APPENDIX E – BIOLOGICAL RESOURCES DATABASE SEARCH

Scientific Name	Common Name	Federal Status	State Status	CNPS Rare Plant Rank	Habitat	Habitat Present/ Absent	Potential for Occurrence
Plants							
Astragalus tener var. ferrisiae	Ferris' milk-vetch	-	-	1B.1	Vernally mesic meadows and seeps, and subalkaline flats in valley and foothill grasslands. Elev: 7-246 ft. (2-75 m.) Blooms: April-May (CNPS 2014).	P	May occur. Seasonal wetlands provide suitable habitat.
Brasenia schreberi	watershield	-	-	2B.3	Freshwater marshes and swamps. Elev: 98-7,218 feet (30-2,200 m.) Blooms: June-September (CNPS 2014).	A	Not likely to occur. PSA is below species elevation range.
Carex comosa	bristly sedge	-	-	2B.1	Coastal prairies, valley and foothill grasslands, as well as marshes, swamps and lake margins. Elev: 0-2,051 feet (0-625 m.) Blooms: May-September (CNPS 2014).	P	May occur. Seasonal wetlands and seasonal marsh provide suitable habitat.
Castilleja campestris ssp. succulenta	succulent owl's-clover	FT	SE	1B.1	Acidic vernal pools. Elev: 164-2,461 ft (50-750m). Blooms: Apr-May (CNPS 2014.	A	Not likely to occur. Suitable habitat not present and PSA is below species elevation range.
Cicuta maculata var. bolanderi	Bolander's water-hemlock	-	-	2B.1	Coastal, fresh or brackish marshes and swamps. Elev: 0-656 ft. (0-200 m.) Blooms: July-Sept (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Cuscuta obtusiflora var. glandulosa	Peruvian dodder	-	-	2B.2	Freshwater marshes and swamps. Elev: 49-919 ft. (15-280 m.) Blooms: July-Oct (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Downingia pusilla	dwarf downingia	-	-	2B.2	Vernal pools and mesic valley and foothill grasslands. Elev: 3-1,459 ft. (1-445 m.) Blooms: Mar-May (CNPS 2014).	P	May occur. Seasonal wetlands provide suitable habitat.
Gratiola heterosepala	Boggs Lake hedge-hyssop	-	SE	1B.2	Clay soils in marshes, swamps, lake margins and vernal pools. Elev: 33-7,792 ft. (10-2,375 m.) Blooms: April-August (CNPS 2014).	P	May occur. Seasonal wetlands provide suitable habitat.
Hibiscus lasiocarpus var. occidentalis	woolly rose-mallow	-	-	1B.2	Freshwater marshes and swamps. Elev: 0-394 ft. (0-120 m.) Blooms: June-September (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Juglans hindsii	Northern California black walnut	-	-	1B.1	Riparian forest/woodland. Elev: 0-1,444 feet (0-440 m.) Blooms: Apr-May (CNPS 2014).	A	Native occurrence not likely to occur. Riparian woodland around perennial marsh was created.
Juncus leiospermus var. ahartii	Ahart's dwarf rush	-	-	1B.2	Mesic valley and foothill grasslands. Elev: 98-751 ft. (30-229 m.) Blooms: March-May (CNPS 2014).	A	Not likely to occur. PSA is below species elevation range.
Lathyrus jepsonii var. jepsonii	Delta tule pea	-	-	1B.2	Freshwater and brackish marshes and swamps. Elev: 0-13 ft. (0-4 m.) Blooms: May-Sept (CNPS 2014).	A	Not likely to occur. PSA is above species elevation range.
Legenere limosa	legenere	-	-	1B.1	Vernal pools. Elev: 3-2,887 ft (1-880 m) Blooms: Apr-June (CNPS 2014).	P	May occur. Seasonal wetlands provide suitable habitat.
Lepidium latipes var. heckardii	Heckard's pepper-grass	-	-	1B.2	Alkaline flats in valley and foothill grasslands. Elev: 7-656 feet (2-200 m.) Blooms: March-May (CNPS 2014).	A	Not likely to occur. Suitabble habitat not present.
Lilaeopsis masonii	Mason's lilaeopsis	-	SR	1B.1	Riparian scrub, and brackish or freshwater marshes and swamps. Elev: 3-33 ft. (0-10 m.) Blooms: Apr-Nov (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Limosella australis	Delta mudwort	-	-	2B.1	Usually mud banks in riparian scrub, and freshwater or brackish marshes and swamps. Elev: 0-10 ft. (0-3 m.) Blooms: May-Aug (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat and PSA is above species elevation range.
Orcuttia tenuis	slender Orcutt grass	FT	SE	1B.1	Vernal pools. Elev: 115-5,774 ft. (35-1,760 m.) Blooms: May-October (CNPS 2014).	A	Not likely to occur. PSA is below species elevation range.
	Critical Habitat, slender Orcutt grass	X	-	-		A	Critical habitat not present.
Orcuttia viscida	Sacramento Orcutt grass	FE	SE	1B.1	Vernal pools. Elev: 98-328 ft. (30-100 m.) Blooms: Apr-Sep (CNPS 2014).	A	Not likely to occur. PSA is below species elevation range.
	Critical Habitat, Sacramento Orcutt grass	X	-	-		A	Critical habitat not present.
Sagittaria sanfordii	Sanford's arrowhead	-	-	1B.2	Assorted shallow freshwater marshes and swamps. Elev: 0-2,133 ft. (0-650 m.) Blooms: May-October (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Scutellaria galericulata	marsh skullcap	-	-	2B.2	Lower montane coniferous forest, meadows, seeps, marshes, and swamps. Elev: 0-6,890 feet (0-2,100 m.) Blooms: Jun-Sep (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Scutellaria laterifolia	side-flowering skullcap	-	-	2B.2	Marshes, swamps, mesic meadows and seeps. Elev: 0-1,640 feet (0-500 m.) Blooms: Jul-Sep (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat.
Symphyotrichum lentum	Suisun Marsh aster	-	-	1B.2	Brackish and freshwater marshes and swamps. Elev: 0-10 ft. (0-3 m.) Blooms: May-Nov (CNPS 2014).	A	Not likely to occur. Seasonal marsh too dry to provide suitable habitat and PSA is above species elevation range.
Trifolium hydrophilum	saline clover	-	-	1B.2	Marshes & swamps, valley & foothill grassland (mesic, alkaline), and vernal pools. Elev: 0-984 ft (0-300m) Blooms: Apr-June (CNPS 2014).	P	May occur. Seasonal wetlands and seasonal marsh provide suitable habitat.
Invertebrates							
Branchinecta conservatio	conservancy fairy shrimp	FE	-		Vernal pools, often large and turbid pools (USFWS 2005).	P	May occur. Seasonal wetlands provide suitable habitat.
Branchinecta lynchi	vernal pool fairy shrimp	FT	-		Found only in vernal pools and ephemeral wetlands. Distributed throughout the Central Valley, including Sacramento County (USFWS 2005).	P	May occur. Seasonal wetlands provide suitable habitat.
	Critical Habitat, vernal pool fairy shrimp	X	-			A	Critical habitat not present.

	valley elderberry longhorn beetle	FT	-		Dependent on hostplant, elderberry (Sambucus spp.), which generally grows in riparian woodlands and upland habitats of the Central Valley. Current distribution in the Central Valley from Shasta County to Fresno County (USFWS 1999).	A	Not likely to occur. Elderberry hostplant not present.
Desmocerus californicus dimorphus	Critical Habitat, valley elderberry longhorn beetle	X	-			A	Critical habitat not present.
Elaphrus viridis	delta green ground beetle	FT			Only known from greater Jepson Prairie area in south-central Solano County in grassland areas interspersed with vernal pools (USFWS 2005).	A	Not likely to occur. Outside species range.
	vernal pool tadpole shrimp	FE	-		Wide variety of ephemeral wetland habitats, including vernal pools. Distributed throughout Central Valley and San Francisco Bay area (USFWS 2005).	P	May occur. Seasonal wetlands provide suitable habitat.
Lepidurus packardi	Critical Habitat, vernal pool tadpole shrimp	X	-			A	Critical habitat not present.
Fish							
Acispenser medirostris	green sturgeon	FT	SSC		Entire coast of California. Spawning occurs in Sacramento River and Klamath River (USFWS 1996). Oceanic waters, bays, and estuaries during non-spawning season. Spawning habitat – deep pools in large, turbulent, freshwater mainstems (NMFS 2005).	A	Not likely. Suitable habitat not present.
Archoplites interruptus	Sacramento perch	-	SSC		Historically, Central Valley sloughs, slow-moving rivers, and lakes with beds of rooted emergent aquatic vegetation. Current distribution is artificially atocked farm ponds and reservoirs (USFWS 1995).	A	Not likely. Suitable habitat not present.
	delta smelt	FT	SE		Distribution includes the Sacramento River below Isleton, San Joaquin River below Mossdale, and Suisun Bay. Spawning areas include the Sacramento River below Sacramento, Mokelumne River system, Cache Slough, the delta, and Montezuma Slough (USFWS 1995).	A	Not likely. Suitable habitat not present.
Hypomesus transpacificus	Critical Habitat, delta smelt	X	-			A	Critical habitat not present.
Lampetra ayresii	river lamprey	-	SSC		Adults require clean, gravelly riffles in permanent streams for spawning, while the ammocoetes require sandy backwaters or stream edges in which to bury themselves, where water quality is continuously high and temperatures do not exceed 25°C (Moyle et. al).	A	Not likely. Suitable habitat not present.
Mylopharodon conocephalus	hardhead	-	SSC		Small to large streams in a low to mid-elevation environment. May also inhabit lakes or reservoirs. Their preferred stream temperature might easily exceed 20ºC, though these fish do not favor low dissolved oxygen levels. Therefore the hardhead minnow is usually found in clear deep streams with a slow but present flow. Though spawning may occur in pools, runs, or riffles, the bedding area will typically be characterized by gravel and rocky substrate (CalFish 2014).	A	Not likely. Suitable habitat not present.
	Central Valley steelhead	FT	-		Spawning habitat – gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning – estuarine, marine waters (Busby 1996).	A	Not likely. Suitable habitat not present.
Oncorhynchus mykiss	Critical Habitat, Central Valley steelhead	X	-			A	Critical habitat not present.
	Central Valley spring-run chinook salmon	FT	ST			A	Not likely. Suitable habitat not present.
	Critical Habitat, Central Valley spring-run chinook salmon	X	-		Spawning habitat – fast moving, freshwater streams and rivers. Juvenile habitat – brackish estuaries. Non-spawning – marine waters (Myers 1998).	A	Critical habitat not present.
	winter-run chinook salmon, Sacramento River	FE	SE			A	Not likely. Suitable habitat not present.
	Critical Habitat, winter-run chinook salmon, Sacramento River	X	-			A	Critical habitat not present.
Oncorhynchus tshawytscha	chinook salmon, Central Valley fall/late fall-run ESU	-	SSC			A	Not likely. Suitable habitat not present.
Pogonichthys macrolepidotus	Sacramento splittail	-	SSC		Prefer slow-moving sections of freshwater rivers and sloughs. Most abundant in Suisun Bay and Marsh region. Largely absent from Sacramento River except during spawning (USFWS 1995).	A	Not likely. Suitable habitat not present.
Spirinchus thaleichthys	longfin smelt	FC	ST/SSC		Adults and juveniles require salt or brackish estuary waters. Spawning takes place in freshwater over sandy-gravel substrates, rocks, and aquatic plants (Moyle et. al).	A	Not likely. Suitable habitat not present.
Amphibians							

Ambystoma californiense	California tiger salamander, central population	FT	ST		Occurs in grasslands of the Central Valley and oak savannah communities in the Central valley, the Sierra Nevada and Coast ranges, and the San Francisco Bay area. Needs seasonal or semi-permanent wetlands to reproduce, and terrestrial habitat with active ground squirrel or gopher burrows (Bolster 2010).	A	Not likely to occur. History of disturbance precludes the presence of this species.
Rana draytonii	California red-legged frog	FT	SSC		Found mainly near ponds in humid forests, woodlands, grasslands, coastal scrub, and streamsides with plant cover. Most common in lowlands or foothills. Frequently found in woods adjacent to streams. Breeding habitat is in permanent or ephemeral water sources; lakes, ponds, reservoirs, slow streams, marshes, bogs, and swamps. Ephemeral wetland habitats require animal burrows or other moist refuges for estivation when the wetlands are dry. From sea level to 5,000 ft. (1,525 m.) (Nafis 2013).	A	Not likely to occur. Breeding habitat not present. Largely extirpated form the Central Valley.
Spea hammondii	western spadefoot	-	SSC		Open areas with sandy/gravelly soils. Variable habitats including mixed woodlands, grasslands, coastal sage scrub, chaparral, sandy washes, lowlands, river floodplains, alluvial fans, playas, alkali flats, foothills, and mountains. Rainpools which do not contain bullfrogs, fish, or crayfish are necessary for breeding (Nafis 2014).	A	Not likely to occur. Suitable soils not present and history of disturbance.
					Reptiles		
Emys marmorata	western pond turtle	-	SSC		Found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches, with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. In streams, prefers pools to shallower areas. Logs, rocks, cattail mats, and exposed banks are required for basking. May enter brackish water and even seawater. Found at elevations from sea level to over 5,900 ft (1,800 m). (Nafis 2014).	A	Not likely to occur. Suitable habitat not present. Seasonal marsh too dry to support species.
Thamnophis gigas	giant garter snake	FT	ST		Marshes, sloughs, ponds, small lakes, low gradient streams, irrigation and drainage canals, rice fields and their associated uplands. Upland habitat should have burrows or other soil crevices suitable for snakes to reside during their dormancy period (November- mid March). Ranges in the Central Valley from Butte County to Buena Vista Lake in Kern County. Endemic to valley floor wetlands (USFWS 2012).	A	Not likely to occur. Suitable habitat not present. Seasonal marsh and drainage ditches too dry to support species.
					Birds		
Agelaius tricolor	tricolored blackbird	-	SSC		Nest in wetlands or in dense vegetation near open water. Dominant nesting substrates: cattails, bulrushes, blackberry, agricultural silage. Nesting substrate must either be flooded, spinous, or in some way defended against predators (Hamilton 2004).	P	May occur. Dense vegetaton around seasonal marsh may provide suitable nesting habitat; however, marsh may be too dry to support species.
Ammodramus savannarum	grasshopper sparrow	-	SSC		In the foothills and lowlands west of the Cascades/Sierras. Dry, dense grasslands, especially those with a variety of grasses and tall forbs and scattered shrubs for singing perches (CDFW 2014b)	P	May occur. Suitable habitat present.
Aquila chrysaetos	golden eagle	-	FP		Uncommon resident and migrant throughout California, except center of Central Valley. Habitat typically rolling foothills, mountain areas, sage-juniper flats, desert (CDFW 2014b).	A	Unlikely to occur. Not known to nest in center of Central Valley.
Athene cunicularia	burrowing owl	-	SSC		Open, flat expanses with short, sparse vegetation and few shrubs, level to gentle topography and well-drained soils. Requires underground burrows or cavities for nesting and roosting. Can use rock cavities, debris piles, pipes and culverts if burrows unavailable. Habitats include grassland, shrub steppe, desert, agricultural land, vacant lots and pastures (CDFW 2014b).	P	May occur. Suitable habitat present in open areas throughout PSA.
Buteo swainsoni	Swainson's hawk	-	ST		Nests in stands with few trees in riparian areas, juniper-sage flats, and oak savannah in the Central Valley. Forages in adjacent grasslands, agricultural fields and pastures (CDFW 2014b).	P	May occur. Suitable nesting and foraging habitat throughout PSA.
Chaetura vauxi	Vaux's swift	-	SSC		Prefers redwood and Douglas fir habitats with nest sites in large hollow trees and snags, especially tall, burnt-out stubs (CDFW 2014b).	A	Unlikely to occur. Suitable nesting habitat not present.
Charadrius montanus	mountain plover	-	SSC		Found on short grasslands and plowed fields of the Central Valley from Sutter and Yuba counties southward. Also found in foothill valleys. Avoids high and dense cover. Often roosts in depressions such as ungulate hoof prints and plow furrows (CDFW 2014b).	A	Unlikely to occur. Grassland areas tall and dense.

Circus cyaneus	northern harrier	-	SSC		Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and steams, grasslands, pastures, croplands, sagebrush flats and desert sinks (Shuford 2008).	A	Unlikely to occur due to disturbed nature of the PSA.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	PT	SE		Requires large, dense tracts of riparian woodland with well-developed understories. Occurs in deciduous trees or shrubs. Prefers willow, but will also nest in orchards adjacent to streams in Sacramento Valley. Restricted to moist habitats along slow-moving waterways during breeding season (CDFW 2014b).	A	Unlikely to occur. Suitable habitat not present. Lack of water in marsh precludes presence of this species.
Dendroica petechia brewsteri	yellow warbler	-	SSC		Riparian vegetation along streams and in wet meadows. Willow cover and Oregon ash important predictors of abundance in northern California (CDFW 2014b).	A	Unlikely to occur. Suitable habitat not present. Lack of water in marsh precludes presence of this species.
Elanus leucurus	white-tailed kite	-	FP		Typically nest in the upper third of trees that may be 10–160 ft. (33-525 m.) tall. These can be open-country trees growing in isolation, or at the edge of or within a forest (Cornell 2013).	P	May occur. Suitable nesting and foraging habitat throughout PSA.
Grus canadensis canadensis	lesser sandhill crane	-	SSC		In summer, occurs in and near wet meadow, shallow lacustrine, and fresh emergent wetland habitats. In winter, frequents moist croplands with rice or corn stubble, and open, emergent wetlands. Prefers treeless plains. Nests in remote portions of extensive wetlands or sometimes shortgrass prairies (CDFW 2014b).	A	Unlikely to occur. Suitable nesting habitat not present.
Grus canadensis tabida	greater sandhill crane	-	ST/FP			A	Unlikely to occur. Suitable nesting habitat not present.
Icteria virens	yellow-breasted chat	-	SSC		Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nest in dense thicket plants such as blackberry and willow (Shuford 2008).	A	Unlikely to occur. Suitable habitat not present. Lack of water in marsh precludes presence of this species.
Ixobrychus exilis	least bittern	-	SSC		Large, freshwater wetlands with dense emergent vegetation (CDFW 2014b).	A	Unlikely to occur. Suitable habitat not present. Lack of water in marsh precludes presence of this species.
Lanius ludovicianus	loggerhead shrike	-	SSC		Breed in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford 2008).	P	May occur. Suitable habitat present.
Melospiza melodia	song sparrow ("Modesto" population)	-	SSC		Breeds and winters in riparian, fresh or saline emergent wetland, and wet meadows. Breeds in riparian thickets of willows, other shrubs, vines, tall herbs, and fresh or saline emergent vegetation (CDFW 2014b).	A	Unlikely to occur. Suitable habitat not present. Lack of water in marsh precludes presence of this species.
Progne subis	purple martin	-	SSC		Woodland and forest habitats with numerous suitable nest cavities, open air space above nest sites, and aerial insect prey (Shuford 2008).	A	Not likely to occur. Suitable habitat not present.
Riparia riparia	bank swallow	-	ST		Riparian areas with sandy, vertical bluffs or riverbanks. Also nest in earthen banks and bluffs, as well as sand and gravel pits (CDFW 2014b).	A	Not likely to occur. Suitable habitat not present.
Sternula antillarum browni	California least tern	FE	SE/FP		Nest and roost in colonies on open beaches, forage near shore ocean waters and in shallow estuaries ad lagoons (USFWS 2006).	A	Not likely to occur. Suitable habitat not present.
Vireo bellii pusillus	least Bell's vireo	FE	SE		Willows and other low, dense valley foothill riparian habitat and lower portions of canyons. Usually found near water, but also inhabits thickets along dry, intermittent streams. Ranges 0-2000 feet (CDFW 2014b).	P	May occur. Suitable habitat present.
Xanthocephalus xanthocephalus	yellow-headed blackbird	-	SSC		Nest in marshes with tall, emergent vegetation (e.g., tules and cattails) adjacent to deepwater (Shuford 2008).	A	Not likely to occur. Suitable habitat not present.
Mammals							
Lasiurus blossevillii	western red bat	-	SSC		Roosting habitat includes forests and woodlands, often in edge habitats adjacent to streams, fields, or urban areas (CDFW 2014b).	P	May occur. Abandoned buildings provide suitable habitat for this species.
Taxidea taxus	American badger	-	SSC		Open shrub, forest and herbaceous habitats with friable soils. Associated with treeless regions, prairies, park lands and cold desert areas. Range includes most of California, except the North Coast (CDFW 2014b).	P	May occur. Suitable habitat present.

Sources: CDFW 2014a, CNPS 2014, USFWS 2014

Key
Federal & State Status
(FE) Federal Endangered
(FT) Federal Threatened
(FC) Federal Candidate
(FD) Federally Delisted

(FP) Fully Protected
(SE) State Endangered
(ST) State Threatened
(SR) State Rare
(SSC) State Species of Special Concern
(SCE) State Candidate Endangered
(SCT) State Candidate Threatened
CNPS Rare Plant Rank
Rareness Ranks
(1A) Presumed Extinct in California
(1B) Rare, Threatened, or Endangered in California and Elsewhere
(2B) Rare, Threatened, or Endangered in California, But More Common Elsewhere
Threat Ranks
(0.1) Seriously threatened in California
(0.2) Fairly threatened in California
(0.3) Not very threatened in California

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Scientific Name	Common Name	native?
Achyrachaena mollis	blow wives	yes
Allium sp.	onion	yes
Amsinckia menziesii	fiddleneck	yes
Asclepias fascicularis	narrow leaf milkweed	yes
Avena fatua	wild oats	no
Baccharis pilularis	coyote brush	yes
Brassica nigra	black mustard	no
Briza minor	little rattlesnake grass	no
Brodiaea sp.	brodiaea	yes
Bromus diandrus	ripgut brome	no
Bromus hordeaceus	soft brome	no
Carduus pycnocephalus	Italian thistle	no
Centauria solstitialis	yellow star-thistle	no
Centromadia pungens	common tarweed	yes
Chenopodium album	lamb's quarters	no
Cichorium intybus	chicory	no
Conium maculatum	poison hemlock	no
Convolvulus arvensis	bindweed	no
Croton setigerus	turkey mullein	yes
Epilobium brachycarpum	tall annual willowherb	yes
Erodium botrys	broad leaf filaree	no
Erodium cicutarium	redstem filaree	no
Eryngium sp.	coyote thistle	yes
Eucalyptus sp.	blue gum	no
Festuca myuros	rattail fescue	no
Festuca perennis	Italian ryegrass	no
Foeniculum vulgare	fennel	no
Geranium dissectum	cut-leaf geranium	no
Helminthotheca echioides	bristly ox-tongue	no
Holocarpha sp.	tarweed	yes
Hordeum murinum	foxtail barley	no
Hordeum marinum	seaside barley	no
Juglands hindsii	California black walnut	yes
Lactuca serriola	prickly lettuce	no
Lasthenia glaberrima	rayless goldfields	yes
Leontodon saxatilis	hawkbit	no
Lepidium latifolium	perennial pepperweed	no
Lupinus bicolor	dwarf lupine	yes
Lythrum portula	spatulaleaf loosestrife	no
Melilotus indicus	annual yellow sweetclover	no
Olea europaea	olive	no
Persecaria sp.	smartweed	unknown
Phalaris aquatica	Harding grass	no
Phyla nodiflora	turkey tangle fogfruit	yes
Plagiobothrys stipitatus	slender popcorn flower	yes
Pogogyne zizyphoroides	Sacramento mesamint	yes

Polypogon monspeliensis	rabbitsfoot grass	no
Populus fremontii	Fremont's cottonwood	yes
Psilocarphus brevissimus	woolly marbles	yes
Pyracantha angustifolia	firethorn	no
Quercus lobata	valley oak	yes
Ranunculus muricatus	spinyfruit buttercup	no
Raphanus sativus	wild radish	no
Rubus armeniacus	Himalayan blackberry	no
Rumex crispus	curly dock	no
Salix exigua	narrowleaf willow	yes
Salix laevigata	red willow	yes
Silybum marianum	milk thistle	no
Sonchus asper	sowthistle	no
Sorghum halepense	Johnsongrass	no
Tamarix ramosissima	tamarisk	no
Tragopogon porrifolium	purple salsify	no
Trifolium hirtum	rose clover	no
Veronica peregrina	neckweed	yes
Vicia villosa	hairy vetch	no
Washingtonia filifera	California fan palm	yes
Xanthium strumarium	cocklebur	yes

BIOLOGICAL MEMORANDUM

To: CITY OF ELK GROVE

From: Leslie Parker

Cc: Joyce Hunting, Patrick Hindmarsh

Date: May 5, 2014

RE: Civic Center Aquatic Complex Project: Rare Plant Survey

Project Description

On May 2 and 19, 2014, a PMC botanist investigated parcels associated with the Civic Center Aquatic Complex project. A reconnaissance-level survey indicated the presence of urban, grassland, wetland and vernal pool habitats within the project footprint. Several special-status plants have the potential to occur in these habitats in the vicinity of the project:

- Ferris' milk-vetch (*Astragalus tener* var. *ferrissiae*, CNPS 1B)
- watershield (*Brasenia schreberi,* CNPS 2B)
- bristly sedge (*Carex comosa*, CNPS 2B)
- succulent owl's-clover (*Castilleja campestris* ssp. *succulent,* CNPS 1B)
- Bolander's water hemlock (*Cicuta maculate var. bolanderi,* CNPS 2B)
- Peruvian dodder (*Cuscuta obtusiflora var. glandulosa,* CNPS 2B)
- dwarf downingia (*Downingia pusilla,* CNPS 2B)
- Boggs Lake hedge-hyssop (*Gratiola heterosepala,* CA Endangered, CNPS 1B)
- wooly rose-mallow (*Hibiscus lasiocarpus,* CNPS 1B)
- Northern California black walnut (*Juglans hindsii,* CNPS 1B)
- Ahart's dwarf rush (*Juncus leiospermus var. ahartii*, CNPS 1B)
- Delta tule pea (*Lathyrus jepsonii var. jepsonii,* CNPS 1B)
- legenere (*Legenere limosa,* CNPS 1B)
- Heckard's pepper-grass (*Lepidium latipes var. heckardii,* CNPS 1B)
- Mason's lilaeopsis (*Lilaeopsis masonii,* CA Rare, CNPS 1B)
- Delta mudwort (*Limosella australis*, CNPS 2B)
- slender Orcutt grass (*Orcuttia tenuis*, CNPS 1B)
- Sacramento Orcutt grass (*Orcuttia viscid*, CNPS 1B)
- Sanford's arrowhead (*Sagittaria sanfordii,* CNPS 1B)
- marsh skullcap (*Scutellaria galericulata,* CNPS 2B)

- side-flowering skullcap (*Scutellaria laterifolia,* CNPS 2B)
- Suisun Marsh aster (*Symphyotrichum lentum*, CNPS 1B)
- saline clover (*Trifolium hydrophilum*, CNPS 1B)

Methodology

The project study area was systematically surveyed to ensure total search coverage, with special attention given to identifying those portions of the project study area with the potential to support special-status species listed above. The area surveyed during this visit was concentrated around the vernal pool and marsh features; however, large portions of the site outside these features were also walked. The project site was walked during the morning and early afternoon hours of May 2 and 19, 2014, and species encountered were identified to the level of species, when possible.

Results

Much of the habitat of the proposed project occupies land that has been regularly disturbed as a result of farming practices. Many species of plants, both native and non-native have re-colonized the disturbed landscape. A full floristic list of species observed can be found in **Appendix A**.

Conclusions

No special-status species have been found in the vicinity of the project.