

APPENDIX I

Special-Status Plant Survey

Special-Status Plant Survey
For
South Sutter Specific Plan
Sutter County, California

September 27, 2006

Prepared for:
Measure M Group



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Special-Status Plant Survey

South Sutter Specific Plan

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INTRODUCTION

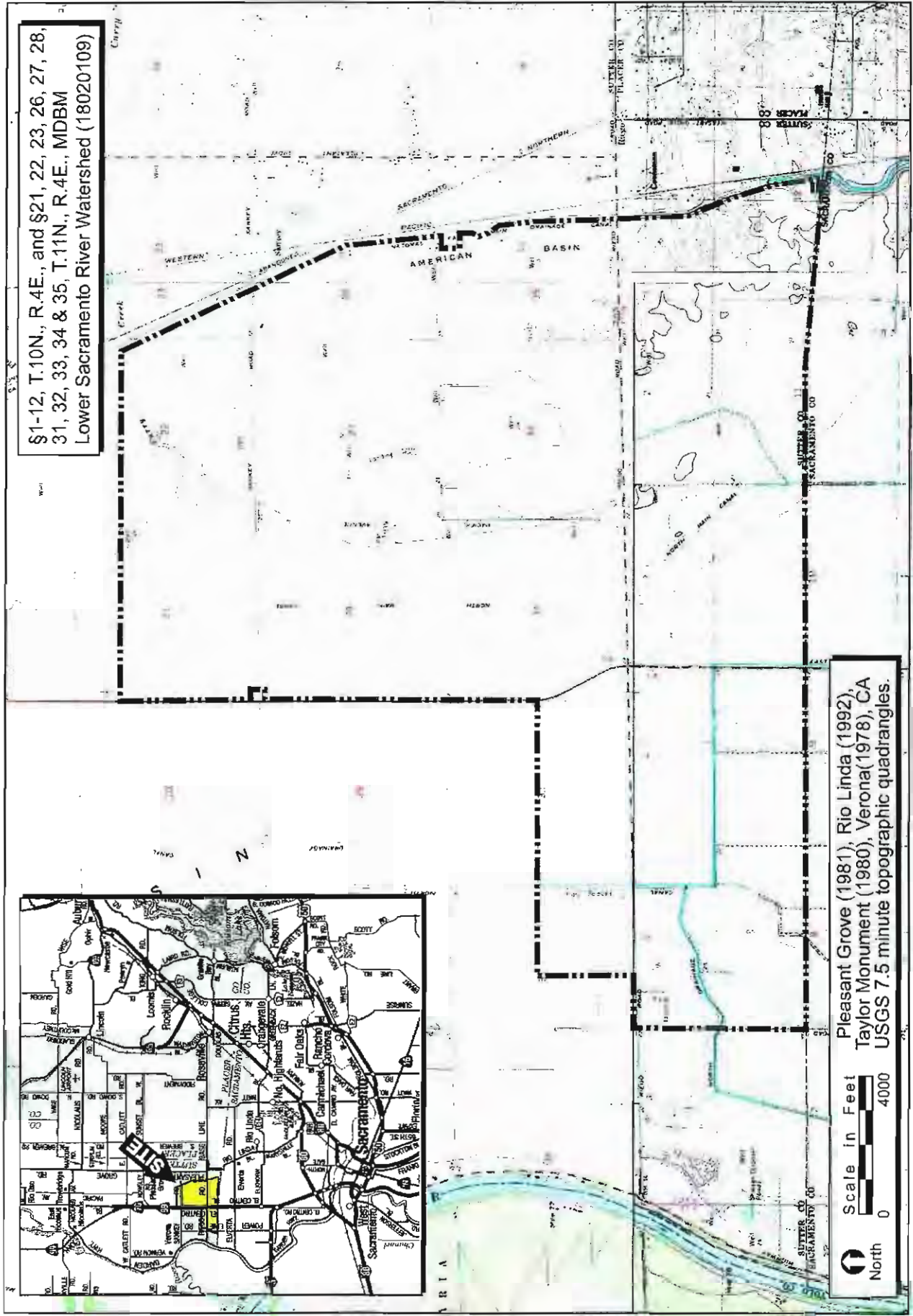
At the request of Measure M Group, ECORP Consulting, Inc. (ECORP) conducted a special-status plant survey for the 7,500-acre South Sutter Specific Plan Area (Plan Area) in Sutter County, California. The purpose of this survey was to identify and map the locations of special-status plant species observed within the Plan Area.

For the purposes of this report, "special-status species" refers to those plant species which:

- Are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act;
- Are listed or candidates for future listing as threatened or endangered under the California Endangered Species Act;
- Meet the definitions of endangered or rare under Section 15380 of the CEQA Guidelines;
- Are considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (Lists 1B and 2); or
- Are listed as rare under the California Native Plant Protection Act (Fish and Game Code of California, Section 1900 et seq.).

Site Location

The Plan Area is located east of Power Line Road, south of Howsley Road, and west of Natomas Road in southern Sutter County. State Highway 99/70 divides the site into two unequal portions. The Sutter/Sacramento County line parallels the southernmost portion of the Plan Area (Figure 1 – *Project Site and Vicinity*). The Plan Area corresponds to portions of Sections 21-23, 26-28, and 31-35 of Township 11 North, Range 4 East (MDBM) and portions of Sections 1-5, and 8-12 of Township 10 North, Range 4 East (MDBM) of the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute quadrangles (U.S. Department of the Interior, Geological Survey [USGS] 1981, 1978, 1980, and 1992, respectively). The Plan Area is located within the Lower Sacramento River Watershed (#18020109, U.S. Department of Interior, Geological Survey 1978).



S1-12, T.10N., R.4E., and S21, 22, 23, 26, 27, 28,
31, 32, 33, 34 & 35, T.11N., R.4E., MDBM
Lower Sacramento River Watershed (18020109)

Scale in Feet
 0 4000
 North
 Pleasant Grove (1981), Rio Linda (1992),
 Taylor Monument (1980), Verona (1978), CA
 USGS 7.5 minute topographic quadrangles.

FIGURE 1. Project Site and Vicinity

Existing Site Conditions

The majority of the Plan Area has been historically leveled and farmed for cultivated rice (*Oryza sativa*). Irrigation water is mechanically pumped from groundwater wells into the rice fields or cells via a system of man-made canals. The fields remain flooded until the fall harvest when each field is drained through manually controlled gates into a matrix of drainage ditches. Individual fields are separated by small upland checks or larger levees, some of which are used as access roads. The rice fields are rotated in and out of production and may remain in production for several years followed by fallow periods. Rice fields that are currently flooded are dominated by cultivated rice, but several other species also occur within and along the edges of these flooded fields. These species include water plantain (*Alisma lanceolatum*), broad-leaf water plantain (*Alisma plantago-aquatica*), fringed water plantain (*Damsonium californicum*), blue mud plantain (*Heteranthera limosa*), southern cattail (*Typha domingensis*), annual rabbit-foot grass (*Polypogon monspeliensis*), lady's thumb (*Polygonum persicaria*), Johnson grass (*Sorghum halepense*), whitewater crowfeet (*Ranunculus aquaticus*), and water primrose (*Ludwigia peploides* ssp. *peploides*).

Other vegetation communities observed within the Plan Area include non-irrigated and irrigated pastures. A field south of the Sankey Road/Natomas Road intersection has not been leveled and appears to be utilized for non-irrigated hay crops, such as oats or wheat. An irrigated pasture used for cattle grazing is located on the north side of Sankey Road, immediately west of Natomas Road. Plant species occurring in the irrigated pasture include ryegrass (*Lolium multiflorum*), Bermuda grass (*Cynodon dactylon*), several species of clover (*Trifolium* species), alfalfa (*Medicago sativa*), and Kentucky fescue (*Festuca arundinaceae*). A rural residence is located near the irrigated pasture on Sankey Road, and several commercial developments are also found within the Plan Area along Pacific Avenue.

Aquatic features present within the Plan Area include one seasonal wetland swale and a variety of drainage ditches (Figure 2). Dominant plants observed within the seasonal wetland swale include ryegrass, annual rabbit-foot grass, curly dock (*Rumex crispus*), hyssop loosestrife (*Lythrum hyssopifolium*), and toad rush (*Juncus bufonius*). Several small areas within the



Seasonal Wetland Swale

Drainage Ditch

SCALE IN FEET

0 1750 3500

SCALE: 1" = 3500'

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FIGURE 2. Survey Area



bonariensis), slender popcorn-flower (*Plagiobothrys stipitatus*), and water pygmy-weed (*Crassula aqualtica*).

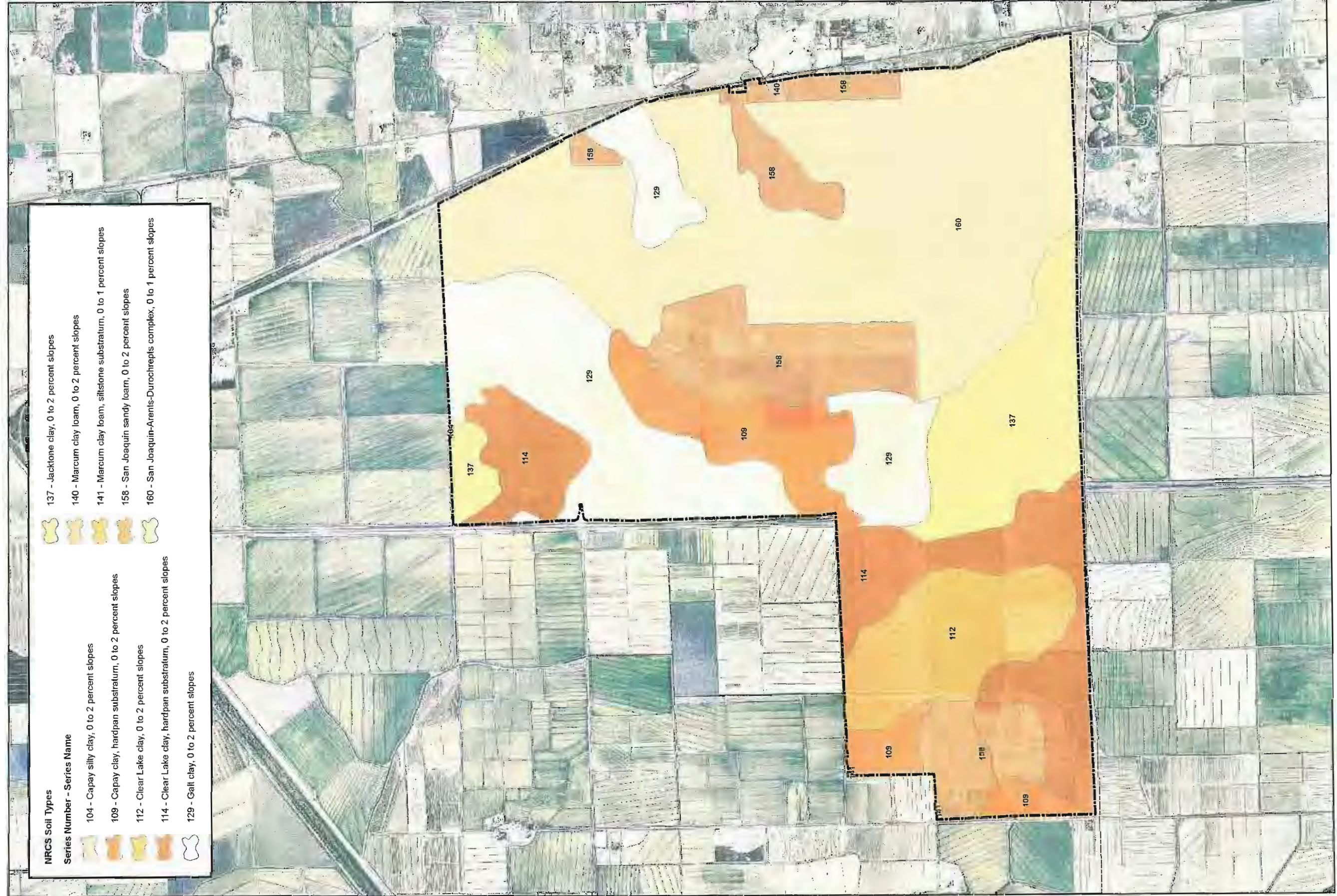
The drainage ditches within the Plan Area range from temporary features, generally less than 5 feet wide and 1 foot deep, to permanent features up to 30 feet wide and several feet deep. The temporary features are dominated by species such as southern cattail, water primrose, tall flatsedge (*Cyperus eragrostis*), ripgut brome (*Bromus diandrus*), milk thistle (*Silybum marianum*), rough cockle-bur (*Xanthium strumarium*), Bermuda grass, and hairy willow-herb (*Epilobium ciliatum*). The larger, more permanent drainage ditches were largely unvegetated due to the high volume of water; however they do support water primrose and southern cattail along the edges.

According to the *Soil Survey of Sutter County, California* (U.S. Department of Agriculture (USDA), Soil Conservation Service (SCS) 1988), ten soil units, or types, have been mapped within the Plan Area (Figure 3 – *Natural Resources Conservation Service Soil Types*). These are: (104) Capay silty clay, 0 to 2 percent slopes; (109) Capay clay, hardpan substratum, 0 to 2 percent slopes; (112) Clear Lake clay, 0 to 2 percent slopes; (114) Clear Lake clay, hardpan substratum, 0 to 2 percent slopes; (129) Galt clay, 0 to 2 percent slopes; (137) Jacktone clay, 0 to 2 percent slopes; (140) Marcum clay loam, 0 to 2 percent slopes; (141) Marcum clay loam, siltstone substratum, 0 to 1 percent slopes; (158) San Joaquin sandy loam, 0 to 2 percent slopes; and (160) San Joaquin-Arents-Durochrepts complex, 0 to 1 percent slopes.

Surrounding land uses include primarily rice agriculture with scattered rural residences. The Natomas East Main Drainage Canal is located immediately east of the Plan Area and the Cross Canal is located approximately one mile north of the Plan Area.

METHODS

The special-status plant survey included a review of resource agency species lists, literature review, on-line database query, voucher specimen and reference population review, and field surveys. Background information was collected on the potential existence of the special-status plants within or near the Plan Area from a variety of sources including:



NRCS Soil Types	
Series Number - Series Name	Series Name
104 - Capay silty clay, 0 to 2 percent slopes	137 - Jackstone clay, 0 to 2 percent slopes
109 - Capay clay, hardpan substratum, 0 to 2 percent slopes	140 - Marcum clay loam, 0 to 2 percent slopes
112 - Clear Lake clay, 0 to 2 percent slopes	141 - Marcum clay loam, siltstone substratum, 0 to 1 percent slopes
114 - Clear Lake clay, hardpan substratum, 0 to 2 percent slopes	158 - San Joaquin sandy loam, 0 to 2 percent slopes
129 - Galt clay, 0 to 2 percent slopes	160 - San Joaquin-Arents-Durochreplis complex, 0 to 1 percent slopes

File Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan\SouthSutter_Soil\table1.mxd

Map Projection: CA StatePlane Zone II
Datum: North American Datum 1983 (NAD83)

Figure 3. Natural Resources Conservation Service Soil Types

1 inch equals 3,000 feet



- California Department of Fish and Game's Natural Diversity Database (CNDDDB) record search for the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute quadrangles (CDFG 2003);
- California Native Plant Society's Inventory of Rare and Endangered Plants record search for the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute quadrangles (CNPS 2006);
- Species Lists for the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute quadrangles created by the U.S. Fish and Wildlife Service (USFWS) (USFWS 2006);
- *Status of Rare, Threatened, and Endangered Animal and Plants of California 2000-2004* (CDFG 2005);
- *Inventory of Rare and Endangered Vascular Plants of California* (CNPS 2001);
- *Inventory of Rare and Endangered Plants* (online edition) (CNPS 2006);
- *Soil Survey of Sutter County, California*, (USDA, SCS 1988);
- Color aerial photograph (Airphoto USA 2002, scale: 1" = 800');
- *Wetland Delineation for South Sutter Specific Plan, Sutter County* (ECORP 2006); and
- *Draft Natomas Basin Habitat Conservation Plan, Sacramento and Sutter Counties, California* (City of Sacramento et al. 2002)

Based upon the references listed above, vegetation communities and conditions present within the Plan Area, and known species distributive data in the region, a list of potentially occurring special-status plants was developed.

Field surveys were conducted in accordance with guidelines promulgated by U.S. Fish and Wildlife Service (USFWS 2000), California Department of Fish and Game (CDFG 1983), and California Native Plant Society (CNPS 2001). The determinate-level field surveys were conducted on May 23 and 25, June 27 and 30, and July 6, 2006, which coincided with the optimum blooming period for each of the potentially occurring special-status plants. ECORP botanists Debra Sykes and Virginia Moran walked meandering transects throughout the Plan Area to ensure complete coverage of all potentially suitable habitat. A list of field personnel and their qualifications is included as Attachment A.

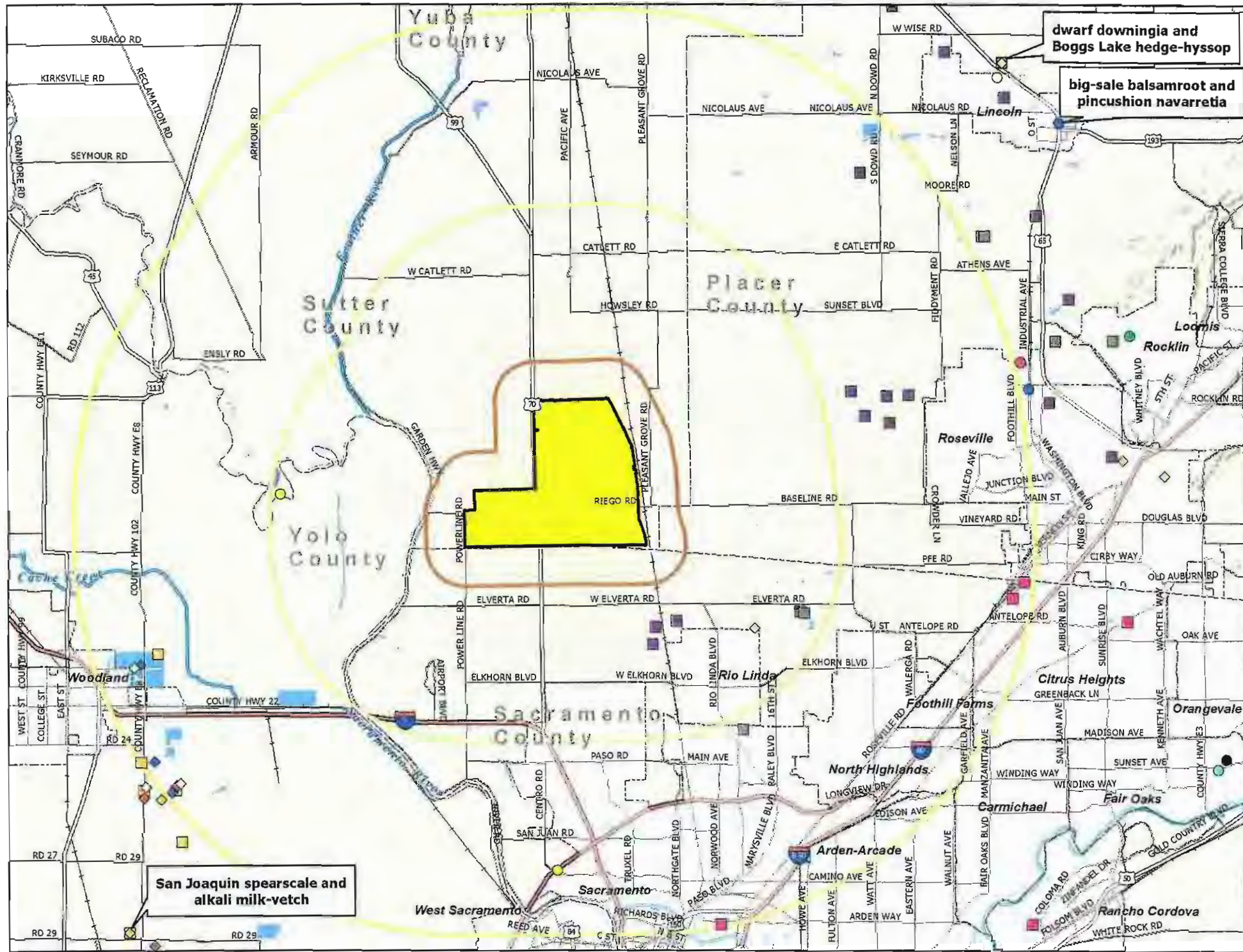
Reference populations for the target species were visited throughout the floristic season to assess bloom phenology and to observe species morphology. When reference populations were not available, mounted herbarium specimens were observed at the UC Davis Herbarium. Attachment B identifies the reference source for each of the target species including the location of the population, dates of visits, and phenological stage of the species at the time of the field visit(s).

Plant species identification, nomenclature, and taxonomy followed *The Jepson Manual: Higher Plants of California* (Hickman 1993). Vegetation community classification was based on the classification systems presented in *A Manual of California Vegetation* (Sawyer and Keeler-Wolf 1995), *Preliminary Descriptions of the Terrestrial Natural Communities of California* (Holland 1986), and *A Guide to Wildlife Habitats of California* (Mayer and Laudenslayer Jr. 1988).

RESULTS AND DISCUSSION

Previously Documented Special-Status Plant Occurrences

There are no previously documented occurrences of special-status plants within the Plan Area in the CNDDDB (CDFG 2003). However, several special-status plant species occurrences have been documented within an approximately ten mile radius of the Plan Area. These are: alkali milk vetch (*Astragalus tener* var. *tener*, CNPS List 1B), brittlescale (*Atriplex depressa*, CNPS List 1B), San Joaquin spearscale (*Atriplex joaquiniana*, CNPS List 1B), big-scale balsamroot (*Balsamorhiza macrolepis* var. *macrolepis*, CNPS List 1B), palmate-bracted bird's-beak (*Cordylanthus palmatus*, CNPS List 1B), dwarf downingia (*Downingia pusilla*, CNPS List 2), Boggs Lake hedge-hyssop (*Gratiola heterosepala*, California-endangered, CNPS List 1B), rose-mallow (*Hibiscus lasiocarpus*, CNPS List 2), Red Bluff dwarf rush (*Juncus leiospermus* var. *leiospermus*, CNPS List 1B), legenere (*Legenere limosa*, CNPS List 1B), Heckard's peppergrass (*Lepidium latipes* var. *heckardii*, CNPS List 1B), and Sanford's arrowhead (*Sagittaria sanfordii*, CNPS List 1B) (Figure 4 – *CNDDDB Special-Status Plant Species*). The results of the CNDDDB query for the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute quadrangles are included as Attachment C. Each of the special-status



Map Features

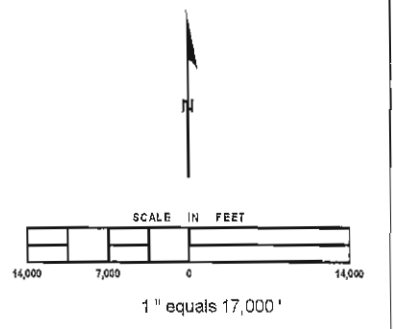
- | | | | |
|----------------------------------|----------------|-------------------------------|----------------------------|
| Administrative Boundaries | Buffers | Transportation Network | Hydrologic Features |
| City Boundary | 1 mile | Interstate | Lakes and Reservoirs |
| County Boundary | 5 mile | State Highway | Rivers |
| Project Boundary | 10 mile | Roads | |
| | | Railroads | |

² CNDDB Occurrences

- Plants**
- hispid bird's-beak
 - Red Bluff dwarf rush
 - Ahar's dwarf rush
 - big-sale balsamroot
 - pincushion navarretia
 - rose-mallow
 - Sacramento orcutt grass
 - brittlescale
 - palmate-bracted bird's-beak
 - Heckard's pepper-grass
 - Boggs Lake hedge-hyssop
 - alkali milk-vetch
 - legenera
 - Sanford's arrowhead
 - San Joaquin spearscale
 - dwarf downingia

NOTES

- ¹ Project Boundary: ECORP CAD wetland delineation
- ² CDFG California Natural Diversity Database (CNDDDB), June, 2006 Update (GIS Shapefile)
- Map Projection: California State Plane Zone II (NAD83) feet



VICINITY MAP



FIGURE 4. CNDDB SPECIAL-STATUS PLANT SPECIES

2005-186 South Sutter Specific Plan

Location: J:\GIS_Maps\2005-186_South_Sutter_Specific_Plan	Map Name: 06_plant_cnddb	Project Manager: PB
Original Production Date: 7/03/06	Revision:	GIS Specialist: EK
Printing Date: 08/28/06	Scale: 1" equals 17,000'	



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plant species known to occur within the vicinity of the Plan Area was evaluated for its potential to occur on-site.

Additional species located outside of the ten mile radius of the Plan Area were also evaluated for their potential to occur on-site due to the presence of potentially suitable habitat. These are: Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii*, CNPS List 1B), pincushion navarretia (*Navarretia myersii* var. *myersii*, CNPS List 1B), slender Orcutt grass (*Orcuttia tenuis*, federal-threatened, California-endangered, CNPS List 1B), and Sacramento Orcutt grass (*Orcuttia viscida*, federal-endangered, California-endangered, CNPS List 1B).

Natomas Basin Habitat Conservation Plan

The Plan Area falls within the jurisdiction of the Natomas Basin Habitat Conservation Plan (NBHCP). The *Draft Natomas Basin Habitat Conservation Plan* (City of Sacramento et al. 2002) identifies seven plant species that are considered "Covered Species" under the NBHCP. These are delta tule pea (*Lathyrus jepsonii* var. *jepsonii*, CNPS List 1B), Sanford's arrowhead, Boggs Lake hedge-hyssop, Sacramento Orcutt grass, slender Orcutt grass, Colusa grass (*Neostapfia colusana*, federal-threatened, California-endangered, CNPS List 1B), and legenera. Each of the species identified in the draft NBHCP was evaluated for its potential to occur on-site.

Target Species

Based on the information listed above, vegetation communities and conditions present within the Plan Area, and known species distributive data in the region, a list of potentially occurring special-status plants was developed. The target special-status plant species for this survey were dwarf downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, legenera, pincushion navarretia, Colusa grass, slender Orcutt grass, Sacramento Orcutt grass, and Sanford's arrowhead (Table 1).

Table 1 – Potentially Occurring Special-Status Plants

Common Name	Scientific Name	Federal ESA Status	California ESA Status	Other Status	Habitat Description	Approximate Survey Dates
Plants						
Dwarf downingia	<i>Downingia pusilla</i>	-	-	2	vernal pool/wetlands	March-May
Boggs Lake hedge-hyssop	<i>Gratiola heterosepala</i>	-	CE	1B	vernal pools	April-August
Ahart's dwarf rush	<i>Juncus leiospermus</i> var. <i>ahartii</i>	-	-	1B	vernal pools	March-May
Legenere	<i>Legenere limosa</i>	-	-	1B	vernal pools	April-June
Pincushion navarretia	<i>Navarretia myersii</i> var. <i>myersii</i>	-	-	1B	vernal pools	May
Colusa grass	<i>Neostapfia colusana</i>	FT	CE	1B	vernal pools	May-August
Slender Orcutt grass	<i>Orcuttia tenuis</i>	FT	CE	1B	vernal pools	May-October
Sacramento Orcutt grass	<i>Orcuttia viscida</i>	FE	CE	1B	vernal pools	April-July
Sanford's arrowhead	<i>Sagittaria sanfordii</i>	-	-	1B	marshes/swamps	May-October

Status Codes:

FE - Federal ESA listed, Endangered.

FT - Federal ESA listed, Threatened.

CE - California ESA or Native Plant Protection Act listed, Endangered.

1B - California Native Plant Society/Rare or Endangered in California and elsewhere.

2 - California Native Plant Society/Rare or Endangered in California, more common elsewhere.

Excluded Species

Several alkaline species that occur within the vicinity of the Plan Area were not included as target species due to the lack of potentially suitable habitat within the Plan Area. These are alkali milk vetch, brittlescale, San Joaquin spearscale, palmate-bracted bird's-beak, and Heckard's peppergrass. These five species are typically found in alkaline meadows and sinks, playas, and chenopod scrub communities (CNPS 2001) with other halophytic species such as salt grass (*Distichlis spicata*), pickleweed (*Salicornia* species), and alkali heath (*Frankenia* species) (CDFG 2003). These types of communities are not present within the Plan Area.

Four additional species were not included as target species even though there are documented occurrences of these species within the vicinity of the Plan Area. These are big scale balsamroot, Red Bluff dwarf rush, rose-mallow, and delta tule pea. Big-scale balsamroot is known to occur in chaparral, cismontane woodland, and valley and foothill grasslands (CNPS 2001). The nearest documented occurrence of big scale balsamroot (CNDDDB Occurrence No. 9) is located approximately 12 miles east of the Plan Area in Placer County (CDFG 2003).

Potentially suitable habitat for big-scale balsamroot does not occur within the Plan Area. Red Bluff dwarf rush is known to occur in chaparral, cismontane woodland, meadows and seeps, valley and foothill grasslands, and vernal pools, in Butte, Shasta, and Tehama counties (CNPS 2001). The nearest documented occurrence of Red Bluff dwarf rush (CNDDDB Occurrence No. 10) is located approximately 12 miles east of the Plan Area (CDFG 2003); however, Witham considers this occurrence to be erroneous, as it is well outside of the reported range of this species (CDFG 2003). It is possible that this occurrence record represents a misidentification, possibly of Ahart's dwarf rush. Red Bluff dwarf rush was not included as a target species since the Plan Area is located outside the known range of this species. Rose-mallow is known to occur in freshwater marshes and swamps (CNPS 2001), typically on soaked riverbanks and sloughs in the Delta Watershed (CDFG 2003). The nearest documented occurrence of rose-mallow (CNDDDB Occurrence No. 68) is located approximately 7.5 miles west of the Plan Area on the north bank of Old River (CDFG 2003). The drainage ditches within the Plan Area are highly manipulated due to rice production and do not provide potentially suitable habitat for rose-mallow. Delta tule pea occurs in both freshwater and brackish marshes and swamps (CNPS 2001). The nearest documented occurrence of Delta tule pea (CNDDDB Occurrence No. 50) is

located approximately 30 miles to the south of the Plan Area. Potentially suitable habitat for delta tule pea does not occur within the Plan Area.

Species Accounts

Dwarf Downingia

Dwarf downingia is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CNPS List 2 species. Dwarf downingia is a small herbaceous annual plant herb that occurs in vernal pools, seasonal wetland swales, and man-made features such as tire ruts, scraped depressions, stock ponds, and roadside ditches (Hickman 1993, CNPS 2001, CDFG 2003, Placer County 2003). This species blooms from March through May and typically occurs at elevations ranging from sea level to 1,460 ft (445 m) (CNPS 2001). In California, it occurs in Merced, Mariposa, Napa, Placer, Sacramento, Solano, Sonoma, Stanislaus, Tehama, and Yuba counties (CNPS 2001).

There are several documented occurrences of dwarf downingia within a five mile radius of the Plan Area (CDFG 2003). The nearest documented occurrence of dwarf downingia (CNDDDB Occurrence No. 59) is located approximately 4.3 miles southeast of the Plan Area. This population is located south of Elverta Road, just west of East Levee Road, and west of Rio Linda (CDFG 2003). This population is presumed to be extant. The seasonal wetland swale on-site represents potentially suitable habitat for this species.

Boggs Lake Hedge-Hyssop

Boggs Lake hedge-hyssop is listed as endangered pursuant to the California Endangered Species Act, and it is designated as a CNPS List 1B species. Boggs Lake hedge-hyssop is also designated as a "Covered Species" under the NBHCP. This species is a small, semi-aquatic, herbaceous annual that occurs in shallow waters or moist clay soils of vernal pools and lake margins up to 7,800 ft (2,377 m) in elevation (CNPS 2001, CDFG 2005). Boggs Lake hedge-hyssop generally blooms from April through August (CNPS 2001). The current range of this species includes Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta,

Siskiyou, San Joaquin, Solano, and Tehama counties and one occurrence in Lake County, Oregon (CNPS 2001, CDFG 2005).

The nearest documented occurrence of Boggs Lake hedge-hyssop (CNDDDB Occurrence No. 3) is located approximately 6.0 miles southeast of the Plan Area (CDFG 2003). This population was located just north of and adjacent to U Street at the northeast border of Rio Linda, and is likely extirpated (CDFG 2003). The nearest extant population (CNDDDB Occurrence No. 16) is located approximately 15 miles east of the Plan Area in Roseville, Placer County. The seasonal wetland swale on-site is represents potentially suitable habitat for this species.

Ahart's Dwarf Rush

Ahart's dwarf rush is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in vernal pool margins and mesic valley and foothill grasslands at elevations ranging from 100 to 330 ft (30 to 91 m) (CNPS 2001, Placer County 2003). Ahart's dwarf rush generally blooms from March through May (CNPS 2001). The current range of this species includes Butte, Calaveras, Placer, Sacramento, and Yuba counties (CNPS 2001).

The nearest documented occurrence of Ahart's dwarf rush (CNDDDB Occurrence No. 3) is located approximately 15 miles northeast of the Plan Area in the City of Lincoln (CDFG 2003). The population was mapped 0.85 miles north of Nicholas Road and 0.3 mile south of Highway 65 (CDFG 2003). The population is presumed to be extant. The seasonal wetland swale on-site represents potentially suitable habitat for this species.

Legenere

Legenere is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CNPS List 1B species. Legenere is also designated as a "Covered Species" under the NBHCP. This annual herb has been documented in a variety of seasonally inundated environments including wetlands, wetland swales, marshes, vernal pools, artificial ponds, and floodplains of intermittent drainages at elevations up to 2,900 ft (884 m) above

mean sea level (CNPS 2001, CDFG 2003, Placer County 2003). *Legenere* blooms from April through June (CNPS 2001). *Legenere* is known from Lake, Napa, Placer, Sacramento, Shasta, San Mateo, Solano, Sonoma, Stanislaus, and Tehama counties (CNPS 2001). However, the species is believed to have been extirpated from Sonoma and Stanislaus counties (CNPS 2001).

The nearest documented occurrence of *legenere* (CNDDDB Occurrence No. 32) was located approximately 6.8 miles southeast of the Plan Area (CDFG 2003). This population was located south of Elverta Road and 0.5 miles southwest of Gibson Ranch in Rio Linda, and is now extirpated (CDFG 2003). The nearest extant population (CNDDDB Occurrence No. 33) is located approximately 7.7 miles southeast of the Plan Area (CDFG 2003). The seasonal wetland swale on-site represents potentially suitable habitat for this species.

Pincushion Navarretia

Pincushion navarretia is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CNPS List 1B species. This species is an herbaceous annual that occurs in vernal pools at elevations ranging from 65 to 1,100 ft (20 to 335 m) above mean sea level (CNPS 2001), and typically blooms in May (CNPS 2001 and 2005). The range of *pincushion navarretia* includes Amador, Lake, Merced, and Sacramento counties (CNPS 2001 and 2005).

The nearest documented occurrence of *pincushion navarretia* (CNDDDB Occurrence No. 12) is located approximately 15.5 miles northeast of the Plan Area (CDFG 2003). The exact location of this population is unknown; however, it is located within the northern limits of the City of Lincoln, Placer County (CDFG 2003). It is presumed to be extant. The seasonal wetland swale on-site represents potentially suitable habitat for this species.

Colusa Grass

Colusa grass is listed as threatened and endangered pursuant to the federal and California Endangered Species Acts, respectively, and is designated as a CNPS List 1B species. This species is also designated as a "Covered Species" under the NBHCP. *Colusa grass* is an

herbaceous annual that occurs in relatively large or deep vernal pools typically with Adobe soils (CNPS 2001, CDFG 2003). Colusa grass occurs at elevations ranging from 15 to 650 ft (5 to 200 m) and typically blooms from May to August (CNPS 2001). This species is known from Colusa, Merced, Solano, Stanislaus, and Yolo Counties (CNPS 2001).

The nearest documented occurrence of Colusa grass (CNDDDB Occurrence No. 58) is located approximately 17.5 miles southwest of the Plan Area (CDFG 2003). This population is located in a vernal pool on the east side of the Davis Air Force Communications Facility, approximately 2.5 miles north northwest of Saxon, Yolo County (CDFG 2003). This population is presumed to be extant. The seasonal wetland swale on-site represents marginally suitable habitat for this species.

Slender Orcutt Grass

Slender Orcutt grass is listed as threatened and endangered in accordance with the federal and California Endangered Species Acts, respectively, and is designated as a CNPS List 1B species. This species is also designated as a "Covered Species" under the NBHCP. This species occurs in vernal pools at elevations ranging from 115 to 5,775 ft (35 to 1,760 m) above mean sea level (CNPS 2001). Slender Orcutt grass is an annual that blooms from May through October (CNPS 2001), occurring primarily on substrates of volcanic origin (Crampton 1959, Corbin and Schoolcraft 1989; *as cited in* USFWS 2003). This species is known to occur in the same type of vernal pool complexes as Sacramento Orcutt grass in Sacramento County; however, these species have not been observed co-existing in the same vernal pool (USFWS 2003). The median area of pools occupied by populations studied by Stone et al. (1988, *as cited in* USFWS 2003) was 1.6 acres and ranged from 0.2 acre to 111.0 acres (USFWS 2003). The geographic range of slender Orcutt grass includes the following counties: Lake, Lassen, Plumas, Sacramento, Shasta, Siskiyou, and Tehama (CNPS 2001).

The nearest documented occurrence of slender Orcutt grass (CNDDDB Occurrence No. 71) is located approximately 19 miles southeast of the Plan Area in Sacramento County (CDFG 2003). This population of slender Orcutt grass was documented east of Mather Air Force Base, near the intersection of Sunrise Boulevard and Douglas Road (CDFG 2003). This population is

presumed to be extant. While this species is not known to occur within the vicinity of the Plan Area, it was included as a target species because the seasonal wetland swale on-site represents marginally suitable habitat for this species.

Sacramento Orcutt Grass

Sacramento Orcutt grass is listed as endangered in accordance with both the federal and California Endangered Species Acts, and is designated as a CNPS List 1B species. It is also designated as a "Covered Species" under the NBHCP. Sacramento Orcutt grass is endemic to the southeastern Sacramento Valley (Keeler-Wolf *et al.* 1998, *as cited in* USFWS 2003), with all known occurrences restricted to Sacramento County. Sacramento Orcutt grass is an annual herb that occurs in vernal pools at elevations ranging from 100 to 330 ft (30 to 100 m) above sea level, and blooms from April through July (CNPS 2001). The median area of occupied pools discovered prior to 1988 was 0.69 acre and ranged from 0.25 acre to 2.03 acres (USFWS 2003). Known occurrences of this species within the general region are limited to a small area east of Mather Field, Phoenix Field Ecological Reserve, Phoenix Park (introduced population), and an area near Rancho Seco Lake (USFWS 2003).

The nearest documented occurrence of Sacramento orcutt grass (CNDDDB Occurrence No. 15) is located approximately 18 miles to the southeast of the Plan Area in Phoenix Park, Fair Oaks, Sacramento County (CDFG 2003). This population is extant. While this species is not known to occur within the vicinity of the Plan Area, it was included as a target species because the seasonal wetland swale on-site represents marginally suitable habitat for this species.

Sanford's Arrowhead

Sanford's arrowhead is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a CNPS List 1B species. Sanford's arrowhead is also designated as a "Covered Species" under the NBHCP. This species is an aquatic perennial that occurs in shallow freshwater marshes, swamps, ponds, rice fields, canals, and ditches up to 2,000 ft (607 m) in elevation (CNPS 2001). Sanford's arrowhead blooms from May through October (CNPS 2001). The known range of Sanford's arrowhead includes Butte, Del Norte,

Fresno, Kern, Merced, Orange, Sacramento, San Joaquin, Shasta, Tehama, and Ventura counties, although this species is believed to have been extirpated from Orange and Ventura counties (CNPS 2001).

The nearest documented occurrence of Sanford's arrowhead (CNDDDB Occurrence No. 46) is located approximately 11.6 miles west of the Plan Area (CDFG 2003). This occurrence is located on the east side of Roseville Road about 0.9 miles from Antelope Rode (CDFG 2003). The population is presumed to be extant. The drainage ditches on-site represent potentially suitable habitat for this species.

Field Survey Results

No special-status plants were observed within the Plan Area during the determinate-level field surveys conducted on May 23 and 25, June 27 and 30, and July 6, 2006. A complete list of plant species encountered during these surveys is included as Attachment D.

CONCLUSION

ECORP conducted a determinate-level special-status plant survey for the South Sutter Specific Plan Area in Sutter County, California on May 23 and 25, June 27 and 30, and July 6, 2006. The target species for this survey were dwarf downingia, Boggs Lake hedge-hyssop, Ahart's dwarf rush, legenera, pincushion navarretia, Colusa grass, slender Orcutt grass, Sacramento Orcutt grass, and Sanford's arrowhead. No special-status plants were observed on-site during the 2006 field surveys.

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LIST OF ATTACHMENTS

Attachment A – Statement of Qualifications

Attachment B – Target Species Reference Source

Attachment C – California Natural Diversity Database Plant Occurrences for "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute Quadrangles

Attachment D – Plant Species Observed On-Site (May 23 and 25, June 27 and 30, and July 6, 2006)

ATTACHMENT A

Statement of Qualifications

Debra Sykes M.S.

Botanist ECORP Consulting, Inc.

Ms. Sykes is a botanist/biologist and trained wetland delineator specializing in biological resource assessment, plant taxonomy, plant ecology, habitat type assessment, invasive plant species, botanical research methodology, and California floristics. Ms. Sykes has three years of professional experience conducting field surveys for a variety special-status plants throughout California. Her experience includes project management, general floristic surveys, vegetation mapping, arbor surveys, mitigation monitoring, and wetland delineation. Her botanical expertise extends throughout the Central Valley, southern, and mountain regions of California and includes work within vernal pool, annual grassland, oak woodland, chaparral, coastal sage scrub, Mojave Desert scrub, and riparian communities.

Virginia Susan Moran M.S.

**Owner and Proprietor of EOS-Ecological Outreach Services
Subcontracted by ECORP Consulting, Inc.**

Virginia Moran is a botanist with over 20 years of field experience. Virginia has worked all over the United States for organizations such as The Nature Conservancy, National Park Service, and U.S. Fish and Wildlife Service. Virginia's experience is extensive and includes: preparing and reviewing NEPA and CEQA documents, conducting Section 7 consultations under the Endangered Species Act, preparing listings under Section 6 of the ESA, assisting the USFWS 404 wetland program biologists during delineations, writing and implementing Conservation Agreements for protection of rare plants, outlining and implementing mitigation and restoration plans, conducting rare plant and general plant surveys, conducting general biological surveys, acting as a tortoise monitor, conducting protocol level surveys for the Quino checkerspot butterfly (Permit # TE 036809-0), writing and supervising field work and field work contracts, work as a utility forester, native plant gardening, designing and implementing numerous interpretation and education classes for all ages. Virginia's extensive botanical experience includes surveys in vernal pool, oak woodland, annual grassland, and riparian communities.

ATTACHMENT B

Target Species Reference Source

Target Species Reference Source

Name	Location of Observation	Dates of Observation	Phenology	Remarks
Dwarf downingia <i>Downingia pusilla</i>	Western Placer County, near the intersection of Baseline Road and Fiddymount Road	April 25-27, 2006 May 4-5, 2006	Population in full bloom.	Small corolla and short, untwisted ovary (as compared to other <i>Downingia</i> species).
Boggs Lake hedge-hyssop <i>Gratiola heterosepala</i>	Mather Field and Montelena Wetland Preserve, Sacramento County	May 8, 2006	Population in full bloom.	Small size of this species and unequal calyx lobes (as compared to <i>Gratiola ebractiata</i>).
Ahart's dwarf rush <i>Juncus leiospermus</i> var. <i>ahartii</i>	UC Davis Herbarium	April 21, 2006	Mounted herbarium specimens.	Reference population not available.
Legenere <i>Legenere limosa</i>	Montelena Wetland Preserve, Sacramento County	May 8, 2006	A few flowers were open.	Distinctive calyx tubes and "zig-zag" axes.
Pincushion navarretia <i>Navarretia myersii</i> var. <i>myersii</i>	UC Davis Herbarium	April 21, 2006	Mounted herbarium specimens.	Reference population not available.
Colusa grass <i>Neostapfia colusana</i>	UC Davis Herbarium	April 21, 2006	Mounted herbarium specimens.	Reference population not available.
Slender Orcutt grass <i>Orcuttia tenuis</i>	Montelena Wetland Preserve, Sacramento County	May 8, 2006 June 9 and 13, 2006	Population in peak flower during June visits.	Distinctive equal lemma lobes with narrow stems and leaves (as compared to other <i>Orcuttia</i> species).
Sacramento Orcutt grass <i>Orcuttia viscida</i>	Phoenix Field Park, Fair Oaks, Sacramento County	April 24, 2006 May 8, 2006 June 8, 12-13 & 20, 2006	Population in peak flower during June visits.	Distinctive unequal lemma lobes with the central lobe being the longest (as compared to other <i>Orcuttia</i> species).
Sanford's arrowhead <i>Sagittaria sanfordii</i>	Sacramento County, near the intersection of Roseville Road and Outlook Drive	May 23 and 26, 2006 June 20, 2006	Several flowering plants were observed during each visit.	Distinctive triangular stems.

ATTACHMENT C

California Natural Diversity Database Plant Occurrences for the "Pleasant Grove, California," "Verona, California," "Taylor Monument, California," and "Rio Linda, California" 7.5-minute Quadrangles

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status: _____ NDDDB Element Ranks: _____ Other Lists: _____
 Federal: None Global: G3 CNPS List: 2
 State: None State: S3.1 R-E-D Code: 1-2-1

Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.
 Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 32 Map Index: 26044 EO Index: 5241 Dates Last Seen: _____
 Occ Rank: Fair Element: 1994-04-04
 Origin: Natural/Native occurrence Site: 1994-04-04
 Presence: Presumed Extant
 Trend: Unknown Record Last Updated: 1994-08-08
 Main Source: YORK, R. 1994 (OBS)

Quad Summary: RIO LINDA (3812164/512B)
 County Summary: SACRAMENTO

Lat/Long: 38.70819° / -121.47648° Township: 10N
 UTM: Zone-10 N4285496 E632468 Range: 05E
 Radius: 80 meters Mapping Precision: SPECIFIC Section: 19 Qtr: NW
 Elevation: 35 ft Symbol Type: POINT Meridian: M

Location: ABOUT 800' DUE SOUTH OF THE WEST END OF DELANO ROAD; BETWEEN RIO LINDA AND ELVERTA.
 Location Detail: DELANO ROAD IS JUST SOUTH OF ELVERTA ROAD AND NORTH OF "U" STREET.
 Ecological: GRASSLAND WITH SEASONAL WETLANDS AND VERNAL POOLS. ASSOCIATED WITH RANUNCULUS BONARIENSIS VAR. TRISEPALUS AND PLAGIOBOTHRYIS STIPITATUS VAR. MICRANTHUS.
 General: 100+ PLANTS OBSERVED IN 1994. SITE IS NEAR A MICROWAVE TOWER AND A DIRT PARKING AREA. PLANNED ACCESS ROADS NEARBY WILL AVOID THE SITE. MAPPED AS SAME SITE AS 1951 COLLECTION BY A. CARTER (#3015 CAS, JEPS, UC) AT KEITHLY RANCH, RIO LINDA.
 Owner/Manager: PVT

Occurrence No. 57 Map Index: 26045 EO Index: 5240 Dates Last Seen: _____
 Occ Rank: None Element: 1991-05-26
 Origin: Natural/Native occurrence Site: 1997-06-18
 Presence: Extirpated
 Trend: Unknown Record Last Updated: 1997-08-11
 Main Source: DAINS, V. 1991 (OBS)

Quad Summary: RIO LINDA (3812164/512B)
 County Summary: SACRAMENTO

Lat/Long: 38.71154° / -121.41774° Township: 10N
 UTM: Zone-10 N4285955 E637569 Range: 05W
 Radius: 80 meters Mapping Precision: SPECIFIC Section: 22 Qtr: NE
 Elevation: 75 ft Symbol Type: POINT Meridian: M

Location: 0.2 MILES SOUTH OF ELVERTA ROAD AND 0.6 MILE EAST OF 16TH STREET, RIO LINDA.
 Location Detail: LOCATED ABOUT 0.5 MILE SOUTHWEST OF GIBSON RANCH COUNTY PARK, NORTH OF DRY CREEK.
 Ecological: GROWING ON BORDER OF A CREATED PONDED DEPRESSION IN ASSOCIATION WITH GRATIOLA EBRACTEATA, DOWNINGIA ORNATISSIMA, AND ELEOCHARIS MACROSTACHYA. THIS IS NOT A TYPICAL VERNAL POOL BUT A SEMI-PERMANANT MARSH WITH WILLOWS AND TULE.
 Threat: DEVELOPMENT IS PLANNED FOR THIS SITE.
 General: 50 PLANTS OBSERVED IN 1991. WETLAND MITIGATION FOR THE PROPOSED DEVELOPMENT COULD INCLUDE RETENTION OF THIS POPULATION. SITE A SUBDIVISION IN 1997; FORMER POP SITE IS NOW NEAR E END OF RUSHING RIVER CT OFF OF CHERRY BROOK DR.
 Owner/Manager: PVT

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 2
State: None	State: S3.1	R-E-D Code: 1-2-1

Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.
Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 58	Map Index: 26042	EO Index: 5243	Dates Last Seen	
Occ Rank: Fair			Element: 1993-04-22	
Origin: Natural/Native occurrence			Site: 1997-06-18	
Presence: Presumed Extant				
Trend: Unknown			Record Last Updated: 1997-08-11	
Main Source: LEACH, S. 1993 (OBS)				

Quad Summary: RIO LINDA (3812164/512B)
County Summary: SACRAMENTO

Lat/Long: 38.69961° / -121.48781°	Township: 10N
UTM: Zone-10 N4284528 E631498	Range: 04E
Radius: 80 meters	Section: 25
Elevation: 30 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: NE
Symbol Type: POINT	

Location: UNDER TRANSMISSION LINE WEST OF EAST LEVEE ROAD AND 1 MILE NORTH OF ELKHORN BLVD, RIO LINDA.
Location Detail: APPROX 600 FEET WEST OF EAST LEVEE ROAD IMMEDIATELY SOUTH OF TWIN TRANSMISSION LINE TOWERS. WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 25.
Ecological: NORTHERN HARDPAN VERNAL POOL DOMINATED BY PLAGIOBOTHRYUS STIPITATUS VAR. MICRANTHUS AND HEMIZONIA. CALIFORNIA LINDERIELLA (LINDERIELLA OCCIDENTALIS) HAS ALSO BEEN OBSERVED IN THIS POOL.
Threat: MAY HAVE BEEN DISKED IN THE PAST; NO PRESENT DISTURBANCES.
General: 50 PLANTS OBSERVED IN 1993. POTENTIAL DISTURBANCE TO SITE IF LANDOWNER SELLS TOPSOIL AND LEVELS THE AREA FOR AGRICULTURE AS NEIGHBORING LANDOWNERS HAVE ALREADY DONE. HABITAT INTACT IN 1997, BUT NO PLANTS SEEN (TOO LATE).
Owner/Manager: PVT

Occurrence No. 59	Map Index: 26043	EO Index: 5242	Dates Last Seen	
Occ Rank: Good			Element: 1993-05-12	
Origin: Natural/Native occurrence			Site: 1997-06-18	
Presence: Presumed Extant				
Trend: Unknown			Record Last Updated: 1997-08-11	
Main Source: LEACH, S. 1993 (OBS)				

Quad Summary: RIO LINDA (3812164/512B)
County Summary: SACRAMENTO

Lat/Long: 38.70598° / -121.48647°	Township: 10N
UTM: Zone-10 N4285236 E631603	Range: 04E
Radius: 80 meters	Section: 24
Elevation: 28 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: SE
Symbol Type: POINT	

Location: ABOUT 0.6 AIR MILE SOUTH OF ELVERTA ROAD JUST WEST OF EAST LEVEE ROAD, WEST OF RIO LINDA.
Location Detail: VERNAL POOL ON SOUTH SIDE OF GRAVEL ACCESS ROAD TO PRIVATE PROPERTY. WITHIN THE SE 1/4 OF THE SE 1/4 OF SECTION 24.
Ecological: NORTHERN HARDPAN VERNAL POOL ON SAN JOAQUIN SOILS. ASSOCIATED WITH PLAGIOBOTHRYUS STIPITATUS VAR. MICRANTHUS, ERYNGIUM VASEYI, LASTHENIA GLABERRIMA, RANUNCULUS BONARIENSIS VAR. TRISEPALUS, AND LIMNANTHES DOUGLASII.
Threat: AGRICULTURE; SITE IS USED FOR A MIXED SPECIES FORAGE CROP (HAY).
General: OVER 150 PLANTS IN 1993. OWNER HAS INDICATED THAT HE PLANS TO LEVEL THE SITE AND SELL SURFACE MATERIAL TO SAC METRO AIRPORT FOR ON-GOING DEVELOPMENT. CA LINDERIELLA ALSO HERE. NO PLANTS SEEN IN 1997 (TOO LATE), BUT HABITAT WAS INTACT.
Owner/Manager: PVT

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 2
State: None	State: S3.1	R-E-D Code: 1-2-1

Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.
Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 61	Map Index: 26040	EO Index: 1727	Dates Last Seen
Occ Rank: Unknown			Element: 1993-04-26
Origin: Natural/Native occurrence			Site: 1993-04-26
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 1995-09-12
Main Source: HOLLAND, R. 1993 (OBS)			

Quad Summary: PLEASANT GROVE (3812174/528C), SHERIDAN (3812184/528B)
County Summary: PLACER

Lat/Long: 38.87484° / -121.38761°	Township: 12N
UTM: Zone-10 N4304123 E639869	Range: 05E
Radius: 80 meters	Section: 23
Elevation: 93 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: SW
Symbol Type: POINT	

Location: LINCOLN COMMUNICATION ANNEX (USAF) NORTH OF MOORE ROAD, ABOUT 5 AIR MILES WEST OF LINCOLN.
Location Detail: MAPPED ABOUT 0.75 MILE NNW OF THE INTERSECTION OF DOWD AVENUE AND MOORE ROAD WITHIN THE NE 1/4 OF THE SW 1/4 OF SECTION 23.
Ecological: GROWING IN SATURATED SOIL IN NORTHERN HARDPAN VERNAL POOL. ASSOCIATED WITH PLAGIOBOTHRYUS BRACTEATUS, ELEOCHARIS MACROSTACHYA, MARSILEA VESTITA, AND PSILOCARPUS OREGANUS. SOILS ARE A HYDRIC INCLUSION WITHIN COMETA LOAM.
Threat: CATTLE GRAZING; SITE HAS BEEN LEASED TO THE LINCOLN HIGH SCHOOL FFA.
Owner/Manager: DOD-USAF

Occurrence No. 98	Map Index: 43406	EO Index: 43406	Dates Last Seen
Occ Rank: Good			Element: 2000-04-12
Origin: Natural/Native occurrence			Site: 2000-04-12
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2000-08-10
Main Source: ROBISON, R. 2000 (OBS)			

Quad Summary: ROSEVILLE (3812173/528D), PLEASANT GROVE (3812174/528C)
County Summary: PLACER

Lat/Long: 38.79160° / -121.37589°	Township: 11N
UTM: Zone-10 N4294903 E641050	Range: 05E
Area: 7.1 ac	Section: 24
Elevation: 90 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: NW
Symbol Type: POLYGON	

Location: ABOUT 0.7 MILE WEST OF CONFLUENCE OF KASEBERG CREEK AND PLEASANT GROVE CREEK, NORTHWEST OF ROSEVILLE.
Location Detail: FOUR POOLS MAPPED WITHIN THREE POLYGONS AT CNDD, ABOUT 1 MILE WEST OF ELBOW IN FIDDYMENT ROAD. POOLS ARE WITHIN THE W 1/2 NW 1/4 SECTION 24.
Ecological: VERNAL POOLS DOMINATED BY PLAGIOBOTHRYUS STIPITATUS, POGOGYNE ZIZIPHOROIDES, PSILOCARPUS BREVISSIMUS, NAVARETTIA LEUCOCEPHALA, AND HORDEUM MURINUM SSP. GOSSONEANUM.
Threat: SITE IS GRAZED AND RECEIVES RUNOFF FROM ADJACENT HOUSING. AREA IS SLATED FOR DEVELOPMENT.
General: UNKNOWN NUMBER OF PLANTS OBSERVED IN FOUR POOLS IN 2000.
Owner/Manager: PVT

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status Federal: None State: None	NDDB Element Ranks Global: G3 State: S3.1	Other Lists CNPS List: 2 R-E-D Code: 1-2-1
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Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.
 Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 99	Map Index: 43407	EO Index: 43407	Dates Last Seen
Occ Rank: Good			Element: 2000-04-12
Origin: Natural/Native occurrence			Site: 2000-04-12
Presence: Presumed Extant			Record Last Updated: 2000-08-10
Trend: Unknown			
Main Source: ROBISON, R. 2000 (OBS)			

Quad Summary: ROSEVILLE (3812173/528D), PLEASANT GROVE (3812174/528C)
 County Summary: PLACER

Lat/Long: 38.78170° / -121.37450°	Township: 11N
UTM: Zone-10 N4293806 E641190	Range: 05E
Area: 3.8 ac	Section: 24
Elevation: 100 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: SW
Symbol Type: POLYGON	

Location: ABOUT 1 MILE SOUTHWEST OF CONFLUENCE OF KASEBERG CREEK AND PLEASANT GROVE CREEK, NORTHWEST OF ROSEVILLE.
 Location Detail: TWO POOLS MAPPED AT CNDDb, JUST NORTH OF PHILIP ROAD ABOUT 0.9 MILE WEST OF FIDDYMENT ROAD. POOLS ARE WITHIN THE SW 1/4 SW 1/4 SECTION 24.
 Ecological: VERNAL POOLS DOMINATED BY PLAGIOBOTHRYIS STIPITATUS, POGOGYNE ZIZIPHOROIDES, PSILOCARPUS BREVISSIMUS, NAVARETTIA LEUCOCEPHALA, AND HORDEUM MURINUM SSP. GOSSONEANUM.
 Threat: SITE IS GRAZED AND RECEIVES RUNOFF FROM ADJACENT HOUSING. AREA IS SLATED FOR DEVELOPMENT.
 General: UNKNOWN NUMBER OF PLANTS OBSERVED IN TWO POOLS IN 2000.
 Owner/Manager: PVT

Occurrence No. 100	Map Index: 43408	EO Index: 43408	Dates Last Seen
Occ Rank: Good			Element: 2000-04-12
Origin: Natural/Native occurrence			Site: 2000-04-12
Presence: Presumed Extant			Record Last Updated: 2000-08-10
Trend: Unknown			
Main Source: ROBISON, R. 2000 (OBS)			

Quad Summary: PLEASANT GROVE (3812174/528C)
 County Summary: PLACER

Lat/Long: 38.79362° / -121.39263°	Township: 11N
UTM: Zone-10 N4295102 E639592	Range: 05E
Area: 8.5 ac	Section: 23
Elevation: 90 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: NW
Symbol Type: POLYGON	

Location: SOUTH SIDE OF PHILLIP ROAD ABOUT 3 MILES EAST OF BREWER ROAD, NORTHWEST OF ROSEVILLE.
 Location Detail: FIVE POOLS MAPPED IN THREE POLYGONS AT CNDDb, JUST SOUTH OF PHILIP ROAD. POOLS ARE WITHIN THE NW 1/4 NW 1/4 SECTION 23 AND THE NE CORNER OF SECTION 22.
 Ecological: VERNAL POOLS DOMINATED BY PLAGIOBOTHRYIS STIPITATUS, POGOGYNE ZIZIPHOROIDES, PSILOCARPUS BREVISSIMUS, NAVARETTIA LEUCOCEPHALA, AND HORDEUM MURINUM SSP. GOSSONEANUM.
 Threat: SITE IS GRAZED AND RECEIVES RUNOFF FROM ADJACENT HOUSING. AREA IS SLATED FOR DEVELOPMENT.
 General: UNKNOWN NUMBER OF PLANTS OBSERVED IN FIVE POOLS IN 2000.
 Owner/Manager: PVT

Downingia pusilla

dwarf downingia

Element Code: PDCAM060C0

Status	NDDDB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 2
State: None	State: S3.1	R-E-D Code: 1-2-1

Habitat Associations

General: VALLEY AND FOOTHILL GRASSLAND (MESIC SITES), VERNAL POOLS.

Micro: VERNAL LAKE AND POOL MARGINS WITH A VARIETY OF ASSOCIATES. IN SEVERAL TYPES OF VERNAL POOLS. 1-485M.

Occurrence No. 101	Map Index: 43409	EO Index: 43409	Dates Last Seen
Occ Rank: Good			Element: 2002-05-01
Origin: Natural/Native occurrence			Site: 2002-05-01
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 2003-03-04
Main Source: ROBISON, R. 2000 (OBS)			

Quad Summary: PLEASANT GROVE (3812174/528C)
 County Summary: PLACER

Lat/Long: 38.78435° / -121.38631°	Township: 11N
UTM: Zone-10 N4294083 E640159	Range: 05E
Area: 13.4 ac	Section: 23
Elevation: 100 ft	Meridian: M
	Qtr: SW

Location: SOUTH OF PHILLIP ROAD ABOUT 3.5 MILES EAST OF BREWER ROAD, NORTHWEST OF ROSEVILLE.

Location Detail: SEVERAL POOLS MAPPED IN SEVEN POLYGONS AT CNDDDB, ABOUT 0.5 MILE SOUTH OF PHILIP ROAD. POOLS ARE NEAR THE CENTER OF THE S 1/2 SECTION 23 AND SOUTH INTO THE N1/2 SEC 26.

Ecological: VERNAL POOLS DOMINATED BY PLAGIOBOTHRYIS STIPITATUS, POGOGYNE ZIZIPHOROIDES, PSILOCARPUS BREVISSIMUS, NAVARETTIA LEUCOCEPHALA, AND HORDEUM MURINUM SSP. GOSSONEANUM.

Threat: SITE IS GRAZED AND RECEIVES RUNOFF FROM ADJACENT HOUSING. AREA IS SLATED FOR DEVELOPMENT.

General: UNKNOWN NUMBER OF PLANTS OBSERVED IN FIVE POOLS IN 2000. LESS THAN 10 PLANTS OBSERVED IN 2002 AT TWO NEW LOCATIONS. INCLUDES FORMER OCCURRENCE # 102.

Owner/Manager: PVT

Gratiola heterosepala

Boggs Lake hedge-hyssop

Element Code: PDSCR0R060

Status		NDDB Element Ranks	Other Lists	
Federal: None		Global: G3	CNPS List: 1B	
State: Endangered		State: S3.1	R-E-D Code: 1-2-2	

Habitat Associations

General: MARSHES AND SWAMPS (FRESHWATER), VERNAL POOLS.

Micro: CLAY SOILS; USUALLY IN VERNAL POOLS, SOMETIMES ON LAKE MARGINS. 5-2400M.

Occurrence No. 3	Map Index: 11397	EO Index: 17785	Dates Last Seen
Occ Rank: None			Element: XXXX-XX-XX
Origin: Natural/Native occurrence			Site: 1997-06-18
Presence: Possibly Extirpated			
Trend: Decreasing			Record Last Updated: 1997-08-11
Main Source: BACIGALUPI, R. 1977 (PERS)			

Quad Summary: RIO LINDA (3812164/512B)

County Summary: SACRAMENTO

Lat/Long: 38.70545° / -121.43912°	Township: 10N	
UTM: Zone-10 N4285247 E635721	Range: 05E	
Radius: 1 mile	Section: 21	Qtr: NW
Elevation: 55 ft	Mapping Precision: NON-SPECIFIC	Meridian: M
	Symbol Type: POINT	

Location: SHALLOW VERNAL POOLS JUST N OF & ADJACENT TO U ST. AT NE BORDER OF RIO LINDA.

Location Detail: FOUND IN SEVERAL POOLS.

Ecological: SHALLOW WATER VERNAL POOLS ON REDDISH ADOBE SOIL.

General: 1960 COLLECTION BY BACIGALUPI (7374 JEPS) ATTRIB TO SITE. PLANT NOT FOUND IN 1978, IN 1977 SITE HAD BEEN PLOWED, HARROWED & LEVELED FOR A HOUSING TRACT. SURROUNDING AREA IS DEVELOPED. SOME HABITAT REMAINED IN 1997, MORE SURVEYS NEEDED.

Owner/Manager: PVT

Legenere limosa

legenere

Element Code: PDCAM0C010

Status	NDDDB Element Ranks	Other Lists
Federal: None	Global: G2	CNPS List: 1B
State: None	State: S2.2	R-E-D Code: 2-3-3

Habitat Associations

General: VERNAL POOLS. MANY HISTORICAL OCCURRENCES ARE EXTIRPATED.
Micro: IN BEDS OF VERNAL POOLS. 1-880M.

Occurrence No. 32	Map Index: 30202	EO Index: 12128	Dates Last Seen
Occ Rank: None			Element: 1991-05-26
Origin: Natural/Native occurrence			Site: 1997-06-18
Presence: Extirpated			
Trend: Unknown			Record Last Updated: 1997-08-11
Main Source: DAINS, V. 1991 (OBS)			

Quad Summary: RIO LINDA (3812164/512B)
County Summary: SACRAMENTO

Lat/Long: 38.71096° / -121.41565°	Township: 10N
UTM: Zone-10 N4285893 E637752	Range: 05E
Radius: 80 meters	Section: 22
Elevation: 75 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: NE
Symbol Type: POINT	

Location: SOUTH OF ELVERTA ROAD AND 0.5 MILE SOUTHWEST OF GIBSON RANCH, RIO LINDA.
Location Detail: MAPPED IN SEASONAL POND 0.2 MILE SOUTH OF ELVERTA ROAD AND 0.75 MILE EAST OF 16TH STREET. NEAR THE CENTER OF THE NE 1/4 OF SECTION 22.
Ecological: ARTIFICIAL POND EXCAVATED WITHIN A VERNAL POOL LANDSCAPE. ASSOCIATED WITH ELEOCHARIS MACROSTACHYA AND LASTHENIA GLABERRIMA IN ADDITION TO MANY WEEDY SPECIES. LARGELY OPEN GROUND.
Threat: DEVELOPMENT IS PLANNED FOR THIS SITE.
General: 150 PLANTS SEEN IN 1991. WETLAND MITIGATION FOR THIS PROPERTY COULD INCLUDE THIS POPULATION. SITE WAS A SUBDIVISION IN 1997; FORMER POPULATION WAS UNDER INTERSECTION OF RANCH RIVER DR AND COLONNADE WAY.

Owner/Manager: PVT

Occurrence No. 33	Map Index: 30203	EO Index: 16909	Dates Last Seen
Occ Rank: Fair			Element: 1991-05-11
Origin: Natural/Native occurrence			Site: 1997-06-18
Presence: Presumed Extant			
Trend: Unknown			Record Last Updated: 1997-08-11
Main Source: WITHAM, C. 1991 (OBS)			

Quad Summary: RIO LINDA (3812164/512B)
County Summary: SACRAMENTO

Lat/Long: 38.66766° / -121.44530°	Township: 09N
UTM: Zone-10 N4281044 E635255	Range: 05E
Area: 5.8 ac	Section: 10
Elevation: 35 ft	Meridian: M
Mapping Precision: SPECIFIC	Qtr: NE
Symbol Type: POLYGON	

Location: EAST OF ROSE STREET AND SOUTH OF MAGPIE DRAIN, ROBLA, JUST NORTH OF SACRAMENTO.
Location Detail: MAPPED ABOUT 0.4 MILE NNE OF WHERE MARYSVILLE ROAD AND RIO LINDA BLVD JOIN. WITHIN THE NW 1/4 OF THE NE 1/4 OF SECTION 10.
Ecological: SEASONAL WETLAND DOMINATED BY RANUNCULUS BONARIENSIS TRISEPALUS, PLAGIOBOTHRYUS BRACTEATUS, LASTHENIA GLABERRIMA, AND ELEOCHARIS MACROSTACHYA. FRITILLARIA AGRESTIS IS FOUND IN NEARBY GRASSLAND.
Threat: SITE TO BE DEVELOPED, WETLAND DISKED ANNUALLY FOR FIRE BREAK; "DIRT-BIKE" USE AND REFUSE DUMPING ALSO IMPACT THIS SITE.
General: 1000-10,000 PLANTS OBSERVED IN 1991. PLANTS ROBUST, UP TO 6" TALL. PORTION OF THIS SITE WILL NOT BE DEVELOPED. NO PLANTS SEEN IN 1997 (PROB TOO LATE). HABITAT STILL EXISTS.

Owner/Manager: PVT

ATTACHMENT D

Plant Species Observed On-Site (May 23 and 25, June 27 and 30, and July 6, 2006)

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

ALISMATACEAE

*Alisa lanceolatum**
Alisma plantago-aquatica
Damasonium californicum
Echinodorus berteroi
Sagittaria latifolia
Sagittaria longiloba
Sagittaria montevidensis

WATER-PLANTAIN FAMILY

Water plantain
Broad-leaf water plantain
Fringed water-plantain
Upright burhead
Broad-leaf arrowhead
Long-lobed arrowhead
Hooded arrowhead

AMARANTHACEAE

Amaranthus blitoides

AMARANTH FAMILY

Prostrate amaranth

APIACEAE

Daucus carota

CARROT FAMILY

Wild carrot

ASCLEPIADACEAE

Asclepias fascicularis
Asclepias speciosa

MILKWEED FAMILY

Narrow-leaf milkweed
Showy milkweed

ASTERACEAE

*Anthemis cotula**
Artemisia douglasiana
*Carduus pycnocephalus**
*Centaurea solstitialis**
*Chamomilla suaveolens**
*Cirsium vulgare**
*Filago gallica**
Hemizonia fitchii
Holocarpha virgata
*Hypochaeris radicata**
*Lactuca serriola**
*Picris echioides**
Psilocarphus brevissimus
*Silybum marianum**
*Sonchus oleraceus**
Xanthium strumarium

SUNFLOWER FAMILY

Mayweed
Mugwort
Italian thistle
Yellow star-thistle
Pineapple weed
Bull thistle
Herba impia
Fitch's spikeweed
Sticky tarweed
Perennial cat's-ear
Prickly lettuce
Bristly oxtongue
Dwarf woolly-heads
Milk thistle
Common sowthistle
Rough cockle-bur

AZOLLACEAE

Azolla filiculoides

MOSQUITO FERN FAMILY

Mosquito fern

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006) (Continued)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

BORAGINACEAE

Amsinckia menziesii
Plagiobothrys bracteatus
Plagiobothrys nothofulvus
Plagiobothrys species
Plagiobothrys stipitatus

BORAGE FAMILY

Rancher's fireweed
Bracted popcorn-flower
Rusty popcorn-flower
Popcorn-flower
Slender popcorn-flower

BRASSICACEAE

*Brassica nigra**
*Hirschfeldia incana**
*Raphanus raphanistrum**
*Raphanus sativus**
Sisymbrium species

MUSTARD FAMILY

Black mustard
Shortpod mustard
Yellow wild radish
Purple wild radish
Tumble mustard

CAMPANULACEAE

Downingia bicornuta
Downingia ornatissima

BELLFLOWER FAMILY

Double-horn downingia
Solano downingia

CARYOPHYLLACEAE

*Spergularia rubra**

PINK FAMILY

Purple sandspurry

CHENOPODIACEAE

*Chenopodium album**
*Salsola tragus**

GOOSEFOOT FAMILY

Lamb's quarters
Russian thistle

CONVOLVULACEAE

*Convolvulus arvensis**

MORNING-GLORY FAMILY

Morning glory

CRASSULACEAE

Crassula aquatica

STONECROP FAMILY

Water pygmy-weed

CYPERACEAE

Cyperus eragrostis
Cyperus esculentus
Cyperus strigosus
Eleocharis macrostachya
Scirpus acutus

SEDGE FAMILY

Tall flatsedge
Nut grass
False nut sedge
Creeping spikerush
Hard-stem bulrush

ELATINACEAE

Elatine brachysperma

WATERWORT FAMILY

Short-seed waterwort

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006) (Continued)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

EQUISETACEAE

Equisetum arvense

HORSETAIL FAMILY

Field horsetail

EUPHORBIACEAE

Chamaesyce species

Eremocarpus setigerus

SPURGE FAMILY

Spurge

Turkey mullien

FABACEAE

*Lotus corniculatus**

Lotus purshianus

*Medicago polymorpha**

*Medicago sativa**

*Melilotus alba**

*Trifolium dubium**

*Vicia villosa**

LEGUME FAMILY

Birdsfoot trefoil

Spanish clover

Bur clover

Alfalfa

White sweetclover

Shamrock clover

Winter vetch

GENTIANACEAE

Centaurium muehlenbergii

GENTIAN FAMILY

Monterey centaury

GERANIACEAE

*Erodium botrys**

*Erodium cicutarium**

*Geranium dissectum**

GERANIUM FAMILY

Filaree

Filaree

Cut-leaved geranium

JUNCACEAE

Juncus bufonius

RUSH FAMILY

Toad rush

LEMNACEAE

Lemna species

DUCKWEED FAMILY

Duckweed

LILIACEAE

Brodiaea elegans

Triteleia hyacinthina

LILY FAMILY

Harvest brodiaea

Hyacinth brodiaea

LYTHRACEAE

Ammannia coccinea

*Lythrum hyssopifolia**

LOOSESTRIFE FAMILY

Purple ammannia

Hyssop loosestrife

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006) (Continued)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

MALVACEAE

*Malva neglecta**

*Malva parviflora**

MALLOW FAMILY

Common mallow

Cheeseweed

MARSILEACEAE

Pilularia americana

MARSILEA FAMILY

American pillwort

ONAGRACEAE

Epilobium brachycarpum

Epilobium ciliatum

Epilobium torreyi

Ludwigia peploides ssp. *peploides*

EVENING PRIMROSE FAMILY

Panicked willow-herb

Hairy willow-herb

Brook spike primrose

Water primrose

PLANTAGINACEAE

*Plantago lanceolata**

*Plantago major**

PLANTAIN FAMILY

English plantain

Broad-leaf plantain

POACEAE

Alopecurus saccatus

*Avena barbata**

*Avena fatua**

*Briza minor**

*Bromus diandrus**

*Bromus hordeaceus**

*Cynodon dactylon**

Deschampsia danthonioides

*Digitaria sanguinalis**

Distichlis spicata

*Echinochloa crus-galli**

*Festuca arundinacea**

*Glyceria declinata**

*Hordeum murinum**

Leptochloa uninervia

*Lolium multiflorum**

*Lolium perenne**

*Oryza sativa**

*Paspalum dilatatum**

*Phalaris aquatica**

*Polypogon interruptus**

*Polypogon monspeliensis**

GRASS FAMILY

Pacific foxtail

Slender wild oat

Wild oat

Little quaking grass

Ripgut brome

Soft brome

Bermuda grass

Annual hairgrass

Hairy crabgrass

Inland saltgrass

Barnyard grass

Kentucky fescue

Mannagrass

Barley

Mexican sprangletop

Ryegrass

Perennial ryegrass

Rice

Dallis grass

Harding grass

Beard grass

Annual rabbit-foot grass

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006) (Continued)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

*Sorghum halepense**

Johnson grass

*Triticum aestivum**

Cultivated wheat

POLEMONIACEAE

PHLOX FAMILY

Navarretia intertexta

Needle-leaf navarretia

POLYGONACEAE

BUCKWHEAT FAMILY

*Polygonum arenastrum**

Prostrate knotweed

Polygonum lapathifolium

Willow weed

*Polygonum persicaria**

Lady's thumb

*Rumex conglomeratus**

Clustered dock

*Rumex crispus**

Curly dock

*Rumex pulcher**

Fiddle dock

Rumex species

Dock

PONTEDERIACEAE

PICKEREL-WEED FAMILY

*Heteranthera limosa**

Blue mud plantain

PORTULACAEAE

PURSLANE FAMILY

Montia chamissoi

Spring beauty

PRIMULACEAE

PRIMROSE FAMILY

*Anagallis arvensis**

Scarlet pimpernel

RANUNCULACEAE

BUTTERCUP FAMILY

Ranunculus aquatilis

Whitewater crowfoot

Ranunculus bonariensis

Carter's buttercup

*Ranunculus muricatus**

Spiny-fruit buttercup

SALICACEAE

WILLOW FAMILY

Populus fremontii

Fremont cottonwood

Salix exigua

Sandbar willow

Salix goodingii

Black willow

SCROPHULARIACEAE

FIGWORT FAMILY

Gratiola ebracteata

Bractless hedgehyssop

Limosella acaulis

Mudwort

Veronica peregrina

Purslane speedwell

Plant Species Observed On-Site (May 23 and 25, June 27 and 30 and July 6, 2006) (Continued)

An asterisk (*) indicates a non-native species.

Scientific Name

Common Name

SOLANACEAE

Solanum species

NIGHTSHADE FAMILY

Nightshade

TYPHACEAE

Typha domingensis

Typha latifolia

CATTAIL FAMILY

Southern cattail

Broad-leaf cattail

VERBENACEAE

*Verbena bonariensis**

VERVAIN FAMILY

South American vervain

ZYGOPHYLLACEAE

*Tribulus terrestris**

CALTROP FAMILY

Puncture-vine