
APPENDIX J

BIOLOGICAL RESOURCES REFERENCE DOCUMENTS

- J-1: Protocol for Biological Surveys**
- J-2: Biological Resource Surveyors Qualifications and Resumes**
- J-3: California Natural Diversity Data Base (CNDDDB) Printouts**
- J-4: USFWS Special-Status Species Report Dated November 16, 2000**
- J-5: California Natural Community Field Survey Forms**

J-1: Protocol for Biological Surveys

**FPL TESLA POWER PROJECT
PROTOCOL FOR BIOLOGICAL SURVEYS**

Prepared by:



FOSTER WHEELER ENVIRONMENTAL CORPORATION

1940 E. Deere Avenue, Suite 200
Santa Ana, CA 92705

May 2001

**APPENDIX J PROTOCOL FOR BIOLOGICAL SURVEYS
CONTENTS**

1.0	INTRODUCTION	J-1-1
2.0	SENSITIVE SPECIES OF THE PROJECT AREA.....	J-1-3
2.1	Special-Status Species	J-1-3
2.2	Site Observations.....	J-1-3
2.3	Wetlands	J-1-6
2.4	Other Sensitive Habitats	J-1-7
2.5	Optimum Survey Periods	J-1-7
3.0	METHODS.....	J-1-9
3.1	Approach	J-1-9
3.2	Natural Communities Mapping	J-1-9
3.3	Sensitive Species Surveys	J-1-9
3.3.1	Botanical Surveys.....	J-1-9
3.3.2	Waters of the U.S. and Wetlands Surveys.....	J-1-10
3.3.3	Federally-listed Species.....	J-1-10
3.3.4	State-listed Species and Special Status Species	J-1-13
4.0	MAPPING AND BIOLOGY SURVEY REPORT	J-1-15
5.0	SCHEDULE	J-1-15
6.0	REFERENCES.....	J-1-17

List of Tables

Table 2-1.	Special status species identified in CNDDDB and through correspondence with USFWS for the Midway and Clifton Court Forbay quadrangles	J-1-4
Table 2-2.	Site Observations for Project Site and all Linear Features	J-1-6

List of Figures

Figure 1-1.	Location Map of Project Facilities	J-1-2
Figure 2-1.	Appropriate Survey Windows	J-1-8
Figure 5-1.	Schedule for Field Work.....	J-1-16

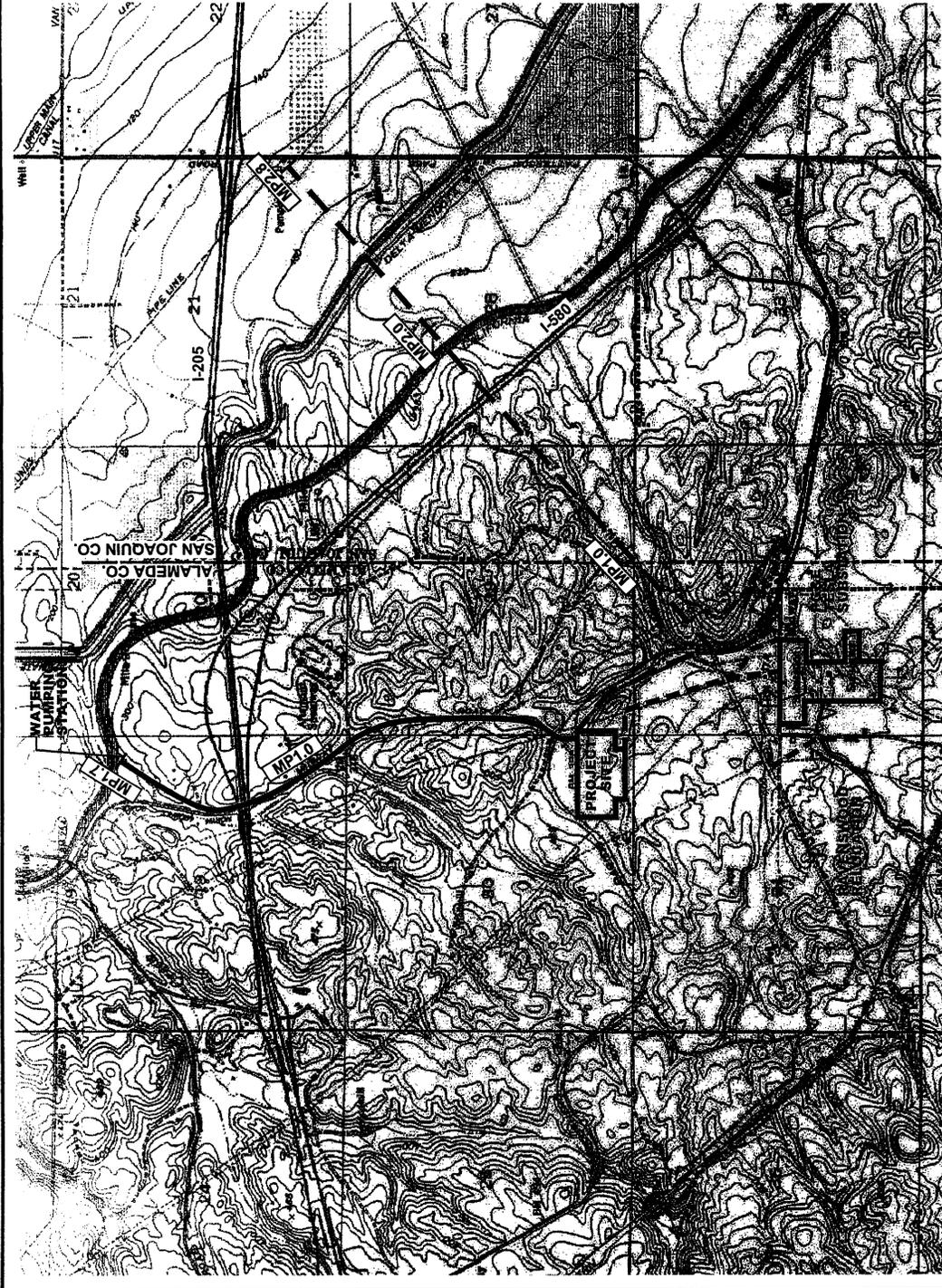
1.0 INTRODUCTION

This document provides introductory material on the FPL Tesla Power Project and describes proposed biology survey protocols to be conducted in May and June 2001.

The project is located within the Midway and Clifton Court Forebay U.S. Geological Survey (USGS) quad sheets (see Figure 1-1). The project components used as a basis for the surveys are:

- **Power Plant Site and Laydown Area.** The power plant site and laydown area are on a 60-acre parcel of agricultural lands presently used for grazing.
- **Natural Gas Pipeline.** The natural gas pipeline is approximately 2.8 miles long. The pipeline will likely be bored under Highway 580, the California Aqueduct, and the Delta-Mendota Canal. The proposed pipeline route follows an existing pipeline corridor, known as “PG&E Line 107”.
- **Electrical Transmission Line.** A new transmission line, approximately 0.5 mile in length will connect the project site to the east side of the PG&E Tesla Substation. Existing transmission lines that are located between the project site and the substation may have to be relocated, depending on the configuration of the transmission interconnection and the specific point it connects to the substation.
- **Water Pump Station and Pipeline.** A pump station will be required adjacent to the California Aqueduct. The pump station will occupy approximately 0.5 acres. A 1.7-mile pipeline will connect the pumping station with the power plant site. Two alternative locations are being considered for the pumping station location. One alternative is to locate the pumping station at the Bethany Reservoir. This would increase the length of the pipeline to approximately 4.0 miles.

Results of all surveys will be included with an Application for Certification (AFC) to be submitted to the California Energy Commission (CEC).

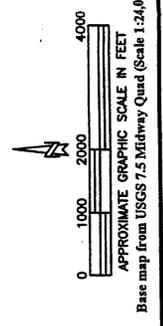


LEGEND

- WATER SUPPLY PIPELINE
- - - NATURAL GAS PIPELINE
- · - · TRANSMISSION LINE

TESLA POWER PROJECT
MIDWAY POWER, LLC

FIGURE 1-1
Location Map of Project Facilities



2.0 SENSITIVE SPECIES OF THE PROJECT AREA

The proposed facilities will be located within the current and historic ranges of several listed and special status plant and wildlife species. The United States Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) are being consulted to ensure compliance with the Federal Endangered Species Act and the California Endangered Species Act.

Biological resource issues that may become critical in terms of the siting and licensing of the project include impacts to federal and state-listed endangered, threatened, and other special status species. Additionally, the location and boundaries of all well-defined bed and bank and wetland resources within the proposed construction corridor may become critical issues because they are subject to jurisdiction by the CDFG under code 1603, U.S. Army Corps of Engineers (Corps) under Section 404 (b)(1) of the Clean Water Act, and Section 10 of the Rivers and Harbors Act of 1899.

The project site is within an area that provides habitat for a number of special-status species that could require mitigation if they were to be found on or adjacent to the site, or within or adjacent to the linear corridors. The power plant site is grazed and lacks undisturbed natural habitat; the linear routes are also grazed but cross habitats which could have a greater potential for the presence of special status species.

2.1 SPECIAL-STATUS SPECIES

Special status species are those with regulatory protection under the federal Endangered Species Act, the Migratory Bird Treaty Act, the California Endangered Species Act, or any other local policies or ordinances protecting biological resources. A search of the California Natural Diversity Database (CNDDDB/RareFind) and correspondence with the US Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG) indicates the project area coincides with habitat for several special-status plant and wildlife species. Table 2-1 represents a tentative list of species to be considered during field surveys. A habitat assessment has been completed.

2.2 Site Observations

Habitat assessment surveys were conducted on May 14-15, 2001 (see Appendix C, Habitat Assessment Survey Report). The 60-acre power plant site and laydown area consists entirely of grazed ranch land without undisturbed natural habitat. The eastern boundary is bordered by Midway Road, and the north and west boundaries are bordered by an abandoned railway.

Table 2-1. Special status species identified in CNDDB and through correspondence with USFWS for the Midway and Clifton Court Forbay quadrangles

<i>Scientific Name</i>	Common Name	Federal/State/C NPS*
BIRDS		
<i>Agelaius tricolor</i>	Tricolored Blackbird	SC/SC/--
<i>Amphispiza belli belli</i>	Bell's Sage Sparrow	SC/--/--
<i>Athene cunicularia</i>	Burrowing Owl	SC/SC/--
<i>Buteo regalis</i>	Feruginous Hawk	SC/--/--
<i>Buteo swainsoni</i>	Swainson's Hawk	--/T/--
<i>Charadrius montanus</i>	Mountain Plover	PT/--/--
<i>Elanus leucurus</i>	White-tailed Kite	SC/--/--
<i>Empidonax traillii brewsteri</i>	Little Willow Flycatcher	--/?/--
<i>Eremophila alpestris actia</i>	California Horned Lark	--/SC/--
<i>Grus canadensis tabida</i>	Greater Sandhill Crane	--/SC/--
<i>Haliaeetus leucocephalus</i>	Bald Eagle	E/--/--
<i>Plegadis chihi</i>	White-faced Ibis	SC/--/--
REPTILES		
<i>Anniella pulchra pulchra</i>	Silvery Legless Lizard	SC/--/--
<i>Clemmys marmorata</i>	Western Pond Turtle	SC/SC/--
<i>Clemmys marmorata marmorata</i>	Northwestern Pond Turtle	SC/--/--
<i>Clemmys marmorata pallida</i>	Southwestern Pond Turtle	SC/--/--
<i>Masticophis flagellum ruddocki</i>	San Joaquin Whipsnake	SC/SC/--
<i>Masticophis lateralis euryxanthus</i>	Alameda Whipsnake	T/--/--
<i>Phrynosoma coronatum frontale</i>	California Horned Lizard	SC/SC/--
<i>Thamnophis gigas</i>	Giant Garter Snake	T/--/--
AMPHIBIANS		
<i>Ambystoma californiense</i>	California Tiger Salamander	SC/SC/--
<i>Rana aurora draytonii</i>	California Red-legged Frog	T/SC/--
<i>Rana boylei</i>	Foothill Yellow-legged Frog	SC/--/--
<i>Scaphiopus hammondii</i>	Western Spadefoot Toad	SC/SC/--
MAMMALS		
<i>Corynorhinus (=Plecotus) townsendii townsendii</i>	Pacific Western Big-eared Bat	SC/--/--
<i>Eumops perotis californicus</i>	Greater Western Mastiff Bat	SC/--/--
<i>Myotis ciliolabrum</i>	Small-footed Myotis Bat	SC/--/--
<i>Myotis evotis</i>	Long-eared Myotis Bat	SC/--/--
<i>Myotis thysanodes</i>	Fringed Myotis Bat	SC/--/--
<i>Myotis volans</i>	Long-legged Myotis Bat	SC/--/--
<i>Myotis yumanensis</i>	Yuma Myotis Bat	SC/--/--
<i>Neotoma fuscipes annectens</i>	San Francisco Dusky-footed Woodrat	SC/--/--
<i>Neotoma fuscipes riparia</i>	Riparian (San Joaquin Valley) Woodrat	PE/SC/--
<i>Perognathus inornatus inornatus</i>	San Joaquin Pocket Mouse	SC/--/--
<i>Sylvilagus bachmani riparius</i>	Riparian Brush Rabbit	E/--/--
<i>Vulpes macrotis mutica</i>	San Joaquin Kit Fox	E/T/--

Table 2-1. Special status species identified in CNDDDB and through correspondence with USFWS for the Midway and Clifton Court Forbay quadrangles (Continued)

<i>Scientific Name</i>	Common Name	Federal/State/CNPS*
INVERTEBRATES		
<i>Branchinecta longiantenna</i>	Longhorn Fairy Shrimp	E/--/--
<i>Branchinecta lynchi</i>	Vernal Pool Fairy Shrimp	T/--/--
<i>Desmocercus californicus dimorphus</i>	Valley Elderberry Longhorn Beetle	T/--/--
<i>Hygrotus curvipes</i>	Curved-foot Hygrotus Diving Beetle	SC/--/--
<i>Lepidurus macrolepidotus</i>	Vernal Pool Tadpole Shrimp	E/--/--
<i>Linderiella occidentalis</i>	California Linderiella Fairy Shrimp	SC/--/--
<i>Lytta molesta</i>	Molestan Blister Beetle	SC/--/--
PLANTS		
<i>Blepharizonia plumosa plumosa</i>	Big Tarplant	--/--/1B
<i>Amsinckia grandiflora</i>	Large-flowered Fiddleneck	E/E/1B
<i>Astragalus tener var. ferrisae</i>	Ferris's Milk-vetch	--/--/1B
<i>Astragalus tener var. tener</i>	Alkali Milk-vetch	--/--/1B
<i>Atriplex cordulata</i>	Heartscale	--/--/1B
<i>Atriplex joaquiniana</i>	San Joaquin Saltbush / Valley Spearscale	SC/--/1B
<i>Deinandra bacigalupii</i>	Livermore Tarplant	SC/--/--
<i>Delphinium recurvatum</i>	Recurved Larkspur	--/--/1B
<i>Eriogonum truncatum</i>	Mt. Diablo Buckwheat	--/--/1A
<i>Eschscholzia rhombipetala</i>	Diamond-petaled California Poppy	--/--/1B
<i>Hibiscus lasiocarpus</i>	Rose-mallow	2
<i>Lilaeopsis masonii</i>	Mason's Lilaeopsis	--/--/1B
<i>Madia radiata</i>	Showy Madia	--/--/1B
<i>Myosurus minimus apus</i>	Little Mousetail	SC/--/--
<i>Tropidocarpum capparideum</i>	Caper-fruited Tropidocarpum	--/--/1A

T = Threatened; E = Endangered; SC = Species of Concern; PE = Proposed Endangered;
 1A = presumed extinct in California; 1B = rare or endangered in California and elsewhere;
 2 = rare or endangered in California but more common elsewhere;
 CNPS = California Native Plant Society

The natural gas pipeline route passes through grazed ranch land and cultivated agricultural land. It also crosses Interstate Highway 580, the California Aqueduct, and the Delta-Mendota Canal. Between the aqueduct and canal is Patterson Run Creek, which has the only natural vegetation on the pipeline route.

The electrical transmission line passes through grazed ranch land and crosses Patterson Run Creek.

The water supply pipeline is adjacent to Midway Road along grazed ranch land. A portion of the pipeline will be adjacent to rural residential properties. The pipeline for the Bethany Reservoir alternative would predominantly cross grazed ranch land; however, it would cross four intermittent streams and marsh-like areas with natural vegetation.

Table 2-2 provides a summary of observations at the project site area and along the linear features. The CNDDDB records and habitat assessment field investigations indicate that there is

potential for encountering special status plants or animals at the project site and along the linear routes, especially where they cross streams and creeks. The CEC, CDFG, and USFWS could require protocol or habitat-based field surveys for special status plant and wildlife species which may potentially be impacted from the proposed project.

Table 2-2. Site Observations for Project Site and all Linear Features

Township/ Range	Section	Observations
PROJECT SITE AND LAYDOWN AREA		
T2S, R4E	29, 30	Grazed ranchland; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, and California horned lizard
WATER PIPELINE		
T2S, R4E	29, 30	Grazed ranchland; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, and California horned lizard
	19	Rural residential and grazed ranchland; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, and California horned lizard
	18	Grazed ranchland and two intermittent streams with wetland vegetation; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, California horned lizard, tricolored blackbird, giant garter snake, and red-legged frog
T2S, R3E	13, 12	Grazed ranchland and two intermittent streams with wetland vegetation; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, California horned lizard, tricolored blackbird, giant garter snake, and red-legged frog
NATURAL GAS PIPELINE		
T2S, R4E	29	Grazed ranchland; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, and California horned lizard
	28	Grazed ranchland and Cultivated agriculture; crosses Interstate Highway 580, the California Aqueduct, the Delta-Mendota Canal, and Patterson Run Creek; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, California horned lizard, tricolored blackbird, giant garter snake, and red-legged frog
	21	Cultivated agriculture; potential habitat for burrowing owl, mountain plover, and white-tailed kite
TRANSMISSION LINE		
T2S, R4E	29, 30	Grazed ranchland; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, and California horned lizard
	32	Grazed ranchland, crosses Patterson Run Creek; potential habitat for burrowing owl, San Joaquin kit fox, Swainson's hawk, mountain plover, white-tailed kite, California horned lizard, and red-legged frog

2.3 WETLANDS

No areas were identified that were inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support,

a prevalence of vegetation typically adapted for life in saturated soil conditions on the proposed power plant site.

The natural gas pipeline route crosses Patterson Run Creek approximately 1.5 miles east of the power plant site, and riparian habitat is present at that location. Directional drilling will most likely be used in this area, thereby avoiding impacts to this habitat. A jurisdictional delineation will be completed to determine the extent of jurisdictional features and potential project impacts.

The alternative route for the water pipeline, which would locate the pumping station at Bethany Reservoir, crosses four intermittent streams. These streams contain wetland vegetation, and therefore create habitat for a number of sensitive species. A jurisdictional delineation will be completed to determine the extent of jurisdictional features and potential project impacts.

The transmission line crosses Patterson Run Creek, which contains riparian habitat and wetland vegetation. A jurisdictional delineation will be completed to determine the extent of jurisdictional features and potential project impacts.

2.4 OTHER SENSITIVE HABITATS

The Livermore Region Vernal Pool Report (CDFG, 1998) has GIS based maps of vernal pool locations within Alameda, Contra Costa, Santa Clara, and San Joaquin counties. Although there are a number of vernal pools identified in these counties, there are no vernal pools known in the project area. Reconnaissance and habitat assessment surveys revealed no vernal pools.

2.5 OPTIMUM SURVEY PERIODS

Figure 2-1 illustrates appropriate survey windows for all of the key species of concern that have been recorded in the project area.

FIGURE 2-1

APPROPRIATE SURVEY WINDOWS

Common Name	Scientific Name	Federal / State / CNPS	Survey Window												
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
PLANTS (Based on CNPS blooming periods)															
Big Tarplant	<i>Blepharizonia plumosa plumosa</i>	-/-1B													
Large-flowered Fiddleneck	<i>Amsinckia grandiflora</i>	E/E/1B													
Ferris's Milk-vetch	<i>Astragalus tener var. ferrisae</i>	-/-1B													
Alkali Milk-vetch	<i>Astragalus tener var. tener</i>	-/-1B													
Heartscale	<i>Atriplex cordulata</i>	-/-1B													
San Joaquin Saltbush / Valley Spearscale	<i>Atriplex joaquiniana</i>	SC/-1B													
Livermore Tarplant	<i>Deinandra bacigalupii</i>	SC/-/-													
Recurved Larkspur	<i>Delphinium recurvatum</i>	-/-1B													
Mt. Diablo Buckwheat	<i>Eriogonum truncatum</i>	-/-1A													
Diamond-petaled California Poppy	<i>Eschscholzia rhombipetala</i>	-/-1B													
Rose-mallow	<i>Hibiscus lasiocarpus</i>	2													
Mason's Lilaopsis	<i>Lilaopsis masonii</i>	-/-1B													
Showy Madia	<i>Madia radiata</i>	-/-1B													
Little Mousetail	<i>Myosurus minimus apus</i>	SC/-/-													
Caper-fruited Tropidocarpum	<i>Tropidocarpum capparideum</i>	-/-1A													
REPTILES / AMPHIBIANS															
California Red-legged Frog	<i>Rana aurora draytonii</i>	T/SC/-													
California Horned Lizard	<i>Phrynosoma coronatum frontale</i>	SC/SC/-													
Giant Garter Snake	<i>Thamnophis gigas</i>	T/-/-													
BIRDS															
Tricolored Blackbird	<i>Agelaius tricolor</i>	SC/SC/-													
Burrowing Owl	<i>Athene cucularia</i>	-/SC/-													
Swainson's Hawk	<i>Buteo swainsoni</i>	-/1/-													
Mountain Plover	<i>Charadrius montanus</i>	PT/-/-													
California Horned Lark	<i>Eremophila alpestris actia</i>	-/SC/-													
White-tailed Kite	<i>Elanus leucurus</i>	SC/-/-													
MAMMALS															
San Joaquin Kit Fox	<i>Vulpes macrotis mutica</i>	E/1/-													

Federal/State/CNPS Codes

T = Threatened, E = Endangered, SC = species of concern, 1A = presumed extinct in California, 1B = rare or endangered in California, 2 = Plants rare, threatened, or endangered in CA but more common elsewhere

█ = Protocol limited survey season
 █ = Optimal survey window, no specific agency defined protocol survey period

3.0 METHODS

3.1 APPROACH

The biological surveys will be completed during May and June 2001. The biological survey work will be completed in four phases:

- Natural community mapping
- Sensitive species (“transect”) surveys
- Final map preparation
- Preparation of a biological report

3.2 NATURAL COMMUNITIES MAPPING

Prior to initiating field investigations of the proposed project site and linear corridors, biologists will develop preliminary natural communities maps that will be based on aerial imagery of the project area. The preliminary communities maps will be verified during field investigations of the project sites and changes will be recorded for final map production. It is anticipated that base maps for the project will be digital versions of 7.5 minute USGS quadrangles and aerial imagery.

To comply with CEC data adequacy requirements, natural communities will be mapped for a distance of one mile from the edge of the power plant site. Along all pipeline and transmission line routes, natural communities will be mapped for a distance of 304.8-meters (1,000-feet) on each side of the centerline of the route.

3.3 SENSITIVE SPECIES SURVEYS

A team of biologists will conduct biological field investigations of the proposed site, adjacent areas, and linear facilities. The UTM coordinates of sensitive species found during field surveys will be identified with Global Positioning System (GPS) receivers. These data will then be available to overlay on maps and plans of the project facilities to facilitate project planning, impact analysis, and development of avoidance measures. Additionally, during all focused surveys, incidental observations of all wildlife species will be recorded on data sheets and reported in the biological report.

3.3.1 Botanical Surveys

Surveys for sensitive botanical resources will be conducted as part of the proposed transect surveys.

- **Spot Checks:** Prior to initiating plant surveys, known sensitive plant populations in the local project area will be observed, and local variation in flowering phenology will be noted before surveys commence. Spot checks of these sensitive plant

populations will facilitate determining the current status of the populations, confirm blooming periods, and assist in determining whether the construction or operation of the proposed project facilities will impact these populations.

- **Botanical Transect Surveys:** The location of the proposed facility and a 152.4-meter (500-foot) buffer zone around the proposed facility will be surveyed by walking meandering transects spaced at 15.24-meter (50-foot) intervals to cover 100% of the project site. Three qualified botanists will conduct the surveys. Areas that support sensitive plant species will be recorded on maps of the project site for impact evaluation. Plants will be identified to a taxonomic level sufficient to determine if the species observed are classified as a sensitive plant species. The project botanist will evaluate those areas where species are not located during field evaluations for their suitability to support sensitive botanical resources. CNDDDB forms will be filled out for all identified special-status plants.

Surveys of the proposed pipelines and transmission lines will extend 152.4-meters (500-feet) on either side of the centerline of the proposed gas pipeline, transmission line, and water pipeline right-of-way. Transmission line and pipeline routes will be surveyed for sensitive botanical resources by walking meandering transects. The transects will be spaced at 15.24-meter (50-foot) intervals to provide 100% coverage of the area within 152.4-meters (500-feet) of the centerline, except for recently cultivated agricultural lands and rural residential lands. Plants will be identified to a taxonomic level sufficient to determine if the species observed are classified as a sensitive plant species. These transects will concentrate on identifying locations of sensitive species, suitable habitat for sensitive species, and areas where special surveys will need to be conducted. Areas that support sensitive species or their habitats will be recorded on maps of the project site for impact evaluation.

3.3.2 Waters of the U.S. and Wetlands Surveys

Patterson Run Creek, the California Aqueduct, and the Delta-Mendota Canal will be delineated in accordance with Section 401 and 404 of the Clean Water Act or Section 1600 *et seq.* of the California Fish and Game Code. Biologists will review the preliminary natural communities maps developed for the project and conduct field investigations to determine whether any other wetlands, waters, or jurisdictional bed and bank features will likely be affected by the proposed project. Any jurisdictional wetland or water feature observed within the project vicinity will be delineated on maps of the project site and a determination made whether project construction or operation could affect these resources.

3.3.3 Federally-listed Species

3.3.3.1 Amphibians and Reptiles

Patterson Run Creek is the only area likely to contain habitat within the proposed project area suitable to support populations of red-legged frog. Additionally, there may be appropriate habitat for this species at the intermittent streams that would be crossed by the water pipeline alternative route. The area of Patterson Run Creek between the California Aqueduct and Delta-Mendota Canal may also provide habitat for the giant garter snake. Where suitable

habitats are identified, the following survey methods will be used to determine if the target species are present. Additionally, during all focused surveys incidental observation of all other wildlife species encountered will be documented.

California Red-legged Frog (*Rana aurora draytonii*)

Suitable habitat for the red-legged frog includes deep pools with dense stands of overhanging willows (*Salix sp.*) and an intermixed fringe of cattails (*Typha sp.*). Focused surveys will be conducted for the California red-legged frog along Patterson Run creek at all suitable habitat locations that fall within 1.6-km (1-mile) of the project laydown area and all linear features. Surveys will be conducted in May and June 2001. There will be two daytime and two nighttime surveys with a minimum of 24-hours between surveys.

- **Daytime Surveys:** These surveys will be conducted on clear, sunny days. The entire shore will be walked in all areas of potential habitat (as identified in the previous habitat assessment survey), and all shoreline areas will be visually scanned. When there is floating vegetation, both the shoreline and the surface of the water will be visually scanned.
- **Nighttime Surveys:** These surveys will be conducted on warm, still nights between one hour after sunset and midnight. The entire shore will be walked in all areas of potential habitat, and all shoreline areas will be visually scanned for eyeshine using flashlights and/or headlamps that use one 6-volt or four to six D-cell batteries. In areas where there is floating vegetation, the surface of the water will also be visually scanned for eyeshine.

Data will be collected on the date and time (beginning and ending) of the survey, names of surveyors, water and air temperature, wind speed, numbers and sizes of all amphibians observed, habitat and frog sitings, and possible threats to observed frogs at the site. Locations of all red-legged frogs will be obtained using Global Positioning System (GPS) field equipment. Photos of observed frogs and their habitat will be taken when possible. CNDDDB forms will be filled out for all observed frogs.

Giant Garter Snake (*Thamnophis gigas*)

A habitat evaluation for the Giant Garter Snake will be conducted in May 2001 for the California Aqueduct, the Delta-Mendota Canal, and Patterson Run Creek between the California Aqueduct and the Delta-Mendota Canal. Qualified biologists will document the presence or absence of still or slow-flowing water over a mud or silt substrate; the presence or absence of flowing water over sand, gravel, rock, or cement substrate; times of water availability; percentage of sunny banks; percentage of shady banks; presence or absence of aquatic vegetation; presence or absence of terrestrial vegetation on the banks and in adjacent uplands; presence or absence of subterranean retreats in the banks and in adjacent uplands; presence or absence of small fish; presence or absence of introduced game fish; presence or absence of amphibians; the site's susceptibility to flooding; and the site's susceptibility to receive polluted runoff.

Based on the results of the habitat evaluation, focused surveys for the giant garter snake will be conducted in June 2001. Surveyors will have a valid scientific collecting permit and appropriate endangered species permits. Ten surveys will be conducted on ten different days. Surveyors will be on foot and will conduct surveys between 9:00 am and 2:00 pm. Surveyors will also use binoculars to aid in the detection of giant garter snake.

3.3.3.2 Birds

During all field investigations, incidental observations of birds within the project area will be recorded.

Mountain Plover (*Charadrius montanus*)

Summer habitat for the mountain plover includes dry prairies and short-grass plains with a preference for intensively grazed grasslands. Mountain plover surveys will be conducted starting the week of June 10, 2001. Three surveys, each separated by a minimum of 14 days, will be conducted between sunrise and 10:00 am or 5:30 pm and sunset. Visual observations will be made from a vehicle within 200-meters of project facilities that occur in potential habitat. All plovers located will be observed long enough to determine whether or not a nest is present. Data will be collected and will include date and time of survey, investigator, weather, observation (direct, including behavior characteristics, or vocalization), nesting location (if observed), vegetation characteristics, and disturbance regime/land use. Nest locations will be documented with GPS field equipment, and photos will be taken when possible.

3.3.3.3 Mammals

San Joaquin Kit Fox (*Vulpes macrotis mutica*)

San Joaquin kit fox inhabit desert and semiarid grasslands and other sparsely vegetated, shrubby habitats. They are also known to live in and adjacent to some kinds of agricultural lands and urban areas. The primary habitat requirement is the availability of suitable dens. Surveys for the San Joaquin kit fox will be conducted in June 2001. Surveys will be conducted by a qualified biologist and will concentrate on the identification of kit fox burrows, particularly natal dens. Prior to conducting the survey, USFWS will be notified. Potential burrows will be dusted to aid in the evaluation of kit fox presence. Data will be collected for all potential burrows, identified active burrows, and natal dens. Data will include date and time of survey, surveyors name, weather, kit fox sign (tracks, scat, etc.), and disturbance regime/land use. All potential burrows, identified active burrows, and natal dens will also be flagged and UTM coordinates will be collected using GPS field equipment. Photographs will also be taken of all potential burrows, identified active burrows, and natal dens.

3.3.4 State-listed Species and Special Status Species

3.3.4.1 Reptiles

California Horned Lizard (*Phrynosoma coronatum frontale*)

California horned lizards are known in a variety of habitats, including grazed grasslands. A habitat requirement for the California horned lizard includes the presence of ant colonies, their primary food source. Surveillance for the California horned lizard will be conducted in conjunction with kit fox and other wildlife and plant surveys. Surveyors will look for any sign of California horned lizard presence and the presence of ant colonies. Any sightings or sign will be documented and GPS coordinates will be recorded. Photos will also be taken when possible.

3.3.4.2 Birds

Burrowing Owl (*Athene cunicularia*)

Focused surveys for the burrowing owl will consist of three phases: habitat assessment, burrow survey, and nesting season survey.

- **Habitat Assessment:** Burrowing owls reside in open, dry grasslands, agricultural and rangelands, and desert habitats, and they are often associated with burrowing mammals. The habitat assessment phase of the burrowing owl survey involves an evaluation of the habitats on the project site and within 150-meters (approximately 152.4-meters (500-feet)) of all project facilities. This portion of the survey was completed in October 2000 during the Biological Reconnaissance Survey.
- **Burrow Survey:** A survey for burrows and owl presence will be conducted in conjunction with the natural community and botanical surveys in May 2001. The location of the proposed facility and a 152.4-meter (500-foot) buffer zone around the proposed facility will be surveyed by walking meandering transects spaced at 15.24-meter (50-foot) intervals to cover 100% of the project site. Surveys of the proposed pipelines and transmission lines will extend 152.4-meters (500-feet) on either side of the centerline of the proposed gas pipeline, transmission line, and water pipeline right-of-way. Transmission line and pipeline routes will be surveyed by walking meandering transects spaced at 15.24-meter (50-foot) intervals to provide 100% coverage of the project area. Burrowing owl burrows will be distinguished from other burrows by the presence of sign, such as tracks, whitewash, pellets, and feathers. Data will be recorded for each burrow and will include date and time, investigators, weather, evidence of burrowing owl presence, habitat type, and disturbance regime/land use. Additionally, locations of burrows will be recorded using GPS field equipment, and photos of burrows and sign will be taken. Burrows will be mapped to assist in the nesting season survey.
- **Nesting Season Survey:** In accordance with the survey protocol established by the California Burrowing Owl Consortium (1993), four site visits, each separated by a minimum of 24 hours, will take place between April 15 and July 15, 2001 to

determine owl presence within the project area. Known burrows will be observed from as many fixed points as necessary to provide full visual coverage of the site using spotting scopes and binoculars. Surveys will be conducted on four separate days from two hours before sunset to one hour after sunset or from one hour before sunrise to two hours after sunrise. Surveys will not be conducted in inclement weather, including heavy rain, high winds (>20 mph), or dense fog. Survey data collected will include direct observation (including behavior characteristics), sign (tracks, scat, burrow, etc.), or vocalization (California Burrowing Owl Consortium 1993).

Swainson's Hawk (*Buteo swainsoni*) and White-tailed Kite (*Elanus leucurus*)

Swainson's hawk inhabit prairies and open, arid land, and they require large nesting trees with a panoramic view of their foraging grounds. The white-tailed kite also occurs in grasslands and requires medium to large trees for nests. Focused surveys for Swainson's hawk and white-tailed kite will be conducted in accordance with survey recommendations provided by the Swainson's Hawk Technical Committee (TAC) (2000) at all wooded areas within ½-mile of all project facilities between June 10 and July 30, 2001. Three surveys will be conducted on separate days from sunrise to noon or from 4:00pm to sunset. Survey dates will be separated by a minimum of 7 days. Where possible surveys will be conducted from a vehicle driving no more than 5 mph with frequent stops. Trees will be scanned from multiple angles at a distance of 50 to 200-meters. Surveys will focus on visual and aural observations. Collected data will include date and time of survey, investigator, weather, observation (direct, including behavior characteristics, or vocalization), nesting location, vegetation characteristics, and disturbance regime / land use. Nest locations will be documented with GPS field equipment, and photos will be taken when possible.

Tri-colored Blackbird (*Agelaius tricolor*)

Tri-colored blackbirds nest in freshwater marshes with cattails and dense shrubs, and they forage in grassland and cropland habitats. Surveys for tri-colored blackbirds will be conducted during their nesting season at Patterson Run Creek between the California Aqueduct and the Delta-Mendota Canal in May and June 2001. Three surveys will be conducted from sunrise to 11:00 am, with each survey separated by a minimum of 7 days. Surveyors will be familiar with tri-colored blackbird songs and plumage. Collected data will include date and time of survey, investigator, weather, observation (direct, including behavior characteristics, or vocalization), nesting location, vegetation characteristics, and disturbance regime / land use. Nest locations will be documented with GPS field equipment, and photos will be taken when possible.

California Horned Lark (*Eremophila alpestris actia*)

California horned larks occur in areas with open ground and low vegetation. Surveys for the California horned lark will be conducted in May and June 2001 in conjunction with other

wildlife and plant surveys. Surveyors will be familiar with California horned lark songs and plumage. Collected data will include date and time of survey, investigator, weather, observation (direct, including behavior characteristics, or vocalization), nesting location, vegetation characteristics, and disturbance regime / land use. Nest locations will be documented with GPS field equipment, and photos will be taken when possible.

4.0 MAPPING AND BIOLOGY SURVEY REPORT

Black-and-white base maps at a scale of 1:24,000 (digitized from USGS 7.5 minute series) will be used to display project components and vegetation communities. The sensitive species survey results will be mapped at a scale of 1:6,000.

A biological survey report will be prepared for inclusion as an appendix to the AFC. The report will include the following:

- Description of field survey methods and results
- Description of field survey conditions (weather, dates of survey, etc.)
- Tables and maps illustrating survey results
- CNDDDB data sheets (print outs)
- Completed CNDDDB species occurrence report forms
- Wetlands delineation report

5.0 SCHEDULE

The schedule for field biology activities is illustrated in Figure 5-1.

Figure 5-1. Schedule for Field Work

Activity	May			June				July				
	14	21	28	4	11	18	25	2	9	16	23	30
Develop Site Biological Base Maps												
1:24,000	X											
Preliminary Natural Community Mapping												
Habitats			X									
Notifications												
USFWS, CDFG letters		X										
Property owner search	X											
Property owner notification	X											
Wetlands Delineation	X											
Sensitive Species												
<i>Plants</i>												
Habitat identification	X											
Noxious weed infestations		X										
Site and corridor transects	X											X
<i>Amphibians and Reptiles</i>												
Habitat identification	X											
Red-legged Frog					X	X	X					
Giant Garter Snake Habitat Evaluation			X									
California Horned Lizard			X	X	X	X	X					
<i>Birds</i>												
Habitat identification	X											
Burrowing Owl Nesting Survey					X	X	X					
Tricolored Blackbird			X									
Swainson's Hawk						X		X		X		
Mountain Plover						X		X		X		
California Horned Lark			X	X	X	X	X			X		
White-tailed Kite			X	X	X	X	X			X		
<i>Mammals</i>												
Habitat identification	X											
Kit Fox Natal Den Survey			X									
Finalize Maps									X	X		
Prepare Field Report (for Appendix)									X	X		
Staff												
D. Strong (Herpetology)												
M. de Leest (T&E Plants/Weeds)												
J. Scheffel ((Biolog(Coordination/Maps/Reports)												
L. Malo (Kit Fox Survey Coordination)												
B. Anderson (Plants/Birds)												
M. Nagy (Wetlands delineation)												

6.0 REFERENCES

California Burrowing Owl Consortium. 1993. Survey Protocol and Mitigation Guidelines, Santa Cruz Predatory Bird Research Group. <http://www2.ucsc.edu/~scpbrg/survey.htm>.

CDFG, 1998. California Vernal Pool Assessment Preliminary Report. California Department of Fish and Game, May 1998. [http://maphost.dfg.ca.gov/wetlands/vp assess rept/index.htm](http://maphost.dfg.ca.gov/wetlands/vp_assess_rept/index.htm).

Swainson's Hawk Technical Advisory Committee (TAC). 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. May 31, 2000.

J-2: Biological Resource Surveyors Qualifications and Resumes

JENNIFER M. SCHEFFEL

Assistant Biologist/Ecologist

EXPERIENCE SUMMARY

Although Ms. Scheffel has no previous professional experience, throughout her undergraduate and graduate work, she has worked extensively on field biology projects.

Currently, she works in the Santa Ana, CA office where her responsibilities have included basic biological research, botanical surveys, and mapping. The majority of her work has been on the PG&E North Baja Pipeline project and her duties on this project have included gathering data, QA/QC, map analysis, botanical and habitat assessment surveys, mapping (using ArcView GIS software) of all collected survey data, and writing survey reports. Ms. Scheffel is currently the project biologist on the FPL Tesla Power Plant Project with responsibilities including basic biological research, consultation with CDFG and USFWS, survey coordination, conducting surveys, writing reports, and mapping.

EDUCATION

M.S. (Master of Science), Applied Geography, New Mexico State University, Las Cruces, NM, 2001
B.S. (Bachelor of Science), Biology, Southwest Texas State University, San Marcos, TX, 1998

TRAINING

CPR and CPR for the Professional Rescuer, July 1998
Life Saving, July 1998
First Aid / Red Cross Certification, July 1998

FOSTER WHEELER ENVIRONMENTAL CORPORATION EXPERIENCE

Project Biologist, May 2001 - Present

FPL-Midway Power Plant Project, Alameda County, CA

Duties include basic biological research, consultation with CDFG and USFWS, survey coordination, conducting surveys, writing reports, and mapping.

Assistant Biologist, January 2001 -Present

PG&E North Baja Pipeline Project, Blythe, CA to Baja California

Assist in the gathering of data, QA/QC, map analysis, assisting in preparation of Section 404 and Section 10 reports, conducting botanical surveys, writing survey reports, and mapping of all survey data using ArcView GIS software.

PROFESSIONAL AFFILIATIONS

American Association of Geographers, Biogeography, 2000

DISCIPLINE CODES

Ecologists: 007, Primary
Surveyors: 023, Secondary
Biologists: 138, Secondary

SKILL SET

BIOLOGICAL SCIENCES

Biological Field Studies



JENNIFER M. SCHEFFEL

Assistant Biologist/Ecologist

Biological Modeling
Field Biology
Field Sampling
GIS Applications for Plant and Mammal Populations
Habitat Based Assessments
Habitat Based Mapping
Landscape Ecology
Mapping
Soils
Statistical Analysis
Terrestrial and Wetland Ecological Investigations
Threatened and Endangered Species Assessments
Threatened and Endangered Species Surveys
Vegetation Assessments
Vegetation Characterization
Wildlife and Habitat Inventory
Wildlife Ecology

SOCIAL SCIENCE

Cartography

TECHNICAL EXPERTISE

ArcView GIS
Systat Statistical Software

LANGUAGE SKILLS

English *Knowledge Level: Primary*

PROFESSIONAL REFERENCES

Dwight Mudry, Project Manager/Senior Biologist, FWENC, 949-756-7533
Jim Nickerson, Project Manager, FWENC, 949-756-7517
Penny Eckert, Independent Contractor, FWENC, 949-756-7547
Lenny Malo, Biologist, FWENC, 949-756-7556

RELATED COMPANY INFORMATION

Office Location: Santa Ana
FWENC Hire Date: 1/8/01
Years with Other Firms: 0
Daytime Telephone: 949-756-7527
E-mail Address: jscheffel@fwenc.com



EXPERIENCE SUMMARY

Mr. Malo has four years experience in interdisciplinary projects centered in biological resource assessment and identification, environmental compliance and permitting, and soil and groundwater investigations and remediation. He has prepared biological reports and assessments to document compliance with NEPA, CEQA, FERC, and federal and state Endangered Species Acts. He has developed survey protocols, field survey schedules, and mitigation packages in accordance with local and federal agency standards. He has also coordinated and conducted threatened and endangered species surveys, wetland delineation and other waters of the U.S. determinations. Mr. Malo is also experienced in technical report preparation for soil and groundwater investigations, underground storage tank (UST) installation and removal, environmental permitting, and heavy equipment operation.

REGISTRATIONS/CERTIFICATIONS

State Water Resources Control Board Underground Storage Tank, Removal - March 1999
Certified Arborist, International Society of Arboriculture, WC-4007 - April 1998

TRAINING

40-Hour HAZWOPER - December 2000
40-Hour OSHA Hazardous Waste and Safety Training - December 2000
8-Hour OSHA Hazardous Waste Health and Safety Supervisor Training - December 2000
Wetland delineation training utilizing the US Army Corps of Engineers 1987 Manual from May Consulting - July 1998

EDUCATION

BS, Ecology, University of California, Berkeley, 1997
Forestry and Resource Management, University of California, Berkeley, 1996

REPRESENTATIVE PROJECT EXPERIENCE

Midway Power, LLC.; Florida Power and Light Project, Northern California; Biologist; 10/00 - Conducted a biological reconnaissance survey and prepared a biological report. Characterized the site and evaluated whether endangered, threatened, or special status species or their habitats occur or potentially occur at the Midway site. Determined potential impacts to wetland habitat, riparian habitat, locally designated natural communities, and biological resources protected by local policies or ordinances.

Installation Restoration (IR) Sites 1 and 2, Innovative Technology RAC, Long Beach Naval Complex, Long Beach, California; Biologist; 09/00 - Conducted a biological reconnaissance survey and prepared a biological report. Characterized the site and evaluated whether endangered, threatened, or special status species or their habitats occur or potentially occur at the Long Beach Navy Mole site. Determined potential impacts to avian species, riparian habitat, locally designated natural communities, and biological resources protected by local policies or ordinances.

360networks, inc.; Fiber Optic Project, Southern California; Biologist; 09/00 - Conducted a biological reconnaissance survey and prepared a biological report. Characterized the site and evaluated whether endangered, threatened, or special status species or their habitats occur or potentially occur at the Guatay site. Determined potential impacts to wetland habitat, riparian habitat, locally designated natural communities, and biological resources protected by local policies or ordinances.

Pacific Gas and Electric; North Baja Natural Gas Pipeline, Southern California and Western Arizona; Biological Task Manager; 05/00 - Present - Prepared biological reports and assessments to document compliance with NEPA, CEQA, FERC, and federal and state Endangered Species Acts. Developed field survey protocols, field survey schedules, and mitigation packages in accordance with local and federal agency standards. Coordinated and conducted threatened and endangered species surveys, wetland delineations, and other waters of the U.S. determinations.

AT&T/PPF.Net; Fiber Optic Project, Southern California; Biological Task Manager; 02/00 - Present - Prepared biological reports and assessments to document compliance with NEPA, CEQA, and federal and state Endangered Species Acts. Responsible for developing field survey protocols, field survey schedules, and mitigation packages in accordance with local and federal agency standards. Coordinated and conducted threatened and endangered species surveys, wetland delineation, and other waters of the U.S. determinations.

360networks, inc.; Fiber Optic Project, Northern California; Biologist; 01/00 - 02/00 - Conducted field reconnaissance level biological surveys and mapping verification for fiber optic conduit installation. Responsible for delineating exclusion zones for sensitive biological resources.

PRIOR EXPERIENCE

Augeas Corporation
Half Moon Bay CA
06/98 - 01/00

Environmental Scientist/Director for Underground Storage Tank Cleanup Fund (USTCF) Department. Conducted wetland delineation, soil and groundwater investigations, environmental compliance and permitting, emergency response containment, and remediation projects in the real estate, petroleum hydrocarbon, and dry cleaning industries.

Various clients; Underground Storage Tank Cleanup Fund; Director; 06/98-01/00 - Served as liaison with the USTCF in Sacramento. Reviewed and evaluated all documentation submitted to the State Water Resource Control Board USTCF.

Served as Project Manager. Prepared proposals and technical reports for soil and groundwater investigations, wetland delineation, underground storage tank (UST) installation and removal, permitting, heavy equipment operation, and subcontractor crews. Provided field oversight and assistance. Wrote wetland delineation reports, reports on subsurface investigations of soil and groundwater, remedial work plans, quarterly groundwater monitoring reports, hazardous materials business plans, spill prevention containment and countermeasures plans, city and county permits, and formal local responsible agency (LRA) correspondence.

Compiled and manipulated analytical data to create tables/charts and characterized soil and groundwater contamination plumes. Responsible for machine operation (backhoe, track-mounted dozer, front-end loader, and bobcat type equipment). Collected soil and groundwater samples for State certified analytical laboratories and LRA officials.

Meister Environmental & Arboricultural Consulting
Santa Cruz, CA;
04/98 - 01/00

Served as Environmental Consultant and Project Manager. Conducted biological assessment and resource identification. Responsible for tree evaluations and landscape scale resource management plans (addressing valuation of tree aesthetics, wildlife habitat, Eco-tourism potential, plant nutrition, endemic

vs. exotic plant selection and succession, and hazard abatement). Provided assistance with specimen installation, establishment and long-term pruning prescriptions for re-vegetation and mitigation plans, erosion control plans, and quarterly vegetation monitoring plans. Provided arboricultural consulting addressing cabling, bracing, lightning protection, diagnosis and treatment of pests, disease, and problems associated with soil and water.

Prepared USTCF reimbursement requests and applications for private homeowners and independent gas stations. Collected soil and groundwater samples for State certified analytical laboratories and LRA officials.

Western Environmental Consultants, Inc.
Santa Cruz, CA
05/97 - 06/98

As a utility forester, served as environmental consultant to Pacific Gas and Electric Company (PG&E). Coordinated and supervised line clearance operations to ensure compliance with the California Public Resources Code and California Public Utility Commission. Updated computer tree inventory programs, prepared staff reports and tree inventory records. Worked closely with PG&E corporate and consumer clients. Performed audits of outside contractors' adherence to prescribed work orders.

Jones & Stokes Associates
Sacramento, CA;
01/96 - 05/97

As an environmental technician, worked on interdisciplinary projects centered on natural resource management and protection. Participated in wetland delineation and assessment, and threatened and endangered species surveys. Compiled and manipulated data to create resource database, species inventory lists on plants and wildlife, tables and charts (botanical, invertebrate and wetland databases). Assisted with preparation of environmental impact reports, environmental impact statements, mitigation and monitoring plans, and wetland delineation reports.

Interpreted aerial photographs (identified vernal pool signatures, possible jurisdictional wetlands, drainage, possible water of the United States, etc.). Prepared maps depicting physical size, hydrology and vegetation of vernal pool habitats, major topographic features, acreage of habitats, and oak tree location.

Performed wildlife surveys, using baited smoke plates and trail marker camera stations to determine species composition, and presence/absence of special status mammals.

Conducted plant surveys concerning species composition and inventory work for trees, presence/absence of wetland plants, and quarterly monitoring.

Conducted kit fox surveys in Contra Costa County, including den surveys for two-week periods, and excavation of potential den sites. Calculated radial telemetry data (48-hour monitoring surveys under conditions of extensive disturbance).

Performed laboratory field activities specifically related to invertebrates, including identification and survey of special status fairy shrimp in both adult and cyst stages, freshwater and terrestrial invertebrate species, California valley elderberry longhorn beetle, and delta green ground beetle.

DISCIPLINE CODES

138 Biologists, N
007 Ecologists, Y

OTHER DATA

Office Location: Santa Ana
FWENC Hire Date: 01/06/2000
Years w/Other Firms: 4
Daytime Phone: 949-756-7556

EXPERIENCE SUMMARY

Dr. Mudry has 28 years of direct experience in environmental sciences including: field surveys; field data analysis; impact assessment; and, management of multidisciplinary environmental, earth sciences, and engineering teams for resource development and environmental and hazardous waste projects.

Responsible for conducting and managing multidisciplinary environmental studies associated with: major industrial and resource development projects; coal, biomass, and gas fired power plants; coal mine development and mining operations; hydroelectric facilities; co-generation facilities; and, road, pipeline, and transmission lines. Provides senior technical support in the areas of power plant siting and impact assessment, biology, and aquatic ecology. Project experience includes preparation of Environmental Assessments, Initial Studies, Environmental Impact Reports and Impact Statements under CEQA, NEPA, and World Bank guidelines. Experience includes projects in Canada, Nepal, and Pakistan, as well as California and other parts of the US.

EDUCATION

PhD / Biology / University of Calgary / 1972

MA / Biology / California State University at Long Beach / 1969

BS / Zoology / California State University at Long Beach / 1967

TRAINING

40-Hour OSHA Hazardous Waste Health and Safety Training

REPRESENTATIVE PROJECT EXPERIENCE

All Star Telecon – AT&T Fiber Optic Line Permitting. Team member responsible for preparation of technical resource documents, and CEQA (California State Lands) and NEPA (Bureau of Land Management) documentation for 360-mile fiber optic line in southern California. Responsible for staffing and execution of field programs for biology, cultural resources, wetlands surveys, and other resources. Principal author of application to California State Lands.

Occidental Energy Ventures Corp., and Sempra Energy Resources – Elk Hills Power Plant Permitting – Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 500 MW power plant facility near Bakersfield, CA. The Application included completion of baseline surveys, impact assessment and mitigation planning. Dr. Mudry managed a project staff of over 15 scientists and specialist subcontractors, participated in public hearings, prepared and delivered sworn testimony, and cooperated with several state and local agencies during the review and permitting process. The project has been approved and is now under construction.

New Cure, Inc., Oil Superfund Site, Monterey Park, California – Deliverables Manager for coordination, production, and quality control of all documents prepared for submission to the US EPA. The Operating Industries, Inc., (OII) Landfill is a 190-acre closed industrial/municipal landfill and Superfund site. The project work includes engineering and construction of cover systems, gas management systems, and surface water management systems for closure of the landfill. Responsible for preparing schedules, developing report outlines, coordinating

preparation of deliverables by technical leads, final editing, report production, and presentations to the EPA. Documents prepared and submitted to the EPA include: Work Plan, Quality Assurance/Quality Control Plan, Safety, Health and Emergency Response Plan, and Preliminary Design Report.

Infrastructure Capital Group, LLC, Liberty Power Project, Pakistan – Conducted field investigations, directed local subcontractors, and prepared a draft Environmental and Social Soundness Assessment for a proposed 450 MW gas fired power plant to be located in northern Sindh Province of Pakistan. In addition to the power plant itself, the project also included construction of approximately 110 km of natural gas pipeline, a 7 km transmission line, a site access road, and a residential colony housing approximately 300 staff and support personnel. The draft report documents the affected environment, identifies potential adverse impacts, and proposes appropriate mitigation measures using the guidelines of the Government of Pakistan and the World Bank. Principal areas of environmental concern included pipeline construction through desert and agricultural lands, planned river crossings through sensitive riparian and aquatic habitats, air and water quality impacts, traffic impacts during construction, displacement of on-site residents due to project construction, and socio-economic impacts related to the operation of the facility.

Government of Nepal, Hydroelectric Project Environmental Assessment – Chief Environmentalist for an environmental assessment and mitigation planning for the 405 MW Arun III hydroelectric facility in north eastern Nepal. Selected by the World Bank as supervisor of an environmental team to provide impact assessment and mitigation planning for expected impacts of this major facility. Project facilities include: 90 meter high dam and impoundment; 10 km of tunnels; powerhouse; quarries; 125 km access road; transmission lines; and, company housing and other infrastructure. Special areas of concern include soil erosion, loss of agricultural land, impacts to migratory fish, and socio economic impacts including resettlement of people displaced by the project. Tasks included preliminary evaluation of potential impacts, identification of data needs, development of field data collection programs, direction of field programs, evaluation of potential impacts, mitigation planning, and write-up and editing of an environmental impact and mitigation report.

Destec Energy- Environmental Assessment of Tapal Energy Project, Karachi, Pakistan - Environmental Specialist for review of environmental compliance and adequacy of mitigation measures for the 300 MW Tapal Energy Project near Karachi. The Tapal facility consists of 12 diesel units fired with low quality fuel oil. Environmental concerns included air quality, water use and disposal, disposal of sludge and waste oil, noise, truck traffic, and impacts to adjacent mosque and school. Tasks included review of project documents, air quality modeling, site visits, interviews with engineering and construction staff, and meetings with government officials. World Bank and Government of Pakistan guidelines were used for evaluation of compliance.

Edison Mission Energy- Environmental Assessment of Jamshoro Power Plant, Jamshoro, Pakistan - Environmental Specialist for review of environmental compliance and adequacy of mitigation measures for the 1200 MW oil and gas fired Jamshoro Power Plant near Jamshoro, Pakistan. The four unit Jamshoro Plant is one of several being privatized by the Government of Pakistan and the environmental review was needed for the overall evaluation of the potential capital and operating expenses for potential purchase of the facility by Edison Mission Energy. Environmental concerns included desilting of Indus River water supply, stack emissions and air quality, treatment and disposal of waste water, disposal of sludge and waste

oil, and the state and effectiveness of environmental protection and monitoring systems. Tasks included review of project documents, site visits, interviews with site engineering staff, meetings with government officials, and preparation of sections for the evaluation report. World Bank and Government of Pakistan guidelines were used for evaluation of compliance.

Los Angeles Harbor Department, Environmental Impact Report – Project Manager and principal author of an Initial Study, Draft and Final Environmental Impact Report (EIR), and Mitigation Monitoring Plan for renewal of Hugo Neu-Proler's lease at Berths 210-211 in the Port of Los Angeles. This facility processes and ships over one million tons per year of scrap metal to Pacific Rim countries. Special studies conducted in support of the EIR included traffic impact assessment, air quality monitoring, health risk assessment, and noise monitoring. Prepared responses to comments from the public and agencies on the Draft EIR and prepared a Final EIR.

Eastern Transportation Corridor, Orange County, California – Acting Mitigation Manager responsible for coordinating and directing multidisciplinary staff monitoring all construction activities for a toll road in Orange County. The 23-mile toll road includes four major intersections, approximately 50 bridges or other structures, and 29 sensitive stream crossings. The project location includes foothill and mountain terrain with chaparral and coastal sage scrub habitat as well as agricultural lands. Monitoring includes: verification that project plans for protection of biological, archaeological, paleontological, and other resources have been implemented; evaluation of the effectiveness of sedimentation and erosion protection measures; continuous monitoring of impacts to sensitive species such as the California gnatcatcher and the cactus wren; implementation of mitigation programs for replacement of coastal sage scrub and wetlands; and, monitoring of clearing, grading, and other construction activities.

Jet Propulsion Laboratory, Environmental Risk Assessment – Responsible for coordination and preparation of a screening ecological risk assessment, which is being prepared following guidelines of the California Department of Toxic Substances Control. The risk assessment is being conducted in support of the Remedial Investigations (RI) for groundwater, soil, and soil vapor contamination at the Jet Propulsion Laboratory (JPL) in Pasadena, California. The risk assessment will help to determine the potential ecological receptors, the potential contaminants of concern, and the potentially completed exposure pathways. The assessment will qualitatively evaluate the potential threat to non-human receptors posed by potential contaminants and site-specific activities.

Rio Linda Water District, Initial Study and Negative Declaration – Responsible for preparation of an Initial Study and Negative Declaration for proposed six mile pipeline through a residential and agricultural area to connect the Rio Linda Water District's existing water distribution system with the nearby Northridge Water District. Tasks included development of a project description and field evaluation of potential impacts to biological, cultural, traffic, noise, and land resources. Potential environmental impacts were assessed, mitigation measures were proposed, and a mitigation monitoring program was prepared. Prepared all CEQA documents and notices for the client, responded to comments on the Initial Study from the public and other agencies, and attended public hearings on the project.

Korean Electric Power Company (KEPCO), Environmental Training Program – Principal instructor for two six-month training programs for environmental staff from the Korean Electric Power Company (KEPCO) working on the Samchonpo Units 5 and 6 and Taeon Units 1 and 2. These two projects are coal fired facilities, each unit rated at 510 MW. Instruction focused on

environmental issues in use of coal for power production, siting of coal fired power plants, evaluation of environmental impacts of coal fired power plants and supporting infrastructure, and development and application of mitigation measures and monitoring programs.

ARK Energy, Ethanol Plant and Cogeneration Plant Permitting – Project Manager responsible for preparation of an Application for Certification (AFC) for submission to the California Energy Commission for a proposed 148.5 MW cogeneration facility and associated ethanol manufacturing plant near Sacramento, CA. The Application included completion of baseline surveys, impact assessment and mitigation planning. Other documents prepared in support of various permit applications included: Soil and Erosion Control Plan, Wetlands Mitigation Plan, NPDES Application, and Deep Well Wastewater Disposal Application. Dr. Mudry managed a project staff of over 20 scientists and technical specialists, participated in public hearings, and cooperated with several state and local agencies during the review and permitting process.

Caltico Oil Corporation, Conditional Use Permit Application – Responsible for preparation of a Conditional Use Permit Application submitted to the City of Santa Clarita for development of the Confusion Hill oil field. The project consisted of 62 oil production wells and 28 steam and water injection wells and modification of existing oil and steam distribution pipeline systems. Approximately 50 old tanks and other equipment will be dismantled and removed. Special studies included biological surveys, archaeological surveys, noise assessment, and investigation of land use issues. An evaluation of potential impacts was completed using a CEQA Initial Study format.

Los Angeles County Internal Services Department, Supplemental EIR – Preparation of an Initial Study and Supplemental Environmental Impact Report for proposed West Los Angeles Courthouse. Tasks included traffic analysis, evaluation of potential impacts, and development of mitigation measures.

Carson Energy, Co-generation Facility Permit Application – Responsible for preparation of a project description for a proposed 98 MW co-generation facility and associated ice manufacturing plant near Sacramento, CA. Documentation was prepared to support a Small Power Plant Exemption (SPPE) to be submitted to the California Energy Commission.

Air Products and Chemicals, Inc., Power Plant Siting and Permit Requirements – Prepared a review of all permit requirements required for siting a co-generation project in California. The analysis identified and provided a discussion of permits which would be required for project of less than 50~MW, 50 100 MW, and greater than 100 MW. Several schedules of various permit scenarios were also provided.

ARCO Oil and Gas Company, Conditional Use Permit Application and Initial Study – Responsible for preparation of a Conditional Use Permit Application and Initial Study submitted to the City of Santa Clarita for redevelopment of the Placerita oil field and modification of oil production facilities. The project consisted of 55 oil production wells and 44 steam and water injection wells, and modification of existing oil and steam distribution pipeline systems including 135,000 feet of new pipe. Special studies included biological surveys, archaeological surveys, and a noise impact assessment. An evaluation of potential impacts was completed using a CEQA Initial Study format.

Los Angeles County Department of Public Works, Negative Declaration – Prepared a Negative Declaration under CEQA for proposed San Gabriel Reservoir Sand and Gravel Removal Project. The project site is in the Los Angeles National Forest and includes the removal of accumulated sediment, sand, and gravel from the exposed portions of a reservoir. Site investigations included biological surveys, air quality impact assessment, noise surveys, traffic impact analysis, cultural resource surveys, and preparation of spill response and mitigation monitoring plans.

Modesto Irrigation District, Power Plant EIR – Responsible for preparation of an Initial Study, Draft and Final EIR, Mitigation Monitoring Plan, and supporting studies for a planned 49 MW gas fired power plant in Modesto, CA. The project required special attention to concerns related to storage and use of ammonia and construction of natural gas pipelines. The EIR was certified and the project is now under construction.

Bonneville Pacific Corporation, Power Plant Initial Study – Responsible for preparation of a Conditional Use Permit application and an Initial Study for a proposed 46 MW co-generation facility at the DuPont plant in Antioch, CA. Special studies included examination of cultural resources, wetlands, and noise.

Federal Energy Regulatory Commission, Natural Gas Pipeline EIS – Responsible for analysis of routing alternatives for two large gas pipelines planned for the New England area for the Federal Energy Regulatory Commission. Responsibilities included analysis of land use and physical and biotic parameters for use in an EIR prepared in compliance with the National Environmental Policy Act (NEPA).

California Energy Commission, Power Plant Siting and EIRs – Project Manager for staff review of the 200 MW Crockett Cogeneration Project Application for Certification for the California Energy Commission Siting Certification Program. Activities on this project required the coordination of a multidisciplinary environmental and engineering team of approximately 20 staff members through the discovery, analysis, and hearings phases. Testimony in 25 areas of expertise was prepared and presented in public meetings and hearings. Edited preliminary and final staff assessments and authored a section on project alternatives.

SOFAR Project, Hydroelectric Project Permits and Mitigation Plans – Responsible for preparation of plans required to obtain a special use permit from the US Forest Service for construction and operation of four dams, tunnels, and power plants, which make up the South Fork American River hydroelectric project. Plans prepared include: Transportation Plan, Fire Prevention Plan, Reclamation Plan, Spoil Plan, Erosion and Sediment Control Plan, Raptor Management Plan, Cultural Resources Management Plan, Hazardous Spill Control and Countermeasure Plan, Public Safety Plan, Vegetation Clearing Plan, and others.

Northern California Power Agency, Environmental Assessments for Five Power Plants – Prepared an environmental overview and the initial studies (under CEQA) for five combustion turbine peaking sites located in Placer County, San Joaquin County, Mendocino County, and Alameda County, California. Tasks included input on siting and evaluation of land use, physical and biotic parameters necessary to comply with CEQA, and other legislation. Expert witness at two public hearings. The plants were subsequently constructed and are now in operation.

Corn Products Corporation, Coal Fired Co-generation Project EIR – Managed and prepared an EIR for a 49.5 MW coal fired re-circulating fluidized bed co-generation facility at an

existing plant in Stockton, California. Responsibilities included supervision of a multidisciplinary study team that prepared an EIR that included a project description, resource evaluation, potential impacts, and mitigation measures. Principal areas of environmental concern included fuel handling, air quality impacts, and ash disposal. The EIR was certified as complete by the City of Stockton, California; the plant was constructed and is now in operation.

Pembina Resources Ltd., Oil Pipeline Environmental Assessment – Supervised study team preparing environmental overview and environmental protection plan for two oil pipelines totaling approximately 200 miles in length. Edited report and wrote sections dealing with aquatic resources.

Home Oil Company, Site Selection for Oil Pipeline – Supervised study team preparing biophysical assessment and route selection for proposed 80 mile pipeline in Rocky Mountain foothills location. Several route alternatives were comparatively assessed, with route selection criteria based on identified environmental sensitivities.

Mobil Oil Company, Environmental Assessment for Oil Sands Mine – Supervised multidisciplinary study team preparing environmental and socioeconomic assessment in connection with an evaluation of a 12,000 acre lease for possible oil sands mining. The environmental assessment covered all phases of the project including: survey and planning, facility siting, exploratory drilling and test pits, land clearing, construction of plant facilities and tailings ponds, and plant operation and maintenance. The environmental assessment included field studies for evaluation of all major environmental resources, impact assessment, and development of possible mitigation measures.

Baymag Mines Company, Environmental Assessment for New Mine – Project Manager for environmental studies for proposed magnesite mine. Assignments included initial environmental overview, input to feasibility studies and cost estimation, field data collection (air quality and climatology, hydrology and water quality, surficial geology and soils, agriculture, aquatic resources, wildlife and habitat, and land use) and subsequent impact assessment, reclamation planning and preparation of applications for related permits.

B. C. Hydro and Power Authority, Fisheries Impacts Study – Principal Scientist responsible for a two year research project undertaken on behalf of B. C. Hydro and Power Authority. The study investigated possible effects of parasite transfaunation on salmon and other fish stocks for proposed McGregor Diversion Project. Supervised field collections, conducted laboratory analysis of several thousand fish and authored final report. Economic species of importance included king salmon, sockeye and kokanee salmon, rainbow trout, bull trout, and lake trout.

McLeod Coal Ltd., Coal Mine EIS – Supervised multidisciplinary study team preparing environmental impact statement (EIS) and supporting technical reports for major planned coal mine. The mining project will produce four million tons-per-year of coal for export to Europe, Japan and other Pacific Rim countries. Project facilities include the mine, tailings dam and tailings pond, wash plant, 12 km coal conveyor system, rail load out facilities, access road, and support buildings. A full range of aquatic and terrestrial field studies were undertaken including: hydrology, limnology, aquatic invertebrate and fisheries habitat studies; fish movement, population and spawning studies; vegetation, soils and forestry investigations; fur bearers, big game, and avian range and population studies; and land and resource use studies.

Gregg River Resources, Coal Mine Construction Permits and Compliance – Project Ecologist for construction phase of major coal mine and processing facility in western Canada. Construction included: excavation of three million cubic meters of cover material to gain access to the coal seams; construction of tailings ponds and associated dams, diversions and impoundments; coal processing and wash plant; and, road and railway construction. Environmental work included acquisition of over 200 permits; reclamation planning; monitoring dust fall and stream water quality; and salvage of merchantable timber.

Alberta Energy Company, Environmental Compliance Audit – Project Biologist for technical audit of Syncrude Canada Ltd. oil sands mining operation. The open pit mining operation at Syncrude is one of the largest in the world, producing approximately 150,000 barrels of synthetic oil per day. Waste sand and process water are accumulated in a tailings pond with an area of nearly 10 square miles. The study assessed compliance with current legislation dealing with pollution control and environmental protection measures. Project tasks included review and evaluation of long-term reclamation plans for the site, including the mine pits and tailings ponds.

Onakawana Development Ltd., Lignite Mine and Power Plant Environmental Assessment – Project Manager for Environmental Impact Assessment for proposed lignite mine and associated power plant development in northern Canada. The project site is located in a remote area with no existing support infrastructure. Planned development of the site required river diversions, construction and operation of an open-pit one million ton-per-year lignite mine, and construction of cooling ponds, and power generation and transmission facilities. Final site reclamation was a key concern and site work included field biological investigations, revegetation plot trials, data analysis, and development of revegetation and reclamation plans.

Yoho National Park, Biological Survey – Headed an intensive two year study gathering quantitative and qualitative data on fish and fish habitat at 22 lake and 30 stream sites in Yoho National Park as part of an aquatic resources inventory for management and interpretation. Developed investigative program, conducted and supervised two year field program, undertook all laboratory analysis of morphometric, chemical, benthic invertebrate, zooplankton, and fish data. Authored a three volume final report.

Pacific Rim National Park, Aquatic Resources Inventory – Conducted Pacific Rim National Park aquatic resources inventory which included an intensive two year examination of seven lakes and a number of streams which were being considered for inclusion in the park system. Physical, chemical, and biotic parameters were examined to describe the diverse aquatic communities of the study area. Field collections were conducted for phytoplankton, zooplankton, benthos, macrophytes, and fish. Principal fish species included sockeye and kokanee salmon, coho salmon, bull trout and cutthroat trout. Taxonomic and population data were developed and analyzed in subsequent laboratory investigations. Authored the final report.

Spray River, Fisheries Impacts Study – Conducted a study to gather basic qualitative and quantitative information on fish and fish habitat which was impacted by reduced water flows following construction of a dam and hydroelectric facility. Field studies were conducted for physical, chemical, and biotic parameters such as algae, benthic invertebrates, and fish populations. Fish species present included *Salvelinus malma* and *S. fontinalis*. Taxonomic and population data were developed and analyzed in subsequent laboratory investigations. Authored the final report. Results included recommendations for improvement and enlargement of important salmonid habitat through changes in release patterns of impounded waters.

Native Trout Population Studies – Planned investigations program and supervised collection and analysis of the native and resident cutthroat trout (*Salmo clarki*) in the Bow, Kootenay - Columbia and Waterton River systems. The purpose of the study was to identify sources and characterize populations of native cutthroat trout using morphological and electrophoretic methods. Twelve lake and three stream sites were sampled and the results were used to develop management plans for maintenance of native stocks.

Zooplankton and Benthic Invertebrate Investigations, Several Projects – Conducted numerous taxonomic and qualitative zooplankton and benthic invertebrate investigations on several projects at lake and stream sites for pollution detection, management, or impact assessment purposes. Comparative studies involved both quantitative and qualitative aspects.

Ski Resort Aquatic Impacts Investigation – Conducted limnological and fisheries investigations on three streams affected by an operating ski and winter recreation area. Work included systematic sampling of water chemistry, coliform bacteria, phytoplankton, benthos, fish habitat and relative fish abundance.

Alaska North Slope, Parasites of Arctic Char – Applied research on parasites of Arctic char (*Salvelinus alpinus*) from the north slopes of Alaska and Canada. This study formed part of an investigation of the biology along a proposed pipeline route. Resulted in the publication of two papers.

MISCELLANEOUS PROJECTS

Responsible for management of staff involved in the following projects: Potrero Canyon EIR; Review of eight power plants under the California Energy Commission Siting Program; Preparation of incineration feasibility study for Basin F remediation at the Rocky Mountain Arsenal; Berths 212-215 Remediation Plan and EIR for Port of Los Angeles; Hazardous waste site investigations at sites in Downey, Los Angeles, Indio, Fresno, Vernon and Westminster, California, as well as others; Investigation under the Defense Environmental Restoration Account on behalf of the US Corps of Engineers; and, Preparation of air quality and environmental documents for projects such as UNOCAL Cogeneration Project, Genstar Coyote Canyon Landfill Gas Power Plant, O'Brien Energy Corporation projects (several), and Delano Biomass Power Plant.

RESEARCH EXPERIENCE

Applied research on the parasites of Arctic char from the north slope of Canada and Alaska. Results were published in two papers dealing with new species and parasite distribution.

Thesis research (Ph.D.) on the biology of the parasite *Hunterella nodulosa* in the common sucker (*Catostomus commersoni*). Resulted in the publication of one paper on the life cycle and one paper on population dynamics.

Basic research involving the capture, examination, and laboratory processing of marine mammals and fish for helminth parasites in California coastal waters. Basic and applied research resulted in definition of several helminth life cycles known to cause significant harm to host stocks.

Thesis research (MA) on parasites of elasmobranch fishes (sharks, skates, rays) along the California coast. Resulted in publication of three papers.

PUBLICATIONS

Dailey, M.D. and D.R. Mudry. Two new species of cestoda from California rays. *Journal of Parasitology* 56:1141-1143.

Mudry, D.R. and M.D. Dailey. *Phlyctainophora squali* sp. nov. (Nematoda, Philometridae) from the spiny dogfish, *Squalis acanthias*. *Proceedings of the Helminthological Society of Washington* 36:280-284.

Mudry, D.R. and M.D. Dailey. Post-embryonic development of certain tetraphyllidean and trypanorhynch cestodes with a possible alternative life cycle for the Order Trypanorhyncha. *Canadian Journal of Zoology* 49:124 -1253.

Mudry, D.R. and H.P. Arai. 1973. Life cycle of *Hunterella nodulosa* Mackiewicz and McCrae 1962 (Cestoidea: Caryophllidea). *Canadian Journal of Zoology* 51:781-786.

Mudry, D.R. and H.P. Arai. 1973. Population dynamics of *Hunterella nodulosa* (Cestoidea: Caryophllidea) in Alberta. *Canadian Journal of Zoology* 51:787-792.

Mudry, D.R. and P.J. McCart. 1974. *Bulbodacnitis alpinus* sp. nov. (Nematoda: Cucullanidae) from Arctic Char, *Salvelinus alpinus*. *Canadian Journal of Zoology* 52:441-446.

Mudry, D.R. and P.J. McCart. 1976. Metazoan parasites of arctic char (*Salvelinus alpinus* L.) from the north slope of Canada and Alaska. *Journal of Fisheries Research Board of Canada* 34:271-275.

Mudry, D.R. and R.S. Anderson. 1977. Helminth and arthropod parasites of fishes in the mountain national parks of Canada. *Journal of Fisheries Biology* 11:21-33.

Arai, H.P. and D.R. Mudry. 1983. Parasites and diseases of fish the McGregor and upper Peace drainages of British Columbia: A study of potential parasite transfaunation. *Canadian Journal of Fisheries and Aquatic Sciences*, 40:1676-1684.

EXPERIENCE SUMMARY

More than 23 years experience as an environmental professional including 2 years with a local government agency; 10 years with state resource management and regulatory agencies, and 11 years as a consultant with large international firms. Expertise in environmental impact assessment, environmental permitting and compliance; natural resource inventories, wetlands and wildlife evaluations, and NEPA documentation. Extensive experience as a project manager, including many large multi-disciplinary projects.

REGISTRATIONS/CERTIFICATIONS

Certified Environmental Professional (C.E.P.) No. 96050329, April, 1996

EDUCATION

Graduate Studies/ Natural Resources/ Michigan State University/ 1977

BS/ Natural Resources/ Ball State University/ 1977

REPRESENTATIVE PROJECT EXPERIENCE***NEPA Analysis***

- Project Manager and principal author of the Programmatic Environmental Impact Statement, (EIS) for the State of Florida's Everglades Restoration Program and Everglades Construction Project. The EIS was completed for the U.S. Army Corps of Engineers, (USACE), Jacksonville District, with oversight by U.S. EPA Region 4.
- Project Manager and principal author of the EIS for the Canal 51 West Flood Control Project in South Florida. The EIS was completed for the USACE, Jacksonville District
- Completed environmental planning and analysis for the Levee 28 Modification Feasibility Study, Big Cypress National Preserve. The study document included integrated NEPA analysis (Environmental Assessment). The study was completed for the USACE, Jacksonville District, and included extensive coordination with the USFWS, National Park Service, and USGS.
- Project Manager and principal author of the EIS for Shell Western E&P Inc., Exploratory Oil Well at the Miccosukee Indian Reservation, Florida Everglades. The project was completed for Shell as a third party EIS directed by the U.S. Department of Interior, Bureau of Land Management, and Bureau of Indian Affairs, and the Miccosukee Tribe of Indians of Florida. The project included Section 7 Consultation with the U.S. Fish and Wildlife Service, several public hearings, and briefing with the Florida Congressional Delegation in Washington, D.C.
- Project Manager for the Environmental Assessment of Key West International Airport Improvements in accordance with FAA and Florida DOT procedures. The project was completed for Monroe County, Florida, under the direction of FAA. The project included coordination with a public steering committee, public hearings, and federal and state agency coordination.
- Completed the natural resources inventory and impact analysis for the Environmental Impact Assessment of Emerald Bay Resort at Great Exuma, Bahamas. The EIA for the 460-acre resort and marina project was completed in accordance with Commonwealth of the Bahamas and World Bank standards. Issues included flora, fauna, marine resources, water quality, aquifer protection.
- Completed baseline natural resources inventories and impact assessments for several other Environmental Assessments including: Florida Spaceport Authority, Cape San Blas Sounding Rocket Facility; Space Launch Complex 17C, Canaveral Air Force Station; Ft. Lauderdale International Airport Roadways Project; Orlando Maglev Train Demonstration Project.
- Currently responsible for NEPA Analysis within the Florida Key Deer Habitat Conservation Plan.

Permitting

- Project Manager for the Central Florida Pipeline Project for GATX Terminals Corp. Siting, environmental assessments and permitting for a 112 mile long petroleum products pipeline with approximately 200 wetland impact areas. Included Section 7 consultation with the U.S. Fish and Wildlife Service, wetland mitigation design, and construction. Listed species of concern included bald eagle, gopher tortoise, red-cockaded woodpecker, scrub jay, scrub mint, and sand skink.
- Linear corridor analysis, wetland and wildlife permitting for ENRON Corp. natural gas pipeline expansion projects in Florida, Mississippi, Louisiana, and Alabama. Included preparing documentation for state and federal permit applications and various filings with FERC.
- Recently acquired a Section 404 permit for filling 16 acres of wetlands for a mixed commercial use development in Palm Beach County, Florida. The wetland mitigation plan consisted of purchase of credits from an established regional wetland mitigation bank.
- Completed an ecological site assessment and developed an enhancement plan for a 15 acre coastal wetland at Long Beach, Barbados. Negotiated with the Ministry of Environment for recognition of the enhancement project as wetland mitigation for project impacts.
- While on staff at the South Florida Water Management District, acquired over 50 federal, state and local environmental permits for public works and environmental enhancement projects including Kissimmee River Restoration.

Other Projects

- Provided expert witness services to the U.S. Department of Justice for land condemnation cases in the Everglades National Park Expansion Area; Big Cypress National Preserve; Crocodile Lake National Wildlife Refuge; and an FAA facility site in Vega Baja, Puerto Rico. This work consisted of site investigations for wetlands, wildlife and other natural resources that may affect appraised value and highest and best use. Testimony was then provided in Federal court regarding regulatory constraints that could effect development of the various properties.
- Project Manager for the South Florida Water Management District Land Cover and Land Use Mapping Project. Included mapping and classification of land use and land cover to an established classification system for 16 counties. The project was completed by visual and photogrammetric analysis of NAPP color infrared aerial photography.
- Assisted Plum Creek Timber Company in analysis of a 538,000-acre forest purchase area in Mississippi, Arkansas, and Louisiana. Included analysis of regulatory constraints that may be imposed by federal and state wetland, wildlife, and other natural resource protection laws. This work was completed during a due diligence period.
- Completed environmental assessment and permit application documentation for a mixed commercial use development and marina project in St. Thomas, U.S. Virgin Islands. The documentation was completed to the Territory of the Virgin Islands standards. Issues included water quality, sea grasses, and traffic impacts.
- Completed natural resource assessments of wetland and wildlife resources at various development and remediation sites within the 40,000 acre Kissimmee Prairie State Preserve for the Florida Department of Environmental Protection. Sited and permitted a staff and public use facility to avoid major resource impacts and environmental permits.
- Conducted habitat and wildlife assessments for natural gas field (well pad, pipeline and access road) impacts in the coal methane area of Central Alabama for Taurus Exploration, Inc.
- Completed a natural resource inventory of Lake Worth Lagoon, a 40-mile long coastal estuary in South Florida. The project involved a literature search and review, site

investigations, and mapping of biological and physical features. Recommendations for resource enhancement actions and projects were then developed. This project became the basis for a 10 year program of physical improvements and regulatory actions geared toward enhancement of the lagoon.

PRIOR EXPERIENCE

Dames & Moore - Senior Ecologist – Planned, organized, managed and completed multi disciplinary projects with emphasis on environmental planning and assessment. Completed water resource plans; resource management plans; linear corridor planning and analysis; basin and water quality studies; facility siting studies; site audits; acquisition of environmental permits; expert witness services; environmental impact statements and assessments in compliance with NEPA; wetlands, upland habitat and wildlife assessments; wetlands mitigation, site development, and regulatory compliance plans.

South Florida Water Management District – Project Manager – Managed complex regional water resources projects with emphasis on project planning and design, environmental assessment and permitting, and construction contract execution. Completed projects involving wetlands, water quality, surface water discharge, ground water discharge, stormwater, solid waste, industrial waste, domestic waste, underground storage tanks, well construction, archeological resources, and regulatory approval issues.

Florida Department of Environmental Regulation-Environmental Supervisor – Administered wetland resource permitting program (major projects) for South Florida. Evaluated and processed applications, water quality, sediment, and biological data; performed wetland jurisdictional determinations and site assessments; consulted and negotiated with applicants and other governmental agencies; developed and refined regulations; managed applied research projects.

Florida Department of Natural Resources - Park Ranger – Conducted park operations including administration, resource management, visitor services, protection, and facility maintenance. Acted as resource management and interpretive program coordinator for Ft. Pierce Inlet State Park.

Elkhart County Park and Recreation Department – Environmental Specialist – Planned, developed and administered interpretive services, park facilities, biological surveys, and resource management plans for a resource based county park system.

J. GEOFF MONK
ENVIRONMENTAL BIOLOGIST

Mr. Monk has approximately 23 years of experience as an environmental biologist in California, with additional experience in Idaho, Washington, Oregon, and Nevada. His technical expertise includes: quantitative wildlife and vegetation analysis; multiparameter wetland assessments; design and implementation of wetlands mitigation projects; design and implementation of rare and endangered species population studies; biological constraints analysis; mitigation monitoring; and impact analysis pursuant to NEPA and CEQA. Mr. Monk also provides liaison between clients and regulatory agency personnel, and prepares wetland permit applications, streambed alteration agreements, alternative analyses and mitigation plans for submittal to California Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers. Mr. Monk has extensive experience supervising large field crews performing comprehensive resource and target species analyses.

EDUCATION

M.S., Wildland Resource Science, University of California, Berkeley, 1981
B.S., Wildlife Management, Humboldt State University, Arcata, California, 1977

EMPLOYMENT HISTORY

1992 - Present: Monk & Associates, Environmental Biologist/Principal.

1989 -1992: Harding Lawson Associates, Senior Biologist.

1986-1989: University of California, Santa Cruz, Federal and State Birds of Prey Monitoring Team Coordinator/ Data Base Manager.

1984 - 1986: Monk & Associates, Wildlife Biologist/Principal

1981 - 1983: U.S. Fish and Wildlife Service, Wildlife Biologist. Sacramento Endangered Species Office.

1976-1980: U.S. Bureau of Land Management, Wildlife Biologist, Washington, Nevada, California Districts.

J. GEOFF MONK
Environmental Biologist

REPRESENTATIVE PROJECTS

Highland View Development, El Dorado County, California.

*See Representative Projects Completed by M&A.

French Camp Golf Course and R.V. Park, San Joaquin County, California.

*See Representative Projects Completed by M&A.

UNOCAL Ecological Risk Assessment, San Luis Obispo County, California

*See Representative Projects Completed by M&A.

Oak Manor Housing Development, Alameda County, California.

*See Representative Projects Completed by M&A.

Sky Valley Orchards Housing Development, Solano County, California.

*See Representative Projects Completed by M&A.

Keller Canyon Sanitary Landfill, Contra Costa County, California.

*See Representative Projects Completed by M&A.

Four Seasons Development, Contra Costa County, California.

*See Representative Projects Completed by M&A.

TMD-Brown Development, Sonoma County, California.

*See Representative Projects Completed by M&A.

PGT Coyote Springs and Medford Lateral Pipelines.

*See Representative Projects Completed by M&A.

Bennett Consolidated Commercial Development, Sonoma County, California.

*See Representative Projects Completed by M&A.

Granite Construction Company, Vernalis Project, Stanislaus County, California.

*See Representative Projects Completed by M&A.

Bridgeport Trails Housing Development, San Joaquin County, California.

*See Representative Projects Completed by M&A.

J. GEOFF MONK
Environmental Biologist

REPRESENTATIVE EXPERIENCE

Lambie Ranch Development, Solano County, California - Prepared Biological Resource Analysis for proposed 1100-acre commercial development approximately 10 miles east of Fairfield, near Jepson Prairie. Tasks included obtaining a U.S. Army Corps of Engineers jurisdictional determination of the site, coordination of rare plant surveys, completion of special-status wildlife surveys including fairy shrimp, California tiger salamander and burrowing owl surveys, and preparation of mitigation plans for proposed impacts to special-status plants, wildlife, and wetlands. Client: Dick Emigh.

Stonechase Housing Development, Contra Costa County, California - Directed the preparation of a Biological Resource Analysis. Responsible for California tiger salamander, fairy shrimp, and San Joaquin kit fox surveys. Kit Fox Surveys were conducted using California Department of Fish and Game Region 4 Guidelines. Client: Shea Homes

Manzanar Four Lane Project, Inyo County California - Assisted with preparation of a Natural Environmental Study (NES) for a 6.5 mile Highway 395 widening project. M&A completed special-status species surveys in the project area and prepared an assessment of potential project related impacts to such species. This study was completed for CalTrans as part of the environmental documentation and clearance process for proposed highway projects. Client: Dames & Moore, Santa Barbara, California.

Vasco Road Sanitary Landfill, Alameda County, California - Conducted a San Joaquin Kit Fox survey on an 89-acre site proposed as a landfill expansion area. The survey was conducted in accordance with the April 30, 1993 Survey Protocols released by the U.S. Fish and Wildlife Service. The survey included den searches, night spotlighting, scent station maintenance, and utilization of camera stations. Client: Bruen & Gordon; Browning-Ferris Industries

Pacific Gas & Electric, Pacific Gas Transmission - Natural Gas Pipeline Expansion Project - Conducted preconstruction surveys for special-status wildlife species along Spreads 2C and 3C (approximately 40 miles of pipeline) of the PGT-PG&E pipeline in central Oregon. Also assisted with delineation of U.S. Army Corps of Engineers jurisdictional wetlands, pursuant to Section 404 of the Clean Water Act. All surveys coordinated with Oregon Department of Fish and Wildlife, and the U.S. Forest Service. Client: Pacific Gas Transmission, San Francisco, California.

Redwood Sanitary Landfill Salt Marsh Harvest Mouse Survey, Marin County, California. Conducted a trapping study for the State and Federally endangered salt marsh harvest mouse in a proposed landfill expansion area. Client: Redwood Sanitary Landfill.

J. GEOFF MONK

Environmental Biologist

REPRESENTATIVE EXPERIENCE

PGT/PG&E Pipeline Expansion Project - Principal investigator for proposed 1000-mile natural gas transmission pipeline. Conducted birds of prey surveys along the pipeline route in Idaho, Washington, Oregon, and California. Supervised 10 wildlife biologists conducting special-status inventories for all potential wildlife species that could occur along the pipeline route in Oregon, Washington, and Idaho. Responsible for final report preparation and submittal. Client: Pacific Gas Transmission Company and Pacific Gas and Electric Company.

Port of Oakland Inner Harbor Deep Draft Navigation Improvement Project, Oakland, California - Prepared the Draft Supplemental EIR/EIS biological resources section for a major dredging project, the Phase I, Oakland Inner Harbor Deep-Draft Navigation Improvement Project. Over 25 potential upland, in-bay, and ocean dredged material disposal sites were evaluated for their regulatory and environmental acceptability. Following site screening, six upland sites, one ocean site, and one in-bay site were selected for more detailed biological evaluation. Managed biological field crew surveys of all upland sites, with particular emphasis upon wetlands and other sensitive habitats, and several special-status species. Client: Port of Oakland.

Lakeborough Community Development, Stanislaus County, California - Environmental Impact Report review and modification for planned 4,000-acre development. Contributed to mitigation planning for proposed impacts to San Joaquin kit fox habitat and wetlands in response to California Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers mitigation criteria and protocols. Also, worked towards resolving migratory and resident avian issues concerning installation of the Lakeborough community water treatment facility. Similarly, participated in resolving potential conflicts with a nearby U.S. Navy Air Base that was concerned the water treatment facility would increase Bird Airstrike Hazard. Client: O'Brien and Hicks, Inc.

Highway 89 improvements, Tahoe City, California - Assisted in the preparation of environmental documents (TRPA focused EIR/CEQA Negative Declaration) for widening and resurfacing of three miles of highway which serves as the primary northern entrance to the Tahoe Basin. Client: California Department of Transportation.

PG&E coal fired power plant siting studies, northern California - Assessed biological impacts of proposed railroad spur lines and 500kV powerline routes through the Sacramento Valley. Conducted aerial censusing and mapping of waterfowl concentration areas in the Sacramento Valley. Client: Pacific Gas and Electric Company.

Completed helicopter surveys in Oregon for nesting peregrine falcons, ospreys, and bald eagles on contract to the Oregon Department of Fish and Wildlife. Surveys were conducted in southern and eastern Oregon in 1982, 1985, and 1987. Client: Oregon Fish and Wildlife Service.

J. GEOFF MONK

Environmental Biologist

REPRESENTATIVE EXPERIENCE

Annual raptor surveys, California - Completed annual raptor surveys over much of central and northern California from 1978 through 1988. Primarily worked with peregrine falcons. Also surveyed for prairie falcons, golden eagles, and red-tailed hawks. Periodically responsible for field crews of up to 15 biologists; also, responsible for final reports, and budgeting. In addition, was responsible for coordinating the efforts of up to 20 U.S. Forest Service, Bureau of Land Management, and National Park Service biologists. Employers: U.S. Bureau of Land Management, U.S. Fish and Wildlife Service, and Santa Cruz Predatory Bird Research Group.

Completed wildlife/vegetation characterization studies in eastern Nevada and northern California. Projects included vegetation mapping, Emlin bird transects, rodent snap trapping, and carnivore live trapping. Employer: U.S. Bureau of Land Management.

Ecological preserve suitability study, Yakima Canyon, Washington - Final report included complete wildlife inventory and vegetative characterization relationships. Also completed a general raptor nesting inventory in central/eastern Washington, a western sage grouse inventory in the Saddle Mountains of Washington, and a mountain goat inventory in the Oakanogan Highlands Washington. Employer: U.S. Bureau of Land Management.

Raptor banding studies, Alberta, Canada - Adult raptors were trapped and banded at the nest site. Nestlings were also banded. Species included the ferruginous hawk, Swainson's hawk, red-tailed hawk, Cooper's hawk, merlin, prairie falcon, and golden eagle. Employer: Canadian Wildlife Service.

AWARDS

U.S. Bureau of Land Management Special Achievement Award, California State Honors.
U.S. Fish and Wildlife Service Special Achievement Award, Western Regional Honors.

CERTIFICATIONS

Certified Wildlife Biologist - Certification from The Wildlife Society, Washington, D.C.

**SARAH M. LYNCH
BIOLOGIST**

Ms. Lynch is a biologist experienced in the fields of wildlife biology, wetlands ecology and delineation, botany, and threatened and endangered species assessments. Her technical expertise includes: multiparameter wetland assessments; bird and amphibian censusing; small mammal trapping; mitigation monitoring; biological constraints analysis and impact analysis pursuant to CEQA. Ms. Lynch also prepares permitting packages for submittal to local, state, and federal resource agencies. She has extensive experience conducting surveys for special-status animal and plant species, and has worked on small and large survey projects, either independently, or as part of a large survey team.

EDUCATION

B.S., Environmental and Systematic Biology
California Polytechnic State University, San Luis Obispo 1990

EMPLOYMENT HISTORY

1994 - Present: Monk & Associates, Biologist

1992 - 1994: Western Ecological Services Company, Inc., Biologist

1990 - 1992: Harding Lawson Associates, Staff Biologist

1989 - 1990: San Luis Obispo County, Planning Department, Energy Division,
Environmental Intern

1989: San Luis Obispo County, Environmental Coordinator's Office,
Environmental Intern

1988: The Peregrine Fund Inc., Boise, Idaho
Hack Site Attendant

SARAH M. LYNCH

Biologist

REPRESENTATIVE EXPERIENCE

Botanical and Wildlife Studies

Conducted rare plant surveys in a variety of plant communities in northern California, including coastal dune scrub, coastal salt marsh, oak woodland, redwood forest, and vernal pools in Sonoma County and the Central Valley. All surveys followed California Department of Fish and Game recommended guidelines. Clients: Pulte Home Corporation; Alameda County, Mrs. Nancy Vogler; East Bay Municipal Utility District; Lund Construction; Cal Trans.

Pacific Gas Transmission Company, Medford Lateral Pipeline Project, Oregon - Conducted pre-construction surveys for special-status raptors (peregrine falcon, bald eagle, northern goshawk) and for greater sandhill cranes along 89 miles of a proposed pipeline route in Klamath and Jackson Counties, Oregon. All survey work was coordinated with Oregon Department of Fish and Wildlife and the U.S. Bureau of Land Management. Client: Ochoco Biological Services, Prineville, Oregon.

Received fairy shrimp species identification training from internationally recognized fairy shrimp expert, Dr. Denton Belk. Authorized to conduct fairy shrimp and vernal pool tadpole shrimp surveys under a Federal 10(a)(1)(A) permit and California Department of Fish and Game collector's permit. Conducted dip-netting surveys for fairy shrimp in Alameda, El Dorado, Merced, Sacramento, Placer, Yolo, Solano, and Sonoma Counties. Clients: Jacobs Engineering, Shea Homes, Zander Associates, and Mr. Dick Emigh.

UNOCAL Ecological Risk Assessment, San Luis Obispo County, California - Assisted with a trophic level study as part of an ecological risk assessment. Study methods included trapping small and medium sized mammals in dune scrub and dune slack communities, setting-up camera stations, and conducting night spotlighting in an effort to characterize animal use of the UNOCAL site, and to determine the relative abundance of these animals on this 2,300-acre site. Client: Entrix, Inc., Walnut Creek, California.

Ecological Risk Assessment, McClellan Air Force Base (AFB), Sacramento County, and two associated communication facilities (Lincoln, Placer County and Davis, Yolo County) - Conducted special-status wildlife surveys on 1,000 acres of natural habitats found within the AFB and its associated communication facilities. Habitats consist primarily of non-native annual grasslands with vernal pools interspersed. Three creeks also pass through the AFB. Specific surveys for special-status invertebrates (fairy shrimp, vernal pool tadpole shrimp), amphibians (California tiger salamander, California red-legged frog, western spadefoot toad), reptiles (giant garter snake, western pond turtle), and burrowing owl were conducted. An inventory of all species observed on the sites was also compiled. Data on species occurrences gathered during the

SARAH M. LYNCH

Biologist

REPRESENTATIVE EXPERIENCE

surveys were used in the preparation of an ecological risk assessment for the base. Client: Jacobs Engineering

Pacific Gas Transmission/Pacific Gas & Electric Company Pipeline Expansion Project, California - Conducted special-status raptor nesting/occurrence surveys for California Department of Fish and Game. Surveys were conducted for the Swainson's hawk, prairie falcon, peregrine falcon, and osprey along a 100-mile spread of the PGT/PG&E pipeline expansion project in Modoc, Siskiyou and Shasta Counties, California. Monitored activity of three Swainson's hawk nests and one prairie falcon eyrie identified along the pipeline in Modoc County. Client: Michael Sotak & Associates.

California Department of Fish and Game monitor for all biological surveys conducted along a 100-mile spread of the PGT/PG&E pipeline expansion project in Shasta, Siskiyou, and Modoc Counties, California. Responsibilities included monitoring activities of consulting biologists conducting special-status raptor surveys along the pipeline, monitoring construction activities, attending interagency meetings, and reviewing all biological survey status reports and mitigation plans. Client: Michael Sotak & Associates

San Joaquin kit fox surveys, California - Conducted San Joaquin kit fox surveys using regulatory protocols and policies in effect in 1992. Then conducted a resurvey to bring 1992 survey protocol methods up to 1993 survey protocol standards. Survey methods included den surveys, night spotlighting, scent and camera station. Clients: Condor Minerals Management; Granite Construction Company; Bruen & Gordon; Browning-Ferris Industries.

Comprehensive biological assessments. Conducted field surveys and recorded baseline biological conditions, determined potential biological constraints and impacts associated with proposed use of sites, and suggested mitigations to offset proposed impacts. Clients: Alameda County; Oliver De Silva; Shea Homes; East Bay Municipal Utility District; Marin Municipal Water District.

Raptor (birds of prey) nesting/occurrence surveys - Conducted nesting/occurrence surveys for golden eagle, Cooper's hawk, sharp-shinned hawk, white-tailed kite, and burrowing owl for proposed developments in the San Francisco Bay Area. Clients: Various.

Conducted kit fox den surveys along a 60-mile spread of the Westley-Tracy transmission line project in San Joaquin County, California. Surveys were conducted in order to determine alternative routes for the transmission line. Client: Transmission Agency of Northern California.

SARAH M. LYNCH

Biologist

REPRESENTATIVE EXPERIENCE

Conducted larval and nocturnal surveys for candidate amphibian species including the California tiger salamander, California red-legged frog, and foothill yellow-legged frog. Surveys followed California Department of Fish and Game and U.S. Fish and Wildlife Service recommended guidelines. Clients: Various.

Assisted with trapping studies for the Federal and State listed endangered salt marsh harvest mouse. Included on Federal and State Memorandums of Understanding (MOUs) permitting handling of salt marsh harvest mice while under direct supervision of lead permittee. Clients: Entrix, Inc., Sacramento, California; City of San Rafael; Bay Port Center; and PG&E.

Conducted larval surveys for the federally listed endangered Myrtle's silverspot butterfly. Larvae frequency and density were determined using the line intercept method and by identification of the butterfly's nectar and host plants through quadrat analysis. Surveys were conducted on 1,200 acres proposed for a golf ranch in Marin County, California. Client: Marin Coast Associates.

Mitigation and Monitoring Services

Provided monitoring and management for created wetland pools. Monitoring was conducted quarterly over a five year period and included plant identification, quadrat analyses to determine plant density/distribution, and monitoring to identify wildlife use.

Provided quarterly monitoring of oak woodland, riparian, and wetland mitigation areas for a residential development. Monitoring was conducted to assess success and percent survival of created habitats, and to assess wildlife use of these habitats. Client: Shea Homes.

Performance Standards Monitoring. Monitored performance of alternative landfill cover for compliance with State regulations using State recommended vector surveillance methods. Responsibilities included weekly data collection, monthly progress reports, meetings with Marin County Department of Environmental Health and the State Board. Client: Redwood Sanitary Landfill.

Environmental and Regulatory

Oak Manor Development, Alameda County, California - Environmental permitting. Secured permits for impacts to U.S. Army Corps of Engineers jurisdictional "waters of the United States" pursuant to Section 404 of the Clean Water Act, and obtained a waiver of water quality from the

California Regional Water Quality Control Board (pursuant to Section 401 of the Clean Water Act). Also, obtained a Streambed Alteration Agreement, pursuant to Section 1603 of California Fish and Game Code, for proposed impacts to intermittent creeks from construction of the

SARAH M. LYNCH

Biologist

REPRESENTATIVE EXPERIENCE

housing development. Prepared an oak tree management plan for distribution to new home owners to assist them with the care and maintenance of native oak trees on their property. Client: Branaugh Excavating, Inc., Livermore, California.

Delineated over 30 vernal pools and swales on a 110-acre site proposed for landfill expansion in Merced County, California. Prepared a report for submittal to the U.S. Army Corps of Engineers, obtained a U.S. Army Corps of Engineers jurisdictional determination for the delineation, and arranged mitigation for proposed impacts to vernal pools and habitat for the Federally listed threatened vernal pool fairy shrimp (*Branchinecta lynchi*).

Prepared a CalTrans Natural Environment Study for proposed roadway improvements in Alameda County, California.

Water Resources Planning and Development Services

Conducted special-status animal surveys, including northern spotted owl surveys, for a joint EIR/EIS for a proposed 100-foot high dam within the headwaters of Big Sulphur Creek in Lake County, California. Assisted with preparation of the biology section of the EIR/EIS.

AFFILIATIONS

The Wildlife Society - San Francisco Bay Chapter Treasurer/Secretary since November 1994.
The California Native Plant Society

EXPERIENCE SUMMARY

Mr. Anderson is a biologist with more than 20 years of experience conducting field surveys, field data analysis, restoration planning and mitigation monitoring. Recent project experience includes mitigation monitoring for restoration of coastal sage scrub habitat and wetlands habitat.

EDUCATION

MS / Integrated Pest Management / California State University / Riverside, CA
BA / Biology / California State Polytechnic University / Pomona, CA

LICENSES, OTHER TRAINING

Agricultural Pest Control Advisors License / State of California / Department of Pesticide Regulation

Certified Applicator License / State of California / Department of Pesticide Regulation

Completion of a class on identification of Fairy Shrimp by Denton Belk, Ph.D.

Completion of a class and workshop on the identification of the Quino Checkerspot. Conducted at the United States Department of Fish and Game / Carlsbad, CA

PROFESSIONAL MEMBERSHIPS

Society for Ecological Restoration (SER)

California Exotic Plant Pest Council (CalEPPC)

Southern California Botanists

Company: Foster Wheeler Environmental Corporation; Years with Foster Wheeler: 1; Years with Other: 20

Present Location: Santa Ana, CA

Daytime Phone: 949-756-7500

REPRESENTATIVE PROJECT EXPERIENCE

Eastern Transportation Corridor (Toll Road); Restoration Ecologist – Responsible for restoration of the following sites:

- Siphon Reservoir Restoration Site in Santa Ana mountain foothills. Mitigation for impacts to Coastal Sage Scrub habitat along the Eastern Transportation Corridor (ETC). The site is 100 acres of former citrus orchard restored to native coastal sage scrub. Animal species utilizing the site (both actual and potential) include mountain lion, bobcat, deer, coyote, California gnat catcher, Coastal cactus wren, rattlesnakes and other vertebrate and invertebrate species. Plant species include California sagebrush, California buckwheat, California encelia, blue elderberry and other coastal sage scrub plant species.
- Limestone Restoration Site – 50 acres of river habitat. Mitigation for impacts to upland and riparian habitats along the ETC including oak woodland, sycamore-elderberry woodland, willow woodland, floodplain sage scrub and coastal sage scrub. Actual and potential animal usage of the site includes all the same species listed for siphon. Plant

species including the siphon species but also include coast live oak, sycamore, elderberry and other upland and riparian species.

P&D Consultants, Inc., Orange, CA; Restoration Ecologist – Design and installation of a Coastal Sage Scrub restoration project. This project is current and includes an experimental plot portion that will fulfill in part the requirements of Master of Arts degree in Biology.

Agricultural Biologist; Fresno, CA – Independent Pest Management Consultant specializing in trees and vines.

H. Naraghi Farms, Modesto, CA; Agricultural Biologist – Integrated Pest-Management Specialist responsible for chemical rules and regulations. Foreman of chemical crews and chemical worker safety.

Union Chemical Co., Dos Palos, CA; Agricultural Biologist – Integrated Pest-Management Specialist and Agricultural Pest Control Advisor

RESEARCH ACTIVITY

- Original investigations comparing several methods and combinations of techniques used in the restoration of the Coastal Sage Scrub community.
- Assisted with the pollinator study for *Eriastrum densifolium ssp. sanctorum* an endangered plant species. Study is part of the management plan for the species. Research conducted by Dr. Eugene Jones and Dr. Jack Burk, at California State University, Fullerton, CA.
- Original investigations to assess the importance of behavior as a mechanism of reproductive isolation in various species in the genus *Lytta* Meloidae, Coleoptera. Masters Thesis work in the laboratory of Dr. John Pinto, University of California, Riverside.
- Assisted with the study of systematics in various insect taxa in the laboratory of Dr. John Pinto, University of California, Riverside.
- Assisted in the development of the California IPM program for cotton. Program was a joint effort of the University of California at Riverside, Davis and Berkley. Met the internship requirement for Master of Science degree in Integrated Pest Management.

TEACHING POSITIONS

- Lab Instructor, California State University, Fullerton, CA. Principles of Zoology
- Graduate Assistant, California State University, Fullerton, CA. Field Botany
- Teaching Assistant, University of California, Riverside, CA. Entomology for non-majors

**J-3: California Natural Diversity Data Base
(CNDDDB) Printouts**

Midway

ANBYSTOMA CALIFORNIENSE CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status: Endangered	Global: G2G3	Other Lists: CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 102 Map Index: 17087 -Dates Last Seen-
 Occ Rank: Excellent Element: 1989-01-27
 Origin: Natural/Native occurrence Site: 1989-01-27
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: BEEMAN, G. 1989 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA, SAN JOAQUIN
 SMA Summary: Draney Canyon

Location: ALONG PORTIONS OF TESLA AND CORRAL HOLLOW ROADS, BETWEEN TRACY AND LIVERMORE.

Lat/Long: 37°38'03" / 121°32'47" Township: 03S
 UTM: Zone-10 N4166030 E628241 Range: 04N
 Mapping Precision: NON-SPECIFIC Section: 33 Qtr XX
 Symbol Type: POLYGON Meridian: M
 Area: 346.8 ac Elevation: 700 ft

Comments: SALAMANDERS SEEN BY DRIVING ALONG THIS PORTION OF ROAD ON RAINY NIGHTS.
 Distribution: HABITAT CONSISTS OF THE GRASSLAND/RIPARIAN INTERGRADE BETWEEN CORRAL HOLLOW CREEK AND ADJACENT FARMLANDS. VERNAL POOLS NEARBY.
 Ecological: THREATENED BY ORV ACTIVITY & VEHICLES ON CORRAL HOLLOW ROAD.
 Threat: SALAMANDERS OBSERVED DEAD ON ROAD 1.05 MILES EAST OF ALAMEDA-SAN JOAQUIN COUNTY LINE IN 1987. 2-10 INDIVIDUALS OBSERVED IN 1989. 5 ADULTS OBSERVED CRUSHED ON THE ROADWAY IN 1992. 1 COLLECTED IN SEC 35 ON 1/27/98.
 Owner/Manager: DPR-CARRISIE SVRA, UNKNOWN

Source Codes
 MUL89F12, AND89F04, MUL92F02, JEN98F15, BE889F05, VIN87U01

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status: Endangered	Global: G2G3	Other Lists: CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 106 Map Index: 17093 -Dates Last Seen-
 Occ Rank: Excellent Element: 1989-11-25
 Origin: Natural/Native occurrence Site: 1989-11-25
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: BEEMAN, G. 1989 (OBS)

Quad Summary: ALTAMONT (3712166/445B)*, MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SMA Summary: Draney Canyon

Location: ALONG TESLA ROAD AND A SMALL PORTION OF GREENVILLE ROAD, SOUTHEAST OF LIVERMORE.

Lat/Long: 37°39'16" / 121°40'02" Township: 03S
 UTM: Zone-10 N4168115 E617570 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 21 Qtr SW
 Symbol Type: POLYGON Meridian: M
 Area: 834.4 ac Elevation:

Comments: ABOUT 15 SALAMANDERS OBSERVED WHILE DRIVING ALONG THESE ROADS DURING A MEDIUM TO HEAVY RAIN BTWN 8-11 PM.
 Distribution: OPEN, GRASED GRASSLAND WITH NEARBY CREEKS & PONDS.
 Ecological: THREAT: CATTLE GRASSING.
 Threat: CATTLE GRASSING.
 General:
 Owner/Manager: UNKNOWN

Source Codes
 BE889F05

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status: Endangered	Global: G2G3	Other Lists: CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 104 Map Index: 17089 -Dates Last Seen-
 Occ Rank: Fair Element: 1995-01-26
 Origin: Natural/Native occurrence Site: 1995-01-26
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: LYNCH, S. 1995 (OBS)

Quad Summary: ALTAMONT (3712166/445B)*, MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SMA Summary: Redwood Cut

Location: ALTAMONT PASS ROAD BTWN GREENVILLE AND NORTH MIDWAY ROAD, AND THE SOUTHERN HALF OF DYER ROAD.

Lat/Long: 37°44'07" / 121°40'11" Township: 02S
 UTM: Zone-10 N4177074 E617208 Range: 03W
 Mapping Precision: NON-SPECIFIC Section: 22 Qtr XX
 Symbol Type: POLYGON Meridian: M
 Area: 732.1 ac Elevation: 500 ft

Comments: NO ROUTES EXIST FOR SALAMANDERS TO MIGRATE UNDER OR AROUND ALTAMONT PASS ROAD.
 Distribution: OPEN, GRASED GRASSLAND WITH NEARBY CREEKS & PONDS. ALTAMONT CREEK IS BROAD AND SLOW MOVING; RESEMBLES INUNDATED WETLAND WITH SPARSE EMERGENT VEGETATION; SURROUNDING HILLS SUPPORT NON-NATIVE GRASSLAND.
 Ecological: THREAT: CATTLE GRASSING; WIND ENERGY PRODUCTION IN SURROUNDING HILLS; HEAVY COMPUTER TRAFFIC; GARBAGE TRUCKS; WIDENING OF ROAD.
 Threat: 1989-APPROX. 30 OBSERVED WHILE DRIVING DURING A MEDIUM/HEAVY RAIN BTWN 8-11PM. 1993, 4 ANIMALS OBSERVED IN DITCHES, DRYER ROAD. 1995, 42 ADULTS OBSERVED; SOME ROADKILLS PRESENT ALTAMONT & DRYER ROADS.
 General:
 Owner/Manager: UNKNOWN

Source Codes
 LYN95F06, LYN95F05, LYN95F03, ELY93F61, LYN95F07, LYN95F01, LYN95F04, LYN95F02, MON95F01, MON95F02, LYN95F08, BE889F05, VIN87U01

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status: Endangered	Global: G2G3	Other Lists: CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 123 Map Index: 22174 -Dates Last Seen-
 Occ Rank: Good Element: 1991-02-28
 Origin: Natural/Native occurrence Site: 1991-02-28
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: ALLABACK, M. & D. LAABS 1991 (OBS)

Quad Summary: CLIFTON COURT FOREYAK (3712175/463D)*, BYRON HOT SPRINGS (3712176/463C)
 County Summary: CONTRA COSTA
 SMA Summary:

Location: NW OF THE INTERSECTION OF BYRON HOT SPRINGS ROAD AND BOLEY ROAD, NEAR BYRON AIRPORT.

Lat/Long: 37°49'55" / 121°37'27" Township: 01S
 UTM: Zone-10 N4187866 E621075 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 22 Qtr NE
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 40 ft

Comments: 3 ADULTS WERE LOCATED INSIDE GROUND SQUIRREL HOLES, ALL WITHIN 200 FEET OF A 4-ACRE HOLDING POND.
 Distribution: HABITAT SURROUNDING HOLDING POND IS ANNUAL/ALKALI GRASSLAND WITH SOME WETLANDS.
 Ecological: THREAT: THREATENED BY THE BYRON AIRPORT EXPANSION PROJECT, WHICH PROPOSES TO FILL THE POND IN ORDER TO CREATE A NEW RUNWAY.
 Threat: 3 ADULT SALAMANDERS OBSERVED (2 MALES, ONE UNKNOWN). THIS SITE HAS BEEN A DEPENDABLE BREEDING LOCATION IN THIS AREA. PROPOSED MITIGATION FOR DESTRUCTION OF THIS HOLDING POND IS TO RECREATE A SIMILAR WETLAND. 1 SEEN 1982 UTM 621200 - 418800
 General:
 Owner/Manager: FVT-BYRON AIRPORT

Source Codes
 ALL91F03

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 130 Map Index: 23735 -Dates Last Seen-
Occ Rank: Good Element: 1993-04-14
Origin: Natural/Native occurrence Site: 1993-04-14
Presence: Presumed Extant
Trend: Unknown
Main Source: MORI, B. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary:

Location: 2 MILES SOUTHWEST OF THE JUNCTION OF I-580/I-205, 10 MILES SE OF LIVERMORE.

Lat/Long: 37°42'38" / 121°36'47" Township: 02S
UTM: Zone-10 N4174398 E622265 Range: 03E
Mapping Precision: SPECIFIC Section: 35 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 650 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF A STOCK RESERVOIR LOCATED IN A SHALLOW CREEK CHANNEL ON THE VALLEY FLOOR; WATER IS ABOUT 3.5 INCHES DEEP AND TEA-COLORED. TYPA, CAREX, AND OTHER AQUATIC VEGETATION ABUNDANT. ADJACENT UPLAND IS GRADED ANNUAL GRASSLAND.
Threat: THREATENED BY A PROPOSAL TO USE THIS SITE FOR LANDFILL.
General: 10 SALAMANDER LARVAE OBSERVED AT THIS SITE. RANA AURORA DRAYTONI ALSO FOUND HERE.

Owner/Manager: PVT

Source Codes
MOR93702

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 169 Map Index: 24454 -Dates Last Seen-
Occ Rank: Unknown Element: 1982-07-04
Origin: Natural/Native occurrence Site: 1982-07-04
Presence: Presumed Extant
Trend: Unknown
Main Source: BROWN, C. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: VICINITY OF THE JUNCTION OF BYRON HWY AND NORTH BRUNS WAY, 3.25 MILES SE OF BYRON.

Lat/Long: 37°49'49" / 121°36'14" Township: 01S
UTM: Zone-10 N4187704 E622874 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 23 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 15 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF A FARM POND SURROUNDED BY GRASSLAND.
Threat: POSSIBLE THREAT FROM INTRODUCED (NON-NATIVE) FISH AND BULLFROGS.
General: AN UNKNOWN NUMBER OF LARVAE AND JUVENILES OBSERVED.

Owner/Manager: UNKNOWN

Source Codes
BRO82F06

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 150 Map Index: 24158 -Dates Last Seen-
Occ Rank: Unknown Element: 1986-04-19
Origin: Natural/Native occurrence Site: 1986-04-19
Presence: Presumed Extant
Trend: Unknown
Main Source: PGE 1986 (LIT)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: VICINITY OF CHRISTENSEN ROAD JUNCTION WITH BRUNS ROAD, SW OF CLIFTON COURT FOREBAY.

Lat/Long: 37°47'15" / 121°36'30" Township: 02S
UTM: Zone-10 N4182934 E622549 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 02 Qtr SE
Symbol Type: POINT Meridian: M
Area: 64.4 ac Elevation: 140 ft

Comments
Distribution:
Ecological: VERNAL POOL(S).
Threat:
General: LARVAE OBSERVED AT TWO LOCATIONS ON 26 MARCH AND 14 APRIL 1986.
Owner/Manager: UNKNOWN

Source Codes
PGE90R01

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER		Element Code: AAAAA01147
Status	NDDB Element Ranks	Other Lists
Federal: Endangered	Global: G2G3	CDFG Status: SC
State: None	State: S2S3	
Habitat Associations		
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.		
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING		

Occurrence No. 189 Map Index: 25036 -Dates Last Seen-
Occ Rank: Excellent Element: 1993-04-14
Origin: Natural/Native occurrence Site: 1993-04-14
Presence: Presumed Extant
Trend: Unknown
Main Source: MORI, B. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary:

Location: 1.5 MILES SOUTHWEST OF THE I-580/I-205 JUNCTION, 10 MILES SE OF LIVERMORE.

Lat/Long: 37°42'52" / 121°36'34" Township: 02S
UTM: Zone-10 N4174837 E622553 Range: 03E
Mapping Precision: SPECIFIC Section: 35 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 500 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF A BERRIED STOCK RESERVOIR, 80-90 FEET IN DIAMETER. WATER IS UP TO 4 FEET DEEP, CLEAR, AND 50% OPEN; 25% TYPA AND 25% CAREX/BLUODA COVERAGE. POND MARGIN WITH DENSE GRASS AND RUSH COVER; ADJACENT UPLAND IS GRADED GRASSLAND.
Threat: THREATENED BY A PROPOSED LANDFILL EXPANSION PROJECT.
General: 4 LARVAE OBSERVED ON 14 APRIL 1993. RANA AURORA DRAYTONI LARVAE AND Hyla adults and larvae also present at this site.

Owner/Manager: PVT

Source Codes
MOR93728

AMBYSTOMA CALIFORNIENSE (cont.)			Element Code: AAAAA01147
CALIFORNIA TIGER SALAMANDER			
Status	NDBE Element Ranks	Other Lists	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 205 Map Index: 25531 --Dates Last Seen--
 Occ Rank: Unknown Element: 1981-11-21
 Origin: Natural/Native occurrence Site: 1981-11-21
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: BROWN, C. 1981 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: WEST SIDE OF BRUNUS AVENUE, 0.5 MILE EAST OF THE DELTA PUMPING PLANT FOR THE CALIFORNIA AQUEDUCT.

Lat/Long: 37°47'52" / 121°36'15"
 UTM: Zone-10 N4184092 E622897 Township: 01S
 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 35 Qtr SE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 100 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A FARM POND SURROUNDED BY GRASED GRASSLAND.
 Threat: THREATENED BY THE PRESENCE OF INTRODUCED GAMEFISH AND BULLFROGS.
 General: 1 ADULT OBSERVED IN 1981.
 Owner/Manager: UNKNOWN

Source Codes
 BR081F09

AMBYSTOMA CALIFORNIENSE (cont.)			Element Code: AAAAA01147
CALIFORNIA TIGER SALAMANDER			
Status	NDBE Element Ranks	Other Lists	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 330 Map Index: 33111 --Dates Last Seen--
 Occ Rank: Good Element: 1994-04-27
 Origin: Natural/Native occurrence Site: 1994-04-27
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: ALLARCK, M. 1994 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: SOUTH OF MOUNTAIN HOUSE CREEK, 2.4 MILES WSW OF MOUNTAIN HOUSE.

Lat/Long: 37°44'01" / 121°36'32"
 UTM: Zone-10 N4176950 E622583 Township: 02S
 Range: 03E
 Mapping Precision: SPECIFIC Section: 26 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 80 meters Elevation: 460 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A STOCK POND SURROUNDED BY ANNUAL GRASSLAND.
 CALIFORNIA RED-LEGGED FROG LARVAE ALSO FOUND AT THIS SITE.
 Threat: POSSIBLE THREAT FROM CATTLE GRAZING.
 General: >100 LARVAE OBSERVED ON 27 APRIL 1994.
 Owner/Manager: FVT

Source Codes
 ALL94F07

AMBYSTOMA CALIFORNIENSE (cont.)			Element Code: AAAAA01147
CALIFORNIA TIGER SALAMANDER			
Status	NDBE Element Ranks	Other Lists	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 206 Map Index: 25532 --Dates Last Seen--
 Occ Rank: Unknown Element: 1982-05-06
 Origin: Natural/Native occurrence Site: 1982-05-06
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: BROWN, C. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: WEST SIDE OF THE CALIFORNIA AQUEDUCT, 0.75 MILE NE OF THE DELTA PUMPING PLANT.

Lat/Long: 37°48'37" / 121°36'35"
 UTM: Zone-10 N4185461 E622385 Township: 01S
 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 26 Qtr SE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 40 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A FARM POND SURROUNDED BY GRASED GRASSLAND.
 Threat: THREATENED BY THE PRESENCE OF INTRODUCED GAMEFISH AND BULLFROGS.
 General: 6 JUVENILES OBSERVED IN 1982.
 Owner/Manager: UNKNOWN

Source Codes
 BR027F13

AMBYSTOMA CALIFORNIENSE (cont.)			Element Code: AAAAA01147
CALIFORNIA TIGER SALAMANDER			
Status	NDBE Element Ranks	Other Lists	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 373 Map Index: 34029 --Dates Last Seen--
 Occ Rank: Unknown Element: 1982-02-14
 Origin: Natural/Native occurrence Site: 1982-02-14
 Presence: Presumed Extant
 Trends: Unknown
 Main Source: BROWN, C. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: ROADSIDE, BYRON HOT SPRINGS ROAD, 0.7 AIR MILES SE OF BYRON HOT SPRINGS, WEST OF CLIFTON COURT FOREBAY.

Lat/Long: 37°50'12" / 121°37'22"
 UTM: Zone-10 N4188374 E621201 Township: 01S
 Range: 03E
 Mapping Precision: SPECIFIC Section: 22 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 80 meters Elevation: 40 ft

Comments:
 Distribution:
 Ecological: FARM POND, GRASSLAND
 Threat: POSSIBLE DISTURBANCE BY INTRODUCED GAME FISH AND BULLFROGS.
 General: 1 ADULT OBSERVED 2/14/82.
 Owner/Manager: FVT

Source Codes
 BR027F45

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER			Element Code: AAAAA01147
Status:	NDBB Element Ranks:	Other Lists:	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations:			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 422 Map Index: 38592 -Dates Last Seen-
Occ Rank: Unknown Element: 1997-04-08
Origin: Natural/Native occurrence Site: 1997-04-08
Presence: Presumed Extant
Trend: Unknown
Main Source: ALLABACK, M. 1998 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SEA Summary:

Location: "45 CANAL POND SITE," ALONG 45 CANAL, 0.6 MILE SSE OF JCT OF
BOLEY RD/BYRON HOT SPRINGS RD, SW OF CLIFTON COURT FOREBAY

Lat/Long: 37°49'23" / 121°37'01" Township: 018
UTM: Zone-10 N4186884 E621729 Range: 03E
Mapping Precision: SPECIFIC Section: 26 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 40 ft

Comments:
Distribution:
Ecological: MANMADE POND <100 SQUARE FEET IN SIZE. NO EMERGENT VEGETATION.
Threat:
General: CTS OBSERVED AT THIS SITE ON 8 APRIL 1997.
Owner/Manager: UNKNOWN

Source Codes:
ALL98U01

SCAPHIOPUS HAMMONDII WESTERN SPADEFOOT			Element Code: AAABF01030
Status:	NDBB Element Ranks:	Other Lists:	
Federal: None	Global: G3?	CDFG Status: SC	
State: None	State: S3?		
Habitat Associations:			
General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.			
Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.			

Occurrence No. 31 Map Index: 23074 -Dates Last Seen-
Occ Rank: Good Element: 1992-11-14
Origin: Natural/Native occurrence Site: 1992-11-14
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. & G. BRIDAN 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SEA Summary:

Location: JUST NORTH OF CORRAL HOLLOW ROAD, 12 MILES WEST OF TRACY, WITHIN
CARNEGIE ORV RECREATION AREA.

Lat/Long: 37°37'58" / 121°32'16" Township: 03E
UTM: Zone-10 N4165869 E629012 Range: 04E
Mapping Precision: SPECIFIC Section: 33 Qtr NE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 660 ft

Comments:
Distribution: POND NORTH OF CORRAL HOLLOW ROAD (1992) AND DEAD ON ROAD (1987).
Ecological: HABITAT CONSISTS OF A SMALL POND ALONG CORRAL HOLLOW CREEK, WITHIN RIPARIAN HABITAT.
Threat: THREATENED BY HABITAT DESTRUCTION BY ORV'S.
General: TWO ADULTS OBSERVED 1992. OBSERVED SPECIMEN DEAD ON ROAD IN 1987.
Owner/Manager: DPR-CARNEGIE SVRA

Source Codes:
MUL92F01

ANBYSTOMA CALIFORNIENSE (cont.) CALIFORNIA TIGER SALAMANDER			Element Code: AAAAA01147
Status:	NDBB Element Ranks:	Other Lists:	
Federal: Endangered	Global: G2G3	CDFG Status: SC	
State: None	State: S2S3		
Habitat Associations:			
General: FEDERAL LISTING REFERS TO POPULATIONS IN SANTA BARBARA COUNTY ONLY.			
Micro: NEED UNDERGROUND REFUGES, ESPECIALLY GROUND SQUIRREL BURROWS & VERNAL POOLS OR OTHER SEASONAL WATER SOURCES FOR BREEDING			

Occurrence No. 423 Map Index: 38593 -Dates Last Seen-
Occ Rank: Unknown Element: 1997-05-08
Origin: Natural/Native occurrence Site: 1997-05-08
Presence: Presumed Extant
Trend: Unknown
Main Source: ALLABACK, M. 1998 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SEA Summary:

Location: "BRUNS POND SITE," 0.7 MILE SSE OF BOLEY RD/BYRON HOT SPRINGS RD,
SW OF CLIFTON COURT FOREBAY

Lat/Long: 37°49'19" / 121°36'59" Township: 018
UTM: Zone-10 N4186748 E621778 Range: 03E
Mapping Precision: SPECIFIC Section: 26 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 40 ft

Comments:
Distribution:
Ecological: MANMADE POND >10,000 SQUARE FEET IN SIZE. NO EMERGENT VEGETATION.
Threat:
General: CTS OBSERVED AT THIS SITE ON 8 MAY 1997.
Owner/Manager: UNKNOWN

Source Codes:
ALL98U01

SCAPHIOPUS HAMMONDII (cont.) WESTERN SPADEFOOT			Element Code: AAABF01030
Status:	NDBB Element Ranks:	Other Lists:	
Federal: None	Global: G3?	CDFG Status: SC	
State: None	State: S3?		
Habitat Associations:			
General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS.			
Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.			

Occurrence No. 52 Map Index: 32321 -Dates Last Seen-
Occ Rank: Excellent Element: 1992-05-18
Origin: Natural/Native occurrence Site: 1992-05-18
Presence: Presumed Extant
Trend: Stable
Main Source: WORKMAN, M. & T. KING 1992 (OBS)

Quad Summary: TRACY (3712164/444B)*, MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SEA Summary:

Location: SSW OF TRACY; CORRAL HOLLOW; APPROX. 0.6 KM NORTH OF CASTLE ROCK.

Lat/Long: 37°38'32" / 121°29'26" Township: 03E
UTM: Zone-10 N4166991 E633166 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 25 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 3/5 mile Elevation: 475 ft

Comments:
Distribution: UNKNOWN NUMBER COLLECTED FROM CORRAL HOLLOW 10 JUNE 1985 & DEPOSITED IN WAYNE STATE NATURAL HISTORY MUSEUM.
Ecological: VALLEY FOOTHILL RIPARIAN; GRASSLAND.
Threat: SILTATION FROM NEARBY ORV PARK; AREA NOT OPEN FOR PUBLIC ACCESS.
General: MARCH 1992: NO SPADEFOOT OBS; NO RANA AURORA OBS; BUFO BORAS OBS, Hyla arenicolor & RANA AURORA TADPOLES OBS. MAY 1992: SPADEFOOT JUVENILES OBS BURROWING INTO SAND.
Owner/Manager: DFG-CORRAL HOLLOW ER

Source Codes:
WOR92F07, WOR92F06, EDW85R01, WOR92F08, BRO92F27

SCAPETOPUS HAMMONDII (cont.) WESTERN SPADEFOOT		Element Code: AAARF01030
Status: None	NDBB Element Ranks: Global: G37 State: S37	Other Lists: CDFG Status: SC
Habitat Associations General: OCCURS PRIMARILY IN GRASSLAND HABITATS, BUT CAN BE FOUND IN VALLEY-FOOTHILL HARDWOOD WOODLANDS. Micro: VERNAL POOLS ARE ESSENTIAL FOR BREEDING AND EGG-LAYING.		
Occurrence No. 152	Map Index: 38749	—Dates Last Seen— Element: 1998-01-26 Site: 1998-01-26
Occ Rank: Fair	Origin: Natural/Native occurrence	Presence: Presumed Extant
Trend: Unknown	Main Source: JENKINGS, M. 1998 (OBS)	
Quad Summary: MIDWAY (3712165/445A) County Summary: ALAMEDA SRA Summary:		
Location: CORRAL HOLLOW ROAD, 0.2 MILE WEST OF THE ALA/SJQ COUNTY LINE, BETWEEN LIVERMORE AND TRACY.		
Lat/Long: 37°38'13" / 121°33'36"	UTM: Zone-10 N4166299 E627044	Township: 038 Range: 04E Section: 29 Qtr SW Meridian: M Elevation: 720 ft
Mapping Precision: SPECIFIC	Symbol Type: POINT	Radius: 80 meters
Comments Distribution: HABITAT IN THE AREA CONSISTS OF VERNAL POOLS SURROUNDED BY GRASSLAND/CHAPARRAL. Threat: THREATENED BY VEHICULAR TRAFFIC ON THE ROADWAY AND ORV'S CRUSHING BURROWS AND CAUSING SILTATION OF POOLS. General: 1 ADULT COLLECTED ON 26 JANUARY 1998 AND DEPOSITED AT CAS (#SNJ 1346). Owner/Manager: UNKNOWN		
—Source Codes— JEN98F14		
Date: 05/04/2001	Commercial Version Information dated 12/05/2000	Page 17

RAVA AURORA DRAYTONII CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened	NDBB Element Ranks: Global: G42T3 State: S233	Other Lists: CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		
Occurrence No. 27	Map Index: 20135	—Dates Last Seen— Element: 1997-03-18 Site: 2000-03-30
Occ Rank: Fair	Origin: Natural/Native occurrence	Presence: Presumed Extant
Trend: Stable	Main Source: MULLEN, D. 1989 (OBS)	
Quad Summary: CLIFTON COURT FOREBAY (3712175/463D) County Summary: ALAMEDA SRA Summary: Mountain House Creek		
Location: UPPER REACHES OF MOUNTAIN HOUSE CREEK, IN THE VICINITY OF THE INTERSECTION OF GRANT LINE ROAD AND MOUNTAIN HOUSE ROAD		
Lat/Long: 37°45'27" / 121°34'24"	UTM: Zone-10 N4179665 E625681	Township: 028 Range: 04E Section: 18 Qtr E Meridian: M Elevation: 160 ft
Mapping Precision: NON-SPECIFIC	Symbol Type: POLYGON	Area: 118.4 ac
Comments Distribution: FROGS UTILISE BOTH MOUNTAIN HOUSE CREEK AND NEARBY SMALL CATTLE PONDS. Ecological: HEAVILY GRAZED CREEK BED WITH AQUATIC VEGETATION CREEK AREA DOMINATED BY TYPHA. ROADSIDE CATTLE PONDS ALMOST DEVOID OF VEGETATION EXCEPT WEEDY SPECIES. SOME PORTIONS OF STREAM ARE CHANNELISED. Threat: THREATS INCLUDE CATTLE GRASSING, PERIODIC DREDGING OF CREEK CHANNEL, AND PLANNED RESIDENTIAL DEVELOPMENT IN AREA. General: 100+ INDIVIDUALS OBSERVED, 16 SEP 89. IN 1991, 15 ADULTS COUNTED ON EAST SIDE OF AQUEDUCT; 1 ADULT CAPTURED ON WEST SIDE. 13 AD/2 JUV OBSERVED IN 1996. 1 AD/4 EGG MASSES OBSERVED ON 18 MAR 97 (WEST SIDE); NO FROGS OR EGGS PRESENT, MAR 2000. Owner/Manager: DWR, PVT		
—Source Codes— MUL89F15, BRO91F02, PAT97F06, MON96F02, HOG00F01		
Date: 05/04/2001	Commercial Version Information dated 12/05/2000	Page 18

RAVA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened	NDBB Element Ranks: Global: G42T3 State: S233	Other Lists: CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		
Occurrence No. 28	Map Index: 17129	—Dates Last Seen— Element: 1989-11-07 Site: 1989-11-07
Occ Rank: Good	Origin: Natural/Native occurrence	Presence: Presumed Extant
Trend: Unknown	Main Source: MULLEN, D. 1989 (OBS)	
Quad Summary: CLIFTON COURT FOREBAY (3712175/463D) County Summary: ALAMEDA SRA Summary:		
Location: 0.5 MI WEST OF MOUNTAIN HOUSE SCHOOL AT MOUNTAIN HOUSE RD. SMALL 1/2 ACRE CATTLE POND.		
Lat/Long: 37°47'05" / 121°35'08"	UTM: Zone-10 N4182680 E624555	Township: 028 Range: 04E Section: 06 Qtr SW Meridian: M Elevation: 120 ft
Mapping Precision: SPECIFIC	Symbol Type: POINT	Radius: 80 meters
Comments Distribution: MORE THAN 50 INDIVIDUALS FOUND. Ecological: ARTIFICIAL EMPOUNDMENT IN HISTORIC DRAINAGE. HEAVILY GRAZED WITH ADJACENT MARSHY AREA PROTECTED FROM CATTLE BY FENCING. POND VEG DOMINATED BY TYPHA. Threat: HEAVY GRASSING. DEVELOPMENT PLANS. BULLFROGS ALSO FOUND IN THE POND. General: Owner/Manager: PVT		
—Source Codes— MUL89F14		
Date: 05/04/2001	Commercial Version Information dated 12/05/2000	Page 19

RAVA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened	NDBB Element Ranks: Global: G42T3 State: S233	Other Lists: CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		
Occurrence No. 35	Map Index: 17147	—Dates Last Seen— Element: 1989-10-17 Site: 1989-10-17
Occ Rank: Unknown	Origin: Natural/Native occurrence	Presence: Presumed Extant
Trend: Unknown	Main Source: LSA ASSOC. 1989 (OBS)	
Quad Summary: MIDWAY (3712165/445A) County Summary: SAN JOAQUIN SRA Summary:		
Location: APPROXIMATELY 4 MI WNW OF INTERSECTION OF HWY 580 & CORRAL HOLLOW RD, N OF LAWRENCE RADIATION LAB SITE 300, SW OF TRACY.		
Lat/Long: 37°41'09" / 121°31'47"	UTM: Zone-10 N4171769 E629637	Township: 038 Range: 04E Section: 10 Qtr SW Meridian: M Elevation: 800 ft
Mapping Precision: SPECIFIC	Symbol Type: POINT	Radius: 80 meters
Comments Distribution: 3 ADULTS FOUND IN SMALL SUNKEN SPRING. Ecological: SPRING ABOUT 8 SQUARE FEET IN INTRODUCED GRASSLAND. THE NEAREST STREAM IS CORRAL HOLLOW CR, APPROX 3 MI SW, AND THE NEAREST STOCK PONDS ARE 1 MI TO THE N, AND NEITHER HELD WATER AT THE TIME OF THIS OBSERVATION. Threat: CATTLE AND SHEEP GRASSING. POTENTIAL PLANS TO DEVELOP THIS SITE. General: SITE IS REMARKABLE IN ITS SMALL SIZE AND ISOLATION. Owner/Manager: PVT		
—Source Codes— LSA89F03		
Date: 05/04/2001	Commercial Version Information dated 12/05/2000	Page 20

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	WDBS Element Ranks: Global: G42T23 State: S283	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 43 Map Index: 23078 -Dates Last Seen-
 Occ Rank: Fair Element: 1992-06-29
 Origin: Natural/Native occurrence Site: 1992-06-29
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLEN, D. & G. REEMAN 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SRA Summary:

Location: ONE MILE NORTH OF THE LAWRENCE RADIATION LABORATORY BOUNDARY, 7 MILES SW OF TRACY.

Lat/Long: 37°41'31" / 121°31'33" Township: 038
 UTM: Zone-10 N4172450 E629971 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 09 Qtr XX
 Symbol Type: POLYGON Meridian: M
 Area: 189.5 ac Elevation: 500 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF TWO SMALL CATTLE WATERING PONDS, LOCATED ABOUT ONE MILE APART.
 Threat:
 General: 50 ADULTS AND MANY TADPOLES OBSERVED IN THE WESTERN-MOST POND; JUST A FEW FROGS FOUND IN THE EASTERN POND.
 Owner/Manager: PVT-TROS RANCH
 Source Codes:
 MUL92F05

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	WDBS Element Ranks: Global: G42T23 State: S283	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 44 Map Index: 23734 -Dates Last Seen-
 Occ Rank: Good Element: 1993-04-14
 Origin: Natural/Native occurrence Site: 1993-04-14
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MORI, B. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SRA Summary:

Location: 1.5 MILES NW OF PATTERSON PASS ROAD (STONE CORRAL), 11 MILES SE OF LIVERMORE.

Lat/Long: 37°42'41" / 121°36'18" Township: 02E
 UTM: Zone-10 N4174499 E622962 Range: 03E
 Mapping Precision: SPECIFIC Section: 35 Qtr SE
 Symbol Type: POLYGON Meridian: M
 Area: 12.1 ac Elevation: 550 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF TWO STOCK PONDS WITHIN A DRAINAGE SWALE; DOMINATED BY ABUNDANT TYPPA, CAREX, ELODEA, AND CHELYR. WATER HAS 4 INCHES DEEP AND TEA-COLORED. POND MARGINS VEGETATED BY DENSE GRASS/RUSH COVER. SURROUNDING GRASSLAND IS GRAZED.
 Threat: THREATENED BY PROPOSED USE OF SITE AS A LANDFILL.
 General: 6 ADULTS AND LARVAE TOO NUMEROUS TO COUNT OBSERVED. WET MEADOW BELOW PONDS ALSO SUPPORTED BOTH LARVAE AND ADULTS, ALTHOUGH STANDING WATER WAS CONFINED TO A NARROW CHANNEL. SURROUNDING LAND USE INCLUDES WINDFARMS.
 Owner/Manager: PVT

Source Codes:
 MOR93F01

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	WDBS Element Ranks: Global: G42T23 State: S283	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 45 Map Index: 25036 -Dates Last Seen-
 Occ Rank: Excellent Element: 1993-04-14
 Origin: Natural/Native occurrence Site: 1993-04-14
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MORI, B. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SRA Summary:

Location: 1.5 MILES SOUTHWEST OF THE I-580/I-205 JUNCTION, 10 MILES SE OF LIVERMORE.

Lat/Long: 37°42'52" / 121°36'34" Township: 02S
 UTM: Zone-10 N4174837 E622553 Range: 03E
 Mapping Precision: SPECIFIC Section: 35 Qtr SE
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 500 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A BERMED RESERVOIR LOCATED A SUB-VALLEY FLOOR. WATER IS ABOUT 4 FEET DEEP AND CLEAR; 50% COVER OF TYPPA, CAREX, AND ELODEA. MARGIN OF POND WITH DENSE GRASS COVER; ADJACENT UPLAND IS GRAZED ANNUAL GRASSLAND.
 Threat: THREATENED BY A PROPOSAL TO USE THIS SITE FOR LANDFILL.
 General: SEVERAL LARVAE OBSERVED ON 14 APRIL 1993. AMBYSTOMA CALIFORNIENSE LARVAE AND BYLA ADULTS AND LARVAE ALSO FOUND HERE.
 Owner/Manager: PVT
 Source Codes:
 MOR93F27

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	WDBS Element Ranks: Global: G42T23 State: S283	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 60 Map Index: 24683 -Dates Last Seen-
 Occ Rank: Poor Element: 1993-03-16
 Origin: Natural/Native occurrence Site: 1993-03-16
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: LUKE, C. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SRA Summary:

Location: 0.2 MI EAST OF DELTA MINNOCOTA CANAL, 0.85 MI NNE OF JUNCTION OF MOUNTAIN HOUSE RD AND GRANT LINE RD, ESE OF ESTHAY RES.

Lat/Long: 37°46'00" / 121°34'13" Township: 02S
 UTM: Zone-10 N4180673 E625926 Range: 04E
 Mapping Precision: SPECIFIC Section: 07 Qtr SE
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 175 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A STOCK POND SURROUNDED BY NON-NATIVE GRASSLAND.
 Threat:
 General: ONE RED-LEGGED FROG OBSERVED IN POND ON 16 MARCH 1993.
 Owner/Manager: UNKNOWN
 Source Codes:
 LUK93F07

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	MDDB Element Ranks: Global: G4T2T3 State: S2S3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 82 Map Index: 23735 —Dates Last Seen—
 Occ Rank: Excellent Element: 1993-04-14
 Origin: Natural/Native occurrence Site: 1993-04-14
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MORI, B. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SRA Summary:

Location: 2 MILES SOUTHWEST OF THE JUNCTION OF I-580/I-205, 10 MILES SE OF LIVERMORE.

Lat/Long: 37°42'38" / 121°36'47"	Township: 02S
UTM: Zone-10 N4174399 E622265	Range: 03E
Mapping Precision: SPECIFIC	Section: 35 Qtr SE
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 650 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A 40 X 100 FOOT POND SITUATED ON A NW-FACING SLOPE. POND HAS A DEPTH OF UP TO 4 FEET, WITH CLEAR WATER, AND 25% TYPHA AND 25% CANNI COVER. DENSE GRASS COVER ALONG POND MARGIN; ADJACENT UPLAND MADE UP OF GRADED GRASSLAND.
 Threat: THREATENED BY A PROPOSED EXPANSION OF A LANDFILL SITE.
 General: 5 ADULTS AND 5+ LARVAE OBSERVED ON 14 APRIL 1993. AMBYSTOMA CALIFORNIENSE ALSO FOUND AT THIS SITE.
 Owner/Manager: PVT
 Source Codes:
 MOR93F29

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	MDDB Element Ranks: Global: G4T2T3 State: S2S3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 98 Map Index: 25526 —Dates Last Seen—
 Occ Rank: Poor Element: 1989-05-15
 Origin: Natural/Native occurrence Site: 1989-05-15
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: ANDERSON, K. 1989 (OBS)

Quad Summary: MIDWAY (3712165/445A)*, CEDAR MTN. (3712155/445D)
 County Summary: SAN JOAQUIN
 SRA Summary:

Location: SOUTH SIDE OF CORRAL HOLLOW, 0.75 MILE EAST OF THE ALAMEDA/SAN JOAQUIN COUNTY LINE, CARNEGIE SVRA.

Lat/Long: 37°37'42" / 121°32'41"	Township: 03S
UTM: Zone-10 N4165367 E628429	Range: 04E
Mapping Precision: SPECIFIC	Section: 33 Qtr W
Symbol Type: POLYGON	Meridian: N
Area: 39.9 ac	Elevation: 750 ft

Comments:
 Distribution:
 Ecological: FROGS ARE FOUND AROUND SEASONAL PONDS AND CATCHMENT BASINS IN THE PARK. POND HABITAT IS FAIRLY DEVOID OF VEGETATION; SURROUNDING AREA IS MAINLY ANNUAL GRASSLAND, WITH SOME COASTAL SCRUB AND BLUE OAK WOODLAND.
 Threat: THREATENED BY OHV ACTIVITY AND THE RESULTING HEAVY DISTURBANCE TO THE HABITAT.
 General: MANY WERE OBSERVED ON 15 MAY 1989.
 Owner/Manager: DPR-CARNEGIE SVRA
 Source Codes:
 AND89F01

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	MDDB Element Ranks: Global: G4T2T3 State: S2S3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 86 Map Index: 25515 —Dates Last Seen—
 Occ Rank: Unknown Element: 1982-03-10
 Origin: Natural/Native occurrence Site: 1982-03-10
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: BROWN, C. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREWAY (3712175/463D)
 County Summary: ALAMEDA
 SRA Summary:

Location: 0.5 MILE WEST OF THE JUNCTION OF CHRISTENSEN ROAD AND THE CALIFORNIA AQUEDUCT, AT THE NORTH END OF BETHANY RESERVOIR.

Lat/Long: 37°47'08" / 121°36'45"	Township: 02S
UTM: Zone-10 N4182733 E622168	Range: 03E
Mapping Precision: SPECIFIC	Section: 02 Qtr SW
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 175 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF A FARM POND SURROUNDED BY GRAIED GRASSLAND.
 Threat: THREATENED BY INUNDATION FROM A PROPOSED RESERVOIR.
 General: 1 ADULT OBSERVED IN 1982.
 Owner/Manager: UNKNOWN
 Source Codes:
 BR08ZF12

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	MDDB Element Ranks: Global: G4T2T3 State: S2S3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 99 Map Index: 25525 —Dates Last Seen—
 Occ Rank: Poor Element: 1989-05-15
 Origin: Natural/Native occurrence Site: 1989-05-15
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: ANDERSON, K. 1989 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA, SAN JOAQUIN
 SRA Summary:

Location: SOUTH SIDE OF CORRAL HOLLOW, IN THE VICINITY OF THE ALAMEDA/SAN JOAQUIN COUNTY LINE, CARNEGIE SVRA.

Lat/Long: 37°37'55" / 121°33'23"	Township: 03S
UTM: Zone-10 N4165763 E627386	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 32 Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation: 800 ft

Comments:
 Distribution:
 Ecological: FROGS ARE FOUND AROUND SEASONAL PONDS AND CATCHMENT BASINS IN THE PARK. POND HABITAT IS FAIRLY DEVOID OF VEGETATION; SURROUNDING AREA IS MADE UP OF MAINLY ANNUAL GRASSLAND, WITH SOME COASTAL SCRUB AND BLUE OAK WOODLAND.
 Threat: THREATENED BY OHV ACTIVITY AND THE RESULTING HABITAT DISTURBANCE.
 General: MANY WERE OBSERVED ON 15 MAY 1989. THERE IS A SPECIMEN IN MVE (#129925) LABELED ONLY "CORRAL HOLLOW, ALAMEDA CO." FROM 6 FEB 1975.
 Owner/Manager: DPR-CARNEGIE SVRA
 Source Codes:
 AND89F01, MV188501

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	MDDS Element Ranks Global: G422T3 State: S2S3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 100 Map Index: 25516 --Dates Last Seen--
Occ Rank: Unknown Element: 1986-03-26
Origin: Natural/Native occurrence Site: 1986-03-26
Presence: Presumed Extant
Trend: Unknown
Main Source: FGE 1990 (LIT)

Quad Summary: CLIFTON COURT FOREWAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: CREEK LOCATED JUST SE OF THE INTERSECTION OF KILSO ROAD AND BRUNS AVENUE, NORTH OF ESTHANY RESERVOIR.

Lat/Long: 37°47'33" / 121°36'07"	Township: 02S
UTM: Zone-10 N4183500 E623093	Range: 03E
Mapping Precision: NON-SPECIFIC	Section: 01 Qtr NW
Symbol Type: POLYGON	Meridian: N
Area: 22.6 ac	Elevation: 100 ft

Comments:
Distribution:
Ecological: HABITAT IS AN INTERMITTENT CREEK.
Threat:
General: AN UNKNOWN NUMBER OF ADULTS OBSERVED ON 26 MARCH 1986.
Owner/Manager: UNKNOWN

Source Codes
PC990R01

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	MDDS Element Ranks Global: G422T3 State: S2S3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 132 Map Index: 33112 --Dates Last Seen--
Occ Rank: Good Element: 1994-04-27
Origin: Natural/Native occurrence Site: 1994-04-27
Presence: Presumed Extant
Trend: Unknown
Main Source: ALLABACK, M. 1994 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary:

Location: MOUNTAIN HOUSE CREEK, 2.2 MILES WSW OF MOUNTAIN HOUSE.

Lat/Long: 37°44'06" / 121°36'25"	Township: 02S
UTM: Zone-10 N4177129 E622755	Range: 03E
Mapping Precision: SPECIFIC	Section: 26 Qtr NE
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 400 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF A PONDED SECTION OF MOUNTAIN HOUSE CREEK.
Threat:
General: <10 LARVAE OBSERVED ON 27 APRIL 1994.
Owner/Manager: PVT

Source Codes
ALL94F09

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	MDDS Element Ranks Global: G422T3 State: S2S3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 131 Map Index: 33111 --Dates Last Seen--
Occ Rank: Good Element: 1994-04-27
Origin: Natural/Native occurrence Site: 1994-04-27
Presence: Presumed Extant
Trend: Unknown
Main Source: ALLABACK, M. 1994 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary:

Location: SOUTH OF MOUNTAIN HOUSE CREEK, 2.4 MILES WSW OF MOUNTAIN HOUSE.

Lat/Long: 37°44'01" / 121°36'32"	Township: 02S
UTM: Zone-10 N4176950 E622583	Range: 03E
Mapping Precision: SPECIFIC	Section: 26 Qtr NE
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 460 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF A STOCK POND SURROUNDED BY ANNUAL GRASSLAND. CALIFORNIA TIGER SALAMANDER LARVAE WERE ALSO PRESENT AT THIS SITE.
Threat: POSSIBLE THREAT FROM CATTLE GRAZING.
General: >100 LARVAE OBSERVED ON 27 APRIL 1994.
Owner/Manager: PVT

Source Codes
ALL94F08

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	MDDS Element Ranks Global: G422T3 State: S2S3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 133 Map Index: 33113 --Dates Last Seen--
Occ Rank: Good Element: 1994-04-27
Origin: Natural/Native occurrence Site: 1994-04-27
Presence: Presumed Extant
Trend: Unknown
Main Source: LAAS, D. 1994 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary:

Location: MOUNTAIN HOUSE CREEK, 3 MILES WSW OF MOUNTAIN HOUSE.

Lat/Long: 37°43'58" / 121°37'16"	Township: 02S
UTM: Zone-10 N4176871 E621509	Range: 03E
Mapping Precision: SPECIFIC	Section: 26 Qtr NW
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 500 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF A STOCK POND IN ANNUAL GRASSLAND.
Threat: POSSIBLE THREAT FROM CATTLE GRAZING.
General: >1000 LARVAE OBSERVED ON 27 APRIL 1994.
Owner/Manager: PVT

Source Codes
LAA94F05

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	NDBE Element Ranks Global: G42T23 State: S2B3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 263 Map Index: 40060 —Dates Last Seen—
 Occ Rank: Fair Element: 1997-03-06
 Origin: Natural/Native occurrence Site: 1997-03-06
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PATERSON, L. 1997 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SRA Summary:

Location: JUST NORTH OF THE BANKS PUMPING PLANT ON THE CALIFORNIA AQUEDUCT, SW OF CLIFTON COURT FOREBAY, 4 MILES SSE OF BYRON

Lat/Long: 37°48'20" / 121°37'13" Township: 01S
 UTM: Zone-10 N4184953 E621437 Range: 03E
 Mapping Precision: SPECIFIC Section: 35 Qtr NW
 Symbol Type: POLYGON Meridian: M
 Area: 11.9 ac Elevation: 100 ft

Comments: SITE IS LOCATED SOUTH OF THE SOUTHERN END OF BYRON HOT SPRINGS ROAD. THIS DRAINAGE WAS PREVIOUSLY DAMAGED IN SEVERAL LOCATIONS TO CREATE PONDS. DAMS HAVE NOT BEEN MAINTAINED, BUT SOME SMALL AREAS OF PONDING WATER REMAIN.
 Distribution: HABITAT CONSISTS OF A SMALL DRAINAGE WITH INTERMITTENT WATER FLOW. DEEPEST AREAS OF PONDING WATER (18-24 INCHES) IS VEGETATED BY SCIRPUS MARITIMUS; SURROUNDING AREAS DOMINATED BY DISTICHLIS SPICATA, AND HAVELLA LEPROCA.
 Ecological: HABITAT CONSISTS OF A SMALL DRAINAGE WITH INTERMITTENT WATER FLOW. DEEPEST AREAS OF PONDING WATER (18-24 INCHES) IS VEGETATED BY SCIRPUS MARITIMUS; SURROUNDING AREAS DOMINATED BY DISTICHLIS SPICATA, AND HAVELLA LEPROCA.
 Threat: General: 5 ADULT FROGS WERE OBSERVED ON 6 MAR 1997 IN A SMALL (3 FT X 3 FT) POOL WITH STEEP, ERODED BANKS.
 Owner/Manager: DWR
 Source Codes: PAT97F01

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	NDBE Element Ranks Global: G42T23 State: S2B3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 265 Map Index: 40062 —Dates Last Seen—
 Occ Rank: Unknown Element: 1997-03-19
 Origin: Natural/Native occurrence Site: 1997-03-19
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PATERSON, L. 1997 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SRA Summary:

Location: JUST SOUTH OF CHRISTENSEN ROAD, ON THE EAST SIDE OF THE CALIFORNIA AQUEDUCT, JUST NORTH OF BETHANY RESERVOIR

Lat/Long: 37°47'12" / 121°37'09" Township: 02S
 UTM: Zone-10 N4182862 E621584 Range: 03E
 Mapping Precision: SPECIFIC Section: 02 Qtr SW
 Symbol Type: POLYGON Meridian: M
 Area: 12.9 ac Elevation: 200 ft

Comments: CREEK CROSSES THE AQUEDUCT AT MILE POST 4.42, APPROXIMATELY 500 FEET EAST OF THE AQUEDUCT.
 Distribution: HABITAT CONSISTS OF A PERENNIAL STREAM FLOWING DOWNSTREAM AS THE RESULT OF SEEPAGE FROM THE AQUEDUCT. DOMINANT PLANTS INCLUDE SALIX LASIOLEPIS AND TYPHA LATIFOLIA; SURROUNDING AREA VEGETATED BY ANNUAL GRASSES.
 Ecological: HABITAT CONSISTS OF A PERENNIAL STREAM FLOWING DOWNSTREAM AS THE RESULT OF SEEPAGE FROM THE AQUEDUCT. DOMINANT PLANTS INCLUDE SALIX LASIOLEPIS AND TYPHA LATIFOLIA; SURROUNDING AREA VEGETATED BY ANNUAL GRASSES.
 Threat: General: ONE ADULT OBSERVED IN DENSE TYPHA ON 19 MAR 1997.
 Owner/Manager: UNKNOWN
 Source Codes: PAT97F03

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	NDBE Element Ranks Global: G42T23 State: S2B3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 264 Map Index: 40061 —Dates Last Seen—
 Occ Rank: Fair Element: 2000-05-09
 Origin: Natural/Native occurrence Site: 2000-05-09
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PATERSON, L. 1997 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SRA Summary:

Location: UNNAMED CREEK THAT INTERSECT THE CALIFORNIA AQUEDUCT AT MILE POST 3.81, NORTH OF BETHANY RESERVOIR, 5 MILES SSE OF BYRON

Lat/Long: 37°47'34" / 121°37'18" Township: 02S
 UTM: Zone-10 N4183520 E621340 Range: 03E
 Mapping Precision: SPECIFIC Section: 02 Qtr NE
 Symbol Type: POLYGON Meridian: M
 Area: 12.5 ac Elevation: 200 ft

Comments: SITE IS LOCATED DIRECTLY DOWNSTREAM OF THE CULVERT UNDER THE AQUEDUCT.
 Distribution: HABITAT CONSISTS OF A SMALL, PERENNIAL CREEK WITHIN THE RIGHT-OF-WAY OF THE CALIFORNIA AQUEDUCT. CREEK IS DENSELY VEGETATED BY CATTAILS. LARGE STOCK PONDS CAN BE FOUND BOTH UPSTREAM AND DOWNSTREAM, PROVIDING POTENTIAL SEEP HABITAT.
 Ecological: HABITAT CONSISTS OF A SMALL, PERENNIAL CREEK WITHIN THE RIGHT-OF-WAY OF THE CALIFORNIA AQUEDUCT. CREEK IS DENSELY VEGETATED BY CATTAILS. LARGE STOCK PONDS CAN BE FOUND BOTH UPSTREAM AND DOWNSTREAM, PROVIDING POTENTIAL SEEP HABITAT.
 Threat: General: 1 ADULT OBSERVED ON 6 MAR 1997 IN A CEMENT SILT TRAP OVERGROWN BY CATTAILS. 3 ADULTS AND 2 SUB-ADULTS OBSERVED ON 9 MAY 2000.
 Owner/Manager: DWR
 Source Codes: HOG00F03, PAT97F02

RANA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened Federal: Threatened State: None	NDBE Element Ranks Global: G42T23 State: S2B3	Other Lists CDFG Status: SC
Habitat Associations General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 266 Map Index: 40063 —Dates Last Seen—
 Occ Rank: Fair Element: 2000-05-09
 Origin: Natural/Native occurrence Site: 2000-05-09
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PATERSON, L. 1997 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SRA Summary:

Location: DRAINAGE/SEEP DIRECTLY BELOW BETHANY RESERVOIR DAM, 0.4 MILE SOUTH OF CHRISTENSEN ROAD, SSW OF CLIFTON COURT FOREBAY

Lat/Long: 37°46'54" / 121°36'24" Township: 02S
 UTM: Zone-10 N4182302 E622692 Range: 03E
 Mapping Precision: SPECIFIC Section: 02 Qtr SE
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 160 ft

Comments: THIS IS SEEP 3 OF BETHANY RESERVOIR.
 Distribution: DRAINAGE/SEEP VEGETATED BY A DENSE STAND OF TYPHA LATIFOLIA; SURROUNDING AREA VEGETATED BY ANNUAL GRASSES.
 Ecological: DRAINAGE/SEEP VEGETATED BY A DENSE STAND OF TYPHA LATIFOLIA; SURROUNDING AREA VEGETATED BY ANNUAL GRASSES.
 Threat: POSSIBLE THREAT FROM CATTLE GRADING.
 General: JUVENILE FROGS HAVE BEEN OBSERVED ON SEVERAL OCCASIONS IN PONDING WATER IN A SILT TRAP LOCATED DIRECTLY BELOW SEEP 3. 1 JUVENILE FROG OBSERVED ON 18 JUL 1997. 3 TADPOLES (1 WITH HINDLEGS) OBSERVED ON 9 MAY 2000.
 Owner/Manager: DWR
 Source Codes: PAT97F04, HOG00F04

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	WDDB Element Ranks: Global: G4T2T3 State: S2B3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 267 Map Index: 40064 -Dates Last Seen-
Occ Rank: Fair Element: 1997-07-07
Origin: Natural/Native occurrence Site: 1997-07-07
Presence: Presumed Extant
Trend: Unknown
Main Source: PATTERSON, L. 1997 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: SW SHORE OF BETHANY RESERVOIR, SW OF CLIFTON COURT FOREBAY.

Lat/Long: 37°46'25" / 121°36'10" Township: 02S
UTM: Zone-10 N4181430 E623045 Range: 03E
Mapping Precision: SPECIFIC Section: 12 Qtr NW
Symbol Type: POLYGON Meridian: M
Area: 18.0 ac Elevation: 340 ft

Comments:
Distribution: SITE IS LOCATED 0.3 MILE NORTH OF THE FURTHEST SOUTH INLET INTO THE RESERVOIR, AS YOU TRAVEL ALONG THE PERIMETER ROAD.
Ecological: HABITAT CONSISTS OF A DENSE PATCH OF TYPHA LATIFOLIA. TO THE EAST, SITE IS SURROUNDED BY OPEN WATER AND BY OPEN GRASSLANDS TO THE WEST.
Threat:
General: ONE ADULT FROG OBSERVED ALONG THE SHORE IN A DENSE PATCH OF CATTAILS.
Owner/Manager: DWR
Source Codes:
PAT97F05

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	WDDB Element Ranks: Global: G4T2T3 State: S2B3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 300 Map Index: 41131 -Dates Last Seen-
Occ Rank: Fair Element: 2000-05-09
Origin: Natural/Native occurrence Site: 2000-05-09
Presence: Presumed Extant
Trend: Unknown
Main Source: HOGAN, J. 1998 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: JUST EAST OF THE DELTA PUMPING PLANT, 1 MILE NORTH OF BETHANY RESERVOIR, 4 MILES SSE OF BYRON

Lat/Long: 37°47'59" / 121°36'49" Township: 01S
UTM: Zone-10 N4184298 E622045 Range: 03E
Mapping Precision: SPECIFIC Section: 35 Qtr SW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 120 ft

Comments:
Distributions:
Ecological: HABITAT CONSISTS OF A SMALL PERENNIAL STREAM, VEGETATED BY TYPHA SP, SCIRPUS SP, AND EPHLOBIUM SP. ONLY ABOUT 50 FEET OF EMERGENT VEGETATION, THEN THE STREAM ENTERS PRIVATE, HEAVILY-GRAZED GRASSLAND, CONTAINING A SERIES OF STOCK PONDS.
Threat:
General: 2 ADULTS AND 3 JUVENILES OBSERVED ON 14 MAY 1998. 1 SUB-ADULT OBSERVED ON 9 MAY 2000.
Owner/Manager: DWR
Source Codes:
HOG00F05, HOG98F01

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	WDDB Element Ranks: Global: G4T2T3 State: S2B3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 275 Map Index: 40431 -Dates Last Seen-
Occ Rank: Good Element: 1998-09-30
Origin: Natural/Native occurrence Site: 1998-09-30
Presence: Presumed Extant
Trend: Unknown
Main Source: BRIDEN, L. 1998 (OBS)

Quad Summary: MIDWAY (3712165/445A)*, CEDAR MTN. (3712155/445D)
County Summary: ALAMEDA
SNA Summary:

Location: S SIDE OF MOUNTAIN, 1 MILE S OF TESLA, 1.7 MILES WNW OF MITCHELL SHAW AT HATCH HATCHY AQUEDUCT.

Lat/Long: 37°37'30" / 121°35'56" Township: 03S
UTM: Zone-10 N4164954 E623626 Range: 03E
Mapping Precision: SPECIFIC Section: 36 Qtr SW
Symbol Type: POLYGON Meridian: M
Area: 8.3 ac Elevation: 1900 ft

Comments:
Distribution: FROGS FOUND IN TWO ADJACENT STOCK PONDS, SAMPLE SITE POND #1A.
Ecological: OAK SAVANNAH/NOB-NATIVE GRASSLAND
Threat:
General: COUNTED 2 ADULTS IN THE PONDS, UNABLE TO COUNT THE JUVENILES ACCURATELY, BUT THEY WERE NUMEROUS.
Owner/Manager: DFR
Source Codes:
BR198F14

RAWA AURORA DRAYTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	WDDB Element Ranks: Global: G4T2T3 State: S2B3	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 384 Map Index: 42970 -Dates Last Seen-
Occ Rank: Fair Element: 1999-10-22
Origin: Natural/Native occurrence Site: 1999-10-22
Presence: Presumed Extant
Trend: Unknown
Main Source: HOGAN, J. 1999 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: NORTH SIDE OF BETHANY RESERVOIR, 0.5 MILE SOUTH OF CHRISTENSEN ROAD, 5 MILES SSE OF BYRON.

Lat/Long: 37°46'56" / 121°36'50" Township: 02S
UTM: Zone-10 N4182367 E622047 Range: 03E
Mapping Precision: SPECIFIC Section: 02 Qtr SW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 180 ft

Comments:
Distributions:
Ecological: SITE IS KNOWN AS KEEP 2 OF BETHANY RESERVOIR. HABITAT CONSISTS OF A SHIP WITH SOME CATTAILS PRESENT. SEVERAL PACIFIC TREE FROGS PRESENT.
Threat:
General: THREATENED BY CATTLE GRASSING.
Owner/Manager: DWR
Source Codes:
HOG99F01

RAWA ABOHRA DRAFTONII (cont.) CALIFORNIA RED-LEGGED FROG		Element Code: AAABH01022
Status: Threatened State: None	NDBB Element Ranks: Global: G427T3 State: S283	Other Lists: CDFG Status: SC
Habitat Associations: General: LOWLANDS & FOOTHILLS IN OR NEAR PERMANENT SOURCES OF DEEP WATER WITH DENSE, SHRUBBY OR EMERGENT RIPARIAN VEGETATION. Micro: REQUIRES 11-20 WEEKS OF PERMANENT WATER FOR LARVAL DEVELOPMENT. MUST HAVE ACCESS TO ESTIVATION HABITAT.		

Occurrence No. 385 Map Index: 42971 —Dates Last Seen—
Occ Rank: Fair Element: 2000-04-30
Origin: Natural/Native occurrence Site: 2000-04-30
Presence: Presumed Extant
Trend: Unknown
Main Source: HOGAN, J. 2000 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: NORTH END OF BETHANY RESERVOIR, 0.2 MILE SOUTH OF CHRISTENSEN ROAD, 5 MILES SSE OF BYRON.

Lat/Long: 37°47'05" / 121°37'01" Township: 02S
UTM: Zone-10 W4182640 E621768 Range: 03E
Mapping Precision: SPECIFIC Section: 02 Qtr SW
Symbol Type: POINT Meridian: N
Radius: 80 meters Elevation: 180 ft

Comments:
Distribution: SITE IS KNOWN AS SHEEP 1 OF BETHANY RESERVOIR.
Ecological: HABITAT CONSISTS OF A SHEEP WITH SOME CATTAILS GROWING IN A CHANNEL. BIRDAL SPECIES WITH SOME BUNCGRASSES FOUND IN THE SURROUNDING GRASSLAND AREA.
Threat: THREATENED BY CATTLE GRASING WITHIN DRAINAGE. DRAINAGE CLEARED OF CATTAIL OVERGROWTH AS NEEDED (1/2 CHANNEL AT A TIME).
General: 1 ADULT OBSERVED, 30 APR 2000.
Owner/Manager: DWR

Source Codes:
HOG00F02

BUTEO SWAINSONI (NESTING) SWAINSON'S HAWK		Element Code: ABNKC19070
Status: None State: Threatened	NDBB Element Ranks: Global: G4 State: S2	Other Lists: CDFG Status:
Habitat Associations: General: BREEDS IN STANDS WITH FEW TREES IN JUNIPER-SAGE FLATS, RIPARIAN AREAS AND IN OAK SAVANNAH. Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.		

Occurrence No. 318 Map Index: 21022 —Dates Last Seen—
Occ Rank: Poor Element: 1989-05-09
Origin: Natural/Native occurrence Site: 1989-05-09
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. A. 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: ALONG WEST BANK OF OLD RIVER, 1.5 MI NORTH OF THE INTERSECTION OF HENDERSON ROAD WITH BYRON ROAD, 7 MI SW OF TRACY.

Lat/Long: 37°48'05" / 121°31'43" Township: 01S
UTM: Zone-10 W4184604 E629542 Range: 04E
Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
Symbol Type: POINT Meridian: N
Radius: 1/5 mile Elevation: 5 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF VALLEY RIPARIAN SCRUB ALONG THE OLD RIVER LEVEE; SOME SCATTERED, ISOLATED WILLOWS AND WHITE ALDERS. THIS AREA IS SURROUNDED BY AGRICULTURE, ROW CROPS, HAY, AND PASTURAGE.
Threat: NEST AND A DEFENSIVE PAIR OF ADULTS OBSERVED DAILY 9-11 MAY, 1989.
General: NEST AND A DEFENSIVE PAIR OF ADULTS OBSERVED DAILY 9-11 MAY, 1989.
Owner/Manager: FVT

Source Codes:
MUL89F18

ELANUS LEUCURUS (NESTING) WHITE-TAILED KITE		Element Code: ABNKC06010
Status: None State: None	NDBB Element Ranks: Global: G5 State: S3	Other Lists: CDFG Status:
Habitat Associations: General: LOW ROLLING FOOTHILLS/VALLEY MARGINS WITH SCATTERED OAKS AND RIVER BOTTOMLANDS OR MARSHES ADJACENT TO DECIDUOUS WOODLAND Micro: OPEN GRASSLANDS, MEADOWS, OR MARSHES FOR FORAGING CLOSE TO ISOLATED, DENSE-TOPPED TREES FOR NESTING AND PERCHING.		

Occurrence No. 9 Map Index: 24682 —Dates Last Seen—
Occ Rank: Unknown Element: 1993-05-04
Origin: Natural/Native occurrence Site: 1993-05-04
Presence: Presumed Extant
Trend: Unknown
Main Source: DIEHL, J. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary:

Location: NNE OF THE INTERSECTION OF MOUNTAIN HOUSE ROAD AND DELTA MENDOTA CANAL, 1.25 MILES EAST OF BETHANY RESERVOIR.

Lat/Long: 37°46'34" / 121°34'46" Township: 02S
UTM: Zone-10 W4181705 E625115 Range: 04E
Mapping Precision: SPECIFIC Section: 07 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 160 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF MIXED AGRICULTURE AND NON-NATIVE GRASSLAND.
Threat: POSSIBLE THREATS INCLUDE AGRICULTURAL ACTIVITIES.
General: TWO ADULTS OBSERVED NESTING.
Owner/Manager: UNKNOWN

Source Codes:
DIR93F01

BUTEO SWAINSONI (NESTING) (cont.) SWAINSON'S HAWK		Element Code: ABNKC19070
Status: None State: Threatened	NDBB Element Ranks: Global: G4 State: S2	Other Lists: CDFG Status:
Habitat Associations: General: BREEDS IN STANDS WITH FEW TREES IN JUNIPER-SAGE FLATS, RIPARIAN AREAS AND IN OAK SAVANNAH. Micro: REQUIRES ADJACENT SUITABLE FORAGING AREAS SUCH AS GRASSLANDS, OR ALFALFA OR GRAIN FIELDS SUPPORTING RODENT POPULATIONS.		

Occurrence No. 693 Map Index: 36524 —Dates Last Seen—
Occ Rank: Unknown Element: 1987-07-07
Origin: Natural/Native occurrence Site: 1987-07-07
Presence: Presumed Extant
Trend: Unknown
Main Source: GREEN, M. & A. HAYWORTH 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: SMALL ISLAND, APPROXIMATELY 2 MILES UPSTREAM (SE) FROM THE CONFLUENCE OF OLD RIVER AND DELTA MENDOTA CANAL

Lat/Long: 37°47'55" / 121°31'22" Township: 01S
UTM: Zone-10 W4184299 E630048 Range: 04E
Mapping Precision: SPECIFIC Section: 34 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 5 ft

Comments:
Distribution:
Ecological: SMALL ISLAND WHERE NEST TREE IS LOCATED IS NEAR THE LINDEMANN CUT PUMP.
Threat: NEST TREE IS A PINE; THIS DELTA ISLAND HAS BEEN PLANTED WITH NON-NATIVE TREES. THE NEST IS 40-50 FEET UP IN THE PINE TREE.
General: ON 7 JULY 1987, 2 DARK-PHASE ADULTS WERE OBSERVED NEST-BUILDING.
Owner/Manager: FVT

Source Codes:
GRE87F03

ATHENE CUNICULARIA (BURROW SITES)		Element Code: AHNBS10010
BURROWING OWL		
Status: None	NRDS Element Ranks: Global: G4T2	Other Lists: CDFG Status: SC
State: None	State: S2	
Habitat Associations:		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 47 Map Index: 10965 --Dates Last Seen--
 Occ Rank: Unknown Element: 1973-04-30
 Origin: Natural/Native occurrence Site: 1973-04-30
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EDWARDS, A. 1983 (PERS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary: Redwood Cut

Location: ON N SIDE OF ALTAMONT PASS, 1.5 MI SW OF MOUNTAIN HOUSE, APPROX 10 MI NE OF LIVERMORE.

Lat/Long: 37°44'50" / 121°38'52" Township: 02S
 UTM: Zone-10 N4178481 E623541 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 24 Qtr NW
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 400 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: SINGLE BIRD OBSERVED DURING THE BREEDING SEASON.
 Owner/Manager: UNKNOWN

Source Codes:
 JOBS8001, EDWS3001

ATHENE CUNICULARIA (BURROW SITES) (cont.)		Element Code: AHNBS10010
BURROWING OWL		
Status: None	NRDS Element Ranks: Global: G4T2	Other Lists: CDFG Status: SC
State: None	State: S2	
Habitat Associations:		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 49 Map Index: 10955 --Dates Last Seen--
 Occ Rank: Unknown Element: 1990-IX-XX
 Origin: Natural/Native occurrence Site: 1990-IX-XX
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EDWARDS, A. 1983 (PERS)

Quad Summary: CLIFTON COURT FORESBY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary: Holy Road North

Location: NORTH OF HOLY ROAD, BETWEEN BYRON HOT SPRINGS ROAD AND BYRON HIGHWAY (ROAD J-4), 3 MILES SOUTH OF BYRON.

Lat/Long: 37°50'02" / 121°36'55" Township: 01S
 UTM: Zone-10 N4188074 E621849 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 23 Qtr NW
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 50 ft

Comments:
 Distribution: BURROWS LOCATED ON THE BANK OF AN IRRIGATION DITCH IN THE VICINITY OF ALFALFA FIELDS.
 Ecological:
 Threat:
 General: SEVERAL OBSERVED 1981-82. IN 1990, OWLS COULD BE SEEN FREQUENTLY WHILE DRIVING BY ON HOLY ROAD.
 Owner/Manager: PVT

Source Codes:
 MYE90F09, EDWS3001

ATHENE CUNICULARIA (BURROW SITES) (cont.)		Element Code: AHNBS10010
BURROWING OWL		
Status: None	NRDS Element Ranks: Global: G4T2	Other Lists: CDFG Status: SC
State: None	State: S2	
Habitat Associations:		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 48 Map Index: 11007 --Dates Last Seen--
 Occ Rank: Unknown Element: 1982-12-11
 Origin: Natural/Native occurrence Site: 1982-12-11
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EDWARDS, A. 1983 (PERS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: NEAR MIDWAY, IMMEDIATELY E OF PATTERSON PASS ROAD AND WESTERN PACIFIC RAILROAD JCT.

Lat/Long: 37°42'25" / 121°34'20" Township: 03S
 UTM: Zone-10 N4174055 E625858 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 06 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 500 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: SEVERAL OBSERVED BY EDWARDS IN 1982.
 Owner/Manager: PVT

Source Codes:
 JOBS8001, EDWS3001

ATHENE CUNICULARIA (BURROW SITES) (cont.)		Element Code: AHNBS10010
BURROWING OWL		
Status: None	NRDS Element Ranks: Global: G4T2	Other Lists: CDFG Status: SC
State: None	State: S2	
Habitat Associations:		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 73 Map Index: 11037 --Dates Last Seen--
 Occ Rank: Unknown Element: 1982-06-27
 Origin: Natural/Native occurrence Site: 1982-06-27
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EDWARDS, A. 1983 (PERS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: EAST SIDE OF NORTH MIDWAY ROAD, 8 MILES WEST OF TRACY.

Lat/Long: 37°44'40" / 121°34'13" Township: 02S
 UTM: Zone-10 N4178213 E625970 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 19 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 1/10 mile Elevation: 300 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: EVIDENCE OF BREEDING; 2 OBSERVED AT THIS LOCATION.
 Owner/Manager: UNKNOWN

Source Codes:
 EDWS3001

ATHEKE CUNICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: _____	MDDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 100 Map Index: 17250 -Dates Last Seen-
 Occ Rank: Fair Element: 1989-09-16
 Origin: Natural/Native occurrence Site: 1989-09-16
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLEN, D. A. 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary: Mountain House Creek

Location: ALONG HEMDOTA CANAL, ONE MI NORTH OF MOUNTAIN HOUSE, ALAMEDA COUNTY.

Lat/Long: 37°46'09" / 121°34'24" Township: 02S
 UTM: Zone-10 N4180970 8625661 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 07 Qtr SE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 200 ft

Comments: _____
 Distribution: BURROW WITH TWO ADULTS IN A RECENTLY-DISCED, OPEN FIELD.
 Ecological: SURROUNDING LAND USE IS MAINLY AGRICULTURE, ALTHOUGH THERE ARE MANY ACTIVE CALIFORNIA GROUND SQUIRREL BURROWS IN THE VICINITY.
 Threat: MAIN THREAT IS AGRICULTURE.
 General: BURROW WAS VISITED SEVERAL TIMES IN THE FALL, AND IT REMAINED OCCUPIED.

Owner/Manager: PVT
 Source Codes: MUL89F16

ATHEKE CUNICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: _____	MDDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 151 Map Index: 23740 -Dates Last Seen-
 Occ Rank: Unknown Element: 1992-06-12
 Origin: Natural/Native occurrence Site: 1992-06-12
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: SPENCER, G. 1992 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary: _____

Location: 0.2 MILE SOUTH OF HOLY ROAD AND 0.5 MILE WEST OF NORTH BURNS WAY, WEST OF CLIFTON COURT FOREBAY.

Lat/Long: 37°49'42" / 121°36'44" Township: 01S
 UTM: Zone-10 N4187478 8622144 Range: 03E
 Mapping Precision: SPECIFIC Section: 23 Qtr SE
 Symbol Type: POINT Meridian: N
 Radius: 90 meters Elevation: 30 ft

Comments: _____
 Distribution: 2 BURROWS, LOCATED ABOUT 125 FEET APART.
 Ecological: HABITAT SURROUNDING BURROW SITE CONSISTS OF WETLANDS AND AGRICULTURE.
 Threat: POSSIBLE THREAT OF DISTURBANCE FROM PROPOSED PIPELINE.
 General: BOTH BURROWS SHOWED OWL SIGN AT BURROW ENTRANCE AND HAD AN OWL STANDING OUTSIDE BURROW.

Owner/Manager: UNKNOWN
 Source Codes: SP892F01

ATHEKE CUNICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: _____	MDDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 101 Map Index: 17251 -Dates Last Seen-
 Occ Rank: Fair Element: 1989-09-16
 Origin: Natural/Native occurrence Site: 1989-09-16
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLEN, D. A. 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: SAN JOAQUIN
 SNA Summary: Mountain House Creek

Location: 1.3 MI ENE OF MOUNTAIN HOUSE, SAN JOAQUIN COUNTY.

Lat/Long: 37°45'36" / 121°33'06" Township: 02S
 UTM: Zone-10 N4179962 8627588 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 17 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 120 ft

Comments: _____
 Distribution: BURROW LOCATED IN AN OPEN FIELD NEAR A LATERAL IRRIGATION CANAL. Ecological: FIELD RECENTLY FARMED IN WHEAT, IN POORLY-DRAINED ALKALI SOIL. MANY CALIFORNIA GROUND SQUIRREL BURROWS PRESENT.
 Threat: MAIN THREAT IS AGRICULTURE.
 General: BURROW WAS VISITED SEVERAL TIMES AND REMAINED ACTIVE.

Owner/Manager: PVT
 Source Codes: MUL89F17

ATHEKE CUNICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: _____	MDDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 152 Map Index: 23739 -Dates Last Seen-
 Occ Rank: Unknown Element: 1992-06-12
 Origin: Natural/Native occurrence Site: 1992-06-12
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: JACKSON, R. 1992 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary: _____

Location: 1 MILE WEST OF BYRON HWY CROSSING OVER THE CALIFORNIA AQUEDUCT, SW OF CLIFTON COURT FOREBAY.

Lat/Long: 37°49'22" / 121°36'45" Township: 01S
 UTM: Zone-10 N4186865 8622109 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 26 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 1/5 mile Elevation: 45 ft

Comments: _____
 Distribution: 2 BURROWS, LOCATED ABOUT 500 FEET APART.
 Ecological: HABITAT SURROUNDING BURROW SITES CONSISTS OF WETLANDS AND AGRICULTURE.
 Threat: THE TWO BURROWS WERE ON EITHER SIDE OF A PROPOSED PIPELINE.
 General: BURROWS BOTH HAD OWL SIGN (DROPPINGS) AROUND RM; ONE OWL OBSERVED FLYING THROUGHOUT THE AREA.

Owner/Manager: UNKNOWN
 Source Codes: JAC92F01

ATHENE CUCULIARIA (BURROW SITES) (cont.)		Element Code: ARNSB10010	
BURROWING OWL			
Status	NDDB Element Ranks	Other Lists	
Federal: None	Global: G4T2	CDFG Status: SC	
State: None	State: S2		
Habitat Associations			
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.			
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.			

Occurrence No. 171 Map Index: 23898 --Dates Last Seen--
 Occ Rank: Good Element: 1992-07-03
 Origin: Natural/Native occurrence Site: 1992-07-03
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLER, D. & G. KEEMAN 1991 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: 1.75 MILES SOUTH OF THE INTERSECTION OF PATTERSON PASS ROAD AND I-580, 5 MILES SW OF TRACY.

Lat/Long: 37°41'36" / 121°31'50"	Township: 03S
UTM: Zone-10 N4172598 E629556	Range: 04E
Mapping Precision: SPECIFIC	Section: 04 Qtr SE
Symbol Type: POINT	Meridian: M
Radius: 80 meters	Elevation: 700 ft

Comments

Distribution:

Ecological: HABITAT CONSISTS OF OPEN GRASSING LAND.

Threat:

General: BURROW WITH ONE ADULT OBSERVED.

Owner/Manager: PVT

Source Codes: NUL92F08

ATHENE CUCULIARIA (BURROW SITES) (cont.)		Element Code: ARNSB10010	
BURROWING OWL			
Status	NDDB Element Ranks	Other Lists	
Federal: None	Global: G4T2	CDFG Status: SC	
State: None	State: S2		
Habitat Associations			
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.			
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.			

Occurrence No. 182 Map Index: 24456 --Dates Last Seen--
 Occ Rank: Unknown Element: 1992-05-XX
 Origin: Natural/Native occurrence Site: 1992-05-XX
 Presence: Presumed Extant
 Trend: Stable
 Main Source: FLANNERY, A. 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: WEST SIDE OF MIDWAY ROAD, 0.5 MILE SOUTH OF I-580, 10 MILES SOUTH OF TRACY.

Lat/Long: 37°44'13" / 121°34'06"	Township: 02S
UTM: Zone-10 N4177383 E626149	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 30 Qtr NE
Symbol Type: POLYGON	Meridian: M
Area: 19.1 ac	Elevation: 315 ft

Comments

Distribution:

Ecological: HABITAT CONSISTS OF A BURROW ON AN EAST-FACING SLOPE OF GRASSLAND/PASTURE.

Threat:

General: 2 BIRDS OBSERVED LEAVING BURROW ON 2 CONSECUTIVE NIGHTS DURING A SPOTLIGHTING SURVEY IN 1992. TWO BIRDS SEEN HERE 6/27/82.

Owner/Manager: PVT

Source Codes: FLA92F08, EDW83U01

ATHENE CUCULIARIA (BURROW SITES) (cont.)		Element Code: ARNSB10010	
BURROWING OWL			
Status	NDDB Element Ranks	Other Lists	
Federal: None	Global: G4T2	CDFG Status: SC	
State: None	State: S2		
Habitat Associations			
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.			
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.			

Occurrence No. 181 Map Index: 24455 --Dates Last Seen--
 Occ Rank: Unknown Element: 1992-05-XX
 Origin: Natural/Native occurrence Site: 1992-05-XX
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: FLANNERY, A. 1992 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: NORTH OF GRANT LINE ROAD AND SOUTH OF MOUNTAIN HOUSE CREEK, 5 MILES SOUTH OF CLIFTON COURT FOREBAY.

Lat/Long: 37°45'42" / 121°33'43"	Township: 02S
UTM: Zone-10 N4180125 E626681	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 17 Qtr NW
Symbol Type: POINT	Meridian: M
Radius: 1/5 mile	Elevation: 155 ft

Comments

Distribution: BURROW IS LOCATED ON THE SLOPE OF CANAL LEVEE.

Ecological: BURROW SITE IS SURROUNDED BY BOTH GRASED AND UNGRASED GRASSLAND.

Threat:

General: 2 BIRDS OBSERVED LEAVING BURROW ON 3 CONSECUTIVE NIGHTS DURING A SPOTLIGHTING SURVEY.

Owner/Manager: PVT

Source Codes: FLA92F07

ATHENE CUCULIARIA (BURROW SITES) (cont.)		Element Code: ARNSB10010	
BURROWING OWL			
Status	NDDB Element Ranks	Other Lists	
Federal: None	Global: G4T2	CDFG Status: SC	
State: None	State: S2		
Habitat Associations			
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.			
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.			

Occurrence No. 202 Map Index: 24675 --Dates Last Seen--
 Occ Rank: Fair Element: 1992-09-29
 Origin: Natural/Native occurrence Site: 1992-09-29
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EHRLICH, S. 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: JUST EAST OF PATTERSON PASS ROAD, 0.3 MILE SOUTH OF I-205, SW OF TRACY.

Lat/Long: 37°44'15" / 121°31'42"	Township: 02S
UTM: Zone-10 N4177516 E629663	Range: 04E
Mapping Precision: SPECIFIC	Section: 22 Qtr SW
Symbol Type: POINT	Meridian: M
Radius: 80 meters	Elevation: 160 ft

Comments

Distribution: BURROW LOCATED ABOUT 250 FEET EAST OF AN EXISTING GAS PIPELINE, BETWEEN MP 323.0 AND 323.2.

Ecological: HABITAT SURROUNDING BURROW SITE CONSISTS OF NON-NATIVE GRASSLAND AND AGRICULTURE.

Threat: POSSIBLE THREAT FROM AGRICULTURAL ACTIVITIES.

General: BURROW CONTAINING WHITENESS AND FEATHERS AT THE ENTRANCE OBSERVED ON 29 SEPTEMBER 1992; NO OWLS OBSERVED.

Owner/Manager: UNKNOWN

Source Codes: EHR92F04

ATHENE CUCICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: None	NDBB Element Rank: Global: G4T2	Other Lists: CDFG Status: SC
Federal: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 203 Map Index: 24677 —Dates Last Seen—
 Occ Rank: Fair Element: 1992-09-29
 Origin: Natural/Native occurrence Site: 1992-09-29
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: EHRLEICH, S. 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: BETWEEN PATTERSON PASS ROAD AND HANSEN ROAD, 0.6 MILE SOUTH OF I-205, SW OF TRACT.

Lat/Long: 37°43'58" / 121°31'16" Township: 02S
 UTM: Zone-10 M4176995 E630310 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr N
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 150 ft

Comments: BURROW LOCATED ALONG AN EXISTING GAS PIPELINE CORRIDOR, APPROXIMATELY 300 FEET EAST OF PIPELINE, AT MILEPOST 323.4.
 Ecological: HABITAT SURROUNDING THE BURROW CONSISTS OF NON-NATIVE GRASSLAND AND AGRICULTURE.
 Threat: POSSIBLE THREAT FROM AGRICULTURAL ACTIVITIES.
 General: 1 OWL WAS FLUSHED FROM A BURROW CONTAINING OWL SIGN ON 29 SEPTEMBER 1992.
 Owner/Manager: UNKNOWN

Source Codes
 EHR2F03

ATHENE CUCICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: None	NDBB Element Rank: Global: G4T2	Other Lists: CDFG Status: SC
Federal: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 205 Map Index: 24678 —Dates Last Seen—
 Occ Rank: None Element: 1993-04-06
 Origin: Natural/Native occurrence Site: 1993-04-06
 Presence: Extirpated
 Trend: Unknown
 Main Source: DIRKL, J. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: EAST SIDE OF HANSEN ROAD, 0.5 MILES NORTH OF DELTA MENDOTA CANAL, SW OF TRACT.

Lat/Long: 37°43'34" / 121°30'40" Township: 02S
 UTM: Zone-10 M4176256 E631210 Range: 04E
 Mapping Precision: SPECIFIC Section: 26 Qtr SW
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 150 ft

Comments: BURROW IS LOCATED 175 FEET EAST OF HANSEN ROAD, ALONG AN EXISTING GAS PIPELINE CORRIDOR, AT MILEPOST 324.4.
 Ecological: HABITAT SURROUNDING BURROW CONSISTS OF NON-NATIVE GRASSLAND AND AGRICULTURAL FIELDS.
 Threat: 1 ADULT OWL OBSERVED STANDING AT A COMPLEX OF 3 BURROW ENTRANCES, WHICH CONTAINED WHITWASH AND FEATHERS. BURROWS WERE MONITORED, THEN EXCAVATED (WITH DFG APPROVAL) DURING SPRING 1993.
 Owner/Manager: UNKNOWN

Source Codes
 DIE93F02

ATHENE CUCICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: None	NDBB Element Rank: Global: G4T2	Other Lists: CDFG Status: SC
Federal: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 204 Map Index: 24676 —Dates Last Seen—
 Occ Rank: None Element: 1993-02-11
 Origin: Natural/Native occurrence Site: 1993-02-11
 Presence: Extirpated
 Trend: Unknown
 Main Source: CULL, R. 1993 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: BETWEEN PATTERSON PASS ROAD AND HANSEN ROAD, 0.5 MILE SOUTH OF I-205, SW OF TRACT.

Lat/Long: 37°44'05" / 121°31'08" Township: 02S
 UTM: Zone-10 M4177210 E630509 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr NE
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 140 ft

Comments: BURROW LOCATED ALONG AN EXISTING GAS PIPELINE CORRIDOR, AT MILEPOST 323.7.
 Ecological: HABITAT SURROUNDING THE BURROW SITE CONSISTS OF NON-NATIVE GRASSLAND AND AGRICULTURE.
 Threat: POSSIBLE THREAT FROM AGRICULTURAL ACTIVITIES.
 General: ONE PAIR OF OWLS WAS FLUSHED FROM THIS COLONY SITE. THIS WAS ONE OF SEVERAL BURROWS MONITORED, THEN EXCAVATED (WITH DFG APPROVAL).
 Owner/Manager: UNKNOWN

Source Codes
 CUL93F04

ATHENE CUCICULARIA (BURROW SITES) (cont.)		Element Code: ABNSB10010
BURROWING OWL		
Status: None	NDBB Element Rank: Global: G4T2	Other Lists: CDFG Status: SC
Federal: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 207 Map Index: 24800 —Dates Last Seen—
 Occ Rank: Good Element: 1994-05-29
 Origin: Natural/Native occurrence Site: 1994-05-29
 Presence: Presumed Extant
 Trend: Stable
 Main Source: EHRLEICH, S. 1992 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA, CONTRA COSTA
 SNA Summary:

Location: VICINITY OF THE INTERSECTION OF KELSO ROAD AND BRUNS AVE, NORTH OF BETHANY RESERVOIR AND SW OF CLIFTON COURT FOREBAY.

Lat/Long: 37°48'01" / 121°36'08" Township: 01S
 UTM: Zone-10 M4184358 E623061 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 36 Qtr XX
 Symbol Type: POLYGON Meridian: M
 Area: 274.0 ac Elevation: 100 ft

Comments: BURROWS LOCATED NE, NW, AND SW OF THE BRUNS ROAD X KELSO ROAD JUNCTION.
 Ecological: HABITAT SURROUNDING BURROW SITE CONSISTS OF NON-NATIVE GRASSLAND AND AGRICULTURE.
 Threat: General: 8-10 ACTIVE BURROW SITES PRESENT IN THIS AREA BETWEEN 1992 AND 1994.
 Owner/Manager: UNKNOWN

Source Codes
 EHR92F01, DAY92F01, EHR92F02, LE094F04, LE094F03, VAN93F01

ATHENE CUNICULARIA (BURROW SITES) (cont.)		
BURROWING OWL	Element Code: ARNSB10010	
-----Status-----	NDBS Element Ranks	Other Lists
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
-----Habitat Associations-----		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 208 Map Index: 24799 ---Dates Last Seen---
Occ Rank: None Element: 1993-04-16
Origin: Natural/Native occurrence Site: 1993-04-16
Presence: Possibly Extirpated
Trend: Unknown
Main Source: CULL, R. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA, SAN JOAQUIN
SMA Summary:

Location: ALONG EXISTING PIPELINE, EXTENDING 1 MILE NW OF GRANTLINE ROAD, IN THE VICINITY OF MOUNTAIN HOUSE CREEK.

Lat/Long: 37°45'42" / 121°33'46"	Township: 02S
UTM: Zone-10 N4180139 N626598	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 17 Qtr NW
Symbol Type: POLYGON	Meridian: N
Area: 66.8 ac	Elevation: 165 ft

-----Comments-----
Distribution: BURROWS LOCATED BETWEEN MILEPOSTS 320 AND 321, ALONG THE EXISTING GAS PIPELINE.

Ecological: HABITAT SURROUNDING BURROW SITES CONSISTS OF GRASED NON-NATIVE GRASSLAND.

Threat:

General: ONE BURROW WITH OWL SIGN OBSERVED 30 SEPTEMBER 1992. 10 BURROWS LOCATED FROM 200-500 EAST AND WEST OF THE PIPELINE CORRIDOR; BURROWS WERE MONITORED, THEN EXCAVATED IN SPRING 1993. ONE BURROW WITH OWL NEARBY OBSERVED ON 16 APRIL 1993.

Owner/Manager: UNKNOWN

-----Source Codes-----
JEN93F01, DAY92F03, CUL93F05

ATHENE CUNICULARIA (BURROW SITES) (cont.)		
BURROWING OWL	Element Code: ARNSB10010	
-----Status-----	NDBS Element Ranks	Other Lists
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
-----Habitat Associations-----		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 260 Map Index: 38275 ---Dates Last Seen---
Occ Rank: Good Element: 1997-10-10
Origin: Natural/Native occurrence Site: 1997-10-10
Presence: Presumed Extant
Trend: Unknown
Main Source: FLANKERY, A. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SMA Summary:

Location: SOUTH SIDE OF I-580, 0.4 MILE EAST OF GRANT LINE ROAD, 12 MILES EAST OF TRACY.

Lat/Long: 37°44'26" / 121°34'39"	Township: 02S
UTM: Zone-10 N4177769 N625339	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 19 Qtr SW
Symbol Type: POINT	Meridian: N
Radius: 1/10 mile	Elevation: 400 ft

-----Comments-----
Distribution: HABITAT CONSISTS OF OPEN, GRASED GRASSLAND; BURROW IS LOCATED IN A SHALE (LOTS OF OWL SIGNS).

Ecological: HABITAT CONSISTS OF OPEN, GRASED GRASSLAND; BURROW IS LOCATED IN A SHALE (LOTS OF OWL SIGNS).

Threat: POSSIBLE THREAT FROM FREEWAY EXPANSION PROJECT.

General: 1 OWL FLUSHED FROM THE BURROW SITE ON 10 OCT 1997.

Owner/Manager: FVT
-----Source Codes-----
FLA97F03

ATHENE CUNICULARIA (BURROW SITES) (cont.)		
BURROWING OWL	Element Code: ARNSB10010	
-----Status-----	NDBS Element Ranks	Other Lists
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
-----Habitat Associations-----		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 226 Map Index: 30891 ---Dates Last Seen---
Occ Rank: Good Element: 1994-06-13
Origin: Natural/Native occurrence Site: 1994-06-13
Presence: Presumed Extant
Trend: Unknown
Main Source: BANCLAY, J. 1994 (OBS)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SMA Summary:

Location: BYRON AIRPORT, 1 MILE SOUTH OF BYRON HOT SPRINGS

Lat/Long: 37°49'49" / 121°37'37"	Township: 01S
UTM: Zone-10 N4187674 N620841	Range: 03E
Mapping Precision: NON-SPECIFIC	Section: 22 Qtr SE
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation: 100 ft

-----Comments-----
Distribution: OWLS WERE PASSIVELY RELOCATED IN 1993 FROM AIRPORT EXPANSION CONSTRUCTION AREAS.

Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND AND ALKALI WETLANDS IN THE VICINITY OF THE AIRPORT.

Threat: THREATENED BY AIRPORT EXPANSION CONSTRUCTION.

General: NO OWLS CAPTURED DURING AN EVENING OF TRAPPING IN 1993. 12 ADULTS AND 9 JUVENILES WERE OBSERVED IN 1994. 4 JUVENILE OWLS WERE Banded FROM A COLONY OF 6 BREEDING PAIRS; THESE YOUNG WERE FROM PAIRS NESTING OUTSIDE THE RELOCATION AREA.

Owner/Manager: CCA COUNTY

-----Source Codes-----
BAR94U01, BAR94F04

ATHENE CUNICULARIA (BURROW SITES) (cont.)		
BURROWING OWL	Element Code: ARNSB10010	
-----Status-----	NDBS Element Ranks	Other Lists
Federal: None	Global: G4T2	CDPG Status: SC
State: None	State: S2	
-----Habitat Associations-----		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 261 Map Index: 38277 ---Dates Last Seen---
Occ Rank: Good Element: 1997-10-10
Origin: Natural/Native occurrence Site: 1997-10-10
Presence: Presumed Extant
Trend: Unknown
Main Source: FLANKERY, A. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SMA Summary:

Location: ALTAMONT SPEEDWAY PARKING LOT, SE OF THE INTERSECTION OF I-205 AND I-580, 8 MILES WEST OF TRACY.

Lat/Long: 37°44'26" / 121°33'49"	Township: 02S
UTM: Zone-10 N4177792 N626567	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 20 Qtr SW
Symbol Type: POINT	Meridian: N
Radius: 1/10 mile	Elevation: 300 ft

-----Comments-----
Distribution: MULTIPLE-BURROW SITE: 4 BURROWS LOCATED IN THE NORTH PART OF THE ALTAMONT SPEEDWAY PARKING LOT AND 1 BURROW LOCATED JUST WEST OF A FENCE (SOUTH OF I-205/580 SPLIT).

Ecological: HABITAT CONSISTS OF OPEN, WEALTHY-BARE GRASSLAND (PARKING LOT EDGE).

Threat: POSSIBLY THREATENED BY ALTAMONT SPEEDWAY EVENTS.

General: ALTHOUGH ALL 5 DEN'S CONTAINED OWL SIGN, ONLY ONE OWL WAS OBSERVED ON 10 OCT 1997.

Owner/Manager: FVT
-----Source Codes-----
FLA97F04

ATHENE CUCULIARIA (BURROW SITES) (cont.)
BURROWING OWL Element Code: ABNS10010

Status: _____ NDB Element Ranks: _____ Other Lists: _____
Federal: None Global: G4T2 CDFG Status: SC
State: None State: S2

Habitat Associations
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 262 Map Index: 38278 Dates Last Seen: _____
Occ Rank: Good Element: 1997-10-10
Origin: Natural/Native occurrence Site: 1997-10-10
Presence: Presumed Extant
Trend: Unknown
Main Source: FLANNERY, A. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SHA Summary:

Location: 0.5 MILE WEST OF ALTAMONT SPEEDWAY, EAST OF MIDWAY ROAD, AND JUST SOUTH I-580, WEST OF TRACY

Lat/Long: 37°44'28" / 121°34'12" Township: 02S
UTM: Zone-10 M4177855 E625985 Range: 04E
Mapping Precision: SPECIFIC Section: 19 Qtr SW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 300 ft

Comments
Distribution: SOUTH OF CALTRANS RIGHT-OF-WAY FENCE.
Ecological: HABITAT CONSISTS OF OPEN, GRADED GRASSLAND.
Threat: POSSIBLY THREATENED BY FREEWAY EXPANSION ACTIVITIES.
General: 1 OWL OBSERVED AT AN ACTIVE DEN SITE ON 10 OCT 1997.
Owner/Manager: PVT

Source Codes
FLA97F05

ATHENE CUCULIARIA (BURROW SITES) (cont.)
BURROWING OWL Element Code: ABNS10010

Status: _____ NDB Element Ranks: _____ Other Lists: _____
Federal: None Global: G4T2 CDFG Status: SC
State: None State: S2

Habitat Associations
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 264 Map Index: 38284 Dates Last Seen: _____
Occ Rank: Good Element: 1997-10-10
Origin: Natural/Native occurrence Site: 1997-10-10
Presence: Presumed Extant
Trend: Unknown
Main Source: FLANNERY, A. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SHA Summary:

Location: NORTH SIDE OF I-580, 0.4 MILE EAST OF MIDWAY ROAD, NEAR I-580/I-205 SPLIT, 8 MILES WEST OF TRACY.

Lat/Long: 37°44'41" / 121°33'55" Township: 02S
UTM: Zone-10 M4178262 E626395 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 20 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 1/10 mile Elevation: 300 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF OPEN, GRADED GRASSLAND.
Threat: POSSIBLE THREAT FROM FREEWAY EXPANSION PROJECT.
General: 1 INDIVIDUAL OBSERVED AT BURROW SITE.
Owner/Manager: PVT

Source Codes
FLA97F06

ATHENE CUCULIARIA (BURROW SITES) (cont.)
BURROWING OWL Element Code: ABNS10010

Status: _____ NDB Element Ranks: _____ Other Lists: _____
Federal: None Global: G4T2 CDFG Status: SC
State: None State: S2

Habitat Associations
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 263 Map Index: 38279 Dates Last Seen: _____
Occ Rank: Excellent Element: 1997-10-10
Origin: Natural/Native occurrence Site: 1997-10-10
Presence: Presumed Extant
Trend: Unknown
Main Source: FLANNERY, A. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SHA Summary:

Location: NORTH SIDE OF I-205, JUST NE OF THE DELTA-MENDOTA CANAL WHERE IT CROSSES I-205, 7 MILES WEST OF TRACY.

Lat/Long: 37°44'40" / 121°33'03" Township: 02S
UTM: Zone-10 M4178229 E627685 Range: 04E
Mapping Precision: SPECIFIC Section: 20 Qtr NE
Symbol Type: POLYGON Meridian: M
Area: 12.7 ac Elevation: 200 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF OPEN GRASSLAND; LOTS OF ACTIVE AND POTENTIAL DENNS LOCATED IN THE SLOPE NORTH OF THE DELTA-MENDOTA CANAL MAINTENANCE ROAD.
Threat:
General: 2 OWLS OBSERVED ON 10 OCT 1997.
Owner/Manager: PVT

Source Codes
FLA97F07

ATHENE CUCULIARIA (BURROW SITES) (cont.)
BURROWING OWL Element Code: ABNS10010

Status: _____ NDB Element Ranks: _____ Other Lists: _____
Federal: None Global: G4T2 CDFG Status: SC
State: None State: S2

Habitat Associations
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.

Occurrence No. 296 Map Index: 40040 Dates Last Seen: _____
Occ Rank: Good Element: 1989-09-02
Origin: Natural/Native occurrence Site: 1989-09-02
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. A. 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SHA Summary:

Location: JUST WEST OF KILSO ROAD, 0.9 MILE NORTH OF BYRON BETHANY ROAD INTERSECTION WITH KILSO RD, SE OF CLIFTON COURT FOREBAY.

Lat/Long: 37°48'29" / 121°32'57" Township: 01S
UTM: Zone-10 M4185328 E627707 Range: 04E
Mapping Precision: SPECIFIC Section: 32 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 5 ft

Comments
Distribution: SITE IS LOCATED 50 YARDS WEST OF KILSO ROAD, IN AN OPEN, UNFARMED FIELD.
Ecological: HABITAT CONSISTS OF AN OLD, UNFARMED FIELD WITH MOSTLY RUDERAL, WEEDY VEGETATION.
Threat:
General: 1 JUVENILE OBSERVED AT A BURROW SITE.
Owner/Manager: PVT

Source Codes
MUL89F24

ATHENE CUCULIARIA (BURROW SITES) (cont.)		
BURROWING OWL		
Element Code: AHN510010		
Status: None	NDBS Element Ranks: Global: G472	Other Lists: CDFG Status: SC
Federal: None	State: S2	
Habitat Associations		
General: FOUND IN OPEN, DRY ANNUAL OR PERENNIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERISED BY LOW-GROWING VEGETATION.		
Micro: SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.		

Occurrence No. 317 Map Index: 40990 —Dates Last Seen—
 Occ Rank: POOR Element: 1999-04-02
 Origin: Natural/Native occurrence Site: 1999-04-02
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: JACKSON, J. 1999 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: JOHN E. SKINNER FISH SALVAGE FACILITY, BYRON.

Lat/Long: 37°48'34" / 121°33'33" Township: 018
 UTM: Zone-10 M4185451 E626813 Range: 04E
 Mapping Precision: SPECIFIC Section: 32 Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 15 ft

Comments: BURROW IS LOCATED ON THE SOUTH SIDE OF THE MAIN ROAD USED TO ENTER THE FACILITY, ABOUT 10M THE CHAIN LINK FENCE ENTRANCE TO A MAIN PART OF THE FACILITY.

Ecological: BURROW IS LOCATED ON A ROCKY ROADSIDE EMERGEMENT. TALL GRASSES GROW ABOUT 4-5M BEHIND THE BURROW.

Threat: POSSIBLE THREAT FROM FUTURE WORK PROJECTS IN THE AREA.

General: 2 ADULTS OBSERVED ON 2 APR 1999; UTILISING A FORMER GROUND SQUIRREL BURROW.

Owner/Manager: DWR

Source Codes
 JAC99F01

ERENOPHILA ALPESTRIS ACTIA (cont.)		
CALIFORNIA BORNED LARK		
Element Code: ABP202011		
Status: None	NDBS Element Ranks: Global: G46573	Other Lists: CDFG Status: SC
Federal: None	State: S3	
Habitat Associations		
General: COASTAL REGIONS, CHIEFLY FROM SONOMA CO. TO SAN DIEGO CO. ALSO MAIN PART OF SAN JOAQUIN VALLEY & EAST TO FOOTHILLS.		
Micro: SHORT-GRASS PRAIRIE, "BALD" HILLS, MOUNTAIN MEADOWS, OPEN COASTAL PLAINS, FALLOW GRAIN FIELDS, ALKALI FLATS.		

Occurrence No. 13 Map Index: 34870 —Dates Last Seen—
 Occ Rank: Fair Element: 1993-02-10
 Origin: Natural/Native occurrence Site: 1993-02-10
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: CULL, R. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: NORTHEAST OF BETHANY RESERVOIR; 0.9 KM SOUTHEAST OF BRUNS AVENUE X KELSO ROAD.

Lat/Long: 37°47'22" / 121°35'48" Township: 02E
 UTM: Zone-10 M4183187 E623558 Range: 03E
 Mapping Precision: SPECIFIC Section: 01 Qtr NW
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 110 ft

Comments: DISTRIBUTION: AT MILEPOST 318.3 OF EXISTING NATURAL GAS PIPELINE.

Ecological: NON-NATIVE GRASSLAND.

Threat: POSSIBLE THREAT: CANAL AND AGRICULTURAL ACTIVITIES.

General: APPROX. 20 LARVAE (SEX UNDETERMINED) OBSERVED FORAGING IN GRASS NEAR GAS PIPELINE CORRIDOR.

Owner/Manager: UNKNOWN

Source Codes
 CUL93F08

ERENOPHILA ALPESTRIS ACTIA		
CALIFORNIA BORNED LARK		
Element Code: ABP202011		
Status: None	NDBS Element Ranks: Global: G46573	Other Lists: CDFG Status: SC
Federal: None	State: S3	
Habitat Associations		
General: COASTAL REGIONS, CHIEFLY FROM SONOMA CO. TO SAN DIEGO CO. ALSO MAIN PART OF SAN JOAQUIN VALLEY & EAST TO FOOTHILLS.		
Micro: SHORT-GRASS PRAIRIE, "BALD" HILLS, MOUNTAIN MEADOWS, OPEN COASTAL PLAINS, FALLOW GRAIN FIELDS, ALKALI FLATS.		

Occurrence No. 12 Map Index: 34869 —Dates Last Seen—
 Occ Rank: Fair Element: 1993-04-28
 Origin: Natural/Native occurrence Site: 1993-04-28
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: VANHEWEGE, B. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: ALONG PIPELINES 0.5 KM NNE OF GRANT LINE ROAD X DELTA-MENDOTA CANAL; SOUTHWEST OF BETHANY RESERVOIR.

Lat/Long: 37°45'34" / 121°33'37" Township: 02E
 UTM: Zone-10 M4179900 E626811 Range: 04E
 Mapping Precision: SPECIFIC Section: 17 Qtr NW
 Symbol Type: POLYGON Meridian: M
 Area: 7.3 ac Elevation: 170 ft

Comments: DISTRIBUTION: ALL OBSERVATION MADE WITHIN PIPELINE CORRIDOR BETWEEN MILEPOSTS 320.4 AND 320.8.

Ecological: NON-NATIVE GRASSLAND.

Threat: POSSIBLE THREAT: AGRICULTURAL, PIPELINE.

General: 4/12/1992: APPROX. 20 ADULTS OBSERVED FORAGING BY J. DIEHL.

4/14/1993: 5 ADULTS OBSERVED FORAGING UP TO 20 FEET WEST OF PIPELINE BY J. LIPCHER. 4/28/1993: 1 ADULT OBSERVED FORAGING 200 FEET WEST OF PIPELINE BY B. VANHEWEGE.

Owner/Manager: UNKNOWN

Source Codes
 DIE92F01, VAN93F08, LIM93F09

AGELAIUS TRICOLOR (NESTING COLONY)		
TRICOLORED BLACKBIRD		
Element Code: ABPXB0020		
Status: None	NDBS Element Ranks: Global: G3	Other Lists: CDFG Status: SC
Federal: None	State: S3	
Habitat Associations		
General: HIGHLY COLONIAL SPECIES, MOST NUMEROUS IN THE CENTRAL VALLEY & VICINITY. LARGELY ENDEMIC TO CALIFORNIA.		
Micro: REQUIRES OPEN WATER, PROTECTED NESTING SUBSTRATE, & FORAGING AREA WITH INSECT PREY WITHIN A FEW KM OF THE COLONY.		

* SENSITIVE *
 Occurrence No. 235 Map Index: 23077 —Dates Last Seen—
 Occ Rank: Good Element: 1992-06-29
 Origin: Natural/Native occurrence Site: 1992-06-29
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLEN, D. & G. BEEMAN 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: *SENSITIVE* Location information suppressed.

* SENSITIVE * Lat/Long: / Township:
 UTM: Range:
 Mapping Precision: Section: Qtr
 Symbol Type: Meridian:
 Radius: Elevation:

Comments: DISTRIBUTION: Please contact the California Natural Diversity Database, California Department of Fish and Game, for more information: (916) 324-3812.

Ecological: HABITAT CONSISTS OF AN ARTIFICIALLY IMPOUNDED POND GROWN OVER WITH A HEAVY STAND OF TYPHA SP.

Threat:

General:

Owner/Manager:
 Source Codes
 MUL92F06, HOS93U01

PEROGNATHUS INORNATUS INORNATUS SAN JOAQUIN POCKET MOUSE		Element Code: AMAFD01061
Status:	NDDB Element Ranks:	Other Lists:
Federal: None	Global: G4T2T3	CDPG Status:
State: None	State: S2B3	
Habitat Associations:		
General: TYPICALLY FOUND IN GRASSLANDS AND BLUE OAK SAVANNAS.		
Micro: NEEDS FRIABLE SOILS.		

Occurrence No. 3 Map Index: 10990 -Dates Last Seen-
Occ Rank: Unknown Element: 1939-06-18
Origin: Natural/Native occurrence Site: 1939-06-18
Presence: Presumed Extant
Trend: Unknown
Main Source: SIMPSON, J. 1939 (MDS)

Quad Summary: MIDWAY (3712165/445A)*, CEDAR MTN. (3712155/445D)
County Summary: ALAMEDA
SNA Summary:

Location: CORRAL HOLLOW, 1 MI E TESLA.

Lat/Long: 37°38'15" / 121°34'54" Township: 03S
UTM: Zone-10 M4166337 E625142 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 30 Qtr SW
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation:

Comments:
Distribution:
Ecological:
Threat:
General: MVE #87976.
Owner/Manager: UNKNOWN
Source Codes:
MV81801

PEROGNATHUS INORNATUS INORNATUS (cont.) SAN JOAQUIN POCKET MOUSE		Element Code: AMAFD01061
Status:	NDDB Element Ranks:	Other Lists:
Federal: None	Global: G4T2T3	CDPG Status:
State: None	State: S2B3	
Habitat Associations:		
General: TYPICALLY FOUND IN GRASSLANDS AND BLUE OAK SAVANNAS.		
Micro: NEEDS FRIABLE SOILS.		

Occurrence No. 45 Map Index: 11261 -Dates Last Seen-
Occ Rank: Unknown Element: 1941-03-29
Origin: Natural/Native occurrence Site: 1941-03-29
Presence: Presumed Extant
Trend: Unknown
Main Source: CARRIGER, H. 1941 (MDS)

Quad Summary: UNION ISLAND (3712174/462C)*, CLIFTON COURT FOREBAY
(3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: 7 MI NW TRACY.

Lat/Long: 37°49'57" / 121°28'55" Township: 02S
UTM: Zone-10 M4188111 E633590 Range: 04E
Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation:

Comments:
Distribution:
Ecological:
Threat:
General: MVE #95399.
Owner/Manager: UNKNOWN
Source Codes:
MV81801

PEROGNATHUS INORNATUS INORNATUS (cont.) SAN JOAQUIN POCKET MOUSE		Element Code: AMAFD01061
Status:	NDDB Element Ranks:	Other Lists:
Federal: None	Global: G4T2T3	CDPG Status:
State: None	State: S2B3	
Habitat Associations:		
General: TYPICALLY FOUND IN GRASSLANDS AND BLUE OAK SAVANNAS.		
Micro: NEEDS FRIABLE SOILS.		

Occurrence No. 44 Map Index: 11232 -Dates Last Seen-
Occ Rank: Unknown Element: 1911-03-18
Origin: Natural/Native occurrence Site: 1911-03-18
Presence: Presumed Extant
Trend: Unknown
Main Source: TAYLOR, W. 1911 (MUS)

Quad Summary: TRACY (3712164/444B)*, LONE TREE CREEK (3712154/444C), MIDWAY
(3712165/445A)
County Summary: SAN JOAQUIN
SNA Summary:

Location: CORRAL HOLLOW, 8 MI SW TRACY.

Lat/Long: 37°38'18" / 121°29'24" Township: 03S
UTM: Zone-10 M4166555 E633229 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 25 Qtr W
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation:

Comments:
Distribution:
Ecological:
Threat:
General: MVE #14484.
Owner/Manager: UNKNOWN
Source Codes:
MV81801

PEROGNATHUS INORNATUS INORNATUS (cont.) SAN JOAQUIN POCKET MOUSE		Element Code: AMAFD01061
Status:	NDDB Element Ranks:	Other Lists:
Federal: None	Global: G4T2T3	CDPG Status:
State: None	State: S2B3	
Habitat Associations:		
General: TYPICALLY FOUND IN GRASSLANDS AND BLUE OAK SAVANNAS.		
Micro: NEEDS FRIABLE SOILS.		

Occurrence No. 72 Map Index: 38740 -Dates Last Seen-
Occ Rank: Good Element: 1992-04-08
Origin: Natural/Native occurrence Site: 1992-04-08
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. & C. BEEHAN 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SNA Summary:

Location: CREDO RANCH, 1 MILE SE OF JUNCTION OF I-580, I-205 & MIDWAY ROAD,
0.3 MILE SW OF MILE 10 CALIFORNIA AQUEDUCT.

Lat/Long: 37°44'06" / 121°33'16" Township: 02S
UTM: Zone-10 M4177199 E627382 Range: 04E
Mapping Precision: SPECIFIC Section: 29 Qtr NE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 280 ft

Comments:
Distribution:
Ecological:
Threat: CATTLE GRAZING, DEVELOPMENTS FOR AUTO RACING AND PAINT BALL
RECREATION AREAS.
General: 2 DEAD ADULT MOLES FOUND UNDER A PIECE OF SCRAP PLYWOOD, NOT
CRUSHED BY WOOD, CAUSE OF DEATH UNKNOWN.
Owner/Manager: PVT
Source Codes:
MUL92F09

NEOTOMA FUSCIPES RIPARIA		
RIPARIAN (=SAN JOAQUIN VALLEY) WOODRAT		
Element Code: AMAFF0801		
Status: Endangered	NDBB Element Ranks: Global: G5T1	Other Lists: CDFG Status: SC
State: None	State: S1	
Habitat Associations:		
General: RIPARIAN AREAS ALONG THE SAN JOAQUIN, STANISLAUS & TUOLUMNE RIVERS.		
Micro: NEED AREAS WITH MIX OF BRUSH & TREES. NEED SUITABLE NESTING SITES IN TREES, SNAGS OR LOGS.		

Occurrence No. 1 Map Index: 11232 Dates Last Seen: Element: 1955-10-13
 Occ Rank: Unknown Site: 1955-10-13
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: GOLDEN, R. 1955 (MUS)

Quad Summary: TRACT (3712164/444B)*, LOWE TREE CREEK (3712154/444C), MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: CORRAL BOLLOW CREEK, 4 MI E ALAMEDA CO LINE.
 Lat/Long: 37°38'18" / 121°29'24" Township: 03E
 UTM: Zone-10 M4166855 E633229 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 25 Qtr W
 Symbol Type: POINT Meridian: M
 Radius: 1 mile Elevation:

Comments:
 Distribution:
 Ecological:
 Threat:
 General: MVS #128790. ALSO MVS #94769 FROM 11-9-1939.
 Owner/Manager: UNKNOWN

Source Codes: NVS1801

VULPES MACROTIS NUTICA (cont.)		
SAN JOAQUIN KIT FOX		
Element Code: AMAJAO3041		
Status: Endangered	NDBB Element Ranks: Global: G4T2T3	Other Lists: CDFG Status: SC
State: Threatened	State: S2S3	
Habitat Associations:		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.		
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Source Codes: BR185F01, BR190F03, OFA81R03, VOG89F01, SWA89M01, MOR75M01, MYE89F10, MUL91F04, MUL91F09, GFB89F01, BLS92F02, BLS92F04, MUL91F08, BLS89F01, BLS83M01, MYE89F12, FMS70F04, MUL91F06, MUL91F10, DPO80U17, DPO81R01, BLS91F02, SWI73R01, EKS87F01, BLS92F01, MUL91F03, MUL91F05, BIP91M01, MCG92F02, BLS92F02, PAL87U01, MUL91F07, MYE89F11, MYE89F13

Occurrence No. 127 Map Index: 34695 Dates Last Seen: Element: 1982-04-16
 Occ Rank: Unknown Site: 1982-04-16
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: BROWN, C. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA, CONTRA COSTA
 SNA Summary:

Location: BETWEEN CLIFTON COURT FOREBAY AND BETHANY RESERVOIR, 1.2 KM NNE OF KELSO ROAD X BRUNS AVENUE.
 Lat/Long: 37°48'18" / 121°36'03" Township: 01E
 UTM: Zone-10 M4184889 E623172 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 36 Qtr NW
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 80 ft

Comments:
 Distribution:
 Ecological: HABITAT CONSISTS OF OPEN POND, MARSH AND GRASSLAND.
 Threat: POSSIBLE THREAT: CATTLE GRAZING AND INUNDATION BY PROPOSED RESERVOIR (?).
 General: 2/16/1982: "SEVERAL" ADULT TURTLES OBSERVED; 2/17/1982: 3 ADULT TURTLES OBSERVED; 4/16/1982: 1 ADULT TURTLE OBSERVED.
 Owner/Manager: UNKNOWN

Source Codes: BRO82F24, BRO82F25, BRO82F26

VULPES MACROTIS NUTICA		
SAN JOAQUIN KIT FOX		
Element Code: AMAJAO3041		
Status: Endangered	NDBB Element Ranks: Global: G4T2T3	Other Lists: CDFG Status: SC
State: Threatened	State: S2S3	
Habitat Associations:		
General: ANNUAL GRASSLANDS OR GRASSY OPEN STAGES WITH SCATTERED SHRUBBY VEGETATION.		
Micro: NEED LOOSE-TEXTURED SANDY SOILS FOR BURROWING, AND SUITABLE PREY BASE.		

Occurrence No. 17 Map Index: 23600 Dates Last Seen: Element: 1992-08-92
 Occ Rank: Unknown Site: 1992-08-92
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: BELL, H. 1992 (OBS)

Quad Summary: SOLYO (3712153/444D)*, VOLTA (3712018/403C), INCOMAR (3712028/403B), SAN LUIS DAM (3712111/404D), PACIFIC PASS (3712112/404C), HOWARD RANCH (3712121/404A), CREVISION PEAK (3712122/404B), HEWMAN (3712131/424D), ORESTIMA PEAK (3712132/424C), CROWS LANDING (3712141/424A), PATTERSON (3712142/424B), COPPER MTN. (3712143/425A), BRUSH LAKE (3712151/443D), WESTLEY (3712152/443C), LOWE TREE CREEK (3712154/444C), CEDAR MTN. (3712155/445D), VERMILIS (3712163/444A), TRACY (3712164/444B), MIDWAY (3712165/445A), ALTAMONT (3712166/445B), LIVERMORE (3712167/446A), DUBLIN (3712168/446B), UNION ISLAND (3712174/462C), CLIFTON COURT FOREBAY (3712175/463D), BROWN HOT SPRINGS (3712176/463C), TABSARARA (3712177/464D), DIABLO (3712178/464C), WOODWARD ISLAND (3712185/463A), BERRYWOOD (3712186/463B), ANTIOCO SOUTH (3712187/464A), CLAYTON (3712188/464B)
 County Summary: ALAMEDA, CONTRA COSTA, MERCED, SAN JOAQUIN, STANISLAUS
 SNA Summary:

Location: NORTHWEST SAN JOAQUIN VALLEY; NORTH TO ANTIOCO AND SOUTH TO HIGHWAY 152.

Lat/Long: 37°31'47" / 121°17'33" Township: 06E
 UTM: Zone-10 M4154791 E650887 Range: 07E
 Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
 Symbol Type: POLYGON Meridian: M
 Area: 374,090.4 ac Elevation: 700 ft

Comments:
 Distribution: DENSITIES THROUGHOUT THE AREA ARE NOT KNOWN. NUMEROUS SIGHTINGS HAVE BEEN RECORDED FROM 1972-1992.
 Ecological: GRAZED ANNUAL GRASSLAND, VALLEY/COASTAL MOUNTAIN INTERFACE, AGRICULTURAL LAND.
 Threat: DEVELOPMENT, GRAZING, COMPETITION FROM RED FOX AND COYOTE, AGRICULTURE, ROAD CROSSING.
 General: A LARGE AMOUNT OF DATA IS AVAILABLE FOR THIS OCCURRENCE IN THE VULPES MACROTIS NUTICA ELEMENT FILE.
 Owner/Manager: UNKNOWN

CLEMYS MARMORATA (cont.)		
WESTERN POND TURTLE		
Element Code: ARAAD02030		
Status: None	NDBB Element Ranks: Global: G4	Other Lists: CDFG Status: SC
State: None	State: S3	
Habitat Associations:		
General: A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES WITH AQUATIC VEGETATION.		
Micro: NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT FOR EGG-LAYING.		

Occurrence No. 128 Map Index: 34696 Dates Last Seen: Element: 1989-05-11
 Occ Rank: Poor Site: 1989-05-11
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MULLEN, D. 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: POND ALONG UPPER MOUNTAIN HOUSE CREEK; 1.2 KM NORTHEAST OF GRANT LINE ROAD X MOUNTAIN HOUSE ROAD.

Lat/Long: 37°45'48" / 121°33'59" Township: 02E
 UTM: Zone-10 M4180305 E626282 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 17 Qtr NW
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 140 ft

Comments:
 Distribution:
 Ecological: POND CREATED BY EARLHEN DAM ALONG CREEK; HEAVILY GRAZED CATTLE POND HEAVILY SURROUNDED BY HEAVILY GRAZED GRASSLAND/AGRICULTURE.
 Threat: POSSIBLE THREAT: CATTLE GRAZING, AGRICULTURE.
 General: SINGLE ADULT (FEMALE?) OBSERVED BASKING ON POND MARGIN BY DR. MULLEN.
 Owner/Manager: FVT-TRIMARK FARMS

Source Codes: MUL89F23

CLEMNYS MARMORATA (cont.)
WESTERN POND TURTLE
Element Code: ARAAD02030

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G4	CDPG Status: SC
State: None	State: S3	

Habitat Associations
General: A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES WITH AQUATIC VEGETATION.
Micro: NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT FOR EGG-LAYING.

Occurrence No. 143 Map Index: 41058 Dates Last Seen—
Occ Rank: Good Element: 1999-04-16
Origin: Natural/Native occurrence Site: 1999-04-16
Presence: Presumed Extant
Trend: Unknown
Main Source: LITRELL, E. 1999 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: EUCALYPTUS ISLAND, AT THE NORTH END OF (AND ADJACENT TO) CLIFTON COURT FOREBAY.

Lat/Long: 37°51'32" / 121°34'16" Township: 01S
UTM: Zone-10 N4190918 E625690 Range: 04E
Mapping Precision: SPECIFIC Section: 07 Qtr XX
Symbol Type: POLYGON Meridian: M
Area: 28.4 ac Elevation: 0

Comments
Distribution: SEEPAGE POND 6.
Ecological: HABITAT CONSISTS OF RIPARIAN AND EMERGENT VEGETATION, WITH WOODY DEBRIS (BASKING SITES) IN THE WATER.
Threat: THREATENED BY EROSION OF SUBSTRATE.
General: 6 ADULTS AND 1 JUVENILE OBSERVED ON 16 APRIL 1999.
Owner/Manager: UNKNOWN

Source Codes
LIT99FD1

CLEMNYS MARMORATA (cont.)
WESTERN POND TURTLE
Element Code: ARAAD02030

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G4	CDPG Status: SC
State: None	State: S3	

Habitat Associations
General: A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES WITH AQUATIC VEGETATION.
Micro: NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT FOR EGG-LAYING.

Occurrence No. 155 Map Index: 42998 Dates Last Seen—
Occ Rank: Good Element: 2000-05-09
Origin: Natural/Native occurrence Site: 2000-05-09
Presence: Presumed Extant
Trend: Unknown
Main Source: HOGAN, J. 2000 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: NORTH END OF CLIFTON COURT FOREBAY, JUST SW OF WIDDOWS ISLAND.

Lat/Long: 37°51'27" / 121°34'52" Township: 01S
UTM: Zone-10 N4190768 E624810 Range: 04E
Mapping Precision: SPECIFIC Section: 07 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 0

Comments
Distribution: SEEPAGE POND 4.
Ecological: HABITAT CONSISTS OF A POND EDGED WITH HIMALAYAN BLACKBERRY AND OTHER RUDDERAL SPECIES; SMALL WILLOWS OCCUR AT THE NORTH END.
Threat:
General: 2 ADULTS OBSERVED, 9 MAY 2000.
Owner/Manager: DWR

Source Codes
HOG00F07

CLEMNYS MARMORATA (cont.)
WESTERN POND TURTLE
Element Code: ARAAD02030

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G4	CDPG Status: SC
State: None	State: S3	

Habitat Associations
General: A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES WITH AQUATIC VEGETATION.
Micro: NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT FOR EGG-LAYING.

Occurrence No. 154 Map Index: 42997 Dates Last Seen—
Occ Rank: Good Element: 2000-05-09
Origin: Natural/Native occurrence Site: 2000-05-09
Presence: Presumed Extant
Trend: Unknown
Main Source: HOGAN, J. 2000 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: SOUTH END OF CLIFTON COURT FOREBAY, 1 MILE NE OF THE INTERSECTION OF HERDLIN ROAD AND BYRON BETHANY ROAD.

Lat/Long: 37°49'34" / 121°34'15" Township: 01S
UTM: Zone-10 N4187299 E625764 Range: 04E
Mapping Precision: SPECIFIC Section: 19 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 0

Comments
Distribution: SEEPAGE POND 6.
Ecological: HABITAT CONSISTS OF A POND CONTAINING LARGE AMOUNTS OF SEDIMENT, EDGED WITH ALKALI BULRUSH, PICKLEWEED, AND A FEW SALT BUSH SHRUBS.
Threat:
General: 1 ADULT OBSERVED, 9 MAY 2000.
Owner/Manager: DWR

Source Codes
HOG00F06

PHRYNOSOMA CORONATUM FRONTALE
CALIFORNIA HORNED LIZARD
Element Code: ARACF12022

Status	NDDB Element Ranks	Other Lists
Federal: None	Global: G4R3R4	CDPG Status: SC
State: None	State: S3S4	

Habitat Associations
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.

Occurrence No. 2 Map Index: 23073 Dates Last Seen—
Occ Rank: Good Element: 1992-04-13
Origin: Natural/Native occurrence Site: 1992-04-13
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. A. 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SNA Summary:

Location: 0.5 MILE EAST OF ALTAMONT SPEEDWAY, JUST NORTH OF I-580.

Lat/Long: 37°44'16" / 121°33'05" Township: 02S
UTM: Zone-10 N4177496 E627648 Range: 04E
Mapping Precision: SPECIFIC Section: 20 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 200 ft

Comments
Distribution:
Ecological: HABITAT CONSISTS OF GRAZED NON-NATIVE GRASSLANDS.
Threat:
General: ONE JUVENILE OBSERVED.
Owner/Manager: PVT-CREDO RANCH

Source Codes
MUL92F03

PHRYNOSOMA CORONATUM FRONTALE (cont.)		Element Code: ARACF12022	
CALIFORNIA BORNED LIZARD			
Status: _____	NDBB Element Ranks: _____	Other Lists: _____	
Federal: None	Global: G4T3T4	CDFG Status: SC	
State: None	State: S384		
Habitat Associations			
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.			
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.			

Occurrence No. 3 Map Index: 23076 -Dates Last Seen-
Occ Rank: Good Element: 1992-06-29
Origin: Natural/Native occurrence Site: 1992-06-29
Presence: Presumed Extant
Trend: Unknown
Main Source: MULLEN, D. & G. BREMAN 1992 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SNA Summary:

Location: 1.6 MILES NORTH OF THE LAWRENCE RADIATION LABORATORY BOUNDARY, 7 MILES WSW OF TRACY.

Lat/Long: 37°42'04" / 121°32'33"	Township: 038
UTM: Zone-10 N4173449 E628500	Range: 04E
Mapping Precision: SPECIFIC	Section: 04 Qtr NW
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 400 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF GRAZED NON-NATIVE GRASSLAND.
Threat:
General: ONE ADULT MALE FOUND ON A ROADWAY.
Owner/Manager: PVT-YROE RANCH

Source Codes
MDL92F04

HAUSTORPHIS FLAGELLUM HUDDOCKI		Element Code: ARADB21021	
SAN JOAQUIN WHIPSHAKE			
Status: _____	NDBB Element Ranks: _____	Other Lists: _____	
Federal: None	Global: G5T27	CDFG Status: SC	
State: None	State: S27		
Habitat Associations			
General: OPEN, DRY HABITATS WITH LITTLE OR NO TREE COVER. FOUND IN VALLEY GRASSLAND & SALTBUSH SCRUB IN THE SAN JOAQUIN VALLEY.			
Micro: NEEDS MARSHAL BURGOWS FOR REFUGE AND OVIPOSITION SITES.			

Occurrence No. 20 Map Index: 40665 -Dates Last Seen-
Occ Rank: Excellent Element: 1998-07-08
Origin: Natural/Native occurrence Site: 1998-07-08
Presence: Presumed Extant
Trend: Unknown
Main Source: SWAIN, K. 1998 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA, SAN JOAQUIN
SNA Summary:

Location: SITE 300, LAWRENCE LIVERMORE NATIONAL LABORATORY, BETWEEN LIVERMORE AND TRACY.

Lat/Long: 37°38'57" / 121°33'12"	Township: 038
UTM: Zone-10 N4167672 E627610	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 29 Qtr NE
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation: 1300 ft

Comments:
Distribution:
Ecological: HABITAT CONSISTS OF OPEN-CANOPY SCRUB, DOMINATED BY BLACK SAGE (SALVIA MELIIFERA).
Threat:
General: 9 ADULTS CAPTURED BETWEEN 17 APR & 8 JUL 1998.
Owner/Manager: UC-BERKELEY

Source Codes
SWA98F01

PHRYNOSOMA CORONATUM FRONTALE (cont.)		Element Code: ARACF12022	
CALIFORNIA BORNED LIZARD			
Status: _____	NDBB Element Ranks: _____	Other Lists: _____	
Federal: None	Global: G4T3T4	CDFG Status: SC	
State: None	State: S384		
Habitat Associations			
General: FREQUENTS A WIDE VARIETY OF HABITATS, MOST COMMON IN LOWLANDS ALONG SANDY WASHES WITH SCATTERED LOW BUSHES.			
Micro: OPEN AREAS FOR SUNNING, BUSHES FOR COVER, PATCHES OF LOOSE SOIL FOR BURIAL, & ABUNDANT SUPPLY OF ANTS & OTHER INSECTS.			

Occurrence No. 29 Map Index: 39895 -Dates Last Seen-
Occ Rank: Unknown Element: 1990-06-07
Origin: Natural/Native occurrence Site: 1990-06-07
Presence: Presumed Extant
Trend: Unknown
Main Source: SCHMOLDT, D. 1990 (OBS)

Quad Summary: MIDWAY (3712165/445A)*, TRACY (3712164/444B)
County Summary: SAN JOAQUIN
SNA Summary:

Location: 2.5 MILES WEST OF I-580 & CORRAL HOLLOW ROAD JUNCTION, 2.3 MILES SOUTH OF CROSSING OF WESTERN PACIFIC RAILWAY & I-580.

Lat/Long: 37°40'11" / 121°30'01"	Township: 038
UTM: Zone-10 N4170044 E632260	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 14 Qtr SE
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation: 700 ft

Comments:
Distribution: AREA SEVERAL MILES SOUTHWEST OF TRACY.
Ecological: HEAVILY GRAZED, INTRODUCED ANNUAL GRASSLAND, IN LOW HILLS.
Threat: GRAZING, PLANNED FOR DEVELOPMENT, LOCATION WHERE THE LIZARD WAS FOUND IS PLANNED FOR DEVELOPMENT OF AN ARTIFICIAL LAKE.
General: 1 FOUND 7 JUNE 1990. MEASUREMENTS: TOTAL LENGTH 5"; NOSE TO BASE OF TAIL 3.5"; WIDTH AT WIDEST POINT, 2".
Owner/Manager: PVT

Source Codes
SCH90F17

VALLEY SINK SCRUB		Element Code: CTT36210CA	
Status: _____	NDBB Element Ranks: _____	Other Lists: _____	
Federal: None	Global: G1	CDFG Status: SC	
State: None	State: S1.1		
Habitat Associations			
General:			
Micro:			

Occurrence No. 19 Map Index: 10951 -Dates Last Seen-
Occ Rank: Unknown Element: 1985-11-XX
Origin: Natural/Native occurrence Site: 1985-11-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: JOKERST, J. 1985 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary: Bethany Reservoir Worth

Location: BETW KELSO & CHRISTENSEN RDS, W OF BRUNS AVE, N OF BETHANY RESERVOIR, CALIF AGUEDUCT.

Lat/Long: 37°47'21" / 121°36'23"	Township: 02S
UTM: Zone-10 N4183119 E622703	Range: 03E
Mapping Precision: SPECIFIC	Section: 02 Qtr NE
Symbol Type: POLYGON	Meridian: N
Area: 45.2 ac	Elevation: 130 ft

Comments:
Distribution: MOSAIC OF BARREN MUD FLATS.
Ecological: ALLENROLFIA OCCIDENTALIS, DISTICHLIS, FRANKENIA GRANDIFLORA, ATRIPLEX PATULA SSP. SPICATA, CRESSA TRUXILLIENSIS, SALICORNIA AND HERBS.
Threat: IS HEAVILY GRAZED ANNUAL GRASSLAND.
General: THIS WAS OCC #019 OF CTT36210CA.
Owner/Manager: UNKNOWN

Source Codes
JOK85F10

VALLEY SINK SCRUB (cont.)		Element Code: CTT36210CA
Status	NDBS Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 20 Map Index: 10964 —Dates Last Seen—
Occ Rank: Unknown Element: 1985-11-XX
Origin: Natural/Native occurrence Site: 1985-11-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: JOEKERST, J. 1985 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA, CONTRA COSTA
SNA Summary: Bethany Reservoir North

Location: NORTHWEST OF TRACY PUMPING STATION OF DELTA-MENDOZA CANAL, EAST OF BRUNS AVE.

Lat/Long: 37°48'15" / 121°36'02" Township: 01S
UTM: Zone-10 N4184804 8623199 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 36 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 85 ft

Comments:
Distribution: IN MOSAIC OF BARREN MUD FLATS. UNKNOWN IF COMM EXTENDS INTO CONTRA COSTA CO, INFO FOR ALAMEDA CO. ONLY.
Ecological: ALLENNOLFEA OCCIDENTALIS, DISTICHELIS, FRANKENIA GRANDIFOLIA, ATRIPLEX PATULA SSP SPICATA, CRESSA TRUXILLENIS, SALICORNIA AND HERBS.
Threat: General: THIS WAS OCC #020 OF CTT36210CA.
Owner/Manager: UNKNOWN
Source Codes: JOK85F10

VALLEY SINK SCRUB (cont.)		Element Code: CTT36210CA
Status	NDBS Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 22 Map Index: 10937 —Dates Last Seen—
Occ Rank: Unknown Element: 1985-11-19
Origin: Natural/Native occurrence Site: 1985-11-19
Presence: Presumed Extant
Trend: Unknown
Main Source: JOEKERST, J. 1985 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)*, BYRON HOT SPRINGS (3712176/463C)
County Summary: CONTRA COSTA
SNA Summary: Holey Road North

Location: EAST OF BYRON HWY ABOUT 1 MI SE OF BYRON.

Lat/Long: 37°51'16" / 121°37'26" Township: 01S
UTM: Zone-10 N4190352 8621062 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 10 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 20 ft

Comments:
Distribution: IN MOSAIC WITH BARRENS, IN GRAZED ANNUAL GRASSLAND.
Ecological: ALLENNOLFEA OCCIDENTALIS, DISTICHELIS, FRANKENIA GRANDIFOLIA, ATRIPLEX PATULA SPICATA, CRESSA TRUXILLENIS, SALICORNIA.
Threat: General: THIS WAS OCC #022 OF CTT36210CA.
Owner/Manager: UNKNOWN
Source Codes: JOK85F10

VALLEY SINK SCRUB (cont.)		Element Code: CTT36210CA
Status	NDBS Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 21 Map Index: 11052 —Dates Last Seen—
Occ Rank: Good Element: 1985-11-XX
Origin: Natural/Native occurrence Site: 1985-11-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: JOEKERST, J. 1985 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA
SNA Summary: Mountain House Creek

Location: BED OF INTERMITTENT MOUNTAIN HOUSE CREEK EAST OF DELTA-MENDOZA CANAL.

Lat/Long: 37°46'04" / 121°33'44" Township: 02S
UTM: Zone-10 N4180830 8626648 Range: 04E
Mapping Precision: SPECIFIC Section: 08 Qtr SW
Symbol Type: POLYGON Meridian: M
Area: 17.6 ac Elevation: 140 ft

Comments:
Distribution: IN MOSAIC W/BARREN MUD FLATS & HERB FLATS, IN GRAZED ANNUAL GRASSLAND.
Ecological: SCATTERED ALLENNOLFEA OCCIDENTALIS, DISTICHELIS, FRANKENIA GRANDIFOLIA, ATRIPLEX PATULA SSP SPICATA, CRESSA TRUXILLENIS, SALICORNIA PRESENT.
Threat: GRAZED.
General: THIS WAS OCC #021 OF CTT36210CA.
Owner/Manager: UNKNOWN
Source Codes: JOK85F10

VALLEY SINK SCRUB (cont.)		Element Code: CTT36210CA
Status	NDBS Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 24 Map Index: 10933 —Dates Last Seen—
Occ Rank: Unknown Element: 1987-04-14
Origin: Natural/Native occurrence Site: 1987-04-14
Presence: Presumed Extant
Trend: Unknown
Main Source: JOEKERST, J. 1987 (OBS)

Quad Summary: ALTAMONT (3712166/445B)*, MIDWAY (3712165/445A)
County Summary: ALAMEDA
SNA Summary: Redwood Cut

Location: NORTH OF ALTAMONT PASS RD FROM 1.5-3.2 MI EAST OF SUMMIT SCHOOL.

Lat/Long: 37°44'36" / 121°37'28" Township: 02S
UTM: Zone-10 N4178026 8621198 Range: 03E
Mapping Precision: SPECIFIC Section: 23 Qtr SW
Symbol Type: POLYGON Meridian: M
Area: 32.4 ac Elevation: 480 ft

Comments:
Distribution: ALONG CREEK.
Ecological: VALLEY SINK SCRUB W/ ALLENNOLFEA, CYPERUS, SUARDA, FRANKENIA & OTHERS.
Threat: MODERATE LIVESTOCK GRASSING MAY HAVE SOME NEGATIVE IMPACT ON VEG.
General: THIS WAS OCC #024 OF CTT36210CA.
Owner/Manager: UNKNOWN
Source Codes: JOK87F01

NORTHERN CLAYPAN VERNAL POOL		Element Code: CTT44120CA
Status	WDEB Element Ranks	Other Lists
Federal: None	Global: G1	
State: None	State: S1.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 11 Map Index: 11071 Dates Last Seen—
Occ Rank: Unknown Element: 1975-04-XX
Origin: Natural/Native occurrence Site: 1975-04-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: HOOD, L. 1977 (LIT) CWACC

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA, SAN JOAQUIN
SNA Summary: Bryon Alkali Vernal Pools

Location: BRYON ALKALI VERNAL POOLS.

Lat/Long: 37°47'57" / 121°33'31" Township: 02S
UTM: Zone-10 N4184305 E626901 Range: 03E
Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 45 ft

Comments:
Distribution:
Ecological: ALKALINE VERNAL POOLS. FLORA INCL AMSINCKIA EASTWOODAE, DOWNINGIA INSIGNIS, FRANKENIA GRANDIFLORA, MYOSURUS MINIMUS, PLANTAGO BIGELOWII, SPOROBIOLUS ALNOIDES. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.
Threat: SOME SHEEP GRASING BUT LARGELY INTACT.
General: CDEC SITE 010280.
Owner/Manager: PVT
Source Codes: H0077R01

BRANCHINECTA LITCHEI		Element Code: ICBRA03030
Status	WDEB Element Ranks	Other Lists
Federal: Threatened	Global: G2G3	CDFG Status:
State: None	State: S2B3	
Habitat Associations		
General: ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTHS, AND SOUTH COAST MTHS, IN ASTATIC RAIN-FILLED POOLS. Micro: THERMITE MOUND, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALS, BARTS MOUND, OR BARALT-FLOW DEPRESSION POOLS.		

Occurrence No. 219 Map Index: 41752 Dates Last Seen—
Occ Rank: Good Element: 1997-02-10
Origin: Natural/Native occurrence Site: 1997-02-10
Presence: Presumed Extant
Trend: Unknown
Main Source: ARNOLD, R. 1997 (OBS)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: BOUNDED BY ARMSTRONG ROAD ON W & N, AND BYRON HOTS SPRINGS ROAD ON E, 0.6 TO 2.6 MILES S OF BYRON HOT SPRINGS.

Lat/Long: 37°49'26" / 121°37'52" Township: 01S
UTM: Zone-10 N4186953 E620456 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 22 Qtr XX
Symbol Type: POLYGON Meridian: M
Area: 1,262.3 ac Elevation: 100 ft

Comments:
Distribution: BYRON AIRPORT SITE. LAND USED AS RANGELAND AND COUNTY OPERATED AIRPORT.
Ecological: GRASED ANNUAL AND ALKALI GRASSLANDS WITH CONSTRUCTED, SEASONALLY FLOWED WETLANDS.
Threat:
General: MANY ADULTS AND JUVENILES OBSERVED IN THE AREA; VOUCHER SPECIMENS BOILED AT CALIFORNIA ACADEMY OF SCIENCE, 1997.
Owner/Manager: COUNTY, UNKNOWN
Source Codes: ARN97F07

ALKALI MEADOW		Element Code: CTT45310CA
Status	WDEB Element Ranks	Other Lists
Federal: None	Global: G3	
State: None	State: S2.1	
Habitat Associations		
General:		
Micro:		

Occurrence No. 7 Map Index: 10948 Dates Last Seen—
Occ Rank: Unknown Element: 1986-06-XX
Origin: Natural/Native occurrence Site: 1986-06-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: JOKERST, J. 1986 (PRES)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary: Holey Road North

Location: LOS VAQUEROS SITE, E OF BYRON HIGHWAY, N OF CLIFTON COURT RD.

Lat/Long: 37°50'30" / 121°36'42" Township: 01S
UTM: Zone-10 N4188960 E622160 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 14 Qtr S
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 20 ft

Comments:
Distribution:
Ecological: ALKALI MEADOW. IODINE BUSH PRESENT ON BANKS. SOME NORTHERN VERNAL POOLS MAY BE PRESENT BUT WERE NOT SEEN BY JOKERST, 1986.
Threat: PROPOSED RESERVOIR SITE.
General: RECLASSIFIED, WAS PREVIOUSLY NORTHERN VERNAL POOL OCC #017. THIS WAS OCC #007 OF CTT45310CA.
Owner/Manager: PVT
Source Codes: ST080N01, J086U02

LILABOPSIS NASOWII		Element Code: PDAP119030
Status	WDEB Element Ranks	Other Lists
Federal: None	Global: G3	CNPS List: 1B
State: Rare	State: S3.1	R-S-D Code: 2-3-3
Habitat Associations		
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB. Micro: TIDAL BONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.		

Occurrence No. 42 Map Index: 11073 Dates Last Seen—
Occ Rank: Unknown Element: 1987-09-12
Origin: Natural/Native occurrence Site: 1987-09-12
Presence: Presumed Extant
Trend: Unknown
Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: ALAMEDA, CONTRA COSTA, SAN JOAQUIN
SNA Summary:

Location: SW OF HAMMER ISLAND & N OF LIVERMORE YACHT CLUB, SE OF CLIFTON COURT FOREBAY.

Lat/Long: 37°48'53" / 121°33'26" Township: 01S
UTM: Zone-10 N4186033 E626996 Range: 04E
Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 5 ft

Comments:
Distribution: ON ISOLATED PATCHES OF CLAY.
Threat:
General: UNKNOWN
Owner/Manager: UNKNOWN
Source Codes: DA187F03

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: FDAP19030	
Status: None	Global: G3	Other Lists: CNPS List: 1B	
Federal: None	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 43 Map Index: 21957 —Dates Last Seen—
Occ Rank: Good Element: 1996-11-15
Origin: Natural/Native occurrence Site: 1996-11-15
Presence: Presumed Extant
Trend: Unknown
Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: SE OF CLIFTON COURT FOREBAY, OLD RIVER. FROM 0.3-1.3 MI SE OF HANMER ISLAND.

Lat/Long: 37°48'37" / 121°32'30" Township: 01S
UTM: Zone-10 N4185566 E628362 Range: 04E
Mapping Precision: SPECIFIC Section: XX Qtr XX
Symbol Type: POLYGON Meridian: N
Area: 57.0 ac Elevation: 5 ft

Comments:
Distribution: GROWING ON ISOLATED PATCHES OF CLAY IN ASSOCIATION WITH SAMOLUS FLORIBUNDUS, HYDROCOOTYLE VERTICILLATA, AND JUNCUS EFFUSUS VAR. PACIFICUS.
Threat: BARRIER ON OLD RIVER (RELATED TO PUMPS AT CLIFTON COURT?) WOULD CAUSE SUFFICIENT TIDAL CHANGE TO IMPACT THIS POPULATION.
General: UNKNOWN HOW MANY PLANTS AT THIS SITE. 591 PLANTS REPORTED FROM EXTREME SOUTHERN END OF OCCURRENCE IN 1996.
Owner/Manager: DFC-CLIFTON COURT FOREBAY
Source Codes: B9191F02, MCC91F05, DA187F03, KJ969F04

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: FDAP19030	
Status: None	Global: G3	Other Lists: CNPS List: 1B	
Federal: None	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 45 Map Index: 21955 —Dates Last Seen—
Occ Rank: Fair Element: 1989-08-12
Origin: Natural/Native occurrence Site: 1989-08-12
Presence: Presumed Extant
Trend: Unknown
Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: WEST CANAL, W EDGE OF COMEY ISLAND, E OF CLIFTON COURT FOREBAY.

Lat/Long: 37°50'46" / 121°33'28" Township: 01S
UTM: Zone-10 N4189525 E626889 Range: 04E
Mapping Precision: SPECIFIC Section: XX Qtr XX
Symbol Type: POLYGON Meridian: N
Area: 9.0 ac Elevation: 5 ft

Comments:
Distribution: GROWING ON MUD FLATS OF TIDAL MARSH ON ISOLATED PATCHES OF CLAY.
Threat:
General:
Owner/Manager: UNKNOWN
Source Codes: DA187F03, MCC89F23

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: FDAP19030	
Status: None	Global: G3	Other Lists: CNPS List: 1B	
Federal: None	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 44 Map Index: 25037 —Dates Last Seen—
Occ Rank: Good Element: 1987-09-12
Origin: Natural/Native occurrence Site: 1987-09-12
Presence: Presumed Extant
Trend: Unknown
Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA, SAN JOAQUIN
SNA Summary:

Location: NORTHEAST CORNER OF THE JUNCTION BETWEEN WEST CANAL AND GRANT CANAL; SOUTHEAST OF CLIFTON COURT FOREBAY.

Lat/Long: 37°49'18" / 121°32'55" Township: 01S
UTM: Zone-10 N4186815 E627743 Range: 04E
Mapping Precision: SPECIFIC Section: XX Qtr XX
Symbol Type: POLYGON Meridian: N
Area: 8.2 ac Elevation: 5 ft

Comments:
Distribution: ALONG SHORE OF UNION ISLAND; N SIDE OF GRANT LINE CANAL; WEST OF PUMPING STATION, BOTH SIDES OF EM 4 ON TOPO MAP.
Ecological: FRESHWATER MARSH GROWING ON ISOLATED PATCHES OF EXPOSED CLAY.
Threat:
General:
Owner/Manager: UNKNOWN
Source Codes: DA187F03

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: FDAP19030	
Status: None	Global: G3	Other Lists: CNPS List: 1B	
Federal: None	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 46 Map Index: 21954 —Dates Last Seen—
Occ Rank: Excellent Element: 1989-08-12
Origin: Natural/Native occurrence Site: 1989-08-12
Presence: Presumed Extant
Trend: Unknown
Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA, SAN JOAQUIN
SNA Summary:

Location: JUNCTION OF OLD RIVER & WEST CANAL, NORTHEAST OF CLIFTON COURT FOREBAY.

Lat/Long: 37°51'27" / 121°33'51" Township: 01S
UTM: Zone-10 N4190760 E626309 Range: 04W
Mapping Precision: SPECIFIC Section: XX Qtr XX
Symbol Type: POLYGON Meridian: N
Area: 50.0 ac Elevation: 5 ft

Comments:
Distribution: NEAR SOUTHERNMOST POINT OF VICTORIA ISLAND, ON NORTHEAST SIDE OF OLD RIVER.
Ecological: GROWING ON MUD FLATS OF TIDAL MARSH ON ISOLATED PATCHES OF CLAY NEAR FRESHWATER MARSH.
Threat:
General: 2 SUBPOPULATIONS; LARGEST OF THEM IS THE BEST OCCURRENCE IN THE AREA.
Owner/Manager: UNKNOWN
Source Codes: MCC89F24, DA187F03

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: PDAP19030	
Status	WDB Element Ranks	Other Lists	
Federal: None	Global: G3	CPS List: 1B	
State: Rare	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 74 Map Index: 21953 —Dates Last Seen—
Occ Rank: Unknown Element: 1991-07-02
Origin: Natural/Native occurrence Site: 1991-07-02
Presence: Presumed Extant
Trend: Unknown
Main Source: ROGERS C. ET AL 1991 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary:

Location: BYRON TRACT, ALONG ITALIAN SLOUGH, 1.25 MILES NORTHEAST OF CLIFTON COURT ROAD BRIDGE OVER SLOUGH.

Lat/Long: 37°51'00" / 121°35'06"	Township: 01S
UTM: Zone-10 N4189907 E624503	Range: 04E
Mapping Precision: SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 5 ft

Comments:
Distribution: ON SMALL MOUND (CA. 3 FT. WIDE) ABOUT 4 FT FROM WEST BANK OF ITALIAN SLOUGH.
Ecological: GROWING ON MUD FLATS OF TIDAL MARSH.
Threat:
General:
Owner/Manager: UNKNOWN
Source Codes:
R091F01

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: PDAP19030	
Status	WDB Element Ranks	Other Lists	
Federal: None	Global: G3	CPS List: 1B	
State: Rare	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 115 Map Index: 25517 —Dates Last Seen—
Occ Rank: Good Element: 1991-10-17
Origin: Natural/Native occurrence Site: 1991-10-17
Presence: Presumed Extant
Trend: Unknown
Main Source: BRIDEN, L. 1991 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: SOUTHERN SHORE OF UNION TRACT ALONG GRANT LINE CANAL.

Lat/Long: 37°49'15" / 121°32'09"	Township: 01S
UTM: Zone-10 N4186734 E628861	Range: 04E
Mapping Precision: SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 5 ft

Comments:
Distribution: MAPPED 1000 METERS EAST OF THE WESTERN TIP OF THE ISLAND WHICH SEPARATES GRANT LINE CANAL AND FABIAN & BELL CANAL.
Ecological: ASSOCIATED WITH SAMOLUS FLORIBUNDUS, HYDROCOTYLE VERTICILLATA, AND JUNCUS EFFUSUS VAR. PACIFICUS.
Threat: OLD RIVER BARRIER WILL CAUSE AN ARTIFICIALLY HIGH LOW TIDE WHICH MAY CAUSE THE LOSS OF THE PLANTS IN THE LOWEST AREAS.
General:
Owner/Manager: DFG-CLIFTON COURT FOREBAY
Source Codes:
BR19F02

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: PDAP19030	
Status	WDB Element Ranks	Other Lists	
Federal: None	Global: G3	CPS List: 1B	
State: Rare	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 75 Map Index: 21956 —Dates Last Seen—
Occ Rank: Unknown Element: 1991-10-02
Origin: Natural/Native occurrence Site: 1991-10-02
Presence: Presumed Extant
Trend: Unknown
Main Source: MCCARTER, M. & T. FRASER 1991 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA, SAN JOAQUIN
SNA Summary:

Location: UNION ISLAND, ALONG WEST CANAL, 0.75 MILE NORTHEAST OF BANNER ISLAND.

Lat/Long: 37°49'30" / 121°33'00"	Township: 01S
UTM: Zone-10 N4187190 E627605	Range: 04E
Mapping Precision: SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 5 ft

Comments:
Distribution: ON WEST SIDE OF UNION ISLAND.
Ecological: GROWING ON MUD FLATS OF TIDAL MARSH.
Threat:
General: POPULATION AREA ESTIMATED AT 11 SQ FEET IN 1991.
Owner/Manager: UNKNOWN
Source Codes:
MCC91F06

LILABOPSIS MASONII (cont.) MASON'S LILABOPSIS		Element Code: PDAP19030	
Status	WDB Element Ranks	Other Lists	
Federal: None	Global: G3	CPS List: 1B	
State: Rare	State: S3.1	R-E-D Code: 2-3-3	
Habitat Associations			
General: FRESHWATER AND BRACKISH MARSHES, RIPARIAN SCRUB.			
Micro: TIDAL ZONES, IN MUDDY OR SILTY SOIL FORMED THROUGH RIVER DEPOSITION OR RIVER BANK EROSION. 0-10M.			

Occurrence No. 144 Map Index: 35474 —Dates Last Seen—
Occ Rank: Fair Element: 1996-11-15
Origin: Natural/Native occurrence Site: 1996-11-15
Presence: Presumed Extant
Trend: Unknown
Main Source: EJELDSER, C. & D. EJELDSER 1996 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: SAN JOAQUIN
SNA Summary:

Location: SE OF CLIFTON COURT FOREBAY, ALONG OLD RIVER, 1.3 MI NW OF JCT HENDERSON ROAD AND BYRON ROAD.

Lat/Long: 37°47'58" / 121°31'30"	Township: 01S
UTM: Zone-10 N4184385 E629869	Range: 04E
Mapping Precision: SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 80 meters	Elevation: 0

Comments:
Distribution:
Ecological: ON MUD BANK.
Threat: SURROUNDING AREA RIP-RAPPED.
General: 588 PLANTS IN 1996.
Owner/Manager: DFG-CLIFTON COURT FOREBAY
Source Codes:
KJ96F04

BLEPHARIZONIA FLUWOSA SSP FLUWOSA			Element Code: PDASTIC011
BIG TARPLANT			
-----Status-----	-----MDSB Element Ranks-----	-----Other Lists-----	
Federal: None	Global: G471	CNPS List: 1B	
State: None	State: S1.1	R-E-D Code: 3-3-3	
-----Habitat Associations-----			
General: VALLEY AND FOOTHILL GRASSLAND.			
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.			

Occurrence No. 5 Map Index: 11164 -----Dates Last Seen-----
Occ Rank: Unknown Element: 1908-10-19
Origin: Natural/Native occurrence Site: 1908-10-19
Presence: Presumed Extant
Trend: Unknown
Main Source: MCMURPHY SN UC #990567 (HERB)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SRA Summary:

Location: ALONG RAILROAD TRACKS 6.5 MILES WEST OF TRACY. (MAPPED ABOUT 2 MILES EAST OF MIDWAY ON SOUTHERN PACIFIC TRACKS).

Lat/Long: 37°42'53" / 121°31'11" Township: 02S
UTM: Zone-10 N4174989 E630472 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 34 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation: 240 ft

-----Comments-----
Distribution: THREE DIFFERENT SETS OF TRACKS CAN BE INTERPRETED AS WEST OF TRACY; SOUTHERN PACIFIC RUNNING NW TOWARDS KETHANY, WESTERN PACIFIC RUNNING W FROM CARROSA, AND SOUTHERN PACIFIC RUNNING SW TOWARDS MIDWAY.
Ecological:
Threat: General: ONLY SOURCE OF INFORMATION IS 1908 COLLECTION BY MCMURPHY.
Owner/Manager: UNKNOWN
-----Source Codes-----
MCM08802

BLEPHARIZONIA FLUWOSA SSP FLUWOSA (cont.)			Element Code: PDASTIC011
BIG TARPLANT			
-----Status-----	-----MDSB Element Ranks-----	-----Other Lists-----	
Federal: None	Global: G471	CNPS List: 1B	
State: None	State: S1.1	R-E-D Code: 3-3-3	
-----Habitat Associations-----			
General: VALLEY AND FOOTHILL GRASSLAND.			
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.			

Occurrence No. 7 Map Index: 31491 -----Dates Last Seen-----
Occ Rank: Unknown Element: 1932-10-16
Origin: Natural/Native occurrence Site: 1932-10-16
Presence: Presumed Extant
Trend: Unknown
Main Source: CRUM #1481 UC (HERB)

Quad Summary: MIDWAY (3712165/445A)*, CEDAR MTR. (3712155/445D)
County Summary: ALAMEDA
SRA Summary:

Location: 1 MILE SOUTHWEST OF TESLA, MOUNT HAMILTON RANGE.

Lat/Long: 37°37'44" / 121°36'46" Township: 03S
UTM: Zone-10 N4165348 E622411 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 35 Qtr NE
Symbol Type: POINT Meridian: M
Radius: 3/5 mile Elevation: 1500 ft

-----Comments-----
Distribution: Ecological: GROWING IN DRY SOIL OF NORTH FACING SLOPE.
Threat: General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1932 COLLECTION BY CRUM. ORIGINAL LABEL "BLEPHARIZONIA FLUWOSA" NOT FURTHER ASSOCIATED.
Owner/Manager: UNKNOWN
-----Source Codes-----
CRU32803

BLEPHARIZONIA FLUWOSA SSP FLUWOSA (cont.)			Element Code: PDASTIC011
BIG TARPLANT			
-----Status-----	-----MDSB Element Ranks-----	-----Other Lists-----	
Federal: None	Global: G471	CNPS List: 1B	
State: None	State: S1.1	R-E-D Code: 3-3-3	
-----Habitat Associations-----			
General: VALLEY AND FOOTHILL GRASSLAND.			
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.			

Occurrence No. 6 Map Index: 31490 -----Dates Last Seen-----
Occ Rank: Fair Element: 1996-10-04
Origin: Natural/Native occurrence Site: 1996-10-04
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SRA Summary:

Location: ABOUT 0.7 AIRMI N OF TESLA, SOUTH SIDE OF TESLA ROAD, ABOUT 0.6 MI EAST OF SUMMIT.

Lat/Long: 37°38'54" / 121°35'56" Township: 03S
UTM: Zone-10 N4167525 E623595 Range: 03E
Mapping Precision: SPECIFIC Section: 25 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 1120 ft

-----Comments-----
Distribution: Ecological: ON ROAD BANK AND IN ANNUAL GRASSLAND. N-FACING SLOPE IN CLAY LOAM SOILS WITH AVENA FATUA, GRINDELIA CAMPORUM, LEPIDIUM NITIDUM, & LUPINUS MICROCARPUS.
Threat: General: 200 PLANTS IN 1996. THIS SITE PROBABLY INCLUDES A 1933 COLLECTION BY RECK (#2500 UC) FROM "HALFWAY UP THE GRADE, 1 MI NORTH OF TESLA".
Owner/Manager: PVT
-----Source Codes-----
FR96F06, KRC33813

BLEPHARIZONIA FLUWOSA SSP FLUWOSA (cont.)			Element Code: PDASTIC011
BIG TARPLANT			
-----Status-----	-----MDSB Element Ranks-----	-----Other Lists-----	
Federal: None	Global: G471	CNPS List: 1B	
State: None	State: S1.1	R-E-D Code: 3-3-3	
-----Habitat Associations-----			
General: VALLEY AND FOOTHILL GRASSLAND.			
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.			

Occurrence No. 14 Map Index: 37337 -----Dates Last Seen-----
Occ Rank: Fair Element: 1996-10-04
Origin: Natural/Native occurrence Site: 1996-10-04
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SRA Summary:

Location: 1 AIRMI SW OF JOHNSON CAMP, SOUTH SIDE OF TESLA ROAD, 0.2 MI NW OF SUMMIT.

Lat/Long: 37°39'02" / 121°36'22" Township: 03S
UTM: Zone-10 N4167745 E622962 Range: 03E
Mapping Precision: SPECIFIC Section: 23 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 1400 ft

-----Comments-----
Distribution: Ecological: ROADCUT AND ANNUAL GRASSLAND WITHIN OAK WOODLAND. N-FACING SLOPE WITH VULPIA SP., AVENA SP., EPILABIUM BRACHYCARPUM, HIRSCHFELDIA INCANA, AND TOXICODENDRON DIVERSILOBUM. IN SANDY CLAY LOAM SOIL (ALTAMONT CLAY).
Threat: ROAD MAINTENANCE, SLUMPING, AND EROSION THREATEN.
General: AT LEAST 100 PLANTS IN 1996.
Owner/Manager: PVT
-----Source Codes-----
FR96F05

ELEPHANTIA FLUOSA SSP FLUOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

—Status—	—NDBS Element Ranks—	—Other Lists—
Federal: None	Global: G4T1	CHPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3

—Habitat Associations—
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 15 Map Index: 37344 —Dates Last Seen—
Occ Rank: Good Element: 1996-10-04
Origin: Natural/Native occurrence Site: 1996-10-04
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SMA Summary:

Location: MIDWAY; BETWEEN MIDWAY ROAD AND POWER SUBSTATION.

Lat/Long: 37°42'38" / 121°33'31"	Township: 02S
UTM: Zone-10 N4174465 N627060	Range: 04E
Mapping Precision: SPECIFIC	Section: 32 Qtr SW
Symbol Type: POLYGON	Meridian: N
Area: 13.8 ac	Elevation: 370 ft

—Comments—
Distribution: SE1/4 OF SW1/4 OF SECTION 32.
Ecological: GENTLY SLOPING ANNUAL GRASSLAND WITH VULPIA SP., BROMUS BORDACEUS, BORDIUM MARINUM CURMEANUM, CENTAUREA SOLSTITIALIS. SOIL MAPPED AS CLEAR LAKE LOAM.
Threat: EDGE OF FIELD DISKED FOR FIRE SUPPRESSION.
General: 500 PLANTS IN 1996.
Owner/Manager: PVT
—Source Codes—
PRE96F07

ELEPHANTIA FLUOSA SSP FLUOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

—Status—	—NDBS Element Ranks—	—Other Lists—
Federal: None	Global: G4T1	CHPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3

—Habitat Associations—
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 17 Map Index: 37453 —Dates Last Seen—
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. E SIDE ELK RAVINE, 2.25 AIRMI NE OF JCT COUNTY LINE & CORRAL HOLLOW RD ON TOPO.

Lat/Long: 37°39'25" / 121°31'30"	Township: 03S
UTM: Zone-10 N4168584 N630118	Range: 04E
Mapping Precision: SPECIFIC	Section: 22 Qtr W
Symbol Type: POLYGON	Meridian: N
Area: 2.2 ac	Elevation: 980 ft

—Comments—
Distribution: SOUTH OF BUILDING 812 COMPLEX.
Ecological: NE-FACING SLOPES. SOIL MAPPED AS WISLIT-ARBURIA-SAN TIMOTEO COMPLEX. 30-50% SLOPES. MOSTLY IN CONTROLLED BURN AREAS; ALSO ON ROADSIDES.
Threat: SEVERAL HUNDRED PLANTS IN 1996.
General: SEVERAL HUNDRED PLANTS IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB
—Source Codes—
PRE96F03

ELEPHANTIA FLUOSA SSP FLUOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

—Status—	—NDBS Element Ranks—	—Other Lists—
Federal: None	Global: G4T1	CHPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3

—Habitat Associations—
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 16 Map Index: 37366 —Dates Last Seen—
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE NATIONAL LAB, SITE 300. FROM 2.5 MI NE TO 3.0 MI ENE OF JCT COUNTY LINE & CORRAL HOLLOW RD ON TOPO.

Lat/Long: 37°38'53" / 121°30'31"	Township: 03S
UTM: Zone-10 N4167604 N631572	Range: 04E
Mapping Precision: SPECIFIC	Section: 26 Qtr N
Symbol Type: POLYGON	Meridian: N
Area: 29.1 ac	Elevation: 800 ft

—Comments—
Distribution: ALONG BOTH SIDES OF ROAD WHICH RUNS THROUGH ELK RAVINE. MAPPED AS FIVE POLYGONS AT CROSS.
Ecological: NONNATIVE ANNUAL GRASSLAND WITH BROMUS DIANDRUS, B. BORDACEUS, B. MADRITENSIS RUBENS, Avena sp., GUTIERREZIA CA, ERICOGONUM ANGULOSUM, HOLOCARPHA OBSCURA, AMMICKIA INTERMEDIA, LYTHUM TRITICOIDES, & GRINDBELLIA CAMPORUM.
Threat: FIRE CONTROL ACTIVITIES AND PROPOSED DRAINAGE CULVERT THREATEN PORTIONS OF THIS OCCURRENCE.
General:
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB
—Source Codes—
PRE96F03

ELEPHANTIA FLUOSA SSP FLUOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

—Status—	—NDBS Element Ranks—	—Other Lists—
Federal: None	Global: G4T1	CHPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3

—Habitat Associations—
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 18 Map Index: 37455 —Dates Last Seen—
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LABORATORY, SITE 300. 2.5 MI NE OF JCT COUNTY LINE & CORRAL HOLLOW RD ON TOPO. E SIDE OF ELK RAVINE.

Lat/Long: 37°39'56" / 121°31'52"	Township: 03S
UTM: Zone-10 N4169528 N629556	Range: 04E
Mapping Precision: SPECIFIC	Section: 16 Qtr SE
Symbol Type: POLYGON	Meridian: N
Area: 8.8 ac	Elevation: 1150 ft

—Comments—
Distribution: ADJACENT TO BUILDING 801.
Ecological: W-FACING SLOPES IN CLAY SOIL. PRIMARILY IN CONTROLLED BURN AREAS; ALSO ON ROADSIDES.
Threat: BUILDING CONSTRUCTION MAY AFFECT SOME PLANTS HERE.
General: SEVERAL HUNDRED PLANTS IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB
—Source Codes—
PRE96F03

BLEPHARISONIA FLUWOSA SSP FLUWOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

Status	-----	NDDB Element Ranks	-----	Other Lists	-----
Federal:	None	Global:	G4T1	CHPS List:	1B
State:	None	State:	S1.1	R-E-D Code:	3-3-3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 19 Map Index: 37457 ---Dates Last Seen---
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 2.1 MI NNE OF JCT COUNTY LINE AND CORRAL HOLLOW ROAD ON TOPO.

Lat/Long: 37°39'59" / 121°33'05" Township: 03E
UTM: Zone-10 N4169568 E627765 Range: 04E
Mapping Precision: SPECIFIC Section: 17 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 1300 ft

Comments
Distribution: IN AND ALONG DIRT ROAD AND LOWER SLOPE.
Ecological: IN DISTURBED ANNUAL GRASSLAND (ANNUALLY BURNED) ON N-FACING SLOPE IN ROCKY CLAY LOAM SOIL.
Threat: MAY BE AFFECTED BY FUTURE CONSTRUCTION OF DRAINAGE DITCH AROUND SITE.
General: APPROX. 100 PLANTS IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes
PRE96F03

BLEPHARISONIA FLUWOSA SSP FLUWOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

Status	-----	NDDB Element Ranks	-----	Other Lists	-----
Federal:	None	Global:	G4T1	CHPS List:	1B
State:	None	State:	S1.1	R-E-D Code:	3-3-3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 21 Map Index: 37459 ---Dates Last Seen---
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 2 MI NE OF JCT COUNTY LINE AND CORRAL HOLLOW ROAD ON TOPO.

Lat/Long: 37°39'21" / 121°31'49" Township: 03E
UTM: Zone-10 N4168446 E629649 Range: 04E
Mapping Precision: SPECIFIC Section: 21 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 1080 ft

Comments
Distribution: E-FACING SLOPE ON EAST SIDE OF UNNAMED ROAD ON TOPO.
Ecological: PRIMARILY IN CONTROLLED BURN AREAS; ALSO ON ROADSIDES. CLAY SOILS.
Threat: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes
PRE96F03

BLEPHARISONIA FLUWOSA SSP FLUWOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

Status	-----	NDDB Element Ranks	-----	Other Lists	-----
Federal:	None	Global:	G4T1	CHPS List:	1B
State:	None	State:	S1.1	R-E-D Code:	3-3-3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 20 Map Index: 37458 ---Dates Last Seen---
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. APPROX. 3.2 MI SE OF MIDWAY.

Lat/Long: 37°40'25" / 121°31'47" Township: 03E
UTM: Zone-10 N4170400 E629669 Range: 04E
Mapping Precision: SPECIFIC Section: 16 Qtr NE
Symbol Type: POINT Meridian: M
Area: 4.5 ac Elevation: 1200 ft

Comments
Distribution: ALSO IN THE NW 1/4 OF SECTION 15. SEVERAL PATCHES SCATTERED ALONG VARIOUS ROADS (UNNAMED ON TOPO).
Ecological: PRIMARILY IN CONTROLLED BURN AREAS - ANNUAL GRASSLAND ON CLAY TO CLAY LOAM SOILS. USUALLY ON SLOPES. ALSO ON ROADSIDES.
Threat: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes
PRE96F03

BLEPHARISONIA FLUWOSA SSP FLUWOSA (cont.) Element Code: PDASTIC011
BIG TARPLANT

Status	-----	NDDB Element Ranks	-----	Other Lists	-----
Federal:	None	Global:	G4T1	CHPS List:	1B
State:	None	State:	S1.1	R-E-D Code:	3-3-3

Habitat Associations
General: VALLEY AND FOOTHILL GRASSLAND.
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.

Occurrence No. 22 Map Index: 37465 ---Dates Last Seen---
Occ Rank: Good Element: 1996-09-27
Origin: Natural/Native occurrence Site: 1996-09-27
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 1.6 MI NE OF JCT COUNTY LINE AND CORRAL HOLLOW ROAD ON TOPO.

Lat/Long: 37°39'06" / 121°32'06" Township: 03E
UTM: Zone-10 N4167986 E629236 Range: 04E
Mapping Precision: SPECIFIC Section: 21 Qtr SE
Symbol Type: POINT Meridian: M
Radius: 80 meters Elevation: 1340 ft

Comments
Distribution: ON WEST SIDE OF UNNAMED ROAD ON TOPO.
Ecological:
Threat: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes
PRE96F03

ELEPHANTHUS FLUOROSA SSP FLUOROSA (cont.) BIG TARPLANT		Element Code: PDASTIC011
Status: _____	RDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T1	CNPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 23 Map Index: 37466 Dates Last Seen: _____
 Occ Rank: Good Element: 1996-09-27 Site: 1996-09-27
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 1.3-1.6 MI N OF CARNEGIE (SITE).

Lat/Long: 37°38'50" / 121°31'31" Township: 03E
 UTM: Zone-10 N4167505 E630092 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr NW
 Symbol Type: POLYGON Meridian: M
 Area: 4.8 ac Elevation: 1200 ft

Comments: DISTRIBUTION: MOSTLY ON WEST SIDE OF UNNAMED ROAD ON TOPO. ALSO IN SW 1/4 OF SECTION 22.

Ecological:

Threat:

General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.

Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes:
 PR96F03

ELEPHANTHUS FLUOROSA SSP FLUOROSA (cont.) BIG TARPLANT		Element Code: PDASTIC011
Status: _____	RDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T1	CNPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 25 Map Index: 37468 Dates Last Seen: _____
 Occ Rank: Good Element: 1996-09-27 Site: 1996-09-27
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 1.85 MI NE OF JCT COUNTY LINE AND CORRAL BOLLOW ROAD.

Lat/Long: 37°38'32" / 121°31'24" Township: 03E
 UTM: Zone-10 N4166952 E630288 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr SW
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 1100 ft

Comments: DISTRIBUTION: ON WEST SIDE OF UNNAMED ROAD ON TOPO. FAR NE 1/4 OF SW 1/4 OF SECTION 27.

Ecological:

Threat:

General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.

Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes:
 PR96F03

ELEPHANTHUS FLUOROSA SSP FLUOROSA (cont.) BIG TARPLANT		Element Code: PDASTIC011
Status: _____	RDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T1	CNPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 24 Map Index: 37467 Dates Last Seen: _____
 Occ Rank: Good Element: 1996-09-27 Site: 1996-09-27
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 2.2 MI ENE OF JCT COUNTY LINE AND CORRAL BOLLOW ROAD ON TOPO.

Lat/Long: 37°38'33" / 121°31'00" Township: 03E
 UTM: Zone-10 N4166990 E630864 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr NE
 Symbol Type: POLYGON Meridian: M
 Area: 5.4 ac Elevation: 950 ft

Comments: DISTRIBUTION: ON BOTH SIDES OF UNNAMED ROAD ON TOPO. SE1/4 OF NE1/4 OF SECTION 27.

Ecological:

Threat:

General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.

Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes:
 PR96F03

ELEPHANTHUS FLUOROSA SSP FLUOROSA (cont.) BIG TARPLANT		Element Code: PDASTIC011
Status: _____	RDB Element Ranks: _____	Other Lists: _____
Federal: None	Global: G4T1	CNPS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 26 Map Index: 37469 Dates Last Seen: _____
 Occ Rank: Good Element: 1996-09-27 Site: 1996-09-27
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SMA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 0.7 MI NE OF CARNEGIE (SITE).

Lat/Long: 37°38'11" / 121°31'07" Township: 03E
 UTM: Zone-10 N4166307 E630715 Range: 04E
 Mapping Precision: SPECIFIC Section: 27 Qtr SE
 Symbol Type: POINT Meridian: M
 Radius: 80 meters Elevation: 920 ft

Comments: DISTRIBUTION: SW1/4 OF SE1/4 SECTION 27.

Ecological:

Threat:

General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.

Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes:
 PR96F03

ELEPHANTIA FLUOROSA SSP FLUOROSA (cont.) BIG TARFLANT		Element Code: PDASTIC011
Status: _____	NDBS Element Rank: _____	Other Lists: _____
Federal: None	Global: G471	CHFS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 27 Map Index: 37470 —Dates Last Seen—
 Occ Rank: Good Element: 1996-09-27 Site: 1996-09-27
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1996 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: LAWRENCE LIVERMORE LAB, SITE 300. 2.7 MI E OF JCT COUNTY LINE AND CORRAL HOLLOW ROAD.

Lat/Long: 37°38'10" / 121°30'22" Township: 03S
 UTM: Zone-10 N4166294 E631813 Range: 04E
 Mapping Precision: SPECIFIC Section: 26 Qtr SW
 Symbol Type: POLYGON Meridian: N
 Area: 2.7 ac Elevation: 650 ft

Comments
 Distribution: SE 1/4 OF SW 1/4 SECTION 26.
 Ecological:
 Threat:
 General: UNKNOWN HOW MANY PLANTS SEEN IN 1996.
 Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes
 PR96703

ELEPHANTIA FLUOROSA SSP FLUOROSA (cont.) BIG TARFLANT		Element Code: PDASTIC011
Status: _____	NDBS Element Rank: _____	Other Lists: _____
Federal: None	Global: G471	CHFS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 29 Map Index: 41671 —Dates Last Seen—
 Occ Rank: Good Element: 1998-10-13 Site: 1998-10-13
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1998 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: CORRAL HOLLOW, ABOUT 0.4 MILE ESE OF TESLA (SITE), SOUTHWEST OF MIDWAY.

Lat/Long: 37°38'19" / 121°35'37" Township: 03S
 UTM: Zone-10 N4166465 E624079 Range: 03E
 Mapping Precision: SPECIFIC Section: 25 Qtr SE
 Symbol Type: POLYGON Meridian: N
 Area: 3.5 ac Elevation: 1000 ft

Comments
 Distribution: SOUTH SIDE OF CORRAL HOLLOW CREEK. MAPPED WITHIN THE SW 1/4 SE 1/4 SECTION 25.
 Ecological: ANNUAL GRASSLAND. ASSOCIATED WITH SOLOCARPUS OBOVATA, LILIUM MULTIFLORUM, GRINDHELLIA CAMPORUM, RUMEX CRISPUS, EPILABIUM BRACHYCARPUM, ERIOCHLOM GRACILE, LAGOPHYLLA SP.; SHRINK-SWELL CLAY SOIL.
 Threat: PROPOSED ORV PARK. SLOPE SUBJECT TO SLUMPING AND EROSION.
 General: 500 PLANTS SEEN IN 1998 BY PRESTON.
 Owner/Manager: DPR

Source Codes
 PR98714

ELEPHANTIA FLUOROSA SSP FLUOROSA (cont.) BIG TARFLANT		Element Code: PDASTIC011
Status: _____	NDBS Element Rank: _____	Other Lists: _____
Federal: None	Global: G471	CHFS List: 1B
State: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: DRY HILLS & PLAINS IN ANNUAL GRASSLAND. CLAY TO CLAY-LOAM SOILS; USUALLY ON SLOPES AND OFTEN IN BURNED AREAS. 15-455M.		

Occurrence No. 28 Map Index: 41670 —Dates Last Seen—
 Occ Rank: Good Element: 1998-10-13 Site: 1998-10-13
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: PRESTON, R. 1998 (OBS)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SNA Summary:

Location: CORRAL HOLLOW, 0.5 MILES SSE OF TESLA (SITE), SOUTHWEST OF MIDWAY.

Lat/Long: 37°38'02" / 121°35'53" Township: 03S
 UTM: Zone-10 N4165926 E623690 Range: 03E
 Mapping Precision: SPECIFIC Section: 36 Qtr NW
 Symbol Type: POLYGON Meridian: N
 Area: 3.9 ac Elevation: 1650 ft

Comments
 Distribution: TWO COLONIES, BOTH MAPPED WITHIN THE NE 1/4 NW 1/4 SECTION 36.
 Ecological: ANNUAL GRASSLAND. ASSOCIATED WITH Avena, GRINDHELLIA CAMPORUM, EREMOCARPUS SETIGERUS, ERIBRUM HORDEACEUS, B. DIANDRUS, HIRSCHFELDIA INCANA, EPILABIUM BRACHYCARPUM. ON WEST AND NORTH FACING SLOPES.
 Threat: PROPOSED OFF-ROAD VEHICLE PARK.
 General: 500 PLANTS SEEN AT BOTH COLONIES BY PRESTON IN 1998.
 Owner/Manager: DPR

Source Codes
 PR98713

MADIA RADIATA SNOWY MADIA		Element Code: PDAST65000
Status: _____	NDBS Element Rank: _____	Other Lists: _____
Federal: None	Global: G2	CHFS List: 1B
State: None	State: S2.1	R-E-D Code: 2-3-3
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND, CHEROPOD SCRUB.		
Micro: MOSTLY ON ADOBE CLAY IN GRASSLAND OR AMONG SHRUBS. 25-1125M.		

Occurrence No. 24 Map Index: 24801 —Dates Last Seen—
 Occ Rank: Unknown Element: 1922-04-02 Site: 1922-04-02
 Origin: Natural/Native occurrence
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: JEPSON, W. #9562 JEPS (HERB)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: CORRAL HOLLOW, MT. HAMILTON RANGE.

Lat/Long: 37°37'48" / 121°32'03" Township: 03S
 UTM: Zone-10 N4165562 E629352 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: IX Qtr IX
 Symbol Type: POLYGON Meridian: N
 Area: 336.4 ac Elevation: 600 ft

Comments
 Distribution: MAPPED IN VICINITY OF CARNEGIE (SITE).
 Ecological: GROWING ON A CLAY HILLTOP.
 Threat:
 General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1922 COLLECTION BY JEPSON. NEEDS FIELDWORK.
 Owner/Manager: UNKNOWN

Source Codes
 JEP22803

ANSICKIA GRANDIFLORA LARGE-FLOWERED FIDDLENECK		Element Code: FDBOR1050
Status: Endangered	WDBB Element Ranks: Global: G1	Other Lists: CHPS List: 1B
State: Endangered	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations		
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND. PROBABLY ONCE A LOT MORE COMMON; NOW KNOWN FROM 3 NATIVE OCCS.		
Micro: ANNUAL GRASSLAND IN VARIOUS SOILS. 275-550M.		

Occurrence No. 4 Map Index: 11087 —Dates Last Seen—
Occ Rank: Unknown Element: 1996-04-09
Origin: Natural/Native occurrence Site: 1996-04-09
Presence: Presumed Extant
Trend: Unknown
Main Source: TAYLOR, D. 1987 (LIT)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary: Draney Canyon

Location: ABOUT 0.5 MILE EAST OF THE ALAMEDA COUNTY LINE, NORTH SIDE OF CORRAL CANYON AT LAWRENCE LIVERMORE LAB SITE 300.

Lat/Long: 37°38'44" / 121°32'47" Township: 038
UTM: Zone-10 N4167278 E628241 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 28 Qtr NW
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 950 ft

Comments: WITHIN SITE 300 OF LAWRENCE LIVERMORE NATIONAL LABORATORY. PAVLIK'S "SITE 300-DROPPER" SITE.
Distribution: Ecological: ANNUAL GRASSLAND ON SANDY CLAY LOAM WITH BLUE OAK, ANNUAL GRASSES, AND ANSICKIA TRSELATA.
Threat: LLL STAFF ASSURES THIS OCCURRENCE WILL NOT BE IMPACTED. ANSICKIA COMPETES WITH NON-NATIVE GRASSES.
General: MORE THAN 50 PLANTS IN 1984, 188 PLANTS IN 1986, 344 PLANTS IN 1988, 236 PLANTS IN 1989, 104 IN 1990, 92 IN 1991, 546 IN '92, 332 IN '93, 1606 IN '94, 1104 IN '95, 1949 IN '96. SITE MANAGED FOR SPECIES IN 1991-1996.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes: HUN9902, HNOBOR01, PAV96R01, TAY97R02, PAV91R02, HUN96F01, FWS80002

TROPIDOCARPUS CAPPARIDISUN CAPER-FRUITED TROPIDOCARPUS		Element Code: FDBRA2R010
Status: None	WDBB Element Ranks: Global: GH	Other Lists: CHPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 1 Map Index: 11164 —Dates Last Seen—
Occ Rank: None Element: 1932-03-20
Origin: Natural/Native occurrence Site: 1987-03-XX
Presence: Extirpated
Trend: Unknown
Main Source: MASON, H. SM #54252 JEPS (HERB)

Quad Summary: MIDWAY (3712165/445A)
County Summary: SAN JOAQUIN
SMA Summary:

Location: 2 MI E OF MIDWAY.

Lat/Long: 37°42'53" / 121°31'11" Township: 028
UTM: Zone-10 N4174989 E630472 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 34 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation: 240 ft

Comments: Distribution: Ecological: ON PLAIN.
Threat: General: VISITED BY DR. DEAN TAYLOR IN 1987 AND NO HABITAT REMAINS.
Owner/Manager: PVT

Source Codes: HAS32S02

ANSICKIA GRANDIFLORA (cont.) LARGE-FLOWERED FIDDLENECK		Element Code: FDBOR1050
Status: Endangered	WDBB Element Ranks: Global: G1	Other Lists: CHPS List: 1B
State: Endangered	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations		
General: CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND. PROBABLY ONCE A LOT MORE COMMON; NOW KNOWN FROM 3 NATIVE OCCS.		
Micro: ANNUAL GRASSLAND IN VARIOUS SOILS. 275-550M.		

Occurrence No. 7 Map Index: 11043 —Dates Last Seen—
Occ Rank: Unknown Element: 1996-04-15
Origin: Natural/Native occurrence Site: 1996-04-15
Presence: Presumed Extant
Trend: Unknown
Main Source: HOWARD, A. 1988 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SMA Summary: Draney Canyon

Location: DRANEY CNY, NORTH OF CORRAL HOLLOW, LAWRENCE LIVERMORE NATL LABORATORY.

Lat/Long: 37°39'02" / 121°33'41" Township: 038
UTM: Zone-10 N4167813 E626909 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 20 Qtr SW
Symbol Type: POINT Meridian: M
Radius: 1/5 mile Elevation: 1000 ft

Comments: WITHIN SITE 300 OF LAWRENCE LIVERMORE NATIONAL LABORATORY. PAVLIK'S "SITE 300-DRANEY CANYON" SITE.
Distribution: Ecological: ON STEEP SLOPE ON SANDY SOIL IN ANNUAL GRASSLAND WITH OTHER ANSICKIA SPP. AND LUPINES. SOIL IS QUITE DIFFERENT FROM OTHER OCCURRENCE (#4) AT SITE 300.
Threat: COMPETITION FROM NON-NATIVE GRASSES. AREA IS BUFFER LAND FOR LAB; NO USE IS PLANNED.
General: 19 PLANTS DISCOVERED BY E. DRANEY (MANAGER OF SITE 300). 23 PLANTS IN 1989, 16 IN '90, 29 IN '91, 28 IN '92, 28 IN '93, 13 IN '94, 27 IN '95, 9 IN '96. SITE MONITORED BY PAVLIK AS PART OF RECOVERY EFFORT.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes: HUN9901, PAV96R01, PAV93R01, HUN96F02, PAV91R02, PAV94R01, PAV95R01

TROPIDOCARPUS CAPPARIDISUN (cont.) CAPER-FRUITED TROPIDOCARPUS		Element Code: FDBRA2R010
Status: None	WDBB Element Ranks: Global: GH	Other Lists: CHPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 3 Map Index: 22136 —Dates Last Seen—
Occ Rank: Unknown Element: 1933-03-17
Origin: Natural/Native occurrence Site: 1933-03-17
Presence: Presumed Extant
Trend: Unknown
Main Source: ROSE, L. #33019 CAS, RBA, UCLA (HERB)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)*, MIDWAY (3712165/445A)
County Summary: ALAMEDA, SAN JOAQUIN
SMA Summary:

Location: MOUNTAIN HOUSE, APPROX 5 AIRMI S OF CLIFTON COURT FOREBAY.

Lat/Long: 37°45'18" / 121°34'24" Township: 028
UTM: Zone-10 N4179376 E625668 Range: 04E
Mapping Precision: NON-SPECIFIC Section: 18 Qtr XX
Symbol Type: POINT Meridian: M
Radius: 1 mile Elevation: 200 ft

Comments: Distribution: Ecological: IN ALKALINE LOW HILLS.
Threat: General: Owner/Manager: PVT

Source Codes: RO833S02

TROPIDOCARPUM CAPPARIDEUM (cont.) CAPER-FRUITED TROPIDOCARPUM		Element Code: PD8A2R010
Status: _____	NDBS Element Ranks: _____	Other Lists: _____
Federal: None	Global: GH	CNPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 4 Map Index: 11155 —Dates Last Seen—
 Occ Rank: None Element: 1888-03-25
 Origin: Natural/Native occurrence Site: 1974-04-05
 Presence: Possibly Extirpated
 Trend: Unknown
 Main Source: GREENE, E. SH DS (HERB)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: BETHANY (JCT OF BETHANY ROAD & SOUTHERN PACIFIC RR).

Lat/Long: 37°46'51" / 121°31'32" Township: 02S
 UTM: Zone-10 W4182317 E629843 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 03 Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1 mile Elevation: 40 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: PLANT NOT FOUND IN 1974; EXTENSIVE CULTIVATION.
 Owner/Manager: FVT
 Source Codes:
 GR68802

TROPIDOCARPUM CAPPARIDEUM (cont.) CAPER-FRUITED TROPIDOCARPUM		Element Code: PD8A2R010
Status: _____	NDBS Element Ranks: _____	Other Lists: _____
Federal: None	Global: GH	CNPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 6 Map Index: 10914 —Dates Last Seen—
 Occ Rank: None Element: 1889-03-24
 Origin: Natural/Native occurrence Site: 1979-XX-XX
 Presence: Possibly Extirpated
 Trend: Unknown
 Main Source: GREENE, E. SH DS (HERB)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, CLIFTON COURT FOREBAY (3712175/463D), WOODWARD ISLAND (3712185/463A), BRIGHTWOOD (3712186/463B)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: BYRON.

Lat/Long: 37°52'06" / 121°38'11" Township: 01S
 UTM: Zone-10 W4191877 E619941 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 03 Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1 mile Elevation: 25 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: AREA SEARCHED AND PLANT NOT FOUND IN 1978 AND 1979 BY N. CRANE.
 Owner/Manager: FVT
 Source Codes:
 GR68901, CRA79003

TROPIDOCARPUM CAPPARIDEUM (cont.) CAPER-FRUITED TROPIDOCARPUM		Element Code: PD8A2R010
Status: _____	NDBS Element Ranks: _____	Other Lists: _____
Federal: None	Global: GH	CNPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 5 Map Index: 11015 —Dates Last Seen—
 Occ Rank: None Element: 1932-03-19
 Origin: Natural/Native occurrence Site: 1987-03-XX
 Presence: Extirpated
 Trend: Unknown
 Main Source: MASON, H. #6818 DS (HERB)

Quad Summary: MIDWAY (3712165/445A)*, CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA, SAN JOAQUIN
 SNA Summary:

Location: ROAD FROM MOUNTAIN HOUSE TO MIDWAY, W OF TRACY.

Lat/Long: 37°44'38" / 121°34'19" Township: 02S
 UTM: Zone-10 W4178154 E625820 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: 19 Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1 mile Elevation: 300 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: SITE VISITED IN 1987 BY DR. DEAN TAYLOR, AND NO HABITAT REMAINS.
 Owner/Manager: FVT
 Source Codes:
 HAS32803

TROPIDOCARPUM CAPPARIDEUM (cont.) CAPER-FRUITED TROPIDOCARPUM		Element Code: PD8A2R010
Status: _____	NDBS Element Ranks: _____	Other Lists: _____
Federal: None	Global: GH	CNPS List: 1A
State: None	State: SH	R-E-D Code: *
Habitat Associations		
General: VALLEY AND FOOTHILL GRASSLAND.		
Micro: ALKALINE HILLS. 0-455M.		

Occurrence No. 8 Map Index: 10953 —Dates Last Seen—
 Occ Rank: Unknown Element: 1957-03-30
 Origin: Natural/Native occurrence Site: 1957-03-30
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: SMITH & STONE #2867 JEPS (HERB)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: W END OF FIELD, W OF BYRON RD & JUST N OF HOLBY RD, APPROX 3 MI SE OF BYRON.

Lat/Long: 37°49'57" / 121°36'30" Township: 01S
 UTM: Zone-10 W4187937 E622468 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 23 Qtr NE
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 18 ft

Comments:
 Distribution:
 Ecological: IN MODERATELY ALKALINE SOIL.
 Threat:
 General:
 Owner/Manager: FVT
 Source Codes:
 SM15702

TROPIDOCARPUS CAPPARIDRUS (cont.)		Element Code: FDBRA2R010	
CAPEN-FRUITED TROPIDOCARPUS			
Status: None	WDBB Element Ranks: Global: GE	Other Lists: CNPS List: 1A	
Federal: None	State: None	R-E-D Code: *	
Habitat Associations:			
General: VALLEY AND FOOTHILL GRASSLAND.			
Micro: ALKALINE HILLS. C-455M.			

Occurrence No. 11 Map Index: 36869 —Dates Last Seen—
 Occ Rank: Unknown Element: 1897-03-IX
 Origin: Natural/Native occurrence Site: 1897-03-IX
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: DUDLEY, W. SN DS (HERB)

Quad Summary: ALTAMONT (3712166/445B)*, MIDWAY (3712165/445A), LIVERMORE (3712167/446A), BYRON HOT SPRINGS (3712176/463C), TASSAJARA (3712177/464D)

County Summary: ALAMEDA
 SNA Summary:

Location: BY RAILROAD EAST OF LIVERMORE.

Lat/Long: 37°42'02" / 121°42'55"	Township: 03S
UTM: Zone-10 N4173164 E613259	Range: 02E
Mapping Precision: NON-SPECIFIC	Section: 02 Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 5 mile	Elevation: 540 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: ABOVE LOCATION DESCRIPTION IS ONLY INFORMATION. NO ELEVATION GIVEN ON HERBARIUM LABEL. SURVEYS NEEDED TO DETERMINE IF SUITABLE HABITAT EXISTS.

Owner/Manager: UNKNOWN

Source Codes:
 DUD97801

ATRIplex JOAQUINIANA		Element Code: FDCHE041F3	
SAN JOAQUIN SALTFLUSH			
Status: None	WDBB Element Ranks: Global: G2	Other Lists: CNPS List: 1B	
Federal: None	State: None	R-E-D Code: 2-2-3	
Habitat Associations:			
General: CHEROPOD SCRUB, ALKALI MEADOW, VALLEY AND FOOTHILL GRASSLAND.			
Micro: IN SEASONAL ALKALI WETLANDS OR ALKALI SINK SCRUB WITH DISTICHLIS SPICATA, FRANKLINIA, ETC. 1-250M.			

Occurrence No. 19 Map Index: 20664 —Dates Last Seen—
 Occ Rank: Good Element: 1989-03-30
 Origin: Natural/Native occurrence Site: 1989-03-30
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: MEYER & POLLAK 1989 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA
 SNA Summary:

Location: JUST E OF MOUNTAIN HOUSE ROAD AND S OF DELTA WISCONSIN CANAL.
 (0.2-0.3 MI S OF JCT OF CANAL AND ROAD).

Lat/Long: 37°46'13" / 121°34'58"	Township: 02S
UTM: Zone-10 N4181059 E624823	Range: 04E
Mapping Precision: SPECIFIC	Section: 07 Qtr SW
Symbol Type: POLYGON	Meridian: M
Area: 5.7 ac	Elevation: 180 ft

Comments:
 Distribution: ABOVE MARSH AND ALKALI MEADOW ABOUT 100 FT FROM RD.
 Ecological: DISTURBED GRASS, LOWER BASE OF LOW HILLS WITH LEPIDIUM NITIDUM, FRANKLINIA GRANDIFLORA, ANNUAL GRASSES, BROMES, ETC.
 Threat: CATTLE, HORSES, AND POTENTIAL ROAD ALL MAY THREATEN.
 General: ABOUT 200 PLANTS SEEN IN 1989.

Owner/Manager: UNKNOWN

Source Codes:
 MEY89F01

ATRIplex CORDELATA		Element Code: FDCHE040B0	
HERBATSICALS			
Status: None	WDBB Element Ranks: Global: G27	Other Lists: CNPS List: 1B	
Federal: None	State: None	R-E-D Code: 2-2-3	
Habitat Associations:			
General: CHEROPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, MEADOWS.			
Micro: ALKALINE FLATS AND SCALDS IN THE CENTRAL VALLEY, SANDY SOILS. 1-150(600)M.			

Occurrence No. 50 Map Index: 31358 —Dates Last Seen—
 Occ Rank: Good Element: 1994-07-08
 Origin: Natural/Native occurrence Site: 1994-07-08
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: WOOD, M. 1994 (OBS)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, CLIFTON COURT FOREBAY (3712175/463D)

County Summary: CONTRA COSTA
 SNA Summary:

Location: S OF ENTRANCE TO BYRON HOT SPRINGS, W SIDE OF BYRON HOT SPRINGS ROAD, N OF ARMSTRONG ROAD.

Lat/Long: 37°50'35" / 121°37'31"	Township: 01S
UTM: Zone-10 N4189073 E620970	Range: 03E
Mapping Precision: SPECIFIC	Section: 15 Qtr SE
Symbol Type: POLYGON	Meridian: M
Area: 32.7 ac	Elevation: 40 ft

Comments:
 Distribution: BOTH SIDES OF IRRIGATION CANAL.
 Ecological: IN ALKALI MEADOW AND VALLEY SINK SCRUB WITH ALLENROLFEA, DISTICHLIS, & SUAEDA MOQUINI.
 Threat: GRASSING, ALTERED HYDROLOGY, ROAD WIDENING, AND DEVELOPMENT THREATS. SITE WITHIN BYRON FLASHING AREA.
 General: 1500 PLANTS IN 1994.

Owner/Manager: PVT

Source Codes:
 W0094F07

ASTRAGALUS TENER VAR TENER		Element Code: FDFAB07SRL	
ALKALI MILK-VETCH			
Status: None	WDBB Element Ranks: Global: G1T1	Other Lists: CNPS List: 1B	
Federal: None	State: None	R-E-D Code: 3-2-3	
Habitat Associations:			
General: ALKALI FLATS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.			
Micro: LOW GROUND, ALKALI FLATS, AND FLOODED LANDS; IN ANNUAL GRASSLAND OR IN FLATS OR VERNAL POOLS. 1-170M.			

Occurrence No. 9 Map Index: 24685 —Dates Last Seen—
 Occ Rank: None Element: 1957-04-04
 Origin: Natural/Native occurrence Site: 1957-04-04
 Presence: Possibly Extirpated
 Trend: Unknown
 Main Source: LISTON, A. 1988 (PERS)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: 3 MILES SOUTH OF BYRON, NEAR BYRON HOT SPRINGS.

Lat/Long: 37°50'13" / 121°37'53"	Township: 01S
UTM: Zone-10 N4188402 E620433	Range: 03E
Mapping Precision: NON-SPECIFIC	Section: IX Qtr XX
Symbol Type: POINT	Meridian: M
Radius: 1 mile	Elevation: 60 ft

Comments:
 Distribution: MAPPED 1 MILE SOUTH OF BYRON HOT SPRINGS.
 Ecological:
 Threat:
 General: SPECIES COLLECTED IN THE AREA BY A. EASTWOOD IN 1914 (#3818, HERBARIUM UNKNOWN) AND BY P.B. RAVEN IN 1957 (#10586, HERBARIUM UNKNOWN). AREA SHOULD BE FIELD CHECKED TO SEE IF APPROPRIATE HABITAT STILL EXISTS.

Owner/Manager: UNKNOWN

Source Codes:
 LIS88R01

ASTRAGALUS TENER VAR FERRISIAE FERRIS'S MILK-VEITCH		Element Code: POFABOPEB3
Status: None	NDDB Element Ranks: Global: G1F1	Other Lists: CNPS List: 1B
Federal: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations: General: MEADOWS, VALLEY AND FOOTHILL GRASSLAND. ONLY A FEW EXTANT OCCURRENCES REMAIN; FORMERLY MORE WIDESPREAD IN THE VALLEY. Micro: SUBALKALINE FLATS ON OVERFLOW LAND IN THE CENTRAL VALLEY; USUALLY SEEN IN DRY, ADOBE SOIL. 5-75M.		

Occurrence No. 8 Map Index: 22136 Dates Last Seen: Element: 1884-05-XX
 Occ Rank: Unknown Origin: Natural/Native occurrence Site: 1884-05-XX
 Presence: Presumed Extant Trend: Unknown
 Main Source: LISTON, A. 1990 (LIT)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)*, MIDWAY (3712165/445A)
 County Summary: ALAMEDA, SAN JOAQUIN
 SNA Summary:

Location: MOUNTAIN HOUSE.

Lat/Long: 37°45'18" / 121°34'24"	Township: 02S
UTM: Zone-10 N4179376 E625668	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: 18 Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 1 mile	Elevation: 200 ft

Comments:
 Distribution:
 Ecological:
 Threat:
 General: HERBARIUM COLLECTION, BRANDEGEE SH (UC), IS ONLY SOURCE OF INFORMATION FOR THIS SITE. COLUSA CO. MENTIONED AS COLLECTION AREA BY LISTON. U.S.G.S. GASTNER LISTS ONLY ONE MOUNTAIN HOUSE AND 1'S IN ALAMEDA CO.
 Owner/Manager: UNKNOWN

Source Codes:
 LIS9QA01

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALOHOQ0
Status: None	NDDB Element Ranks: Global: G4	Other Lists: CNPS List: 2
Federal: None	State: S2.2	R-E-D Code: 2-2-1
Habitat Associations: General: MARSHES AND SWAMPS (FRESHWATER). Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.		

Occurrence No. 75 Map Index: 11161 Dates Last Seen: Element: 1987-09-12
 Occ Rank: Unknown Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)*, BOLT (3712184/462B),
 WOODWARD ISLAND (3712185/463A)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: ALONG VICTORIA AND NORTH CANAL, NE OF CLIFTON COURT FOREBAY.

Lat/Long: 37°52'32" / 121°31'10"	Township: 01S
UTM: Zone-10 N4192847 E630209	Range: 04E
Mapping Precision: SPECIFIC	Section: XX Qtr XX
Symbol Type: POLYGON	Meridian: N
Area: 294.1 ac	Elevation:

Comments:
 Distribution:
 Ecological: PLANTS FOUND ALONG CANAL; LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: ABOUT 12 PLANTS SEEN.
 Owner/Manager: UNKNOWN

Source Codes:
 DA187F06

HIBISCUS LASIOCARPUS ROSE-MALLOW		Element Code: PDMALOHOQ0
Status: None	NDDB Element Ranks: Global: G4	Other Lists: CNPS List: 2
Federal: None	State: S2.2	R-E-D Code: 2-2-1
Habitat Associations: General: MARSHES AND SWAMPS (FRESHWATER). Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.		

Occurrence No. 10 Map Index: 11000 Dates Last Seen: Element: 1957-07-XX
 Occ Rank: Unknown Origin: Natural/Native occurrence Site: 1957-07-XX
 Presence: Presumed Extant Trend: Unknown
 Main Source: ROBERTS, W. 1974 (PERS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA, SAN JOAQUIN
 SNA Summary:

Location: N POINT OF CLIFTON COURT TRACT ON ITALIAN SLOUGH.

Lat/Long: 37°51'36" / 121°34'47"	Township: 01S
UTM: Zone-10 N4191027 E624939	Range: 99X
Mapping Precision: NON-SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation:

Comments:
 Distribution:
 Ecological:
 Threat:
 General: NONE.
 Owner/Manager: FVT

Source Codes:
 RO874U04

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALOHOQ0
Status: None	NDDB Element Ranks: Global: G4	Other Lists: CNPS List: 2
Federal: None	State: S2.2	R-E-D Code: 2-2-1
Habitat Associations: General: MARSHES AND SWAMPS (FRESHWATER). Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.		

Occurrence No. 76 Map Index: 11066 Dates Last Seen: Element: 1987-09-12
 Occ Rank: Unknown Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA, SAN JOAQUIN
 SNA Summary:

Location: ISLAND IN OLD RIVER, AT JUNCTION W/WEST CANAL, SE OF KINGS ISLAND.

Lat/Long: 37°51'24" / 121°33'44"	Township: 01S
UTM: Zone-10 N4190680 E626484	Range: 04E
Mapping Precision: NON-SPECIFIC	Section: XX Qtr XX
Symbol Type: POINT	Meridian: N
Radius: 1/5 mile	Elevation: 10 ft

Comments:
 Distribution:
 Ecological: RIPARIAN/UPLAND VEGETATION WITH SALIX GOODINGII AND POPULUS FREMONTII. LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: SINGLE PLANT SEEN.
 Owner/Manager: UNKNOWN

Source Codes:
 DA187F06

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALORHQO	
Status: None	WDBB Element Ranks: Global: G4	Other Lists: CWS List: 2	
Federal: None	State: S2.2	R-E-D Code: 2-2-1	
Habitat Associations			
General: MARSHES AND SWAMPS (FRESHWATER).			
Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.			

Occurrence No. 77 Map Index: 11076 —Dates Last Seen—
 Occ Rank: Unknown Element: 1987-09-12
 Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant
 Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SNA Summary:

Location: WEST CANAL, BETWEEN COREY ISLAND & CLIFTON COURT FOREBAY.
 Lat/Long: 37°50'42" / 121°33'27" Township: 01S
 UTM: Zone-10 N4189392 E626920 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 10 ft

Comments
 Distribution:
 Ecological: LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: SINGLE PLANT SEEN.
 Owner/Manager: UNKNOWN
 Source Codes
 DA187F06

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALORHQO	
Status: None	WDBB Element Ranks: Global: G4	Other Lists: CWS List: 2	
Federal: None	State: S2.2	R-E-D Code: 2-2-1	
Habitat Associations			
General: MARSHES AND SWAMPS (FRESHWATER).			
Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.			

Occurrence No. 79 Map Index: 11095 —Dates Last Seen—
 Occ Rank: Unknown Element: 1987-09-12
 Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant
 Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA, SAN JOAQUIN
 SNA Summary:

Location: AT JUNCTION OF GRANT LINE CANAL & OLD RIVER, SW OF CLIFTON COURT FOREBAY.
 Lat/Long: 37°49'18" / 121°32'56" Township: 01S
 UTM: Zone-10 N4186815 E627717 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 5 ft

Comments
 Distribution:
 Ecological: LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: SINGLE PLANT SEEN.
 Owner/Manager: UNKNOWN
 Source Codes
 DA187F06

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALORHQO	
Status: None	WDBB Element Ranks: Global: G4	Other Lists: CWS List: 2	
Federal: None	State: S2.2	R-E-D Code: 2-2-1	
Habitat Associations			
General: MARSHES AND SWAMPS (FRESHWATER).			
Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.			

Occurrence No. 78 Map Index: 11138 —Dates Last Seen—
 Occ Rank: Unknown Element: 1987-09-12
 Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant
 Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA, SAN JOAQUIN
 SNA Summary:

Location: ON ISLAND IN OLD RIVER, W OF UNION ISLAND, N OF CLIFTON COURT RD.
 Lat/Long: 37°50'52" / 121°32'02" Township: 01S
 UTM: Zone-10 N4189733 E628993 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation:

Comments
 Distribution:
 Ecological: RIPARIAN/UPLAND VEGETATION WITH SALIX GOODINGII AND POPULUS FREMONTII. LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: SINGLE PLANT SEEN.
 Owner/Manager: UNKNOWN
 Source Codes
 DA187F06

HIBISCUS LASIOCARPUS (cont.) ROSE-MALLOW		Element Code: PDMALORHQO	
Status: None	WDBB Element Ranks: Global: G4	Other Lists: CWS List: 2	
Federal: None	State: S2.2	R-E-D Code: 2-2-1	
Habitat Associations			
General: MARSHES AND SWAMPS (FRESHWATER).			
Micro: MOIST, FRESHWATER-SOAKED RIVER BANKS & LOW PEAT ISLANDS IN SLOUGHS; IN CALIF., KNOWN FROM THE DELTA WATERSHED. 0-150M.			

Occurrence No. 80 Map Index: 11127 —Dates Last Seen—
 Occ Rank: Unknown Element: 1987-09-12
 Origin: Natural/Native occurrence Site: 1987-09-12
 Presence: Presumed Extant
 Trend: Decreasing
 Main Source: DAINS, V. 1987 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: SAN JOAQUIN
 SNA Summary:

Location: GRANT LINE CANAL, APPROX 0.75 MI E OF JUNCTION W/OLD RIVER.
 Lat/Long: 37°49'14" / 121°32'12" Township: 01S
 UTM: Zone-10 N4186709 E628796 Range: 04E
 Mapping Precision: NON-SPECIFIC Section: XX Qtr XX
 Symbol Type: POINT Meridian: M
 Radius: 1/5 mile Elevation: 5 ft

Comments
 Distribution:
 Ecological: LITTLE HABITAT REMAINS.
 Threat: WATER CONVEYANCE FOR CALIFORNIA AQUEDUCT CAUSING SEVERE BANK EROSION.
 General: SINGLE PLANT SEEN.
 Owner/Manager: UNKNOWN
 Source Codes
 DA187F06

ESCHSCHOLZIA RHOMBIFETALA (cont.)		
DIAMOND-FETALOID CALIFORNIA POPPY		
Element Code: FDPAPAO00		
Status: None	HDBB Element Ranks: Global: G1	Other Lists: CNPS List: 1B
Federal: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND. MOST SITES ARE HISTORICAL.		
Micro: ALKALINE, CLAY SLOPES AND FLATS. 0-975M.		

Occurrence No. 6 Map Index: 37002 —Dates Last Seen—
Occ Rank: Good Element: 1997-05-06
Origin: Natural/Native occurrence Site: 1997-05-06
Presence: Presumed Extant
Trend: Unknown
Main Source: PRESTON, R. 1997 (OBS)

Quad Summary: MIDWAY (3712165/445A)
County Summary: ALAMEDA
SHA Summary:

Location: LAWRENCE LIVERMORE NATIONAL LABORATORY; SITE 300.

Lat/Long: 37°38'22" / 121°33'52" Township: 03S
UTM: Zone-10 N4166588 N626663 Range: 04E
Mapping Precision: SPECIFIC Section: 29 Qtr SW
Symbol Type: POINT Meridian: N
Radius: 80 meters Elevation: 900 ft

Comments: Distribution: SITE IS OPEN SPACE AREA WITHIN ENERGY RESEARCH FACILITY.
Ecological: N-FACING SLOPE ON FRABLE CLAY SOIL. AT ECOTONE BETWEEN ANNUAL GRASSLAND AND ERODING BANK FACE. WITH POA SCABRILLA, ERODIUS MADYTTENSIS RUBENS, LYNERA BARBARA, STYLIDICOM HETEROPHYLLA AND MICROSERIS DOUGLASSII.
Threat: EROSION THREATENS.
General: COLLECTED BY P. RAVEN IN 1949 FROM "UPPER CORRAL HOLLOW; BETWEEN TESLA (TESLA SIC.) AND CORRAL HOLLOW". THE MAPPED SITE WAS PRESUMED TO BE THE SAME SITE AS THIS RAVEN COLLECTION.
Owner/Manager: DOE-LAWRENCE LIVERMORE LAB

Source Codes: EAS35801, PRES7701, CLAS0001

DELPHINIUM RECURVATUM (cont.)		
RECURVED LARKSPUR		
Element Code: PDAN081J0		
Status: None	HDBB Element Ranks: Global: G2	Other Lists: CNPS List: 1B
Federal: None	State: S2.2	R-E-D Code: 2-2-3
Habitat Associations:		
General: CHERNOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND. MANY HISTORICAL AND DEGRADED SITES.		
Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHERNOPOD SCRUB. 3-685M.		

Occurrence No. 2 Map Index: 10938 —Dates Last Seen—
Occ Rank: Unknown Element: 1981-04-01
Origin: Natural/Native occurrence Site: 1981-04-01
Presence: Presumed Extant
Trend: Unknown
Main Source: SROW, R. 1981 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SHA Summary:

Location: 2 MI S OF HWY J4, 0.7 MI S OF HOLEY RD, ABOUT 2.5 AIR MI SSE OF BYRON.

Lat/Long: 37°49'16" / 121°37'18" Township: 01S
UTM: Zone-10 N4186646 N621316 Range: 03E
Mapping Precision: SPECIFIC Section: 26 Qtr NW
Symbol Type: POINT Meridian: N
Radius: 80 meters Elevation: 50 ft

Comments: Distribution: ALONGSIDE BYRON HOT SPRINGS ROAD.
Ecological: AT EDGE OF ALKALINE SWALES ON LOW RANKS IN SANDY SOIL. ASSOCIATES INCLUDE DISTICHLIS SPICATA.
Threat: General: 10 PLANTS SEEN.
Owner/Manager: FVT

Source Codes: SNO81F01

ESCHSCHOLZIA RHOMBIFETALA		
DIAMOND-FETALOID CALIFORNIA POPPY		
Element Code: FDPAPAO00		
Status: None	HDBB Element Ranks: Global: G1	Other Lists: CNPS List: 1B
Federal: None	State: S1.1	R-E-D Code: 3-3-3
Habitat Associations:		
General: VALLEY AND FOOTHILL GRASSLAND. MOST SITES ARE HISTORICAL.		
Micro: ALKALINE, CLAY SLOPES AND FLATS. 0-975M.		

Occurrence No. 4 Map Index: 36880 —Dates Last Seen—
Occ Rank: Unknown Element: XXXX-XX-XX
Origin: Natural/Native occurrence Site: XXXX-XX-XX
Presence: Presumed Extant
Trend: Unknown
Main Source: CLARK, C. 1979 (PRES)

Quad Summary: BYRON HOT SPRINGS (3712176/463C)*, MIDWAY (3712165/445A), ALTAMONTE (3712166/445B), CLIFTON COURT FOREBAY (3712175/463D), WOODWARD ISLAND (3712185/463A), BREKENTWOOD (3712186/463B)
County Summary: ALAMEDA, CONTRA COSTA, SAN JOAQUIN
SHA Summary:

Location: HILLS SOUTH OF BYRON.

Lat/Long: 37°48'17" / 121°38'25" Township: 01S
UTM: Zone-10 N4184813 N619707 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 34 Qtr XX
Symbol Type: POINT Meridian: N
Radius: 5 mile Elevation: 100 ft

Comments: Distribution:
Ecological:
Threat:
General: COLLECTED AT ABOVE LOCATION BY GREENE, DATE UNKNOWN.
Owner/Manager: UNKNOWN

Source Codes: JEP22801, CLA79001

DELPHINIUM RECURVATUM (cont.)		
RECURVED LARKSPUR		
Element Code: PDAN081J0		
Status: None	HDBB Element Ranks: Global: G2	Other Lists: CNPS List: 1B
Federal: None	State: S2.2	R-E-D Code: 2-2-3
Habitat Associations:		
General: CHERNOPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND. MANY HISTORICAL AND DEGRADED SITES.		
Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHERNOPOD SCRUB. 3-685M.		

Occurrence No. 7 Map Index: 10936 —Dates Last Seen—
Occ Rank: Unknown Element: 1945-03-23
Origin: Natural/Native occurrence Site: 1945-03-23
Presence: Presumed Extant
Trend: Unknown
Main Source: EPLING, C. & MILES, G. #542 UC (HERB)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)*, BYRON HOT SPRINGS (3712176/463C)
County Summary: CONTRA COSTA
SHA Summary:

Location: 0.5 MI W OF TRACY-BYRON RD, ON RD TO BYRON HOT SPRINGS, ABOUT 1.6 MI SSE OF BYRON.

Lat/Long: 37°50'42" / 121°37'25" Township: 01S
UTM: Zone-10 N4189304 N621103 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 15 Qtr XX
Symbol Type: POINT Meridian: N
Radius: 1 mile Elevation: 40 ft

Comments: Distribution:
Ecological: ALONG RIVULET IN HEAVY SOIL.
Threat:
General: COLLECTION LABEL SEEMS TO READ "5 MILES W OF TRACY-BYRON RD," BUT WE MAPPED IT AT THIS LOCATION SINCE IT MADE MORE SENSE. COLLECTION BY C.F. BAKER (SN, POM #150573) IN 1903 IS ALSO ATTRIBUTED TO THIS SITE.
Owner/Manager: FVT

Source Codes: EPL45801

DELPHINIUM RECURVATUM (cont.)		Element Code: PDRAN081JO	
RECURVED LARKSPUR			
Status: None		NDBE Element Ranks: Global: G2 State: S2.2	
Federal: None		Other Lists: CWS List: 1B R-E-D Code: 2-2-3	
Habitat Associations			
General: CHEROPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND, MANY HISTORICAL AND DEGRADED SITES.			
Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHEROPOD SCRUB. 3-685M.			

Occurrence No. 61 Map Index: 31546 Dates Last Seen: 1991-05-01
 Occ Rank: Excellent Element: 1991-05-01
 Origin: Natural/Native occurrence Site: 1991-05-01
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: TAYLOR, D. 1991 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: ALAMEDA, CONTRA COSTA
 SMA Summary:

Location: WEST-SIDE OF BURNS ROAD ABOUT 0.6 MILE NORTH OF KELSO ROAD, JUST SOUTH OF CONTRA COSTA/ALAMEDA COUNTY LINE.

Lat/Long: 37°48'13" / 121°36'08" Township: 01S
 UTM: Zone-10 N4184740 E623050 Range: 03E
 Mapping Precision: SPECIFIC Section: 36 Qtr NW
 Symbol Type: POLYGON Meridian: N
 Area: 13.5 ac Elevation: 120 ft

Comments: MAPPED WITHIN THE SW 1/4 OF THE NW 1/4 OF SECTION 36.
 Distribution: MARGINS OF MESA-TOPOGRAPHY ADJACENT TO ALKALINE SOIL DEPRESSIONS, IN GRASSLAND WITH DISTICHLIS, HORDEUM DEPRESSUM, FRANKENIA GRANDIFLORA, LEPIDIUM, LOLIUM, SPERGULARIA, ET AL. SOILS ARE FINE, GRAVELLY ALKALINE CLAY.
 Threat: General: 150 PLANTS OBSERVED IN 1991.
 Owner/Manager: PVT
 Source Codes: TAY91F12

ERIOGONUM TRUNCATUM		Element Code: PDPGN08550	
MT. DIABLO BUCKWHEAT			
Status: None		NDBE Element Ranks: Global: GH State: SH	
Federal: None		Other Lists: CWS List: 1A R-E-D Code: *	
Habitat Associations			
General: CHAPARRAL, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND. HISTORICALLY KNOWN FROM ALA, CCA, AND SOL COUNTIES.			
Micro: DRY, EXPOSED CLAY OR SANDY SUBSTRATES. 100-600M.			

Occurrence No. 6 Map Index: 10961 Dates Last Seen: 1940-12-01
 Occ Rank: Unknown Element: 1940-12-01
 Origin: Natural/Native occurrence Site: 1940-12-01
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: HOOVER, R. #4704 DS, UC (HERB)

Quad Summary: MIDWAY (3712165/445A)
 County Summary: ALAMEDA
 SMA Summary:

Location: HEAD OF CORRAL HOLLOW.

Lat/Long: 37°38'25" / 121°35'42" Township: 03S
 UTM: Zone-10 N4166627 E623969 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 25 Qtr SE
 Symbol Type: POINT Meridian: N
 Radius: 1 mile Elevation: 880 ft

Comments: FOUND ON BARREN CLAY SPOTS.
 Distribution: Ecological: FOUND ON BARREN CLAY SPOTS.
 Threat: General: PVT
 Owner/Manager: PVT
 Source Codes: H0040804

DELPHINIUM RECURVATUM (cont.)		Element Code: PDRAN081JO	
RECURVED LARKSPUR			
Status: None		NDBE Element Ranks: Global: G2 State: S2.2	
Federal: None		Other Lists: CWS List: 1B R-E-D Code: 2-2-3	
Habitat Associations			
General: CHEROPOD SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND, MANY HISTORICAL AND DEGRADED SITES.			
Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHEROPOD SCRUB. 3-685M.			

Occurrence No. 65 Map Index: 37531 Dates Last Seen: 1993-03-28
 Occ Rank: Good Element: 1993-03-28
 Origin: Natural/Native occurrence Site: 1993-03-28
 Presence: Presumed Extant
 Trend: Unknown
 Main Source: OLSON, B. 1993 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
 County Summary: CONTRA COSTA
 SMA Summary:

Location: SW OF CLIFTON COURT FOREBAY; S OF HOLEY ROAD, E OF BYRON HOT SPRINGS ROAD.

Lat/Long: 37°49'32" / 121°37'11" Township: 01S
 UTM: Zone-10 N4187166 E621485 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 23 Qtr SW
 Symbol Type: POLYGON Meridian: N
 Area: 42.0 ac Elevation: 35 ft

Comments: NO MAP RECEIVED AT CHDDS. MAPPED ACCORDING TO 1/4 OF 1/4 SECTION GIVEN ON FIELD SURVEY FORM (SW 1/4 OF SW 1/4 OF SECTION 23).
 Distribution: ALKALI GRASSLAND/ VERNAL SLOUGH (AT TRANSITION ZONE). UPLANDS DOMINATED BY BROMUS SPP., HORDEUM JUBATUM, VULPIA SPP., AVERNA BARBATA, TRIFOLIUM TRIDENTATUM. WETLANDS W/DISTICHLIS SPICATA STRICTA, SPERGULARIA MACROTHECA LONGISTILA.
 Threat: General: 22 PLANTS IN 1993.
 Owner/Manager: PVT
 Source Codes: OLS93F01

ERIOGONUM TRUNCATUM (cont.)		Element Code: PDPGN08550	
MT. DIABLO BUCKWHEAT			
Status: None		NDBE Element Ranks: Global: GH State: SH	
Federal: None		Other Lists: CWS List: 1A R-E-D Code: *	
Habitat Associations			
General: CHAPARRAL, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND. HISTORICALLY KNOWN FROM ALA, CCA, AND SOL COUNTIES.			
Micro: DRY, EXPOSED CLAY OR SANDY SUBSTRATES. 100-600M.			

Occurrence No. 7 Map Index: 10942 Dates Last Seen: 1987-03-XX
 Occ Rank: None Element: 1987-03-XX
 Origin: Natural/Native occurrence Site: 1987-03-XX
 Presence: Possibly Extirpated
 Trend: Unknown
 Main Source: HOOVER, R. #4702 DS (HERB)

Quad Summary: MIDWAY (3712165/445A)*, ALTMONT (3712166/445B)
 County Summary: ALAMEDA
 SMA Summary:

Location: NEAR SUMMIT ON ROAD FROM LIVERMORE TO CORRAL HOLLOW.

Lat/Long: 37°38'57" / 121°36'35" Township: 03S
 UTM: Zone-10 N4167594 E622648 Range: 03E
 Mapping Precision: NON-SPECIFIC Section: 26 Qtr NE
 Symbol Type: POINT Meridian: N
 Radius: 1 mile Elevation: 1600 ft

Comments: ONLY ERIOGONUM ARGULOSUM FOUND.
 Distribution: Ecological: ONLY ERIOGONUM ARGULOSUM FOUND.
 Threat: CLAY MINING HAS OCCURRED.
 General: D. TAYLOR HAS VISITED AREA AND SOME HABITAT STILL REMAINS. NO PLANTS WERE FOUND.
 Owner/Manager: PVT
 Source Codes: TAY87U05, H0040805

DELPHINIUM RECURVATUM		Element Code: FDRAN01J0	
RECURVED LARKSPUR			
Status: _____		NDDB Element Rank: _____	Other Lists: _____
Federal: None	Global: G2	CMPS List: 1B	
State: None	State: S2.2	R-E-D Code: 2-2-3	
Habitat Associations: _____			
General: CHEWPOD SCRUB, VALLEY AND POOTHILL GRASSLAND, CISMONTANE WOODLAND. MANY HISTORICAL AND DEGRADED SITES.			
Micro: ON ALKALINE SOILS; OFTEN IN VALLEY SALTBUSH OR VALLEY CHEWPOD SCRUB. 3-685M.			

Occurrence No. 1 Map Index: 10958 Date Last Seen: _____
Occ Rank: Unknown Element: 1982-04-16
Origin: Natural/Native occurrence Site: 1982-04-16
Presence: Presumed Extant
Trend: Unknown
Main Source: SNOW, R. 1982 (OBS)

Quad Summary: CLIFTON COURT FOREBAY (3712175/463D)
County Summary: CONTRA COSTA
SNA Summary: Holey Road North

Location: NEAR JUNCTION OF HOLEY ROAD AND BYRON HIGHWAY, ABOUT 3 MILES
SOUTHEAST OF BYRON.

Lat/Long: 37°49'56" / 121°36'18" Township: 01S
UTM: Zone-10 W4187911 N622761 Range: 03E
Mapping Precision: NON-SPECIFIC Section: 23 Qtr NE
Symbol Type: POINT Meridian: N
Radius: 1/5 mile Elevation: 10 ft

Comments: _____
Distribution: AMONG TALL GRASSES ALONG A FENCE, NEAR RAILROAD TRACKS AND
RAILROAD SIGNAL #702.
Ecological: ON ALKALINE SOIL.
Threat: AREA GRADED.
General: ABOUT 6 LARGE PLANTS SEEN IN 1982. APPARENTLY SUITABLE HABITAT ON
OTHER SIDE OF FENCE BUT NO PLANTS SEEN. COLLECTION BY HOOVER
(#10710, OBI) IN 1967 ALSO ATTRIBUTED TO THIS SITE.
Owner/Manager: PVT

Source Codes:
LAC87001, SNO82F02

**J-4: USFWS Special-Status Species Report Dated
April 17, 2001**



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W2605
Sacramento, California 95825-1846

IN REPLY REFER TO:
1-1-01-SP-1695

April 17, 2001

Mr. Mathew dos Santos
Foster Wheeler Environmental
1940 E. Deere Avenue, Suite 200
Santa Ana, California 92705

Subject: Species List for Proposed Power Project, Alameda County, California.

Dear Mr. dos Santos:

We are sending the enclosed list in response to your April 17, 2001, request for information about endangered and threatened species (Enclosure A). The list covers the following U.S. Geological Survey 7½ minute quads of Tracy and Midway.

Please read *Important Information About Your Species List* (enclosed). It explains how we made the list and describes your responsibilities under the Endangered Species Act. Please contact Harry Mossman, Biological Technician, at (916) 414-6674, if you have any questions about the attached list or your responsibilities under the Endangered Species Act. For the fastest response to species list requests, address them to the attention of Mr. Mossman at this address. You may fax requests to him at 414-6712 or 6713.

Sincerely,


 Jan C. Knight
Chief, Endangered Species Division

Enclosures

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. If you requested your list by quad name or number, that is what we used. Otherwise, we used the information you sent us to determine which quad or quads to use.

Animals

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.

Plants

Any plants on your list are ones *that have actually been observed* in the quad or quads covered by the list. We have also included either a county species list or a list of species in nearby quads. We recommend that you check your project area for these plants. Plants may exist in an area without ever having been detected there.

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 enclosed *Guidelines for Conducting and Reporting Botanical Inventories for Federally Listed, Proposed and Candidate Species*. The results of your surveys should be published in any environmental documents prepared for your project.

State-Listed Species

If a species has been listed as threatened or endangered by the State of California, but not by us nor by the National Marine Fisheries Service, it will appear on your list as a Species of Concern. *However you should contact the California Department of Fish and Game for official information about these species.* Call (916) 322-2493 or write Marketing Manager, California Department of Fish and Game, Natural Diversity Data Base, 1416 Ninth Street, Sacramento, California 95814.

Your Responsibilities Under the Endangered Species Act

All plants and animals identified as *listed* on Enclosure A 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. Such consultation would result in a *biological opinion* 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 mitigates for the project's direct and indirect impacts to listed species and compensates for project-related loss of habitat. You should include the mitigation 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. Maps and 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).

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.

Your list may contain a section called *Species of Concern*. This term includes former *category 2*

candidate species and other plants and animals of concern to the Service and other Federal, State and private conservation agencies and organizations. Some of these species may become candidate species in the future.

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, candidate and special concern species in your planning, this should not be a problem. We also continually strive to make our information as accurate as possible. Sometimes we learn that a particular species has a different range than we thought. This should not be a problem if you consider the species on the county or surrounding-quad lists that we have enclosed. If you have a long-term project or if your project is delayed, please feel free to contact us about getting a current list. You can also find out the current status of a species by going to the Service's Internet page: www.fws.gov

**GUIDELINES FOR CONDUCTING AND REPORTING BOTANICAL INVENTORIES
FOR FEDERALLY LISTED, PROPOSED AND CANDIDATE PLANTS
(September 23, 1996)**

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 project 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 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. 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 three years from the current date of project proposal submission will likely need additional survey. Investigators need to assess whether an additional survey(s) is (are) needed.
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.
9. Guidance from California Department of Fish and Game (CDFG) regarding plant and plant community surveys can be found in Guidelines for Assessing the Effects of Proposed Developments on Rare and Endangered Plants and Plant Communities, 1984. Please contact the CDFG Regional Office for questions regarding the CDFG guidelines and for assistance in determining any applicable State regulatory requirements.

ENCLOSURE A
Endangered and Threatened Species that May Occur in
or be Affected by Projects in the Selected Quads Listed Below
Reference File No. 01-SP-1695
Proposed Power Project
April 17, 2001

QUAD : 444B TRACY

Listed Species

Mammals

- riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) *
- riparian brush rabbit, *Sylvilagus bachmani riparius* (E) *
- San Joaquin kit fox, *Vulpes macrotis mutica* (E)

Birds

- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

- giant garter snake, *Thamnophis gigas* (T)

Amphibians

- California red-legged frog, *Rana aurora draytonii* (T)

Fish

- Critical habitat, delta smelt, *Hypomesus transpacificus* (T)
- delta smelt, *Hypomesus transpacificus* (T)
- Central Valley steelhead, *Oncorhynchus mykiss* (T)
- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

- vernal pool fairy shrimp, *Branchinecta lynchi* (T)
- valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)
- vernal pool tadpole shrimp, *Lepidurus packardii* (E)

Plants

- large-flowered fiddleneck, *Amsinckia grandiflora* (E)

Proposed Species

Birds

- mountain plover, *Charadrius montanus* (PT)

Candidate Species

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Species of Concern

Mammals

- Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- small-footed myotis bat, *Myotis ciliolabrum* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

- tricolored blackbird, *Agelaius tricolor* (SC)
- Bell's sage sparrow, *Amphispiza belli belli* (SC)
- western burrowing owl, *Athene cunicularia hypugea* (SC)
- Aleutian Canada goose, *Branta canadensis leucopareia* (D)
- ferruginous hawk, *Buteo regalis* (SC)
- little willow flycatcher, *Empidonax traillii brewsteri* (CA)
- American peregrine falcon, *Falco peregrinus anatum* (D)
- greater sandhill crane, *Grus canadensis tabida* (CA)
- white-faced ibis, *Plegadis chihi* (SC)

Reptiles

- silvery legless lizard, *Anniella pulchra pulchra* (SC)
- northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
- southwestern pond turtle, *Clemmys marmorata pallida* (SC)
- San Joaquin coachwhip (=whipsnake), *Masticophis flagellum ruddocki* (SC)
- California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

- foothill yellow-legged frog, *Rana boylei* (SC)
- western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- river lamprey, *Lampetra ayresi* (SC)
- Kern brook lamprey, *Lampetra hubbsi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

Sacramento anthicid beetle, *Anthicus sacramento* (SC)

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

caper-fruited tropidocarpum, *Tropidocarpum capparideum* (SC) **

QUAD : 445A MIDWAY

Listed Species

Mammals

riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) *

riparian brush rabbit, *Sylvilagus bachmani riparius* (E) *

San Joaquin kit fox, *Vulpes macrotis mutica* (E)

Birds

bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

Alameda whipsnake, *Masticophis lateralis euryxanthus* (T)

giant garter snake, *Thamnophis gigas* (T)

Amphibians

California red-legged frog, *Rana aurora draytonii* (T)

Fish

Critical habitat, delta smelt, *Hypomesus transpacificus* (T)

delta smelt, *Hypomesus transpacificus* (T)

Central Valley steelhead, *Oncorhynchus mykiss* (T)

Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

longhorn fairy shrimp, *Branchinecta longiantenna* (E)

vernal pool fairy shrimp, *Branchinecta lynchi* (T)

valley elderberry longhorn beetle, *Desmocerus californicus dimorphus* (T)

vernal pool tadpole shrimp, *Lepidurus packardii* (E)

Plants

Critical habitat, large-flowered fiddleneck, *Amsinckia grandiflora* (E)

large-flowered fiddleneck, *Amsinckia grandiflora* (E)

showy Indian clover, *Trifolium amoenum* (E) *

Proposed Species

Birds

mountain plover, *Charadrius montanus* (PT)

Candidate Species

Amphibians

California tiger salamander, *Ambystoma californiense* (C)

Species of Concern

Mammals

Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)

greater western mastiff-bat, *Eumops perotis californicus* (SC)

small-footed myotis bat, *Myotis ciliolabrum* (SC)

long-eared myotis bat, *Myotis evotis* (SC)

fringed myotis bat, *Myotis thysanodes* (SC)

long-legged myotis bat, *Myotis volans* (SC)

Yuma myotis bat, *Myotis yumanensis* (SC)

San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)

San Joaquin pocket mouse, *Perognathus inornatus* (SC)

Birds

tricolored blackbird, *Agelaius tricolor* (SC)

Bell's sage sparrow, *Amphispiza belli belli* (SC)

western burrowing owl, *Athene cunicularia hypugea* (SC)

ferruginous hawk, *Buteo regalis* (SC)

little willow flycatcher, *Empidonax traillii brewsteri* (CA)

American peregrine falcon, *Falco peregrinus anatum* (D)

Reptiles

silvery legless lizard, *Anniella pulchra pulchra* (SC)

northwestern pond turtle, *Clemmys marmorata marmorata* (SC)

southwestern pond turtle, *Clemmys marmorata pallida* (SC)

San Joaquin coachwhip (=whipsnake), *Masticophis flagellum ruddocki* (SC)

California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

foothill yellow-legged frog, *Rana boylei* (SC)

western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

green sturgeon, *Acipenser medirostris* (SC)

river lamprey, *Lampetra ayresi* (SC)

Pacific lamprey, *Lampetra tridentata* (SC)

longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

curved-foot hygroty diving beetle, *Hygroty curvipes* (SC)

California linderiella fairy shrimp, *Linderiella occidentalis* (SC)

Plants

Livermore tarplant, *Deinandra bacigalupii* (SC)

diamond-petaled poppy, *Eschscholzia rhombipetala* (SC)

caper-fruited tropidocarpum, *Tropidocarpum capparideum* (SC) **

KEY:

(E) <i>Endangered</i>	Listed (in the Federal Register) as being in danger of extinction.
(T) <i>Threatened</i>	Listed as likely to become endangered within the foreseeable future.
(P) <i>Proposed</i>	Officially proposed (in the Federal Register) for listing as endangered or threatened.
(PX) <i>Proposed Critical Habitat</i>	Proposed as an area essential to the conservation of the species.
(C) <i>Candidate</i>	Candidate to become a <i>proposed</i> species.
(SC) <i>Species of Concern</i>	May be endangered or threatened. Not enough biological information has been gathered to support listing at this time.
(MB) <i>Migratory Bird</i>	Migratory bird
(D) <i>Delisted</i>	Delisted. Status to be monitored for 5 years.
(CA) <i>State-Listed</i>	Listed as threatened or endangered by the State of California.
(*) <i>Extirpated</i>	Possibly extirpated from this quad.
(**) <i>Extinct Critical Habitat</i>	Possibly extinct. Area essential to the conservation of a species.

ENCLOSURE A
Endangered and Threatened Species that May Occur in or be Affected by
PROJECTS IN ALAMEDA COUNTY
Reference File No. 01-SP-1695
April 17, 2001

Listed Species

Mammals

- salt marsh harvest mouse, *Reithrodontomys raviventris* (E)
- San Joaquin kit fox, *Vulpes macrotis mutica* (E)
- riparian (San Joaquin Valley) woodrat, *Neotoma fuscipes riparia* (E) *
- riparian brush rabbit, *Sylvilagus bachmani riparius* (E) *

Birds

- California brown pelican, *Pelecanus occidentalis californicus* (E)
- California clapper rail, *Rallus longirostris obsoletus* (E)
- California least tern, *Sterna antillarum (=albifrons) browni* (E)
- bald eagle, *Haliaeetus leucocephalus* (T)

Reptiles

- Alameda whipsnake, *Masticophis lateralis euryxanthus* (T)
- Critical habitat, Alameda whipsnake, *Masticophis lateralis euryxanthus* (T)
- giant garter snake, *Thamnophis gigas* (T)

Amphibians

- California red-legged frog, *Rana aurora draytonii* (T)

Fish

- tidewater goby, *Eucyclogobius newberryi* (E)
- Critical habitat, winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- winter-run chinook salmon, *Oncorhynchus tshawytscha* (E)
- delta smelt, *Hypomesus transpacificus* (T)
- Central California Coastal steelhead, *Oncorhynchus mykiss* (T)
- Central Valley spring-run chinook salmon, *Oncorhynchus tshawytscha* (T)
- Critical Habitat, Central Valley spring-run chinook, *Oncorhynchus tshawytscha* (T)
- Sacramento splittail, *Pogonichthys macrolepidotus* (T)

Invertebrates

- longhorn fairy shrimp, *Branchinecta longiantenna* (E)
- vernal pool tadpole shrimp, *Lepidurus packardii* (E)
- callippe silverspot butterfly, *Speyeria callippe callippe* (E)
- vernal pool fairy shrimp, *Branchinecta lynchi* (T)
- bay checkerspot butterfly, *Euphydryas editha bayensis* (T)

Plants

- large-flowered fiddleneck, *Amsinckia grandiflora* (E)
- Presidio clarkia, *Clarkia franciscana* (E)
- palmate-bracted bird's-beak, *Cordylanthus palmatus* (E)
- pallid manzanita (Alameda manzanita), *Arctostaphylos pallida* (T)
- robust spineflower, *Chorizanthe robusta* (E) *
- Contra Costa goldfields, *Lasthenia conjugens* (E) *
- California sea blite, *Suaeda californica* (E) *
- showy Indian clover, *Trifolium amoenum* (E) *
- Santa Cruz tarplant, *Holocarpha macradenia* (T) *

Proposed Species

Birds

- mountain plover, *Charadrius montanus* (PT)

Candidate Species

Amphibians

- California tiger salamander, *Ambystoma californiense* (C)

Fish

- Central Valley fall/late fall-run chinook salmon, *Oncorhynchus tshawytscha* (C)

Species of Concern

Mammals

- Pacific western big-eared bat, *Corynorhinus (=Plecotus) townsendii townsendii* (SC)
- greater western mastiff-bat, *Eumops perotis californicus* (SC)
- small-footed myotis bat, *Myotis ciliolabrum* (SC)
- long-eared myotis bat, *Myotis evotis* (SC)
- fringed myotis bat, *Myotis thysanodes* (SC)
- long-legged myotis bat, *Myotis volans* (SC)
- Yuma myotis bat, *Myotis yumanensis* (SC)
- San Francisco dusky-footed woodrat, *Neotoma fuscipes annectens* (SC)
- San Joaquin pocket mouse, *Perognathus inornatus* (SC)
- Alameda Island mole, *Scapanus latimanus parvus* (SC)
- salt marsh vagrant shrew, *Sorex vagrans halicoetes* (SC)
- Berkeley kangaroo rat, *Dipodomys heermanni berkeleyensis* (SC) *

Birds

- little willow flycatcher, *Empidonax traillii brewsteri* (CA)
- black rail, *Laterallus jamaicensis coturniculus* (CA)
- bank swallow, *Riparia riparia* (CA)

Aleutian Canada goose, *Branta canadensis leucopareia* (D)
American peregrine falcon, *Falco peregrinus anatum* (D)
Black-Crowned Night Heron, *Nycticorax nycticorax* (MB)
tricolored blackbird, *Agelaius tricolor* (SC)
grasshopper sparrow, *Ammodramus savannarum* (SC)
Bell's sage sparrow, *Amphispiza belli belli* (SC)
short-eared owl, *Asio flammeus* (SC)
western burrowing owl, *Athene cunicularia hypugea* (SC)
American bittern, *Botaurus lentiginosus* (SC)
ferruginous hawk, *Buteo regalis* (SC)
Costa's hummingbird, *Calypte costae* (SC)
Lawrence's goldfinch, *Carduelis lawrencei* (SC)
Vaux's swift, *Chaetura vauxi* (SC)
lark sparrow, *Chondestes grammacus* (SC)
olive-sided flycatcher, *Contopus cooperi* (SC)
hermit warbler, *Dendroica occidentalis* (SC)
white-tailed (=black shouldered) kite, *Elanus leucurus* (SC)
Pacific-slope flycatcher, *Empidonax difficilis* (SC)
common loon, *Gavia immer* (SC)
saltmarsh common yellowthroat, *Geothlypis trichas sinuosa* (SC)
loggerhead shrike, *Lanius ludovicianus* (SC)
Lewis' woodpecker, *Melanerpes lewis* (SC)
Alameda (South Bay) song sparrow, *Melospiza melodia pusillula* (SC)
long-billed curlew, *Numerius americanus* (SC)
white-faced ibis, *Plegadis chihi* (SC)
rufous hummingbird, *Selasphorus rufus* (SC)
Allen's hummingbird, *Selasphorus sasin* (SC)
red-breasted sapsucker, *Sphyrapicus ruber* (SC)
Bewick's wren, *Thryomanes bewickii* (SC)
California thrasher, *Toxostoma redivivum* (SC)

Reptiles

silvery legless lizard, *Anniella pulchra pulchra* (SC)
northwestern pond turtle, *Clemmys marmorata marmorata* (SC)
southwestern pond turtle, *Clemmys marmorata pallida* (SC)
San Joaquin coachwhip (=whipsnake), *Masticophis flagellum ruddocki* (SC)
California horned lizard, *Phrynosoma coronatum frontale* (SC)

Amphibians

- foothill yellow-legged frog, *Rana boylei* (SC)
- western spadefoot toad, *Scaphiopus hammondi* (SC)

Fish

- green sturgeon, *Acipenser medirostris* (SC)
- river lamprey, *Lampetra ayresi* (SC)
- Pacific lamprey, *Lampetra tridentata* (SC)
- longfin smelt, *Spirinchus thaleichthys* (SC)

Invertebrates

- Opler's longhorn moth, *Adela oplerella* (SC)
- Bridges' Coast Range shoulderband snail, *Helminthoglypta nickliniana bridgesi* (SC)
- Ricksecker's water scavenger beetle, *Hydrochara rickseckeri* (SC)
- curved-foot hygrotus diving beetle, *Hygrotus curvipes* (SC)
- California linderiella fairy shrimp, *Linderiella occidentalis* (SC)
- San Francisco lacewing, *Nothochrysa californica* (SC)

Plants

- heartscale, *Atriplex cordulata* (SC)
- brittlescale, *Atriplex depressa* (SC)
- valley spearscale, *Atriplex joaquiniana* (SC)
- Mt. Hamilton thistle, *Cirsium fontinale* var. *campylon* (SC)
- South Bay clarkia, *Clarkia concinna* ssp. *automixa* (SC)
- hispid bird's-beak, *Cordylanthus mollis* ssp. *hispidus* (SC)
- Livermore tarplant, *Deinandra bacigalupii* (SC)
- interior California larkspur, *Delphinium californicum* ssp. *interius* (SC)
- recurved larkspur, *Delphinium recurvatum* (SC)
- diamond-petaled poppy, *Eschscholzia rhombipetala* (SC)
- talus fritillary, *Fritillaria falcata* (SC)
- fragrant fritillary, *Fritillaria liliacea* (SC)
- Diablo helianthella (=rock-rose), *Helianthella castanea* (SC)
- pappose spikeweed, *Hemizonia parryi* ssp. *congdonii* (SC)
- delta tule-pea, *Lathyrus jepsonii* var. *jepsonii* (SC)
- Mason's lilaeopsis, *Lilaeopsis masonii* (SC)
- little mousetail, *Myosurus minimus* ssp. *apus* (SC)
- most beautiful (uncommon) jewelflower, *Streptanthus albidus* ssp. *peramoenus* (SC)
- alkali milk-vetch, *Astragalus tener* var. *tener* (SC) *
- San Francisco Bay spineflower, *Chorizanthe cuspidata* var. *cuspidata* (SC) *
- northcoast bird's-beak, *Cordylanthus maritimus* ssp. *palustris* (SC) *

Kellogg's (wedge-leaved) horkelia, *Horkelia cuneata* ssp. *sericea* (SC) *

adobe sanicle, *Sanicula maritima* (SC) *

caper-fruited tropidocarpum, *Tropidocarpum capparideum* (SC) **

Mt. Diablo phacelia, *Phacelia phacelioides* (SC)

KEY:

- | | |
|---|--|
| (E) <i>Endangered</i> | Listed (in the Federal Register) as being in danger of extinction. |
| (T) <i>Threatened</i> | Listed as likely to become endangered within the foreseeable future. |
| (P) <i>Proposed</i> | Officially proposed (in the Federal Register) for listing as endangered or threatened. |
| (PX) <i>Proposed</i>
<i>Critical Habitat</i> | Proposed as an area essential to the conservation of the species. |
| (C) <i>Candidate</i> | Candidate to become a <i>proposed</i> species. |
| (SC) <i>Species of</i>
<i>Concern</i> | Other species of concern to the Service. |
| (D) <i>Delisted</i> | Delisted. Status to be monitored for 5 years. |
| (CA) <i>State-Listed</i> | Listed as threatened or endangered by the State of California. |
| * <i>Extirpated</i> | Possibly extirpated from the area. |
| ** <i>Extinct</i> | Possibly extinct |
| <i>Critical Habitat</i> | Area essential to the conservation of a species. |

**J-5: California Natural Community
Field Survey Forms**

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 6 - 7 - 01
month (mm) date (dd) year (yyyy)

Scientific Name: _____

Common Name: Burrowing Owl

Species Found? _____
yes no If not, why?

Total No. Individuals 2 Subsequent Visit? yes no

Is this an existing NDDDB occurrence? _____ no unk.
Yes, Occ. #

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Schuffel

Address: 1940 E. Deere Ave Ste 200
Santa Ana, CA 92705

Email Address: jschuffel@fwenc.com

Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: 2
adults # juveniles # unknown

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____

Quad Name: Midway Elevation: _____

T 2S R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____

UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WG584, other)

Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters

UTM Coordinates 626278 4177102

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: Stokes
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

- | | | |
|--------------------|--------------------------------|---|
| Plant / animal | Slide <input type="checkbox"/> | Print <input checked="" type="checkbox"/> |
| Habitat | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Diagnostic feature | <input type="checkbox"/> | <input type="checkbox"/> |
- May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 6 - 7 - 01
month (mm) date (dd) year (yyyy)

Scientific Name: _____

Common Name: Burrowing Owl

Species Found? yes no If not, why? _____
 Total No. Individuals 2 Subsequent Visit? yes no
Is this an existing NDDDB occurrence? yes no unk. Yes, Occ. # _____
 Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Schaffel
Address: 1940 E. Deere Ave SR 200
Santa Ana, CA 92705
Email Address: jschaffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: 2
adults # juveniles # unknown
 breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 2S R 4E SW 1/4 of NW 1/4 of Section 29 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WGS84, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 625764 4176262

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)
Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: _____

Comments: ~~at the edge of the field~~
~75 ft east of Midway Rd.

Determination: (check one or more, and fill in blanks)

Keyed (cite reference): _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: Stokes
 By another person (name): _____
 Other: _____

Photographs: (check one or more)

Plant / animal	<input type="checkbox"/> Slide	<input checked="" type="checkbox"/> Print
Habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 6 - 7 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found?
yes no If not, why?

Total No. Individuals 1 Subsequent Visit? yes no

Is this an existing NDDDB occurrence? yes no unk.
Yes, Occ. #

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Schaffel
Address: 1940 E. Dure Ave Ste 200
Santa Ana, CA 92705
Email Address: jschaffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: 1
adults # juveniles # unknown

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WG584 (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 625836 4176386

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

Keyed (cite reference) _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: Stokes
 By another person (name): _____
 Other: _____

Photographs: (check one or more)

Plant / animal Slide Print
 Habitat
 Diagnostic feature

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 14 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found? yes no burrow only
If not, why?

Total No. Individuals _____ Subsequent Visit? yes no

Is this an existing NDDDB occurrence? yes no unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Jennifer M. Schuffel
Address: 1940 E. Dene Ave Ste 200
Santa Ana CA 92705

Email Address: jschuffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

Age Structure: _____
adults _____ # juveniles _____ # unknown _____

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0625850 4176076

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)
Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: _____

Comments: ~~_____~~

Determination: (check one or more, and fill in blanks)

Keyed (cite reference): _____

Compared with specimen housed at: _____

Compared with photo / drawing in: _____

By another person (name): _____

Other: _____

Photographs: (check one or more)

Plant / animal Slide Print

Habitat Slide Print

Diagnostic feature Slide Print

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 14 - 01
month (mm) date (dd) year (yyyy)

Scientific Name: _____

Common Name: Burrowing Owl

Species Found? yes no burrow only
If not, why?

Total No. Individuals _____ Subsequent Visit? yes no

Is this an existing NDDDB occurrence? yes no unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Jennifer M. Scheffel
Address: 1940 E. Deane Ave Ste 200
Santa Ana, CA 92705
Email Address: jscheffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

Age Structure: _____
adults _____ # juveniles _____ # unknown _____

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: _____ (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0626042 4176217

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing
 Visible disturbances / possible threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

Keyed (cite reference): _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: _____
 By another person (name): _____
 Other: _____

Photographs: (check one or more)

Slide	Print
Plant / animal	<input type="checkbox"/> <input type="checkbox"/>
Habitat	<input type="checkbox"/> <input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/> <input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 14 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found? yes no Burrowing owl
If not, why?

Total No. Individuals _____ Subsequent Visit? yes no

Is this an existing NDDDB occurrence? _____ no unk.
Yes, Occ. #

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Schuffel
Address: 1940 E. Deane Ave Ste 200
Santa Ana, CA 92705

Email Address: jschuffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: _____
adults # juveniles # unknown

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 2S R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0626190 4176186

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-Native Annual Grassland

Other rare species?

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing
 Visible disturbances / possible threats:

Comments:

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

	Slide	Print
Plant / animal	<input type="checkbox"/>	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 14 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found? Journal only
yes no If not, why?

Total No. Individuals _____ Subsequent Visit? yes no
 Is this an existing NDDB occurrence? _____ no unk.
Yes, Occ. #

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Schuffel
Address: 1940 E. Deane Ave Ste 200
Santa Ana CA 92705
Email Address: jschuffel@fwenc.com
Phone: (949) 796-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: _____
adults # juveniles # unknown

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 16 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: _____ (NAD83, NAD27, WG584, other)
 Source: CPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0625595 4176275

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-native annual grasslands

Other rare species?

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats:

Comments:

Determination: (check one or more, and fill in blanks)

- Keyed (cite reference): _____
- Compared with specimen housed at: _____
- Compared with photo / drawing in: _____
- By another person (name): _____
- Other: _____

Photographs: (check one or more)

Slide	Print
Plant / animal	<input type="checkbox"/> <input type="checkbox"/>
Habitat	<input type="checkbox"/> <input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/> <input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 14 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found? yes no Incurred only
If not, why?

Total No. Individuals _____ Subsequent Visit? yes no

Is this an existing NDDDB occurrence? _____ no unk.
Yes, Occ. # _____

Collection? If yes: _____
Number _____ Museum / Herbarium _____

Reporter: Jennifer M. Scheffel
Address: 1940 E. Dore Ave Ste 200
Santa Ana, CA 92705

Email Address: jscheffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative _____ % flowering _____ % fruiting _____

Animal Information

Age Structure: _____
adults _____ # juveniles _____ # unknown _____

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/4 of D 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WG584 (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0625863 4176510

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)

Non-native annual grassland

Other rare species?

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats:

Comments:

Determination: (check one or more, and fill in blanks)

Keyed (cite reference) _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: _____
 By another person (name): _____
 Other: _____

Photographs: (check one or more)

	Slide	Print
Plant/ animal	<input type="checkbox"/>	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>	<input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 5 - 15 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: Burrowing Owl

Species Found? yes no I burrow only
If not, why?

Total No. Individuals _____ Subsequent Visit? yes no

Is this an existing NDDDB occurrence? yes no unk.
Yes, Occ. # _____

Collection? If yes: _____
Number Museum / Herbarium

Reporter: Jennifer M. Scheffel
Address: 1940 E. Deere Ave Ste 200
San Jose, CA 95128
Email Address: jscheffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
% vegetative % flowering % fruiting

Animal Information

Age Structure: _____
adults # juveniles # unknown

breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: _____
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/4 of _____ 1/4 of Section 30 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WG584, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0626209 4176722

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)
Non-native annual grassland

Other rare species? _____

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: _____

Comments: _____

Determination: (check one or more, and fill in blanks)

Keyed (cite reference): _____

Compared with specimen housed at: _____

Compared with photo / drawing in: _____

By another person (name): _____

Other: _____

Photographs: (check one or more)

Plant / animal	<input type="checkbox"/>	Slide	<input type="checkbox"/>
Habitat	<input type="checkbox"/>	Print	<input type="checkbox"/>
Diagnostic feature	<input type="checkbox"/>		<input checked="" type="checkbox"/>

May we obtain duplicates at our expense? yes no

California Native Species Field Survey Form

Mail to:
 Natural Diversity Database
 California Department of Fish and Game
 1807 13th Street, Suite 202
 Sacramento, CA 95814

For Office Use Only

Source Code _____ Quad Code _____
 Elm Code _____ Occ. No. _____
 EO Index No. _____ Map Index No. _____

Date of Field Work: 8 - 29 - 01
month (mm) date (dd) year (yyyy)

Scientific Name:

Common Name: San Joaquin Kit Fox

Species Found? yes burrow only If not, why?
 Total No. Individuals _____ Subsequent Visit? yes no
 Is this an existing NDDDB occurrence? no unk.
 Yes, Occ. # _____
 Collection? If yes: _____
 Number _____ Museum / Herbarium _____

Reporter: Jennifer M. Schuffel
Address: 1940 E. Deere Ave Ste 200
Santa Ana, CA 92705
Email Address: jschuffel@fwenc.com
Phone: (949) 756-7527

Plant Information

Phenology: _____
 % vegetative _____ % flowering _____ % fruiting _____

Animal Information

Age Structure: _____
 # adults _____ # juveniles _____ # unknown _____
 breeding wintering burrow site rookery nesting other

Location (please also attach or draw map on back)

County: Alameda Landowner / Mgr.: PG & E
 Quad Name: Midway Elevation: _____
 T 25 R 4E 1/16 of _____ 1/4 of Section 31 T _____ R _____ 1/4 of _____ 1/4 of Section _____
 UTM: Zone: 10 (10, 11) Datum: WGS 84 (NAD83, NAD27, WGS 84, other)
 Source: GPS (GPS, map & type, etc.) Point Accuracy: 3 Meters
 UTM Coordinates 0626364 4174755

Habitat Description (plant communities, dominants, associates, substrates/soils, aspects/slope)
Non native annual grassland

Other rare species?

Site Information Overall site quality: Excellent Good Fair Poor

Current / surrounding land use: grazing

Visible disturbances / possible threats: Tesla substation expansion

Comments: burrow surrounded by fresh prey remains (i.e. crushed skull, leg bones, fur) & fresh prints. Also, was prev. flagged w/red pin flag.

Determination: (check one or more, and fill in blanks)

Keyed (cite reference) _____
 Compared with specimen housed at: _____
 Compared with photo / drawing in: _____
 By another person (name): _____
 Other: based on knowledge learned from
Geoff Mark

Photographs: (check one or more) Slide Print

Plant / animal
 Habitat
 Diagnostic feature

May we obtain duplicates at our expense? yes no