E-5: Line 407 West Plant Report

Special Status and Listed Plant Report
PG&E Line 407 West Natural Gas Transmission Pipeline

Yolo and Sutter Counties, California

August 2007

Prepared for:

TRC
80 Stone Pine Road, Suite 200
Half Moon Bay, CA 94019
Attn: Benjamin Hart

Prepared by:

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Introduction

As requested by TRC, Gallaway Consulting Inc. (GCI) performed rare plant surveys and a floristic inventory within the Pacific Gas and Electric Company (PG&E) Line 407 West study area. Utility improvements are planned for the site. Surveys were conducted on May 3, 8, and 14, 2007 to determine the presence of special-status botanical resources and to establish whether or not these resources would be impacted by the proposed project.

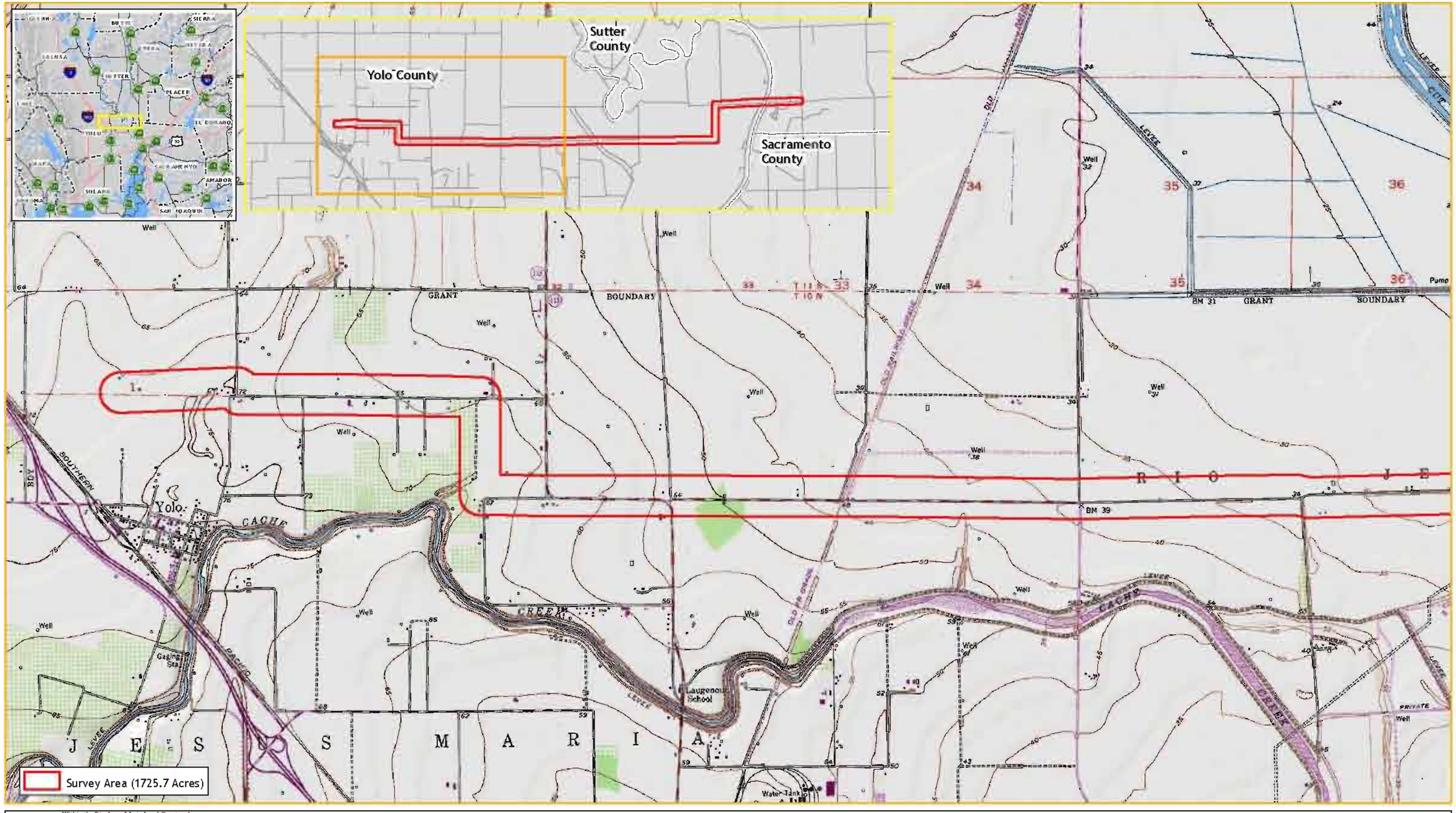
Project Description

The PG&E is planning to construct the Line 407 West Project (project) to address the need for additional natural gas supply to serve on-going residential and commercial growth in the greater Sacramento River Valley region within Yolo and Sutter Counties. Line 407 West is one of three natural gas transmission pipeline segments that are planned for construction between 2009 and 2012 to supply natural gas to the region. The project includes approximately 13.5 miles of 30-inch-diameter pipeline operating at 975 pounds per square inch gauge (psig) and transporting up to 180,000,000 cubic feet of natural gas per day between existing Line 172A and the tie-in with proposed Line 407 East near the intersection of Powerline and Riego roads in Sutter County. Line 407 West will run east from Line 172A through an area rich in agricultural production, and will cross Knights Landing Ridge Cut, the Yolo Bypass, Tule Canal, a number of unnamed irrigation canals, and the Sacramento River (**Figure 1**).

Existing Conditions

The survey area was determined by creating a 500 foot buffer on either side of the pipeline and encompasses a 1725.75-acre corridor of rural, urban, and developed land in portions of Grays Bend, Woodland, Verona, and Taylor Monument USGS quadrangles (**Figure 1**). Topography is flat due to historical farming and grading practices with project elevation ranging from 15-125 feet above sea level. Rural residential, agricultural structures, and agricultural fields occupy the extent of the study area. There were 26 soil map unit descriptions found to occur within the study area (**Table 1**).

The average annual temperature for the study area ranges from 49-70°F, with the hottest temperatures occurring in July and August. The average annual rainfall for the area is approximately 23 inches, however, during the 2006/2007 winter the area only received a total of 7.48 inches of rainfall (The Weather Underground, Inc. 2007).



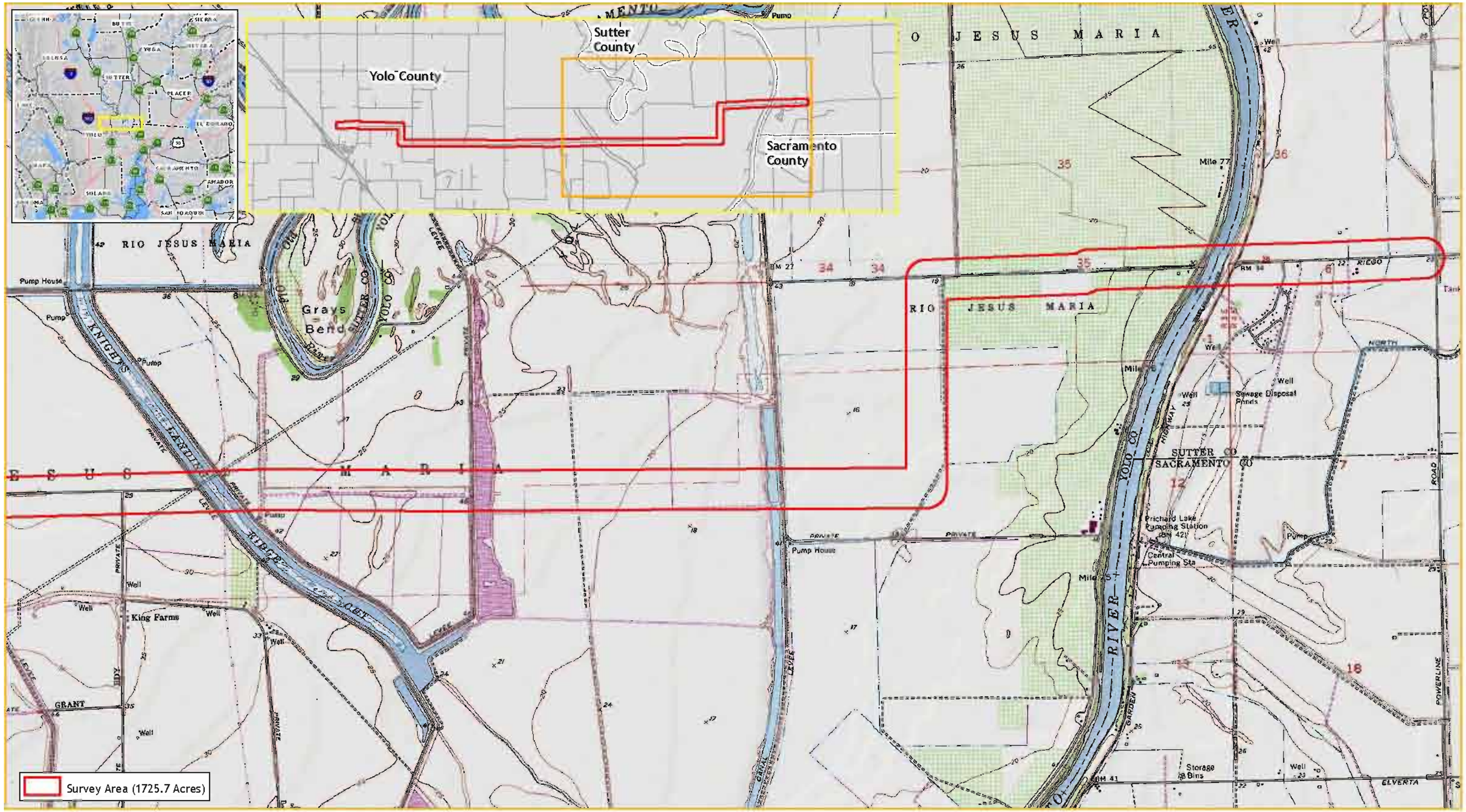
Within the Rio Jesus Maria Land Grant and
Sect 1 of T10N & R1E, Sect 1 of T10N & R2E,
Sects 9, 10, 11, 12 of T10N & R2E, Sects 5, 6 of T10N & R4E
Sect 36 of T11N & R3E, and Sect 31 of T11N & R4E
On El Dorado Bend, Knights Landing, Verona, Woodland,
Grays Bend, and Taylor Monument 7.5' USGS Quads
Map Date 6/29/07

Miles
0 0.5 1

GALLAWAY CONSULTING, INC.

Figure 1a

PG&E Line 407 **Location (2 of 2)**



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Sect 1 of T10N & R1E, Sect 1 of T10N & R2E,
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Sect 36 of T11N & R3E, and Sect 31 of T11N & R4E
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Grays Bend, and Taylor Monument 7.5' USGS Quads
Map Date 6/29/07

Miles
0 0.5 1

GALLAWAY CONSULTING, INC.

Figure 1b

Table 1. Soil Map Unit Descriptions Found within the Study Area.

Map Unit Symbol	Map Unit Description	Hydric(Y or N)/ Landform
144	Nueva loam, 0 to 1 percent	Y/Floodplains
141	Marcum clay loam, siltstone substratum, 0 to 1 percent slopes	Y/Basin Floors
146	Nueva loam, wet, 0 to 1 percent slopes	Y/Floodplains
158	San Joaquin sandy loam, 0 to 2 percent slopes	N
Ya	Yolo silt loam	Y/Alluvial Fans
Sv	Sycamore complex, drained	Y/Alluvial Fans
BrA	Brentwood silty clay loam, 0 to 2 percent slopes	N
Sr	Sycamore silt loam, flooded	Y/Alluvial Fans
Su	Sycamore complex	Y/Alluvial Fans, Basin Floors
Te	Tyndall very fine sandy loam, deep	Y/Alluvial Fans
La	Lang sandy loam	Y/Alluvial Fans
So	Sycamore silt loam	Y/Alluvial Fans
Sa	Sacramento silty clay loam	Y/Alluvial Fans
Tb	Tyndall very fine sandy loam	Y/Alluvial Fans
Lb	Lang sandy loam, deep	Y/Alluvial Fans
Sw	Sycamore complex, flooded	Y/Alluvial Fans, Basin Floors
Md	Maria silt loam, deep	Y/Alluvial Fans
Sc	Sacramento clay	Y/Alluvial Fans, Basin Floors
Ra	Reiff very fine sandy loam	Y/Alluvial Fans
Yb	Yolo silty clay loam	Y/Alluvial Fans
Mb	Maria silt loam	Y/Alluvial Fans
Tc	Tyndall very fine sandy loam, drained	Y/Alluvial Fans
Sg	Sacramento soils, flooded	Y/Alluvial Fans, Basin Floors
Sp	Sycamore silt loam, drained	Y/Alluvial Fans
Lg	Laugenour very fine sandy loam	Y/Alluvial Fans
W	Water	Y/Open Water

Study Methods

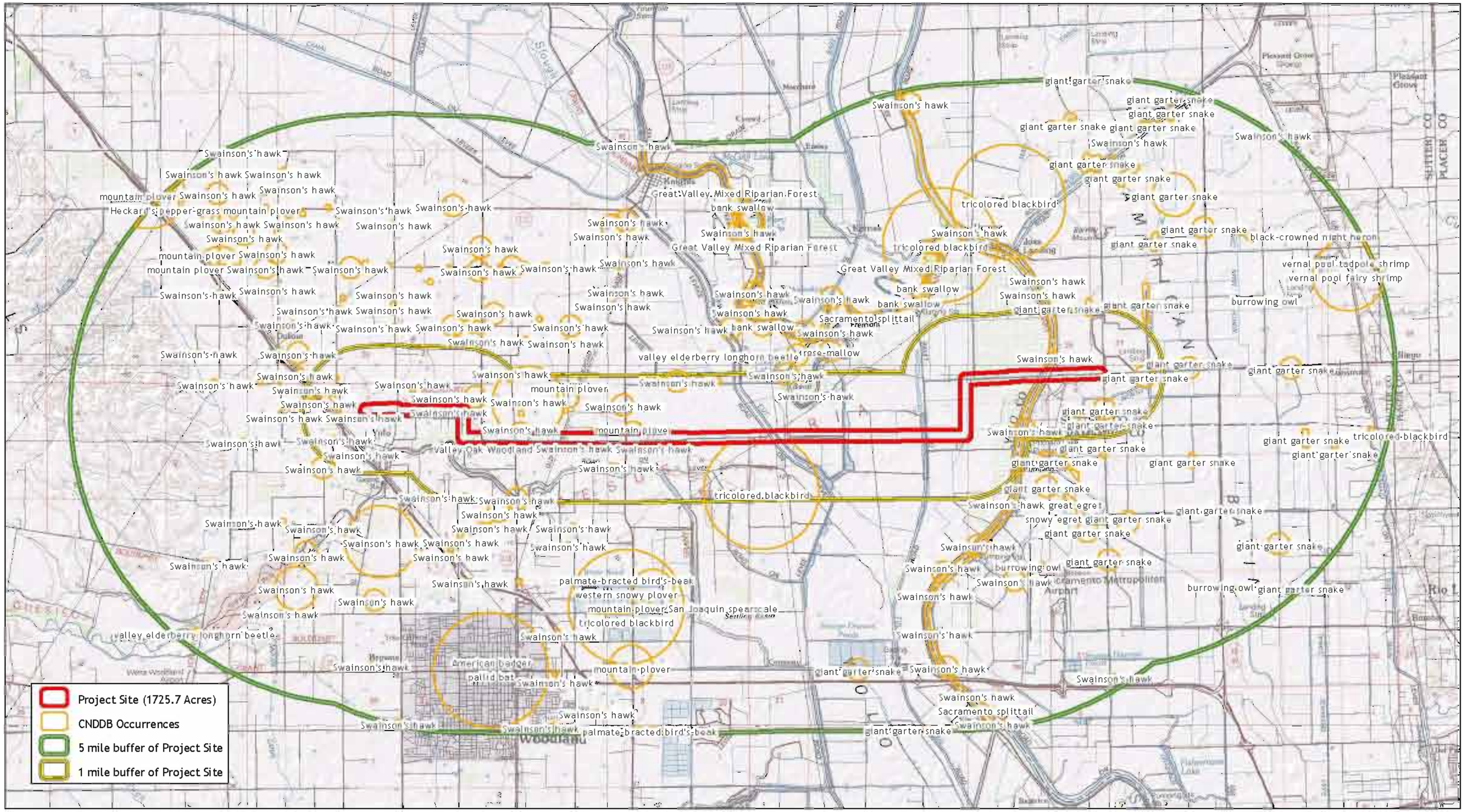
Prior to conducting the onsite survey, GCI created a list of potentially occurring special-status plant species occurring within the study area by accessing all pertinent databases, and contacting appropriate state and federal agencies. Topographic maps and aerial photos of the site were reviewed and areas of potential impact noted. The lists were then reviewed and edited taking into account existing conditions present within the study area. The California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) and U.S. Fish and Wildlife Service (USFWS) species lists are presented in **Appendix A**. A 5-mile radius CNDDB search identified several documented special-status plant species occurrences in the surrounding area (**Figure 2**). The CNDDB

provides natural history and location information on rare, threatened, endangered, and special-status species and natural communities within California. The CNDDB only documents known occurrences and is used as a preliminary tool, in addition to the USFWS species lists, to determine potential species occurrences within the study area. Surveys were conducted for all the plant species included on these lists because they each had varying degrees of potential to occur within the study area. For the purposes of this survey, special-status species are those that fall into one of the following categories:

- Designated as rare, threatened, or endangered by state or federal governments (ESA, 50 CFR 17.12 for listed plants and various notices in the Federal Register, California Endangered Species Act (CESA), 14 CCR 670.5);
- Designated as Species of Concern and/or Special Concern by state or federal governments;
- Proposed for rare, threatened, or endangered designation by state and federal governments;
- Included on the CNPS List as 1A, 1B, and 2 (Skinner and Pavlik, 2001);
- Plants that meet the definitions of rare or endangered species under the California Environment Quality Act (CEQA) (State CEQA Guidelines, Section 15380).

On May 3, 8, and 14, 2007, a pedestrian survey of the site was undertaken. The extent of the survey area were examined using transects and spot-checks of high quality habitat. Botanist Elena Alfieri, assisted by biologists Taylor Brooks and Breanna Owens, conducted botanical surveys during the appropriate flowering window of the target species (See **Appendix B** for Botanist Qualifications). Surveys were floristic in nature and conducted in accordance with the USFWS *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants* (January 2000) and the CNPS *Botanical Survey Guidelines* (June 2001) (**Appendix C**). When possible, reference populations or herbarium specimens of the target species were observed to refresh the surveyors' visual memory of the species and to check the blooming status of the target species (**Table 2**). The entire project site was traversed using parallel transects spaced no more than 15 feet apart. Transects were stratified according to plant community types and all suitable habitat was closely inspected (See **Appendix D** for a list of all plant species observed during surveys). A Trimble GeoXT was on hand to record special-status plant species occurrences.

PG&E Line 407 **CNDDB Occurrences**



CNDDB Occurrence provided
by CDFG (May 1, 2007)
On Sacramento 15' USGS Quad
Map Date June 20, 2007

Miles
0 1 2

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Figure 2

Table 2. Locations of Reference Populations for Species with Potential to Occur in the Study Area Based on USFWS and CNDDB Species Lists

Species	Location of Reference Population
Plants	
Astragalus tener var. ferrisiae	On the south side of Evans-Reimer Road, about 1 mile east of Pennington Road, Gray Lodge Waterfowl Management Area
Atriplex cordulata	Gray Lodge Wildlife Area, 2 miles southeast of the headquarters building. Just south of Rutherford Road, west of Levee Road
Atriplex depressa	Delevan National Wildlife Refuge. One mile east of Excelsior Road in Cell 12 of the Refuge
Atriplex joaquiniana	About 3 miles southeast of woodland, north of Willow Slough, north and south of Road 25 and west of road 103
Cordylanthus palmatus	City of Woodland site, near junction of Road 103 and Road 25
Downingia pusilla	About 8 miles southeast of Corning, North Fork Hall Creek
Gratiola heterosepala	Archgate Reservoir, just west of the Shasta-Lassen county border, south of Pittville, west of Pittville Road
Hibiscus lasiocarpus	Upper Butte Sink Wildlife Area - Howard Slough
Juncus leiospermus var. ahartii	Along Powerline Road corridor between Fruitland Road and South Honcut Creek, west of Loma Rica
Juncus leiospermus var. leiospermus	Palermo, southeast of Daly Road
Legenere limosa	Stillwater Plains Mitigation Bank, Palermo
Lepidium latipes var. heckardii	West of Sacramento Northern Railroad
Navarretia myersii ssp. myersii	2 miles east of Sacramento-Amador Countyline, Howard Ranch
Sagittaria sandfordii	Along and between Beacon Creek and Elder Creek, east of Power Inn Road, Elk Grove

Results

Plant species determined to have the potential to occur within the study area are discussed in **Table 3**.

Habitat Characterization

The survey area includes nine habitat characterizations based on the California Department of Fish and Game California Wildlife Habitat Relationship System (CWHR) (**Attachment A**). The CWHR classification system was developed through a multi-agency effort to provide resource managers and scientists with a standardized habitat and wildlife management tool. The CWHR system is commonly used to discuss habitats in terms of wetland delineations, wildlife management plans and biological resource assessments. Habitat characterizations are divided by vegetative assemblage (i.e., tree dominated, shrub dominated, herbaceous dominated) then subdivided by location and unique vegetation. Habitats are first assessed from aerial photographs, then followed by ground truthing. The following habitats occur within the project boundaries:

Dryland Grain Crops

Dryland grain crops include annual seed producing grasses, cereal rye (*Secale cereale*), oats (*Avena sativa*), and wheat (*Triticum aestivum*). They are usually planted in drilled rows in the fall and then harvested in the spring. They may also be rotated with other irrigated crops after the fall harvest of a previous crop, dry farmed, and then harvested in the late spring. Volunteer native or naturalized herbaceous species may colonize fallowed dryland grain fields. The dryland grain crop fields within the study area had been harvested at the time of the surveys. Many of the fields observed during the dates surveyed were actively being farmed. In the active fields, specific dryland crop species being produced included wheat. There are approximately 259 acres of dryland grain crops in the survey area.

Fallow fields and along the periphery of the active fields consisted of disturbed annual grassland vegetation including annual oatgrass (*Avena* ssp.), star-thistle (*Centaurea solstitialis)*, bindweed (*Convovulus arvensis*), black mustard (*Brasica niger*), prickly lettuce (*Lactuca serriola*), turkey mullein (*Eremocarpus setigerus*), soft chess (*Bromus hordeaceous*), annual rygrass (*Lolium multiflorum*), Medusae-head grass (*Taeniatherum caput-medusae*) and long-beaked stork's-bill (*Erodium botrys*). These areas could support wildlife such as the western fence lizard (*Sceloporus occidentalis*), western meadowlark (*Sturnella neglecta*), black-tailed rabbit (*Lepus californicus*), western harvest mouse (*Reithrodontomys megalotis*), California vole (*Microtus californicus*), northern harrier (*Circus cyaneus*), and American kestrel (*Falco sparverius*).

Table 3. Species with Potential to Occur in the Study Area Based on USFWS and CNDDB Species Lists

Species		Listing Status[1]	Habitat Association	Blooming Period	Potential to Occur[2]
SCIENTIFIC NAME	COMMON NAME				
Astragalus tener var. tener	Allkali Milk Vetch	CNPS 1B	Playas, valley and foothill grassland with adobe clay soils, and alkaline vernal pools	March-June	None. No suitable habitat. Was not found during protocol-level surveys.
Atriplex cordulata	Heartscale	CNPS 1B	Chenopod scrub/meadows and seeps/valley and foothill grassland/saline or alkaline soils	April-October	None. No suitable habitat. Was not found during protocol-level surveys
Atriplex depressa	Brittlescale	CNPS 1B	Chenopod scrub/meadows and seeps/valley and foothill grassland/saline or alkaline soils/vernal pools/playas/alkaline clay soils	May-October	None. No suitable habitat. Was not found during protocol-level surveys.
Atriplex joaquiniana	San Joaquin Spearscale	CNPS 1B	Chenopod scrub/meadows and seeps/valley and foothill grassland/saline or alkaline soils/ playas/alkaline clay soils	April-October	None. No suitable habitat. Was not found during protocol-level surveys
California macrophylla	Round-leaved Filaree	CNPS 1B	Cismontane woodland and valley and foothill grassland with clay soils.	March-May	None. Not found during surveys.
Carex lenticularis var. limnophila	Lakeshore Sedge	CNPS 2	Bogs and fens, marshes and swamps, and gravelly beaches and shores in north coast coniferous forests.	June-August	None. No suitable habitat present within the survey area. Not found during surveys.
Cordylanthus palmatus	Palmate-bracted Bird's-beak	FE, SE, CNPS 1B	Chenopod scrub/valley and foothill grassland/alkaline soils	May-October	None. No suitable habitat. Was not found during protocol-level surveys
Downingia pusilla	Dwarf Downingia	CNPS 2	Valley and foothill grassland/vernal pools	March-May	None. No suitable habitat. Was not found during protocol-level surveys

Species		Listing Status[1]	Habitat Association	Blooming Period	Potential to Occur[2]
Gratiola heterosepala	Boggs Lake Hedge-hyssop	SE, CNPS 1B	Marshes and swamps/vernal pools/clay	April-August	None. No suitable habitat. Was not found during protocol-level surveys
Hibiscus lasiocarpus	Rose-mallow	CNPS 2	Marshes and swamps	June-September	None. No suitable habitat. Was not found during protocol-level surveys
Juncus leiospermus var. ahartii	Ahart's Dwarf Rush	CNPS 1B	Valley and foothill grassland	March-May	None. No suitable habitat. Was not found during protocol-level surveys
Legenere limosa	Legenere	CNPS 1B	Vernal pools	April-June	None. No suitable habitat. Was not found during protocol-level surveys
Lepidium latipes var. heckardii	Heckard's Pepper-grass	CNPS 1B	Valley and foothill grassland (alkaline flats)	March-May	None. No suitable habitat. Was not found during protocol-level surveys
Navarretia leucocephala ssp. bakeri	Baker's Navarretia	CNPS 1B	Cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grassland, and mesic vernal pools.	April-July	None. No suitable habitat. Was not found during protocol-level surveys
Sagittaria sandfordii	Sanford's Arrowhead	CNPS 1B	Marshes and swamps (assorted shallow freshwater)	May-October	None. No suitable habitat. Was not found during protocol-level surveys

[1] Listing Status

Federal Listing Codes
FE Federally endangered

California State Listing Codes
SE State endangered

California Native Plant Society's Listing Codes
1B Rare or endangered in California
2 Rare, threatened, or endangered in California, but more common elsewhere.

[2] Potential to Occur determinations were made following habitat assessments and floristic surveys.

Irrigated Row and Field Crops

Irrigated row and field crops can be annuals, such as cotton and lettuce, or perennials, such as alfalfa and strawberries (*Fragaria ananassa*). The annuals are usually planted in the spring and harvested in the summer or fall. They may also be rotated with other irrigated crops after the fall harvest of a previous crop, dry farmed, and then harvested in the late spring. Irrigated row and field crop at the time of surveys included alfalfa, tomatoes, sunflowers, and corn. Fallow fields and along the periphery of the active fields consisted of disturbed annual grassland vegetation and associated wildlife species as described in the previous section. Approximately 1167 acres of irrigated row crops exist within the survey area.

Orchards

As stated by Mayer and Laudenslayer (1988), orchards are single species tree dominated habitats arranged in a linear pattern and often spaced to prevent tree crowns from touching. Often the understory in orchards are managed to prevent herbaceous growth. Orchard crop species observed within the survey area included almonds and walnuts. Approximately 145 acres of orchards occur onsite. Wildlife species known to utilize these orchard crops include northern flicker (*Colaptes auratus*), scrub jay (*Aphelocoma californica*), American crow (*Corvus brachyrhynchos*), plain titmouse (*Parus inornatus*), Brewer's blackbird (*Euphagus cyanocephalus*), house finch (*Carpodacus mexicanus*), and California ground squirrel (*Spermophilus beecheyi*).

Water

Water habitats include Waters of the U.S. dominated by open water such as ponds, rivers, and lakes. In the survey area, rivers, canals, ponds, and irrigation ditches delineated were included in this habitat type. Water habitats are typically void of vegetation, however, fresh emergent vegetation is often associated with the banks of water habitats and occasionally within slow moving waters including canals and streams. Dominant species within the vegetated irrigation canals in the survey area include cattails (*Typha* sp.), vervain (*Verbena* sp.), yellow nutsedge (*Cyperus esculentus*), tall cyperus (*Cyperus eragrostis*) and floating primrose willow (*Ludwigia peploides*). Wildlife that typically utilize this habitat type include northern harrier (*Circus cyaneus*), killdeer (*Charadrius vociferous*), western meadowlark (*Sturnella neglecta*), red-winged blackbird (*Agelaius phoeniceus*), gopher snake (*Pituophis melanoleucus catenifer*), garter snake (*Thamnophis couchi*), and pacific tree frog (*Hyla regilla*). There are approximately 60 acres of open water habitats within the survey area (please refer to the Drat Delineation of Waters of the U.S. for the PG&E Line 407 Project prepared by GCI in August 2007 for a detailed description of the Waters of the U.S. delineated onsite).

Rice

A small portion of the study area along Riego Road is active rice fields. Although they can be considered a type of fresh emergent wetland, rice fields are subject to human-induced water regimes and function as an agricultural crop rather than a naturally occurring wetland. However, in the Sacramento Valley they do support many of the same species that naturally occurring fresh emergent wetlands do (see above description),

in addition to arrowhead (*Sagittaria* ssp.), water plantain (*Alisma lanceolata*), and numerous waterfowl, egrets, and white-faced ibises (*Plegadis chihi*). Rice fields can also provide habitat for the federally and state threatened giant garter snake (*Thamnophis gigas*). Approximately 681 acres of rice fields occur within the survey area.

Valley-foothill Riparian

Riparian habitat is critical for many species, providing food, water, migration and dispersal corridors and escape, nesting and thermal cover for a very high density of California's wildlife. Mayer and Laudenslayer (1988) report that more than 50 reptiles and amphibian species, 147 bird species and 55 mammal species can occur in the California's Central Valley riparian communities. The riparian habitat onsite can be found within the vegetated irrigation canals running through the survey area and along the banks of the Sacramento River. There are approximately 18 acres of riparian habitat within the survey area.

Dominant vegetation in the canopy layer of the riparian habitat onsite included cottonwood (*Populus fremontii*), Goodding's willow (*Salix gooddingii*), and valley oak (*Quercus lobata*). Understory plants included wild grape (*Vitis californica*), wild rose (*Rosa* ssp.), Himalayan blackberry (*Rubus discolor*), blue elderberry (*Sambucus mexicana*) and mixed willow species (*Salix* ssp.). The herbaceous layer consisted of nutsedges (*Cyperus* ssp.), cattails, spikerushes (*Eleocharis* ssp.), and grasses including canary grass (*Phalaris* ssp.). Characteristic wildlife in this habitat type includes egrets (*Casmerodius albus*), ducks, raptor species, swallows, bats, broad-footed mole (*Scapanus latimanus*), striped skunk (*Mephitis mephitis*), and raccoon (*Procyon lotor*).

Disturbed / Urban

Approximately 273 acres of the survey area is characterized as disturbed/urban, which includes disked fallow croplands, disturbed roadsides, commercial and residential developments, and associated infrastructure (i.e. roads). As stated by Mayer and Laudenslayer (1988), most units of the urban vegetation are relatively static in species composition due to maintenance. Species commonly associated with the urban environment include scrub jays, raccoons, European starlings (*Sturnus vulgaris*), mockingbirds (*Mimus polyglottos*), house finches, striped skunks, opossum (*Didelphis virginiana*), and rock doves (*Columba livia*).

Forested Upland

Forested uplands are areas dominated by an upland tree canopy including oak woodlands and pine forests. Within the survey area the forested upland areas are dominated by oaks (*Quercus* ssp.) but are small and occur interspersed with annual grassland and urban habitat types. There are approximately 13 acres of forested upland areas within the survey area. Wildlife species utilizing these areas typically include American crows, scrub jays, mourning doves (*Zenaida macroura*), starlings, mockingbirds, and western gray squirrels (*Sciurus griseus*).

Special-status Plant Species Known to Occur

No special-status plant species were observed within the survey boundaries during the protocol-level surveys. Due to the highly disturbed nature of the survey area, no suitable habitat for special-status plants occurs onsite.

Potential Effects

No potential impacts to special-status plants are expected to occur within the survey area due to the proposed project.

Additional Recommendations

Though no special-status plant species were observed onsite, an additional survey should be performed if construction activity does not occur within 3 years. Seeds of plants can be easily transferred in to the project area in a 3-year period by wind or water and can germinate should suitable conditions occur. If special-status plants should be observed at that time, the following avoidance and minimization recommendations taken from the CNPS Policy on Mitigation Guidelines Regarding Impacts to Rare, Threatened, and Endangered Plants (February 1991, revised April 1998) should be followed. California Native Plant Society List 1B and 2 plants meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) or Section 2062 and 2067 (California Endangered Species Act) of the California Department of Fish and Game Code, and are eligible for state listing. It is mandatory that they be fully considered during preparation of environmental documents relating to CEQA. List 1B and 2 plants may require mitigation; these mitigation options are listed below (CEQA, Section 15370):

1) Avoiding the impacts altogether by not taking a certain action.
2) Minimizing impacts by limiting the degree or magnitude of the action.
3) Rectifying the impacts by repairing, rehabilitating, or restoring the impacted environment.

4) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the project.
5) Compensating for the impacts by replacing or providing substitute resources or environments.

Conclusions and Determinations

Due to the highly disturbed nature of the survey area, no potential exists for special-status plant species to occur onsite and thus, no impacts to these species are expected to result from the proposed project.

References

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_____. California Wildlife Habitat Relationship System. California Department of Fish and Game Biogeographic Data Branch. Available online at: http://www.dfg.ca.gov/whdab/html/wildlife_habitats.html#Agricultural

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Personal Observation

Elena Alfieri, botanist, Gallaway Consulting, Inc. 2007
Brooks Taylor, biologist, Gallaway Consulting, Inc. 2007
Breanna Owens, biologist, Gallaway Consulting, Inc. 2007

Appendix A: CNDDB, CNPS, and USFWS Species Lists

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species
that Occur in or may be Affected by Projects in the
WOODLAND (514A)
U.S.G.S. 7 1/2 Minute Quad

Database Last Updated: June 9, 2007

Document Number: 070806023552

Species of Concern - The Sacramento Fish & Wildlife Office no longer maintaina a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See www.fws.gov/sacramento/es/spp_concern.htm for more information and links to these sensitive species lists.

Red-Legged Frog Critical Habitat - The Service has designated final critical habitat for the California red-legged frog. The designation became final on May 15, 2006. See our map index.

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas

giant garter snake (T)

Candidate Species

Fish

Oncorhynchus tshawytscha
Central Valley fall/late fall-run chinook salmon (C) (NMFS)
Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regard-less of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the quad or quads covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

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  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compen-sates for project-related loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our critical habitat page for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before

the end of your project.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 04, 2007.

Inventory of Rare and Endangered Plants

v7-07c 7-09-07

Status: search results - Mon, Aug. 6, 2007, 13:34 b

{QUADS_123} =~ m/514A|530C|530D|513B|513C|529C|514B|514(Search

Tip: Words meant to be searched as a unit should be wrapped in quotes, e.g., "coastal dunes". [all tips and help.] [search history]

Your Quad Selection: Woodland (514A) 3812167, Zamora (530C) 3812178, Eldorado Bend (530D) 3812177, Grays Bend (513B) 3812166, Davis (513C) 3812156, Knights Landing (529C) 3812176, Madison (514B) 3812168, Winters (514C) 3812158, Merritt (514D) 3812157

Hits 1 to 11 of 11

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	**Astragalus tener var. tener**	alkali milk-vetch	Fabaceae	List 1B.2
		1	**Atriplex cordulata**	heartscale	Chenopodiaceae	List 1B.2
		1	**Atriplex depressa**	brittlescale	Chenopodiaceae	List 1B.2
		1	**Atriplex joaquiniana**	San Joaquin spearscale	Chenopodiaceae	List 1B.2
		1	**California macrophylla**	round-leaved filaree	Geraniaceae	List 1B.1
		1	**Carex lenticularis var. limnophila**	lakeshore sedge	Cyperaceae	List 2.2
		1	**Cordylanthus palmatus**	palmate-bracted bird's-beak	Scrophulariaceae	List 1B.1
		1	**Hibiscus lasiocarpus**	rose-mallow	Malvaceae	List 2.2
		1	**Lepidium latipes var. heckardii**	Heckard's pepper-grass	Brassicaceae	List 1B.2
		1	**Lessingia hololeuca**	woolly-headed lessingia	Asteraceae	List 3
		1	**Navarretia leucocephala ssp. bakeri**	Baker's navarretia	Polemoniaceae	List 1B.1

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.


powered by
WODA

California Department of Fish and Game
Natural Diversity Database
Woodland Quad

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	American badger *Taxidea taxus*	AMAJF04010			G5	S4	SC
2	Swainson's hawk *Buteo swainsoni*	ABNKC19070		Threatened	G5	S2	
3	Valley Oak Woodland	CTT71130CA			G3	S2.1	
4	mountain plover *Charadrius montanus*	ABNNB03100			G2	S2?	SC
5	pallid bat *Antrozous pallidus*	AMACC10010			G5	S3	SC
6	valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened		G3T2	S2	

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species
that Occur in or may be Affected by Projects in the
VERONA (529D)
U.S.G.S. 7 1/2 Minute Quad

Database Last Updated: June 9, 2007

Document Number: 070806023658

Species of Concern - The Sacramento Fish & Wildlife Office no longer maintaina a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See www.fws.gov/sacramento/es/spp_concern.htm for more information and links to these sensitive species lists.

Red-Legged Frog Critical Habitat - The Service has designated final critical habitat for the California red-legged frog. The designation became final on May 15, 2006. See our map index.

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Candidate Species

Fish

Oncorhynchus tshawytscha
Central Valley fall/late fall-run chinook salmon (C) (NMFS)
Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

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Plants

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what's in the nine surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

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Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

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Inventory of Rare and Endangered Plants

v7-07c 7-09-07

Status: search results - Mon, Aug. 6, 2007, 13:00 b

{QUADS_123} =~ m/529D|513A|513B|528B|528C|512B|529A|529E Search

Tip: Want to search by habitat? Try the **Checkbox and Preset** search page.[all tips and help.]
[search history]

Your Quad Selection: Verona (529D) 3812175, Taylor Monument (513A) 3812165, Grays Bend (513B) 3812166, Sheridan (528B) 3812184, Pleasant Grove (528C) 3812174, Rio Linda (512B) 3812164, Nicolaus (529A) 3812185, Sutter Causeway (529B) 3812186, Knights Landing (529C) 3812176

Hits 1 to 10 of 10

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	Astragalus tener var. tener	alkali milk-vetch	Fabaceae	List 1B.2
		1	Atriplex depressa	brittlescale	Chenopodiaceae	List 1B.2
		1	Atriplex joaquiniana	San Joaquin spearscale	Chenopodiaceae	List 1B.2
		1	Carex lenticularis var. limnophila	lakeshore sedge	Cyperaceae	List 2.2
		1	Cordylanthus palmatus	palmate-bracted bird's-beak	Scrophulariaceae	List 1B.1
		1	Downingia pusilla	dwarf downingia	Campanulaceae	List 2.2
		1	Gratiola heterosepala	Boggs Lake hedge-hyssop	Scrophulariaceae	List 1B.2
		1	Hibiscus lasiocarpus	rose-mallow	Malvaceae	List 2.2
		1	Legenere limosa	legenere	Campanulaceae	List 1B.1
		1	Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	List 1B.2

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

California Department of Fish and Game
Natural Diversity Database
Verona Quad

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020			G2	S2	SC
2	Swainson's hawk *Buteo swainsoni*	ABNKC19070		Threatened	G5	S2	
3	bank swallow *Riparia riparia*	ABPAU08010		Threatened	G5	S2S3	
4	black-crowned night heron *Nycticorax nycticorax*	ABNGA11010			G5	S3	
5	burrowing owl *Athene cunicularia*	ABNSB10010			G4	S2	SC
6	giant garter snake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2G3	S2S3	
7	tricolored blackbird *Agelaius tricolor*	ABPBXB0020			G2G3	S2	SC
8	vernal pool fairy shrimp *Branchinecta lynchi*	ICBRA03030	Threatened		G3	S2S3	
9	vernal pool tadpole shrimp *Lepidurus packardi*	ICBRA10010	Endangered		G3	S2S3	

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species
that Occur in or may be Affected by Projects in the
TAYLOR MONUMENT (513A)
U.S.G.S. 7 1/2 Minute Quad

Database Last Updated: June 9, 2007

Document Number: 070806023745

Species of Concern - The Sacramento Fish & Wildlife Office no longer maintaina a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See www.fws.gov/sacramento/es/spp_concern.htm for more information and links to these sensitive species lists.

Red-Legged Frog Critical Habitat - The Service has designated final critical habitat for the California red-legged frog. The designation became final on May 15, 2006. See our map index.

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Candidate Species

Fish

Oncorhynchus tshawytscha
Central Valley fall/late fall-run chinook salmon (C) (NMFS)
Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.
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Critical Habitat - Area essential to the conservation of a species.
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Critical Habitat

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Updates

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Inventory of Rare and Endangered Plants

v7-07b 4-12-07

Status: search results - Wed, Jun. 20, 2007 11:47 c

{QUADS_123} =~ m/513A|529C|529D|512B|512C|528C|513B|513(Search

Tip: Having trouble with a multi-word search? Try a single word, e.g. `ginger` or `cobra`.
[all tips and help.][search history]

Your Quad Selection: Taylor Monument (513A) 3812165, Knights Landing (529C) 3812176, Verona (529D) 3812175, Rio Linda (512B) 3812164, Sacramento East (512C) 3812154, Pleasant Grove (528C) 3812174, Grays Bend (513B) 3812166, Davis (513C) 3812156, Sacramento West (513D) 3812155

Hits 1 to 12 of 12

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	Astragalus tener var. tener	alkali milk-vetch	Fabaceae	List 1B.2
		1	Atriplex cordulata	heartscale	Chenopodiaceae	List 1B.2
		1	Atriplex depressa	brittlescale	Chenopodiaceae	List 1B.2
		1	Atriplex joaquiniana	San Joaquin spearscale	Chenopodiaceae	List 1B.2
		1	Carex lenticularis var. limnophila	lakeshore sedge	Cyperaceae	List 2.2
		1	Cordylanthus palmatus	palmate-bracted bird's-beak	Scrophulariaceae	List 1B.1
		1	Downingia pusilla	dwarf downingia	Campanulaceae	List 2.2
		1	Gratiola heterosepala	Boggs Lake hedge-hyssop	Scrophulariaceae	List 1B.2
		1	Hibiscus lasiocarpus	rose-mallow	Malvaceae	List 2.2
		1	Legenere limosa	legenere	Campanulaceae	List 1B.1
		1	Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	List 1B.2
		1	Sagittaria sanfordii	Sanford's arrowhead	Alismataceae	List 1B.2

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

California Department of Fish and Game
Natural Diversity Database
Taylor Monument Quad

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020			G2	S2	SC
2	Swainson's hawk *Buteo swainsoni*	ABNKC19070		Threatened	G5	S2	
3	black-crowned night heron *Nycticorax nycticorax*	ABNGA11010			G5	S3	
4	burrowing owl *Athene cunicularia*	ABNSB10010			G4	S2	SC
5	giant garter snake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2G3	S2S3	
6	great egret *Ardea alba*	ABNGA05010			G5	S4	
7	snowy egret *Egretta thula*	ABNGA06030			G5	S4	
8	tricolored blackbird *Agelaius tricolor*	ABPBXB0020			G2G3	S2	SC
9	valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	IICOL48011	Threatened		G3T2	S2	

California Department of Fish and Game
Natural Diversity Database
Grays Bend Quad

	Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1	Heckard's pepper-grass *Lepidium latipes var. heckardii*	PDBRA1M0K1			G4T1	S1.2	1B.2
2	Sacramento splittail *Pogonichthys macrolepidotus*	AFCJB34020			G2	S2	SC
3	San Joaquin spearscale *Atriplex joaquiniana*	PDCHE041F3			G2	S2.1	1B.2
4	Swainson's hawk *Buteo swainsoni*	ABNKC19070		Threatened	G5	S2	
5	alkali milk-vetch *Astragalus tener var. tener*	PDFAB0F8R1			G1T1	S1.1	1B.2
6	brittlescale *Atriplex depressa*	PDCHE042L0			G2Q	S2.2	1B.2
7	giant garter snake *Thamnophis gigas*	ARADB36150	Threatened	Threatened	G2G3	S2S3	
8	mountain plover *Charadrius montanus*	ABNNB03100			G2	S2?	SC
9	palmate-bracted bird's-beak *Cordylanthus palmatus*	PDSCR0J0J0	Endangered	Endangered	G1	S1.1	1B.1
10	tricolored blackbird *Agelaius tricolor*	ABPBXB0020			G2G3	S2	SC
11	western snowy plover *Charadrius alexandrinus nivosus*	ABNNB03031	Threatened		G4T3	S2	SC
12	white-faced ibis *Plegadis chihi*	ABNGE02020			G5	S1	SC

Sacramento Fish & Wildlife Office

Federal Endangered and Threatened Species
that Occur in or may be Affected by Projects in the
GRAYS BEND (513B)
U.S.G.S. 7 1/2 Minute Quad

Database Last Updated: June 9, 2007

Document Number: 070806023834

Species of Concern - The Sacramento Fish & Wildlife Office no longer maintaina a list of species of concern. However, various other agencies and organizations maintain lists of at-risk species. These lists provide essential information for land management planning and conservation efforts. See www.fws.gov/sacramento/es/spp_concern.htm for more information and links to these sensitive species lists.

Red-Legged Frog Critical Habitat - The Service has designated final critical habitat for the California red-legged frog. The designation became final on May 15, 2006. See our map index.

Listed Species

Invertebrates

Branchinecta lynchi
vernal pool fairy shrimp (T)

Desmocerus californicus dimorphus
valley elderberry longhorn beetle (T)

Lepidurus packardi
vernal pool tadpole shrimp (E)

Fish

Acipenser medirostris
green sturgeon (T) (NMFS)

Hypomesus transpacificus
delta smelt (T)

Oncorhynchus mykiss
Central Valley steelhead (T) (NMFS)
Critical habitat, Central Valley steelhead (X) (NMFS)

Oncorhynchus tshawytscha
Central Valley spring-run chinook salmon (T) (NMFS)
Critical Habitat, Central Valley spring-run chinook (X) (NMFS)
Critical habitat, winter-run chinook salmon (X) (NMFS)
winter-run chinook salmon, Sacramento River (E) (NMFS)

Amphibians

Ambystoma californiense
California tiger salamander, central population (T)

Rana aurora draytonii
California red-legged frog (T)

Reptiles

Thamnophis gigas
giant garter snake (T)

Birds

Charadrius alexandrinus nivosus
western snowy plover (T)

Plants

Cordylanthus palmatus
palmate-bracted bird's-beak (E)

Candidate Species

Fish

Oncorhynchus tshawytscha
Central Valley fall/late fall-run chinook salmon (C) (NMFS)
Critical habitat, Central Valley fall/late fall-run chinook (C) (NMFS)

Birds

Coccyzus americanus occidentalis
Western yellow-billed cuckoo (C)

Key:

(E) *Endangered* - Listed (in the Federal Register) as being in danger of extinction.
(T) *Threatened* - Listed as likely to become endangered within the foreseeable future.
(P) *Proposed* - Officially proposed (in the Federal Register) for listing as endangered or threatened.
(NMFS) Species under the Jurisdiction of the National Marine Fisheries Service. Consult with them directly about these species.
Critical Habitat - Area essential to the conservation of a species.
(PX) *Proposed Critical Habitat* - The species is already listed. Critical habitat is being proposed for it.
(C) *Candidate* - Candidate to become a proposed species.
(X) *Critical Habitat* designated for this species

Important Information About Your Species List

How We Make Species Lists

We store information about endangered and threatened species lists by U.S. Geological Survey 7½ minute quads. The United States is divided into these quads, which are about the size of San Francisco.

The animals on your species list are ones that occur within, or may be affected by projects within, the quads covered by the list.

- Fish and other aquatic species appear on your list if they are in the same watershed as your quad or if water use in your quad might affect them.
- Birds are shown regardless of whether they are resident or migratory. Relevant birds on the county list should be considered regard-less of whether they appear on a quad list.

Plants

Any plants on your list are ones that have actually been observed in the quad or quads covered by the list. Plants may exist in an area without ever having been detected there. You can find out what's in the nine surrounding quads through the California Native Plant Society's online Inventory of Rare and Endangered Plants.

Surveying

Some of the species on your list may not be affected by your project. A trained biologist or botanist, familiar with the habitat requirements of the species on your list, should determine whether they or habitats suitable for them may be affected by your project. We recommend that your surveys include any proposed and candidate species on your list.

For plant surveys, we recommend using the Guidelines for Conducting and Reporting Botanical Inventories. The results of your surveys should be published in any environmental documents prepared for your project.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as listed above are fully protected under the Endangered Species Act of 1973, as amended. Section 9 of the Act and its implementing regulations prohibit the take of a federally listed wildlife species. Take is defined by the Act as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect" any such animal.

> Take may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or shelter (50 CFR §17.3).

Take incidental to an otherwise lawful activity may be authorized by one of two procedures:

- If a Federal agency is involved with the permitting, funding, or carrying out of a project that may result in take, then that agency must engage in a formal consultation with the Service.

  During formal consultation, the Federal agency, the applicant and the Service work together to avoid or minimize the impact on listed species and their habitat. Such consultation would result in a biological opinion by the Service addressing the anticipated effect of the project on listed and proposed species. The opinion may authorize a limited level of incidental take.

- If no Federal agency is involved with the project, and federally listed species may be taken as part of the project, then you, the applicant, should apply for an incidental take permit. The Service may issue such a permit if you submit a satisfactory conservation plan for the species that would be affected by your project.

  Should your survey determine that federally listed or proposed species occur in the area and are likely to be affected by the project, we recommend that you work with this office and the California Department of Fish and Game to develop a plan that minimizes the project's direct and indirect impacts to listed species and compen-sates for project-related

loss of habitat. You should include the plan in any environmental documents you file.

Critical Habitat

When a species is listed as endangered or threatened, areas of habitat considered essential to its conservation may be designated as critical habitat. These areas may require special management considerations or protection. They provide needed space for growth and normal behavior; food, water, air, light, other nutritional or physiological requirements; cover or shelter; and sites for breeding, reproduction, rearing of offspring, germination or seed dispersal.

Although critical habitat may be designated on private or State lands, activities on these lands are not restricted unless there is Federal involvement in the activities or direct harm to listed wildlife.

If any species has proposed or designated critical habitat within a quad, there will be a separate line for this on the species list. Boundary descriptions of the critical habitat may be found in the Federal Register. The information is also reprinted in the Code of Federal Regulations (50 CFR 17.95). See our critical habitat page for maps.

Candidate Species

We recommend that you address impacts to candidate species. We put plants and animals on our candidate list when we have enough scientific information to eventually propose them for listing as threatened or endangered. By considering these species early in your planning process you may be able to avoid the problems that could develop if one of these candidates was listed before the end of your project.

Wetlands

If your project will impact wetlands, riparian habitat, or other jurisdictional waters as defined by section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act, you will need to obtain a permit from the U.S. Army Corps of Engineers. Impacts to wetland habitats require site specific mitigation and monitoring. For questions regarding wetlands, please contact Mark Littlefield of this office at (916) 414-6580.

Updates

Our database is constantly updated as species are proposed, listed and delisted. If you address proposed and candidate species in your planning, this should not be a problem. However, we recommend that you get an updated list every 90 days. That would be November 04, 2007.

Inventory of Rare and Endangered Plants

v7-07b 4-12-07

Status: search results - Wed, Jun. 20, 2007 12:03 c

{QUADS_123} =~ m/513B|529C|529D|514A|514D|530D|513A|513(Search

Tip: Word fragments must be completed with a wildcard, e.g., `esch* hyp*` for Eschscholzia hypecoides.[all tips and help.][search history]

Your Quad Selection: Grays Bend (513B) 3812166, Knights Landing (529C) 3812176, Verona (529D) 3812175, Woodland (514A) 3812167, Merritt (514D) 3812157, Eldorado Bend (530D) 3812177, Taylor Monument (513A) 3812165, Davis (513C) 3812156, Sacramento West (513D) 3812155

Hits 1 to 9 of 9

Requests that specify topo quads will return only Lists 1-3.

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

open	save	hits	scientific	common	family	CNPS
		1	Astragalus tener var. tener	alkali milk-vetch	Fabaceae	List 1B.2
		1	Atriplex cordulata	heartscale	Chenopodiaceae	List 1B.2
		1	Atriplex depressa	brittlescale	Chenopodiaceae	List 1B.2
		1	Atriplex joaquiniana	San Joaquin spearscale	Chenopodiaceae	List 1B.2
		1	Carex lenticularis var. limnophila	lakeshore sedge	Cyperaceae	List 2.2
		1	Cordylanthus palmatus	palmate-bracted bird's-beak	Scrophulariaceae	List 1B.1
		1	Hibiscus lasiocarpus	rose-mallow	Malvaceae	List 2.2
		1	Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	List 1B.2
		1	Lessingia hololeuca	woolly-headed lessingia	Asteraceae	List 3

To save selected records for later study, click the ADD button.

ADD checked items to Plant Press | check all | check none

Selections will appear in a new window.

No more hits.

Appendix B: Botanist Qualifications

Elena Alfieri
BOTANIST
Gallaway Consulting, Inc.
117 Meyers Street, Suite 110, Chico, CA 95928
Starting and ending dates: May 2006 – present

EDUCATION

BACHELOR OF SCIENCE in EVIRONMENTAL BIOLOGY AND MANAGEMENT, BOTANICAL EMPHASIS – *Interdisciplinary Degree*
Department of Biological Sciences, University of California, Davis
Awarded in December 2004

EXPERIENCE

Elena Alfieri has over 2 years of experience conducting botanical/rare plant surveys, wetland delineations, and valley elderberry longhorn beetle surveys (VELB) in project sites ranging from 1 to 2,000 acres, and habitat classification and mapping for the U.S. Department of Agriculture Forest Service. Ms. Alfieri has also acquired extensive knowledge of greenhouse management and exotic and native plant maintenance and identification through her many years working for the U.C. Davis Botanical Conservatory. Course work for Ms. Alfieri during her attendance at U.C. Davis included multiple plant taxonomy, plant biology and paleobotany classes. During her time at Gallaway Consulting, Inc. Ms. Alfieri has gained experience in assisting with protocol-level wet season vernal pool invertebrate surveys. Her areas of expertise include general botanical surveys and plant identification, rare plant surveys, and wetland delineations. Her recent work includes conducting protocol-level Butte County meadowfoam surveys for the Byrne Habitat Conservation Bank in Chico, California.

Appendix C: USFWS and CNPS Survey Protocol

Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Plants

January, 2000

These guidelines describe protocols for conducting botanical inventories for federally listed, proposed and candidate plants, and describe minimum standards for reporting results. The Service will use, in part, the information outlined below in determining whether the project under consideration may affect any listed, proposed. or candidate plants, and in determining the direct, indirect, and cumulative effects.

Field inventories should be conducted in a manner that will locate listed, proposed, or candidate species (target species) that may be present. The entire study area requires a botanical inventory, except developed agricultural lands. The field investigator(s) should:

1. Conduct inventories at the appropriate times of year when target species are present and identifiable. Inventories will include all potential habitats. Multiple site visits during a field season may be necessary to make observations during the appropriate phenological stage of all target species.
2. If available, use a regional or local reference population to obtain a visual image of the target species and associated habitat(s). If access to reference populations(s) is not available, investigators should study specimens from local herbaria.
3. List every species observed and compile a comprehensive list of vascular plants for the entire project site. Vascular plants need to be identified to a taxonomic level which allows rarity to be determined.
4. Report results of botanical field inventories that include:

a. a description of the biological setting, including plant community, topography, soils, potential habitat of target species, and an evaluation of environmental conditions, such as timing or quantity of rainfall, which may influence the performance and expression of target species

b. a map of project location showing scale, orientation, project boundaries, parcel size, and map quadrangle name

c. survey dates and survey methodology(ies)

d. if a reference population is available, provide a written narrative describing the target species reference population(s) used, and date(s) when observations were made

e. a comprehensive list of all vascular plants occurring on the project site for each habitat type

f. current and historic land uses of the habitat(s) and degree of site alteration

g. presence of target species off-site on adjacent parcels, if known
h. an assessment of the biological significance or ecological quality of the project site in a local and regional context
5. If target species is(are) found, report results that additionally include: a. a map showing federally listed, proposed and candidate species distribution as they relate to the proposed project b. if target species is (are) associated with wetlands, a description of the direction and integrity of flow of surface hydrology. If target species is (are) affected by adjacent off-site hydrological influences, describe these factors. c. the target species phenology and microhabitat, an estimate of the number of individuals of each target species per unit area; identify areas of high, medium and low density of target species over the project site, and provide acres of occupied habitat of target species. Investigators could provide color slides, photos or color copies of photos of target species or representative habitats to support information or descriptions contained in reports. d. the degree of impact(s), if any, of the proposed project as it relates to the potential unoccupied habitat of target habitat.
6. Document findings of target species by completing California Native Species Field Survey Form(s) and submit form(s) to the Natural Diversity Data Base maintained by the Natural Heritage Division of the California Department of Fish & Game. Documentation of determinations and/or voucher specimens may be useful in cases of taxonomic ambiguities, habitat or range extensions.
7. Report as an addendum to the original survey, any change in abundance and distribution of target plants in subsequent years. Project sites with inventories older than 3 years from the current date of project proposal submission will likely need additional survey.
8. Adverse conditions may prevent investigator(s) from determining presence or identifying some target species in potential habitat(s) of target species. Disease, drought, predation, or herbivory may preclude the presence or identification of target species in any year. An additional botanical inventory(ies) in a subsequent year(s) may be required if adverse conditions occur in a potential habitat(s). Investigator(s) may need to discuss such conditions.

CNPS Botanical Survey Guidelines

CALIFORNIA NATIVE PLANT SOCIETY
December 9, 1983
Revised June 2, 2001

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how surveys should be conducted, and what information should be contained in the survey report. The California Native Plant Society recommends that lead agencies not accept the results of surveys unless they are conducted and reported according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all botanical resources, including special status plants (rare, threatened, and endangered plants) and plant (vegetation) communities. Special status plants are not limited to those that have been listed by state and federal agencies but include any plants that, based on all available data, can be shown to be rare, threatened, or endangered under the following definitions:

   > A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.[1]

   Rare plant (vegetation) communities are those communities that are of highly limited distribution. These communities may or may not contain special status plants. The most current version of the California Natural Diversity Database's *List of California Terrestrial Natural Communities*[2] should be used as a guide to the names and status of communities.

   Consistent with the California Native Plant Society's goal of preserving plant biodiversity on a regional and local scale, and with California Environmental Quality Act environmental impact assessment criteria[3], surveys should also assess impacts to locally significant plants. Both plants and plant communities can be considered significant if their local occurrence is on the outer limits of known distribution, a range extension, a rediscovery, or rare or uncommon in a local context (such as within a county or region). Lead agencies should address impacts to these locally unique botanical resources regardless of their status elsewhere in the state.

2. Botanical surveys must be conducted to determine if, or to the extent that, special status or locally significant plants and plant communities will be affected by a proposed project when any natural vegetation occurs on the site and the project has the potential for direct or indirect effects on vegetation.

3. Those conducting botanical surveys must possess the following qualifications:
   a. Experience conducting floristic field surveys;
   b. Knowledge of plant taxonomy and plant community ecology and classification;
   c. Familiarity with the plants of the area, including special status and locally significant plants;

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[1] California Environmental Quality Act Guidelines, §15065 and §15380.
[2] List of California Terrestrial Natural Communities. California Department of Fish and Game Natural Diversity Database. Sacramento, CA.
[3] California Environmental Quality Act Guidelines, Appendix G (Initial Study Environmental Checklist).

d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
e. Experience with analyzing impacts of a project on native plants and communities.

4. Botanical surveys should be conducted in a manner that will locate any special status or locally significant plants or plant communities that may be present. Specifically, botanical surveys should be:

   a. Conducted in the field at the proper times of year when special status and locally significant plants are both evident and identifiable. When special status plants are known to occur in the type(s) of habitat present in the project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the plants are identifiable at the time of survey.

   b. Floristic in nature. A floristic survey requires that every plant observed be identified to species, subspecies, or variety as applicable. In order to properly characterize the site, a complete list of plants observed on the site shall be included in every botanical survey report. In addition, a sufficient number of visits spaced throughout the growing season is necessary to prepare an accurate inventory of all plants that exist on the site. The number of visits and the timing between visits must be determined by geographic location, the plant communities present, and the weather patterns of the year(s) in which the surveys are conducted.

   c. Conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques[4,5]. Collections (voucher specimens) of special status and locally significant plants should be made, unless such actions would jeopardize the continued existence of the population. A single sheet should be collected and deposited at a recognized public herbarium for future reference. All collections shall be made in accordance with applicable state and federal permit requirements. Photography may be used to document plant identification only when the population cannot withstand collection of voucher specimens.

   d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas. All habitats within the project site must be surveyed thoroughly in order to properly inventory and document the plants present. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity.

   e. Well documented. When a special status plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5-minute topographic map with the occurrence mapped, shall be completed, included within the survey report, and separately submitted to the California Natural Diversity Database. Population boundaries should be mapped as accurately as possible. The number of individuals in each population should be counted or estimated, as appropriate.

5. Complete reports of botanical surveys shall be included with all environmental assessment documents, including Negative Declarations and Mitigated Negative Declarations, Timber Harvesting Plans, Environmental Impact Reports, and Environmental Impact Statements. Survey reports shall contain the following information:

   a. Project location and description, including:

[4] Collecting Guidelines and Documentation Techniques. California Native Plant Society Policy (adopted March 4, 1995).
[5] Ferren, W.R., Jr., D.L. Magney, and T.A. Sholars. 1995. The Future of California Floristics and Systematics: Collecting Guidelines and Documentation Techniques. *Madroño* 42(2):197-210.

1) A detailed map of the location and footprint of the proposed project.
2) A detailed description of the proposed project, including one-time activities and ongoing activities that may affect botanical resources.
3) A description of the general biological setting of the project area.

b. Methods, including:
   1) Survey methods for each of the habitats present, and rationale for the methods used.
   2) Description of reference site(s) visited and phenological development of the target special status plants, with an assessment of any conditions differing from the project site that may affect their identification.
   3) Dates of surveys and rationale for timing and intervals; names of personnel conducting the surveys; and total hours spent in the field for each surveyor on each date.
   4) Location of deposited voucher specimens and herbaria visited.

c. Results, including:
   1) A description and map of the vegetation communities on the project site. The current standard for vegetation classification, *A Manual of California Vegetation*[6], should be used as a basis for the habitat descriptions and the vegetation map. If another vegetation classification system is used, the report must reference the system and provide the reason for its use.
   2) A description of the phenology of each of the plant communities at the time of each survey date.
   3) A list of all plants observed on the project site using accepted scientific nomenclature, along with any special status designation. The reference(s) used for scientific nomenclature shall be cited.
   4) Written description and detailed map(s) showing the location of each special status or locally significant plant found, the size of each population, and method used to estimate or census the population.
   5) Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms and accompanying maps.

d. Discussion, including:
   1) Any factors that may have affected the results of the surveys (*e.g.*, drought, human disturbance, recent fire).
   2) Discussion of any special local or range-wide significance of any plant population or community on the site.
   3) An assessment of potential impacts. This shall include a map showing the distribution of special status and locally significant plants and communities on the site in relation to the proposed activities. Direct, indirect, and cumulative impacts to the plants and communities shall be discussed.
   4) Recommended measures to avoid and/or minimize direct, indirect, and cumulative impacts.

e. References cited and persons contacted.

f. Qualifications of field personnel including any special experience with the habitats and special status plants present on the site.

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[6] Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society. Sacramento, CA. 471 pp.

Appendix D: List of All Plant Species Observed on May 3, 8, and 14, 2007

Scientific Name	**Common Name**
Ailanthus altissima	Tree-of-heaven
Aira caryophyllea	Silver European hairgrass
Alisma lanceolatum	Water plantain
Amsinkia menzisii	Fiddleneck
Artemesia douglasii	Mugwort
Arundo donax	Arundo
Avena barbata	Annual oatgrass
Azolla ssp.	Water fern
Brasica niger	Black mustard
Bromus diandrus	Rip-gut brome
Bromus hordeaceous	Soft chess
Bromus madritensis rubra	Red brome
Catalpa speciosa	Catalpa
Centaurea solstitialis	Star-thistle
Cerastium ssp.	Mouse-eared chickweed
Chamomillia suaveolus	Common pineapple-weed
Chenopodium ssp.	Common lambsquarters
Circium vulgare	Bull thistle
Convovulus arvensis	Bindweed
Cynodon dactylon	Bermuda Grass
Cyperus eragrostis	Tall Cyperus
Cyperus esculentus	Yellow Nutsedge
Digitaria sanguinalis	Crab Grass
Dipsacus ssp.	Teasel
Eleocharis macrostachya	Pale Spike-rush
Equisetum telmateia	Horestail
Eremocarpus setigerus	Dove Weed
Erodium botrys	Long-beaked stork's-bill
Eucalyptus sideroxylon	Pink Ironbark
Foeniculum vulgare	Fennel
Gastridium ventricosum	Nit Grass
Geranium dissectum	Cut-leaved geranium
Geranium molle	Dove's foot geranium
Grindelia hursutula var. davyi	Gumplant
Heliotropium curvassavicum	Wild heliotrope
Hemizonia fitchii	Fitch's Tarweed
Hordeum marinum	Mediterranean barley
Hordeum murinum	Barley
Juglans niger	Black walnut
Juncus bufonius	Toad Rush
Lactuca serriola	Prickly Lettuce
Lepidium latifolium	Perennial pepperweed
Lolium multiflorum	Annual Ryegrass
Ludwigia peploides	Floating Primrose-willow

Scientific Name	**Common Name**
Lythrum hyssopifolium	Hyssop Loosestrife
Lythrum sp.	Loosestrife
Navarretia leucocephala	White-flowered navarretia
Paspalum distichum	Knotgrass
Phalaris sp.	Canary Grass
Picris echioides	Bristly ox-tongue
Plagiobothrys ssp.	Popcorn Flower
Plantago lanceolata	English plantain
Plantanus x acerifolia	London plane-tree
Pogogyne zizyphoroides	Sacramento Valley Pogogyne
Polygonum arenastrum	Common Knotweed
Polygonum hydropiperoides	Water smartweed
Polypogon monspeliensis	Beardgrass
Populus fremontii	Fremont's Cottonwood
Psilocarphus brevissimus	Wooly Marbles
Ranunculus muricatus	Buttercup
Rosa ssp.	Rose
Rumex crispus	Curly Dock
Salix exerguta	Sandbar willow
Salix gooddingii	Goodding's willow
Salix sp.	Willow
Sambucus mexicana	Blue elderberry
Scirpus acutus	Hard-stemmed Bulrush
Silybum marianum	Milk Thistle
Sonchus ssp.	Sow-thistle
Taeniatherum caput-medusae	Medusae-head Grass
Trichostema lanceolatum	Vingegar Weed
Trifolium variegatum	White-tipped Clover
Typha sp.	Cattail
Verbena sp.	Vervain
Vicia ssp.	Vetch
Vitis californica	Wild grape
Vulpia sp.	Vulpia
Xanthium strumarium	Cocklebur

Attachment A: Habitat Characterization Map

PG&E Line 407

Habitat Types

Habitat Types	Area (ft.^{2})	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

Miles
0 0.5 1

GALLAWAY CONSULTING, INC.

Attachment A.1

PG&E Line 407

Habitat Types

Habitat Types	Area (ft.^{2})	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

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GALLAWAY CONSULTING, INC.

Attachment A.2

PG&E Line 407

Habitat Types

Habitat Types	Area (ft.^{2})	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West. EA, BT Survey Dates 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East. JG,SI,EA Survey Dates July 21, 24 - 28, Aug 10 & 25 2006
Aerial Feb 2005 (NAIP) Map Date August 6, 2007

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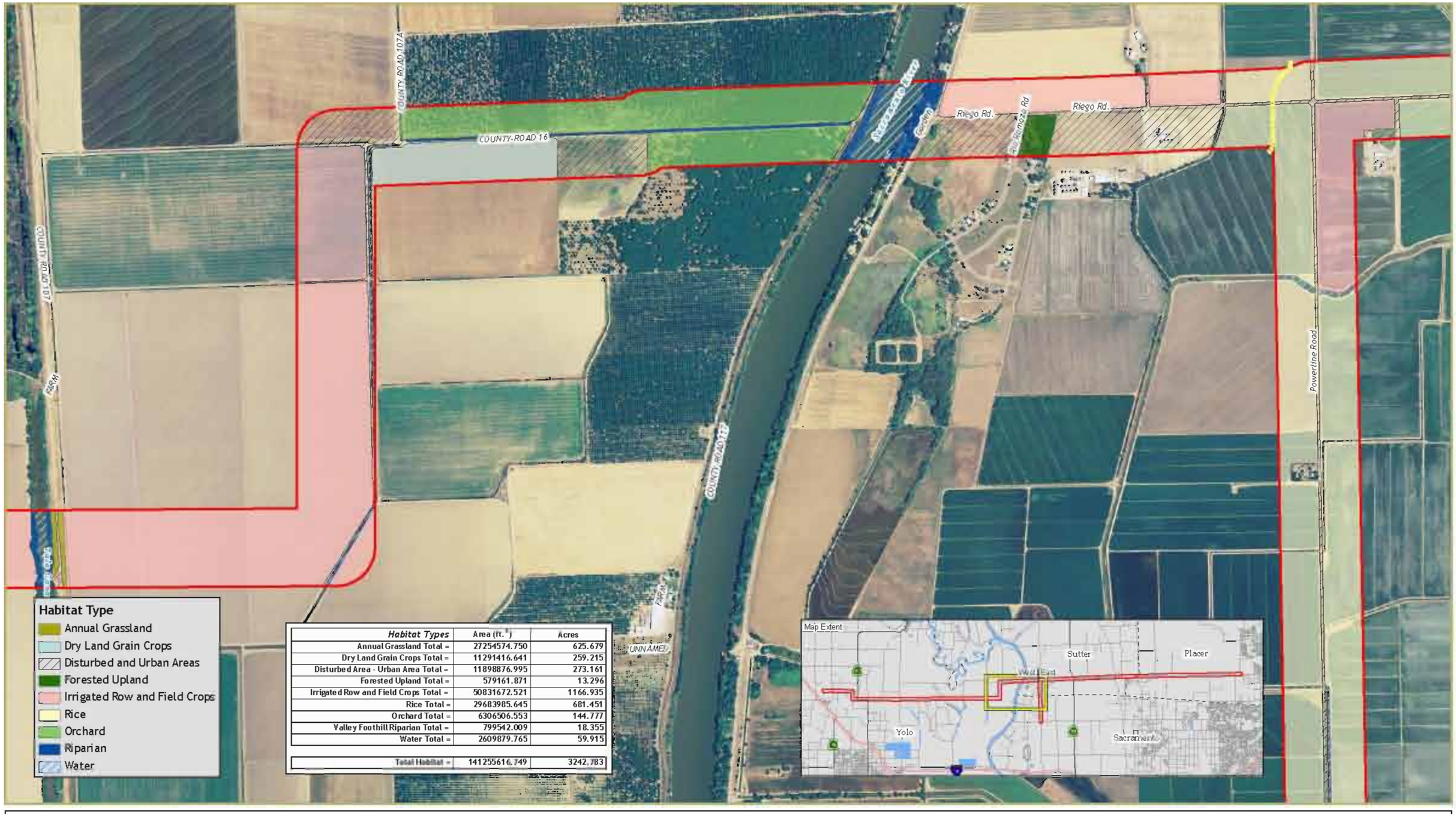
GALLAWAY CONSULTING, INC.

Attachment A.3

PG&E Line 407 **Habitat Types**



Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug. 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

Miles
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GALLAWAY CONSULTING, INC.

Attachment A.4

PG&E Line 407 **Habitat Types**

Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West. EA, BT Survey Dates 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East. JG,SI,EA Survey Dates July 21, 24 - 28, Aug 10 & 25 2006
Aerial Feb 2005 (NAIP) Map Date August 6, 2007

Miles
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GALLAWAY CONSULTING, INC.

Attachment A.5

PG&E Line 407 **Habitat Types**

Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

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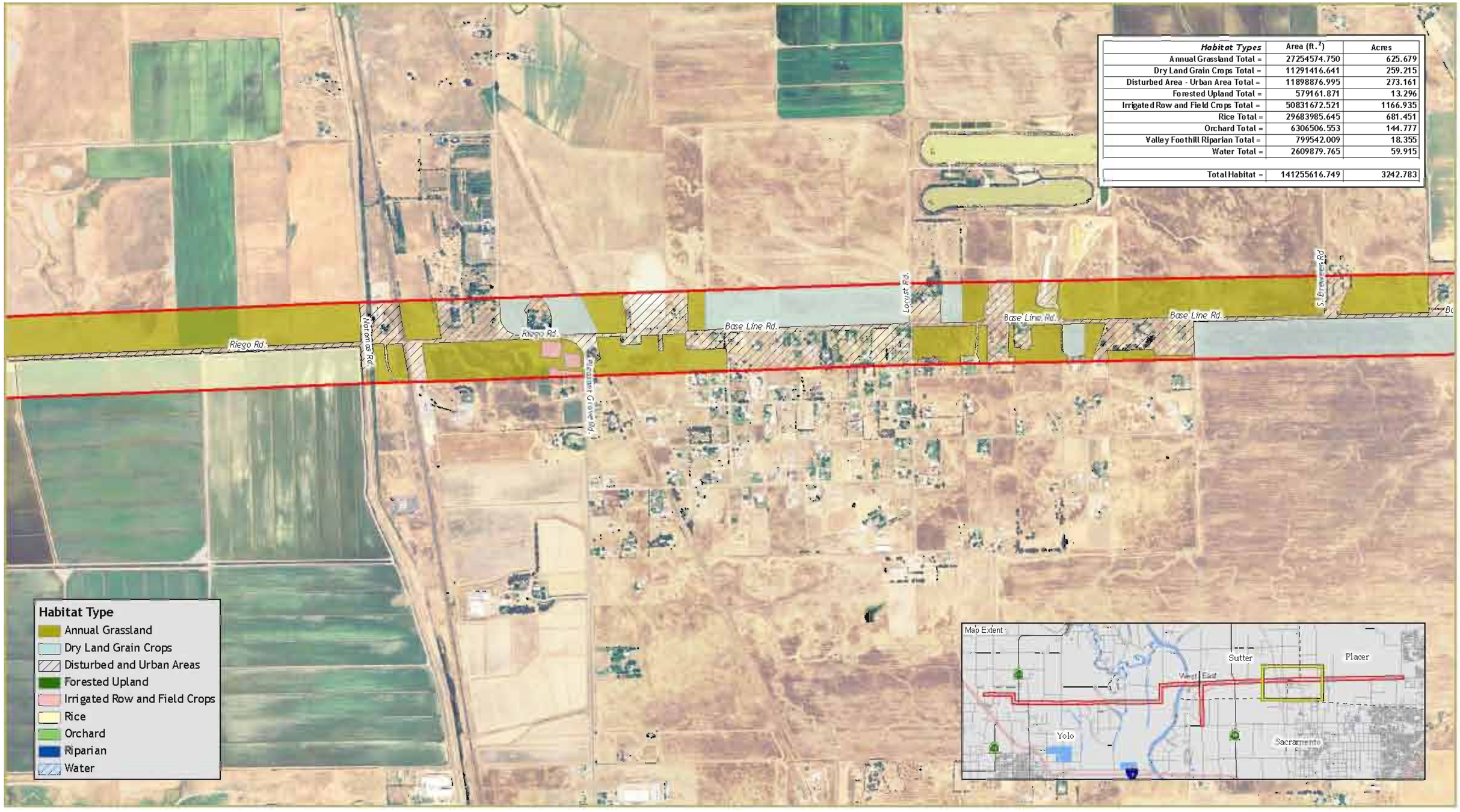
GALLAWAY CONSULTING, INC.

Attachment A.6

PG&E Line 407

Habitat Types

Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783



Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug. 10 & 25 2006
Aerial: Feb. 2005 (NAIP) Map Date: August 6, 2007

Miles
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GALLAWAY CONSULTING, INC.

Attachment A.7

PG&E Line 407 **Habitat Types**

Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates July 21, 24 - 28, Aug 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

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GALLAWAY CONSULTING, INC.

Attachment A.8

PG&E Line 407

Habitat Types

Habitat Types	Area (ft.²)	Acres
Annual Grassland Total =	27254574.750	625.679
Dry Land Grain Crops Total =	11291416.641	259.215
Disturbed Area - Urban Area Total =	11898876.995	273.161
Forested Upland Total =	579161.871	13.296
Irrigated Row and Field Crops Total =	50831672.521	1166.935
Rice Total =	29683985.645	681.451
Orchard Total =	6306506.553	144.777
Valley Foothill Riparian Total =	799542.009	18.355
Water Total =	2609879.765	59.915
Total Habitat =	141255616.749	3242.783

Survey area derived from 500 ft. buffer of roadway
Surveyor West: EA, BT Survey Dates: 5/3/07, 5/8/07, 5/14/07, 6/21/07)
Surveyor East: JG,SI,EA Survey Dates: July 21, 24 - 28, Aug 10 & 25 2006
Aerial: Feb 2005 (NAIP) Map Date: August 6, 2007

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GALLAWAY CONSULTING, INC.

Attachment A.9