined wastewater ponds. The proposed transmission line route has been designed to ensure pole

placement will avoid all sensitive wetland and non-wetland waters habitats, as well as upland habitats for sensitive species in order to minimize potential effects.

4.1.1 Jurisdictional Aquatic Resources

Wetlands and non-wetland waters occur throughout the Project Study Area. Project activities will not occur within nor adjacent to wetland and non-wetland waters, except where existing developed substrate is present. All features, including poles, staging, and stockpiling areas have been setback a minimum distance of 35 feet from jurisdictional waters and riparian habitat and 50 feet away from jurisdictional wetlands and the Napa River (Napa County Code Chapter 18.108.026). As such, no effects to these features are anticipated.

4.1.2 Special Status Plant Species

Despite the presence of suitable habitat for eleven (11) special status plant species, no special status plants were observed during protocol-level plant surveys in 2021 or 2022 conducted within the entire Project Study Area. Given that two consecutive years of floristic surveys yielded no findings of special status plants, no effects are anticipated.

4.1.3 Special Status Wildlife Species

Eleven (11) special status wildlife species have potential to occur on or adjacent to the site: western pond turtle (*Emys marmorata*), tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), white-tailed kite (*Elanus leucurus*), burrowing owl (*Athene cunicularia*), California black rail *(Laterallus jamaicensis coturniculus)*, San Pablo song sparrow (*Melospiza melodia samuelis*), salt-marsh harvest mouse (*Reithrodontomys raviventris*), pallid bat (*Antrozous pallidus*), western red bat (*Lasiurus blossevillii*), and hoary bat (*L. cinereus*). A summary of each species' habitat needs on-site and potential for adverse effects from the proposed project is discussed below.

Western Pond Turtle (*Emys marmorata*)

The western pond turtle (WPT) is the only native freshwater turtle in California. Western pond turtle (WPT) inhabits annual and perennial aquatic habitats, such as coastal lagoons, lakes, ponds, marshes, rivers, and streams from sea level to 5,500 feet in elevation and can also occur in many man-made habitats such as stock ponds, wastewater storage, percolation ponds, canals, and reservoirs. This species requires low-flowing or stagnant freshwater aquatic habitat with suitable basking structures, including rocks, logs, algal mats, mud banks and sand. To escape periods of high-water flow, high salinity, or prolonged dry conditions, WPT may move upstream and/or burrow into loose soils and leaf litter in upland or riparian habitat for up to four months (Thompson et al 2016). This species preferentially utilizes aquatic and riparian corridors for movement and dispersal and requires open, dry upland habitat with friable soils for nesting typically on unshaded slopes within 100 meters of a waterbody (Thompson et al 2016).

Napa River provides documented habitat for WPT, and nearby treatment ponds may potentially support WPT seasonally. However, the two concrete lined ponds that the array will constructed on do not provide suitable habitat. Marginally suitable habitat for WPT is also present within Suscol Creek and other waterways on the site, which likely provides dispersal and foraging habitat; suitable nesting habitat is not present due to agricultural activities in the area. Treatment ponds located in the Project Study Area do not provide suitable habitat for pond turtle. Transmission line poles will be placed a minimum of 35 feet from Suscol Creek and other waterways and associated riparian habitat to avoid potential WPT that may be present. The line will be routed overhead to avoid any impacts to this habitat. Based on design, potentially significant effects to WPT are not anticipated to occur.

Tricolored Blackbird (*Agelaius tricolor*)

The tricolored blackbird is a locally common resident in the Central Valley during the spring and summer and along coastal California and the bay area in the winter. This species breeds adjacent to fresh water, preferring emergent wetlands with tall, dense cattails or tules, thickets of willow or blackberry, and/or tall herbs. Flooded agricultural fields with dense vegetation are also used (Shuford and Gardali 2008). This species is highly colonial; nesting habitat must be large enough to support a minimum of 30 pairs, and colonies are commonly substantially larger (up to thousands of pairs). The tricolored blackbird often intermingles with other blackbird species during the non-breeding season. Individuals typically forage up to 5.6 miles (9 kilometers) from their colonies although in most cases only a small part of the area within this range provides suitable foraging (Hamilton and Meese 2006).

Occurrences of tricolored blackbird are documented within 1.5 miles of the Project Study Area. Suitable foraging habitat is present both on and adjacent to the District property. Given that tricolored blackbird may forage on the District lands, impacts to foraging habitat from pole placement may have negligible effects on tricolored blackbird foraging. Such effects are likely to be temporary during installation only and as such, are not likely to be significant. Intact foraging habitat associated with agricultural uses will be avoided. There is no suitable nesting habitat present in the Project Study Area.

Burrowing Owl (*Athene cunicularia*)

The burrowing owl occurs as a year-round resident and winter visitor in much of California's lowlands, inhabiting open areas with sparse or non-existent tree or shrub canopies. Typical habitat is annual or perennial grassland, although human-modified areas such as agricultural lands and airports are also used (Poulin et al. 1993). This species is dependent on burrowing mammals to provide the burrows that are characteristically used for shelter and nesting, and in northern California is typically found in close association with California ground squirrels (*Spermophilus beecheyi*). Manmade substrates such as pipes or debris piles may also be occupied in place of burrows. Prey consists of insects and small vertebrates. Breeding typically takes place from March to July.

Marginally suitable habitat is present for burrowing owl due to current land use practices and relatively few occurrences within five miles. Nonetheless there is a low potential for burrowing owl to overwinter and/or nest on the site. Proposed activities may potentially impact burrowing owl if present resulting in direct mortality and/or disruption during the nesting period. There would be a less than significant impact with mitigation incorporated under CEQA.

Swainson's Hawk (*Buteo swainsoni*)

Swainson's hawk is a summer resident and migrant in California's Central Valley and scattered portions of the southern California interior. Nests are constructed of sticks and placed in trees located in otherwise largely open areas. Areas typically used for nesting include the edge of narrow bands of riparian vegetation, isolated patches of oak woodland, lone trees, and planted and natural trees associated with roads, farmyards and sometimes adjacent residential areas. Foraging occurs in open habitats, including grasslands, open woodlands, and agricultural areas. While breeding, adults feed primarily on rodents (and other vertebrates); for the remainder of the year, large insects (e.g., grasshoppers, dragonflies) comprise most of the diet.

Based on multiple documented occurrences on the border of the Project Study Area, and suitable foraging and nesting habitat within the District property, Swainson's hawk is presumed to be present within and around the Project Study Area. Given that Swainson's hawk may forage on the District lands, impacts to foraging habitat from pole placement may have negligible effects on Swainson's hawk foraging. Such effects are likely to be temporary during installation only and as such, are not likely to be significant. Transmission line pole placement and line stringing has the potential to disturb nesting birds if present and as such is considered potentially significant under CEQA. While protocol-level surveys have not been performed within the Project Study Area, potentially suitable nest trees on the District property have been examined by a qualified biologist for potential nest structures which could be occupied by Swainson's hawk in the spring and summer months. Location of the transmission line has been designed to avoid those trees that may support potential Swainson's hawk nests.

White-Tailed Kite (*Elanus leucurus*)

The white-tailed kite is resident in open to semi-open habitats throughout the lower elevations of California, including grasslands, savannahs, woodlands, agricultural areas, and wetlands. Vegetative structure and prey availability seem to be more important habitat elements than associations with specific plants or vegetative communities (Dunk 1995). Nests are constructed mostly of twigs and placed in trees, often at habitat edges. Nest trees are highly variable in size, structure, and immediate surroundings, ranging from shrubs to trees greater than 150 feet tall (Dunk 1995). This species preys upon a variety of small mammals, as well as other vertebrates and invertebrates.

The nearest occurrence for white-tailed kite was documented 1.4 miles north of the Project Study Area, and trees and taller vegetation within and around the site that provide suitable nesting habitat. Transmission line pole placement and line stringing has the potential to disturb nesting

birds if present. Potentially suitable nest trees on the District property have been examined by a qualified biologist for potential nest structures which could be occupied by white-tailed kite in the spring and summer months. Location of the transmission line has been designed to avoid those trees that may support potential white-tailed kite nests.

California Black Rail (*Laterallus jamaicensis coturniculus*)

The California black rail is the resident black rail subspecies that occurs in California coastal salt and brackish marshes from Bodega Bay to Morro Bay (Eddleman et al. 1994). According to a published analysis by Spautz et al. (2005), important habitat elements for this species within the San Francisco Bay estuary are: 1) emergent marsh dominated by pickleweed (*Salicornia pacifica*), marsh gumplant (*Grindelia stricta*), bulrush (Scirpus *maritimus*), rushes (*Juncus* sp.), and/or cattails (*Typha* sp.); 2) high density of vegetation below four inches in height; 3) high marsh elevation with transitional upland vegetation; 4) large total area of contiguous marsh; 5) proximity to a major water source; and, 6) isolation from disturbance. This species feeds primarily on invertebrates. Black rails are extremely secretive and very difficult to glimpse or flush; identification typically relies on voice. Nests are placed on the ground in dense wetland vegetation.

California black rail is documented within 0.9 miles of the Project Study Area, but preferred habitat is not present within or adjacent to the Project Study Area. The marsh habitat adjacent to the Project Study Area is too small and fragmented to be ideal habitat for the species, but still presents a low chance for California black rail to occur near to the Project due to the presence of pickleweed and gumplant. Transmission line placement will completely avoid the nearby marsh habitat for California black rail. Installation of the floating array is not likely to exceed ambient noise conditions and salt marsh habitat close to treatment ponds is too small and fragmented to support nesting. As such, no effects to California black rail are expected.

San Pablo Song Sparrow (*Melospiza melodia samuelis*)

Also known as the San Pablo song sparrow, this subspecies of the common and widespread song sparrow is endemic to tidal and semi-tidal marshes of San Pablo Bay and northern San Francisco Bay. The essential habitat requirement is dense, taller emergent and herbaceous vegetation, particularly in the upper marsh plain; high-quality habitat tends to include woody shrubs in the upper marsh and adjacent transitional areas (Shuford and Gardali 2008). Nests are placed in dense vegetative cover, and invertebrates compose most of the diet.

Occurrences for San Pablo song sparrow are documented within 2 miles of the Project Study Area, and suitable grassland and wetland foraging habitat is present on and adjacent to the site. Transmission line placement will completely avoid the nearby suitable marsh habitat for San Pablo song sparrow. However, pole placement may potentially disturb nesting birds where it crosses Suscol Creek and as such is considered a potentially significant effect under CEQA.

Nesting and/or Migratory Birds

Installation of the floating solar arrays and related infrastructure (excluding the transmission line) will occur entirely within active developed portions of the District property including two lined wastewater ponds and nearby access roads and paved areas. Array installation activities are not anticipated to exceed ambient level noise conditions at the site, and as such do not pose a potential affect nesting or migratory birds that may nest in the area.

Transmission line pole placement does have the potential to disturb nesting birds if activities occur during the nesting bird season from February 15 to August 31. Project activities in areas containing suitable nesting habitat will largely be performed outside the nesting season. Impacts to nesting birds resulting in nest abandonment or direct mortality to chicks or eggs is considered a potentially significant impact under CEQA.

Pacific Gas and Electric (PG&E) has mapped Raptor Concentration Zone (RCZs) for Overhead Lines where raptor collisions with transmission lines and power poles is possible. This mapping was done with the based on the following conditions: available prey base; presence of poles as preferred perch locations; proximity to water or wetlands; and bird-related outage history (PG&E 2008). The Project Study Area is within an RCZ. PG&E committed that new poles and pole replacements required to be built with "bird-safe" which includes specific methods of constructing or modifying the design of wood poles in configurations that will provide 50 inches of phase-to-phase or phase-to ground separation or, in lieu of increasing separation, insulate the hardware or the conductors against simultaneous contact. This reduces the electrocution risk to large raptors (PG&E 2015). In most cases, a combination of covers, perch deterrents, and construction framing should be included in the design to provide birds with a safe place to land or prevent birds from landing or perching between closely spaced phases. PG&E provides guidance for specific elements in their *Raptor-Safe Construction and Wildlife Protection* document (PG&E 2008). Construction framing for this project will incorporate vertical construction, including phase-to-phase spacing, elimination of crossarms, and pole insulation. Such measures will ensure raptors and/or large flying birds (herons, geese, etc.) cannot make contact with the lines with wings spread, particularly when taking off and landing thus avoiding mortality to juvenile birds or during feeding of young chicks. Furthermore, the elimination of crossarms makes nesting and perching harder.

Salt-marsh Harvest Mouse (*Reithrodontomys raviventris*)

The salt marsh harvest mouse (SMHM) is a relatively small rodent found only in suitable salt- and brackish-marsh habitat in the greater San Francisco Bay, San Pablo Bay, and Suisun Bay areas. The habitat associated with SMHM has been described as pickleweed-dominated vegetation (Fisler 1965), though more recent studies have shown that SMHM is supported equally in pickleweed-dominated and mixed vegetation (including native and non-native salt- and brackish-marsh species including tules) (Sustaita et al. 2005, Sustaita et al. 2011). Another key habitat requirement for this species is upland or tidal refuge habitat, which is used to escape high tides and storm events. Persistent, low numbers of SMHM are also found in grasslands at least 330

feet (100 meters) from the edge of marsh habitat, though their presence in grasslands may be seasonal and opportunistic (USFWS 2013).

SMHM has been documented to occur west of the transmission line directly north of the District office on-site. The transmission line route has been designed to avoid this area and any upland habitats within 100 meters of suitable marsh habitat except where existing developed hardscape can be utilized (Appendix A, Figure 2b). Therefore, no effects to SMHM are expected.

Pallid Bat (*Antrozous pallidus*)

Pallid bat occurs in a variety of habitats ranging from rocky arid deserts to grasslands, and into higher elevation coniferous forests. Pallid bats often roost in colonies of between 20 and several hundred individuals. Roosts are typically in rock crevices, tree hollows, mines, caves, and a variety of man-made structures, including vacant and occupied buildings. Tree roosting has been documented in large conifer snags (e.g., ponderosa pine), inside basal hollows of redwoods and giant sequoias, and within bole cavities in oak trees. Pallid bats are primarily insectivorous, feeding on large prey that is usually taken on the ground but sometimes in flight. Prey items include arthropods such as scorpions, ground crickets, and cicadas (WBWG 2022).

Pallid bat may be present in trees in the Project Study Area, particularly in larger oaks, cottonwoods, and/or eucalyptus trees adjacent to Suscol Creek. No tree removal is proposed however if tree removal becomes necessary, mitigation measures have been incorporated to avoid impacts to bats. Therefore, there would be a less than significant impact with mitigation incorporated under CEQA.

Western Red Bat (*Lasiurus blossevillii*)

Western red bats are highly migratory, broadly distributed, and are believed to make seasonal shifts in their distribution (Pierson et al. 2006). They are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas possibly and association with riparian habitat (particularly willows, cottonwoods, and sycamores; Pierson et al. 2006). It is believed that males and females maintain different distributions during pupping, where females take advantage of warmer inland areas and males occur in cooler areas along the coast.

Western red bat may be present in trees located in the Project Study Area, particularly in riparian areas and/or larger cottonwoods. No tree removal is proposed as part of the project however if tree removal becomes necessary, mitigation measures have been incorporated to avoid impacts to bats. Therefore, there would be a less than significant impact with mitigation incorporated under CEQA.

Hoary Bat (*Lasiurus cinereus*)

Hoary bats are highly associated with forested habitats in the Pacific Northwest. They are a solitary species and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, usually at the edge of a clearing. Roosts are typically 10 to 30 feet above the

ground. Hoary bats are thought to be highly migratory, however, wintering sites and migratory routes have not been well documented. This species tolerates a wide range of temperatures and has been captured at air temperatures between 0 and 22 degrees Celsius. This species reportedly has a strong preference for moths, but is also known to eat beetles, flies, grasshoppers, termites, dragonflies, and wasps (WBWG 2022).

Hoary bat may be present in trees located along the Project Study Area, particularly in riparian areas. No tree removal is proposed as part however if tree removal becomes necessary, mitigation measures have been incorporated to avoid impacts to bats. Therefore, there would be a less than significant impact with mitigation incorporated under CEQA.

Wildlife Corridors

The Project Study Area may be traversed by terrestrial mammals traveling along Soscol Creek primarily such as Columbian black-tailed deer, racoon, gray fox, and striped skunk or the Napa River (outside District facilities). The Project does not include erecting above ground structures that will impede the movement of wildlife. All transmission poles and lines have been designed to be in line with other existing tranmission lines on the property and/or existing tree lines to reduce the potential for collisions with birds.

Vertical construction framing described in Section 4.1.3 will ensure migratory birds flying along the Napa River or between the Napa River and adjacent treatment ponds are not significantly impacted where such flyways intersect with the Project Study Area. As such, no potentially significant effects to wildlife corridors are anticipated.

4.2 Recommended Avoidance and Minimization Measures

The following measures are recommended to be implemented in the event any of the potential impacts described in Section 4.1 cannot be completely avoided by project design and/or recommended work windows (e.g., vegetation removal between Sept. 1 and Feb. 1).

BIO-1 Riparian Habitats
Consultation with CDFW under Section 1600 of the California Fish and Game Code is required for transmission line overhead crossing across Suscol Creek and its associated riparian habitat. If impacts to riparian habitat are unavoidable, underground directional drilling of the line may be considered through CDFW consultation.

BIO-2 Wetland Setbacks
All project elements, including the transmission line poles and staging/construction access will adhere to the 50-foot setback from wetlands as described in the County code. Wetland setbacks may be encroached upon during the course of construction for safety reasons only.

BIO-3 Indirect Impacts
The Napa County Best Management Practice Guidelines must be employed to ensure impacts to project-adjacent or off-site habitats and resources are avoided.

BIO-4 Swainson's Hawk and White-Tailed Kite

To avoid impacts to state listed and state fully protected species, a pre-construction survey for Swainson's hawk and white-tailed kite shall be performed prior to any project-related activities within one-half mile of suitable nesting habitat as determined by a qualified biologist between March 1 and August 1. A minimum of two surveys shall be conducted in accordance with the statewide survey guidelines (CDFW 2000) between March 20 and April 20, before trees leaf out making detection difficult. If an active nest is observed, a minimum one quarter mile no-disturbance buffer shall be erected around the nest until young have fledged and/or the nest is naturally predated or abandoned. A smaller buffer may be established through consultation with CDFW for specific activities not likely to result in nest abandonment due to visual screening or ambient conditions; nest buffers shall not be smaller than 500 feet for any activity. Removal of an active nest is prohibited under CESA.

BIO-5 Burrowing Owl

To avoid impacts to burrowing owl, pre-construction surveys shall be performed following the 1993 CDFW survey protocol prior to any construction-related activities in non-developed (hardscape) portions of the site. If found, a no-disturbance buffer shall be established around the burrow of a minimum radius of 50 meters between September 1 and January 31, or 75 meters between February 1 and August 31. If occupied burrows cannot be avoided, a passive relocation plan shall be prepared, and owls may be excluded using one-way doors during the non-nesting season only. Given that impacts to foraging habitat are mostly temporary and as such negligible, no mitigation for foraging habitat is recommended.

BIO-6 San Pablo Song Sparrow and Migratory Nesting Birds

To prevent impacts to nesting birds, the following avoidance and minimization measures are recommended:

1. If construction begins between February 1 and August 31, a pre-construction nesting bird (both passerine and raptor) survey of suitable nesting habitat within 500 feet of all work areas shall be performed within 10 days of groundbreaking. If no nesting birds are observed, no further action is required. A follow up survey is required if a stoppage in work occurs for longer than 10 days between February 1 and July 1; initiation of new nests is not anticipated after July 1.
2. If active bird nests (passerine and/or raptor) are observed during the pre-construction survey, a disturbance-free buffer zone shall be established around the nest tree(s) until the young have fledged or the nest has naturally failed or been predated, as determined by a qualified biologist. The radius of the required buffer zone can vary depending on the species, with the dimension of any required buffer zone to be determined by a qualified biologist.
3. If tree trimming or removal becomes necessary, tree work shall be performed outside the nesting season to avoid impacts to common (and special status) raptors observed within the Project Study Area.

BIO-7. Bird Collisions with Transmission Line
Transmission lines and associated structures will be designed, or devices will be incorporated to minimize the potential for bird collision.

Protective materials to either cover energized parts and conductors will be UV stable, non-tracking, with sufficient insulating properties to protect energized conductors from incidental contact with birds, squirrels, and other wildlife. Vertical construction framing will be used to prevent nesting and perching, and to avoid collisions with wires.

BIO-8. Pallid Bat, Western Red Bat, and Hoary Bat
To prevent impacts to roosting bats, the following avoidance and minimization measures are recommended:

1. All tree removal or limbing of trees shall be performed outside the maternity season, typically between September 15 and April 15 of a given year to avoid impacts to solitary and colonial maternity roosts.
2. Prior to any tree removal, or limbing, a bat habitat assessment shall be performed by a qualified biologist. If suitable habitat is found, then a nighttime emergence survey shall be performed prior to any activities within 50 feet or more (as determined by the biologist). If bats are detected, then an appropriate no-disturbance buffer shall be placed around the roost until the end of the maternity season or hibernation period at which time trees may be removed using the two-step method (between September 15 and October 31, and between March 1 and April 15).
3. The two-step method for tree removal shall be performed as follows:
    a. Large trees shall be limbed first on the first day and then felled on the second day.
    b. Limbs shall be gently shaken on Day 2 under supervision by the qualified biologist to allow any bats to exit.
    c. On Day 2, once the biologist has checked all of the felled parts of the tree, then the tree and limbs shall be either chipped or removed from the site.

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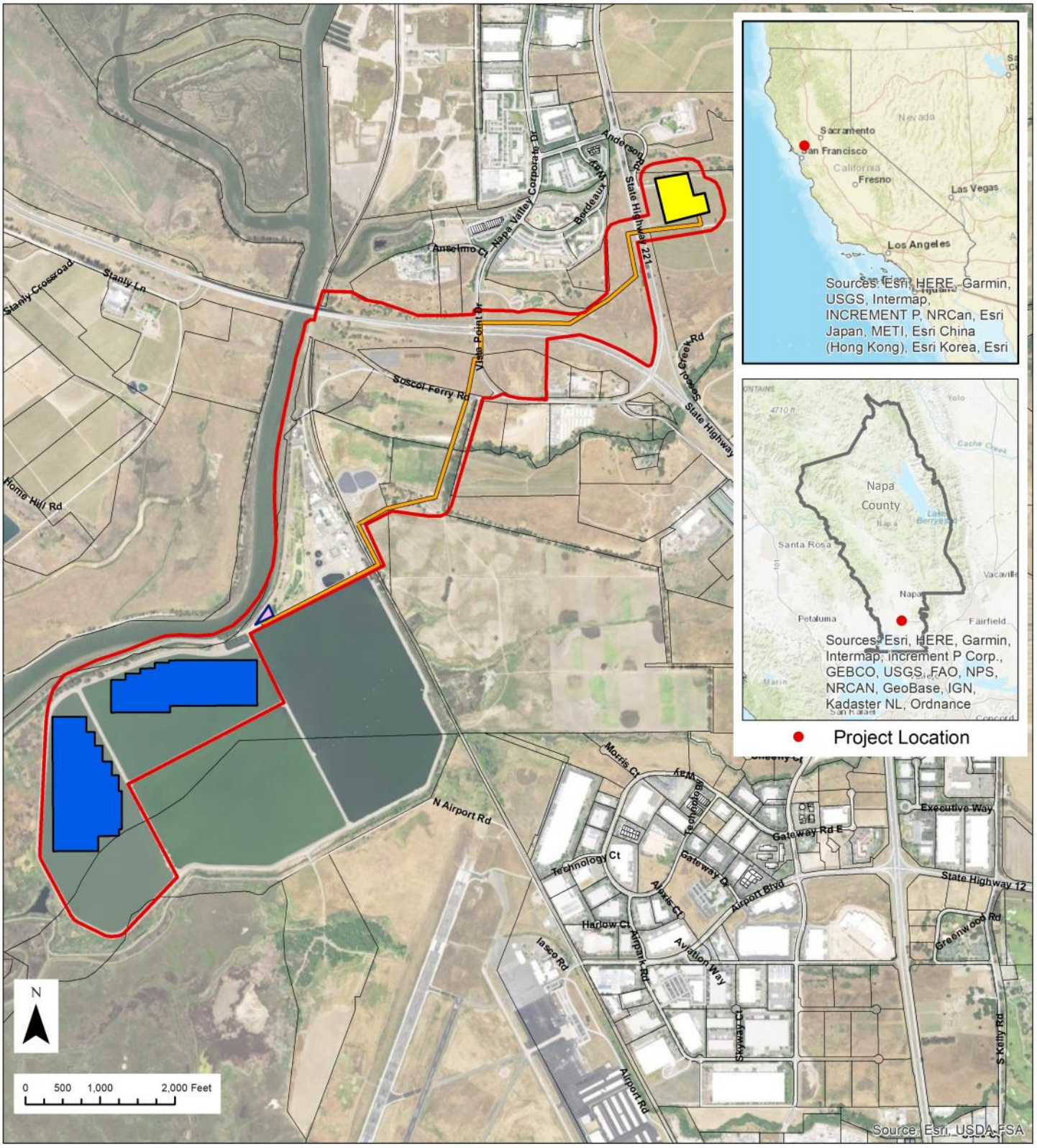
APPENDIX A

PROJECT FIGURES: PROJECT STUDY AREA MAP, VEGETATION COMMUNITIES, AND CNDDB MAP RESULTS

Figure 1: Location of Project Area

Napa Sanitation Floating Solar Project, Napa County, CA



Date: 1-4-2021
Data: Sol Ecology Inc., Napa Co., USGS

Datum: NAD 83
Base: ESRI
GIS: AJG1708

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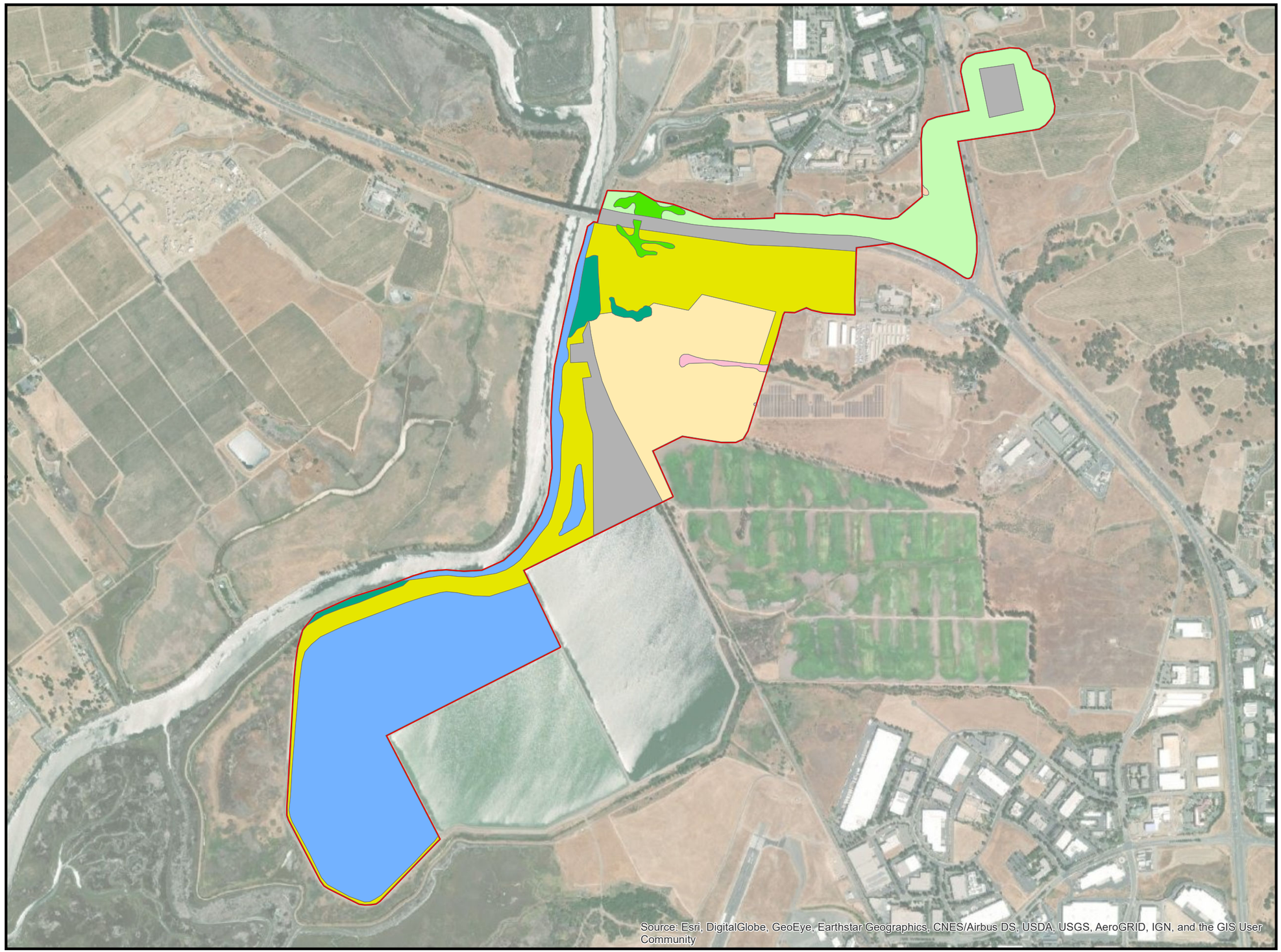
solecology.com

Figure 2a. Study Area Location and Vegetation Communities Map



Napa Sanitation Floating Solar Project

Napa County, CA

Legend

MapClass

- Agriculture (71.5 ac)
- California Annual Grasslands Alliance (55.9
- Coast Live Oak Alliance (4.5
- Mixed Oak Alliance (0.1
- Saltgrass - Pickleweed NFD Super Alliance (7.9
- Upland Annual Grasslands & Forbs Formation (97.3
- Urban or Built-up (41.3 ac)
- Valley Oak - Fremont Cottonwood - (Coast Live Oak) Riparian Forest NFD Association (1.6 ac)
- Water (158.8 ac)
- Study Area

Coordinate System:
NAD_1983_2011_StatePlane_California_II_FIPS_0402_Ft_US
Datum: North American 1983

Map created:12-9-2022
Data: Sol Ecology Inc, Napa Co.
Base: ESRI
GIS: AG1709

N

0 500 1,000 2,000
Feet

1 inch = 1,189 feet

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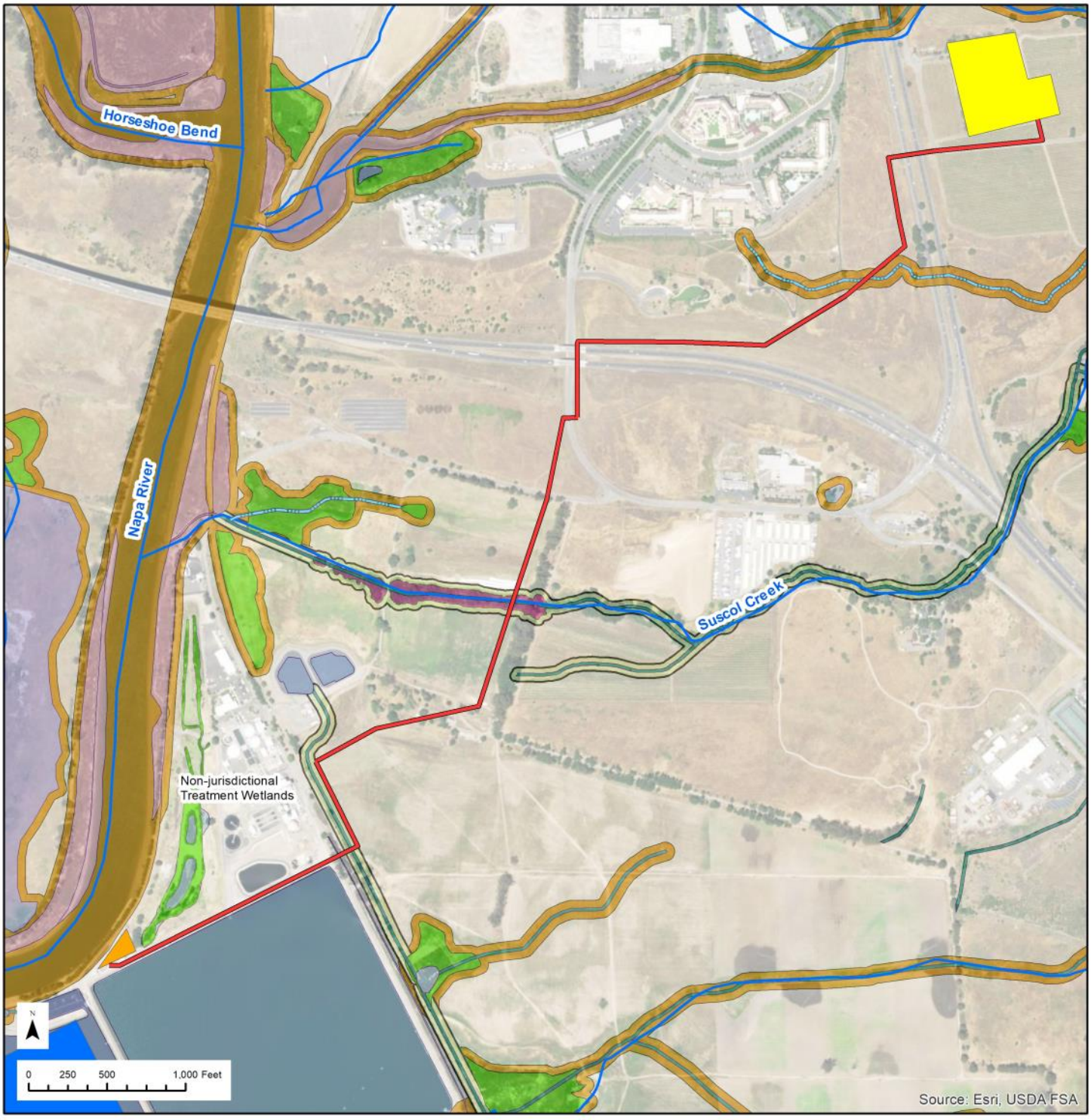
Figure 2b: Sensitive Communities

Napa Sanitation Floating Solar Project, Napa County, CA



Proposed Transmission Line

Site Interconnection Facilities

Tulucay Substation

Solar Array

National Wetlands Inventory - Wetlands Type

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Pond

Lake

Riverine

Riparian Habitat

35' Setback from Riparian Habitat & Waters

50' Setback Around Wetlands & Napa River

Rivers and Streams

Ephemeral Stream

Date: 12-20-2022
Data: Sol Ecology Inc., Napa Co., US FWS

Datum: NAD 83
Base: NAIP 2020
GIS: AJG1709

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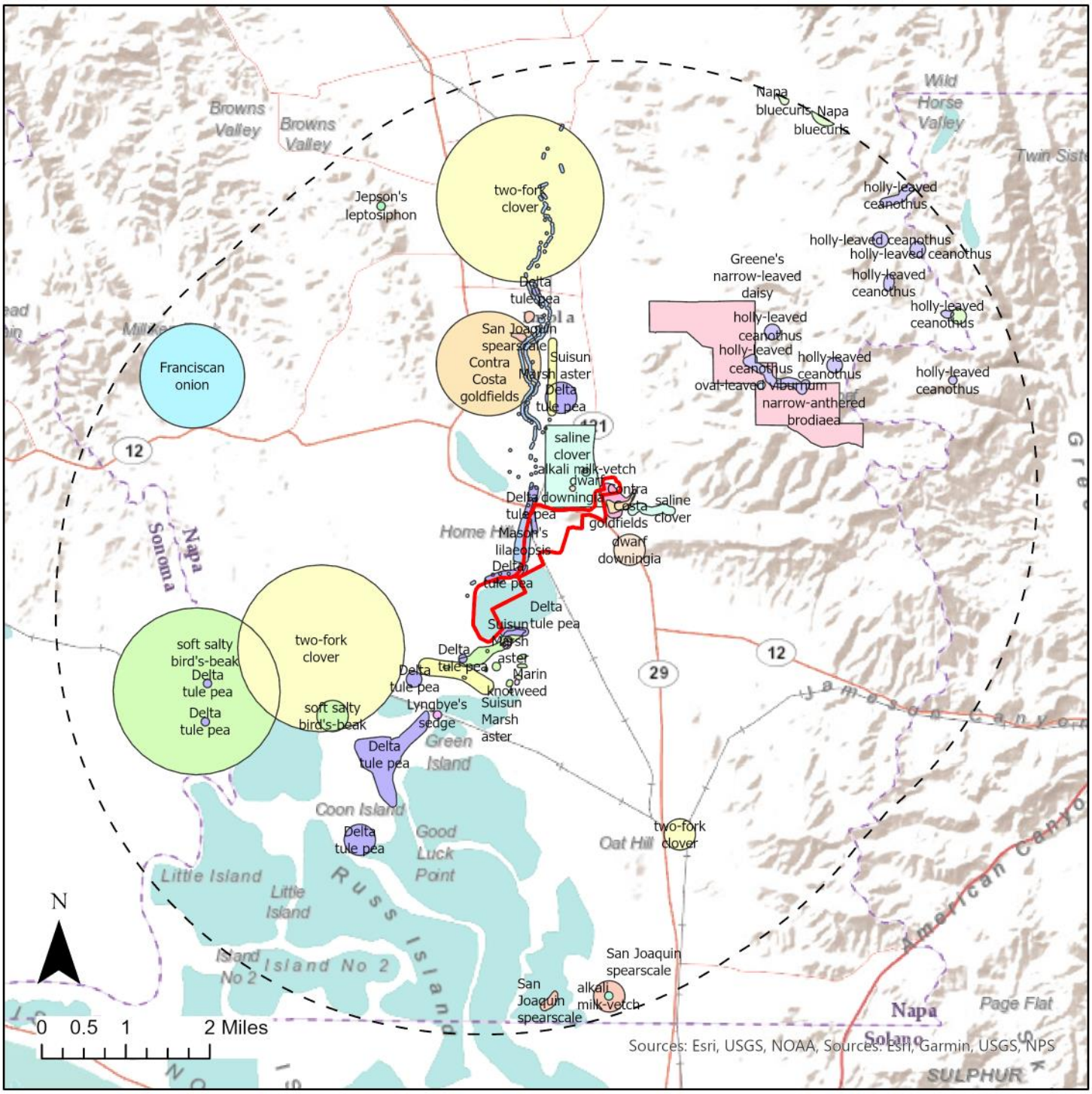
Figure 3: Special Status Plant Species within 5 Miles of the Project Site

Napa Sanitation Floating Solar Project, Napa County, CA



- Study Area
- 5 Miles
- Contra Costa goldfields
- Delta tule pea
- Franciscan onion
- Greene's narrow-leaved daisy
- Jepson's leptosiphon
- Lyngbye's sedge
- Marin knotweed
- Mason's lilaeopsis
- Napa bluecurls
- San Joaquin spearscale
- Suisun Marsh aster
- alkali milk-vetch
- dwarf downingia
- holly-leaved ceanothus
- legenere
- narrow-anthered brodiaea
- oval-leaved viburnum
- saline clover
- soft salty bird's-beak
- two-fork clover

Date: 12-7-2022
Data: Sol Ecology Inc., Napa Co., CDFW
Base: ESRI
GIS: JC1709

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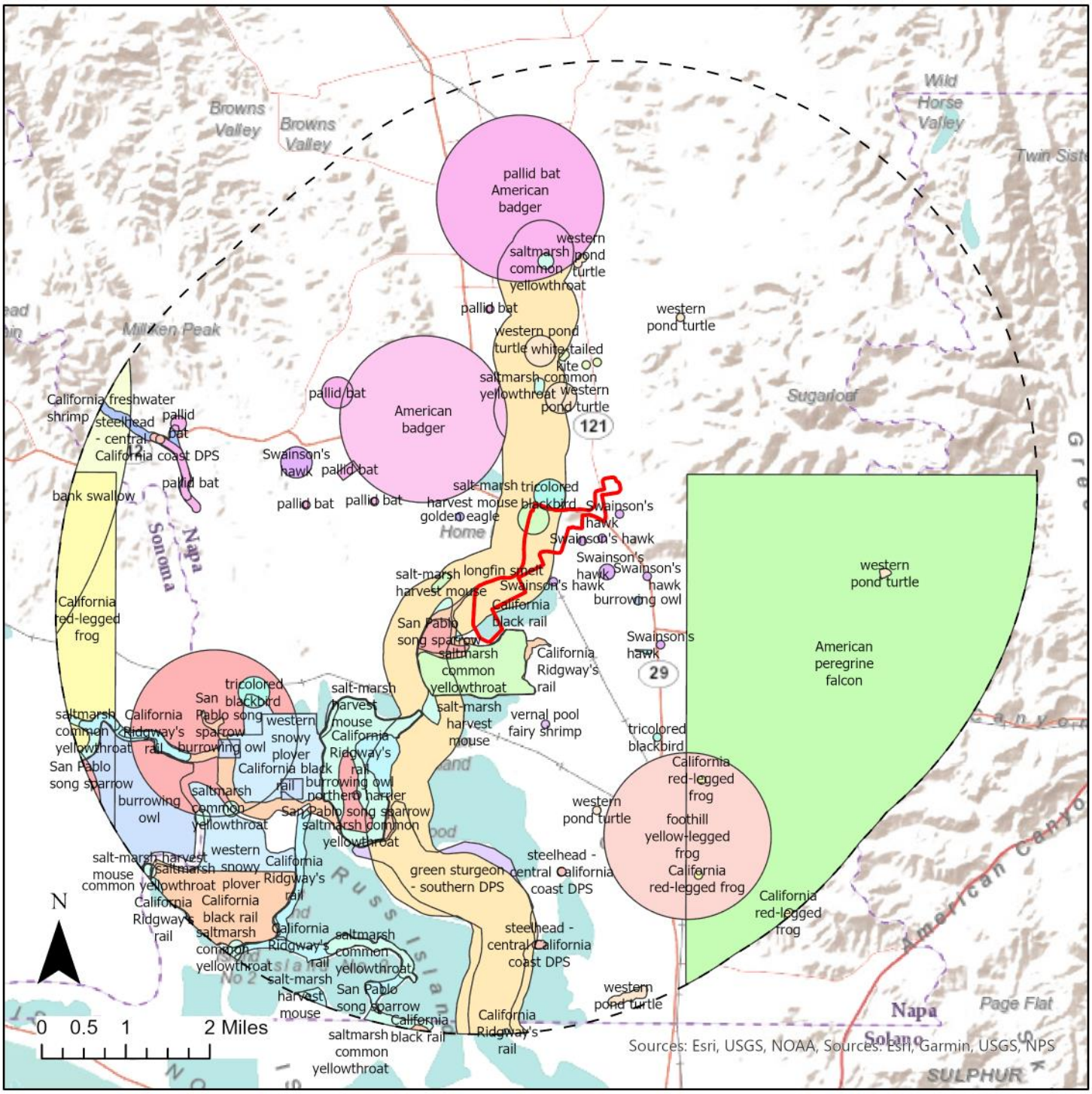
Figure 4. Special Status Wildlife Species within 5 Miles of the Project Site

Napa Sanitation Floating Solar Project, Napa County, CA



- Study Area
- 5 Miles
- American badger
- American peregrine falcon
- California Ridgway's rail
- California black rail
- California freshwater shrimp
- California red-legged frog
- San Pablo song sparrow
- Suisun shrew
- Swainson's hawk
- bank swallow
- burrowing owl
- foothill yellow-legged frog
- golden eagle
- green sturgeon - southern DPS
- longfin smelt
- northern harrier
- pallid bat
- salt-marsh harvest mouse
- saltmarsh common yellowthroat
- steelhead - central California coast DPS
- tricolored blackbird
- vernal pool fairy shrimp
- western pond turtle
- western snowy plover
- white-tailed kite

Date: 12-7-2022
Data: Sol Ecology Inc., Napa Co., CDFW

Base: ESRI
GIS: JC1709

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APPENDIX B

CNDDB, CNPS, AND USFWS IPAC SUMMARY TABLES

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Cuttings Wharf (3812223) OR Sonoma (3812234) OR Napa (3812233) OR Mt. George (3812232) OR Sears Point (3812224) OR Cordelia (3812222) OR Petaluma Point (3812214) OR Mare Island (3812213) OR Benicia (3812212))
 AND Taxonomic Group IS (Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

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.
Agrostis hendersonii Henderson's bent grass	G2Q S2	None None	Rare Plant Rank - 3.2	790 790	26 S:1	0	1	0	0	0	0	0	1	1	0	0
Allium peninsulare var. franciscanum Franciscan onion	G5T2 S2	None None	Rare Plant Rank - 1B.2	280 280	25 S:2	0	0	1	0	0	1	1	1	2	0	0
Amorpha californica var. napensis Napa false indigo	G4T2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	550 1,670	76 S:7	2	2	0	0	0	3	6	1	7	0	0
Astragalus tener var. tener alkali milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.2	7 15	65 S:2	0	0	1	0	1	0	2	0	1	0	1
Balsamorhiza macrolepis big-scale balsamroot	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive USFS_S-Sensitive	145 800	51 S:4	0	3	0	0	0	1	2	2	4	0	0
Blennosperma bakeri Sonoma sunshine	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	30 65	24 S:4	0	1	1	0	2	0	3	1	2	0	2
Blepharizonia plumosa big tarplant	G1G2 S1S2	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden		53 S:1	0	0	0	0	1	0	1	0	0	1	0
Brodiaea leptandra narrow-anthered brodiaea	G3? S3?	None None	Rare Plant Rank - 1B.2	450 1,800	39 S:12	3	2	0	0	0	7	4	8	12	0	0
Calochortus pulchellus Mt. Diablo fairy-lantern	G2 S2	None None	Rare Plant Rank - 1B.2	150 200	52 S:2	0	1	0	0	0	1	1	1	2	0	0
Carex lyngbyei Lyngbye's sedge	G5 S3	None None	Rare Plant Rank - 2B.2 IUCN_LC-Least Concern	4 4	37 S:1	0	0	1	0	0	0	0	1	1	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.
Castilleja affinis var. neglecta Tiburon paintbrush	G4G5T1T2 S1S2	Endangered Threatened	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	580 580	7 S:1	0	1	0	0	0	0	0	1	1	0	0
Ceanothus confusus Rincon Ridge ceanothus	G1 S1	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_SBBG-Santa Barbara Botanic Garden	960 960	33 S:1	0	1	0	0	0	0	0	1	1	0	0
Ceanothus purpureus holly-leaved ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	700 2,200	43 S:19	4	1	0	0	0	14	12	7	19	0	0
Ceanothus sonomensis Sonoma ceanothus	G2 S2	None None	Rare Plant Rank - 1B.2 SB_SBBG-Santa Barbara Botanic Garden	700 2,600	30 S:8	2	1	0	1	0	4	5	3	8	0	0
Centromadia parryi ssp. congdonii Congdon's tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	80 80	96 S:1	0	0	0	0	1	0	1	0	0	0	1
Centromadia parryi ssp. parryi pappose tarplant	G3T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	15 20	39 S:2	0	0	0	1	0	1	1	1	2	0	0
Chloropyron molle ssp. molle soft salty bird's-beak	G2T1 S1	Endangered Rare	Rare Plant Rank - 1B.2	0 8	27 S:9	0	3	1	0	4	1	5	4	5	3	1
Cicuta maculata var. bolanderi Bolander's water-hemlock	G5T4T5 S2?	None None	Rare Plant Rank - 2B.1		17 S:2	0	0	0	0	0	2	2	0	2	0	0
Dirca occidentalis western leatherwood	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 500	90 S:3	0	1	1	0	0	1	0	3	3	0	0
Downingia pusilla dwarf downingia	GU S2	None None	Rare Plant Rank - 2B.2	10 1,550	132 S:8	1	3	0	0	1	3	8	0	7	0	1

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.
Erigeron greenei Greene's narrow-leaved daisy	G3 S3	None None	Rare Plant Rank - 1B.2	300 1,500	20 S:6	1	2	0	0	0	3	2	4	6	0	0
Eryngium jepsonii Jepson's coyote-thistle	G2 S2	None None	Rare Plant Rank - 1B.2	200 600	19 S:5	0	0	0	0	0	5	2	3	5	0	0
Extriplex joaquinana San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	5 5	127 S:3	0	0	2	0	0	1	3	0	3	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	10 10	82 S:1	0	0	0	0	1	0	1	0	0	1	0
Helianthella castanea Diablo helianthella	G2 S2	None None	Rare Plant Rank - 1B.2	150 540	107 S:5	0	4	1	0	0	0	1	4	5	0	0
Hemizonia congesta ssp. congesta congested-headed hayfield tarplant	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_UCBG-UC Botanical Garden at Berkeley		52 S:2	0	0	0	0	0	2	2	0	2	0	0
Hesperolinon breweri Brewer's western flax	G2 S2	None None	Rare Plant Rank - 1B.2		29 S:1	0	0	0	0	0	1	1	0	1	0	0
Horkelia tenuiloba thin-lobed horkelia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,230 1,230	27 S:1	0	0	0	0	0	1	1	0	1	0	0
Isocoma arguta Carquinez goldenbush	G1 S1	None None	Rare Plant Rank - 1B.1		14 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasthenia conjugens Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	60 230	36 S:4	0	1	1	0	2	0	2	2	2	1	1

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.
Lathyrus jepsonii var. jepsonii Delta tule pea	G5T2 S2	None None	Rare Plant Rank - 1B.2 SB_BerrySB-Berry Seed Bank SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	0 7	133 S:16	0	3	0	2	1	10	12	4	15	1	0
Legenere limosa legenere	G2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley	40 40	83 S:1	0	0	1	0	0	0	1	0	1	0	0
Leptosiphon jepsonii Jepson's leptosiphon	G2G3 S2S3	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	400 430	51 S:2	0	0	0	0	0	2	0	2	2	0	0
Lilaeopsis masonii Mason's lilaeopsis	G2 S2	None Rare	Rare Plant Rank - 1B.1	0 10	198 S:7	1	3	2	0	0	1	4	3	7	0	0
Lupinus sericatus Cobb Mountain lupine	G2? S2?	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	1,800 1,860	46 S:2	0	0	0	1	0	1	2	0	2	0	0
Polygonum marinense Marin knotweed	G2Q S2	None None	Rare Plant Rank - 3.1	5 5	32 S:5	2	1	0	0	0	2	2	3	5	0	0
Rhynchospora californica California beaked-rush	G1 S1	None None	Rare Plant Rank - 1B.1	875 875	9 S:1	0	1	0	0	0	0	0	1	1	0	0
Senecio aphanactis chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	200 200	98 S:1	0	0	0	0	0	1	1	0	1	0	0
Sidalcea hickmanii ssp. napensis Napa checkerbloom	G3T1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	1,380 1,380	2 S:1	0	0	0	0	0	1	1	0	1	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.
Spergularia macrotheca var. longistyla long-styled sand-spurrey	G5T2 S2	None None	Rare Plant Rank - 1B.2	200 200	22 S:1	0	0	0	0	0	1	1	0	1	0	0
Symphyotrichum lentum Suisun Marsh aster	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_USDA-US Dept of Agriculture	0 10	175 S:5	0	1	0	1	0	3	5	0	5	0	0
Trichostema ruygtii Napa bluecurls	G1G2 S1S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	95 1,625	19 S:8	0	0	0	0	1	7	2	6	7	0	1
Trifolium amoenum two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	20 100	26 S:3	0	0	0	0	1	2	3	0	2	1	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	5 775	56 S:7	0	0	1	0	1	5	3	4	6	0	1
Viburnum ellipticum oval-leaved viburnum	G4G5 S3?	None None	Rare Plant Rank - 2B.3	600 1,480	39 S:4	0	0	0	0	0	4	2	2	4	0	0

Summary Table Report

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California Natural Diversity Database

Query Criteria: Quad IS (Cuttings Wharf (3812223) OR Sonoma (3812234) OR Napa (3812233) OR Mt. George (3812232) OR Sears Point (3812224) OR Cordelia (3812222) OR Petaluma Point (3812214) OR Mare Island (3812213) OR Benicia (3812212))
 AND Taxonomic Group IS (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects)

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.
Accipiter cooperii Cooper's hawk	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	300 300	118 S:1	0	1	0	0	0	0	1	0	1	0	0
Acipenser medirostris pop. 1 green sturgeon - southern DPS	G2T1 S1	Threatened None	AFS_VU-Vulnerable IUCN_EN-Endangered	0 0	14 S:1	0	1	0	0	0	0	0	1	1	0	0
Adela oplerella Opler's longhorn moth	G2 S2	None None		400 400	14 S:1	0	0	0	0	0	1	1	0	1	0	0
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	6 372	955 S:9	1	3	0	0	1	4	7	2	8	1	0
Andrena blennospermatis Blennosperma vernal pool andrenid bee	G2 S2	None None		110 110	15 S:1	0	0	0	0	0	1	1	0	1	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive	15 710	420 S:15	1	4	1	1	1	7	13	2	14	0	1
Aquila chrysaetos golden eagle	G5 S3	None None	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected CDFW_WL-Watch List IUCN_LC-Least Concern	55 1,000	325 S:3	2	0	0	0	1	0	2	1	2	1	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	12 128	156 S:3	1	1	0	0	0	1	2	1	3	0	0

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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.
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	0 350	2011 S:9	2	3	1	1	2	0	7	2	7	1	1
Bombus caliginosus obscure bumble bee	G2G3 S1S2	None None	IUCN_VU-Vulnerable	100 2,500	181 S:2	0	0	0	0	0	2	2	0	2	0	0
Bombus occidentalis western bumble bee	G2G3 S1	None None	IUCN_VU-Vulnerable USFS_S-Sensitive	15 500	306 S:10	0	0	0	0	0	10	10	0	10	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S3	Threatened None	IUCN_VU-Vulnerable	15 15	796 S:1	0	1	0	0	0	0	0	1	1	0	0
Buteo regalis ferruginous hawk	G4 S3S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	30 30	107 S:1	0	0	1	0	0	0	1	0	1	0	0
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	7 100	2548 S:8	0	2	2	0	0	4	0	8	8	0	0
Calasellus californicus An isopod	G2 S2	None None		25 25	3 S:1	0	0	0	0	0	1	1	0	1	0	0
Charadrius nivosus nivosus western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List	5 10	138 S:2	2	0	0	0	0	0	1	1	2	0	0
Circus hudsonius northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	5 5	54 S:3	0	3	0	0	0	0	0	3	3	0	0
Coturnicops noveboracensis yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	6 200	45 S:3	0	0	0	0	0	3	2	1	3	0	0

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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.
Cypseloides niger black swift	G4 S2	None None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable NABCI_YWL-Yellow Watch List USFWS_BCC-Birds of Conservation Concern	2,500 2,500	46 S:1	0	0	0	0	0	1	1	0	1	0	0
Danaus plexippus plexippus pop. 1 monarch - California overwintering population	G4T1T2 S2	Candidate None	IUCN_EN-Endangered USFS_S-Sensitive	10 140	383 S:5	1	1	0	0	1	2	3	2	4	1	0
Desmocerus californicus dimorphus valley elderberry longhorn beetle	G3T2T3 S3	Threatened None		50 220	271 S:2	0	1	0	0	1	0	1	1	1	0	1
Dicamptodon ensatus California giant salamander	G2G3 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	350 1,300	234 S:5	0	0	0	0	0	5	4	1	5	0	0
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	10 140	184 S:3	0	3	0	0	0	0	1	2	3	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	5 840	1404 S:21	0	8	7	1	0	5	10	11	21	0	0
Falco peregrinus anatum American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected	200 300	73 S:2	1	1	0	0	0	0	1	1	2	0	0
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	2 12	112 S:36	4	4	3	0	0	25	29	7	36	0	0
Gonidea angulata western ridged mussel	G3 S1S2	None None	IUCN_VU-Vulnerable	100 100	157 S:1	0	0	0	0	0	1	1	0	1	0	0
Hydroprogne caspia Caspian tern	G5 S4	None None	IUCN_LC-Least Concern	6 6	3 S:1	1	0	0	0	0	0	1	0	1	0	0
Hypomesus transpacificus Delta smelt	G1 S1	Threatened Endangered	AFS_TH-Threatened IUCN_CR-Critically Endangered	0 0	29 S:5	0	4	0	0	0	1	3	2	5	0	0

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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.
Laterallus jamaicensis coturniculus California black rail	G3T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_EN-Endangered NABCI_RWL-Red Watch List	0 12	303 S:19	3	8	1	0	0	7	5	14	19	0	0
Masticophis lateralis euryxanthus Alameda whipsnake	G4T2 S2	Threatened Threatened		450 450	167 S:1	0	1	0	0	0	0	1	0	1	0	0
Melospiza melodia maxillaris Suisun song sparrow	G5T3 S3	None None	CDFW_SSC-Species of Special Concern	5 6	36 S:7	0	1	0	0	0	6	6	1	7	0	0
Melospiza melodia samuelis San Pablo song sparrow	G5T2 S2	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	0 100	41 S:23	10	5	0	0	0	8	13	10	23	0	0
Nycticorax nycticorax black-crowned night heron	G5 S4	None None	IUCN_LC-Least Concern	157 157	37 S:1	0	0	0	0	0	1	0	1	1	0	0
Nyctinomops macrotis big free-tailed bat	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	200 200	32 S:1	0	0	0	0	0	1	1	0	1	0	0
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	0 600	44 S:3	0	0	1	2	0	0	2	1	3	0	0
Pandion haliaetus osprey	G5 S4	None None	CDF_S-Sensitive CDFW_WL-Watch List IUCN_LC-Least Concern	0 19	504 S:11	0	3	1	0	1	6	1	10	10	0	1
Pogonichthys macrolepidotus Sacramento splittail	G3 S3	None None	AFS_VU-Vulnerable CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	0 2	15 S:6	3	2	1	0	0	0	5	1	6	0	0
Rallus obsoletus obsoletus California Ridgway's rail	G3T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	0 30	99 S:23	2	7	5	0	0	9	16	7	23	0	0

Summary Table Report

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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.
Rana boylii foothill yellow-legged frog	G3 S3	None Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	78 350	2478 S:3	0	0	1	0	2	0	2	1	1	2	0
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	10 650	1671 S:24	1	9	8	1	0	5	11	13	24	0	0
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	0 10	144 S:22	0	12	0	0	0	10	16	6	22	0	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	25 25	298 S:1	0	0	0	0	0	1	1	0	1	0	0
Sorex ornatus sinuosus Suisun shrew	G5T1T2Q S1S2	None None	CDFW_SSC-Species of Special Concern	2 100	15 S:10	0	1	0	0	0	9	9	1	10	0	0
Speyeria callippe callippe callippe silverspot butterfly	G5T1 S1	Endangered None		615 719	12 S:4	0	0	0	0	0	4	0	4	4	0	0
Speyeria zerene sonomensis Sonoma zerene fritillary	G5T1 S1	None None		200 200	1 S:1	0	0	0	0	0	1	1	0	1	0	0
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened	IUCN_LC-Least Concern	0 0	46 S:4	0	0	0	0	0	4	0	4	4	0	0
Syncaris pacifica California freshwater shrimp	G2 S2	Endangered Endangered	IUCN_EN-Endangered	100 120	20 S:3	2	1	0	0	0	0	2	1	3	0	0
Taricha rivularis red-bellied newt	G2 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	800 800	136 S:1	0	0	0	0	0	1	1	0	1	0	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	20 40	594 S:2	0	0	0	0	0	2	2	0	2	0	0
Xanthocephalus xanthocephalus yellow-headed blackbird	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	100 100	13 S:1	0	0	0	0	0	1	1	0	1	0	0

CNPS Rare Plant Inventory

California Native Plant Society

Search Results

65 matches found. Click on scientific name for details

Search Criteria: Quad is one of [**3812223:3812233:3812232:3812222:3812212:3812213:3812214:3812224:3812234**]

▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK
Agrostis hendersonii	Henderson's bent grass	Poaceae	annual herb	Apr-Jun	None	None	G2Q	S2	3.2
Allium peninsulare var. *franciscanum*	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	None	None	G5T2	S2	1B.2
Amorpha californica var. *napensis*	Napa false indigo	Fabaceae	perennial deciduous shrub	Apr-Jul	None	None	G4T2	S2	1B.2
Antirrhinum virga	twig-like snapdragon	Plantaginaceae	perennial herb	Jun-Jul	None	None	G3?	S3?	4.3
Arabis modesta	modest rockcress	Brassicaceae	perennial herb	Mar-Jul	None	None	G3	S3	4.3
Astragalus tener var. *tener*	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G2T1	S1	1B.2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2
Blennosperma bakeri	Sonoma sunshine	Asteraceae	annual herb	Mar-May	FE	CE	G1	S1	1B.1
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	None	None	G1G2	S1S2	1B.1
Brodiaea leptandra	narrow-anthered brodiaea	Themidaceae	perennial bulbiferous herb	May-Jul	None	None	G3?	S3?	1B.2
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	None	None	G4	S4	4.2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G2	S2	1B.2
Carex lyngbyei	Lyngbye's sedge	Cyperaceae	perennial rhizomatous herb	Apr-Aug	None	None	G5	S3	2B.2
Castilleja affinis var. *neglecta*	Tiburon paintbrush	Orobanchaceae	perennial herb (hemiparasitic)	Apr-Jun	FE	CT	G4G5T1T2	S1S2	1B.2
Castilleja ambigua var. *ambigua*	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	None	None	G4T4	S3S4	4.2
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1
Ceanothus purpureus	holly-leaved ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G2	S2	1B.2
Ceanothus sonomensis	Sonoma ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	None	None	G3T2	S2	1B.1

Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2
Chloropyron molle ssp. *molle*	soft salty bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Nov	FE	CR	G2T1	S1	1B.2
Cicuta maculata var. *bolanderi*	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	None	None	G5T4T5	S2?	2B.1
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	Onagraceae	annual herb	Apr-Jul	None	None	G5T3	S3	4.2
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	None	None	G2	S2	1B.2
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	None	None	GU	S2	2B.2
Eleocharis parvula	small spikerush	Cyperaceae	perennial herb	(Apr)Jun-Aug(Sep)	None	None	G5	S3	4.3
Erigeron biolettii	streamside daisy	Asteraceae	perennial herb	Jun-Oct	None	None	G3?	S3?	3
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	perennial herb	May-Sep	None	None	G3	S3	1B.2
Eryngium jepsonii	Jepson's coyote-thistle	Apiaceae	perennial herb	Apr-Aug	None	None	G2	S2	1B.2
Erythronium helenae	St. Helena fawn lily	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3	S3	4.2
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2	S2	1B.2
Harmonia nutans	nodding harmonia	Asteraceae	annual herb	Mar-May	None	None	G3	S3	4.3
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	(Apr)May-Jul	None	None	G2	S2	1B.2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	None	None	G2	S2	1B.2
Horkelia tenuiloba	thin-lobed horkelia	Rosaceae	perennial herb	May-Jul(Aug)	None	None	G2	S2	1B.2
Iris longipetala	coast iris	Iridaceae	perennial rhizomatous herb	Mar-May(Jun)	None	None	G3	S3	4.2
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	None	None	G1	S1	1B.1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	FE	None	G1	S1	1B.1
Lathyrus jepsonii var. *jepsonii*	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	None	None	G5T2	S2	1B.2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1

Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	None	None	G2G3	S2S3	1B.2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	None	None	G2G3	S2S3	3
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	None	CR	G2	S2	1B.1
Lilium rubescens	redwood lily	Liliaceae	perennial bulbiferous herb	Apr-Aug(Sep)	None	None	G3	S3	4.2
Lomatium repostum	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G2G3	S2S3	1B.2
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2
Monardella antonina ssp. *antonina*	San Antonio Hills monardella	Lamiaceae	perennial rhizomatous herb	Jun-Aug	None	None	G4T1T3Q	S1S3	3
Monardella viridis	green monardella	Lamiaceae	perennial rhizomatous herb	Jun-Sep	None	None	G3	S3	4.3
Polygonum marinense	Marin knotweed	Polygonaceae	annual herb	(Apr)May-Aug(Oct)	None	None	G2Q	S2	3.1
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	None	None	G4	S3	4.2
Rhynchospora californica	California beaked-rush	Cyperaceae	perennial rhizomatous herb	May-Jul	None	None	G1	S1	1B.1
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	None	None	G3	S2	2B.2
Sidalcea hickmanii ssp. *napensis*	Napa checkerbloom	Malvaceae	perennial herb	Apr-Jun	None	None	G3T1	S1	1B.1
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	None	None	G5T2	S2	1B.2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	None	None	G2	S2	1B.2
Trichostema ruygtii	Napa bluecurls	Lamiaceae	annual herb	Jun-Oct	None	None	G1G2	S1S2	1B.2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	FE	None	G1	S1	1B.1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2
Triteleia lugens	dark-mouthed triteleia	Themidaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4?	S4?	4.3
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3

Showing 1 to 65 of 65 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 15 September 2022].

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Napa County, California

Local offices

San Francisco Bay-Delta Fish And Wildlife

(916) 930-5603
(916) 930-5654

650 Capitol Mall
Suite 8-300
Sacramento, CA 95814

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

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

Endangered species

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

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

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

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

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

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

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

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1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

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

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

Mammals

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

Birds

NAME	STATUS
California Clapper Rail Rallus longirostris obsoletus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4240	Endangered
California Least Tern Sterna antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Northern Spotted Owl Strix occidentalis caurina Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/1123	Threatened
Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/8035	Threatened

Reptiles

NAME	STATUS

Green Sea Turtle Chelonia mydas — Threatened

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6199

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS

Delta Smelt Hypomesus transpacificus — Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/321

Tidewater Goby Eucyclogobius newberryi — Endangered

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/57

Insects

NAME	STATUS

Monarch Butterfly Danaus plexippus — Candidate

Wherever found

No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/9743

Crustaceans

NAME	STATUS

California Freshwater Shrimp Syncaris pacifica — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/7903

Conservancy Fairy Shrimp Branchinecta conservatio — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8246

Vernal Pool Fairy Shrimp Branchinecta lynchi — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/498

Flowering Plants

NAME	STATUS

Contra Costa Goldfields Lasthenia conjugens — Endangered
Wherever found
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
https://ecos.fws.gov/ecp/species/7058

Showy Indian Clover Trifolium amoenum — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6459

Soft Bird's-beak Cordylanthus mollis ssp. mollis — Endangered
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8541

Critical habitats

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

This location overlaps the critical habitat for the following species:

NAME	TYPE
Contra Costa Goldfields Lasthenia conjugens https://ecos.fws.gov/ecp/species/7058#crithab	Final

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

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

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be

present and breeding in your project area.

NAME	BREEDING SEASON
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Jan 1 to Aug 31
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/8	Breeds Apr 1 to Aug 15
Black Swift *Cypseloides niger* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Bullock's Oriole *Icterus bullockii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 21 to Jul 25
California Thrasher *Toxostoma redivivum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Jul 31
Cassin's Finch *Carpodacus cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Olive-sided Flycatcher Contopus cooperi — Breeds May 20 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3914

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Western Grebe aechmophorus occidentalis — Breeds Jun 1 to Aug 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/6743

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

APPENDIX C

FIELD SURVEYOR QUALIFICATIONS

Biological Assessment

Dana Riggs, Principal Biologist for Sol Ecology received her Bachelor of Science degree in Earth Systems, Science and Policy at California State University of Monterey Bay in 2001. Prior to founding Sol Ecology, she was a principal biologist and head of the Wildlife and Fisheries Department at a mid-size environmental consulting firm in San Rafael, California. She has more than 20 years of experience directing a broad range of resource studies including: biological habitat assessments and mapping, special status species surveys, corridor studies, site restoration and monitoring, federal and state regulatory permitting, and NEPA and CEQA documentation for a variety of public and private sector clients. She also has specialized experience working with tidal, riverine, and inland wildlife species including Swainson's hawk, burrowing owl, California black rail, northwestern pond turtle, and salt marsh harvest mouse. In 2022, Ms. Riggs successfully documented more than one dozen active Swainson's hawk nests in the surrounding Bay-Delta region.

Biological Assessment and Rare Plant Surveys

Morgan Stickrod, Senior Botanist for Sol Ecology is a botanist and plant ecologist with over 10 years of experience doing research and field work throughout California, the southeastern United States, Mexico, and South America. He completed his MS at San Francisco State University, where his research focused on floristics, dispersal dynamics, and rare plant management within the Suisun Marsh estuarine complex. Recently, he has also been involved in research projects studying groups such as manzanitas (*Arctostaphylos* spp.), mariposa lilies (*Calochortus* spp.), CFP endemic thistles (*Cirsium* spp.) and chapparal pea (*Pickeringia montana*). Prior to coming to Sol Ecology he worked at SFPUC, doing rare plant management work throughout the San Francisco peninsula watershed and Santa Cruz Mountains. He has also done consulting and floristic work throughout much of California, including vegetation mapping of Southeast Farallon Island, floristics of San Pedro Valley, and numerous rare plant mapping projects in areas such as the Klamath Mountain region, the Sierra Nevada and the Mojave Desert.

Wetland Delineation

Mark Kalnins, Senior Regulatory Specialist for Sol Ecology received a Bachelor of Science in Plant Biology from The Ohio State University in 1997 and a Master of Science in Environmental Science from Christopher Newport University-Virginia in 2000. He has worked as a professional wetland delineator, biologist, and regulatory permitting specialist in public, private, and non-profit sectors for over 17 years. Mark specializes in wetland delineation, assessments, and permitting, special status plant surveys, floristic inventories, and vegetation community mapping in the SF Bay Area and Northern California.

Amy May, Associate Biologist for Sol Ecology received a Bachelor of Science degree in Biological Sciences at Virginia Tech in 2006 and a dual Master of Public Affairs and Master of Science in Environmental Science at Indiana University-Bloomington in 2010. She has worked as a biologist in the public and private industry for over 10 years and specializes in special status plant and wildlife surveys, floristic inventories, wetland delineation, and vegetation community mapping with experience in the Bay Area, Mojave Desert, Shasta Cascade Region, Great Basin, and Snake River Plain.

APPENDIX D

OBSERVED SPECIES TABLE

Vascular Plant Species List

***=non-native**

++=special status

Aizoaceae	
**Tetragonia tetragonoides*	New Zealand spinach
Anacardiaceae	
Toxicodendron diversilobum	Poison oak
Apiaceae	
**Conium maculatum*	Poison hemlock
Asteraceae	
Baccharis pilularis	Coyote brush
**Carduus pycnocephalus*	Italian thistle
**Cirsium vulgare*	Bull thistle
**Cotula coronopifolia*	Brass buttons
**Helminthotheca echioides*	Bristly ox-tongue
**Hypochaeris radicata*	Hairy cats ear
Jaumea carnosa	Marsh jaumea
**Lactuca serriola*	Prickly lettuce
**Sonchus oleraceus*	Sow thistle
**Silybum marianum*	Milk thistle
Brassicaceae	
**Brassica rapa*	Mustard
**Hirschfeldia incana*	Mustard
**Lepidium didymium*	Lesser swine cress
**Lepidium latifolium*	Perennial pepperweed

**Raphanus sativus*	Jointed charlock
Caryophyllaceae	
**Polycarpon tetraphyllum* var. *tetraphyllum*	Four leaved allseed
Spergularia marina	Salt sand spurry
**Spergularia rubra*	Purple sand spurry
Chenopodiaceae	
**Atriplex prostrata*	Fat-hen
Salicornia pacifica	Pickleweed
Convolvulaceae	
**Convolvulus arvensis*	Field bindweed
Cyperaceae	
**Carex* sp.	Sedge
Cyperus eragrostis	Tall Cyperus
Isolepis carinata	Keeled bulrush
Schoenoplectus americanus	Bulrush
Euphorbiaceae	
Euphorbia serpens	Matted sandmat
Fabaceae	
**Acacia dealbata*	Silver wattle
**Acacia melanoxylon*	Blackwood acacia
Acmispon americanus var. *americanus*	American bird's foot trefoil
**Lotus corniculatus*	Bird's foot trefoil
**Trifolium cernuum*	Nodding clover
**Trifolium glomeratum*	Clustered clover
**Trifolium hirtum*	Rose clover
**Trifolium repens*	White clover
**Vicia sativa*	Spring vetch

**Fagaceae*	Hairy vetch
Fagaceae	
Quercus agrifolia	Coast live oak
Quercus lobata	Valley oak
Geraniaceae	
**Erodium brachycarpum*	White-stemmed filaree
**Geranium dissectum*	Wild geranium
**Geranium molle*	Crane's bill geranium
Juncaceae	
Juncus sp.	Rush
Juncus bufonius	Common toad rush
Juncaginaceae	
Triglochin maritima	Seaside arrow grass
Lamiaceae	
**Mentha pulegium*	Pennyroyal
Limnanthaceae	
Limnanthes douglasii ssp. *douglasii*	Meadowfoam
Lythraceae	
**Lythrum hyssopifolia*	Hyssop loosestrife
Oleaceae	
**Olea europaea*	Olive
Onagraceae	
Epilobium brachycarpum	Willowherb
Epilobium ciliatum ssp. *ciliatum*	Fringed willowherb
Epilobium ciliatum "var. *holosericeum*"	Fringed willowherb
Papaveraceae	
Eschscholzia californica	California poppy

Pinaceae	
Pinus radiata	Monterey pine
Plantaginaceae	
Callitriche sp.	Starwort
**Plantago lanceolata*	Ribwort
**Plantago major*	Common plantain
Poaceae	
**Avena barbata*	Slim oats
**Avena fatua*	Wildoats
**Bromus diandrus*	Ripgut brome
**Bromus hordaceus*	Soft chess
**Bromus madritensis*	Foxtail brome
Distichlis spicata	Salt grass
**Festuca perennis*	Italian rye grass
**Holcus lanatus*	Common velvetgrass
**Phalaris aquatica*	Harding grass
**Polypogon monspeliensis*	Annual beard grass
Polygonaceae	
**Rumex crispus*	Sheep sorrel
Ranunculaceae	
**Ranunculus muricatus*	Rough-fruited buttercup
Rosaceae	
Rosa californica	California wild rose
**Rubus armeniacus*	Himalayan blackberry
Rubus ursinus	California blackberry
Rubiaceae	
Galium aparine	Cleavers

Galium porrigens	Climbing bedstraw

APPENDIX E

SITE PHOTOGRAPHS

Photo 1. Project Study Area facing southwest toward ponds 3 and 4.

Photo 2. Palustrine, emergent, seasonally flooded wetland adjacent to the Project Study Area.

Photo 3. Tree line along roadway parallel to the proposed transmission line; taller trees (primarily eucalyptus) may be topped and maintained to reduce fire hazard.

Photo 4. Soscol Creek and its associated riparian habitat.

Photo 5. Intermittent stream north of Highway 12.

Photo 6. Facing south from the Northwest corner of the Tulucay PG&E Substation where expansion is proposed.

APPENDIX F

RARE PLANT SURVEY REPORT

SOL ECOLOGY

P.O. Box 5214
Petaluma, CA 94955
(707) 241-7718
www.solecology.com

December 9, 2022

Eva Pauly-Bowles
Laketricity and Dynamo Solar, LLC
755 Baywood Drive, 2nd Floor
Petaluma, CA 94954

Re: Special Status Plant Survey at Napa Sanitation District - Floating Solar Array Project, Napa, Napa County, California

Dear Ms. Pauly-Bowles,

This letter discusses the findings of a protocol-level special-status plant survey at the Napa Sanitation District Floating Solar Array Project located at 1515 Soscol Ferry Road, Napa, Napa County, California (Project Study Area). Special status plant surveys were performed on March 25, 2021, and on April 6, May 20, and June 30, 2022, within the Project Study Area in accordance with California Department of Fish and Wildlife (CDFW) protocol[1] and California Native Plant Society (CNPS) protocol.[2] No special status plant species were identified during the surveys.

Project Study Area Description

The Project Study Area is located on the Napa Sanitation District (District) property at 1515 Soscol Ferry Road in Napa County, accessed via Soscol Ferry Road, off California State Route 12 (SR 12). The approximately 57-acre Project Study Area is bounded to the northwest by the Napa River, to the south by Fagan Marsh State Marine Park, to the north by SR 12/State Highway 29, and to the east and west by farmland and shopping centers. The proposed transmission line will start at the north side of Pond 3 and run north to SR 12, cross California State Route 221 (SR 221), and connect to Tulucay PG&E substation to the northeast as shown in Figure 1. Surrounding land uses include the District lands, the Napa River, and open agricultural lands, intermixed with industrial and commercial development.

The Project consists of two floating photovoltaic (PV) arrays to be installed on two of the existing lined wastewater ponds facilities totaling approximately 56 acres. Pond 3's solar array design will consist of utilizing approximately 30 acres of existing idle pond space with an output of 18.6 MWp. Pond 4's solar array design will consist of approximately 30 acres of existing idle space and generate 16.1 MWp. The Project will install a new dedicated electric substation with an approximate 80' x 80'

1 CDFW. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Online at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.
2 CNPS. 2001. CNPS Botanical Survey Guidelines. Online at: https://cnps.org/wp-content/uploads/2018/03/cnps_survey_guidelines.pdf.

fenced area within the existing District surplus maintenance area adjacent to the floating solar ponds. Power from the new solar substation will be exported via a new, overhead 60kV electric power line, approximately 2 miles in length, to PG&E's Tulucay Substation. All new poles placed on District property will be placed in hardscape/developed areas to the extent feasible or in grassland/agricultural habitats and will be located along existing disturbed roadways or pathways on District land.

Methods

Database Searches

Prior to conducting the surveys, Sol Ecology queried the California Natural Diversity Database (CNDDB)[3] and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants of California[4] to compile a list of special status plant species with the potential to occur in the vicinity of the proposed Project. The CNDDB and CNPS queries were conducted for the following nine U.S. Geological Survey (USGS) 7.5-minute series topographic quadrangles: Cuttings Wharf, Cordelia, Benicia, Mare Island, Petaluma Point, Sears Point, Sonoma, Napa, and Mount George. The *Jepson Manual* was consulted for detailed biological, distributional, and phenological information, and used as a standard for nomenclature.[5]

Field Surveys

Protocol-level surveys were performed on March 25, 2021, and on April 6, May 20, and June 30, 2022. Surveys were timed with blooming periods for plants with a potential to occur within the Project Study Area. Transect surveys were performed and the entire Project Study Area was traversed on foot to examine suitable habitat for the presence of special status plants known to occur in the vicinity of the Project Study Area. The survey followed the protocol described in the March 20, 2018 Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. All rare plant populations and sensitive communities, if found, were mapped using handheld Global Positioning System equipment with sub-meter accuracy.

In addition, nearby reference populations of Contra Costa goldfields (*Lasthenia conjugens*) were visited on March 30, 2021, and March 31, 2022, to determine the phenological development of one of the target special status plant species, Contra Costa goldfields. The 2021 reference population was located along Branscombe Road, south of Travis AFB and north of Highway 12, in Fairfield, California on the Wildlands North Suisun Mitigation Bank Property. The 2022 reference population

3 **Error! Main Document Only.**CDFW. 2019. CNDDB. Wildlife and Habitat Data Analysis Branch, Sacramento, CA. Accessed: June 2020.
4 California Native Plant Society (CNPS), Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Online at: http://www.rareplants.cnps.org. Accessed: June 2020.
5 Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken, editors. 2012. The Jepson manual: vascular plants of California, second edition. University of California Press, Berkeley.

is located north of Soscol Creek Road and east of Highway 221 on volcanic claypan vernal pool habitat in Napa, California. Contra Costa goldfields were observed, in full bloom, during both reference population visits.

Field Surveyor Qualifications

Morgan Stickrod, Senior Botanist (2022 surveys) for Sol Ecology is a botanist and plant ecologist with over 10 years of experience doing research and field work throughout California, the southeastern United States, Mexico, and South America. He completed his MS at San Francisco State University, where his research focused on floristics, dispersal dynamics, and rare plant management within the Suisun Marsh estuarine complex. Recently, he has also been involved in research projects studying groups such as manzanitas (*Arctostaphylos* spp.), mariposa lilies (*Calochortus* spp.), CFP endemic thistles (*Cirsium* spp.) and chapparal pea (*Pickeringia montana*). Prior to coming to Sol Ecology, he worked at SFPUC, doing rare plant management work throughout the San Francisco peninsula watershed and Santa Cruz Mountains. He has also done consulting and floristic work throughout much of California, including vegetation mapping of Southeast Farallon Island, floristics of San Pedro Valley, and numerous rare plant mapping projects in areas such as the Klamath Mountain region, the Sierra Nevada, and the Mojave Desert.

Amy May, Associate Biologist (2021 survey) for Sol Ecology received a Bachelor of Science degree in Biological Sciences at Virginia Tech in 2006 and a dual Master of Public Affairs and Master of Science in Environmental Science at Indiana University-Bloomington in 2010. She has worked as a biologist in the public and private industry for over 10 years and specializes in special status plant and wildlife surveys, floristic inventories, wetland delineation, and vegetation community mapping with experience in the Bay Area, Mojave Desert, Shasta Cascade Region, Great Basin, and Snake River Plain.

Results and Discussion

Biological communities present in the Project Study Area were classified based on existing plant community descriptions described in the California Native Plant Society Online Manual of California Vegetation (CNPS 2019). However, in some cases it is necessary to identify variants of community types or to describe non-vegetated areas that are not described in the literature.

The Project Study Area encompasses four soil map units identified by the USDA, NRCS (USDA 2019):

- **Reyes silty clay loam:** This soil map unit consists of very deep, poorly drained soils that formed in alluvium along the margins of bays. It typically occurs in brackish or saltwater marshes adjacent to seawater or waterbodies subject to daily tidal influence. Reyes is listed as a California hydric soil. The natural vegetation that this soil typically supports consists of saltgrass (*Distichlis spicata*), bulrush (*Schoenoplectus* spp.), lambsquarters (*Chenopodium* and *Atriplex* spp.), coyote brush (*Baccharis pilularis*), and various annual grasses. Where Reyes soils occur, they have been largely reclaimed and used for oat hay, grain, and livestock

pasture. Minor components include Clear Lake (5%), Haire (5%) and very poorly drained Reyes (5%).

•**Hambright rock-Outcrop complex, 30 to 75 percent slopes:** This soil map unit consists of shallow, well drained soils that were formed in material weathered from basic igneous rocks. It typically occurs on plateaus, basalt flows and hillslopes. It is the dominant soil type found throughout the Project Study Area. Hambright is not listed as a California hydric soil. The natural vegetation that this soil typically supports consists of annual grasses forbs, as well as occasional shrubs such as scrub oaks (*Quercus durata*, *Q. berberidifolia*) and coyote brush (*Baccharis pilularis*). Depending on localized conditions, some trees can be supported, such as California bay (*Umbellularia californica*), blue oak (*Quercus douglasii*) and coast live oak (*Quercus agrifolia*). It is often used for grazing. Where it occurs within the Project Study Area, the soil layer is very shallow, with rocky outcrops accounting for ~40% of the terrain.

•**Coombs gravelly loam, 2 to 5 percent slopes:** This soil map unit consists of well-drained, moderately slowly permeable soils on gravelly terraces that were formed in gravelly alluvium from mixed sources. It typically occurs on gently angled to nearly level slopes. Coombs is not listed as a California hydric soil. The natural vegetation that this soil typically supports consists of annual grasses and forbs, with occasional oak trees (*Quercus* spp.). Where this soil occurs, the majority of the land has been converted and is cultivated in orchards, vineyards, irrigated pasture and dryland grain. Minor components consist of Clear Lake (3%).

•**Bale clay loam, 0 to 2 percent slopes:** This soil map unit consists of very deep, moderately poorly drained soils that were formed in stratified, gravelly and sandy alluvium from mixed sources. It typically occurs on level to gently sloping alluvial fans and terraces. Bale is not listed as a California hydric soil. However, it is noted for being somewhat poorly drained, with a water table close to the surface, and ponding often occurring for short periods during the winter rainy season. The natural vegetation that this soil typically supports consists of oak (*Quercus* spp.), willow (*Salix* spp.), blackberry (*Rubus* spp.) and poison oak (*Toxicodendron diversilobum*), as well as annual grasses. However, where this soil map unit occurs, it has been largely converted, used primarily for wine grape production, orchards, and irrigated pasture. Minor components consist of Clear Lake (3%).

Four vegetation types can be found throughout the Project Study Area:

<u>California Annual Grassland</u>

The portion of the Project Study Area north of Soscol Ferry Road consists of moderately sloped to level terrain that can be characterized most appropriately as a mosaic of California Annual Grassland type vegetation and the *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands vegetation alliance. Both of these classifications are typical of herbaceous-dominant habitats that have been transformed over time due to prolonged periods of regular anthropogenic disturbance. These two communities are not mutually exclusive, and they tend to occur together quite often (Sawyer et al. 2009). Much of the area contained within the bounds of Soscol Ferry Road to the south, Vista Point

Drive to the north, and Highway 221 to the east is disturbed grassland that is largely dominated by wildoats (*Avena fatua*) and a mosaic of patchy, non-native grasses and forbs such as ripgut brome (*Bromus diandrus*), Italian ryegrass (*Festuca perennis*), rose clover (*Trifolium hirtum*), white-stemmed filaree (*Erodium brachycarpum*), jointed charlock (*Raphanus sativus*), and mustard (*Brassica rapa*).

The easternmost portions of the grassland have several small coast live oak (*Quercus agrifolia*) trees, with an understory consistent with the surrounding grassland, but also a more localized representation of the native American bird's foot trefoil (*Acmispon americanus*) and poison oak (*Toxicodendron diversilobum*). To the north of the oak trees, the soil becomes increasingly shallow and rocky, and there are small depressions, likely underlain by a slightly impermeable substrate, where the grassland exemplifies a more mesic character. While the same suite of non-native forbs and grasses are still present, native species associated with mesic grassland such as Douglas' meadowfoam (*Limnanthes douglasii* ssp. *douglasii*) and common toad rush (*Juncus bufonius*) appear in small patches where impermeable soils have facilitated greater localized water retention.

Ruderal/Developed

The northeastern portion of the Project Study Area, particularly the area immediately surrounding the Tulucay PG&E substation, consists of habitat that can be characterized as ruderal or developed. Along the margins of the substation, as well as the road providing access, are a number of ornamental trees that have been planted, such as olive (*Olea europea*), silver wattle (*Acacia dealbata*) and blackwood acacia (*Acacia melanoxylon*), and also some native coast live oak (*Quercus agrifolia*) and valley oak (*Quercus lobata*). Along disturbed slopes surrounding the substation, non-native forbs such as Italian thistle (*Carduus pycnocephalus*), hairy vetch (*Vicia villosa*) and matted sandmat (*Euphorbia serpens*) are abundant, with patchy occurrences of native but generally ubiquitous forbs such as willowherb (*Epilobium brachycarpum*) and California poppy (*Eschscholzia californica*).

Freshwater Wetlands

Immediately south of Soscol Ferry Road, there is a stretch of freshwater wetland-type habitat positioned just west of the path of the transmission line. Dominant plants throughout the more saturated portions of the wetland are the native torrent sedge (*Carex nudata*), bulrush (*Schoenoplectus americanus*), fringed willowherb (*Epilobium ciliatum* "var. *holosericeum*") and rush (*Juncus* sp.). Within bare depressions and disturbed, saturated, or submerged portions there are occasional dense occurrences of startwort (*Callitriche* sp.) and rough-fruited buttercup (*Ranunculus muricatus*). In less saturated, slightly elevated portions of the wetland, non-native species such as milk thistle (*Silybum marianum*), pennyroyal (*Mentha pulegium*), hyssop loosestrife (*Lythrum hyssopifolia*), brass buttons (*Cotula coronopifolia*) and fat-hen (*Atriplex prostrata*) are relatively abundant. Along the banks of Soscol Creek, dense thickets of the non-native Himalayan blackberry (*Rubus armeniacus*) as well as the native California rose (*Rosa californica*) proliferate.

Salt Marsh

The southwestern corner of the Project Study Area that runs adjacent and parallel to the Napa River consists of level terrain that, particularly on the western portions closest to the river, are characteristic of Salt Marsh type vegetation (*Salicornia pacifica* Herbaceous Alliance). As this portion of the river is positioned near the mouth of the river, where it meets San Francisco Bay, it experiences daily tidal action, including fluctuating periods of daily inundation and relatively high salinity levels. Thus, the vegetation that is within the range of daily tidal saturation is representative of typical coastal and estuarine salt marsh plant communities. Along the margins closest to the river, native hydrophilic species such as pickleweed (*Salicornia pacifica*) bulrush (*Schoenoplectus americanus*) and keeled bulrush (*Isolepis carinata*) are dominant. On low interior rises just beyond the margins, native perennial (often rhizomatous) halophytic forbs such as marsh jaumea (*Jaumea carnosa*), saltgrass (*Distichlis spicata*), seaside arrow grass (*Triglochin maritima*), and salt sand spurry (*Spergularia marina*) are dominant, often forming dense mats where conditions permit.

Rare Plants

Based upon a review of the resources and databases given in Section 2.1, 45 special-status plant species have been documented within a five-mile radius of the Project Study Area, of which 10 have potential to occur in the Project Study Area as described in Table 1 below.

Table 1. Plant Species with Potential to Occur in the Project Study Area Site

Scientific Name/Common Name	Status	Habitat	Blooming Period	Potential to Occur
Astragalus tener var. *tener* Alkali milk-vetch	1B.2	Alkaline flats, vernally moist meadows	Mar-Jun	**Low.** The Project Study Area lacks appropriate habitat.
Balsamorhiza macrolepis Big-scale balsamroot	1B.2	Open grassy or rocky slopes, valleys	Mar-Jul	**Low.** The Project Study Area lacks appropriate habitat.
Carex lyngbyei Lyngbye's sedge	2B.2	Brackish areas	May-Jul (fruiting)	**Low.** The Project Study Area lacks appropriate habitat.
Centromadia parryi ssp. *congdonii* Congdon's tarplant	1B.1	Terraces, swales, floodplains, grassland, disturbed sites	Jun-Oct	**Moderate.** The Project Study Area contains potentially appropriate habitat.
Chloropyron molle ssp. *molle* Soft salty bird's-beak	Fed: Endangered State: Rare 1B.2	Coastal salt marsh	Jul-Nov	**Low.** The Project Study Area lacks appropriate habitat.

Doningia pusilla Dwarf downingia	2B.2	Vernal pools, roadside ditches	Mar-May	**Low.** The Project Study Area lacks appropriate habitat.
Erigeron greenei Greene's narrow-leaved daisy	1B.2	Serpentine, sometimes rocky alluvium, chaparral, woodland, conifer forest	May-Sep	**Low.** The Project Study Area lacks appropriate habitat.
Extriplex joaquinana San Joaquin spearscale	1B.2	Alkaline soils	Apr-Sep	**Low.** The Project Study Area lacks appropriate habitat.
Helianthella castanea Diablo helianthella	1B.2	Open, grassy sites	Apr-Jun	**Low.** While the Project Study Area contains portions that qualify as "grassland" habitat, these are more disturbed in quality, and *H. castanea* tends to occur in less disturbed grassland habitat or along the margins of interior chaparral.
Hemizonia congesta ssp. *congesta* Congested-headed hayfield tarplant	1B.2	Grassy sites, marsh edges	May-Nov	**Moderate.** The Project Study Area contains potentially appropriate habitat.
Lasthenia conjugens Contra Costa goldfields	FE	Mesic grassland, seasonal wetlands.	Mar-Jun	**Low.** The Project Study Area contains limited mesic grassland habitat primarily north of Highway 12 within a seasonal drainage.

1 Status

- FE – Federally Endangered
- FT – Federally Threatened
- CE – California Endangered
- CT – California Threatened
- CR – California Rare
- California Rare Plant Rank
  - 1B – Plants rare, threatened, or endangered in California and elsewhere.
  - 2B – Plants rare, threatened, or endangered in California but more common elsewhere.
    - 0.1 – Seriously threatened in California
    - 0.2 – Moderately threatened in California
    - 0.3 – Not very threatened in California

Despite suitable habitat for 11 plant species found in the vicinity, no special status plants were observed during any of the surveys which corresponded with the blooming window for all 11 species.

Please do not hesitate to contact me at mstickrod@solecology.com for questions concerning this report.

Sincerely,

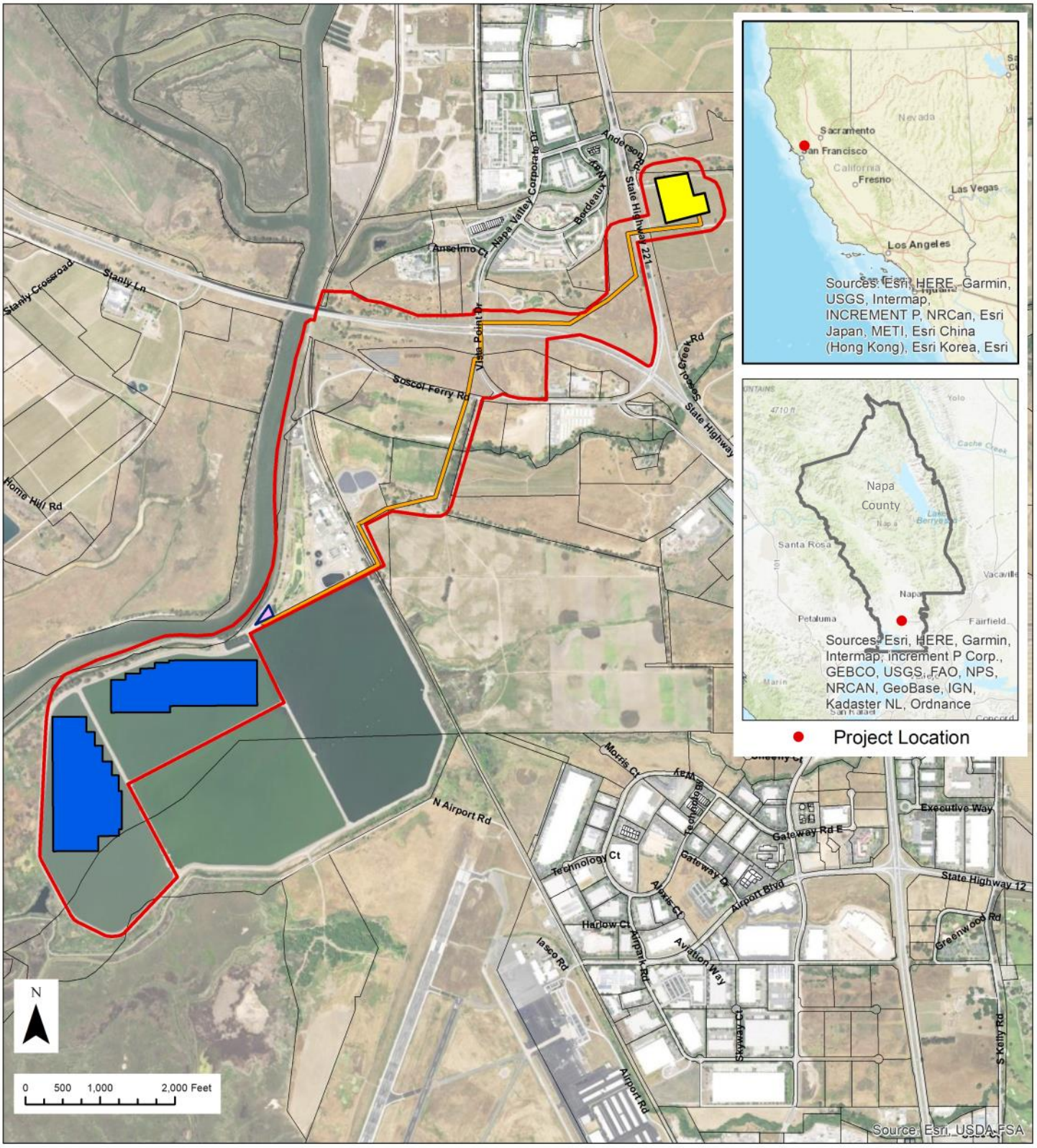
Morgan Stickrod, Senior Botanist

Attachments (2):

A – Project Study Area
B – Observed Species Table

Attachment A. Figure 1: Location of Project Area

Napa Sanitation Floating Solar Project, Napa County, CA



Date: 1-4-2021
Data: Sol Ecology Inc., Napa Co., USGS

Datum: NAD 83
Base: ESRI
GIS: AJG1708

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Attachment B. Observed Species Table

Vascular Plant Species List ***= non-native** **++= special status**	
Aizoaceae	
**Tetragonia tetragonoides*	New Zealand spinach
Anacardiaceae	
Toxicodendron diversilobum	Poison oak
Apiaceae	
**Conium maculatum*	Poison hemlock
Asteraceae	
Baccharis pilularis	Coyote brush
**Carduus pycnocephalus*	Italian thistle
**Cirsium vulgare*	Bull thistle
**Cotula coronopifolia*	Brass buttons
**Helminthotheca echioides*	Bristly ox-tongue
**Hypochaeris radicata*	Hairy cats ear
Jaumea carnosa	Marsh jaumea
**Lactuca serriola*	Prickly lettuce
**Sonchus oleraceus*	Sow thistle
**Silybum marianum*	Milk thistle
Brassicaceae	
**Brassica rapa*	Mustard
**Hirschfeldia incana*	Mustard
**Lepidium didymum*	Lesser swine cress
**Lepidium latifolium*	Perennial pepperweed
**Raphanus sativus*	Jointed charlock
Caryophyllaceae	
**Polycarpon tetraphyllum* var. *tetraphyllum*	Four leaved allseed
Spergularia marina	Salt sand spurry
**Spergularia rubra*	Purple sand spurry
Chenopodiaceae	
**Atriplex prostrata*	Fat-hen
Salicornia pacifica	Pickleweed
Convolvulaceae	
**Convolvulus arvensis*	Field bindweed
Cyperaceae	
Carex nudata	Torrent sedge
Cyperus eragrostis	Tall Cyperus
Isolepis carinata	Keeled bulrush
Schoenoplectus americanus	Bulrush
Euphorbiaceae	

Euphorbia serpens	Matted sandmat
Fabaceae	
**Acacia dealbata*	Silver wattle
**Acacia melanoxylon*	Blackwood acacia
Acmispon americanus var. *americanus*	American bird's foot trefoil
**Lotus corniculatus*	Bird's foot trefoil
**Trifolium cernuum*	Nodding clover
**Trifolium glomeratum*	Clustered clover
**Trifolium hirtum*	Rose clover
**Trifolium repens*	White clover
**Vicia sativa*	Spring vetch
**Vicia villosa*	Hairy vetch
Fagaceae	
Quercus agrifolia	Coast live oak
Quercus lobata	Valley oak
Geraniaceae	
**Erodium brachycarpum*	White-stemmed filaree
**Geranium dissectum*	Wild geranium
**Geranium molle*	Crane's bill geranium
Juncaceae	
Juncus sp.	Rush
Juncus bufonius	Common toad rush
Juncaginaceae	
Triglochin maritima	Seaside arrow grass
Lamiaceae	
**Mentha pulegium*	Pennyroyal
Limnanthaceae	
Limnanthes douglasii ssp. *douglasii*	Douglas' meadowfoam
Lythraceae	
**Lythrum hyssopifolia*	Hyssop loosestrife
Oleaceae	
**Olea europaea*	Olive
Onagraceae	
Epilobium brachycarpum	Willowherb
Epilobium ciliatum ssp. *ciliatum*	Fringed willowherb
Epilobium ciliatum "var. *holosericeum*"	Fringed willowherb
Papaveraceae	
Eschscholzia californica	California poppy
Pinaceae	
Pinus radiata	Monterey pine
Plantaginaceae	
Callitriche sp.	Starwort
**Plantago lanceolata*	Ribwort
**Plantago major*	Common plantain

Poaceae	
**Avena barbata*	Slim oats
**Avena fatua*	Wildoats
**Bromus diandrus*	Ripgut brome
**Bromus hordaceus*	Soft chess
**Bromus madritensis*	Foxtail brome
Distichlis spicata	Salt grass
**Festuca perennis*	Italian rye grass
**Holcus lanatus*	Common velvetgrass
**Phalaris aquatica*	Harding grass
**Polypogon monspeliensis*	Annual beard grass
Polygonaceae	
**Rumex crispus*	Sheep sorrel
Ranunculaceae	
**Ranunculus muricatus*	Rough-fruited buttercup
Rosaceae	
Rosa californica	California wild rose
**Rubus armeniacus*	Himalayan blackberry
Rubus ursinus	California blackberry
Rubiaceae	
Galium aparine	Cleavers
Galium porrigens	Climbing bedstraw