Appendix D. Biological Resources Assessment

October 3, 2008

Norcal Waste Systems, Inc.
160 Pacific Avenue, Suite 200
San Francisco, California 94111-1968

Attention: Mr. Drew Lehman

RE: Special-Status Plant Survey Report
Jess Ranch Project, Livermore, California

Dear Mr. Lehman:

In the spring and summer of 2008, Monk & Associates, Inc. (M&A) completed focused surveys for special-status (that is, rare, threatened, or endangered) plants at the Jess Ranch project site (herein referred to as the project site) located on the Altamont Pass, Alameda County, California (Figures 1 and 2). No special-status plant species were identified during the surveys conducted on the project site. Below we provide a description of the project site's plant communities, our survey methods, and results.

1. PROJECT SITE LOCATION AND SETTING

The 177-acre Jess Ranch project site is located within a 600-acre cattle ranch immediately south of Interstate 580 at Grant Line Road on the Altamont Pass. Figure 3 provides an aerial photograph that shows the project site features and the surrounding land use.

The project site consists of a grassland covered plateau and associated drainages. An unnamed intermittent tributary flows from south to north along the western project site boundary. A fenced "bull-pen" and building facilities operated by PowerWorks, LLC (a wind power company) occupy the northeastern corner of the project site. A paved road provides access to PowerWorks and the rest of the project site from Grant Line Road. A dirt road crosses the project site from north to south, traversing a storage area for fill and truck trailers at the south side of the project site. A second dirt road south of the storage area runs along the southern project site boundary. A Southern Pacific Railroad easement delimits the southern project site boundary.

Ranch residences and associated outbuildings are located north of the project site, and a horse training center is located northwest of the project site. A stock pond located west of the project site's northwest corner diverts water from the unnamed intermittent tributary. The remaining surrounding lands consist of annual grasslands that are used for livestock grazing and wind farms.

The project site consists of grazed, non-native annual grassland that supports livestock. As part of their livestock operation, the project site owners spread bio-solids over portions of the land and plant foxtail barley (*Hordeum murinum* ssp. *leporinum*) on a rotational basis[1]. The bio-solids

[1] NRCS 2007. Conservation Plan for the Jess Ranch. Alameda County Conservation Planning Pilot Program 2005-2006. Natural Resources Conservation Service, Livermore Local Partnership Office. August.

encourage faster growth and improved forage for livestock. The bio-solids application is done working cooperatively with permits through the Regional Water Quality Control Board (RWQCB). As part of the bio-solids Waste Discharge Requirements issued by the RWQCB for the bio-solid project, eight catchment ponds were built at the base of swales that drain the project site to catch and filter bio-solids runoff before it enters into waterways.

2. PLANT COMMUNITIES

Three plant communities occur within the project site. Non-native annual grassland dominates the project site. An intermittent creek channel supporting alkaline wetland vegetation is located along the southwestern corner of the project site. One small seasonal wetland occurs on the northeastern corner of the project site. All three plant communities are further discussed below. Plants listed in the community descriptions below were observed onsite during M&A's 2008 surveys.

2.1.1 NON-NATIVE ANNUAL GRASSLAND

Non-native annual grasslands consist of an assembly of introduced grasses and forbs that have out-competed and replaced the original native grassland community. On the project site, foxtail barley is the dominant grass species, particularly in the central portion of the project site where barley plantings have been focused. This habitat is also heavily grazed by cattle. Other non-native grass species present include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), soft chess (*Bromus hordeaceus*), ripgut grass (*Bromus diandrus*), Italian ryegrass (*Lolium multiflorum*) and bulbous bluegrass (*Poa bulbosa*). Common forbs within this plant community include common fiddleneck (*Amsinckia menziesii* var. *menziesii*), tarplant (*Holocarpha obconica*), London rocket (*Sisymbrium irio*), short-podded mustard (*Hirschfeldia incana*), wild mustard (*Sinapis arvensis*), wild radish (*Raphanus sativus*), spearscale (*Atriplex triangularis*), Italian thistle (*Carduus pycnocephalus*), bull thistle (*Cirsium vulgare*), and prickly lettuce (*Lactuca serriola*).

Remnant patches of native grassland occur in portions of the project site that are grazed, but otherwise have not been impacted by discing and bio-solids application. Native species detected in these areas include woolly-leaved loco (*Astragalus asymmetricus*), purple owl's clover (*Castilleja exserta* ssp. *exserta*), butter and eggs (*Triphysaria eriantha* ssp. *eriantha*), miner's lettuce (*Claytonia perfoliata*), wild buckwheat (*Eriogonum nudum*), lagophylla (*Lagophylla ramosissima*), vinegar weed (*Trichostema lanceolatum*), white-tip clover (*Trifolium variegatum*), wild onion (*Allium peninsulare* var. *peninsulare*), dwarf brodiaea (*Brodiaea terrestris* ssp. *terrestris*), poison sanicle (*Sanicula bipinnata*), California goldfields (*Lasthenia californica* ssp. *californica*) and yellow carpet (*Blennosperma nanum* var. *nanum*).

2.1.2 CREEK CHANNEL

An unnamed tributary runs through the project site along the southernmost portion of the western project site boundary. At the time of the March and April 2008 site visits, this channel was flowing. By May 2008, the channel was dry. This creek is heavily grazed by cattle, resulting in hummocks in the channel and densely cropped alkaline wetland vegetation. Species found along the incised bed of the tributary include saltgrass (*Distichlis spicata*), bulrush (*Bolboschoenus*

maritimus ssp. *paludosus*), heliotrope (*Heliotropium curassavicum*), alkali weed (*Cressa truxillensis*), alkali mallow (*Malvella leprosa*) and meadow barley (*Hordeum brachyantherum*).

2.1.3 SEASONAL WETLANDS

Seasonal wetlands are habitats that may appear dry in the summer and fall months, but by the first winter rains become inundated and hold water for a period of several weeks to months at a time. Owing to soils with high clay content or that otherwise are mostly or partially impervious, any time depressional topography occurs or is created through man's activities, such areas often trap seasonal rainfall over short to long durations of the winter and spring. Such areas eventually are dominated by seasonal wetland plants and otherwise persist as seasonal wetlands.

One small seasonal wetland is located along the side of the access road to the project site. Dominant species within this wetland are Italian ryegrass and Mediterranean barley. Also present are curly dock (*Rumex crispus*) and annual beard grass (*Polypogon monspeliensis*).

3. SURVEY METHODOLOGY

Prior to conducting the 2008 surveys at the project site, M&A searched California Department of Fish and Game's (CDFG) Natural Diversity Database (RareFind 3.1 Application)[2]. M&A also reviewed the CNPS *Inventory of Rare and Endangered Vascular Plants of California*[3] for occurrences of special-status plants within a five mile radius of the project site. Drawings, photographs, and written descriptions of all special-status plants were reviewed prior to or during the survey period. Table 1, attached, lists the target special-status plant species M&A looked for during the 2008 surveys.

Special-status plant surveys were conducted by M&A biologists Ms. Isabelle de Geofroy and Ms. Stephanie Scolari on March 28, April 25, May 30, 2008, and by Ms. de Geofroy and Ms. Sarah Lynch on September 11, 2008. The surveys followed CDFG[4] and CNPS[5] published survey guidelines. These guidelines state that special-status surveys should be conducted at the proper time of year when special-status and locally significant plants are both evident and identifiable. The guidelines also state that the surveys be floristic in nature with every plant observed identified to species, subspecies, or variety as necessary to determine their rarity status. Finally, these surveys must be conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques. Following these guidelines, surveys were conducted during the months when special-status plant species from the region are known

[2] California Natural Diversity Data Base (CNDDB). 2008. RareFind 3.1 Computer printout for special-status species within a 5-mile radius of the project site. California Natural Heritage Division, California Department of Fish and Game, Sacramento, CA.

[3] CNPS (California Native Plant Society). 2001. Inventory of rare and endangered plants of California (sixth edition). Rare plant scientific advisory committee, David P. Tibor, convening editor. California Native Plant Society. Sacramento, CA. x+338 pps.

[4] California Department of Fish and Game. 2000. Guidelines for assessing the effects of proposed developments on rare and endangered plants and plant communities. May 4, 1984; revised May 8, 2000. 2 pps.

[5] CNPS 2001. *op. cit.*

to be evident and flowering. All areas of the project site were examined by walking transects through potential habitat, and by closely examining any existing microhabitats that could potentially support special-status plants.

Nearly all plant species found on the project site were identified to species. All were identified to the level needed to determine whether they qualify as special-status plants. A list of all vascular plant taxa encountered within the project site was recorded in the field. Plants that needed further evaluation were collected and keyed in the lab. Final determinations for collected plants were made by keying specimens using standard references such as *The Jepson Manual*[6].

4. SURVEY RESULTS

All plants observed on the project site during the March, April, May and September 2008 surveys are listed in Table 2, attached. No special-status plant species were identified on the project site during the appropriately timed surveys. Due to the highly disturbed nature of the site, plant species diversity was low, and a large number of non-native species were observed during the surveys. Overall, a total of 101 plant species were observed on the project site. Of these 101 species, 49 plants (or 49%) were non-native, and 52 plants (or 51%) were native.

This concludes our report on special-status plant surveys at the Jess Ranch project site. If you have any questions regarding M&A's special-status plant surveys or survey report, please do not hesitate to call me at (925) 947-4867 x 211.

Sincerely,

Isabelle de Geofroy
Staff Biologist

Attachment: Figures 1-3
Tables 1-2

[6] Hickman, J. (ed.). 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley. 1400 pp.

Monk & Associates
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1136 Saranap Avenue, Suite Q
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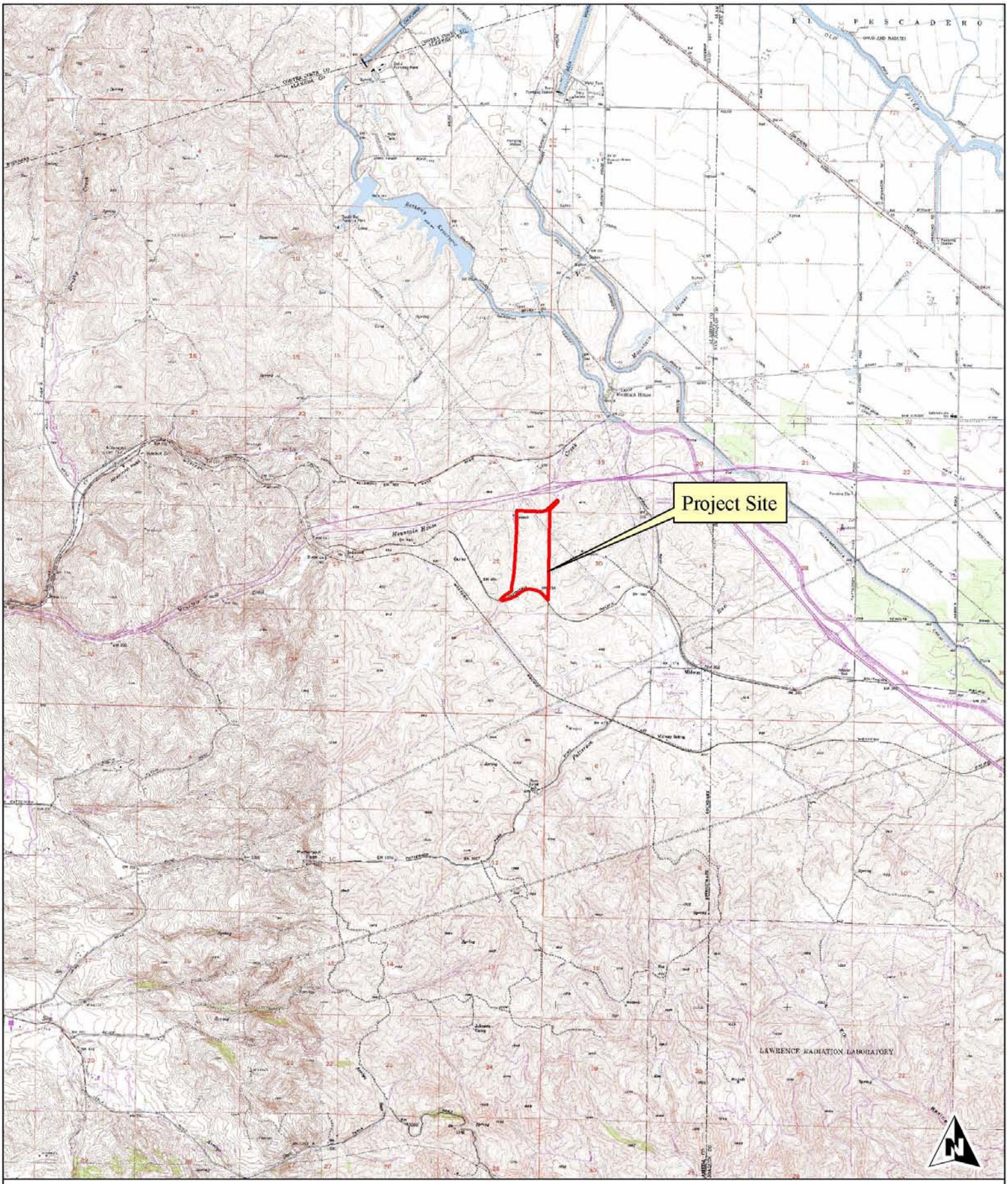
0 2.5 5 10 15 20 25 Miles

Figure 1. Jess Ranch Project Regional Map
Livermore, California

County: Alameda
Map Preparation Date: March 27, 2008



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0 0.5 1 2 3 4 5 Miles

Figure 2. Jess Ranch Project Location Map
Livermore, California

7.5-Minute Midway quadrangle
Topography Source: http://gis.ca.gov
Map Preparation Date: March 27, 2008

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Figure 3. Aerial Photograph of the Jess Ranch Project
Livermore, California

Map Preparation Date: June 23, 2008
Aerial Photograph Source: http://gdw.apfo.usda.gov

Table 1

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Jess Ranch Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Amaranthaceae					
Atriplex depressa Brittlescale	Fed: - State: - CNPS: List 1B.2	April-October	Chenopod scrub; playas; meadows and seeps, vernal pools [alkaline or clay]., valley and foothill grassland. Elevation 1-320 meters.	Record for this species located 4.0 miles west of the project site (Occurrence No. 28).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Atriplex joaquiniana San Joaquin saltbush	Fed: - State: - CNPS: List 1B.2	April-October	Chenopod scrub; meadows and seeps; valley and foothill grassland; [alkaline].Elevation 1-835 meters.	Record for this species located 2.6 miles north of the project site (Occurrence No. 19).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Asteraceae					
Blepharizonia plumosa Big tarplant	Fed: - State: - CNPS: List 1B.1	July-October	Valley and foothill grassland. Elevation 30-505 meters.	Record for this species located 0.3 miles southwest of the project site (Occurrence No. 15).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Centromadia parryi congdonii Congdon's tarplant	Fed: - State: - CNPS: List 1B.2	May-November	Valley and foothill grassland (alkaline). Elevation 1- 230 meters.	Record for this species located 4.6 miles west of the project site (Occurrence No. 68).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Madia radiata Showy madia	Fed: - State: - CNPS: List 1B.1	March-May	Cismontane woodland; valley and foothill grassland. Elevation 25-900 meters.	On CNPS quad search.	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Senecio aphanactis Rayless ragwort	Fed: - State: - CNPS: List 2.2	January-April	Chaparral; Cismontane woodland; coastal scrub (sometimes alkaline). Elevation 15-800 meters.	On CNPS quad search.	None. No suitable habitat for this species is present on the project site. Would have been detectable during appropriately-timed surveys.

Table 1

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Jess Ranch Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Boraginaceae					
Amsinckia grandiflora Large-flowered fiddleneck	Fed: FE State: CE CNPS: List 1B.1	April-May	Cismontane woodland, Valley and foothill grassland. Elevation 275 - 550 meters.	On CNPS quad search.	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Amsinckia lunaris Bent-flowered fiddleneck	Fed: - State: - CNPS: List 1B.2	March-June	Coastal bluff scrub; cismontane woodland, Valley and foothill grassland. Elevation 3-500 meters.	Record for this species located 3.9 miles west of the project site (Occurrence No. 35).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Brassicaceae					
Caulanthus coulteri lemmonii Jewelflower	Fed: State: CNPS: List 1B.2	March-May	Pinyon and juniper woodland, valley and foothill grassland. Elevation 80-1220 m.	On CNPS quad search.	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Tropidocarpum capparideum Caper-fruited tropidocarpum	Fed: - State: - CNPS: List 1B.1	March-April	Valley and foothill grassland (alkaline hills). Elevation 1-455 meters.	Record for this species located 0.7 miles northeast of the project site (Occurrence No. 3).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.
Geraniaceae					
California macrophylla Large-leaf storksbill	Fed: - State: - CNPS: List 1B.1	March-May	Cismontane woodland; valley and foothill grassland/clay. Elevation 15-1200 meters.	Record for this species located 0.7 miles north of the project site (Occurrence No. 44).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.

Table 1

Special-Status Plant Species with the Potential to Occur in the Vicinity of the Jess Ranch Project Site

Family Taxon Common Name	Status*	Flowering Period	Habitat	Area Locations	Probability on Project Site
Papaveraceae					
Eschscholzia rhombipetala Diamond-petaled California poppy	Fed: - State: - CNPS: List 1B.1	March-April	Valley and foothill grassland (clay). Elevation 0-975 meters.	Record for this species located 0.9 miles north of the project site (Occurrence No. 4).	None. Although suitable habitat for this species is present on the project site, it was not detected during appropriately-timed surveys.

***Status**

Federal:
FE - Federal Endangered
FT - Federal Threatened
FPE - Federal Proposed Endangered
FPT - Federal Proposed Threatened
FC - Federal Candidate

State:
CE - California Endangered
CT - California Threatened
CR - California Rare
CC - California Candidate
CSC - California Species of Special Concern

CNPS:
List 1A - Presumed extinct in California
List 1B - Plants rare, threatened, or endangered in California and elsewhere
List 1B.1 - Seriously endangered in California (over 80% occurrences threatened/ high degree and immediacy of threat)
List 1B.2 - Fairly endangered in California (20-80% occurrences threatened)
List 1B.3 - Not very endangered in California (<20% of occurrences threatened or no current threats known)

CNPS Continued:
List 2 - Plants rare, threatened, or endangered in California, but more common elsewhere
List 2.1 - Seriously endangered in California, but more common elsewhere
List 2.2 - Fairly endangered in California, but more common elsewhere
List 2.3 - Not very endangered in California, but more common elsewhere
List 3 - Plants about which we need more information (Review List)
List 3.1 - Plants about which we need more information (Review List) Seriously endangered in California
List 3.2 - Plants about which we need more information (Review List) Fairly endangered in California
List 4 - Plants of limited distribution - a watch list

Table 2

Plants Observed on the Jess Ranch Project Site

Angiosperms - Dicots

Amaranthaceae

Atriplex triangularis	Spearscale
**Chenopodium album*	White pigweed
Chenopodium berlandieri	Pitseed goosefoot

Apiaceae

Sanicula bipinnata	Poison sanicle

Apocynaceae

Asclepias fascicularis	Narrow-leaf milkweed

Asteraceae

Achillea millefolium	Common yarrow
Achyrachaena mollis	Blow-wives
Blennosperma nanum var. nanum	Yellowcarpet
**Carduus pycnocephalus*	Italian thistle
**Carduus tenuiflorus*	Plumeless thistle
**Centaurea solstitialis*	Yellow star-thistle
**Cirsium vulgare*	Bull thistle
Grindelia camporum var. camporum	Great Valley gumplant
Hesperevax sparsiflora var. sparsiflora	Dwarf hesperevax
Holocarpha obconica	Tarplant
**Hypochaeris glabra*	Smooth cat's-ear
**Hypochaeris radicata*	Rough cat's-ear
**Lactuca serriola*	Prickly lettuce
Lagophylla ramosissima	Lagophylla
Lasthenia californica ssp. californica	California goldfields
Madia gracilis	Slender tarweed
**Matricaria discoidea*	Pineapple-weed
Microseris douglasii ssp. douglasii	Douglas' silverpuffs
**Senecio vulgaris*	Common groundsel
**Silybum marianum*	Milk thistle

Boraginaceae

Amsinckia menziesii var. menziesii	Common fiddleneck
Heliotropium curassavicum	Heliotrope
Plagiobothrys acanthocarpus	Adobe allocarya
Plagiobothrys canescens	Valley popcornflower

Brassicaceae

**Brassica nigra*	Black mustard
**Brassica rapa*	Field mustard
**Capsella bursa-pastoris*	Shepherd's purse
**Hirschfeldia incana*	Short-podded mustard
**Lepidium latifolium*	Broad-leaf peppergrass
Lepidium nitidum var. nitidum	Shining peppergrass
**Raphanus raphanistrum*	Jointed charlock
**Raphanus sativus*	Wild radish

* Indicates a non-native species

**Sinapis arvensis*	Wild mustard
**Sisymbrium irio*	London rocket

Caryophyllaceae

**Cerastium glomeratum*	Mouse-ear chickweed
**Stellaria media var. media*	Common chickweed

Convolvulaceae

**Convolvulus arvensis*	Bindweed
Cressa truxillensis	Alkali weed

Crassulaceae

Crassula connata	Sandy pygmy-weed

Cucurbitaceae

Marah fabaceus	California man-root

Euphorbiaceae

Croton setigerus	Turkey mullein

Fabaceae

Astragalus asymmetricus	Woolly-leaved loco
Lupinus bicolor	Miniature lupine
Lupinus microcarpus var. microcarpus	Chick lupine
Lupinus succulentus	Arroyo lupine
**Medicago polymorpha*	California burclover
**Melilotus indica*	Annual yellow sweetclover
Trifolium depauperatum var. truncatum	Clover
**Trifolium hirtum*	Rose clover
Trifolium variegatum	White-tip clover

Frankeniaceae

Frankenia salina	Alakali heath

Geraniaceae

**Erodium botrys*	Broad-leaf filaree
**Erodium cicutarium*	Red-stem filaree
**Erodium moschatum*	White-stem filaree

Hydrophyllaceae

Phacelia ciliata	Great Valley phacelia

Lamiaceae

**Marrubium vulgare*	Horehound
Trichostema lanceolatum	Vinegar weed

Malvaceae

**Malva sp.*	Cheeseweed
Malvella leprosa	Alkali mallow

Myrtaceae

**Eucalyptus sideroxylon*	Red iron bark

Orobanchaceae

**Bellardia trixago*	Bellardia
Castilleja attenuata	Valley tassels
Castilleja exserta ssp. exserta	Purple owl's-clover
Triphysaria eriantha ssp. eriantha	Butter-and-eggs

Papaveraceae

Eschscholzia californica	California poppy

Plantaginaceae

Plantago erecta	Plantain

Polygonaceae

Eriogonum nudum	Wild buckwheat
**Polygonum aviculare*	Common knotweed
**Rumex crispus*	Curly dock

Portulacaceae

Calandrinia ciliata	Red maids
Claytonia perfoliata	Miner's lettuce

Primulaceae

Dodecatheon clevelandii ssp. patulum	Shooting stars

Ranunculaceae

Ranunculus canus	Sacramento Valley buttercup

Rubiaceae

**Galium aparine*	Goose grass

Urticaceae

**Urtica urens*	Dwarf nettle

Angiosperms -Monocots

Cyperaceae

Bolboschoenus maritimus ssp. paludosus	Bulrush

Liliaceae

Allium peninsulare var. peninsulare	Wild onion
Chlorogalum pomeridianum var. pomeridianum	Soap plant

Poaceae

**Avena barbata*	Slender wild oat
**Bromus diandrus*	Ripgut grass
**Bromus hordeaceus*	Soft chess
**Bromus madritensis ssp. rubens*	Red brome
Distichlis spicata	Saltgrass
Hordeum brachyantherum	Meadow barley
**Hordeum marinum ssp. gussoneanum*	Mediterranean barley
**Hordeum murinum ssp. leporinum*	Foxtail barley
**Lolium multiflorum*	Italian ryegrass
Nassella pulchra	Purple needlegrass
**Poa annua*	Annual bluegrass
**Poa bulbosa*	Bulbous bluegrass
**Polypogon monspeliensis*	Annual beard grass
**Vulpia bromoides*	Brome fescue
**Vulpia myuros var. hirsuta*	Rat-tail fescue

Themidaceae

Brodiaea terrestris ssp. terrestris	Dwarf brodiaea
Dichelostemma capitatum ssp. capitatum	Blue dicks
Triteleia laxa	Ithuriel's spear

* Indicates a non-native species

Biological Assessment of Jess Ranch

ALTAMONT PASS AREA
ALAMEDA COUNTY
CALIFORNIA

Prepared For:
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Tracy, California 95377
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Contact:
Jeff Dreier
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Date:
May 2005

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1.0 INTRODUCTION

On May 3, 2005, WRA performed a biological site assessment for the Jess Ranch (Study Area) in eastern Alameda County, California (Figure 1). The purpose of the assessment was to determine:

1) habitat suitability and subsequent likelihood of occurrence of special status wildlife and plant species potentially occurring at the site;

2) the presence of wetlands potentially subject to federal jurisdiction under Section 404 of the Clean Water Act;

3) the presence of stream or riparian areas potentially subject to state jurisdiction under Section 1601 of the California Fish and Game Code.;

4) mitigation habitat value for special status species, including the California red-legged frog (*Rana aurora draytonii*), California tiger salamander (*Ambystoma californiense*), and burrowing owl (*Athene cunicularia*). This biological assessment provides general information on the potential presence of sensitive species or habitats but, is not intended as an official protocol level survey for listed species that may be required by local, state, or federal agencies. However, specific findings on the occurrence of any species or the presence of sensitive habitats may require that protocol surveys be conducted. This assessment is based on information available at the time of the study and on site conditions that were observed on the date of the site visit.

1.1 General Study Area Description

The Study Area is located south of the intersection of Interstate 580 and Grant Line Road in the Altamont Hills of eastern Alameda County, California. The approximately 600-acre Study Area is characterized by rolling hills with numerous drainages and seasonal stock ponds. The Study Area is dominated by non-native annual grassland. The majority of the Study Area is within the Mountain House Creek watershed. Aquatic habitat includes ephemeral and seasonal drainages, spring-fed drainages, and seasonal to perennial stock ponds. Current and historical land use has primarily been dry pasture, hay and grain farming, equestrian activities, and a wind farm.

1.2 Regulatory Background

Federal, state, and local regulations governing sensitive biological resources that were the focus of this assessment are discussed in detail below.

1.2.1 Special Status Species

Special status species include those plants and wildlife 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). Critical habitat may also be designated for federal listed species. These Acts afford protection to both listed and proposed species. In addition, California Department of Fish and Game (CDFG) Species of Special Concern, which are species that face

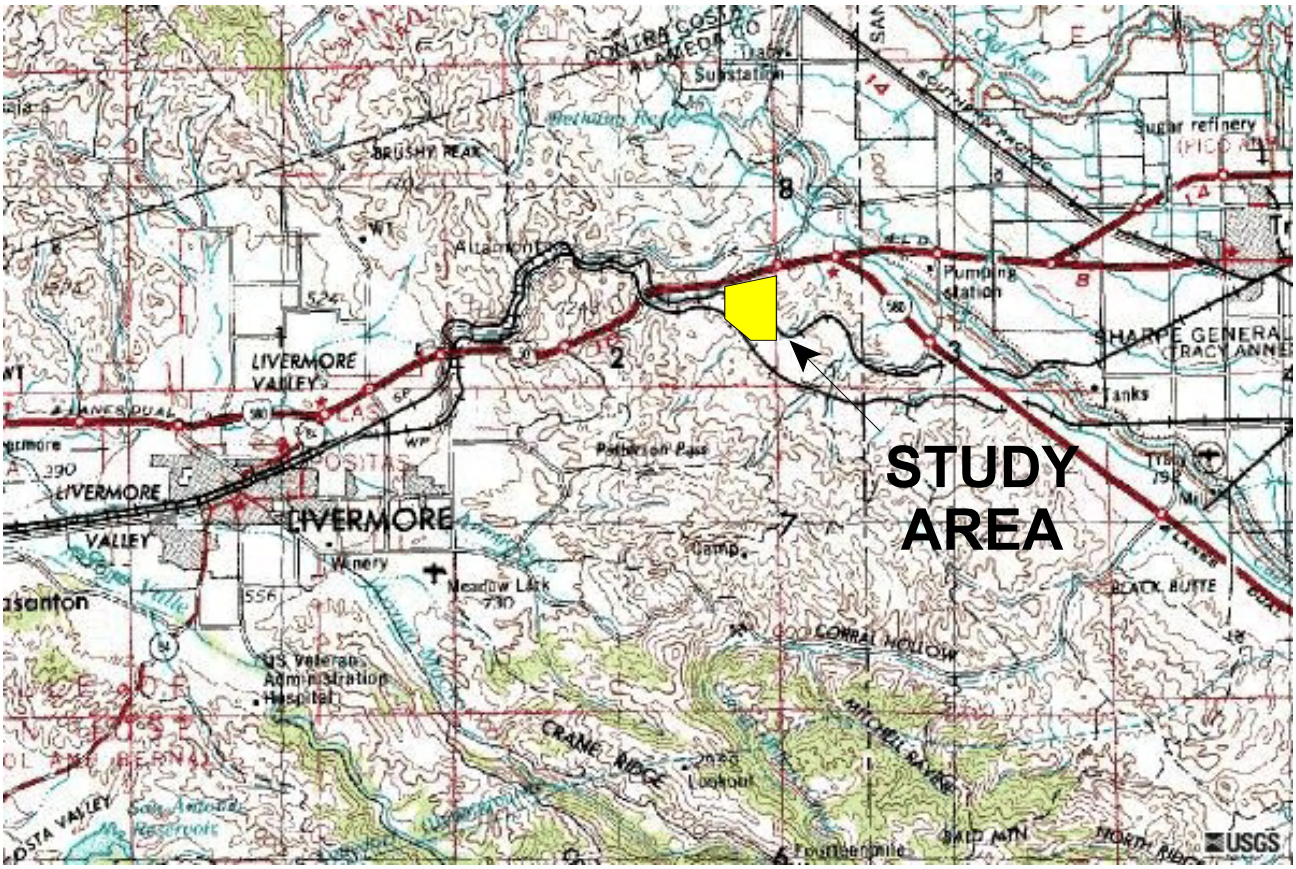

Figure 1. Regional USGS map showing the location of the Study Area in eastern Alameda County.

wra
ENVIRONMENTAL CONSULTANTS

extirpation in California if current population and habitat trends continue, and U.S. Fish and Wildlife Service (USFWS) Species of Concern are considered special status species. Although California and USFWS Species of Concern generally have no special legal status, they are given special consideration under the California Environmental Quality Act (CEQA). In addition to regulations for special status species, most birds in the United States, including non-status species, are protected by the Migratory Bird Treaty Act of 1918. Under this legislation, destroying active nests, eggs, and young is illegal. Plant species on California Native Plant Society (CNPS) Lists 1 and 2 are also considered special status plant species. Impacts to these species are considered significant according to the California Environmental Quality Act (CEQA). The CNPS List 3 and 4 plants have little or no protection under CEQA, but are included in this analysis for completeness. (The assessment may also include species of local concern as indicated by the USFWS list for the quad/county, or as designated by a City or County).

1.2.2 Sensitive Plant Communities and Aquatic Features

Sensitive habitats include habitats that fulfill special functions or have special values, such as wetlands, streams, and riparian habitat. These habitats are regulated under federal regulations (such as the Clean Water Act), state regulations (such as the Porter-Cologne Act, the California Department of Fish and Game's Streambed Alteration Program, or the California Environmental Quality Act), or local ordinances or policies (City or County Tree Ordinances, Special Habitat Management Areas or General Plan Special Land Use areas).

Waters of the United States

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the United States" under Section 404 of the Clean Water Act. "Waters of the U.S." are defined broadly as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands stated in the *Corps of Engineers Wetlands Delineation Manual* (1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated for sufficient duration and depth to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water line (OHW). Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into "Waters of the U.S." (including wetlands) generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

"Waters of the State" are defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB protects all waters in its regulatory scope, but has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. "Waters of the State" are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact "Waters of the State," are

required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to "Waters of the State," the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the California Department of Fish and Game under Sections 1600-1616 of the State Fish and Game Code. Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term stream, which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as follows: "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term stream can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG ESD 1994). Riparian is defined as, "on, or pertaining to, the banks of a stream;" therefore, riparian vegetation is defined as, "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG ESD 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from CDFG.

Sensitive Plant Communities

Sensitive plant communities include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game (CDFG). CDFG ranks sensitive communities as 'threatened' or 'very threatened' and keeps records of their occurrences in its Natural Diversity Database. Sensitive plant communities are also identified by CDFG on their *List of California Natural Communities Recognized by the CNDDB*. Impacts to sensitive natural communities identified in local or regional plans, policies, regulations or by the CDFG or USFWS must be considered and evaluated under the California Environmental Quality Act (California Code of Regulations: Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county General Plans or ordinances.

2.0 METHODS

On May 3, 2005, the Study Area was traversed on foot and vehicle to determine (1) plant communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special status plant or wildlife species, and (3) if sensitive habitats were present. All plant and wildlife species encountered were recorded and are summarized in Appendix B.

2.1 Plant Communities

Plant communities were classified based on existing descriptions developed by the *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and mapped on the existing topographic map. However, in some cases it is necessary to identify variants of plant community types or to describe non-vegetated areas that are not described in the literature. Sensitive plant communities observed were noted and mapped. Plant communities are considered sensitive if they are, or have the potential to be regulated by any agency under policies described in Section 1.2. Representative site photographs of the observed plant communities are included in Appendix C.

2.2 Aquatic Features

2.2.1 Wetlands and Waters

The Study Area was surveyed to determine if any wetlands and "waters" potentially subject to jurisdiction by the Corps, RWQCB, or CDFG were present. The assessment was based primarily on the presence of wetland plant indicators, but may also include any observed indicators of wetland hydrology or wetland soils. Any potential wetland areas were identified as areas dominated by plant species with a wetland indicator status[1] of OBL, FACW, or FAC as given on the U.S. Fish and Wildlife Service List of Plant Species that Occur in Wetlands (Reed 1988). Evidence of wetland hydrology can include direct evidence (primary indicators), such as visible inundation or saturation, surface sediment deposits, algal mats and drift lines, or indirect indicators (secondary indicators), such as oxidized root channels. Some indicators of wetland soils include dark colored soils, soils with a sulfidic odor, and soils that contain redoximorphic features as defined by the Corps Manual and Field Indicators of Hydric Soils in the United States (NRCS, 2002).

The preliminary "waters" assessment was based primarily on the presence of unvegetated, ponded areas or flowing water, or evidence indicating their presence such as a high water mark or a defined drainage course.

Collection of additional data will be necessary to prepare a delineation report suitable for submission to the Corps.

2.2.2 Riparian Habitat

An inspection was conducted to determine if the banks of drainages, streams and other aquatic features within the Study Area supported hydrophytic or stream-dependent woody plant species (riparian species). Streams supporting riparian vegetation were noted and the width of the riparian habitat on each side of the stream was recorded.

2.3 Special Status Species

[1] OBL = Obligate, always found in wetlands (> 99% frequency of occurrence); FACW = Facultative wetland, usually found in wetlands (67-99% frequency of occurrence); FAC = Facultative, equal occurrence in wetland or non-wetlands (34-66% frequency of occurrence).

2.3.1 Literature Review

Potential occurrence of special status species in the Study Area was evaluated by first determining which special status species occur in the vicinity of the Study Area through a literature and database search (Appendix A). Database searches for known occurrences of special status species included the Midway 7.5 minute USGS quadrangle and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- California Natural Diversity Database records (CNDDB) (CDFG 2005)
- USFWS Quadrangle Species Lists (USFWS 2005)
- CNPS Electronic Inventory records (CNPS 2004)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings 2004)

2.3.2 Site Assessment

A site visit was conducted to search for suitable habitats within the Study Area for those species identified as occurring within the vicinity. Potential for special status species to occur in the Study Area was then evaluated according to the following criteria:

(1) Not Present. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

(2) Low Potential. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

(3) Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

(4) High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

(5) Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

Eastern Alameda County was searched for relevant CNDDB occurrence records. Appendix A presents the special status plant and wildlife species with a potential to occur within the Study Area, their habitat requirements, and a rating of potential for occurrence.

A site visit is intended to identify suitable habitat for special status species known to occur in the vicinity

in order to determine their potential to occur within the Study Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special status species is observed during the site visit, its presence will be recorded and discussed.

3.0 RESULTS AND DISCUSSION

The following sections present the results and discussion of the biological assessment for special status species and sensitive habitats within the Study Area.

3.1 Plant Communities

The Study Area contains one sensitive plant community (seasonal wetlands) and one non-sensitive plant community (non-native annual grassland). The majority of the Study Area is composed of non-native annual grassland. These plant communities are discussed in detail below and shown in Figure 2.

3.1.1 Sensitive Plant Communities

Seasonal Wetland

Seasonal wetland plant communities are not described in Holland (1986), but occur in depressions that are inundated during the rainy season for sufficient duration to support vegetation adapted to wetland conditions. Seasonal wetlands in California are highly variable in plant composition which is determined by the length of ponding or inundation occurring in the depression. They also generally lack the plant community assemblage typical of defined marshes and vernal pools. Species that typically occur in seasonal wetlands in California include Italian ryegrass (*Lolium multiflorum*), Mediterranean barley (*Hordeum marinum*), bristly ox-tongue (*Picris echioides*), flatsedge (*Cyperus* spp.), rush (*Juncus* spp.), and rabbitsfoot grass (*Polypogon monspeliensis*). Plant species observed in seasonal wetland plant communities present in the Study Area include cattail (*Typha* sp.) And rabbitsfoot grass.

Seasonal wetlands are present along the tributary to Mountain House Creek and upstream of the southern stock pond. The estimated area of seasonal wetlands is 1.5 acres.

3.1.2 Non-sensitive Plant Communities

Non-native Annual Grassland

Non-native annual grassland typically occurs in open areas of valleys and foothills throughout California, usually on fine textured clay or loam soils that are somewhat poorly drained (Holland 1986). Non-native grassland is typically dominated by non-native annual grasses and forbs that occur together with scattered native wildflowers. Common species found in the non-native grasslands of northern and central California include wild oats (*Avena* spp.), brome grasses (*Bromus* spp.), wild barley (*Hordeum*

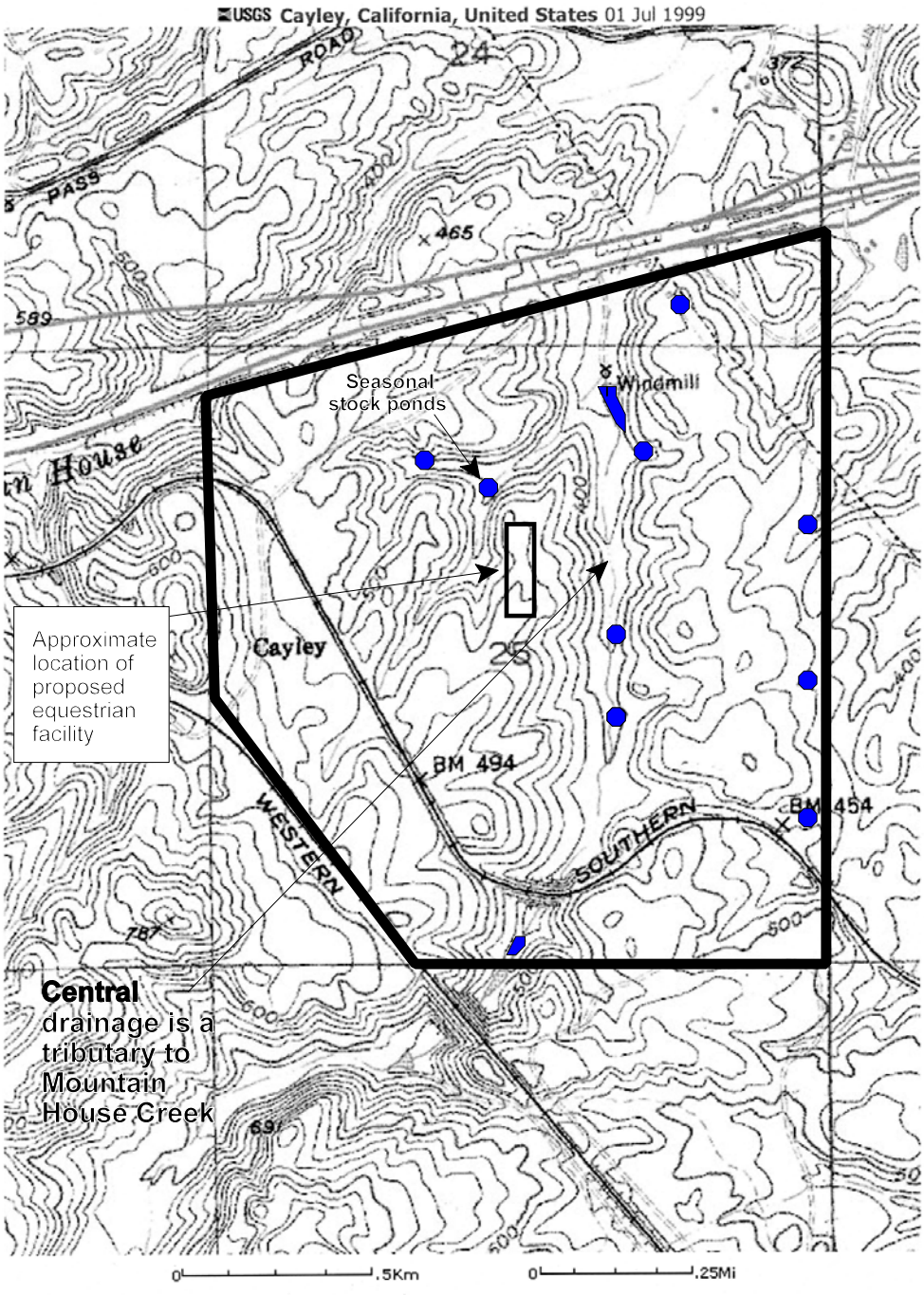

Figure 2. USGS map showing the approximate boundary of the Study Area. The site is dominated by non-native annual grassland. Numerous seasonal stock ponds and two perennial stock ponds are present along the central drainage. An equestrian facility exists north of the large north stock pond; a 2 to 3-acre facility is proposed on a ridge in the area shown.

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spp.), Italian ryegrass (*Lolium multiflorum*), and California poppy (*Eschscholzia californica*). Non-native grassland communities in the Study Area are dominated by slender wild oat (*Avena barbata*), soft chess (*Bromus hordeaceus*), Italian ryegrass, mustard (*Brassica* sp.), and thistle (*Cirsium* sp.).

3.2 Aquatic Features

Several aquatic features were found to occur within the Study Area. The central drainage is a tributary of Mountain House Creek. This apparently intermittent to perennial drainage flows south to north through the central portion of the Study Area. The substrate is predominantly fine sediments.

Several small seasonal stock ponds are present throughout the Study Area. During the May 3 site visit, many were dry or contained remnant surface water. Two larger, perennial stock ponds are also located in the Study Area on the central drainage. One is located near the equestrian facility, and the other is located at the southern property line.

Potential jurisdictional wetlands were found to occur along the tributary to Mountain House Creek and upstream of the southern stock pond. Potential jurisdictional waters are present along approximately 6000 feet of ephemeral, intermittent and perennial drainages. The seasonal and perennial stock ponds may also be potential jurisdictional waters. Based on these preliminary findings, a delineation of potential jurisdictional wetlands and waters is recommended to accurately map and classify these features.

3.3 Special Status Species

3.3.1 Wildlife

Sixty-four special status species of wildlife have been recorded in the vicinity of the Study Area. Appendix A summarizes the potential for occurrence for these species in the Study Area. Of these species, 21 species are not likely to ever be present, 23 wildlife species have a low potential for occurrence in the Study Area, 7 species have a moderate potential for occurrence, and 5 species have a high potential for occurrence. Five special status wildlife species were observed in the Study Area during the assessment: golden eagle (*Aquila chrysaetos*), burrowing owl (*Athene cunicularia*), loggerhead shrike (*Lanius ludovicianus*), California tiger salamander (*Ambystoma californiense*), and California red-legged frog (*Rana aurora draytonii*).

For those 44 species with a low potential for occurrence or those not likely to be present, the habitat conditions within the Study Area are clearly unsuitable for breeding, rearing, and or foraging. Twenty species of wildlife were observed in or adjacent to the Study Area during the site assessment (Appendix B). Most of the wildlife observed in the Study Area are commonly found species.

Seventeen special status wildlife species have either a moderate or high potential for occurrence, or were observed in the Study Area. These species, their status, habitat requirements, and known distribution are discussed below.

Special Status Wildlife Species with a <u>Moderate Potential for Occurrence</u> in the Study Area

Pallid Bat (*Antrozous pallidus*), CDFG Species of Special Concern. This bat is found in a variety of low elevation habitats throughout California. It selects a variety of day roosts including rock outcrops, mines, caves, hollow trees, buildings, and bridges. Night roosts are usually found under bridges, but also in caves, mines, and buildings. Pallid bats are sensitive to roost disturbance. Unlike most bats, pallid bats primarily feed on large ground-dwelling arthropods, and are somewhat unique among local bats in that they may forage on the ground (Philpott 1996). There is a moderate potential for this bat to occur in the Study Area due to the presence of potential roost habitat associated with ranch buildings and abandoned windmill structures.

Yuma Myotis (*Myotis yumanensis*), USFWS Species of Concern. The Yuma myotis is found throughout most of California at lower elevations in a wide variety of habitats. Day roosts are found in buildings, trees, mines, caves, bridges, and rock crevices. Night roosts are usually associated with buildings, bridges or other man-made structures (Philpott 1996). The Yuma myotis is a locally common species. There is a moderate potential for this bat to occur in the Study Area due to the presence of potential roost habitat associated with ranch buildings and abandoned windmill structures.

Prairie Falcon (*Falco mexicanus*), CDFG Species of Special Concern. This is an uncommon resident and migrant that ranges from southeastern deserts northwest along the Coast Ranges and Sierra Nevada. It occurs in many habitats, but typically is associated with grasslands, savannahs, rangeland, agricultural areas, and desert scrub. This falcon typically nests on cliffs. The prairie falcon has a moderate potential to occur in the Study Area because suitable foraging habitat is present; however, nesting habitat is not available.

Tricolored Blackbird (*Agelaius tricolor*), CDFG Species of Special Concern; USFWS Species of Concern. Although this species was not observed during the May site visit, limited suitable nesting habitat for the nomadic tricolored blackbird is present. Emergent vegetation associated with the central drainge upstream of the southern stock pond provides potential nesting habitat. In winter, this bird is likely to forage in grasslands throughout the Study Area. According to the CDFG Natural Diversity Data Base (2005), tricolored blackbirds have been observed approximately 3 miles east of the Study Area.

Western spadefoot (*Scaphiopus hammondii*), CDFG Species of Special Concern, USFWS Species of Concern. This species breeds in rainpools, and vernal pools and swales; in summer, it finds underground refugia such as mammal burrows to spend the dry season. It can breed in wetlands that remain inundated for as little as 4 weeks (Jennings and Hayes 1994). As a result, most wetlands and seasonal stock ponds in the Study Area provide potential breeding habitat. According to the CDFG Natural Diversity Data Base (2005), spadefoots have been documented to occur approximately 6 miles south of the Study Area.

Bridges' Coast Range Shoulderband Snail (*Helminthoglypta nickliniana bridgesi*), USFWS Species of Concern. Little information exists for this native snail that inhabits grassy hillsides in Contra Costa and Alameda counties. Although this species has not been documented to occur in the vicinity of the Study Area, there is a moderate potential for it to occur on hillsides where ground disturbance associated with agriculture has not occurred.

Curved-foot Hygrotus Diving Beetle (*Hygrotus curvipes*), USFWS Species of Concern. The curved-foot hygrotus diving beetle is associated with turbid seasonal pools. Like the previously-discussed

invertebrate, there is little information available regarding this beetle. Although this species has not been documented to occur in the vicinity of the Study Area, there is a moderate potential for it to occur because the seasonal stock ponds provide suitable habitat.

Special Status Wildlife Species with a High Potential for Occurrence in the Study Area

American Badger (*Taxidea taxus*), CDFG Species of Special Concern. Badgers occur in drier open stages of most scrub, forest, and herbaceous habitats where friable soils and prey populations are present. According to the CDFG Natural Diversity Data Base (CDFG 2005), this species has been documented to occur immediately south of the Study Area. There is a high potential for this species to occur in the Study Area because suitable grassland habitat is present, prey is abundant, and badgers have been documented to occur in the region.

San Joaquin Kit Fox (*Vulpes macrotis mutica*), Federal Endangered Species; State Threatened Species. In the northern portion of its range, the San Joaquin kit fox typically occurs in grassland habitats supporting California ground squirrel populations. Ground squirrels are important as both a prey item and a source of den habitat. The Study Area is within the known range of the kit fox (USFWS 1998; CDFG 2005; H.T. Harvey 1997), and provides suitable foraging, denning, and dispersal habitat. There is a high potential for this wide-ranging species to occur in the Study Area because it has been documented to occur within 1 mile of the Study Area.

White-tailed Kite (*Elanus leucurus*), CDFG Fully Protected Species. White-tailed kites are associated with agricultural areas, annual grasslands, scrub habitats, wet meadows, and emergent wetlands throughout the lower elevations of California. Nesting generally occurs in shrubs or small trees. This species is frequently observed in the Central Valley and San Francisco Bay region. Kites are likely to forage in the Study Area; however, nesting habitat is not present.

Northern Harrier (*Circus cyaneus*), CDFG Species of Special Concern. The northern harrier is a resident of annual grasslands, emergent wetlands, and agricultural lands throughout California. They typically nest on the ground in shrubby vegetation. There is a high potential for occurrence because the site provides excellent foraging habitat. Areas along the drainages may provide suitable nesting sites if they are inaccessible to livestock.

California Horned Lark (*Eremophila alpestris actia*), CDFG Species of Special Concern; USFWS Species of Concern. The California horned lark is a common to abundant resident in a variety of open habitats, usually where trees and large shrubs are absent. It is found from grasslands along the coast and deserts near sea level to alpine dwarf-shrub habitat above treeline. It forages on the ground searching for insects, and other small invertebrates during the breeding season. At other times it also eats forb and grass seed and other plant material. Nests are built in a depression on the ground in the open. The grazed grasslands within the Study Area provide suitable nesting and foraging habitat for California horned larks. According to the CDFG (2005), horned larks have been documented to occur approximately 5 miles south of the Study Area.

Special Status Wildlife Species Documented to Occur in the Study Area

Golden Eagle (*Aquila chrysaetos*), CDFG Fully Protected Species. Golden eagles occur in a variety of

habitats throughout California. This large raptor typically nests in large isolated trees or cliffs. Golden eagles forage over a large areas, feeding primarily on ground squirrels, rabbits, large birds, and carrion. Suitable foraging habitat is present in the Study Area; however, nesting habitat is not present. During the May 2005 assessment, a golden eagle was observed foraging in the eastern portion of the Study Area.

Burrowing Owl (*Athene cunicularia*), CDFG Species of Special Concern; USFWS Species of Concern. The burrowing owl typically favors flat, open grassland or gentle slopes and sparse-shrub land ecosystems. These owls prefer annual or perennial grasslands, typically with sparse or nonexistent tree or shrub canopies; however, they also colonize debris piles and old pipes. In California, burrowing owls are found in close association with California ground squirrels. Burrowing owls exhibit high site fidelity and usually use the abandoned burrows of ground squirrels for shelter and nesting. Burrowing owls have been observed in the vicinity of the Study Area (CDFG 2005), and on May 3, 2005, an adult was observed in the Study Area along the abandoned Southern Pacific Railroad bed.

Loggerhead Shrike (*Lanius ludovicianus*), CDFG Species of Special Concern; USFWS Species of Concern. The loggerhead shrike is a common resident and winter visitor in lowlands and foothills throughout California. It prefers open habitats with scattered trees, shrubs, posts, fences, utility lines or other perches. Nests are usually built on a stable branch in a densely-foliaged shrub or small tree and are usually well-concealed. The Study Area contains foraging habitat, but breeding habitat is limited to a few trees near the equestrian facility. One individual was observed in the Study Area during the May 2005 habitat assessment; it is expected to occur throughout the Study Area.

California Tiger Salamander (*Ambystoma californiense*), Federal Threatened Species; CDFG Species of Special Concern. California tiger salamanders typically inhabit ground squirrel burrows and ground cracks during the dry season; adults emerge during winter rains and migrate to breeding pools. A minimum of 10 weeks of inundation is necessary for this salamander to complete metamorphosis. The seasonal and perennial stock ponds within the Study Area provide suitable breeding habitat (Figure 3). Summer upland habitat can be as far as 0.75 mile from breeding sites. Scattered burrows provide summer upland habitat on the site. This species has been documented to occur less than one mile to the north and west, and approximately one mile to the south (CDFG 2005). Several larvae were observed in stock ponds 1 and 2 during the May assessment (Figure 3). Size class distribution suggests that adults were breeding during a period of several weeks (Table 1).

Table 1. Size classes (in millimeters) of California tiger salamander larvae observed in stock ponds 1 and 2 during the April 26, 2004 assessment.

Stock Pond	50-59mm	60-69mm	70-79mm	80-89mm	90-99mm
Pond 1	5	3	6	2	2
Pond 2	-	10	-	-	-

Figure 3

Figure 3. California tiger salamander larvae (top) of various size classes were found in two seasonal stock ponds in the Study Area (bottom). Several seasonal ponds are located in the Study Area.

Photographs taken May 3, 2005.

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Portions of the Study Area are located within proposed California tiger salamander critical habitat unit 1 (USFWS 2004a).

California Red-legged Frog (*Rana aurora draytonii*), Federal Threatened Species; CDFG Species of Special Concern. According to the CDFG Natural Diversity Data Base (2005), the California red-legged frog occurs throughout much of eastern Alameda County, and has been documented to occur less than one mile west of the Study Area. The Study Area is located within a proposed California red-legged frog critical habitat unit 15 (USFWS 2004b). On May 3, 2005, an adult California red-legged frog was observed in a small pool in the drainage upstream of the southern stock pond (Figure 4).

Several seasonal to perennial stock ponds and drainage pools are present in the Study Area. It is likely that some of these features may provide suitable breeding habitat. Seeps, springs, and drainages throughout the Study Area provide suitable summer estivation, foraging and dispersal habitat.

3.3.2 Plants

Based upon a review of the resources and databases given in Section 2.3.1, 26 special status plant species have been documented in the general vicinity of the Study Area. The Study Area contains suitable habitat for 3 of these species. Appendix A summarizes the potential for occurrence for these plant species in the Study Area.

Species were considered to have a low potential for occurrence if suitable habitat was not present within the Study Area. Special status plant species that are most likely (high or moderate potential) to occur in the Study Area are discussed below. However, protocol level surveys were not conducted and not every area of suitable habitat in the Study Area was surveyed for these species.

Special Status Plant Species with a Moderate Potential for Occurrence in the Study Area

The Study Area is within the range and provides potentially suitable habitat for the following grassland-associated species:

- Big Tarplant (*Blepharizonia plumosa*), CNPS List 1B species.
- Congdon's Tarplant *(Centromadia parryi* ssp. *congdonii*), Federal Species of Concern, CNPS List 1B species
- Round-leaved Filaree (*Erodium macrophyllum*), CNPS List 2 species.

These species are not listed under endangered species legislation, but are considered species of concern. The timing of the May assessment prevented the identification of most of these species. A protocol-level rare plant survey was not conducted during the assessment.

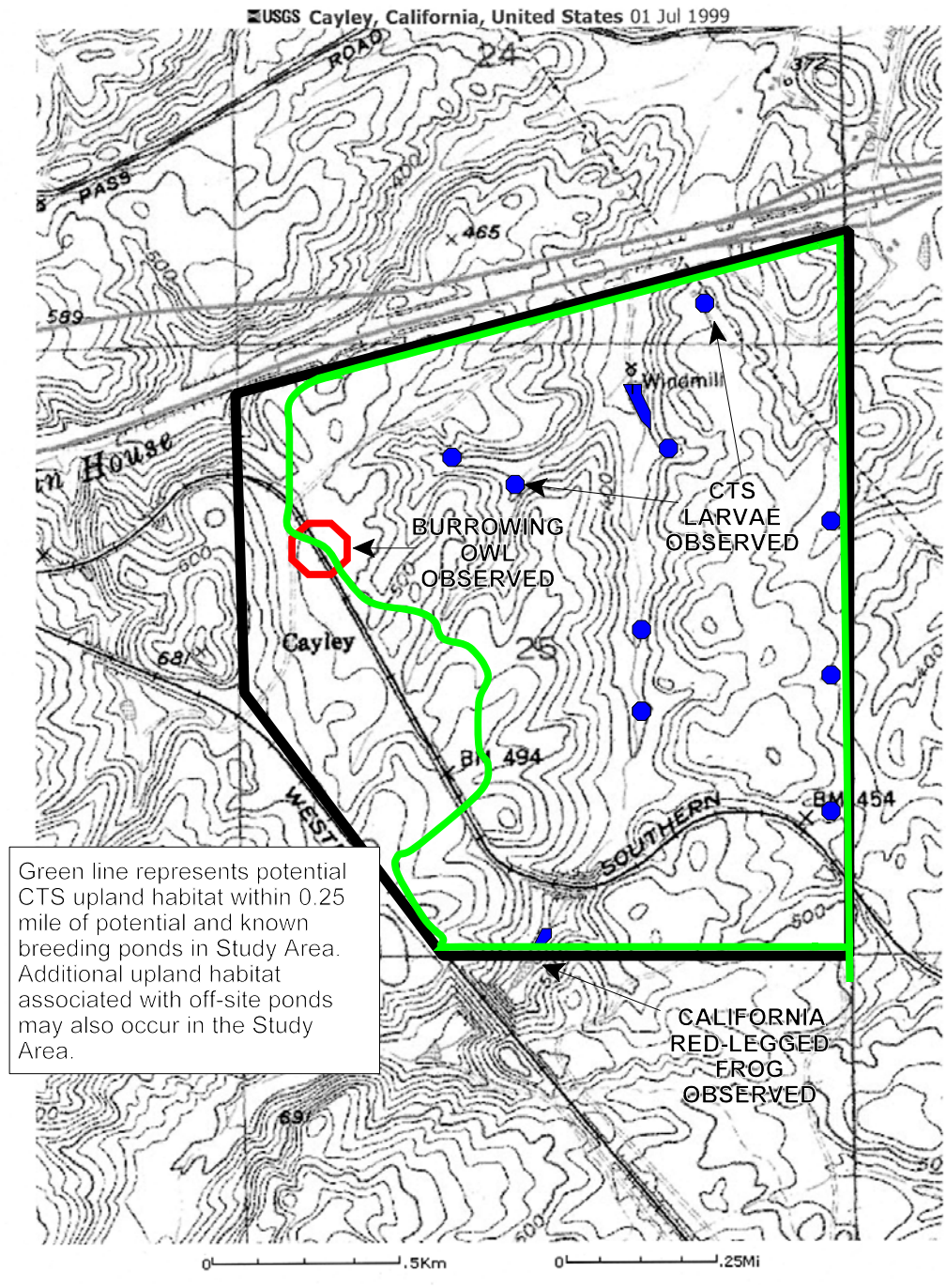

Figure 4. USGS map showing where special status species were observed during the assessment conducted on May 3, 2005. Potential California tiger salamander upland habitat includes most of the Study Area.

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4.0 CONCLUSION AND RECOMMENDATIONS

One sensitive plant community was identified within the Study Area. Seventeen special status wildlife species and 3 special status plants have a moderate or high potential to occur within the Study Area.

4.1 Sensitive Plant Communities and Aquatic Features

Seasonal wetlands and seasonal to perennial stock ponds are present in the Study Area. It is difficult to estimate the acreage of these wetlands without conducting a wetland delineation; however, there is likely approximately 1.5 acre of seasonal wetland habitat in the Study Area. There is approximately 6000 linear feet of ephemeral to intermittent stream channels throughout the Study Area, many of which would be considered "Waters of the United States". Stock ponds constructed within drainages are considered "Waters of the United States" by the U.S. Army Corps of Engineers. Isolated stock ponds would be considered "Waters of the State" by the Regional Water Quality Control Board.

4.2 Plants

To determine the presence/absence of special status plants, a rare plant survey would be necessary. Depending on the list of potential plants, such a survey often requires two seasonal visits to coincide with the various blooming periods.

4.3 Wildlife

Based on the results of this assessment:

- several special status wildlife and plant species are present or likely to occur in the Study Area;
- the federal threatened California red-legged frog is present;
- the Study Area is within a proposed California red-legged frog critical habitat unit;
- the federal threatened California tiger salamander is present;
- a portion of the Study Area is within a proposed California tiger salamander critical habitat unit;
- suitable habitat is present for the federal and state endangered San Joaquin kit fox;
- the burrowing owl is present in the Study Area.

Although presence of the California red-legged frog and California tiger salamander were confirmed, it is recommended that protocol-level surveys for these species be conducted to determine their distribution within the Study Area. For example, the deeper stock ponds should be sampled using minnow traps in spring 2006 to determine if salamanders are breeding there.

4.4 Potential Mitigation Value

Based on the known presence of California red-legged frogs, the Study Area provides high value mitigation for loss of habitat in other areas. The Study Area also provides potential mitigation for California red-legged frog critical habitat (proposed by the USFWS in April 2004). Critical habitat includes potential breeding habitat, a 300-foot associated upland area surrounding each breeding site, and a dispersal corridor at least 300 feet wide connecting potential breeding sites.

Based on the known presence of the California tiger salamander, the Study Area provides high value mitigation for loss of occupied breeding and associated upland habitat in other areas. Although the resource agencies have not defined how far upland habitat extends from a salamander breeding pond, literature suggests that a surrounding area between 750 feet (40 acres) and as far as one mile (over 2000 acres) from a pond would be considered upland habitat.

The presence of burrowing owls suggests that the Study Area provides mitigation value for this species as well. It is recommended that portions of the Study Area be managed to improve habitat conditions for burrowing owls. Grazing and/or mowing to keep tall vegetation from obscuring burrow habitat, and improving conditions for ground squirrels, would likely increase the owl population in the Study Area.

The Study Area is within the northern portion of the San Joaquin kit fox range, and the species has been observed within one mile. The Study Area provides high value mitigation for loss of kit fox dispersal and foraging habitat in other areas. Continued land management (grazing) to encourage ground squirrel activity would continue to provide suitable habitat for the kit fox.

The majority of ponds and stream channels located in the Study Area are considered "Waters of the United States". These features may provide potential mitigation for fill of waters at another location. It is roughly estimated that there is approximately 1.5 acres of seasonal wetlands in the Study Area, and roughly 6000 linear feet of ephemeral to intermittent drainages. These areas may provide mitigation for wetland losses associated with activities on other properties.

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APPENDIX A

LIST OF POTENTIAL SPECIAL STATUS PLANT AND ANIMAL SPECIES

Appendix A. Special status plant and animal species that may occur, or are known to occur in habitats and elevations similar to those found on the Study Area. List compiled from USFWS Species lists (USFWS 2005), CNDDB Sacramento County lists (2005), and other CDFG lists and publications (Jennings and Hayes 1994).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Mammals			
pallid bat *Antrozous pallidus*	CSC	Found in a variety of habitats. Day roosts include rock outcrops, mines, caves, hollow trees, buildings, and bridges.	High Potential. Oak woodlands provide suitable hollows for roost sites.
Townsend's big-eared bat *Corynorhinus townsendii townsendii*	CSC, FSC	Primarily found in rural settings in a wide variety of habitats including oak woodlands and mixed coniferous-deciduous forest. Day roosts highly associated with caves and mines. Very sensitive to human disturbance.	Low Potential. Cavern-like habitats do not appear to be present in the Study Area.
Yuma myotis *Myotis yumanensis*	FSC	Known for its ability to survive in urbanized environments. Also found in heavily forested settings. Day roosts in buildings, trees, mines, caves, bridges and rock crevices. Night roosts associated with man-made structures.	High Potential. Oak woodlands and rock crevices provide suitable roost habitat for this species.
American badger *Taxidea taxus*	CSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Need sufficient food, friable soils and open, uncultivated ground. Prey on burrowing rodents. Dig burrows.	High Potential. Open grasslands with prey (pocket gophers) provide suitable habitat for this species.
Birds			
double-crested cormorant *Phalacrocorax auritus*	CSC	Colonial nester on coastal cliffs, offshore islands, and along lake margins in the interior of the state. Nests along coast on sequestered islets, usually on ground with sloping surface, or in tall trees along lake margins.	Moderate Potential. Stock ponds with fish, provide suitable foraging habitat; but no nesting activity was observed in adjacent trees.
American bittern *Botaurus lentiginosus*	FSC	Occurs in fresh emergent wetlands, often hiding, resting, and roosting solitarily amidst tall, dense, emergent vegetation, on ground, or near ground on log, stump, or on emergent plants.	Low Potential. Typical dense emergent vegetation was not present along stock pond margins; this species may rarely occur to forage.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Cooper's hawk *Accipiter cooperii*	CSC	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	High Potential. Oak woodland provides suitable foraging and breeding habitat.
sharp-shinned hawk *Accipiter striatus*	CSC	Ponderosa pine, black oak, riparian deciduous, mixed conifer and Jeffrey pine habitats. Prefers riparian areas. North-facing slopes, with plucking perches are critical requirements. Nests usually within 275 ft of water.	High Potential. Very likely occurs as a migrant and winter resident; typically nests in more dense woodlands and forests.
ferruginous hawk *Buteo regalis*	CSC, FSC	Open grasslands, sagebrush flats, desert scrub, low foothills & fringes of pinyon-juniper habitats. Mostly eats lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.	High Potential. Likely winters and forages in Study Area; does not nest in Study Area.
osprey *Pandion haliatus*	CSC	Ocean shore, bays, fresh-water lakes, and larger streams. Large nests built in tree-tops within 15 miles of good fish-producing body of water.	Moderate Potential. Aquatic habitat with fish provides suitable foraging habitat, but typical tall dead or live snags used for nesting do not appear to be present.
northern harrier *Circus cyaneus*	CSC	Frequents meadows, grasslands, rangelands, fresh and saltwater emergent wetlands throughout California. Nests in shrubby vegetation on ground.	Moderate Potential. Suitable foraging habitat is present, but grazed grasslands do not provide optimal breeding habitat.
white-tailed kite *Elanus leucurus*	FSC, CFP	Year-long resident of coastal and valley lowlands; rarely found away from agricultural areas. Preys on small diurnal mammals and occasional birds, insects, reptiles, and amphibians.	High Potential. Suitable breeding and foraging habitat are present.
bald eagle *Haliaeetus leucocephalus*	FT, SE, CFP	Requires large bodies of water, or free-flowing rivers with abundant fish adjacent snags or other perches. Nests in large, old-growth, or dominant live tree with open branchwork.	Low Potential. Aquatic habitat with fish/waterfowl provides suitable foraging habitat, but typical tall trees used for nesting are not apparent. May winter in the area.
Swainson's hawk *Buteo swainsoni*	ST	Breeds in stands with few trees in juniper-sage flats, riparian areas and oak savannah. Requires adjacent suitable foraging areas such as grasslands or grain fields supporting rodent populations.	High Potential. Suitable foraging and nesting habitat present; several records within 10 miles (CDFG 2005).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
golden eagle *Aquila chrysaetos*	CSC, CFP	Found in rolling foothill and mountain areas, sage-juniper flats, dessert. Cliff-walled canyons provide nesting habitat in most parts of range.	High Potential. Suitable foraging habitat present, but blue oak woodland may not provide suitable nesting habitat.
merlin *Falco columbarius*	CSC	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.	Moderate Potential. Winter visitor to open habitats; suitable conditions exist in Study Area.
prairie falcon *Falco mexicanus*	CSC	Inhabits dry, open terrain. Breeding sites located on cliffs. Forages widely.	High Potential. Likely to occur in winter and during migration; no suitable nesting habitat.
American peregrine falcon *Falco peregrinus anatum*	SE, CFP	Winters throughout Central Valley. Requires protected cliffs and ledges for cover. Feeds on a variety of birds, and some mammals, insects, and fish.	Moderate Potential. Likely to occur in winter and during migration; no suitable nesting habitat.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	FC, SE	Found in deep forest riparian areas. Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	Not Present. Likely extirpated in Sacramento County; typical dense riparian forest not present.
short-eared owl *Asio flammeus*	CSC	Found in open, treeless areas with elevated sites for perches and dense vegetation for roosting and nesting.	Low Potential. Grazing reduces nesting habitat suitability; may occasionally occur in winter and migration.
long-eared owl *Asio otus*	CSC	Inhabit open woodlands, forest edges, riparian strips along rivers, hedgerows, juniper thickets, woodlots, and wooded ravines and gullies. Breeding habitat must include thickly wooded areas for nesting and roosting with nearby open spaces for hunting.	Moderate Potential. Most likely nests at higher elevations in foothills; may occur in Study Area in winter.
western burrowing owl *Athene cunicularia hypugea*	FSC, CSC	Frequents open grasslands and shrublands with perches and burrows. Preys upon insects, small mammals, reptiles, birds, and carrion. Nests and roosts in old burrows of small mammals.	Low Potential. Ground squirrels scarce; poor burrow habitat availability.
Lewis' woodpecker *Melanerpes lewis*	FSC	Uncommon winter resident occurring on open oak savannahs, broken deciduous and coniferous habitats.	Present. Suitable oak woodland and savannah habitat throughout Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
red-breasted sapsucker *Sphyrapicus ruber*	FSC	Nest (lower elevations) in live deciduous trees such as alder, cottonwood, or aspen.	Present. Unlikely to nest in Study Area, but present in winter and migration.
olive-sided flycatcher *Contopus cooperi*	FSC	Nesting habitats are mixed conifer, montane harwood-conifer, douglas-fir, redwood, red fir & lodgepole pine. Most numerous in montane conifer forests where tall trees overlook canyons, meadows, lakes or other open terrain.	Low Potential. Oak woodlands do not provide typical habitat; may occur during migration.
willow flycatcher *Empidonax traillii*	SE	Inhabits extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters; 2000-8000 elev. require dense willow thickets for nesting/roosting. Low, exposed branches are used for singing posts/hunting perches.	Low Potential. Willows along Coyote Creek and Carson Creek are sparse; poor habitat for this species.
loggerhead shrike *Lanius ludovicianus*	CSC, FSC	Prefers open habitats with scattered shrubs, trees, pots, utility lines from which to forage for large insects. Nest well concealed above ground in densely-foliaged shrub or tree.	Present. Suitable nesting and foraging habitat available throughout the Study Area.
California thrasher *Toxostoma redivivum*	FSC	Common resident of foothills and lowlands in cismontane California. Occupies moderate to dense chaparral habitats and extensive thickets in young or open valley foothill riparian habitat.	Moderate Potential. Dense oak woodland and understory shrubs along portions of Coyote Creek may provide suitable habitat.
yellow warbler *Dendroica petechia*	CSC	Riparian plant associations. Prefers willows, cottonwoods, aspens, sycamores, and alders for nesting and foraging. Also nests in montane shrubbery in open conifer forests.	Moderate Potential. Dense oak woodland and understory shrubs along portions of Coyote Creek may provide suitable habitat.
yellow-breasted chat *Icteria virens*	CSC	Summer resident; inhabits riparian thickets of willow and other brushy tangles near watercourses. Nests in low, dense riparian, consisting of willow, blackberry, wild grape; forage and nest within 10 ft of ground.	Low Potential. Typical riparian habitat is not present in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
tricolored blackbird *Agelaius tricolor*	FSC, CSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate, & foraging area with insect prey within a few km of the colony. Usually nests over or near freshwater in dense cattails, tules, or thickets of willow, blackberry, wild rose or other tall herbs.	Low Potential. Limited emergent vegetation in Carson Creek provides only potential nesting habitat.
Reptiles and Amphibians			
western pond turtle *Clemmys (Emys) marmorata*	CSC	Occurs in perennial ponds, lakes, rivers and streams with suitable basking habitat (mud banks, mats of floating vegetation, partially submerged logs) and submerged shelter.	Present. Turtles observed in southeast stock pond. Northwestern pond turtle CNDDB occurrences within one mile of Study Area.
California horned lizard *Phrynosoma coronatum frontale*	FSC, CSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress juniper and annual grass habitats. Prefers sand areas, washes, flood plains and wind-blown deposits.	Low Potential. Typical habitat is not present in the Study Area.
giant garter snake *Thamnophis gigas*	FT, ST	Prefers freshwater marsh and low gradient streams. Has adapted to drainage channels and irrigation ditches.	Not Present. Low gradient streams and sloughs are not present in the Study Area.
California tiger salamander *Ambystoma californiense*	FT, CSC	Inhabits annual grass habitat and mammal burrows. Seasonal ponds and vernal pools crucial to breeding	Low Potential. The presence of fish and bullfrogs in breeding habitat likely precludes presence. Uplands support few if any ground squirrels.
western spadefoot toad *Scaphiopus (Spea) hammondii*	FSC, CSC	Occurs primarily in grasslands but occasionally populates valley-foothill hardwood woodlands. Feed on insects, worms, and other invertebrates.	Moderate Potential. Vernal habitats may provide suitable breeding habitat. Multiple CNDDB occurrences immediately west of Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
California red-legged frog *Rana aurora draytonii*	FT, CSC	Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Documented to disperse through upland habitats after rains.	Low Potential. Limited suitable habitat is present however there are no documented occurrences within 5 miles of the Study Area and the presence of fish and bullfrogs in breeding habitat and absence of dense, extensive shoreline vegetation likely precludes the presence.
foothill yellow-legged frog *Rana boylii*	FSC, CSC	Found in or near rocky streams in a variety of habitats. Feed on both aquatic and terrestrial invertebrates.	Moderate Potential. Suitable habitat is present in tributary streams, but bullfrogs are widespread. Possible sighting on upper Little Deer Creek during assessment.
Fishes			
steelhead - Central Valley ESU *Oncorhynchus mykiss*	FT	Adults migrate upstream to spawn in cool streams with clean gravel substrates. Juveniles rear in fresh water for 1 to 5 years before migrating downstream to the ocean.	Low Potential. Streams in the Study Area likely have high summer water temperatures that would create unsuitable rearing habitat.
Invertebrates			
vernal pool fairy shrimp *Branchinecta lynchi*	FT	Inhabit small, clear-water sandstone-depression pools, grassy swales, slumps, or basalt-flow depression pools.	High Potential. Vernal swales and pools may provide suitable habitat. CNDDB documented occurrences within 5 miles, to the west of the Study Area.
midvalley fairy shrimp *Branchinecta mesovallensis*	FSC	Vernal pools in the Central Valley.	High Potential. Vernal swales and pools may provide suitable habitat. CNDDB documented occurrences within 5 miles, to the west of the Study Area.
vernal pool tadpole shrimp *Lepidurus packardi*	FE	Pools commonly found in grass bottomed swales of unplowed grasslands. Som pools are mud-bottomed and highly turbid.	High Potential. Vernal swales and pools may provide suitable habitat. CNDDB documented occurrences within one mile, to the west of the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
California linderiella *Linderiella occidentalis*	FSC	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity and conductivity.	High Potential. Vernal swales and pools may provide suitable habitat. CNDDB documented occurrences immediately adjacent to the north of the Study Area and west.
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT	Occurs in mature elderberry bushes in the Central Valley. Prefers to lay eggs in branches 2-8 inches in diameter.	Low Potential. Elderberry shrubs were not observed in areas surveyed. CNDDB documented occurrences within 5 miles, to the west of the Study Area.
Plants			
Suisun marsh aster *Aster lentus*	List 1B	Marshes and swamps (brackish and freshwater). Endemic to the Sac/San Joaquin river delta. Most often seen along sloughs with phragmites, scirpus, blackberry, typha, etc. 0-3m.	Not Present. There are no marshes or swamps present within the Study Area.
San Joaquin saltbush *Atriplex joaquiniana*	List 1B	Chenopod scrub, alkali meadow, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with *Distichlis spicata, Frankenia*, etc. 1-250m.	Low Potential. Valley and foothill grasslands predominate within the Study Area.
big-scale balsamroot *Balsamorhiza macrolepis var. macrolepis*	FSC, List 1B	Valley and foothill grasslands, cismontane woodland, sometimes on serpentine soils. 90-1400m. Blooms: March-June	Low Potential. Valley and foothill grasslands predominate within the Study Area.
dwarf downingia *Downingia pusilla*	List 2	Valley and foothill grassland, vernal pools. 1-445m. Blooms: March-May	High Potential. Vernal pools and swales in the Study Area provide suitable habitat.
Ione buckwheat *Eriogonum apricum var. apricum*	FE, SE, List 1B	Chaparral. Endemic to Amador County. In gravelly openings on Ione formation soil. 80-150m.	Not Present. Chaparral habitat is not present in the Study Area.
Butte fritillary *Fritillaria eastwoodiae*	FSC	Chaparral, cismontane woodland, lower montane coniferous forest (openings) / sometimes serpentinite. 50-1500m. Blooms: March-May	Not Present. Chaparral habitat is not present in the Study Area.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Bogg's Lake hedge-hyssop *Gratiola heterosepala*	SE, List 1B	Marshes and swamps, vernal pools, clay soils. 10-2375m. Blooms: April-August	Low Potential. Vernal pools may potentially occur in the Study Area.
Bisbee peak rush-rose *Helianthemum suffrutescens*	List 3	Chaparral. Often on serpentine, gabbroic, or ione formation soils; in openings in chaparral. 45-610m.	Not Present. Chaparral habitat is not present in the Study Area.
Rose-mallow *Hibiscus lasiocarpus*	List 2	Marshes and swamps (freshwater). Moist, freshwater-soaked river banks & low peat islands in sloughs; in Calif., known from the delta watershed. 0-150m.	Not Present. Study Area is not within the documented range of this species.
Parry's horkelia *Horkelia parryi*	List 1B	Chaparral, cismontane woodland. Openings in chaparral or woodland; especially known from the Ione Formation in Amador County. 80-1035m.	Not Present. Chaparral habitat is not present in the Study Area.
Northern California black walnut *Juglans hindsii*	List 1B	Riparian forest, riparian woodland. Two extant native stands remain; widely naturalized. Deep alluvial soil associated with a creek or stream. 0-395m.	Low Potential. Walnut trees were not observed during the site assessment.
Ahart's dwarf rush *Juncus leiospermus var. ahartii*	FSC, List 1B	Valley and foothill grassland (mesic). 30-100m. Blooms: March-May	High Potential. Mesic valley and foothill grassland occur throughout much of the western portion of the Study Area.
Delta tule pea *Lathyrus jepsonii var. jepsonii*	List 1B	Freshwater and brackish marshes. Most of distribution restricted to the Sacramento/San Joaquin River delta. Often found w/typha, *Aster lentus, Rosa calif*., juncus spp., scirpus, etc. Usually on marsh and slough edges.	Not Present. Study Area is not within the documented range of this species.
legenere *Legenere limosa*	FSC, List 1B	Vernal pools. Many historical occurrences are extirpated. 1-880m. Blooms: April-June.	Low Potential. Vernal pools may potentially occur in the Study Area.
Mason's lilaeopsis *Lilaeopsis masonii*	List 1B	Freshwater and brackish marshes, riparian scrub. Tidal zones, in muddy or silty soil formed through river deposition or river bank erosion. 0-10m.	Not Present. Study Area is not within the documented range of this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE
Delta mudwort *Limosella subulata*	List 2	Riparian scrub, freshwater marsh, brackish marsh. Probably the rarest of the suite of delta rare plants. Usually on mud banks of the delta in marshy or scrubby riparian associations; often with *Lilaeopsis masonii*. 0-3m.	Not Present. Study Area is not within the documented range of this species.
Pincushion navarretia *Navarretia myersii ssp. myersii*	FSC	Vernal pools. 20-330m. Blooms: May.	Moderate Potential. Vernal pools and swales provide suitable habitat.
Slender orcutt grass *Orcuttia tenuis*	FT, SE, list 1B	Vernal pools. 30-1735m.	Moderate Potential. Vernal pools and swales provide suitable habitat.
Sacramento orcutt grass *Orcuttia viscida*	FE, SE, List 1B	Vernal pools. Endemic to Sacramento County. 30-100m.	Moderate Potential. Vernal pools and swales provide suitable habitat.
Bearded popcorn-flower *Plagiobothrys hystriculus*	List 1A	Vernal pools, valley and foothill grassland. Known only from a historical collection in Solano county. Wet sites. 10-50m.	Moderate Potential. Vernal swales and grasslands provide suitable habitat.
Slender-leaved pondweed *Potamogeton filiformis*	List 2	Marshes and swamps. Shallow, clear water of lakes and drainage channels. 15-2310m.	Low Potential. Some drainage channels occur along both sides of Scott Road.
Sanford's arrowhead *Sagittaria sanfordii*	List 1B	Marshes and swamps. In standing or slow-moving freshwater ponds, marshes, and ditches. 0-610m.	Low Potential. The stock pond or reservoir may provide suitable habitat.
Blue skullcap *Scutellaria lateriflora*	List 2	Meadows and seeps, marshes and swamps. Wet meadows and marshes. 3-500m.	Moderate Potential. Vernal pools and swales provide suitable habitat.
El Dorado county mule ears *Wyethia reticulata*	List 1B	Chaparral, cismontane woodland, lower montane coniferous forest. Endemic to El Dorado County. Stony red clay and gabbroic soils; often in openings in gabbro chaparral. 180-630m.	Not Present. Study Area is below the typical elevation range for this species.
Layne's butterweed (ragwort) *Senecio layneae*	FT, List 1B	Chaparral, cismontane woodland. Serpentine or gabboric soils. 200-1000m. Blooms: April-July.	Not Present. Study Area is below the typical elevation range for this species.

* Key to status codes:
Status codes used above are:
FE - Federal Endangered
FT - Federal Threatened
FC - Federal Candidate
FPD - Federal Proposed Delisted
FSC - United States Fish and Wildlife Service Federal Species of Concern
NMFS - Species under the Jurisdiction of the National Marine Fisheries Service
SE - State Endangered, CFP - CDFG Fully Protected Animal
CSC - CDFG Species of Special Concern, CSC (Draft) - 4 April 2001 Draft
CDFG Species of Special Concern
SLC - Species of Local Concern
None - No status given but rookery sites are monitored by CDFG
List 1B - CNPS 1B List, Endangered, Threatened, or Rare in California

APPENDIX B

LIST OF OBSERVED ANIMAL SPECIES

Appendix B. Wildlife and plant species observed during the habitat assessment conducted on May 3, 2005.

Common Name	*Species*	Seasonal Status	Comments
Mammals			
Botta's pocket gopher	*Thomomys bottae*	resident	Common in Study Area
California ground squirrel	*Spermophilus beecheyi*	resident	Common; burrows provide important habitat for salamanders, owls, and kit fox
Audubon's cottontail	*Sylvilagus audubonii*	resident	Common in region
Birds			
turkey vulture	*Cathartes aura*	resident	Common in region
mallard	*Anas platyrhynchos*	resident	Likely nests along stock pond margins and tributary to Mountain House Creek
red-tailed hawk	*Buteo jamaicensis*	resident	Excellent foraging habitat in Study Area
golden eagle	*Aquila chrysaetos*	resident	CDFG Fully Protected Species; no nesting habitat
American kestrel	*Falco sparverius*	resident	Excellent foraging habitat in Study Area
greater yellowlegs	*Tringa melanoleuca*	migrant	Stock ponds provide habitat in winter and during migration for this shorebird
burrowing owl	*Athene cunicularia*	resident	CDFG Species of Special Concern; observed along old Southern Pacific bed
mourning dove	*Zenaida macroura*	resident	Abundant in region
loggerhead shrike	*Lanius ludovicianus*	resident	CDFG Species of Special Concern
savannah sparrow	*Passerculus sandwichensis*	resident	Common in grasslands
western meadowlark	*Sturnella neglecta*	resident	Abundant in grasslands throughout region
Reptiles and Amphibians			
western fence lizard	*Clemmys marmorata*	resident	Abundant in many habitats
gopher snake	*Pituophis melanoleucus*	resident	Observed near seasonal stockpond

Common Name	***Species***	**Seasonal Status**	**Comments**
California tiger salamander	*Ambystoma californiense*	resident	Federal Threatened Species; larvae present in at least 2 pools; residents report adult observations
Pacific treefrog	*Hyla regilla*	resident	Larvae common in seasonal pools and main tributary
western toad	*Bufo boreas*	resident	Larvae common in seasonal ponds and main tributary
California red-legged frog	*Rana aurora draytonii*	resident	Federal Threatened Species; adult observed in plunge pool near south stock pond

APPENDIX C

STUDY AREA PHOTOGRAPHS

APPENDIX C. A California red-legged frog was observed in the southern wetland area of the central drainage (top) during the May 2005 assessment. Scattered pools occur in the drainage further downstream; however, the stream was shallow for most of its lenth between stock ponds (bottom).

Photographs taken May 3, 2005.

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APPENDIX C. A California red-legged frog was observed immediately upstream of this perennial stock pond during the May 2005 assessment (top). Several stock ponds in the Study Area are seasonal (bottom).

Photographs taken May 3, 2005.

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APPENDIX C. On May 3, 2005, the seasonal stock ponds were in various stages of drying; however, several had sufficient inundation to allow metamorphosis of California tiger salamanders.

Photographs taken May 3, 2005.

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Biological Resources Assessment

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LIST OF ACRONYMS AND ABBREVIATIONS

APN	Assessor's Parcel Number
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
Corps	U.S. Army Corps of Engineers
CRLF	California red-legged frog
CTS	California tiger salamander
EACCS	East Alameda Conservation Strategy
ESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
NMFS	National Marine Fisheries Service
Rank	California Rare Plant Rank
RWQCB	Regional Water Quality Control Board
SJKF	San Joaquin kit fox
USFWS	U.S. Fish and Wildlife Service
WBWG	Western Bat Working Group
WRA	WRA, Inc.

EXECUTIVE SUMMARY

The purpose of this report is to provide an analysis of natural community and special-status species issues at the Jess Ranch Composting Facility Project Site (Study Area) in Livermore, California.

On November 11, 2015, WRA, Inc. (WRA) conducted an assessment of biological resources within the Study Area. A wetland delineation was conducted in the Study Area on February 5, 2016, and observations made during this visit have been incorporated into the biological resource assessment. WRA observed five biological communities, 36 plant species, and 20 wildlife species. Three sensitive biological community types covering 75.21 acre in the Study Area were identified. Eight special-status wildlife species and nine special-status plant species have a moderate or high potential to occur within the Study Area. Four species with potential to occur are federal-listed and designated Critical Habitat for CRLF is present within the Study Area.

The proposed Project is focused predominantly in habitats unsuitable for special-status wildlife species; however, there is potential for several special-status species to inhabit the 23.43 acres annual grassland portions of the Project Area or disperse through during rain events. The 23.43 acres of annual grassland within the Project Area is also within designated critical habitat for CRLF. The Eastern Alameda County Conservation Strategy suggests mitigation for impacts to this annual grassland community. Potential mitigation measures for impacts to California annual grassland are discussed below in Section 5.2.

The proposed Project will result in the fill of 0.01 acres of seasonal wetland to construct a road. The seasonal wetland feature in the Project Area is potentially within Corps jurisdiction under Section 404 of the Clean Water Act and under the jurisdiction of the RWQCB under the Porter-Cologne Act. Potential mitigation measures for impacts to Corps and RWQCB jurisdictional features are discussed below in Section 5.2.

Implementation of the described avoidance and minimization measures and those determined in consultation with the USFWS and CDFW will reduce Project impacts to a less than significant level for special-status species and sensitive biological communities.

1.0 INTRODUCTION

On November 11, 2015, WRA, Inc. performed an assessment of biological resources at the Jess Ranch Composting Facility Project Site in Livermore, Alameda County, California (Figure 1). The proposed Project is located on two parcels (Assessor's Parcel Numbers [APN] 99B-7800-7-7 and 99B-7800-7-8). The purpose of the assessment was to gather information necessary to complete a review of biological resources under the California Environmental Quality Act (CEQA) for the Jess Ranch Composting Facility Project (Project). The assessment included both a Study Area and a Project Area. The approximately 138-acre Study Area consists of the entirety of parcel APN 99B-7800-7-8 and the portion of parcel APN 99B-7800-7-7 that includes an access road and a 100-foot buffer from both sides of the access road. The approximately 62-acre Project Area, located entirely within the Study Area, consists of all primary Project elements, including access roads, parking lots, buildings, composting areas, and stormwater basins, and a 100-foot buffer on these elements (Figure 2). The 100-foot buffer on the primary Project elements represents the area where direct impacts may occur during construction and implementation of Project activities, as well as the area where indirect impacts are likely to occur as a result of operations and management of the biosolids facility.

The Study Area is located on Jess Ranch Road, near the Grant Line Road exit on I-580. It is located in rural northeastern Alameda County and characterized by grazed California annual grassland and dense stands of mustard. This report describes the results of the site visit, which assessed the Study Area for (1) potential to support special-status species; and (2) presence of other sensitive biological resources protected by local, state, and federal laws and regulations. If special-status species were observed during the site visit, they were recorded. Specific findings on the habitat suitability or presence of special-status species or sensitive habitats may require that protocol-level surveys be conducted. This report also contains an evaluation of potential impacts to special-status species and sensitive biological resources that may occur as a result of the proposed project and potential mitigation measures to compensate for those impacts.

A biological resources assessment provides general information on the potential presence of sensitive species and habitats. The biological assessment is not an official protocol-level survey for listed species that may be required for project approval by local, state, or federal agencies. This assessment 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.

2.0 REGULATORY BACKGROUND

The following sections explain the regulatory context of the biological assessment, including applicable laws and regulations that were applied to the field investigations and analysis of potential project impacts.

2.1 Sensitive Biological Communities

Sensitive biological communities include habitats that fulfill special functions or have special values, such as wetlands, streams, or riparian habitat. These habitats are protected under federal regulations such as the Clean Water Act; state regulations such as the Porter-Cologne Act, the California Department of Fish and Wildlife (CDFW) Streambed Alteration Program, and the California Environmental Quality Act; or local ordinances or policies such as city or county tree ordinances, Special Habitat Management Areas, and General Plan Elements.

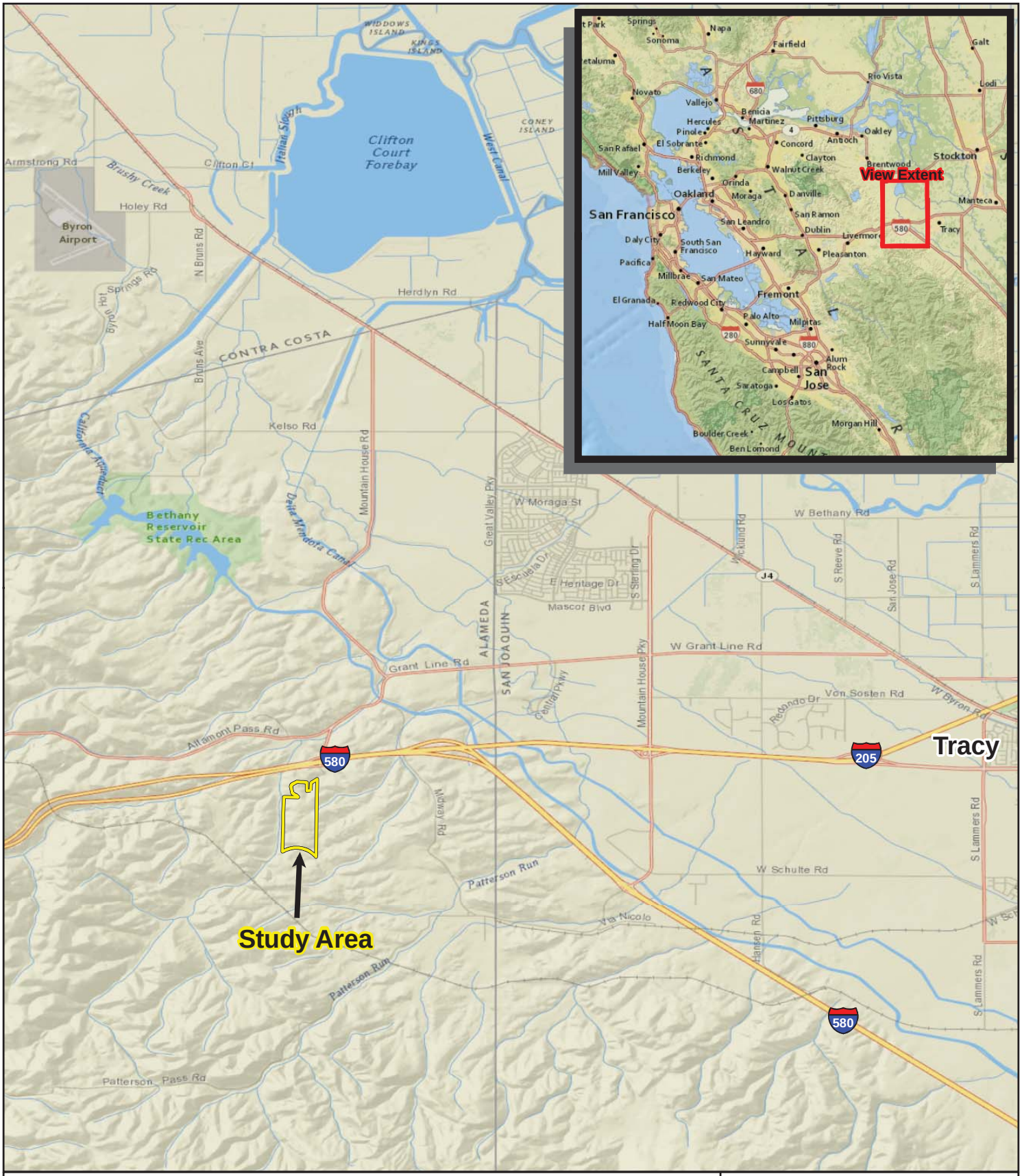

Figure 1. Study Area Location Map

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Miles

wra
ENVIRONMENTAL CONSULTANTS

Jess Ranch Biological Resource Assessment
Alameda County, California

Map Prepared Date: 2/19/2016
Map Prepared By: MRochelle
Base Source: Esri, National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\15000\15021-2\GIS\ArcMap\Location.mxd

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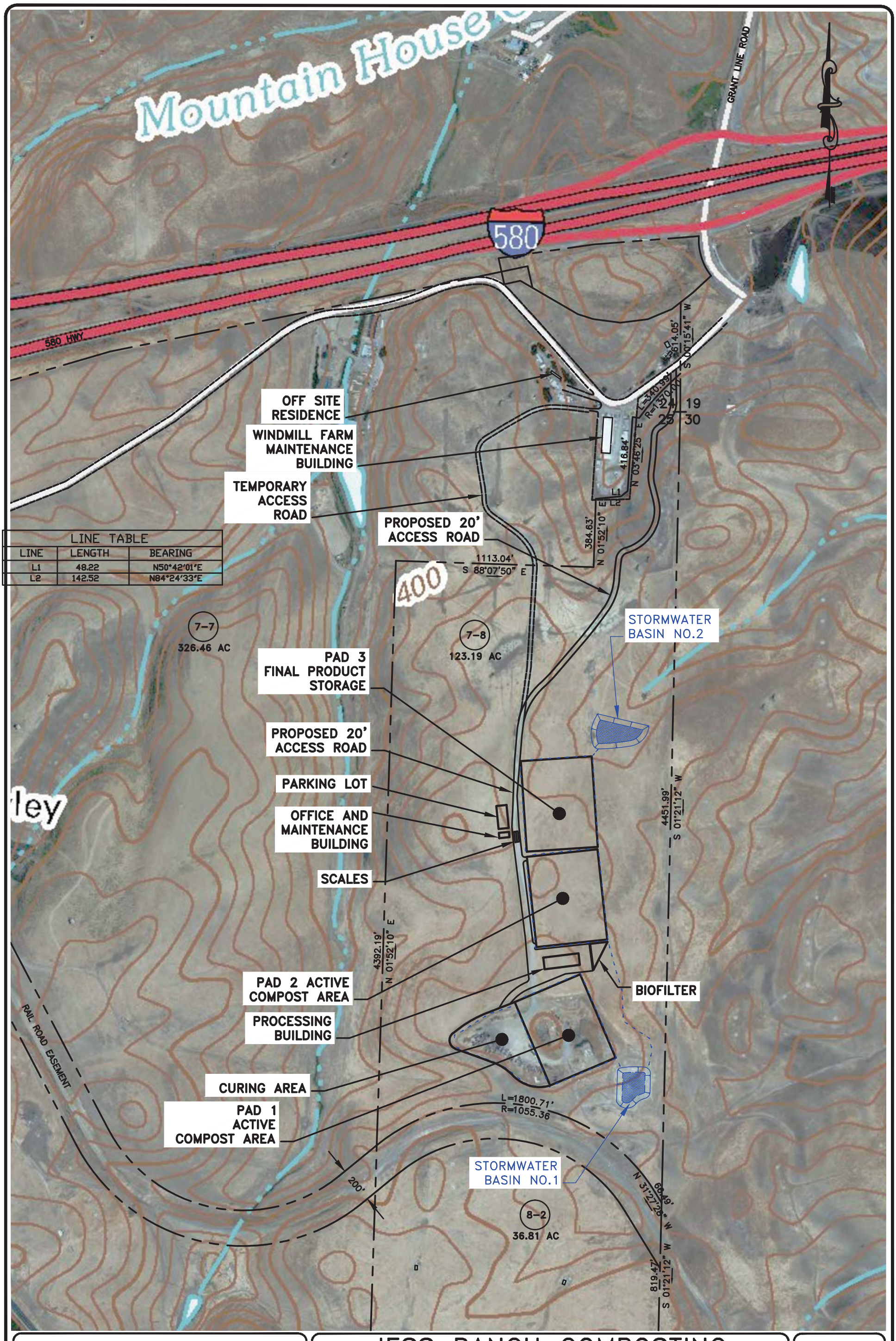

JESS RANCH COMPOSTING
LIVERMORE, CALIFORNIA

CONCEPTUAL PLAN

FIGURE **2**

402-1.1 PROJECT NO.

Waters of the U.S.

The U.S. Army Corps of Engineers (Corps) regulates "Waters of the U.S." under Section 404 of the Clean Water Act. Waters of the U.S. are defined in the Code of Federal Regulations (CFR) as waters susceptible to use in commerce, including interstate waters and wetlands, all other waters (intrastate waterbodies, including wetlands), and their tributaries (33 CFR 328.3). Potential wetland areas, according to the three criteria used to delineate wetlands as defined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), are identified by the presence of (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology. Areas that are inundated at a sufficient depth and for a sufficient duration to exclude growth of hydrophytic vegetation are subject to Section 404 jurisdiction as "other waters" and are often characterized by an ordinary high water mark. Other waters, for example, generally include lakes, rivers, and streams. The placement of fill material into Waters of the U.S generally requires an individual or nationwide permit from the Corps under Section 404 of the Clean Water Act.

Waters of the State

The term "Waters of the State" is defined by the Porter-Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state." The Regional Water Quality Control Board (RWQCB) protects all waters in its regulatory scope and has special responsibility for wetlands, riparian areas, and headwaters. These waterbodies have high resource value, are vulnerable to filling, and are not systematically protected by other programs. RWQCB jurisdiction includes "isolated" wetlands and waters that may not be regulated by the Corps under Section 404. Waters of the State are regulated by the RWQCB under the State Water Quality Certification Program which regulates discharges of fill and dredged material under Section 401 of the Clean Water Act and the Porter-Cologne Water Quality Control Act. Projects that require a Corps permit, or fall under other federal jurisdiction, and have the potential to impact Waters of the State, are required to comply with the terms of the Water Quality Certification determination. If a proposed project does not require a federal permit, but does involve dredge or fill activities that may result in a discharge to Waters of the State, the RWQCB has the option to regulate the dredge and fill activities under its state authority in the form of Waste Discharge Requirements.

Streams, Lakes, and Riparian Habitat

Streams and lakes, as habitat for fish and wildlife species, are subject to jurisdiction by the CDFW under Sections 1600-1616 of California Fish and Game Code (CFGC). Alterations to or work within or adjacent to streambeds or lakes generally require a 1602 Lake and Streambed Alteration Agreement. The term "stream", which includes creeks and rivers, is defined in the California Code of Regulations (CCR) as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life [including] watercourses having a surface or subsurface flow that supports or has supported riparian vegetation" (14 CCR 1.72). In addition, the term "stream" can include ephemeral streams, dry washes, watercourses with subsurface flows, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife (CDFG 1994). "Riparian" is defined as "on, or pertaining to, the banks of a stream." Riparian vegetation is defined as "vegetation which occurs in and/or adjacent to a stream and is dependent on, and occurs because of, the stream itself" (CDFG 1994). Removal of riparian vegetation also requires a Section 1602 Lake and Streambed Alteration Agreement from the CDFW.

Other Sensitive Biological Communities

Other sensitive biological communities not discussed above include habitats that fulfill special functions or have special values. Natural communities considered sensitive are those identified in local or regional plans, policies, regulations, or by the CDFW. The CDFW ranks sensitive communities as "threatened" or "very threatened" and keeps records of their occurrences in its California Natural Diversity Database (CNDDB; CDFW 2015a). Sensitive plant communities are also identified by the CDFW (CNPS 2015a, CDFW 2015b). CNDDB vegetation alliances are ranked 1 through 5 based on NatureServe's (2010) methodology, with those alliances ranked globally (G) or statewide (S) as 1 through 3 considered sensitive. Impacts to sensitive natural communities identified in local or regional plans, policies, or regulations or those identified by the CDFW or U.S. Fish and Wildlife Service (USFWS) must be considered and evaluated under CEQA (CCR Title 14, Div. 6, Chap. 3, Appendix G). Specific habitats may also be identified as sensitive in city or county general plans or ordinances.

East Alameda County Conservation Strategy

The Study Area is located in Conservation Zone 10 of the East Alameda County Conservation Strategy (EACCS; ICF 2010). The EACCS is intended to provide an effective framework to protect, enhance, and restore natural resources in eastern Alameda County, while improving and streamlining the environmental permitting process for impacts resulting from infrastructure and development projects. The City of Livermore is a partner in the EACCS and uses the document to provide a baseline inventory of biological resources and conservation priorities during project-level planning and environmental permitting. The EACCS includes provisions for “focal species”—species that are protected under federal and state laws. The goal is to protect and enhance the habitats of these species. Although the EACCS is a framework for guidance by regulatory agencies and does not include incidental take permits for threatened or endangered species similar to those provided by a Habitat Conservation Plan, the USFWS issued a Programmatic Biological Opinion in 2012 for Corps permitted projects utilizing the EACCS (Corps File No.: 2011-00230S). The Programmatic Biological Opinion offers a streamlined permitting process with the USFWS for projects considered suitable to be appended.

2.2 Special-Status Species

Special-status species include those plants and wildlife 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. In addition, CDFW Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, CDFW California Fully Protected species, USFWS Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although these aforementioned species generally have no special legal status, they are given special consideration under CEQA. 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 are considered under CEQA. In addition to regulations for special-status species, most birds in the United States, including non-special-status native species, are protected by the Migratory Bird Treaty Act of 1918 (MBTA) and the CFGC, i.e., sections 3503, 3503.5 and 3513. Under these laws,

destroying active bird nests, eggs, and/or young is illegal. EACCS Focal Species are also considered special-status.

Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under CEQA. Rank 3 and Rank 4 species are afforded little or no protection under CEQA but are included in this analysis for completeness. A description of the Ranks is provided below in Table 1.

Table 1. Description of California Rare Plant Ranks and Threat Codes

California Rare Plant Ranks (formerly known as CNPS Lists)	
Rank 1A	Presumed extirpated in California and either rare or extinct elsewhere
Rank 1B	Rare, threatened, or endangered in California and elsewhere
Rank 2A	Presumed extirpated in California, but more common elsewhere
Rank 2B	Rare, threatened, or endangered in California, but more common elsewhere
Rank 3	Plants about which more information is needed - A review list
Rank 4	Plants of limited distribution - A watch list
Threat Ranks	
0.1	Seriously threatened in California
0.2	Moderately threatened in California
0.3	Not very threatened in California

Critical Habitat

Critical habitat is a term defined in the ESA as a specific geographic area that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. The ESA requires federal agencies to consult with the USFWS to conserve listed species on their lands and to ensure that any activities or projects they fund, authorize, or carry out will not jeopardize the survival of a threatened or endangered species. In consultation for those species with critical habitat, federal agencies must also ensure that their activities or projects do not adversely modify critical habitat to the point that it will no longer aid in the species' recovery. In many cases, this level of protection is similar to that already provided to species by the ESA jeopardy standard. However, areas that are currently unoccupied by the species but which are needed for the species' recovery are protected by the prohibition against adverse modification of critical habitat.

3.0 METHODS

On November 11, 2015, the Study Area was traversed on foot to determine (1) biological communities present within the Study Area, (2) if existing conditions provided suitable habitat for any special-status plant or wildlife species, and (3) if sensitive habitats are present. In addition, a wetland delineation occurred in the Study Area on February 5, 2016, and observations made during this visit have been incorporated into the biological resource assessment. All plant and wildlife species encountered were recorded and are summarized in Appendix A. Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2015), except where noted. Because of recent changes in classification for many of the taxa treated by Baldwin et al. and the Jepson Flora Project, relevant synonyms are provided in

brackets. For cases in which regulatory agencies, CNPS, or other entities base rarity on older taxonomic treatments, precedence was given to the treatment used by those entities.

3.1 Biological Communities

Prior to the site visit, an online soil survey of the Study Area (CSRL 2015), a previous wetland delineation report and rare plant survey report encompassing the Study Area (Monk & Associates 2008a and 2008b), and aerial imagery (Google Earth 2015) were examined to determine if any unique soil types that could support sensitive plant communities and/or aquatic features were present in the Study Area. Biological communities present in the Study Area were mapped and classified based on a combination of existing plant community descriptions provided in *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986) and *A Manual of California Vegetation, Online Edition* (CNPS 2015a). Holland classifies more often in broader, habitat-level descriptions than those in *A Manual of California Vegetation, Online Edition*, which typically provides narrower classifications based on individual species or small groups of species. Although the CDFW uses Natural Community descriptions used in *A Manual of California Vegetation, Online Edition*, it also follows habitat descriptions used by Holland, such as freshwater marsh. Biological communities were classified as sensitive or non-sensitive as defined by CEQA and other applicable laws and regulations.

3.1.1 Non-sensitive Biological Communities

Non-sensitive biological communities are those communities that are not afforded special protection under CEQA and other state, federal, and local laws, regulations and ordinances. These communities may, however, provide suitable habitat for some special-status plant or wildlife species and are identified or described in Section 4.1.1 below.

3.1.2 Sensitive Biological Communities

Sensitive biological communities are defined as those communities that are given special protection under CEQA and other applicable federal, state, and local laws, regulations and ordinances. Applicable laws and ordinances are discussed above in Section 2.0. Special methods used to identify sensitive biological communities are discussed below.

<u>Wetlands and Waters</u>

A wetland delineation that included the Study Area was conducted in 2008 by Monk & Associates and confirmed by the Corps on April 10, 2009 (Corps File No.: SPK 2008-0139). This Corps verification expired in 2014. On February 5, 2016, WRA conducted a routine wetland delineation in the Study Area to determine the presence of any wetland or non-wetland waters features potentially subject to jurisdiction by the Corps, RWQCB, or CDFW. The methods used in this study were based on the *U.S. Army Corps of Engineers Wetlands Delineation Manual* ("Corps Manual"; Environmental Laboratory 1987, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Corps 2008a), and *A Field Guide to Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the United States* (Corps 2008b). The routine method for wetland delineation described in the Corps Manual was used to identify areas potentially subject to Corps Section 404 jurisdiction within the Study Area. The findings of this wetland delineation were incorporated in this biological resource assessment to help determine which biological communities are present in the Study Area.

Other Sensitive Biological Communities

The Study Area was evaluated for the presence of other sensitive biological communities, including riparian areas, sensitive plant communities recognized by the CDFW and EACCS. Prior to the site visit, aerial photographs (Google Earth 2015), local soil maps (CSRL 2015), and *A Manual of California Vegetation, Online Edition* (CNPS 2015a) were reviewed to assess the potential for sensitive biological communities to occur in the Study Area. These communities are described in Section 4.1.2 below.

3.2 Special-Status Species

3.2.1 Literature Review

Potential occurrence of special-status species in the Study Area was evaluated by first determining which special-status species occur in the vicinity of the Study Area through a literature and database search. Database searches for known occurrences of special-status species focused on the Midway 7.5 minute U.S. Geological Survey (USGS) quadrangle and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special-status plant and wildlife species have been documented to occur in the vicinity of the Study Area:

- California Natural Diversity Database (CNDDB) records (CDFW 2015a)
- USFWS species lists (USFWS 2015a)
- CNPS Inventory records (CNPS 2015b)
- CDFG publication "California's Wildlife, Volumes I-III" (Zeiner et al. 1990)
- CDFG publication "California Bird Species of Special Concern" (Shuford and Gardali 2008)
- CDFG publication "Amphibians and Reptile Species of Special Concern in California" (Jennings and Hayes 1994)
- Alameda County Breeding Bird Atlas (Richmond et al. 2011)
- A Field Guide to Western Reptiles and Amphibians (Stebbins 2003)
- Fairy Shrimps of California's Puddles, Pools and Playas (Eriksen and Belk 1999)
- East Alameda County Conservation Strategy (ICF 2010)

3.2.2 Site Assessment

A site visit was made to the Study Area to search for suitable habitats for special-status species. Habitat conditions observed in the Study Area were used to evaluate the potential for presence of special-status species based on these searches and the professional expertise of the investigating biologists. The potential for each special-status species to occur in the Study Area and more specifically within the Project Area was then evaluated according to the following criteria:

- No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).
- Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found on the site.

- Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.
- High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.
- Present. Species is observed on the site or has been recorded (i.e. CNDDB, other reports) on the site recently.

The site assessment is intended to identify the presence or absence of suitable habitat for each special-status species known to occur in the vicinity in order to determine its potential to occur in the Study Area. The site visit does not constitute a protocol-level survey and is not intended to determine the actual presence or absence of a species; however, if a special-status species is observed during the site visit, its presence will be recorded and discussed.

In cases where little information is known about species occurrences and habitat requirements, the species evaluation was based on best professional judgment of WRA biologists with experience working with the species and habitats. If necessary, recognized experts in individual species biology were contacted to obtain the most up to date information regarding species biology and ecology.

If a special-status species was observed during the site visit, its presence was recorded and is discussed below in Section 4.2. For some species, a site assessment visit 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. In these cases, a species may be assumed to be present or further protocol-level special-status species surveys may be necessary. Special-status species for which further protocol-level surveys may be necessary are described below in Section 5.0.

4.0 RESULTS

The Study Area is located in eastern Alameda County in the foothills of the Altamont Pass. Cattle grazing lands are present to the east and south the Study Area; cattle grazing land and an unnamed tributary to Mountain House Creek are present to the west of the Study Area; and a windmill maintenance facility and I-580 are present north of the Study Area. A wind turbine is present 0.1 mile northwest of the Study Area. Vegetation on the majority of the site can be characterized as California annual grassland and dense mustard. Elevations of the Study Area range from 330 to 480 feet. The Study Area is used for cattle grazing and a portion has been previously used for biosolids placement to improve cattle forage. Soils in the central Study Area and comprising a majority of the Project Area have been tilled annually for several years prior to placement of biosolids. Three berms have also been built at the heads of drainages within the Study Area to capture and filter runoff; these catchments were constructed as part of the Waste Discharge Requirements by the RWQCB and are therefore not considered potentially jurisdictional features. Power lines are present in the northern portion of the Study Area. A north-south oriented dirt road traverses the length of the Study Area. The following sections present the results and discussion of the biological assessment within the Study Area.

4.1 Biological Communities

Table 2 summarizes the area of each biological community type observed in the Study Area. Non-sensitive biological communities in the Study Area include mustard and ruderal/developed. Three sensitive biological communities are found in the Study Area: California annual grassland, ephemeral drainage, and swale. Descriptions for each biological community are contained in the following sections. Biological communities within the Study Area are shown in Figure 3.

Table 2. Summary of Biological Communities in the Study Area

Community Type	**Area (acres)**
Mustard	50.51
Ruderal/Developed	11.87
California annual grassland	75.18
Potentially Jurisdictional "Waters of the U.S." and "Waters of the State"	
Ephemeral drainage	0.01
Seasonal wetland	0.02
Total Study Area Size	**137.59**

4.1.1 Non-Sensitive Biological Communities

Mustard

One or more non-native mustard (Brassicaceae) species form stands in much of California, including the coast, the Central Valley, the Sierra Nevada, and the Sonoran Desert. Mustard stands often occur in disturbed areas but may also occur in wildland settings (CNPS 2015a). Such stands are classified as upland mustards (*Brassica nigra* and other mustards Herbaceous Semi-Natural Alliance) by *A Manual of California Vegetation, Online Edition* (CNPS 2015a). In the Study Area, the mustard community is present in the central and eastern portions, primarily in areas that have been tilled and had biosolids applied to them, although it has expanded outside of such areas to a limited degree. A dirt road is present in part of this community. In addition, two of the small, bermed catchments described above are present in California annual grassland. These features appear to retain water longer than the surrounding areas, but the duration appears to be brief, and the plant composition does not differ greatly from the surrounding plant community. The mustard community is composed primarily of dense black mustard (*Brassica nigra*). Other plant species observed in this community include London rocket (*Sisymbrium* irio), foxtail barley (*Hordeum murinum*), and ripgut brome (*Bromus diandrus*). Wildlife species observed in mustard stand portions of the Study Area include house finch (*Haemorhous mexicanus*) and mourning dove (*Zenaida macroura*).

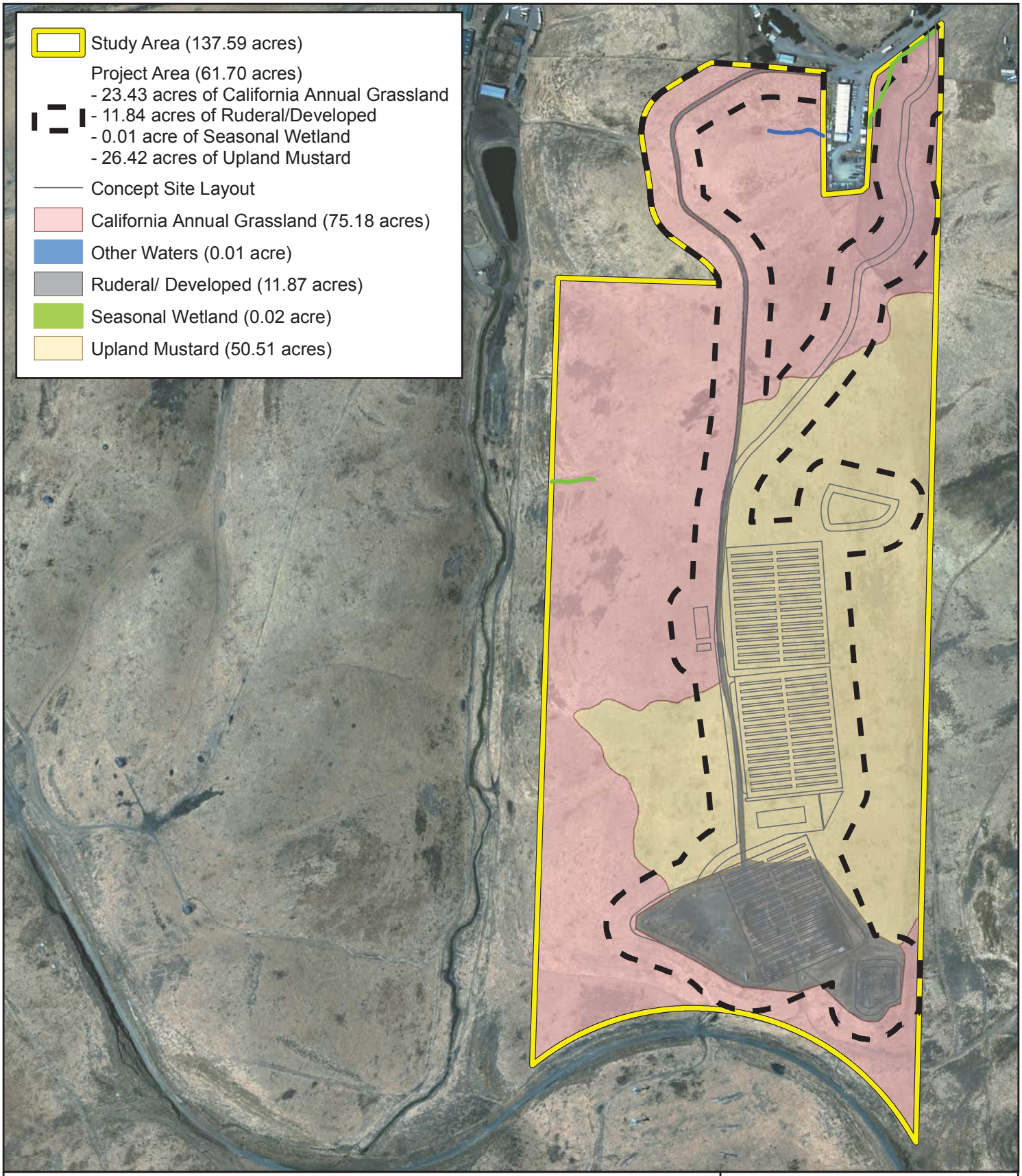

Figure 3. Biological Communities, Concept Site Layout, and Project Area Impacts

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ENVIRONMENTAL CONSULTANTS

Jess Ranch Biological Resource Assessment
Alameda County, California

Map Prepared Date: 3/15/2016
Map Prepared By: MRochelle
Base Source: USGS EROS Imagery
Data Source(s): WRA

Path: L:\Acad 2000 Files\15000\15021-2\GIS\ArcMap\BioComm Impacts.mxd

Ruderal/developed

Ruderal/developed areas are areas that have been partially developed or have been significantly disturbed in some way. In the Study Area, the ruderal/developed community is located near the southern boundary, in an area that is a storage area for fill and truck trailers (Monk and Associates 2008a) and is regularly disturbed. Because of this regular disturbance, the vegetation is often sparse and is typically composed of non-native annual species such as Italian thistle (*Carduus pycnocephalus*), Russian thistle (*Salsola australis*), dooryard knotweed (*Polygonum aviculare*), and foxtail barley. Wildlife species observed in ruderal and disturbed portions of the Study Area include side-blotched lizard (*Uta stansburiana*), Bewick's wren (*Thryomanes bewickii*), house finch, and mourning dove.

4.1.2 Sensitive Biological Communities

California annual grassland

California annual grassland typically occurs in open areas of valleys and foothills throughout California, except in the north coastal and desert regions, usually on fine textured clay or loam soils that are somewhat poorly drained (Holland 1986). California annual grassland is typically dominated by non-native annual grasses and forbs along with scattered native wildflowers. This community is not considered sensitive by the USFWS, CDFW, or other federal or state organizations. However, it is considered sensitive under the EACCS which has the conservation goal to protect and enhance this community type, which can "benefit focal species and promote native biodiversity." California annual grassland is present in the southern, western, and northern portions of the Study Area, where tilling and fertilization does not occur. A dirt road is present in the central and northern portions of this community. In addition, one of the small, bermed catchments described above is present in California annual grassland. This feature appears to retain water longer than the surrounding areas, but the duration appears to be brief, and the plant composition does not differ greatly from the surrounding plant community. Plant species observed in California annual grassland include slender oat (*Avena barbata*), ripgut brome, soft chess (*B. hordeaceus*), and foxtail barley. Wildlife species observed in this community in the Study Area include northern harrier (*Circus cyaneus*), horned lark (*Eremophila alpestris*), and western meadowlark (*Sturnella neglecta*).

Potentially jurisdictional Waters of the U.S. and Waters of the State

Ephemeral drainage

An ephemeral drainage typically exhibiting flow only during and immediately following precipitation events was observed in the Study Area. This ephemeral drainage occurrs on a steep slope in the northwestern portion of the Study Area in an obvious topographic draw that drains a cattle pond. Plant species observed in the ephemeral drainage include Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), Italian rye grass (*Festuca perennis*), and dooryard knotweed. Though plant cover was observed as being greater than 5% during the site visit(s), this feature shows typical conditions of ephemeral non-wetland drainages, characterized by a slight meander pattern and a narrow channel that exhibits sediment sorting and rill erosion. No wildlife species were observed in the ephemeral drainage portion of the Study Area.

Seasonal wetland

Two seasonal wetland features were observed in the Study Area. One occurs in a linear depression on a steep slope in the western portion of the Study Area. The other occurs in the northeastern portion of the Study Area. The upper portion of this feature is narrower and located on a steep slope, while the lower portion is shallower and broader as the slope becomes gentler. Seasonal wetlands were densely vegetated and dominated by non-native annual weltand species including Italian rye grass, Mediterranean barley, and annual bluegrass (*Poa annua*). No wildlife species were observed in the seasonal wetland portions of the Study Area.

4.2 Special-Status Species

4.2.1 Plants

Based upon a review of the resources and databases given in Section 3.2.1, 60 special-status plant species have been documented in the vicinity of the Study Area. Species documented in the CNDDB (CDFW 2015a) within 5 miles of the Study Area are shown in Figure 4. The Study Area has a moderate potential to support nine of these species. Appendix B summarizes the potential for occurrence for each special-status plant species occurring in the vicinity of the Study Area. No special-status plant species were observed in the Study Area during the assessment site visit however, this timing of this visit was not adequate to determine presence/absence of these species. No special-status plant species have a high potential to occur in the Study Area, and ten special-status plant species have a moderate potential to occur in the Study Area, including the Project Area. The remaining species documented to occur in the vicinity of the Study Area are unlikely or have no potential to occur. Special-status plant species that are most likely (high or moderate potential) to occur in the Study Area are discussed below.

Large-flowered fiddleneck (*Amsinckia grandiflora*), Federal Endangered, State Endangered, Rank 1B.1. Moderate Potential. Large-flowered fiddlneck is an annual forb in the forget-me-not family (Boraginaceae) that blooms from April to May. It typically occurs in open areas within cismontane woodland and valley and foothill grassland underlain by various soil types at elevations ranging from 900 to 1800 feet (CDFW 2015a, CNPS 2015b). Typical observed associated species include soft chess (*Bromus hordeaceus*), bristly fiddleneck (*Amsinckia tessellata*), wild oat (*Avena fatua*), slender phlox (*Microsteris gracilis*), sliver bush lupine (*Lupinus albifrons*), blue oak (*Quercus douglasii*), and California juniper (*Juniperus californica*) (CDFW 2015a).

Large-flowered fiddleneck is known from five USGS 7.5-minute quadrangles in Alameda, Contra Costa, and San Joaquin counties (CNPS 2015b). It has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat. Potential is considered moderate because the nearest CNDDB occurrence record of this species is greater than 5 miles to the south of the Study Area, and none of the native tree and herbaceous species typically associated with this species are present on-site. Only the more widespread associated species such as soft chess have been observed in the Study Area.

Bent-flowered fiddleneck (*Amsinckia lunaris*), Rank 1B.2. Moderate Potential. Bent-flowered fiddleneck is an annual forb in the forget-me-not family (Boraginaceae) that blooms from March to June. It typically occurs in open areas within cismontane woodland, valley and foothill grassland, and coastal bluff scrub habitat often underlain by clay substrate at elevations ranging from 10 to 1625 feet (CDFW 2015a, CNPS 2015b, Jepson Flora Project 2015).

Species typically observed growing with bent-flowered fiddleneck include coast live oak, blue oak (*Quercus douglasii*), California juniper (*Juniperus californicus*), buck brush (*Ceanothus cuneatus*), poison oak, miniature lupine (*Lupinus bicolor*), foothill lotus (*Acmispon brachycarpus*), calf lotus (*A. wrangelianus*), fringe pod (*Thysanocarpus curvipes*), q-tips (*Micropus californicus*), cream cups (*Platystemon californicus*), slender tarweed (*Madia gracilis*), common yarrow (*Achillea millefolium*), goldenback fern (*Pentagramma triangularis*), one-sided bluegrass (*Poa secunda*), woolly sunflower (*Eriophyllum lanatum*), and slender wild oat (*Avena barbata*) (CDFW 2015a).

Bent-flowered fiddleneck is known from 38 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Lake, Marin, Napa, San Benito, Santa Clara, Santa Cruz, San Mateo, and Yolo counties (CNPS 2015b). It has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat and clay substrate. Potential for occurrence is considered moderate because the nearest occurrence of this species is greater than 3 miles west of the Study Area (Calflora 2015), and none of the native tree and herbaceous species typically associated with this species are present on-site. Only the more widespread associated species such as slender wild oat have been observed in the Study Area.

California androsace (*Androsace elongata* ssp. *acuta*), Rank 4.2. Moderate Potential. California androsace is an annual forb in the primrose family (Primulaceae) that blooms from March to June. It typically occurs in chaparral, cismontane woodland, coastal sage scrub, and valley and foothill grassland habitat at elevations ranging from 485 to 3900 feet (CNPS 2015b). Observed associated species include blue oak (*Quercus douglasii*), scrub oak (*Q. berberidifolia*), California buckwheat (*Eriogonum fasciculatum*), common sandaster (*Corethrogyne filaginifolia*), red stemmed filaree, hill sun cup (*Tetrapteron graciliflorum*), dwarf lupine (*Lupinus bicolor*), interior goldenbush (*Ericameria linearifolia*), bromes (*Bromus* spp.), and variable linanthus (*Leptosiphon parviflorus*).

California androsace is known from 60 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, Fresno, Glenn, Kern, Los Angeles, Merced, Riverside, San Bernardino, San Benito, Santa Clara, San Diego, San Joaquin, San Luis Obispo, San Mateo, Siskiyou, Stanislaus, and Tehama counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat. Potential for occurrence is considered moderate because none of the native tree and herbaceous species typically associated with this species are present on-site and only the more widespread associated species such as slender wild oat have been observed in the Study Area.

Round-leaved filaree (*California macrophylla*), Rank 1B.2. Moderate Potential. Round-leaved filaree is an annual forb in the geranium family (Geraniaceae) that blooms from March to May. It typically occurs on clay to loamy clay substrates in cismontane woodland, and valley and foothill grassland habitat at elevations ranging from 50 to 3900 feet (CDFW 2015a, CNPS 2015b). Observed associated species include coast live oak (*Quercus agrifolia*), shiny pepperweed (*Lepidium nitidum*), blue dicks (*Dichelostemma capitatum*), fiddleneck (*Amsinckia menziesii*), tomcat clover (*Trifolium willdenovii*), showy madia (*Madia radiata*), one-sided bluegrass (*Poa secunda*), and wild parsley (*Apiastrum angustifolium*) (CDFW 2015a).

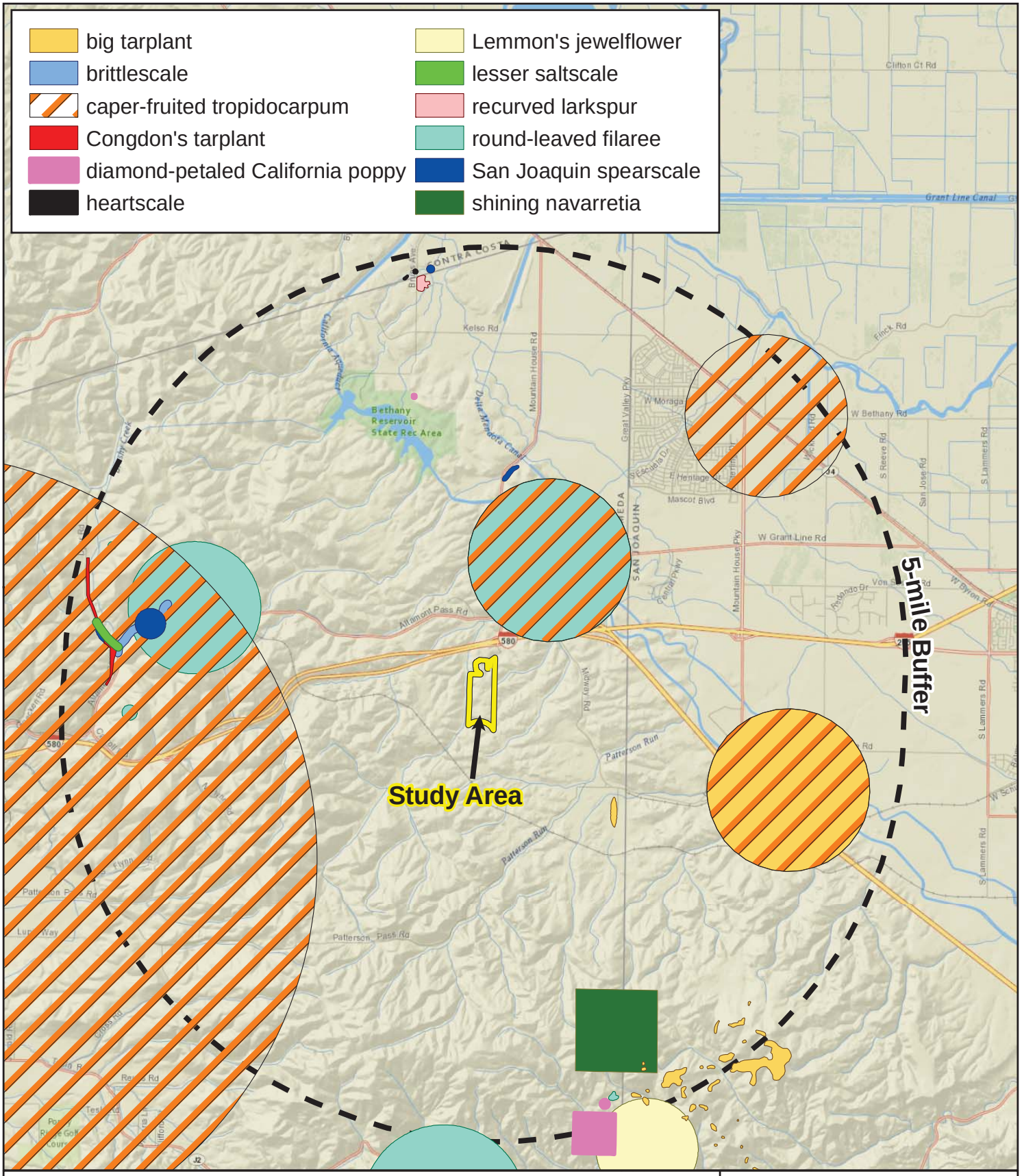

Figure 4. Special Status Plant Occurrences within 5-miles of the Study Area

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Miles

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ENVIRONMENTAL CONSULTANTS

Jess Ranch Biological Resource Assessment
Alameda County, California

Map Prepared Date: 2/19/2016
Map Prepared By: MRochelle
Base Source: Esri, National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\15000\15021-2\GIS\ArcMap\CNDDB Plants.mxd

Round-leaved filaree is known from 123 USGS 7.5-minute quadrangles in Alameda, Butte, Contra Costa, Colusa, Fresno, Glenn, Kings, Kern, Lake, Los Angeles, Merced, Monterey, Napa, Riverside, Santa Barbara, San Benito, Santa Clara, San Diego, San Joaquin, San Luis Obispo, San Mateo, Solano, Sonoma, Stanislaus, Tehama, Tulare, Ventura, and Yolo counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of suitable grassland habitat on clay substrate. Potential for occurrence is considered moderate because the nearest CNDDB occurrence record of this species is greater than 4 miles west of the Study Area and none of the native tree and only one of the herbaceous species typically associated with this species are present on-site.

Lemmon's jewelflower (*Caulanthus lemmonii*), Rank 1B.2. Moderate Potential. Lemmon's jewelflower is an annual forb in the mustard family (Brassicaceae) that blooms from February to May. It typically occurs within openings in pinyon and juniper woodland and valley and foothill grassland at elevations ranging from 260 to 4000 feet (CDFW 2015a, CNPS 2015b). Observed associated species include creeping wild rye (*Elymus triticoides*), ripgut brome, red brome (*Bromus madritensis* ssp. *rubens*), red stemmed filaree (*Erodium cicutarium*), California poppy (*Eschscholzia californica*), California buckwheat (*Eriogonum fasciculatum*), bristly fiddleneck, one-sided bluegrass, small wirelettuce (*Stephanomeria exigua*), snake's head (*Malacothrix coulteri*), singleleaf pinyon pine (*Pinus monophylla*), and California juniper (CCH 2015).

Lemmon's jewelflower is known from 61 USGS 7.5-minute quadrangles in Alameda, Fresno, Kings, Kern, Merced, Monterey, Santa Barbara, San Benito, San Joaquin, San Luis Obispo, Stanislaus, and Ventura counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat. Potential for occurrence is considered moderate because the nearest CNDDB occurrence record of this species is greater than 5 miles south of the Study Area, and none of the native tree or herbaceous species typically associated with this species have been observed in the Study Area.

Diamond-petaled California poppy (*Eschscholzia rhombipetala*), Rank 1B.1. Moderate Potential. Diamond-petaled California poppy is an annual forb in the poppy family (Papaveraceae) that blooms from March to April. It typically occurs in valley and foothill grassland on alkaline, clay substrates at elevations ranging from 0 to 3200 feet (CDFW 2015a, CNPS 2015b). Observed associated species include red stemmed filaree, bur clover (*Medicago polymorpha*), red maids (*Calandrinia menziesii*), Italian ryegrass (*Festuca perennis*), milk thistle (*Silybum marianum*), one-sided bluegrass, bromes (*Bromus* spp.), bugloss fiddleneck (*Amsinckia lycopsoides*), and annual phlox (CDFW 2015a).

Diamond-petaled California poppy is known from 14 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Colusa, San Joaquin, San Luis Obispo, and Stanislaus counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland on alkaline, clay substrate. Potential for occurrence is considered moderate because the nearest CNDDB occurrence record of this species is greater than 3 miles north of the Study Area and none of the native herbaceous species typically associated with this species have been observed in the Study Area.

Stinkbells (*Fritillaria agrestis*). Rank 4.2. Moderate Potential. Stinkbells is a bulbiferous perennial forb in the lily family (Liliaceae) that blooms from March to June. It typically occurs on clay soils, often derived from serpentine, in grassy areas, occasionally near vernal pools, within cismontane woodland, chaparral, pinyon and juniper woodland, and valley and foothill grassland habitat at elevations ranging from 30 to 5055 feet (CDFW 2015a, CNPS 2015b). This species is

a facultative plant (Lichvar et al. 2014) but has no vernal pool indicator status (Keeler-Wolf et al. 1998). Observed associated species include ripgut brome (*Bromus diandrus*), soft chess (*B. hordeaceus*), Italian rye grass (*Festuca perennis*), and fillarees (*Erodium* spp.) (CDFW 2015a).

Stinkbells is known from 33 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Fresno, Kern, Mariposa, Mendocino, Merced, Monterey, Placer, Sacramento, Santa Barbara, San Benito, Santa Clara, Santa Cruz, San Luis Obispo, San Mateo, Stanislaus, Tuolumne, Ventura, and Yuba counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat on clay substrate. Potential for occurrence is considered moderate because the Study Area does not contain serpentine substrate, the nearest documented occurrence is approximately 1 mile north of the Study Area (Calflora 2015).

Showy golden madia (*Madia radiata*), Rank 1B.1. Moderate Potential. Showy golden madia is an annual herb in the sunflower family (Asteraceae) that blooms from March to May. It typically occurs in openings in cismontane woodland and valley and foothill grassland on adobe clay soil at elevations ranging from 80 to 3990 feet (CDFW 2015a, CNPS 2015b). Observed associated species include avena bromus, bristly fiddleneck, shining peppergrass (*Lepidium nitidum*), annual phlox, Great Valley phacelia (*Phacelia ciliata*), wind poppy (*Papaver heterophylla*), miner's lettuce (*Claytonia parviflora*), common monolopia (*Monolopia lanceolata*), Crum's monolopia (*Monolopia stricta*), one-sided bluegrass, red stemmed filaree, red brome, and pale yellow layia (*Layia heterotricha*) (CCH 2015).

Showy golden madia is known from 37 USGS 7.5-minute quadrangles in Contra Costa, Fesno, Kings, Kern, Monterey, Santa Barbara, San Benito, Santa Clara, San Joaquin, San Luis Obispo, and Stanislaus counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat on clay substrate. Potential for occurrence is considered moderate because the nearest CNDDB occurrence record of this species is approximately 8 miles southeast of the Study Area and none of the native herbaceous species typically associated with this species are present on-site.

Caper-fruited tropidocarpum (*Tropidocarpum capparideum*), Rank 1B.1. Moderate Potential. Caper-fruited tropidocarpum is an annual forb in the mustard family (Brassicaceae) that blooms from March to April. It typically occurs on hills in valley and foothill grassland on alkaline, clay substrate at elevations ranging from 0 to 1490 feet (CDFW 2015a, CNPS 2015b). Observed associated species include needle goldfields (*Lasthenia gracilis*), cream cups (*Platystemon californicus*), small fescue (*Festuca microstachys*), soft chess, red maids, red stemmed filaree, long-beaked stork's bill (*Erodium botrys*), valley popcornflower (*Plagiobothrys canescens*), rusty popcornflower (*Plagiobothrys nothofulvus*), slender wild oat, dwarf lupine (*Lupinus nanus*), and yellow star-thistle (*Centaurea solstitialis*) (CCH 2015).

Caper-fruited tropidocarpum is known from 13 USGS 7.5-minute quadrangles in Alameda, Contra Costa, Fresno, Glenn, Monterey, Santa Clara, San Joaquin, and San Luis Obispo counties (CNPS 2015b). This species has potential to occur in the Study Area, including the Project Area, because of the presence of annual grassland habitat on alkaline, clay substrate. Potential for occurrence is considered moderate because there is a CNDDB occurrence record of this species less than 2 miles north of the Study Area, and none of the native herbaceous species typically associated with this species are present on-site.
The site assessment occurred during the blooming period of one of the 10 special-status plant species with a potential to occur in the Study Area; however, this potentially blooming species was not observed.

4.2.2 Wildlife

Fifty-three special-status species of wildlife have been recorded in the vicinity of the Study Area. Appendix B summarizes the potential for each of these species to occur in the Study Area. Species documented in the CNDDB (CDFW 2015a) within 5 miles of the Study Area are shown in Figure 5. Two special-status wildlife species were observed in the Study Area during the site assessment, northern harrier (*Circus cyaneus*) and long-billed curlew (*Numenius americanus*). However, the long-billed curlew does not breed in the region and is unlikely to occur within the Study Area during the breeding season. Three special-status wildlife species have a high potential to occur in the Study Area, and five special-status wildlife species have a moderate potential to occur in the Study Area. A majority of special-status wildlife species are unlikely to occur based upon lack of suitable habitat such as trees, stream, and vernal pool habitats. Special-status wildlife species that were observed, or have a moderate or high potential to occur in the Study Area are discussed below.

San Joaquin kit kox (*Vulpes macrotis mutica*), Federal Endangered, State Threatened, EACCS Focal Species. The San Joaquin kit fox (SJKF) is found in the San Joaquin Valley and in surrounding foothills, from Alameda east to Stanislaus County. It is a desert-adapted species which occurs mainly in arid, flat grasslands, scrublands, and alkali meadows where the vegetation structure is relatively short (generally less than 1.5 feet tall), but may also use an agricultural matrix of row crops, irrigated pastures, orchards, vineyards, and grazed annual grasslands (USFWS 1998). This species uses dens year-round and needs loose-textured soils suitable for burrowing. In San Joaquin, Alameda and Contra Costa Counties, kit foxes now occur primarily in foothill grasslands (Hall 1983, USFWS 1998), valley oak savanna, and alkali grasslands (Bell 1994). Habitats with loose-textured soils (Grinnell et al. 1937, Hall 1946, Egoscue 1962) that are suitable for excavating dens are preferred. The non-native grassland and ruderal/developed habitat in the Study Area are suitable for the SJKF, and grazing by cattle likely maintains grasses at suitable height within these areas. The mustard within the Study Area is not suitable for the SJKF. Burrows of suitable den size and with potential to be used by the SJKF were observed along the edge of the disturbed habitat in the southeastern portion of the Study Area. The potential dens did not appear suitable to be used as natal dens based upon single entrances into the dens. Although no sign of the SJKF was observed at these potential dens, there is a moderate potential for this species to occur in the California annual grassland and ruderal/developed habitats within the Study Area.

American badger (*Taxidea taxus*), CDFW Species of Special Concern, EACCS Focal Species. Badgers occur throughout California in drier open stages of most scrub, forest, and herbaceous habitats, where loose, gravelly soils suitable for burrowing are present, as well as suitable prey populations. Badger prey includes small mammals like ground squirrel, rats, gophers, and mice, which it digs out of the ground using its claws. Badgers have very large home ranges, depending on the habitat available. Density averages one per square mile in prime open country (Long 1973). The California annual grassland habitat in the Study Area provides suitable habitat for badger. Although no potential burrows or sign of badger were observed during the site visit, there is a moderate potential for badger to occur within the non-native grassland in the Study Area because badgers are known in the vicinity and may move into the Study Area.

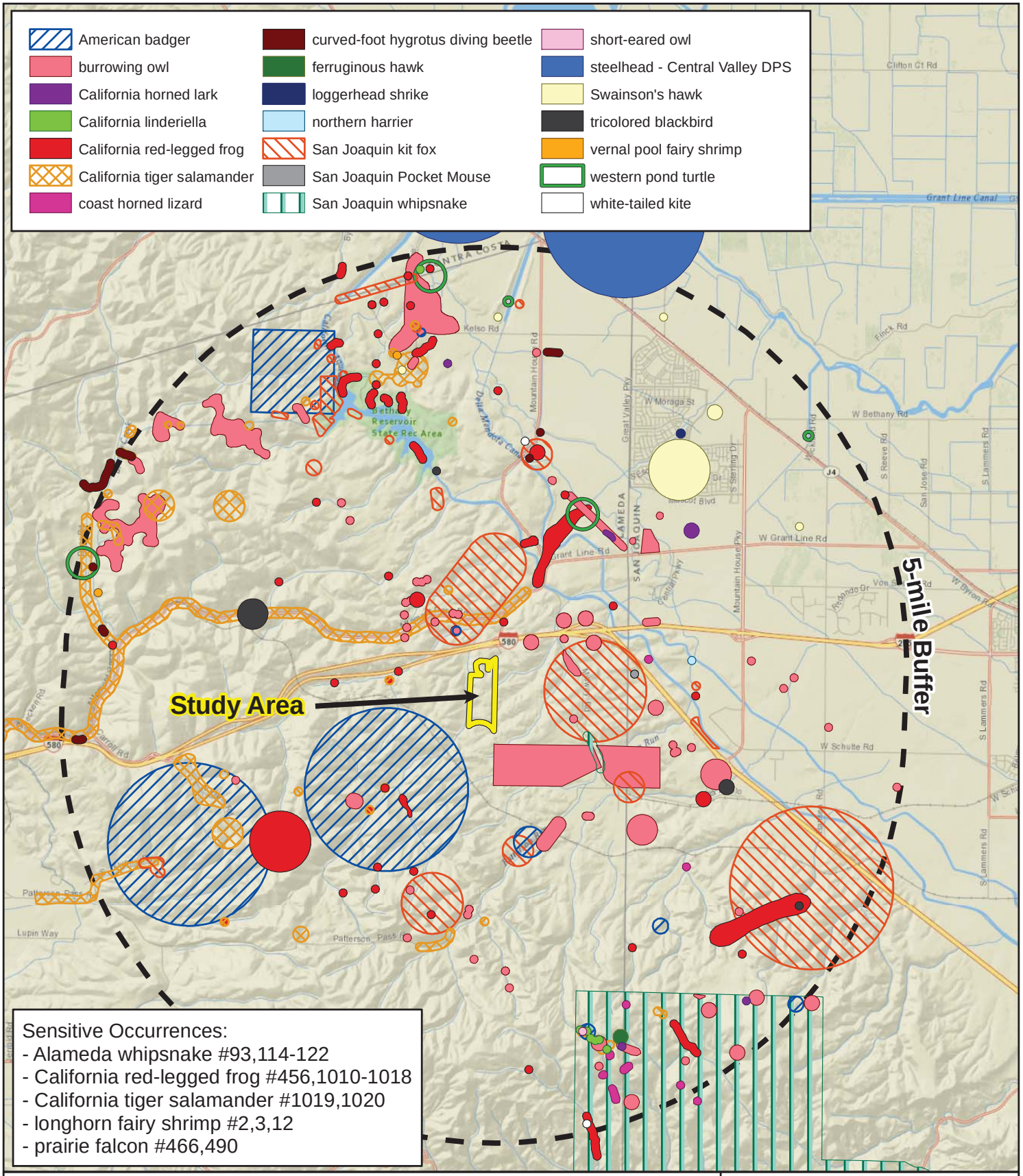

Figure 5. Special Status Wildlife Occurrences within 5-miles of the Study Area

Jess Ranch Biological Resource Assessment
Alameda County, California

0 0.5 1 2
Miles

ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 2/19/2016
Map Prepared By: MRochelle
Base Source: Esri, National Geographic
Data Source(s): WRA

Path: L:\Acad 2000 Files\15000\15021-2\GIS\ArcMap\CNDDB Wildlife.mxd

Northern harrier (*Circus cyaneus*), CDFW Species of Special Concern. The northern harrier occurs as a resident and winter visitor in open habitats throughout most of California, including freshwater and brackish marshes, grasslands and fields, agricultural areas, and deserts. Harriers typically nest in treeless areas within patches of dense, relatively tall, vegetation, the composition of which is highly variable; nests are placed on the ground and often located near water or within wetlands (Davis and Niemala 2008). Harriers are birds of prey and subsist on a variety of small mammals and other vertebrates. The Study Area provides suitable foraging habitat for northern harrier and two were observed foraging during the November 2015 site visit. The California annual grassland may provide suitable nesting habitat; however, suitability is dependent upon level of cattle grazing and heavy grazing will reduce cover and lower the potential for nesting by northern harrier. There is a moderate potential for northern harrier to nest in the California annual grassland within and adjacent to the Study Area in areas with lower grazing intensity.

Burrowing owl (*Athene cunicularia*), CDFW Species of Special Concern, USFWS Bird of Conservation Concern, EACCS Focal Species. The burrowing owl typically favors flat, open grassland or gentle slopes and sparse shrub-land ecosystems. These owls prefer annual or perennial grasslands, typically with sparse or nonexistent tree or shrub canopies; however, they also colonize debris piles and old pipes. Burrowing owls exhibit high site fidelity and usually nest in abandoned burrows of ground squirrels or pocket gophers. Burrowing owls are comparatively easy to see because they are active in daylight, and are often bold and approachable. The California annual grassland and ruderal/developed habitats within the Study Area contain ground squirrels and suitable burrow habitat for burrowing owl. Grazing by cattle may maintain grasses at suitable height throughout the year. Although no definite sign of burrowing owl was observed during the November 2015 site visit, the site visit occurred a few days following a storm event which may have washed away evidence at burrows. Burrowing owl has been documented in the vicinity of the Study Area; therefore, there is a high potential for burrowing owl to occur in the California annual grassland habitat throughout the year.

Loggerhead shrike (*Lanius ludovicianus*). CDFW Species of Special Concern, USFWS Bird of Conservation Concern. The loggerhead shrike is a year-round resident and winter visitor in lowlands and foothills throughout California. This species is associated with open country with short vegetation and scattered trees, shrubs, fences, utility lines and/or other perches. Although they are songbirds, shrikes are predatory and forage on a variety of invertebrates and small vertebrates. Captured prey items are often impaled for storage purposes on suitable substrates, including thorns or spikes on vegetation, and barbed wire fences. Loggerhead shrike nests in trees and large shrubs; nests are usually placed three to ten feet off the ground (Shuford and Gardali 2008). The Study Area contains suitable foraging habitat for the loggerhead shrike, and two trees suitable for nesting are present adjacent to the access road in the northeastern edge of the Study Area. There is a moderate potential for this species to nest in the northeastern corner of the Study Area.

California tiger salamander (*Ambystoma californiense*), Federal Threatened, State Threatened, EACCS Focal Species. The California tiger salamander (CTS) is restricted to grasslands and low-elevation foothill regions in California (generally under 1500 feet) where it uses seasonal aquatic habitats for breeding. This species inhabits valley and foothill grasslands and the grassy understory of open woodlands, usually within 1 mile of water (Jennings and Hayes 1994). The CTS requires two primary habitat components: aquatic breeding sites and upland terrestrial estivation or refuge sites. The salamanders breed in natural ephemeral pools, or ponds that mimic ephemeral pools (stock ponds that go dry), and occupy substantial areas surrounding the breeding pool as adults. Adults migrate from upland habitats to aquatic

breeding sites during the first major rainfall events, between November and February (Shaffer and Fisher 1991, Barry and Shaffer 1994), and return to upland habitats after breeding. Adult CTS spend most of their time underground in upland subterranean refugia. The CTS primarily uses California ground squirrel burrows as upland refuge sites, but can also be found under logs and piles of lumber (Holland et al. 1990, Loredo et al. 1996, Trenham 2001). The Study Area does not contain aquatic habitat for the CTS in most years. Pools resulting from berms installed in drainages within the Study Area to filter runoff do not appear to hold water for sufficient periods for CTS breeding, although one pool in the southeast may hold water for sufficient length in years of high rainfall. Breeding pools are documented approximately 200 feet northwest of the Study Area, and CTS may be present in ground squirrel burrows within the Study Area. Ground squirrel burrows and upland refugia for the CTS are present within the Study Area but extremely limited within the California annual grassland in the Project Area and none present within the mustard habitat. There is a high potential for the CTS to occur in burrows within the California annual grassland habitat in the Study Area and a moderate potential for CTS to occur within California annual grassland habitat or disperse through the Project Area during rain events.

California red-legged frog (*Rana draytonii*), Federal Threatened, CDFW Species of Special Concern, EACCS Focal Species. The California red-legged frog (CRLF) is dependent on suitable aquatic, estivation, and upland habitat. During periods of wet weather, starting with the first rainfall in late fall, red-legged frogs disperse away from their estivation sites to seek suitable breeding habitat. Aquatic and breeding habitat is characterized by dense, shrubby, riparian vegetation and deep, still or slow-moving water. Breeding occurs between late November and late April. California red-legged frogs estivate (period of inactivity) during the dry months in upland habitats typically within 300 feet of aquatic and riparian habitat. Upland habitats are comprised of grasslands, woodlands, and/or vegetation that provide shelter, forage, and predator avoidance including small mammal burrows, moist leaf litter, incised stream channels, and large cracks in the bottom of dried ponds (USFWS 2010). The Study Area does not contain aquatic habitat for the CRLF. Pools resulting from berms installed in drainages within the Study Area to filter biosolids are not of sufficient depth for the CRLF to breed and do not appear to hold water for sufficient length for successful metamorphosis. The nearest potential breeding pool is approximately 200 feet northwest of the Study Area. Ground squirrel burrows and upland refugia for the CRLF are present within the Study Area but are extremely limited within the California annual grassland in the Project Area and none are present within the mustard habitat. There is a high potential for the CRLF to occur in burrows within the California annual grassland habitat in the Study Area and a moderate potential for CRLF to occur within California annual grassland habitat or disperse through the Project Area during rain events. In addition, the Study and Project Areas are within designated Critical Habitat Unit ALA-2 (75 FR 12815-12959).

San Joaquin whipsnake (=coachwhip) (*Masticophis flagellum ruddocki*), CDFW Species of Special Concern. The San Joaquin whipsnake occurs in open, dry, vegetative associations with little or no tree cover. The San Joaquin whipsnake is originally believed to have occurred throughout the Sacramento and San Joaquin Valleys extending into surrounding foothills; however, it is now restricted to unconverted lands and predominantly in the foothills bordering the San Joaquin Valley. It is most common in northeastern Alameda County near the border with San Joaquin County south to Kern County. This species probably requires one or more mammal associates because it uses burrows for refuge and probably for oviposition sites, and may sometimes be dependent on mammals for food (Jennings and Hayes 1994). Although not much is known about the habitat use of the San Joaquin whipsnake, the Study Area contains potentially suitable grassland and burrow refugia within the California annual grassland habitat.

Cattle grazing may assist in maintaining grass at a height suitable for the San Joaquin whipsnake during the spring months. The Study Area is near the western extent of the known range, but there is a moderate potential for San Joaquin whipsnake to occur in the California annual grassland throughout the Study Area.

5.0 POTENTIAL IMPACTS AND MITIGATION

The proposed Project is the construction of a new biosolids composting facility (Figure 2). The facility would receive and process organic materials, primarily greenwaste, foodwaste, and biosolids, as defined below, but would also receive untreated scrap wood, natural fiber products such as rice hulls and straw, non-recyclable paper waste and inert materials such as sediment, gypsum, wood ash and clean construction debris. Non-hazardous liquid wastes may be accepted and used as a substitute for water that would be added for efficient composting. The proposed Project would result in development of a majority of the Study Area. A majority of the Project Area is comprised of mustard and ruderal/developed habitats, which are not considered sensitive habitats under CEQA. California annual grassland is considered a sensitive community under the EACCS, and this community could be impacted by Project activities. The seasonal wetland and ephemeral swale features present in the northern portion of the Project Area are potentially within Corps jurisdiction under Section 404 of the Clean Water Act and under the jurisdiction of the RWQCB under Section 401 of the Clean Water Act and the Porter-Cologne Act. These features may by impacted by Project activities. The Project Area is surrounded by grazed, annual grasslands, and the Project will not completely develop or fence the Project Area; therefore, no significant impacts to wildlife migratory corridors are likely to occur. The mustard and ruderal/developed habitats do not provide suitable habitat for most species, and most special-status species are unlikely to occur in these habitats. However, the California annual grassland provides potential habitat for the following special-status plant species: large-flowered fiddleneck, bent-flowered fiddleneck, California androsace, big tarplant, Lemmon's jewelflower, diamond-petaled California poppy, stinkbells, showy golden madia, and caper-fruited tropidocarpum. Of those nine species, big tarplant is unlikely to occur in the Study Area because it was not observed during two surveys. California annual grassland also provides potential habitat for the following special-status wildlife species: SJKF, American badger, burrowing owl, northern harrier, upland habitats for CTS and CRLF, and San Joaquin whipsnake. The Project does not conflict with the EACCS and will not impact habitat features considered Conservation Priorities for Conservation Zone10. Potentially significant impacts as a result of the Project and mitigation measures are discussed below.

5.1 Potentially Significant Impacts

Sensitive Biological Communities

The proposed Project will impact 23.43 acres of California annual grassland. The EACCS suggests mitigation for impacts to this community. Potential mitigation measures for impacts to California annual grassland are discussed below in Section 5.2.

The proposed Project will result in the fill of 0.01 acres of seasonal wetland to construct a road, which is a potentially significant impact under CEQA. The seasonal wetland feature in the Project Area is potentially within Corps jurisdiction under Section 404 of the Clean Water Act and under the jurisdiction of the RWQCB under the Porter-Cologne Act. Potential mitigation measures for impacts to Corps and RWQCB jurisdictional features are discussed below in

Section 5.2. Incorporation of these mitigation measures in the Project will reduce to these impacts to less than significant.

Special-Status Plant Species

The proposed Project is focused predominantly in mustard and ruderal/developed habitats unsuitable for special-status plant species. However, 23.43 acres of the Project Area contain California annual grassland habitat, in which eight special-status plant species have a moderate potential to occur. Impacts to special-status plant species are potentially significant under CEQA. Potential mitigation measures for impacts to special-status plant species are discussed below in Section 5.2.

Special-Status Wildlife Species

The proposed Project is focused predominantly in habitats unsuitable for special-status wildlife species; however, there is potential for several special-status species to inhabit the 23.43 acres annual grassland within the Project Area or disperse through during rain events. Take of special-status wildlife species and nests of birds protected under the MBTA are significant impacts under CEQA. The 23.43 acres of annual grassland within the Project Area is also within designated critical habitat for CRLF. Potential mitigation measures for impacts to special-status wildlife species are discussed below in Section 5.2.

5.2 Mitigation Measures

Sensitive Biological Communities

California annual grassland

California annual grassland is not considered to be a sensitive biological community by the USFWS, CDFW, or other federal or state organizations. However, the EACCS states that impacts to California annual grassland that does not provide habitat for focal species should be mitigated at a ratio of 3:1. However, most impacts to California grassland will be mitigated at the focal species level. See below for a discussion of impacts to focal species in the Project Area.

Waters of the U.S.

Because the Project would impact a potentially jurisdictional wetland, federal and state permits under Sections 404 and 401 of the Clean Water Act are required. Federal and state laws do not have mandatory setbacks or set compensatory mitigation ratios for jurisdictional wetlands. However, these laws require that compensatory mitigation for unavoidable impacts to wetlands ensure no net-loss of value and/or function of the wetlands. In addition, the EACCS states that impacts to wetlands that do not provide habitat for focal species should be mitigated at a ratio of 3:1. Impacts to waters of the U.S. that provide habitat for focal species will be mitigated at the focal species level. See below for a discussion of impacts to focal species in the Project Area.

The need for federal permits provides a federal nexus for the Project under FESA. As a result, the Project can enter into consultation with the USFWS through the Section 7 process. See below for a discussion of impacts to federal listed species in the Project Area.

Special-Status Plant Species

In order to determine the presence of thespecial-status plant species determined to have moderate potential to occur within the Project Area, a special-status plant survey is recommended for April, during the blooming period for these plant species. Survey timing may need to be adjusted to account for varying climatic conditions.

If large-flowered fiddleneck, a federal and state listed species, is observed in the Project Area, avoidance measures should be implemented. Avoidance measures should generally follow the measures listed in Table 3-2 of the EACCS and include, but are not limited to, clearly visible exclusion areas around large-flowered fiddleneck occurrences; erosion control measures such as straw wattles and silt fencing; and environmental sensitivity training for construction workers. If impacts to large-flowered fiddleneck cannot be avoided, consultation with the USFWS through the Section 7 process will be necessary to determine minimization measures and mitigation amounts.

The remaining special-status plant species with moderate potential to occur in the Project Area--bent-flowered fiddleneck, California androsace, round-leaved filaree, Lemmon's jewelflower, diamond-petaled California poppy, stinkbells, showy golden madia, and caper-fruited tropidocarpum—are not protected by the ESA or CESA, but they receive consideration under CEQA. If any of these species are observed in the Project Area, then avoidance measures should be implemented. Avoidance measures should generally follow the measures listed in Table 3-2 of the EACCS and include, but are not limited to, clearly visible exclusion areas around special-status plant occurrence; erosion control measures such as straw wattles and silt fencing; and environmental sensitivity training for construction workers. If impacts to these species cannot be avoided, then mitigation may be necessary. The EACCS includes a mitigation ratio of 5:1 for focal plant species; however, because none of the above species are focal species, a mitigation ratio of 1:1 would be appropriate for the Project Area. Implementation of the above measures will reduce impacts to a less than significant level for large-flowered fiddleneck, bent-flowered fiddleneck, California androsace, round-leaved filaree, Lemmon's jewelflower, diamond-petaled California poppy, stinkbells, showy golden madia, and caper-fruited tropidocarpum.

Special-Status Wildlife Species

CTS, CRLF, and SJKF

The proposed Project will not impact aquatic habitat features potentially inhabited by CTS or CRLF. However, the Project will temporarily impact dispersal corridors and permanently impact CRLF designated critical habitat and a small amount of upland habitat for CTS and CRLF. It is recommended that presence of CTS and CRLF be assumed because of the high potential for presence in adjacent aquatic habitats; however, protocol-level surveys and trapping may be conducted to attempt to prove absence. To prove absence of CTS, two consecutive wet season drift fence trapping studies are necessary. If CTS are observed at any time during the study, then CTS is determined to be present. Critical habitat is present and will require consultation with the USFWS regardless of presence of CRLF.

If the Project assumes presence of these species, or surveys determine presence, consultation with the USFWS will be necessary to determine minimization measures and habitat compensation amounts. The Project may also impact SJKF if they are found to occupy dens within the Project Area. For CTS, CRLF, and SJKF, the EACCS recommends habitat mitigation

at a 3:1 ratio regardless of impact type; however, the proposed Project will not impact primary physical or biological features for these species because the Project Area is predominantly restricted to dispersal habitat and will not permanently impact dispersal corridors. Therefore, a lower habitat mitigation ratio than that recommended by the EACCS may be achieved through individual project consultation with the USFWS through the Section 7 process.

In addition to consultation with the USFWS, CTS and SJKF are state listed species and will require consultation with CDFW to receive an Incidental Take Permit. The minimization measures determined through consultation with both USFWS and CDFW are likely to follow those described in the EACCS and the EACCS Programmatic Biological Opinion and may include the following measures:

- Pre-construction surveys within 48 hours of initial ground disturbance,
- A qualified biologist will conduct a Worker Environmental Awareness Program for all construction personnel to educate personnel on sensitive species and habitats,
- No plastic monofilament erosion control materials are to be used,
- Exclusion fencing surrounding areas within a certain proximity of aquatic habitats,
- Work only in the dry season (May 1 – October 15),
- No work during rain events (rainfall greater than 0.25 inches in a 24 hour period),
- Prior to ground disturbance, a qualified biologist will monitor potential SJKF dens which cannot be avoided and hand excavate dens following USFWS and CDFW guidelines,
- A biological monitor will be present during initial ground disturbance and vegetation removal, and
- Construction personnel will inspect open trenches in the morning and evening for trapped amphibians.

The implementation of the above measures and minimization measures determined in consultation with the USFWS and CDFW will reduce impacts to a less than significant level for CTS, CRLF, and SJKF.

Burrowing Owl, American Badger, and San Joaquin Whipsnake

To avoid impacts to burrowing owl, American badger, and San Joaquin whipsnake, pre-construction surveys are recommended to be conducted within 14 days of initiation of ground disturbing activities.

- If burrowing owl are observed occupying a burrow within the Project Area, a qualified biologist will establish an exclusion buffer surrounding the occupied burrow. The buffer will follow guidelines established by the CDFW (CDFG 2012) and be based upon nesting season or non-nesting season.
    - If the occupied burrow cannot be avoided, an exclusion plan will be submitted to the CDFW in accordance with the Staff Report on Burrowing Owl (CDFG 2012), and the burrowing owls will be excluded during the non-nesting season (September 1 through March 14). No exclusion activities will occur during the nesting season unless determined to be an inactive nest by a qualified biologist.
    - The EACCS recommends a mitigation ratio of 3:1 for impacts to burrowing owl habitat. CDFW guidelines request individual consultation to determine habitat mitigation amounts for impacts to breeding habitat.

- If American badger or San Joaquin whipsnake are observed occupying burrows within the Project Area, a suitable exclusion buffer will be established by a qualified biologist.
    - If the occupied burrow cannot be avoided, the burrow will be monitored until determine to be unoccupied. If necessary, an exclusion plan will be created utilizing one-way doors on the burrow entrance to exclude the individuals. Once the burrow has been determined to be empty, the burrow will be excavated by hand to ensure no individuals are present.
    - The EACCS recommends a mitigation ratio of 3:1 for impacts to American badger habitat. San Joaquin whipsnake is not an EACCS Focal Species.

The implementation of the above measure will reduce impacts to a less than significant level for burrowing owl, American badger, and San Joaquin whipsnake.

Northern Harrier and Nesting Birds

If Project activities are initiated during the nesting season (February 15 – August 31), pre-construction surveys for northern harrier and nesting birds are recommended to be conducted within 14 days of initiation of ground disturbing activities. If active nests are observed, a qualified biologist will establish an exclusion buffer appropriate to species and nest location. The nest will be monitored and once the biologist has confirmed the nest to be inactive, the exclusion buffer will be removed. The implementation of the above measure will reduce impacts to a less than significant level for northern harrier and nesting birds covered under the MBTA.

6.0 CONCLUSION

Based on the results of the Site assessment, the Project will result in impacts to sensitive special-status wildlife species and a sensitive biological community and may result in impacts to special-status plant species. No special-status plant species were observed during the site visits or during 2008 special-status plant surveys, but eight have moderate potential to occur within the Study Area; if present, they would require avoidance and minimization measures, which may include, but are not limited to, buffers, erosion control measures, or off-site mitigation. Eight special-status wildlife species have potential to occur within the Study Area. Avoidance measures including breeding bird surveys, pre-construction surveys, monitoring during initial ground disturbance, and work windows will be utilized to avoid impacts to these species. Four species with potential to occur are federal-listed and designated Critical Habitat for CRLF is present within the Study Area. Although recommended avoidance and minimization measures will reduce potential to impact these wildlife species and critical habitat, consultation with the USFWS will be necessary to determine mitigation measures. Implementation of the described avoidance and minimization measures and those determined in consultation with the USFWS and CDFW will reduce Project impacts to a less than significant level for special-status species and sensitive biological communities.

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APPENDIX A

LIST OF OBSERVED PLANT AND WILDLIFE SPECIES

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Appendix A1. Plant Species Observed in the Study Area.

FAMILY	SCIENTIFIC NAME	COMMON NAME	PHENOLOGY & FORM	ORIGIN	RARE STATUS	INVASIVE STATUS
Apocynaceae [Asclepiadaceae]	*Asclepias fascicularis*	Mexican milkweed	perennial forb	native	--	--
Asteraceae	*Baccharis pilularis* ssp. *consanguinea*	coyote brush	evergreen shrub	native	--	--
Asteraceae	*Carduus pycnocephalus*	Italian thistle	annual forb	non-native	--	moderate
Asteraceae	*Holocarpha obconica*	San Joaquin tarweed	annual forb	native	--	--
Asteraceae	*Lactuca serriola*	prickly lettuce	annual forb	non-native	--	assessed
Asteraceae	*Senecio vulgaris*	old man in the Spring	annual forb	non-native	--	--
Asteraceae	*Silybum marianum*	milk thistle	perennial forb	non-native	--	limited
Brassicaceae	*Brassica nigra*	black mustard	annual forb	non-native	--	moderate
Brassicaceae	*Capsella bursa-pastoris*	shepherd's purse	annual forb	non-native	--	--
Brassicaceae	*Hirschfeldia incana*	short podded mustard	perennial forb	non-native	--	moderate
Brassicaceae	*Lepidium nitidum*	shining pepperweed	annual forb	native	--	--
Brassicaceae	*Raphanus raphanistrum*	wild radish	perennial forb	non-native	--	--
Brassicaceae	*Raphanus sativus*	wild radish	perennial forb	non-native	--	limited
Brassicaceae	*Sisymbrium irio*	London rocket	annual forb	non-native	--	moderate
Caryophyllaceae	*Stellaria media*	common chickweed	annual forb	non-native	--	--
Chenopodiaceae	*Atriplex suberecta*	peregrine saltbush	annual forb	non-native	--	--
Chenopodiaceae	*Chenopodum* sp.	goosefoot	annual forb	unknown	--	--
Chenopodiaceae	*Salsola australis* [*S. tragus*]	Russian thistle	annual forb	non-native	--	limited
Euphorbiaceae	*Croton setiger* [*Eremocarpus setigerus*]	turkey mullein	annual forb	native	--	--

FAMILY	SCIENTIFIC NAME	COMMON NAME	PHENOLOGY & FORM	ORIGIN	RARE STATUS	INVASIVE STATUS
Fabaceae	*Medicago polymorpha*	bur medic	annual forb	non-native	--	limited
Geraniaceae	*Erodium botrys*	longbeak stork's bill	annual forb	non-native	--	assessed
Geraniaceae	*Erodium cicutarium*	redstem stork's bill	annual forb	non-native	--	limited
Geraniaceae	*Erodium moschatum*	musky stork's bill	annual forb	non-native	--	assessed
Lamiaceae	*Trichostema lanceolatum*	vinegarweed	annual forb	native	--	--
Malvaceae	*Malva* (*neglecta*)	common mallow	perennial forb	non-native	--	--
Poaceae	*Avena barbata*	slender oat	annual graminoid	non-native	--	moderate
Poaceae	*Avena fatua*	wild oat	annual graminoid	non-native	--	moderate
Poaceae	*Bromus diandrus*	ripgut brome	annual graminoid	non-native	--	moderate
Poaceae	*Bromus hordeaceus*	soft chess	annual graminoid	non-native	--	limited
Poaceae	*Hordeum marinum* ssp. *gussoneanum*	Mediterranean barley	annual graminoid	non-native	--	moderate
Poaceae	*Hordeum murinum*	foxtail barley	annual graminoid	non-native	--	moderate
Poaceae	*Poa annua*	annual bluegrass	annual graminoid	non-native	--	--
Polygonaceae	*Polygonum aviculare* [*P. arenastrum*]	dooryard knotweed	perennial forb	non-native	--	--
Polygonaceae	*Rumex crispus*	curly dock	perennial forb	non-native	--	limited
Primulaceae	*Primula clevelandii var. patula* [*Dodecatheon c.* v. *p.*]	padre's shootingstar	perennial forb	native	--	--
Urticaceae	*Urtica urens*	dwarf nettle	annual forb	non-native	--	--

Appendix A2. Wildlife species observed in the Study Area

Scientific Name	Common Name
Birds	
Buteo jamaicensis	red-tailed hawk
Corvus corax	common raven
Haemorhous mexicanus	house finch
Sturnus vulgaris	European starling
Zenaida macroura	mourning dove
Circus cyaneus	northern harrier
Sturnella neglecta	western meadowlark
Eremophila alpestris	horned lark
Myiarchus cinerascens	ash-throated flycatcher
Thryomanes bewickii	Bewick's wren
Euphagus cyanocephalus	Brewer's blackbird
Numenius americanus	long-billed curlew
Cathartes aura	turkey vulture
Zonotrichia atricapilla	golden-crowned sparrow
Anthus rubescens	American pipit
Reptiles	
Uta stansburiana	side-blotched lizard
Mammals	
Canis latrans	coyote (tracks)
Otospermophilus beecheyi	California ground squirrel
Microtus spp.	vole species
Thomomys spp.	pocket gopher

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APPENDIX B

POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR IN THE STUDY AREA, INCLUDING THE PROJECT AREA

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Appendix B. Potential for special-status plant and wildlife species to occur in the Study Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CDFW 2015a), U.S. Fish and Wildlife Service (USFWS) Species Lists, and California Native Plant Society (CNPS) Electronic Inventory search of the Midway, Byron Hot Springs, Clifton Court Forebay, Union Island, Altamont, Tracy, Mendenhall Springs, Cedar Mountain, and Lone Tree Creek USGS 7.5' quadrangles and a review of other CDFW lists and publications (Jennings and Hayes 1994, Zeiner et al. 1990).

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
MAMMALS				
pallid bat *Antrozous pallidus*	SSC, WBWG High	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 (including occupied buildings). Roosts must protect bats from high temperatures. Very sensitive to disturbance of roosting sites.	**Unlikely.** The Study Area does not contain structures, caves, mines, or other potential roost habitat. This species may occasionally forage over the Study Area.	No further actions are recommended for this species
Townsend's big-eared bat *Corynorhinus townsendii*	SC, SSC, WBWG High	This species is associated with a wide variety of habitats from deserts to mid-elevation mixed coniferous-deciduous forest. Females form maternity colonies in buildings, caves and mines and males roost singly or in small groups. Foraging occurs in open forest habitats where they glean moths from vegetation.	**Unlikely.** The Study Area does not contain structures, caves, mines, or other potential roost or forage habitat.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western red bat *Lasiurus blossevillii*	SSC, WBWG High	This species is highly migratory and is typically solitary, roosting primarily in the foliage of trees or shrubs. It is associated with broad-leaved tree species 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.	**Unlikely.** The Study Area does not contain trees, shrubs, or other potential roost habitat. This species may occasionally pass over the Study Area.	No further actions are recommended for this species
hoary bat *Lasiurus cinereus*	WBWG Medium	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.	**Unlikely.** The Study Area does not contain trees or other potential roost habitat. This species may occasionally forage over the Study Area.	No further actions are recommended for this species
long-eared myotis *Myotis evotis*	WBWG Medium	Occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with coniferous forests from sea level to 9000 feet. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges.	**Unlikely.** The Study Area does not contain structures, caves, mines, or other potential roost habitat. This species may occasionally forage over the Study Area	No further actions are recommended for this species
fringed myotis *Myotis thysanodes*	WBWG High	Associated with a wide variety of habitats including dry woodlands, desert scrub, mesic coniferous forest, grassland, and sage-grass steppes. Buildings, mines and large trees and snags are important day and night roosts.	**Unlikely.** The Study Area does not contain structures, caves, mines, or other potential roost habitat. This species may occasionally forage over the Study Area	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
riparian brush rabbit *Sylvilagus bachmani riparius*	FE, SE, RP	Riparian areas on the San Joaquin River in northern Stanislaus County. Dense thickets of wild rose, willows, and blackberries.	**No Potential.** The Study Area is outside the documented range of this species.	No further actions are recommended for this species
San Francisco dusky-footed woodrat *Neotoma fuscipes annectens*	SSC	Forest habitats of moderate canopy and moderate to dense understory. Also in chaparral habitats. Constructs nests of shredded grass, leaves, and other material. May be limited by availability of nest-building materials.	**No Potential.** The Study Area is outside the documented range of this subspecies.	No further actions are recommended for this species
riparian (=San Joaquin Valley) woodrat *Neotoma fuscipes riparia*	FE, SSC, RP	Riparian areas along the San Joaquin, Stanislaus, and Tuolumne Rivers. Need areas with mix of brush and trees. Need suitable nesting sites in trees, snags or logs.	**No Potential.** The Study Area is outside the documented range of this subspecies.	No further actions are recommended for this species
salt-marsh harvest mouse *Reithrodontomys raviventris*	FE, SE, CFP, SSC	Found only in the saline emergent wetlands of San Francisco Bay and its tributaries. Pickleweed is primary habitat, but may use other thick wetland vegetation. Does not burrow, builds loosely organized nests. Requires higher areas for flood escape.	**No Potential.** The Study Area is outside the documented range of this species.	No further actions are recommended for this species
San Joaquin kit fox *Vulpes macrotis mutica*	FE, ST, RP, EACCS	Annual grasslands or grassy open stages with scattered shrubby vegetation. Need loose-textured sandy soils for burrowing, and suitable prey base.	**Moderate Potential**. The Study Area contains suitable gassland habitat, and the species is known to occur in the vicinity.	Pre-construction survey and consultation with USFWS may be necessary for impacts if present.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
ring-tailed cat (Ringtail) *Bassariscus astutus*	CFP	The Ringtail is widely distributed throughout most of California, absent from some portions of the Central Valley and northeastern California. Found in a variety of habitats throughout the western US including riparian areas, semi-arid country, deserts, chaparral, oak woodlands, pinyon pine woodlands, juniper woodlands and montane conifer forests. Typically uses cliffs or large trees for shelter.	**Unlikely**. The Study Area does not contain suitable habitat conditions for this species.	No further actions are recommended for this species
American badger *Taxidea taxus*	SSC, EACCS	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Requires friable soils and open, uncultivated ground. Preys on burrowing rodents.	**Moderate Potential.** The Study Area contains suitable grassland habitat and is known in the vicinity; however no potential burrows were observed during the site visit.	Pre-construction survey.
BIRDS				
American white pelican *Pelecanus erythrorhynchos*	SSC	Non-breeding visitor in most of California. Nests colonially on large interior lakes or rivers; breeding restricted to portions of eastern California. Winters on sheltered inland and estuarine waters with abundant small fishes for forage.	**Unlikely.** The Study Area is out of the nesting range for this species and no lake or suitable waters are present.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
golden eagle *Aquila chrysaetos*	BCC, CFP, EACCS	Occurs year-round in rolling foothills, mountain areas, sage-juniper flats, and deserts. Cliff-walled canyons provide nesting habitat in most parts of range; also nests in large trees, usually within otherwise open areas.	**Unlikely.** The Study Area does not contain nesting habitat for this species. This species may forage over the Study Area.	No further actions are recommended for this species
ferruginous hawk *Buteo regalis*	BCC	Winter visitor to open habitats, including grasslands, sagebrush flats, scrub, and low foothills surrounding valleys. Preys on mammals. Does not breed in California.	**Unlikely.** The Study Area is out of the nesting range for this species. This species may forage in the Study Area during the winter.	No further actions are recommended for this species
Swainson's hawk *Buteo swainsoni*	ST, BCC	Summer resident in California's Central Valley and limited portions of the southern California interior. Nests in tree groves and isolated trees in riparian and agricultural areas, including near buildings. Forages in grasslands and scrub habitats as well as agricultural fields, especially alfalfa. Preys on arthropods year-round as well as smaller vertebrates during the breeding season.	**Unlikely.** The Study Area and vicinity do not contain suitable nesting habitat for this species. Suitable foraging habitat within the Study Area is limited to non-native grassland which is largely avoided by project activities.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
northern harrier *Circus cyaneus*	SSC	Year-round resident and winter visitor. Found in open habitats including grasslands, prairies, marshes and agricultural areas. Nests on the ground in dense vegetation, typically near water or otherwise moist areas. Preys on small vertebrates.	**Moderate Potential.** The Study Area contains suitable foraging habitat and habitat adjacent to the Study Area may provide suitable nesting habitat. This species was observed foraging in the Study Area during the site visit.	If Project activities begin during the breeding season (February 15-August 31), conduct a pre-construction breeding bird survey within 14 days of Project activities.
white-tailed kite *Elanus leucurus*	CFP	Year-round resident in coastal and valley lowlands with scattered trees and large shrubs, including grasslands, marshes and agricultural areas. Nests in trees, of which the type and setting are highly variable. Preys on small mammals and other vertebrates.	**Unlikely.** The Study Areaand vicinity do not contain suitable nesting habitat for this species.	No further actions are recommended for this species
bald eagle *Haliaeetus leucocephalus*	FD, SE, CFP, BCC	Occurs year-round in California, but primarily a winter visitor. Nests in large trees in the vicinity of larger lakes, reservoirs and rivers. Wintering habitat somewhat more variable but usually features large concentrations of waterfowl or fish.	**Unlikely.** The Study Area and vicinity do not contain suitable nesting or foraging habitat for this species.	No further actions are recommended for this species
prairie falcon *Falco mexicanus*	BCC	Year-round resident and winter visitor. Inhabits dry, open terrains, including foothills and valleys. Breeding sites located on steep cliffs. Forages widely.	**Unlikely.** The Study Area is out of the nesting range for this species. This species may forage over the Study Area during the winter.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
long-billed curlew *Numenius americanus*	BCC	(Nesting) breeds in upland shortgrass prairies and wet meadows in northeastern California. Habitats on gravelly soils and gently rolling terrain are favored over others	**Unlikely.** The Study Area is out of the nesting range for this species, but winters in the region. This species was observed foraging in the Study Area during the November site visit.	No further actions are recommended for this species
short-eared owl *Asio flammeus*	SSC	Occurs year-round, but primarily as a winter visitor; breeding very restricted in most of California. Found in open, treeless areas (e.g., marshes, grasslands) with elevated sites for foraging perches and dense herbaceous vegetation for roosting and nesting. Preys mostly on small mammals, particularly voles.	**Unlikely.** The Study Area does not contain suitable nesting habitat for this species. Grasslands within the Study Area are heavily grazed.	No further actions are recommended for this species
burrowing owl *Athene cunicularia*	SSC, BCC, EACCS	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.	**High Potential.** The Study Area contains suitable foraging and burrow habitat in the California annual grassland. This species has been documented in the immediate vicinity.	Pre-construction survey within 14 days of Project activities during the breedingand non-breeding season.
Allen's hummingbird *Selasphorus sasin*	BCC	Summer resident along the California coast, breeding in a variety of woodland and forest habitats, including parks and gardens with abundant nectar sources. Nest in shrubs and trees with dense vegetation.	**Unlikely.** The Study Area does not contain suitable nesting or foraging habitat for this species.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Nuttall's woodpecker *Picoides nuttallii*	BCC	Year-round resident in lowland woodlands throughout much of California west of the Sierra Nevada. Typical habitat is dominated by oaks; also occurs in riparian woodland. Nests in tree cavities.	**No Potential.** The Study Area is outside the documented range of this species.	No further actions are recommended for this species
loggerhead shrike *Lanius ludovicianus*	BCC, SSC	Year-round resident in open woodland, grassland, savannah and scrub. Prefers areas with sparse shrubs, trees, posts, and other suitable perches for foraging. Preys upon large insects and small vertebrates. Nests are well-concealed in densely foliated shrubs or trees.	**Moderate Potential.** The Study Area does not contain trees or shrubs for nesting habitat; however, two trees with potential to be used by this speices are present immediately adjacent to the northern border of the Study Area.	If Project activities begin during the breeding season (February 15-August 31), conduct a pre-construction breeding bird survey within 14 days of Project activities.
yellow-billed magpie *Pica nuttalli*	BCC	Oak savanna with large trees and large expanses of open ground. The Central Valley floor, gentle slopes, and open park-like areas including along stream courses. Grasslands, pasture, or cultivated fields are needed for foraging.	**Unlikely.** The Study Area and vicinity do not contain suitable woodland habitat for this nesting.	No further actions are recommended for this species
oak titmouse *Baeolophus inornatus*	BCC	Occurs year-round in woodland and savannah habitats where oaks are present, as well as riparian areas. Nests in tree cavities.	**No Potential.** The Study Area and vicinity do not contain woodland habitat for this species.	No further actions are recommended for this species
black-chinned sparrow *Spizella atrogularis*	BCC	Prefers sloping ground in mixed chaparral, chamise-redshank chaparral, sagebrush, and similar brushy habitats. Often on arid, south-facing slopes with ceanothus, manzanita, sagebrush, and chamise.	**Unlikely.** The Study Area does not contain chaparral or sagebrush habitat for this species.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
song sparrow (Modesto Population) *Melospiza melodia*	SSC, BCC	Restricted to the Sacramento and extreme northern San Joaquin Valleys from Colusa County south to Stanislaus County. Associated with woody riparian habitat and freshwater marshes.	**No Potential.** The Study Area is outside the documented range of this species and does not contain suitable habitat.	No further actions are recommended for this species
Lawrence's goldfinch *Spinus (= Carduelis) lawrencei*	BCC	Summer resident, primarly in southern California; generally uncommon and local. Also found in large open areas in Contra Costa and Alameda Counties. Typically found in arid open woodlands, including oak savannah. Breeding distribution is erratic from year to year.	**Unlikely.** The Study Area and vicinity do not contain woodland habitat typical of nesting for this species.	No further actions are recommended for this species
tricolored blackbird *Agelaius tricolor*	SSC, BCC, EACCS	Nearly endemic to California, where it is most numerous in the Central Valley and vicinity. Highly colonial, nesting in dense aggregations over or near freshwater in emergent growth or riparian thickets. Also uses flooded agricultural fields. Abundant insect prey near breeding areas essential.	**Unlikely.** The Study Area and vicinity do not contain suitable wetland or flooded agricultural habitat for this species.	No further actions are recommended for this species
AMPHIBIANS				
California tiger salamander *Ambystoma californiense*	FE/FT, ST, RP, EACCS	Populations in Santa Barbara and Sonoma counties currently listed as endangered. Inhabits grassland, oak woodland, ruderal and seasonal pool habitats. Seasonal ponds and vernal pools are crucial to breeding. Adults utilize mammal burrows as estivation habitat.	**High Potential.** This species is known to breed in pools in the vicinity of the Study Area. Upland habitat refugia is limited, but this species may disperse through the Study Area during rain events.	Avoidance of suitable habitat or pre-construction surveys, work windows, and exclusion fencing. Consultation with USFWS may be necessary for impacts to CTS.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
western spadefoot *Spea (=Scaphiopus) hammondii*	SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Shallow temporary pools formed by winter rains are essential for breeding and egg-laying.	**Unlikely.** The Study Area does not contain suitable vernal pool habitat for this species.	No further actions are recommended for this species
California red-legged frog *Rana draytonii*	FT, SSC, RP, EACCS	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11 to 20 weeks of permanent water for larval development. Associated with quiet perennial to intermittent ponds, stream pools and wetlands. Prefers shorelines with extensive vegetation. Disperses through upland habitats after rains.	**High Potential.** This species is known to breed in pools in the vicinity of the Study Area. Upland habitat refugia is limited, but this species may disperse through the Study Area during rain events. The Study Area is within Critical Habitat unit ALA-2.	Avoidance of suitable habitat or pre-construction surveys, work windows, and exclusion fencing. Consultation with USFWS may be necessary for impacts to CRLF and its Critical Habitat.
foothill yellow-legged frog *Rana boylii*	SSC, EACCS	Found in or near rocky streams in a variety of habitats. Prefers partly-shaded, shallow streams and riffles with a rocky substrate; requires at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis. Feeds on both aquatic and terrestrial invertebrates.	**No Potential.** No suitable stream habitat is present in the Study Area or vicinity.	No further actions are recommended for this species
REPTILES				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Pacific (western) pond turtle *Actinemys marmorata*	SSC	A thoroughly aquatic turtle of 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 (sandy banks or grassy open fields) for egg-laying.	**Unlikely.** The Study Area and vicinity do not contain suitable aquatic habitat for this species.	No further actions are recommended for this species
Blainville's (Coast) horned lizard *Phrynosoma blainvillii (coronatum)*	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Prefers friable, rocky, or shallow sandy soils for burial; open areas for sunning; bushes for cover; and an abundant supply of ants and other insects.	**Unlikely.** The Study Area does not contain suitable habitat conditions for this species.	No further actions are recommended for this species
silvery legless lizard *Anniella pulchra*	SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.	**Unlikely.** The Study Area does not contain suitable soils or habitat conditions for this species.	No further actions are recommended for this species
San Joaquin whipsnake *Masticophis flagellum ruddocki*	SSC	Found in valley grassland and saltbush scrub in the San Joaquin Valley in open, dry habitats with little or no tree cover. Requires mammal burrows for refuge and breeding sites.	**Moderate Potential.** The California annual grassland in the Study Area provides suitable refugia and foraging habitat for this species.	Pre-construction surveys.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Alameda whipsnake *Masticophis lateralis euryxanthus*	FT, ST, EACCS	Inhabits chaparral and foothill-hardwood habitats in the eastern Bay Area. Prefers south-facing slopes and ravines with rock outcroppings where shrubs form a vegetative mosaic with oak trees and grasses and small mammal burrows provide basking and refuge.	**No Potential.** The Study Area is outside the documented range of this species.	No further actions are recommended for this species
FISHES				
steelhead - central valley DPS *Oncorhynchus mykiss irideus*	FT, NMFS	The Central Valley ESU includes all naturally spawned populations (and their progeny) in the Sacramento and San Joaquin Rivers and their tributaries, excluding San Francisco and San Pablo bays and their tributaries. Preferred spawning habitat for steelhead is in cool to cold perennial streams with high dissolved oxygen levels and fast flowing water. Abundant riffle areas for spawning and deeper pools with sufficient riparian cover for rearing are necessary for successful breeding.	**No Potential.** No stream habitat is present within or near the Study Area.	No further actions are recommended for this species
Delta smelt *Hypomesus transpacificus*	FT, SE, RP	Lives in the Sacramento-San Joaquin estuary in areas where salt and freshwater systems meet. Occurs seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt; most often at salinities < 2 ppt.	**No Potential.** The Study Area does not contain waters in the Delta system or stream habitat.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
longfin smelt *Spirinchus thaleichthys*	FC, ST, SSC, RP	Euryhaline, nektonic and anadromous. Found in open waters of estuaries, mostly in middle or bottom of water column. Prefer salinities of 15 to 30 ppt, but can be found in completely freshwater to almost pure seawater.	**No Potential.** The Study Area does not contain waters in the Delta system or stream habitat.	No further actions are recommended for this species
eulachon *Thaleichthys pacificus*	FT, SSC	Found in Klamath River, Mad River, Redwood Creek and in small numbers in Smith River and Humboldt Bay tributaries. Spawn in lower reaches of coastal rivers with moderate water velocities and bottom of pea-sized gravel, sand and woody debris.	**No Potential.** The Study Area does not contain waters in the Delta system or stream habitat. The Study Area is out of the known range this species; it is known from northwestern California.	No further actions are recommended for this species
INVERTEBRATES				
longhorn fairy shrimp *Branchinecta longiantenna*	FE, SSI, RP, EACCS	Endemic to the eastern margin of the central coast mountains in seasonally astatic grassland vernal pools. Inhabit small, clear-water depressions in sandstone and clear-to-turbid clay/grass-bottomed pools in shallow swales.	**No Potential.** No suitable vernal pool or swale habitat present within or adjacent to the Study Area.	No further actions are recommended for this species
vernal pool fairy shrimp *Branchinecta lynchi*	FT, SSI, RP, EACCS	Endemic to the grasslands of the Central Valley, central coast mountains, and south coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	**No Potential.** No suitable vernal pool or swale habitat present within or adjacent to the Study Area.	No further actions are recommended for this species

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
midvalley fairy shrimp *Branchinecta mesovallensis*	SSI	Vernal pools in the Central Valley in Sacramento, Solano, Merced, Madera, San Joaquin, Fresno, and Contra Costa counties.	**No Potential.** No suitable vernal pool or swale habitat present within or adjacent to the Study Area. The Study Area is out of the known range of this sprecies.	No further actions are recommended for this species
California linderiella *Linderiella occidentalis*	SSI	Seasonal pools in unplowed grasslands with old alluvial soils underlain by hardpan or in sandstone depressions. Water in the pools has very low alkalinity, conductivity, and TDS.	**No Potential.** No suitable vernal pool or swale habitat present within or adjacent to the Study Area.	No further actions are recommended for this species
Callippe silverspot butterly *Speyeria callippe callippe*	FE, SSI, EACCS	Two populations in San Bruno mountain and the Cordelia Hills are recognized. Hostplant is Viola pedunculata, which is found on serpentine soils. Most adults found on east-facing slopes; males congregate on hilltops in search of females.	**No Potential.** No suitable habitat present for the host plant or species. The Study Area is outside of the known range of the species.	No further actions are recommended for this species
valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT, SSI, RP	Occurs only in the central valley of California, in association with blue elderberry (*Sambucus* spp.). Prefers to lay eggs in elderberrry 2 to 8 inches in diameter; some preference shown for "stressed" elderberry.	**No Potential.** No elderberry is present within the Study Area.	No further actions are recommended for this species
curved-foot hygrotus diving beetle *Hygrotus curvipes*	SSI	Aquatic; known only from Alameda and Contra Costa counties.	**No Potential.** No aquatic habitat present within Study Area.	No further actions are recommended for this species
PLANTS				

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Santa Clara thorn-mint *Acanthomintha lanceolata*	Rank 4.2	Chaparral (often serpentine), cismontane woodland, coastal scrub/rocky. Elevation ranges from 260 to 3940 feet (80 to 1200 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain chaparral, woodland, or coastal scrub habitats or serpentine substrate.	No further actions are recommended for this species.
Sharsmith's onion *Allium sharsmithiae*	Rank 1B.3	Chaparral, cismontane woodland/serpentine, rocky. Elevation ranges from 1310 to 3940 feet (400 to 1200 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain chaparral or woodland habitats or serpentine substrate.	No further actions are recommended for this species.
large-flowered fiddleneck *Amsinckia grandiflora*	FE, SE, Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 900 to 1800 feet (275 to 550 meters). Blooms Apr-May.	**Moderate Potential.** This species has moderate potential to occur in California annual grassland habitat in the Study Area.	Appropriately timed surveys are recommended for this species.
bent-flowered fiddleneck *Amsinckia lunaris*	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. Elevation ranges from 10 to 1640 feet (3 to 500 meters). Blooms Mar-Jun.	**Moderate Potential.** This species has moderate potential to occur in California annual grassland habitat in the Study Area, including the Project Area.	Appropriately timed surveys are recommended for this species.
California androsace *Androsace elongata* ssp. *acuta*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub, meadows and seeps, pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 490 to 3940 feet (150 to 1200 meters). Blooms Mar-Jun.	**Moderate Potential.** This species has moderate potential to occur in California annual grassland habitat in the Study Area, including the Project Area.	Appropriately timed surveys are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Contra Costa manzanita *Arctostaphylos manzanita* ssp. *laevigata*	Rank 1B.2	Chaparral (rocky). Elevation ranges from 1410 to 3610 feet (430 to 1100 meters). Blooms Jan-Mar (Apr).	**No Potential.** The Study Area does not contain chaparral habitat.	No further actions are recommended for this species.
Carlotta Hall's lace fern *Aspidotis carlotta-halliae*	Rank 4.2	Chaparral, cismontane woodland/usually serpentine. Elevation ranges from 330 to 4590 feet (100 to 1400 meters). Blooms Jan-Dec.	**No Potential.** The Study Area does not contain chaparral or woodland habitats or serpentine substrate.	No further actions are recommended for this species.
alkali milk-vetch *Astragalus tener var. tener*	Rank 1B.2	Playas, valley and foothill grassland (adobe clay), vernal pools/alkaline. Elevation ranges from 0 to 200 feet (1 to 60 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain alkali flat, playa pool, or vernal pool habitats. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.
heartscale *Atriplex cordulata var. cordulata*	Rank 1B.2	Chenopod scrub, meadows and seeps, valley and foothill grassland (sandy)/saline or alkaline. Elevation ranges from 0 to 1840 feet (0 to 560 meters). Blooms Apr-Oct.	**No Potential.** The Study Area does not contain chenopod scrub or meadow and seep, or alkaline flats and scalds (CDFW 2015) or sandy substrate.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
crownscale *Atriplex coronata var. coronata*	Rank 4.2	Chenopod scrub, valley and foothill grassland, vernal pools/alkaline, often clay. Elevation ranges from 0 to 1940 feet (1 to 590 meters). Blooms Mar-Oct.	**Unlikely.** The Study Area does not contain chenopod scrub or vernal pool habitat. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.
Lost Hills crownscale *Atriplex coronata var. vallicola*	Rank 1B.2	Chenopod scrub, valley and foothill grassland, vernal pools/alkaline. Elevation ranges from 160 to 2080 feet (50 to 635 meters). Blooms Apr-Aug.	**No Potential.** The Study Area does not contain chenopod scrub or vernal pool habitat or vernally moist, powerdery alkaline soils (CDFW 2015).	No further actions are recommended for this species.
brittlescale *Atriplex depressa*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland, vernal pools/alkaline, clay. Elevation ranges from 0 to 1050 feet (1 to 320 meters). Blooms Apr-Oct.	**Unlikely.** The Project does not contain chenopod scrub, meadow and seep, vernal pool, or alkali scald habitats. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
lesser saltscale *Atriplex minuscula*	Rank 1B.1	Chenopod scrub, playas, valley and foothill grassland/alkaline, sandy. Elevation ranges from 50 to 660 feet (15 to 200 meters). Blooms May-Oct.	**No Potential.** The Study Area does not contain sandy, alkaline substrate.	No further actions are recommended for this species.
big-scale balsamroot *Balsamorhiza macrolepis*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/sometimes serpentine. Elevation ranges from 300 to 5100 feet (90 to 1555 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain chaparral or cismontane woodland habitats or serpentine or volcanic substrates, which this species is often found on.	No further actions are recommended for this species.
big tarplant *Blepharizonia plumosa*	Rank 1B.1, EACCS	Valley and foothill grassland/usually clay. Elevation ranges from 100 to 1660 feet (30 to 505 meters). Blooms Jul-Nov.	**Unlikely.** The Study Area, including the Project Area, contains seemingly suitable habitat on clay substrate on slopes in California annual grassland habitat; however, this species was not observed by WRA in November 2015 or by Monk & Associates in 2008. As such, it is unlikey that big tarplant occurs in the Study Area.	No further actions are recommended for this species.
round-leaved filaree *California macrophylla*	Rank 1B.2	Cismontane woodland, valley and foothill grassland/clay. Elevation ranges from 50 to 3940 feet (15 to 1200 meters). Blooms Mar-May.	**Moderate Potential.** This species has moderate potential to occur in the Study Area, including the Project Area, on clay substrate in California annual grassland habitat**.**	Appropriately timed surveys are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mt. Diablo fairy-lantern *Calochortus pulchellus*	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation ranges from 100 to 2760 feet (30 to 840 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral or cismontane woodland habitats or grassland openings in such habitats (CDFW 2015).	No further actions are recommended for this species.
chaparral harebell *Campanula exigua*	Rank 1B.2	Chaparral (rocky, usually serpentine). Elevation ranges from 900 to 4100 feet (275 to 1250 meters). Blooms May-Jun.	**No Potential.** The Study Area does not contain chaparral habitat or serpentine substrate.	Appropriately timed surveys are recommended for this species.
Lemmon's jewelflower *Caulanthus lemmonii*	Rank 1B.2	Pinyon and juniper woodland, valley and foothill grassland. Elevation ranges from 260 to 4000 feet (80 to 1220 meters). Blooms Mar-May.	**Moderate Potential.** This species has moderate potential to occur in the Study Area, including the Project Area in California annual grassland habitat.	Appropriately timed surveys are recommended for this species.
Congdon's tarplant *Centromadia parryi* ssp. *congdonii*	Rank 1B.1, EACCS	Valley and foothill grassland (alkaline). Elevation ranges from 0 to 750 feet (0 to 230 meters). Blooms May-Oct (Nov).	**Unlikely.** The Study Area does not contain alkaline, heavy, white clay soils (CDFW 2015). There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
hispid bird's-beak *Chloropyron molle* ssp. *hispidum*	Rank 1B.1	Meadows and seeps, playas, valley and foothill grassland/alkaline. Elevation ranges from 0 to 510 feet (1 to 155 meters). Blooms Jun-Sep.	**Unlikely.** The Study Area does not contain meadow and seep or playa habitat. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species. Salt grass, an associated species (CDFW 2015), was not observed in the Study Area.	No further actions are recommended for this species.
palmate-bracted bird's-beak *Chloropyron palmatum*	FE, SE, Rank 1B.1, EACCS	Chenopod scrub, valley and foothill grassland/alkaline. Elevation ranges from 20 to 510 feet (5 to 155 meters). Blooms May-Oct.	**Unlikely.** The Study Area does not contain chenopod scrub habitat or Pescadero silty clay, which is the soil type this species is usually associated with (CDFW 2015). In addition, associated species, such as salt grass and alkali heath (CDFW), are tolerant of high alkalinity/salinity, are not present in the Study Area, indicating that the Study Area is not likely to contain suitable alkalinity levels.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Mt. Hamilton fountain thistle *Cirsium fontinale var. campylon*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/serpentine seeps. Elevation ranges from 330 to 2920 feet (100 to 890 meters). Blooms (Feb), Apr-Oct.	**No Potential.** The Study Area does not contain serpentine substrate.	No further actions are recommended for this species.
Brewer's clarkia *Clarkia breweri*	Rank 4.2	Chaparral, cismontane woodland, coastal scrub/often serpentine. Elevation ranges from 710 to 3660 feet (215 to 1115 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, or coastal scrub habitats or serpentine substrate.	No further actions are recommended for this species.
Santa Clara red ribbons *Clarkia concinna ssp. automixa*	Rank 4.3	Chaparral, cismontane woodland. Elevation ranges from 300 to 4920 feet (90 to 1500 meters). Blooms (Apr), May-Jun (Jul).	**No Potential.** The Study Area does not contain chaparral or cismontane woodland habitats.	No further actions are recommended for this species.
small-flowered morning-glory *Convolvulus simulans*	Rank 4.2	Chaparral (openings), coastal scrub, valley and foothill grassland/clay, serpentine seeps. Elevation ranges from 100 to 2300 feet (30 to 700 meters). Blooms Mar-Jul.	**Unlikely.** The Study Area does not contain chaparral or coastal scrub habitats or serpentine substrate.	No further actions are recommended for this species.
Livermore tarplant *Deinandra bacigalupii*	Rank 1B.2, EACCS	Meadows and seeps (alkaline). Elevation ranges from 490 to 610 feet (150 to 185 meters). Blooms Jun-Oct.	**No Potential.** The Study Area does not contain meadow and seep habitat.	No further actions are recommended for this species.
Hospital Canyon larkspur *Delphinium californicum* ssp. *interius*	Rank 1B.2	Chaparral (openings), cismontane woodland (mesic), coastal scrub. Elevation ranges from 640 to 3590 feet (195 to 1095 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral, woodland, or coastal scrub habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
recurved larkspur *Delphinium recurvatum*	Rank 1B.2, EACCS	Chenopod scrub, cismontane woodland, valley and foothill grassland/alkaline. Elevation ranges from 10 to 2590 feet (3 to 790 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain chenopod scrub or woodland habitats. Some of the mapped soil types are described as moderately alkaline, but based on the lack of observed species that are more commonly found in alkaline conditions indicates that the Study Area may not have suitable alkalinity for this species.	No further actions are recommended for this species.
Jepson's woolly sunflower *Eriophyllum jepsonii*	Rank 4.3	Chaparral, cismontane woodland, coastal scrub/sometimes serpentine. Elevation ranges from 660 to 3360 feet (200 to 1025 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, or coastal scrub habitats or serpentine substrate.	No further actions are recommended for this species.
spiny-sepaled button-celery *Eryngium spinosepalum*	Rank 1B.2	Valley and foothill grassland, vernal pools. Elevation ranges from 260 to 2030 feet (80 to 620 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.
diamond-petaled California poppy *Eschscholzia rhombipetala*	Rank 1B.1	Valley and foothill grassland (alkaline, clay). Elevation ranges from 0 to 3200 feet (0 to 975 meters). Blooms Mar-Apr.	**Moderate Potential.** This species has moderate potential to occur in the Study Area, including the Project Area, on clay substrate in California annual grassland habitat.	Appropriately timed surveys are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
San Joaquin spearscale *Extriplex joaquinana*	Rank 1B.2	Chenopod scrub, meadows and seeps, playas, valley and foothill grassland/alkaline. Elevation ranges from 0 to 2740 feet (1 to 835 meters). Blooms Apr-Oct.	**No Potential.** The Study Area does not contain seasonal alkali wetland or alkali sink scrub habitats or associated species (CDFW 2015).	No further actions are recommended for this species.
stinkbells *Fritillaria agrestis*	Rank 4.2	Chaparral, cismontane woodland, pinyon and juniper woodland, valley and foothill grassland/clay, sometimes serpentine. Elevation ranges from 30 to 5100 feet (10 to 1555 meters). Blooms Mar-Jun.	**Moderate Potential.** This species has moderate potential to occur in the Study Area, including the Project Area, on clay substrate in California annual grassland.	Appropriately timed surveys are recommended for this species.
talus fritillary *Fritillaria falcata*	Rank 1B.2	Chaparral, cismontane woodland, lower montane coniferous forest/serpentine, often talus. Elevation ranges from 980 to 5000 feet (300 to 1525 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain chaparral, woodland, or coniferous forest habitat or serpentine or talus substrate.	No further actions are recommended for this species.
Diablo helianthella *Helianthella castanea*	Rank 1B.2	Broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation ranges from 200 to 4270 feet (60 to 1300 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain forest, chaparral, woodland, or coastal scrub habitats. This species usually occurs in shallow, rocky soil at the interface of chaparral and oak woodland (CDFW 2015), and neither habitat is present in the Study Area.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
hogwallow starfish *Hesperevax caulescens*	Rank 4.2	Valley and foothill grassland (mesic, clay), vernal pools (shallow). Elevation ranges from 0 to 1660 feet (0 to 505 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain vernal pool or mesic grassland habitats.	No further actions are recommended for this species.
Brewer's western flax *Hesperolinon breweri*	Rank 1B.2	Chaparral, cismontane woodland, valley and foothill grassland/usually serpentine. Elevation ranges from 100 to 3100 feet (30 to 945 meters). Blooms May-Jul.	**Unlikely.** The Study Area does not contain chaparral or woodland habitats or serpentine substrate.	No further actions are recommended for this species.
woolly rose-mallow *Hibiscus lasiocarpos var. occidentalis*	Rank 1B.2	Marshes and swamps (freshwater)/often in riprap on sides of levees.. Elevation ranges from 0 to 390 feet (0 to 120 meters). Blooms Jun-Sep.	**No Potential.** The Study Area does not contain marsh or swamp habitat.	No further actions are recommended for this species.
Loma Prieta hoita *Hoita strobilina*	Rank 1B.1	Chaparral, cismontane woodland, riparian woodland/usually serpentine, mesic. Elevation ranges from 100 to 2820 feet (30 to 860 meters). Blooms May-Jul (Aug), (Oct).	**No Potential.** The Study Area does not contain chaparral or woodland habitats or serpentine substrate.	No further actions are recommended for this species.
Contra Costa goldfields *Lasthenia conjugens*	FE, Rank 1B.1	Cismontane woodland, playas (alkaline), valley and foothill grassland, vernal pools/mesic. Elevation ranges from 0 to 1540 feet (0 to 470 meters). Blooms Mar-Jun.	**No Potential.** The Study Area does not contain vernal pool habitat. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Ferris' goldfields *Lasthenia ferrisiae*	Rank 4.2	Vernal pools (alkaline, clay). Elevation ranges from 70 to 2300 feet (20 to 700 meters). Blooms Feb-May.	**No Potential.** The Study Area does not contain vernal pool habitat. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.
legenere *Legenere limosa*	Rank 1B.1	Vernal pools. Elevation ranges from 0 to 2890 feet (1 to 880 meters). Blooms Apr-Jun.	**No Potential.** The Study Area does not contain vernal pool habitat.	No further actions are recommended for this species.
serpentine leptosiphon *Leptosiphon ambiguus*	Rank 4.2	Cismontane woodland, coastal scrub, valley and foothill grassland/usually serpentine. Elevation ranges from 390 to 3710 feet (120 to 1130 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain woodland or coastal scrub habitats or serpentine substrate.	No further actions are recommended for this species.
Mt. Hamilton coreopsis *Leptosyne hamiltonii*	Rank 1B.2	Cismontane woodland (rocky). Elevation ranges from 1800 to 4270 feet (550 to 1300 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain contain woodland habitat or steep, shale talus (CDFW 2015).	No further actions are recommended for this species.
Mason's lilaeopsis *Lilaeopsis masonii*	SR, Rank 1B.1	Marshes and swamps (brackish or freshwater), riparian scrub. Elevation ranges from 0 to 30 feet (0 to 10 meters). Blooms Apr-Nov.	**No Potential.** The Study Area does not contain marsh or swamp or riparian scrub habitat.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Delta mudwort *Limosella australis*	Rank 2B.1	Marshes and swamps (freshwater or brackish), riparian scrub/usually mud banks. Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms May-Aug.	**No Potential.** The Study Area does not contain marsh or swamp, riparian scrub, or mud bank habitats.	No further actions are recommended for this species.
showy golden madia *Madia radiata*	Rank 1B.1	Cismontane woodland, valley and foothill grassland. Elevation ranges from 80 to 3990 feet (25 to 1215 meters). Blooms Mar-May.	**Moderate Potential.** This species has moderate potential to occur in the Study Area, including the Project Area, in California annual grassland habitat.	Appropriately timed surveys are recommended for this species.
Hall's bush-mallow *Malacothamnus hallii*	Rank 1B.2	Chaparral, coastal scrub. Elevation ranges from 30 to 2490 feet (10 to 760 meters). Blooms May-Sep (Oct).	**No Potential.** The Study Area does not contain chaparral or coastal scrub habitats.	No further actions are recommended for this species.
Mt. Diablo cottonweed *Micropus amphibolus*	Rank 3.2	Broadleafed upland forest, chaparral, cismontane woodland, valley and foothill grassland/rocky. Elevation ranges from 150 to 2710 feet (45 to 825 meters). Blooms Mar-May.	**Unlikely.** The Study Area does not contain forest, chaparral, or woodland habitats. Rocky grassland habitat in the Study Area is small and isolated. There are no occurrences in CCH (2015) closer than 30 miles away.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
little mousetail *Myosurus minimus* ssp. *apus*	Rank 3.1	Valley and foothill grassland, vernal pools (alkaline). Elevation ranges from 70 to 2100 feet (20 to 640 meters). Blooms Mar-Jun.	**Unlikely.** The Study Area does not contain vernal pool or mesic grassland habitats. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.
adobe navarretia *Navarretia nigelliformis* ssp. *nigelliformis*	Rank 4.2	Valley and foothill grasslandvernally mesic, vernal poolssometimes/clay, sometimes serpentine. Elevation ranges from 330 to 3280 feet (100 to 1000 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain vernal pool or mesic grassland habitats or serpentine substrate. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
shining navarretia *Navarretia nigelliformis* ssp. *radians*	Rank 1B.2	Cismontane woodland, valley and foothill grassland, vernal pools/sometimes clay. Elevation ranges from 250 to 3280 feet (76 to 1000 meters). Blooms Apr-Jul.	**Unlikely.** The Study Area does not contain woodland or vernal pool habitats. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species. Slopes with clay substrate are dry, small, and isolated.	No further actions are recommended for this species.
Mount Diablo phacelia *Phacelia phacelioides*	Rank 1B.2	Chaparral, cismontane woodland/rocky. Elevation ranges from 1640 to 4490 feet (500 to 1370 meters). Blooms Apr-May.	**No Potential.** The Study Area does not contain chaparral or woodland habitats.	No further actions are recommended for this species.
hairless popcorn-flower *Plagiobothrys glaber*	Rank 1A	Meadows and seeps (alkaline), marshes and swamps (coastal salt). Elevation ranges from 50 to 590 feet (15 to 180 meters). Blooms Mar-May.	**No Potential.** The Study Area does not contain meadow and seep or marsh and swamp habitats.	No further actions are recommended for this species.
California alkali grass *Puccinellia simplex*	Rank 1B.2	Marshes and swamps (coastal salt). Elevation ranges from 0 to 30 feet (1 to 10 meters). Blooms Jul.	**No Potential.** The Study Area does not contain marsh and swamp habitat.	No further actions are recommended for this species.
chaparral ragwort *Senecio aphanactis*	Rank 2B.2	Chaparral, cismontane woodland, coastal scrub/sometimes alkaline. Elevation ranges from 50 to 2620 feet (15 to 800 meters). Blooms Jan-Apr.	**No Potential.** The Study Area does not contain chaparral, cismontane woodland, coastal scrub, or alkaline flat habitats.	No further actions are recommended for this species.

SPECIES	STATUS*	HABITAT	POTENTIAL FOR OCCURRENCE	RECOMMENDATIONS
Suisun Marsh aster *Symphyotrichum lentum*	Rank 1B.2	Marshes and swamps (brackish and freshwater). Elevation ranges from 0 to 10 feet (0 to 3 meters). Blooms May-Nov.	**No Potential.** The Study Area does not contain marsh and swamp habitat.	No further actions are recommended for this species.
saline clover *Trifolium hydrophilum*	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. Elevation ranges from 0 to 980 feet (0 to 300 meters). Blooms Apr-Jun.	**Unlikely.** The Study Area does not contain marsh and swamp, mesic grassland, or vernal pool habitats. There are several small, manmade water impoundments at the heads of ephemeral drainages that have seasonal hydrology, but these are unlikely to provide suitable habitat for this species.	No further actions are recommended for this species.
caper-fruited tropidocarpum *Tropidocarpum capparideum*	Rank 1B.1	Valley and foothill grassland (alkaline hills). Elevation ranges from 0 to 1490 feet (1 to 455 meters). Blooms Mar-Apr.	**Moderate Potential.** This species has moderate potenital to occur in the Study Area, including the Project Area, in California annual grassland habitat.	Appropriately timed surveys are recommended for this species.

*** Key to status codes:**

BCC	U.S. Fish & Wildlife Service (USFWS) Birds of Conservation Concern
CFP	California Department of Fish and Wildlife (CDFW) Fully Protected Animal
EACCS	East Alameda County Conservation Strategy Focal Species
FC	Federal Candidate Species for Listing
FE	Federal Endangered
FT	Federal Threatened
RP	Sensitive species included in a USFWS Recovery Plan or Draft Recovery Plan
SC	State Candidate Species for listing
SE	State Endangered
SSC	California Department of Fish and Wildlife (CDFW) Species of Special Concern
SSI	California Department of Fish and Wildlife (CDFW) Special Status Invertebrates
ST	State Threatened
Rank 1A	California Rare Plant Rank 1A: Plants presumed extinct in California
Rank 1B	California Rare Plant Rank 1B: Plants rare, threatened or endangered in California and elsewhere
Rank 2A	California Rare Plant Rank 2A: Plants presumed extinct in California but more common elsewhere
Rank 2B	California Rare Plant Rank 2B: Plants rare, threatened, or endangered in California but more common elsewhere
Rank 3	CNPS List 3: Plants about which CNPS needs more information (a review list)
Rank 4	CNPS Rank 4: Plants of limited distribution (a watch list)
WBWG	Western Bat Working Group High Priority Species
WL	CDFW Watch List

****Potential species occurrence definitions:**

Present. Species was observed on the site during site visits or has been recorded (i.e. CNDDB, other reports) on the site recently.

High Potential. All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on the site.

Moderate Potential. Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found on the site.

Unlikely. Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species has a low probability of being found on the site.

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (foraging, breeding, cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

APPENDIX C

SITE PHOTOGRAPHS

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Photograph 1. Photograph shows the ruderal/developed biological community in the southern portion of the Project Area.

Photograph 2. Photograph shows a portion of the dense stand of mustard that occupies much of the central and eastern portions of the Study Area, including the Project Area.

Photograph 3. Photograph shows the California annual grassland biological community in the northeast portion of the Project Area.

Photograph 4. Photograph shows a portion of the swale biological community in the northeast portion of the Project Area. The swale is in the center of the photograph, running from the upper right side of the image to the lower left side of the image.

May 19, 2016

Chandra Jenkins
Regulatory Division
Delta Branch
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, CA 95814

Re: Re-verification request for Jess Ranch Delineation
(Corps File Number SPK-2008-01390)

Dear Chandra,

On behalf of our client, Denali Water Solutions, LLC, WRA, Inc. (WRA) is requesting an extension of the existing Jurisdictional Determination for the Jess Ranch property, located on Jess Ranch Road, immediately south of Interstate 580 at Grant Line Road near the Altamont Pass, in Alameda County (all of APN 99B-7800-7-8 and a portion of APN 99B-7800-7-7), California. The previous Jurisdictional Determination was issued by the Corps on April 30, 2009. The delineation verification likely expired on April 30, 2014, and our client is requesting that the Jurisdictional Determination be re-verified.

WRA made a site visit to the property on February 5, 2016, to determine if site conditions had changed substantially since the previous Jurisdictional Determination was issued. No property modifications have been made to the Study Area since 2008, although the Study Area boundary has been revised. There have been no large-scale changes in vegetative communities, and the Study Area remains as agricultural grazing land. The results of the site visit indicate no substantial changes to the locations of previously delineated waters of the U.S., with the exception of an extension of one previously mapped feature. As a result, the total acreage of waters of the U.S. has changed slightly. As stated above, the Study Area boundary has been revised based on the current needs of the client, and some features that were delineated and verified in 2008 are no longer located within the Study Area.

Enclosed with this letter are the previously verified wetland delineation map, the updated 2016 WRA wetland delineation map, updated 2016 delineation data sheets for representative sample points, and the Consolidated ORM Upload Workbook. The sample points confirm the locations of previously delineated waters of the U.S. in the Study Area, with the slight modifications shown on the enclosed map and summarized below:

- Ephemeral drainage feature OW1 has been delineated as a seasonal wetland swale as a result of the presence of dense vegetation throughout the linear feature. In addition, wetland conditions were observed to continue downslope from the originally delineated feature, where the slope becomes gentler and the feature broadens from 1 foot to 3 feet in width. As a result, this feature was increased from 0.0018 acres in 2008 to 0.019 acres in 2016. The name of this feature has been changed from OW1 to SW1 to reflect the change in the type of waters.

- Ephemeral drainage features OW3 and OW4 have been delineated as seasonal wetland swales as a result of the presence of dense vegetation throughout the linear features. These features, located in the same linear drainage, have also been combined into a single feature because wetland conditions continue between them. In 2008, the combined size of these features was 0.0033 acres. In 2016, the size of this combined feature (now called SW2 to reflect the change in the type of waters) increased to 0.004 acres.

- The feature delineated in 2005 as OW2 is now being called OW1 because it is the only non-wetland waters feature in the Study Area.

- W1 and OW5, delineated in 2008, are no longer located within the Study Area.

Summary tables detailing the total extent of Corps jurisdiction in the Jess Ranch Study Area have been updated and are shown below.

Table 1. Summary of Wetlands in the Jess Ranch Study Area

Feature	Type	Jurisdictional Area (acres)	Jurisdictional Area (linear feet)
SW1	Seasonal Wetland Swale	0.019	517
SW2	Seasonal Wetland Swale	0.004	182
	Total	**0.023**	**699**

Table 2. Summary of Non-wetland Waters in the Jess Ranch Study Area

Feature	Type	Jurisdictional Area (acres)	Jurisdictional Area (linear feet)
OW1	Ephemeral Drainage	0.011	238
	Total	**0.011**	**238**

Thank you for your review of this request for reverification. Please contact me at 415-524-7357, if you require additional information in making a determination to extend the previous verification, or would like to schedule a site visit to confirm conditions.

Sincerely,

Mark Kalnins
Associate Regulatory Permitting Specialist

Enclosures:

1. Previously verified wetland delineation map (Monk & Associates)
2. Updated 2016 wetland delineation map (WRA)
3. 2016 Wetland Delineation data sheets
4. Consolidated ORM Upload Workbook

Enclosure 1 – Previously verified wetland delineation map

(Monk & Associates)

Wetlands #	Sq. Ft.
W 1	161
Other Waters #	**Sq. Ft.**
OW 1	78
OW 2	476
OW 3	106
OW 4	36
OW 5	3,808

0 100 200 400 600 800 1,000 Feet

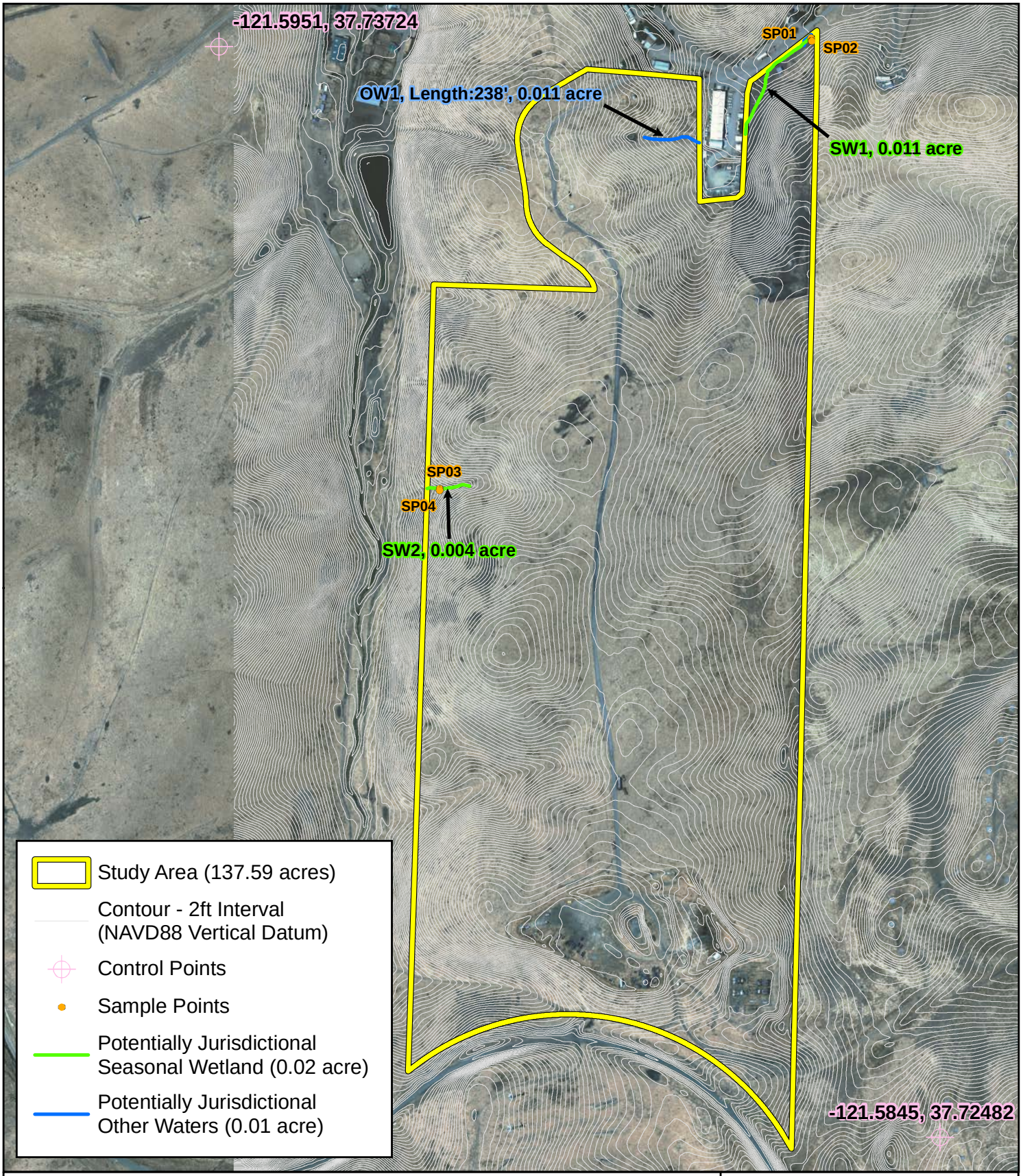
Sheet 1. Confirmed Wetland Delineation Map
Jess Ranch Project, Livermore, California

Monk & Associates
Environmental Consultants
1136 Saranap Avenue, Suite Q
Walnut Creek, California 94595
(925) 947-4867

Scale: 1 inch = 200 feet
Aerial Photograph Source: http://gdw.apfo.usda.gov
Corps Confirmation Date: April 10, 2009
by Marc Fuglar
Map Revision Date: April 24, 2009

Enclosure 2 – Updated 2016 wetland delineation map

(WRA, Inc.)



Enclosure 2. Delineation of Jurisdictional Features within the Study Area

N
W E
S

1 inch = 550 feet

0 250 500 1,000
Feet

Jess Ranch
Alameda County, California

wra
ENVIRONMENTAL CONSULTANTS

Map Prepared Date: 3/15/2016
Map Prepared By: MRochelle
Base Source: USGS EROS Imagery
Data Source(s): WRA

Path: L:\Acad 2000 Files\15000\15021-2\GIS\ArcMap\Delineation No Project Area.mxd

Enclosure 3 – 2016 Arid West Wetland Delineation Sheets

(WRA, Inc.)

Wetland Determination Data Form - Arid West Region

Project/Site Jess Ranch City Livermore County Alameda Sampling Date 2/5/2016

Applicant/Owner Jeff Thurber (Denali Water Solutions, LLC) State CA Sampling Point **SP01**

Investigator(s) Scott Batiuk Section,Township,Range 19, 2S, 4E

Landform (hillslope, terrace, etc.) small valley bottom Local Relief (concave, convex, none) concave Slope(%) 0-1

Subregion(LRR) LRR C (Medit. CA) Lat: 37.737439 Long: -121.586537 Datum: WGS 84

Soil Map Unit Name Altamont rocky clay, moderately deep, 7 to 30 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: The sample point is a paired wetland point located in a broad, low-gradient swale in the northeastern portion of the Study Area, south of Jess Ranch Road. The wetland boundary was determined by a break in slope and shift to dominance by upland plant species. SP02 and SP03 are paired.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 3' X 3.5'			
1. *Festuca perennis*	65	yes	FAC
2. *Hordeum marinum*	15	no	FAC
3. *Poa annua*	10	no	FACU
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover:	90		
WOODY VINE STRATUM Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 3 % cover of biotic crust 7

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 1 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

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

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: The sample point meets the Dominance Test indicator of hydrophytic vegetation.

SOIL

Sampling Point SP01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[1]	Texture	Remarks
0-6	10YR 2/2	95	7.5YR 2/2	5	C	M	silty clay loam	
6-16	10YR 3/2	85	7.5YR 3/4	15	C	PL	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☒ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point meets the Biotic Crust indicator of wetland hydrology.

Wetland Determination Data Form - Arid West Region

Project/Site Jess Ranch City Livermore County Alameda Sampling Date 2/5/2016

Applicant/Owner Jeff Thurber (Denali Water Solutions, LLC) State CA Sampling Point **SP02**

Investigator(s) Scott Batiuk Section,Township,Range 19, 2S, 4E

Landform (hillslope, terrace, etc.) hillslope Local Relief (concave, convex, none) concave Slope(%) 1-2

Subregion(LRR) LRR C (Medit. CA) Lat: 37.737430 Long: -121.586519 Datum: WGS 84

Soil Map Unit Name Altamont rocky clay, moderately deep, 7 to 30 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: The sample point is a paired upland point located at the base of a slope, above a swale, in the northeastern portion of the Study Area, south of Jess Ranch Road. The wetland boundary was determined by a break in slope and shift to dominance by upland plant species. SP02 and SP03 are paired.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 5-foot radius			
1. *Hordeum murinum*	48	yes	FACU
2. *Erodium moschatum*	20	yes	NL
3. *Capsella bursa-pastoris*	10	no	FACU
4. *Festuca perennis*	10	no	FAC
5. *Stellaria media*	5	no	FACU
6.			
7.			
8.			
Herb Stratum Total Cover:	93		
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 7 % cover of biotic crust 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 0 (A)

Total number of dominant species across all strata? 2 (B)

% of dominant species that are OBL, FACW, or FAC? 0 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:	
OBL species	x1	
FACW species	x2	
FAC species	x3	
FACU species	x4	
UPL species	x5	
Column Totals (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

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

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meet indicators of hydrophytic vegetation.

SOIL

Sampling Point SP02

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[1]	Texture	Remarks
0-4	10YR 2/2	70					sandy clay loam	gravel/cobbles 30%
4-12	10YR 2/2	90					sandy clay loam	gravel/cobbles 10%

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meet indicators of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches): _____

Water table present? ☐ Yes ☒ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches): _____

Wetland Hydrology Present ? ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet indicators of wetland hydrology.

Wetland Determination Data Form - Arid West Region

Project/Site Jess Ranch City Livermore County Alameda Sampling Date 2/5/2016

Applicant/Owner Jeff Thurber (Denali Water Solutions, LLC) State CA Sampling Point **SP03**

Investigator(s) Scott Batiuk Section,Township,Range 25, 2S, 3E

Landform (hillslope, terrace, etc.) drainage channel Local Relief (concave, convex, none) convex Slope(%) 2

Subregion(LRR) LRR C (Medit. CA) Lat: 37.732210 Long: -121.591931 Datum: WGS 84

Soil Map Unit Name Altamont rocky clay, moderately deep, 7 to 30 percent slopes NWI classification N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☒ Yes ☐ No
Hydric Soil Present? ☒ Yes ☐ No
Wetland Hydrology Present? ☒ Yes ☐ No

Is the Sampled Area within a Wetland? ☒ **Yes** ☐ **No**

Remarks: The sample point is a paired wetland point located in a narrow, linear, vegetated drainage between steep slopes along the western edge of the Study Area, outside of the Project Area. The wetland boundary was determined by a break in slope and shift to a dominance of upland vegetation. SP04 and SP05 are paired.

VEGETATION (use scientific names)

TREE STRATUM **Plot Size:** N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM **Plot Size:** N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM **Plot Size:** 1' x 10'			
1. *Festuca perennis*	96	yes	FAC
2. *Erodium moschatum*	3	no	NL
3. *Stellaria media*	1	no	FACU
4.			
5.			
6.			
7.			
8.			
Herb Stratum Total Cover: 100			
WOODY VINE STRATUM **Plot Size:** N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum 0 % cover of biotic crust 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 1 (B)

% of dominant species that are OBL, FACW, or FAC? 100 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:	
OBL species	x1	
FACW species	x2	
FAC species	x3	
FACU species	x4	
UPL species	x5	
Column Totals (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☒ Dominance Test is >50%
☐ Prevalence Index is </= 3.0[1]
☐ Morphological adaptations (provide supporting data in remarks)
☐ Problematic hydrophytic vegetation[1] (explain)

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

Hydrophytic Vegetation Present ? ☒ Yes ☐ No

Remarks: The sample point meets the Dominance Test indicator of hydrophytic vegetation.

SOIL

Sampling Point SP03

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-1	10YR 4/3	100					silty clay loam	
1-6	10YR 4/3	99	7.5YR 4/4	1	C	M	silty clay	
6-12	10YR 4/2	85	7.5YR 4/6	15	C	M, PL	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present ? ☒ **Yes** ☐ **No**

Remarks: The sample point meets the Depleted Matrix indicator of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches):

Water table present? ☐ Yes ☒ No Depth (inches):

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches):

Wetland Hydrology Present ? ☒ **Yes** ☐ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point meets the Oxidized Rhizospheres Along Living Roots indicator of wetland hydrology.

Wetland Determination Data Form - Arid West Region

Project/Site: Jess Ranch | City: Livermore | County: Alameda | Sampling Date: 2/5/2016

Applicant/Owner: Jeff Thurber (Denali Water Solutions, LLC) | State: CA | Sampling Point: **SP04**

Investigator(s): Scott Batiuk | Section,Township,Range: 25, 2S, 3E

Landform (hillslope, terrace, etc.): hillslope | Local Relief (concave, convex, none): convex | Slope(%): 5

Subregion(LRR): LRR C (Medit. CA) | Lat: 37.732195 | Long: -121.591932 | Datum: WGS 84

Soil Map Unit Name: Altamont rocky clay, moderately deep, 7 to 30 percent slopes | NWI classification: N/A

Are climatic/hydrologic conditions on-site typical for this time of year? ☒ Yes ☐ No (If no, explain in remarks)

Are any of the following significantly disturbed? ☐ Vegetation ☐ Soil ☐ Hydrology | Are "Normal Circumstances" present? ☒ Yes ☐ No

Are any of the following naturally problematic? ☐ Vegetation ☐ Soil ☐ Hydrology | (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS - Attach site map showing sample point locations, transects, important features, etc.

Hydrophytic Vegetation Present? ☐ Yes ☒ No

Hydric Soil Present? ☐ Yes ☒ No

Wetland Hydrology Present? ☐ Yes ☒ No

Is the Sampled Area within a Wetland? ☐ **Yes** ☒ **No**

Remarks: The sample point is a paired upland point at the base of a steep slope above a linear drainage near the western boundary of the Study Area, outside of the Project Area. The wetland boundary was determined by a break in slope and shift to a dominance of upland vegetation. SP04 and SP05 are paired.

VEGETATION (use scientific names)

TREE STRATUM Plot Size: N/A	Absolute % cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Tree Stratum Total Cover:			
SAPLING/SHRUB STRATUM Plot Size: N/A			
1.			
2.			
3.			
4.			
Sapling/Shrub Stratum Total Cover:			
HERB STRATUM Plot Size: 5-foot radius			
1. *Lepidium nitidum*	40	yes	FAC
2. *Erodium moschatum*	20	yes	NL
3. *Festuca perennis*	11	no	FAC
4. *Amsinckia sp. (seedling)*	10	no	NL
5. *Hordeum murinum*	5	no	FACU
6. *Erodium botrys*	2	no	FACU
7. *Stellaria media*	2	no	FACU
8.			
Herb Stratum Total Cover:	90		
WOODY VINE STRATUM Plot Size: N/A			
1.			
2.			
Woody Vines Total Cover:			

% Bare ground in herb stratum: 10 | % cover of biotic crust: 0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC? 1 (A)

Total number of dominant species across all strata? 2 (B)

% of dominant species that are OBL, FACW, or FAC? 50 (A/B)

Prevalence Index Worksheet

Total % cover of:	Multiply by:
OBL species	x1
FACW species	x2
FAC species	x3
FACU species	x4
UPL species	x5
Column Totals (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators

☐ Dominance Test is >50%

☐ Prevalence Index is </= 3.0[1]

☐ Morphological adaptations (provide supporting data in remarks)

☐ Problematic hydrophytic vegetation[1] (explain)

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

Hydrophytic Vegetation Present ? ☐ Yes ☒ No

Remarks: The sample point does not meeting indicators of hydrophytic vegetation.

SOIL

Sampling Point SP04

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[1]	Texture	Remarks
0-12	10YR 3/3	100	7.5YR 4/6	<1	C	M	silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)(LRR C)
- ☐ 1cm Muck (A9)(LRR D)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydric vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present ? ☐ **Yes** ☒ **No**

Remarks: The sample point does not meeting indicators of hydric soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)(Nonriverine)
- ☐ Sediment Deposits (B2)(Nonriverine)
- ☐ Drift Deposits (B3)(Nonriverine)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in PLowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1)(Riverine)
- ☐ Sediment Deposits (B2)(Riverine)
- ☐ Drift Deposits (B3)(Riverine)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface water present? ☐ Yes ☒ No Depth (inches): _____

Water table present? ☐ Yes ☒ No Depth (inches): _____

Saturation Present? (includes capillary fringe) ☐ Yes ☒ No Depth (inches): _____

Wetland Hydrology Present ? ☐ **Yes** ☒ **No**

Describe recorded data (stream guage, monitoring well, aerial photos, etc.) if available.

Remarks: The sample point does not meet indicators of wetland hydrology.

Enclosure 4 – Consolidated ORM Upload Workbook

Waters_Name	State	Cowardin_Code	HGM_Code	Meas_Type	Amount	Units	Waters_Type	Latitude	Longitude	Local_Waterway
SW1	CALIFORNIA	PEM1		Area	0.019	ACRE	NRPWW	37.737059	-121.587077	
SW2	CALIFORNIA	PEM1		Area	0.004	ACRE	NRPWW	37.732182	-121.591728	
OW1	CALIFORNIA	R4SB		Linear	238	FOOT	NRPW	37.736254	-121.588534	

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

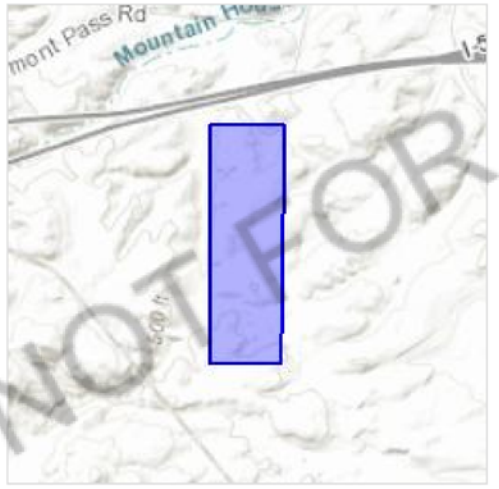
IPaC resource list

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

Alameda County, California



Local office

Sacramento Fish And Wildlife Office

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

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

Endangered species

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

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

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

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

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

Listed 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.

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

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

Mammals

NAME	STATUS

San Joaquin Kit Fox Vulpes macrotis mutica — Endangered
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2873

Reptiles

NAME	STATUS
Alameda Whipsnake (=striped Racer) Masticophis lateralis euryxanthus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5524	Threatened
Giant Garter Snake Thamnophis gigas No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii There is **final** critical habitat for this species. Your location overlaps the critical habitat. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

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

Insects

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

NAME	STATUS
Valley Elderberry Longhorn Beetle Desmocerus californicus dimorphus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp Branchinecta lynchi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp Lepidurus packardi There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2246	Endangered

Flowering Plants

NAME	STATUS
Large-flowered Fiddleneck Amsinckia grandiflora There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5558	Endangered

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
California Red-legged Frog Rana draytonii https://ecos.fws.gov/ecp/species/2891#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 http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

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

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

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 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/9737

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

Long-billed Curlew Numenius americanus — 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/5511

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

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 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/4243

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

Probability of Presence Summary

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

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

Probability of Presence (■)

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

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

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

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

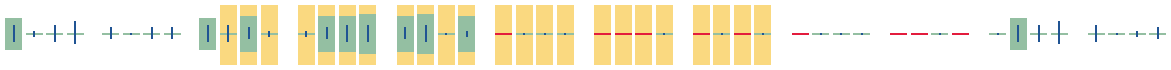
No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort – no data

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

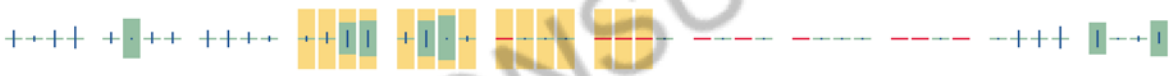
Burrowing Owl
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



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

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

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

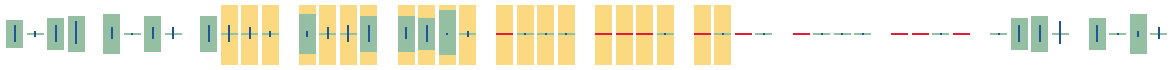


Oak Titmouse
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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

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

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



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

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

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

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

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

R4SBA

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

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

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

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

Data exclusions

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

Data precautions

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

CNDDB 9-Quad Species List 359 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712154	Lone Tree Creek	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712164	Tracy	Mapped	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712165	Midway	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712166	Altamont	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Ambystoma californiense	California tiger salamander	AAAAA01180	Threatened	Threatened	WL	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Amphibians - Ambystomatidae - Ambystoma californiense
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712166	Altamont	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712165	Midway	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712164	Tracy	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712156	Mendenhall Springs	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Candidate Threatened	SSC	-	3712155	Cedar Mtn.	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii

Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Taricha torosa	Coast Range newt	AAAAF02032	None	None	SSC	-	3712156	Mendenhall Springs	Unprocessed	Animals - Amphibians - Salamandridae - Taricha torosa
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712154	Lone Tree Creek	Mapped	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Amphibians	Spea hammondii	western spadefoot	AAABF02020	None	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Amphibians - Scaphiopodidae - Spea hammondii
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Accipiter striatus	sharp-shinned hawk	ABNKC12020	None	None	WL	-	3712166	Altamont	Unprocessed	Animals - Birds - Accipitridae - Accipiter striatus
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712166	Altamont	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712164	Tracy	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712165	Midway	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712154	Lone Tree Creek	Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712155	Cedar Mtn.	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Accipitridae - Buteo regalis

Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712165	Midway	Mapped	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo regalis	ferruginous hawk	ABNKC19120	None	None	WL	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo regalis
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3712166	Altamont	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3712174	Union Island	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3712164	Tracy	Mapped	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Buteo swainsoni	Swainson's hawk	ABNKC19070	None	Threatened	-	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Accipitridae - Buteo swainsoni
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712165	Midway	Mapped	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Circus hudsonius	northern harrier	ABNKC11011	None	None	SSC	-	3712166	Altamont	Unprocessed	Animals - Birds - Accipitridae - Circus hudsonius
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712175	Clifton Court Forebay	Mapped	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Elanus leucurus	white-tailed kite	ABNKC06010	None	None	FP	-	3712165	Midway	Mapped and Unprocessed	Animals - Birds - Accipitridae - Elanus leucurus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3712166	Altamont	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712166	Altamont	Unprocessed	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712175	Clifton Court Forebay	Mapped	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712164	Tracy	Mapped	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712165	Midway	Mapped	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712155	Cedar Mtn.	Mapped	Animals - Birds - Alaudidae - Eremophila alpestris actia
Animals - Birds	Eremophila alpestris actia	California horned lark	ABPAT02011	None	None	WL	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Alaudidae - Eremophila alpestris actia

Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3712165	Midway	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Chaetura vauxi	Vaux's swift	ABNUA03020	None	None	SSC	-	3712166	Altamont	Unprocessed	Animals - Birds - Apodidae - Chaetura vauxi
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Nycticorax nycticorax	black-crowned night heron	ABNGA11010	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Ardeidae - Nycticorax nycticorax
Animals - Birds	Charadrius montanus	mountain plover	ABNNB03100	None	None	SSC	-	3712174	Union Island	Unprocessed	Animals - Birds - Charadriidae - Charadrius montanus
Animals - Birds	Falco columbarius	merlin	ABNKD06030	None	None	WL	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Falconidae - Falco columbarius
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3712166	Altamont	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3712164	Tracy	Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3712156	Mendenhall Springs	Mapped	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco peregrinus anatum	American peregrine falcon	ABNKD06071	Delisted	Delisted	FP	-	3712166	Altamont	Unprocessed	Animals - Birds - Falconidae - Falco peregrinus anatum
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712174	Union Island	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712175	Clifton Court Forebay	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712164	Tracy	Mapped	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Agelaius tricolor	tricolored blackbird	ABPBXB0020	None	Candidate Endangered	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Icteridae - Agelaius tricolor
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712165	Midway	Mapped	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Lanius ludovicianus	loggerhead shrike	ABPBR01030	None	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Laniidae - Lanius ludovicianus
Animals - Birds	Baeolophus inornatus	oak titmouse	ABPAW01100	None	None	-	-	3712155	Cedar Mtn.	Unprocessed	Animals - Birds - Paridae - Baeolophus inornatus

Animals - Birds	Setophaga petechia	yellow warbler	ABPBX03010	None	None	SSC	-	3712166	Altamont	Unprocessed	Animals - Birds - Parulidae - Setophaga petechia
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712166	Altamont	Mapped	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712155	Cedar Mtn.	Mapped	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712165	Midway	Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Ammodramus savannarum	grasshopper sparrow	ABPBXA0020	None	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Passerellidae - Ammodramus savannarum
Animals - Birds	Artemisiospiza belli belli	Bell's sage sparrow	ABPBX97021	None	None	WL	-	3712165	Midway	Unprocessed	Animals - Birds - Passerellidae - Artemisiospiza belli belli
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3712164	Tracy	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Melospiza melodia	song sparrow (-inModesto-in population)	ABPBXA3010	None	None	SSC	-	3712174	Union Island	Mapped	Animals - Birds - Passerellidae - Melospiza melodia
Animals - Birds	Phalacrocorax auritus	double-crested cormorant	ABNFD01020	None	None	WL	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Birds - Phalacrocoracidae - Phalacrocorax auritus
Animals - Birds	Melanerpes lewis	Lewis' woodpecker	ABNYF04010	None	None	-	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Picidae - Melanerpes lewis
Animals - Birds	Numenius americanus	long-billed curlew	ABNNF07070	None	None	WL	-	3712176	Byron Hot Springs	Unprocessed	Animals - Birds - Scolopacidae - Numenius americanus
Animals - Birds	Asio flammeus	short-eared owl	ABNSB13040	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Birds - Strigidae - Asio flammeus
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712155	Cedar Mtn.	Mapped	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712154	Lone Tree Creek	Mapped	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712174	Union Island	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia

Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Vireo bellii pusillus	least Bell's vireo	ABPBW01114	Endangered	Endangered	-	-	3712164	Tracy	Mapped	Animals - Birds - Vireonidae - Vireo bellii pusillus
Animals - Crustaceans	Branchinecta longiantenna	longhorn fairy shrimp	ICBRA03020	Endangered	None	-	-	3712166	Altamont	Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta longiantenna
Animals - Crustaceans	Branchinecta longiantenna	longhorn fairy shrimp	ICBRA03020	Endangered	None	-	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta longiantenna
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta lynchi	vernal pool fairy shrimp	ICBRA03030	Threatened	None	-	-	3712166	Altamont	Mapped and Unprocessed	Animals - Crustaceans - Branchinectidae - Branchinecta lynchi
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Branchinecta mesovallensis	midvalley fairy shrimp	ICBRA03150	None	None	-	-	3712176	Byron Hot Springs	Mapped	Animals - Crustaceans - Branchinectidae - Branchinecta mesovallensis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3712166	Altamont	Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Crustaceans	Linderiella occidentalis	California linderiella	ICBRA06010	None	None	-	-	3712165	Midway	Mapped and Unprocessed	Animals - Crustaceans - Linderiellidae - Linderiella occidentalis
Animals - Fish	Acipenser medirostris	green sturgeon	AFCAA01030	Threatened	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Acipenseridae - Acipenser medirostris
Animals - Fish	Acipenser transmontanus	white sturgeon	AFCAA01050	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Acipenseridae - Acipenser transmontanus
Animals - Fish	Lavinia exilicauda exilicauda	Sacramento hitch	AFCJB19012	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda exilicauda
Animals - Fish	Mylopharodon conocephalus	hardhead	AFCJB25010	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Cyprinidae - Mylopharodon conocephalus

Animals - Fish	Pogonichthys macrolepidotus	Sacramento splittail	AFCJB34020	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Cyprinidae - Pogonichthys macrolepidotus
Animals - Fish	Hysterocarpus traskii traskii	Sacramento-San Joaquin tule perch	AFCQK02012	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Embiotocidae - Hysterocarpus traskii traskii
Animals - Fish	Hypomesus transpacificus	Delta smelt	AFCHB01040	Threatened	Endangered	-	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Fish - Osmeridae - Hypomesus transpacificus
Animals - Fish	Spirinchus thaleichthys	longfin smelt	AFCHB03010	Candidate	Threatened	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Fish - Osmeridae - Spirinchus thaleichthys
Animals - Fish	Thaleichthys pacificus	eulachon	AFCHB04010	Threatened	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Fish - Osmeridae - Thaleichthys pacificus
Animals - Fish	Entosphenus tridentatus	Pacific lamprey	AFBAA02100	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Petromyzontidae - Entosphenus tridentatus
Animals - Fish	Oncorhynchus mykiss irideus pop. 11	steelhead - Central Valley DPS	AFCHA0209K	Threatened	None	-	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 11
Animals - Fish	Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	AFCHA0209G	Threatened	None	-	-	3712156	Mendenhall Springs	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus mykiss irideus pop. 8
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall / late fall-run ESU	AFCHA0205N	None	None	SSC	-	3712174	Union Island	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 13
Animals - Fish	Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	AFCHA0205A	Threatened	Threatened	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 6
Animals - Fish	Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	AFCHA0205B	Endangered	Endangered	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Fish - Salmonidae - Oncorhynchus tshawytscha pop. 7
Animals - Insects	Bombus crotchii	Crotch bumble bee	IIHYM24480	None	None	-	-	3712174	Union Island	Mapped	Animals - Insects - Apidae - Bombus crotchii
Animals - Insects	Bombus crotchii	Crotch bumble bee	IIHYM24480	None	None	-	-	3712164	Tracy	Mapped	Animals - Insects - Apidae - Bombus crotchii
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712164	Tracy	Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712156	Mendenhall Springs	Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712165	Midway	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3712166	Altamont	Mapped	Animals - Insects - Apidae - Bombus occidentalis

Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3712165	Midway	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3712174	Union Island	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Desmocerus californicus dimorphus	valley elderberry longhorn beetle	IICOL48011	Threatened	None	-	-	3712164	Tracy	Mapped	Animals - Insects - Cerambycidae - Desmocerus californicus dimorphus
Animals - Insects	Hygrotus curvipes	curved-foot hygrotus diving beetle	IICOL38030	None	None	-	-	3712166	Altamont	Mapped	Animals - Insects - Dytiscidae - Hygrotus curvipes
Animals - Insects	Hygrotus curvipes	curved-foot hygrotus diving beetle	IICOL38030	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Insects - Dytiscidae - Hygrotus curvipes
Animals - Insects	Hygrotus curvipes	curved-foot hygrotus diving beetle	IICOL38030	None	None	-	-	3712176	Byron Hot Springs	Mapped	Animals - Insects - Dytiscidae - Hygrotus curvipes
Animals - Insects	Speyeria callippe callippe	callippe silverspot butterfly	IILEPJ6091	Endangered	None	-	-	3712156	Mendenhall Springs	Unprocessed	Animals - Insects - Nymphalidae - Speyeria callippe callippe
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712164	Tracy	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712165	Midway	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712154	Lone Tree Creek	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712155	Cedar Mtn.	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712166	Altamont	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Vulpes macrotis mutica	San Joaquin kit fox	AMAJA03041	Endangered	Threatened	-	-	3712176	Byron Hot Springs	Mapped	Animals - Mammals - Canidae - Vulpes macrotis mutica
Animals - Mammals	Dipodomys heermanni berkeleyensis	Berkeley kangaroo rat	AMAFD03061	None	None	-	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Mammals - Heteromyidae - Dipodomys heermanni berkeleyensis
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712155	Cedar Mtn.	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712154	Lone Tree Creek	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712164	Tracy	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus

Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712174	Union Island	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712165	Midway	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus
Animals - Mammals	Perognathus inornatus	San Joaquin Pocket Mouse	AMAFD01060	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Animals - Mammals - Heteromyidae - Perognathus inornatus
Animals - Mammals	Sylvilagus bachmani riparius	riparian brush rabbit	AMAEB01021	Endangered	Endangered	-	-	3712174	Union Island	Mapped	Animals - Mammals - Leporidae - Sylvilagus bachmani riparius
Animals - Mammals	Eumops perotis californicus	western mastiff bat	AMACD02011	None	None	SSC	-	3712164	Tracy	Mapped	Animals - Mammals - Molossidae - Eumops perotis californicus
Animals - Mammals	Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	AMAFF08082	None	None	SSC	-	3712156	Mendenhall Springs	Unprocessed	Animals - Mammals - Muridae - Neotoma fuscipes annectens
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712156	Mendenhall Springs	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712155	Cedar Mtn.	Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712174	Union Island	Mapped	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Taxidea taxus	American badger	AMAJF04010	None	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Mammals - Mustelidae - Taxidea taxus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712166	Altamont	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712165	Midway	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712164	Tracy	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus

Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712156	Mendenhall Springs	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712155	Cedar Mtn.	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3712154	Lone Tree Creek	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712154	Lone Tree Creek	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712164	Tracy	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3712165	Midway	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3712166	Altamont	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3712176	Byron Hot Springs	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712166	Altamont	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3712156	Mendenhall Springs	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3712155	Cedar Mtn.	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3712175	Clifton Court Forebay	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3712174	Union Island	Unprocessed	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Reptiles	Anniella pulchra	northern California legless lizard	ARACC01020	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Reptiles - Anniellidae - Anniella pulchra

Animals - Reptiles	Arizona elegans occidentalis	California glossy snake	ARADB01017	None	None	SSC	-	3712165	Midway	Mapped	Animals - Reptiles - Colubridae - Arizona elegans occidentalis
Animals - Reptiles	Arizona elegans occidentalis	California glossy snake	ARADB01017	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Arizona elegans occidentalis
Animals - Reptiles	Arizona elegans occidentalis	California glossy snake	ARADB01017	None	None	SSC	-	3712155	Cedar Mtn.	Mapped	Animals - Reptiles - Colubridae - Arizona elegans occidentalis
Animals - Reptiles	Masticophis flagellum ruddocki	San Joaquin coachwhip	ARADB21021	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis flagellum ruddocki
Animals - Reptiles	Masticophis flagellum ruddocki	San Joaquin coachwhip	ARADB21021	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis flagellum ruddocki
Animals - Reptiles	Masticophis flagellum ruddocki	San Joaquin coachwhip	ARADB21021	None	None	SSC	-	3712166	Altamont	Mapped	Animals - Reptiles - Colubridae - Masticophis flagellum ruddocki
Animals - Reptiles	Masticophis flagellum ruddocki	San Joaquin coachwhip	ARADB21021	None	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis flagellum ruddocki
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712176	Byron Hot Springs	Mapped	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712165	Midway	Mapped	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Masticophis lateralis euryxanthus	Alameda whipsnake	ARADB21031	Threatened	Threatened	-	-	3712154	Lone Tree Creek	Mapped	Animals - Reptiles - Colubridae - Masticophis lateralis euryxanthus
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712155	Cedar Mtn.	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712164	Tracy	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712166	Altamont	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712174	Union Island	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712175	Clifton Court Forebay	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata

Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3712176	Byron Hot Springs	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712176	Byron Hot Springs	Mapped	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712166	Altamont	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712165	Midway	Mapped and Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712164	Tracy	Mapped and Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712156	Mendenhall Springs	Mapped and Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712155	Cedar Mtn.	Unprocessed	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Phrynosoma blainvillii	coast horned lizard	ARACF12100	None	None	SSC	-	3712154	Lone Tree Creek	Mapped	Animals - Reptiles - Phrynosomatidae - Phrynosoma blainvillii
Animals - Reptiles	Plestiodon skiltonianus interparietalis	Coronado skink	ARACH01114	None	None	WL	-	3712156	Mendenhall Springs	Unprocessed	Animals - Reptiles - Scincidae - Plestiodon skiltonianus interparietalis
Community - Terrestrial	Alkali Meadow	Alkali Meadow	CTT45310CA	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Community - Terrestrial - Alkali Meadow
Community - Terrestrial	Alkali Meadow	Alkali Meadow	CTT45310CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Alkali Meadow
Community - Terrestrial	Alkali Seep	Alkali Seep	CTT45320CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Alkali Seep
Community - Terrestrial	Cismontane Alkali Marsh	Cismontane Alkali Marsh	CTT52310CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Cismontane Alkali Marsh
Community - Terrestrial	Great Valley Valley Oak Riparian Forest	Great Valley Valley Oak Riparian Forest	CTT61430CA	None	None	-	-	3712174	Union Island	Mapped	Community - Terrestrial - Great Valley Valley Oak Riparian Forest
Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Northern Claypan Vernal Pool
Community - Terrestrial	Northern Claypan Vernal Pool	Northern Claypan Vernal Pool	CTT44120CA	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Community - Terrestrial - Northern Claypan Vernal Pool
Community - Terrestrial	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	CTT62100CA	None	None	-	-	3712166	Altamont	Mapped	Community - Terrestrial - Sycamore Alluvial Woodland
Community - Terrestrial	Sycamore Alluvial Woodland	Sycamore Alluvial Woodland	CTT62100CA	None	None	-	-	3712156	Mendenhall Springs	Mapped	Community - Terrestrial - Sycamore Alluvial Woodland

Community - Terrestrial	Valley Needlegrass Grassland	Valley Needlegrass Grassland	CTT42110CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Valley Needlegrass Grassland
Community - Terrestrial	Valley Sink Scrub	Valley Sink Scrub	CTT36210CA	None	None	-	-	3712176	Byron Hot Springs	Mapped	Community - Terrestrial - Valley Sink Scrub
Community - Terrestrial	Valley Sink Scrub	Valley Sink Scrub	CTT36210CA	None	None	-	-	3712165	Midway	Mapped	Community - Terrestrial - Valley Sink Scrub
Community - Terrestrial	Valley Sink Scrub	Valley Sink Scrub	CTT36210CA	None	None	-	-	3712166	Altamont	Mapped	Community - Terrestrial - Valley Sink Scrub
Community - Terrestrial	Valley Sink Scrub	Valley Sink Scrub	CTT36210CA	None	None	-	-	3712175	Clifton Court Forebay	Mapped	Community - Terrestrial - Valley Sink Scrub
Plants - Vascular	Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Agavaceae - Chlorogalum pomeridianum var. minus
Plants - Vascular	Allium sharsmithiae	Sharsmith's onion	PMLIL02310	None	None	-	1B.3	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Alliaceae - Allium sharsmithiae
Plants - Vascular	Eryngium spinosepalum	spiny-sepaled button-celery	PDAPI0Z0Y0	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Apiaceae - Eryngium spinosepalum
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Lilaeopsis masonii	Mason's lilaeopsis	PDAPI19030	None	Rare	-	1B.1	3712174	Union Island	Mapped	Plants - Vascular - Apiaceae - Lilaeopsis masonii
Plants - Vascular	Balsamorhiza macrolepis	big-scale balsamroot	PDAST11061	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Asteraceae - Balsamorhiza macrolepis
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712165	Midway	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712174	Union Island	Mapped	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712164	Tracy	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Blepharizonia plumosa	big tarplant	PDAST1C011	None	None	-	1B.1	3712176	Byron Hot Springs	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Blepharizonia plumosa
Plants - Vascular	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1	None	None	-	1B.1	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. congdonii
Plants - Vascular	Centromadia parryi ssp. congdonii	Congdon's tarplant	PDAST4R0P1	None	None	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. congdonii
Plants - Vascular	Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	PDAST2E163	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Asteraceae - Cirsium fontinale var. campylon

Plants - Vascular	Deinandra bacigalupii	Livermore tarplant	PDAST4R0V0	None	Endangered	-	1B.1	3712166	Altamont	Mapped and Unprocessed	Plants - Vascular - Asteraceae - Deinandra bacigalupii
Plants - Vascular	Eriophyllum jepsonii	Jepson's woolly sunflower	PDAST3N040	None	None	-	4.3	3712166	Altamont	Unprocessed	Plants - Vascular - Asteraceae - Eriophyllum jepsonii
Plants - Vascular	Eriophyllum jepsonii	Jepson's woolly sunflower	PDAST3N040	None	None	-	4.3	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Asteraceae - Eriophyllum jepsonii
Plants - Vascular	Eriophyllum jepsonii	Jepson's woolly sunflower	PDAST3N040	None	None	-	4.3	3712156	Mendenhall Springs	Unprocessed	Plants - Vascular - Asteraceae - Eriophyllum jepsonii
Plants - Vascular	Eriophyllum jepsonii	Jepson's woolly sunflower	PDAST3N040	None	None	-	4.3	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Asteraceae - Eriophyllum jepsonii
Plants - Vascular	Helianthella castanea	Diablo helianthella	PDAST4M020	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Asteraceae - Helianthella castanea
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3712165	Midway	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3712166	Altamont	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3712175	Clifton Court Forebay	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Hesperevax caulescens	hogwallow starfish	PDASTE5020	None	None	-	4.2	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Asteraceae - Hesperevax caulescens
Plants - Vascular	Lasthenia ferrisiae	Ferris' goldfields	PDAST5L070	None	None	-	4.2	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Asteraceae - Lasthenia ferrisiae
Plants - Vascular	Lasthenia ferrisiae	Ferris' goldfields	PDAST5L070	None	None	-	4.2	3712175	Clifton Court Forebay	Unprocessed	Plants - Vascular - Asteraceae - Lasthenia ferrisiae
Plants - Vascular	Lasthenia ferrisiae	Ferris' goldfields	PDAST5L070	None	None	-	4.2	3712166	Altamont	Unprocessed	Plants - Vascular - Asteraceae - Lasthenia ferrisiae
Plants - Vascular	Leptosyne hamiltonii	Mt. Hamilton coreopsis	PDAST2L0C0	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Asteraceae - Leptosyne hamiltonii
Plants - Vascular	Leptosyne hamiltonii	Mt. Hamilton coreopsis	PDAST2L0C0	None	None	-	1B.2	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Asteraceae - Leptosyne hamiltonii
Plants - Vascular	Madia radiata	showy golden madia	PDAST650E0	None	None	-	1B.1	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Asteraceae - Madia radiata
Plants - Vascular	Madia radiata	showy golden madia	PDAST650E0	None	None	-	1B.1	3712164	Tracy	Mapped	Plants - Vascular - Asteraceae - Madia radiata
Plants - Vascular	Madia radiata	showy golden madia	PDAST650E0	None	None	-	1B.1	3712165	Midway	Mapped	Plants - Vascular - Asteraceae - Madia radiata
Plants - Vascular	Micropus amphibolus	Mt. Diablo cottonweed	PDAST6D030	None	None	-	3.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Asteraceae - Micropus amphibolus
Plants - Vascular	Microseris sylvatica	sylvan microseris	PDAST6E0E0	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Asteraceae - Microseris sylvatica

Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3712165	Midway	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis
Plants - Vascular	Senecio aphanactis	chaparral ragwort	PDAST8H060	None	None	-	2B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Asteraceae - Senecio aphanactis
Plants - Vascular	Amsinckia grandiflora	large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	-	1B.1	3712165	Midway	Mapped and Unprocessed	Plants - Vascular - Boraginaceae - Amsinckia grandiflora
Plants - Vascular	Amsinckia grandiflora	large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	-	1B.1	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Boraginaceae - Amsinckia grandiflora
Plants - Vascular	Amsinckia grandiflora	large-flowered fiddleneck	PDBOR01050	Endangered	Endangered	-	1B.1	3712164	Tracy	Mapped and Unprocessed	Plants - Vascular - Boraginaceae - Amsinckia grandiflora
Plants - Vascular	Plagiobothrys glaber	hairless popcornflower	PDBOR0V0B0	None	None	-	1A	3712166	Altamont	Mapped	Plants - Vascular - Boraginaceae - Plagiobothrys glaber
Plants - Vascular	Caulanthus lemmonii	Lemmon's jewelflower	PDBRA0M0E0	None	None	-	1B.2	3712165	Midway	Mapped	Plants - Vascular - Brassicaceae - Caulanthus lemmonii
Plants - Vascular	Caulanthus lemmonii	Lemmon's jewelflower	PDBRA0M0E0	None	None	-	1B.2	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Brassicaceae - Caulanthus lemmonii
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712164	Tracy	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712165	Midway	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712174	Union Island	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Tropidocarpum capparideum	caper-fruited tropidocarpum	PDBRA2R010	None	None	-	1B.1	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Brassicaceae - Tropidocarpum capparideum
Plants - Vascular	Campanula exigua	chaparral harebell	PDCAM020A0	None	None	-	1B.2	3712165	Midway	Mapped	Plants - Vascular - Campanulaceae - Campanula exigua
Plants - Vascular	Campanula exigua	chaparral harebell	PDCAM020A0	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Campanulaceae - Campanula exigua
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3712156	Mendenhall Springs	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712165	Midway	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla

Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712166	Altamont	Mapped and Unprocessed	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Spergularia macrotheca var. longistyla	long-styled sand-spurrey	PDCAR0W062	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Caryophyllaceae - Spergularia macrotheca var. longistyla
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	PDCHE040B0	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex cordulata var. cordulata
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	PDCHE040B0	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex cordulata var. cordulata
Plants - Vascular	Atriplex cordulata var. cordulata	heartscale	PDCHE040B0	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex cordulata var. cordulata
Plants - Vascular	Atriplex coronata var. coronata	crownscale	PDCHE040C3	None	None	-	4.2	3712175	Clifton Court Forebay	Unprocessed	Plants - Vascular - Chenopodiaceae - Atriplex coronata var. coronata
Plants - Vascular	Atriplex coronata var. coronata	crownscale	PDCHE040C3	None	None	-	4.2	3712166	Altamont	Unprocessed	Plants - Vascular - Chenopodiaceae - Atriplex coronata var. coronata
Plants - Vascular	Atriplex coronata var. coronata	crownscale	PDCHE040C3	None	None	-	4.2	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Chenopodiaceae - Atriplex coronata var. coronata
Plants - Vascular	Atriplex depressa	brittlescale	PDCHE042L0	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex depressa
Plants - Vascular	Atriplex depressa	brittlescale	PDCHE042L0	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex depressa
Plants - Vascular	Atriplex minuscula	lesser saltscale	PDCHE042M0	None	None	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex minuscula
Plants - Vascular	Atriplex minuscula	lesser saltscale	PDCHE042M0	None	None	-	1B.1	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Chenopodiaceae - Atriplex minuscula
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped and Unprocessed	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3712166	Altamont	Mapped and Unprocessed	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Convolvulus simulans	small-flowered morning-glory	PDCON05060	None	None	-	4.2	3712165	Midway	Unprocessed	Plants - Vascular - Convolvulaceae - Convolvulus simulans
Plants - Vascular	Convolvulus simulans	small-flowered morning-glory	PDCON05060	None	None	-	4.2	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Convolvulaceae - Convolvulus simulans
Plants - Vascular	Arctostaphylos manzanita ssp. laevigata	Contra Costa manzanita	PDERI04273	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos manzanita ssp. laevigata
Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener

Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener
Plants - Vascular	Astragalus tener var. tener	alkali milk-vetch	PDFAB0F8R1	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Fabaceae - Astragalus tener var. tener
Plants - Vascular	Hoita strobilina	Loma Prieta hoita	PDFAB5Z030	None	None	-	1B.1	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Fabaceae - Hoita strobilina
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum
Plants - Vascular	Phacelia phacelioides	Mt. Diablo phacelia	PDHYD0C3Q0	None	None	-	1B.2	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Hydrophyllaceae - Phacelia phacelioides
Plants - Vascular	Acanthomintha lanceolata	Santa Clara thorn-mint	PDLAM01020	None	None	-	4.2	3712154	Lone Tree Creek	Unprocessed	Plants - Vascular - Lamiaceae - Acanthomintha lanceolata
Plants - Vascular	Acanthomintha lanceolata	Santa Clara thorn-mint	PDLAM01020	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Lamiaceae - Acanthomintha lanceolata
Plants - Vascular	Acanthomintha lanceolata	Santa Clara thorn-mint	PDLAM01020	None	None	-	4.2	3712165	Midway	Unprocessed	Plants - Vascular - Lamiaceae - Acanthomintha lanceolata
Plants - Vascular	Calochortus pulchellus	Mt. Diablo fairy-lantern	PMLIL0D160	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Liliaceae - Calochortus pulchellus
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712176	Byron Hot Springs	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712175	Clifton Court Forebay	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712165	Midway	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712166	Altamont	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria agrestis	stinkbells	PMLIL0V010	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria agrestis
Plants - Vascular	Fritillaria falcata	talus fritillary	PMLIL0V070	None	None	-	1B.2	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Liliaceae - Fritillaria falcata
Plants - Vascular	Hesperolinon breweri	Brewer's western flax	PDLIN01030	None	None	-	1B.2	3712165	Midway	Mapped	Plants - Vascular - Linaceae - Hesperolinon breweri
Plants - Vascular	Hesperolinon breweri	Brewer's western flax	PDLIN01030	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Linaceae - Hesperolinon breweri
Plants - Vascular	Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	PDMAL0H0R3	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Malvaceae - Hibiscus lasiocarpos var. occidentalis
Plants - Vascular	Malacothamnus hallii	Hall's bush-mallow	PDMAL0Q0F0	None	None	-	1B.2	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Malvaceae - Malacothamnus hallii
Plants - Vascular	Clarkia breweri	Brewer's clarkia	PDONA05080	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Onagraceae - Clarkia breweri

Plants - Vascular	Clarkia concinna ssp. automixa	Santa Clara red ribbons	PDONA050A1	None	None	-	4.3	3712155	Cedar Mtn.	Mapped	Plants - Vascular - Onagraceae - Clarkia concinna ssp. automixa
Plants - Vascular	Piperia michaelii	Michael's rein orchid	PMORC1X110	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Orchidaceae - Piperia michaelii
Plants - Vascular	Chloropyron molle ssp. hispidum	hispid salty bird's-beak	PDSCR0J0D1	None	None	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron molle ssp. hispidum
Plants - Vascular	Chloropyron palmatum	palmate-bracted bird's-beak	PDSCR0J0J0	Endangered	Endangered	-	1B.1	3712166	Altamont	Mapped	Plants - Vascular - Orobanchaceae - Chloropyron palmatum
Plants - Vascular	Eschscholzia rhombipetala	diamond-petaled California poppy	PDPAP0A0D0	None	None	-	1B.1	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Papaveraceae - Eschscholzia rhombipetala
Plants - Vascular	Eschscholzia rhombipetala	diamond-petaled California poppy	PDPAP0A0D0	None	None	-	1B.1	3712165	Midway	Mapped and Unprocessed	Plants - Vascular - Papaveraceae - Eschscholzia rhombipetala
Plants - Vascular	Eschscholzia rhombipetala	diamond-petaled California poppy	PDPAP0A0D0	None	None	-	1B.1	3712164	Tracy	Mapped	Plants - Vascular - Papaveraceae - Eschscholzia rhombipetala
Plants - Vascular	Eschscholzia rhombipetala	diamond-petaled California poppy	PDPAP0A0D0	None	None	-	1B.1	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Papaveraceae - Eschscholzia rhombipetala
Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Poaceae - Puccinellia simplex
Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Poaceae - Puccinellia simplex
Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3712166	Altamont	Mapped and Unprocessed	Plants - Vascular - Poaceae - Puccinellia simplex
Plants - Vascular	Leptosiphon ambiguus	serpentine leptosiphon	PDPLM09020	None	None	-	4.2	3712166	Altamont	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon ambiguus
Plants - Vascular	Leptosiphon ambiguus	serpentine leptosiphon	PDPLM09020	None	None	-	4.2	3712156	Mendenhall Springs	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon ambiguus
Plants - Vascular	Leptosiphon ambiguus	serpentine leptosiphon	PDPLM09020	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon ambiguus
Plants - Vascular	Leptosiphon ambiguus	serpentine leptosiphon	PDPLM09020	None	None	-	4.2	3712154	Lone Tree Creek	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon ambiguus
Plants - Vascular	Navarretia nigelliformis ssp. radians	shining navarretia	PDPLM0C0J2	None	None	-	1B.2	3712165	Midway	Mapped	Plants - Vascular - Polemoniaceae - Navarretia nigelliformis ssp. radians
Plants - Vascular	Navarretia nigelliformis ssp. radians	shining navarretia	PDPLM0C0J2	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Polemoniaceae - Navarretia nigelliformis ssp. radians
Plants - Vascular	Eriogonum umbellatum var. bahiiforme	bay buckwheat	PDPGN086UB	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum umbellatum var. bahiiforme

Plants - Vascular	Eriogonum umbellatum var. bahiiforme	bay buckwheat	PDPGN086UB	None	None	-	4.2	3712156	Mendenhall Springs	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum umbellatum var. bahiiforme
Plants - Vascular	Androsace elongata ssp. acuta	California androsace	PDPRI02031	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Primulaceae - Androsace elongata ssp. acuta
Plants - Vascular	Androsace elongata ssp. acuta	California androsace	PDPRI02031	None	None	-	4.2	3712165	Midway	Unprocessed	Plants - Vascular - Primulaceae - Androsace elongata ssp. acuta
Plants - Vascular	Androsace elongata ssp. acuta	California androsace	PDPRI02031	None	None	-	4.2	3712166	Altamont	Unprocessed	Plants - Vascular - Primulaceae - Androsace elongata ssp. acuta
Plants - Vascular	Androsace elongata ssp. acuta	California androsace	PDPRI02031	None	None	-	4.2	3712176	Byron Hot Springs	Unprocessed	Plants - Vascular - Primulaceae - Androsace elongata ssp. acuta
Plants - Vascular	Aspidotis carlotta-halliae	Carlotta Hall's lace fern	PPADI07020	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Pteridaceae - Aspidotis carlotta-halliae
Plants - Vascular	Delphinium californicum ssp. interius	Hospital Canyon larkspur	PDRAN0B0A2	None	None	-	1B.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium californicum ssp. interius
Plants - Vascular	Delphinium californicum ssp. interius	Hospital Canyon larkspur	PDRAN0B0A2	None	None	-	1B.2	3712154	Lone Tree Creek	Mapped	Plants - Vascular - Ranunculaceae - Delphinium californicum ssp. interius
Plants - Vascular	Delphinium californicum ssp. interius	Hospital Canyon larkspur	PDRAN0B0A2	None	None	-	1B.2	3712156	Mendenhall Springs	Mapped	Plants - Vascular - Ranunculaceae - Delphinium californicum ssp. interius
Plants - Vascular	Delphinium californicum ssp. interius	Hospital Canyon larkspur	PDRAN0B0A2	None	None	-	1B.2	3712166	Altamont	Mapped	Plants - Vascular - Ranunculaceae - Delphinium californicum ssp. interius
Plants - Vascular	Delphinium californicum ssp. interius	Hospital Canyon larkspur	PDRAN0B0A2	None	None	-	1B.2	3712165	Midway	Mapped and Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium californicum ssp. interius
Plants - Vascular	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	None	None	-	1B.2	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Ranunculaceae - Delphinium recurvatum
Plants - Vascular	Delphinium recurvatum	recurved larkspur	PDRAN0B1J0	None	None	-	1B.2	3712176	Byron Hot Springs	Mapped	Plants - Vascular - Ranunculaceae - Delphinium recurvatum
Plants - Vascular	Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	None	None	-	3.1	3712175	Clifton Court Forebay	Unprocessed	Plants - Vascular - Ranunculaceae - Myosurus minimus ssp. apus
Plants - Vascular	Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	None	None	-	3.1	3712166	Altamont	Unprocessed	Plants - Vascular - Ranunculaceae - Myosurus minimus ssp. apus
Plants - Vascular	Galium andrewsii ssp. gatense	phlox-leaf serpentine bedstraw	PDRUB0N032	None	None	-	4.2	3712155	Cedar Mtn.	Unprocessed	Plants - Vascular - Rubiaceae - Galium andrewsii ssp. gatense

Plants - Vascular	Limosella australis	Delta mudwort	PDSCR10030	None	None	-	2B.1	3712175	Clifton Court Forebay	Mapped	Plants - Vascular - Scrophulariaceae - Limosella australis

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

59 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712176, 3712175, 3712174, 3712166, 3712165, 3712164, 3712156 3712155 and 3712154;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthomintha lanceolata	Santa Clara thorn-mint	Lamiaceae	annual herb	Mar-Jun	4.2	S4	G4
Allium sharsmithiae	Sharsmith's onion	Alliaceae	perennial bulbiferous herb	Mar-May	1B.3	S2	G2
Amsinckia grandiflora	large-flowered fiddleneck	Boraginaceae	annual herb	(Mar)Apr-May	1B.1	S1	G1
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Aspidotis carlotta-halliae	Carlotta Hall's lace fern	Pteridaceae	perennial rhizomatous herb	Jan-Dec	4.2	S3	G3
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	1B.1	S2	G2
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Blepharizonia plumosa	big tarplant	Asteraceae	annual herb	Jul-Oct	1B.1	S1S2	G1G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Campanula exigua	chaparral harebell	Campanulaceae	annual herb	May-Jun	1B.2	S2	G2
Caulanthus lemmonii	Lemmon's jewelflower	Brassicaceae	annual herb	Feb-May	1B.2	S3	G3
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S2	G3T2
Chlorogalum pomeridianum var. minus	dwarf soaproot	Agavaceae	perennial bulbiferous herb	May-Aug	1B.2	S3	G5T3
	hispid bird's-beak	Orobanchaceae	annual herb	Jun-Sep	1B.1	S1	G2T1

Chloropyron molle ssp. hispidum			(hemiparasitic)				
Chloropyron palmatum	palmate-bracted bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct	1B.1	S1	G1
Cirsium fontinale var. campylon	Mt. Hamilton fountain thistle	Asteraceae	perennial herb	(Feb)Apr-Oct	1B.2	S2	G2T2
Clarkia breweri	Brewer's clarkia	Onagraceae	annual herb	Apr-Jun	4.2	S4	G4
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May-Jun(Jul)	4.3	S3	G5?T3
Convolvulus simulans	small-flowered morning-glory	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4
Deinandra bacigalupii	Livermore tarplant	Asteraceae	annual herb	Jun-Oct	1B.1	S1	G1
Delphinium californicum ssp. interius	Hospital Canyon larkspur	Ranunculaceae	perennial herb	Apr-Jun	1B.2	S3	G3T3
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eriophyllum jepsonii	Jepson's woolly sunflower	Asteraceae	perennial herb	Apr-Jun	4.3	S3	G3
Eryngium spinosepalum	spiny-sepaled button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.2	S2	G2
Eschscholzia rhombipetala	diamond-petaled California poppy	Papaveraceae	annual herb	Mar-Apr	1B.1	S1	G1
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria agrestis	stinkbells	Liliaceae	perennial bulbiferous herb	Mar-Jun	4.2	S3	G3
Fritillaria falcata	talus fritillary	Liliaceae	perennial bulbiferous herb	Mar-May	1B.2	S2	G2
Helianthella castanea	Diablo helianthella	Asteraceae	perennial herb	Mar-Jun	1B.2	S2	G2
Hesperevax caulescens	hogwallow starfish	Asteraceae	annual herb	Mar-Jun	4.2	S3	G3
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2	G2
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Hoita strobilina	Loma Prieta hoita	Fabaceae	perennial herb	May-Jul(Aug-Oct)	1B.1	S2?	G2?
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	4.2	S4	G4
Leptosyne hamiltonii	Mt. Hamilton coreopsis	Asteraceae	annual herb	Mar-May	1B.2	S2	G2
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Madia radiata	showy golden madia	Asteraceae	annual herb	Mar-May	1B.1	S3	G3
Malacothamnus hallii	Hall's bush-mallow	Malvaceae	perennial evergreen shrub	(Apr)May-Sep(Oct)	1B.2	S2	G2

Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	4.2	S3	G4T3
Navarretia nigelliformis ssp. radians	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	1B.2	S2	G4T2
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	Mar-May	1A	SH	GH
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May	1B.2	S2	G5T2
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1

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Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Plants								
Allium sharsmithiae	Sharsmith's onion	-	-	1B.3	Rocky and serpentine soils in chaparral and cismontane woodland. Elevation: 1,310-3,935 feet. Blooming period: March-May (CNPS 2019).	N	N	Suitable habitat and serpentine soils not present.
Amsinckia grandiflora	large-flowered fiddleneck	FE	SE	1B.1	Cismontane woodland, valley and foothill grassland. Elevation: 885-1,805 feet. Blooming period: March-May (CNPS 2019).	N	Y	Project area is approximately 400 feet below species elevation range listed in the CNPS Inventory; however, there are several known occurrences in the hills north and south of the Project area, as well as one record in Livermore at a lower elevation than the Project area (CCH 2019). Suitable grassland habitat is present.
Amsinckia lunaris	bent-flowered fiddleneck	-	-	1B.2	Coastal bluff scrub, cismontane woodland, and grasslands. Elevation: 5-1,640 feet. Blooming period: March-June (CNPS 2019).	N	Y	Project area contains suitable grassland habitat.
Arctostaphylos manzanita ssp. *laevigata*	Contra Costa manzanita	-	-	1B.2	Rocky soils in chaparral. Elevation: 1,410-3,610 feet. Blooming period: January-April (CNPS 2019).	N	N	Suitable habitat not present. Project area is approximately 1,000 feet below elevation range for this species.
Astragalus tener var. *tener*	alkali milk-vetch	-	-	1B.2	Alkaline soils in playas, adobe clay grasslands, and vernal pools. Elevation: 0-195 feet. Blooming period: March–June (CNPS 2019).	N	N	Suitable habitat not present. This species associated with valley floors at lower elevations (CCH 2019).
Atriplex cordulata var. *cordulata*	heartscale	-	-	1B.2	Saline or alkaline soils in chenopod scrub, meadows, seeps, and sandy grassland. Elevation: 0-1,837 feet. Blooming period: April-October (CNPS 2019).	N	N	Suitable habitat not present. Soils are clay and clay-loam, not sandy (USDA 2019).
Atriplex coronata var. *vallicola*	Lost Hills crownscale	-	-	1B.2	Alkaline soils in chenopod scrub, grassland, and vernal pools. Elevation: 164-2,083 feet. Blooming period: April-August (CNPS 2019).	N	N	Suitable habitat not present, and northern extent of occurrences is located approximately 60 miles south of the Project area (CDFW 2019a).
Atriplex depressa	brittlescale	-	-	1B.2	Alkaline or clay soils in chenopod scrub, meadows, seeps, playas, vernal pools, and grassland. Elevation: 3-1,049 feet. Blooming period: April-October (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are clay and mildly alkaline (USDA 2019).
Atriplex minuscula	lesser saltscale	-	-	1B.1	Alkaline and sandy soils in chenopod scrub, playas, and grassland. Elevation: 49-656 feet. Blooming period: May-October (CNPS 2019).	N	N	Suitable habitat not present. Soils are clay and clay-loam, not sandy (USDA 2019).
Balsamorhiza macrolepis	big-scale balsamroot	-	-	1B.2	Occasionally in serpentine soils in chaparral, cismontane woodland, and grasslands. Elevation: 295-5,100 feet. Blooming period: March–June (CNPS 2019).	N	Y	Project area does not contain chaparral, woodland, or serpentine; however, grasslands in Project area may provide suitable habitat as this species can be found on substrates other than serpentine.
Blepharizonia plumosa	big tarplant	-	-	1B.1	Usually clay soils in grasslands. Elevation: 95-1,655 feet. Blooming period: July–October (CNPS 2019).	Y	Y	Project area contains suitable grassland habitat.
Calochortus pulchellus	Mount Diablo fairy-lantern	-	-	1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. Elevation: 98-2,755 feet. Blooming period: April-June (CNPS 2019).	N	N	Outside known species range (CDFW 2019a; CNPS 2019).
Campanula exigua	chaparral harebell	-	-	1B.2	Rocky, usually serpentine soils in chaparral. Elevation: 900-4,100 feet. Blooming period: May-June (CNPS 2019).	N	N	Suitable habitat not present. Project area is well below elevation range for this species.
Caulanthus lemmonii	Lemmon's jewelflower	-	-	1B.2	Pinyon and juniper woodland, grassland. Elevation: 262-4,002 feet. Blooming period: March-May (CNPS 2019).	N	Y	Project area contains suitable grassland habitat.
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	-	-	1B.1	Alkaline soils in grassland. Elevation: 0-755 feet. Blooming period: May-November (CNPS 2019).	Y	Y	Suitable grassland habitat present. Soils in Project area are mildly alkaline (USDA 2019).
Chlorogalum pomeridianum var. *minus*	dwarf soaproot	-	-	1B.2	Serpentine soils in chaparral. Elevation: 1,000-3,280 feet. Blooming period: May-August (CNPS 2019).	N	N	Suitable habitat not present. Project area is well below elevation range for this species.
Chloropyron molle ssp. *hispidum*	hispid bird's-beak	-	-	1B.1	Alkaline soils in meadows, seeps, playas, grassland. Elevation: 3-508 feet. Blooming period: June-September (CNPS 2019).	N	N	Known from highly alkaline lowland areas. Hilly, mildly alkaline soils of Project area do not provide suitable habitat.
Chloropyron palmatum	palmate-bracted bird's-beak	FE	SE	1B.1	Alkaline soils in chenopod scrub and grasslands. Elevation: 15-510 feet. Blooming period: May-October (CNPS 2019).	Y	N	Known from highly alkaline lowland areas. Hilly, mildly alkaline soils of Project area do not provide suitable habitat.
Cirsium fontinale var. *campylon*	Mt. Hamilton fountain thistle	-	-	1B.2	Serpentine seeps in chaparral, cismontane woodland, and grasslands. Elevation: 325-2,920 feet. Blooming period: February, April-October (CNPS 2019).	N	N	Serpentine not present.
Deinandra bacigalupii	Livermore tarplant	-	SE	1B.1	Alkaline meadows and seeps. Elevation: 490-605 feet. Blooming period: June-October (CNPS 2019).	Y	N	Suitable habitat not present.

Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Delphinium californicum ssp. *interius*	Hospital Canyon larkspur	-	-	1B.2	Coastal scrub, mesic soils in cismontane woodland, and openings of chaparral. Elevation: 635-3,595 feet. Blooming period: April-May (CNPS 2019).	N	N	Suitable habitat not present.
Delphinium recurvatum	recurved larkspur	-	-	1B.2	Alkaline soils in chenopod scrub, cismontane woodland, and grassland. Elevation: 9-2,591 feet. Blooming period: March-June (CNPS 2019).	Y	Y	Suitable grassland habitat present. Soils in Project area are mildly alkaline (USDA 2019).
Eryngium spinosepalum	spiny-sepaled button-celery	-	-	1B.2	Vernal pools and grassland. Elevation: 262-2,034 feet. Blooming period: April-June (CNPS 2019).	N	N	Suitable vernal pool habitat not present.
Eschscholzia rhombipetala	diamond-petaled California poppy	-	-	1B.1	Grasslands in alkaline or clay soils. Elevation: 0-3,200 feet. Blooming period: March-April (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are clay and mildly alkaline (USDA 2019).
Extriplex joaquinana	San Joaquin spearscale	-	-	1B.2	Alkaline soils in chenopod scrub, meadows, seeps, playas, and grasslands. Elevation: 0-2,740 feet. Blooming period: April–October (CNPS 2019.	N	Y	Suitable grassland habitat present. Soils in Project area are mildly alkaline (USDA 2019).
Fritillaria falcata	talus fritillary	-	-	1B.2	Serpentine soils that are often in talus in chaparral, cismontane woodland, and lower montane coniferous forest. Elevation: 980-5,005 feet. Blooming period: March-May (CNPS 2019).	N	N	Suitable habitat and serpentinite substrate not present. Project area is well below elevation range for this species.
Helianthella castanea	Diablo helianthella	-	-	1B.2	Usually rocky, axonal soils, often in partial shade; broadleafed upland forest, chaparral, cismontane woodland, coastal scrub, riparian woodland, valley and foothill grassland. Elevation: 197-4,265 feet. Blooming period: March-June (CNPS 2019).	N	N	Suitable habitat not present.
Hesperolinon breweri	Brewer's western flax	-	-	1B.2	Usually serpentinite, chaparral, cismontane woodland, valley and foothill grassland. Elevation: 98-3,100 feet. Blooming period: May-July (CNPS 2019).	N	Y	Project area does not contain chaparral, woodland, or serpentine; however, grasslands in Project area may provide suitable habitat as this species can be found on substrates other than serpentine
Hibiscus lasiocarpos var. *occidentalis*	woolly rose-mallow	-	-	1B.2	Often in riprap on sides of levees in freshwater marshes and swamps. Elevation: 0-395 feet. Blooming period: June-September (CNPS 2019).	N	N	Suitable habitat not present.
Hoita strobilina	Loma Prieta hoita	-	-	1B.1	Usually serpentinite, mesic areas in chaparral, cismontane woodland, and riparian woodland. Elevation: 98-2,851 feet. Blooming period: May-October (CNPS 2019).	N	N	Suitable habitat not present.
Lasthenia conjugens	Contra Costa goldfields	FE	-	1B.1	Mesic soils in vernal pools, grasslands, alkaline playas, and cismontane woodland. Elevation: 0-1,540 feet. Blooming period: March-June (CNPS 2019).	N	N	Suitable habitat not present. Seasonal wetlands in Project area likely do not have long enough hydroperiod to support species. Nearest occurrences to Project area are in Antioch and Walnut Creek (CCH 2019).
Legenere limosa	legenere	-	-	1B.1	Vernal pools. Elevation: 0-2,885 feet. Blooming period: April-June (CNPS 2019).	N	N	Suitable habitat not present.
Leptosyne hamiltonii	Mt. Hamilton coreopsis	-	-	1B.2	Rocky soils in cismontane woodland. Elevation: 1,800-4,265 feet. Blooming period: March-May (CNPS 2019).	N	N	Suitable habitat not present. Project area is well below elevation range for this species.
Lilaeopsis masonii	Mason's lilaeopsis	-	SR	1B.1	Perennial rhizomatous herb. Brackish or freshwater marshes and swamps, riparian scrub; 0-33 feet. Blooming period: April-November	N	N	Suitable habitat not present. Project area is above elevation range for this species, which is restricted to lowland valley floors.
Limosella australis	Delta mudwort	-	-	2B.1	Usually mud banks in freshwater or brackish marshes and swamps, riparian scrub. Elevation: 0-9 feet. Blooming period: May-August (CNPS 2019).	N	N	Suitable habitat not present. Project area is above elevation range for this species, which is restricted to lowland valley floors.
Madia radiata	showy golden madia	-	-	1B.1	Cismontane woodland and grassland. Elevation: 82-3,986 feet. Blooming period: March-May (CNPS 2019).	N	Y	Suitable grassland habitat present.
Malacothamnus hallii	Hall's bush-mallow	-	-	1B.2	Chaparral and coastal scrub. Elevation: 30-2,495 feet. Blooming period: April-October (CNPS 2019).	N	N	Suitable habitat not present.
Navarretia nigelliformis ssp. *radians*	shining navarretia	-	-	1B.2	Sometimes in clay soils in vernal pools, grasslands, and cismontane woodland. Elevation: 210-3,280 feet. Blooming period: March-July (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are clay (USDA 2019).
Phacelia phacelioides	Mt. Diablo phacelia	-	-	1B.2	Rocky soils chaparral and cismontane woodland. Elevation: 1,640-4,495 feet. Blooming period: April-May (CNPS 2019).	N	N	Suitable habitat not present.
Puccinellia simplex	California alkali grass	-	-	1B.2	Alkaline and vernally mesic soils in sinks, flats, and lake margins in chenopod scrub, meadows, seeps, grassland, and vernal pools. Elevation: 5-3,050 feet. Blooming period: March-May (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are clay and mildly alkaline (USDA 2019).
Senecio aphanactis	chaparral ragwort	-	-	2B.2	Chaparral, cismontane woodland, coastal scrub, and alkaline flats. Elevation: 49-2,624 feet. Blooming period: January-April (CNPS 2019).	N	N	Suitable habitat not present.

Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	-	-	1B.2	Alkaline soils in meadows, seeps, marshes and swamps. Elevation: 0-835 feet. Blooming period: February-May (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are mildly alkaline (USDA 2019).
Symphyotrichum lentum	Suisun Marsh aster	-	-	1B.2	Brackish and freshwater marshes and swamps. Elevation: 0-9 feet. Blooming period: (April)May-November (CNPS 2019).	N	N	Suitable habitat not present. Project area is above elevation range for this species, which is restricted to lowland valley floors.
Trifolium hydrophilum	saline clover	-	-	1B.2	Marshes, swamps, vernal pools, and grasslands with mesic or alkaline soils. Elevation: 0-985 feet. Blooming period: April-June (CNPS 2019).	N	N	Suitable habitat not present. This species associated with valley floors at lower elevations. Nearest occurrence to Project area is in Stockton (CCH 2019).
Tropidocarpum capparideum	caper-fruited tropidocarpum	-	-	1B.1	Alkaline hills in valley and foothill grassland. Elevation: 3-1,493 feet. Blooming period: March-April (CNPS 2019).	N	Y	Suitable grassland habitat present. Soils in Project area are mildly alkaline (USDA 2019).
Invertebrates								
Branchinecta longiantenna	longhorn fairy shrimp	FE	-		Various types of vernal pools (USFWS 2005).	Y	N	No vernal pools or vernal pool-like features present in the Project area.
Branchinecta lynchi	vernal pool fairy shrimp	FT	-		Found only in vernal pools and vernal pool-like habitats. Never found in riverine, marine, or other permanent water bodies. Can be found in a variety of pool types; however, this species trends toward smaller pools (<0.05 acre). Distributed throughout the Central Valley and coast ranges of California (USFWS 2005).	Y	N	No vernal pools or vernal pool-like features present in the Project area.
Callophrys mossii bayensis	San Bruno elfin butterfly	FE	-		Coastal grassland and low scrub of north-facing slopes within the fog belt where the larval host plant grows, stonecrop (*Sedum spathulifolium*). Known populations restricted to San Mateo County (USFWS 2010a).	N	N	Project area outside known species range.
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	-		Dependent on host plant, elderberry (*Sambucus* spp.), which generally grows in riparian woodlands and upland habitats of the Central Valley. Current beetle distribution in Central Valley ranges from Shasta County to Fresno County (USFWS 1999).	N	N	Elderberry host plant not present (Monk & Associates 2008, WRA 2016).
Lepidurus packardi	vernal pool tadpole shrimp	FE	-		Wide variety of ephemeral wetland habitats (vernal pools). Distributed throughout Central Valley and San Francisco bay Area (USFWS 2005).	N	N	No vernal pools or vernal pool-like features present in the Project area.
Speyeria callippe callippe	Callippe silverspot butterfly	FE	-		Found in grassy hills near the San Francisco Bay that support native host plant violet (*Viola pedunculata*). Only two accepted populations: one on San Bruno Mountain, San Mateo County, and another in Cordelia Hills, Solano County (USFWS 2009).	Y	N	Project area outside known species range.
Fishes								
Acipenser medirostris	green sturgeon	FT	SSC		Entire coast of California. Spawning occurs in Sacramento River and Klamath River. Oceanic waters, bays, and estuaries during non-spawning season. Spawning habitat = deep pools in large, turbulent, freshwater mainstems (NMFS 2005).	N	N	Suitable habitat not present.
Acipenser transmontanus	white sturgeon	-	SSC		Found in salt water habitats from Mexico to Alaska. Spawning occurs from the Sacramento-San Joaquin system northward, with most California spawning occuring in the Sacramento and Feather rivers (San Joaquin River when conditions are clear and fast). Spawning occurs form February to June. Spawning conditions require minimal sand and silt, complex habitats with floodplain and rocky substrates (Moyle et al. 2015).	N	N	Suitable habitat not present.
Entosphenus tridentatus	Pacific lamprey	-	-		Occurs along Pacific coast from Japan to Alaska and down to Baja California. Can be freshwater residents or anadromous. This species migrates long distances and is stopped only by major barriers such as dams. Need cold clear water with gravel for spawning. Young need slow flows and soft sediment for burrowing (Moyle et al. 2015).	N	N	Suitable habitat not present.
Hypomesus transpacificus	Delta smelt	FT	SE		Tolerates wide range of salinities. Move into freshwater when spawning (January–July). When not spawning, found most often in the mixing zone. Distribution includes the Sacramento River below Isleton, San Joaquin River below Mossdale, and Suisun Bay. Spawning areas include the Sacramento River below Sacramento, Mokelumne River system, Cache Slough, the Delta, and Montezuma Slough (USFWS 1996).	N	N	Suitable habitat not present.

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Lavinia exilicauda exilicauda	Sacramento hitch	-	SSC		Inhabit warm, lowland waters including clear streams, turbid sloughs, lakes and reservoirs. In streams they are generally found in pools or runs among aquatic vegetation, although small individuals will also use riffles. Prefer shallow (<1 meter) stream habitats with smaller gravel to mud substrates. Hitch have high temperature tolerances. Spawning occurs on gravel riffles, water of 14-26°C. Found in the Delta, Sacramento River and tributaries, reservoirs, but largely not present from San Joaquin River (Moyle et al. 2015).	N	N	Suitable habitat not present.
Mylopharodon conocephalus	hardhead	-	-		Small to large streams in a low to mid-elevation environments. May also inhabit lakes or reservoirs. Preferred stream temperature might easily exceed 20ºC, though these fish do not favor low dissolved oxygen levels.Usually found in clear deep streams with a slow but present flow. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate. Occur from Sacramento-San Joaquin and Russian River drainages from the Pit River, Modoc County, in the north to the Kern River, Kern County in the south (University of California Davis 2017).	N	N	Suitable habitat not present.
Oncorhynchus mykiss irideus pop. 8	steelhead - Central Valley DPS	FT	-		Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (Busby et al. 1996).	N	N	Suitable habitat not present.
Oncorhynchus mykiss irideus pop. 11	steelhead - central California coast DPS	FT	-		Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (Busby et al 1996).	Y	N	Suitable habitat not present.
Oncorhynchus tshawytscha pop. 6	chinook salmon - Central Valley spring-run ESU	FT	ST		Spawning habitat = fast-moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	N	N	Suitable habitat not present.
Oncorhynchus tshawytscha pop. 7	chinook salmon - Sacramento River winter-run ESU	FE	SE		Spawning habitat = fast moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	N	N	Suitable habitat not present.
Oncorhynchus tshawytscha pop. 13	chinook salmon - Central Valley fall/late fall-run ESU	-	SSC		Spawning habitat = fast moving, freshwater streams and rivers. Juvenile habitat = brackish estuaries. Non-spawning = marine waters (Myers et al. 1998).	N	N	Suitable habitat not present.
Spirinchus thaleichthys	longfin smelt	FC	ST, SSC		In the Sacramento-San Joaquin estuary, longfin smelt are rarely found upstream of Rio Vista or Medford Island in the Delta. Adults occur seasonally as far downstream as South Bay but they are concentrated in Suisun, San Pablo, and North San Francisco Bays. Occupy mostly the middle or bottom of the water column in the salt or brackish water portions of the estuary. Spawning takes place in freshwater, over sandy-gravelsubstrates, rocks, and aquatic plants (USFWS 1996).	N	N	Suitable habitat not present.
Thaleichthys pacificus	eulachon	FT	-		Nearshore ocean waters and to 1,000 feet in depth, except for the brief spawning runs into their natal (birth) streams. Spawning grounds are typically in the lower reaches of larger snowmelt-fed rivers with water temperatures ranging from 39 to 50°F (4 to 10°C). Spawning occurs over sand or coarse gravel substrates (NMFS 2017).	N	N	Suitable habitat not present.
Amphibians								
Ambystoma californiense	California tiger salamander	FT	ST		Breeding ponds are usually fish-free and ephemeral. Ponds form in winter and dry in summer. May also breed in slow streams and semi-permanent waters, including cattle ponds. Needs both suitable upland habitat and breeding ponds. Mostly fossorial & often utilizes mole/ground squirrel burrows. Typical habitat associations include grassland, oak savanna, and edges of mixed woodland and lower elevation coniferous forest (Nafis 2019).	Y	Y	Suitable aquatic habitat not present in the Project area; however, there are suitable breeding ponds adjacent to Project area and there are numerous occurrences in vicinity of Project area (CDFW 2019a). Species could utilize refugia in onsite grassland habitats, or move through the Project area.

Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Rana boylii	foothill yellow-legged frog	-	ST, SSC		Frequents rocky streams and rivers with rocky substrate and open, sunny banks, in forests, chaparral, and woodlands. Sometimes found in isolated pools, vegetated backwaters, and deep, shaded, spring-fed pools. From sea level to 6,700 feet. Occurs in the Coast Ranges from the Oregon border south to the Transverse Mountains in Los Angeles Co., in most of northern California west of the Cascade crest, and along the western flank of the Sierra south to Kern Co. (Nafis 2019).	N	N	Suitable habitat not present.
Rana draytonii	California red-legged frog	FT	SSC		Ponds/streams in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover in lowlands or foothills. Breeding habitat includes permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. From sea level to 5,000 feet (Nafis 2019). Occurs along the Coast Ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges (CDFW 2019b).	Y	Y	Suitable aquatic habitat not present in the Project area; however, there are suitable breeding ponds adjacent to Project area and there are numerous occurrences in vicinity of Project area (CDFW 2019a). Species could utilize refugia in onsite grassland habitats, or move through the Project area.
Spea hammondii	western spadefoot	-	SSC		Open areas with sandy/gravelly soils. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding (Nafis 2019).	N	N	Suitable habitat not present
Taricha torosa	coast range newt	-	SSC		Found in wet forests, oak forests, chaparral and rolling grasslands. In southern California, drier chaparral, oak woodland and grassland are used. Adults migrate from terrestrial locations to ponds, reservoirs, and sluggish pools in streams to breed. Terrestrial newts spend the hot dry summer in moist habitats under woody debris, or in rock crevices and animal burrows, but can sometimes be seen wandering overland in moist habitat or conditions any time of the year (Nafis 2019).	N	N	Project area is outside species range (Nafis 2019).
Reptiles								
Anniella pulchra	Northern California legless lizard	-	SSC		Occurs in moist, warm, loose soil with plant cover. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodlands, desert scrub, sandy washes, and stream terraces with trees. Leaf litter under trees and bushes in sunny areas and dunes stabilized with shrubs indicate suitable habitat. Found at elevations up to 5,900 feet. Northernmost limit of range is northern Contra Costa County (Nafis 2019).	N	N	Suitable habitat not present. Project area underlain by clay soils (USDA 2019). Sandy, friable habitat for burrowing and cover not present.
Arizona elegans occidentalis	California glossy snake	-	SSC		Inhabits arid scrub, rocky washes, grasslands, chaparral. Appears to prefer microhabitats of open areas and areas with soil loose enough for easy burrowing (Nafis 2019).	N	Y	Suitable habitat present. Several occurrences in vicinity of Project area (CDFW 2019a).
Emys marmorata	western pond turtle	-	SSC		Found in a wide variety of habitats throughout California, but associated with permanent ponds, lakes, streams, irrigation ditches, and permanent pools along intermittent streams. Occurs tthroughout California, west of the Sierra-Cascade crest and not present from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. (CDFW 2019b).	N	N	Areas in and adjacent to the Project area do not contain suitable perennial aquatic habitat for this species.
Masticophis flagellum ruddocki	San Joaquin coachwhip	-	SSC		Occurs in open, dry, treeless areas, including grassland and saltbush scrub. Takes refuge in rodent burrows, under shaded vegetation, and under surface objects (Nafis 2019).	N	Y	Suitable habitat present. Several occurrences in vicinity of Project area (CDFW 2019a).
Masticophis lateralis euryxanthus	Alameda whipsnake	FT	ST		Alameda whipsnakes are typically found in chaparral-northern coastal sage scrub and coastal sage. Recent telemetry data indicate that, although home ranges of Alameda whipsnakes are centered on shrub communities, they venture up to 500 feet into adjacent habitats including grassland, oak savanna, and occasionally oak-bay woodland (USFWS 2019).	Y	N	Suitable shrub communities not present in the Project area or within 500 feet of the Project area.
Phrynosoma blainvillii	coast horned lizard	-	SSC		Inhabits open areas of sandy soil and low vegetation in valleys, foothills and semiarid mountains. Found in grasslands, coniferous forests, woodlands, and chaparral, with open areas and patches of loose soil. Often found in lowlands along sandy washes with scattered shrubs and along dirt roads, and frequently found near ant hills (Nafis 2019).	N	N	Project area underlain by clay soils (USDA 2019). Sandy, friable habitat for burrowing and cover not present.

Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Thamnophis gigas	giant garter snake	FT	ST		Marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, rice fields and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November- mid March). Ranges in the Central Valley from Butte County to Buena Vista Lake in Kern County (USFWS 2012).	N	N	Areas in and adjacent to the Project area do not contain suitable perennial aquatic habitat for this species. This species distribution is restricted to the valley floor (CDFW 2019a).
Birds								
Agelaius tricolor	tricolored blackbird	-	ST, SSC		Preferred nesting habitat includes cattails, bulrushes, Himalayan berry, and agricultural silage. Dense vegetation is preferred but heavily lodged cattails not burned in recent years may preclude settlement. Need access to open water. Strips of emergent vegetation along canals are avoided as nest sites unless they are about 10 or more m wide but in some ponds, especially where associated with Himalayan blackberries and deep water, settlement may be in narrower fetches of cattails. (Hamilton 2004).	Y	N	Suitable habitat not present. No riparian vegetation, blackberry thickets, or dense irrigated vegetation in the Project area.
Ammodramus savannarum	grasshopper sparrow	-	SSC		Frequents dense, dry or well-drained grassland, especially native grassland with a mix of grasses and forbs for foraging and nesting. Uses scattered shrubs for singing perches (CDFW 2019b).	N	Y	Grassland provides suitable nesting habitat for this species.
Aquila chrysaetos	golden eagle	BGEPA	FP		Nests of cliffs of all heights and large trees in open areas. Habitat includes rolling foothills and mountain terrain, wide arid plateaus deeply cut by streams and canyons, open mountain slopes, and cliffs and rock outcrops. Uncommon resident and migrant throughout California, except the center of the Central Valley. (CDFW 2019b).	Y	N	Suitable nesting trees/structures not present in or within 660 feet of the Project area.
Asio flammeus	short-eared owl	-	SSC		Found in open, treeless areas with elevated sites for perches, and dense vegetation for roosting and nesting. Associated with perennial grasslands, prairies, dunes, meadows, irrigated lands, and saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east Sierras from Lake Tahoe to Inyo County and San Joaquin Valley. Winters in the Central Valley, western Sierra Nevada foothills and along the coastline (CDFW 2019b).	N	N	Project area is outside known species range (CDFW 2019c).
Athene cunicularia	burrowing owl	-	SSC		Nesting habitat includes open areas with mammal burrows, including rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and human disturbed lands. Soils must be friable for burrows (Bates 2006).	Y	Y	Low grassland provides suitable nesting habitat for this species. Numerous occurrences in vicinity of Project area (CDFW 2019a). Although sandy, friable soil not present, mammal burrows have been documented on site (WRA 2016).
Buteo swainsoni	Swainson's hawk	-	ST		Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah. Forages in adjacent grasslands, agricultural fields and pastures. Breeding resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen Co., and Mojave Desert. Very limited breeding reported from Lanfair Valley, Owens Valley, Fish Lake Valley, and Antelope Valley (CDFW 2019b).	N	N	Project area is outside known species breeding range (CDFW 2019b), and documented occurrences in the region are restricted to the valley floor (CDFW 2019a).
Chaetura vauxi	Vaux's swift	-	SSC		Prefers redwood and Douglas fir habitats with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (CDFW 2019b).	N	N	Suitable habitat not present.
Charadrius montanus	mountain plover	-	SSC		Frequents open plains with low, herbaceous or scattered shrub vegetation below 3,200 feet (1,000 m.) (CDFW 2019b).	N	N	Suitable wintering habitat present; however, species does not breed in California.
Circus hudsonius	northern harrier	-	SSC		Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and steams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford and Gardali 2008).	N	Y	Species unlikely to nest in Project area due to heavy grazing; however, species may utilize the Project area for foraging and adjacent areas for nesting.
Elanus leucurus	white-tailed kite	-	FP		Occurs in herbaceous and open stages of valley lowland habitats, usually near agricultural land. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (CDFW 2019b).	N	N	Suitable nesting trees/structures not present in or adjacent to Project area.
Falco peregrinus anatum	American peregrine falcon	-	FP		Breeds near wetlands lakes, rivers, or other waters on cliffs, banks, dunes or mounds, mostly in woodland, forest and coastal habitats. Nest is a scrape on a depression or ledge in an open site. May use man-made structures, snags, or trees for nesting (CDFW 2019b).	N	N	Project area does not contain suitable nesting or foraging habitat for this species.

Scientific Name	Common Name	USFWS	CDFW	CNPS	Habitat Characteristics	EACCS Covered Species	Impacts Analyzed	Rationale
Haliaeetus leucocephalus	bald eagle	BGEPA	SE, FP		Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Requires large bodies of water or rivers with abundant fish, and adjacent snags. Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity counties. About half of the wintering population is in the Klamath Basin (CDFW 2019b).	N	N	Project area does not contain suitable nesting or foraging habitat for this species.
Lanius ludovicianus	loggerhead shrike	-	SSC		Breed in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford and Gardali 2008).	N	Y	Project area does not contain trees or shrubs for nesting; however, this species may utilize the Project area for foraging and adjacent areas provide nesting opportunitiies.
Melospiza melodia	song sparrow (Modesto population)	-	SSC		Breeds and winters in riparian, fresh or saline emergent wetland, and wet meadows. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and fresh or saline emergent vegetation (CDFW 2019b).	N	N	Project area is outside known range for this species and does not contain suitable habitat.
Setophaga petechia	yellow warbler	-	SSC		Species generally occupies riparian vegetation in close proximity to water along streams and in wet meadows. Throughout, they are found in willows (*Salix* spp.) and cottonwoods (*Populus* spp.), and in California they are found in numerous other species of riparian shrubs or trees (Shuford and Gardali 2008).	N	N	Project area does not contain suitable habitat.
Vireo bellii pusillus	least Bell's vireo	FE	SE		Obligate riparian breeder. Cottonwood, willow, oak woodlands, and mule fat scrub along watercourses (Kus 2002).	N	N	Project area is outside known range for this species and does not contain suitable habitat.
Mammals								
Antrozous pallidus	pallid bat	-	SSC		Associated with arid deserts and canyonlands, shrub-steppe grasslands, karst formations, and coniferous forests up to 7,000 feet. Can roost alone or in large groups. Roosts in rocky crevies, caves, trees, and various human structures including bridges, barns, porches, and buildings (WBWG 2018).	N	N	Suitable roosting habitat not present in Project area.
Corynorhinus townsendii	Townsend's big-eared bat	-	SSC		It has been reported in a wide variety of habitat types ranging from sea level to 10,830 feet. Habitat associations include: coniferous forests, mixed meso-phytic forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types. Distribution is strongly correlated with the availability of caves and cave-like roosting habitat, including abandoned mines. Also been reported to utilize buildings, bridges, rock crevices and hollow trees as roost sites. Forages along edge habitats and streams adjacent to wooded habitats (WBWG 2018).	N	N	Suitable roosting habitat not present in Project area.
Eumops perotis californicus	western mastiff bat	-	SSC		Open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas. Roosts in crevices on vertical cliff faces, high buildings, trees, and tunnels (CDFW 2019b).	N	N	Suitable roosting habitat not present in Project area.
Lasiurus blossevillii	western red bat	-	SSC		Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2019b). Distributed throughout western US. 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 (WBWG 2018).	N	N	Suitable roosting habitat not present in Project area.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	-	SSC		A habitat specialist found in heavy chaparral; hardwood, conifer, and mixed forests, typically in densely wooded areas with heavy undergrowth; riparian woodlands. Builds house of debris on the ground or in a tree (NatureServe 2019).	N	N	Suitable habitat not present.
Sylvilagus bachmani riparius	riparian brush rabbit	FE	SE		Preferred habitat consists of riparian communities dominated primarily by willow and blackberry thickets, along with grasslands (USFWS 2007).	N	N	Project area is outside known species range (USFWS 2007).
Taxidea taxus	American badger	-	SSC		Open shrub, forest and herbaceous habitats with friable soils. Associated with treeless regions, prairies, park lands and cold desert areas. Range includes most of California, except the North Coast (CDFW 2019b).	Y	Y	Suitable habitat present. Although sandy, friable soil not present, mammal burrows (not necessarily suitable to badger) have been documented on site (WRA 2016).
Vulpes macrotis mutica	San Joaquin kit fox	FE	ST		Occur in desert-like habitats characterized by sparse or not present shrub cover, sparse ground cover, and short vegetative structure. Typically in areas having open, level, sandy ground (USFWS 2010b).	Y	Y	Suitable habitat present. Although sandy, friable soil not present, mammal burrows (not necessarily suitable to kit fox) have been documented on site (WRA 2016).

Notes: USFWS: U.S. Fish and Wildlife Service; CDFW: California Department of Fish and Wildlife; CRPR: California Rare Plant Rank

Species Names and Status Follows; California Department of Fish and Wildlife. November 2018. Special Animals List. Available on-line: https://www.wildlife.ca.gov/Data/CNDDB/Plants-and-Animals CDFW Biogeographic Data Branch. Sacramento, CA.

KEY
Species Status:
Federal (USFWS-USFS) State (CDFW)
BGEPA Bald and Golden Eagle Protection Act SE Endangered
FE Endangered ST Threatened
FT Threatened SCE Candidate Endangered
FCE Candidate Endangered SCT Candidate Threatened
FCT Candidate Threatened SCD Candidate for delisting
FCD Candidate for delisting FP Fully Protected
FSS Forest Service Sensitive SSC Species of Special Concer
Plant Status:
CRPR CRPR Threat Code Extension
1A Plants presumed extirpated in California and either rare or extinct elsewhere None Plants lacking any threat information
1B Plants Rare, Threatened, or Endangered in California and elsewhere .1 Seriously threatened in California (over 80% of occurrences threatened; high degree and immediacy of threat)
2A Plants Presumed extirpated in California, but more common elsewhere .2 Moderately threatened in California (20–80% of occurrences threatened; moderate degree and immediacy of threat)
2B Plants Rare, Threatened, or Endangered in California, but more common elsewhere .3 Not very threatened in California (<20% of occurrences threatened; low degree and immediacy of threat or no current threats known)
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