

APPENDIX 5.2D

Rare Plant Report

Contra Costa Generating Station Botanical Survey Results
June 3, 2009

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Background

Methods

Field surveys of the proposed CCGS project site were conducted by botanist Virginia Dains and CH2M Hill biologist Michael Clary on March 25, 2009. Prior to the March field surveys, a regional list of special status plants was compiled (Table 1). Those special status plants with general habitat requirements and distributions that occur within 1 mile of the CCGS site were considered target species for field surveys and site-specific habitat assessments (Table 2).

The purpose of the field survey was to look for sensitive plant species during the early flowering season and assess habitat suitability for other sensitive plant species within the 42-acre facility. An assessment of habitat for special status plants within a 1-mile radius of the proposed CCGS site was also conducted.

All of the CCGS proposed work areas within the 42-acre project site were surveyed on foot. Habitats outside the facility including the electrical transmission line and private inaccessible lands within one mile of the CCGS site were surveyed from the roadway with the help of a 1-inch=2,000 foot scale true color aerial photograph that aided in the identification of potential rare plant habitats. Specific attention was given to the presence of wetlands, natural landforms, and historic or known locations of special status plants. A list of plant species observed during the field survey was compiled and is attached.

Findings

The project site includes buildings and roads with horticultural plantings and other disturbed industrial areas supporting introduced annual grassland vegetation. Vineyards and railroad sidings adjacent to the industrial site are included in the CCGS study area. Isolated and shallow wetland depressions that collect local run-off are found in the northwest portion of the property. These support ryegrass (*Lolium perenne*), salt grass (*Distichlis spicata*), Mediterranean barley (*Hordeum marinum* ssp. *gussoneanum*), rabbits foot grass (*Polypogon monspeliensis*), decadent stands of tule (*Scirpus acutis*), Himalayan berry (*Rubus discolor*) and Goodding's willow (*Salix gooddingii*). A ponded

wetland that was created for mitigation of wetland impacts off-site is found adjacent to the southwest corner of the property. Soils throughout the site are derived from aeolian deposits of riverine sediments that comprise the Delhi sand soil series (Welch 1977). The proposed CCGS site supports no natural topography or undisturbed soil.

Important natural habitats supporting rare plant populations are found within a 1-mile radius of the proposed CCGS facility. These include freshwater marsh and inland stabilized dunes. Special status plants known to occur in these habitats were included on the target list of species potentially occurring on the CCGS site.

As indicated in Table 2, fifteen of the 59 special status plant species from the region had potential to occur within one mile of the project site. None of the early flowering sensitive plant species were observed during the March field survey. Based on habitat assessments made during the field survey, none of the later flowering species are expected to occur within any the CCGS work areas.

Several of the plant species on the target list for the vicinity of the project require specific habitats that are not present on the site. Twelve of the fifteen species known or potentially occurring within one mile of the project site are restricted to fresh or brackish water marsh habitats. No such habitat is found on the CCGS project site. Disturbed seasonal wetlands are present, but do not support a native marsh habitat community suitable for these species.

Three of the plants of local concern are known from sandy soils that correspond to those on the CCGS property. Two federally and state listed species, Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*) and Antioch Dunes evening-primrose (*Oenothera deltooides* ssp. *howellii*), inhabit interior stabilized dunes. These are preserved natural landforms that are not present on the site. Historic locations for Antioch Dunes evening primrose are found elsewhere in the vicinity of the project, though changes in land use have led to the loss of these populations. Both of these species flower in the early spring and would have been identifiable during the March surveys. Neither of these species were present on the CCGS site.

Hoover's cryptantha (*Cryptantha hooveri*) is an annual plant thought to occur on stabilized dunes, though no populations of the plant are currently known and it is thought to be extinct. Recorded flowering dates for this species begin in April. During the late March survey, this species would have been identifiable vegetatively to the generic level, even if not in flower. No plants were recorded from the CCGS site that could be attributed to the *Cryptantha* or closely related *Plagiobothrys* genus. While this is annual plant and its population may vary from year to year, it is highly unlikely that populations may exist on the CCGS property and been undetected during 2009 surveys.

Summary

No special status plants were found in CCGS work areas during early spring 2009 surveys. The timing of these surveys coincided with the flowering period of local species of concern including the federally listed Antioch Dunes evening primrose and Contra Costa wallflower. These species are known to occur within one mile of the project area in protected natural areas. Other local species of concern are restricted to wetland habitats not found on the site. No mitigation or additional botanical surveys should be required for this project.

Welch, LE. 1977. Soil Survey of Contra Costa County, California US Department of Agriculture Soil Conservation Service in cooperation with University of California Agricultural Experiment Station

TABLE 1
Regional List of Special-status Plants

Scientific Name Common Name	Status		CNPS List	ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
	Federal	State				
Bryophytes						
Bryaceae						
<i>Anomobryum julaceum</i> slender silver moss			2.2	No	Occurs in Broadleafed upland forest, Lower montane coniferous forest, North Coast coniferous forest/damp rock and soil on outcrops, usually on roadcuts. Elevation 100 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.
Pottiaceae						
<i>Didymodon norrisii</i> Norris' beard moss			2.2	No	Occurs in Cismontane woodland, Lower montane coniferous forest/intermittently mesic, rock. Elevation 600 to 1973 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Triquetrella californica</i> coastal triquetrella			1B.2	No	Occurs in Coastal bluff scrub, Coastal scrub/soil. Elevation 10 to 100 meters. (CNPS 2009)	None. No appropriate habitat present.
Monocots						
Alismataceae						
<i>Sagittaria sanfordii</i> Sanford's arrowhead			1B.2	No	Occurs in marshes and swamps (assorted shallow freshwater). Blooms May-October. Elevation 0 to 650 meters. (CNPS 2009)	Low. No known local occurrences, salt influence in ditches may preclude establishment.
Cyperaceae						
<i>Carex comosa</i> bristly sedge			2.1	No	Occurs in Coastal prairie, marshes and swamps (lake margins), Valley and foothill grassland. Blooms May-September. Elevation 0 to 625 meters. (CNPS 2009)	Low. No known local occurrences. Marsh habitat is recent or altered.

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Scientific Name Common Name	Status				Habitat Description	Potential Presence in the CCGS 1-mile
	Federal	State	CNPS List	ECC HCP/ NCCP		
<i>Carex vulpinoidea</i> brown fox sedge			2.2	No	Occurs in marshes and swamps (freshwater), Riparian woodland. Blooms May-June. Elevation 30 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
Liliaceae						
<i>Calochortus pulchellus</i> Mt. Diablo fairy-lantern			1B.2	Yes	Occurs in Chaparral, Cismontane woodland, Riparian woodland, Valley and foothill grassland. Blooms April-June. Elevation 30 to 840 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Fritillaria liliacea</i> fragrant fritillary			1B.2	No	Occurs in Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland/often serpentinite. Blooms February-April. Elevation 3 to 410 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Hesperolinon breweri</i> Brewer's western flax			1B.2	Yes	Occurs in Chaparral, Cismontane woodland, Valley and foothill grassland/usually serpentinite. Blooms May-July. Elevation 30 to 900 meters. (CNPS 2009)	None. No appropriate habitat present.
Dicots						
Poaceae						
<i>Neostapfia colusana</i> Colusa grass	FT	SE	1B.1	No	Occurs in Vernal pools (adobe, large). Blooms May-August. Elevation 5 to 200 meters. (CNPS 2009)	None. No appropriate habitat present.
Apiaceae						
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock			2.1	No	Occurs in marshes and swamps in coastal, fresh or brackish water. Blooms July-September. Elevation 0 to 200 meters. (CNPS 2009)	Low. Habitat is present, but no known local occurrences.

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Scientific Name Common Name	Status			ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
	Federal	State	CNPS List			
<i>Eryngium racemosum</i> Delta button-celery		SE	1B.1	No	Occurs in Riparian scrub (vernally mesic clay depressions). Blooms June-September. Elevation 3 to 30 meters. (CNPS 2009)	None. No clay soil habitats present.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis		SR	1B.1	No	Occurs in marshes and swamps (brackish or freshwater), Riparian scrub. Blooms April-November. Elevation 0 to 10 meters. (CNPS 2009)	Present. Populations are known from the Antioch area.
<i>Sanicula saxatilis</i> rock sanicle		SR	1B.2	No	Occurs in Broadleafed upland forest, Chaparral, Valley and foothill grassland/rocky. Blooms April-May. Elevation 620 to 1175 meters. (CNPS 2009)	None. No appropriate habitat present.
Asteraceae						
<i>Blepharizonia plumosa</i> big tarplant			1B.1	Yes	Occurs in Valley and foothill grassland. Blooms July-October. Elevation 30 to 505 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon's tarplant			1B.2	No	Occurs in Valley and foothill grassland (alkaline). Blooms May-October (Nov). Elevation 1 to 230 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Centromadia parryi</i> ssp. <i>parryi</i> pappose tarplant			1B.2	No	Occurs in Chaparral, Coastal prairie, Meadows and seeps, marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic)/often alkaline. Blooms May-November. Elevation 2 to 420 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Helianthella castanea</i> Diablo helianthella			1B.2	Yes	Occurs in Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland, Valley and foothill grassland. Blooms March-June. Elevation 60 to 1300 meters. (CNPS 2009)	None. No appropriate habitat present.

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Scientific Name Common Name	Status			ECC HCP/ NCCP	Habitat Description	Potential Presence in the CCGS 1-mile
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<i>Isocoma arguta</i> Carquinez goldenbush			1B.1	No	Occurs in Valley and foothill grassland (alkaline). Blooms August-December. Elevation 1 to 20 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE		1B.1	No	Occurs in Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools/mesic. Blooms March-June. Elevation 0 to 470 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Madia radiata</i> showy golden madia			1B.1	Yes	Occurs in Cismontane woodland, Valley and foothill grassland. Blooms March-May. Elevation 25 to 900 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Senecio aphanactis</i> chaparral ragwort			2.2	No	Occurs in Chaparral, Cismontane woodland, Coastal scrub/sometimes alkaline. Blooms January-April. Elevation 15 to 800 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Symphotrichum lentum</i> Suisun Marsh aster			1B.2	No	Occurs in Marshes and swamps (brackish and freshwater). Blooms May-November. Elevation 0 to 3 meters. (CNPS 2009)	Present. Known occurrences in the Antioch area.
Boraginaceae						
<i>Amsinckia grandiflora</i> large-flowered fiddleneck	FE	SE	1B.1	No	Occurs in Cismontane woodland, Valley and foothill grassland. Blooms April-May. Elevation 275 to 550 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Cryptantha hooveri</i> Hoover's cryptantha			1A	No	Occurs in Inland dunes, Valley and foothill grassland (sandy). Blooms April-May. Elevation 9 to 150 meters. (CNPS 2009)	Low. Potential habitat may exist on interior stabilized dunes. Plant is considered extinct.
<i>Plagiobothrys hystriculus</i> bearded popcorn-flower			1B.1	No	Occurs in Valley and foothill grassland (mesic), Vernal pools margins/often vernal swales. Blooms April-May. Elevation 0 to 274 meters. (CNPS 2009)	None. No appropriate habitat present.

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	Federal	State	CNPS List	ECC HCP/ NCCP		
Brassicaceae						
<i>Erysimum capitatum</i> var. <i>angustatum</i> Contra Costa wallflower	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-July. Elevation 3 to 20 meters. (CNPS 2009)	Present. Known occurrences in protected sites on interior stabilized dunes.
<i>Streptanthus albidus</i> ssp. <i>peramoenus</i> most beautiful jewel-flower			1B.2	No	Occurs in Chaparral, Cismontane woodland, Valley and foothill grassland/serpentinite. Blooms (March) April-September (Oct). Elevation 94 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Streptanthus hispidus</i> Mt. Diablo jewel-flower			1B.3	No	Occurs in Chaparral, Valley and foothill grassland/rocky. Blooms March-June. Elevation 365 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Tropidocarpum capparideum</i> caper-fruited tropidocarpum			1B.1	No	Occurs in Valley and foothill grassland (alkaline hills). Blooms March-April. Elevation 1 to 455 meters. (CNPS 2009)	None. No appropriate habitat present.
Campanulaceae						
<i>Campanula exigua</i> chaparral harebell			1B.2	No	Occurs in Chaparral (rocky, usually serpentinite). Blooms May-June. Elevation 275 to 1250 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Downingia pusilla</i> dwarf downingia			2.2	No	Occurs in Valley and foothill grassland (mesic), Vernal pools. Blooms March-May. Elevation 1 to 445 meters. (CNPS 2009)	None. No appropriate habitat present.
Caprifoliaceae						
<i>Viburnum ellipticum</i> oval-leaved viburnum			2.3	No	Occurs in Chaparral, Cismontane woodland, Lower montane coniferous forest. Blooms May-June. Elevation 215 to 1400 meters. (CNPS 2009)	None. No appropriate habitat present.

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Chenopodiaceae						
<i>Atriplex cordulata</i> heartscale			1B.2	No	Occurs in Chenopod scrub, Meadows and seeps, Valley and foothill grassland (sandy)/saline or alkaline. Blooms April-October. Elevation 1 to 375 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Atriplex depressa</i> brittlescale			1B.2	Yes	Occurs in Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Vernal pools/alkaline, clay. Blooms April-October. Elevation 1 to 320 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Atriplex joaquiniana</i> San Joaquin spearscale			1B.2	Yes	Occurs in Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland/alkaline. Blooms April-October. Elevation 1 to 835 meters. (CNPS 2009)	None. No appropriate habitat present.
Convolvulaceae						
<i>Calystegia atriplicifolia</i> ssp. <i>buttensis</i> Butte County morning-glory			1B.2	No	Occurs in Chaparral, Lower montane coniferous forest/rocky, sometimes roadside. Blooms May-July. Elevation 600 to 1524 meters. (CNPS 2009)	None. No appropriate habitat present.
Ericaceae						
<i>Arctostaphylos auriculata</i> Mt. Diablo manzanita			1B.3	Yes	Occurs in Chaparral (sandstone), Cismontane woodland. Blooms January-March. Elevation 135 to 650 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Arctostaphylos manzanita</i> ssp. <i>laevigata</i> Contra Costa manzanita			1B.2	No	Occurs in Chaparral (rocky). Blooms January-March (April). Elevation 500 to 1100 meters. (CNPS 2009)	None. No appropriate habitat present.

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Fabaceae						
<i>Astragalus tener</i> var. <i>tener</i> alkali milk-vetch			1B.2	No	Occurs in Playas, Valley and foothill grassland (adobe clay), Vernal pools/alkaline. Blooms March-June. Elevation 1 to 60 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea			1B.2	No	Occurs in marshes and swamps (freshwater and brackish). Blooms May-July(September). Elevation 0 to 4 meters. (CNPS 2009)	Moderate. Habitat may be present, but no known local occurrences.
Geraniaceae						
<i>California macrophylla</i> round-leaved filaree			1B.1	No	Occurs in Cismontane woodland, Valley and foothill grassland/clay. Blooms March-May. Elevation 15 to 1200 meters. (CNPS 2009)	None. No appropriate habitat present.
Hydrophyllaceae						
<i>Phacelia phacelioides</i> Mt. Diablo phacelia			1B.2	No	Occurs in Chaparral, Cismontane woodland/rocky. Blooms April-May. Elevation 500 to 1370 meters. (CNPS 2009)	None. No appropriate habitat present.
Juglandaceae						
<i>Juglans hindsii</i> Northern California black walnut			1B.1	No	Occurs in Riparian forest, Riparian woodland. Blooms April-May. Elevation 0 to 440 meters. (CNPS 2009)	None. No appropriate habitat present.
Lamiaceae						
<i>Monardella antonina</i> ssp. <i>antonina</i> San Antonio Hills monardella			3	No	Occurs in Chaparral, Cismontane woodland. Blooms June-August. Elevation 500 to 1000 meters. (CNPS 2009)	None. No appropriate habitat present.

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<i>Scutellaria galericulata</i> marsh skullcap			2.2	No	Occurs in Lower montane coniferous forest, Meadows and seeps (mesic), marshes and swamps. Blooms June-September. Elevation 0 to 2100 meters. (CNPS 2009)	Low. Habitat may be present but no known local occurrences.
<i>Scutellaria lateriflora</i> side-flowering skullcap			2.2	No	Occurs in Meadows and seeps (mesic), marshes and swamps. Blooms July-September. Elevation 0 to 500 meters. (CNPS 2009)	Low. Habitat may be present but no known local occurrences.
Malvaceae						
<i>Hibiscus lasiocarpus</i> woolly rose-mallow			2.2	No	Occurs in marshes and swamps (freshwater). Blooms June-September. Elevation 0 to 120 meters. (CNPS 2009)	Moderate. Habitat is present but no known local occurrences.
<i>Malacothamnus hallii</i> Hall's bush-mallow			1B.2	No	Occurs in Chaparral, Coastal scrub. Blooms May-September (Oct). Elevation 10 to 760 meters. (CNPS 2009)	None. No appropriate habitat present.
Onagraceae						
<i>Oenothera deltooides</i> ssp. <i>howellii</i> Antioch Dunes evening- primrose	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-September. Elevation 0 to 30 meters. (CNPS 2009)	Present. Known occurrences in protected sites on interior stabilized dunes.
Papaveraceae						
<i>Eschscholzia rhombipetala</i> diamond-petaled California poppy			1B.1	No	Occurs in Valley and foothill grassland (alkaline, clay). Blooms March-April. Elevation 0 to 975 meters. (CNPS 2009)	None. No appropriate habitat present.

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Polemoniaceae						
<i>Eriastrum brandegeae</i> Brandegee's eriastrum			1B.2	No	Occurs in Chaparral, Cismontane woodland/volcanic, sandy. Blooms April-August. Elevation 305 to 1030 meters. (CNPS 2009)	None. No appropriate habitat present.
Polygonaceae						
<i>Eriogonum truncatum</i> Mt. Diablo buckwheat			1B.1	No	Occurs in Chaparral, Coastal scrub, Valley and foothill grassland/sandy. Blooms April-September (Nov-December). Elevation 3 to 350 meters. (CNPS 2009)	None. No appropriate habitat present.
Potamogetonaceae						
<i>Potamogeton zosteriformis</i> eel-grass pondweed			2.2	No	Occurs in marshes and swamps (assorted freshwater). Blooms June-July. Elevation 0 to 1860 meters. (CNPS 2009)	Low. No local occurrences. Freshwater wetland habitats limited.
Ranunculaceae						
<i>Delphinium californicum</i> <i>ssp. interius</i> Hospital Canyon larkspur			1B.2	No	Occurs in Chaparral (openings), Cismontane woodland(mesic). Blooms April-June. Elevation 230 to 1095 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Delphinium recurvatum</i> recurved larkspur			1B.2	Yes	Occurs in Chenopod scrub, Cismontane woodland, Valley and foothill grassland/alkaline. Blooms March-June. Elevation 3 to 750 meters. (CNPS 2009)	None. No appropriate habitat present.
Scrophulariaceae						
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> soft bird's-beak	FE	SR	1B.2	No	Occurs in marshes and swamps (coastal salt). Blooms July-November. Elevation 0 to 3 meters. (CNPS 2009)	Present. Known occurrence in the north bank of the San Joaquin River

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<i>Cordylanthus nidularius</i> Mt. Diablo bird's-beak		SR	1B.1	No	Occurs in Chaparral (serpentine). Blooms July-August. Elevation 600 to 800 meters. (CNPS 2009)	None. No appropriate habitat present.
<i>Limosella subulata</i> Delta mudwort			2.1	No	Occurs in marshes and swamps. Blooms May-August. Elevation 0 to 3 meters. (CNPS 2009)	High. Local occurrences in the San Joaquin river upstream of Antioch.

Status Notes:

Federal Status

FE = federally listed as endangered

FT = federally listed as threatened

State Status

SE = state listed as endangered

ST = state listed as threatened

SR = state listed as rare

California Native Plant Society (CNPS) Status

List 1A = plants presumed extinct in California

List 1B = plants rare, threatened, or endangered in California, but more common elsewhere

List 2 = plants rare, threatened, or endangered in California, but more common elsewhere

List 3 = plants for which we need more information, a review list

CNPS List: Threat Code extensions and their meanings:

1 - Seriously endangered in California over 80% of occurrences threatened / high degree and immediacy of threat)

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened)

East Contra Costa HCP/NCCP (ECC HCP/NCCP)

Yes = covered species

No = not a covered species

TABLE 2

Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status				Habitat Description	Potential Presence CCGS project site
	Federal	State	CNPS List	ECC HCP/ NCCP		
Monocots						
Alismataceae						
<i>Sagittaria sanfordii</i> Sanford's arrowhead			1B.2	No	Occurs in marshes and swamps (assorted shallow freshwater). Blooms May-October. Elevation 0 to 650 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Cyperaceae						
<i>Carex comosa</i> bristly sedge			2.1	No	Occurs in Coastal prairie, marshes and swamps (lake margins), Valley and foothill grassland. Blooms May-September. Elevation 0 to 625 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Dicots						
Apiaceae						
<i>Cicuta maculata</i> var. <i>bolanderi</i> Bolander's water-hemlock			2.1	No	Occurs in marshes and swamps in coastal, fresh or brackish water. Blooms July-September. Elevation 0 to 200 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
<i>Lilaeopsis masonii</i> Mason's lilaeopsis		SR	1B.1	No	Occurs in marshes and swamps (brackish or freshwater), Riparian scrub. Blooms April-November. Elevation 0 to 10 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Asteraceae						
<i>Symphotrichum lentum</i> Suisun Marsh aster			1B.2	No	Occurs in Marshes and swamps (brackish and freshwater). Blooms May-November. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Boraginaceae						
<i>Cryptantha hooveri</i> Hoover's cryptantha			1A	No	Occurs in Inland dunes, Valley and foothill grassland (sandy). Blooms April-May. Elevation 9 to 150 meters. (CNPS 2009)	None. Potential habitat surveyed in late March. No plants attributed to genus <i>Cryptantha</i> or <i>Plagiobothrys</i> found.

TABLE 2

Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status				Habitat Description	Potential Presence CCGS project site
	Federal	State	CNPS List	ECC HCP/ NCCP		
Brassicaceae						
<i>Erysimum capitatum</i> var. <i>angustatum</i> Contra Costa wallflower	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-July. Elevation 3 to 20 meters. (CNPS 2009)	Not present. No plants found during surveys of disturbed sandy soils in March.
Fabaceae						
<i>Lathyrus jepsonii</i> var. <i>jepsonii</i> Delta tule pea			1B.2	No	Occurs in marshes and swamps (freshwater and brackish). Blooms May-July(September). Elevation 0 to 4 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Lamiaceae						
<i>Scutellaria galericulata</i> marsh skullcap			2.2	No	Occurs in Lower montane coniferous forest, Meadows and seeps (mesic), marshes and swamps. Blooms June-September. Elevation 0 to 2100 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
<i>Scutellaria lateriflora</i> side-flowering skullcap			2.2	No	Occurs in Meadows and seeps (mesic), marshes and swamps. Blooms July-September. Elevation 0 to 500 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Malvaceae						
<i>Hibiscus lasiocarpus</i> woolly rose-mallow			2.2	No	Occurs in marshes and swamps (freshwater). Blooms June-September. Elevation 0 to 120 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Onagraceae						
<i>Oenothera deltooides</i> ssp. <i>howellii</i> Antioch Dunes evening- primrose	FE	SE	1B.1	No	Occurs in Inland dunes. Blooms March-September. Elevation 0 to 30 meters. (CNPS 2009)	Not present. No plants found during surveys of disturbed sandy soils in March

TABLE 2

Special-status Plants with General Habitat Requirements and Distributions that Occur Within 1 Mile of the CCGS Site

Scientific Name Common Name	Status				Habitat Description	Potential Presence CCGS project site
	Federal	State	CNPS List	ECC HCP/NCCP		
Potamogetonaceae						
<i>Potamogeton zosteriformis</i> eel-grass pondweed			2.2	No	Occurs in marshes and swamps (assorted freshwater). Blooms June-July. Elevation 0 to 1860 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
Scrophulariaceae						
<i>Cordylanthus mollis</i> ssp. <i>mollis</i> soft bird's-beak	FE	SR	1B.2	No	Occurs in marshes and swamps (coastal salt). Blooms July-November. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.
<i>Limosella subulata</i> Delta mudwort			2.1	No	Occurs in marshes and swamps. Blooms May-August. Elevation 0 to 3 meters. (CNPS 2009)	None. No marsh or swamp habitat present.

Status Notes:

Federal Status

FE = federally listed as endangered

State Status

SE = state listed as endangered

SR = state listed as rare

California Native Plant Society (CNPS) Status

List 1A = plants presumed extinct in California

List 1B = plants rare, threatened, or endangered in California, but more common elsewhere

List 2 = plants rare, threatened, or endangered in California, but more common elsewhere

CNPS List:Threat Code extensions and their meanings:

1 - Seriously endangered in California over 80% of occurrences threatened / high degree and immediacy of threat)

.2 – Fairly endangered in California (20-80% occurrences threatened)

.3 – Not very endangered in California (<20% of occurrences threatened)

East Contra Costa HCP/NCCP (ECC HCP/NCCP)

Yes = covered species

No = not a covered species

TABLE 3
Observed Plant List

Family	Scientific Name	Common Name
Aizoaceae		
	<i>Tetragonia tetragonioides</i>	New Zealand spinach
	<i>Carpobrotus edulis</i>	Iceplant
Amaranthaceae		
	<i>Amaranthus blitum</i>	purple amaranth
Anacardiaceae		
	<i>Schinus molle</i>	Peruvian peppertree
Apocynaceae		
	<i>Nerium oleander</i>	oleander
Araliaceae		
	<i>Hedera helix</i>	English ivy
Areaceae		
	<i>Washingtonia filifera</i>	California fan palm
Asteraceae		
	<i>Baccharis pilularis</i>	coyote brush
	<i>Carduus pycnocephalus</i>	Italian thistle
	<i>Centaurea melitensis</i>	tocalote
	<i>Cotula coronopifolia</i>	brass-buttons
	<i>Heterotheca grandiflora</i>	telegraph weed
	<i>Hypochaeris radicata</i>	rough cat's ear
	<i>Lactuca serriola</i>	prickly lettuce
	<i>Senecio vulgaris</i>	common groundsel
	<i>Silybum marianum</i>	milk thistle
	<i>Sonchus asper</i>	spiny sowthistle
Boraginaceae		
	<i>Amsinckia menziesii var. intermedia</i>	orange-flowered Menzies' fiddleneck
Brassicaceae		
	<i>Brassica nigra</i>	black mustard
	<i>Capsella bursa-pastoris</i>	shepherd's purse
Caryophyllaceae		
	<i>Cerastium glomeratum</i>	mouse-ear chickweed
	<i>Stellaria media</i>	common chickweed
	<i>Spergula arvensis</i>	corn spurry
Chenopodiaceae		
	<i>Chenopodium chenopodioides</i>	goosefoot
	<i>Salsola tragus</i>	prickly Russian Thistle

TABLE 3
Observed Plant List

Family	Scientific Name	Common Name
Cucurbitaceae		
	<i>Marah fabaceus</i>	wild-cucumber
Cyperaceae		
	<i>Schoenoplectus acutus</i>	hardstem bulrush
Fabaceae		
	<i>Lathyrus odoratus</i>	sweet pea
	<i>Lotus humistratus</i>	short-podded lotus
	<i>Lotus scoparius</i>	deerweed
	<i>Lotus wrangelianus</i>	Chilean lotus
	<i>Lupinus bicolor</i>	miniature lupine
	<i>Lupinus ludovicianus</i>	Bush lupine
	<i>Medicago polymorpha</i>	California burclover
	<i>Medicago sativa</i>	alfalfa
	<i>Vicia americana</i>	pea-vine
	<i>Vicia sativa</i>	spring vetch
Geraniaceae		
	<i>Erodium botrys</i>	long-beaked filaree
	<i>Erodium cicutarium</i>	red-stemmed filaree
	<i>Erodium moschatum</i>	white-stemmed filaree
Lamiaceae		
	<i>Lamium amplexicaule</i>	giraffe head
Liliaceae		
	<i>Asparagus officinalis</i> ssp. <i>officinalis</i>	asparagus
Lythraceae		
	<i>Lythrum hyssopifolium</i>	hyssop loosestrife
Malvaceae		
	<i>Malva parviflora</i>	cheeseweed mallow
Myrtaceae		
	<i>Eucalyptus globulus</i>	blue gum
	<i>Eucalyptus tereticornis</i>	forest red gum
Onagraceae		
	<i>Camissonia micrantha</i>	small-flowered evening-primrose
	<i>Epilobium brachycarpum</i>	autumn willowweed
Oxalidaceae		
	<i>Oxalis pes-caprae</i>	Bermuda buttercup

TABLE 3
Observed Plant List

Family	Scientific Name	Common Name
Pinaceae		
	<i>Pinus sp.</i>	horticultural pine
Plantaginaceae		
	<i>Plantago lanceolata</i>	English plantain
	<i>Plantago major</i>	common plantain
Poaceae		
	<i>Avena barbata</i>	slender wild oats
	<i>Bromus diandrus</i>	ripgut brome
	<i>Bromus madritensis ssp. rubens</i>	red brome
	<i>Bromus rubens</i>	
	<i>Cynodon dactylon</i>	Bermudagrass
	<i>Distichlis spicata</i>	saltgrass
	<i>Hordeum murinum</i>	mouse barley
	<i>Lolium perenne</i>	English rye-grass
	<i>Paspalum dilatatum</i>	dallis grass
	<i>Poa annua</i>	annual blue grass
	<i>Polypogon monspeliensis</i>	annual beard grass
	<i>Vulpia myuros</i>	rattail fescue
Polygonaceae		
	<i>Polygonum arenastrum</i>	common knotweed
	<i>Rumex crispus</i>	curly dock
Portulacaceae		
	<i>Calandrinia ciliata</i>	red maids
	<i>Claytonia perfoliata</i>	miner's lettuce
Rosaceae		
	<i>Malus sylvestris</i>	domestic apple
	<i>Prunus dulcis</i>	almond
	<i>Rubus discolor</i>	Himalaya-berry
	<i>Rubus ursinus</i>	California blackberry
Salicaceae		
	<i>Salix gooddingii</i>	Goodding's black willow
Simaroubaceae		
	<i>Ailanthus altissima</i>	tree-of-heaven
Typhaceae		
	<i>Typha latifolia</i>	broadleaf cattail

TABLE 3
Observed Plant List

Family	Scientific Name	Common Name
<i>Urticaceae</i>		
	<i>Urtica urens</i>	dwarf nettle
<i>Viscaceae</i>		
	<i>Phoradendron macrophyllum</i>	big leaf mistletoe
<i>Vitaceae</i>		
	<i>Vitis vinifera</i>	<i>Wine grape</i>