

**APPENDIX B-3**

**SPECIAL-STATUS PLANT SURVEY REPORT (WRA, INC. 2013)**



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# Special-Status Plant Survey Report

## CHELSEA WETLAND RESTORATION PROJECT, CITY OF HERCULES, CONTRA COSTA COUNTY, CALIFORNIA

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## TABLE OF CONTENTS

1.0	INTRODUCTION .....	1
1.1	Brief Project Description .....	1
1.2	Existing Conditions .....	1
2.0	REGULATORY BACKGROUND .....	2
3.0	METHODS .....	3
3.1	Background Database and Literature Review .....	3
3.2	Site Assessment .....	4
3.3	Field Survey .....	4
4.0	RESULTS .....	5
4.1	Background Data Search Results .....	5
4.2	Field Survey Results .....	7
5.0	CONCLUSION .....	7
6.0	REFERENCES .....	8

## LIST OF TABLES

Table 1.	Description of CNPS Ranks and Threat Codes .....	3
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## LIST OF APPENDICES

Appendix A.	Potential for Special-Status Plant Species to Occur in the Project Area
Appendix B.	Representative Photographs
Appendix C.	Plant Species Observed in the Project Area

## 1.0 INTRODUCTION

This report presents the results of a special-status plant survey conducted within the proposed Chelsea Wetland Restoration Project in the City of Hercules, Contra Costa County, California. Two floristic-level surveys that coincide with the peak blooming periods of special-status plant species determined to have potential to occur in the site were conducted by WRA botanists. The first survey was conducted on May 18, 2013, with negative findings. An additional survey was conducted on July 31, 2013, also with negative findings.

### 1.1 Brief Project Description

The City of Hercules is proposing the restoration of tidal marsh habitat on the Chelsea Parcel. The property consists of a vacant 9-acre parcel adjacent to Pinole Creek in the City of Hercules. The tidal marsh restoration will be accomplished through the excavation of fill previously deposited on the site. In addition, an adjacent 2-acre marsh-upland transitional area owned by the Chelsea by the Bay Homeowners association (HOA) will be incorporated into the design. The term Project Area includes both the Chelsea parcel and the HOA parcel. The project is intended to restore tidal marsh to reflect historic site conditions, provide flood storage benefits, minimize mosquito production potential, and provide habitat used by numerous wildlife species, including special-status species.

### 1.2 Existing Conditions

#### *Biological Communities*

A Biological Evaluation Report conducted within the Project Area (Wetlands and Water Resources, Inc. 2009) describes the following biological communities within the Project Area: annual grassland, pickleweed wetland, salt-alkali-marsh, and brackish bulrush-cattail wetland. These communities are described in more detail below.

#### Annual Grassland

Annual grasslands cover the majority of the project site. Non-native grasses, including wild oats (*Avena* sp.), and creeping wildrye (*Leymus triticoides*), are abundant on the site. Other dominant herbaceous vegetation includes spreading hedgeparsley (*Torilis arvensis*) spring vetch (*Vicia sativa*), ripgut brome (*Bromus diandrus*), and cutleaf geranium (*Geranium dissectum*). Large stands of field mustard (*Brassia rapa*) and scattered patches of curly dock (*Rumex crispus*), Harding grass (*Phalaris aquatica*), and salt grass (*Distichlis spicata*) also occur within the grassland. Several isolated pockets of freshwater seasonal wetlands scattered throughout the annual grassland where rainwater accumulates in topographic depressions.

A stand of coyote brush (*Baccharis pilularis*) occurs in the western corner of the project site. This native shrub quickly establishes in disturbed areas. A stand of coyote brush, intermixed with Himalayan blackberry (*Rubus armeniacus*), also occurs in the southeast corner of the site. Approximately ten non-native palm trees (*Phoenix* sp.) occur along the eastern site boundary. The southern site boundary contains a row of moderate-sized Aleppo pine (*Pinus halepensis*) and eucalyptus trees, which were likely planted as a wind/visual barrier for the adjacent

development. Several Northern California walnut (*Juglans hindsii* [*J. californica* var. *h.*]) trees are also present along the northern Project Area boundary.

### Pickleweed Wetland

Pickleweed wetlands are dominated by pickleweed (*Salicornia pacifica*) and occur in low-lying portions of the site. These areas pond water following rain events and likely have remnant soil salinities, which favor the establishment of salt-tolerant vegetation. Some of the lower elevation areas on the HOA parcel also receive occasional spillover of brackish water from the channel during extreme high tides and storm events.

### Salt-Alkali Marsh

Salt-alkali marsh habitat is found in a tidal channel traversing the southern project boundary (starting from the culvert on Pinole Creek). Cordgrass (*Spartina* sp.) and alkali bulrush (*Bolboschoenus maritimus*) occur within lower portions of the channel, transitioning into a matrix of pickleweed, saltgrass, and marsh gumplant (*Grindelia stricta* var. *angustifolia*). Plant species bordering the channel include Harding grass, wild radish (*Raphanus raphanistrum*), and various non-native annual grasses.

### Brackish Bulrush-Cattail Wetland

Brackish bulrush-cattail wetlands occur in the on-site channel, upstream of the salt-alkali marsh habitat described above. The vegetation in the channel is dominated by narrow-leaf cattail (*Typha angustifolia*) and California bulrush (*Schoenoplectus californicus*) and transitions into a matrix of more salt-tolerant species at higher elevations (saltgrass, pickleweed, marsh gumplant). This transition to salt tolerant species is likely due to remnant soil salinity and intrusion of brackish water during storm events.

### Soils

The Soil Survey of Contra Costa County, California (USDA 1977, USDA 2013) indicates that the Project Area contains one mapped soil unit: Clear Lake clay. The Clear Lake series consists of very deep, poorly drained soils that formed in fine textured alluvium derived from sandstone and shale. Clear Lake soils are in basins and in swales of drainageways. Slopes are 0 to 2 percent. Clear Lake clay is listed as hydric on the U.S. Hydric Soils List (USDA 2009). Most upland portions of the Project Area are comprised of urban fill soils, though this is not shown on the USDA soil map.

## **2.0 REGULATORY BACKGROUND**

The following sections explain the regulatory context of the special-status plant survey, including applicable laws and regulations that were applied to the field investigations.

### **2.1 Special-Status Plant Species**

Special-status plant species include those plant species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal

Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. Plant species on the California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (Inventory) with California Rare Plant Ranks (Rank) of 1 and 2 are also considered special-status plant species and must be considered under the California Environmental Quality Act (CEQA). Rank 3 and Rank 4 species are afforded little or no protection under CEQA, and are not included in this analysis. A description of the CNPS Ranks is provided below in Table 1.

Table 1. Description of CNPS Ranks and Threat Codes

<b>California Rare Plant Ranks (formerly known as CNPS Lists)</b>	
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 (Not included in this analysis)
Rank 4	Plants of limited distribution - A watch list (Not included in this analysis)
<b>Threat Ranks</b>	
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**

### **3.1 Background Database and Literature Review**

Potential occurrence of special-status plant species in the Project Area was evaluated by first determining which special-status species occur in the vicinity of the Project Area through a

literature and database search. Database searches for known occurrences of special-status species focused on the Mare Island 7.5 minute USGS quadrangle (USGS 1959) and the eight surrounding USGS quadrangles. The following sources were reviewed to determine which special-status plant species have been documented to occur in the Project Area vicinity:

- California Natural Diversity Database records (CNDDDB) (CDFW 2013)
- USFWS quadrangle species lists (USFWS 2013)
- CNPS Electronic Inventory records (CNPS 2013)
- Biological Evaluation Report – Chelsea Wetland Restoration Project (Wetlands and Water Resources, Inc. 2009)

### **3.2 Site Assessment**

The potential for special-status plant species to occur within the Project Area was assigned based upon a review of available resources, including topographic maps, recent aerial photography, a review of site-specific background literature (Wetlands and Water Resources, Inc. 2009), and professional expertise and knowledge of the area. Habitat conditions observed in the Project Area were also used to evaluate the potential for presence of special-status species. The potential for each special-status species to occur in the Project Area was evaluated according to the following criteria:

No Potential. Habitat on and adjacent to the site is clearly unsuitable for the species requirements (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. CNDDDB, other reports) on the site recently.

Appendix A presents the evaluation of potential for occurrence for each special-status plant species known to occur in the vicinity of the Project Area with their habitat requirements, potential for occurrence, and rationale for the determination, and survey results and recommendations.

### **3.3 Field Survey**

Field surveys were conducted on May 18 and July 31, 2013. The surveys corresponded to



peak blooming periods for observing and accurately identifying special-status plant species with potential to occur within the Project Area. The field surveys were conducted by botanists who have experience with the species that have potential to occur in the area. The surveys followed the protocol for plant surveys described by Nelson (1987). This protocol complies with recommended resource agency guidelines (CNPS 2001, CDFG 2000, USFWS 1996).

Plant nomenclature follows Baldwin et al. (2012) and subsequent revisions by the Jepson Flora Project (2013), 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.

## 4.0 RESULTS

### 4.1 Background Data Search Results

Based upon a review of the resources and databases given in Section 3.1, 49 special-status plant species have been documented in the vicinity of the Project Area. The Project Area has a moderate potential to support nine of these species, though none of the species were observed during special-status surveys. Habitats in the Project Area that may support special-status plant species are those areas that have not been covered by fill soils, particularly relatively high-quality remnant salt-alkali and pickleweed marsh. Additionally, several special-status plant species including Congdon's tarplant (*Centromadia parryi* ssp. *congdonii*), and pappose tarplant (*Centromadia parryi* ssp. *congdonii*) are commonly found in somewhat disturbed habitats. The remaining 40 species occur in habitats not present in the Project Area (coastal scrub, cismontane woodland, chaparral, etc.) or on soil substrates not present in the Project Area (serpentine, sand, rocky outcrops, etc.). Species with potential to occur in the Project Area are described below.

**Alkali milk-vetch (*Astragalus tener* var. *tener*). CNPS Rank 1B.2. Moderate Potential – Not Observed.** Alkali milk-vetch is an annual herb in the pea family (Fabaceae) that blooms from March to June. It typically occurs on low ground in alkali flats and flooded lands in alkali playa, valley and foothill grassland, and vernal pool habitat at elevations ranging from 1 to 170 meters (CDFW 2013, CNPS 2013). This species is regularly known from vernal pool habitat, but may occur in other wetland habitat types. Alkali milk-vetch has a moderate potential to occur in seasonal wetlands and upper edges of remnant marsh habitat within the Project Area due to the presence of suitable hydrologic conditions and somewhat alkaline conditions. Lack of vernal pool wetlands in the Project Area may limit potential for occurrence. This species was not observed during special-status plant surveys conducted in the Project Area.

**Congdon's tarplant (*Centromadia parryi* ssp. *congdonii* [*Hemizonia p.* ssp. *c.*]). CNPS Rank 1B.1. Moderate Potential – Not Observed.** Congdon's tarplant is an annual forb in the sunflower family (Asteraceae) that blooms from June to November. It typically occurs in alkaline grassy areas on the edge of brackish marsh at elevations ranging from 1 to 230 meters (CDFW 2013, CNPS 2013). Congdon's tarplant has a moderate potential to occur in the Project Area due to the presence of some alkaline areas, and this species' tolerance for suboptimal growing conditions and invasive species competition. This species was not

observed during special-status plant surveys conducted in the Project Area.

**Pappose tarplant (*Centromadia parryi* ssp. *parryi* [*Hemizonia p.* ssp. *p.*]). CNPS Rank 1B.2. Moderate Potential – Not Observed.** Pappose tarplant is an annual forb in the sunflower family (Asteraceae) that blooms from May to November. It typically occurs in alkaline, vernal mesic areas in coastal prairie, coastal salt marsh, and valley and foothill grassland at elevations ranging from 2 to 420 meters. Pappose tarplant has a moderate potential to occur in the Project Area due to the presence of some alkaline areas, and this species' tolerance for suboptimal growing conditions and invasive species competition. This species was not observed during special-status plant surveys conducted in the Project Area.

**Point Reyes bird's beak (*Chloropyron maritimum* ssp. *palustre* [*Cordylanthus maritimus* ssp. *palustris*]). CNPS Rank 1B.2 species. Moderate Potential – Not Observed.** Point Reyes bird's beak is an annual, hemiparasitic forb in the broomrape family (Orobanchaceae) that blooms from June to October. It typically occurs in coastal salt marshes at elevations from 0 to 15 meters. This species typically occurs in mid marsh and high marsh/transition zone habitats, often in disturbed areas. Point Reyes bird's-beak has a moderate potential to occur in the Project Area due to suitable remnant salt marsh habitat. This species was not observed during special-status plant surveys conducted in the Project Area.

**Soft bird's-beak (*Chloropyron molle* ssp. *molle* [*Cordylanthus mollis* ssp. *mollis*]). Federal Endangered, State Rare, CNPS Rank 1B.2. Moderate Potential – Not Observed.** Soft bird's-beak is an annual, hemiparasitic forb in the broomrape family (Orobanchaceae) that blooms from July to November. It typically occurs in coastal salt marshes at elevations of 0 to 3 meters. Soft bird's-beak has a moderate potential to occur in the Project Area due to suitable remnant salt marsh habitat. Federal-designated Critical Habitat for this species is located in Point Pinole Regional Shoreline, 3.5 miles west of the Project Area (72FR18518). This species was not observed during special-status plant surveys conducted in the Project Area.

**San Joaquin spearscale (*Extriplex joaquiniana* [*Atriplex j.*]). CNPS Rank 1B.2. Moderate Potential – Not Observed.** San Joaquin spearscale is an annual herb in the goosefoot family (Chenopodiaceae) that blooms from April to October. It typically occurs in seasonal alkali sink scrub and wetlands in chenopod scrub, alkali meadow, and valley and foothill grassland habitat at elevations ranging from 0 to 250 meters (CDFW 2013, CNPS 2013). San Joaquin spearscale has a moderate potential to occur in seasonal wetlands and upper edges of remnant marsh habitat within the Project Area due to the presence of suitable hydrologic conditions and somewhat alkaline conditions. Lack of vernal pool wetlands in the Project Area may limit potential for occurrence. This species was not observed during special-status plant surveys conducted in the Project Area.

**Hairless popcorn-flower (*Plagiobothrys glaber*). CNPS Rank 1A. Moderate Potential – Not Observed.** Hairless popcorn flower is an annual forb in the forget-me-not family (Boraginaceae) that blooms from March to May. It typically occurs in salt marshes and swamps, and alkaline meadows at elevations between 5 and 180 meters (CDFW 2013, CNPS 2013). This species is considered extirpated in California by CNPS, however, it has a moderate potential to occur in the Project Area as suitable salt marsh habitat is present. This species was not observed during special-status plant surveys conducted in the Project Area.

**California seablite (*Suaeda californica*). Federal Endangered, CNPS Rank 1B.1. Moderate Potential – Not Observed.** California seablite is a perennial herb in the goosefoot family (Chenopodiaceae) that blooms from July to October. It typically occurs on the margins of coastal salt marsh habitat at elevations ranging from 0 to 15 meters (CDFW 2013, CNPS 2013). California seablite has a moderate potential to occur in the Study Area due to the presence of remnant coastal salt marsh habitat. This species was not observed during special-status plant surveys conducted in the Project Area.

**Saline clover (*Trifolium hydrophilum*), CNPS Rank 1B.2. Moderate Potential.** Saline clover is an annual herb in the pea family (Fabaceae) that blooms from April to June. It typically occurs in mesic, alkaline sites in marsh, swamp, valley and foothill grassland, and vernal pool habitat at elevations ranging from 0 to 300 meters (CDFW 2013, CNPS 2013). Saline clover has a moderate potential to occur in the Study Area due to the presence of remnant salt marsh habitat. This species was not observed during special-status plant surveys conducted in the Project Area.

#### Northern California black walnut

Northern California black walnut, a CNPS Rank 1B.1 species, is a deciduous tree in the walnut family (Juglandaceae) that occurs in riparian forest and riparian woodland from 0 to 440 meters in elevation. The species blooms from April to May. Native stands are known from Contra Costa and Solano Counties (CNPS 2013). Native stands are considered sensitive by CNPS and under CEQA. Walnut growers routinely cross *J. hindsii* with one of several other North American black walnut species as rootstock for walnut orchards in the state. Many orchards are adjacent to riparian vegetation, and animals (ground squirrels, jays, etc.) and water disperse the walnuts widely in both rural and suburban settings (Sawyer et al. 2009). The resulting introduced, or non-native, stands are not considered sensitive by CNPS or under CEQA. Walnut trees in the Project Area are not native stands and likely originated via wildlife dispersal as described above. Therefore, Northern California black walnut within the Project Area are not considered sensitive.

## **4.2 Field Survey Results**

No special-status plant species were observed in the Project Area during surveys conducted on May 18, and July 31, 2013 by WRA or during a biological evaluation site visit conducted by Wetlands and Water Resources, Inc. in 2009. Representative photographs of the Project Area are shown in Appendix B. All plant species observed within the Project Area are listed in Appendix C. These field visits coincided with peak blooming periods for all special-status plant species with potential to occur in the Project Area.

## **5.0 CONCLUSION**

Of the 49 special-status plant species known to occur in the vicinity of the Project Area, nine species were determined to have a moderate potential to occur in the Project Area. Most of the species found in the background literature review occur in habitats not present in the Project

Area, or on unique soils types which do not occur in the Project Area. No special-status plant species were observed in the Project Area during the surveys conducted on May 18 and July 31, 2013 or during a prior assessment conducted by Wetlands and Waters Resources, Inc. (2009).

## 6.0 REFERENCES

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**Appendix A – Potential for Special-status Plant Species to Occur in the Project Area**

Appendix A. Potential for Special-Status Plant Species to Occur in the Project Area. List compiled from the California Department of Fish and Wildlife (CDFW) Natural Diversity Database (CNDDDB 2013), U.S. Fish and Wildlife Service (USFWS 2013) Species Lists, and California Native Plant Society (CNPS 2013) Electronic Inventory search of the Mare Island, Cuttings Wharf, Cordelia, Benicia, Briones Valley, Richmond, San Quentin, Petaluma Point, and Sears Point USGS 7.5' quadrangles.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
bent-flowered fiddleneck <i>Amsinckia lunaris</i>	Rank 1B.2	Coastal bluff scrub, cismontane woodland, valley and foothill grassland. 50-500 meters. Blooms March to June.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Mt. Tamalpais manzanita <i>Arctostaphylos montana</i> ssp. <i>montana</i> [A. hookeri ssp. m.]	Rank 1B.3	Chaparral, valley and foothill grassland. Serpentine slopes in chaparral and grassland. 160-760 m. Blooms February to April.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
pallid manzanita <i>Arctostaphylos pallida</i>	FT, SE, Rank 1B.1	Broad leafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub. On uplifted marine terraces on siliceous shale or thin chert. May require fire. 185-465 m. Blooms December-March.	<b>No Potential.</b> Suitable soils and habitat for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
alkali milk-vetch <i>Astragalus tener</i> var. <i>tener</i>	Rank 1B.2	Alkali playa, valley and foothill grassland, vernal pools. Low ground, alkali flats, and flooded lands. 1-170m. Blooms March-June.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
big-scale balsamroot <i>Balsamorhiza macrolepis</i>	Rank 1B.2	Valley and foothill grassland, cismontane woodland. Sometimes on serpentine. 35-1000 m. Blooms March-June.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Sonoma sunshine <i>Blennosperma bakeri</i>	FE, SE, Rank 1B.1	Vernal pools, valley and foothill grassland. Vernal pools and swales. 10-110 m. Blooms March to May	<b>Unlikely.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however these features are not considered to be vernal pools, and soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
big tarplant <i>Blepharizonia plumosa</i>	Rank 1B.2	Valley and foothill grassland. 30-505 m. Blooms July- October.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.



SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
round leaved filaree <i>California macrophylla</i>	Rank 1B.1	Cismontane woodland, valley and foothill grassland. 15-2000 m. Blooms March-May.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Mt. Diablo fairy-lantern <i>Calochortus pulchellus</i>	Rank 1B.2	Chaparral, cismontane woodland, riparian woodland, valley and foothill grassland. 30-840 m. Blooms April-June.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Tiburon mariposa lily <i>Calochortus tiburonensis</i>	FT, ST, Rank 1B.1	Valley and foothill grassland (open, rocky slopes in serpentine grassland). 50-150 m. Blooms March to June.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
coastal bluff morning glory <i>Calystegia purpurata</i> <i>spp. saxicola</i>	Rank 1B.2	Coastal dunes, coastal scrub, and North Coast coniferous forest. 10- 105 m. Blooms May to September.	<b>No Potential.</b> Suitable soils and habitat for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Lyngbye's sedge <i>Carex lyngbyei</i>	Rank 2B.2	Marshes and swamps (brackish or freshwater). 0-10 m. Blooms April to August.	<b>Unlikely.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. However, all reported occurrences are located on the immediate coast, outside of San Francisco Bay (CDFW 2013).	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Tiburon Indian paintbrush <i>Castilleja affinis</i> spp. <i>neglecta</i>	FE, ST, Rank 1B.2	Valley and foothill grassland (rocky serpentine sites). 75-400 meters. Blooms April to June.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
holly-leaved ceanothus <i>Ceanothus purpureus</i>	Rank 1B.2	Chaparral, cismontane woodland. Rocky, volcanic soils. 120-640 m. Blooms February to June.	<b>No Potential.</b> Suitable habitat and soils for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Congdon's tarplant <i>Centromadia parryi</i> ssp. <i>congdonii</i> [ <i>Hemizonia p.</i> ssp. <i>c.</i> ]	Rank 1B.1	Valley and foothill grassland (alkaline). 1-230 m. Blooms June-November.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
pappose tarplant <i>Centromadia parryi</i> ssp. <i>parryi</i> [ <i>Hemizonia p.</i> ssp. <i>p.</i> ]	Rank 1B.2	Coastal prairie, meadows and seeps, coastal salt marsh, valley and foothill grassland. Vernal mesic, often alkaline sites. 2-420 m. Blooms May to November.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Point Reyes bird's-beak <i>Chloropyron maritimum</i> ssp. <i>palustre</i> [ <i>Cordylanthus maritimus</i> ssp. <i>palustris</i> ]	Rank 1B.2	Coastal salt marsh. 0-15 meters. Blooms June to October.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
soft bird's-beak <i>Chloropyron molle</i> ssp. <i>molle</i> [ <i>Cordylanthus mollis</i> ssp. <i>mollis</i> ]	FE, SR, Rank 1B.2	Coastal salt marsh, with <i>Distichlis</i> , <i>Salicornia</i> , <i>Frankenia</i> , etc. 0-3 m. Blooms July to November.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence. Critical Habitat for this species is located in Point Pinole Regional Shoreline, 3.5 miles west of the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Spotted water hemlock <i>Cicuta maculata</i> var. <i>bolanderi</i>	Rank 2B.1	Marshes and swamps, coastal, fresh and brackish water. 0-200 m. Blooms July- September.	<b>Unlikely.</b> Though the Project Area contains limited remnant salt marsh habitat that may be suitable for this species, no occurrences have been documented west of Carquinez Strait, except for those at Point Reyes (CDFW 2013). Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Franciscan thistle <i>Cirsium andrewsii</i>	Rank 1B.2	Broad leafed upland forest, coastal bluff scrub, coastal prairie, coastal scrub/mesic, sometimes on serpentine. 0-135 m. Blooms March-July.	<b>No Potential.</b> Suitable soils and habitat for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Western leatherwood <i>Dirca occidentalis</i>	Rank 1B.2	Mesic soils in broad-leafed upland forest, chaparral, closed-cone coniferous forest, cismontane woodland, north coast coniferous forest, riparian forest, riparian woodland. 30-550 m. Blooms January to April.	<b>No Potential.</b> Suitable soils and habitat for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
dwarf downingia <i>Downingia pusilla</i>	Rank 2B.2	Valley and foothill grassland (mesic sites), vernal pools. Vernal lake and pool margins with a variety of associates. In several types of vernal pools. 1-485 m. Blooms March to May.	<b>Unlikely.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however these features are not considered to be vernal pools, and soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Tiburon buckwheat <i>Erigeron luteolum</i> var. <i>caninum</i>	Rank 1B.2	Serpentine soils in chaparral, coastal prairie, valley and foothill grassland. 10-500 m. Blooms June to September.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
San Joaquin spearscale <i>Extriplex joaquiniana</i> [ <i>Atriplex j.</i> ]	Rank 1B.2	Chenopod scrub, alkali meadow, valley and foothill grassland. In seasonal alkali wetlands or alkali sink scrub with <i>Distichlis spicata</i> , <i>Frankenia</i> , etc. 1-250 m. Blooms April-October.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils, and reported associated species are present. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
fragrant fritillary <i>Fritillaria liliacea</i>	Rank 1B.2	Serpentine or clay soils in coastal scrub, valley and foothill grassland, coastal prairie. 3-410 m. Blooms February to April.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Diablo helianthella <i>Helianthella castanea</i>	Rank 1B.2	Broadleaved upland forest, chaparral, cismontane wdln, coastal scrub, riparian woodland, valley & foothill grassland. Usually in chaparral/oak woodland interface in rocky, azonal soils. Often in partial shade. 25-1150 m. Blooms March to June.	<b>No Potential.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. No rocky, azonal soils are present. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
White seaside tarplant <i>Hemizonia congesta</i> <i>ssp. congesta</i> [ <i>H. c.</i> <i>ssp. leucocephala</i> ]	Rank 1B.2	Valley and foothill grassland, sometimes on roadsides. 25-560 meters. Blooms April to November.	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Marin western flax <i>Hesperolinon</i> <i>congestum</i>	FT, ST, Rank 1B.1	Serpentine soils in chaparral, valley and foothill grassland. 30- 365 m elevation. Blooms April to July.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Loma Prieta hoita <i>Hoita strobilina</i>	Rank 1B.1	Chaparral, cismontane woodland, riparian woodland. Serpentine; mesic sites. 30-860 m. Blooms May to July.	<b>No Potential.</b> Suitable serpentine soils and habitat for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.



SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Santa Cruz tarplant <i>Holocarpha macradenia</i>	FT, SE, Rank 1B.1	Coastal prairie, valley and foothill grassland (light sandy soil or sandy clay). 10-260 meters. Blooms June- October	<b>No Potential.</b> No sandy or sandy clay soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Carquinez goldenbush <i>Isocoma arguta</i>	Rank 1B.1	Valley and foothill grassland. Alkaline soils, flats, lower hills. On low benches near drainages, and on tops and sides of mounds in swale habitat. 1-20 m. Blooms August to December.	<b>Unlikely.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Contra Costa goldfields <i>Lasthenia conjugens</i>	FE, Rank 1B.1	Valley and foothill grassland, vernal pools, alkaline playas, cismontane woodland. Vernal pools, swales, low depressions, in open grassy areas. 1-470 m.	<b>Unlikely.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however these features are not considered to be vernal pools, and soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Delta tule pea <i>Lathyrus jepsonii</i> var. <i>jepsonii</i>	Rank 1B.2	Marshes and swamps (freshwater and brackish). Usually on marsh and slough edges. 0-4 m. Blooms May-September.	<b>Unlikely.</b> Though the Project Area contains limited brackish marsh habitat, this species has not been documented west of Carquinez Strait within San Pablo Bay.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
<p>legenera <i>Legenera limosa</i></p>	<p>Rank 1B.1</p>	<p>Vernal pools. Many historical occurrences are extirpated. 1-880 m. Blooms April to June.</p>	<p><b>No Potential.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however these features are not considered to be vernal pools, and soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.</p>	<p><b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.</p>
<p>Mason's lilaeopsis <i>Lilaeopsis masonii</i></p>	<p>SR, Rank 1B.1</p>	<p>Marshes and swamps (brackish or freshwater), riparian scrub. Usually found in tidal zones in muddy or silty soil formed through river deposition or river bank erosion. 0-10 m. Blooms April to November.</p>	<p><b>Unlikely.</b> Though the Project Area contains limited brackish marsh habitat, this species has not been documented west of Carquinez Strait within San Pablo Bay.</p>	<p><b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.</p>

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
Sebastopol meadowfoam <i>Limnanthes vinculans</i>	FE, SE, Rank 1B.1	Mesic meadows, vernal pools, valley and foothill grassland. Swales, wet meadows and marshy areas in valley oak savanna; on poorly drained soils of clays and sandy loam. 15-305 m. Blooms April to May.	<b>Unlikely.</b> The Project Area contains several freshwater seasonal wetlands in annual grassland habitat, however these features are not considered to be vernal pools, and soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Oregon meconella <i>Meconella oregana</i>	Rank 1B.1	Coastal prairie, coastal scrub. 250-500 m. Blooms March-April.	<b>No Potential.</b> Suitable habitat for this species is not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
white-rayed pentachaeta <i>Pentachaeta bellidiflora</i>	FE, SE, Rank 1B.1	Serpentine soils in cismontane woodland and valley and foothill grassland. 35-620 m. Blooms March to May.	<b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
hairless popcorn-flower <i>Plagiobothrys glaber</i>	Rank 1A	Meadows and seeps, marshes and swamps (salt marshes and alkaline meadows). 5-180 m. Blooms March-May	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
chaparral ragwort <i>Senecio aphanactis</i>	Rank 2B.2	Cismontane woodland, coastal scrub. Drying alkaline flats. 20-575 m. Blooms January to April.	<b>No Potential.</b> Suitable habitat for this species is not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
<p>most beautiful jewel-flower <i>Streptanthus albidus</i> ssp. <i>peramoenus</i></p>	<p>Rank 1B.2</p>	<p>Chaparral, cismontane woodland, valley and foothill grassland. Serpentine soils. 120-1000 m. Blooms April to June.</p>	<p><b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.</p>	<p><b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.</p>
<p>Tiburon jewel-flower <i>Streptanthus glandulosus</i> ssp. <i>niger</i> [<i>S. n.</i>]</p>	<p>FE, SE, Rank 1B.1</p>	<p>Valley and foothill grassland (shallow rocky serpentine slopes). 30-150 m. Blooms May to June</p>	<p><b>No Potential.</b> No serpentine soils are present within the Project Area. The Project Area does contain annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.</p>	<p><b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.</p>

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
California seablite <i>Suaeda californica</i>	FE, Rank 1B.1	Coastal salt marshes and swamps. 0-15 m. Blooms July to October.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Suisun Marsh aster <i>Symphyotrichum lentum</i> [ <i>Aster lentus</i> ]	Rank 1B.2	Brackish and freshwater marshes and swamps. 0-3 m. Blooms May to November.	<b>Unlikely.</b> Though the Project Area contains limited brackish marsh habitat, this species is more typically associated with brackish or fresh water wetlands in the Delta and Suisun Bay.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
Santa Ynez false lupine <i>Thermopsis macrophylla</i>	SR, Rank 1B.3	Chaparral (sandy, granitic, disturbed areas). 425-1400 m. Blooms April to June	<b>No Potential.</b> Suitable habitat and soils for this species are not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
two-fork clover <i>Trifolium amoenum</i>	FE, Rank 1B.1	Valley and foothill grassland, coastal bluff scrub (sometimes serpentine). 5-560 m. Blooms April to June	<b>Unlikely.</b> The Project Area contains annual grassland habitat, however soils within this habitat are comprised of fill material. Regular mowing and other disturbances within the Project Area further reduce potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
saline clover <i>Trifolium hydrophilum</i>	Rank 1B.2	Marshes and swamps, valley and foothill grassland (mesic, alkaline), vernal pools. 0-300 m. Blooms April to June.	<b>Moderate Potential.</b> The Project Area contains limited remnant salt marsh habitat, low-lying, flooded areas, and alkali soils. Past disturbance, including addition of fill soils and mowing, may limit potential for occurrence.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.
California triquetrella moss <i>Triquetrella californica</i>	Rank 1B.2	Coastal bluff scrub, coastal scrub, on soil. 10-100 m. Moss.	<b>No Potential.</b> Suitable habitat for this species is not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.



SPECIES	STATUS *	HABITAT	POTENTIAL FOR OCCURRENCE	SURVEY RESULTS AND RECOMMENDATIONS
oval-leaved viburnum <i>Viburnum ellipticum</i>	Rank 2B.3	Chaparral, cismontane woodland, lower montane coniferous forest. 215-1400 m. Blooms May to June.	<b>No Potential.</b> Suitable habitat for this species is not present within the Project Area.	<b>Not observed.</b> This species was not observed during surveys conducted on May 15, and July 31, 2013. No further actions are recommended for this species.

\* Key to status codes:

FE Federal Endangered  
 FT Federal Threatened  
 SE State Endangered  
 ST State Threatened  
 SR State Rare

CNPS Rare Plant Ranks

Rank 1A – Plants presumed extinct in California  
 Rank 1B – Plants 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 CNPS needs more information (a review list). Not included in this analysis.  
 Rank 4 – Plants of limited distribution (a watch list). Not included in this analysis.

CNPS Threat Ranks

0.1 – Seriously threatened in California (over 80% of occurrences threatened/high degree and immediacy of threat)  
 0.2 – Fairly threatened in California (20-80% occurrences threatened/moderate degree and immediacy of threat)  
 0.3 – Not very threatened in California (<20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

## **Appendix B – Representative Photographs**



**Appendix B. Photographs**

Top: Pickleweed wetland habitat.

Bottom: Brackish bulrush-cattail wetland habitat.

Photos taken May 18, 2013





**Appendix B. Photographs**

Top: Salt-alkali marsh and tidal channel, southwestern portion near Pinole Creek.

Bottom: Salt-alkali marsh and tidal channel, northeastern portion near brackish bulrush-cattail marsh.

Photos taken May 18, 2013





**Appendix B. Photographs**

Top: Freshwater seasonal wetland habitat (dry) adjacent to Santa Fe Avenue.

Bottom: Annual grassland habitat that comprises most of the Project Area.

Photos taken July 31, 2013



## **Appendix C – Plant Species Observed in the Project Area**

Appendix C. Plant species observed in the Project Area during the May 15 and July 31, 2013 site visits

Family	Scientific Name*	Common Name	Rarity
Amaryllidaceae	<i>Amaryllis belladonna</i>	belladonna lily	
Anacardiaceae	<i>Toxicodendron diversilobum</i>	poison oak	
Anacardiaceae	<i>Schinus molle</i>	Peruvian pepper tree	
Apiaceae	<i>Foeniculum vulgare</i>	sweet fennel	
Apiaceae	<i>Torilis arvensis</i>	hedge parsley	
Apocynaceae	<i>Nerium oleander</i>	oleander	
Araliaceae	<i>Hedera helix</i>	English ivy	
Arecaceae	<i>Phoenix</i> sp.	date palm	
Asteraceae	<i>Achillea millefolium</i>	yarrow	
Asteraceae	<i>Ambrosia psilostachya</i>	ragweed	
Asteraceae	<i>Baccharis pilularis</i>	coyote brush	
Asteraceae	<i>Carduus pycnocephalus</i>	Italian thistle	
Asteraceae	<i>Cirsium vulgare</i>	bull thistle	
Asteraceae	<i>Cotula coronopifolia</i>	brass buttons	
Asteraceae	<i>Dittrichia graveolens</i>	stinkwort	
Asteraceae	<i>Grindelia stricta</i> var. <i>angustifolia</i>	marsh gumplant	
Asteraceae	<i>Helminthotheca [Picris] echioides</i>	bristly ox tongue	
Asteraceae	<i>Hypochaeris radicata</i>	rough cat's ear	
Asteraceae	<i>Iva axillaris</i>	poverty weed	
Asteraceae	<i>Jaumea carnosa</i>	fleshy jaumea	
Asteraceae	<i>Lactuca serriola</i>	prickly lettuce	
Asteraceae	<i>Sonchus asper</i> ssp. <i>asper</i>	prickly sow thistle	
Asteraceae	<i>Tragopogon porrifolius</i>	salsify	
Boraginaceae	<i>Echium candicans</i>	pride of Madeira	
Boraginaceae	<i>Heliotropium curassavicum</i>	seaside heliotrope	
Brassicaceae	<i>Brassica rapa</i>	field mustard	
Brassicaceae	<i>Hirschfeldia incana</i>	shortpod mustard	
Brassicaceae	<i>Lepidium latifolium</i>	broadleaved pepperweed	
Brassicaceae	<i>Raphanus raphanistrum</i>	wild radish	
Caprifoliaceae	<i>Lonicera japonica</i>	Japanese honeysuckle	
Caryophyllaceae	<i>Spergularia rubra</i>	red sandspurry	
Chenopodiaceae	<i>Atriplex prostrata</i> [A. <i>triangularis</i> ]	spearscale	
Chenopodiaceae	<i>Salicornia pacifica</i> [S. <i>virginica</i> ]	pickleweed	
Chenopodiaceae	<i>Salsola soda</i>	alkali Russian thistle	
Convolvulaceae	<i>Convolvulus arvensis</i>	field bindweed	
Convolvulaceae	<i>Cressa truxillensis</i>	alkali weed	
Cuscutaceae	<i>Cuscuta salina</i>	saltmarsh dodder	

Family	Scientific Name*	Common Name	Rarity
Cyperaceae	<i>Bolboschoenus</i> [ <i>Scirpus</i> ] <i>maritimus</i>	alkali bulrush	
Cyperaceae	<i>Schoenoplectus</i> <i>californicus</i> [ <i>Scirpus</i> c.]	California bulrush	
Dipsacaceae	<i>Dipsacus</i> sp.	teasel	
Fabaceae	<i>Acacia melanoxyton</i>	blackwood acacia	
Fabaceae	<i>Albizia julibrissin</i>	mimosa tree	
Fabaceae	<i>Lotus corniculatus</i>	bird's foot trefoil	
Fabaceae	<i>Medicago polymorpha</i>	bur clover	
Fabaceae	<i>Vicia sativa</i>	spring vetch	
Fabaceae	<i>Vicia villosa</i>	hairy vetch	
Fagaceae	<i>Quercus agrifolia</i>	coast live oak	
Fagaceae	<i>Quercus lobata</i>	valley oak	
Frankeniaceae	<i>Frankenia salina</i>	alkali heath	
Geraniaceae	<i>Erodium moschatum</i>	greenstem filaree	
Geraniaceae	<i>Geranium dissectum</i>	cutleaf geranium	
Geraniaceae	<i>Geranium</i> sp.	ornamental geranium	
Iridaceae	<i>Iris</i> sp.	ornamental iris	
Juncaceae	<i>Juncus patens</i>	spreading rush	
Juglandaceae	<i>Juglans hindsii</i> [ <i>J.</i> <i>californica</i> var. <i>h.</i> ]	Northern California black walnut	CNPS Rank 1B.1*
Malvaceae	<i>Malva parviflora</i>	cheeseweed	
Malvaceae	<i>Malvella leprosa</i>	alkali mallow	
Myrtaceae	<i>Eucalyptus</i> <i>camaldulensis</i>	red river gum	
Myrtaceae	<i>Eucalyptus</i> sp.	gum	
Oleaceae	<i>Ligustrum</i> sp.	privet	
Onagraceae	<i>Epilobium</i> <i>brachycarpum</i>	slender willow herb	
Papaveraceae	<i>Eschscholzia californica</i>	California poppy	
Pinaceae	<i>Pinus halepensis</i>	Aleppo pine	
Pinaceae	<i>Sequoia sempervirens</i>	coast redwood	
Plantaginaceae	<i>Plantago coronopus</i>	cut leaf plantain	
Plantaginaceae	<i>Plantago lanceolata</i>	English plantain	
Poaceae	<i>Avena barbata</i>	slender wild oats	
Poaceae	<i>Avena fatua</i>	wild oats	
Poaceae	<i>Bromus carinatus</i>	California brome	
Poaceae	<i>Bromus diandrus</i>	ripgut brome	
Poaceae	<i>Bromus hordeaceus</i>	soft chess	
Poaceae	<i>Cynodon dactylon</i>	Bermuda grass	
Poaceae	<i>Distichlis spicata</i>	salt grass	
Poaceae	<i>Festuca perennis</i> [ <i>Lolium multiflorum</i> ]	Italian rye	
Poaceae	<i>Hordeum</i> <i>brachyantherum</i>	meadow barley	
Poaceae	<i>Hordeum marinum</i>	seaside barley	
Poaceae	<i>Hordeum murinum</i>	foxtail barley	



Family	Scientific Name*	Common Name	Rarity
Poaceae	<i>Elymus</i> [ <i>Leymus</i> ] <i>triticoides</i>	creeping wild rye	
Poaceae	<i>Parapholis incurva</i>	sickle grass	
Poaceae	<i>Phalaris aquatica</i>	Harding grass	
Poaceae	<i>Stipa mileacea</i> [ <i>Piptatherum</i> <i>miliaceum</i> ]	smilo grass	
Poaceae	<i>Polypogon</i> <i>monspeliensis</i>	rabbitfoot grass	
Poaceae	<i>Spartina alterniflora</i> or hybrid	smooth cordgrass	
Polygonaceae	<i>Rumex crispus</i>	curly dock	
Rosaceae	<i>Cotoneaster</i> sp.	cotoneaster	
Rosaceae	<i>Heteromeles arbutifolia</i>	toyon	
Rosaceae	<i>Prunus cerasifera</i>	cherry plum	
Rosaceae	<i>Rubus armeniacus</i> [ <i>R.</i> <i>discolor</i> ]	Himalayan blackberry	
Rubiaceae	<i>Galium aparine</i>	common bedstraw	
Ruppiaceae	<i>Ruppia maritima</i>	ditch grass	
Scrophulariaceae	<i>Myoporum laetum</i>	lollypop tree	
Salicaceae	<i>Populus</i> sp.	poplar	
Salicaceae	<i>Salix lasiolepis</i>	arroyo willow	
Sapindaceae [Hippocastanaceae]	<i>Aesculus californicus</i>	California buckeye	
Typhaceae	<i>Typha angustifolia</i>	narrow-leaf cattail	

\*Only considered special-status in native stands – See Section 4.1 of the report for a description of this species.