BIOLOGICAL RESOURCES ASSESSMENT REPORT

FOR THE

PHASE V DEVELOPMENT OF THE ARROYO GRANDE OIL FIELD

SAN LUIS OBISPO COUNTY, CALIFORNIA

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LIST OF ACRONYMS AND ABBREVIATED TERMS

AGOF	Arroyo Grande Oil Field
BBS	Breeding Bird Survey
BCC	Birds of Conservation Concern
Bopd	barrels of oil per day
BRAR	Biological Resources Assessment Report
Cal-IPC	California Invasive Plant Council
CalTrans	California Department of Transportation
CalWater	California Interagency Watershed Mapping Committee
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
FP	Fully Protected
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	The County of San Luis Obispo
CSC	California Species of Special Concern
CUP	Conditional Use Permit
CWA	Clean Water Act
cy	Cubic Yards
DBH	Diameter at Breast Height
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DOGGR	Department of Oil, Gas and Geothermal Resources
DPS	Distinct Population Segment
E	East
EIR	Environmental Impact Report
ESA	The United States Endangered Species Act
FC	Candidate for Federal Listing
FE	Federally-listed Endangered
FM O&G	Freeport-McMoRan Oil & Gas
FT	Federally-listed Threatened
GPS	Global Positioning System
kV	Kilovolt
kW	Kilowatt
m	Meters
MBTA	Migratory Bird Treaty Act
MMBTU/hr	Million British Thermal Units Per Hour
MMscfd	Million Standard Cubic Feet Per Day

NHD	National Hydrography Dataset
NMFS	National Marine Fisheries Service
NPDES	National Pollutant Discharge Elimination System
NRCS	National Resource Conservation Service
NWI	National Wetlands Inventory
N	North
OHWM	Ordinary High Water Mark
PCB	Polychlorinated biphenyl
PCE	Primary Constituent Elements
PG&E	Pacific Gas & Electric
Project	Phase V Project
PCR Pipe Crossing	Price Canyon Road Pipe Crossing
RWQCB	Regional Water Quality Control Board
ROS	Raptor Observation Stations
S	South
SCCC	South-Central California Coast
SE	State-listed Endangered
ST	State-listed Threatened
SA	Special Animal
SP	Special Plant
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
UIC	Underground Injection Control
UPRR	Union Pacific Railroad
URS	URS Corporation
USACE	United States Army Corps of Engineers
USFWS	Unites States Fish and Wildlife Service
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WL	Watch List
W	West

EXECUTIVE SUMMARY

ES.1 INTRODUCTION AND BACKGROUND

Freeport-McMoRan Oil & Gas (FM O&G) has retained URS Corporation (URS) to prepare this Biological Resources Assessment Report (BRAR) for the Phase V Development Project (Project) at the Arroyo Grande Oil Field (AGOF), in unincorporated San Luis Obispo County (County), California. This BRAR has been prepared in accordance with the County Department of Planning and Building's *Guidelines for Biological Resources Assessments* (San Luis Obispo County 2009).

This BRAR is organized as follows:

- **Section 1.0, Introduction and Background –** Explains the proposed Project and the purpose of the BRAR, and provides an introduction to the report's content;
- **Section 2.0, Methodology –** Presents the biological investigations that have been conducted at the Study Area to date, and describes the methods employed;
- **Section 3.0, Results –** Presents the results of the biological investigations that have been conducted at the Study Area;
- **Section 4.0, Impact Assessment and Mitigation –** Describes the effects of the Project on biological resources, and recommends feasible mitigation measures that would avoid or substantially lessen the biological impacts of the proposed Project; and
- **Section 5.0, References Cited –** Provides bibliographical citations for all data sources referenced in this BRAR.

ES.1.1 Project Description

FM O&G proposes to expand its existing operations at the 1,480-acre AGOF through the Phase V Development Plan. The Project is anticipated to increase oil production levels from 1,500 barrels of oil per day (bopd) to approximately 10,000 bopd. The proposed Phase V construction and operational expansion activities in AGOF and the biological resources affected by these activities comprise the focus of this BRAR.

The proposed Project (discussed in greater detail in Section 1.3) includes the following principal activities over a period of approximately ten years:

- Addition of 11 new well pads (with access roads) and modification of 34 existing well pads;
- Drilling of approximately 350 wells (approximately 35 per year);
- An increase in production of marketable quality crude oil;

- Abandonment of wells no longer capable of production or operation;
- Installation of five 85-million-British-thermal-units-per-hour (MMBtu/hr) steam generators;
- Installation of additional production and steam lines to support Phase V production, including two areas that would involve jack and boring underneath the Union Pacific Railroad (UPRR) and Price Canyon Road (PCR);
- Expansion of the existing electrical power system/lines; and
- Replacement of one existing pipe bridge over Pismo Creek (near existing well pad Signal 113A; herein referred to as the Northern Pipe Crossing).

ES.2 ENVIRONMENTAL SETTING

According to historical records that pre-date Department of Oil, Gas and Geothermal Resources (DOGGR) records, the AGOF has been an actively producing oil field since 1906. DOGGR started officially documenting oil and gas wells in the Project region in 1919; since that year, over 560 wells have been drilled at AGOF. Currently, FM O&G operates between 85 and 100 active producing wells and between 37 and 40 active injectors in the AGOF. Production of the field employs thermally enhanced oil recovery via steam injection. The current oil and gas production facilities, well pads, and lease access roads occupy over 80 acres of disturbed/graded land. Most of the 1,480-acre AGOF comprises undeveloped land supporting native vegetation. Adjacent land uses include cattle grazing to the north and vineyards to the south, as well as significant undeveloped land.

ES.3 SUMMARY OF IMPACTS AND RECOMMENDED MITIGATION

The proposed Project would entail a patch work of grading and construction over a relatively large area. The area is an active oil field that already supports numerous pads, pipelines, and facilities; the proposed action would increase the number and expand the area covered but the proposed action would not change the nature or character of the AGOF. While California Environmental Quality Act (CEQA) significance determinations have not been explicitly stated in this BRAR, the Project's impacts, combined with a robust suite of recommended mitigation, should allow adequate avoidance, minimization, rectification, reduction, and/or compensation for the Project's biological impacts.

Common wildlife species that currently utilize the Project site could be impacted by construction and operation of the proposed Project. Generally speaking, impacts could potentially include injury or mortality during construction, destruction of suitable habitat, and construction-related edge effects. Implementation of the proposed Project would result in the removal of existing natural habitat (55.93 acres) within the Study Area during grading. Mitigation for these impacts would be achieved through a combination of minimization measures and restoration activities.

In total, eight special-status plant species were detected on the Project site, including one federally-listed endangered plant, Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*), which would be impacted by the project with approximately 5,661 individuals (encompassing approximately 1.0 acre) removed to accommodate site preparation. Seven other special-status plants would be permanently impacted, including five individuals of black-flowered figwort (*Scrophularia atrata*), three individuals of California prickly phlox (*Linanthus californicus* [*Leptodactylon californicum*]), 913 individuals of paniculate tarplant (*Deinandra paniculata*), one individual of Saint's daisy (*Erigeron sanctarum*), one individual of San Luis Obispo owl's clover (*Castilleja densiflora* ssp. *obispoensis*), and 891 individuals of Santa Margarita manzanita (*Arctostaphylos pilosula*).

Wildlife surveys in the Study Area detected a total of ten special-status species that could potentially be affected by the Project, including two reptiles (Blainville's horned lizard [*Phrynosoma blainvillii*] and western pond turtle [*Emys marmorata*]), one amphibian (California red-legged frog [*Rana draytonii*]), and seven bird species (Cooper's hawk [*Accipiter cooperii*], golden eagle [*Aquila chrysaetos*], lark sparrow [*Chondestes grammacus*], northern harrier [*Circus cyaneus*], Nuttall's woodpecker [*Picoides nuttallii*], oak titmouse [*Baeolophus inornatus*], and peregrine falcon [*Falco peregrinus*]). Direct impacts to these species would result from the removal of native vegetation and possible contact with construction equipment. Mitigation for these impacts would be achieved through a combination of impact minimization measures and the preservation of compensatory mitigation land at an on-site or off-site location.

Designated critical habitat for the South-Central California Coast steelhead occurs within the Study Area. Impacts to this designated critical habitat could occur during construction over or near this feature. Mitigation for these impacts would be achieved through impact minimization measures and construction best management practices.

In total, the proposed Project would result in 99.52 acres of permanent impacts to native or naturalized vegetation (excludes anthropogenic/un-vegetated communities). Four sensitive vegetation communities would be permanently impacted, including 0.41 acre of arroyo willow (*Salix lasiolepis*) thickets, 24.78 acres of coast live oak (*Quercus agrifolia*) woodland, 0.01 acre of red willow (*Salix laevigata*) thickets, and 5.90 acres of Santa Margarita manzanita stands. Impacts to vegetation communities and botanical resources would be mitigated through the implementation of a Habitat Enhancement Plan (BIO-3) or compensatory mitigation for lost habitat (BIO-4), which would require impact avoidance where feasible and permanent habitat preservation/enhancement to compensate for unavoidable losses. Impacts to oaks, Santa Margarita manzanita, and Pismo clarkia would include a combination of on-site and off-site mitigation including replanting at a 4:1 ratio for oaks and Santa Margarita manzanita removed, replanting at a 2:1 ratio for oak trees trimmed, 1:1 acreage replacement for Pismo clarkia, and long-term monitoring.

In total, the proposed Project would impact waters of the U.S. by permanently removing 0.22 acre, including 0.16 non-wetland waters of the U.S. and 0.06 wetland waters of the U.S. Impacts to non-wetland waters of the U.S. would occur along Drainage A at Pads 21 and 36, and Drainage B at Pads 11, 23, and 17, the Edna Steam Generator, and the Pipe Casing Replacement. Impacts to wetland waters of the U.S. would occur along Drainage A at Pad 21. Additionally, the proposed project would impact CDFW-jurisdictional streambeds within the Study Area by permanently removing 1.67 acres. Impacts to CDFW-jurisdictional streambeds would occur along Drainage A at Pads 21 and 36, Drainage B at the Pipe Rack Corridor, and Pads 11, 23, and 17, Cañada Verde at Pad 41, and Tiber Canyon at Pad 3. Project-related impacts to jurisdictional waters and streams would be mitigated by recommended biological monitoring during work activities in sensitive drainage and riparian habitats (BIO-8), and the submittal of all applicable permits (BIO-10).

Impacts to wildlife movement and habitat connectivity as a result of the Project are limited. Since AGOF does not lie within an essential habitat linkage and the newly disturbed areas could be feasibly circumvented, effects on movement of mobile animals (i.e., birds, deer, and coyote) would be minimal. Additionally, the Project's limited footprint and disturbed surroundings also render it unlikely to affect wildlife movement. As impacts to wildlife movement and habitat connectivity are not anticipated, mitigation measures are not necessary, although existing site rules within the AGOF should be adequate to mitigate the effects of the Phase V project on wildlife movement and habitat connectivity. The on-site roadways are private, and the low volume of on-site traffic is restricted to service vehicles and equipment. Traffic flow is controlled to allow movement in specific directions only, and vehicle speeds are limited to 5 miles per hour throughout most areas. The majority of the AGOF's roads are narrow, unpaved, and often steep and sinuous, which inherently increases compliance with these existing rules. Provided that the AGOF continues to require the same standards of care as are currently in place, additional mitigation related to wildlife movement and habitat connectivity should not be required.

The proposed Project entails the addition and the modification of new and existing well pads. The necessary expansions would be accomplished by grading, which would remove woodland, shrubland, and grassland habitats that are suitable for use by a wide variety of nesting birds, and are inhabited by coast live oak trees. During development of the proposed project, it is foreseeable that construction activities and vegetation clearing could remove portions of oak woodland habitat or individual coast live oak trees. Due to Project disturbance limits, up to 1,451 coast live oak trees could be removed. Additionally, it is foreseeable that trees rooted immediately adjacent to proposed graded areas would sustain impacts from root compaction or necessary pruning/trimming. A total of 672 trees occur within an approximate 30 foot buffer surrounding disturbance areas and could potentially be impacted due to root compaction or necessary pruning/trimming. Affects to oak trees may be mitigated by the implementation of biological monitoring during the construction phase (BIO-2), as well as protection measures such as fencing or flagging (BIO-7), and payment of

in-lieu fee for impacts to oak trees pursuant to the San Luis Obispo County's oak tree mitigation fee program or the preservation of oak woodland acreage on a 4:1 basis at an off-site location in the vicinity of the AGOF.

In addition, bird nests that may be present in vegetation, structures, or on the ground within the development footprint may be impacted by vegetation clearing. Although most of the birds detected on-site are not special-status species, the nests of native non-game birds are protected by federal and state laws and regulations (the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code, for example). All of the natural vegetation communities present within the Study Area have the potential to support nesting native birds, and the existing industrial structures in areas mapped as Developed may support certain nesting species as well. Impacts to nesting birds can be mitigated through the implementation of pre-construction surveys, and the use of buffer areas around construction zones (BIO-5).

The Project's impacts and recommended mitigation measures are summarized in Table ES-1.

TABLE ES-1
SUMMARY OF IMPACTS AND RECOMMENDED MITIGATION

CEQA Criterion	Summary of Impacts	Summary of Recommended Mitigation Measures
Impacts would be significant if the proposed Project would result in the loss of unique or special-status species or their habitats.	1. Project would remove approximately 891 Santa Margarita manzanita individuals. 2. Project could result in unintended intrusion into adjacent Pismo clarkia populations. 3. Project would disturb habitat suitable for Blainville's horned lizard, and could injure or kill this species if present. 4. Project would remove 55.93 acres of suitable habitat for sensitive passerine birds including the oak titmouse and Nuttall's woodpecker. 5. Project would remove approximately 55.93 acres of suitable foraging, roosting, &/or nesting habitat for sensitive raptors including peregrine falcon, golden eagle, and Cooper's hawk.	BIO-1: Pre-construction Surveys BIO-2: Construction Monitoring BIO-3: Construction Best Management Practices BIO-4: Worker Environmental Awareness Program BIO-5: Nesting Bird Surveys and Avoidance BIO-6: Protection of Blainville's Horned Lizard BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-8: Protection of California Red Legged Frog and Western Pond Turtle
Impacts would be significant if the project would reduce the extent, diversity, or quality of native or other important vegetation.	6. Project would remove 24.78 acre of coast live oak woodland and 5.90 acres of Santa Margarita manzanita stands.	BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-9: Restoration of Cut and Fill Slopes
Impacts would be significant if the proposed Project would impact wetland or riparian habitat.		BIO-8: Protection of California Red Legged Frog and Western Pond Turtle BIO-10: Nationwide Permit, Streambed Alteration Agreement, and CWA Section 401 Water Quality Certification
Impacts would be significant if the proposed project would interfere with the movement of resident or migratory fish or wildlife species, or factors, which could hinder the normal activities of wildlife.	7. The Project's limited footprint and disturbed surroundings render it unlikely to affect wildlife movement.	None recommended.

TABLE ES-1 (CONTINUED)
SUMMARY OF IMPACTS AND RECOMMENDED MITIGATION

CEQA Criterion	Summary of Impacts	Summary of Recommended Mitigation Measures
Impacts would be significant if the proposed Project would conflict with any regional plans or policies to protect sensitive species, or regulations of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	8. Project would remove 1,463 coast live oak trees. 9. Project could result in take of active bird nests during construction.	BIO-1: Pre-construction Surveys BIO-2: Construction Monitoring BIO-3: Construction Best Management Practices BIO-4: Worker Environmental Awareness Program BIO-5: Nesting Bird Surveys and Avoidance BIO-6: Protection of Blainville's Horned Lizard BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-8: Protection of California Red Legged Frog and Western Pond Turtle BIO-11: Restoration of Cut and Fill Slopes

SECTION 1.0
INTRODUCTION AND BACKGROUND

FM O&G proposes to expand its existing operations at the 1,480-acre AGOF through a Phase V Development Plan (Project). The proposed Project (discussed in greater detail in Section 1.3) includes the following principal activities over a period of approximately ten years:

- Addition of 11 new well pads (with access roads) and modification of 34 existing well pads;
- Drilling of approximately 350 wells (approximately 35 per year);
- An increase in production of marketable quality crude oil;
- Abandonment of wells no longer capable of production or operation;
- Installation of five 85-million MMBtu/hr steam generators;
- Installation of additional production and steam lines to support Phase V production, including two areas that would involve jack and boring underneath the Union Pacific Railroad (UPRR) and Price Canyon Road (PCR);
- Expansion of the existing electrical power system/lines; and
- Replacement of one existing pipe bridge over Pismo Creek (near existing well pad Signal 113A; herein referred to as the Northern Pipe Crossing).

The purpose of this BRAR is to provide a description of existing biological resources within the Project site and surrounding area, to identify any significant impacts to these resources that would result from the proposed Project, and to recommend feasible mitigation measures that would avoid or substantially lessen these impacts. It is anticipated that the baseline information, impacts analyses, and recommended mitigation measures presented in this BRAR will be considered by the County when preparing CEQA documentation for the proposed Project.

1.1 STUDY AREA

The Study Area evaluated in this BRAR includes the limits of proposed ground disturbance where the new and expanded Project facilities are proposed, as well as an associated buffer area of approximately 30 feet (Figure 1-1). In addition, the Study Area includes a 50-foot buffer along Price Canyon Road within the Arroyo Grande Oil Field (AGOF) boundary. The Study Area is located entirely within the AGOF, a State-designated Oil Field in Price Canyon, approximately three miles northeast of Pismo Beach in unincorporated San Luis Obispo County, California. The Study Area can be accessed from Price Canyon Road via Interstate 101/State Highway 1, and is located on the Corral De Piedra Land Grant within the Arroyo Grande NE, CA U.S. Geological Survey (USGS) 7.5-minute quadrangle (with a

smaller portion located in the Pismo Beach, CA USGS 7.5-minute quadrangle). The AGOF comprises lands on both sides of Price Canyon Road near the intersection of Ormonde Road, between Highways 101 and 227.

1.2 TAXONOMIC NOMENCLATURE AND SPECIES STATUS

Sources of taxonomic nomenclature for plants, animals, and vegetation communities used in this BRAR are as follows:

- Plant nomenclature follows *The Jepson Manual* (Baldwin *et al*. 2012), and the Jepson Online Interchange for name changes;
- Reptile nomenclature follows *A Field Guide to Western Reptiles and Amphibians* (Stebbins 2003), and the California Herps website for name changes;
- Bird nomenclature follows the American Ornithologists' Union (2008);
- Mammal nomenclature follows *Mammal Species of the World* (Wilson and Reeder 2005); and
- Natural vegetation communities were identified based on *A Manual of California Vegetation, Second Edition* (Sawyer *et al*. 2009).

The term "special-status species," as used in this BRAR, includes:

- Plant and wildlife species that are listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), under the U.S. Endangered Species Act (ESA) (FT and FE, respectively);
- Plant and wildlife species that are listed or candidates for listing as threatened (ST) or endangered under the California Endangered Species Act (CESA) (ST and SE, respectively);
- Those birds, mammals, reptiles and amphibians, and fishes listed as "fully protected" (FP) by the California Fish and Game Code (Sections 3511, 4700, 5050, and 5515, respectively);
- Animals identified by the California Department of Fish and Wildlife (CDFW) as California Species of Special Concern (CSC), Special Plants (SP), or Special Animals (SA);
- Birds identified as Birds of Conservation Concern (BCC) by the USFWS (2008a);
- Plants protected as rare under the California Native Plant Protection Act (see Fish and Game Code Section 1900 et seq.) (SR); and

- Plants occurring on Ranks 1, 2, and 4 of the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CNPS 2013).

Common avian species that receive protection under the Migratory Bird Treaty Act during the nesting season but otherwise maintain no applicable sensitivity designation are not treated as special-status species in this BRAR.

1.3 PROJECT DESCRIPTION

1.3.1 Project Location and Boundaries

The AGOF is a State-designated Oil Field located in Price Canyon approximately three miles northeast of Pismo Beach in San Luis Obispo County, California (Figure 1-1). The Project site is located on both the east and west sides of Price Canyon Road near the intersection of Ormonde Road, between Highways 101 and 227. The proposed Project involves expanded oil production activities on the existing 1,480-acre AGOF that has been an actively producing oil field since 1906. Since 1919, over 560 wells were drilled in the AGOF, and current facilities, well pads and access roads occupy over 80 acres of disturbed/graded land.

The AGOF is located in Price Canyon, which is situated within the south central coastal portion of the County. The Study Area is approximately bisected by Pismo Creek, which occupies the floor of Price Canyon. The area is characterized by rolling terrain with a pronounced ridge to the west and Tiber Hill to the east. Elevations range from approximately 200 feet (in the valleys) to 600 feet (at the ridges) above sea level.

1.3.2 Existing Land Use and General Plan Land Use Designations

The Project site is located within the San Luis Bay-Inland Planning Area, which includes the non-coastal zone portions of the "Five Cities" (i.e., the urban areas of Pismo Beach, Grover Beach, Arroyo Grande, Oceano and Halcyon), the urban area of Avila Beach (outside of the coastal zone), as well as remaining agricultural and rural lands. This planning area encompasses 61,018 acres, or 95 square miles (San Luis Obispo County 2003).

The existing use of the Study Area is a crude oil production field, and existing land use immediately surrounding the area is undeveloped lands and agriculture. The *San Luis Obispo County General Plan*, *San Luis Bay Area Plan – Inland* (San Luis Obispo County 2003) identifies that the AGOF is assigned with Agriculture and Rural land use designations. The area plan also describes the existing oil field development uses within Price Canyon, and states that "the terrain, vegetation and existing development do not make this area appropriate for intensive residential uses for the short-term," and that "during the short-term, interim agriculture uses would be appropriate, but should not preclude the proposed extraction of resources."

1.3.3 Project Characteristics

The proposed Project includes the Phase V expansion activities over a period of approximately ten years at AGOF that would be anticipated to increase oil production levels from 1,500 barrels of oil per day (bopd) to approximately 10,000 bopd.

To accomplish this, the Phase V expansion activities involve: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; drilling of approximately 450 wells (approximately 45 per year); abandonment of wells no longer capable of production or operation; installation of three, 85-million-MMBtu/hr steam generators; installation of additional ancillary production and steam lines, including two areas that would involve jack and boring underneath the UPRR and Price Canyon Road; expansion of the existing electrical power system/lines; and replacement of the Northern Pipe Crossing over Pismo Creek. These activities are described in the following sections in further detail.

1.3.3.1 Grading Activities and Project Disturbance Areas

FM O&G plans to maximize use of existing graded pads and previously disturbed areas as much as possible. Eight new well pads would require grading and construction of new access roads. Additionally, five existing pads that currently do not house oil wells would be used for some of the proposed wells; these pads may need surface grooming. The proposed Project would also include expansion of 33 existing pads to accommodate more wells. Phase V would involve approximately 257,710 cubic yards (cy) of cut and 198,900 cy of fill, for a total of 456,610 cy of grading. As a worst-case scenario, it is estimated that this would occur over the first six years of the project. The 58,810 cy of excess soil would be stored on-site, at the proposed “stockpile waste pad” shown on the grading plans. No soil would be transported to or from the site during well pad construction. The estimated total disturbance for the Project is 67.2 acres of which approximately 53.2 acres would be newly graded; this acreage also accounts for drainage improvements associated with the new and modified pads.

In addition, CalFire would require clearing of vegetation within 13 feet on either side of all new roads constructed under Phase V. Because new wells are typically located in the center of well pads, no additional fuel modification would be needed around new or modified well pads, according to CalFire. The area of fuel modification would be approximately 5.2 acres, which is included in the 67.2 acres of total disturbance. It is acceptable by CalFire to remove vegetation in a mosaic pattern, which would result in thinning the vegetative cover rather than clearing 100 percent; therefore, this would be implemented to the maximum extent possible.

Sites to be graded would first be cleared of vegetation between January 1 and February 15, to avoid the bird nesting period to the maximum extent feasible. Then pads are planned to be graded between April 15 and October 15, to avoid the rainy season to the maximum extent feasible. Cut and fill slopes associated with well pad construction activities would be re-

vegetated with native species. A National Pollutant Discharge Elimination System (NPDES) Permit associated with construction activities would be required for well pad construction. Erosion control measures would be implemented in compliance with the Storm Water Pollution Prevention Plan (SWPPP) prepared in compliance with this requirement.

1.3.3.2 Mechanical/Electrical/Flowlines

As new wells are installed, new oil, produced water, casing gas, and steam gathering lines would be installed to the new wells, and electricity supplied to the pumps. The flowlines would be placed mostly above ground on pipe supports (pipe-racks) constructed along the existing or proposed access roads. The flowlines from the wells would be routed into new and existing headers feeding the existing tank battery.

Replacement of the Northern Pipe Crossing over Pismo Creek is also proposed. The location of the replacement is shown in the Preliminary Grading Plans (Figure 1-2). Replacement of the pipe bridge footings, pipe conductor, and associated pipes is proposed. Construction of the new pipe bridge would be implemented without disturbance to the bed or banks of Pismo Creek, however, riparian vegetation on both sides of Pismo Creek would be disturbed by removal of the existing footings and construction of new footings.

New power poles from Pacific Gas & Electric's (PG&E) 12-kilovolt (kV) system supplying electricity to AGOF would be needed to connect electricity to new wells. New 12-kV connections would be made to the existing system on AGOF. Removal of vegetation within a 10-foot radius of each new power pole would be required for fire protection. New power poles can and would be installed to avoid sensitive species and sensitive habitat. New power poles would be installed either by helicopter or by ground equipment that can operate from previously disturbed graded areas. Stringing of new lines can and would be implemented from previously disturbed graded areas in the AGOF.

1.3.3.3 Drilling

Approximately 450 wells are proposed under Phase V development, or approximately 45 new wells on average per year for 10 years, consisting of production, and steam and water injectors. These new wells would be drilled on existing pads, pads graded or expanded during Phase IV development, or pads proposed for new grading or for expansion in Phase V.

Well drilling would typically occur only between mid-August and the end of March each year, to avoid peak bird nesting periods to the maximum extent feasible.

New wells would be drilled using a drill rig 24 hours per day. Minimum required lighting would be used during drilling operations at night. Lighting would be directed downward in the immediate vicinity of the drilling operations. A typical light tower used during drilling

would be approximately 30 feet in height and would have four 1,250-watt metal halide lamps.

1.3.3.4 Steam Generators

Installation of three, 85-MMBtu/hr steam generators is proposed under Phase V. This activity would occur between March 1 and August 15; steam generators would not be installed while drilling of new wells is occurring.

One steam generators would be installed at the existing Edna Unit and two steam generators would be installed at Pad 38/Signal 150 which is an existing graded pad. The locations of the new steam generators are shown on the Overview Map of Proposed Phase V Development (Figure 1-2). The generators would consist of prefabricated equipment. No grading would be required other than minor surface grooming and for possible installation of foundations if necessary.

SECTION 2.0
METHODOLOGY

To document existing biological conditions within the Study Area, URS reviewed available literature and conducted biological field investigations of the Study Area and surrounding Project site. Methods used to complete these studies are described below.

2.1 STUDY AREA DESCRIPTION

The Study Area is located entirely within the AGOF, a State-designated Oil Field in Price Canyon, in unincorporated San Luis Obispo County, California (Figure 1-1). The Study Area evaluated in this BRAR includes the limits of proposed ground disturbance where the new and expanded Project facilities are proposed, as well as an associated buffer area of approximately 30 feet. In addition, the Study Area includes a 50-foot buffer along Price Canyon Road within the AGOF boundary. The Study Area is approximately bisected by Pismo Creek, which occupies the floor of Price Canyon, and is characterized by rolling terrain with a pronounced ridge to the west and Tiber Hill to the east. Elevations within the Study Area range from approximately 200 feet (in the valleys) to 600 feet (at the ridges) above sea level. In total, the Study Area encompasses 129.98 acres within the AGOF.

2.1.1 Location

The Study Area is located approximately three miles northeast of Pismo Beach in San Luis Obispo County, California (Figure 1-1). The Study Area can be accessed from Price Canyon Road via Interstate 101/State Highway 1, and is located on the Corral De Piedra Land Grant. The Study Area is located primarily within the Arroyo Grande NE USGS 7.5-minute quadrangle, with a smaller portion located in the Pismo Beach quadrangle. The Study Area is within the AGOF, which comprises land on both sides of Price Canyon Road near the intersection of Ormonde Road between Highways 101 and 227.

The Study Area is located within the San Luis Bay-Inland Planning Area as described in the San Luis Obispo County General Plan, which includes the non-coastal zone portions of the "Five Cities" (i.e., the urban areas of Pismo Beach, Grover Beach, Arroyo Grande, Oceano and Halcyon), the urban area of Avila Beach (outside of the coastal zone), as well as remaining agricultural and rural lands. This planning area encompasses 61,018 acres, or 95 square miles (San Luis Obispo County, 2003). The Study Area is not within an incorporated city, and is not within the Coastal Zone.

The existing use of the Study Area is a crude oil production field, and existing land use immediately surrounding the area is undeveloped lands and agriculture. The San Luis Obispo County General Plan, San Luis Bay Area Plan – Inland (San Luis Obispo County 2003) identifies that the AGOF is assigned with Agriculture and Rural land use designations. The

area plan also describes the existing oil field development uses within Price Canyon, and states that "the terrain, vegetation and existing development do not make this area appropriate for intensive residential uses for the short-term," and that "during the short-term, interim agriculture uses would be appropriate, but should not preclude the proposed extraction of resources."

2.1.2 Study Area Boundaries

The Study Area evaluated in this BRAR includes the limits of proposed ground disturbance where the new and expanded Project facilities are proposed, as well as an associated buffer area of approximately 30 feet (Figure 1-1). In addition, the Study Area includes a 50-foot buffer along Price Canyon Road within the Arroyo Grande Oil Field (AGOF) boundary.

The Phase V expansion activities involve: addition of eight new well pads (with access roads) and modification of 33 existing well pads; drilling of approximately 450 wells; abandonment of wells; installation of three steam generators; installation of additional ancillary production and steam lines, including two areas that would involve jack and boring underneath the UPRR and Price Canyon Road; expansion of the existing electrical power system/lines; and replacement of Northern Pipe Crossing over Pismo Creek.

FM O&G plans to maximize use of existing graded pads and previously disturbed areas as much as possible. Eight new well pads would require grading and construction of new access roads. Additionally, five existing pads that currently do not house oil wells would be used for some of the proposed wells; these pads may need surface grooming. The proposed Project would also include expansion of 33 existing pads to accommodate more wells. Approximately 53 acres would be newly graded; this acreage also accounts for drainage improvements associated with the new and modified pads (Figure 1-2). Applying an approximate 30-foot buffer to the limits of disturbance, the total size of the Study Area is 129.98 acres.

2.1.3 Study Area Environmental Setting

2.1.3.1 <u>Site History and Land Use</u>

The Study Area is designated Agriculture; meaning agriculture is the primary land use and any other secondary uses directly support the primary use. However, petroleum extraction is an allowed use under the agricultural land use category according to the San Luis Bay Inland Area Plan. Such use is subject to special standards and permit procedures described in Section 22.08.170 (Resource Extraction) of the San Luis Obispo County Land Use Ordinance. Mining of bituminous sandstone occurred in the Price Canyon area between 1880 and 1930, and oil development at AGOF began around 1906 (Arcadis 2008). Ongoing oilfield operations have created long-term disturbances in the landscape in the form of active and abandoned well pads and tank battery locations. In addition, vegetation clearance around

existing well pads for maintenance and fire clearance excludes native vegetation from re-colonization. Overall, the historic distributions of vegetation types present in the Study Area are similar to the current distributions with slight shifts due to water availability or disturbance.

2.1.3.2 Watershed Boundaries and Drainage Patterns

According to the National Hydrography Dataset (NHD) water boundary dataset, the Study Area is within the Pismo Creek Subwatershed, within the Pismo Creek-Frontal Pacific Ocean Watershed and Central Coast Subbasin (USGS 2013a). A map of watershed boundaries within the Project vicinity is presented on Figure 2-1.

Pismo Creek is a perennial tributary flowing south-southwest to the Pacific Ocean at the city of Pismo Beach, California; it collects water from an approximately 47-square-mile watershed (CCSE 2009). The total length of Pismo Creek from its headwaters in the Los Padres National Forest to the Pacific Ocean is approximately 13.3 miles (USGS 2013a), although the name is not retained through this entire distance (the headwater reach is referred to as Villa Creek, and the intermediate reach flowing predominantly though agricultural areas on the floor of the Edna Valley is East Corral de Piedra Creek). The reach named Pismo Creek, from the confluence of East Corral de Piedra Creek and West Corral de Piedra Creek to the Pacific Ocean, encompasses approximately 5.5 miles. Pismo Creek enters the Pacific Ocean at Pismo Beach, in a dune region owned by the State of California, Department of Parks and Recreation (CCSE 2009). The reach of Pismo Creek within the Study Area has been designated as critical habitat for the federally-listed threatened South-Central California Coast steelhead trout (*Oncorhynchus mykiss irideus*), and the lagoon where this stream enters the Pacific Ocean is designated as critical habitat for the federally-listed endangered tidewater goby (*Eucyclogobius newberryi*).

The Study Area features two tributary streams that enter Pismo Creek from the east, Cañada Verde and Tiber Canyon; these drainages flow in a generally east to west direction and exhibit defined beds, banks, and channels. The streams flow under the UPRR through culverts, then flow into Pismo Creek. The Study Area also includes two unnamed tributaries flowing towards Pismo Creek from the west, referred herein as Drainage A and Drainage B, that flow in a generally west to east direction, and also exhibit defined channel characteristics. These unnamed streams flow under Price Canyon Road through culverts, then flow into Pismo Creek.

2.1.3.3 Vegetation

The Study Area is located within the California Central Coast geographic region (Sawyer *et al*. 2009). The upland areas located within the Study Area are heavily impacted by human disturbance as part of standard oilfield operations, and these areas are primarily comprised of paved or graveled well pads and roadways. Vegetated upland areas surrounding the oilfield

operations are primarily composed of coast live oak woodlands (*Quercus agrifolia* woodland alliance), Santa Margarita manzanita (*Arctostaphylos pilosula*) stands, and annual brome grasslands (*Bromus* [*diandrus*, *hordeaceus*]-*Brachypodium distachyon* semi-natural herbaceous stands). The drainages located throughout the Study Area are primarily composed of coast live oak woodland and arroyo willow thickets (*Salix lasiolepis* shrubland alliance). Detailed discussions of vegetation mapping and floristic survey results can be found in Sections 3.1 and 3.2 of this BRAR, respectively.

2.1.3.4 Soil Types

The Study Area is located within Price Canyon, which is surrounded by the Santa Lucia Mountain foothills. The Soil Survey Geographic Database for San Luis Obispo County, California (USDA-NRCS SSURGO 2008) indicates that six non-hydric and two hydric soil types occurs within the Study Area. Briones loamy sand is the predominant soil type, while Arnold loamy sand, Pismo loamy sand, Corralitos sand, Gaviota sandy- and fine sandy loams, Diablo and Cibo clays, and Cropley clay occur to lesser extents. The soils are described below, abridged from the USDA-NRCS Soil Series Name Search Query Facility (USDA-NRCS 2013a). A map of soil types within the Study Area is presented on Figure 2-2.

2.1.3.4.1 Arnold Series. Arnold series soils are on hills and hilly uplands at elevations of 100 to 2,500 feet along the south-central portion of California's Coast Range usually located within 30 miles of the coast. These soils consist of deep soils that formed in material weathered from soft sandstone. These non-hydric soils are somewhat excessively drained and produce very low to medium runoff; they have rapid permeability above the sandstone and slow permeability within sandstone. Arnold series soils within the Study Area occur on slopes ranging from 5 to 15 percent, but they can more broadly occur on slopes up to 75 percent. Arnold series soils tend to support chaparral, coastal sagebrush (*Artemisia californica*), coast live oak, shrubs, annual grasses, and forbs. They are primarily used for range, with very limited areas used for growing truck crops, Christmas trees, and improved pasture. These soils are classified as mixed, thermic Typic Xeropsamments. Within the Study Area, Arnold series soils occur in Pads 14, 15, 16, 17, 18, 25, 36, 38, 41, 45, and in proximity to Pads 1, 11, 13, 21, and 24 (Figure 2-2).

2.1.3.4.2 Briones Series. Briones series soils occur limitedly on hills and uplands of the foothills of central California's Coast Range, between 500 to 1,000 feet elevation. These are moderately deep, non-hydric, and somewhat excessively drained soils underlain bysandstone; with rapid permeability down to – but much slower permeability within – the sandstone. Briones series soils within the Study Area occur on slopes ranging from 15 to 50 percent, and tend to support grasses, forbs, and scattered oak trees. They are used primarily for range activities. Within the Study Area, Briones series soils underlie Pads 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 15, 17, 19, 20, 21, 22, 23, 24, 26, 28, 29, 31, 33, 34, 35, 37, 40, 43, 44, 45, 46, 48, 49, and are present in proximity to Pads 4, 14, 18, 27, 36, 41, and 47 (Figure 2-2).

2.1.3.4.3 Cibo Series. Cibo series soils occur extensively on foothills and mountainous uplands of coastal areas of southern- and in central California. These soils occur between 50 and 2,800 feet elevation in the foothills adjacent to low valleys, and between 1,400 and 4,600 feet in mountainous uplands; they formed from weathering of basic igneous rocks. Cibo series soils are non-hydric, moderately deep and well drained, with medium to very rapid runoff after cracks swell shut, and slow permeability. Within the Study Area, Cibo series soils are found on slopes of 9 to 15 percent, but they may occur more broadly on slopes up to 75 percent. Vegetation in uncultivated areas is mostly annual grasses and forbs; the soils are used mostly for grazing, with some use in growing field-, specialty-, and citrus crops, and for urban use. Cibo series soils are classified as fine, smectitic, thermic Aridic Haploxererts. Within the Study Area, Cibo coils overlap with Diablo soils, and these occur together in Pads 1, 25, and 38 (Figure 2-2).

2.1.3.4.4 Corralitos Series. Corralitos series soils are on alluvial fans and in small valleys at elevations of 25 to 1,000 feet in small coastal valleys from central California southward. The soils consist of deep soils that formed in recent sandy alluvium derived from acid sandstone and related rocks. These partially hydric soils are somewhat excessively drained, with slow runoff and rapid permeability; slopes range from 2 to 15 percent. Uncultivated areas have a cover of annual grasses, forbs, coyote brush (*Baccharis pilularis*), other shrubs, and a few live oak trees. They are used for range, dryland crops, urban development, and for growing truck crops, alfalfa, citrus, and other fruits under irrigation. These soils are classified as mixed, thermic Typic Xeropsamments. Within the Study Area, Corralitos series soils occur beneath Pads 3, 27, 47, and in proximity to Pad 48 (Figure 2-2).

2.1.3.4.5 Cropley Series. Cropley series soils are very deep, and are moderately extensive on alluvial fans, floodplains and in small basins between 10 and 2,100 feet elevation. They formed in fine textured alluvium weathered from shale, sandstone and mudstone. Cropley series soils are moderately well drained with medium to high runoff and slow permeability; they are not flooded. These soils occur on smooth slopes from 0 to 15 percent, and within the Study Area they are delineated into separate units by slope and hydric properties: there is a partially hydric unit with 0 to 2 percent slope, and a non-hydric unit with 2 to 9 percent slope. Cropley series soils support some scattered coast live oak, annual grasses and forbs, and are used for irrigated row and truck crops, irrigated and dry pasture, apricots, prunes, and for urban development. These soils are classified as fine, smectitic, and thermic Aridic Haploxererts. Within the Study Area, Cropley series soils underlie Pads 25 and 41 (Figure 2-2).

2.1.3.4.6 Diablo Series. Diablo series soils occur extensively on rolling to steep uplands of California's central and southern Coast Ranges, between 25 to 3,000 feet elevation. These soils formed from shale, sandstone, and consolidated sediments including some tuffaceous material. Diablo series soils are non-hydric, well drained, with slow runoff in dry conditions and medium to rapid runoff in moist conditions, and have slow permeability. Diablo series

soils within the Study Area occur on slopes from 9 to 15 percent, but can more broadly occur on slopes up to 50 percent. These soils are associated with annual grasses and forbs, and are used for grazing and dry farm grain production; they are classified as fine, smectitic, and thermic Aridic Haploxererts. Within the Study Area, Diablo soils overlap with Cibo clays, and these soils occur together beneath Pads 1, 25, and 38 (Figure 2-2).

2.1.3.4.7 Gaviota Series. Gaviota series soils occur extensively on hills and mountains of the California Coast Ranges, from 200 to 4,400 feet elevation. They formed from weathered sandstone and meta-sandstone, and may commonly be associated with rock outcrops; they are non-hydric. Gaviota series soils are well- and excessively well drained, with very low to very high runoff and moderately rapid permeability. Gaviota fine sandy loam occurs in the Study Area on slopes of 15 to 50 percent, while Gaviota sandy loam occurs on slopes of 50 to 75 percent. Gaviota series soils support California sage (*Artemisia californica*), chamise (*Adenostoma fasciculatum*), manzanita (*Arctostaphalus* spp.), purple needlegrass (*Stipa pulchra*), and annual grasses; they are used for livestock grazing, while some of the less sloped areas are cropped for dryland grain production. Within the Study Area, Gaviota sandy loam soil occurs in Pads 8, 33, 34, 44, and near to Pads 12, 23, 29, and 43. Gaviota fine sandy loam occurs in Pad 3 (Figure 2-2).

2.1.3.4.8 Pismo Series. Pismo series soils occur limitedly on uplands of the coastal foothills of San Luis Obispo County, California, between 25 and 700 feet elevation. They formed from material weathered from soft sandstone, and are non-hydric. Pismo series soils are somewhat excessively drained with moderate to very rapid runoff and permeability; slopes range from 9 to 30 percent at the Study Site, but can also be found on slopes up to 75 percent. Pismo series soils are associated with brush vegetation with an understory of annual grasses and forbs; they are used for range, wildlife habitat, and recreation. Within the Study Area, Pismo series soils underlie Pads 4, 5, 39, 42, and also occur near Pad 6 (Figure 2-2).

2.1.3.5 Critical Habitat

Critical habitat is defined to include “the specific areas within the geographical area occupied by the species … on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection.” Critical habitat contains one or more Primary Constituent Elements (PCE), which are specific habitat features that support one or more life history stages of the listed species (50 CFR 424.12(b)). In total, designated critical habitat for the South-Central California Coast (SCCC) steelhead (*Oncorhynchus mykiss irideus*) Distinct Population Segment (DPS) includes areas within 28 watersheds, and includes a total of 1,240 miles of stream habitat and three square miles of estuarine habitat. Within the Study Area, Critical habitat for the SCCC steelhead has been designated along Pismo Creek (NMFS 2005). According to the designation documents, PCEs occurring within Pismo Creek include freshwater rearing habitat and freshwater migration habitat (NMFS 2005). The locations of

the designated critical habitat are depicted on Figure 2-3, and include the entire length of Pismo Creek from its confluence with the Pacific Ocean upstream to endpoints in East Corral de Piedra Creek and an unnamed tributary of Pismo Creek.

Pismo Creek flows through the AGOF on the east side of Price Canyon Road. Two project components, Northern Pipe Crossing and Upper Pipe Railroad Pipe Crossing, span Pismo Creek; additionally, several pads are located within close proximity of Pismo Creek, with the entire Study Area occurring within one mile of Pismo Creek.

No other areas of designated critical habitat occur within the Study Area.

2.2 CHARACTERISTICS OF THE SURROUNDING AREA

This section discusses the relationship of the Study Area to its surrounding land uses, vegetation communities, and biotic mosaic. This relationship affects important ecological functions within and around the Study Area, including migration corridors and travel routes, and gene transfer between local populations and metapopulations. Also, the Project site's relationship to the surrounding area affects the extent to which the site may be suitable for species which rely on the site for only a portion of their biological requirements (e.g., raptors nesting off-site but using the Study Area for foraging, or migrating birds using the Study Area as stopover habitat). Lastly, the relationship between the Project site and the surrounding areas is important because the surrounding areas may serve as escape habitat for wildlife within the site during times of disturbance.

2.2.1 Existing Land Uses in the Surrounding Area

Most of the adjacent lands in the vicinity of the Study Area are designated Agriculture or Rural Lands by the County's General Plan and San Luis Bay Inland Area Plan (San Luis Obispo County 2003). As allowed and envisioned by these documents, the existing land uses are dominated by agricultural and grazing with occasional rural residences present. Lands immediately surrounding the Study Area are occupied by the AGOF, and the presence of existing oil field development in the area is acknowledged in the General Plan and Area Plan. Cattle grazing and vineyards are located in agricultural zones. Low density residential and un-developed lands are typically zoned as rural lands. Undeveloped land surrounding the Study Area is typically steep chaparral and oak woodland covered hillsides, and open spaces with active cattle grazing. The nearest area of concentrated population is the City of Pismo Beach, located approximately four miles west of the Study Area.

Existing infrastructure surrounding the Study Area includes roads, developed active and inactive well pads, a tank battery, and oil and gas production equipment. Price Canyon Road, State Route 227, and U.S. Highway 101 are the main roads in the surrounding area (Figure 1-1).

2.2.2 Vegetation in the Surrounding Area

The upland areas in the vicinity of the Study Area are heavily impacted by human disturbance as part of standard oil field operations; these areas primarily consist of paved or graveled well pads, roadways, and tank batteries. The northeastern section of AGOF is currently utilized for cattle grazing, and the whole of AGOF west of Price Canyon Road is grazed by goats. Upland areas comprise the majority of the land surrounding the AGOF's active oil field operations, and exhibit vegetation similar to that within the Study Area. These areas are primarily vegetated with coast live oak woodlands, chaparral, and annual brome grasslands, and are likely to contain Santa Margarita manzanita stands. Pismo Creek and four tributaries occur within the Study Area, and primarily support coast live oak and Arroyo willow thickets. The area south of the AGOF boundary is primarily utilized for agricultural operations including a vineyard, while areas to the northeast of the site are primarily utilized for rangeland.

2.2.3 Critical Habitat in the Surrounding Area

As described in Section 2.1.3.5 above, the reach of Pismo Creek within the Study Area has been designated critical habitat for the SCCC steelhead. This designation applies to the entirety of Pismo Creek, from its headwaters to its confluence with the Pacific Ocean, and a significant portion of the designated area is situated outside the Study Area. Portions of Pismo Creek that are downstream of the AGOF are the receiving waters for all runoff from the site, as all tributary creeks and stormwater conveyances within and around the Study Area flow to Pismo Creek. In addition to this designation, critical habitat for the tidewater goby (*Eucyclogobius newberryi*), and La Graciosa thistle (*Cirsium loncholepis*) occurs in the vicinity of the Study Area. The locations of these critical habitat areas are depicted on Figure 2-3.

Critical habitat for the tidewater goby was designated in 2008 and more recently on February 6, 2013 (USFWS 2013d). The critical habitat unit nearest the Study Area (unit SLO-11) comprises an area of 20 acres in the Pismo Creek estuary. This critical habitat unit is located four miles downstream of the Study Area along Pismo Creek.

Critical habitat for the La Graciosa thistle was designated on December 3, 2009 (USFWS 2009). A total area of 24,103 acres of designated critical habitat includes lands on Pismo State Beach and Guadalupe-Nipomo Dunes National Wildlife Refuge in San Luis Obispo County. Historically, the plant was found along 32 miles of coastline between Arroyo Grande Creek in San Luis Obispo County and the Santa Ynez River in Santa Barbara County. Critical habitat found at Pismo State Beach is located six miles from the Study Area.

2.3 LITERATURE REVIEW AND FIELD SURVEY METHODS

To document the existing biological conditions within the Study Area, URS relied upon a review of available literature, as well as seasonally-timed biological field investigations of the Study Area. Field investigations were initiated with a reconnaissance-level survey performed by URS biologists on April 23, 2013 to assess Study Area accessibility. Subsequent biological field investigations were conducted between April 30 and July 25, 2013, and included vegetation mapping, focused floristic survey, oak tree inventory, breeding bird survey, raptor survey, California red-legged frog protocol survey, general wildlife survey, and a jurisdictional determination/wetland delineation. The methods employed are described below.

2.3.1 Literature Review

Prior to the field surveys, URS conducted a literature review of special-status plant and wildlife species that could potentially occur in and around the Study Area. This literature review included searches within the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants (CNPS 2013), the CalFlora Inventory of Rare Plants Database (CalFlora 2013), and the California Natural Diversity Database (CNDDB) (CDFW 2013a). The latter database provided the locations of sensitive species and natural communities within a nine-quadrangle search centered around the Study Area, which is located in the Arroyo Grande NE, CA USGS 7.5-minute quadrangle (with a smaller portion located in the Pismo Beach, CA USGS 7.5-minute quadrangle). Only seven of the surrounding quadrangles, including San Luis Obispo, Lopez Mountain, Santa Margarita Lake, Pismo Beach, Tar Spring Ridge, Oceano, and Nipomo could be queried; the eighth surrounding quadrangle, located to the southwest of the Study Area, is entirely within the Pacific Ocean and is not included in the USGS 7.5-minute quadrangle map series.

Previously mapped occurrences of sensitive plant species around the Study Area, and changes in their distribution, were provided by FM O&G from the 2012 Sensitive Plant Survey associated with their AGOF Phase IV Development project (Arcadis 2012). Using this information in combination with the previously described literature review, other biological reports for the area, and cross-referencing for habitat types, URS developed a list of special-status plant species with potential to occur in the Study Area.

A similar list was developed for special-status wildlife species. A broad-scale wildlife movement analysis entitled *California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California* (Spencer *et al.* 2010) was consulted to evaluate the potential of the Study Area as a wildlife movement corridor.

2.3.2 Vegetation Mapping

Within the Study Area, vegetation communities were classified using *A Manual of California Vegetation, 2nd Edition* (Sawyer *et al*. 2009), which establishes systematic classifications and definitions of vegetation communities. Each vegetation mapping unit was analyzed for characteristics to define the applicable vegetation community, such as dominant and/or co-dominant plant species and community membership rules. Vegetation communities were determined in the field and were mapped using the results of the focused floristic surveys, field observations, and high resolution aerial photographs. Vegetation mapping was conducted by URS biologists Kelly Kephart, David Kisner, Johanna Kisner, and Tiffany Whitsitt on July 11, 15, and 19, 2013.

2.3.3 Focused Floristic Surveys

The USFWS, CDFW, and CNPS botanical survey protocols (USFWS 2002a, CDFW 2009, and CNPS 2001) direct that surveys be conducted during time(s) that plants are in identifiable condition; often flowers and/or fruits are necessary for correct identification. The list of potentially occurring special-status plant species was cross-referenced with the Jepson Flora Project (Jepson 2013) to determine the flowering seasons for each species, to ensure that field surveys occurred during optimal identification periods.

During focused floristic surveys two URS biologists walked transects spaced up to 10 meters apart throughout the accessible portions of the Study Area. Some areas were inaccessible due to poison oak (*Toxicodendron diversilobum*) and/or dense vegetation (i.e., manzanita stands), and these areas were surveyed from the edge of the impassible vegetation. All sensitive species populations were mapped using a combination of GPS units capable of 3-meter accuracy (Garmin 60CSx), field observations, a high-quality aerial photograph (Bing Maps Hybrid 2013), and site plans (Cannon 2013). Inaccessible portions of sensitive species' populations were indicated on printed maps in the field and digitized using ArcGIS software. Focused floristic (botanical) surveys were conducted in the Study Area from March 30 until May 13, 2013 by URS biologists Jamie Deutsch, Kelly Kephart, David Kisner, Johanna Kisner, Julie Love, Alice Riisness, and Tiffany Whitsitt. Additional late season surveys were conducted on July 11, 15, and 19, 2013 during vegetation mapping surveys by Kelly Kephart, David Kisner, Johanna Kisner, and Tiffany Whitsitt to identify paniculate tarplant (*Deinandra paniculata* [*increscens* ssp. *foliosa*]); CNPS Rank 4.2). A list of all observed plant species was compiled. Plant nomenclature follows *The Jepson Manual – Vascular Plants of California, Second Edition* (Baldwin *et al.* 2012) with updates from the Jepson Flora Project (Jepson 2013). Photographs were taken to document site conditions.

2.3.3.1 <u>Aquatic Vegetation Surveys</u>

Focused aquatic surveys of drainages and wetland areas in the Study Area were conducted to determine the presence or absence of Gambel's yellowcress (*Nasturtium* [*Rorippa*] *gambelii*,

FE, SE, CNPS Rank 1B.1) in portions of the Study Area containing aquatic habitat. Surveys were conducted in conjunction with the daytime California red-legged frog surveys on June 3 and 6, 2013 and jurisdictional determination survey on June 11, 2013, and coincided with the blooming period of Gambel's yellowcress (April to October). Surveys were conducted by URS biologists Kelly Kephart, Johanna Kisner, and Julie Love.

During focused aquatic surveys two URS biologists walked within the drainage or wetland area, up to 10 meters apart throughout the accessible portions of the Study Area. Some areas were inaccessible due to poison oak, deep water, and/or steep cliff faces. Inaccessible areas were surveyed from the edge of the impassible survey area and binoculars were used to survey vegetation within the drainage when possible. A list of all observed plant species was compiled. Plant nomenclature follows *The Jepson Manual – Vascular Plants of California, Second Edition* (Baldwin *et al.* 2012) with updates from the Jepson Flora Project (Jepson 2013).

2.3.4 Oak Tree Inventory

Although coast live oak maintains no applicable federal or state sensitivity designation, oak trees can provide valuable wildlife habitat and due to the County's concern with the loss of oaks in the region from development or other factors, oak trees are treated as special-status resources in this BRAR. URS biologists undertook an effort to map all oaks occurring within the disturbance limits of the Study Area. In addition, an effort was made to assess the vigor, structure, and associated pest/disease values present within disturbance limits of the Study Area and how this habitat relates to the health of the trees.

From June 9 to July 25, 2013, URS biologists Jamie Deutsch, Kelly Kephart, and David Kisner conducted an inventory of individual oak trees within the project disturbance footprint with additional support from URS geologists Andy Evans, Natalie Evans, and Rick Ward, and environmental scientists Mark Weeks and Darryl Remick. The buffer zones surrounding the disturbance limits (together equaling the Study Area), which were surveyed during other biological field investigations, were excluded from the oak tree inventory due to the intense level of effort required in conducting the inventory and the large number of oak trees present. Additionally, these areas are not proposed to have any trees removed, though some may require trimming during construction activities due to limbs extending into disturbance areas. Thus, total coast live oak trees present within these areas were estimated by calculating the total coast live oak woodland vegetation type present within the Study Area, but outside the disturbance zone. This acreage was then multiplied by the average number of coast live oak trees present within surveyed portions of the entire Study Area to approximate total trees within these areas.

Individual oak trees were identified to species, and the location of the trunk(s) was mapped using a combination of GPS units capable of sub-meter accuracy (Trimble GeoXT 6000 or

GeoXH 6000 series) and Garmin GPS units (Garmin 60CSx) capable of 3-meter accuracy. Canopy size measurements were measured with a transect tape and heights were visually estimated. Each trunk was measured for diameter at breast height (DBH, 4.5 feet above the ground surface) using a DBH tape. URS biologists also noted the vigor, structure, and associated diseases and pests of each tree. Some areas were inaccessible due to poison oak, dense vegetation (i.e., manzanita stands), steep slopes, and/or presence of yellow jacket nests. Impassable areas were either surveyed visually if possible or numbers were estimated using high quality aerial imagery. Using aerial imagery, acreages for areas not surveyed were calculated and multiplied by the average number of coast live oak trees per acre present within surveyed portions of the entire Study Area to approximate total trees within these areas.

2.3.5 Bird Surveys

Two focused bird surveys were conducted within and near the Study Area, consisting of a breeding bird survey and a raptor survey. Methods used during each of these investigations are discussed below.

2.3.5.1 Breeding Bird Surveys

Thirteen point count stations were established throughout the AGOF (Figure 2-4), in an approximate 0.9-mile-by-0.55-mile area encompassing the western and eastern sides of Price Canyon Road. Each breeding bird survey (BBS) location within the Study Area was numbered according to the well pad number in closest proximity. The point count stations were placed in a variety of habitats to capture the greatest number of species; all of the natural habitats that may be impacted by the proposed Project were included. Most point count stations were located in coast live oak woodlands with a mix of chaparral species; two stations were near riparian areas and one station was located within open grasslands.

Each BBS location was visited twice during the 2013 breeding season – once, in early May and again in late May. URS biologists David Kisner and Johanna Kisner were the primary observers; URS biologist Jamie Deutsch assisted with the early May surveys. Both surveys were conducted between 6:30 a.m. and 11:00 a.m. under mild weather conditions. All birds detected during a 10-minute count period were recorded; each observation was delineated into one of three time blocks (0–5 minutes, 5–8 minutes, and 8–10 minutes) and one of four distance categories (within 50 meters, 50–100 meters, beyond 100 meters, or “fly over”). Observations of breeding behavior such as carrying nest material, carrying food, nests, or begging young were also recorded. To ensure that an individual bird was not counted twice, the highest daily count for each species at each BBS location (termed the “high count”) was used for analysis.

2.3.5.2 Raptor Surveys

Four raptor observation stations (ROS) were established throughout the AGOF – two on either side of Price Canyon Road – in an approximate 0.5-mile-by-0.35-mile area (Figure 2-). Each ROS within the Study Area was numbered according to the well pad number in closest proximity. These stations were not located in the immediate Study Area, but in adjacent and similar habitat areas selected to maximize long-range visibility. Each observation station was visited twice – once in late May and again in mid-June. URS biologist David Kisner was the primary observer, and biologist Jamie Deutsch assisted with the May surveys. The surveys were conducted between 9:30 a.m. and 12:00 p.m. under mild weather conditions. All birds of prey, turkey vultures (*Cathartes aura*), and American crows (*Corvus brachyrhynchos*) (target birds) detected during a one-hour observation period were recorded. When possible, the species, age, flight altitude, and behavior were recorded for each bird detected. American crows were documented due to their aggressive behavior (mobbing) of raptors. To ensure that an individual bird was not counted twice, the highest daily count for each species at each ROS location (termed the "high count") was used for analysis.

2.3.6 California Red-Legged Frog Surveys

Protocol-level surveys were conducted for California red-legged frog (CRLF; *Rana draytonii*, FT, CSC) according to *USFWS Revised Guidance on-site Assessments and Field Surveys for the California Red-legged Frog* (USFWS 2005). Surveys were conducted in the Study Area where suitable habitat was identified and where locations could be safely accessed. The specific survey locations shown in Figure 2-5 included accessible portions of Pismo Creek within the Study Area, Cañada Verde, Pad 17 pond, Retention Basin, and Drainage B. A larger section of Pismo Creek was surveyed on the first day and night surveys as shown on Figure 2-5; however much of the area was determined to be unsafe to continue surveys due to dense poison oak and limited access. The creek could be safely accessed from downstream of the pipe crossing, the Hyla crossing, and a location at the furthest downstream end as shown in pink in Figure 2-5. The area upstream of the pipe crossing was not surveyed for the first day and night surveys due to safety concerns, but was surveyed on the later dates. The area upstream of the pipe crossing, a tributary to Pismo Creek, and Drainage B were added to the survey locations starting with day survey #2 and night survey #3 and continued for the remainder of surveys. URS biologist and California red-legged frog recovery permit holder, Johanna Kisner led the protocol level surveys for California red-legged frog and was supported by other URS biologists experienced and trained in surveying for California red-legged frog including Kelly Kephart, David Kisner, Christopher Julian, Jamie Deutsch, Billy Fletcher, and Tiffany Whitsitt.

The surveys commenced on June 3, 2013, and were completed on July 24, 2013. These surveys consisted of non-breeding and breeding season surveys that took place during daytime hours and at night using binoculars and USFWS approved handheld flashlights to

search for California red-legged frog eye-shine as well as listening for California red-legged frog vocalizations, and searching for egg masses and tadpoles. Two areas required access with a kayak due to deep water in order to get a closer look at frogs for identification: just upstream of the Hyla crossing and the large stock pond. A kayak was used to access these two areas for most surveys, if a kayak was not used the survey was conducted by viewing with binoculars from the water's edge. The non-breeding season daytime survey was conducted on July 23 and the nighttime survey was conducted on July 24, 2013. Four nighttime breeding season surveys were conducted on June 4, 7, 22, and 30, 2013. Two daytime breeding season surveys were conducted on June 3 and 6, 2013 for the first survey and June 11, 14, and 21, 2013 for the second survey.

Equipment used for the surveys included a thermometer, which was utilized to record air and water temperature. Binoculars (Eagle Optics 8x42, and Nikon Monarch 8x42) and lights (Maglite4D® and Surefire) were utilized to scan all available California red-legged frog habitat and to detect eye-shine during night surveys. Photographs were taken to document site conditions.

2.3.7 General Wildlife Surveys

Based on CDFW comments on the County's Environmental Impact Report (EIR) Notice of Preparation for the Project (CDFW 2013e), URS understands the Study Area has the potential to support sensitive terrestrial wildlife species including the American badger (*Taxidea taxus*). To ascertain whether this species or other sensitive wildlife utilize the site, general wildlife surveys were incorporated into all surveys conducted within the Survey Area. Given the amount of ground covered during floristic, oak tree, and bird surveys (most notably the full-coverage floristic survey), the extent of general wildlife surveys was relatively robust.

During all survey activities, URS biologists documented incidental wildlife sightings; this information was later compiled and used to supplement the data collected during focused surveys. Visual observations were made for most wildlife sightings, except some bird species identified by auditory recognition. Wildlife presence was also noted through observations of distinctive signs including scat, tracks, diggings, trails, and burrows. All wildlife observations were compiled into a comprehensive wildlife species list.

Habitat suitability was assessed for special-status wildlife species for which there are no formal survey protocols, such as the Blainville's horned lizard (*Phrynosoma blainvillii*) and the American badger (both regarded by CDFW as CSC). URS conducted surveys of special status wildlife species using baited scent stations in association with motion sensitive cameras. The scent stations were intended to collect information on the types of terrestrial mammal species occurring within the Study Area. Potential target species included common wildlife (coyotes, bobcats, raccoons, skunks, etc.) as well as special-status species such as the

American badger (*Taxidea taxus*), mountain lion (*Puma concolor*), and ringtail (*Bassariscus astutus*). At several rotating target locations, each station was baited with cat food (wet variety, with the can punctured to release the scent but not allow consumption), and a motion-sensitive camera was mounted on artificial substrate 3.5 feet off the ground and focused on the target. These stations were active for three to five days before being moved to a new location. Nocturnal mammals attracted to the bait were photographed when they entered the target area and triggered the camera sensor. Two scent stations were active at a given time, and stations were moved around AGOF to achieve representative coverage. Station locations corresponded with natural wildlife movement corridors and burrows (Figure 2-6). Photographs were downloaded daily and organized by location.

2.3.8 Delineation of Jurisdictional Waters and Streambeds

Waters of the U.S. and CDFW-jurisdictional streambeds within the Jurisdictional Determination Study Area were delineated using a combination of desktop literature review, field mapping methods, and ArcGIS analysis. The Jurisdictional Determination Study Area defined for the Wetland Delineation and Jurisdictional Determination was established as a 100-foot buffer surrounding each project component. In three distinct places, the Jurisdictional Determination Study Area was modified due to major obstructions to drainage flow patterns. On Drainage B at Pad 17 and the Pipe Casing Replacement, the Jurisdictional Determination Study Area was terminated at Price Canyon Road. On Tiber Canyon at Pad 27, the Jurisdictional Determination Study Area was terminated at Ormonde Road.

A formal field delineation of waters of the U.S. (including wetlands) and CDFW-jurisdictional streambeds was performed within the Jurisdictional Determination Study Area on June 5, June 11-14, June 21, and July 26, 2013. The methods used during the field surveys are summarized below. The field delineations were conducted by URS biologists Julie Love, Kelly Kephart, Jamie Deutsch, and environmental engineer Courtney Smith. Following completion of the surveys, watershed maps, aerial photographs, and other applicable literature were reviewed to ascertain whether waters identified in the field were tributary to navigable waters. This section summarizes the methods of the delineation; a stand-alone report was also prepared (Wetland Delineation and Jurisdictional Determination Report [URS 2013]).

2.3.8.1 <u>Summary of Agency Jurisdiction</u>

Streams and waterways, including ephemeral drainages, dry streambeds, and wetlands can possess unique ecological functions and values, and are protected from human-induced destruction or degradation by a number of federal and state statutes. The federal and state agencies charged with administering these statutes and their responsibilities are described briefly below. For a more complete description of the Project's regulatory setting with regard

to waters and streams, please refer to the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

2.3.8.1.1 Clean Water Act – Section 404. Pursuant to Section 404 of the Clean Water Act (CWA), the USACE regulates the discharge of dredge and/or fill material into waters of the United States. Section 404 requires that any person proposing an activity that would discharge these materials must first obtain a permit from the USACE. For discharges proposed in the Project region, Section 404 Permits are issued by the USACE's Los Angeles District. The CWA stipulates that the USACE may not issue a Section 404 Permit if the proposed activity would be contrary to the public interest or would cause substantial degradation of the nation's waters, or if a less environmentally damaging practicable alternative exists.

Waters of the U.S. generally include navigable waterways and wetlands adjacent to navigable waterways, non-navigable tributaries to navigable waterways, and wetlands adjacent to non-navigable waters that are contiguous with navigable waterways. Regulatory definitions of wetlands and waters of the U.S., as well as recent Supreme Court decisions affecting the interpretation of those definitions, are discussed below.

2.3.8.1.2 Clean Water Act – Section 401. Under Section 401 of the CWA, every federal permit or license applicant for any activity which may result in a discharge of dredge or fill material to a water body must obtain a state-issued Water Quality Certification that the proposed activity will comply with state water quality standards (i.e., beneficial uses, water quality objectives, and anti-degradation policy). In California, the State Water Resources Control Board (SWRCB) has delegated the responsibility for issuing Section 401 Certifications to the nine Regional Water Quality Control Boards (RWQCBs) throughout the state. The Central Coast RWQCB issues Section 401 Certifications for projects in San Luis Obispo County. A CWA Section 404 Permit is a federal permit subject to the terms of Section 401 as described above, and the USACE therefore cannot issue a Section 404 permit in the project region until the permit applicant also receives a Section 401 Certification from the Central Coastal RWQCB. Because Section 401 of the CWA is restricted to activities requiring a federal license or permit, this section does not apply to activities affecting waters outside federal jurisdiction, such as isolated, intrastate waters or those excluded from federal jurisdiction based on the significant nexus standard.

2.3.8.1.3 California Fish and Game Code. Pursuant to Sections 1600–1616 of the California Fish and Game Code, the CDFW regulates all diversions, obstructions, or substantial changes to the natural flow or bed, channel, or bank of any river, stream, or lake that supports fish or wildlife. In regulations promulgated by the CDFW at 14 CCR 1.72, a stream is defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having surface or subsurface flow that supports or has supported riparian

vegetation." In practice, CDFW has interpreted the term "streambed" to encompass all portions of the bed, banks, and channel of any stream, including intermittent and ephemeral streams, extending laterally to the upland edge of riparian vegetation. In the case of watercourses with vegetated floodplains, this interpretation often results in a geographic jurisdictional area that is much wider than the active channel of the stream. The upstream limit of CDFW-jurisdiction is the point upstream of which there is no evidence of a defined bed and bank, and riparian vegetation is not present.

2.3.8.2 Jurisdictional Determination Methods

Prior to field efforts, the United States Geologic Survey (USGS) Arroyo Grande NE, CA and Pismo Beach, CA 7.5 minute quadrangle maps (USGS 1979, NGS 2013), the Arroyo Grande Soil Survey (USDA-NRCS SSURGO 2008), the National Hydrography Dataset (NHD) (USGS 2013b), the National Wetlands Inventory (NWI) (USFWS 2013a), and a high quality aerial photograph of the Jurisdictional Determination Study Area and the surrounding area (Bing Maps Hybrid 2013) were reviewed to determine the locations of potential hydrologic features. Due to the potential sensitivity of these resources, aquatic features were mapped within 100 feet of the proposed disturbance limits, rather than being limited to the Study Area used in other biological investigations. The USGS 7.5-minute quadrangle map (USGS 1979, NGS 2013) and the National Hydrography Dataset (USGS-NHD 2001) indicated the presence of one potential hydrological feature (the mainstem of Pismo Creek) within the Jurisdictional Determination Study Area designated as a perennial stream. For a more complete description of the jurisdictional delineation methods, please refer to the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

2.3.8.2.1 Delineation of Waters of the United States - Ordinary High Water Mark. The extent of non-wetland waters within the Jurisdictional Determination Study Area was determined based on the location of the ordinary high water mark (OHWM). The channel banks were examined for signs of flow, terraces, drift deposits, changes in vegetation, and other indicators that would determine the location of the OHWM. Once the OHWM was identified in the field, the boundary was walked with a Trimble GeoXT 6000 or GeoXH 6000 series handheld GPS unit set to collect positional data in a "streaming" fashion. In areas not accessible on foot due to poison oak, steep terrain, or the presence of multiple yellow jackets, the Jurisdictional Determination Study Area was surveyed from a safe distance and boundaries were estimated using field observations, a high quality aerial, and the USGS topographic map.

Average channel width and depth for each drainage was estimated in the field and features such as substrate type and topography were recorded. When field data collection was complete, jurisdictional boundaries were downloaded from the Trimble GPS unit and converted into a GIS shape file using ArcGIS software. Properties such as length, width, and jurisdictional acreage were calculated through ArcGIS.

2.3.8.2.2 Delineation of Waters of the United States - Adjacent Wetlands. A delineation of potential wetlands within the Jurisdictional Determination Study Area was conducted in accordance with the procedures described in the *Wetland Delineation Manual* (Environmental Laboratory 1987) and the *Western Mountains, Valleys, and Coast Regional Supplement* to that manual (USACE 2010). The methods are summarized below, and are described fully in those documents.

To ascertain whether jurisdictional wetlands occur within the Jurisdictional Determination Study Area, sampling points were established and assessed in the areas most likely to exhibit wetland characteristics, based on visual observations. In accordance with the *Wetland Delineation Manual*, each sampling location was analyzed for hydrophytic vegetation, hydric soil, and wetland hydrology, and a Wetland Delineation Data Form was completed. Photographs were taken to document site conditions, and coordinates for the sample point were recorded using GPS technology. Methods used to evaluate each of the three wetland parameters are described in the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

2.3.8.2.3 Delineation of CDFW-Jurisdictional Streambeds. The extent of streambeds falling under the jurisdiction of the CDFW pursuant to Section 1600 *et seq.* of the California Fish and Game Code was determined based on the presence of a defined physical bed, bank, or channel, or the outer edge of riparian vegetation contiguous with the bank of the watercourse. Once the CDFW-jurisdictional boundary was identified in the field, the boundary was walked with a Trimble GeoXT 6000 or GeoXH 6000 series handheld GPS unit set to collect positional data in a “streaming” fashion. In areas not accessible on foot due to poison oak, dangerously steep terrain, or other safety considerations, the Jurisdictional Determination Study Area was surveyed from a safe distance and boundaries were estimated using field observations, a high quality aerial photograph, and the USGS topographic map.

When field data collection was complete, jurisdictional boundaries were downloaded from the Trimble GPS unit and converted into a GIS shape file using ArcGIS software. Properties such as length, width, and acreage of each stream or wetland feature were calculated through ArcGIS. Photographs were taken to document site conditions.

SECTION 3.0
RESULTS

This section presents the results of focused and general biological surveys conducted in the Study Area between April 2013 and July 2013. The surveys included:

- A literature review, performed prior to conducting field investigations, intended to identify special-status species with potential to occur within the Study Area and any specific survey requirements for those species;
- A vegetation map delineating vegetation communities (presented in Section 3.1 of this BRAR);
- Focused floristic surveys (presented in Section 3.2 of this BRAR);
- An oak tree inventory (presented in Section 3.3 of this BRAR);
- Surveys for breeding birds and raptors (presented in Section 3.4 of this BRAR);
- Focused protocol surveys for the California red-legged frog (presented in Section 3.5 of this BRAR);
- General wildlife surveys (presented in Section 3.6 of this BRAR); and
- A delineation of jurisdictional waters or streams (presented in Section 3.7 of this BRAR).

Biological field investigations for the proposed Project were completed from April 23, 2013 to July 25, 2013. A complete list of survey dates and descriptions, surveyors, and site locations for all field investigations is presented in Table 3-1. The scope of the biological surveys was guided by results of the literature review performed for the Project, which revealed the potential for several special-status species and sensitive resources to occur within the Study Area. A map of documented occurrences of sensitive species in the region, based on CNDDB data, is presented on Figure 3-1 and details of the CNDDB results are presented in Appendix A. The potential for these species to occur within the Study Area is evaluated in Section 3.10 of this BRAR. Additionally, nearby locations of designated critical habitat for federally-listed species are depicted on Figure 2-3.

3.1 VEGETATION MAPPING

The Project is located within the Central California Coast ecological region (Sawyer *et al.* 2009), a unique vegetation region. Nineteen natural vegetation communities occur in the Study Area (Figure 3-2). These native/naturalized vegetation communities include arroyo willow thickets, coast live oak woodland, eucalyptus and pepper tree groves, red willow thickets, California sagebrush scrub, chamise-black sage chaparral, chamise chaparral, coyote brush scrub, Menzies's golden bush scrub, Santa Margarita manzanita stands, restoration areas, annual brome grassland, annual grassland, cattail marshes, European

marshwort stands, Mexican rush stands, pampas grass patches, seep monkey flower stands, and veldt grass grassland. In addition to these natural habitats, two anthropogenic vegetation communities and two un-vegetated land covers occur on the Project site. These land cover types include development, exposed rock, ornamental land, and ruderal vegetation.

The vegetation communities on the site provide nesting, foraging, and cover habitat for numerous wildlife species. The varied on-site topography and soils also contribute to wildlife use and plant diversity. Travel routes for wildlife species are numerous in the habitats present within the Study Area. The open understory in the dense oak woodlands were observed to exhibit multiple animal trails, and likely provide wildlife movement routes, because: 1) the oak woodlands are less densely vegetated than the shrub-dominated habitats, and therefore present fewer obstructions to wildlife movement compared with the surrounding landscape; and 2) plants within these habitats may provide forage for wildlife species. Oak woodlands within the Study Area likely provide important features for wildlife because they provide enhanced shade, cover, and foraging habitat. In addition, the chaparral, Santa Margarita manzanita stands, and riparian in the Study Area likely provide substantial forage and nesting opportunities for resident wildlife that are adapted to these habitat types.

This Section describes the characteristics, extent, and location of the vegetation communities within the Study Area, including dominant plant species observed within each community during site visits. A map of the vegetation communities is presented in Figure 3-2, and a summary of the vegetation communities is included in Table 3-2.

3.1.1 Arroyo Willow Thickets (Sensitive Natural Community)

Arroyo willow thickets (*Salix lasiolepis* shrubland alliance) are characterized by dominant or co-dominant arroyo willow in the shrub or tree canopy. The canopy is open to continuous with a variable herbaceous layer. Shrubs are less than 32.8 feet (10 meters) tall. Arroyo willow thickets are found along stream banks and benches, slope seeps, and stringers along drainages. Elevation ranges from sea level to 7,119 feet (2,170 meters) (Sawyer *et al.* 2009). Although Sawyer *et al.* 2009 classifies arroyo willow thickets as shrubland, they are classified as a tree dominated community herein due to their growth patterns on-site. Arroyo willow thickets are classified by the CDFW (2010) as a sensitive vegetation community type.

Within the Study Area, Arroyo willow thickets occupy approximately 1.46 acres (Table 3-2). Arroyo willow thickets occur along the southern and western boundaries of Pad 41, eastern half of the Ormonde Pipe Crossing coincident with the western border of Pad 3, northwestern corner of Pad 18, northern and eastern corners of Pad 21 and associated Price Canyon Road area, northern portion of proposed access road to Pad 36, and within the non-jurisdictional hydrophytic swales located in the central and northeastern portion of Pad 42 (Figure 3-2). Dominant species in the canopy include Arroyo willow, with the addition of scattered coast

TABLE 3-1
BIOLOGICAL SURVEYS CONDUCTED AT ARROYO GRANDE OIL FIELD PHASE V

Type of Survey/Activity	Description	Date(s)	Time(s)	Weather Conditions[1]	Surveyor(s)	Areas Surveyed
Biological reconnaissance survey	Vehicular and pedestrian reconnaissance of accessible areas of the Study Area.	April 23, 2013	0700–1500	100 percent cloud cover, no precipitation. Air temperature 51–73°F with 0–10.4 mph wind from WSW. Trace precipitation.	Christopher Julian	Study Area and surrounding vicinity
Vegetation mapping	Survey and mapping of all vegetation community types within the Study Area.	July 11, 2013	0700–1300	Partly cloudy to clear, no precipitation. Air temperature 56–78°F with 4.6–11.5 mph wind from NW	Kelly Kephart Tiffany Whitsitt	Pads 1, 2, 3, 6, 7, 9, 10, 11, 13, 14, 15, 16, 17, 26, 27, 31, 33, 34, 35, 41, 44, 45, 46, 47, 48, Pad 25 Road Improvement, Northern Pipe Crossing, UPRR Pipe Crossing, EDNA Steam Generator Pad, Ormonde Pipe Crossing
		July 15, 2013	0700–1300	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 54–71°F with 4.6–13.8 mph wind from NW	Kelly Kephart Johanna Kisner	Pads 4, 5, 8, 12, 18, 19, 20, 21, 22, 23, 24, 28, 29, 36, 42, Pad 36 turnout, Price Canyon Road Pipe Crossing (PCR Pipe Crossing), and Price Canyon Road
		July 19, 2013	0700–1300	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 53–74°F with 0–15 mph winds from NW	Kelly Kephart David Kisner	Pipe Casing Replacement, and Pipe Rack Corridor
Focused floristic (botanical) surveys	Survey of all plants present within the Study Area. Focus on identification of sensitive plant species.	April 30, 2013	0700–1500	Mostly cloudy to 100% cloud cover, no precipitation. Air temperature 53–68°F with 0–12.7 mph winds from SSW	Kelly Kephart David Kisner Jamie Deutsch Tiffany Whitsitt	Pads 6, 7, 18, 20, 28, 34, 35, and 44
		May 1, 2013	0700–1500	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 5 –79°F with 0–11.5 mph winds from W	Jamie Deutsch Tiffany Whitsitt	Pads 31 and 33
		May 2, 2013	0700–1500	Clear skies, no precipitation. Air temperature 48–82°F with 0–13.8 mph winds from WNW	Kelly Kephart David Kisner Julie Love Jamie Deutsch Tiffany Whitsitt Alice Riisness	Pads 2, 3, 4, 5, 15, 17, 21, 26, 27, 42, 47, and 48
		May 3, 2013	0700–1500	Clear skies, no precipitation. Air temperature 58–95°F with 0–21.9 mph winds from NW	Kelly Kephart David Kisner Julie Love Jamie Deutsch Tiffany Whitsitt Alice Riisness	Pads 1, 8, 9, 10, 12, 13, 16, 19, 41, and 46
		May 6, 2013	0700–1500	100 percent cloud cover, trace precipitation. Air temperature 57–65°F with 3.5–13.8 mph winds from SSE	Kelly Kephart Johanna Kisner Jamie Deutsch Alice Riisness	Pads 11, 14, 22, 23, 24, 29, and 45
		May 7, 2013	0700–1500	Mostly cloudy to clear, no precipitation. Air temperature 56–72°F with 0–8.1 mph winds from NW	Kelly Kephart David Kisner Jamie Deutsch Alice Riisness	Price Canyon Road, Pad 36 Turnout, and Pad 25 Road Improvement, Northern Pipe Crossing
		May 8 and 9, 2013	0700–1500	Mostly cloudy to clear, no precipitation. Air temperature 55–68°F with 0–24.2 mph winds from NW	David Kisner Jamie Deutsch	Price Canyon Road
		May 13, 2013	0700–1500	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 52–78°F with 4.6–12.7 mph winds from NW	Kelly Kephart David Kisner	Price Canyon Road
		May 30, 2013	0700–1500	Clear skies, no precipitation. Air temperature 57–63°F with 10 mph wind from NW	Julie Love Kallin Tea	Pad 14

TABLE 3-1 (CONTINUED)
BIOLOGICAL SURVEYS CONDUCTED AT THE PHASE V SITE

Type of Survey/Activity	Description	Date(s)	Time(s)	Weather Conditions[1]	Surveyor(s)	Areas Surveyed
		June 12, 2013	0700–1500	Foggy and 100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 54–68ºF with 0–10.4 mph winds from SSW	Julie Love Courtney Smith	Pad 36
		July 11, 2013	1100–1200	Partly cloudy to clear, no precipitation. Air temperature 56–78°F with 4.6–11.5 mph wind from NW	Kelly Kephart Tiffany Whitsitt	UPRR Pipe Crossing, EDNA steam generator pad
		June 14, 2013 June 21, 2013 June 26, 2013	0700–1500	Clear skies, no precipitation June 14: 53–77°F with 3.5–8.1 mph winds from S to W June 21: 48–50°F with 8.1–27.6 mph winds from NW June 26: 58–81°F with 4.6–25.3 mph from NW	Julie Love Kelly Kephart	Ormonde Pipe Crossing, Northern Pipe Crossing, Pipe Casing Replacement, Pipe Rack Corridor, PCR Pipe Crossing
Aquatic floristic (botanical) surveys	Survey of all plants present within drainages and wetlands within the Study Area. Focus on identification of Gambel's yellowcress.	June 3, 2013	0800–1500	Overcast with light mist. Air temperature 68°F. No wind	Kelly Kephart Johanna Kisner	Bioswale near Gate 2, Pad 17 pond, Retention Basin, Pismo Creek upstream and downstream of Hyla crossing
		June 6, 2013	0830–1500	Overcast. Winds less than 5 mph. Air temperature 55°F.	Kelly Kephart Johanna Kisner	Upper reach of Pismo Creek to pipe crossing, Drainage A, Drainage B, Cañada Verde and Tiber Canyon
		June 14, 2013 June 21, 2013 June 26, 2013	0700–1500	Clear skies, no precipitation. June 14: 53–77°F with 3.5–8.1 mph winds from S to W. June 21: 48–50°F with 8.1–27.6 mph winds from NW. June 26: 58–81°F with 4.6–25.3 mph from NW	Kelly Kephart Julie Love	Drainage features adjacent to Pads 1, 17, 18, 41, and 42, Pipe Rack Corridor, North pipe crossing, and Drainage B.
Oak tree inventory	Survey of all oak trees present within the Phase V disturbance footprint	June 9, 2013	0700–1500	100% cloud cover to scattered clouds, no precipitation. Air temperature 60–70°F with 0–12.7 mph winds from SW	Jamie Deutsch Kelly Kephart	Pads 6, 34, 35, 42, and 44
		June 12, 2013	0700–1500	Mostly cloudy to clear by afternoon, no precipitation. Air temperature 54–68°F with 0–10.4 mph winds from SSW.	Jamie Deutsch Mark Weeks	Pads 4 and 42
		June 13, 2013	0700–1500	Mostly cloudy to clear, no precipitation. Air temperature 54–72°F with 9.2–24.2 mph winds from NW	Jamie Deutsch Mark Weeks	Pads 4, 7, 16, 18, 41, and Pad 25 Road Improvement
		June 14, 2013	0700–1500	Clear skies, no precipitation. Air temperature 53–77°F with 3.5–8.1 mph wind from WSW	Jamie Deutsch Mark Weeks	Pads 3, 33, Northern Pipe Crossing
		June 17, 2013	0700–1500	Clear skies, no precipitation. Air temperature 50–52°F with 9.2–26.5 mph wind from NW	Jamie Deutsch Rick Ward	Pads 13, 27, and 47
		June 18, 2013	0700–1500	100% (start) to 0% (end) cloud cover. Air temperature 53–70°F with 13.8–23 mph winds from NW	Jamie Deutsch Rick Ward Mark Weeks Darrel Remick	Pads 14, 15, 17, 31, and 45
		June 19, 2013	0700–1500	Clear skies, no precipitation. Air temperature 59–76°F with 13.8–25.3 mph wind from NW	Mark Weeks Darrel Remick	Pads 2, 8, 20, 26, 46, and 48 and Pad 36 Turnout
		June 20, 2013	0700–1500	Clear skies, no precipitation. Air temperature 63–78°F with 11.5–26.5 mph winds from NW	Jamie Deutsch Rick Ward Natalie Evans Andy Evans	Pads 5, 9, 10, and 48

TABLE 3-1 (CONTINUED)
BIOLOGICAL SURVEYS CONDUCTED AT THE PHASE V SITE

Type of Survey/Activity	Description	Date(s)	Time(s)	Weather Conditions[1]	Surveyor(s)	Areas Surveyed
		June 21, 2013	0700–1500	Clear skies, no precipitation. Air temperature 53–77°F with 8.1–27.6 mph winds from NW	Jamie Deutsch Rick Ward Natalie Evans Mark Weeks	Pads 12, 19, 21, 22, 23, and 28
		June 22, 2013	0700–1500	Clear skies, no precipitation. Air temperature 50–78°F with 0–21.9 mph winds from NW.	Jamie Deutsch Kelly Kephart	Pads 5, 22, 24, and 29
		July 23, 2013	0700–1500	Mostly cloudy to clear, no precipitation. Air temperature 61–82°F with 0–15 mph winds from NW, and maximum gusts 20.7 mph from WNW.	Jamie Deutsch David Kisner	Pads 21, 36
		July 24 and 25, 2013	0700–1500	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 57–77°F with 0–17.3 mph winds from NW.	Jamie Deutsch Rick Ward	Pad 5, 17, 41, 47, and 48, Ormonde Pipe Crossing, Pipe Casing Replacement, PCR Pipe Crossing, Price Canyon Road, UPRR Pipe Crossing, Northern Pipe Crossing, Pipe Rack Corridor, Pad 36 Turnout
Breeding bird surveys	Point-count bird surveys conducted at 13 points located within the Study Area.	May 8, 2013	0800–0917	Partly to mostly cloudy, no precipitation. Air temperature 56–62°F, with 0–2 mph wind from NW.	David Kisner Jaime Deutsch	Points BBS20, BBS23, BBS31, and BBS43
		May 9, 2013	0644–1047	95% (start) to 10% (end) cloud cover, no precipitation. Air temperature 55–65°F with 5.8–12.7 mph wind from NW.	David Kisner Jaime Deutsch	Points BBS01, BBS03, BBS04, BBS06, BBS09, BBS16, BBS45, BBS46, and BBS48
		May 23, 2013	0755–1022	0% cloud cover, no precipitation. Air temperature 54–63°F with 10.4–12.7 mph wind from NW.	David Kisner Johanna Kisner	Points BBS01, BBS03, BBS04, BBS06, BBS09, BBS16, BBS20, BBS23, BBS31, BBS43,BBS 45, BBS46, and BBS48
Raptor surveys	Raptor survey conducted by sustained observation at four points located within the Study Area or immediate vicinity.	May 29 and 31, 2013	0841–1154	Clear skies, no precipitation. Air temperature 71–80°F with 10.4–23 mph wind from NW.	David Kisner Jaime Deutsch	Stations ROS01, ROS02, ROS03, and ROS04
		June 17 and 18, 2013	0942–1205	Clear skies, no precipitation. Air temperature 57–73°F with 10–15 mph wind from NW.	David Kisner	Stations ROS01, ROS02, ROS03, and ROS04
California red-legged frog breeding daytime surveys	USFWS protocol breeding daytime surveys within Study Area – Survey #1	June 3, 2013	0800–1500	Overcast with light mist. Air temperature 68°F. No wind.	Kelly Kephart Johanna Kisner	Pad 17 pond, Retention Basin, Pismo Creek upstream and downstream of Hyla crossing
	Survey #1 (continued)	June 6, 2013	0830–1500	Overcast. Winds less than 5 mph. Air temperature 55°F.	Kelly Kephart Johanna Kisner	Drainage A, Pismo Creek upstream of Northern Pipe Crossing, Retention Basin, and Pad 17 pond
	Survey #2	June 11, 2013	0800–1500	Mostly cloudy, air temperature 61–74°F with up to 5 mph winds from NW.	Julie Love Kelly Kephart	Pismo Creek upstream and downstream of Hyla Crossing, Retention Basin, and Pad 17 pond
	Survey #2 (continued)	June 14, 2013	0800–1500	Clear skies, air temperature 61–77°F with up to 5 mph wind from WSW.	Julie Love Kelly Kephart	Pismo Creek upstream and downstream of Northern Pipe Crossing
	Survey #2 (continued)	June 21, 2013	0800–1500	Clear skies, air temperature 59–74°F with up to 5 mph winds from NW	Julie Love Kelly Kephart	Drainage B and Cañada Verde Tributary
California red-legged frog non-breeding daytime survey	USFWS protocol non-breeding surveys within Study Area – Survey #1	July 23, 2013	0800–1500	Air temperature 61°F, foggy, cool, low clouds, wind less than 5mph	Johanna Kisner David Kisner Jamie Deutsch	Retention basin, Pad 17 pond, Drainage B, Pismo Creek upstream and downstream of Hyla and Northern Pipe Crossings, and Cañada Verde Tributary
California red-legged frog breeding nighttime surveys	USFWS protocol breeding nighttime surveys within Study Area – Survey #1	June 4, 2013	2100–0100	Clear sky. No moon. Air temperature 54°F. Winds less than 5 mph	Kelly Kephart Johanna Kisner	Pismo Creek upstream and downstream of Hyla crossing, Retention Basin, and Pad 17 pond

TABLE 3-1 (CONTINUED)
BIOLOGICAL SURVEYS CONDUCTED AT THE PHASE V SITE

Type of Survey/Activity	Description	Date(s)	Time(s)	Weather Conditions[1]	Surveyor(s)	Areas Surveyed
	Survey #2	June 7, 2013	2100–0100	Partly cloudy. Air temperature 55°F, winds 3.5mph or less	Kelly Kephart David Kisner Tiffany Whitsitt	Upstream and downstream of Hyla Crossing, Retention Basin, and Pad 17 pond
	Survey #2 (continued)	June 14, 2013	2100-0100	Clear sky. Waxing crescent moon. Air temperature 55°F, winds 4.6 mph or less	Kelly Kephart Billy Fletcher Tiffany Whitsitt	Retention basin, Pad 17 pond, Drainage B, and Pismo Creek upstream and downstream of Hyla and Northern Pipe Crossings
	Survey #3	June 22, 2013	2100–0100	Clear skies, warm, full supermoon. Air temperature 65°F with no winds	Kelly Kephart Tiffany Whitsitt Christopher Julian	Retention basin, Pad 17 pond, Drainage B, Pismo Creek upstream and downstream of Hyla and Northern Pipe Crossings, and Cañada Verde Tributary
	Survey #4	June 30, 2013	2100–0030	Air temperature 69°F, warm, clear, no clouds, slight breeze ~2mph NW	Kelly Kephart Johanna Kisner Jamie Deutsch	Retention basin, Pad 17 pond, Drainage B, Pismo Creek upstream and downstream of Hyla and Northern Pipe Crossings, and Cañada Verde Tributary
California red-legged frog non-breeding nighttime survey	USFWS protocol non-breeding nighttime survey within Study Area – Survey #1	July 24, 2013	2100–0100	Air temperature 63.5°F, foggy, partly cloudy, wind 0–2mph from SW	Johanna Kisner David Kisner Anthony Schuetze	Retention basin, Pad 17 pond, Drainage B, Pismo Creek upstream and downstream of Hyla and Northern Pipe crossings, and Cañada Verde Tributary
General wildlife surveys	Scent stations using wildlife cameras.	May 13 through June 21, 2013		Conditions were generally clear to overcast with trace precipitation. Average air temperature ranged from 49–78°F with variable winds averaging 7.4 mph	Jamie Deutsch David Kisner	Study Area
Jurisdictional determination	Delineation of USACE and CDFW jurisdictional waters and streambeds	June 5, 2013	0700–1500	100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 54–71°F with 3.5–16.1 mph winds from NW	Julie Love Jamie Deutsch	Pad 21 and Retention Basin
		June 12, 2013	0700–1500	Foggy and 100% (start) to 0% (end) cloud cover, no precipitation. Air temperature 54–68°F with 0–10.4 mph winds from SSW	Julie Love Courtney Smith	Pads 11, 23, 17, and 36
		June 11, 14, 21, and 26	0700–1500	Clear skies, no precipitation. June 11: 61–74°F with 0 to 17.3 mph winds from NW June 14: 53–77°F with 3.5–8.1 mph winds from S to W June 21: 48–50°F with 8.1–27.6 mph winds from NW June 26: 58–81°F with 4.6–25.3 mph from NW	Julie Love Kelly Kephart	Pads 1, 3, 17, 18, 21, 41, and 42, Pipe Rack Corridor, Northern Pipe Crossing

[1] Weather conditions recorded in field and/or using Weather Underground (2013).

TABLE 3-2
SUMMARY OF VEGETATION COMMUNITY TYPES BY PROJECT COMPONENT

	Survey Area																																															
Vegetation Community	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8 & 20	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 36 Turnout	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Tree Dominated Communities																																																
Arroyo Willow Thickets1, 2			0.11															0.04		0.15														0.06	0.77	0.06												
Coast Live Oak Woodland2	0.04	2.99	0.96	0.41	0.94	0.53	0.48	0.49	2.86	0.40	0.97	0.51	1.23	1.49	0.24	1.12	0.58	0.21	0.05	1.61	1.65	3.15	1.26	0.27	0.45	0.53	0.31	0.60	0.77	0.46	0.55	0.16	0.18	0.22	0.01	0.87	0.24	3.47	2.49	1.00	0.60	0.06	0.06	0.01		0.08	0.16	0.63
Eucalyptus and Pepper Tree Groves				0.07																					0.10																			0.03					
Red Willow Thickets2																	0.01																																
Shrub Dominated Communities																																																
California Sagebrush Scrub					0.36																				0.16									0.04					0.15	0.29								
Chamise-Black Sage Chaparral													0.03					0.04													0.36							0.47										
Chamise Chaparral														0.27							0.07			1.04		0.00		0.30		0.32								0.14			2.21							
Coyote Brush Scrub	0.39		0.54	0.03	0.02			0.09	0.22		0.03		0.01							0.07								0.48		0.41					0.21													
Menzies's Golden Bush Scrub	0.09																																															
Santa Margarita Manzanita Stands2					0.14	1.00	0.89	1.60				0.36		0.00					1.04		0.11	0.64				0.54	0.96	0.04				0.79	1.24				0.85										0.01
Restoration Area																																				0.52												
Herbaceous Dominated Communities																																																
Annual Brome Grassland	0.83								0.88	1.80	0.74		0.53	0.67		1.09				1.64			0.11	0.14	0.09									1.24	2.34	4.53		0.05	0.07	0.01			3.30			0.26	0.12	
Annual Grassland				1.26	0.03																															0.12										0.02		
Cattail Marshes																		0.01																															
Cattail																	0.01																														0.00		

TABLE 3-2 (CONTINUED)
SUMMARY OF VEGETATION COMMUNITY TYPES BY PROJECT COMPONENT

	Survey Area																																																			
Vegetation Community	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8 & 20	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 36 Turnout	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Marshes/Pampas Grass Patches																																																				
European Marshwort Stands																				0.02																															
Mexican Rush Stands																				0.43																															
Pampas Grass Patches																																																				
Seep Monkey Flower Stands					0.04															0.05																															
Veldt Grass Grassland									0.02				0.97		1.16		1.71																																		
Anthropogenic/Unvegetated Communities																																																				
Development	0.20	0.21	0.09	0.59	0.69	0.40	0.24	1.41	0.91		0.92	0.42	0.54	0.56	0.26	0.01	1.19	1.21	0.23	0.05	0.39	0.60	0.31	0.44	0.54	0.60	0.22		0.37		0.35	0.37	0.21	0.04		0.08	0.41	1.54	0.10	0.21	0.21	0.02		0.23	0.29	0.07	0.00	0.08
Exposed Rock													0.20																																							
Ornamental Land				0.03														0.13																																
Ruderal Vegetation								0.05	0.08					0.17				0.04								0.43																		0.10						
Total	1.55	3.20	1.68	2.40	2.22	1.93	1.61	3.64	4.96	2.20	2.66	1.29	3.50	3.17	1.66	2.22	3.50	1.69	1.32	4.01	2.22	4.39	1.69	1.88	1.34	2.09	1.49	1.41	1.13	1.19	1.25	1.32	1.64	1.61	3.33	6.18	1.50	5.67	2.81	1.51	3.02	0.08	3.36	0.37	0.29	0.42	0.29	0.72

[1] Classified as tree dominated community due to growth patterns on-site (Sawyer *et al*. 2009).

[2] Sensitive Natural Community

live oak in some locations. Poison oak and/or non-native grasses are dominant in the understory.

3.1.2 Coast Live Oak Woodland (Sensitive Natural Community)

Coast live oak woodland (*Quercus agrifolia* woodland alliance) is characterized by dominant or co-dominant coast live oak in the tree canopy with a sparse to intermittent shrub layer and sparse or grassy herbaceous layer. Trees are less than 98 feet (30 meters) tall. Coast live oak woodland is found in alluvial terraces, canyon bottoms, stream banks, slopes, and flats. Associated soils are deep, sandy or loamy with high organic matter. Elevation ranges from sea level to 3,937 feet (1,200 meters) (Sawyer *et al.* 2009). Coast live oak woodlands are not classified by the CDFW (2010) as a sensitive community type. Further, California Public Resources Code §21083.4 (Senate Bill 1334) directs counties to evaluate and mitigate for significant impacts to oak woodlands when reviewing projects under CEQA.

Within the Study Area, coast live oak woodland is the most extensive vegetation community, occupying approximately 43.67 acres (Table 3-2). This vegetation type is present throughout the Study Area, most commonly occupying areas within the northern, central, and eastern portions of the Study Area (Figure 3-2). Dominant species within the herbaceous layer include wild oat grass (*Avena fatua*/*barbata*) and ripgut brome (*Bromus diandrus*). Poison oak is the most dominant understory species, with Santa Margarita manzanita (*Arctostaphylos pilosula* [A. *wellsii*]) also present within the understory. This species is commonly present as a shrub layer within coast live oak woodland and is often associated with poison oak understory. Santa Margarita manzanita is a sensitive species discussed in detail in Section 3.9.1 of this BRAR.

3.1.3 Eucalyptus and Pepper Tree Groves

Eucalyptus and pepper tree groves is not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009), but rather a combination of two accepted plant communities: Eucalyptus groves (*Eucalyptus* [*globulus, camaldulensis*] Semi-Natural Woodland Stands), and Pepper tree or Myoporum groves (*Schinus* [*molle, terebinthifolius*]-*Myoporum laetum* Semi-Natural Woodland Stands). Eucalyptus and pepper tree groves were mapped within the Study Area due to the presence of areas that were co-dominated by blue gum eucalyptus (*Eucalyptus globulus*) and Peruvian pepper tree (*Schinus molle*), but did not fit any other established vegetation classification. Eucalyptus present in the canopy is less than 50 meters tall and Peruvian pepper trees in the canopy are less than 18 meters tall. The canopy is intermittent to continuous and the shrub and herbaceous layer is sparse to intermittent. Eucalyptus and pepper tree groves are planted as tree groves, and windbreaks in uplands and along roadsides. Soils are variable. Eucalyptus and pepper trees are present throughout California, at elevations from sea level to 300 feet (91 meters) (CNPS 2013). Eucalyptus and pepper tree groves are non-native and are not

classified as a sensitive community type. Blue gum eucalyptus is ranked by the California Invasive Plant Council (Cal-IPC) as moderately invasive and Peruvian pepper tree has a limited invasive rank (Cal-IPC 2013).

Within the Study Area, Eucalyptus and pepper tree groves occupy approximately 0.20 acres (Table 3-2) within the Pads 4, 27, and UPRR Pipe Crossing (Figure 3-2). In some locations coast live oaks, both planted and naturally occurring are scattered within the Eucalyptus and pepper tree groves. Understory species include species typically found in ruderal areas, which include non-native black mustard, wild oat grass, ripgut, and red brome (*Bromus madritensis* ssp. *rubens*). The eucalyptus and pepper trees present are occasionally pruned to prevent impact from vehicles utilizing the pads, and the understory is typically mowed.

3.1.4 Red Willow Thickets (Sensitive Natural Community)

Red willow thickets (*Salix laevigata* woodland alliance) are characterized by dominant or co-dominant red willow in the tree canopy. The canopy is open to continuous with an open to intermittent shrub layer and variable herbaceous layer. Trees are less than 65.5 feet (20 meters) tall. Red willow thickets are found in ditches, floodplains, lake edges, and low-gradient depositions along streams. Elevation ranges from sea level to 5,577 feet (1700 meters). Along the Central California Coast stands are scattered along creeks and floodplains (Sawyer *et al.* 2009). Red willow thickets are classified by the CDFW (2010) as a sensitive natural community.

Within the Study Area, red willow thickets occur within the riparian area associated with Pismo Creek at the Northern Pipe Crossing (Figure 3-2) and encompass 0.07 acres (Table 3-2). Dominant species include red and arroyo willow, with an understory of water cress (*Nasturtium officinale*), common horsetail (*Equisetum arvense*), and poison oak.

3.1.5 California Sagebrush Scrub

California sagebrush scrub (*Artemisia californica* alliance) is characterized by intermittent to continuous California sagebrush in the shrub canopy. The shrubs are less than 6 feet (1.8 meters) tall or in two tiers with a second under 15 feet (4.5 meters). There is a variable herbaceous layer seasonally and annually. California sagebrush scrub can be found along slopes that are usually steep and rarely flooded, low-gradient deposits along streams, and in soil that is alluvial or colluvial derived and shallow. Elevation of California sagebrush scrub ranges from sea level to 3,600 feet (1,097 meters) (Sawyer *et al*. 2009). California sagebrush scrub is not a sensitive community type, and has a ranking of G5, globally secure and S5, State secure (CDFW 2010).

Within the Study Area, California sagebrush occupies approximately 1.01 acres (Table 3-2) primarily associated with Pads 27, 46, and 47 (Figure 3-2). In all locations, California sagebrush is dominant with more than 60% cover in the shrub layer, with coyote brush

present but at a lower percent cover. Dominant understory species include several native herb and non-native grass species.

3.1.6 Chamise-Black Sage Chaparral

Chamise-black sage chaparral (*Adenostoma fasciculatum-Salvia mellifera* shrubland alliance) is characterized by dominant or co-dominant chamise and black sage in the shrub canopy with a sparse herbaceous layer. Shrubs are less than nine feet (2 meters) tall. Chamise-black sage chaparral is found on south-facing slopes with shallow loamy sand or sandy loam soils. Elevation ranges from 32 to 5,000 feet (10 to 1,600 meters). Chamise-black sage chaparral is not a sensitive community type, and has a ranking of G5, globally secure and S5, demonstrably secure (CDFW 2010).

Within the Study Area, chamise-black sage chaparral occupies 0.95 acres (Table 3-2) primarily associated with Pad 33 and 45 (Figure 3-2). In addition to the co-dominant chamise and black sage shrubs, dominant understory species include wild oat grass, ripgut brome, and several native herb species.

3.1.7 Chamise Chaparral

Chamise chaparral (*Adenostoma fasciculatum* shrubland alliance) is characterized by dominant chamise in the shrub canopy, which is intermittent to continuous, with emergent trees potentially present and a sparse to intermittent herbaceous layer. Shrubs are less than 13 feet (4 meters) tall. Chamise chaparral is found on variable topography with shallow soils over colluvium or many types of bedrock. Elevation ranges from 33 to 5,905 feet (10-1,800 meters). Chamise chaparral is not a sensitive community type, and has a ranking of G5, globally secure and S5, demonstrably secure (CDFW 2010).

Within the Study Area, chamise chaparral occupies 4.36 acres (Table 3-2) primarily associated with Pads 26 and 48, with smaller areas occurring within Pads 14, 22, and 45 (Figure 3-2). In addition to the dominate chamise, dominate understory species include wild oat grass, ripgut brome, and native herb species.

3.1.8 Coyote Brush Scrub

Coyote brush scrub (*Baccharis pilularis* scrub alliance) is characterized by dominant or co-dominant coyote brush in the shrub canopy. Shrubs are less than 9 feet (2 meters) tall and the canopy and herbaceous layers are both variable. Coyote brush scrub is found along river mouths, stream sides, terraces, stabilized dunes of coastal bars, open slopes, and ridges. Elevation of coyote brush scrub ranges from sea level to 4,500 feet (1,370 meters) (Sawyer *et al*. 2009). Coyote brush scrub is not a sensitive community type, and has a ranking of G5, globally secure and S5, State secure (CDFW 2010).

Within the Study Area, coyote brush scrub occupies approximately 4.15 acres (Table 3-2) primarily associated with Pads 3, 30, 32, northern pipe crossing, and within the northern portion of the Price Canyon Road (Figure 3-2). Coyote brush scrub within the study area is variable. In some locations the coyote brush shrub is dominant in the shrub layer with an understory dominated by non-native grass species and small native and non-native herbs. In other locations, coyote brush is the dominant shrub layer, by typically found along riparian corridors along with poison oak.

3.1.9 Menzies's Golden Bush Scrub

Menzies's golden bush scrub (*Isocoma menziesii* shrubland alliance) is characterized by open to intermittent golden bush in the shrub canopy. The shrubs are less than 1 meter tall. The herbaceous layer is open to continuous, diverse, and grassy. Menzies's goldenbush scrub can be found in alluvial fans, arroyos, stream terraces, and sand dunes. Most populations are the result of recent or frequent disturbance from several causes including fire, flooding, erosion, and human-caused clearing. Elevation of Menzies's golden bush scrub ranges from sea level to 1,200 meters (Sawyer *et al*. 2009). Menzies's golden bush scrub is not a sensitive community type, and has a ranking of G4, globally apparently secure and S4, State apparently secure (CDFW 2010).

Within the Study Area, Menzie's golden bush scrub occupies approximately 0.74 acres (Table 3-2) within the northern portion of the Price Canyon Road area (Figure 3-2). Menzie's golden bush scrub within the study area is dominant in the shrub layer with an understory dominated by non-native grass species and small native and non-native herbs.

3.1.10 Santa Margarita Manzanita Stands (Sensitive Natural Community)

Although not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009), the currently accepted standard for classifying terrestrial vegetation in California, Santa Margarita manzanita stands were mapped within the Study Area due to the presence of areas that were dominated by Santa Margarita manzanita (*Arctostaphylos pilosula* [*A. wellsii*]) but did not fit any other established vegetation classification. Coast live oak is present in the canopy in some areas, and shrubs are generally less than 10 feet (3 meters) tall. The canopy is continuous and the herbaceous layer is sparse. Santa Margarita manzanita stands are most commonly found on outcrops, ridges, and north and east facing slopes. Soils are often shallow and rocky. Santa Margarita manzanita ranges from Pismo Beach to Pozo Summit in San Luis Obispo County, at elevations from 558 to 3,609 feet (170 to 1,100 meters) (CNPS 2013). Typically, Santa Margarita manzanita has been included in the Eastwood manzanita chaparral community (*Arctostaphylos glandulosa* alliance), but habitat within the Study Area differed from the Sawyer *et al.* (2009) habitat description.

Santa Margarita manzanita stands are part of the larger Central Maritime Chaparral habitat type defined by Holland (1986), and were considered to be a sensitive natural community by CDFW prior to 2010. Central maritime chaparral exists along California's northern and central coasts in nutrient-poor soils, on windward uplands and coastal lowlands between Mendocino and Santa Barbara counties. One or more species of manzanita, or Ceanothus (*Ceanothus* spp.) – including many narrow endemic plants considered rare and endangered – characterize these stands (Sawyer *et al.* 2009). Santa Margarita manzanita maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 1B.2 (fairly endangered in California) species. Although not recognized by the most current vegetation classification system, Central Maritime chaparral has been classified as a sensitive community type with a ranking of G3, vulnerable and S3, vulnerable (CNPS 2013).

Within the Study Area, Santa Margarita manzanita stands are the third most prevalent vegetation community and occupy approximately 10.91 acres (Table 3-2). Pads located within the southwestern portion of the Study Area contain the most Santa Margarita manzanita stands (Figure 3-2). In addition to the dominant Santa Margarita manzanita, understory species are relatively sparse, but when present include several small native herbs such as diffuse spineflower (*Chorizanthe diffusa*) and navarretia (*Navarretia atractyloides*). Santa Margarita manzanita is discussed in detail in Section 3.9.1 of this BRAR.

3.1.11 Restoration Area

Although not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009) some locations were identified as restoration areas during mapping efforts. These areas were defined by plantings which indicate recent attempts to reestablish native vegetation within the Study Area. Restoration areas are comprised mostly of coyote brush (*Baccharis pilularis*) and coast live oak saplings. Within the Study Area, restoration area occupies approximately 0.52 acres (Table 3-2) along the northern slope of Pad 42 (Figure 3-2).

3.1.12 Annual Brome Grassland

Annual Brome Grassland (*Bromus diandrus, hordeaceus - Brachypodium distachyon* herbaceous stands) is characterized by dominant or co-dominant ripgut brome, soft chess (*B. hordeaceus*), or false brome (*Brachypodium distachyon*) with native and non-native species in the herbaceous layer. This vegetation community is not native, but it has become naturalized throughout California following European contact. Emergent trees and shrubs may be present at low cover. Herbs in this plant community are less than two and a half feet (<75 centimeters) tall, and cover is intermittent to continuous. Annual brome grassland is found in all topographical settings in foothills, waste places, rangelands, and openings in woodlands. Elevation ranges from sea level to 7,200 feet (2,200 meters). Annual brome

grasslands are non-native and are not classified as a sensitive community type. Ripgut brome and soft brome are ranked by Cal-IPC as moderately invasive (Cal-IPC 2013).

Within the Study Area, annual brome grassland is the second most extensive habitat type, second only to coast live oak woodland. This vegetation type occupies 20.72 acres (Table 3-2) and is primarily associated with project components occurring within the northern half of the Study Area in addition to Pad 42 located along the southern portion of the Study Area (Figure 3-2). In addition to the two types of brome present, dominant herbaceous species present include: lupines (*Lupinus* sp.), rose clover (*Trifolium hirtum*), sheep sorrel (*Rumex acetosella*), and stork's bill (*Erodium botrys*). Additional species present within this habitat include Pismo clarkia, which is a sensitive species discussed in detail in Section 3.2.1 of this BRAR.

3.1.13 Annual Grassland

Annual grassland is not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009), but rather a combination of veldt grass grassland, and two accepted plant communities annual brome grassland (*Bromus diandrus, B. hordeaceus* - *Brachypodium distachyon* herbaceous stands) and wild oats grassland (*Avena* [*barbata*/*fatua*] semi-natural herbaceous stands). Annual grasslands were mapped within the Study Area due to the presence of areas that were co-dominated by veldt grass, wild oat grass, and ripgut brome, but did not fit any other established vegetation classification. All three dominant non-native grasses present in the herbaceous layer are less than 1.2 meters tall. The herbaceous layer is continuous with emergent trees and shrubs present at low cover. Soils are variable. Annual grasslands are present throughout California in waste places, rangelands, and openings in woodlands, at elevations from sea level to 1,200 meters (CNPS 2013). Veldt grass is ranked by the Cal-IPC as highly invasive, while slender oats, wild oats, and ripgut brome are ranked as moderately invasive (Cal-IPC 2013).

Within the Study Area, annual grasslands occupy approximately 5.40 acres (Table 3-2) primarily associated with areas within 50 feet of Price Canyon Road and within Pad 4 (Figure 3-2). In addition to the three dominant non-native grasses present, dominant herbaceous species present are variable and can include: lupines (*Lupinus* sp.), black mustard (*Brassica nigra*), windmill pink (*Silene gallica*), and telegraph weed (*Heterotheca grandiflora*). Additional species present within this habitat include Pismo clarkia and paniculate tarplant, which are sensitive species discussed in detail in Section 3.2.1 of this BRAR.

3.1.14 Cattail Marshes

Cattail marshes (*Typha angustifolia*, *T. domingensis*, or *T. latifolia* herbaceous alliance) are characterized by dominant or co-dominant cattail species (*Typha* spp.) in the herbaceous layer, with possible low cover of emergent trees such as willow (*Salix* spp.). These herbs

grow up to 5 feet (1.5 meters) tall, and occur over nearly all of California from sea level to 1,148 feet (350 meters) elevation, in semi-permanently flooded freshwater or brackish marshes, and in clayey or silty soils. (Sawyer *et al*. 2009). Cattail marshes are not classified as a sensitive community type.

Within the Study Area, cattail marshes occur along the non-jurisdictional hydrophytic swale of Pad 18 (Figure 3-2), for a total of 0.01 acres (Table 3-2). Cattail marshes occur with pampas grass (*Cortaderia selloana*) patches along Drainage B at Pad 17 and the Pipe Casing Replacement (Figure 3-2), for a total of 0.01 acres(Table 3-2). In addition to cattail, arroyo willow, and poison oak are co-dominant canopy and understory species.

3.1.15 Pampas Grass Patches

Pampas grass patches (*Cortaderia jubata* and *C. selloana* semi-natural herbaceous stands) are characterized by dominant pampas grass with open to continuous cover in the herbaceous and shrub layers; emergent shrubs and trees may be present at low cover. Pampas grass is a large, invasive tussock grass with showy plumes and numerous small seeds that grows up to 13 feet (4 meters) tall. It occurs from sea level to 2,624 feet (800 meters) elevation in grasslands, wetlands, estuaries, coastal land, urban-, and other disturbed areas (Sawyer *et al.* 2009). Pampas grass patches are non-native and are not classified as a sensitive community type. Pampas Grass is ranked by the Cal-IPC as highly invasive (Cal-IPC 2013).

Within the Study Area, pampas grass patches occur along Price Canyon Road (Figure 3-2), for a total of occupy 0.31 acres (Table 3-2). Pampas grass occurs with cattail marshes along Drainage B at Pad 17 and the Pipe Casing Replacement (Figure 3-2), for a total of 0.01 acres (Table 3-2). In addition to cattail, arroyo willow, and poison oak are co-dominant canopy and understory species.

3.1.16 European Marshwort Stands

The area classified as European marshwort stands does not correspond to a classification in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009); therefore, the community was informally characterized by its dominant species, European marshwort (*Apium nodiflorum*). Within the Study Area, European marshwort stands occur at the far western extent of the drainage area associated with Pad 21 (Figure 3-2), for a total of 0.02 acres (Table 3-2). In addition to European marshwort, dominant species include common rush (*Juncus patens*) and poison oak.

3.1.17 Mexican Rush Stands

The area classified as Mexican rush stands does not correspond to a classification in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009); therefore, this community was informally characterized by its dominant species, Mexican rush (*Juncus*

mexicanus). Within the Study Area, Mexican rush stands occur within the proposed access road area of Pad 21 and the area immediately east of the disturbance buffer for the main pad area (Figure 3-2), for a total of 0.43 acres (Table 3-2). Dominant understory species at this location include narrowleaf plantain (*Plantago lanceolata*), lesser quaking grass (*Briza minor*), and poison oak.

3.1.18 Seep Monkey Flower Stands

The area classified as seep monkey flower stands does not correspond to a vegetation community type in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009). Therefore, this community was informally characterized by its dominant species, seep monkey flower (*Mimulus guttatus*). Within the Study Area, seep monkey flower stands occur along the southern side of the proposed Pad 21 access road (0.05 acres), Pad 5 (0.04 acres), and along Price Canyon Road (Figure 3-2), for a total of 0.0.09 acres (Table 3-2). In addition to seep monkey flower, co-dominant species at this site include common rush, brown-headed rush (*Juncus phaeocephalus*), chickweed (*Cerastium* sp.), and poison oak.

3.1.19 Veldt Grass Grassland

Although not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009), veldt grass (*Ehrharta calycina*) grasslands were mapped within the Study Area due to the presence of areas that were dominated by veldt grass. Elevation of veldt grass ranges from sea level to 1,640 feet (500 meters) (Jepson 2013). Veldt grass is ranked by the Cal-IPC as highly invasive (Cal-IPC 2013).

Within the Study Area, veldt grass grassland occupies approximately 4.01 acres (Table 3-2) primarily in association with Pads 13, 15, and 17 (Figure 3-2). In all locations, veldt grass is the dominant grass present in the herbaceous layer, with other non-native grasses such as ripgut brome, soft chess, red brome, and wild oat grass present in smaller percentages. Veldt grass grassland occurs adjacent to roads and pads, areas that have been disturbed, and in oak woodland openings.

3.1.20 Development

Developed areas are comprised of active road and pad locations; they have little vegetative cover due to compaction and/or road development. Developed areas generally provide very low quality habitat for native plants and wildlife. Within the Study Area, development occupies approximately 24.85 acres (Table 3-2) on all existing pads, roads, and facilities (Figure 3-2).

3.1.21 Exposed Rock

Exposed rock was mapped within the Study Area due to the presence of areas that were largely composed of bare rock, with low percent cover of species growing within soil that developed in rock crevices.

Within the Study Area, exposed rock occupies approximately 0.71 acres (Table 3-2) within the central portion of Pad 13 and within 50 feet of Price Canyon Road (Figure 3-2). In all locations, bare rock was dominant over any other vegetation present. Within Pad 13, non-native grasses such as ripgut, soft chess, red brome, veldt grass, and wild oat grass were present in crevices between rocks. Other species present included; black sage, bush monkeyflower (*Mimulus aurantiacus*), and black mustard. Exposed rock within the 50 foot buffer of Price Canyon Road is likely the result of roadcuts. Vegetation present is located in cracks and seeps in crevices of the rockface. Non-native grasses are present as well as pampas grass, arroyo willow, small coast live oak trees, and scattered chalk dudleya (*Dudleya pulverulenta*).

3.1.22 Ornamental Vegetation

Although not formally identified as a plant community in *A Manual of California Vegetation, Second Edition* (Sawyer *et al.* 2009), ornamental vegetation was mapped within the Study Area due to the presence of areas that were dominated by non-native, ornamental species planted for landscaping purposes.

Within the Study Area, ornamental land occupies approximately 1.77 acres (Table 3-2) primarily associated within 50 feet of Price Canyon Road (Figure 3-2). Vegetation associated with ornamental land include: small patches of ornamental lawn areas, red rock rose (strawberry tree (*Arbutus unedo*), and planted or naturally occurring coast live oak.

3.1.23 Ruderal Vegetation

Ruderal plants grow in disturbed areas as a result of activities such as road cuts, soil stockpiles, and areas that are continually disturbed. Ruderal areas have a high percentage of bare ground and are typically dominated by non-native species such as Russian thistle (*Salsola tragus*), black mustard, and red brome. Russian thistle is ranked by the Cal-IPC as having limited invasiveness, black mustard is ranked as moderately invasive, and red brome is ranked as highly invasive (Cal-IPC 2013).

Within the Study Area, ruderal vegetation occupies 3.13 acres (Table 3-2) primarily occurring within Pad 14 and within 50 feet of Price Canyon Road (Figure 3-2). Ruderal vegetation is typically associated with previous ground clearing activities adjacent to pads and roads. Stockpiles within the Study Area are typically barren with scattered cocklebur (*Xanthium strumarium*) and pampas grass. Due to the low plant species diversity and

predominance of invasive weeds in most ruderal areas, the habitat value of this vegetation type is generally believed to be low.

3.2 FOCUSED FLORISTIC SURVEYS

3.2.1 Terrestrial Plant Surveys

A total of 253 plant species were observed within the Study Area, including 162 native species, 90 non-native species, and one hybrid species. A total of eight special-status plants species were detected, including two shrubs and five forbs (see Section 3.2.1.1). Many early-blooming species were observed in flower and identified during the initial botanical survey conducted from March 30 to May 13, 2013, and later-flowering species such as paniculate tarplant, were observed in flower during the final botanical visit from July 11 to 19, 2013. A list of all observed plant species is presented in Appendix C. Photographs taken to document site conditions are presented in Appendix B.

Dominant plants observed in the Study Area included trees, shrubs, annual grasses, and herbs. The Study Area is broken up into two generalized areas: the east side and west side of Price Canyon Road. Each portion of the Study Area is highly diverse with many different vegetation communities present.

The Study Area on the east side of Price Canyon Road is dominated by coast live oak. Poison oak, hedge parsley (*Torilis arvensis*), Indian warrior (*Pedicularis densiflora*), hummingbird sage (*Salvia spathacea*), white Chinese houses (*Collinsia bartsiifolia* var. *bartsifolia*), Rattan's phacelia (*Phacelia rattanii*), and non-native grasses such as ripgut brome and red brome were present in the understory. Pismo Creek as well as multiple tributaries to Pismo Creek are present on the east side of Price Canyon Road. Arroyo willow is dominant in these areas with occasional black cottonwood (*Populus trichocarpa*) and sycamore (*Platanus racemosa*) present in the tree canopy. Understory species present in the willow riparian corridors include black berry (*Rubus ursinus*), greater periwinkle (*Vinca major*), and cape ivy (*Delairea odorata*). Habitat dominated by coyote brush with sweet fennel (*Foeniculum vulgare*), Italian thistle (*Carduus pycnocephalus*), and coastal goldenbush was present on the edges of the riparian corridors.

Grassland areas that are actively grazed are present on the east side of Price Canyon Road. These grasslands are dominated by non-native species such as ripgut brome, red brome, soft chess, and wild oat grass. Other herbaceous species present include yellow star thistle (*Centaurea solstitialis*), horseweed (*Conyza canadensis*), morning glory (*Calystegia macrostegia* ssp. *cyclostegia*), and mayweed (*Anthemis cotula*). Other grasslands found in the openings of oak woodlands and chamise-black sage chaparral were dominated by non-native grasses and other herbaceous species such as windmill pink, truncate-leaved lupine (*Lupinus truncatus*), Coast tarweed (*Madia sativa*), and multiple clarkia species. Portions of the Study Area on the east side of Price Canyon Road are within dense, impenetrable chamise-black

sage chaparral. In these areas, there is very little understory below the chamise and black sage shrubs.

The Study Area on the west side of Price Canyon Road has similar habitats and species diversity when compared to the east side of Price Canyon Road. Coast live oak woodlands are common within this portion of Study Area. The understory species within the coast live oak woodland are similar to the east side of Price Canyon Road, except that Santa Margarita manzanita is more prevalent as an understory species on the west side. Santa Margarita stands are common on the west side of Price Canyon. This habitat has an almost continuous shrub layer of Santa Margarita manzanita with emergent coast live oak and a sparse understory of diffuse spineflower, Turkish rugging (*Chorizanthe staticoides*), chaparral bedstraw (*Galium angustifolium* ssp. *angustifofium*), and common sand aster (*Corethrogyne filaginifolia*). Annual brome grasslands in this portion of the Study Area are dominated by ripgut brome, rose clover, multiple lupine species, and multiple clarkia species including Pismo clarkia. Other grasslands present in this area include veldt grass grasslands and annual grasslands. Both of these habitats are relatively disturbed and can be found in grazed and disturbed areas adjacent to roads and pads. Red brome, ripgut brome, wild oat grass, and veldt grass are dominant in these communities. Herbaceous species such as windmill pink, tocalote (*Centaurea melitensis*), black mustard, and deer weed (*Acmispon glaber* var. *glaber*) are present but not dominant. The makeup of chamise-black sage chaparral on the west side of Price Canyon Road is comparable to the east side.

The greatest floristic diversity was found within seven of the fourteen natural vegetation communities mapped within the Study Area (coast live oak woodland, arroyo willow thickets, Santa Margarita manzanita stands, chamise-black sage chaparral, California sagebrush scrub, coyote brush scrub, and Menzies's golden bush scrub). All three grassland habitats observed in the Study Area (annual brome grassland, veldt grass grassland, annual grassland) had floristic diversity, but also had a high percent of non-native species. All vegetation communities are described in detail in Section 3.1 of this BRAR.

The coast live oak woodland exhibited the highest native tree, shrub, and annual plant diversity of all of these communities. This is likely due to the variety of understory types that were observed during the surveys (grassland and poison oak types). In addition, coast live oak woodland within the Study Area is either minimally disturbed or undisturbed, so the percentage of native to non-native species is higher than in other communities. The annual grassland and veldt grass grassland habitat adjacent to pads and roads on the west side of Price Canyon Road, exhibited the lowest amount of plant diversity of all the natural communities. These communities were dominated by three non-native grass species (ripgut brome, wild oat grass, and veldt grass) and were observed to be continually disturbed due to routine mowing.

Non-native species such as ripgut brome, red brome, soft chess, rattail six weeks grass (*Festuca myuros*), and Italian ryegrass (*Festuca perennis*) were ubiquitous to some degree throughout all of the habitats of the Study Area. The highest concentration of non-native plants was observed within the annual grassland, annual brome grassland and ruderal areas, which represented disturbed or previously disturbed habitats throughout the Study Area. The lowest concentration of non-native plants was observed in habitats that had not been previously disturbed by the placement of roads or pads. Chamise-black sage chaparral and coast live oak woodlands within the buffer areas of Pads 2, 21, 45, 46, and 48 have the lowest number of non-native species observed.

3.2.1.1 Special-status Plant Species

Eight special-status plant species were detected within the Study Area during floristic surveys: Pismo clarkia (FE, SR, CNPS Rank 1B.1), black-flowered figwort (*Scrophularia atrata*, CNPS Rank 1B.2), California prickly phlox (*Linanthus californicus* [*Leptodactylon californicum*], CNPS Rank 4.2), mesa horkelia (*Horkelia cuneata* var. *puberula*, CNPS Rank 1B.1), paniculate tarplant (*Deinandra paniculata***,** CNPS Rank 4.2), Saint's daisy (*Erigeron sanctarum*, CNPS Rank 4.2), San Luis Obispo owl's clover (*Castilleja densiflora* ssp. *obispoensis*, CNPS Rank 1B.2), and Santa Margarita manzanita were observed within the Study Area during the focused floristic surveys in late March through early May 2013, as well as late season floristic surveys in July 2013. Table 3-3 presents the sensitive plant species by project component. Figure 3-3 displays the location of sensitive species detected. See Section 3.9.3 for the biological species accounts and status descriptions of these special-status species.

A total of 9,519 Pismo clarkia plants, encompassing 1.61 acres, were observed within the Study Area during focused botanical surveys. The largest populations, accounting for 60.3% and 18.3% of the total acreage, were identified in associate with pads 36 and 21, respectively. All populations of Pismo Clarkia were found in sandy soils within two types of grassland habitats; annual brome grassland and annual grassland. Grassland habitats were located in coast live oak woodland openings, or within sprawling grassland habitats in areas that are minimally grazed.

A total of eight black-flowered figwort individuals were observed on pad 18, two on pad 22, eleven on pad 23, and one on pad 47. Pads 18, 22, and 23 are all located just south of the existing main water treatment facility. Pad 47 is located in the far southeastern portion of the Study Area. These individuals were observed either within coast live oak woodlands or along the edge of existing roadways adjacent to coast live oak woodlands.

A total of three California prickly phlox were observed in the Study Area during focused botanical surveys: two individuals were observed on pad 33 and one individual was observed

TABLE 3-3
SENSITIVE PLANT SPECIES WITHIN STUDY AREA BY PROJECT COMPONENT

	Pismo Clarkia		Santa Margarita Manzanita		Saint's Daisy		Paniculate Tarplant		San Luis Obispo Owl's Clover		Mesa Horkelia		California Prickly Phlox		Black Flowered Figwort	
Project Component #[1]	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres
1							250	0.14								
2			36	0.19												
4			6	0.08			50	0.02								
5			39	0.42			12	0.005								
6			47	0.91												
7			79	1.19												
8 & 20[2]			298	1.56												
9	81	0.01	5	0.001												
11	15	0.01														
12			84	0.75												
13	51	0.002	3	0.001												
14	126	0.09	10	0.05	1	0.0001										
16	205	0.05					464	0.37								
17							81	0.1			1	0.0001				
18															8	0.003
19			145	0.94												
21	1,970	0.45														
22			37	0.64											2	0.0001
23			78	0.87											1	0.001
24	5	0.005														
26	500	0.03														
29			19	0.06												
30			28	0.07	5	0.016										
32			4	0.0002												
33													2	0.001		
34			61	0.72												
35			63	1.37												
N/A	84	0.05														
36	6,478	0.9														
41									1	0.0001						
42			1	0.0002			85	0.28								

TABLE 3-3 (CONTINUED)
SENSITIVE PLANT SPECIES WITHIN STUDY AREA BY LOCATION

	Pismo Clarkia		Santa Margarita Manzanita		Saint's Daisy		Paniculate Tarplant		San Luis Obispo Owl's Clover		Mesa Horkelia		California Prickly Phlox		Black Flowered Figwort	
Project Component #[1]	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres	# of Individuals	Acres
44			207	0.9									1	0.0003		
45	4	0.01	250	0.55												
46			13	0.004												
47															1	0.0001
48			1	0.0001												
Total	9,519	1.61	1,514	11.28	6	0.0161	942	0.92	1	0.0001	1	0.0001	3	0.001	12	0.004

[1] Phase V project components present on this table are where sensitive plant species were detected within disturbance areas during 2013 botanical surveys. No sensitive plants were detected within disturbance areas for Phase V project components not listed on this table.

[2] Pads 8 and 20 were combined for calculation purposes due to their very close proximity to one another.

on pad 44. All individuals observed were adjacent to existing well pads in sandy sloped areas.

A total of one mesa horkelia was found in the north-central portion of the Study Area of Pad 17 during focused botanical surveys. This individual was found within a veldt grass grassland with rocky soils.

A total of 942 paniculate tarplant encompassing 0.92 acres were observed within the Study Area during focused botanical surveys. The largest populations, accounting for 24.6 percent and 45.6 percent of the total acreage were identified in associate with pads 1 and 16, respectively. This species was most commonly associated with annual brome grassland and were commonly observed within or adjacent to existing well pads in areas that had been previously disturbed.

A total of six saint's daisy was found in the central portion of the Study Area of Pad 14, in a cluster within Pad 30 during focused botanical surveys. Individuals was found within an annual brome grassland and understory of oak woodland.

A total of one San Luis Obispo Owl's Clover was found within the central portion of the Study Area of Pad 41 during focused botanical surveys. This individual was found within an annual grassland community.

A total of 1,514 Santa Margarita manzanita individuals, encompassing 11.28 acres, were observed within the Study Area during focused botanical surveys. The largest populations, accounting for 13.2 percent, 15.9 percent, and 19.0 percent of the total acreage were identified in associate with Pad 44, Pad 45, and the combination of pads 8 and 20 (which were unable to be divided into separate units due to their close proximity), respectively. Santa Margarita manzanita was present in dense, homogenous stands within the southwestern section of the Study Area. In other areas, Santa Margarita manzanita commonly occurred as an understory shrub within coast live oak woodlands and was found to colonize openings in the coast live oak canopy. Individuals occurring in these areas were easily discernible in the understory of the coast live oaks and typically occurred as individuals or small groups of large individuals. Occasionally Santa Margarita manzanita was found to sparsely occupy rock faces resulting from development, specifically adjacent to Price Canyon Road and within Pads 9, 22, 23, and 29. Within the Study Area surrounding Pad 45, Santa Margarita manzanita was found to occur adjacent to chamise and black sage vegetation types.

3.2.2 Aquatic Plant Surveys

A total of 85 plant species were recorded within the aquatic habitat features present in the Study Area, including 57 native and 28 non-native species. No special-status plant species were detected. A list of all observed plant species is presented in Appendix D.

No Gambel's yellowcress (*Nasturtium* [*Rorippa*] *gambelii*; FE, SE, CNPS Rank 1B.1) were detected during focused aquatic surveys. Gambel's yellowcress is found in freshwater or brackish marsh habitats at the margins of lakes or along slow-flowing streams, from 20 to 50 feet (6 to18 meters) in elevation. The species requires a permanent water source. The three known extant populations of Gambel's yellowcress occur in San Luis Obispo County at Black Lake Canyon, Oso Flaco Lake, and Little Oso Flaco Lake (58 FR 41378 41384).

Marginal habitat for Gambel's yellowcress was found along Pismo Creek, tributaries to Pismo Creek, and in the drainage and wetland present to the northeast of Pad 21. Pismo Creek is a perennially flowing creek with slow moving water the majority of the year, but the banks of the creek are typically heavily vegetated, rocky and incised. The gradients and surrounding vegetation in tributaries to Pismo Creek are more conducive to Gambel's yellowcress, but are not perennially flowing. The drainage and wetland northeast of Pad 21 was observed to have the most optimal habitat for Gambel's yellowcress within the Study Area. Where the drainage and wetland composed of sandy clay, seep monkey flower stands and Mexican rush stands gently slope up to the top of bank. Although standing water was present in the drainage, the wetland feature did not have any standing water present, which means water is not present year round. In addition, the Mexican rush stands in this area are extremely dense and may preclude the presence of Gambel's yellowcress.

3.3 OAK TREE INVENTORY

The main species of oak in the Study Area is coast live oak (*Quercus agrifolia*); this taxon accounts for all oaks observed with the exception of a single scrub oak (*Q. berberidifolia*) in the development footprint surrounding Pad 32. A total of 1,451 coast live oak trees occur within the disturbance boundary; of these, 1,265 trees were directly surveyed and 186 trees are estimated to occur within areas that were inaccessible due to health and safety concerns present on-site (Section 2.3.4). Oak trunk sizes within the Study Area varied from saplings with no measurable DBH (insufficient height) to mature trees with trunks having a DBH greater than 35 inches. Many of the sampled trees had multiple trunks; these observations along with associated measurements are presented in Appendix E1. As described in Section 2.3.4, the oak tree inventory was limited to the disturbance footprint of the Project, and did not include adjacent areas. However, because the limits of disturbance were not precisely known during the survey effort, the survey biologists exercised caution to ensure that all potentially-affected trees were included in the census. This abundance of caution resulted in the mapping of an additional 672 coast live oak trees, encompassing 18.89 acres, which were located outside the proposed limits of disturbance. Detailed information for each tree surveyed, including vigor, tree structure, and the presence of any obvious pests or stressors, is provided in Appendix E2. Table 3-4 presents the oak trees by project component and Figure 3-4 displays the location of oak trees detected. See Section 3.9.1 for the biological species accounts and status descriptions of this species.

TABLE 3-4
OAK TREES WITHIN DISTURBANCE LIMITS BY PROJECT COMPONENT

Location Name	Pad Name	Surveyed Trees to be Removed	Estimated Trees to be Removed[1]	Total Trees to be Removed
Pad 1	Signal 113A Extension	0	1	1
Pad 2	Maino 16NW Upper	61	70	131
Pad 3	Dollie 108 G	26	0	26
Pad 4	Rock 12N	28	0	28
Pad 5	Signal 9N-1	34	0	34
Pad 6	Signal 306/303	3	3	6
Pad 7	Signal 161	7	0	7
Pad 8	Pulas 2	15	0	15
Pad 9	Signal 195-301 Connecter	199	0	199
Pad 10	Signal B Abandoned	17	0	17
Pad 11	Signal 117	0	28	28
Pad 12	Pulas 3	11	0	11
Pad 13	Signal 171	33	0	33
Pad 14	Signal 125	37	0	37
Pad 15	Low Signal 171	14	0	14
Pad 16	Signal 149	19	0	19
Pad 17	Signal 113-114-115 Connector	12	0	12
Pad 18	Rock 12J	3	0	3
Pad 19	Signal 66C-Ext. pulas 4	4	0	4
Pad 20	Signal 162	14	0	14
Pad 21	Signal 20 Abandoned	56	0	56
Pad 22	Signal P1-I1	70	0	70
Pad 23	Signal 129	115	13	128
Pad 24	Cut Shack Demo	44	0	44
Pad 25	Pad 25 Road Improvement	0	0	0
Pad 26	Maino 20K	10	0	10
Pad 27	Maino 17N	8	0	8
Pad 28	Signal 9J2	30	0	30
Pad 29	Signal 131/B-Lo Pulas 2	19	0	19
Pad 30	Signal 124	10	0	10
Pad 31	Pulas 8	7	0	7
Pad 32	Signal 123	6	0	6

TABLE 3-4 (CONTINUED)
OAK TREES WITHIN DISTURBANCE LIMITS BY PROJECT COMPONENT

Location Name	Pad Name	Surveyed Trees to be Removed	Estimated Trees to be Removed[1]	Total Trees to be Removed
Pad 33	Pulas 6	27	0	27
Pad 34	Signal 135	8	0	8
Pad 35	Signal 180	11	0	11
Pad 36	Pad 36 Turnout	1	0	1
Pad 36	Signal 48	14	0	14
Pad 39	Rock 401	0	0	0
Pad 40	Maino 16 NW	0	0	0
Pad 41	Morehouse 303	2	0	2
Pad 42	Waste Stockpile	80	0	80
Pad 44	Signal 141	19	0	19
Pad 45	Signal 121 AWT Connection	45	21	66
Pad 46	Maino 19J	70	35	105
Pad 47	Maino 6 abandoned	51	0	51
Pad 48	B-Lo Morehouse 3	4	15	19
Pad 49	Rock 98 Expansion	0	0	0
Northern pipe crossing		2	0	2
Ormonde pipe crossing		1	0	1
PCR Pipe Crossing		0	0	0
Pipe casing replacement		1	0	1
Pipe rack corridor		17	0	17
UPRR Pipe Crossing		0	0	0
-	Total	1,265	186	1,451

[1]These areas were not surveyed due to health and safety issues present on the site (i.e., steep slopes, poison oak, presence of yellow jackets). Acreages were calculated for all areas not surveyed and then the average number of coast live oak trees per acre within the Phase V disturbance area was used to extrapolate the approximate number of coast live oak trees present in these areas.

3.4 BIRD SURVEYS

Both breeding bird surveys and raptor surveys were conducted within the Study Area. The results of these surveys are discussed below.

3.4.1 Breeding Bird Surveys

A total of 52 species of birds were detected during the breeding bird point counts, including three special-status species (Section 3.4.1.1). Table 3-5 presents the high count (see Section 2.3.5) of species detected.

Cedar waxwings (*Bombycilla cedrorum*) were the most numerous species detected. Cedar waxwings were the only detected species that does not breed in the Study Area and surrounding vicinity; they are a late migrant species and the closest breeding area is northern California, near the Oregon border. The cedar waxwings have been excluded from further results discussions since they are not expected to breed within the Survey Area and surrounding vicinity.

A total of 389 birds (excluding waxwings) were detected during the point counts. The most abundant birds detected were: bushtit (*Psaltriparus minimus*), western scrub-jay (*Aphelocoma californica*), spotted towhee (*Pipilo maculatus*), Bewick's wren (*Thryomanes bewickii*), oak titmouse (*Baeolophus inornatus*), lesser goldfinch (*Carduelis psaltria*), house finch (*Haemorhous mexicanus*), orange-crowned warbler (*Oreothlypis celata*), rock dove (*Columba livia*), Hutton's vireo (*Vireo huttoni*), turkey vulture (*Cathartes aura*), and wrentit (*Chamaea fasciata*). Rock doves were seen on one day at one point location consisting of a flock of 16 birds; this species may breed in the area surrounding the Study Area, within some of the existing structures, or on some of the steeper cliffs in the vicinity, but the observed birds were more likely a flock passing through the area. Spotted towhee and Bewick's wren were the only two species detected at every BBS location. Eleven species are represented by one individual each at one BBS location; these species are expected within the vicinity surrounding the Study Area and appear to be less abundant than other species detected.

3.4.1.1 Special-status Passerine Bird Species Detected

Three special-status bird species were detected: lark sparrow (*Chondestes grammacus*, SA), Nuttall's woodpecker (*Picoides nuttallii*, BCC, SA), and oak titmouse (*Baeolophus inornatus that*, BCC, SA). Figure 3-5 displays the location of sensitive species detected. See Section 3.9.3 for the biological species accounts and status descriptions of these special-status birds.

One lark sparrow was detected at two different points count stations in the central portion of the Study Area and not far from fairly high levels of site operation activity.

TABLE 3-5
HIGH COUNT OF BIRD SPECIES DETECTED DURING BREEDING BIRD SURVEYS

		Highest Daily Count														
Common Name	Scientific Name	BBS[1] 1	BBS 3	BBS 4	BBS 6	BBS 9	BBS 16	BBS 20	BBS 23	BBS 31	BBS 43	BBS 45	BBS 46	BBS 48	Grand Total	Average
Acorn woodpecker	*Melanerpes formicivorus*	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0.15
American crow	American crow	0	1	3	1	0	0	0	2	0	0	1	0	1	9	0.69
American goldfinch	*Carduelis tristis*	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0.08
American kestrel	*Falco sparverius*	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0.08
Anna's hummingbird	*Calypte anna*	0	0	0	0	0	0	1	0	0	1	1	0	1	4	0.31
Ash-throated flycatcher	*Myiarchus cinerascens*	1	0	0	1	2	1	1	0	0	1	1	0	0	8	0.62
Bewick's wren	*Thryomanes bewickii*	2	1	2	1	2	1	1	3	2	1	2	1	1	20	1.54
Black phoebe	*Sayornis nigricans*	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.08
Black-headed grosbeak	*Pheucticus melanocephalus*	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.08
Blue-gray gnatcatcher	*Polioptila caerulea*	0	0	0	0	1	1	1	0	2	0	2	0	1	8	0.62
Brown-headed cowbird	*Molothrus ater*	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.08
Bushtit	*Psaltriparus minimus*	3	10	0	7	3	4	9	0	0	4	2	1	2	45	3.46
California quail	*Callipepla californica*	1	0	0	1	0	1	2	0	0	0	0	0	0	5	0.38
California thrasher	*Toxostoma redivivum*	1	0	0	2	0	0	1	0	2	1	0	0	0	7	0.54
California towhee	*Pipilo crissalis*	1	0	1	0	0	2	0	0	0	1	1	1	0	7	0.54
Cassin's kingbird	*Tyrannus vociferans*	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.08
Cedar waxwing	*Bombycilla cedrorum*	0	0	1	30	0	7	50	0	80	90	0	35	0	293	22.54

TABLE 3-5 (CONTINUED)
HIGH COUNT OF BIRD SPECIES DETECTED DURING BREEDING BIRD SURVEYS

		Highest Daily Count														
Common Name	Scientific Name	BBS[1] 1	BBS 3	BBS 4	BBS 6	BBS 9	BBS 16	BBS 20	BBS 23	BBS 31	BBS 43	BBS 45	BBS 46	BBS 48	Grand Total	Average
Cliff swallow	*Petrochelidon pyrrhonota*	0	5	1	0	0	0	0	0	0	0	0	0	0	6	0.46
Cooper's hawk (WL)	*Accipiter cooperii*	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0.08
Dark-eyed junco	*Junco hyemalis*	0	1	1	0	1	1	0	0	1	0	0	0	0	5	0.38
Downy woodpecker	*Picoides pubescens*	0	0	0	0	1	0	0	0	1	1	0	0	0	3	0.23
European starling	*Sturnus vulgaris*	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0.08
Great-horned owl	*Bubo virginianus*	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0.08
Hairy woodpecker	*Picoides villosus*	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.08
House finch	*Carpodacus mexicanus*	1	0	0	2	1	0	4	1	0	1	4	2	1	17	1.31
Hummingbird	Trochilidae family	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0.08
Hutton's vireo	*Vireo huttoni*	0	1	0	1	1	1	0	0	4	2	2	1	0	13	1.00
Lark sparrow (SA)	*Chondestes grammacus*	0	0	1	0	1	0	0	0	0	0	0	0	0	2	0.15
Lesser goldfinch	*Carduelis psaltria*	0	3	0	0	2	1	1	0	4	2	1	0	4	18	1.38
Mourning dove	*Zenaida macroura*	0	0	0	0	0	0	0	0	1	1	2	0	1	5	0.38
Northern flicker	*Colaptes auratus*	0	0	0	0	1	0	0	0	1	2	0	0	0	4	0.31
Northern mocking bird	*Mimus polyglottos*	1	0	0	0	0	1	0	0	0	0	0	0	0	2	0.15
Northern rough-winged swallow	*Stelgidopteryx serripennis*	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0.23
Nuttall's woodpecker (BCC, SA)	*Picoides nuttallii*	0	0	0	1	0	0	0	0	0	1	1	0	0	3	0.23

TABLE 3-5 (CONTINUED)
HIGH COUNT OF BIRD SPECIES DETECTED DURING BREEDING BIRD SURVEYS

		Highest Daily Count														
Common Name	Scientific Name	BBS[1] 1	BBS 3	BBS 4	BBS 6	BBS 9	BBS 16	BBS 20	BBS 23	BBS 31	BBS 43	BBS 45	BBS 46	BBS 48	Grand Total	Average
Oak titmouse (BCC, SA)	*Baeolophus inornatus*	1	1	0	4	4	0	2	4	2	0	1	0	1	20	1.54
Orange-crowned warbler	*Vermivora celata*	2	1	0	1	2	1	0	2	2	3	1	1	1	17	1.31
Pacific-slope flycatcher	*Empidonax difficilis*	1	1	0	0	0	0	0	0	0	1	0	0	0	3	0.23
Purple finch	*Carpodacus purpureus*	1	0	0	0	0	1	0	0	0	0	1	0	0	3	0.23
Red-tailed hawk	*Buteo jamaicensis*	1	0	0	0	0	2	0	0	0	0	0	0	1	4	0.31
Red-winged blackbird	*Agelaius phoeniceus*	0	0	1	0	4	0	0	0	0	0	0	0	0	5	0.38
Rock dove	*Columba livia*	0	0	16	0	0	0	0	0	0	0	0	0	0	16	1.23
Song sparrow	*Melospiza melodia*	1	1	0	0	0	0	0	0	0	0	0	0	0	2	0.15
Spotted towhee	*Pipilo maculatus*	2	4	1	2	1	1	2	2	2	2	3	1	1	24	1.85
Tree swallow	*Tachycineta bicolor*	2	0	0	0	0	0	0	0	0	0	0	4	0	6	0.46
Turkey vulture	*Cathartes aura*	3	0	1	0	0	1	2	2	0	0	1	2	1	13	1.00
Violet-green swallow	*Tachycineta thalassina*	0	1	0	0	2	0	0	0	0	0	0	1	0	4	0.31
Warbling vireo	*Vireo gilvus*	0	0	0	0	3	1	0	0	0	0	0	0	0	4	0.31
Western bluebird	*Sialia mexicana*	0	0	2	0	0	1	0	0	0	5	1	0	0	9	0.69
Western scrub-Jay	*Aphelocoma californica*	3	2	6	3	1	1	1	0	4	3	4	1	2	31	2.38

TABLE 3-5 (CONTINUED)
HIGH COUNT OF BIRD SPECIES DETECTED DURING BREEDING BIRD SURVEYS

		Highest Daily Count														
Common Name	Scientific Name	BBS[1] 1	BBS 3	BBS 4	BBS 6	BBS 9	BBS 16	BBS 20	BBS 23	BBS 31	BBS 43	BBS 45	BBS 46	BBS 48	Grand Total	Average
Western wood peewee	*Contopus sordidulus*	1	0	0	0	0	0	0	0	0	0	0	1	0	2	0.15
White-throated swift	*Aeronautes saxatalis*	1	1	0	0	0	0	1	1	0	0	0	0	1	5	0.38
Wilson's warbler	*Wilsonia pusilla*	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0.08
Wrentit	*Chamaea fasciata*	2	1	0	2	0	0	2	0	1	2	1	0	2	13	1.00
Total		36	35	37	60	34	34	82	18	111	125	33	53	24	682	

[1] BBS – Breeding Bird Survey point count location.
Sensitivity Status Definitions:
BCC = USFWS Birds of Conservation Concern
WL = Species is on the CDFW Watch List
SA = CDFW Special Animal (tracked in CNDDB but maintains no other applicable sensitivity designation)

A high count of one Nuttall's woodpecker was detected at two different point count stations. Count stations 6 and 43 are both on the western portion of the Study Area though neither is particularly close to established riparian areas.

A high count of four oak titmice were detected at three different point count stations, two individuals at two other stations, and one individual at four other stations for a total of 20 individuals. Seventeen of the twenty individuals detected were on the western portion of the Study Area; the western portion of the Study Area has more contiguous oak woodland which is likely a factor in their distribution.

3.4.2 Raptor Surveys

Nine species of target birds (raptors, turkey vultures and American crows) were detected during the raptor observation periods, including four special-status species (Section 3.4.2.1). Table 3-6 presents the high count of target species detected.

TABLE 3-6
HIGH COUNT OF TARGET SPECIES DETECTED AT EACH RAPTOR OBSERVATION STATION

Target Species		Observation Station			
Common Name	Scientific Name	1	2	3	4
American crow	*Corvus brachyrhynchos*	0	2	6	1
American kestrel	*Falco sparverius*	1	2	0	0
Cooper's hawk (WL)	*Accipiter cooperii*	1	0	0	0
Golden eagle (BCC, CFP)	*Aquila chrysaetos*	2	0	0	3
Northern harrier (CSC)	*Circus cyaneus*	1	0	0	0
Peregrine falcon (BCC, CFP)	*Falco peregrinus*	2	1	0	0
Red-shouldered hawk	*Buteo lineatus*	1	1	0	0
Red-tailed hawk	*Buteo jamaicensis*	4	2	2	1
Turkey vulture	*Cathartes aura*	4	9	2	5

Sensitivity Status Definitions:
BCC = USFWS Birds of Conservation Concern
CFP = California Fully Protected
CSC = California Species of Special Concern.
WL = Species is on the CDFW Watch List

American kestrels (*Falco sparverius*), red-shouldered hawks (*Buteo lineatus*), and red-tailed hawks (*Buteo jamaicensis*) are thought to have bred in the Survey Area in 2013. The kestrels appear to breed closer to open grasslands in the northeastern and southwestern portions of AGOF. The red-shouldered hawks were observed in riparian areas through the central portion of AGOF, and the red-tailed hawks showed the highest level of territoriality along the northeastern portion of AGOF

along the north-facing cliffs. Turkey vultures (*Cathartes aura*) were the most numerous species detected during the observation periods and appear to traverse through Price Canyon inland from the coast. Based on non-raptor observation point sightings, great horned owls (*Bubo virginianus*) also likely bred in the area in 2013.

3.2.1.1 Special-status Raptor Species Detected

Four special-status bird species were detected: Cooper's hawk (*Accipiter cooperii*, WL), golden eagle (*Aquila chrysaetos*, FP, BCC), northern harrier (*Circus cyaneus*, CSC), and peregrine falcon (*Falco peregrinus*, FP, BCC). Figure 3-5 displays the location of sensitive species detected. See Section 3.9.3 for the biological species accounts and status descriptions of these special-status species.

One Cooper's hawk was detected during the point count surveys conducted in late May and an immature bird was detected in mid-June during the raptor surveys.

No golden eagles were detected during the point count surveys conducted in early and late May throughout the Study Area, nor were there any confirmed sightings during floristic surveys in late April through May. During the first round of raptor surveys, a nest structure was identified on May 31, 2013 located on the large cliff face in the southwestern portion of the AGOF, but no birds were seen in the nest or associated with the structure. On June 17, during the second round of raptor surveys, two golden eagles were seen soaring over the central portion of the AGOF; these birds appeared to be soaring and perhaps hunting but were not seen on land. On June 18, during the second half of the second raptor survey, a dark nestling was observed within the nest structure on the large cliff face in the southwestern portion of the Study Area. The nestling was seen to move from one side of the ledge to the other and back; due to distance, the species of the nestling could not be confirmed directly. However, on this same day, two golden eagles were seen within this area. Initially, one eagle was soaring over the area and then landed in a power tower with the other eagle approximately 0.75 mile south of the ledge. Near the end of the hour long survey period, both eagles flew to with 50 feet of the ledge and landed for a few minutes on a rocky outcrop. Based on their behavior and proximity to the large, dark nestling and no other territorial birds, this nest and nestling is almost certainly a golden eagle.

A single adult male northern harrier was seen during the raptor late May survey could have been a migrant passing through the area or the Study Area could be on the edge of the bird's territory.

No peregrine falcons were detected during the point count surveys conducted in early and late May throughout the Study Area nor were there any confirmed sightings during floristic surveys in late April through May. On June 17, during the second round of raptor surveys, a peregrine falcon was seen "dogfighting" with two American kestrels over the tall rock spire in the southwestern portion of the Study Area. On June 18, during the second half of the second raptor survey, two peregrines falcons were observed (east of observation station number one) over the large cliff face in the northwestern portion of the Study Area; the lighting was poor but based on vocalizations, one of

the peregrines was an adult and the other was a juvenile bird begging for food. The exact nest location is not known though any of the rock shelves in that area would provide a suitable nest locality.

The diversity of raptors in this area is high in part due to the diversity of habitats and the abundance of suitable nesting habitat.

3.5 CALIFORNIA RED-LEGGED FROG SURVEYS

One adult California red-legged frog was observed on July 24, 2013 at the Retention Basin during the non-breeding nighttime survey (Figure 3-5). The California red-legged frog was observed very clearly from the platform looking down where it was sitting on top of the bulrush that had been flattened from previously accessing the pond with the kayak. No other California red-legged frog adults, tadpoles, or egg masses were observed in the Study Area during protocol surveys. However, one adult California red-legged frog was observed incidentally by URS biologists Kelly Kephart and Jamie Deutsch on February 15, 2013 just downstream of the Hyla road crossing structure in Pismo Creek (Figure 3-5).

One western pond turtle (*Emys marmorata*, CSC) was observed on Cañada Verde on July 23, 2013 (see Section 3.6.2). The results from the surveys conducted in the Study Area are summarized in Appendix F1 and the USFWS Survey Data Sheets are included in Appendix F2.

3.6 GENERAL WILDLIFE SURVEYS

During all biological field investigations, a total of 89 wildlife species were observed in the Study Area, including four invertebrates, three fishes, three amphibians, six reptiles, 61 birds, and 11 mammals. Two additional special-status wildlife species was detected during general wildlife surveys or as non-target species during protocol surveys. Wildlife species observed during general wildlife surveys and non-target wildlife species observed during protocol surveys are discussed below. A list of all wildlife species observed during field surveys is provided in Appendix G. Photographs taken by the wildlife cameras are presented in Appendix B.

3.6.1 Fishes

Three species of fish were observed during field surveys, although focused surveys for fishes were not performed. Common species identified during wildlife surveys include prickly sculpin (*Cottus asper*), partially-armored three-spine stickleback (*Gasterosteus aculeatus microcephalus*), and speckled dace (*Rhinichthys osculus*). In addition, unknown species of chub (Cyprinidae family) and bass (*Micropterus* sp.) were observed during California red-legged frog surveys. No special-status fish species were detected during general wildlife surveys, nor during California red-legged frog surveys (see Section 3.5 above).

3.6.2 Reptiles

Four common reptile species, including three lizards and one snake, were observed during field surveys. In addition, two special-status reptile species were observed within the Study Area (Section 3.6.2.1). Common lizard species observed included the western whiptail (*Aspidoscelis tigris*), alligator lizard (*Elgaria multicarinata*) and side-blotched lizard (*Uta stansburiana*). Common snake species observed included the California kingsnake (*Lampropeltis getula californiae*).

3.6.2.1 Special-status Species

Two special-status reptile species were detected: Blainville's horned lizard (*Phrynosoma blainvillii*, CSC), and western pond turtle (*Emys marmorata*, CSC). Figure 3-5 displays the location of sensitive species detected. See Section 3.9.2 for the biological species accounts and status descriptions of these special-status species.

A total of three Blainville's horned lizards were observed during biological surveys conducted for the Phase V project. Two sub-adult Blainville's horned lizards were detected on April 30, 2013 within the currently disturbed area on Pad 44, and one adult was detected on June 9, 2013 within the currently disturbed area on Pad 35.

One western pond turtle was observed on July 23, 2013 in the Cañada Verde tributary to Pismo Creek during USFWS protocol California red-legged frog surveys.

3.6.3 Amphibians

Two common species of amphibians were observed during field surveys, including pacific tree frog (*Pseudacris regilla*) and American bullfrog (*Rana catesbeiana*). American bullfrogs were present along most of Pismo Creek, Cañada Verde, and the Retention Basin. Pacific tree frogs were observed in all locations except just downstream of the pipe crossing where no frogs were observed likely due to a high level of natural tar in the water at that location. No additional special-status amphibian species were detected during general wildlife surveys that were not already identified during California red-legged frog surveys (Section 3.5).

3.6.4 Birds

Birds were the most common wildlife species observed. However, no additional common or special-status bird species were detected during general wildlife surveys that were not already identified during the breeding bird surveys or the raptor surveys (Section 3.4).

3.6.5 Mammals

Common mammal species were observed in person, by camera, or detected via sign (tracks, scat, burrows) in the Study Area. Species include domesticated goats (*Capra aegagrus hircus*)

(observed in person, abundant scat, and by wildlife cameras), Botta's pocket gopher (*Thomomys bottae*) (mounds), several coyotes (*Canis latrans*) (by wildlife cameras), mule deer (*Odocoileus hemionus*) (in person and by wildlife cameras), dusky-footed woodrat (*Neotoma fuscipes macrotis*) (in person and by wildlife cameras), brush rabbit (*Sylvilagus bachmani*) (in person and by wildlife cameras), North American beaver (*Castor canadensis*) (presence of damming in Pismo Creek), California ground squirrel (*Otospermophilus beecheyi*) (in person and burrows observed), western gray squirrel (*Sciurus griseus*) (in person), and bobcat (*Lynx rufus*) (by wildlife cameras). No special-status mammal species were detected during general wildlife surveys.

3.7 DELINEATION OF JURISDICTIONAL WATERS AND STREAMBEDS

This section summarizes the results of the jurisdiction delineation that was conducted within the Project site and along the proposed transmission line route. These results are presented more fully in the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

3.7.1 Jurisdictional Drainages and Water Bodies

There are five jurisdictional drainages and one jurisdictional water body (Retention Basin) associated with eleven project components (oil well pads, pipeline crossings, and/or steam generators) located within the Jurisdictional Determination Study Area. Pismo Creek is the mainstem creek that flows through the Jurisdictional Determination Study Area. Four tributaries feed into Pismo Creek, two on its west side and two on its east side. The jurisdictional drainages and/or jurisdictional water body associated with each project component is described below and summarized in Table 3-7. Jurisdictional drainages are identified graphically on the maps of jurisdictional areas provided in Figure 3-6.

TABLE 3-7
JURISDICTIONAL DRAINAGES AND WATER BODIES SUMMARY

Area	Drainage Length (Feet)	Drainage Max Width (Feet)	Drainage Depth (Feet)	Drainage/Water Body Acreage (Ac)	Riparian Acreage (Ac)	Flow Regime
Pismo Creek	394	36	1–3	0.2	0.27	Perennial
Drainage A	1,894	10	0.5–2	0.1	4.18	Intermittent
Retention Basin	N/A	N/A	Unknown	0	0.2	Perennial, artificial
Drainage B	2,689	1-28	0.25–3	0.31	2.23	Ephemeral/ Intermittent
Cañada Verde	760	20	>5ft	0.35	2.19	Intermittent
Tiber Canyon	767	3	1	0.04	0.82	Intermittent
Total	6,504			1.00	9.88	

3.7.1.1 Pismo Creek

Pismo Creek is the perennial mainstem creek that flows through the Study Area (Figure 3-6), and all other natural aquatic resources within the Study Area are tributary to Pismo Creek. The NWI classifies the reach of Pismo Creek within the Study Area as a perennial riverine system with riparian vegetation that is palustrine, forested, and seasonally flooded wetland. Pismo Creek flows westward through the Edna Valley from the Los Padres National Forest to the Pacific Ocean. The Northern Pipe Crossing and Pad 1, is located along Pismo Creek.

Within the Study Area, the width of the creek varies from 5 to 36 feet. Depth of the active channel varies from 1 to 3 feet, with pools that are up to 10 feet deep. The creek exhibits steep banks that range from 30 to 40 feet high. The substrate within the channel is composed of exposed bedrock with very little sediment deposits. The channel bottom and banks are primarily unvegetated. Riparian vegetation includes red willow woodland, California sycamore, and tall flat sedge stands.

Some human alterations of Pismo Creek are evident within the Study Area. Approximately midway between the upstream and downstream edges of the AGOF, an aging dry-weather, culvert road crossing allowing an unnamed oil field road to access the Hyla Extension has become blocked by accumulated bed material and debris. As a result, Pismo Creek currently overtops the road at this location, rather than flowing through the twin, corrugated metal pipe culverts, creating a complete barrier to fish passage through this reach. At another location, downstream of the blocked Hyla road crossing, effluent from the AGOF's on-site water reclamation plant is discharged into Pismo Creek. During the dry season, this results in noticeable additional streamflow downstream of the discharge point.

3.7.1.2 Drainage A

Drainage A is the northwestern intermittent tributary to Pismo Creek (Figure 3-6). Drainage A is identified by NWI as riverine, and the downstream (eastern, Pad 21) and upstream (western, Pad 36) ends are identified as a freshwater emergent wetlands. Pad 36 and Pad 21 are located along Drainage A.

Within the Study Area, the width of the creek varies from 3 to 10 feet, and the depth varies from 0.5 to 2 feet. The substrate within the channel is composed of sandy loam and loamy sand. The channel bottom and banks are primarily unvegetated. Riparian vegetation includes coast live oak woodland, Mexican rush stands, seep monkey flower stands, European marshwort stands, arroyo willow woodland.

3.7.1.3 Drainage B

Drainage B is the southwestern ephemeral and intermittent tributary to Pismo Creek (Figure 3-6). The upstream (west) portion of Drainage B is identified by NWI was a freshwater forested/shrub wetland. This section of Drainage B is an isolated drainage, yet clearly defined, that begins at a

typographic low point between hills. The drainage is ephemeral in this section and does not hydrologically connect downstream to the remainder of Drainage B along Pad 11. The downstream (east) portion of Drainage B is identified by NWI as riverine and intermittent, and as a separate entity from the upstream portion. The Pipe Rack Corridor, Pad 11, Pad 23, Pad 17, the Edna Steam Generator, and the Pipe Casing Replacement are located along Drainage B.

Within the Study Area, the width of the creek varies from 1 to 28 feet, and the depth varies from 0.25 to 3 feet. The substrate within the channel is composed of sandy loam and loamy sand. The channel bottom and banks are primarily unvegetated. Riparian vegetation includes coast live oak woodland, red willow thickets, cattail marshes, and pampas grass patches.

3.7.1.4 Cañada Verde

Cañada Verde is the northeastern intermittent tributary to Pismo Creek (Figure 3-6). Cañada Verde is identified by NWI as a seasonally flooded freshwater forest/shrub wetland. The drainage begins upstream (east) outside of the Jurisdictional Determination Study Area then flows downstream (west) out of the Jurisdictional Determination Study Area. Although it is outside the Jurisdictional Determination Study Area, it should be noted that this tributary crosses under the railroad tracks to join Pismo Creek further to the west. Pad 41 is located along Cañada Verde.

Within the Study Area, the width of the creek is 20 feet, and the depth is greater than 5 feet. The substrate within the channel is composed of sandy loam. The channel bottom and banks are primarily unvegetated. Riparian vegetation includes arroyo willow thickets.

3.7.1.5 Tiber Canyon

Tiber Canyon is the southeastern intermittent tributary to Pismo Creek (Figure 3-6). Tiber Canyon is identified by NWI as riverine and the portion of the drainage located along the northwest side of Pad 3 is identified as freshwater forest/shrub wetland. Pad 3 is located along Tiber Canyon.

Within the Study Area, the width of the creek is 3 feet, and the depth is 1 foot. The substrate within the channel is composed of sandy loam, sand, and gravel. The channel bottom and banks are primarily unvegetated. Riparian vegetation includes coast live oak woodland and arroyo willow thickets.

3.7.1.6 Retention Basin

To the north and separated from Drainage A by an access road there is a retention basin that serves as a water source for water trucks (Figure 3-6). The basin continually receives water via a pipe originating at an unknown source. It does not appear that the basin has an outflow connecting it to the neighboring drainage. NWI classifies this Retention Basin as a freshwater pond surrounded by forested/shrub wetland. Pad 21 is located along the Retention Basin.

Within the Study Area, the riparian vegetation surrounding the Pretension Basin is 0.2 acres. Riparian vegetation includes arroyo willow woodland and cattail marshes.

These results are presented more fully in the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

3.7.2 Jurisdictional Wetlands

As described previously, Wetland Determination Data Forms were completed on-site; two points along Drainage B at Pad 17 and six points along Drainage A at Pad 21. Characteristics observed at these sampling locations are presented below and summarized in Table 3-8. Jurisdictional wetlands are identified graphically on the map of jurisdictional areas provided in Figure 3-6.

TABLE 3-8
JURISDICTIONAL WETLAND
SAMPLING POINT SUMMARY

Sampling Point	Hydrophytic Vegetation Present?	Hydric Soils Present?	Wetland Hydrology Present?	USACE Wetland Present?
Drainage B				
17A	Yes	Yes	Yes	Yes
17B	Yes	Yes	Yes	Yes
Drainage A				
21A	Yes	Yes	Yes	Yes
21B	No	No	Yes	No
21C	Yes	Yes	Yes	Yes
21D	Yes	No	Yes	No
21E	Yes	Yes	Yes	Yes
21F	Yes	Yes	Yes	Yes

Wetlands were found at Drainage B and Drainage A. These results are presented more fully in the Wetland Delineation and Jurisdictional Determination Report for the Project (URS 2013).

3.7.3 Extent of Regulatory Agency Jurisdiction

As described above, the Jurisdictional Determination identified five jurisdictional drainages and one retention basin associated with eleven Project components exhibiting bed/bank characteristics. A summary of the total acreage of waters subject to the permitting authority of the USACE and CDFW is presented below. All jurisdictional areas are displayed on Figure 3-6 and summarized in Table 3-9.

TABLE 3-9
JURISDICTIONAL AREAS WITHIN 100 FEET OF PROPOSED DISTURBANCE LIMITS

	Waters of the U.S.			
Area	Non-Wetland Waters (Acres)	Wetland Waters (Acres)	Total Waters of the U.S. (Acres)	CDFW Jurisdictional Streambeds (Acres)
Pismo Creek				
Northern Pipe Crossing and Pad 1	0.20		0.20	0.20
Drainage A				
Pad 21	0.08	0.82	0.90	3.71
Pad 36	0.02		0.02	0.47
Retention Basin				
Pad 21				0.20
Drainage B				
Pipe Rack Corridor				0.01
Pad 11 and Pad 23	0.21		0.19	1.32
Pad 17, Edna Steam Generator, and Pipe Casing Replacement	0.10	0.24	0.35	1.09
Cañada Verde				
Pad 41	0.35		0.35	2.19
Tiber Canyon				
Pad 3	0.01		0.01	0.71
Total	0.97	1.06	2.03	9.71

3.8 WILDLIFE MOVEMENT AND HABITAT CONNECTIVITY

Wildlife movement/migration routes link together areas of suitable wildlife habitat that are otherwise separated by rugged terrain, changes in vegetation, or human disturbance. The fragmentation of open space areas by urbanization tends to create isolated “islands” of wildlife habitat. Wildlife movement activities usually fall into one of three movement categories: dispersal (e.g., juvenile animals from natal areas or individuals extending range distribution), seasonal migration, and movements related to home range activities (e.g., foraging for food or water, defending territories, or searching for mates, breeding areas, or cover).

A number of terms such as “travel route,” “wildlife corridor,” and “wildlife crossing” have been used in various wildlife movement studies to refer to areas in which wildlife move from one area to

another. To clarify the meaning of these terms and to facilitate the discussion on wildlife movement in this analysis, these terms are briefly defined as follows:

- Travel route – A landscape feature such as a ridgeline, drainage, canyon, or riparian strip within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g., water, food, cover, den sites);
- Wildlife corridor – A piece of habitat, usually linear in nature, that connects two or more habitat patches that would otherwise be fragmented or isolated from one another; and
- Wildlife crossing – A small, narrow area, relatively short in length and generally constricted in nature that allows wildlife to pass under or through an obstacle or barrier that otherwise hinders or prevents movement.

The California Essential Habitat Connectivity Project was consulted to determine the presence of wildlife corridors within the region of the Project site. The California Essential Habitat Connectivity Project, commissioned by CDFW and California Department of Transportation (CalTrans), was developed because a functional network of connected wildlands is essential for the continued support of California's diverse natural communities. Areas of essential connectivity were identified due to their relatively natural habitat blocks and those areas essential for ecological connectivity between them (Spencer *et al.* 2010).

Price Canyon is not mapped as an area of essential connectivity by the California Essential Habitat Connectivity Project. The closest connectivity area to the Study Area extends throughout the Los Padres National Forest in a northwest/southeast orientation. This area then extends northward up the Pacific coastline. The southern boundary of this connectivity area is located approximately 5.25 miles to the northeast of the Study Area, with the core of the connectivity area approximately 10.5 miles to the northeast of the Study Area (CDFW 2013d). The California Wildlife Habitat Relationships (CWHR) website (CDFW 2008) was also consulted to determine the presence of wildlife ranges within the region of the Project site. This website provides information on range maps and life histories (Zeiner *et al.* 1988–1990) of many wildlife species in the state. The range maps indicate that the Project location does occur within the range of a few large mammals including mule deer and cougar and meso-mammals including coyote, bobcat, and gray fox. Elk and black bear ranges do not extend into the Study Area. Mule deer, coyote, and bobcat were documented within the Study Area by wildlife cameras during general wildlife surveys. No sign of larger mammals such as bear or cougars were detected during any biological surveys.

The AGOF is a relatively small facility, comprising 1,480 acres of Price Canyon, a topographic feature that lies in a north/south direction. Pismo Creek flows south through the base of Price Canyon until its confluence with the Pacific Ocean. Price Canyon slopes gently upward and forms rolling hills to the west of Pismo Creek with a pronounced ridge located 607 feet above sea level. The eastern side exhibits more steep, rocky topography that slopes upward to form Tiber Hill, located at 506 feet above sea level. Within the Project Site, Pismo Creek and the tributaries of

Pismo Creek, along with their adjacent riparian habitat, serve as natural conduits of movement for wildlife due to reduced obstacles (less vegetation within the channel bottoms) and increased topographic cover. Additionally, natural stands of manzanita shrubland, oak woodland, and chaparral occur throughout and adjacent to AGOF boundaries. Providing cover and resources for native wildlife, these habitat features act as travel routes for a variety of wildlife species to carry out natural processes.

Several species of small and medium-sized wildlife were identified during numerous surveys conducted at the Project site and are further discussed in Section 3.6 and are referenced in Appendix G. The Project site may represent the entire range of smaller wildlife species including lizards and rodents. The ranges of more mobile wildlife such as coyotes and birds would not be expected to be limited to the Project site, though they certainly use this area for movements associated with home range activities such as resource procurement and reproduction.

No regional wildlife movement corridors are known to exist in the vicinity of the Project Site. On a smaller scale, the extensive amount of cover provided by both riparian vegetation and upland coastal scrub and oak woodland communities within the site and surrounding vicinity allows small to medium-sized mammals to move about freely. This freedom can be limited in areas containing human development, roads, fences, and cultivated areas lacking in cover. Local wildlife movement is typically focused on areas of low human disturbance, high availability of cover, and ease of travel.

Inhibiting wildlife movement to the greatest extent within Price Canyon is the presence of Price Canyon Road. This paved two lane roadway serves as the primary linkage between the City of Pismo Beach and State Route 227. Thus, habitat connectivity is severely limited between the eastern and western sides of Price Canyon Road. Few, small culvert structures are present beneath Price Canyon Road. In addition, one new pipe crossing beneath Price Canyon Road is proposed, which would aid in movement of small mammals to either side of Price Canyon Road. These structures likely provide for safe wildlife crossings for small to medium sized wildlife. Additionally, access roads have been established throughout the AGOF to access existing oil and gas pads and facilities. These roadways are traversed by equipment trucks and other oil and gas personnel. Traffic flow is controlled to specific, one-way directions and limited to 5 miles per hour, thus significantly reducing the effect of vehicles on local wildlife under existing conditions. Though the presence of existing roadways and well pads within the AGOF facility represent an impediment to wildlife movement, wildlife currently occupying the vicinity of the Study Area are generally accustomed to activities associated with operations of the existing oil and gas facility. Proposed grading areas are primarily confined to areas immediately surrounding 34 existing oil pads with only eleven new pads and associated access road proposed. Additionally, surrounding the existing and proposed disturbed areas both within and adjacent to the existing AGOF facility are undisturbed tracks of native shrubland and oak woodland.

3.9 DESCRIPTIONS OF SPECIAL-STATUS SPECIES OBSERVED

During the biological field investigations described in Sections 3.1 through 3.7 of this BRAR, a total of nine special-status plants species were detected, including one tree, two shrubs and five forbs. A total of ten special-status wildlife species were detected, including two reptiles, one amphibian, and seven birds. The special-status species identified in the Study Area and surrounding vicinity are described below.

3.9.1 Plants

Nine special-status plant species were observed within the Study Area during the focused botanical surveys. The locations and population characteristics are described in Section 3.2.1 and Section 3.3.

3.9.1.1 Black Flowered Figwort (*Scrophularia atrata*, CNPS Rank 1B.2)

Black flowered figwort maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 1B.2 (Moderately threatened in California) species. Black flowered figwort is a perennial herb that blooms from March through July. Habitats for black flowered figwort include closed-cone coniferous forest, chaparral, coastal dunes, coastal scrub, and riparian scrub. This species is endemic to California and is found at elevations ranging from 33 to 1,640 feet (10 to 500 meters) (CNPS 2013).

A total of 12 black flowered figwort encompassing 0.004 acres were observed within the Study Area during focused botanical surveys (Figure 3-3). These individuals were observed either within coast live oak woodlands or along the edge of existing roadways adjacent to coast live oak woodlands.

3.9.1.2 California prickly phlox (*Linanthus californicus* [*Leptodactylon californicum*], CNPS Rank 4.2)

California prickly phlox (*Linanthus californicus*) maintains no applicable federal or state sensitivity designation; however, it was formally regarded as *Leptodactylon californicum* with CNPS as a Rank 4.2 (uncommon in California, fairly endangered in California) species. California prickly phlox is a perennial deciduous shrub that blooms from March to August. Habitats for prickly phlox include dry slopes and banks in chaparral, coastal sage scrub and foothill woodland. This species is endemic to California and can be found from 3 to 98 feet (1 to 30 meters)

A total of three California prickly phlox were observed during focused botanical surveys (Figure 3-3). All species observed were adjacent to existing well pads in sandy sloped areas.

3.9.1.3 Mesa horkelia (*Horkelia cuneata* var. *puberula*, CNPS Rank 1B.1)

Mesa horkelia maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 1B.1 (seriously endangered in California) species (CNPS 2013). Mesa horkelia is an annual herb that blooms from March through July. Habitat for mesa horkelia includes dry, sandy, coastal chaparral. This species is endemic to California and is found at elevations ranging from 229 to 2,296 feet (69 to 700 meters) (Jepson 2013).

A total of one mesa horkelia was found in during focused botanical surveys (Figure 3-3). This individual was found within a veldt grass grassland with rocky soils.

3.9.1.4 Paniculate Tarplant (*Deinandra paniculata*, CNPS Rank 4.2)

Paniculate tarplant maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 4.2 (uncommon in California, fairly endangered in California) species. Paniculate tarplant is an annual herb that blooms from April through November. Habitats for paniculate tarplant include coastal scrub, valley and foothill grassland, and vernal pools. Soils are typically vernally mesic or sandy. This species is not endemic to California and is found at elevations ranging from 82 to 3,084 feet (25 to 940 meters) (CNPS 2013).

A total of 942 paniculate tarplant encompassing 0.92 acres were observed within the Study Area during focused botanical surveys (Figure 3-3). This species was most commonly associated with annual brome grassland and were commonly observed within or adjacent to existing well pads in areas that had been previously disturbed.

3.9.1.5 Pismo Clarkia (*Clarkia speciosa* ssp. *immaculata*, FE, SR, CNPS Rank 1B.1)

Pismo clarkia is regarded as endangered under the federal Endangered Species Act, is protected as rare under the California Native Plant Protection Act (see Fish and Game Code Section 1900 et seq.), and is regarded by the CNPS as a Rank 1B.1 (seriously endangered in California) species. Pismo clarkia is an annual herb that blooms from May through July. Habitats for Pismo clarkia include sandy areas within chaparral (margins, openings), cismontane woodland, and valley and foothill grassland. This species is endemic to California and is found at elevations ranging from 82 to 607 feet (25 to 185 meters) (CNPS 2013).

A total of 9,519 Pismo clarkia plants encompassing 1.61 acres were observed within the Study Area during focused botanical surveys (Figure 3-3). All populations of Pismo Clarkia were found in sandy soils within two types of grassland habitats; annual brome grassland and annual grassland. Grassland habitats were located in coast live oak woodland openings, or within sprawling grassland habitats in areas that are minimally grazed.

3.9.1.6 Saint's Daisy (*Erigeron sanctarum*, CNPS Rank 4.2)

Saint's daisy maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 4.2 (uncommon in California, fairly endangered in California) species. Saint's daisy is a perennial, rhizomatous herb that blooms from March through July. Habitats for saint's daisy include chaparral, cismontane woodland, and coastal scrub. This species is endemic to California and is found at elevations ranging from 525 to 1,148 feet (160 to 350 meters) (CNPS 2013).

A total of six saint's daisy was found during focused botanical surveys (Figure 3-3). These individuals were found within an annual brome grassland, and grassland understory of a coast live oak woodland.

3.9.1.7 San Luis Obispo Owl's Clover (*Castilleja densiflora* ssp. *obispoensis*, CNPS Rank 1B.2)

San Luis Obispo Owl's Clover maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 1B.2 (Moderately threatened in California) species (CNPS 2013). San Luis Obispo Owl's Clover is an annual herb that blooms from March through June. Habitat for San Luis Obispo Owl's Clover includes coastal grassland. This species is endemic to California and is found at elevations ranging from zero to 1,312 feet (zero to 400 meters) (Jepson 2013).

A total of one San Luis Obispo Owl's Clover was found during focused botanical surveys (Figure 3-3). This individual was found within an annual grassland community.

3.9.1.8 Santa Margarita Manzanita (*Arctostaphylos pilosula* [*A. wellsii*], CNPS Rank 1B.2)

Santa Margarita manzanita maintains no applicable federal or state sensitivity designation, but is regarded by the CNPS as a Rank 1B.2 (Moderately threatened in California) species. Santa Margarita manzanita is a perennial evergreen shrub that blooms from December through May. Habitats for Santa Margarita manzanita include broad-leafed upland forest, closed-cone coniferous forest, chaparral, and cismontane woodland. Associated soils are sometimes sandstone. This species is endemic to California and is found at elevations ranging from 558 to 3,609 feet (170 to 1,100 meters) (CNPS 2013).

A total of 1,514 Santa Margarita manzanita encompassing 11.28 acres were observed within the Study Area during focused botanical surveys (Figure 3-3). Santa Margarita manzanita was present in dense, homogenous stands. In other areas, Santa Margarita manzanita commonly occurred as an understory shrub within coast live oak woodlands and was found to colonize openings in the coast live oak canopy. Occasionally Santa Margarita manzanita was found to sparsely occupy rock faces resulting from development. Santa Margarita manzanita was occasionally found adjacent to chamise and black sage vegetation types.

3.9.1.9 Coast Live Oak (*Quercus agrifolia*)

Although coast live oak maintains no applicable federal or state sensitivity designation, oak trees in certain areas are subject to the County's Tree Preservation Ordinance (Section 22.56.010 of the San Luis Obispo County Code) (San Luis Obispo County 2013). This ordinance requires persons to obtain a permit from the County prior to removing trees within designated urban or village reserve lines. However, because the Study Area is not within an urban or village reserve, the Tree Protection Ordinance does not apply to oak trees within the Study Area. The Conservation and Open Space Element of the County's General Plan directs that a Native Tree Protection Ordinance should be drafted for review prior to the end of 2012; however, a draft ordinance has not been released as of this writing. Oak trees can provide valuable wildlife habitat and due to the County's concern with the loss of oaks in the region from development or other factors, oak trees are treated as special-status species in this BRAR. Coast live oak is a perennial evergreen tree that is native to California. This species is mature at one year and can grow between 33 – 82 feet (10 – 25 meters) tall (Jepson 2013). Habitats for coast live oak include mixed evergreen forest, foothill woodland, and southern oak woodland. This species occurs at elevations ranging from 0 to 4921 feet (0 to 1500 meters) (Jepson 2013).

A total of 1,451 coast live oak trees occur within the proposed disturbance boundary (Figure 3-4). Coast live oak trees were found within coast live oak woodland and scattered throughout other vegetation communities.

3.9.2 Reptiles and Amphibians

Two sensitive reptile species and one sensitive amphibian species was observed within the Project site. These species are described below.

3.9.2.1 Blainville's Horned Lizard (*Phrynosoma blainvillii*, CSC)

The Blainville's (coast) horned lizard ranges throughout Central California from the coast and the southern South Coast Peninsular and Transverse mountain ranges, to the foothills of the Sierra Nevada and the Tehachapi Mountains. The species occupies a variety of open habitats including coastal scrub, oak savanna, coniferous woodland, and grasslands. It is most commonly found in lowlands, along sandy washes with scattered low bushes and along dirt roads, and frequently found near ant hills. The species requires open areas for sunning, bushes for cover, patches of loose soil for burial, and an abundant supply of native ants and other insects for forage.

A total of three Blainville's horned lizards were observed during biological surveys conducted for the Phase V project. Numerous recent sightings recorded in CNDDB throughout the region (CDFW 2013a), combined with these incidental observations, suggest that this cryptic species could be present in suitable habitat throughout the Study Area.

3.9.2.2 Western Pond Turtle (*Emys marmorata*, CSC)

The western pond turtle (CSC) is the only abundant native turtle in California that is uncommon to common is suitable habitat throughout California west of the Sierra-Cascade crest, with the exception of desert regions. This species is semi-aquatic and requires basking sites in or adjacent to permanent water that is deep enough to offer protection from potential predators. Individuals are associated with permanent or nearly permanent water in a variety of habitat types (CDFW 2008) with elevations ranging from near sea level to 4,690 feet (1430 meters) (Jennings and Hayes 1994). Female turtles lay eggs from March to August depending on local conditions (CDFW 2008) and can travel up to 100 meters from water to lay eggs (Nussbaum *et al*. 1983). Within the Study Area there is little suitable habitat for this species. Within the Study Area, more open portions of Pismo Creek, its tributaries, and the Retention Basin on-site have the required habitat components needed by this species.

This species was observed in the Cañada Verde tributary to Pismo Creek during USFWS protocol California red-legged frog surveys. Numerous recent sightings recorded in CNDDB throughout the region (CDFW 2013a), combined with these incidental observations, suggest that this species could be present in suitable habitat throughout the Study Area.

3.9.2.3 California Red-Legged Frog (*Rana draytonii*, FT, CSC)

The California red-legged frog is federally listed as threatened and is a CSC. It inhabits ponds, marshes, springs, streams, and reservoirs. Optimum habitat conditions include deep pools (at least 20 centimeters), with emergent and submergent vegetation present for cover and reproduction (USFWS 2002b). California red-legged frogs typically find shelter in upland habitats by using mammal burrows, leaf litter, or downed woody debris. California red-legged frogs breed from December to April. Tadpoles hatch in a few days, depending on temperature, and develop through the spring. Tadpoles start to transform into metamorphs in June or July, and by late August most have completed the metamorphosis process (USFWS 2002b).The historic range of the California red-legged frog extends along the California coast from the vicinity of Point Reyes National Seashore in Marin County, and inland from the vicinity of the City of Redding in Shasta County, southward to northwestern Baja California, Mexico. It is typically found from sea level to elevations of approximately 1,500 meters (USFWS 2002b).

One California red-legged frog was observed at the Retention Basin. In addition, one adult was observed in Pismo Creek during surveys conducted for the Hyla Crossing Project by URS biologists in February 2013. Numerous recent sightings recorded in CNDDB throughout the region (CDFW 2013a), combined with these observations, suggest that this species could be present in suitable habitat throughout the Study Area.

3.9.3 Birds

Seven special-status bird species were observed during the point count and raptor surveys within the Study Area. The locations and population characteristics are described in Section 3.4.

3.9.3.1 Cooper's Hawk (*Accipiter cooperii*, WL)

Cooper's hawks were formerly regarded as a bird species of special concern but have recovered sufficiently to be removed from that list, although the species remains on the CDFW's Special Animals list as a Watch List species. This species population declined by 13 percent yearly between 1941 and 1945 and the rate of decline increased to 25 percent in 1948; this decline was linked to the use of Dichlorodiphenyltrichloroethane (DDT) (Ehrlich *et al*. 1992). Since the banning of DDT in 1972, the populations of Cooper's hawks have stabilized and substantially increased.

Cooper's hawks are classified as a "breeding resident throughout most of the wooded portion of" California from sea level up to 9,000 feet (Baicich and Harrison 1997). Their preferred habitats include dense stands of live oak, deciduous riparian woodlands, or other forest habitats near water but have become fairly common in suburban and even urban settings. Cooper's hawks usually nest in second-growth conifer stands, or in deciduous riparian areas and usually have only one brood (Ehrlich *et al.* 1988). Their primary prey is other birds but will also take small mammals, lagomorphs, amphibians and reptiles (Ehrlich *et al.* 1988).

One Cooper's hawk was detected during the point count surveys conducted in late May and an immature bird was detected in mid-June during the raptor surveys. Though there is suitable habitat within the Study Area, there was no evidence of Cooper's hawks breeding in the immediate area. This species is known to be very protective of their nest sites and usually call loudly and/or stoop on any person getting close to the nest. The birds detected on-site were likely either migrants passing through the area or resident birds whose territories include portions of the Study Area.

3.9.3.2 Golden Eagle (*Aquila chrysaetos*, FP, BCC)

Golden eagles are identified as a Fully Protected species by Section 3511 of the California Fish and Game Code and are classified as a Bird of Conservation Concern by the USFWS during both the wintering and breeding seasons. The species is not listed as threatened or endangered at a state or federal level, but receives federal protection under the Bald and Golden Eagle Protection Act (16 USC 668-668c).

Golden eagles are described as an "uncommon permanent resident and migrant throughout California" (Zeiner *et al*. 1990) from sea level up to 11,500 feet (Grinnell and Miller 1944). Golden eagles typically utilize rolling foothills, mountain areas, sage-juniper flats, and desert (Zeiner *et al*. 1990) and breed in open areas especially in mountainous or hilly areas (Ehrlich *et al.* 1988). Territory size has been estimated to average 36 mi² in southern California (Dixon 1937), and 48

mi² in northern California (Smith and Murphy 1973). They primarily hunt lagomorphs (rabbits and jackrabbits) and rodents but are known to takes other mammals, birds, reptiles, and some carrion (Zeiner *et al*. 1990).

Nests are usually placed on ledges of rocky outcrops or cliffs, or less frequently 10 to 100 feet up within a tree (Ehrlich *et al*. 1988; Baicich and Harrison 1997). Golden eagles often maintain alternate nest sites and re-use old nest; nests can get very large as sticks and twigs are added to the structures year after year (Zeiner *et al*. 1990; Ehrlich *et al*. 1988; Baicich and Harrison 1997).

Golden eagles have only one brood per year; two eggs are usually laid (Zeiner *et al*. 1990; Baicich and Harrison 1997) but only one chick tends to fledge with the weaker chick being killed or starving (Baicich and Harrison 1997; Ehrlich *et al.* 1988). Incubation of the eggs requires 43 to 45 days and nestlings begin to fly after 63 to 75 days (Ehrlich *et al.* 1988; Baicich and Harrison 1997).

Breeding was confirmed on-site for the golden eagle. An adult pair of golden eagles and a nestling were seen near the tall rock spire in the southwestern portion of the AGOF, in the vicinity surrounding the Study Area. Based on the observations of the eagles in this area, it appears that the eagles are hunting in the more open areas around the AGOF and do not seem disturbed by ongoing operations in the valley (i.e., oil extraction and processing, farming, cattle grazing, etc.). Based on the small size on the nest structure, it would appear that this is a new structure and has not been used historically by golden eagles.

3.9.3.3 Lark Sparrow (*Chondestes grammacus*, SA)

The lark sparrow was formerly regarded as a bird species of special concern but has been removed from that list, although the species remains on the CDFW's Special Animals list for nesting. The lark sparrow is a striking passerine with boldly marked face with white, dark, and rusty "harlequin" face pattern. Lark sparrows can be found year-round in most of western California and breeds through most of the U.S. excluding the East Coast (Sibley 2000). Their preferred habitats include open grasslands, prairie, savannah, cultivated areas, and fields with scattered trees and shrubs (Ehrlich *et al*. 1988).

Lark sparrows breed on the ground or in shrubs or low trees (Ehrlich *et al.* 1988; Baicich and Harrison 1997). They lay one or two broods of four to five eggs which are incubated for 11 to 13 days; young are incubated for nine to ten days (Baicich and Harrison 1997; Ehrlich *et al*. 1988).

A high count of one lark sparrow was detected at two different point count stations. The mosaic of grassland "meadows" surrounded by trees and shrubs within the Study Area is well suited to the habitat requirements of the lark sparrow and in is in the middle of their range. This species is expected to breed at low densities around the grassland "meadows".

3.9.3.4 Northern Harrier (*Circus cyaneus*, CSC)

Nesting northern harriers are classified as a CSC by CDFW while nesting. This species is most frequently found within meadows, grasslands, open rangelands, desert sinks, fresh and saltwater emergent wetlands but is seldom found in wooded areas. The home range appears to average at 1,000 acres, but could be as small as one quarter or as large as four times this size (Baicich and Harrison 1997).

Unlike most other raptors, northern harriers nest on the ground usually in emergent wetlands or along rivers or lakes, but they may nest in grasslands, grain fields, or on sagebrush flats several miles from water (Ehrlich *et al.* 1988). Northern harriers have one brood consisting of five eggs (range: three to twelve). Their prey consists of small mammals (especially voles) but will also prey upon birds, frogs, small reptiles, crustaceans, insects, and occasionally fish.

A single adult male was seen during the raptor late May survey could have been a migrant passing through the area or the Study Area could be on the edge of the bird's territory. The northern grasslands of the Study Area has the highest potential to support a northern harrier but existing grazing and the lack of extensive wetland features reduces the quality of the habitat for this species.

3.9.3.5 Nuttall's Woodpecker (*Picoides nuttallii*, BCC, SA)

Nuttall's woodpecker is regarded as a BCC by the USFWS and as a SA by CDFW while nesting. Nuttall's woodpeckers are a medium-sized, non-migratory woodpecker that can be found year-round in most of western California and the northwestern most portion of Baja California (Sibley 2000). Their preferred habitats include oak woodlands, chaparral, willow-cottonwood riparian areas and feed almost exclusively on insects gleaned from trees and branches (Ehrlich *et al* 1988).

Nuttall's woodpeckers breed in cavities which the male woodpecker excavates; the cavities are usually placed in dead riparian deciduous tree (Ehrlich *et al* 1988) or "live oak and mixed tree growth near watercourse" (Baicich and Harrison 1997). They lay a single brood of four to five eggs which are incubated for 14 days; young begin to fly at 29 days (Baicich and Harrison 1997; Ehrlich *et al* 1988).

A high count of one Nuttall's woodpecker was detected at two different point count stations. Habitat within the Study Area is well suited to the habitat requirements of the Nuttall's woodpecker and is in the middle of their range. Though breeding was not confirmed, this species is expected to breed within the oak woodlands throughout the Study Area.

3.9.3.6 Oak Titmouse (*Baeolophus inornatus*, BCC, SA)

Oak titmouse is regarded as a BCC by the USFWS and as a SA by CDFW while nesting. The oak titmouse is a drab ashy-gray passerine with a small crest that can be found year-round in most of western California, southwestern most Oregon, and the northwestern most portion of Baja

California (Sibley 2000). Their preferred habitats include oak woodlands, mixed riparian, and wooded suburban areas (Baicich and Harrison 1997).

Oak titmice breed in natural or woodpecker-made cavities or nest boxes which the female selects (Ehrlich *et al* 1988; Baicich and Harrison 1997). They lay a single brood of six to eight eggs which are incubated for 14 to 16 days; young leave the nest cavity around 16 to 21 days (Baicich and Harrison 1997; Ehrlich *et al* 1988).

A high count of four oak titmice was detected at three different point count stations. Habitat within the Study Area is well suited to the habitat requirements of the oak titmouse and is in the middle of their range. No nests for this species were detected though juvenile oak titmice were detected at two sampling stations; this species is expected to breed within the oak woodlands throughout the Study Area.

3.9.3.7 Peregrine Falcon (*Falco peregrinus*, FP, BCC)

Peregrine falcons are regarded as Fully Protected under Section 3511 of the California Fish and Game Code and are classified as a Bird of Conservation Concern by the USFWS while breeding. The peregrine falcon was listed as endangered at a state and federal level; however, due to the species population and range expansion, the species was delisted at a federal level in August 1999 and at a state level in November 2009 (CDFW 2013b).

Peregrine falcons were classified as a "very uncommon breeding resident, and uncommon as a migrant" (Zeiner *et al*. 1990) with only 39 pairs known to be breeding in California in 1981 (Monk 1981). However, with the banning of dichlorodiphenyldichloroethylenes (DDE), polychlorinated biphenyls (PCB), and certain pesticides in conjunction with focused recovery efforts, peregrine falcon numbers have dramatically increased allowing for the species to be delisted at a state and federal level. Peregrine falcons can be found world-wide but are mostly in the temperate and arctic regions (Clark and Wheeler 2001). The primary prey for peregrine falcons consists of other birds especially doves, pigeons, waterfowl, shorebirds, and passerines (Ehrlich *et al* 1988) and occasionally prey on mammals, insects, or fish (Zeiner *et al*. 1990). Riparian areas and coastal and inland wetlands are important habitats yearlong, especially in nonbreeding seasons (Zeiner *et al*. 1990).

Peregrines breed in a wide variety of habitats (Baicich and Harrison 1997) but breed mostly in woodland, forest, and coastal habitats (Zeiner *et al*. 1990). Nests are placed on ledges of a cliff or rocky outcrop or occasionally on large city buildings or high bridges (Baicich and Harrison 1997; Ehrlich *et al* 1992). Peregrine falcons have only one brood per year with three or four eggs (Ehrlich *et al* 1988; Baicich and Harrison 1997). Incubation of the eggs requires 29 to 32 days and nestlings begin to fly after 35 to 42 days (Ehrlich *et al* 1988; Baicich and Harrison 1997).

Breeding was confirmed on-site for the peregrine falcon. Two peregrine falcons were observed over the large cliff face in the northwestern portion of the Study Area; one of the peregrines was an

adult and the other was a juvenile bird begging for food. Based on the observations of the peregrines in this area, it appears that a pair of peregrine falcons bred in the area, fledged at least one young, and do not seem disturbed by ongoing operations in the valley (i.e., oil extraction and processing, farming, cattle grazing, etc.). Though unclear, the peregrines could easily be hunting within the AGOF and/or hunting along the coastline.

3.10 SPECIAL-STATUS SPECIES NOT OBSERVED BUT WITH POTENTIAL TO OCCUR IN THE STUDY AREA

Figure 3-1 and Appendix A provides the results of the CNDDB records search for special-status plant, wildlife, and sensitive native plant community occurrences within the Project site quadrangles (Arroyo Grande NE, CA and Pismo Beach, CA) and the surrounding quadrangles. This CNDDB query, supplemented by additional literature review for special-status plant and wildlife species with potential to occur within the Study Area, indicated that there is potential for special-status plants and wildlife that were not observed during field surveys to occur within the Project site. These 93 plant and wildlife species were selected based on considerations of the reported occurrences in the site vicinity, habitat suitability and availability on the site, habitat connectivity, and presumed extant status of species with known and/or historic ranges that include the site. Summary discussions of special-status species with potential for occurrence on or near the Project site are included in Table 3-10 (plants) and Table 3-11 (wildlife). Other special-status species that were not identified in the CNDDB query, but which require analysis due to their potential of occurrence, are also included.

3.10.1 Plants

Fifty-one special-status plant species that were not observed during biological surveys have the potential to occur on the Project site and proposed transmission line route based on the literature review and the presence of suitable habitat (Table 3-10). Descriptions of these species, including known occurrence, habitat, range restrictions, and likelihood to occur are provided below.

3.10.2 Wildlife

Forty-two special-status wildlife species that were not observed during biological surveys were identified as having a potential to occur on the Project site and proposed transmission line route due to the availability of suitable habitat (Table 3-11). Descriptions of these species, including known occurrence, habitat, range restrictions, and likelihood to occur are provided below.

TABLE 3-10
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Agrostis hooveri	Hoover's bent grass	CNPS Rank 1B.2	Apr – Aug	Dry sandy soils, open chaparral, oak woodland. Less than 600 meters (m)	Not observed Spring 2013; suitable habitat present.	Possible
Arctostaphylos cruzensis	Arroyo de la Cruz manzanita	CNPS Rank 1B.2	Jan – Mar	Sandy bluffs, maritime chaparral and coastal prairie. <150 m	Not observed Spring 2013; suitable habitat present, large, unambiguous shrub. Closest record approximately 9.5 miles NW of Study Area (CDFW 2013a)	Unlikely
Arctostaphylos luciana	Santa Lucia manzanita	CNPS Rank 1B.2	Jan – Mar	Shale outcrops and slopes, upland chaparral near coast; 100–800 m	Not observed Spring 2013; large, unambiguous shrub; suitable habitat present. Closest record 8 miles NNE of Study Area (CDFW 2013a).	Possible
Arctostaphylos pechoensis	Pecho manzanita	CNPS Rank 1B.2	Jan – Mar	Shale outcrops, chaparral, conifer forest; <500 m	Not observed Spring 2013; large, unambiguous shrub; suitable habitat present. Closest record 6.8 miles NW of Study Area (CDFW 2013a).	Unlikely
Arctostaphylos rudis	Sand mesa manzanita	CNPS Rank 1B.2	Nov – Feb	Sandy soils, chaparral; <380 m	Not observed Spring 2013; large, unambiguous shrub; suitable habitat present. Closest record approximately 9 miles SE of Study Area (CDFW 2013a).	Unlikely
Arenaria paludicola	Marsh sandwort	FE, SE, CNPS Rank 1B.1	Late spring – summer	Wet meadows, marshes, <300 m	Not observed Spring 2013; habitat not present.	Unlikely
Astragalus didymocarpus var. *milesianus*	Miles' milk-vetch	CNPS Rank 1B.2	Mar – May	Grassy areas near coast, <400 m	Not observed Spring 2013; habitat not present.	Unlikely
Calochortus obispoensis	San Luis mariposa lily	CNPS Rank 1B.2	May – Jun	Dry serpentine, generally open chaparral; 100–500 m	Not observed Spring 2013; non serpentine soils, habitat not present.	Unlikely

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Calochortus simulans	La Panza mariposa lily	CNPS Rank 1B.3	May – Jul	Sand (often granitic), grassland to yellow pine forest; <1,100 m.	Not observed Spring 2013; habitat not present.	Unlikely
Calystegia subacaulis ssp. *episcopalis*	Cambria morning-glory	CNPS Rank 4.2	Apr – Jun	Dry, open scrub, woodland, <500 m	Not observed Spring 2013; suitable habitat present. Closest record 4.25 miles N of Study Area (CDFW 2013a).	Possible
Camissoniopsis hardhamiae	Hardham's evening-primrose	CNPS Rank 1B.2	Mar – May	Sandy soil, limestone, disturbed oak woodland; 240–600 m	Not observed Spring 2013; site elevation below species' range.	Unlikely
Carex obispoensis	San Luis Obispo sedge	CNPS Rank 1B.2	Mar – Jun	Springs, streamsides in chaparral, generally serpentine soils; <800 m	Not observed Spring 2013. Non serpentine soils, habitat not present.	Unlikely
Centromadia parryi ssp. *congdonii*	Congdon's tarplant	CNPS Rank 1B.1	Jun – Oct	Terraces, swales, floodplains, grassland, disturbed sites; <300 m	Not observed Spring 2013; suitable habitat present. Nearest record approximately 4 miles north of Study Area (CDFW 2013a).	Possible
Chenopodium littoreum	Coastal goosefoot	CNPS Rank 1B.2	Jun – Oct	Generally sandy soils, dunes, <40 m	Not observed Spring 2013; habitat not present. All records are along the coast between approximately 7.5-10.5 miles S of Study Area (CDFW 2013a).	Unlikely
Chlorogalum pomeridianum var. *minus*	Dwarf soaproot	CNPS Rank 1B.2	May – Jun	Serpentine outcrops in chaparral, <750 m	Not observed Spring 2013; non serpentine soils, habitat not present.	Unlikely
Chorizanthe breweri	Brewer's spineflower	CNPS Rank 1B.3	Mar – Jul	Gravel or rocks, 60–800 m	Not observed Spring 2013; suitable habitat present. Closest record 3.8 miles NE of Study Area.	Possible
Chorizanthe rectispina	Straight-awned spineflower	CNPS Rank 1B.3	May – Jul	Sand or gravel, 200–600 m	Not observed Spring 2013; site elevation below species' range, habitat not present.	Unlikely

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Cirsium fontinale var. *obispoense*	Chorro Creek bog thistle/San Luis Obispo fountain thistle	FE, SE, CNPS Rank 1B.2	Apr – Oct	Serpentine seeps and streams, <350 m	Not observed Spring 2013; non serpentine soils, habitat not present.	Unlikely
Cirsium occidentale var. *lucianum*	Cuesta Ridge thistle	CNPS Rank 1B.2	Apr – Jun	Chaparral, woodland or forest openings, often on serpentine; 500–750 m	Not observed Spring 2013; site elevation below species' range and non-serpentine soils, habitat not present.	Unlikely
Cirsium rhothophilum	Surf thistle	ST, CNPS Rank 1B.2	Apr – Aug	Dunes, bluffs; <20 m	Not observed Spring 2013; site elevation above species' range, habitat not present.	Unlikely
Cirsium scariosum var. *loncholepis*	La Graciosa thistle	ST, CNPS Rank 1B.1	Apr – Sep	Marshes, dune wetlands; <50m	Not observed Spring 2013; habitat not present.	Unlikely
Cladium californicum	California saw-grass	CNPS Rank 2.2	Jun – Sep	Generally alkaline marshes, swamps; 60–865 m[4].	Not observed Spring 2013; site elevation below species' range; habitat not present.	Unlikely
Delphinium parryi ssp. *blochmaniae*	Dune larkspur	CNPS Rank 1B.2	Apr – May	Coastal chaparral, sand; <200 m	Not observed Spring 2013; some coastal chaparral habitat present. Closest record approximately 5.8 miles N of Study Area; most sightings restricted near Oceano, CA (CDFW 2013a).	Unlikely - Possible
Delphinium parryi ssp. *eastwoodiae*	Eastwood's larkspur	CNPS Rank 1B.2	Mar – May	Coastal chaparral, grassland, serpentine soils; 100–500 m	Not observed Spring 2013; non serpentine soils; habitat not present.	Unlikely
Delphinium umbraculorum	Umbrella larkspur	CNPS Rank 1B.3	Apr – Jun	Moist oak forest; 400–1,600 m	Not observed Spring 2013; site elevation below species' range.	Unlikely
Dithyrea maritima	Beach spectaclepod	ST, CNPS Rank 1B.1	Mar – Aug	Seashores, coastal sand dunes; <50 m	Not observed Spring 2013; habitat not present.	Unlikely

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Dudleya abramsii ssp. *bettinae*	Betty's dudleya	CNPS Rank 1B.2	May – Jun	Rocky outcrops in serpentine grassland; 50–180 m	Not observed Spring 2013; non serpentine soils, habitat not present.	Unlikely
Dudleya abramsii ssp. *murina*	Mouse-gray dudleya	CNPS Rank 1B.3	May – Jun	Serpentine outcrops; 120–300 m	Not observed Spring 2013; non serpentine soils, habitat not present.	Unlikely
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's dudleya	CNPS Rank 1B.1	Apr – Jun	Open, rocky slopes, often serpentine or clay-dominated; <450 m	Not observed Spring 2013; non serpentine or clay soils, habitat not present.	Unlikely
Eriastrum luteum	Yellow-flowered eriastrum	CNPS Rank 1B.2	May – Jun	Drying slopes; <1,000 m	Not observed Spring 2013; Closest record approximately 13 miles NW of Study Area, near Santa Margarita Lake (CDFW 2013a).	Unlikely
Erigeron blochmaniae	Blochman's leafy daisy	CNPS Rank 1B.2	Jul – Oct	Sand dunes and hills; <70 m	Not observed Spring 2013; habitat not present.	Unlikely
Eriodictyon altissimum	Indian Knob mountainbalm	FE, SE, CNPS Rank 1B.1	Mar – Jun	Sandstone ridges, chaparral; <270 m	Not observed Spring 2013; suitable habitat; closest record approximately 3 miles NW of Study Area (CDFW 2013a).	Possible
Eryngium aristulatum var. *hooveri*	Hoover's button-celery	CNPS Rank 1B.1	Jul	Vernal pools, seasonal wetlands, occasionally alkaline soils; <50 m	Not observed Spring 2013; habitat not present.	Unlikely
Horkelia cuneata var. *sericea*	Kellogg's horkelia	CNPS Rank 1B.1	Apr – Aug	Old dunes, coastal sandhills; generally <200 m	Not observed Spring 2013; habitat not present. Closest record approximately 10.3 miles SSW of Study Area (CDFW 2013a).	Unlikely
Layia jonesii	Jones' layia	CNPS Rank 1B.2	Mar – May	Open serpentine or clayey slopes; <300 m	Not observed Spring 2013; non serpentine or clay soils; habitat not present.	Unlikely

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Lupinus ludovicianus	San Luis Obispo County lupine	CNPS Rank 1B.2	Apr – Jun	Open, grassy areas, on limestone, in oak woodland; 50–500 m	Not observed Spring 2013; suitable habitat present. Closest record approximately 0.7 miles NE of Study Area (CDFW 2013a).	Possible
Lupinus nipomensis	Nipomo Mesa lupine	FE, SE, CNPS Rank 1B.1	Mar – May	Stable dunes; <25 m	Not observed Spring 2013; site elevation above species' range; habitat not present.	Unlikely
Monardella undulata ssp. *crispa*	Crisp monardella	CNPS Rank 1B.2	Apr – Nov	Active dunes; <100 m	Not observed Spring 2013; habitat not present.	Unlikely
Monardella undulata ssp. *undulata*	San Luis Obispo monardella	CNPS Rank 1B.2	Apr – Sep	Stabilized dunes and sandy soils, coastal scrub; <200 m	Not observed Spring 2013; habitat not present.	Unlikely
Nasturtium gambelii	Gambel's yellowcress	FE, ST, CNPS Rank 1B.1	May – Aug	Marshes, stream banks, lake margins; <350 m	Not observed Spring 2013; suitable habitat along Pismo Creek. Records restricted near Oceano, CA (CDFW 2013a).	Unlikely
Nemacaulis denudata var. *denudata*	Coast woolly-heads	CNPS Rank 1B.2	Mar – Aug	Beaches; <100 m	Not observed Spring 2013; habitat not present.	Unlikely
Nemacladus secundiflorus var. *robbinsii*	Robbins' nemacladus	CNPS Rank 1B.2	Apr – May	Dry, gravelly slopes; 350–1,700 m	Not observed Spring 2013; site elevation below species' range.	Unlikely
Orobanche parishii ssp. *brachyloba*	Short-lobed broomrape	CNPS Rank 4.2	May – Aug	Sandy soil near ocean, generally with *Isocoma menziesiil*; <300 m	Not observed Spring 2013; habitat not present.	Unlikely
Plagiobothrys uncinatus	Hooked popcornflower	CNPS Rank 1B.2	Apr – May	Chaparral, canyon sides, rocky outcrops; 300–600 m	Not observed Spring 2013; site elevation below species' range. Closest record approximately 12.7 miles NNW of Study Area (CDFW 2013a).	Unlikely

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Scientific Name	Common Name	Regulatory Status	Blooming Period	Habitat Requirements[1, 2]	Site Suitability/Survey Results[3]	Potential to Occur
Sanicula maritima	Adobe sanicle	CNPS Rank 1B.1	Apr – May	Coastal, grassy, open wet meadows, ravines; +/- 150 m	Not observed Spring 2013; habitat not present. Records approximately 5.3 – 10.7 miles NW of Study Area (CDFW 2013a).	Unlikely
Senecio aphanactis	Chaparral ragwort	CNPS Rank 2.2	Feb – May	Alkaline flats, dry open rocky areas; 10–550 m	Not observed Spring 2013; alkaline soils not present, habitat not present.	Unlikely
Sidalcea hickmanii ssp. *anomala*	Cuesta Pass checkerbloom	CNPS Rank 1B.2	May – Jun	Closed-cone-conifer forest, gen. serpentine; 600–800 m	Not observed Spring 2013; serpentine soils not present; site elevation below species' range.	Unlikely
Streptanthus glandulosus ssp. *glandullsus* (*Streptanthus albidus* ssp. *peramoenus*)	Most beautiful jewel-flower	CNPS Rank 1B.2	Apr – Jun	Serpentine or metamorphic, rocky, gen barren slopes, chaparral openings, steep woodland; 150–1,400 m	Not observed Spring 2013; non serpentine soils, habitat not present. Closest records approximately 5.1 – 10.3 miles NW of Study Area (CDFW 2013a).	Unlikely
Symphyotrichum defoliatum	San Bernardino aster	CNPS Rank 1B.2	Jul – Nov	Grassland, disturbed places; <2,050 m	Not observed Spring 2013; one uncertain sighting in Oceano, CA (CDFW 2013a).	Unlikely
Trifolium hydrophilum	Saline clover	CNPS Rank 1B.2	Apr – Jun	Salt marshes, open areas in alkaline soils; <300 m	Not observed Spring 2013; habitat not present. Closest record 7.3 miles NW of Study Area (CDFW 2013a). Primarily occurs in northern California.	Unlikely
Tropidocarpum capparideum	Caper-fruited tropidocarpum	CNPS Rank 1B.1	Mar – Apr	Alkaline soils, low hills, valleys; <400 m	Not observed Spring 2013; alkaline soils not present. Closest record approximately 11.7 miles NW of Study Area (CDFW 2013a).	Unlikely

1 Jepson 2013.

2 m refers to elevation in meters above mean sea level.

3 Project site elevation is ~35–155 m.

4 CNPS 2013.

Regulatory Status Definitions:

TABLE 3-10 (CONTINUED)
SPECIAL-STATUS PLANTS NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

FE = Federally-listed Endangered.
FT = Federally-listed Threatened.
FC = Candidate for Federal Listing.
SE = State-listed Endangered.
ST = State-listed Threatened.
SR = State Rare.
CNPS = California Native Plant Society.
- 1A = Presumed extinct/extirpated in California.
- 1B = Plants that are rare, threatened, or endangered in California and elsewhere.
- 2 = Rare, threatened, and endangered in California but more common elsewhere.
- 3 = Plants about which more information is needed.
- 4 = A watch list of plants of limited distribution.
  - 1 = Seriously endangered in California.
  - 2 = Fairly endangered in California.
  - 3 = Not very endangered in California.

TABLE 3-11
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Invertebrates					
Oso Flaco robber fly	*Ablautus schlingeri*	SA	Occurs on sand dunes in San Luis Obispo County (San Luis Obispo County 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 5 miles SW of Study Area in Oceano Dunes State Recreation Area in 1963 (CDFW 2013a).	Unlikely
Oso Flaco flightless moth	*Areniscythris brachypteris*	SA	Only known from the Santa Maria dune system along the coast of San Luis Obispo county, particularly, the Oso Flaco Dunes. Requires dune habitat (Essig Museum of Entomology 2013a).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest records are in Pismo Dunes Natural Preserve and Oceano Dunes State Recreation Area approximately 5 miles SW of Study Area in 1973 (CDFW 2013a).	Unlikely
Vernal pool fairy shrimp	*Branchinecta lynchi*	FT, SA	Only three occurrences are found in southern California. Found in temporary wetlands that form in depressions of unplowed grassland over a clay hardpan. Eggs or cysts withstand desiccation and extreme temperatures when pools disappear (USFWS 2007).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 4 miles NW of Study Area in 2003 (CDFW 2013a).	Unlikely
Oso Flaco patch butterfly	*Chlosyne leanira elegans*	SA	Found in Oso Flaco Lake dunes. Uses Coast Indian paintbrush (*Castillega affinis* ssp. *affinis*) for hostplant (Butterflies of America 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 8 miles south of Study Area, just south of Oceano Dunes State Recreation Area in 1983 (CDFW 2013a).	Unlikely
Sandy beach tiger beetle	*Cicindela hirticollis gravida*	SA	Found in moist sand near the ocean; in swales behind dunes or upper beaches beyond normal high tides (NatureServe Explorer 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest records approximately 2 miles SW of Study Area at Pismo Beach in 1955, and just south of Oceano Dunes State Recreation Area approximately 8 miles south of Study Area, in 1969 (CDFW 2013a).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Globose dune beetle	*Coelus globosus*	SA	Found in California's coastal dune habitat. Mostly subterranean; tunnels through sand beneath dune vegetation (Essig Museum of Entomology 2013b).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 4 miles SW of Study Area at Grover Beach (CDFW 2013a).	Unlikely
Monarch butterfly	*Danaus plexippus*	SA	Found in mostly open habitat containing asclepiad host plants; dense tree cover required for overwintering, primarily in Eucalyptus trees or coastal conifers in California (NatureServe Explorer 2013).	Not observed during Spring or Summer 2013 surveys. Potentially suitable habitat is present. Closest records are approximately 3 miles SW of Study Area in Grover Beach, in 1998 (CDFW 2013a).	Possible
White sand bear scarab beetle	*Lichnanthe albipilosa*	SA	Known from only 11 individuals, all found hovering close to sand dune surface near Oso Flaco Lake (Encyclopedia of Life 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 5 miles south of Study Area near Oceano Dunes State Recreation Area in 1976 (CDFW 2013a).	Unlikely
California linderiella	*Linderiella occidentalis*	SA	Occurs in large, long-lasting vernal pool wetland ecosystems that are wet during winter and spring, and dry during summer. Found in almost any grassland supporting vernal pools. Minimum maturation period is 31 days (Technology Associates 2009).	Not observed during Spring or Summer 2013 surveys. Habitat not present in Study Area. Closest record approximately 8 miles NW of Study Area in 2000, between upper ends of Dairy Creek and Chorro Creek (CDFW 2013a).	Unlikely
Morro Bay blue butterfly	*Plebejus icarioides moroensis*	SA	Restricted to the sand dunes at Vandenberg Air Force Base, Morro Bay, and Pismo/Guadalupe. Feeds on *Lupinus chamissonis*, which is the only host plant (Walgren *et al*. 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 10 miles south of Study Area F just south of Oceano Dunes State Recreation Area, in 2004 (CDFW 2013a).	Unlikely
Atascadero June beetle	*Polyphylla nubila*	SA	Known only from sand dunes in San Luis Obispo County (MRS 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 5 miles north of Study Area in San Luis Obispo, in 1956 (CDFW 2013a).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
San Luis Obispo pyrg	*Pyrgulopsis taylori*	SA	Freshwater snail, known from an unnamed spring in San Luis Obispo Creek (Smithsonian Institution 2013). Little information available on this species. Critically imperiled in California, specifically San Luis Obispo County.	Not observed during Spring or Summer 2013 surveys. Closest record approximately 10 miles north of Study Area in San Luis Obispo, in 2000 (CDFW 2013a).	Unknown due to lack of informati on on species
Mimic tryonia	*Tryonia imitator*	SA	Found in brackish salt marshes in herbaceous wetlands along the southern California coast (NatureServe Explorer 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 5 miles south of Study Area between Grover Beach and Pismo Dunes Natural Preserve, in 1979 (CDFW 2013a).	Unlikely
Fishes					
Tidewater goby	*Eucyclogobius newberryi*	FE, CSC	Found in cool (16–25°C) brackish water in lagoons and estuaries created by coastal streams. Favorable habitat includes shallow open water with emergent vegetation. Aquatic vegetation important for cover during feeding. Water salinity less than 10ppt is optimal, but can survive levels up to 40ppt (University of California 2013).	Not observed during Spring or Summer 2013 surveys. The mouth of Pismo Creek is designated as USFWS critical habitat for Tidewater goby. No suitable habitat within Study Area. Closest record approximately 2 miles SW of AGOF, downstream in Pismo Creek, in 2008 (CDFW 2013a). No suitable	Unlikely
Arroyo chub	*Gila orcutti*	CSC	Found in cool to warm (10–24°C) streams or rivers with sand or mud substrates; preferably with slow-flowing or backwater areas. They feed on algae, water fern, insects, and mollusks. Plants in and adjacent to pools provide cover for fry (University of California 2013).	Not observed during Spring or Summer 2013 surveys. Pismo Creek, which runs through the Study Area has suitable habitat for Arroyo chub but no record for this species are from the recent past (< 25 years). Closest CNDDB record is approximately 7 miles E of AGOF near Lopez Lake, in 1948 (CDFW 2013A).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Steelhead (South/Central California Coast DPS)	*Oncorhynchus mykiss irideus*	FT, CSC	Found in cool, slow-moving, freshwater coastal streams and rivers during early development, with mix of riffles and ponds, and overhanging vegetation for shade. Sensitive to sedimentation and channel scouring, as gravel beds are required for egg-laying. Adults migrate to ocean (Animal Diversity Web 2013).	Not observed during Spring or Summer 2013 surveys. Steelhead may be supported in Pismo Creek, which runs through the Study Area, and were observed in Pismo Creek in 2002 (CDFW 2013A).	Known Present
Amphibians					
Foothill yellow-legged frog	*Rana boylii*	CSC	Found in or near rocky streams in various habitats; rarely found far from permanent water. Tadpoles require 3–4 months water access for development. Rocks in and around streams provide shelter and sunning locations. Adults feed on aquatic and terrestrial invertebrates, favoring insects; tadpoles graze on algae and diatoms along stream bottoms (CDFW 2013c, Zeiner *et al.* 1988–1990).	Not observed during Spring or Summer 2013 surveys. Suitable habitat may be present within Pismo Creek but no records for this species are from the recent past (< 25 years). Closest record approximately 7 miles NE of Study Area, along the Lopez Canyon River, in 1963 (CDFW 2013A).	Unlikely
Western spadefoot	*Spea hammondii*	CSC	Found in grasslands with shallow temporary pools; occasional occurrence in valley-foothill hardwood woodlands. Breeding pools formed by winter rainfall. Adults burrow most of the year up to 0.9 m deep; small mammal burrows may be used. Adults feed on insects, worms, and other invertebrates; tadpoles are omnivorous (CDFW 2013c, Zeiner *et al.* 1988–1990).	Not observed during Spring or Summer 2013 surveys. Suitable habitat may be present within Study Area. Limited surface activity may make observations difficult except during breeding season. Closest CNDDB record approximately 13 miles SE of AGOF in Nipomo, in 1995 (CDFW 2013A).	Possible

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Coast Range newt	*Taricha torosa*	CSC	Found in grasslands, woodlands, forests, ponds, and reservoirs along coastal CA and Sierra Nevada foothills. Mostly terrestrial but entirely aquatic during breeding season. Adults feed on arthropods, worms, and slugs (BLM 2013). Terrestrial individuals are relatively inactive for most of the year, under woody debris or in rock crevices and animal burrows, where conditions are moist (CDFW 2013c, Zeiner *et al.* 1988–1990).	Not observed during Spring or Summer 2013 surveys. Terrestrial habitat and limited aquatic habitat is available on-site. Limited surface activity may make observations difficult, but individuals are very conspicuous and easy to see when present. Closest record approximately 7 miles north of Study Area in San Luis Obispo, in 1939 (CDFW 2013A).	Possible
Reptiles					
Black legless lizard	*Anniella pulchra nigra*	CSC	Found in sandy or loose organic soils with ample leaf litter, especially coastal dune, valley-foothill, chaparral, and coastal scrub habitats. Moisture is an essential habitat requirement. Individuals rarely active on the surface; they burrow in leaf litter and under logs, and demonstrate high site fidelity. Legless lizards eat insects and spiders (CDFW 2013c, Zeiner *et al.* 1988–1990).	Not observed during Spring or Summer 2013 surveys. Terrestrial habitat available on-site but no record for this species are from the recent past (< 25 years). Limited surface activity may make observations difficult. Closest record approximately 8 miles NW of Study Area in Morro Bay, in 1948 (CDFW 2013a).	Unlikely
Silvery legless lizard	*Anniella pulchra pulchra*	CSC	Found in sandy to sandy loam soil areas of beaches, chaparral, pine-oak woodland, or riparian woodland. Soil moisture is essential for conserving energy at high temperatures. Silvery legless lizards are live-bearing. Adults and juveniles are insectivorous, and will also feed on spiders (ECCCHCPA 2006).	Not observed during Spring or Summer 2013 surveys. Chaparral and oak woodland habitats available, but rocky soils and areas disturbed by human use are not suitable habitat. Additionally no record for this species is from the recent past (< 25 years). Closest record approximately 9 miles S of Study Area at Oceano Dunes State Recreation Area, in 1972 (CDFW 2013a).	Possible

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Birds[2]					
Sharp-shinned hawk (nesting)	*Accipiter striatus*	WL	In dry areas of western US, found primarily at higher altitudes of montane evergreen forests. Found in diverse habitats with vegetative cover during migration and winter, but avoiding open areas. Nests in large forests of conifer, deciduous, or mixed woodlands with closed canopies to conceal nests (BLM 2013).	Not observed during Spring or Summer 2013 surveys. Suitable nesting habitat is not available. Closest CNDDB record, approximately 10.5 miles to the south of the Study Area, in 2003 (CDFW 2013a).	Unlikely
Tricolored blackbird (nesting)	*Agelaius tricolor*	BCC, CSC	Breeds near freshwater, mostly emergent wetland with tall, dense cattails or thickets of willow, blackberry, wild rose, and tall herbs. Feeds on insects and seeds over grassland and cropland habitats. Nests may be located up to 4 miles from foraging areas. Highly colonial species; nesting sites must be large enough to support at least 50 pairs (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Suitable habitat for feeding is available in areas of the Study Area, marginal nesting habitat may exist on-site as well. Closest record approximately 10 miles NW of Study Area at Chorro Reservoir near San Luis Obispo, in 1997 (CDFW 2013a).	Possible
Burrowing owl	*Athene cunicularia*	BCC, CSC	Found in dry, open grasslands and desert habitats, and in grass, forb and open shrubland of pinyon-juniper and ponderosa pine habitats. Nests in old burrows of small mammals, or may dig their own burrows in soft soil (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 10 miles NW of Study Area at Camp San Luis Obispo Natl. Guard Reserve, in 2003 (CDFW 2013a).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Ferruginous hawk (wintering)	*Buteo regalis*	BCC, WL	Found in large open tracts of grasslands, sagebrush flats, and desert habitats with elevated structures for nesting. Common winter resident of grassland and agricultural areas in southwest California; arrives in Sept. and departs by mid-April (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Suitable winter foraging habitats available in open grassland, but patches are small. Closest records approximately 5 miles NW of Study Area in San Luis Obispo, in 1993 and 2002 (CDFW 2013a).	Unlikely
Western snowy plover (nesting)	*Charadrius alexandrinus nivosus*	FT, BCC, CSC	The Pacific coast population breeds on coastal beaches from southern WA to southern Baja California. Nests occur in flat, open areas with sandy or saline substrates. Feeds on insects and amphipods from the dry sand and upper beaches along the coast (BLM 2013).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 2 miles SW of Study Area in Pismo Beach, in 1978 (CDFW 2013a).	Unlikely
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	FC, BCC, SE	Uncommon to rare summer resident of valley foothills and desert riparian habitats in scattered locations in California. Found in extensive deciduous riparian thickets with dense foliage, usually dominated by willow (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not during Spring or Summer 2013 surveys. Riparian vegetation present within Study Area not likely suitable. Additionally no record for this species is from the recent past (< 25 years). Closest record approximately 5 miles NNW of Study Area in San Luis Obispo, in 1921 (CDFW 2013a).	Unlikely
White-tailed kite (nesting)	*Elanus leucurus*	FP, SA	Found in herbaceous coastal and valley lowlands rarely far from agricultural areas. Uses dense tree canopies for cover, with nests 6–20 m high in oak or willow, close to open foraging areas. Forages in undisturbed and open grasslands, meadows, farmlands, and wetlands (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Foraging and nesting habitat is available throughout most of the Study Area. Closest record approximately 10 miles NW of Study Area, west of San Luis Obispo, in 1997 (CDFW 2013a).	Possible

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
California horned lark	*Eremophila alpestris actia*	WL	Found in open grassland dominated by sparse, low herbaceous vegetation or widely scattered low shrubs. Nests in ground hollows next to grass tufts or clods. Feeds mostly on seeds, and in warm season, insects (NatureServe Explorer 2013).	Not observed during Spring or Summer 2013 surveys. Annual grassland and agricultural areas available in the Study Area, but only provide marginally suitable habitat as grasslands present are densely vegetated with tall grasses. Closest record approximately 8.5 miles NW of Study Area, in Camp San Luis Obispo Natl. Guard Reserve, in 1995 (CDFW 2013a).	Unlikely
Merlin (wintering)	*Falco columbarius*	WL	Found in open habitats at low elevations near water and tree stands, mostly coastlines, lakeshores, and wetlands. Can also occur in open grasslands, savannahs, and woodlands. Does not breed in California. Feeds on insects and small mammals, but mostly small birds. Frequents shorelines in winter to hunt shorebirds (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Winter foraging habitat is available in Study Area. Closest record approximately 11 miles NE of Study Area, 4 miles west of Santa Margarita Lake, in 2004 (CDFW 2013a).	Possible
Prairie falcon (nesting)	*Falco mexicanus*	BCC, WL	Found mostly in perennial grasslands, savannahs, rangeland, some agricultural fields, and desert scrub. Uses open terrain for foraging. Nests in open terrain with canyons, cliffs, rock outcrops, and escarpments (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest CNDDB record 11.5 miles NE of Study Area near Santa Margarita Lake, in the late 1970s and early 1980s (CDFW 2013a).	Unlikely
California condor	*Gymnogyps californianus*	FE, SE, FP, BCC	Requires vast expanses of open grasslands, savannah and foothill chaparral, and with cliffs, large trees, and snags for roosting and nesting. Forages for carrion over wide areas of open rangeland (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat not present. The USFWS critical habitat area for California condors is approximately 10 miles northeast of the Study Area. Closest record is approximately 10 miles NE of Study Area, in 1975 (CDFW 2013a).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Loggerhead shrike (nesting)	*Lanius ludovicianus*	BCC, CSC	Found in various open-canopied habitats with scattered shrubs and trees. Requires ample perches for hunting; mostly feeds on insects, but also takes small mammals, birds, fish, reptiles and amphibians, and sometimes carrion (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat is available, but species not often found in heavily urbanized areas. Additionally, the Study Area is located along the margin of migratory habitat for this species. Closest record is approximately 6 miles northwest of Study Area, in San Luis Obispo, in 2005 (CDFW 2013a).	Unlikely
California black rail	*Laterallus jamaicensis coturniculus*	BCC, ST, FP	Scarcely seen; found in upper zones of saline, brackish, and fresh emergent wetlands, especially with pickleweed or cattails, bulrushes, and saltgrass. Feeds on insects and other arthropods from the surface of mud and vegetation within marshes and wetlands (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat not present. Closest record approximately 12 miles south of Study Area on the Nipomo coast, in 1991 (CDFW 2013a).	Unlikely
Purple martin (nesting)	*Progne subis*	CSC	Uncommon summer resident of a variety of low-elevation woodland habitats. Forages for insects over riparian areas, forest and woodland. Nests in tall, old trees near water (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Limited and marginal nesting habitat is available. Closest record approximately 14 miles north of Study Area, and 5 miles west of Santa Margarita Lake, in 2003 (CDFW 2013a).	Unlikely
California least tern (nesting)	*Sternula antillarum browni*	FE, SE, FP	Migratory in California; found in undisturbed, open, sandy or gravelly shores near shallow estuaries. Feeds on small fish in shallow estuaries or lagoons (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Habitat is not present. Closest record approximately 12 miles south of Study Area on Nipomo coast, in 1987 (CDFW 2013a).	Unlikely

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Mammals					
Pallid bat[3]	*Antrozous pallidus*	CSC	Found in deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Day roosts are caves, crevices, mines, and sometimes hollow trees and buildings. Roosts must protect bats from high temps; very sensitive to disturbance of roost sites (CDFW 2013c, Zeiner *et al.* 1988–1990).	Potentially suitable roosting and foraging habitat is present within the project vicinity with suitable foraging habitat present within the Study Area. Pismo Creek serves as a permanent source of drinking water and the surrounding mosaic of oak woodland, scrubland, and open grassland provide suitable foraging habitat. The quantity of potentially suitable habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Direct interaction between construction equipment and foraging bats is not anticipated due to most construction activities taking place during the day when bats are least active and since bats are a highly mobile species they should be able to avoid any construction equipment. Closest record approximately 5 miles NNW in San Luis Obispo, in 2000 (CDFW 2013a).	Possible, foraging only

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Townsend's big-eared bat[3]	*Corynorhinus townsendii*	SC, CSC	Found throughout California in all but subalpine and alpine habitats; most abundant in mesic habitats. Roosts include caves, mines, tunnels, buildings, or other human structures, and are most important limiting resource. Extremely sensitive to roost disturbance. Forage primarily on moths, but other insects taken as well (CDFW 2013c, Zeiner *et al*. 1988–1990).	Potentially suitable roosting habitat is present within the project vicinity with suitable foraging habitat for this species present within the Study Area. Pismo Creek serves as a permanent source of drinking water and the surrounding mosaic of oak woodland, scrubland, and open grassland provide suitable habitat. The quantity of potentially suitable habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Direct interaction between construction equipment and foraging bats is not anticipated due to most construction activities taking place during the day when bats are least active and since bats are a highly mobile species they should be able to avoid any construction equipment. Closest record approximately 10 miles NW of AGOF near Chorro Creek, northwest of San Luis Obispo, in 2001 (CDFW 2013a).	Possible, foraging only

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Western mastiff bat[3]	*Eumops perotis californicus*	CSC	Roosts among significant rock features in desert scrub, chaparral, oak woodland, and ponderosa pine, and tunnels, buildings or other man-made structures. Primarily dwells in crevices, with roosts high (at least 3.5 m) above the ground. Foraging habitat includes dry desert washes, flood plains, chaparral, coastal sage scrub, oak woodland, grassland, open pine forest, and agricultural areas (Pierson and Rainey 1998).	Potentially suitable roosting habitat is present within the project vicinity with suitable foraging habitat for this species present within the Study Area. Pismo Creek serves as a permanent source of drinking water and the surrounding mosaic of oak woodland, scrubland, and open grassland provide suitable habitat. The quantity of potentially suitable habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Direct interaction between construction equipment and foraging bats is not anticipated due to most construction activities taking place during the day when bats are least active and since bats are a highly mobile species they should be able to avoid any construction equipment. Closest record approximately 6 miles N of AGOF in San Luis Obispo, in 1991 (CDFW 2013a).	Possible, foraging only

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Western red bat[3]	*Lasiurus blossevillii*	CSC	Roosting habitat for this foliage-dwelling species includes forests and woodlands from sea level up through mixed conifer forests, with preference for trees and shrubs located along edge habitats adjacent to streams and open fields. Foraging habitat includes grasslands, shrublands, open woodlands and forests, and croplands. Feeds mostly on moths, crickets, beetles, and cicadas (CDFW 2013c, Pierson and Rainey 1998, Zeiner *et al*. 1988–1990).	Suitable habitat for roosting and foraging is available within and around the Study Area. Removal of large coast live oaks, sycamore, or cottonwood trees within the riparian corridor of Pismo Creek or adjacent to open fields have potential to contain roosting individuals and small maternity groupings of western red bats. The quantity of potentially suitable habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Direct interaction between construction equipment and foraging bats is not anticipated due to most construction activities taking place during the day when bats are least active and since bats are a highly mobile species they should be able to avoid any construction equipment. Closest record approximately 14 miles NE of the Study Area, and 3 miles southeast of Santa Margarita Lake, in 1998 (CDFW 2013a).	Possible, foraging and roosting

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

Common Name	Scientific Name	Regulatory Status[1]	Habitat Requirements	Site Suitability/Survey Results	Potential to Occur
Yuma myotis[3]	*Myotis yumanensis*	SA	Found in open forests and woodlands in proximity of water sources, which are used as foraging sites and sources of drinking water. Roosts in caves, mines, crevices, and in buildings (CDFW 2013c, Zeiner *et al*. 1988–1990).	Potentially suitable roosting habitat is present within the project vicinity with suitable foraging habitat for this species present within the Study Area. Pismo Creek serves as a permanent source of drinking water and the surrounding mosaic of oak woodland, scrubland, and open grassland provide suitable habitat. The quantity of potentially suitable habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Direct interaction between construction equipment and foraging bats is not anticipated due to most construction activities taking place during the day when bats are least active and since bats are a highly mobile species they should be able to avoid any construction equipment. Closest record approximately 14 miles NE of Study Area, and 3 miles southeast of Santa Margarita Lake, in 1998 (CDFW 2013a).	Possible, foraging only
American badger	*Taxidea taxus*	CSC	Found in open areas of herbaceous habitats, shrublands and forests with dry, friable soils used for burrows. Preys mostly on burrowing rodents (CDFW 2013c, Zeiner *et al*. 1988–1990).	Not observed during Spring or Summer 2013 surveys. Ground appears to be suitable for denning. Burrowing rodents do occur within Study Area for prey. Closest record approximately 0.5 miles E of Study Area and 2 miles SE of Study Area, in 1991 (CDFW 2013a).	Possible

1 CDFW 2011

2 If season is not indicated, protection for species is presumed to be year round

3 No bat surveys were conducted within the Study Area, thus presence of specific bat species cannot be based on observance/documentation, rather potential is based upon an assessment of species habitat and available habitat within the Study Area. URS biologists did observe a single bat utilizing Pismo Creek as foraging habitat during California red-legged frog night surveys.
Regulatory Status Definitions:

TABLE 3-11 (CONTINUED)
SPECIAL-STATUS WILDLIFE NOT OBSERVED BUT WITH POTENTIAL TO OCCUR WITHIN THE STUDY AREA

FE = Federally-listed Endangered.
FT = Federally-listed Threatened.
FC = Candidate for Federal Listing.
BCC = USFWS Birds of Conservation Concern.
SE = State-listed Endangered.
ST = State-listed Threatened.
SC = State Candidate for Listing
CFP = California Fully Protected.
CSC = California Species of Special Concern.
WL = Species is on the CDFW Watch List, which means that the species is not currently considered a Species of Special Concern.
SA = CDFW Special Animal (tracked in CNDDB but maintains no other applicable sensitivity designation).

SECTION 4.0
IMPACT ASSESSMENT AND MITIGATION

This section describes the direct, indirect, and cumulative impacts of the proposed Project on biological resources. During environmental review of the project under California Environmental Quality Act (CEQA) the County will consider this information, and will exercise independent judgment when determining whether impacts are significant. The CEQA statute requires that any direct, indirect, or cumulative impacts found to be potentially significant must be mitigated to a less than significant level where feasible. To facilitate compliance with CEQA, the definitions used in the CEQA statute and the State CEQA Guidelines have been adopted to clearly define and differentiate between these three types of impacts in this BRAR. Recommended mitigation measures to reduce the project's biological impacts are also identified.

For purposes of this analysis, direct or primary impacts of the proposed Project would include those effects that are caused by the Project and occur at the same time and place. Examples of direct impacts could include permanent and temporary habitat removal during site preparation, injury or mortality of plants or wildlife by construction equipment, and diversion or modification of stream channels.

Secondary or indirect impacts, by contrast, are defined to include impacts that are reasonably foreseeable and caused by a project, but occur at a different time or place. Thus, those Project-related impacts that would occur off-site or at a later time are considered indirect impacts. Examples of indirect impacts could include effects on wildlife behavior in adjacent areas due to noise or nighttime lighting at the site, or long-term changes in the species composition on-site due to the creation of conditions that may favor particular species, usually those adapted to disturbance or human presence.

The term "cumulative impacts," as defined at Section 15355 of the State CEQA Guidelines, refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Thus, in instances where other past, proposed, or reasonably foreseeable future projects in the region would impact the same resource as the proposed Project (such as oak woodland habitat, for example), the cumulative impact on this resource would include the incremental impacts from all of these projects, including the proposed Project.

The significance criteria assessed in the Initial Study for the proposed Project, issued by the County, have been referenced in this BRAR to assist the County in determining impact significance during the CEQA process. The Project's impacts on biological resources would be considered significant if:

- The Project would result in the loss of unique or special-status species or their habitats;

- The Project would reduce the extent, diversity, or quality of native or other important vegetation;
- The Project would impact wetland or riparian habitat;
- The Project would interfere with the movement of resident or migratory fish or wildlife species, or factors, which could hinder the normal activities of wildlife; or
- The Project would conflict with any regional plans or policies to protect sensitive species, or regulations of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.

Impacts of the proposed Project on biological resources and recommended mitigation measures are summarized in Table 4-1 and described in detail in Sections 4.1 through 4.5.

4.1 IMPACTS TO PLANTS AND WILDLIFE

Criterion: Impacts would be significant if the proposed Project would result in the loss of unique or special-status species or their habitats

This section addresses the impacts of the proposed Project on plants and wildlife, including both a discussion of Project-related impacts to plants and wildlife in general, and separate analyses of impacts to special-status species. It is expected that the County will evaluate impacts for significance according to the criterion stated above; however, Section 15065(a)(1) of the State CEQA Guidelines mandates additional circumstances under which impacts to plants and wildlife species must be considered significant. These circumstances include:

- **Mandatory Finding of Significance:** Impacts would be significant if the proposed Project would substantially reduce the habitat of a fish or wildlife species.
- **Mandatory Finding of Significance:** Impacts would be significant if the proposed Project would cause a fish or wildlife population to drop below self-sustaining levels.
- **Mandatory Finding of Significance:** Impacts would be significant if the proposed Project would substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

- To ensure that this BRAR is as useful as possible in supporting the County's CEQA analysis of the project, the discussion presented below considers the Mandatory Findings of Significance required by CEQA as well as the County's significance criteria.

4.1.1 Impacts to Common Plants and Wildlife

As described more fully in Section 2.1.3 of this BRAR, the Study Area is a fairly representative sample of coastal San Luis Obispo County from a biological perspective. The

TABLE 4-1
SUMMARY OF IMPACTS AND RECOMMENDED MITIGATION

CEQA Criterion	Summary of Impacts	Summary of Recommended Mitigation Measures
Impacts would be significant if the proposed Project would result in the loss of unique or special-status species or their habitats.	1. Project would remove approximately 891 Santa Margarita manzanita individuals. 2. Project could result in unintended intrusion into adjacent Pismo clarkia populations. 3. Project would disturb habitat suitable for Blainville's horned lizard, and could injure or kill this species if present. 4. Project would remove 55.93 acres of suitable habitat for sensitive passerine birds including the oak titmouse and Nuttall's woodpecker. 5. Project would remove approximately 55.93 acres of suitable foraging, roosting, &/or nesting habitat for sensitive raptors including peregrine falcon, golden eagle, and Cooper's hawk.	BIO-1: Pre-Construction Surveys BIO-2: Construction Monitoring BIO-3: Construction Best Management Practices BIO-4: Worker Environmental Awareness Program BIO-5: Nesting Bird Surveys and Avoidance BIO-6: Protection of Blainville's Horned Lizard BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-8: Protection of California Red Legged Frog and Western Pond Turtle
Impacts would be significant if the project would reduce the extent, diversity, or quality of native or other important vegetation.	6. Project would remove 24.78 acre of coast live oak woodland and 5.90 acres of Santa Margarita manzanita stands.	BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-9: Restoration of Cut and Fill Slopes
Impacts would be significant if the proposed Project would impact wetland or riparian habitat.		BIO-9: Restoration of Cut and Fill Slopes BIO-8: Protection of California Red Legged Frog and Western Pond Turtle BIO-10: Nationwide Permit, Streambed Alteration Agreement, and CWA Section 401 Water Quality Certification
Impacts would be significant if the proposed project would interfere with the movement of resident or migratory fish or wildlife species, or factors, which could hinder the normal activities of wildlife.	7. The Project's limited footprint and disturbed surroundings render it unlikely to affect wildlife movement.	None recommended.

TABLE 4-1 (CONTINUED)
SUMMARY OF IMPACTS AND RECOMMENDED MITIGATION

CEQA Criterion	Summary of Impacts	Summary of Recommended Mitigation Measures
Impacts would be significant if the proposed Project would conflict with any regional plans or policies to protect sensitive species, or regulations of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service	8. Project would remove 1,451 coast live oak trees. 9. Project could result in take of active bird nests during construction.	BIO-1: Pre-Construction Surveys BIO-2: Construction Monitoring BIO-3: Construction Best Management Practices BIO-4: Worker Environmental Awareness Program BIO-5: Nesting Bird Surveys and Avoidance BIO-6: Protection of Blainville's Horned Lizard BIO-7: Protection of Special-status Plant Species and Pismo Clarkia BIO-8: Protection of California Red Legged Frog and Western Pond Turtle BIO-11: Restoration of Cut and Fill Slopes

most common vegetation communities within the Study Area consists of coast live oak woodlands, annual grasslands, and chaparral, which are also among the most extensive in the region. By extension, the plants that define these communities are also dominant, both in the region and within the Study Area. Regionally common wildlife species that are associated with these communities, such as the house finch, bushtit, western scrub-jay, California quail, and American crow, are also among the most abundant within the Study Area. Regionally common reptiles such as the Western fence lizard, alligator lizard, and California king snake were observed in the Study Area's oak woodlands and chaparral, as well as on existing developed oil well pads. In addition, mammals such as the mule deer, coyote, and Botta's pocket gopher are regionally abundant species.

Common wildlife species that currently utilize the Project site could be impacted by construction and operation of the proposed Project. Generally speaking, impacts could potentially include injury or mortality during construction, destruction of suitable habitat, and construction-related edge effects. These types of impacts would potentially affect all species occupying the site, including common and special-status species, and the analysis below is not intended to focus on any particular species. Impacts to special-status species are discussed individually in Section 4.1.2 of this BRAR. Impacts associated with wildlife movement are addressed in Section 4.4 of this BRAR.

4.1.1.1 Injury/Mortality of Common Plants and Wildlife during Construction

Within the Study Area, a total of 55.93 acres of existing natural habitat would be disturbed (including permanent removal within the footprint of proposed facilities and temporary disturbance in surrounding construction zones). For the plants and wildlife that inhabit these areas, ground disturbance would lead to injury and mortality of individuals. The extent to which species would be impacted would be dependent on several factors, the most important of which is mobility.

All existing plants within the proposed development limits would be eliminated, as these species are completely immobile. Species to be removed would include common grasses, forbs, and shrubs, as well as mature trees and Santa Margarita manzanita, a special-status plant (refer to Section 4.1.2.1.2). All of the plant species that would be removed during construction are relatively widespread in the Project region.

For wildlife species of relatively low mobility, such as reptiles and small, fossorial mammals, construction-related ground disturbance would result in injury and mortality due to collapsed burrows and collisions with construction equipment. These types of impacts would be expected to affect all low-mobility, ground dwelling species within the Project site; this impact would affect common species that are regionally abundant, and special-status species including Blainville's horned lizard (CSC), western pond turtle (CSC), and California red-legged frog (FT, CSC). Impacts specific to these special-status reptiles and amphibian are addressed in Section 4.1.2.2 and 4.1.2.3 of this BRAR.

For wildlife species of higher mobility, such as medium-sized mammals and birds, the risk of injury or mortality during Project construction would be much lower. These species have home ranges that exceed the size of the Study Area, and encounters with construction equipment would not necessarily occur. Birds would almost certainly be able to escape collisions by flying away, and so the potential for construction equipment to injure or kill adult birds is minimal. Destruction of active bird nests containing eggs or young is prohibited by the federal Migratory Bird Treaty Act, and would be avoided (see Section 4.5.2 of this BRAR). The common wildlife that occur within the Study Area have wide geographic ranges and are abundant in the Project region, and would persist in adjacent, undisturbed habitat, as well as within portions of the Study Area not proposed for development.

Impacts to common plants and wildlife are likely during construction of the Project. Due to the generally widespread nature of these plants and animals, coupled with Recommended Mitigation Measures BIO-2: Construction Monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-9: Restoration of Cut and Fill Slopes (see Section 4.6), reduction of impacts to common plants and wildlife would occur.

4.1.1.2 Loss of Habitat for Common Plants and Wildlife

Implementation of the proposed Project would result in the removal of existing natural habitat (55.93 acres) within the Study Area during grading. Due to the quantity of similar habitat available in the Study Area and region coupled with recommended Mitigation Measures BIO-2: Construction Monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-9: Restoration of Cut and Fill Slopes (see Section 4.6), project-related habitat loss would be reduced.

4.1.1.3 Operational Impacts for Common Plants and Wildlife

Implementation of the proposed Project would result in incrementally increased operations within the Study Area. Operational impacts are impacts to biological resources that occur during the life of project operation, including maintenance activities. This includes such activities as periodic maintenance and repair, inspection, and management of project facilities. Operational impacts would also include weed abatement activities including but not limited to mechanical removal, managed goat grazing, or herbicide treatment. These impacts would remain an ongoing source of disturbance for many plants and wildlife species that occur within AGOF and in adjacent habitat.

Because the AGOF is continuously active, with operations staff, vehicles, and equipment moving throughout the field on an ongoing basis, implementation of the proposed Project would not substantially change the character of the area. While animals in areas adjacent to the Project footprint might alter their behavior or leave the area because of the increased noise and activity levels during construction, wildlife that currently utilize habitats within the oil field are accustomed to the presence of workers and vehicles, and would be likely to resume their current behavior patterns when construction-related activities have subsided. Thus, it can be expected that during operations, wildlife use of the Study Area continue at the same levels that currently exist.

Impacts to plants would include, but are not limited to, trampling or crushing of native vegetation by vehicular or foot traffic, increased erosion and sedimentation, and the introduction of non-native, invasive plants due to increased human presence. Operational impacts to wildlife would include mortality from vehicle strikes, disturbance from vegetation management activities, potential disruption of nest sites, noise from facility operations, and human disturbance. Due to the relatively minor presence of personnel in developed areas of the AGOF facility, as well as on-site regulations regarding speed limits and personnel access, coupled with Recommended Mitigation BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, considerable operational impacts are not expected for common plants and wildlife.

4.1.2 Impacts to Special-status Plants and Wildlife

During the biological field investigations described in Sections 3.1 through 3.7 of this BRAR, a total of eight special-status plants species were detected, including two shrubs and five forbs. A total of ten special-status wildlife species were detected, including two reptiles, one amphibian, and seven birds. Impacts to these plants and animals are described below.

4.1.2.1 Impacts to Special-status Plant Species.

Eight special-status plant species were detected on the Project site; Black flowered figwort (*Scrophularia atrata*, CNPS Rank 1B.2), California prickly phlox (*Linanthus californicus* [*Leptodactylon californicum*], CNPS Rank 4.2), mesa horkelia (*Hokelia cuneata* ssp. *cuneata*, CNPS Rank 1B.1), Saint's daisy (*Erigeron Sanctarum*, CNPS Rank 4.2), Paniculate Tarplant (*Deinandra paniculata*, CNPS Rank 4.2), San Luis Obispo owl's clover (*Castelleja densiflora* ssp. *obispoensis*, CNPS Rank 1B.2), and Santa Margarita manzanita (*Arctostaphylos pilosula*, CNPS Rank 1B.2). Impacts to Pismo clarkia (*Clarkia speciosa* ssp. *immaculata*, FE, SR, CNPS Rank 1B.1) are described in Section 4.1.2.2. See Figure 3-3 for special-status species locations. See Table 4-2 for a summary of impacts to special-status plants and Table 4-3 for sensitive plant species proposed to be removed by project components. Impacts to oak trees, which are not special-status plants but are protected by local ordinance, are described in Section 4.5 of this BRAR.

TABLE 4-2
SUMMARY OF IMPACTS TO SPECIAL-STATUS PLANT SPECIES

	Total Number Detected within Study Area		Number to be Removed	
Species	Number of Individuals	Acreage	Number of Individuals	Acreage
Black Flowered Figwort	12	0.004	5	0.005
California Prickly Phlox	3	0.001	3	0.001
Mesa Horkelia	1	0.0001	0	0
Paniculate Tarplant	942	0.92	913	0.9
Pismo Clarkia	9,519	1.61	5,661	1
Saint's Daisy	6	0.0161	1	0.0001
San Luis Obispo Owl's Clover	1	0.0001	1	0.0001
Santa Margarita Manzanita	1,526	11.83	891	6.95
Total	12,010	14	7,475	8.86

Loss of Individuals Due to Injury or Mortality. Special-status CNPS list plant species could experience loss from construction activities that include grading, vegetation removal,

sedimentation, accumulation of fugitive dust, increased erosion, and the colonization of non-native, invasive plant species. Three individuals of California prickly phlox were observed within the Project's limits of disturbance during biological surveys in spring 2013. Two individuals are located on Pad 33 and one individual was located on Pad 44. This species is no longer listed as being uncommon in California (CNPS Rank 4.2). Impacts to this species are the same as described in Section 4.1.1 Impacts to Common Plants and Wildlife. One individual mesa horkelia was observed within the Study Area during biological surveys in spring 2013. This individual is located in the north-central portion of the Study Area surrounding Pad 17. During the design stage of the proposed Project it was determined that avoiding this mesa horkelia plant was feasible, and the proposed limits of disturbance reflect complete avoidance of this resource. Six individual Saint's daisies were observed within the Study Area during biological surveys in spring 2013. Only one individual, located in the central portion of the Study Area surrounding Pad 14 is within the Project limits of disturbance. One individual San Luis Obispo owl's clover was observed within the Study Area during biological surveys in spring 2013. This individual is located in the west-central portion of the Pad 41 disturbance limits. No other individuals were observed during surveys. Black flowered figwort plants were observed scattered throughout the Study Area. This species occurs within the Study Area, totaling 22 individuals comprising 0.004 acres. During the design stage of the proposed Project it was determined that most individuals could be avoided and thus only five individuals comprising 0.001 acres occur within the Project limits of disturbance on Pads 22 and 23. Paniculate tarplants were observed scattered throughout the Study Area, sometimes as isolated populations comprised of less than 10 individuals or as large populations totaling several hundred individuals. This species; which is ubiquitous throughout the AGOF facility, occurs within the Study Area totaling 942 individuals comprising 0.92 acres. Of this, 913 individuals comprising 0.90 acres on Pads 1, 4, 5, 16, 17, and 42 occur within the Project limits of disturbance. Santa Margarita manzanita plants were observed scattered throughout the Study Area, sometimes as isolated individual plants and sometimes in clusters or stands. This species was detected during botanical surveys within the Study Area totaling 1,514 individuals comprising 11.28 acres. Within the Study Area, a total of 891 Santa Margarita manzanita plants would be directly removed during Project-related grading activities. As illustrated in the Table 4-3, the majority of the Project's impacts to this species would occur at Pads 6, 7, 8, 19, 20, 23, 34, 35, and 45, in addition to less significant impacts at other pads, where individuals would be removed to accommodate expansion of the existing oil well pads. Because Pads 7, 8, 19, 23, 34, 35, 44, and 45 are situated in proximity to Santa Margarita manzanita plants on all sides, the need to remove individuals during Project development is inevitable.

The recommended Mitigation Measures BIO-1: Pre-construction Monitoring, BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-7: Protection of Special-status Plant Species and Pismo Clarkia (see Section 4.6) would reduce the likelihood of potential impacts to the species described above.

TABLE 4-3
SPECIAL-STATUS PLANT SPECIES PROPOSED TO BE REMOVED

	Pismo Clarkia		Santa Margarita Manzanita		Saint's Daisy		Paniculate Tarplant		San Luis Obispo Owl's Clover		Black Flowered Figwort		California Prickly Phlox	
Project Component within Disturbance Area[1]	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage
1							241	0.14						
2			30	0.18										
4			6	0.08			50	0.02						
5			30	0.29			4	0.002						
6			34	0.64										
7			40	0.6										
8 & 20			166	0.84										
9	76	0.01	5	0.001										
11	15	0.01												
12			35	0.31										
13	51	0.002	3	0.001										
14	118	0.07	5	0.04	1	0.002								
16	122	0.03					453	0.36						
17							80	0.10						
19			69	0.59										
21	1,551	0.34												
22			32	0.59							2	0.0001		
23			76	0.84							3	0.0004		
24	4	0.003												
26	500	0.03												
29			19	0.06										
30			15	0.06										
32			4	0.0003										
33													2	0.001
34			24	0.29										
35			35	0.76										
Pad 36 turnout	7	0.01												
36	3,217	0.52												
41									1	0.00003				
42			1	0.0002			85	0.28						
44			75	0.38									1	0.0003
45			173	0.39										

TABLE 4-3 (CONTINUED)
SPECIAL-STATUS PLANT SPECIES PROPOSED TO BE REMOVED

Project Component within Disturbance Area[1]	Pismo Clarkia		Santa Margarita Manzanita		Saint's Daisy		Paniculate Tarplant		San Luis Obispo Owl's Clover		Black Flowered Figwort		California Prickly Phlox	
	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage	# of Individuals	Acreage
46			13	0.004										
48			1	0.0001										
	5,661	1.03	891	6.95	1	0.002	913	0.90	1	0.00003	5	0.0005	3	0.0013

[1] Phase V project components present on this table are where sensitive plant species were detected within disturbance areas during 2013 botanical surveys. No sensitive plants were detected within disturbance areas for Phase V project components not listed on this table.

***Loss or Modification of Suitable Habitat*.** As described previously, the proposed Project would remove a total of 55.93 acres of existing natural habitat areas within the Study Area. This acreage is primarily comprised of annual grasslands, coast live oak woodland, chamise chaparral, Santa Margarita manzanita stands, and coyote brush scrub, among others, all of which are suitable habitat for any of the above mentioned special-status species. Following implementation of the proposed Project, these areas would no longer be suitable for use by these species. However, there is substantial acreage of suitable habitat for special-status species in the Project vicinity and the region. Recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, would reduce additional impacts to special-status species. Additionally, Mitigation Measure BIO-7: Protection of Special-status Plant Species and Pismo Clarkia (see Section 4.6) would further reduce impacts to special-status species by implementing protection measures and planning for restoration if protection measures are not feasible.

4.1.2.2 Impacts to Pismo Clarkia

Pismo clarkia were observed scattered throughout the Study Area, sometimes as isolated populations comprised of less than 25 individuals or as large populations totaling several hundred individuals (Figure 3-3). This species occurs within the Study Area totaling 9,519 individuals comprising 1.61 acres. Of this, 5,661 individuals comprising 1.0 acre occur within the Project limits of disturbance (Table 4-2).

***Loss of Individuals Due to Injury or Mortality*.** Pismo clarkia could experience loss from construction activities that include grading, vegetation removal, sedimentation, accumulation of fugitive dust, increased erosion, and the colonization of non-native, invasive plant species. Within the Study Area, a total of 1.03 acres of habitat currently supporting 5,661 Pismo clarkia would be removed during construction. If construction equipment or personnel were to inadvertently stray into areas outside the Project impact limits currently proposed, additional Pismo clarkia individuals could potentially be impacted. Pismo clarkia could experience impacts from construction activities that remove vegetation, grade soils, cause sedimentation, accumulation of fugitive dust, increased erosion, and the colonization of non-native, invasive plant species.

Recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, would reduce additional impacts to Pismo clarkia within or adjacent to construction areas. Additionally, Mitigation Measure BIO-7: Protection of Special-status Plant Species and Pismo Clarkia (see Section 4.6) would further reduce impacts to Pismo clarkia by implementing protection measures and planning for restoration if protection measures are not feasible

***Loss or Modification of Suitable Habitat*.** As described previously, the proposed Project would remove a total of 55.93 acres of existing natural habitat areas within the Study Area. This

acreage primarily comprises annual grasslands, coast live oak woodland, chamise chaparral, Santa Margarita manzanita stands, and coyote brush scrub, among others, any of which may support edges and openings suitable for colonization by Pismo clarkia. Following implementation of the proposed Project, these areas would no longer be suitable for use by the species. However, because the quantity of habitat to be disturbed is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region, the effects of unoccupied habitat loss on this species is unlikely to be considerable. Recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, would reduce additional impacts to Pismo clarkia habitat by reducing intrusion into adjacent suitable habitat. Additionally, Mitigation Measure BIO-7: Protection of Special-status Plant Species and Pismo Clarkia (see Section 4.6) would further reduce impacts to Pismo clarkia by planning for restoration if protection measures are not feasible.

4.1.2.2 Impacts to Special-status Fish Species

One special-status fish species was identified as likely to occur within the Project site, impacts to this species are described below.

4.1.2.2.1 Steelhead (*Oncorhynchus mykiss irideus, FT, CSC*). This species was not directly observed during any AGOF surveys conducted between April 2013 and July 2013, yet Pismo Creek is considered to currently support anadromous steelhead based on relatively recent reports and incidental observations by site personnel. A report by Becker and Reining (2008) indicates that during several Pismo Creek site visits by CDFW personnel between 1996 and 2002, observations of multiple year classes were made, and in 2005 CDFW personnel observed young of year and age 1+ and 2+ steelhead throughout the main-stem of Pismo Creek. Additionally, there is a 2002 CNDDB record for steelhead within Pismo Creek. Suitable rearing and migratory habitat for steelhead occur within the AGOF boundaries. Steelhead within the Study Area are designated as a component of the South-Central California Coast (SCCC) Distinct Population Segment (DPS) which includes all naturally spawned populations and their progeny in streams from the Pajaro River located in Santa Cruz, California to, but not including, the Santa Maria River in San Luis Obispo County (USFWS 2013c). Of the 29 watersheds comprising the SCCC DPS, eleven were designated as Core 1 populations in a draft recovery plan submitted by the NMFS (2012), including the Pismo Creek watershed. Core 1 populations are ranked as the highest priority for recovery action based on a variety of factors, including: the intrinsic potential of the population in an unimpaired condition; the role of the population in meeting the spatial and/or redundancy viability criteria; the current condition of the populations; the severity of the threats facing the populations; the potential ecological or genetic diversity the watershed and population could provide to the species; and the capacity of the watershed and population to respond to the critical recovery actions needed to abate those threats.

***Loss of Individuals Due to Injury or Mortality*.** This species is known to occur within Pismo Creek and may be present during construction. Construction is only proposed over a short section of Pismo Creek (five foot length) where a pipe bridge, which spans the width of Pismo Creek, is proposed to be removed and replaced. No construction is proposed within the ordinary high water mark of Pismo Creek. A large crane will be used to remove the existing pipe bridge and to construct the new one at Pads 1 and 41. However, there is potential for construction debris or sediment to fall into the water, which could potentially be occupied with steelhead. Implementation of Mitigation Measures BIO-2: Construction Monitoring, BIO-3: Construction Best Management Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6), would reduce the likelihood of injury or mortality of steelhead due to proposed construction.

***Loss or Modification of Suitable Habitat*.** As described above, the proposed Project will not directly impact steelhead habitat. Although Pismo Creek traverses the Study Area, no construction activities (including staging of equipment and removal/trimming of vegetation) would occur within the wetted channel or ordinary high water mark of the creek. Replacement of the northern pipe bridge would be achieved by re-using the existing abutments on either side of Pismo Creek to support the bridge or by replacing the abutments at their existing locations beyond the banks of the creek. The pipe bridge itself would be replaced using a crane, obviating the need for construction equipment to enter the channel. Considering this information, the Project is not likely to result in a loss of habitat for the SCCC steelhead. Further, implementation of Mitigation Measure BIO-2: Construction Monitoring, BIO-3: Construction Best Management Practices, BIO-4: Worker Environmental Awareness Program, and BIO-8: Protection of California Red Legged Frog and Western Pond Turtle, would further reduce the probability of this impact.

4.1.2.2 Impacts to Special-status Reptile Species

Two special-status reptile species were found on the Project site; impacts to these species are described below.

4.1.2.2.1 Blainville's Horned Lizard (*Phrynosoma blainvillii*, CSC). This species was observed during general wildlife surveys of the AGOF, and is known to occupy woodland and open scrub habitats in the vicinity of the Study Area. The chamise/black sage chaparral within the Study Area appears highly suitable for this species, and annual grasslands may be used as well, provided that openings and areas of loose soil are present. Although focused surveys for this species within the Study Area were not performed, it is likely that Blainville's horned lizard may occur throughout the Study Area.

Loss of Individuals Due to Injury or Mortality. Because Blainville's horned lizard is a species of relatively low mobility and is cryptic, spending significant periods of time underground, this species has a high likelihood of being injured or killed during construction activities. During the

winter months this lizard may be underground and inactive, further increasing the chances of becoming crushed or entombed if present within the grading footprint. Due to this species' cryptic nature and generally low population densities, traditional impact avoidance strategies such as pre-construction surveys are not highly effective for reducing impacts to the Blainville's horned lizard. However, construction monitoring by approved biologists, recommended in Mitigation Measure BIO-2: Construction Monitoring, would considerably reduce potential impacts. Mitigation Measures BIO-3: Construction Best Management Practices, BIO-4: Worker Environmental Awareness Program, and BIO-6: Protection of Blainville's Horned Lizard would also reduce impacts.

Loss or Modification of Suitable Habitat. As described previously, the proposed Project would remove a total of 55.93 acres of existing natural habitat areas within the Study Area. This acreage primarily comprises annual grasslands, coast live oak woodland, chamise chaparral, Santa Margarita manzanita stands, and coyote brush scrub, among others, all of which may be suitable habitat for Blainville's horned lizard, provided that soil conditions are also suitable. Following implementation of the proposed Project these areas would be compacted and un-vegetated, and would probably no longer be suitable for use by the species. However, the acreage that would be disturbed by the Project is minimal compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Recommended Mitigation Measures BIO-1: Pre-construction Monitoring, BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, (see Section 4.6) would further reduce this impact by minimizing effect on suitable habitats in adjacent areas.

4.1.2.2.2 Western Pond Turtle (*Emys marmorata*, CSC). This species was observed in the Cañada Verde tributary to Pismo Creek during USFWS protocol California red-legged frog surveys of the AGOF. Western pond turtles are semi-aquatic and require basking sites in or adjacent to permanent water that is deep enough to offer protection from potential predators. Female turtles can travel up to 100 meters from water to lay eggs (Nussbaum et al. 1983). Suitable habitat for the species within the Study Area is located in open portions of Pismo Creek, its tributaries and the Retention Basin.

***Loss of Individuals Due to Injury or Mortality*.** As detailed in Section 4.3, the Project would avoid impacts to the mainstem of Pismo Creek and the retention basin in the northwestern portion of the AGOF. Because these features are the most suitable pond turtle habitat areas within the Study Area, the likelihood of pond turtles being killed or injured during construction activities is relatively low. Aquatic habitat areas that would be affected by the Project, such as the unnamed tributaries to Pismo Creek that traverse the AGOF from the west, are characterized by ephemeral or intermittent hydrology and do not support surface flows of adequate duration to support this species. However, western pond turtles are known to travel up to 100 meters from aquatic habitat areas to lay eggs (Nussbaum et al. 1983), and therefore may periodically occur in areas beyond the limits of the on-site aquatic resources. Further, the western pond turtle has relatively low mobility and is cryptic, spending most of time its time in or adjacent to water. Due

to these habits there is a possibility of this species being injured or killed during construction activities that take place near the banks of Pismo Creek or near the retention basin. The likelihood and intensity of these impacts would be reduced through Recommended Mitigation Measures BIO-1: Pre-construction Monitoring, BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-8: Protection of California Red Legged Frog and Western Pond Turtle (see Section 4.6).

***Loss or Modification of Suitable Habitat*.** As described in Section 4.2 below, the proposed Project would remove a limited acreage of riparian habitat during construction of new and expanded well pads. However, as detailed in Section 4.3, the Project would avoid impacts to the mainstem of Pismo Creek and the retention basin in the northwestern portion of the AGOF. Because the proposed riparian habitat losses would be not be associated with perennial surface water sources, these losses are unlikely to affect the western pond turtle. Further, because the acreage to be removed (see Section 4.2 below) is small compared to the acreage of riparian habitat available within the Project vicinity and the region, no large-scale effects on this species are anticipated. Recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-8: Protection of California Red Legged Frog and Western Pond Turtle (see Section 4.6) would further reduce this impact be minimizing effects on adjacent areas.

4.1.2.3 Impacts to Special-status Amphibian Species

One special-status amphibian species was found on the Project site; impacts to this species are described below.

4.1.2.3.1 California Red-Legged Frog (*Rana draytonii*, FT, CSC). This species was observed at the AGOF during California red-legged frog protocol surveys for Phase V and California red-legged frog surveys for a project related to Hyla crossing, and is known to occupy riparian and pond habitats in the vicinity of the Study Area. The riparian habitat along Pismo Creek and Cañada Verde within the Study Area appears highly suitable for this species, and upland habitats throughout the AGOF may be used as transitory habitat as well. One California red-legged frog was observed at the large stock pond and one was located in a pooled area just downstream of the Hyla crossing. There is potential for California red-legged frog to occur in other portions of Pismo Creek and its tributaries. Although California red-legged frogs may use drainages and tributaries within the Study Area as refugia when moving through uplands, these areas are not expected to serve as breeding habitat.

Loss of Individuals Due to Injury or Mortality. Because California red-legged frog can move up to one mile through upland habitats, there is a possibility of this species being injured or killed during construction activities. During periods of rainfall this frog is prone to move through upland habitats, further increasing the chances of becoming crushed or entombed if present within the grading footprint. Due to this species' cryptic nature and generally low population

densities, traditional impact avoidance strategies such as pre-construction surveys are not highly effective for reducing impacts to California red-legged frog. However, implementation of full time biological monitoring during construction within the 100 foot buffer of Pismo Creek in recommended Mitigation Measure BIO-2: Construction monitoring, and BIO-8: Protection of California Red Legged Frog and Western Pond Turtle would reduce potential impacts. Mitigation Measures BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6) would further reduce impacts on this species.

Loss or Modification of Suitable Habitat. As described previously, the proposed Project would remove a small percentage of riparian habitat adjacent to the main stem of Pismo Creek, that is suitable habitat for California red-legged frog breeding. The proposed Project would remove a total of 55.93 acres of upland habitat primarily consisting of annual grasslands, coast live oak woodland, chamise chaparral, Santa Margarita manzanita stands, and coyote brush scrub, among others, which may be suitable dispersal habitat. Suitable riparian breeding habitat was calculated within 30-meters of suitable water features, the distance which California red-legged frogs have been found from water during breeding [USFWS 2002b]). Following implementation of the proposed Project these areas would be compacted and un-vegetated, and would probably no longer be suitable for use by the species. However, the acreage that would be disturbed by the Project is relatively small compared to the extensive acreage of suitable habitat for this species in the Project vicinity and the region. Recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-8: Protection of California Red Legged Frog and Western Pond Turtle (see Section 4.6) would further reduce this impact be minimizing effect on suitable habitats in adjacent areas.

4.1.2.4 Impacts to Special-status Bird Species

Impacts to the seven special-status bird species documented within the Project site and vicinity are described below.

4.1.2.4.1 Impacts to Special-status Raptors. Four special-status raptors were detected on the Project site; Peregrine Falcon (*Falco peregrinus*, BCC, FP), Cooper's Hawk (*Accipiter cooperii;* WL), Golden Eagle (*Aquila chrysaetos*, BCC, FP), and Northern Harrier (*Circus cyaneus*; CSC).The impacts to these species and their habitats are described below.

***Loss of Individuals Due to Injury or Mortality*.** Within the Project site, approximately 55.93 acres of existing natural habitat would be disturbed during construction. As adult raptors are highly mobile, any individuals that happened to be in the disturbance footprint during construction would be able to fly away and avoid injury or mortality caused by collisions with construction equipment. Should adult falcons be roosting in trees at the time of vegetation clearing, the birds would likely be flushed before clearing occurs. Therefore, injury or mortality of adult raptors during construction is not likely to occur.

Within the Study Area, there is potential for Cooper's hawks to nest in vegetated areas such as the mature riparian corridor of Pismo Creek and in the extensive oak woodlands that occupy the spaces between the various oil well pads and other AGOF infrastructure (while breeding was not documented in 2013, Cooper's hawks were observed during surveys and the habitat in these areas is suitable for nesting). Additionally, peregrine falcons and golden eagles are known to have nested within the AGOF in 2013; both species nested and fledged young in the vicinity of the rock spire on the east side of Pismo Creek. Larger trees in the on-site oak woodlands are also suitable for nesting by golden eagles, although nesting in these areas has not been observed and may be unlikely due to the presence of higher quality nesting habitat for this species elsewhere in Price Canyon. During nesting periods, raptors may be particularly susceptible to construction-related impacts. If nest trees are removed, mortality of eggs or nestlings could result. The loss of active bird nests or young is prohibited by the federal Migratory Bird Treaty Act (MBTA) and by Section 3503 of the California Fish and Game Code.

Even if nest sites are not directly eliminated, disturbance caused by construction-related dust, drilling and other noise, and human presence in proximity to an active nest could potentially cause adult raptors to abandon nests or flush for excessive periods, resulting in nest failure due to exposure or predation. Because no project-related disturbance is proposed in the vicinity of the on-site rock outcrops (high above the east bank of Pismo Creek) the potential for Project activities to impact golden eagles and peregrine falcons nesting in this area is low. The potential for impacts is greater where Cooper's hawks and tree-nesting golden eagles are concerned, as the majority of proposed development would occur in proximity to oak woodland habitat. The northern harrier is unlikely to nest within the AGOF or the Study Area due to the lack of suitable habitat, and the Project is not expected to impact harrier nests.

During project operations, the levels of on-site human presence and activity would be incrementally greater than those occurring under existing conditions. While it is possible that disturbance associated with these increases could discourage raptors from nesting in the area, this effect is unlikely to be substantial. For the most part, the proposed facilities would be constructed on existing pads, and vehicles would be operated on existing roadways. Wildlife, including raptors, which currently inhabit or forage within the AGOF are presumably accustomed to the presence of facilities, personnel, and vehicles in the area, and conditions during Project operations would be substantially similar to those existing currently with regard to the types of equipment and activities present. Further, because the proposed Project would be constructed over a period of several years, the increase in operational activity levels would occur gradually and allow animals in the area some opportunity to become accustomed to the new site conditions.

Impacts to foraging and nesting special-status raptors would be avoided through implementation of pre-construction nesting bird surveys and avoidance practices required by Recommended Mitigation Measure BIO-5: Nesting Bird Surveys and Avoidance. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker

Environmental Awareness Program (see Section 4.6) would further reduce impacts by protecting possible nest trees adjacent to construction areas from damage.

***Loss or Modification of Suitable Habitat*.** Approximately 55.93 acres of natural habitats where special-status raptors have potential to forage would be permanently removed by the Project. The most common vegetation communities within the Study Area consist of coast live oak woodlands, annual grasslands, Santa Margarita manzanita stands, and chaparral, which are also generally extensive in the region. Because raptors are highly mobile with an extensive foraging range, loss of foraging habitat is not expected to have a substantial effect on any special-status raptor species. Foraging habitat in the Study Area is not suitable for northern harriers as they forage in open habitats, frequently near water. In addition, because the Study Area is small and non-contiguous, there is a low probability that special-status raptors such as golden eagles spend extended periods of time foraging over the Study Area.

Of the approximately 55.93 acres of natural habitat to be permanently removed by the Project, 24.78 acres contain coast live woodland, suitable for nesting of golden eagle and Cooper's hawk, and 0.41 acre of arroyo willow and 0.01 acre of red willow thickets that could also be suitable for nesting of Cooper's hawk. Because suitable nesting sites are abundant in the Project vicinity and the region, the loss of 25.20 acres of nesting habitat is not expected to adversely affect Cooper's hawks and golden eagles. Because the Study Area does not contain suitable nesting habitat for Northern harrier, loss of nesting habitat would not occur as a result of the Project.

Impacts to adjacent habitat would be reduced through implementation of pre-construction monitoring and avoidance practices required by Recommended Mitigation Measure BIO-5: Nesting Bird Surveys and Avoidance. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, (see Section 4.6) would further reduce impacts by protecting adjacent nesting and foraging habitat from damage.

4.1.2.4.1 Impacts to Special-status Passerines. Five special-status raptors were detected on the Project site; Lark Sparrow (*Chondestes grammacus*, SA), Nuttall's Woodpecker (*Picoides nuttallii*, BCC, SA), and Oak Titmouse (*Baeolophus inornatus*, SA). The impacts to these species and their habitats are described below.

***Loss of Individuals Due to Injury or Mortality*.** Within the Project site, approximately 55.93 acres of existing natural habitat would be disturbed during construction. As adult passerines are highly mobile, any individuals that happened to be in the disturbance footprint during construction would be able to fly away and avoid injury or mortality caused by collisions with construction equipment. Should adult passerines be roosting or foraging in trees or shrubs at the time of vegetation clearing, the birds would likely be flushed before clearing occurs. Therefore impacts to adult passerine individuals may not be significant.

Nesting of special-status passerines, including Lark sparrow, Nuttal's woodpecker, and oak titmouse, within the Study Area is likely. If the Nuttal's woodpecker, and oak titmouse were nesting in cavities of oak trees proposed to be removed by the project, impacts could potentially include mortality of eggs or nestlings. Additionally, if Lark sparrow, Nuttal's woodpecker, and oak titmouse were nesting in trees adjacent to construction zones, construction activities; including elevated noise and activity could cause the adult birds to leave the area, abandoning their eggs or chicks. The loss of active bird nests or young is regulated by the MBTA and Fish and Game Code Section 3503. Additionally, nesting passerines may also nest in equipment if is left idle on-site during the breeding season.

Impacts to foraging and nesting special-status passerines would be avoided through implementation of pre-construction nesting bird surveys and avoidance practices required by Recommended Mitigation Measure BIO-5: Nesting Bird Surveys and Avoidance. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6) would further reduce impacts by protecting possible nest trees and shrubs from damage.

***Loss or Modification of Suitable Habitat*.** Approximately 55.93 acres of natural habitats where special-status passerines have potential to forage and nest would be permanently removed by the Project. The most common vegetation communities within the Study Area consist of coast live oak woodlands, annual grasslands, and chaparral, which are also among the most extensive in the region. By extension, the plants that define these communities are also dominant, both in the region and within the Study Area. The project's proposed removal of 24.78 acres of existing coast live oak woodland and 18.58 acres of annual, annual brome, and veldt grass grasslands would incrementally reduce the amount of available foraging and nesting habitat for special-status passerines such as the lark sparrow, Nuttal's woodpecker, and oak titmouse within the Study Area. Because suitable nesting sites are abundant in the Project vicinity and the region, the loss of 55.93 acres of nesting habitat is not expected to adversely affect lark sparrow, Nuttal's woodpecker, and oak titmouse.

Impacts to adjacent habitat would be reduced through implementation of pre-construction monitoring and avoidance practices required by Recommended Mitigation Measure BIO-5: Nesting Bird Surveys and Avoidance. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6) would further reduce impacts by protecting adjacent nesting and foraging habitat from damage.

4.1.3 Impacts to Designated Critical Habitat

Impacts to one area of designated critical habitat located within the Project site is described below.

4.1.3.1 Impacts to South-Central California Coast Steelhead (*Oncorhynchus mykiss irideus*, FT, CSC) Critical Habitat

Pismo Creek, present within the proposed disturbance area and within the Project vicinity, was designated critical habitat for the steelhead SCCC DPS on September 2, 2005. This designation includes the entire length of Pismo Creek from its confluence with the Pacific Ocean upstream to endpoints in East Corral de Piedra Creek (35.2343, -120.5571) and an unnamed tributary of Pismo Creek (35.2462, -120.5856) (NMFS 2005).

Pismo Creek intersects the proposed Project disturbance limits by 0.014 acres. No permanent structures will be placed below the OHWM of Pismo Creek and no construction activities will occur below the OHWM of Pismo Creek. Construction is only proposed over a short section of Pismo Creek (five foot length) where a pipe bridge, which spans the width of Pismo Creek, is proposed to be removed and replaced. No construction is proposed within the ordinary high water mark of Pismo Creek. A large crane will be used to remove the existing pipe bridge and to construct the new one at Pads 1 and 41. Impacts to Pismo Creek could potentially include debris falling into the channel. Additionally, increased sedimentation due to disturbance of riparian vegetation required to access the north and south abutment structures present on the upper banks of Pismo Creek and/or disturbance resulting from staging of construction equipment could impact Pismo Creek. However, the construction site housekeeping requirements presented in recommended BIO-3: Construction Best Management Practices, as well as Mitigation Measures BIO-2: Construction Monitoring and BIO-4: Worker Environmental Awareness Program (see Section 4.6), would further reduce this impact.

4.2 IMPACTS TO EXISTING VEGETATION COMMUNITIES AND LAND COVERS

Criterion: Impacts would be significant if the project would reduce the extent, diversity, or quality of native or other important vegetation.

The Study Area is located within an active oil field, and is subjected to routine industrial activity and human encroachment. The natural oak woodland and chaparral vegetation communities in the vicinity have been fragmented somewhat by the installation of graded oil well pads and access roads, which are kept clear of vegetation. Nevertheless, as described in Section 3.1 of this BRAR, twenty natural communities, along with four anthropogenic or un-vegetated land cover types, can be found within the Study Area. These communities provide habitat for a variety of plant and wildlife species that are found throughout the region. As discussed in Section 3.1, the Study Area occupies approximately 105.92 acres, of which approximately 99.52 acres contain natural vegetation. Implementation of the proposed Project would result in permanent losses of habitat in areas where grading is proposed, and would also result in indirect impacts in adjacent areas due to construction-related disturbance and long-term fuel modification. Impacts of the proposed Project on existing vegetation are discussed in this Section.

To quantify and describe the project's effects on existing vegetation, a geospatial analysis was performed overlaying the proposed site plan onto the vegetation map described in Section 3.1 (Figure 3-2). By calculating the intersections between these data layers, the analysis yielded acreages of each vegetation type that would be permanently impacted by grading activities. A qualitative analysis was then performed to approximate the nature extent of impacts that would result, based on proximity and sensitivity of nearby biological receptors and comparison with existing conditions. Results of this analysis are presented below.

4.2.1 Impacts to the Extent, Diversity, or Quality of Sensitive or Other Important Vegetation Communities

Areas subject to impacts from ground disturbance are those locations that would be either directly occupied by Project facilities or graded to accommodate necessary pad acreage or associated fill slopes. Existing vegetation in impact areas would be completely removed, and would be replaced by compacted fill that is not expected to support vegetation. On oil well pads, long-term vegetation treatment practices may be employed to ensure that vegetation does not become re-established in these areas. On fill slopes, vegetation with County-approved species may be employed to limit soil erosion; however, shrubs and trees would not be used for this purpose. Thus, impacts to woodland and scrub habitats are presumed to be permanent. While all project-related development, equipment activity, vegetation clearing, and ground disturbance would be confined to the project development footprint (illustrated on Figure 1-2), the proposed Project would have the potential to result in impacts on adjacent habitat areas. Construction activities are likely to generate fugitive dust, which may settle on vegetation in areas adjacent to the grading footprint. However, dust control measures recommended in Mitigation Measures BIO-3: Construction Best Practices, would reduce dust related impacts. In addition, Mitigation Measures BIO-2: Construction monitoring, BIO-4: Worker Environmental Awareness Program, and BIO-8: Oak Tree Protection (see Section 4.6) would reduce additional impacts to adjacent habitat that could be impacted by construction activities. Mitigation Measure BIO-12: Off-site Mitigation Land for Loss of Habitat would mitigate impacts by protecting similar habitats to those being impacted by the Project.

In total, the proposed Project would result in direct removal of 55.93 acres of existing natural (native/naturalized) vegetation (though non-native plant communities; annual brome grassland, veldt grass grasslands, pampas grass patches, eucalyptus and pepper groves, and European marshwort stands are included in this analysis because they have become naturalized throughout the state and provide habitat value, for native wildlife albeit sometimes limited). The majority of this acreage consists of coast live oak woodland and annual brome grassland, although Santa Margarita manzanita stands, coyote brush scrub, chamise chaparral, red willow thickets, and arroyo willow thickets, among others, would be impacted as well. The acreages of vegetation that would be removed within the Study Area are presented in Table 4-4, and the locations where these impacts would occur are depicted graphically on Figure 3-2. In addition to affecting areas that contain native or naturalized vegetation, Project-related grading would also affect areas that

have been graded previously (mapped as development) or which contain ruderal or un-vegetated habitats (mapped as exposed rock, ornamental, or ruderal). Impacts in these areas would not affect natural habitats.

Four of the vegetation communities that would be affected by the Project, including arroyo willow thickets, coast live oak woodlands, red willow thickets, and Santa Margarita manzanita stands, are considered by the CDFW (2010) to be sensitive natural communities. Impacts of the proposed Project on existing vegetation communities are quantified in Table 4-4, and impacts to sensitive natural communities are described in detail below.

4.2.1.1 Impacts to Arroyo Willow Thickets (CDFW Sensitive Natural Community)

Arroyo willow thickets represent a small portion of the Study Area vegetation, encompassing approximately 1.46 acres. As presented in Table 4-4, the proposed Project would impact this vegetation type within the Study Area by permanently removing 0.41 acre. This area of removal is confined to the western and southern boundaries of Pad 41, western edge of Pad 3 coincident with the eastern half of the Ormonde Pipe Crossing, along the northern boundary of the proposed access road to Pad 36, central far northeastern border of Pad 42, and the far northern and eastern corners of Pad 21. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6), would further reduce impacts to adjacent habitat that could be impacted by construction activities.

4.2.1.2 Impacts to Coast Live Oak Woodland (CDFW Sensitive Natural Community)

Coast live oak woodland is the most extensive natural community present within the Study Area, encompassing approximately 43.67 acres. As presented in Table 4-4, the proposed Project would impact this vegetation type within the Study Area by permanently removing 24.78 acres, containing 1,451 individual oak trees. Removal of oak woodland would be most extensive at Pad 9, where 199 trees and Pad 23 where 115 trees would be removed to accommodate the proposed expansion of existing pads in these areas. Additionally, proposed removal of coast live oak trees at additional pads are discussed in Section 4.5.1. No oak tree removal is proposed at pads 1, 11, 39, 40, 49, the PCR pipe crossing, Pad 25 road improvement, or UPRR pipe crossing areas. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program, would further reduce impacts to adjacent habitat that could be impacted by construction activities. Additionally, Mitigation Measure BIO-7: Protection of Special-status Plant Species and Pismo Clarkia would further reduce impacts to adjacent oak trees and oak woodland habitat that could be impacted by construction activities.

For a discussion of the project's effects on individual oak trees, please refer to Section 4.5.1 of this BRAR.

TABLE 4-4
PROPOSED REMOVAL OF VEGETATION WITHIN THE STUDY AREA

	Survey Areas																																																	
Vegetation Community	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor	Northern Pipe Crossing	Pad 36 Turnout
Tree Dominated Communities																																																			
Arroyo Willow Thickets[1, 2]			0.03																		0.02														0.03	0.30	0.03													
Coast Live Oak Woodland[2]	0.01	2.23	0.41	0.33	0.71	0.22	0.35	0.38	2.06	0.18	0.58	0.25	0.97	1.31	0.21	0.55	0.28	0.10	0.00	0.38	1.12	1.12	2.25	0.91	0.22	0.24	0.35	0.18	0.19	0.28	0.12	0.24	0.08	0.13	0.14	0.01	0.61	0.14	2.08	2.08	0.70	0.42	0.02	0.00		0.01	0.02	0.22	0.01	0.02
Eucalyptus and Pepper Tree Groves				0.07																						0.06																		0.00							
Red Willow Thickets[2]																																																	0.01	
Shrub Dominated Communities																																																			
California Sagebrush Scrub					0.27																					0.11									0.02					0.11	0.10								
Chamise-Black Sage Chaparral																		0.01													0.15								0.34											
Chamise Chaparral														0.14								0.07			0.57		0.00		0.22		0.19								0.00			1.42								
Coyote Brush Scrub	0.11		0.47		0.01			0.09	0.11		0.03									0.09	0.05								0.45		0.35					0.12													0.11	
Menzies's Golden Bush Scrub	0.08																																																		
Santa Margarita Manzanita Stands[2]					0.08	0.66	0.41	0.74				0.10							0.62	0.74		0.00	0.54				0.34	0.53	0.03				0.35	0.67				0.37	0.45											
Restoration Area																																					0.14														
Herbaceous Dominated Communities																																																			
Annual Brome Grassland	0.54								0.66	1.37	0.63		0.41	0.45		0.83					1.19			0.09	0.11	0.06									0.73	1.87	3.78		0.02	0.07			2.20			0.09	0.01		
Annual Grassland				0.73	0.02																																0.05													
Cattail																		0.01																																	

	Survey Areas																																																				
Vegetation Community	Pad 1	Pad 2	Pad 3	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor	Northern Pipe Crossing	Pad 36 Turnout
Marshes																																																					
Cattail Marshes/ Pampas Grass Patches																																														0.00				
European Marshwort Stands																					0.01																														
Mexican Rush Stands																					0.23																														
Pampas Grass Patches																																																					
Seep Monkey Flower Stands					0.01																0.02																														
Veldt Grass Grassland									0.00				0.73		0.91		1.01																																		
Anthropogenic/Unvegetated Communities																																																					
Development	0.16	0.06	0.01	0.40	0.50	0.35	0.23	1.21	0.90		0.58	0.37	0.37	0.30	0.06		0.92	0.81	0.12	1.21	0.02	0.33	0.45	0.11	0.28	0.31	0.52			0.33		0.32	0.34	0.21	0.02		0.03	0.37	1.48	0.03	0.08	0.12		0.06	0.06	0.01		0.02	0.02	0.00
Exposed Rock													0.19																																								
Ornamental Land																		0.01																																		
Ruderal Vegetation								0.05	0.08					0.17				0.01		0.05							0.13	0.20																0.02							

[1] Sensitive natural vegetation communities.

4.2.1.3 Impacts to Red Willow Thickets (CDFW Sensitive Natural Community)

Red willow thickets represent a small portion of the Study Area vegetation, encompassing approximately 0.07 acres (Figure 3-2). As presented in Table 4-4, the proposed Project would impact this vegetation type within the Study Area by permanently removing 0.01 acre. This area of removal is entirely confined within the Northern Pipe Crossing in association with Pismo Creek. Removal of Arroyo willow thickets associated with CDFW-jurisdictional streambeds is described in further detail in Section 4.3. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program (see Section 4.6), would further reduce impacts to adjacent habitat that could be impacted by construction activities.

4.2.1.4 Impacts to Santa Margarita Manzanita Stands (CDFW Sensitive Natural Community)

As presented in Table 4-4, the proposed Project would impact this vegetation type within the Study Area by permanently removing 5.90 acres out of 10.91 total acres. Impacts to Santa Margarita manzanita stands will primarily occur on pads in the southwestern portion of the overall study area. This vegetation type will be removed to accommodate expansion of the existing oil well pads. (For an evaluation of the Project's effects on individual Santa Margarita manzanita plants, please refer to Section 4.1.2.1.8 of this BRAR). Removal of this sensitive vegetation type could have a considerable effect on biological resources. Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, would further reduce impacts to adjacent habitat that could be impacted by construction activities. Additionally, Mitigation Measure BIO-7: Protection of Special-status Plant Species and Pismo Clarkia would further reduce impacts to adjacent Santa Margarita manzanita and Santa Margarita manzanita habitat that could be impacted by construction activities.

4.3 IMPACTS TO JURISDICTIONAL WATERS AND STREAMS

Criterion: Impacts would be significant if the proposed Project would impact wetland or riparian habitat

Streams and water bodies are protected by several federal and state statutes, and are generally considered to be valuable habitat features. Streams can vary considerably in their characteristics, and different classes of streams provide different hydrologic, biogeochemical, and habitat-related functions. As described in Section 3.7 of this BRAR and illustrated on Figure 3-6, the Study Area contains portions of five jurisdictional drainages and one jurisdictional water body (Retention Basin) associated with eleven project components, which occupy a total of 9.71 acres within the Jurisdictional Determination Study Area. The four intermittent drainages (Drainage A, Drainage B, Cañada Verde, and Tiber Canyon) are relatively permanent tributaries to the Pacific Ocean via the permanent water of Pismo

Creek; this river is a non-navigable but relatively permanent tributary to the Pacific Ocean, which is navigable-in-fact. These four tributaries and Pismo Creek are waters of the United States due to their hydrologic, chemical, and ecological nexus to the ocean. The streams on-site are subject to the permitting authority of the USACE under Section 404 of the Clean Water Act and CDFW under Section 1600 *et seq*. of the California Fish and Game Code.

As presented in Table 4-5, the proposed Project would impact waters of the U.S. within the Study Area by permanently removing 0.22 acres, including 0.16 non-wetland waters of the U.S. and 0.06 wetland waters of the U.S. Impacts to non-wetland waters of the U.S. would occur along Drainage A at Pads 21 and 36, and Drainage B at Pads 11, 23, and 17, the Edna Steam Generator, and the Pipe Casing Replacement. Impacts to wetland waters of the U.S. would occur along Drainage A at Pad 21. Additionally, the proposed project would impact CDFW-jurisdictional streambeds within the Study Area by permanently removing 1.65 acres. Impacts to CDFW-jurisdictional streambeds would occur along Drainage A at Pads 21 and 36, Drainage B at the Pipe Rack Corridor, and Pads 11, 23, and 17, Cañada Verde at Pad 41, and Tiber Canyon at Pad 3. Removal of waters of the U.S. and CDFW-jurisdictional would constitute an impact and warrants mitigation. Project-related impacts to jurisdictional waters and streams would be mitigated by recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, and BIO-4: Worker Environmental Awareness Program. Project-related removal of jurisdictional waters and streams would be mitigated by Recommended Mitigation Measure BIO-10: Nationwide Permit, Streambed Alteration Agreement, and CWA Section 401 Water Quality Certification (see Section 4.6). Project impacts to drainages on-site are described below.

4.3.1 Impacts to Pismo Creek

Replacement of the Northern Pipe Bridge is proposed over Pismo Creek. Replacement of the pipe bridge footings, pipe conductor, and associated pipes is proposed; however, construction of the new pipe bridge would be implemented without disturbance to the bed or banks of Pismo Creek. Therefore, the jurisdictional portion of Pismo Creek will not be impacted.

4.3.2 Impacts to Drainage A

The proposed Project would alter the existing channel of Drainage A with disturbance occurring at Pads 21 and 36. In total, 0.07 acres of waters of the U.S. and 0.7 acres of CDFW-jurisdictional streambeds would be impacted along Drainage A.

4.3.2.1 <u>Impacts at Pad 21</u>

A total of 0.07 acres of permanent impacts to waters of the U.S. would occur along Drainage A at Pad 21, including 0.01 acres of impacts to non-wetland waters of the U.S. and 0.06 acres of impacts to wetland waters of the U.S. Impacts would occur to the waters of the U.S. due to the construction of the proposed access road and pad. A total of 0.63 acres of permanent

TABLE 4-5
IMPACTS TO JURISDICTIONAL WATERS AND STREAMS BY PROJECT COMPONENT

	Total Acreage Present within Study Area				Acreage to be Filled/Removed			
	Waters of the U.S.				Waters of the U.S.			
Area	Non-Wetland Waters (Acres)	Wetland Waters (Acres)	Total Waters of the U.S. (Acres)	CDFW Jurisdictional Streambeds (Acres)	Non-Wetland Waters (Acres)	Wetland Waters (Acres)	Total Waters of the U.S. (Acres)	CDFW Jurisdictional Streambeds (Acres)
Pismo Creek								
Northern Pipe Crossing and Pad 1	0.2	–	0.2	0.2		-		
Pad 21	0.08	0.82	0.9	3.71	0.01	0.06	0.07	0.63
Pad 36	0.02	–	0.02	0.47	0.01	–	0.01	0.07
Retention Basin								
Pad 21	–	–	–	0.2	–	–	–	–
Drainage B								
Pipe Rack Corridor	–	–	–	0.01	–	–	–	0.002
Pad 11	0.16	–	0.16	0.51	0.13	–	0.13	0.31
Pad 23	0.03	–	0.03	0.62	0.01	–	0.01	0.31
Pad 17	0.09	0.19	0.28	0.36	–	–	–	0.003
Edna Steam Generator	0.02	0.02	0.04	0.54	–	–	–	–
Pipe Casing Replacement	0.01	0.03	0.04	0.19	0.0003	–	0.0003	0.013
Cañada Verde								
Pad 41	0.35		0.35	2.19	–	–	–	0.3

TABLE 4-5 (CONTINUED)
IMPACTS TO JURISDICTIONAL WATERS AND STREAMS BY PROJECT COMPONENT

	Total Acreage Present within Study Area				Acreage to be Filled/Removed			
	Waters of the U.S.				Waters of the U.S.			
Area	Non-Wetland Waters (Acres)	Wetland Waters (Acres)	Total Waters of the U.S. (Acres)	CDFW Jurisdictional Streambeds (Acres)	Non-Wetland Waters (Acres)	Wetland Waters (Acres)	Total Waters of the U.S. (Acres)	CDFW Jurisdictional Streambeds (Acres)
Tiber Canyon								
Pad 3	0.01		0.01	0.71	–	–	–	0.03
Total	0.97	1.06	2.03	9.71	0.16	0.06	0.22	1.67

impacts to CDFW-jurisdictional streambeds would occur along Drainage A at Pad 21. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed access road and pad.

4.3.2.2 Impacts at Pad 36

A total of 0.01 acres of permanent impacts to non-wetland waters of the U.S. would occur along Drainage A at Pad 36. Impacts would occur to the waters of the U.S. due to the construction of the proposed access road. A total of 0.07 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage A at Pad 36. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed access road.

4.3.3 Impacts to Drainage B

In total, 0.14 acres of waters of the U.S. and 0.62 acres of CDFW-jurisdictional streambeds would be impacted along Drainage B.

4.3.3.1 Impacts at Pipe Rack Corridor

A total of 0.002 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage B at the Pipe Rack Corridor. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed pipe rack.

4.3.3.2 Impacts at Pad 11

A total of 0.13 acres of permanent impacts to non-wetland waters of the U.S. would occur along Drainage B at Pad 11. Impacts would occur to the waters of the U.S. due to the construction of the proposed pad and modification to the existing pad. A total of 0.31 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage B at Pad 11. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed pad and modification to the existing pad.

4.3.3.3 Impacts at Pad 23

A total of 0.01 acres of permanent impacts to non-wetland waters of the U.S. would occur along Drainage B at Pad 23. Impacts would occur to the waters of the U.S. due to the construction of the proposed pad and modification to the existing pad. A total of 0.31 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage B at Pad 23. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed pad and modification to the existing pad.

4.3.3.4 Impacts at Pad 17

No permanent impacts to non-wetland waters of the U.S. would occur along Drainage B at Pad 17. A total of 0.003 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage B at Pad 17. Impacts would occur to CDFW-jurisdictional streambeds due to the construction of the proposed pad.

4.3.3.5 Impacts at Edna Steam Generator

No permanent impacts to non-wetland waters of the U.S. or CDFW-jurisdictional streambeds would occur along Drainage B at the Edna Steam Generator,

4.3.3.6 Impacts at Pipe Casing Replacement

NA total of 0.0003 acre of permanent impacts to non-wetland waters of the U.S. would occur along Drainage B at the Pipe Casing Replacement. A total of 0.013 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Drainage B at the construction of the proposed Pipe Casing Replacement.

4.3.4 Impacts to Cañada Verde

A total of 0.3 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Cañada Verde at Pad 41. Impacts would occur to CDFW-jurisdictional streambeds due to the modification to the existing pad.

4.3.5 Impacts to Tiber Canyon

A total of 0.03 acres of permanent impacts to CDFW-jurisdictional streambeds would occur along Tiber Canyon at Pad 3. Impacts would occur to CDFW-jurisdictional streambeds due to construction of a proposed pad.

4.4 IMPACTS TO WILDLIFE MOVEMENT AND HABITAT CONNECTIVITY

Intact movement linkages are an integral component of functional wildlife habitat, and preventing habitat fragmentation and isolation has long been a tenet of conservation biology. On a large scale, functional habitat linkages are instrumental in allowing gene flow between regional populations, and in allowing species to recolonize habitats following local extirpations. On a local scale, habitat connectivity allows species to accomplish essential behaviors including foraging, dispersing, and searching for mates. As habitats become increasingly fragmented, accomplishing these behaviors becomes more difficult, and wildlife must expend additional effort to survive. Because the Study Area is bordered by intact grassland, woodland, and chaparral habitats, it is likely that small and medium-sized wildlife species traverse the Study Area periodically to satisfy biological requirements such as foraging, seeking mates, and dispersal. However, due to the quantity and quality of natural

habitat in and around the Study Area, the proposed action is not likely to impact regional wildlife movements.

The AGOF is comprised of a mosaic of over 50 pads interspersed with intact natural habitats. The increase in the number and size of operational pads is limited with the proposed Phase V project, increasing the amount of land that is disturbed by 69.65 acres, of which 55.93 acres is comprised of natural vegetation. Since AGOF does not lie within an essential habitat linkage (discussed in Section 3.8) and the newly disturbed areas could be feasibly circumvented, effects on movement of mobile animals (i.e., birds, deer, coyote), would be minimal. The site is likely play a significant role for gene flow or range expansion for mobile wildlife because the common wildlife in the area are widely distributed and generally occur throughout the surrounding landscape and region. Additionally, no permanent fencing or other deliberately impermeable structures are proposed thus developed pads would remain passable by wildlife, which would be able to move over, under, or around the project's various components. Though suitability of habitat will decrease somewhat, overall expansion of the AGOF would not irreparably alter the landscape within the AGOF or the Price Canyon area in general, and would not be expected to physically obstruct wildlife movement through these areas.

In addition to the potential for projects to physically obstruct wildlife moving thorough an area, it is important also to consider the potential for changes in land use to disrupt wildlife movement through behavioral changes. Factors such as human presence, vehicle traffic, noise, and nighttime illumination may cause certain species of wildlife to avoid developed areas, even if passage is not physically precluded. Because the Phase V project would be constructed within an existing active oil field, the types of activities that would occur during construction and operation of the proposed project would be similar to those that are currently ongoing in the area. Examples of these sorts of factors include: low-speed traffic, including heavy equipment traffic; human presence and operation of powered tools; presence of an industrial landscape and structures; and operational noise generated by oil field structures. It is presumed that the wildlife which currently utilize the Study Area are accustomed to these activities, and the proposed Project therefore would not be likely to inhibit wildlife movement by inducing behavioral disruptions. Considering this information, the impacts of the proposed Project with respect to wildlife movement and habitat connectivity would be minimal.

Existing site rules within the AGOF should be adequate to mitigate the limited effects of the Phase V project on wildlife movement and habitat connectivity. The on-site roadways are private, and the low volume of on-site traffic is restricted to service vehicles and equipment. Traffic flow is controlled to allow movement in specific directions only, and vehicle speeds are limited to 5 miles per hour throughout most areas. The majority of the AGOF's roads are narrow, unpaved, and often steep and sinuous, which inherently increases compliance with these existing rules. Provided that the AGOF continues to require the same standards of care

as are currently in place, additional mitigation related to wildlife movement and habitat connectivity should not be required.

4.5 CONSISTENCY WITH BIOLOGICAL RESOURCES POLICIES AND REGULATIONS

Criterion: Impacts would be significant if the proposed Project would conflict with any regional plans or policies to protect sensitive species, or regulations of the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

Biological resources are protected by statutes, regulations, and policies at the federal, state, and local levels. The Project's impacts with regard to some of the most salient requirements are described below.

4.5.1 Impacts to Oak Trees

Oak trees can provide valuable wildlife habitat and due to the County's concern with the loss of oaks in the region from development or other factors, oak trees are treated as special-status species in this BRAR. However, absent a policy or regulation protecting individual oak trees in the Study Area from removal, Project-related impacts to on-site oaks would not conflict with policies or regulations to protect sensitive species. For a discussion of project-related impacts on oak woodlands, refer to Section 4.2.1.2.

The proposed Project entails the addition and the modification of new and existing well pads. The necessary expansions would be accomplished by grading, which would remove woodland, shrubland, and grassland habitats that are suitable for use by a wide variety of nesting birds, and are inhabited by coast live oak trees. During development of the proposed project, it is foreseeable that construction activities and vegetation clearing could remove portions of oak woodland habitat or individual coast live oak trees. Due to Project disturbance limits, up to 1,451 coast live oak trees could be removed. The number of trees to be removed at each new and modified existing well pad within the Study Area is presented in Table 3-4. Additionally, it is foreseeable that trees rooted immediately adjacent to proposed graded areas would sustain impacts from root compaction or necessary pruning/trimming. A total of 672 trees occur within an approximate 30 foot buffer surrounding disturbance areas and could potentially be impacted due to root compaction or necessary pruning/trimming. Other oak species do not occur within the Study Area and would not be affected by the proposed Project.

Oaks proposed to be removed range anywhere from zero trees at pads 1, 11, 39, 40, 49, the PCR Pipe Crossing, Pad 25 Road Improvement, and the UPRR Pipe Crossing areas to 199 trees at Pad 9 and 115 trees at Pad 23. In general, trees of a lower size class are comprised of multiple trunks, whereas more mature trees are comprised of either fewer trunks or a single trunk. Oak trees proposed for removal on Pads 9, 23 and 42 are primarily comprised of small

size class individuals with multiple trunks. Pad 9 comprises the most proposed oak tree removals. Some areas containing coast live oak trees were not able to be surveyed due to health and safety issues present on-site (i.e., steep slopes, poison oak, presence of yellow jackets). In these instances the acreage of each area not surveyed, but classified as a coast live oak woodland community type, was calculated. The average number of coast live oak trees per acre within the Phase V disturbance area was used to extrapolate the approximate number of coast live oak trees present in these areas.

The Project's effects on oak trees would be lessened by recommended Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program, and BIO-7: Protection of Special-status Plant Species and Pismo Clarkia. which would reduce potential construction related impacts and require compensation for losses of habitat through long-term preservation and enhancement. These recommended measures are set forth in full in Section 4.6.

4.5.2 Impacts to Nesting Birds

As described previously, the Study Area contains woodland, shrubland, and grassland habitats that are suitable for use by a wide variety of nesting birds. Although most of the birds detected on-site are not special-status species, the nests of native non-game birds are protected by federal and state laws and regulations (the Migratory Bird Treaty Act and Section 3503 of the California Fish and Game Code, for example). All of the natural vegetation communities present within the Study Area have the potential to support nesting native birds, and the existing industrial structures in areas mapped as Developed may support certain nesting species as well. During development of the proposed project, it is foreseeable that construction activities and vegetation clearing could remove bird nests that may be present in vegetation, structures, or on the ground within the development footprint. Further, fugitive noise and dust from construction operations could cause behavioral changes, including potentially nest abandonment, in areas immediately adjacent to construction zones. Absent requirements to the contrary, the proposed Project could therefore result in inconsistencies with these laws if construction activities were to destroy an active nest or disrupt nesting birds to the point of causing nest abandonment. These impacts must be avoided to ensure consistency with applicable laws and regulations.

Incidental take of active bird nests during construction is prohibited by federal and state law, and would be avoided through the pre-construction surveys required by recommended Mitigation Measure BIO-5: Nesting Bird Surveys and Avoidance. Additionally, Mitigation Measures BIO-2: Construction monitoring, BIO-3: Construction Best Practices, BIO-4: Worker Environmental Awareness Program (see Section 4.6) would further reduce impacts by protecting adjacent habitat and possible nest trees from damage.

4.6 RECOMMENDED MITIGATION MEASURES

The following mitigation measures are recommended to avoid, minimize, rectify, reduce, or compensate for the Project's impacts on biological resources.

BIO-1: Pre-Construction Wildlife Surveys.

Preconstruction surveys shall be conducted for all known or potentially occurring special-status wildlife species at the project site. The surveys shall be conducted as close as possible to the start of construction activities such as clearing and grubbing that would impact previously undisturbed habitat and no more than two weeks prior to construction. Appropriate survey methods shall be employed to maximize the possibility of detecting each species such as time of day, and specific locations searched and time of year. The survey should be phased into specific areas where construction will be taking place.

BIO-2: Construction Monitoring.

A County-approved biological monitor shall be on-site during all vegetation clearing and shall periodically monitor the project site during construction activities to inspect protective fencing, equipment staging areas, and physically relocate/remove any special-status wildlife species entering the construction zone (i.e., Blainville's horned lizard, western pond turtle, etc.). All special-status species shall be relocated to suitable habitat located outside the construction zone by a qualified biologist. Exact procedures and protocols for relocation shall be based upon pre-project consultation with CDFW. Work activities at Pad 1 and Pad 41, and at the pipe crossing between the two pads, shall be monitored by a qualified biologist on a full-time basis.

BIO-3: Construction Best Management Practices.

All equipment staging areas, construction-crew parking areas, and construction access routes shall be established in areas that have been previously disturbed or developed and shall be designated on the grading plans for the project. Exclusionary fencing will be erected at the boundaries of construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special-status species. The exact location of exclusionary fencing for each construction area shall be determined by a County-approved biological monitor. The fencing shall remain in place throughout the duration of construction activities at each of the three individual oil well pads affected by the Project. During nighttime drilling and/or construction activities, all equipment lighting (i.e., drilling rigs, etc.) shall be shielded away from adjacent wildlife habitat areas and sky to minimize lighting/glare impacts of wildlife.

BIO-4: Worker Environmental Awareness Program.

A County-approved biological monitor shall conduct a worker orientation for all construction contractors (site supervisors, equipment operators and laborers) which emphasizes the presence of special-status species within the Project site, identification, their habitat requirements, and applicable regulatory policies and provisions regarding their protection, and measures being implemented to avoid and/or minimize impacts.

BIO-5: Nesting Bird Surveys and Avoidance.

Prior to on-site any site disturbance (i.e., mobilization, staging, grading or construction) the Applicant shall retain a County qualified biologist to conduct pre-construction surveys for nesting birds within the recognized breeding season in all areas within 500 feet of proposed disturbance areas, or a lesser distance if dense vegetation renders a 500-foot survey radius infeasible. Surveys for raptors shall be conducted for all areas from February 1 to August 15. The required survey dates may be modified based on local conditions, as determined by the County qualified biologist based on observations in the field, with the approval of the County of San Luis Obispo. Similarly, the prescribed buffers may be adjusted to reflect existing conditions including ambient noise, topography, and disturbance with the approval of the County of San Luis Obispo,

If breeding birds with active nests are found prior to or during construction, a biological monitor shall establish a 300-foot buffer around the nest for ground-based construction activities and no activities will be allowed within the buffer(s) until the young have fledged from the nest or the nest fails. The biological monitor(s) shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails.

The biological monitor(s) shall be responsible for documenting the results of the surveys and ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the County. If for any reason a bird nest must be removed during the nesting season, the Applicant shall provide written documentation providing concurrence from the USFWS and CDFW authorizing the nest relocation. Additionally, the Applicant shall provide a written report documenting the relocation efforts. The report shall include what actions were taken to avoid moving the nest, the location of the nest, what species is being relocated, the number and condition of the eggs taken from the nest, the location of where the eggs are incubated, the survival rate, the location of the nests where the chicks are relocated, and whether the birds were accepted by the adopted parent.

Surveys shall be conducted to include all structural components of the oil field equipment and related structures, as well as all construction equipment. If birds are found to be nesting in facility structures, buffers as described above shall be implemented. If birds are found to

be nesting in construction equipment, that equipment shall not be used until the young have fledged the nest or, if no young are present, until after the breeding season has passed.

All trees to be removed as part of project-related construction activities will be removed outside of the nesting season to avoid additional impacts to nesting raptors. If removal during the nesting season can't be avoided then trees will be thoroughly surveyed by a qualified biologist to ensure that no nests are present. If nests are found within these trees and contain eggs or young, the biological monitor shall allow no activities within a 300-foot buffer for nesting birds and/or a 500-foot buffer for raptors until the young have fledged the nest.

BIO-6: Protection of Blainville's Horned Lizard.

A County-approved biologist shall conduct pre-construction surveys to determine presence/absence of Blainville's horned lizard within and adjacent to individual well pads containing suitable chaparral and/or scrub habitat. Surveys shall only be required during the active period of Blainville's horned lizards (generally April through September). If Blainville's horned lizards are identified adjacent to and/or within work areas, then hand rakes or an equivalent shall be utilized by biological monitors to scarify the ground surface and encourage the horned lizards (and other wildlife) to vacate the immediate area prior to construction. Alternatively, sampling composed of drift fences shall be used to capture horned lizards. As necessary, the County-approved biological monitor shall physically relocate Blainville's horned lizards to suitable habitat located outside the construction zone. Exact procedures and protocols for relocation shall be based upon pre-project consultation with CDFW.

BIO-7: Protection of Special-status Plant Species and Pismo Clarkia.

Due to the fluctuation in annual plant populations, spring botanical surveys shall be conducted annually by a County-approved biologist in portions of the Study Area where Pismo Clarkia has been documented to update the location of special-status plant species populations on project plans until the end of the construction period. Annual botanical survey results and documented fluctuations in populations shall be added cumulatively to project plans each year (i.e., all newly discovered populations shall be added to existing populations documented in previous years). All mapped populations shall be clearly fenced off with exclusionary fencing prior to construction in those areas. If areas supporting Pismo clarkia and/or other sensitive plant species are determined by the County to be unavoidable then Pismo Clarkia and any other special-status plant species impacted shall be reseeded or replanted (depending on the species) on-site or preserved off-site on a 1:1 basis. If replanted, the disturbed topsoil containing the seed bank shall be salvaged and re-spread at the mitigation site when feasible. Re-planted areas shall be monitored for a minimum period of three years (five years for shrub and tree species) to ensure successful establishment of the

planted individuals. If survivorship is not sufficient to achieve a minimum 1:1 compensation ratio, then replacement planting or re-seeding (depending on the species) shall be required.

Prior to any construction, grubbing or tree removal, each oak tree (genus *Quercus*) within the vicinity of the proposed construction zones shall be clearly marked for removal or protection. Exclusionary fencing will be erected at the boundaries of construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special-status species. To further protect oak trees that remain in place, a certified arborist shall be retained by the applicant to perform any necessary trimming of oak tree limbs overhanging existing well pads/expansion areas. This shall be conducted prior to allowing construction equipment and drilling rigs within well pads to avoid and/or minimize the potential for inadvertent damage to oak trees limbs (i.e., from drilling rig booms, etc.). Prior to completion of construction of the project, payment to the State Wildlife Conservation Board shall be made at $970 per oak tree that is removed and $485 per oak tree that is encroached upon or trimmed (but not removed) pursuant to the San Luis Obispo County's oak tree mitigation fee program. Receipt of payment shall be provided to the San Luis Obispo County Department of Planning and Building. Alternatively, the Applicant may opt to preserve oak woodland acreage on a 4:1 basis at an off-site location in the vicinity of the AGOF instead of paying the in-lieu fee.

Utilizing the most recent available survey data, final project plans shall clearly illustrate the location of Santa Margarita manzanita stands to be removed as part of the project and all Santa Margarita manzanita to remain within 25 feet of construction activities. Prior to any construction, grubbing or tree removal, each Santa Margarita manzanita stand within the vicinity of the subject pads shall be clearly marked for removal or protection. Existing Santa Margarita stands and individuals will be protected to the maximum extent feasible. If removal of these resources is necessary, the Applicant shall ensure on-site replacement or off-site preservation on a minimum 1:1 basis as described above. Exclusionary fencing will be erected at the boundaries of construction areas to avoid equipment and human intrusion into adjacent habitats with emphasis on protection of areas containing special-status species.

BIO-8: Protection of California Red Legged Frog and Western Pond Turtle.

Construction (e.g., clearing and grubbing of vegetation, rough grading, drilling, etc.) of any previously undisturbed area located within a buffer zone of 100 feet from both sides of Pismo Creek's banks shall be prohibited. Pismo Creek and the required 100-foot buffer shall be illustrated on final project plans and adhered to during the construction period. Construction within previously disturbed areas (not including drilling activities) located within the buffer zone of 100 feet from both sides of Pismo Creek's banks shall be monitored by a qualified biologist on a full-time basis.

BIO-9: Restoration of Cut and Fill Slopes.

Within cut and fill slopes that would be disturbed or graded during construction but would not be needed for oilfield operations once completed, restoration with native plant species shall be completed in the fall season immediately following completion of construction within the temporary impact zone. If hydroseeding is employed for this purpose, San Luis Obispo County's recommended seed mix for construction sites or bare areas shall be used. Locally-sourced native seed mix shall be used whenever feasible. Restoration shall be overseen by a qualified restoration ecologist. This mitigation measure shall not apply to any areas that are needed for long-term oilfield operations or where permanent access is required.

BIO-10: Nationwide Permit, Streambed Alteration Agreement, and CWA Section 401 Water Quality Certification.

Prior to implementing Project activities that would divert, obstruct, alter, or discharge any material into Pismo Creek or other jurisdictional aquatic resource areas, the Applicant shall demonstrate to the County that all necessary approvals from the U.S. Army Corps of Engineers, the California Department of Fish and Wildlife, and the Central Coast Water Quality Control Board have been secured, or shall provide the County with documentation that such approvals are not required. In the event that these approvals require the Applicant to provide compensatory mitigation for impacts to aquatic resources, the Applicant shall comply with all conditions and requirements.

SECTION 5.0
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FIGURES

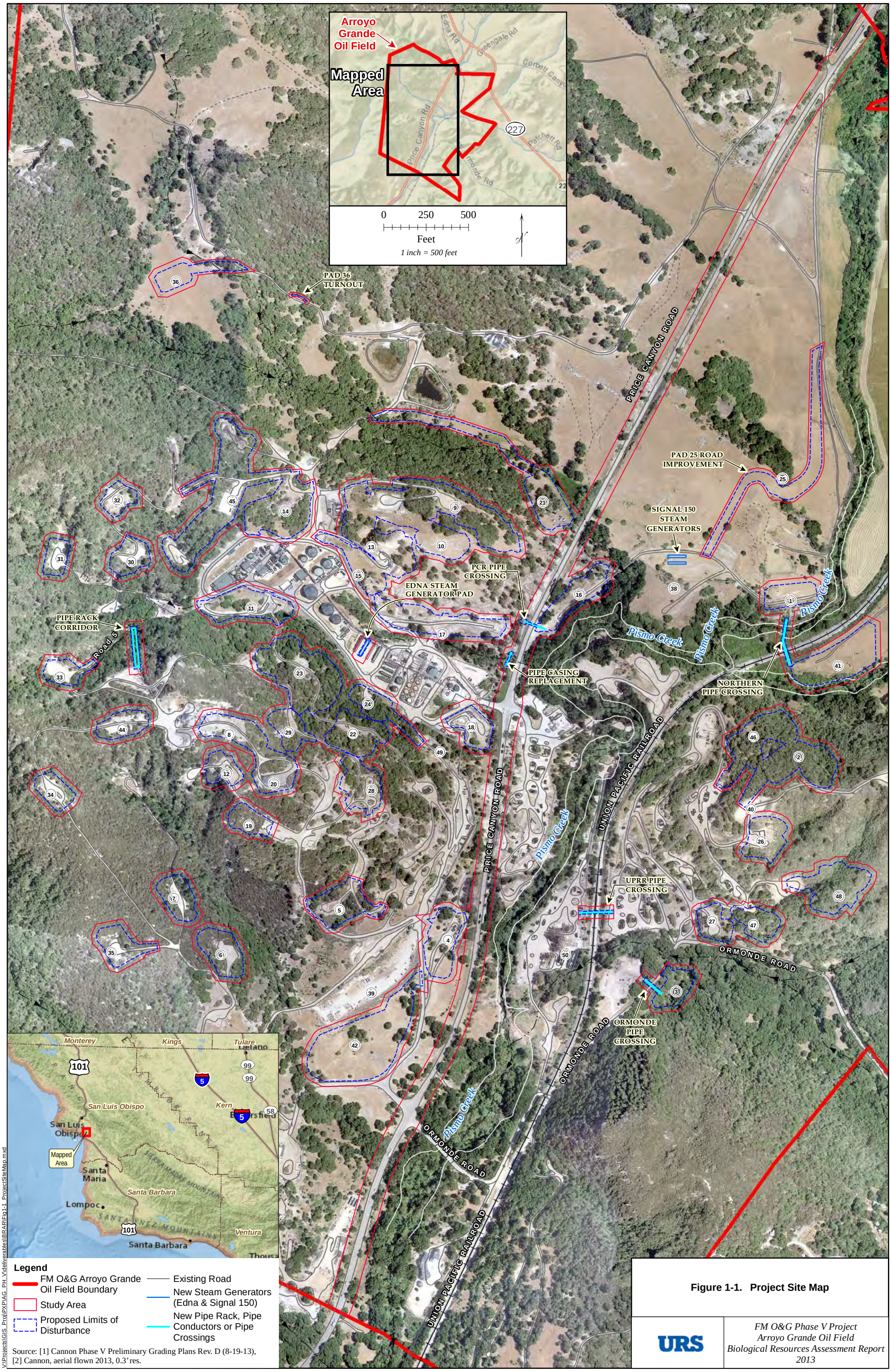

Figure 1-1. Project Site Map

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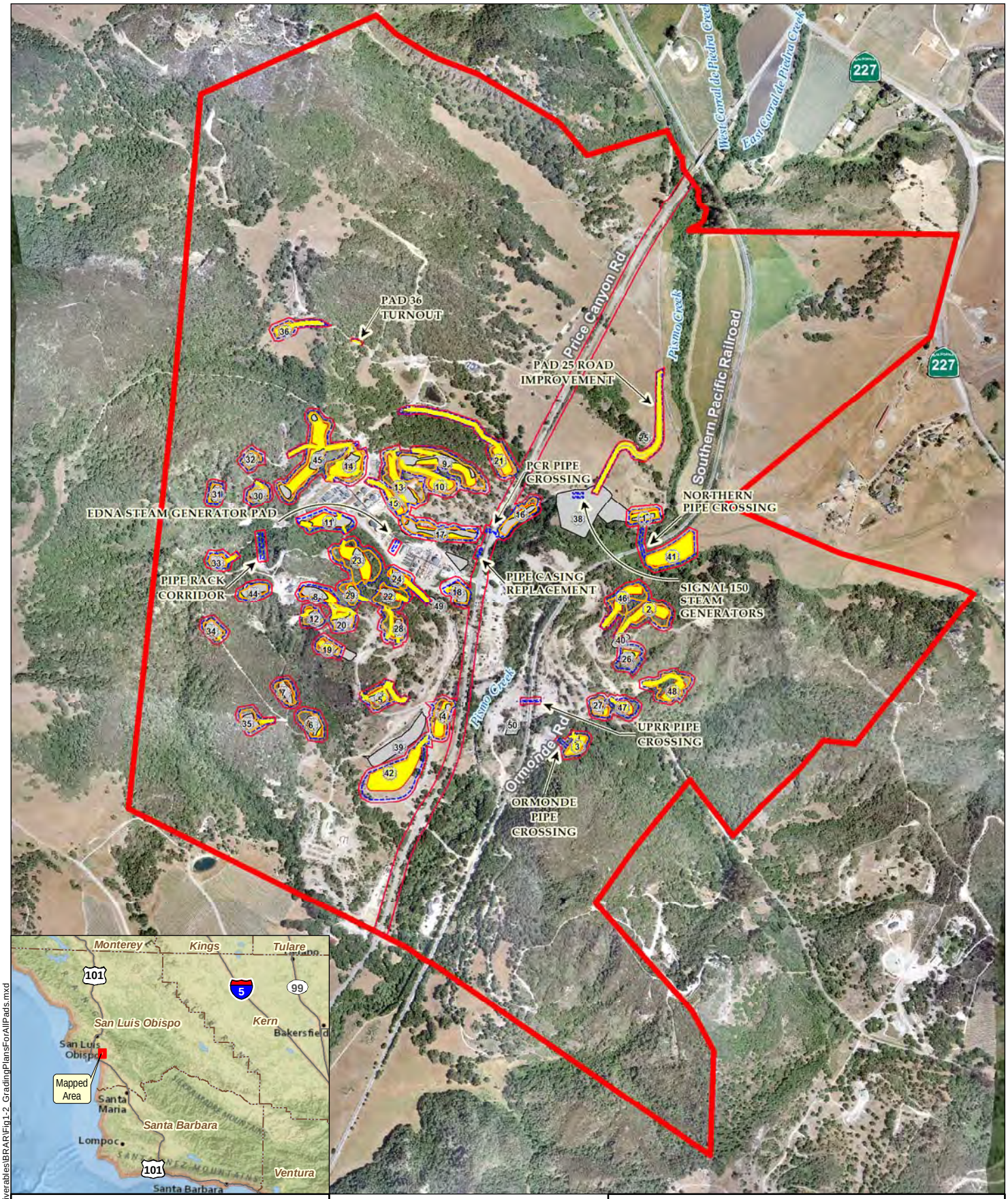

Source: [1] Cannon Phase V Preliminary Grading Plans Rev. D (8-19-13), [2] Cannon, aerial flown 2013, 0.3' res.

0 0.25 0.5
Miles

Legend

- FM O&G Arroyo Grande Oil Field Boundary
- Study Area
- Proposed Limits of Disturbance
- (#) Well Pad No.
- Cut/Fill Daylight of Proposed Well Pad
- Proposed Road
- Existing Well Pad
- Proposed New/Expanded Well Pad

Figure 1-2. Grading Plans for all Pads

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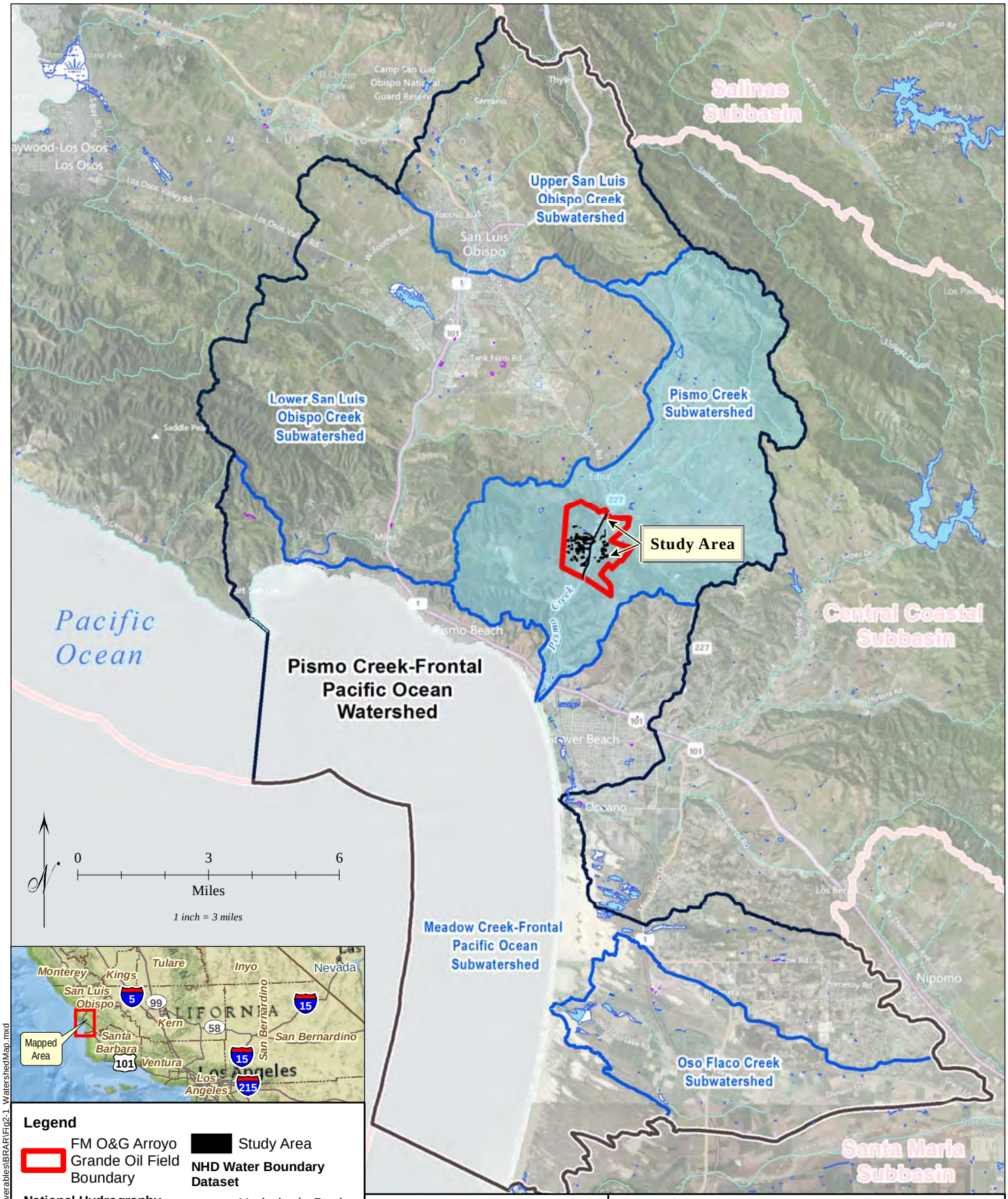

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Figure 2-1. Watershed Map

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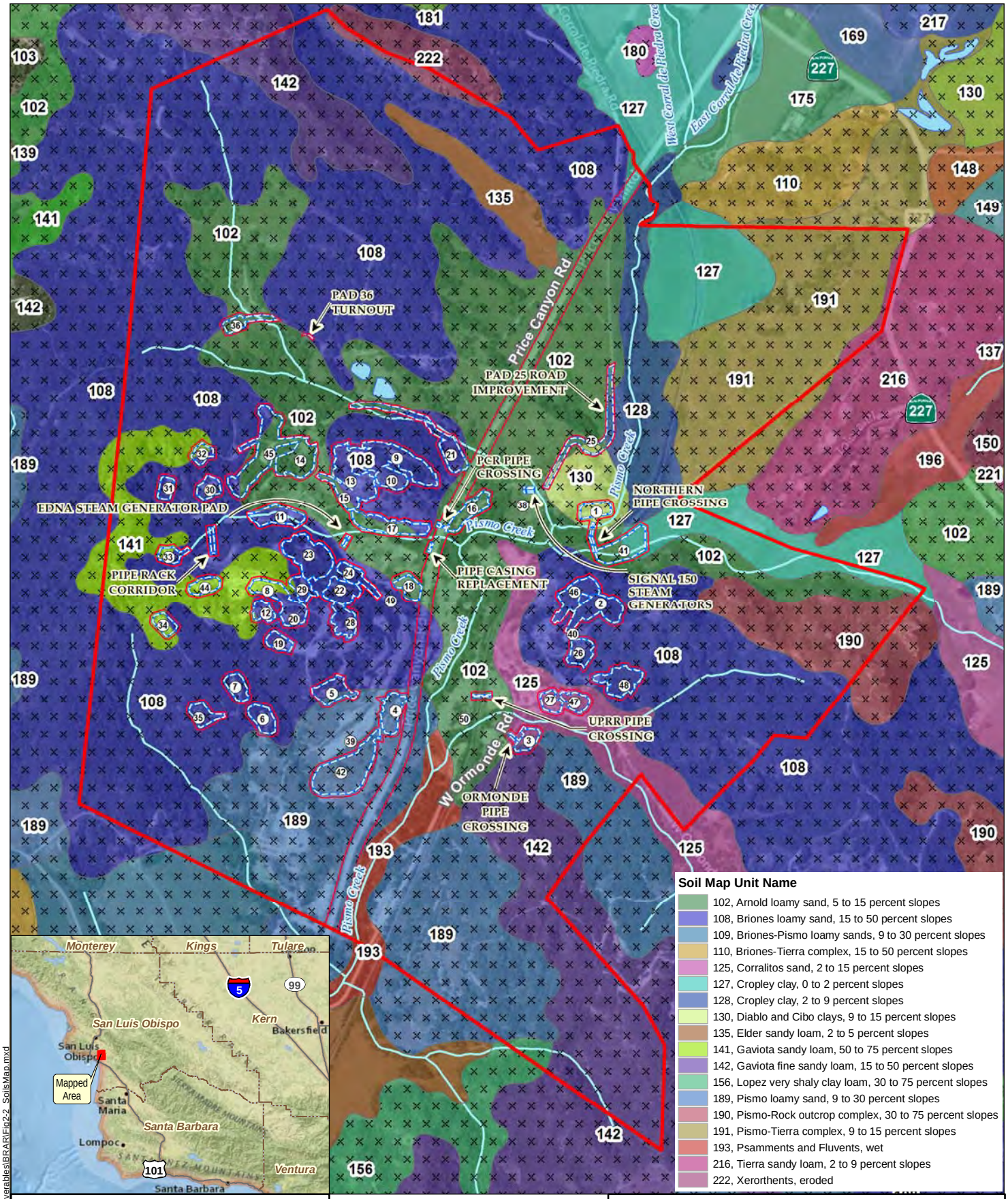

Source: [1] US Geological Survey (USGS), USDA, NRCS: Soil Survey Geographic (SSURGO) database for CA664, San Luis Obispo County, California, Coastal Part (1/2/2008) [2] USGS NHD Flowlines & Waterbodies (high resolution sub region accessed May 23, 2013 from ftp://nhdftp.usgs.gov/DataSets/Staged/

0 0.25 0.5

Miles

1 inch = 0.25 miles

Legend

- FM O&G Arroyo Grande Oil Field Boundary
- Study Area
- Proposed Limits of Disturbance
- Well Pad No.
- Stream/River
- Lake/Pond

Hydric Soil Rating by Map Unit Name

- Partially Hydric
- Not Hydric

Figure 2-2. Soils Map

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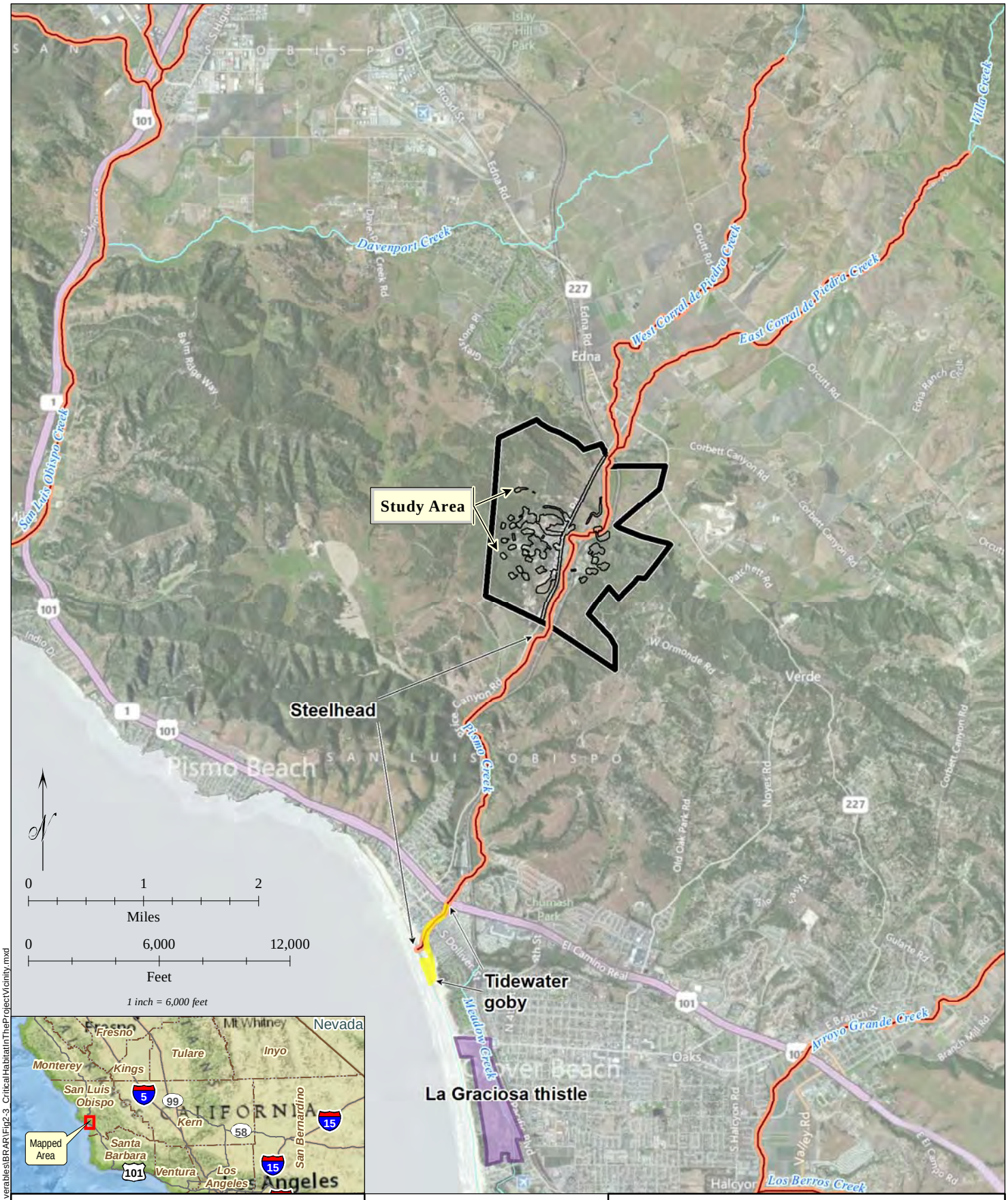

Legend

- FM O&G Arroyo Grande Oil Field Boundary
- Study Area

Critical Habitat

- Steelhead
- La Graciosa thistle
- Tidewater goby

Source: [1] United States Fish & Wildlife Service (2/6/2013); [2] USGS NHD Flowlines & Waterbodies -- high res. sub region accessed 5/23/2013 from ftp://nhdftp.usgs.gov/DataSets/Staged/ [3] Bing Maps Aerial Imagery Web Mapping Service - (c) 2010 Microsoft Corporation and its data suppliers (Image Date 2010).

Figure 2-3. Critical Habitat in the Project Vicinity

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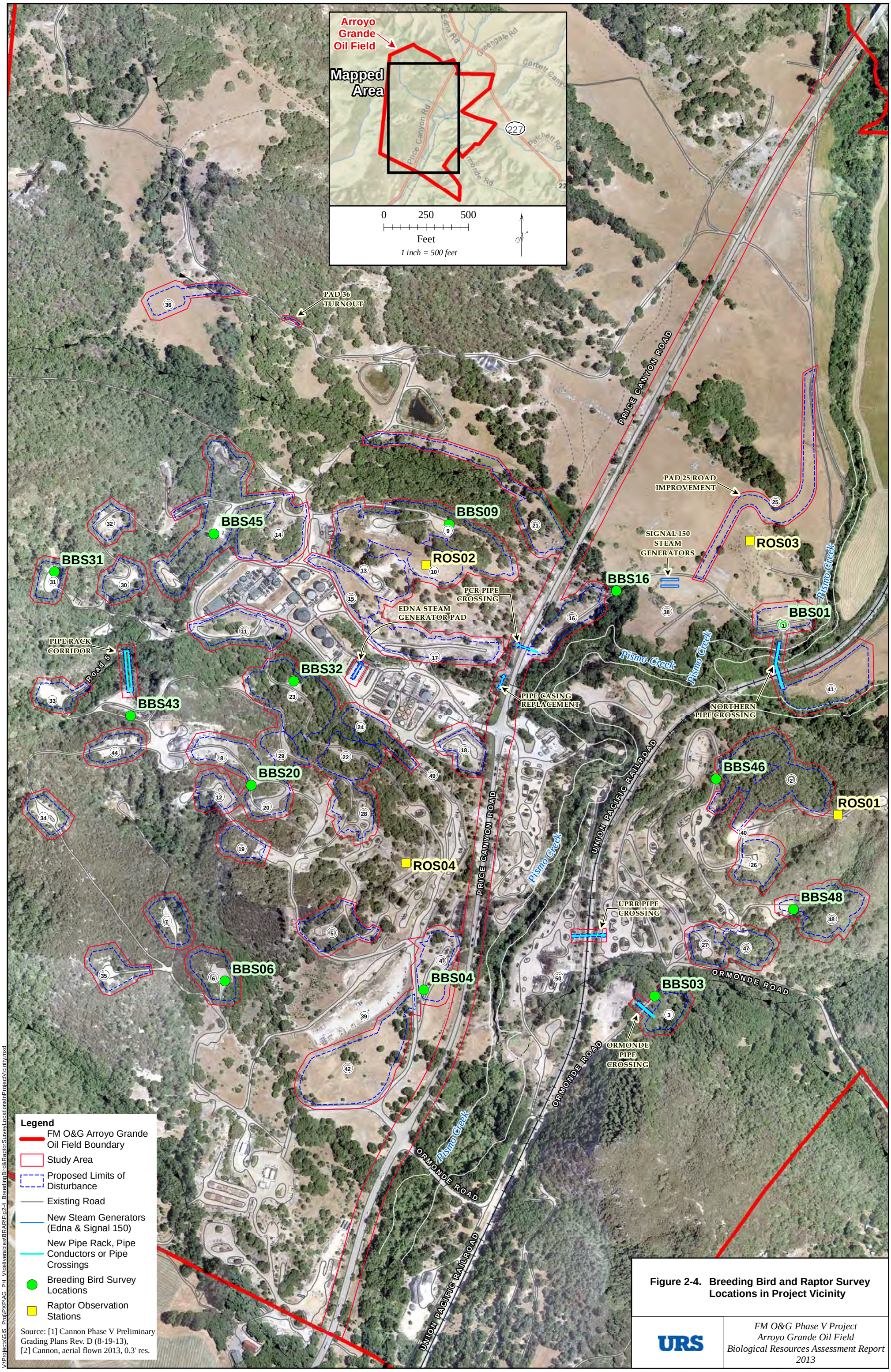

Figure 2-4. Breeding Bird and Raptor Survey Locations in Project Vicinity

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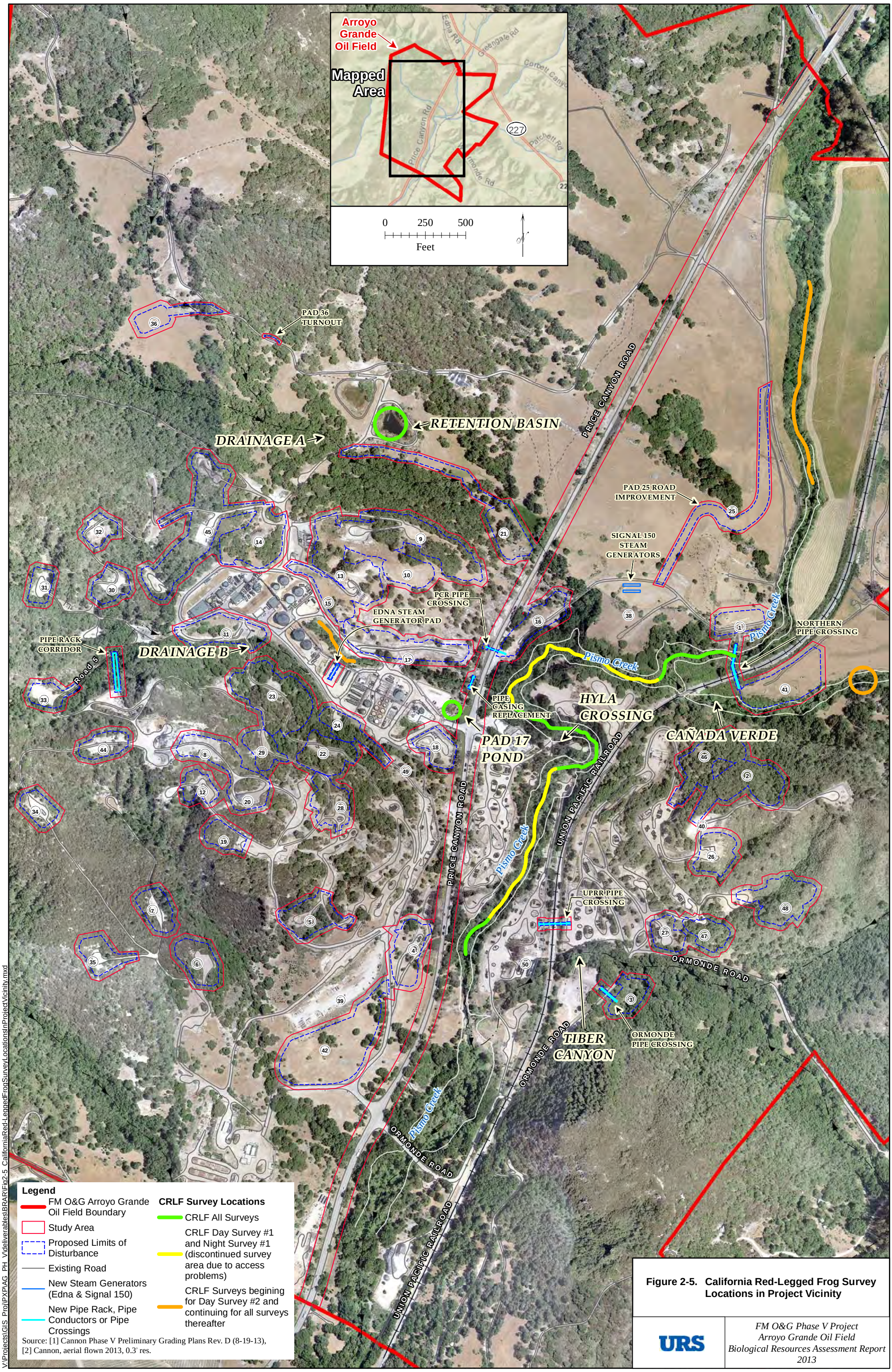

Figure 2-5. California Red-Legged Frog Survey Locations in Project Vicinity

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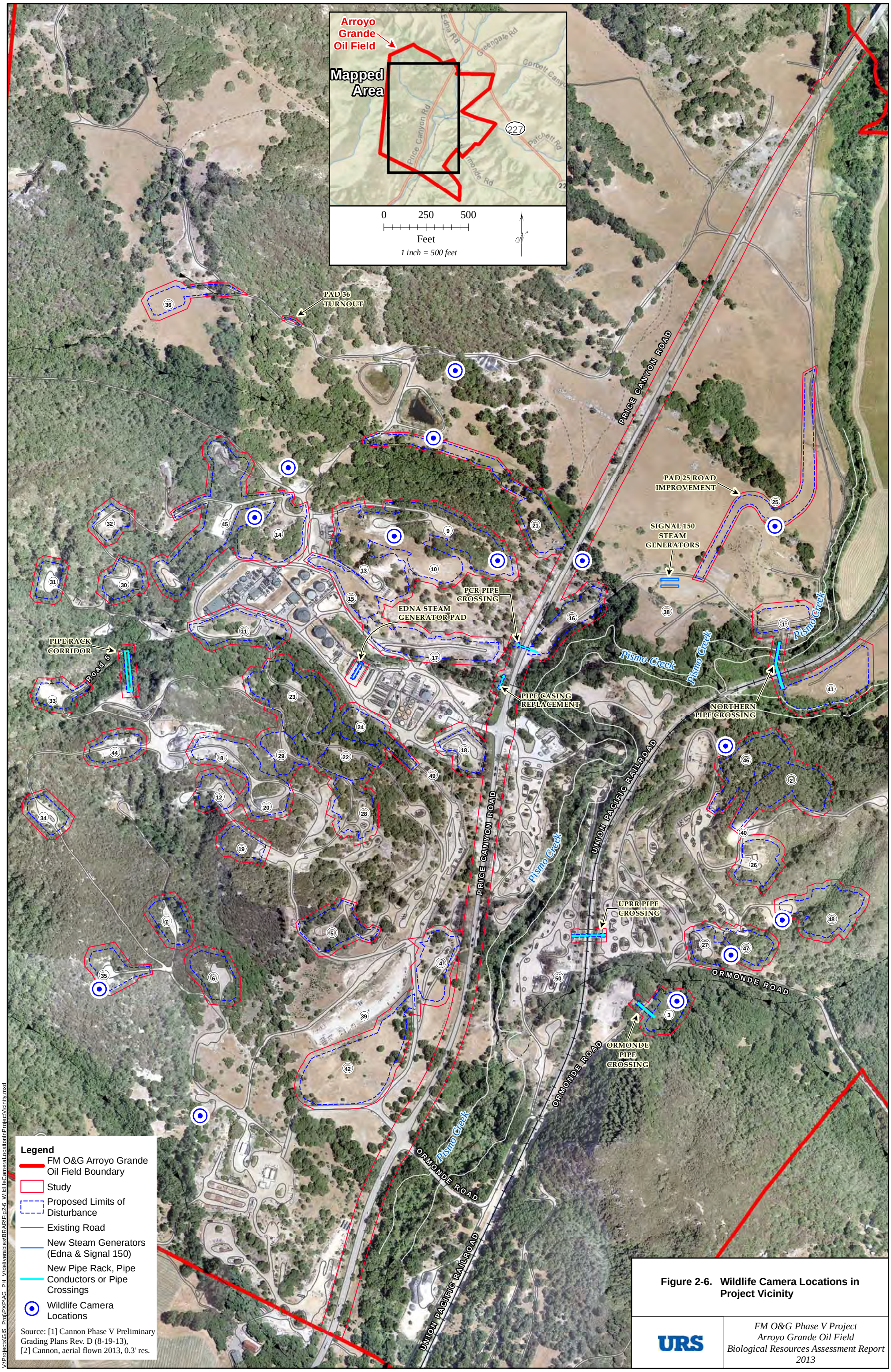

Figure 2-6. Wildlife Camera Locations in Project Vicinity

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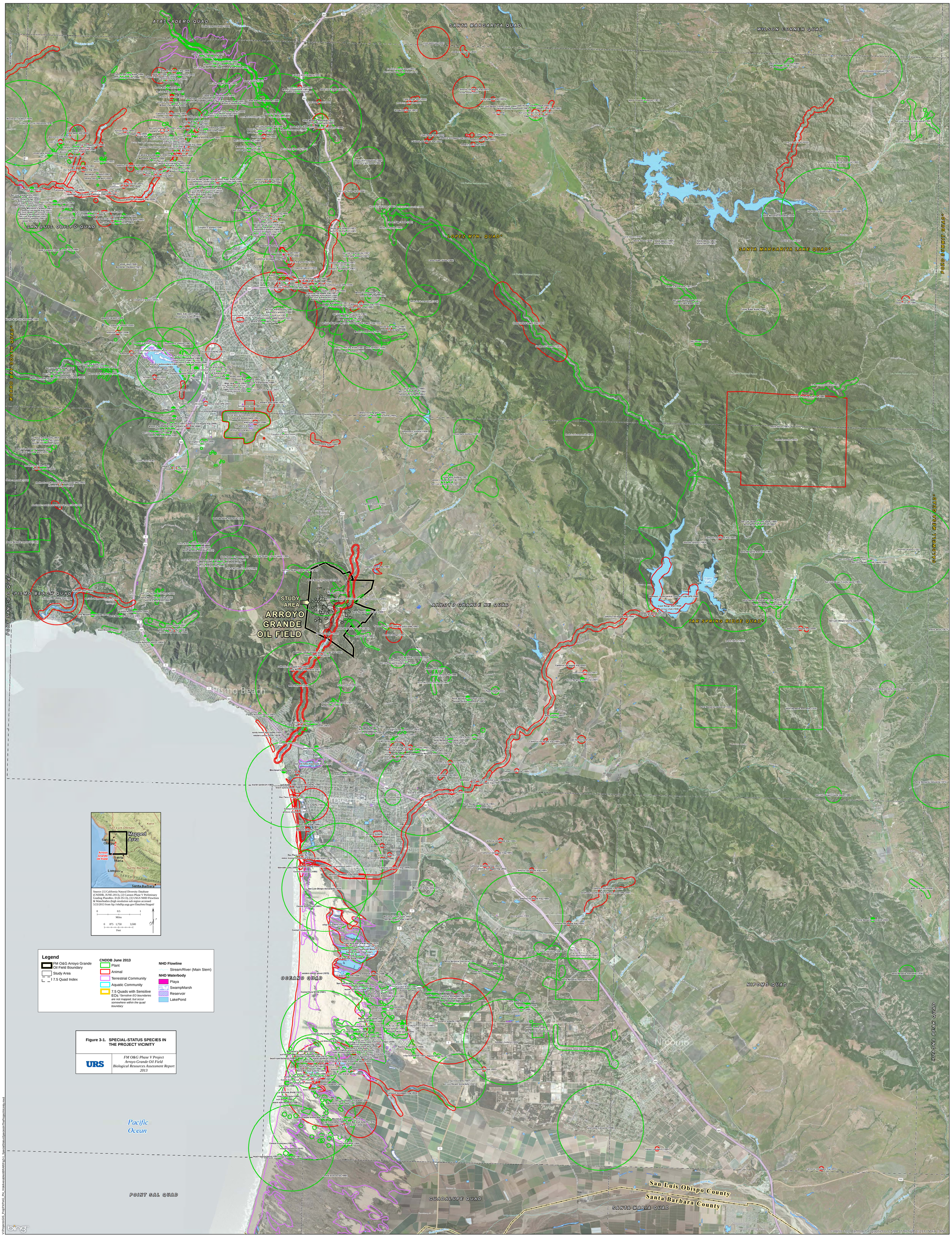

Figure 3-1. SPECIAL-STATUS SPECIES IN THE PROJECT VICINITY

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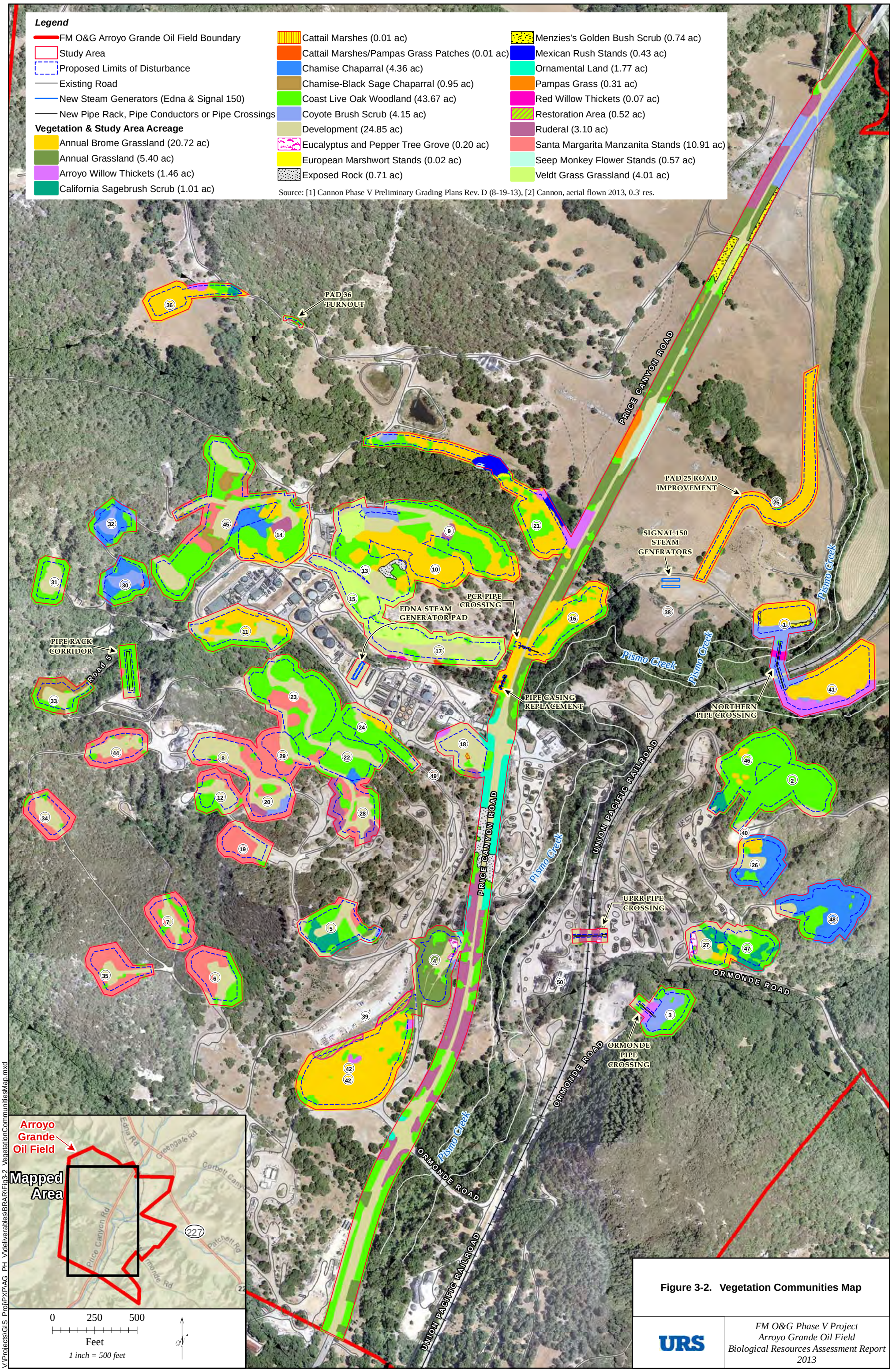

Figure 3-2. Vegetation Communities Map

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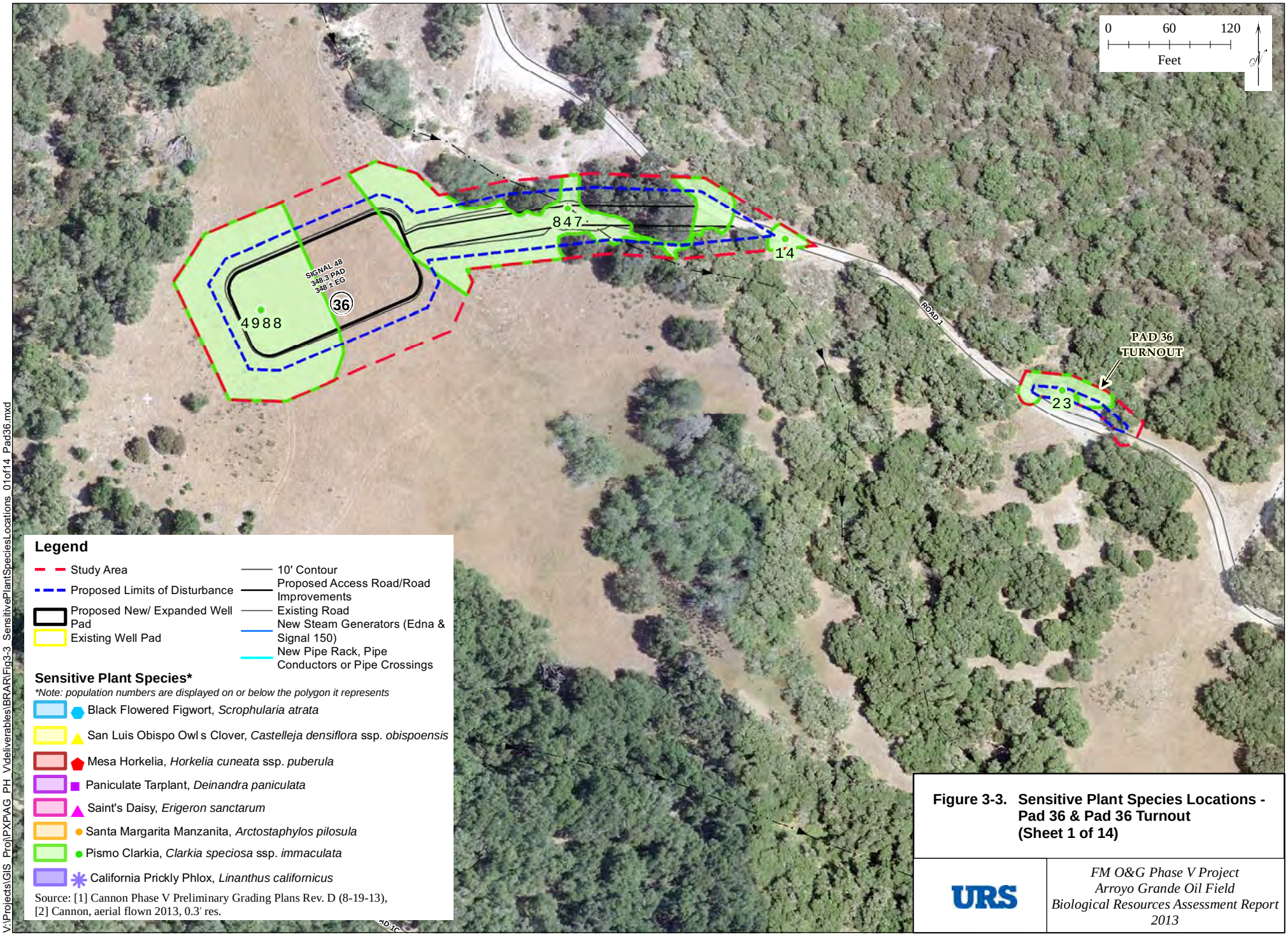

Figure 3-3. Sensitive Plant Species Locations - Pad 36 & Pad 36 Turnout (Sheet 1 of 14)

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Figure 3-3. Sensitive Plant Species Locations - Pads 14, 30, 31, 32 & 45 (Sheet 2 of 14)

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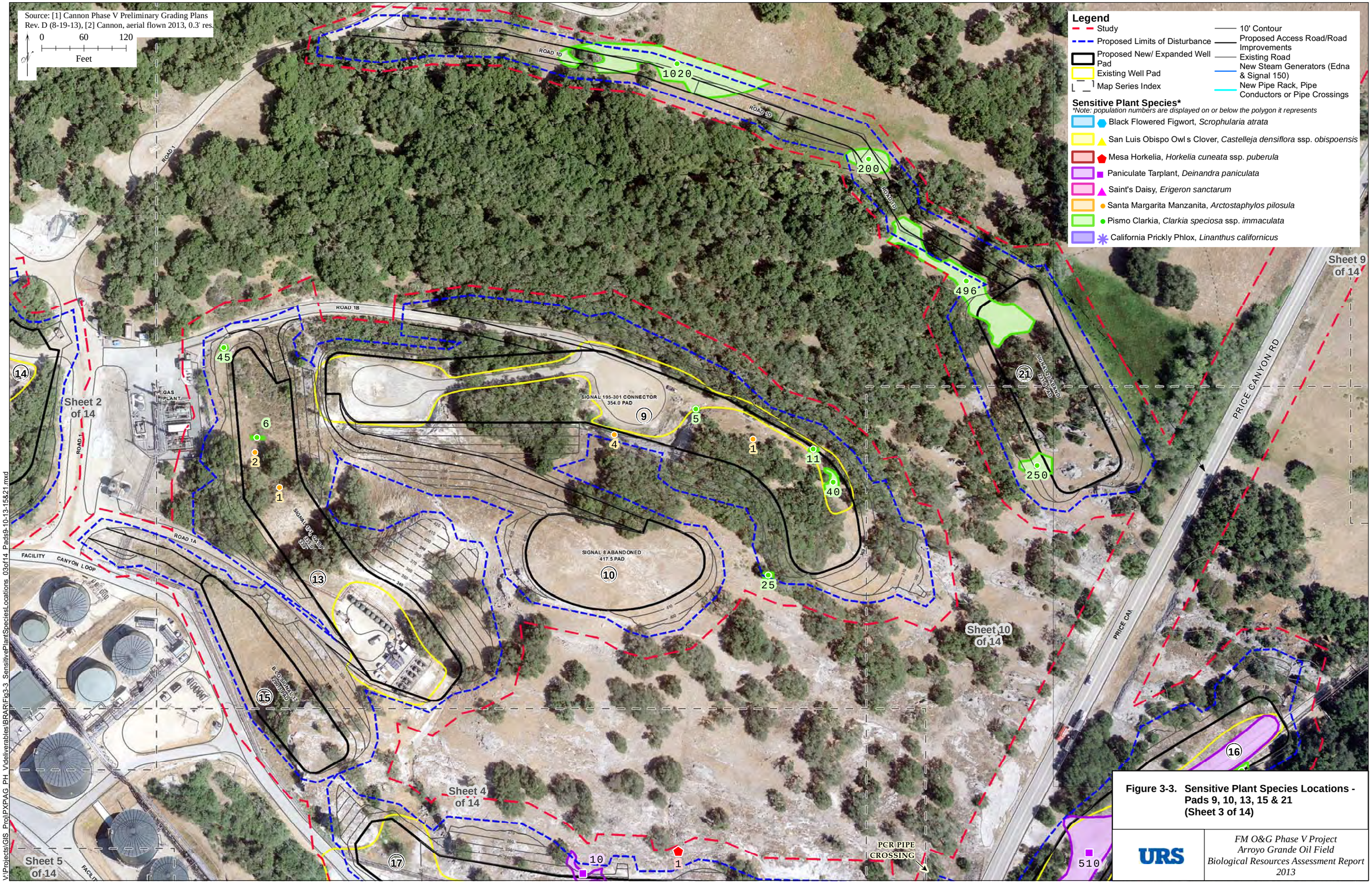

Figure 3-3. Sensitive Plant Species Locations - Pads 9, 10, 13, 15 & 21 (Sheet 3 of 14)

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Figure 3-3. Sensitive Plant Species Locations - Pads 8, 11, 17, 18, 22, 23 & 24 (Sheet 4 of 14)

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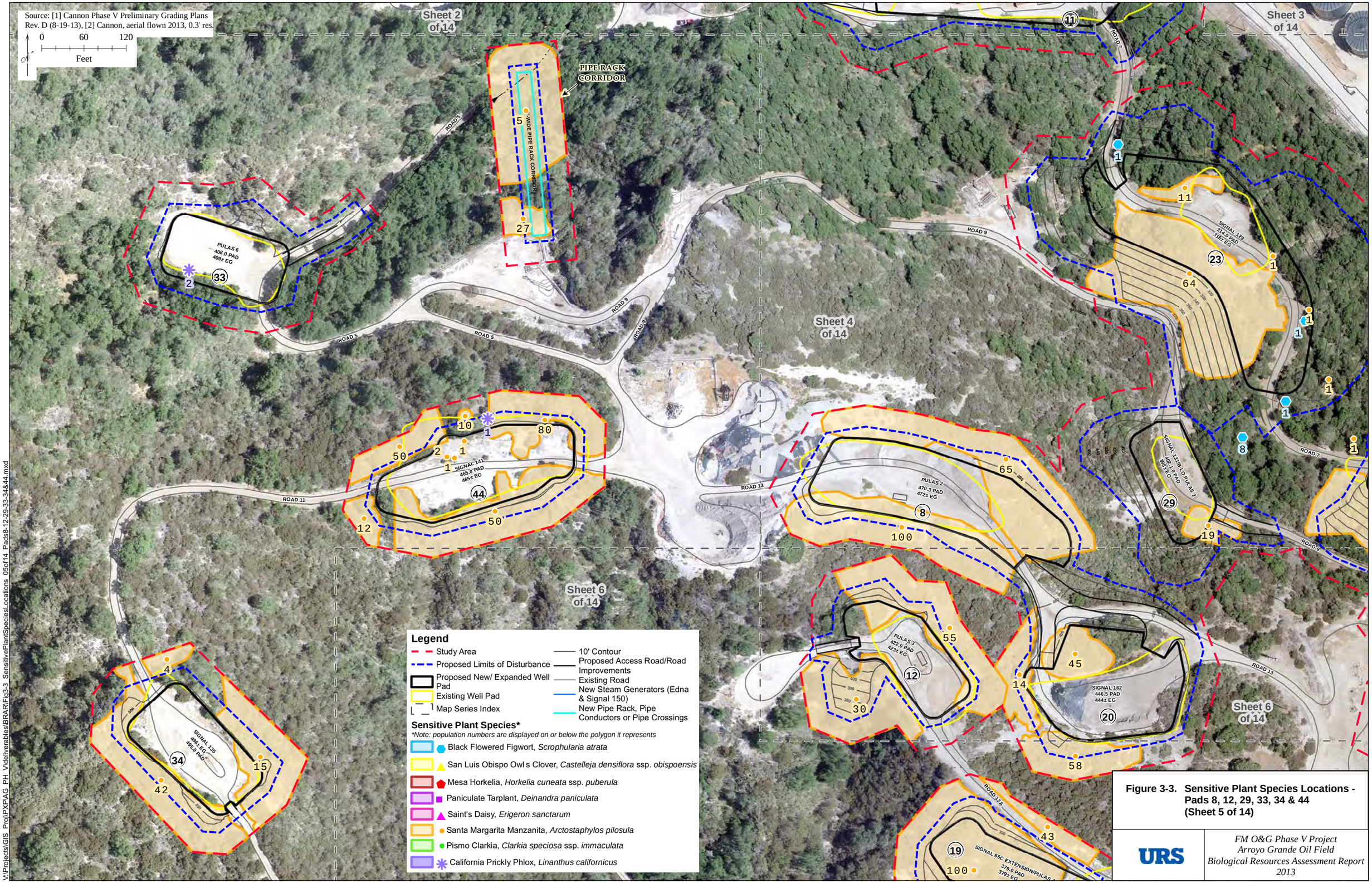

Figure 3-3. Sensitive Plant Species Locations - Pads 8, 12, 29, 33, 34 & 44 (Sheet 5 of 14)

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Figure 3-3. Sensitive Plant Species Locations - Pads 5, 7, 12, 19, 20 & 28 (Sheet 6 of 14)

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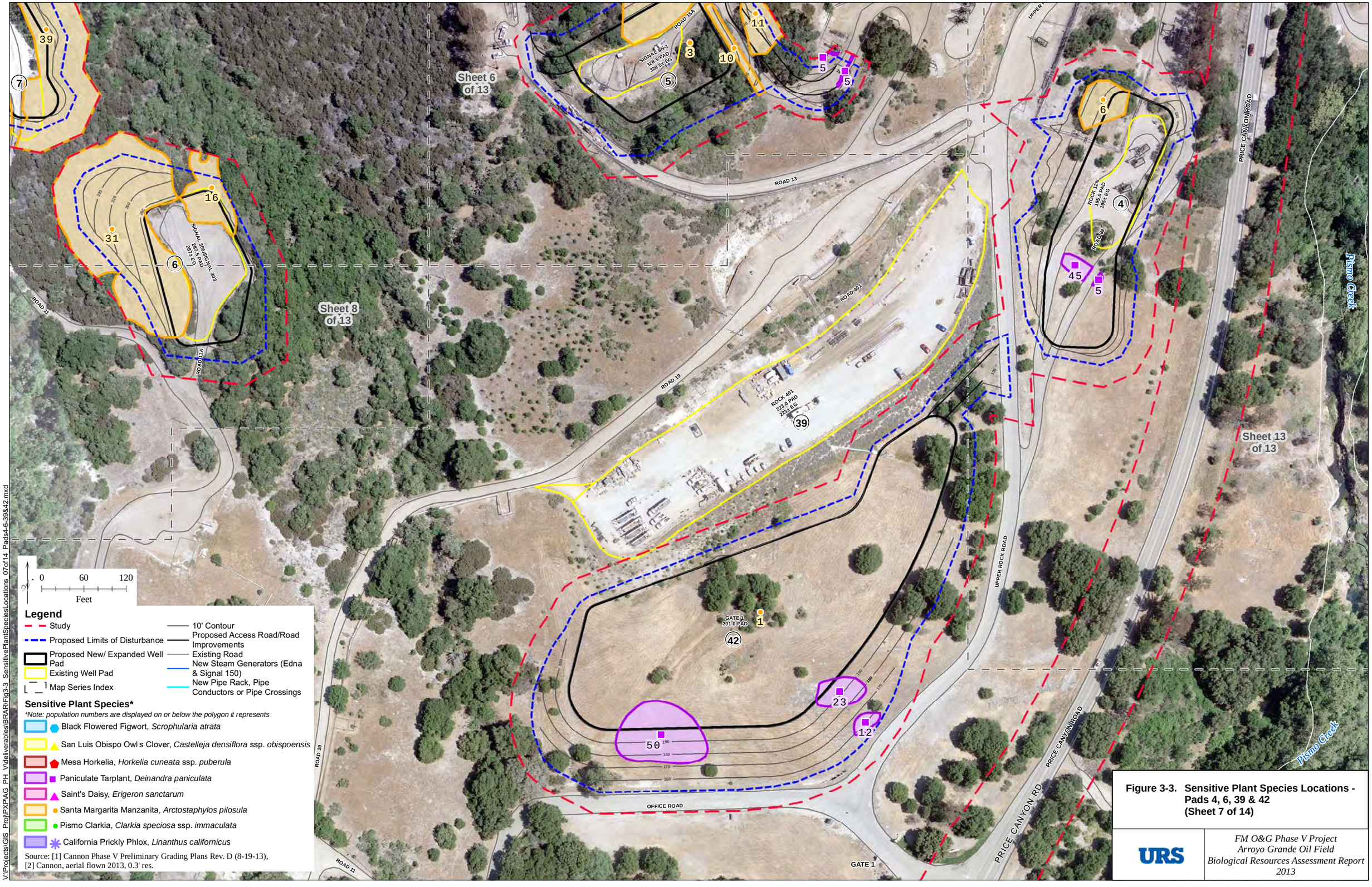

Figure 3-3. Sensitive Plant Species Locations - Pads 4, 6, 39 & 42 (Sheet 7 of 14)

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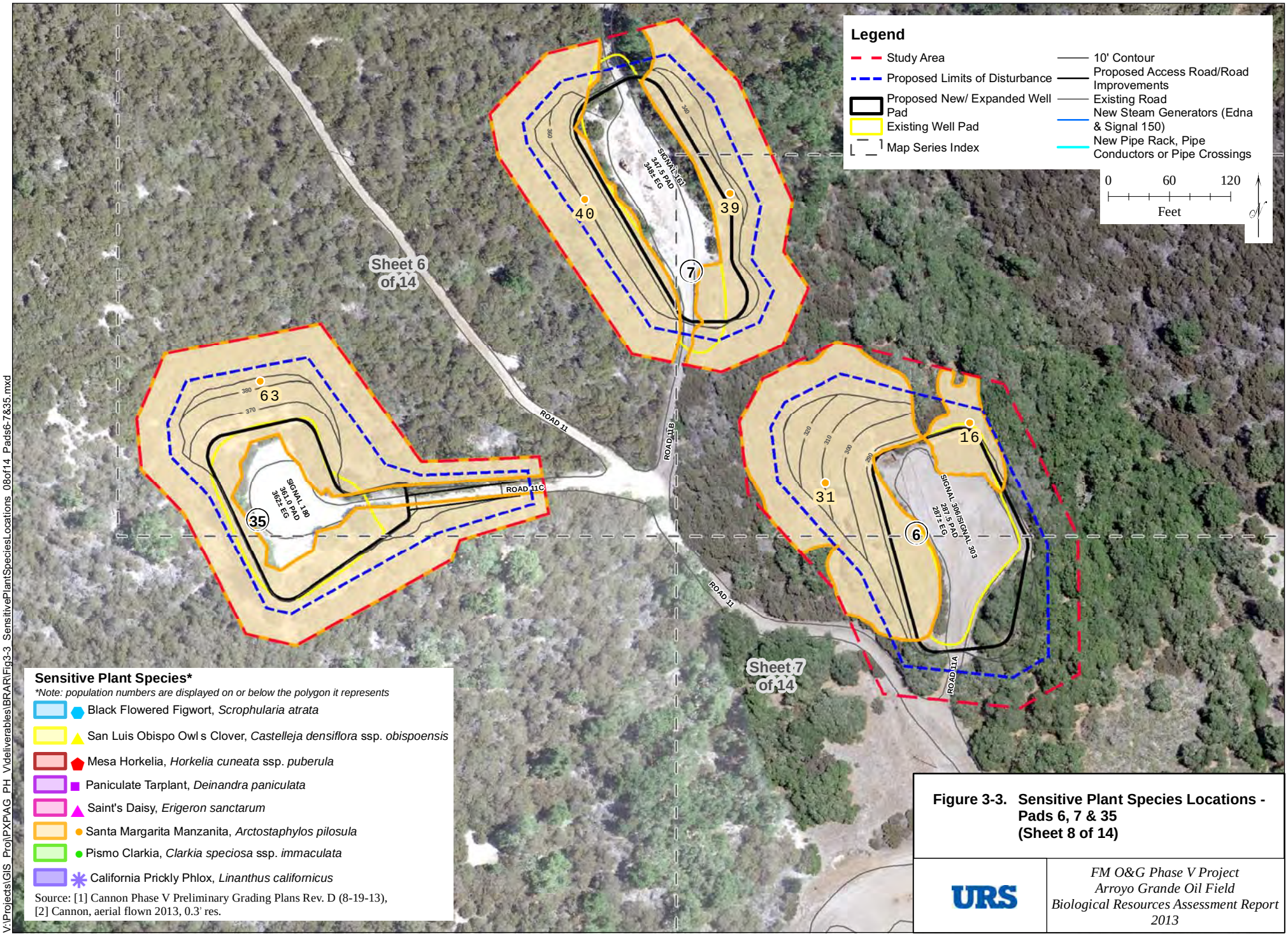

Figure 3-3. Sensitive Plant Species Locations - Pads 6, 7 & 35 (Sheet 8 of 14)

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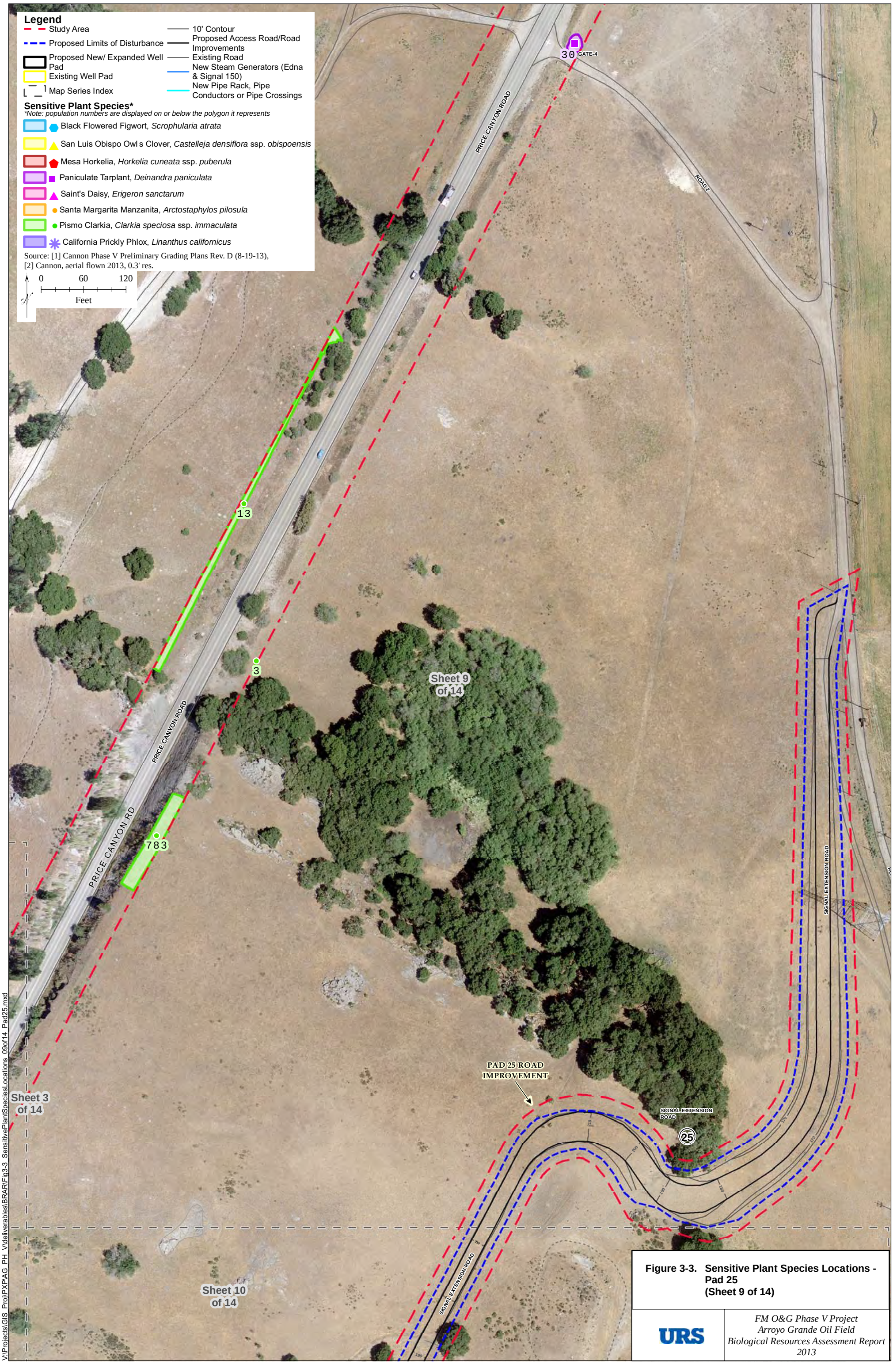

Figure 3-3. Sensitive Plant Species Locations - Pad 25 (Sheet 9 of 14)

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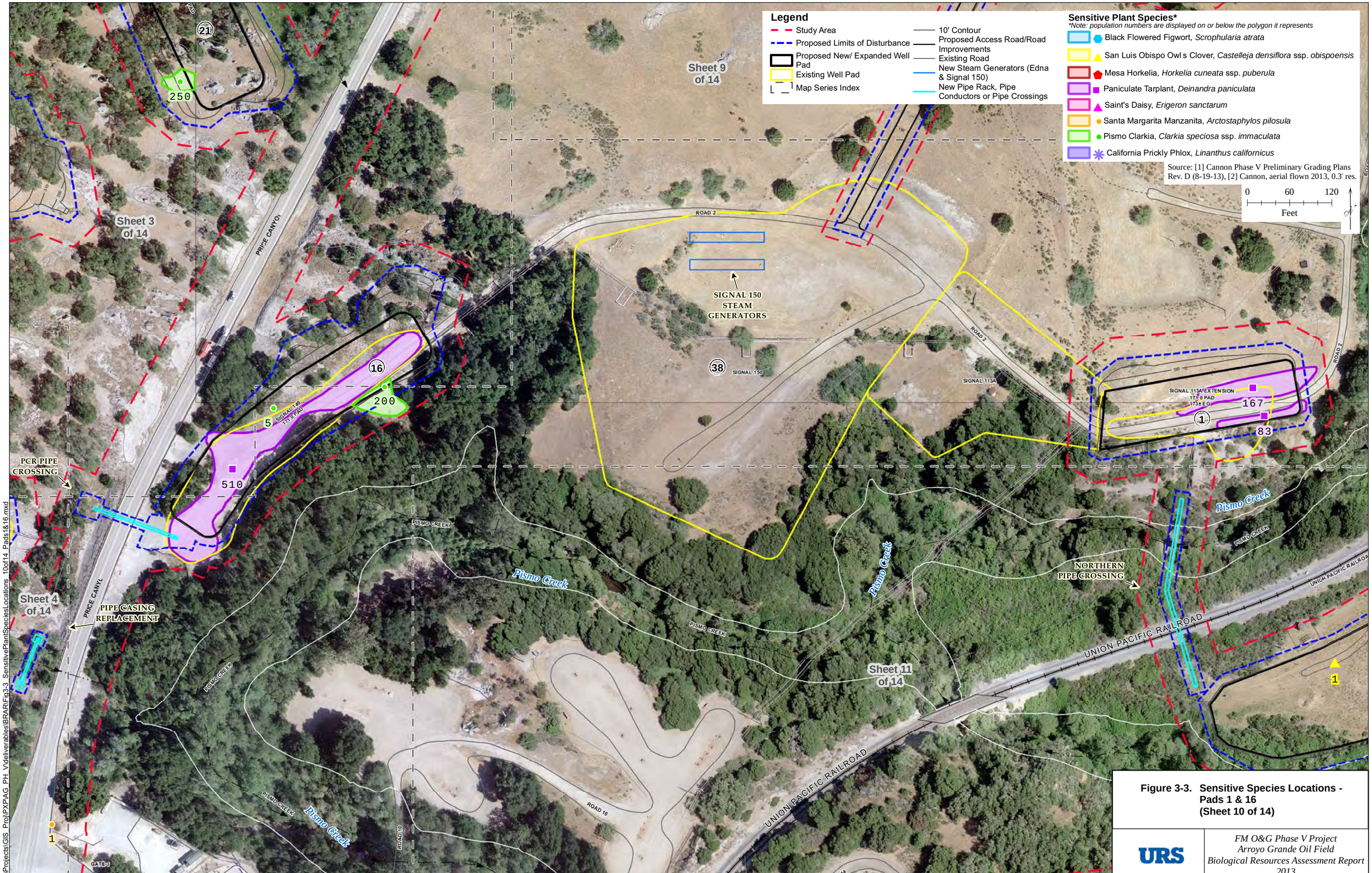

Figure 3-3. Sensitive Species Locations - Pads 1 & 16 (Sheet 10 of 14)

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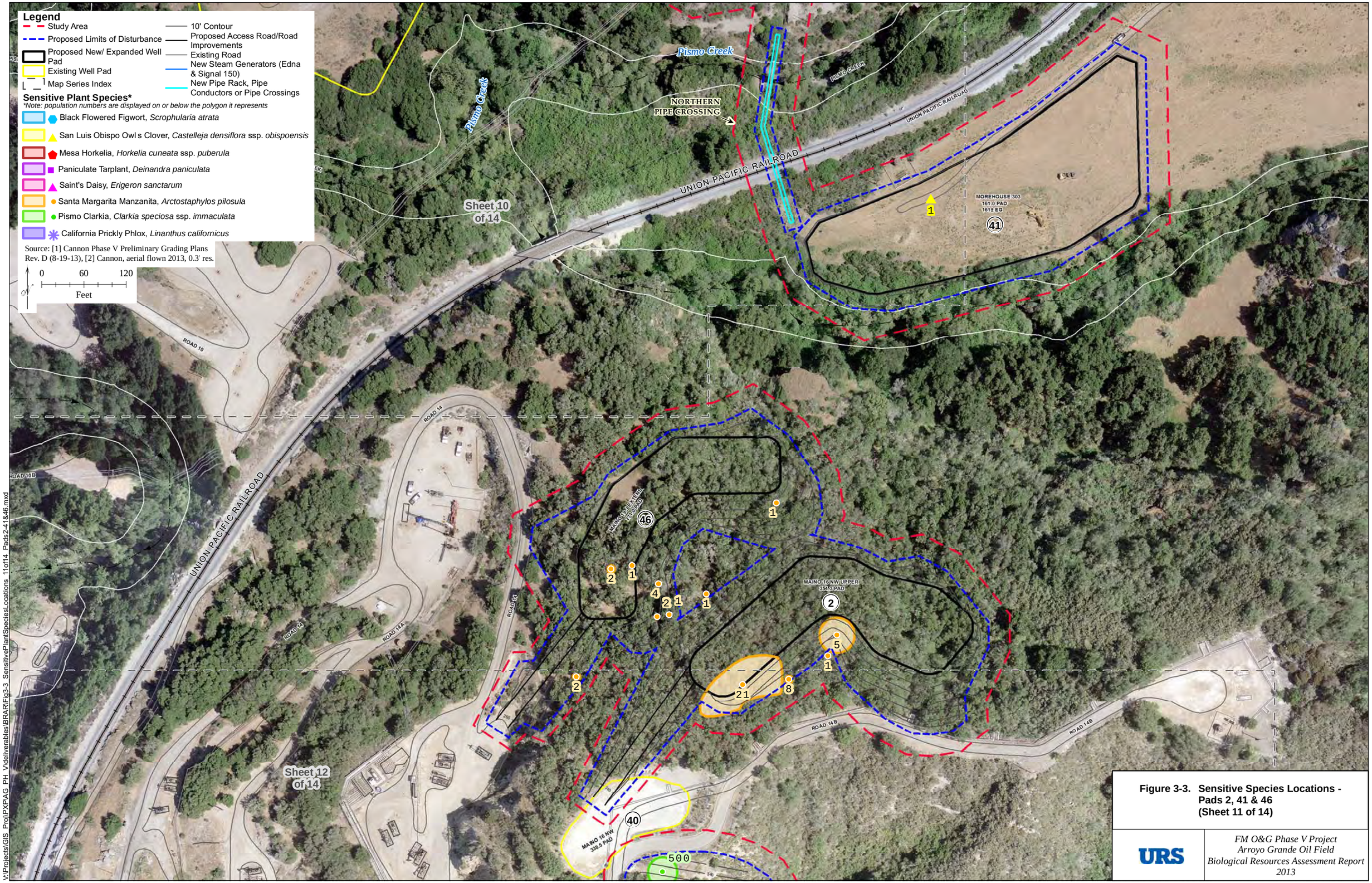

Figure 3-3. Sensitive Species Locations - Pads 2, 41 & 46 (Sheet 11 of 14)

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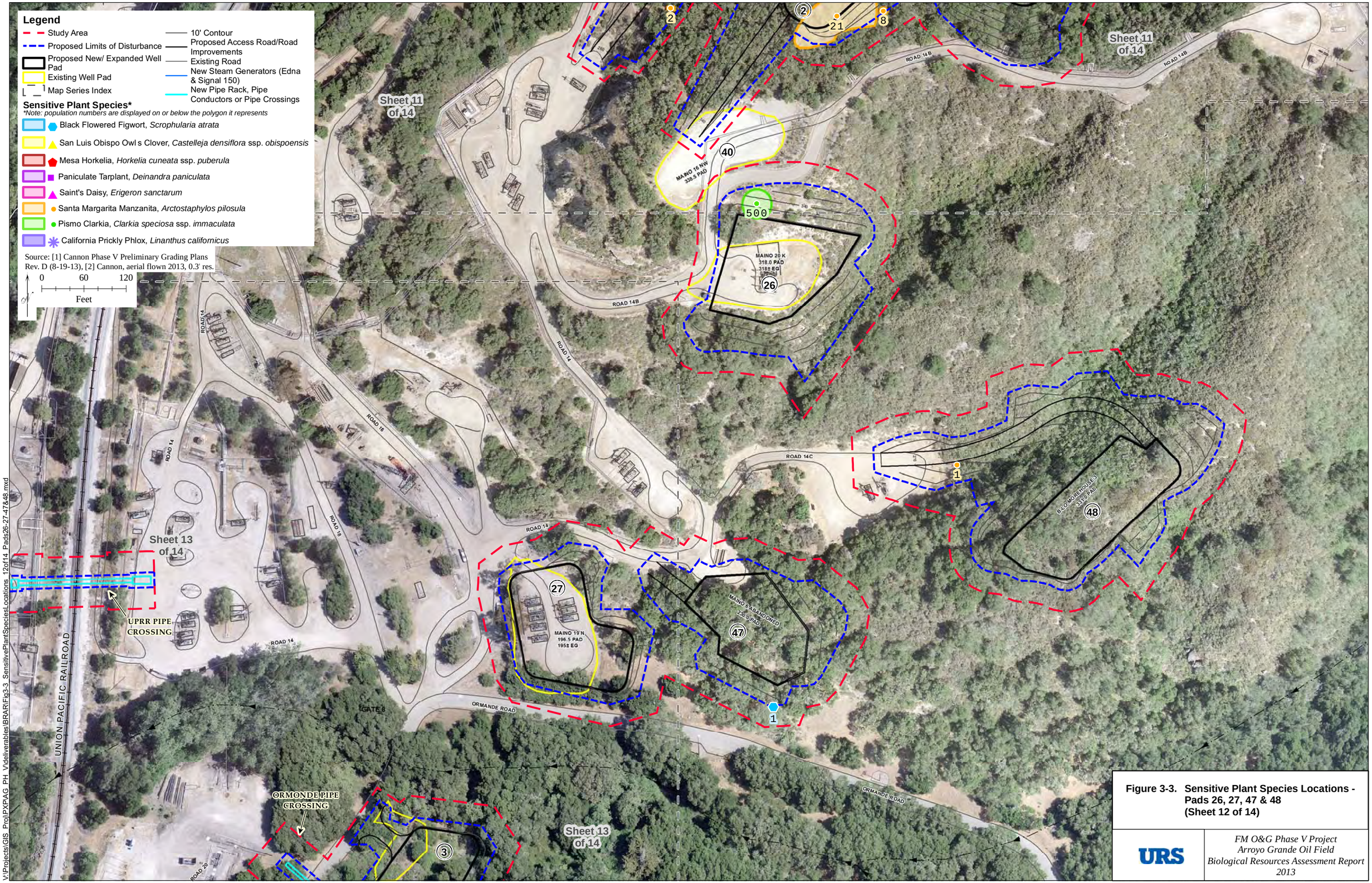

Figure 3-3. Sensitive Plant Species Locations - Pads 26, 27, 47 & 48 (Sheet 12 of 14)

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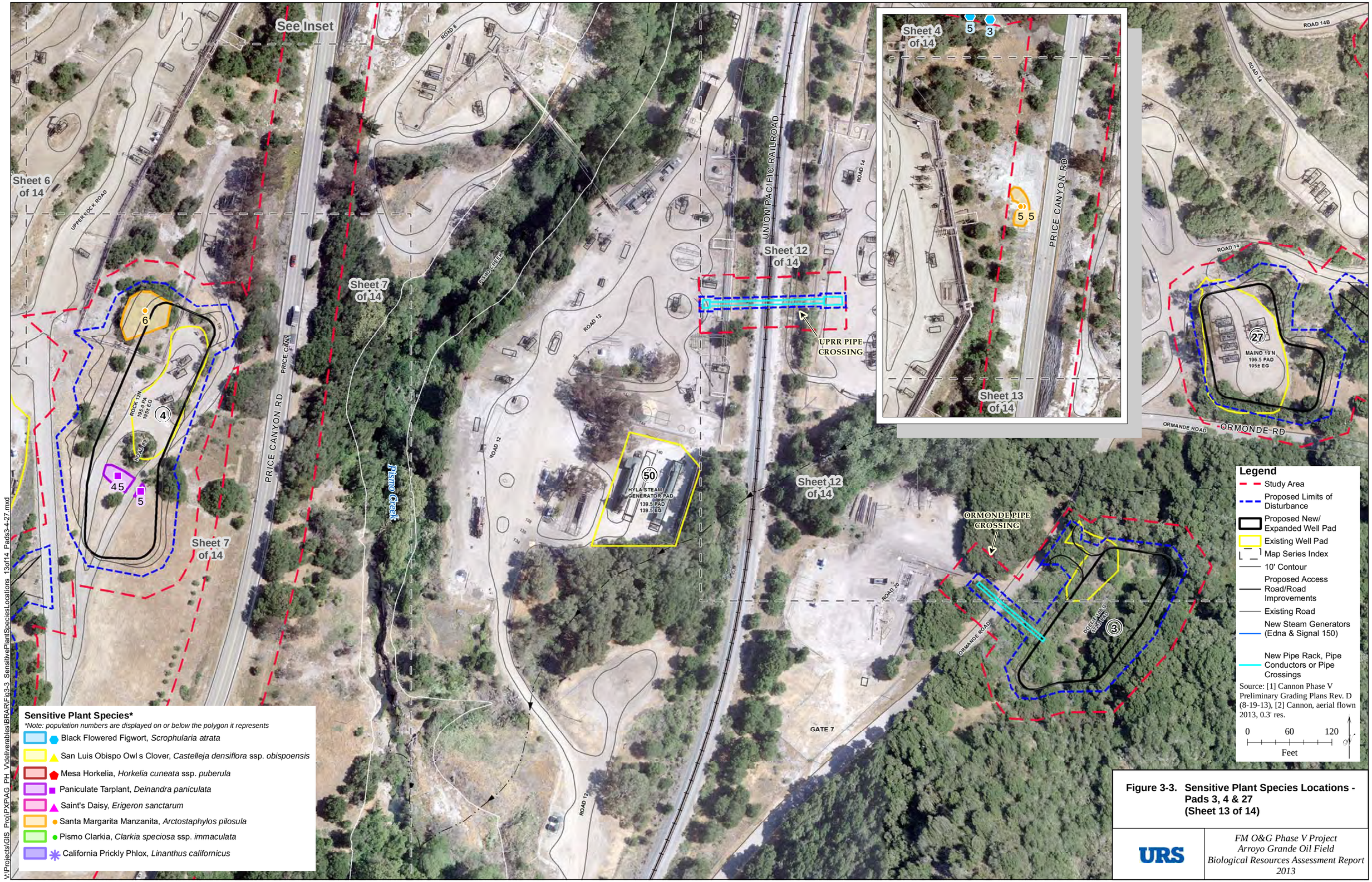

Figure 3-3. Sensitive Plant Species Locations - Pads 3, 4 & 27 (Sheet 13 of 14)

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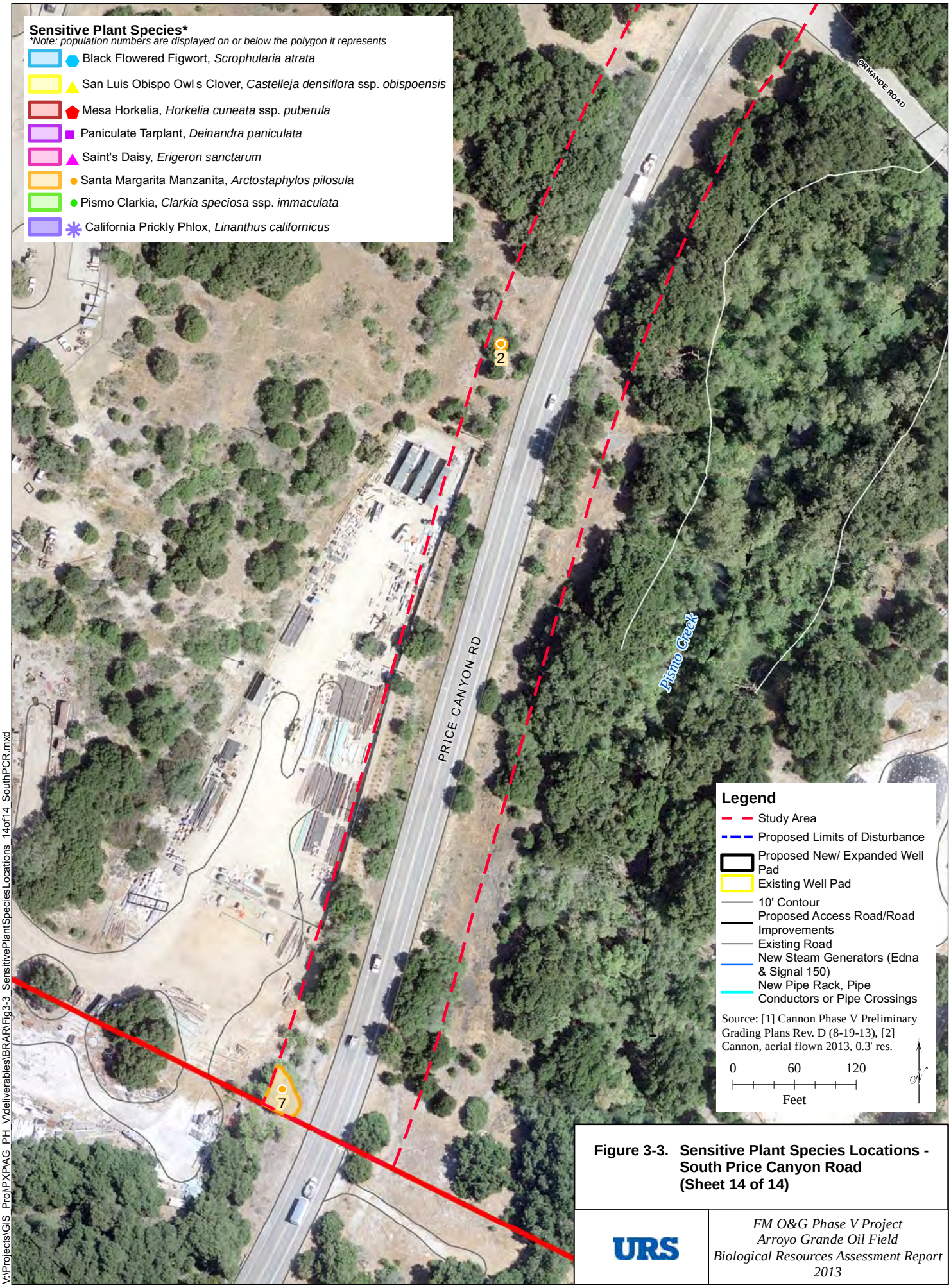

Figure 3-3. Sensitive Plant Species Locations - South Price Canyon Road (Sheet 14 of 14)

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Biological Resources Assessment Report 2013

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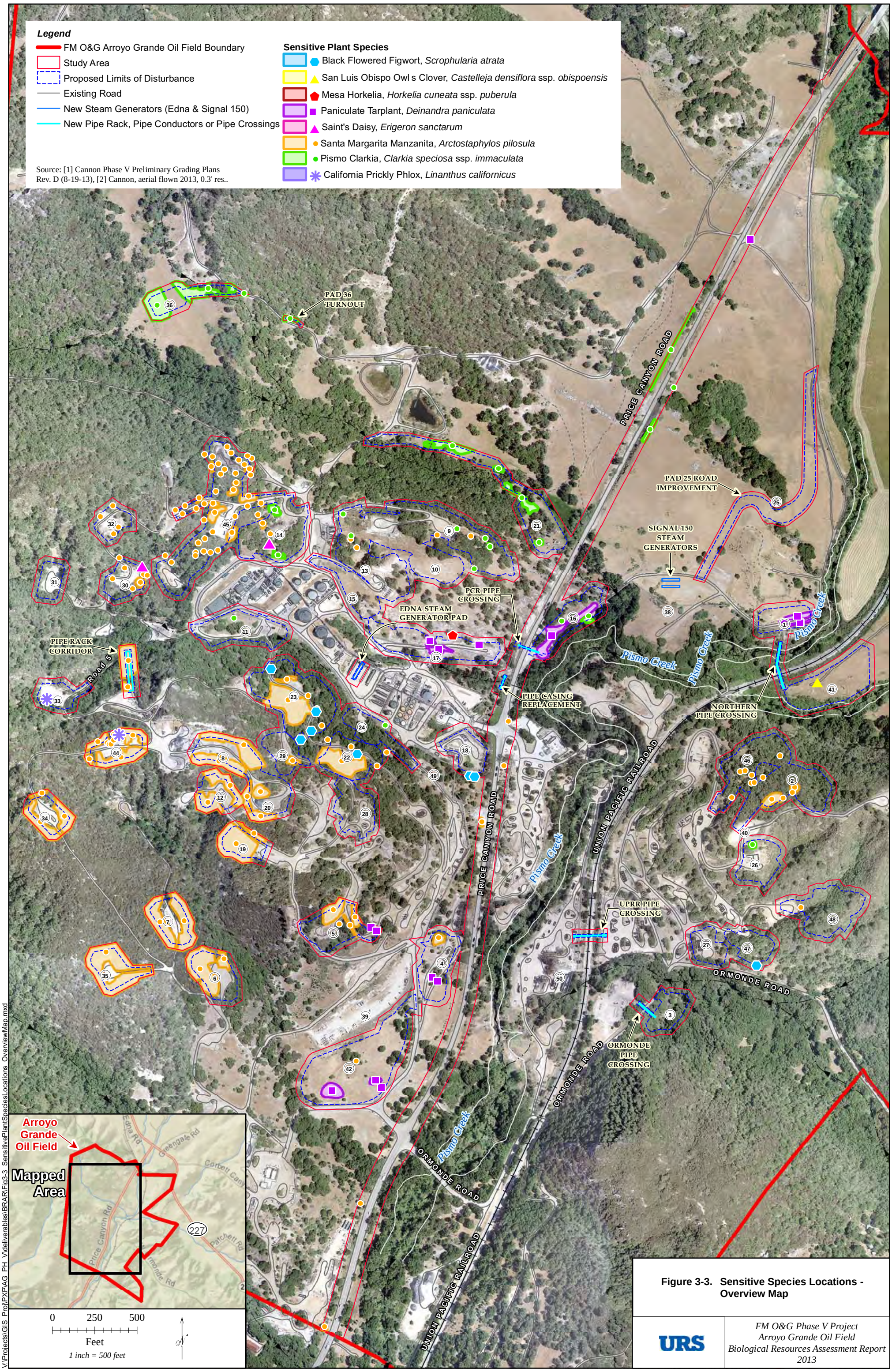

Figure 3-3. Sensitive Species Locations - Overview Map

URS

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Arroyo Grande Oil Field
Biological Resources Assessment Report
2013

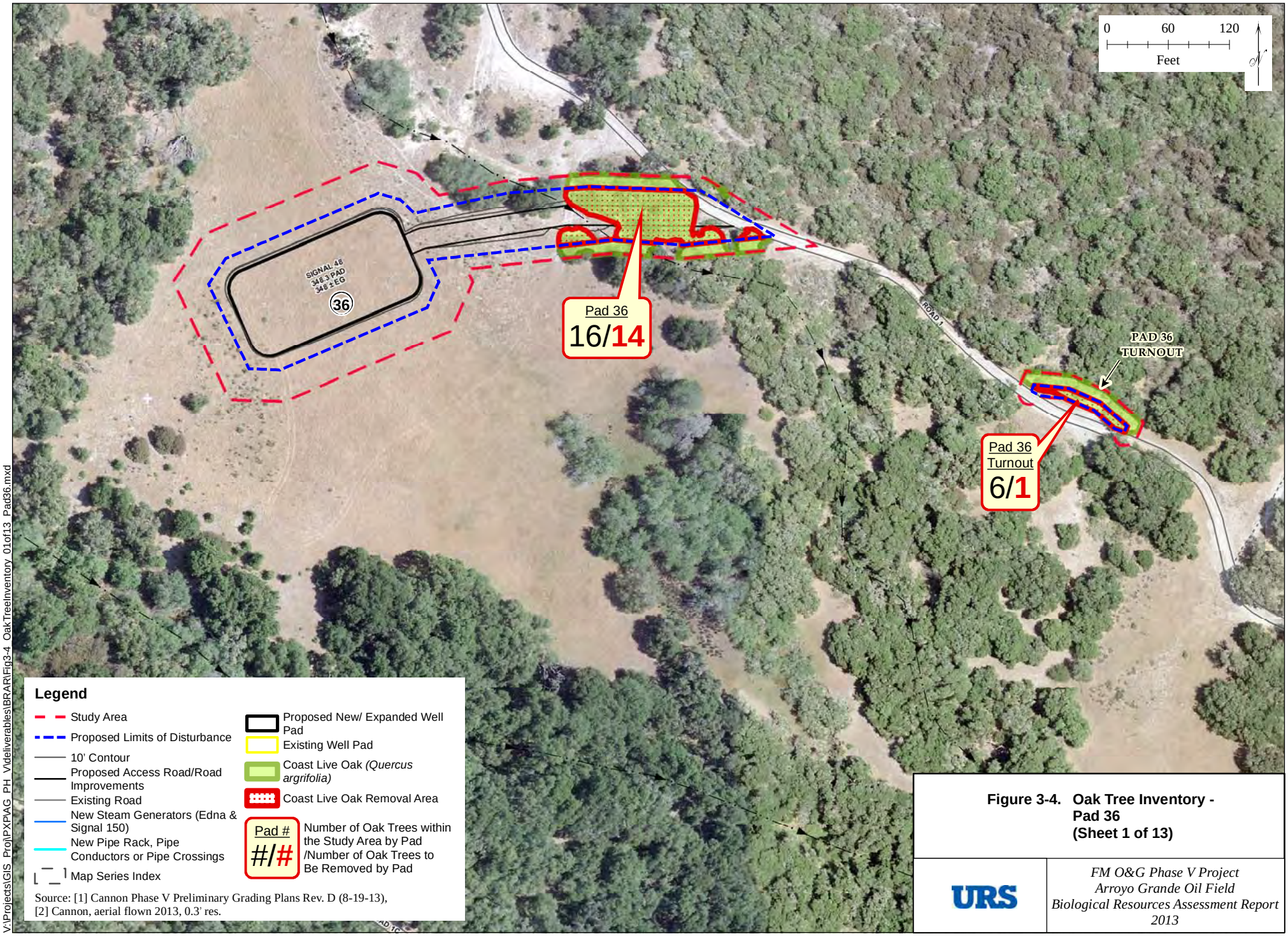

Figure 3-4. Oak Tree Inventory - Pad 36 (Sheet 1 of 13)

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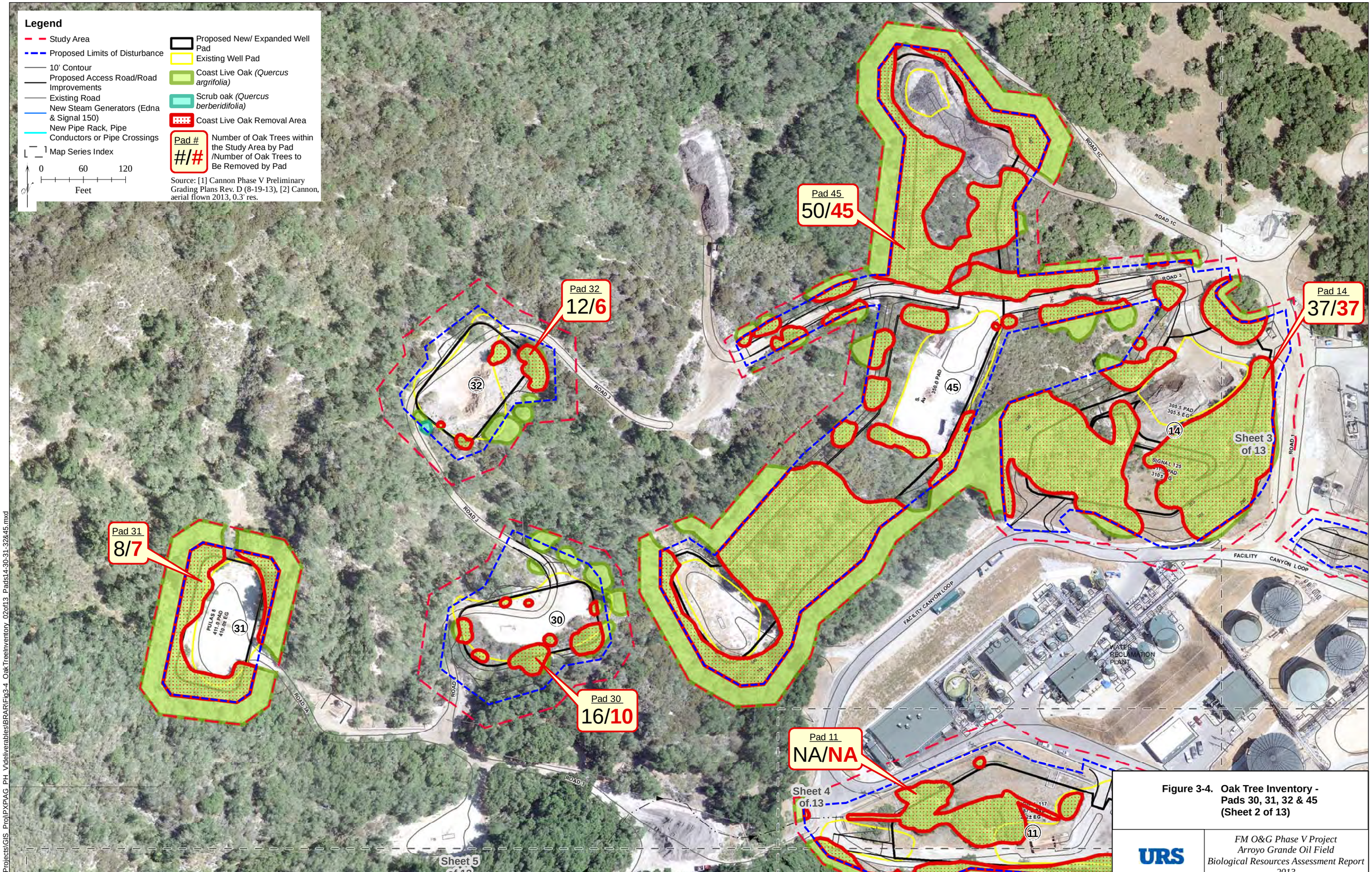
2013



V:\Projects\GIS_Proj\PXP\AG_PH_V\deliverables\BRA\Fig3-4_OakTreeInventory_02of13_Pads14-30-31-32&45.mxd

Figure 3-4. Oak Tree Inventory - Pads 30, 31, 32 & 45 (Sheet 2 of 13)

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Figure 3-4. Oak Tree Inventory - Pads 9, 10, 13, 15 & 21 (Sheet 3 of 13)

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2013

V:\Projects\GIS_Proj\PXPAG_PH_V\deliverables\BRAR\Fig3-4_OakTreeInventory_03of13_Pads9-10-13-15&21.mxd

Figure 3-4. Oak Tree Inventory - Pads 8, 11, 17, 18, 22, 23, 24 & 49 (Sheet 4 of 13)

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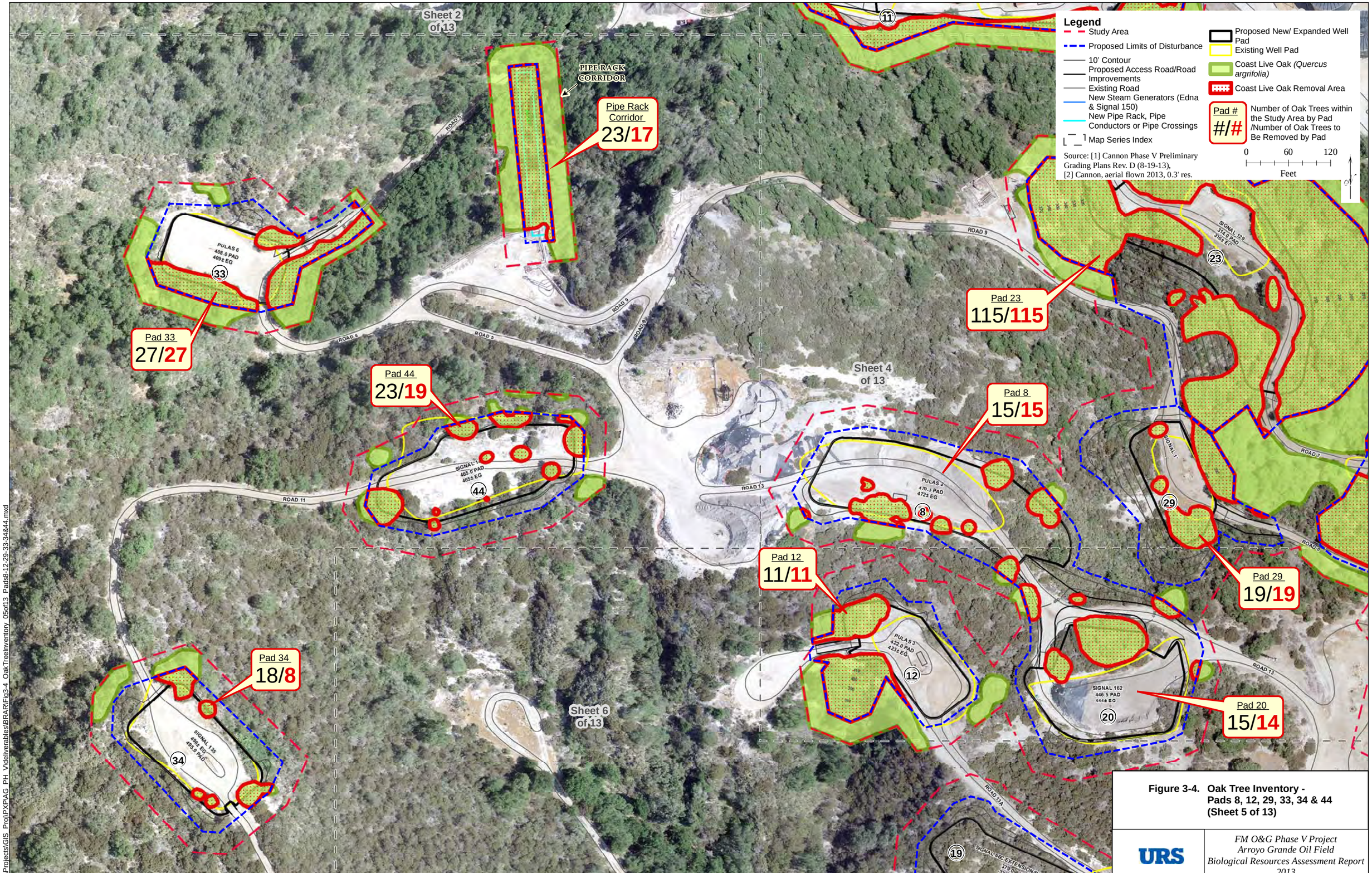

Figure 3-4. Oak Tree Inventory - Pads 8, 12, 29, 33, 34 & 44 (Sheet 5 of 13)

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V:\Projects\GIS_Proj\PXP\AG_PH_V\deliverables\BRAR\Fig3-4_OakTreeInventory_05of13_Pads8-12-29-33-34&44.mxd

Figure 3-4. Oak Tree Inventory - Pads 5, 7, 12, 19, 20 & 28 (Sheet 6 of 13)

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Figure 3-4. Oak Tree Inventory - Pads 4, 6, 39 & 42 (Sheet 7 of 13)

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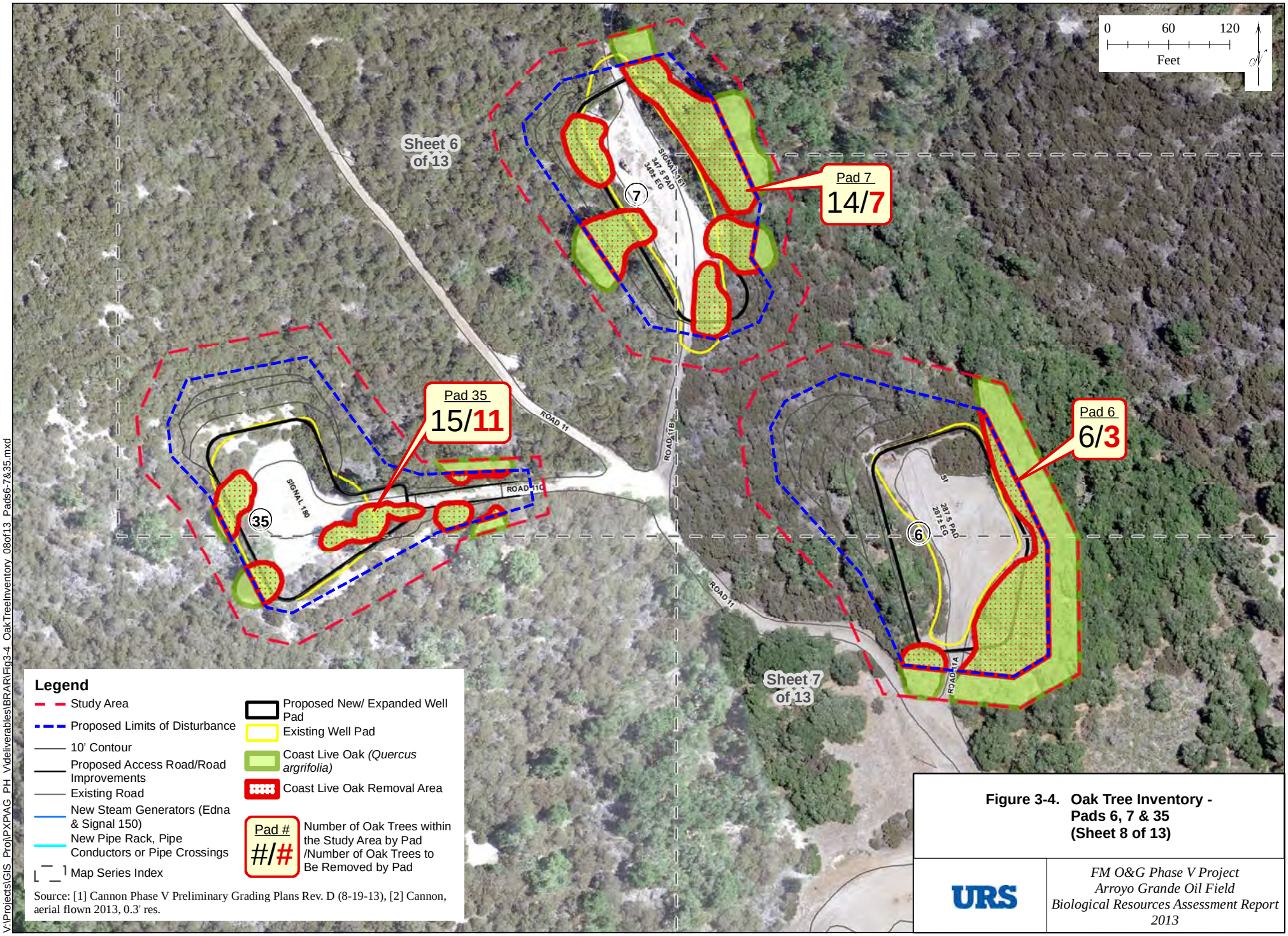

Figure 3-4. Oak Tree Inventory - Pads 6, 7 & 35 (Sheet 8 of 13)

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V:\Projects\GIS_Proj\PXPAG_PH_V\deliverables\BRAR\Fig3-4_OakTreeInventory_08of13_Pads6-7&35.mxd

Figure 3-4. Oak Tree Inventory - Pad 25 (Sheet 9 of 13)

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Biological Resources Assessment Report
2013

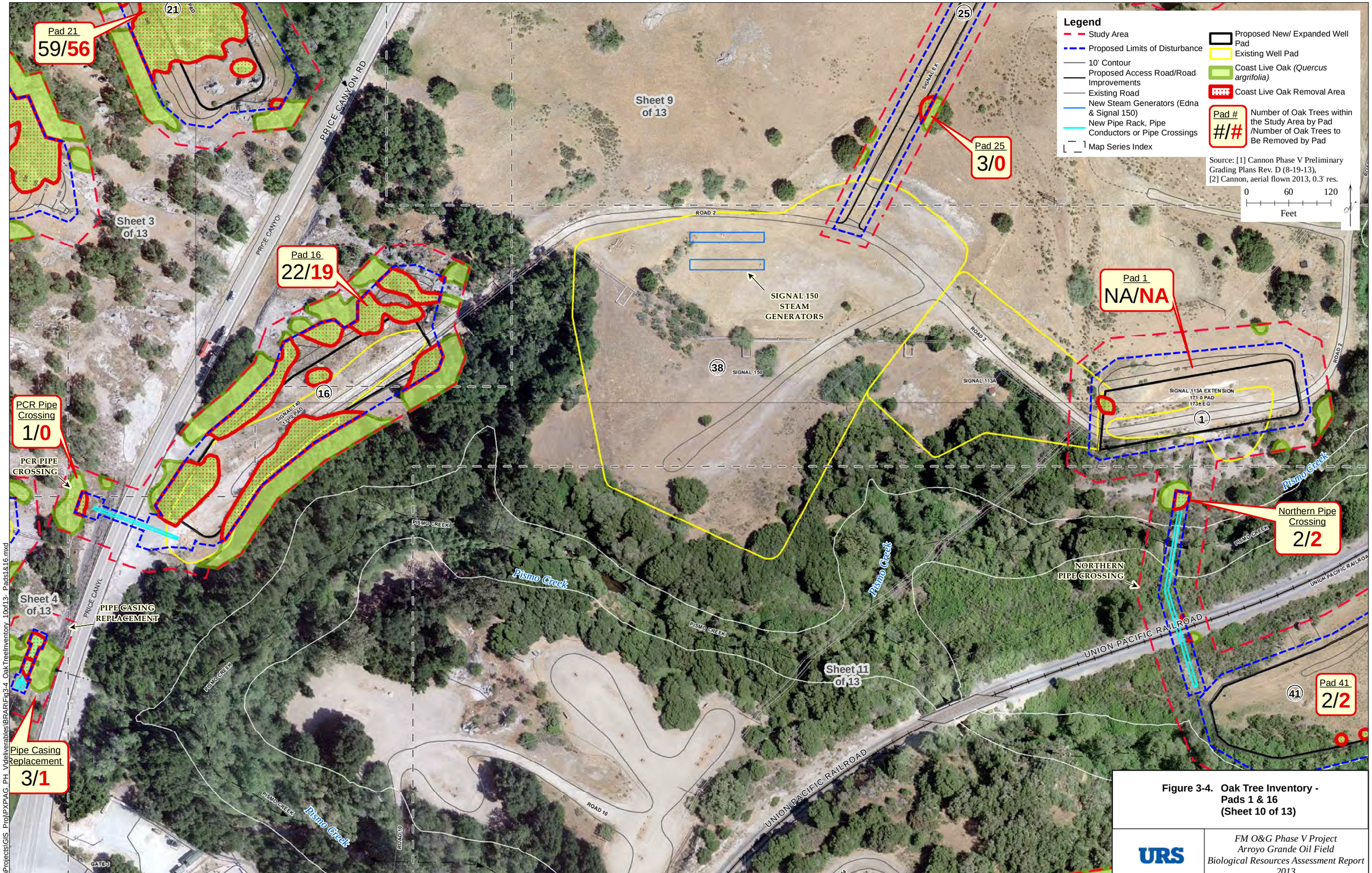

Figure 3-4. Oak Tree Inventory - Pads 1 & 16 (Sheet 10 of 13)

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2013

Figure 3-4. Oak Tree Inventory - Pads 2, 41 & 46 (Sheet 11 of 13)

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Biological Resources Assessment Report
2013

V:\Projects\GIS_Proj\PXP\AG_PH_V\deliverables\BRA\Fig3-4_OakTreeInventory_11of13_Pads2-41&46.mxd

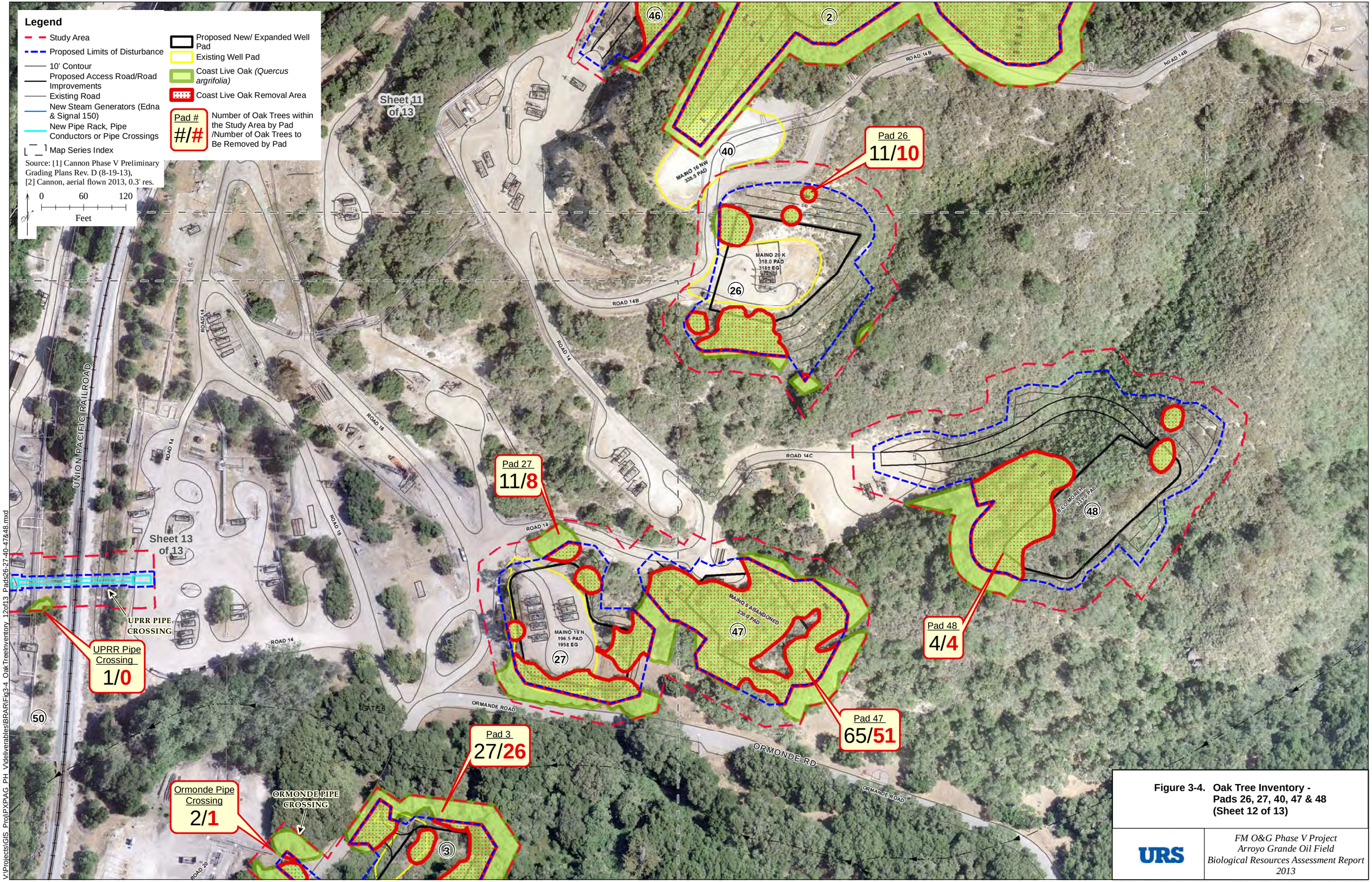

Figure 3-4. Oak Tree Inventory - Pads 26, 27, 40, 47 & 48 (Sheet 12 of 13)

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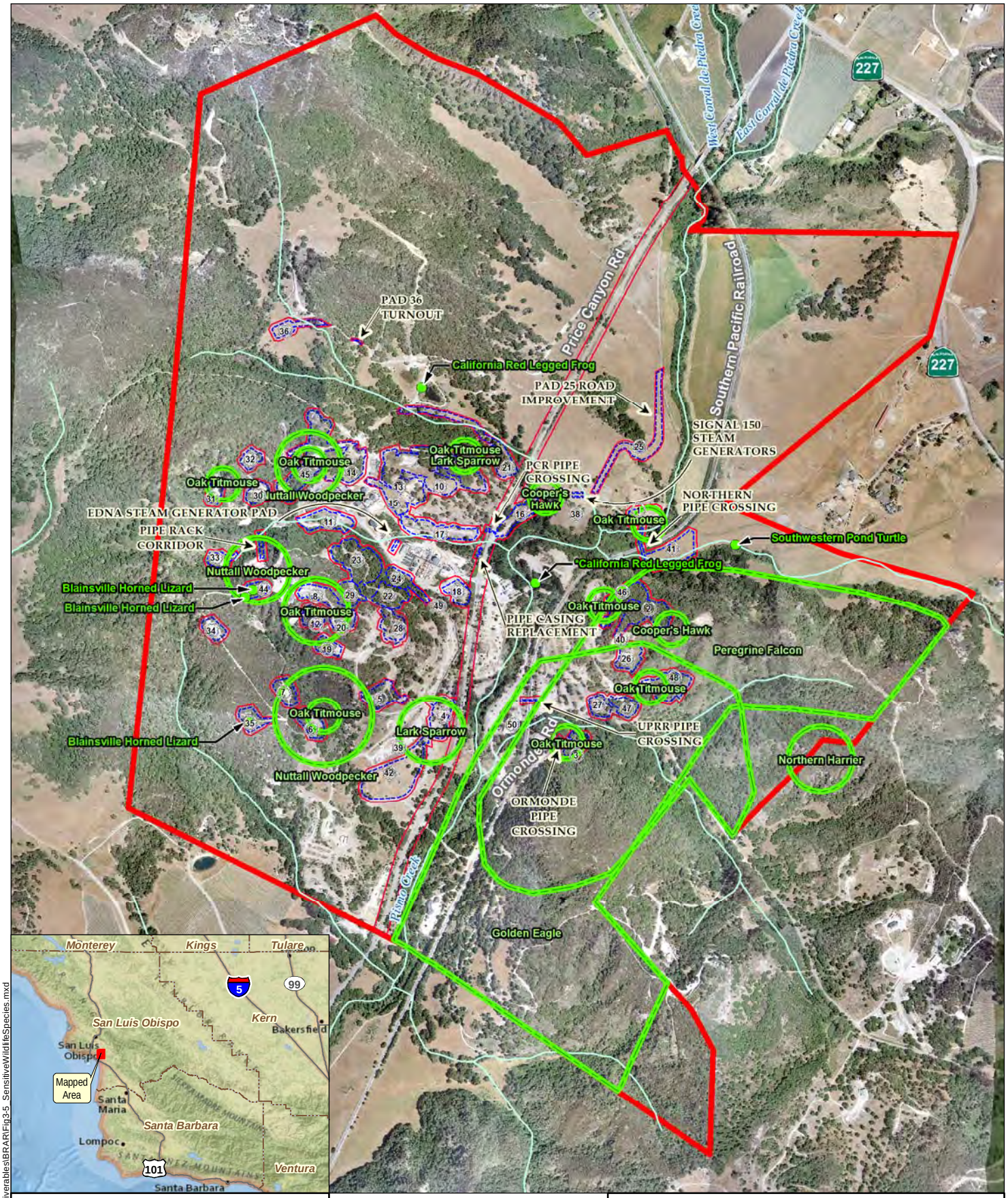
Biological Resources Assessment Report
2013

V:\Projects\GIS_Proj\PXP\AG_PH_V\deliverables\BRAR\Fig3-4_OakTreeInventory_12of13_Pads26-27-40-47&48.mxd

Legend
Study Area
Proposed Limits of Disturbance
10' Contour
Proposed Access Road/Road Improvements
Existing Road
New Steam Generators (Edna & Signal 150)
New Pipe Rack, Pipe Conductors or Pipe Crossings
Map Series Index
Proposed New/ Expanded Well Pad
Existing Well Pad
Coast Live Oak (Quercus argrifolia)
Coast Live Oak Removal
Pad # #/#
Number of Oak Trees within the Study Area by Pad /Number of Oak Trees to Be Removed by Pad
Source: [1] Cannon Phase V Preliminary Grading Plans Rev. D (8-19-13), [2] Cannon, aerial flown 2013, 0.3' res.
Sheet 6 of 13
Sheet 7 of 13
Sheet 12 of 13
UPPER ROCK ROAD
PRICE CANYON RD
PISMO CREEK
UNION PACIFIC RAILROAD
ROAD 8
ROAD 12
ROAD 14
ROAD 14B
ROAD 16
ROAD 18
ROAD 20
ROAD 26
ORMANDE ROAD
ORMONDE RD
GATE 8
GATE 7
UPRR PIPE CROSSING
UPRR Pipe Crossing 1/0
Pad 27 11/8
Pad 4 33/28
Pad 3 27/26
Ormonde Pipe Crossing 2/1
ORMONDE PIPE CROSSING
HYLA STEAM GENERATOR PAD 139.5 PAD 139.5 EG
MAINO 19'N 196.5 PAD 195± EG
ROCK 13N 196.0 PA 195± EG
DOUBLE 40L 139.5 PAD
Pismo Creek
4
50
27
3
0 60 120
Feet
Figure 3-4. Oak Tree Inventory - Pads 3, 4 & 27 (Sheet 13 of 13)
URS
FM O&G Phase V Project
Arroyo Grande Oil Field
Biological Resources Assessment Report
2013
V:\Projects\GIS_Proj\PXPAG_PH_V\deliverables\BRAR\Fig3-4_OakTreeInventory_13of13_Pads3-4&27.mxd



Source: [1] Cannon Phase V Preliminary Grading Plans Rev. D (8-19-13), [2] Cannon, aerial flown 2013, 0.3' res.

0 0.25 0.5
Miles
1 inch = 0.25 miles

Legend

- FM O&G Arroyo Grande Oil Field
- Study Area
- Proposed Limits of Disturbance
- NHD Flowline
- Sensitive Species Survey Results (Specific Siting Location 2013)
- Sensitive Species Survey Results (2013)

*Note: Adult red-legged frog detected prior to protocol surveys.

Figure 3-5. Sensitive Wildlife Species

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FM O&G Phase V
Arroyo Grande Oil Field
Biological Resources Assessment Report
2013

V:\Projects\GIS_Proj\PXP\AG_PH_V\deliverables\BRAR\Fig3-5_SensitiveWildlifeSpecies.mxd

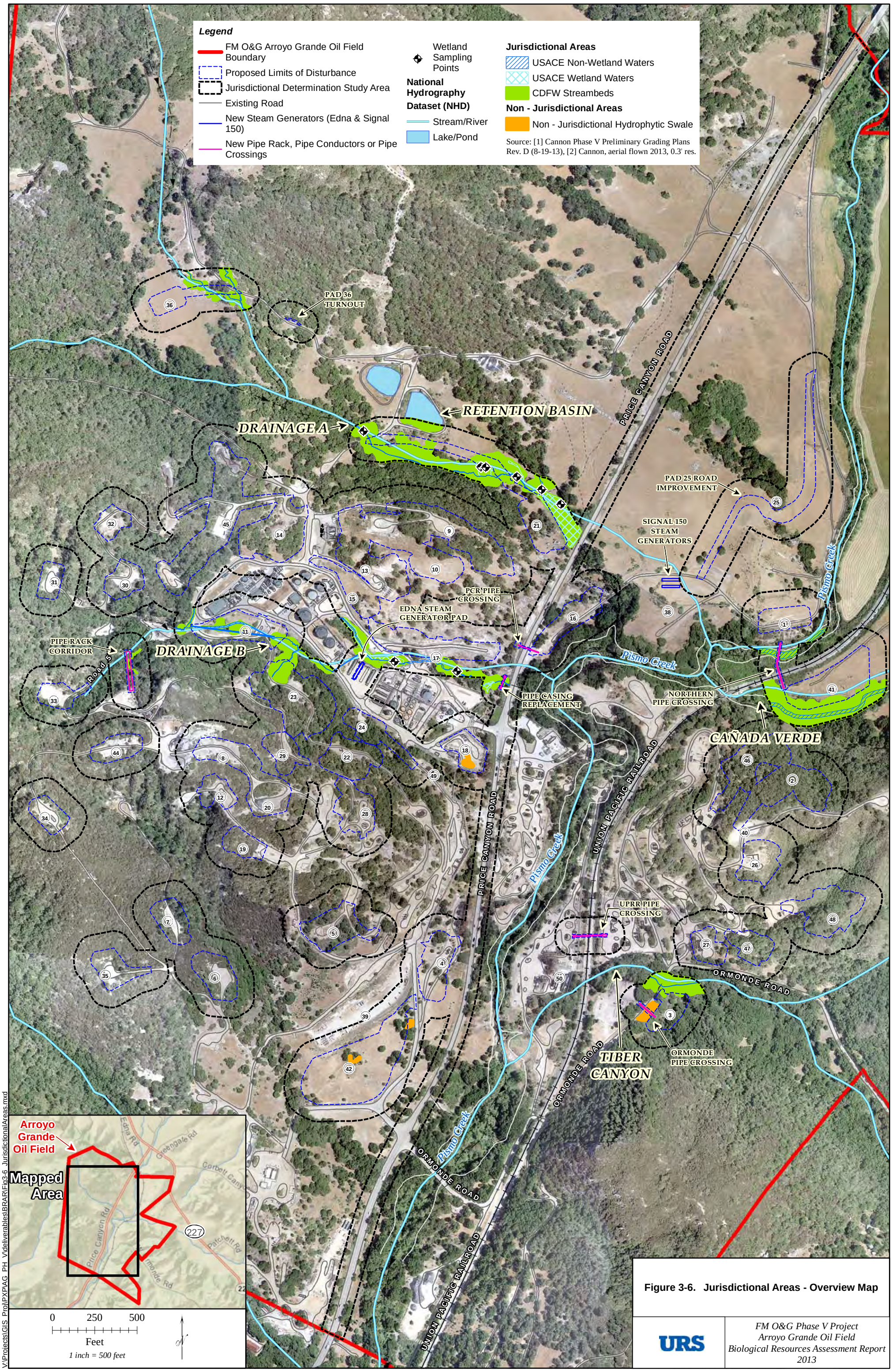

Figure 3-6. Jurisdictional Areas - Overview Map

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FM O&G Phase V Project
Arroyo Grande Oil Field
Biological Resources Assessment Report
2013

APPENDIX A
CNDDB RESULTS

Multiple Occurrences per Page

California Department of Fish and Wildlife

California Natural Diversity Database

Taricha torosa **Element Code:** AAAAF02032

Coast Range newt

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T4
	State:	None		**State:**	S4
	Other:	CDFW_SSC-Species of Special Concern			
Habitat:	**General:**	COASTAL DRAINAGES FROM MENDOCINO COUNTY TO SAN DIEGO COUNTY.			
	Micro:	LIVES IN TERRESTRIAL HABITATS & WILL MIGRATE OVER 1 KM TO BREED IN PONDS, RESERVOIRS & SLOW MOVING STREAMS.			

Occurrence No.	8	**Map Index:** 52432	**EO Index:** 52432	**Element Last Seen:**	2002-02-XX
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	2002-02-XX
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2003-09-11

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.18584 / -120.48832	**Accuracy:**	80 meters
UTM:	Zone-10 N3896542 E728699	**Elevation (ft):**	390
PLSS:	T31S, R14E, Sec. 32 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CREEK, JUST WEST OF LOPEZ DAM, 7 MILES NE OF ARROYO GRANDE

Detailed Location: SITE IS LOCATED AT THE BASE OF LOPEZ DAM, NEAR THE OUTLET WORKS BUILDING.

Ecological:

General: 60 ADULTS AND 30 OF UNKNOWN AGE OBSERVED ON 30 OCT 2001, MOVING ACROSS THE ACCESS ROAD, AWAY FROM THE PONDS. UNKNOWN NUMBER OBSERVED IN FEB 2002.

Owner/Manager: SLO COUNTY

Occurrence No.	9	**Map Index:** 52434	**EO Index:** 52434	**Element Last Seen:**	2003-03-27
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2003-03-27
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2003-09-11

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35500 / -120.63083	**Accuracy:**	80 meters
UTM:	Zone-10 N3914988 E715273	**Elevation (ft):**	1515
PLSS:	T29S, R12E, Sec. 36 (M)	**Acres:**	0.0

Location: UNNAMED TRIBUTARY TO SANTA MARGARITA CREEK, 5 MILES NNE OF SAN LUIS OBISPO

Detailed Location: TRIBUTARY DRAINS WEST TO SANTA MARGARITA CREEK, AT HIGHWAY 1, ON THE NORTH SIDE OF CUESTA GRADE.

Ecological: HABITAT SURROUNDING BLUE-LINE STREAM IS DOMINATED BY SALIX LASIOLEPIS AND POPULUS BALSAMIFERA SSP TRICHOCARPA; MIXED EVERGREEN WOODLAND, DOMINATED BY QUERCUS AGRIFOLIA, UMBELLULARIA CALIFORNICA, ACER MACROPHYLLUM, ETC., FOUND UPSLOPE.

General: 47+ ADULTS FOUND BREEDING AND LAYING EGG MASSES 27 MAR 2003.

Owner/Manager: PVT-SANTA MARGARITA CO

Occurrence No.	12	**Map Index:** 52469	**EO Index:**	52469		**Element Last Seen:**	2002-06-05
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-09-15

Quad Summary:	Lopez Mtn. (3512035)
County Summary:	San Luis Obispo

Lat/Long:	35.34489 / -120.58419	**Accuracy:**	specific area
UTM:	Zone-10 N3913970 E719539	**Elevation (ft):**	1237
PLSS:	T30S, R13E, Sec. 04 (M)	**Acres:**	15.8

Location:	UPPER TROUT CREEK, TRIBUTARY TO WATER CANYON CREEK, 2.5 MILES EAST OF CUESTA PASS, NE OF SAN LUIS OBISPO
Detailed Location:	0.5 MILE STRETCH OF CREEK WAS SURVEYED IN 2002.
Ecological:	HABITAT CONSISTS OF A LOW-GRADIENT, MEANDERING STREAM CHANNEL AND A SMALL TO MEDIUM COBBLE SUBSTRATE, WITH AREAS OF FINER DEPOSITION. STREAM SURROUNDED BY COAST LIVE OAK WOODLAND, VALLEY OAK SAVANNAH, AND GRAZED ANNUAL GRASSLAND.
General:	75+ ADULTS OBSERVED BREEDING AND LAYING EGG MASSES ON 18 MAY 2002; 41 ADULTS AND 1 METAMORPH OBSERVED ON 5 JUN 2002.
Owner/Manager:	PVT-SANTA MARGARITA CO

Occurrence No.	14	**Map Index:** 52476	**EO Index:**	52476		**Element Last Seen:**	2002-06-14
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-09-15

Quad Summary:	Lopez Mtn. (3512035)
County Summary:	San Luis Obispo

Lat/Long:	35.35676 / -120.59159	**Accuracy:**	specific area
UTM:	Zone-10 N3915270 E718834	**Elevation (ft):**	1292
PLSS:	T29S, R13E, Sec. 33 (M)	**Acres:**	14.6

Location:	UPPER END OF YERBA BUENA CREEK, IN SYCAMORE CANYON, 5.25 MILES NE OF SAN LUIS OBISPO
Detailed Location:	
Ecological:	HABITAT CONSISTS OF A STEEP-GRADIENT, MEANDERING STREAM WITH BOULDERS AND NUMEROUS SMALL SCOUR POOLS. DOMINANT PLANTS INCLUDE SALIX SPP, QUERCUS AGRIFOLIA, PINUS SABINIANA, AND PLATANUS RACEMOSA.
General:	4 ADULTS OBSERVED ON 14 JUN 2002.
Owner/Manager:	PVT-SANTA MARGARITA CO

Occurrence No.	59	**Map Index:**	76873	**EO Index:**	77815	**Element Last Seen:**	1939-06-19
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1939-06-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-10-07

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29634 / -120.62742	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3908489 E715738	**Elevation (ft):**	500
PLSS:	T30S, R13E, Sec. 19 (M)	**Acres:**	339.0

Location: SAN LUIS OBISPO CREEK, JUST NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED FROM TOWN EDGE TO 2 MI NE ALONG CREEK. MVZ RECORD LOCATION STATED AS "1 MI N SAN LUIS OBISPO." UMMZ RECORD LOCATION FOR SAME COLLECTING SESSION BY SAME COLLECTORS ON SAME DATE STATE "SAN LUIS OBISPO CREEK, CA 1 MI N SAN LUIS OBISPO."

Ecological:

General: 2 NEARLY METAMORPHED SPECIMENS (MVZ 31386, 31387), 57 MM TOTAL LENGTH, WERE COLLECTED ON 19 JUN 1939 WHILE MILLER, MILLER, & DAVIS COLLECTED FISH (DEPOSITED AT UMMZ). THESE 2 SPECIMENS WERE ORIGINALLY MIS-IDED AS CALIF TIGER SALAMANDER.

Owner/Manager: UNKNOWN

Occurrence No.	60	**Map Index:**	76880	**EO Index:**	77837	**Element Last Seen:**	1939-06-19
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1939-06-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-10-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31443 / -120.64995	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910446 E713641	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	340.0

Location: BRIZZIOLARI CREEK IN POLY CANYON, JUST NORTH & NORTHEAST OF CALIF POLYTECHNIC STATE UNIVERSITY CAMPUS, SAN LUIS OBISPO.

Detailed Location: MAPPED FROM ALONG CREEK FROM BM294 NEAR CAMPUS, NE TO VICINITY OF BM1024 (SERRANO). MVZ SPECIMEN RECORD LOCATION STATED AS "POLY CANYON, BRIZZIOLARI CREEK, CA. 2 MI N SAN LUIS OBISPO."

Ecological: RANA DRAYTONII AND THAMNOPHIS ELEGANS ALSO COLLECTED FROM THIS LOCATION.

General: 6 SPECIMENS WERE COLLECTED BY R. R. MILLER & R. G. MILLER ON 19 JUN 1939 AND DEPOSITED AT MVZ (31376-31381).

Owner/Manager: STATE LANDS COMMISSION

Occurrence No.	61	**Map Index:** 47409	**EO Index:**	77840		**Element Last Seen:**	1939-06-19
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1939-06-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-10-08

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28146 / -120.61486	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906865 E716921	**Elevation (ft):**	700
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	176.4

Location: RESERVOIR CANYON, EAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED ALONG CANYON FROM SAN LUIS OBISPO CREEK UPSTEAM (SOUTHEAST) TO IT'S TERMINOUS NEAR HAMPTON CANYON. EXACT LOCATION UNKNOWN. MVZ RECORD STATES "RESERVOIR CANYON, 1.6 MI SE SAN LUIS OBISPO."

Ecological:

General: 4 SPECIMENS WERE COLLECTED BY R. R. MILLER ON 19 JUN 1939 AND DEPOSITED AT MVZ (31382-31385).

Owner/Manager: UNKNOWN

Occurrence No.	62	**Map Index:** 76903	**EO Index:**	77849		**Element Last Seen:**	1948-09-03
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	1948-09-03
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-10-27

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19151 / -120.48750	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3897173 E728758	**Elevation (ft):**	400
PLSS:	T31S, R14E, Sec. 28 (M)	**Acres:**	306.0

Location: LOPEZ CANYON IN THE VICINITY OF ROUTZHAN PARK (HISTORIC), NOW UNDER LOPEZ LAKE, 7 MI NE OF ARROYO GRANDE.

Detailed Location: MAPPED TO LOCATION DESCRIPTIONS FROM CAS: "LOPEZ CANYON AT COUNTY PARK" AND "CANYON AT COUNTY PARK." LOPEZ DAM COMPLETED IN 1968. COLLECTOR'S ID WAS Q48-71 OR 4871.

Ecological: HUBBS & LIMBAUGH ALSO COLLECTED GILA ORCUTTII, ONCORHYNCHUS MYKISS, AND GASTEROSTEUS ACULEATUS AT THIS LOCATION ON THE SAME DATE AND DEPOSITED SPECIMENS AT CAS-ICHTHYOLOGY.

General: C. HUBBS & C. LIMBAUGH COLLECTED 5 AMPHIBIAN SPECIMENS ON 3 SEP 1948; 2 WERE DEPOSITED AT CAS (SU 10994, 10995), AND 3 SPECIMENS ENDED UP AT THE FMNH (84781-84783). THE LATER 3 SPECIMENS WERE MIS-IDENTIFIED AS AMBYSTOMA CALIFORNIENSE.

Owner/Manager: SLO COUNTY

Spea hammondii

Element Code: AAABF02020

western spadefoot

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S3
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened			
Habitat:	**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.	78	**Map Index:**	33279	**EO Index:**	1619	**Element Last Seen:**	1995-05-26
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-09-05

Quad Summary: Nipomo (3512014)

County Summary: San Luis Obispo

Lat/Long:	35.00627 / -120.48158	**Accuracy:**	80 meters
UTM:	Zone-10 N3876637 E729817	**Elevation (ft):**	160
PLSS:	T11N, R34W, Sec. 29 (S)	**Acres:**	0.0

Location: 1.25 MILES EAST OF THE INTERSECTION OF RIVERSIDE DRIVE AND NIPOMO OSO FLACO ROAD, NORTH EDGE OF SANTA MARIA VALLEY.

Detailed Location: LOCATED AT THE FOOT OF THE CLIFF (300 FEET SOUTH) ALONG RIVERSIDE DRIVE.

Ecological: HABITAT CONSISTS OF A FARM POND SURROUNDED BY AGRICULTURAL FIELDS. POOL CONTAINS TYPHA SP AND SCIRPUS SP; BANKS VEGETATED BY NON-NATIVE GRASSES.

General: 1 ADULT AND SEVERAL HUNDRED TADPOLES OBSERVED ON 26 MAY 1995.

Owner/Manager: UNKNOWN

Rana draytonii

Element Code: AAABH01022

California red-legged frog

Listing Status:	**Federal:**	Threatened	**CNDDB Element Ranks:**	**Global:**	G4T2T3
	State:	None		**State:**	S2S3
	Other:	CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable			
Habitat:	**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.	46	**Map Index:** 24412	**EO Index:**	29092		**Element Last Seen:**	1996-08-12
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1996-08-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-04-01

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33671 / -120.72710	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3912754 E706571	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	90.3

Location: DAIRY CREEK & TRIBUTARY, EL CHORRO REGIONAL PARK, NW OF SAN LUIS OBISPO.

Detailed Location: 2 FROGS OBSERVED (IN 1995) JUST NORTH OF HWY 1; THE REMAINDER OF THE OBSERVATIONS WERE MADE 0.7-1.0 MILE UPSTREAM.

Ecological: HABITAT CONSISTS OF A PERENNIAL STREAM (DAIRY CREEK), SURROUNDED BY RIPARIAN, DOMINATED BY COAST LIVE OAK AND SYCAMORE, AND AN UNDERSTORY OF WILLOWS.

General: ONE JUVENILE CAPTURED ON 10 MAR 93. 9 ADULTS WERE OBSERVED, 12 SEP 95. 40 NEWLY-TRANSFORMED JUVENILES OBSERVED ALONG A 500-FT SEGMENT OF CREEK, 19 SEP 95; SOME STILL ABOVE GROUND, 30 OCT 95. 8 ADULTS CAPTURED/RELEASED, APR 29-AUG 12, 1996.

Owner/Manager: SLO COUNTY

Occurrence No.	143	**Map Index:** 33293	**EO Index:**	1431		**Element Last Seen:**	1995-02-27
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1995-02-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-12-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10852 / -120.54869	**Accuracy:**	80 meters
UTM:	Zone-10 N3887827 E723413	**Elevation (ft):**	325
PLSS:	T32S, R13E, Sec. 26 (M)	**Acres:**	0.0

Location: UNNAMED DRAINAGE, 0.5 MILE EAST OF HWY 101, 2 MILES SE OF ARROYO GRANDE.

Detailed Location:

Ecological: CREEK IS SURROUNDED BY OAK WOODLAND & WILLOW RIPARIAN; WILLOW RIPARIAN IS BORDERED BY GRAZED, NON-NATIVE GRASSLAND. CREEK STILL HAD FLOWING WATER THROUGH THE END OF JULY. CHANNEL IS 3 FT WIDE & ~10-20 INCHES DEEP.

General: 3 JUVENILE FROGS OBSERVED ON 27 FEBRUARY 1995.

Owner/Manager: UNKNOWN

Occurrence No.	144	**Map Index:**	33294	**EO Index:**	1430	**Element Last Seen:**	1995-03-28
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-03-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-09-12

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10441 / -120.55005	**Accuracy:**	80 meters
UTM:	Zone-10 N3887368 E723301	**Elevation (ft):**	350
PLSS:	T32S, R13E, Sec. 35 (M)	**Acres:**	0.0

Location: OLD GRAVEL PIT, JUST EAST OF HWY 101 AND WEST OF PICACHO, 2 MILES SE OF ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF AN OLD GRAVEL PIT (3-1/2 FEET DEEP), WITH LITTLE AQUATIC VEGETATION; SURROUNDED BY OPEN, NON-NATIVE GRASSLAND.

General: 1 ADULT OBSERVED ON 28 MARCH 1995.

Owner/Manager: UNKNOWN

Occurrence No.	145	**Map Index:**	33295	**EO Index:**	1429	**Element Last Seen:**	1995-07-27
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-07-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-12-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09885 / -120.53565	**Accuracy:**	80 meters
UTM:	Zone-10 N3886784 E724628	**Elevation (ft):**	350
PLSS:	T32S, R13E, Sec. 36 (M)	**Acres:**	0.0

Location: UNNAMED DRAINAGE JUST SOUTH OF PICACHO, 0.6 MILE EAST OF HWY 101, SE OF ARROYO GRANDE.

Detailed Location: POOL IS APPROXIMATELY 100 FEET X 200 FEET.

Ecological: HABITAT CONSISTS OF A FARM POND WITH ABUNDANT VEGETATION (TYPHA SP AND JUNCUS SP). OAK WOODLAND AND WILLOW RIPARIAN ARE FOUND UPSTREAM AND DOWNSTREAM OF POOL.

General: 6 ADULTS AND 4 JUVENILES WERE OBSERVED ON 27 JULY 1995.

Owner/Manager: UNKNOWN

Occurrence No.	146	**Map Index:**	33269	**EO Index:**	1428	**Element Last Seen:**	1995-02-27
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-02-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-09-12

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.08940 / -120.53450	**Accuracy:**	80 meters
UTM:	Zone-10 N3885738 E724759	**Elevation (ft):**	250
PLSS:	T12N, R35W, Sec. 26 (S)	**Acres:**	0.0

Location: JUST EAST OF HWY 101, 1 MILE NW OF THE INTERSECTION OF HWY 101 AND LOS BERROS CANYON, SE OF ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF A DRAINAGE WITH SPARSE WILLOW RIPARIAN, AND DENSER WILLOWS UPSTREAM; OPEN, NON-NATIVE GRASSLAND WITH ROCK OUTCROPPINGS ADJACENT.

General: 1 JUVENILE OBSERVED ON 27 FEBRUARY 1995.

Owner/Manager: UNKNOWN

Occurrence No.	147	**Map Index:**	33270	**EO Index:**	1427	**Element Last Seen:**	1995-07-12
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-07-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-12-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.08135 / -120.51998	**Accuracy:**	80 meters
UTM:	Zone-10 N3884877 E726105	**Elevation (ft):**	250
PLSS:	T12N, R35W, Sec. 36 (S)	**Acres:**	0.0

Location: LOS BERROS CANYON CREEK, 0.3 MILE NE OF HWY 101, 4 MILES SE OF ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF A DENSE RIPARIAN CORRIDOR OF SYCAMORES, WILLOWS, AND OAKS, WITH A STEADY WATER FLOW. POOLS PRESENT (10-25 INCHES DEEP). CHANNEL IS ABOUT 15 FT WIDE.

General: 1 JUVENILE OBSERVED ON 12 JULY 1995.

Owner/Manager: UNKNOWN

Occurrence No.	148	**Map Index:**	33271	**EO Index:**	19285	**Element Last Seen:**	1995-07-12
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-07-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-09-13

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14225 / -120.53164	**Accuracy:**	specific area
UTM:	Zone-10 N3891607 E724875	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 13 (M)	**Acres:**	4.0

Location: JUST WEST OF THE INTERSECTION OF HUASNA ROAD AND BRANCH MILL ROAD, ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF TWO AGRICULTURAL IMPOUNDMENTS (APPROX 4 FEET DEEP), WHICH ARE SPARSELY VEGETATED; SURROUNDED BY AGRICULTURAL FIELDS AND GRAZED GRASSLAND.

General: 6 JUVENILE FROGS OBSERVED ON 12 JULY 1995.

Owner/Manager: UNKNOWN

Occurrence No.	149	**Map Index:**	33274	**EO Index:**	1879	**Element Last Seen:**	2008-05-13
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-05-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-27

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36235 / -120.69629	**Accuracy:**	80 meters
UTM:	Zone-10 N3915663 E709304	**Elevation (ft):**	1425
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: WHISKEY SPRING AND VICINITY, CAMP SAN LUIS OBISPO.

Detailed Location: PAGE'S SITE #CLSO1 IN 1994; KLEINFELDER SITE 2 IN 2004; CAMP SAN LUIS OBISPO CRLF MONITORING SITE 2, WHISKEY SPRING.

Ecological: HABITAT CONSISTS OF A SPRING AND INTERMITTENT DRAINAGE WITH RIPARIAN. CSLO COMMENTS: MODERATE DEPTH (1-3FT); VEGETATED.

General: 1993: LARVAE/3 INDIV. 1994: LARVAE/38 INDIV OBS. 1996: 23. 1997: >100. 1998: >300 & CAS 210395, 210483. 1999: >200. 2000: > 500. 2001: >100. 2002: 81. 2003: 15. 2004: 31. 2006: > 50. 2007: >150. 2008: 95.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	150	**Map Index:**	33275	**EO Index:**	1878	**Element Last Seen:**	2006-06-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-06-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-27

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36425 / -120.69034	**Accuracy:**	80 meters
UTM:	Zone-10 N3915887 E709840	**Elevation (ft):**	1650
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: DUGHI SPRING, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: 1993-1994: PAGE'S SITE #CLSO2. CSLO CRLF MONITORING SITE 3, DUGHI SPRING.

Ecological: HABITAT CONSISTS OF A SPRING WITH A SHALLOW POOL.

General: 8 MAY 1993, 6 LARVAE & 2 ADULTS OBS. 6 JUNE 1993, 1 ADULT OBS. 21 MARCH 1994, MANY LARVAE & 2 ADULTS OBS. 28 MAY 1994, 1 ADULT OBS. MAY & JUN 1997, 6 INDIVIDUALS OBS. 24 MAY 1999, 2 INDIVIDUALS OBS. MAY & JUN 2006, 7 INDIVIDUALS OBS.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	151	**Map Index:**	33298	**EO Index:**	1622	**Element Last Seen:**	2008-05-13
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-05-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33882 / -120.68496	**Accuracy:**	specific area
UTM:	Zone-10 N3913077 E710395	**Elevation (ft):**	675
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	54.0

Location: SEDIMENT PONDS ON THE NORTH AND WEST FORKS OF CHORRO CREEK AND TRIBUTARIES TO CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: CSLO CRLF SITES 1 (AKA POACHERS POND, ALPHA RANGE POND, CLSO#12), 6, 9, 10, 14 (CHORRO RES), 23, 26 (EUC POND), 32, & 33. 2005 = "IN ACTIVE DRAINAGE ADJACENT TO THE SOUTH EAST CORNER OF THE BOG THISTLE ENCLOSURE" (NE OF CHORRO RES).

Ecological: HABITAT CONSISTS OF SEDIMENT PONDS, A FRESHWATER POND AND ASSOCIATED RIPARIAN ALONG CHORRO CREEK, "WEST FORK" AND "NORTH FORK" (MAIN STEM).

General: JUNE 1993: 3 INDIVIDUALS OBS. 1996: ~20. 1997: ~35. 1998: >50 & 2 COLLECTED; CAS 210394, 210486. 1999: ~100. 2000: ~96. 2001: ~29. 2002: ~80. 2003: >100. 2004: ~40. 2005: 1. 2006: ~50. 2007: ~20. 2008: ~14.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	152	**Map Index:**	33299	**EO Index:**	1624	**Element Last Seen:**	1993-05-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-05-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-10-03

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34983 / -120.69126	**Accuracy:**	80 meters
UTM:	Zone-10 N3914285 E709794	**Elevation (ft):**	815
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: TRIBUTARY TO CHORRO RESERVOIR, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: PAGE'S SITE #CLSO7.

Ecological:

General: 1 ADULT FROG CAPTURED/RELEASED ON 9 MAY 1993.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	155	**Map Index:**	32878	**EO Index:**	13766	**Element Last Seen:**	1998-10-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-10-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-08-17

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30245 / -120.64221	**Accuracy:**	specific area
UTM:	Zone-10 N3909134 E714377	**Elevation (ft):**	480
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	33.9

Location: MIOSSI CREEK, 0.5 - 1.0 KM NORTH OF HIGHWAY 101; APPROX. 1.4 KM EAST OF CALIFORNIA POLYTECHNIC STATE UNIVERSITY.

Detailed Location: TRIBUTARY TO SAN LUIS OBISPO CREEK.

Ecological: HABITAT CONSISTS OF A PERENNIAL, SPRING-FED CREEK; DEEP (<1.5M) POOLS, NUMEROUS BASKING SITES. STREAM SUBSTRATE OF SAND, GRAVEL, COBBLE, BEDROCK; GRADIENT VARIABLE: RIFFLES IN SPOTS. SURROUNDED BY ROLLING OAK SAVANNAH, RIPARIAN HARDWOODS.

General: 29 ADULTS, 14 JUVENILES, AND LARVAE OBSERVED IN MAY 1995; FOUND ESPECIALLY WHERE BANK GRADIENT IS TOO STEEP TO ALLLOW CATTLE ACCESS. 4 ADULTS AND 4 JUVENILES (SOME WITH TAILS) OBSERVED ON 1 OCT 1998.

Owner/Manager: PVT-MIOSSI

Occurrence No.	156	**Map Index:**	32879	**EO Index:**	495	**Element Last Seen:**	1995-05-31
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-31
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-02-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29463 / -120.63456	**Accuracy:**	80 meters
UTM:	Zone-10 N3908283 E715094	**Elevation (ft):**	360
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: TRIBUTARY TO SAN LUIS OBISPO CREEK FLOWING UNDER HIGHWAY 101; APPROX. 0.1 KM SE OF HIGHWAY 101 X FOX HOLLOW ROAD.

Detailed Location: BETWEEN FOX HOLLOW ROAD AND RESERVOIR CANYON ROAD.

Ecological: SMALL (2-3M WIDE, <0.5M DEEP) DRAINAGE WITH DENSE WILLOW COVER ALONG CORRIDOR; BASKING SITE AND LOW COVER ABUNDANCE HIGH: SEDGES, RUSHES, DUCKWEED: SUBSTRATE MUD/SAND, UNDERCUT BANKS; FLOWS UNDER HIGHWAY 101.

General: 1 JUVENILE FLUSHED FROM SEDGE BASKING SITE TO UNDERCUT BANK (60MM SVL; 34.5 GRAMS).

Owner/Manager: UNKNOWN

Occurrence No.	157	**Map Index:**	32881	**EO Index:**	494	**Element Last Seen:**	1995-05-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-05-13

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28666 / -120.61225	**Accuracy:**	80 meters
UTM:	Zone-10 N3907448 E717144	**Elevation (ft):**	600
PLSS:	T30S, R13E, Sec. 29 (M)	**Acres:**	0.0

Location: TRIBUTARY TO CREEK IN RESERVOIR CANYON; APPROXIMATELY 4.0 KM EAST OF SAN LUIS OBISPO.

Detailed Location:

Ecological: SMALL SEASONAL DRAINAGES IN OAK SAVANNAH/GRASSLAND. RIPARIAN HARDWOODS LINE CORRIDOR; COVER AND BASKING SITE ABUNDANCE HIGH; UNDERCUT BANKS; SUBSTRATE GRAVEL - COBBLE, SAND, WOODY DEBRIS.

General: 1 ADULT FOUND UNDER WOODY DEBRIS ON 1 MAY 1995. FROG LOCATED NEAR A SMALL, DEEP POOL THAT IS PROTECTED FROM CATTLE TRAMPLING BY STEEP BANKS.

Owner/Manager: PVT

Occurrence No.	245	**Map Index:**	38521	**EO Index:**	33528	**Element Last Seen:**	1996-11-19
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-11-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-11-25

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29469 / -120.63003	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3908299 E715506	**Elevation (ft):**	400
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: RESERVOIR CANYON, VICINITY OF SAN LUIS OBISPO CREEK, EAST OF SAN LUIS OBISPO

Detailed Location:

Ecological:

General: SINGLE ADULT FOUND DOR ON 19 AUG 1996; CARCASS PROVIDED TO USFWS.

Owner/Manager: UNKNOWN

Occurrence No.	258	**Map Index:**	39777	**EO Index:**	34779	**Element Last Seen:**	1998-09-06
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-09-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-22

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.17617 / -120.68517	**Accuracy:**	80 meters
UTM:	Zone-10 N3895034 E710797	**Elevation (ft):**	175
PLSS:	T32S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: GRAGG CANYON, 0.7 MILE EAST OF HWY 101, EAST OF AVILA BEACH.

Detailed Location: ADULT FROGS WERE OBSERVED IN A SPRING LOCATED ACROSS FROM THE PROPOSED VISITOR CENTER

Ecological: HABITAT CONSISTS OF A SPRING WITHIN A GRASSLAND AREA

General: 2 ADULT FROGS OBSERVED DURING A NIGHT SURVEY ON 5 SEP 1998; 3 ADULT FROGS OBSERVED DURING A NIGHT SURVEY ON 6 SEP 1998.

Owner/Manager: PVT

Occurrence No.	291	**Map Index:**	40926	**EO Index:**	40926	**Element Last Seen:**	2004-09-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2004-09-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-08-11

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35402 / -120.69134	**Accuracy:**	specific area
UTM:	Zone-10 N3914750 E709775	**Elevation (ft):**	1200
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	6.0

Location: "MUCKY POND" NEAR A MINE THAT IS 0.75 MI S OF, & "CLAMSHRIMP POND" 0.6 MI S OF DUGHI SPRING, CAMP SAN LUIS OBISPO.

Detailed Location: CRLF MONITORING SITE 4, "MUCKY POND" (SOUTH FEATURE) AND SITE 5, "CLAMSHRIMP POND" (NORTH FEATURE).

Ecological: BOTH SPRINGS HAVE POOLS THAT ARE 1-3FT DEEP. SITE 4 IS A SEASONAL WETLAND WITH NO VEGETATION AND SITE 5 IS A POOL SURROUNDED BY VEGETATION.

General: 3 INDIV (NOTED "ALL SIZES FOUND") OBS IN MAY 1996. 36 INDIV OBS IN MAY & JUN 1997. 10 INDIV OBS IN 1998. 1 LARVA COLLECTED (CAS 210485) ON 2 JUN 1998. 20 JUVENILES OBS IN JUL 2000. 7 OBS IN MAY 2001. > 1 OBSERVED ON 1 SEP 2004.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Occurrence No.	292	**Map Index:**	40927	**EO Index:**	40927	**Element Last Seen:**	2001-05-15
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-05-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33206 / -120.70724	**Accuracy:**	80 meters
UTM:	Zone-10 N3912280 E708387	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 08 (M)	**Acres:**	0.0

Location: ALONG SAN BENITO RD, 0.4 ROAD MILES NORTH OF KERN AVE, AND ABOUT 2.1 MI NNW OF BISHOP PEAK, CAMP SAN LUIS OBISPO.

Detailed Location: CRLF MONITORING SITE 11, ON WEST SIDE OF ROAD.

Ecological: HABITAT CONSISTS OF RIPARIAN ON AN UNNAMED TRIBUTARY WITH A MODERATE (1-3FT) DEPTH POOL. NO VEGETATION.

General: 4 INDIVIDUALS OBSERVED IN 1998. 3 INDIVIDUALS OBSERVED IN MAY 2001.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Occurrence No.	299	**Map Index:** 41130	**EO Index:**	41130		**Element Last Seen:**	1998-05-30
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-05-30
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-06-01

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03209 / -120.61293	**Accuracy:**	80 meters
UTM:	Zone-10 N3879206 E717760	**Elevation (ft):**	20
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: SW END OF LITTLE OSO FLACO LAKE, PISMO DUNES STATE VEHICULAR RECREATION AREA.

Detailed Location:

Ecological: HABITAT CONSISTS OF DUNE SWALES, DOMINATED BY JUNCUS, TULES, AND POISON OAK. SUBSTRATE IS SAND ON A LOW SLOPE. ADJACENT UPLANDS ARE COMPRISED OF DUNE SCRUB.

General: 1 ADULT OBSERVED ON 30 MAY 1998.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	303	**Map Index:** 41232	**EO Index:**	41232		**Element Last Seen:**	1998-12-06
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-12-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-06-15

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.18603 / -120.73277	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3896027 E706437	**Elevation (ft):**	30
PLSS:	T31S, R12E, Sec. 31 (M)	**Acres:**	0.0

Location: AVILA BEACH GOLF COURSE, 5 MILES SSW OF SAN LUIS OBISPO.

Detailed Location:

Ecological: HABITAT CONSISTS OF A SMALL, FLOWING STREAM WITH INTERMITTENT RIPARIAN, DOMINATED BY SYCAMORES AND WILLOWS, ALONG THE GOLF COURSE FAIRWAYS. SURROUNDING HILLSIDES ARE DOMINATED BY OAK WOODLAND. EMERGENT VEGETATION FOUND ALONG STREAM CHANNEL.

General: 1 ADULT RLF OBSERVED ON 6 DEC 1998.

Owner/Manager: AVILA BEACH GOLF RESORT

Occurrence No.	314	**Map Index:** 41481	**EO Index:**	41481		**Element Last Seen:**	1998-01-26
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-01-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-02-27

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.18477 / -120.50003	**Accuracy:**	80 meters
UTM:	Zone-10 N3896396 E727636	**Elevation (ft):**	380
PLSS:	T31S, R14E, Sec. 32 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CREEK, 0.7 MILE WSW OF LOPEZ DAM, NE OF ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF A POOL JUST DOWNSTREAM OF A BRIDGE CROSSING ARROYO CREEK. FURTHER DOWNSTREAM, HERBACEOUS PLANTS AND WILLOWS FORM <50% COVER ON THE GRAVEL BARS.

General: 1 INDIVIDUAL OBSERVED TWICE, BETWEEN 1900-2030 ON 26 JAN 1998.

Owner/Manager: UNKNOWN

Occurrence No.	319	**Map Index:** 41844	**EO Index:**	41844		**Element Last Seen:**	1999-09-12
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1999-09-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-11-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.12891 / -120.55562	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3890073 E722726	**Elevation (ft):**	140
PLSS:	T32S, R13E, Sec. 23 (M)	**Acres:**	29.7

Location: ARROYO GRANDE CREEK, 1 MILE EAST OF THE INTERSECTION OF CORBIT CANYON ROAD AND UPPER ARROYO GRANDE ROAD, ARROYO GRANDE

Detailed Location:

Ecological: HABITAT CONSISTS OF RIPARIAN, <45% OF STREAM BANK VEGETATED BY WILLOW, COTTONWOOD, POISON OAK, BLACKBERRY, NETTLE, AND SEDGES. STREAM INHABITED BY STEELHEAD (SOUTH/CENTRAL ESU).

General: 1 ADULT OBSERVED ON 12 SEP 1999; MANY MORE EXPECTED TO BE IN THE AREA.

Owner/Manager: PVT

Occurrence No.	418	**Map Index:** 44705	**EO Index:**	44705		**Element Last Seen:**	2000-10-20
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-10-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2001-01-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13430 / -120.57015	**Accuracy:**	80 meters
UTM:	Zone-10 N3890639 E721387	**Elevation (ft):**	140
PLSS:	T32S, R13E, Sec. 22 (M)	**Acres:**	0.0

Location: CORBIT CANYON CREEK (AKA TALLY HO CREEK), AT THE JUNCTION OF CORBIT CANYON AND POORMAN CANYON, ARROYO GRANDE

Detailed Location: ~3-FT DEEP POOL UNDER HIGHWAY 227 BRIDGE, 40 FEET EAST OF TALLY HO ROAD.

Ecological: HABITAT CONSISTS OF A FRESHWATER MARSH, DOMINATED BY SEDGES; MANY ESCAPED ORNAMENTALS PRESENT.

General: 1 INDIVIDUAL OBSERVED ON 20 OCT 2000.

Owner/Manager: UNKNOWN

Occurrence No.	452	**Map Index:** 45734	**EO Index:**	45734		**Element Last Seen:**	2004-09-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-09-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-07-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32298 / -120.73178	**Accuracy:**	specific area
UTM:	Zone-10 N3911222 E706179	**Elevation (ft):**	250
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	43.0

Location: LOWER CHORRO CREEK FROM HOLLISTER AVE BRIDGE UPSTREAM (ESE) ABOUT 0.5 MILES, CAMP SAN LUIS OBISPO.

Detailed Location: OBSERVATIONS MADE AT HOLLISTER AVE BRIDGE (SITE 30), AMADOR AVE BRIDGE (SITE 105), VENTURA AVE BRIDGE (SITE 106), AND BRIDGE SITE 107 (ABOUT 140M UPSTREAM FROM SITE 106).

Ecological: HABITAT CONSISTS OF A CREEK WITH ~40% EMERGENT VEGETATION.

General: 1 ADULT FEMALE COLLECTED (CAS 210392) ON 1 JUN 1998 AT SITE 30. AT LEAST ONE OBSERVED ON 30 AUG (SITE 107), 1 SEP (SITE 105), AND 15 SEP (SITES 106 & 107) ALL IN 2004.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	453	**Map Index:** 45735	**EO Index:**	45735		**Element Last Seen:**	2008-05-13
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2008-05-13
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-07-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32060 / -120.70297	**Accuracy:**	specific area
UTM:	Zone-10 N3911018 E708805	**Elevation (ft):**	380
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	17.0

Location: CHORRO CREEK BETWEEN SALINAS STREET AND SANTA CRUZ RD BRIDGE (NEAR RIVERSIDE STREET), CAMP SAN LUIS OBISPO

Detailed Location: INCLUDES CRLF MONITORING SITES 18 (SANTA CRUZ AVE BRIDGE NEAR RIVERSIDE ST; AT BM 393) & 19 (SANTA CRUZ RD AT SALINAS ST). CAS SITE DESCRIBED AS "CHORRO CREEK BETWEEN STATE PRISON [LIKELY "MENS COLONY"] AND HWY 1; 1.4 MI N OF CHUMASH PEAK."

Ecological: RIPARIAN. SITE 18 IS A DEEP (>3 FT) POOL WITH NO VEGETATION. SITE 19 IS A VEGETATED POOL WITH MODERATE DEPTH (1-3').

General: 15 MAY 1997: 7 INDIVIDUALS OBSERVED. JUN 1998: 1 MALE COLLECTED (CAS# 210393), & 7 INDIVIDUALS OBSERVED. MAY 2001: 2 INDIVIDUALS. MAY-JUN 2006: 5 INDIVIDUALS (1 JUVENILE). 13 MAY 2008: 75 INDIVIDUALS.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	459	**Map Index:** 45816	**EO Index:**	45816		**Element Last Seen:**	2002-08-02
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-08-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2002-09-05

Quad Summary:	Arroyo Grande NE (3512025)
County Summary:	San Luis Obispo

Lat/Long:	35.13015 / -120.57290	**Accuracy:**	specific area
UTM:	Zone-10 N3890172 E721148	**Elevation (ft):**	150
PLSS:	T32S, R13E, Sec. 22 (M)	**Acres:**	16.9

Location:	TALLY HO CREEK, NEAR THE ENDS OF MAY STREET AND PASEO STREET, ARROYO GRANDE
Detailed Location:	BULLFROGS PRESENT IN AN UPSTREAM POOL/DEVELOPMENT.
Ecological:	HABITAT CONSISTS OF 3 DEEP POOLS IN TALLY HO CREEK, SURROUNDED BY A WILLOW RIPARIAN CORRIDOR, WITH WILLOW BRANCHES HANGING INTO THE POOLS AND KIKUYU GRASS ON THE BANKS.
General:	ADULT FROGS OBSERVED IN 1999, 2000, AND 2001. 1 ADULT AND 10 JUVENILE FORGS OBSERVED ON 2 AUG 2002.
Owner/Manager:	PVT

Occurrence No.	495	**Map Index:** 47269	**EO Index:**	47269		**Element Last Seen:**	2001-04-19
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-04-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2002-02-20

Quad Summary:	Tar Spring Ridge (3512024)
County Summary:	San Luis Obispo

Lat/Long:	35.21218 / -120.46174	**Accuracy:**	80 meters
UTM:	Zone-10 N3899525 E731046	**Elevation (ft):**	530
PLSS:	T31S, R14E, Sec. 22 (M)	**Acres:**	0.0

Location:	LOS PADRES NATIONAL FOREST; POND (NEAR A TRIBUTARY) ADJACENT TO NORTHWEST SIDE OF LOPEZ LAKE.
Detailed Location:	
Ecological:	HABITAT CONSISTS OF A POND 30 FT X 50 FT WITH LITTLE OVERHANGING AND EMERGENT VEGETATION. POOL IS MOST LIKELY CONNECTED TO LAKE WHEN FULL.
General:	19 APR 2001: 1 ADULT OBSERVED.
Owner/Manager:	SLO COUNTY

Occurrence No.	496	**Map Index:**	47286	**EO Index:**	47286	**Element Last Seen:**	2009-09-11
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2009-09-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-09-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09666 / -120.61574	**Accuracy:**	specific area
UTM:	Zone-10 N3886363 E717332	**Elevation (ft):**	20
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	78.0

Location: ARROYO GRANDE CREEK, FROM 0.3 MILE UPSTREAM FROM THE MOUTH TO EAST OF THE RR TRACKS, OCEANO.

Detailed Location: NORTHERN SLOUGH NEAR MOUTH AND SOUTHERN TRIBUTARY CONTAIN AN ABUNDANCE OF BULLFROGS. POOLS PROVIDE GOOD ADULT/BREEDING HABITAT.

Ecological: HABITAT: POOLS ALONG FLOOD CONTROL CHANNEL PORTION OF LOWER ARROYO GRANDE CREEK; CONTAINS 10-20 FOOT TALL WILLOWS & CONSIDERABLE EMERGENT WATERCRESS. SURROUNDED BY ADJACENT AIRPORT AND CONDOMINIUMS NEAR MOUTH; OTHER DEVELOPMENT UPSTREAM.

General: SEP 1996: 1 JUV. OCT 2002: 2 JUVS & 1 AD . DEC 2004: 2 ADS. SEP 2005: 26 JUVS. AUG 2006: 1 AD. 2007: 12 JUL-29 AUG; 3 ADS/3 UNK OBS. 5 OCT; 1 AD & 1 JUV. 2008: JUN; 1 AD, 35 JUVS & 1 LARVA, OCT; 1 AD. SEPT 2009; 2 LARVAE, 4 JUVS & 4 ADS.

Owner/Manager: SLO COUNTY

Occurrence No.	527	**Map Index:**	48225	**EO Index:**	48225	**Element Last Seen:**	2002-07-01
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-07-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2002-07-11

Quad Summary: Nipomo (3512014)

County Summary: San Luis Obispo

Lat/Long:	35.00098 / -120.41428	**Accuracy:**	80 meters
UTM:	Zone-10 N3876207 E735975	**Elevation (ft):**	280
PLSS:	T11N, R34W, Sec. 25 (S)	**Acres:**	0.0

Location: 4.5 MILES SE OF NIPOMO; 0.6 MILE NORTH ALONG WINEMAN RD (FROM HWY 166) AT CROSSING OF UNNAMED TRIBUTARY TO NIPOMO CREEK.

Detailed Location: INDIVIDUAL OBSERVED ON TOP OF DIRT PILE AND RIPRAP.

Ecological: HABITAT CONSISTS OF DISTURBED/RUDERAL AREA ADJACENT TO RIPARIAN WOODLAND DOMINATED BY SALIX LASIOLEPIS WITH SOME TYPHA LATIFOLIA PROVIDING COVER NEARBY. NO STANDING WATER PRESENT. DIRT/RIPRAP NEAR ROADWAY AND CULVERT.

General: 1 ADULT (SVL 4-5 INCHES) OBSERVED ON 1 JUL 2002.

Owner/Manager: SLO COUNTY

Occurrence No.	567	**Map Index:** 48755	**EO Index:**	48755		**Element Last Seen:**	2002-09-03
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-09-03
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2002-09-10

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16805 / -120.52185	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3894491 E725695	**Elevation (ft):**	525
PLSS:	T32S, R14E, Sec. 06 (M)	**Acres:**	0.0

Location: EAST OF THE NORTH END OF ARROYO GRANDE VALLEY. 0.5 MILE SE OF ORCUTT RD LOPEZ DR INTERSECTION.

Detailed Location:

Ecological: HABITAT CONSISTS OF A RESERVOIR, SURROUNDED BY DISTURBED GRASSLANDS, DOMINATED BY NON-NATIVE GRASSES/ANNUAL HERBS. DOMINANTS ALONG THE BANK INCLUDE HEMIZONIA SPP, HIRSCHFELDIA INCANA, ARTEMISIA CALIFORNICA; SCIRPUS SPP DOMINATES POND EDGE.

General: 1 ADULT AND 20 JUVENILES OBSERVED ON 3 SEP 2002.

Owner/Manager: PVT

Occurrence No.	572	**Map Index:** 48885	**EO Index:**	48885		**Element Last Seen:**	2008-10-10
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2008-10-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-04-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02321 / -120.58952	**Accuracy:**	specific area
UTM:	Zone-10 N3878273 E719919	**Elevation (ft):**	45
PLSS:	T11N, R35W, Sec. 17 (S)	**Acres:**	222.0

Location: OSO FLACO CREEK, 3.5 MILES NORTH OF GUADALUPE.

Detailed Location: 2008 LOCATION IS "DRAINAGE DITCH, ON OSO FLACO RD ~1.1 MI NW OF THE INTERSECTION OF OSO FLACO RD & HWY 1".

Ecological: HABITAT CONSISTS OF WILLOW RIPARIAN ALONG CHANNEL AND PONDS LINED WITH CATTAILS AND BULRUSH; MOST OF OPEN WATER COVERED WITH DUCKWEED.

General: 28 ADULTS & 15 JUVENILES OBSERVED BETWEEN 30 MAY-4 JUN 2002. 12 ADULTS AND SUBADULTS OBSERVED & 5 SPLASHES HEARD DURING A NIGHT SURVEY CONDUCTED 500-700' DOWNCHANNEL OF HIGHWAY 1, ON 21 OCT 2003. 3 JUVENILES WERE OBSERVED ON 10 OCT 2008.

Owner/Manager: PVT-TEIXEIRA FARMS

Occurrence No.	578	**Map Index:** 48927	**EO Index:**	48927		**Element Last Seen:**	2002-08-27
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-08-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Decreasing		**Record Last Updated:**	2002-10-03

Quad Summary:	Tar Spring Ridge (3512024)
County Summary:	San Luis Obispo

Lat/Long:	35.18616 / -120.48973	**Accuracy:**	80 meters
UTM:	Zone-10 N3896574 E728571	**Elevation (ft):**	390
PLSS:	T31S, R14E, Sec. 32 (M)	**Acres:**	0.0

Location:	ARROYO GRANDE CREEK, AT THE BASE OF LOPEZ DAM, NE OF ARROYO GRANDE
Detailed Location:	FROGS WERE RELOCATED JUST UPSTREAM OF RODRIGUEZ BRIDGE.
Ecological:	HABITAT CONSISTS OF A SMALL, SPARSELY-VEGETATED POND.
General:	8 ADULTS AND 1 JUVENILE WERE RELOCATED OUT OF THE WORK AREA (DAM RETROFIT) BETWEEN 19 DEC 2001 AND 27 AUG 2002.
Owner/Manager:	SLO COUNTY

Occurrence No.	626	**Map Index:** 51343	**EO Index:**	51343		**Element Last Seen:**	2002-05-18
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-05-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-21

Quad Summary:	Lopez Mtn. (3512035)
County Summary:	San Luis Obispo

Lat/Long:	35.34555 / -120.55999	**Accuracy:**	80 meters
UTM:	Zone-10 N3914096 E721737	**Elevation (ft):**	1200
PLSS:	T30S, R13E, Sec. 03 (M)	**Acres:**	0.0

Location:	TACO CREEK, TRIBUTARY TO RINCONADA CREEK, TRIBUTARY TO THE SALINAS RIVER, NE OF SAN LUIS OBISPO
Detailed Location:	TACO CREEK HAS ONE ROAD CROSSING IN THE ACTIVE STREAM CHANNEL.
Ecological:	HABITAT CONSISTS OF A SEASONAL TRIBUTARY TO A PERENNIAL STREAM, ADJACENT TO AN AG POND CONTAINING BULLFROGS, BLACK BULLHEADS, AND SW POND TURTLES. POOL IS SHADED BY A LARGE VALLEY OAK; ROOT TANGLES ARE EXPOSED FROM AN UNDERCUT BANK.
General:	1 ADULT OBSERVED ON 18 MAY 2002.
Owner/Manager:	PVT-SANTA MARGARITA RANCH

Occurrence No.	627	**Map Index:** 51344	**EO Index:**	51344		**Element Last Seen:**	2002-09-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-09-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-21

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.36055 / -120.56749	**Accuracy:**	80 meters
UTM:	Zone-10 N3915744 E721014	**Elevation (ft):**	1150
PLSS:	T29S, R13E, Sec. 34 (M)	**Acres:**	0.0

Location: TROUT CREEK, TRIBUTARY TO THE SALINAS RIVER, 1 MILE ESE OF MILLER FLAT, NE OF SAN LUIS OBISPO

Detailed Location: TROUT CREEK HAS SEVERAL CROSSINGS IN THE ACTIVE STREAM CHANNEL.

Ecological: HABITAT CONSISTS OF AN INTERMITTENT STREAM; A SERIES OF BEAVER DAMS SLOW WATER FLOWS AND CREATE MODERATE-SIZED POOLS WITH SOME EMERGENT VEGETATION AND OVERHANGING WILLOWS. VINEYARDS ADJACENT TO STREAM, WITH A 100' SETBACK.

General: 4 JUVENILES OBSERVED ON 27 SEP 2002

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	628	**Map Index:** 51345	**EO Index:**	51345		**Element Last Seen:**	2002-05-18
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-05-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-21

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.34275 / -120.58627	**Accuracy:**	80 meters
UTM:	Zone-10 N3913727 E719355	**Elevation (ft):**	1240
PLSS:	T30S, R13E, Sec. 04 (M)	**Acres:**	0.0

Location: TROUT CREEK, TRIBUTARY TO WATER CANYON CREEK, 2.5 MILES EAST OF CUESTA PASS, NE OF SAN LUIS OBISPO

Detailed Location: TROUT CREEK HAS SEVERAL CROSSINGS IN THE ACTIVE STREAM CHANNEL.

Ecological: HABITAT CONSISTS OF AN INTERMITTENT STREAM CONTAINING A SMALL SCOUR POOL AT AN OXBOW UNDER A WESTERN SYCAMORE. STREAM IS VEGETATED BY RED WILLOW THICKETS AND COAST LIVE OAK WOODLAND IS FOUND IN THE POOL VICINITY. SAND AND COBBLE SUBSTRATE.

General: 5 ADULTS OBSERVED SUNNING ON THE BANK OF A SMALL SCOUR POOL ON 18 MAY 2002.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	629	**Map Index:** 51346	**EO Index:**	51346		**Element Last Seen:**	2002-06-12
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-21

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10000 / -120.55471	**Accuracy:**	80 meters
UTM:	Zone-10 N3886868 E722888	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 35 (M)	**Acres:**	0.0

Location: MIDDLE TRIBUTARY TO LOS BERROS CREEK, ON THE WEST SIDE OF HIGHWAY 101, 0.8 MILE WEST OF PICACHO HILL

Detailed Location: THE ABUNDANCE OF SAME-AGE SUB-ADULT CRLF'S AND OTHER CNDDB RECORDS IN THE VICINITY INDICATES A HEALTHY BREEDING POPULATION.

Ecological: HABITAT CONSISTS OF A SMALL POOL AT THE BASE OF AN ARTESIAN WELL, WITHIN THE MIDDLE OF 3 DRAINAGES THAT FLOW INTO LOS BERROS CREEK; SURROUNDED BY GRAZED NON-NATIVE GRASSLAND.

General: 1 SUB-ADULT FROG OBSERVED ON 12 JUN 2002.

Owner/Manager: PVT

Occurrence No.	630	**Map Index:** 51349	**EO Index:**	51349		**Element Last Seen:**	2002-06-12
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-21

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09917 / -120.55222	**Accuracy:**	80 meters
UTM:	Zone-10 N3886782 E723117	**Elevation (ft):**	220
PLSS:	T32S, R13E, Sec. 35 (M)	**Acres:**	0.0

Location: SOUTHERN TRIBUTARY TO LOS BERROS CREEK, ON THE WEST SIDE OF HIGHWAY 101, 0.7 MILE WSW OF PICACHO HILL

Detailed Location: THE ABUNDANCE OF SAME-AGE SUB-ADULT CRLF'S AND OTHER CNDDB RECORDS IN THE VICINITY INDICATES A HEALTHY BREEDING POPULATION.

Ecological: PERENNIAL DRAINAGE WITH STEEPLY INCISED BANKS & SCOUR POOLS WITH SOME ARROYO WILLOWS, THE SOUTHERN OF 3 DRAINAGES THAT FLOW INTO LOS BERROS CREEK; SURROUNDED BY GRAZED NON-NATIVE GRASSLAND & INTERMITTENTLY COVERED WITH COAST LIVE OAK CANOPY

General: 15+ ADULT FROGS OBSERVED ON 12 JUN 2002.

Owner/Manager: PVT

Occurrence No.	639	**Map Index:** 51371	**EO Index:**	51371		**Element Last Seen:**	1991-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1991-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-05-22

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29010 / -120.62759	**Accuracy:**	specific area
UTM:	Zone-10 N3907796 E715740	**Elevation (ft):**	400
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	1.2

Location: RESERVOIR IN RESERVOIR CANYON, SAN LUIS OBISPO.

Detailed Location:

Ecological: HABITAT CONSISTS OF AN OLD, DETERIORATED RESERVOIR THAT WAS ONCE A SOURCE OF WATER FOR SAN LUIS OBISPO.

General: 1 INDIVIDUAL CAPTURED IN 1991.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	648	**Map Index:** 51512	**EO Index:**	51512		**Element Last Seen:**	2003-05-10
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-06-11

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33016 / -120.72666	**Accuracy:**	80 meters
UTM:	Zone-10 N3912028 E706627	**Elevation (ft):**	320
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	0.0

Location: UNNAMED DRAINAGE EAST OF AND TRIBUTARY TO DAIRY CREEK, 0.3 MILE UPSTREAM FROM THE CONFLUENCE, EL CHORRO REGIONAL PARK

Detailed Location:

Ecological: HABITAT CONSISTS OF SEVERAL PONDS WITHIN A DRAINAGE; VEGETATED BY WESTERN SYCAMORE, ARROYO WILLOW, CALIFORNIA BLACKBERRY, POISON OAK, & WATERCRESS. ANNUAL GRASSLAND TO NORTH & EAST, EL CHORRO REGIONAL PARK & BOTANICAL GARDEN TO SOUTH & WEST

General: ON 10 MAY 2003, 3 ADULTS OBSERVED AND MULTIPLE "PLOPS" HEARD FROM FROGS ENTERING WATER.

Owner/Manager: SLO COUNTY-EL CHORRO RP

Occurrence No.	728	**Map Index:** 54227	**EO Index:**	54227		**Element Last Seen:**	2003-09-17
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-09-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-02-02

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.34505 / -120.56942	**Accuracy:**	specific area
UTM:	Zone-10 N3914020 E720881	**Elevation (ft):**	1233
PLSS:	T30S, R13E, Sec. 03 (M)	**Acres:**	2.5

Location: PONDED AREA OF TROUT CREEK, ON THE SW SIDE OF SANTA MARGARITA VALLEY, 6 MILES NE OF SAN LUIS OBISPO

Detailed Location: DURING SEP 2003, THE POND MEASURED 120' X 90', WITH TEMPERATURES FROM 64-67 DEGREES F.

Ecological: HABITAT CONSISTS OF A POND, SURROUNDED BY GRAZING LAND. SHORELINE VEGETATION WAS DOMINATED BY EXTENSIVE STANDS OF ELEOCHARIS MACROSTACHYA; CATTLE GRAZING DURING SUMMER REMOVED ALL EMERGENT VEGETATION. BULLFROGS PRESENT IN LARGE NUMBERS.

General: DURING 2001 AND 2002, THIS POND DRIED UP, ELIMINATING A POPULATION OF INTRODUCED FISH AND REDUCING THE BULLFROG POPULATION. NO CRLF'S OBSERVED DURING A 2002 SURVEY. 5 ADULTS AND 34 JUVENILES OBSERVED ON 17 SEP 2003.

Owner/Manager: PVT-SANTA MARGARITA CO

Occurrence No.	744	**Map Index:** 55271	**EO Index:**	55271		**Element Last Seen:**	2004-04-22
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-04-22
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-04-26

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05594 / -120.56552	**Accuracy:**	80 meters
UTM:	Zone-10 N3881957 E722021	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 09 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON CREEK, AT THE ZENON WAY CROSSING, 1.75 MILES EAST OF HIGHWAY 1, NORTH OF NIPOMO MESA

Detailed Location:

Ecological: HABITAT CONSISTS OF DENSE WILLOW RIPARIAN, DOMINATED BY WILLOW, BLACKBERRY, AND CYPERUS SP; SURROUNDED BY OAK WOODLAND ON THE UPLAND SLOPES.

General: 4 SUBADULTS OBSERVED ON 22 APR 2004.

Owner/Manager: UNKNOWN

Occurrence No.	836	**Map Index:** 61612	**EO Index:**	61648		**Element Last Seen:**	2007-05-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2007-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-08-03

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.32835 / -120.69653	**Accuracy:**	specific area
UTM:	Zone-10 N3911892 E709370	**Elevation (ft):**	440
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	10.0

Location:	CHORRO CRK AT KERN AVE (MONTEREY AVE) & 0.25 CRK MI NE OF KERN AVE, W & N OF CALIF MENS COLONY, CAMP SAN LUIS OBISPO.
Detailed Location:	CRLF MONITORING SITE 21 (AT KERN AVE) DESCRIBED AS "AT INTERSECTION OF MONTEREY AVE & EAST OF PRISON ENTRANCE [CALIF MEN'S COLONY]." SITE 22 (NORTH FEATURE) DESCRIBED AS "AT THE PUMP STATION ON RESERVOIR LOOP.
Ecological:	HABITAT CONSISTS OF A CREEK WITH 40-50% EMERGENT VEGETATION. SITE 21 CONSISTES OF A VEGETATED, DEEP (>3') POOL. SITE 22 CONSISTES OF A SHALLOW TO DEEP (>3') POOL.
General:	SITE 21: 4 OBSERVED IN 1997; 2 IN 1999; 9 IN 2002; 1 IN 2003; 3 IN 2004; AND 2 IN 2006. SITE 22: 5 IN 1996; 5 IN 1999; 2 IN 2004; AND 5 IN 2007. LEVEL OF SURVEY EFFORT UNKNOWN. 1999 DATA FROM BULLFROG REMOVAL PROJECT.
Owner/Manager:	STATE-CAMP SAN LUIS OBISPO

Occurrence No.	838	**Map Index:** 61614	**EO Index:**	61650		**Element Last Seen:**	2007-05-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2007-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-08-23

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.32269 / -120.71830	**Accuracy:**	specific area
UTM:	Zone-10 N3911218 E707405	**Elevation (ft):**	328
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	41.0

Location:	LOWER CHORRO CREEK & UN-NAMED TRIBUTARY, E AND W OF THE HWY 1 BRIDGE IN THE EAST CANTONMENT AREA, CAMP SAN LUIS OBISPO.
Detailed Location:	SITE 16 (DEEP POOL, 630M UPSTRM OF HWY 1 NEAR SANTA CRUZ & NAPA); 17 (SHALLOW POOL, 400M UPSTRM NEAR SANTA CRUZ); 25 (SHALLOW RIFFLE, 230M UPSTRM NEAR SANTA CRUZ & KERN); BRIDGE 109 (120M UPSTRM); BRIDGE 108 (SHALLOW POOL, 160M DWNSTRM).
Ecological:	HABITAT CONSISTS OF A CREEK WITH 40-50% EMERGENT VEGETATION. SITE 27 IS A DETACHED POND (KILO POND) SOUTH OF BRIDGE 108.
General:	1996: 5 OBS ON 16 MAY. 1997: 6 OBS ON 14 & 15 MAY. 1998: 4 OBS ON 1 & 30 JUN. 2002: 4 OBS ON 22 MAY. 2003: 1 OBS ON 1 MAY. 2004: UNK # OBSERVED. 2006: 1 OBS ON 6 JUN. 2007: 3 OBS ON 7 & 15 MAY.
Owner/Manager:	STATE-CAMP SAN LUIS OBISPO

Occurrence No.	839	**Map Index:**	61615	**EO Index:**	61651	**Element Last Seen:**	2008-05-12
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-05-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-04-07

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32551 / -120.70936	**Accuracy:**	specific area
UTM:	Zone-10 N3911549 E708211	**Elevation (ft):**	345
PLSS:	T30S, R12E, Sec. 08 (M)	**Acres:**	9.0

Location: UNNAMED TRIBUTARY TO CHORRO CREEK ALONG KERN AVENUE JUST SW OF SAN BENITO RD NEAR USPFO, CAMP SAN LUIS OBISPO.

Detailed Location: CRLF MONITORING SITES 15 (NE FEATURE; "USPFO CULVERT") AND SITE 24 (SW FEATURE). MAPPED TO PROVIDED COORDINATES.

Ecological: HABITAT CONSISTS OF A CREEK WITH 40-50% EMERGENT VEGETATION. SITE 15 IS A VEGETATED SHALLOW POOL. SITE 24 IS A VEGETATED SHALLOW TO DEEP (>3') POOL.

General: 1996: 5 INDIVIDUALS OBSERVED. 1998: 7 INDIV OBS. 1999: 23 INDIV. 2000: 4 INDIV. 2001: 18 INDIV. 2002: 15 INDIV. 2003:2 INDIV. 1 SEP, 14 SEP, & 16 SEP 2004: UNK # OBS. 2006: 3 INDIV. 2007: 30 INDIV. 2008: 1 INDIV.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	843	**Map Index:**	62484	**EO Index:**	62521	**Element Last Seen:**	2005-06-13
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-06-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-09-07

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.16431 / -120.63538	**Accuracy:**	80 meters
UTM:	Zone-10 N3893825 E715363	**Elevation (ft):**	80
PLSS:	T32S, R12E, Sec. 01 (M)	**Acres:**	0.0

Location: UNNAMED TRIBUTARY TO PISMO CREEK, 0.2 MILE UPSTREAM FROM THE PISMO CREEK CONFLUENCE, 1.5 MILES NORTH OF PISMO BEACH

Detailed Location:

Ecological: HABITAT SURROUNDING THE STREAM CONSISTS OF COAST LIVE OAK WOODLAND, DOMINATED BY QUERCUS AGRIFOLIA, WITH ASSOCIATES THAT INCLUDE RHAMNUS CROCEA, HETEROMELES ARBUTIFOLIA, TOXICODENDRON DIVERSILOBUM, AND BROMUS DIANDRUS.

General: 1 ADULT OBSERVED ON 13 JUN 2005.

Owner/Manager: PVT

Occurrence No.	895	**Map Index:**	65909	**EO Index:**	65988	**Element Last Seen:**	2006-08-09
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-08-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-08-18

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24496 / -120.68081	**Accuracy:**	80 meters
UTM:	Zone-10 N3902674 E711016	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: JUST NORTH OF THE CONFLUENCE OF PREFUMO CREEK & SAN LUIS OBISPO CREEK, SAN LUIS OBISPO.

Detailed Location: SITE IS AN ABANDONED AREA WITHIN THE CITY OF SAN LUIS OBISPO'S WATER TREATMENT AREA; MANAGED FOR WILDLIFE (PRIMARILY WATERFOWL).

Ecological: HABITAT CONSISTS OF DEEP CONCRETE CHANNELS WITH LARGE AREAS OF VEGETATIVE COVER (DUCKWEED)

General: 1 ADULT, 1 JUVENILE AND 1 OF UNKNOWN AGE OBSERVED ON 9 AUG 2006.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	936	**Map Index:**	68614	**EO Index:**	69000	**Element Last Seen:**	2006-03-23
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-03-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-03-21

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03785 / -120.60172	**Accuracy:**	80 meters
UTM:	Zone-10 N3879870 E718767	**Elevation (ft):**	38
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JACK LAKE, OCEANO DUNES STATE VEHICULAR RECREATION AREA, 4.5 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: HABITAT CONSISTS OF A FRESHWATER LAKE/POND SURROUNDED BY DUNES TO THE NORTH AND WEST, A CONOCO-PHILLIPS OIL REFINERY TO THE EAST, AND AGRICULTURAL FIELDS TO THE SOUTH.

General: 1 ADULT OBSERVED ON 23 MAR 2006.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	1021	**Map Index:**	74045	**EO Index:**	75037	**Element Last Seen:**	2008-08-13
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-08-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-03-19

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.18214 / -120.42611	**Accuracy:**	specific area
UTM:	Zone-10 N3896276 E734376	**Elevation (ft):**	900
PLSS:	T31S, R14E, Sec. 36 (M)	**Acres:**	10.0

Location: 0.88 AIRMI ESE OF THE SE END OF LOPEZ LAKE.

Detailed Location: SITES ARE LOCATED IN A TRIBUTARY TO PHOENIX CREEK. DAMMED POND (~0.44 ACRE) (A) IS 0.12 MI WEST OF CONCRETE LINED MAN-MADE RESERVOIR (~0.3 ACRE) (B).

Ecological: VEGETATION NEAR DAMMED POND IS CHAMISE CHAPARRAL AND SCRUB OAK TO HIGH WATER LINE; VERY LITTLE WETLAND VEGETATION; WHITE SAND, CALCAREOUS. VEGETATION NEAR RESERVOIR HAS BEEN CLEARED, ONLY SHORT GRASSES REMAIN IMMEDIATELY SURROUNDING RES.

General: 3 ADULTS OBSERVED IN DAMMED POND (A). 1 ADULT OBSERVED IN RESERVOIR (B).

Owner/Manager: PVT

Occurrence No.	1047	**Map Index:**	74361	**EO Index:**	75369	**Element Last Seen:**	2006-06-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-06-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34238 / -120.70441	**Accuracy:**	80 meters
UTM:	Zone-10 N3913431 E708618	**Elevation (ft):**	570
PLSS:	T30S, R12E, Sec. 05 (M)	**Acres:**	0.0

Location: 0.22 MI WNW OF THE JUNCTION OF RANGE RD & SAN BENITO RD, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: JUST NORTH OF RANGE RD. CRLF MONITORING SITE 12. SAME DATA FROM BULLFROG REMOVAL PROJECT (2000).

Ecological: VEGETATED, POND. DEEP (>3FT) POOL. IN THE DELTA RANGE AREA.

General: 1 INDIV OBS ON 16 MAY 1996. 3 INDIV OBS IN MAY 1997. 4 INDIV OBS IN JUN 1998. 4 INDIV OBS IN MAY 1999. 32 INDIV OBS IN APR-JUN 2000. 20 INDIV OBS IN MAY 2001. 1 INDIV OBS IN MAY 2003. 4 INDIV OBS IN MAY-JUN 2006.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	1049	**Map Index:**	74425	**EO Index:**	75421	**Element Last Seen:**	2007-05-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2007-05-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31535 / -120.74573	**Accuracy:**	80 meters
UTM:	Zone-10 N3910346 E704930	**Elevation (ft):**	410
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: 0.26 MI S OF THE JUNCTION OF MERCED AVE & SUTTER AVE, CAMP SAN LUIS OBISBO NATIONAL GUARD RESERVATION.

Detailed Location: DRAINAGE ALONG SOUTHEASTERN BOUNDARY OF TRAINING AREA ALPHA. NEAR CENTER OF SECTION 13.

Ecological:

General: 3 JUVENILES OBSERVED. 2 INDIVIDUALS WERE OBSERVED IN POOL NEAREST THE FENCELINE AND 1 INDIVIDUAL WAS OBSERVED IN ADJACENT UPSTREAM POOL.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	1339	**Map Index:**	76794	**EO Index:**	77737	**Element Last Seen:**	2009-09-11
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2009-09-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-09-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09853 / -120.59171	**Accuracy:**	80 meters
UTM:	Zone-10 N3886623 E719518	**Elevation (ft):**	50
PLSS:	T32S, R13E, Sec. 33 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CREEK, JUST EAST OF THE JUNCTION OF CIENAGA ST & S. HALCYON RD, OCEANO.

Detailed Location:

Ecological: SURROUNDING AREA IS FARMLAND AND RESIDENTIAL.

General: 2 JUVENILES OBSERVED ON 11 SEPT 2009. THE CREEK WAS MOSTLY DRY, AGAIN, THIS YEAR. THE FLOW DID NOT COME UP LATER IN THE SUMMER AS IT USUALLY DOES. ANNUAL ZONE 1/1A ARROYO GRANDE CREEK WILLOW CLEARING PROJECT.

Owner/Manager: SLO COUNTY

Occurrence No.	1341	**Map Index:**	76880	**EO Index:**	77839	**Element Last Seen:**	1939-06-19
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1939-06-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-10-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31443 / -120.64995	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910446 E713641	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	340.0

Location: BRIZZIOLARI CREEK IN POLY CANYON, JUST NORTH & NORTHEAST OF CALIF POLYTECHNIC STATE UNIVERSITY CAMPUS, SAN LUIS OBISPO.

Detailed Location: MAPPED FROM ALONG CREEK FROM BM294 NEAR CAMPUS, NE TO VICINITY OF BM1024 (SERRANO). MVZ SPECIMEN RECORD LOCATION STATED AS "POLY CANYON, BRIZZIOLARI CREEK, CA. 2 MI N SAN LUIS OBISPO."

Ecological: TARICHA TOROSA TOROSA AND THAMNOPHIS ELEGANS ALSO COLLECTED FROM THIS LOCATION.

General: 2 SPECIMENS WERE COLLECTED BY R. R. MILLER & R. G. MILLER ON 19 JUN 1939 AND DEPOSITED AT MVZ (31611-31612).

Owner/Manager: STATE LANDS COMMISSION

Occurrence No.	1356	**Map Index:**	80262	**EO Index:**	81252	**Element Last Seen:**	2001-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-10-05

Quad Summary: Nipomo (3512014), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09300 / -120.50429	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3886206 E727504	**Elevation (ft):**	350
PLSS:	T32S, R14E, Sec. 32 (M)	**Acres:**	190.0

Location: LOS BERROS CREEK, IN THE VICINITY OF UPPER LOS BERROS RD BETWEEN N DANA FOOTHILLS RD AND SPRING CANYON LN.

Detailed Location: EXACT LOCATION UNKNOWN. DOCUMENT STATES "...LESS THAN ONE-QUARTER MILE UPSTREAM FROM THE PROJECT SITE." MAPPED TO GENERAL AREA OF PROJECT AND SURVEY LOCATIONS.

Ecological: HABITAT DESCRIBED IN STEELHEAD OCC#32 (EONDX 81245) AS RIPARIAN HABITAT DOMINATED BY QUERCUS AGRIFOLIA, PLANTANUS RACEMOSA AND SALIX SP. WITH A STREAM CHANNEL SUBSTRATE COMPOSED OF SAND, GRAVEL, BOLULDERS AND SOME AREAS OF BEDROCK.

General: DUGAN AND DUGAN (2001) ARE CITED AS HAVING OBSERVED 2 CALIFORNIA RED-LEGGED FROGS IN THIS AREA IN 2001.

Owner/Manager: UNKNOWN

Rana boylii **Element Code:** AAABH01050

foothill yellow-legged frog

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S2S3
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_NT-Near Threatened, USFS_S-Sensitive			
Habitat:	**General:**	PARTLY-SHADED, SHALLOW STREAMS & RIFFLES WITH A ROCKY SUBSTRATE IN A VARIETY OF HABITATS.			
	Micro:	NEED AT LEAST SOME COBBLE-SIZED SUBSTRATE FOR EGG-LAYING. NEED AT LEAST 15 WEEKS TO ATTAIN METAMORPHOSIS.			

Occurrence No.	811	**Map Index:** 47409	**EO Index:** 77842	**Element Last Seen:**	1953-05-03
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1953-05-03
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2010-05-05

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28146 / -120.61486	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906865 E716921	**Elevation (ft):**	700
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	176.4

Location: RESERVOIR CANYON, EAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED ALONG CANYON FROM SAN LUIS OBISPO CREEK UPSTEAM (SE) TO IT'S TERMINOUS NEAR HAMPTON CANYON. EXACT LOCATION UNKNOWN. MVZ RECORDS STATE "RESERVOIR CANYON, 1.6 MI SE SAN LUIS OBISPO" AND "RESERVOIR CANYON, 2 MI E SAN LUIS OBISPO"

Ecological:

General: 1 SPECIMEN WAS COLLECTED BY R. R. MILLER ON 19 JUN 1939 AND DEPOSITED AT MVZ (31615). 1 SPECIMEN WAS COLLECTED BY RICHARD G. ZWEIFEL ON 3 MAY 1953 AND DEPOSITED AT MVZ (59660).

Owner/Manager: CITY OF SAN LUIS OBISPO, UNK

Occurrence No.	821	**Map Index:** 78810	**EO Index:** 79754	**Element Last Seen:**	1963-05-05
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1963-05-05
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2010-05-05

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28289 / -120.54204	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3907186 E723540	**Elevation (ft):**	1100
PLSS:	T30S, R13E, Sec. 26 (M)	**Acres:**	580.0

Location: AREA OF LOPEZ CANYON, ABOUT 6 MILES EAST OF SAN LUIS OBISPO.

Detailed Location: LOCATIONS STATED AS "LOPEZ CANYON, 6 MI E SAN LUIS OBISPO", AND "SAN LUIS OBISPO COUNTY LOPEZ CANYON". LOCATION MAPPED AS A 1 MILE STRETCH OF LOPEZ CANYON CENTERED AROUND THE COORDINATES PROVIDED BY MVZ.

Ecological:

General: 1 COLLECTED (MVZ# 58422) BY RICHARD F. JOHNSTON ON 6 JUN 1953. 5 COLLECTED (HE 136-140 - SANTA BARBARA MUSEUM OF NATURAL HISTORY) BY R. WILLIS ON 5 MAY 1963.

Owner/Manager: USFS-LOS PADRES NF, UNKNOWN

Gymnogyps californianus

Element Code: ABNKA03010

California condor

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	ABC_WLBCC-Watch List of Birds of Conservation Concern, CDF_S-Sensitive, IUCN_CR-Critically Endangered			
Habitat:	**General:**	REQUIRE VAST EXPANSES OF OPEN SAVANNAH, GRASSLANDS, AND FOOTHILL CHAPARRAL IN MOUNTAIN RANGES OF MODERATE ALTITUDE.			
	Micro:	DEEP CANYONS CONTAINING CLEFTS IN THE ROCKY WALLS PROVIDE NESTING SITES. FORAGES UP TO 100 MILES FROM ROOST/NEST.			

Occurrence No.	3	**Map Index:** 13350	**EO Index:** 14760	**Element Last Seen:**	1975-07-11
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1975-07-11
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Tar Spring Ridge (3512024), Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.24563 / -120.43589	**Accuracy:**	specific area
UTM:	Zone-10 N3903296 E733304	**Elevation (ft):**	2600
PLSS:	T31S, R14E, Sec. 01 (M)	**Acres:**	3713.8

Location: HI MT CONDOR AREA

Detailed Location: INCLUDES SECTIONS 2, 3, 6, 7, 10, 11, 12, 13, 14, AND 18.

Ecological:

General: YEAR-LONG USE.

Owner/Manager: UNKNOWN

Elanus leucurus

Element Code: ABNKC06010

white-tailed kite

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_LC-Least Concern			
Habitat:	**General:**	ROLLING FOOTHILLS AND VALLEY MARGINS WITH SCATTERED OAKS & RIVER BOTTOMLANDS OR MARSHES NEXT TO DECIDUOUS WOODLAND.			
	Micro:	OPEN GRASSLANDS, MEADOWS, OR MARSHES FOR FORAGING CLOSE TO ISOLATED, DENSE-TOPPED TREES FOR NESTING AND PERCHING.			

Occurrence No.	55	**Map Index:** 42273	**EO Index:**	42273		**Element Last Seen:**	1997-03-24
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1997-03-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2000-01-26

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31389 / -120.71747	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3910243 E707504	**Elevation (ft):**	340
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, 0.5 MILE EAST OF CERRO ROMUALDO, 0.7 MILE SSE OF CROSSING OF CHORRO CREEK AND HIGHWAY 1.

Detailed Location: OAK WOODLAND AREA WEST OF COMMON TASK TRAINING GROUND NEAR PLOT #326. WOO97F10: "FIRST NOTICED IN GRASSLAND AREA NW OF CTTG MATIN ON A POLE PAIR, THEN FLEW INTO OAK WOODLAND AREA."

Ecological: OAK WOODLAND, GRASSLAND AREA.

General: BREEDING SITE. 2 ADULTS OBSERVED 31 MAR 1995. 2 ADULTS OBSERVED ON 24 MAR 1997.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Occurrence No.	65	**Map Index:** 51560	**EO Index:**	51560		**Element Last Seen:**	2002-06-02
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-06-17

Quad Summary: Lopez Mtn. (3512035), Santa Margarita (3512045)

County Summary: San Luis Obispo

Lat/Long:	35.37583 / -120.58444	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3917401 E719432	**Elevation (ft):**	1240
PLSS:	T29S, R13E, Sec. 28 (M)	**Acres:**	0.0

Location: JUST NORTH OF MILLER FLAT, 1.5 MILES SE OF SANTA MARGARITA

Detailed Location: NEST NOT FOUND, BUT RECENT FLEDGLINGS INDICATE NESTING IN THE IMMEDIATE VICINITY.

Ecological: HABITAT CONSISTS OF COAST LIVE OAK WOODLAND, DOMINATED BY QUERCUS AGRIFOLIA AND PINUS SABINIANA; SOME CHAPARRAL ELEMENTS ON SOUTH-FACING SLOPES. LARGE EXPANSES OF VALLEY OAK SAVANNAH AND ANNUAL GRASSLANDS NEARBY PROVIDE FORAGING HABITAT.

General: 4 RECENT FLEDGLINGS OBSERVED ON 1 JUN 2002, WITH 2 ADULTS NEARBY. ON 2 JUN 2002, 1 ADULT WITH TWO FLEDGLINGS OBSERVED FORAGING OVER AN ADJACENT FIELD.

Owner/Manager: PVT-SANTA MARGARITA CO

Occurrence No.	79	**Map Index:**	55396	**EO Index:**	55396	**Element Last Seen:**	1999-08-10
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1999-08-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-05-10

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34509 / -120.68447	**Accuracy:**	80 meters
UTM:	Zone-10 N3913774 E710423	**Elevation (ft):**	810
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: WEST SIDE OF CHORRO CREEK, 0.5 MILE NORTH OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO

Detailed Location: NEST TREE WAS LOCATED ACROSS FROM THE END POINT OF LCTA PLOT #330.

Ecological: HABITAT CONSISTS OF RIPARIAN WOODLAND, DOMINATED BY COAST LIVE OAK. SURROUNDING AREA IS GRAZED AND UTILIZED FOR MILITARY TRAINING.

General: 2 ADULTS AND 2 JUVENILES OBSERVED AT THE NEST ON 10 AUG 1999.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	103	**Map Index:**	65937	**EO Index:**	66016	**Element Last Seen:**	2004-04-07
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2004-04-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-08-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34241 / -120.72933	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3913382 E706353	**Elevation (ft):**	660
PLSS:	T30S, R12E, Sec. 06 (M)	**Acres:**	0.0

Location: EL CHORRO REGIONAL PARK, ABOUT 1 MI NORTH OF CAMP SAN LUIS OBISPO.

Detailed Location: NESTING AREA IS IN OAK WOODLANDS

Ecological: ANN. GRASSLAND DOM. BY BROMUS MADRITENSIS, B. DIANDRUS, AVENA SPP., ERODIUM BOTRYS, BRASSICA SPP., HEMIZONIA LUZULAEFOLIA, PLAGIOBOTHRYS SPP., SANICULA ARGUTA, DICHELOSTEMMA PULCHELLA & VIOLA PEDUNCULATA. SOIL CLAY-SANDY, GENTLE-STEEP SLOPE

General: 2 ADULTS OBSERVED ON 7 APR 1994, SOARING & FORAGING. NESTING KNOWN IN OAK WOODLANDS WITHIN THIS AREA.

Owner/Manager: SLO COUNTY

Accipiter striatus

Element Code: ABNKC12020

sharp-shinned hawk

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	CDFW_WL-Watch List			
Habitat:	**General:**	PONDEROSA PINE, BLACK OAK, RIPARIAN DECIDUOUS, MIXED CONIFER & JEFFREY PINE HABITATS. PREFERS RIPARIAN AREAS.			
	Micro:	NORTH-FACING SLOPES, WITH PLUCKING PERCHES ARE CRITICAL REQUIREMENTS. NESTS USUALLY WITHIN 275 FT OF WATER.			

Occurrence No.	9	**Map Index:**	51979	**EO Index:**	51979	**Element Last Seen:**	2003-07-24
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-07-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-08-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03166 / -120.55312	**Accuracy:**	80 meters
UTM:	Zone-10 N3879291 E723218	**Elevation (ft):**	200
PLSS:	T11N, R35W, Sec. 15 (S)	**Acres:**	0.0

Location: NIPOMO MESA, 1.6 MILES NNE OF THE INTERSECTION OF HIGHWAY 1 AND OSO FLACO LAKE ROAD, 5.5 MILES SE OF OCEANO.

Detailed Location:

Ecological: NEST TREE IS A EUCALYPTUS SNAG. HABITAT CONSISTS OF A MODERATELY-DENSE EUCALYPTUS WOODLAND; LOW WILDLIFE DIVERSITY DUE TO THE DOMINATION BY EXOTICS.

General: 2 ADULTS OBSERVED NESTING ON 24 JUL 2003.

Owner/Manager: UNKNOWN

Buteo regalis

Element Code: ABNKC19120

ferruginous hawk

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4
	State:	None		**State:**	S3S4
	Other:	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	OPEN GRASSLANDS, SAGEBRUSH FLATS, DESERT SCRUB, LOW FOOTHILLS & FRINGES OF PINYON-JUNIPER HABITATS.			
	Micro:	EATS MOSTLY LAGOMORPHS, GROUND SQUIRRELS, AND MICE. POPULATION TRENDS MAY FOLLOW LAGOMORPH POPULATION CYCLES.			

Occurrence No.	13	**Map Index:**	65993	**EO Index:**	66072	**Element Last Seen:**	2001-01-17
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-01-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-08-23

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35303 / -120.59506	**Accuracy:**	80 meters
UTM:	Zone-10 N3914849 E718528	**Elevation (ft):**	1175
PLSS:	T30S, R13E, Sec. 05 (M)	**Acres:**	0.0

Location: ABOUT 2.5 MI SSE OF SANTA MARGARITA, SYCAMORE CANYON.

Detailed Location: MAPPED ACCORDING TO COORDINATES GIVEN IN SOURCE. HAWKS OFTEN OBSERVED PERCHED IN VALLEY OAKS WITHIN THE VINEYARD.

Ecological: VINEYARDS ARE PLACED IN OPEN ANNUAL GRASSLAND/VALLEY OAK SAVANNA HABITAT WITH ADJACENT WOODLANDS, CHAPARRAL AND RIPARIAN HABITATS.

General: WINTERING SITE. 2 ADULTS OBSERVED FROM 15 NOV 2000 TO 17 JAN 2001. HAWKS WERE SEEN USING VINEYARD AREAS AND OPEN GRASSLAND/SAVANNA HABITATS FOR HUNTING AND ROOSTING.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	14	**Map Index:**	65994	**EO Index:**	66073	**Element Last Seen:**	2002-11-01
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-11-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-08-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26115 / -120.69519	**Accuracy:**	80 meters
UTM:	Zone-10 N3904440 E709666	**Elevation (ft):**	130
PLSS:	T31S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: ABOUT 1.3 MI WSW OF INTERSECTION OF MADONNA RD AND HWY 1, SW OF LAGUNA LAKE, ABOUT 2.2 MILES SW OF SAN LUIS OBISPO.

Detailed Location: MAPPED ACCORDING TO COORDINATES GIVEN IN SOURCE.

Ecological: RIPARIAN WOODLAND WITH ADJACENT RESIDENTIAL AREAS.

General: WINTERING SITE. 1 ADULT OBSERVED ON 1 NOV 2002.

Owner/Manager: PVT

Occurrence No.	25	**Map Index:** 66017	**EO Index:**	66096		**Element Last Seen:**	1991-XX-XX
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-08-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25240 / -120.65609	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3903552 E713246	**Elevation (ft):**	200
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	34.9

Location: WESTERN SIDE OF CHEAPSKATE & ADJACENT HILLS, AT BASE OF HILLS. ON MARGARITA RANCH JUST ON OUTSKIRTS OF SAN LUIS OBISPO.

Detailed Location: MAPPED IN SW 1/4 OF SE 1/4 OF SEC 2 AS PER SOURCE.

Ecological: BARE ROCKY HILLS, OVERGRAZED GRASSLANDS AT STRETCHES FROM THE BASE. HOUSING DEVELOPMENT NEARBY.

General: WINTERING SITE. A PAIR WINTERED AT THIS SITE DURING THE WINTERS OF 1987-88 TO 1990-91 BUT NOT 1991-92 AND SO FAR NOT 1992-93.

Owner/Manager: UNKNOWN

Falco columbarius

Element Code: ABNKD06030

merlin

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	CDFW_WL-Watch List, IUCN_LC-Least Concern			
Habitat:	**General:**	SEACOAST, TIDAL ESTUARIES, OPEN WOODLANDS, SAVANNAHS, EDGES OF GRASSLANDS & DESERTS, FARMS & RANCHES.			
	Micro:	CLUMPS OF TREES OR WINDBREAKS ARE REQUIRED FOR ROOSTING IN OPEN COUNTRY.			

Occurrence No.	16	**Map Index:** 71857	**EO Index:**	72728		**Element Last Seen:**	2004-01-14
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-01-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-07-30

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.34512 / -120.56774	**Accuracy:**	specific area
UTM:	Zone-10 N3914032 E721033	**Elevation (ft):**	1210
PLSS:	T30S, R13E, Sec. 03 (M)	**Acres:**	10.0

Location: SANTA MARGARITA (RANCHO SANTA MARGARITA), 1 MILE WEST & 1.7 MILES WSW OF FIVEMILE BRIDGE.

Detailed Location: CUESTA RIDGE VINEYARD, SANTA MARGARITA RANCH. MAPPED TO PROVIDED COORDINATES.

Ecological: HABITAT CONSISTS OF VINEYARDS AND GRAZING LAND. THE MERLIN WAS OBSERVED PERCHING ON TOP OF OAKS SURROUNDING VINYARDS & HUNTING/CATCHING BIRDS FLUSHED FROM VINE ROWS. HABITAT QUALITY MARKED AS "EXCELLENT" & "FAIR."

General: THOUGHT TO BE ONE BIRD SEEN TWICE ON 14 JAN & 10 FEB, 2004, AT TWO LOCATIONS APPROXIMATELY 0.8 MILES APART.

Owner/Manager: SANTA MARGARITA RANCH, LLC

Falco mexicanus

Element Code: ABNKD06090

prairie falcon

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	CDFW_WL-Watch List, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	INHABITS DRY, OPEN TERRAIN, EITHER LEVEL OR HILLY.			

Micro: BREEDING SITES LOCATED ON CLIFFS. FORAGES FAR AFIELD, EVEN TO MARSHLANDS AND OCEAN SHORES.

*** SENSITIVE ***

Occurrence No.	280	**Map Index:**	13415	**EO Index:**	26133	**Element Last Seen:**	1975-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1977-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-09-14

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	nonspecific area
UTM:		**Elevation (ft):**	840
PLSS:		**Acres:**	203.2

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	281	**Map Index:**	13518	**EO Index:**	26130	**Element Last Seen:**	1977-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1977-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Pozo Summit (3512033), Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1880
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	293	**Map Index:**	13304	**EO Index:**	13068	**Element Last Seen:**	1981-05-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1480
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	294	**Map Index:**	13274	**EO Index:**	26113	**Element Last Seen:**	1978-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1978-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1320
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	295	**Map Index:**	13345	**EO Index:**	26114	**Element Last Seen:**	1977-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1977-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1557
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	296	**Map Index:**	13378	**EO Index:**	26112	**Element Last Seen:**	1981-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Tar Spring Ridge (3512024), Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	3040
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	297	**Map Index:**	13260	**EO Index:**	13067	**Element Last Seen:**	1978-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1978-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1600
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	309	**Map Index:**	13370	**EO Index:**	26102	**Element Last Seen:**	1980-04-30
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-04-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	2200
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

*** SENSITIVE ***

Occurrence No.	435	**Map Index:** 13436	**EO Index:**	26004		**Element Last Seen:**	1981-05-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1981-05-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1989-08-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:		**Accuracy:**	1 mile
UTM:		**Elevation (ft):**	1800
PLSS:		**Acres:**	0.0

Location: *SENSITIVE* LOCATION INFORMATION SUPPRESSED.

Detailed Location: PLEASE CONTACT THE CALIFORNIA NATURAL DIVERSITY DATABASE, CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE, FOR MORE INFORMATION: (916) 322-2493

Ecological:

General:

Owner/Manager:

Laterallus jamaicensis coturniculus

Element Code: ABNME03041

California black rail

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T1
	State:	Threatened		**State:**	S1
	Other:	ABC_WLBCC-Watch List of Birds of Conservation Concern, BLM_S-Sensitive, CDFW_FP-Fully Protected, IUCN_NT-Near Threatened, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	INHABITS FRESHWATER MARSHES, WET MEADOWS & SHALLOW MARGINS OF SALTWATER MARSHES BORDERING LARGER BAYS.			
	Micro:	NEEDS WATER DEPTHS OF ABOUT 1 INCH THAT DOES NOT FLUCTUATE DURING THE YEAR & DENSE VEGETATION FOR NESTING HABITAT.			

Occurrence No.	194	**Map Index:** 36890	**EO Index:**	71502		**Element Last Seen:**	1991-XX-XX
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1991-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-02-25

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02877 / -120.62110	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3878820 E717023	**Elevation (ft):**	40
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	133.2

Location: OSO FLACO LAKE ABOUT 5 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: FRESHWATER LAKE AND MARSH AREA SURROUNDED BY SAND DUNES, COASTAL SCRUB, AND WILLOWS.

General: UNKNOWN NUMBER OF BIRDS OBSERVED DURING SURVEYS FROM 1989-1991.

Owner/Manager: DPR-OCEANO DUNES SVRA, UNKNOWN

Charadrius alexandrinus nivosus

Element Code: ABNNB03031

western snowy plover

Listing Status:	**Federal:**	Threatened	**CNDDB Element Ranks:**	**Global:**	G3T3
	State:	None		**State:**	S2
	Other:	ABC_WLBCC-Watch List of Birds of Conservation Concern, CDFW_SSC-Species of Special Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	SANDY BEACHES, SALT POND LEVEES & SHORES OF LARGE ALKALI LAKES.			
	Micro:	NEEDS SANDY, GRAVELLY OR FRIABLE SOILS FOR NESTING.			

Occurrence No.	6	**Map Index:** 12874	**EO Index:**	25772		**Element Last Seen:**	1965-04-26
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1978-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-10-09

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.14198 / -120.64512	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891326 E714535	**Elevation (ft):**	120
PLSS:	T32S, R12E, Sec. 13 (M)	**Acres:**	30.9

Location: PISMO STATE BEACH; 500 YARDS EAST OF OCEAN, 800 YARDS WNW OF CAMPGROUND.

Detailed Location:

Ecological: DURING A 1978 SURVEY THE HABITAT WAS DEEMED NO LONGER SUITABLE DUE TO DEVELOPMENT AND/OR HUMAN ACTIVITY.

General: 3 EGGS SEEN ON EACH OF TWO NESTS ON SAND DUNES IN 1965. DURING A MAY TO JULY 1978 SURVEY NO BIRDS WERE OBSERVED.

Owner/Manager: DPR-PISMO SB

Occurrence No.	52	**Map Index:** 25878	**EO Index:**	5388		**Element Last Seen:**	1978-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1978-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1997-01-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.07707 / -120.61827	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3884184 E717154	**Elevation (ft):**	100
PLSS:	T12N, R36W, Sec. 36 (S)	**Acres:**	3434.0

Location: NIPOMO DUNES, NORTH & NORTHEAST OF OSO FLACO LAKE, & WEST OF SOUTHERN PACIFIC RAILROAD TRACKS.

Detailed Location:

Ecological: COASTAL DUNE HABITAT.

General: TWO PAIRS DETECTED IN MAY-JUNE 1978.

Owner/Manager: DPR-PISMO SB, PVT

Sternula antillarum browni

Element Code: ABNNM08103

California least tern

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G4T2T3Q
	State:	Endangered		**State:**	S2S3
	Other:	ABC_WLBCC-Watch List of Birds of Conservation Concern, CDFW_FP-Fully Protected			
Habitat:	**General:**	NESTS ALONG THE COAST FROM SAN FRANCISCO BAY SOUTH TO NORTHERN BAJA CALIFORNIA.			
	Micro:	COLONIAL BREEDER ON BARE OR SPARSELY VEGETATED, FLAT SUBSTRATES: SAND BEACHES, ALKALI FLATS, LAND FILLS, OR PAVED AREAS.			

Occurrence No.	72	**Map Index:** 36890	**EO Index:** 25651	**Element Last Seen:**	1983-XX-XX
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1987-07-12
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2007-12-11

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02877 / -120.62110	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3878820 E717023	**Elevation (ft):**	40
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	133.2

Location: OSO FLACO LAKE.

Detailed Location:

Ecological:

General: 6-8 PAIRS MAY HAVE NESTED HERE IN 1978; BETWEEN 1980 AND 1983, UP TO 6 PAIRS NESTED HERE; NO NESTING OCCURRED IN 1987, ALTHOUGH SOME POST-BREEDING BIRDS WERE SEEN.

Owner/Manager: DPR-OCEANO DUNES SVRA, UNKNOWN

Coccyzus americanus occidentalis

Element Code: ABNRB02022

western yellow-billed cuckoo

Listing Status:	**Federal:**	Candidate	**CNDDB Element Ranks:**	**Global:**	G5T3Q
	State:	Endangered		**State:**	S1
	Other:	BLM_S-Sensitive, USFS_S-Sensitive, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	RIPARIAN FOREST NESTER, ALONG THE BROAD, LOWER FLOOD-BOTTOMS OF LARGER RIVER SYSTEMS.			
	Micro:	NESTS IN RIPARIAN JUNGLES OF WILLOW, OFTEN MIXED WITH COTTONWOODS, W/ LOWER STORY OF BLACKBERRY, NETTLES, OR WILD GRAPE.			

Occurrence No.	83	**Map Index:** 12855	**EO Index:** 5652	**Element Last Seen:**	1921-06-30
Occ. Rank:	None		**Presence:** Extirpated	**Site Last Seen:**	1921-06-30
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1994-07-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28302 / -120.64684	**Accuracy:**	1 mile
UTM:	Zone-10 N3906969 E714007	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO.

Detailed Location:

Ecological:

General: ONE SPECIMEN (POSSIBLY NESTING) COLLECTED BY SANTA BARBARA COUNTY MUSEUM ON 6/30/21; ONE EGG SET COLLECTED FROM UNSPECIFIED LOCATION IN S.L.O. COUNTY BY SANTA BARBARA NATURAL HISTORY MUSEUM ON 7/5/32.

Owner/Manager: UNKNOWN

Athene cunicularia

Element Code: ABNSB10010

burrowing owl

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4
	State:	None		**State:**	S2
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	OPEN, DRY ANNUAL OR PERENIAL GRASSLANDS, DESERTS & SCRUBLANDS CHARACTERIZED BY LOW-GROWING VEGETATION.			
	Micro:	SUBTERRANEAN NESTER, DEPENDENT UPON BURROWING MAMMALS, MOST NOTABLY, THE CALIFORNIA GROUND SQUIRREL.			

Occurrence No.	573	**Map Index:** 51260	**EO Index:** 51260	**Element Last Seen:**	2003-01-07
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2003-01-07
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2003-05-12

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34371 / -120.71014	**Accuracy:**	80 meters
UTM:	Zone-10 N3913566 E708094	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 05 (M)	**Acres:**	0.0

Location: 2 MILES ENE OF CUESTA COLLEGE, CAMP SAN LUIS OBISPO

Detailed Location:

Ecological: HABITAT CONSISTS OF GRASSLANDS, DOMINATED BY EXOTIC GRASSES, WITH SOME NATIVE BUNCHGRASSES ALONG ROCKY SLOPES AND COASTAL SCRUB SPECIES FOUND IN DEEPER DRAWS THROUGHOUT THE AREA. CURRENTLY USED AS FIREARMS RANGE WITH CATTLE GRAZING.

General: 2 ADULTS OBSERVED WINTERING AT THE BURROW SITE.

Owner/Manager: DOD-CALIFORNIA NATIONAL GUARD

Eremophila alpestris actia

Element Code: ABPAT02011

California horned lark

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T3Q
	State:	None		**State:**	S3
	Other:	CDFW_WL-Watch List, IUCN_LC-Least Concern			
Habitat:	**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.	33	**Map Index:**	42274	**EO Index:**	42274	**Element Last Seen:**	1995-03-30
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-03-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2000-01-26

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.32995 / -120.69971	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3912062 E709078	**Elevation (ft):**	460
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	34.9

Location:	CAMP SAN LUIS OBISPO, 0.5 MILE NW OF CALIFORNIA MENS COLONY, 0.85 MILE SW OF CHORRO RES, ~4 MILES NNW OF SAN LUIS OBISPO
Detailed Location:	EAST ON KERN ROAD, 0.1 MILE PAST GATE ON NORTH SIDE OF ROAD, PLOT #308. ELEVATION RANGE 420 - 502.
Ecological:	GRASSLAND SLOPE WITH SMALL ROCKY OUTCROPS
General:	5/29/95: 1 MALE AND 1 FEMALE OBSERVED AT POSSIBLE NEST SITE; 5/30/95: 2 OTHER ADULTS OBSERVED ALONG SIDE OF THE ROAD.
Owner/Manager:	STATE-CAMP SAN LUIS OBISPO

Progne subis **Element Code:** ABPAU01010

purple martin

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern			
Habitat:	**General:**	INHABITS WOODLANDS, LOW ELEVATION CONIFEROUS FOREST OF DOUGLAS-FIR, PONDEROSA PINE, & MONTEREY PINE.			
	Micro:	NESTS IN OLD WOODPECKER CAVITIES MOSTLY, ALSO IN HUMAN-MADE STRUCTURES. NEST OFTEN LOCATED IN TALL, ISOLATED TREE/SNAG.			

Occurrence No.	15	**Map Index:**	51862	**EO Index:**	51862	**Element Last Seen:**	2003-06-01
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-06-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-07-29

Quad Summary:	Lopez Mtn. (3512035)
County Summary:	San Luis Obispo

Lat/Long:	35.35953 / -120.56941	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3915627 E720842	**Elevation (ft):**	1165
PLSS:	T29S, R13E, Sec. 34 (M)	**Acres:**	0.0

Location:	ALONG TROUT CREEK, WEST OF POZO ROAD, SANTA MARGARITA RANCH
Detailed Location:	NEST TREES ARE FOUND WITHIN THE CUESTA RIDGE VINEYARD ON THE SANTA MARGARITA RANCH.
Ecological:	NESTING HABITAT CONSISTS OF OLD SYCAMORES, ALTHOUGH THE TREES USED VARIES FROM YEAR TO YEAR. VINEYARD CONVERSION ON SURROUNDING LANDS APPEARS NOT TO HAVE AFFECTED THIS NESTING COLONY.
General:	10+ ADULTS OBSERVED NESTING ON 1 JUN 2003.
Owner/Manager:	PVT-SANTA MARGARITA RANCH

Lanius ludovicianus **Element Code:** ABPBR01030

loggerhead shrike

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4
	State:	None		**State:**	S4
	Other:	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	BROKEN WOODLANDS, SAVANNAH, PINYON-JUNIPER, JOSHUA TREE, & RIPARIAN WOODLANDS, DESERT OASES, SCRUB & WASHES.			
	Micro:	PREFERS OPEN COUNTRY FOR HUNTING, WITH PERCHES FOR SCANNING, AND FAIRLY DENSE SHRUBS AND BRUSH FOR NESTING.			

Occurrence No.	89	**Map Index:** 81103	**EO Index:** 82088	**Element Last Seen:**	2003-05-01
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2003-05-01
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2011-01-18

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35303 / -120.54188	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3914967 E723362	**Elevation (ft):**	1140
PLSS:	T29S, R13E, Sec. 35 (M)	**Acres:**	0.0

Location: TACO CREEK OFF RINCONADA CREEK, JUST WEST OF FIVEMILE BRIDGE AREA, 4.5 MILES SE OF SANTA MARGARITA.

Detailed Location: MAPPED TO PROVIDED COORDINATES AND MAP.

Ecological: OAK SAVANNAH AND VINEYARDS SURROUND THIS SITE. GRAZING LANDS ASSOCIATED WITH CREEK. THIS SECTION OF TACO CREEK IS PROPOSED FOR A SAFE HARBOR AGREEMENT FOR CA RED-LEGGED FROG.

General: ONE NEST CONTAINING 1 ADULT & 5 YOUNG FOUND IN RED WILLOW OVERHANGING TACO CREEK ON SANTA MARGARITA RANCH 1 MAY 2003. ADULT FEMALE COOPER'S HAWK OBS IN WILLOW ON 5 MAY. FEATHER PILES INDICATE FLEDGED YOUNG EATEN BEFORE LEARNING TO FLY.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	90	**Map Index:** 51319	**EO Index:** 82095	**Element Last Seen:**	2005-05-11
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2005-05-11
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2011-01-26

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25884 / -120.66197	**Accuracy:**	80 meters
UTM:	Zone-10 N3904254 E712694	**Elevation (ft):**	179
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: JUST NORTH THE END OF MARGARITA AVENUE, 0.7 MILE EAST OF HIGHWAY 101, CITY OF SAN LUIS OBISPO.

Detailed Location: LOCATION MAPPED TO PROVIDED MAP. PROVIDED COORDINATES PLACE LOCATION SLIGHTLY MORE TO THE EAST.

Ecological: HABITAT CONSISTS OF GRASSLAND/WETLAND. NEST SITE WAS IN WETLAND AND MAY NOT BE DEVELOPED. HILLSIDE TO NORTH PROPOSED TO BE OPEN SPACE. RESIDENTIAL TO WEST & SOUTH; GRAZED GRASSLANDS TO THE EAST. SINGING MALE GRASSHOPPER SPARROWS TO NORTH.

General: PAIR OF SHRIKES OBS TENDING TO NEST IN MYOPORUM LAETUM TREE WITH 4 EGGS ON 11 MAY 2005. DEVELOPMENT OF PROJECT WILL REDUCE FORAGING AREA AND IT IS LIKELY SHRIKES WILL NOT NEST AT THIS SITE AFTER COMPLETION.

Owner/Manager: PVT-KING VENTURES

Agelaius tricolor

Element Code: ABPBXB0020

tricolored blackbird

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2G3
	State:	None		**State:**	S2
	Other:	ABC_WLBCC-Watch List of Birds of Conservation Concern, BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_EN-Endangered, USFWS_BCC-Birds of Conservation Concern			
Habitat:	**General:**	HIGHLY COLONIAL SPECIES, MOST NUMBEROUS IN 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.			

Occurrence No.	331	**Map Index:**	37152	**EO Index:**	32149	**Element Last Seen:**	1997-05-02
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-05-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-10-09

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.33723 / -120.68691	**Accuracy:**	specific area
UTM:	Zone-10 N3912896 E710222	**Elevation (ft):**	560
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	9.1

Location:	CHORRO RESERVOIR, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION, 3 MILES NNW OF SAN LUIS OBISPO.
Detailed Location:	CHORRO RESERVOIR AND A HOLDING POND BEHIND CHORRO RESERVOIR.
Ecological:	HABITAT CONSISTS OF A MAN-MADE POND, DOMINATED BY JUNCUS AND SCIRPUS.
General:	150+ ADULTS OBSERVED NESTING ON 2 MAY 1997.
Owner/Manager:	DOD-ARMY NATIONAL GUARD

Oncorhynchus mykiss irideus

Element Code: AFCHA0209H

steelhead - south/central California coast DPS

Listing Status:	**Federal:**	Threatened	**CNDDB Element Ranks:**	**Global:**	G5T2Q
	State:	None		**State:**	S2
	Other:	AFS_TH-Threatened, CDFW_SSC-Species of Special Concern			
Habitat:	**General:**	FED LISTING REFERS TO RUNS IN COASTAL BASINS FROM THE PAJARO RIVER SOUTH TO, BUT NOT INCLUDING, THE SANTA MARIA RIVER.			
	Micro:				

Occurrence No.	6	**Map Index:**	34099	**EO Index:**	30209	**Element Last Seen:**	1980-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-09-29

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037), Morro Bay North (3512047)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.35228 / -120.78651	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3914359 E701132	**Elevation (ft):**	200
PLSS:	T30S, R11E, Sec. 03 (M)	**Acres:**	1437.5

Location: CHORRO CR & TRIBS, BETWEEN MORRO BAY & SAN LUIS OBISPO, ALONG HWY 1 TO CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: IN CHORRO CR FROM MORRO BAY TO CHORRO RESERVOIR. IN SAN BERNARD CREEK TO ~400 FEET ELEVATION. IN SAN LUISTO CREEK TO ABOUT 5.6 KM UPSTREAM FROM MOUTH. IN DAIRY CREEK TO JUST OUTSIDE THE NORTHERN BOUNDERY OF CHORRO REGIONAL PARK.

Ecological: DENSE CHAPARRAL IN HEADWATERS, TO ROLLING GRASSLAND & OAK WOODLAND, THEN THROUGH AGRICULTURAL & URBAN AREAS TO MORRO BAY. 13 MIGRATION BARRIERS WERE IDENTIFIED THROUGHT THE DRAINAGE, THEIR ELIMINATION WOULD TRIPLE SPAWNING/NURSERY HABITAT.

General: RUN SIZE ESTIMATED AT 160 FISH IN 1976. SINCE 1979, UP TO 5000 STEELHEAD SMOLTS STOCKED ANNUALLY AS MITIGATION FOR DEPT OF CORRECTIONS CHORRO CREEK DAM. SUITABLE SPAWNING AND REARING HABITAT NOTED FOR THE CHORRO CREEK DRAINAGE.

Owner/Manager: PVT, DOC, SLO COUNTY, DOD

Occurrence No.	12	**Map Index:**	34105	**EO Index:**	30206	**Element Last Seen:**	2002-07-08
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-07-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-10-17

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.16959 / -120.62580	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3894431 E716222	**Elevation (ft):**	90
PLSS:	T32S, R13E, Sec. 06 (M)	**Acres:**	398.1

Location: PISMO CREEK & TRIBUTARY, WEST CORRAL DE PIEDRA CREEK, PRICE CANYON, BETWEEN EDNA & PISMO BEACH.

Detailed Location: FROM LOWER MIDDLE PISMO CREEK TO THE LOWERMOST PORTION OF WEST CORRAL DE PIEDRA CREEK.

Ecological: 1972: SPAWNING GRAVELS PRESENT BUT NOT ABUNDANT & NO FISH OBS FROM MOUTH TO EDNA. 1974: STEELHEAD OBS SUMMER & FALL IN ELECTROFISHING SURVEYS IN UPPER HALF OF PISMO CR & LOWERMOST WEST CORRAL DE PIEDRA CR. 2002: DENSE WILLOWS IN LOWER CR.

General: BASED ON 1990 DFG FILE DOCUMENTS, STEELHEAD APPARENTLY STILL ENTER PISMO CREEK. 8 JUL 2002: A 2" FRY WAS FOUND DEAD, AND 2 OTHERS OBSERVED ALIVE IN LOWER PISMO CREEK BY RR BRIDGE.

Owner/Manager: PVT, DPR-PISMO SB, UNKNOWN

Occurrence No.	17	**Map Index:** 36721	**EO Index:**	31718		**Element Last Seen:**	2008-06-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2008-06-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-01-16

Quad Summary: Oceano (3512015), Tar Spring Ridge (3512024), Arroyo Grande NE (3512025)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.13506 / -120.54724	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3890774 E723473	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 14 (M)	**Acres:**	830.0

Location: ARROYO GRANDE CREEK, ARROYO GRANDE VALLEY.

Detailed Location: FROM MOUTH AT PACIFIC OCEAN IN PISMO STATE BEACH (NEAR OCEANO AND HWY 1) TO BELOW LOPEZ DAM (UPPER EXTENT OF STEELHEAD DISTRIBUTION COULD NOT BE PRECISELY DETERMINED FROM SOURCE DOCUMENT).

Ecological: HABITAT CONSISTS OF POOLS (25-50CM DEEP), RIFFLES & GLIDES, WITH OVERHANGING VEGETATION. SURROUNDED BY RURAL RESIDENTIAL/GRAZED GRASSLANDS. CALIF RED-LEGGED FROG ALSO OCCURS IN THIS STREAM.

General: 9/24 & 27/1996: 116 FISH COLLECTED. ABUNDANCE FROM LOW (MOST COMMON) TO MODERATE. 10-15 JUVENILES OBS 12 SEP 1999 NEAR ARROYO GRANDE. 0.25 MI UPSTREAM OF LAGOON: JUVS OBS JUN & SEP 2006 & ADULTS & SMOLTS OBS MAR & JUN 2008 .

Owner/Manager: PVT, DPR-PISMO SB

Occurrence No.	21	**Map Index:** 41538	**EO Index:**	41538		**Element Last Seen:**	1999-01-13
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1999-01-13
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-08-31

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32759 / -120.67148	**Accuracy:**	80 meters
UTM:	Zone-10 N3911860 E711650	**Elevation (ft):**	480
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: UNNAMED TRIB TO STENNER CREEK, 1.4 MILES NE OF HIGHWAY 1 AT STENNER CREEK ROAD JCT, 2.7 MILES NNW OF SAN LUIS OBISPO.

Detailed Location: INSIDE CULVERT UNDER STENNER CREEK ROAD, STENNER CREEK LOCATED 50 FEET DOWNSTREAM. SMALL STREAM MAY FLOW YEAR ROUND DUE TO OVERFLOW FROM CITY WATER FACILITIES OR UPSTREAM SEEPS.

Ecological: DEEP POOL AT CULVERT OUTLET SHADED BY CULVERT AND DENSE WILLOWS. STREAM BOTTOM 100% COVERED BY THICK ALGAL MAT. UPSTREAM THE BED IS COMPOSED PRIMARILY OF SOIL AND HEAVY VEGETATION, VERY LITTLE GRAVEL.

General: 5 OBSERVED, 1 ADULT AND 4 JUVENILES, 1999.

Owner/Manager: PVT

Occurrence No.	22	**Map Index:** 41540	**EO Index:**	41540		**Element Last Seen:**	1997-08-29
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1997-08-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-08-31

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.29407 / -120.64347	**Accuracy:**	specific area
UTM:	Zone-10 N3908202 E714285	**Elevation (ft):**	320
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	24.1

Location:	SAN LUIS CREEK, CUESTA COUNTY PARK, SAN LUIS OBISPO.
Detailed Location:	FISH LADDER WITHIN CUESTA COUNTY PARK.
Ecological:	GRAVEL STREAM BED.
General:	19 OBSERVED 6 YEARLINGS AND 13 YOUNG OF THE YEAR; THE SURVEY LOOKED FOR RED-LEGGED FROG BUT FOUND NONE, 1997.
Owner/Manager:	SLO COUNTY-PARKS DEPT

Occurrence No.	25	**Map Index:** 55878	**EO Index:**	55894		**Element Last Seen:**	2003-07-02
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-07-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-22

Quad Summary:	Pismo Beach (3512026)
County Summary:	San Luis Obispo

Lat/Long:	35.21741 / -120.73395	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3899506 E706250	**Elevation (ft):**	300
PLSS:	T31S, R12E, Sec. 19 (M)	**Acres:**	17.2

Location:	DAVIS CANYON CREEK, 0.6 MI UPSTREAM FROM THE CONFLUENCE WITH SEE CANYON CREEK.
Detailed Location:	
Ecological:	STREAM IS IN A STEEP-SIDED CANYON WITH PERENNIAL FLOW AND COOL TEMPERATURES. WELL SHADED RIPARIAN CANOPY CONSISTING PRIMARILY OF DOGWOOD & WILLOWS. SMALL APPLE ORCHARD ADJACENT TO CREEK.
General:	6 YOUNG OF THE YEAR AND AGE 1+ FISH OBSERVED 2 JUL 2003.
Owner/Manager:	PVT

Occurrence No.	26	**Map Index:**	55880	**EO Index:**	55896	**Element Last Seen:**	2003-04-23
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-23

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.22407 / -120.73260	**Accuracy:**	80 meters
UTM:	Zone-10 N3900248 E706356	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 18 (M)	**Acres:**	0.0

Location: SEE CANYON CREEK, ABOUT 0.9 MI UPSTREAM FROM THE CONFLUENCE WITH DAVIS CANYON CREEK, IN THE IRISH HILLS.

Detailed Location:

Ecological: PERENNIAL CREEK TRIBUTARY TO SAN LUIS OBISPO CREEK. HABITAT CONSISTS OF BOULDER & LARGE COBBLE SUBSTRATE WITH SMALL PLUNGE POOLS, RUNS & LOW GRADIENT RIFFLES. POOL DEPTHS 4-20 INCHES. SOME UNDERCUT BANKS. CANOPY >70%. WATER TEMPS <70 F.

General: 1 JUVENILE OBSERVED 23 APR 2003.

Owner/Manager: UNKNOWN

Occurrence No.	27	**Map Index:**	55886	**EO Index:**	55902	**Element Last Seen:**	2003-07-02
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-07-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25271 / -120.67392	**Accuracy:**	80 meters
UTM:	Zone-10 N3903548 E711622	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO CREEK, EAST OF HWY 101, SOUTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: PERENNIAL COASTAL CREEK. SUBSTRATE OF GRAVEL AND SAND WITH SMALL SCOUR POOLS LONG EXISTING BANK STABILIZATION. ISOLATED POOLS 4-15 INCHES DEEP. SOME UNDERCUT BANKS BETWEEN BOULDERS PLACED AS RIPRAP. CANOPY <30%. WATER TEMP ABOUT 65 F.

General: 110 JUVENILES OBSERVED 2 JUL 2003. NONE OBSERVED ON 9 JUL 2003. HERON, EGRET & RACOON TRACKS WERE OBSERVED ALONG THE BANKS OF THE POOLS.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	30	**Map Index:**	76873	**EO Index:**	77843	**Element Last Seen:**	1939-06-19
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1939-06-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-10-08

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29634 / -120.62742	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3908489 E715738	**Elevation (ft):**	500
PLSS:	T30S, R13E, Sec. 19 (M)	**Acres:**	339.0

Location: SAN LUIS OBISPO CREEK, JUST NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED FROM TOWN EDGE TO 2 MI NE ALONG CREEK. UMMZ RECORD LOCATION STATED AS "SAN LUIS OBISPO CREEK, CA 1 MI N SAN LUIS OBISPO."

Ecological:

General: 1 SPECIMEN COLLECTED BY R. R. MILLER AND R. G. MILLER ON 19 JUN 1939 AND DEPOSITED AT UMMZ (133191).

Owner/Manager: UNKNOWN

Occurrence No.	31	**Map Index:**	76903	**EO Index:**	77850	**Element Last Seen:**	1948-09-03
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	1948-09-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-10-12

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19151 / -120.48750	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3897173 E728758	**Elevation (ft):**	400
PLSS:	T31S, R14E, Sec. 28 (M)	**Acres:**	306.0

Location: LOPEZ CANYON IN THE VICINITY OF ROUTZHAN PARK (HISTORIC), NOW UNDER LOPEZ LAKE, 7 MI NE OF ARROYO GRANDE.

Detailed Location: MAPPED TO LOCATION DESCRIPTIONS FROM CAS: "LOPEZ CANYON AT COUNTY PARK" AND "CANYON AT COUNTY PARK." LOPEZ DAM COMPLETED IN 1968. COLLECTOR'S ID WAS Q48-71 OR 4871.

Ecological: HUBBS & LIMBAUGH ALSO COLLECTED GILA ORCUTTII, GASTEROSTEUS ACULEATUS, AND TARICHA TOROSA AT THIS LOCATION ON THE SAME DATE AND DEPOSITED SPECIMENS AT CAS-ICHTHYOLOGY AND FMNH.

General: C. HUBBS & C. LIMBAUGH COLLECTED 1 SPECIMEN ON 3 SEP 1948 AND DEPOSITED AT CAS (SU 15189).

Owner/Manager: SLO COUNTY

Occurrence No.	32	**Map Index:** 80262	**EO Index:**	81245		**Element Last Seen:**	2001-07-13
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-07-13
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-10-18

Quad Summary: Nipomo (3512014), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09300 / -120.50429	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3886206 E727504	**Elevation (ft):**	350
PLSS:	T32S, R14E, Sec. 32 (M)	**Acres:**	190.0

Location: LOS BERROS CREEK, IN THE VICINITY OF UPPER LOS BERROS RD BETWEEN N DANA FOOTHILLS RD AND SPRING CANYON LN.

Detailed Location: MAPPED GENERALLY TO THE DESCRIPTION THAT "JUVENILE STEELHEAD WERE OBSERVED IN SHALLOW, FLOWING SECTION OF INTERMITTENT REACH OF LOS BERROS CRK LOCATED 0.5 MILES UPSTREAM OF THE FIRST BRIDGE OVER THE CREEK ON DANA FOOTHIL RD.

Ecological: RIPARIAN HABITAT DOMINATED BY QUERCUS AGRIFOLIA, PLANTANUS RACEMOSA AND SALIX SP. WITH A STREAM CHANNEL SUBSTRATE COMPOSED OF SAND, GRAVEL, BOLULDERS AND SOME AREAS OF BEDROCK. CALIFORNIA RED-LEGGED FROG ALSO PRESENT IN VICINITY.

General: 100S OF JUVENILE O. MYKISS OBSERVED ON 13 JUL 2001 & PRESUMED TO BE O. M. IRIDEUS. CALFISH WINTER STEELHEAD DISTRIBUTION (2007) SHOWS THIS STRETCH OF LOS BERROS CRK AS HAVING ANADROMOUS STEELHEAD PRESENT BTWN 2003-2005 BOTH UP & DOWN STREAM

Owner/Manager: UNKNOWN

Gila orcuttii

Element Code: AFCJB13120

arroyo chub

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	AFS_VU-Vulnerable, CDFW_SSC-Species of Special Concern, USFS_S-Sensitive			
Habitat:	**General:**	NATIVE TO STREAMS FROM MALIBU CR TO SAN LUIS REY RIVER BASIN. INTRODUCED INTO STREAMS IN SANTA CLARA, VENTURA, SANTA YNEZ, MOHAVE & SAN DIEGO RIVER BASINS.			
	Micro:	SLOW WATER STREAM SECTIONS WITH MUD OR SAND BOTTOMS. FEEDS HEAVILY ON AQUATIC VEGETATION & ASSOCIATED INVERTEBRATES.			

Occurrence No.	51	**Map Index:** 76903	**EO Index:**	77851		**Element Last Seen:**	1948-09-03
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	1948-09-03
Occ. Type:	Transplant Outside of Native Hab./Range		**Trend:**	Unknown		**Record Last Updated:**	2009-10-12

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19151 / -120.48750	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3897173 E728758	**Elevation (ft):**	400
PLSS:	T31S, R14E, Sec. 28 (M)	**Acres:**	306.0

Location: LOPEZ CANYON IN THE VICINITY OF ROUTZHAN PARK (HISTORIC), NOW UNDER LOPEZ LAKE, 7 MI NE OF ARROYO GRANDE.

Detailed Location: MAPPED TO LOCATION DESCRIPTIONS FROM CAS: "LOPEZ CANYON AT COUNTY PARK" AND "CANYON AT COUNTY PARK." LOPEZ DAM COMPLETED IN 1968. COLLECTOR'S ID WAS Q48-71 OR 4871.

Ecological: HUBBS & LIMBAUGH ALSO COLLECTED ONCORHYNCHUS MYKISS, GASTEROSTEUS ACULEATUS, AND TARICHA TOROSA AT THIS LOCATION ON THE SAME DATE AND DEPOSITED SPECIMENS AT CAS-ICHTHYOLOGY AND FMNH. TRANSPLANT OUT OF NATIVE RANGE ACCORDING TO P. B. MOYLE.

General: C. HUBBS & C. LIMBAUGH COLLECTED 1 SPECIMEN ON 3 SEP 1948 AND DEPOSITED AT CAS (SU 15190).

Owner/Manager: SLO COUNTY

Eucyclogobius newberryi

Element Code: AFCQN04010

tidewater goby

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S2S3
	Other:	AFS_EN-Endangered, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable			
Habitat:	**General:**	BRACKISH WATER HABITATS ALONG THE CALIF COAST FROM AGUA HEDIONDA LAGOON, SAN DIEGO CO. TO THE MOUTH OF THE SMITH RIVER.			
	Micro:	FOUND IN SHALLOW LAGOONS AND LOWER STREAM REACHES, THEY NEED FAIRLY STILL BUT NOT STAGNANT WATER & HIGH OXYGEN LEVELS.			

Occurrence No.	53	**Map Index:**	12654	**EO Index:**	28527	**Element Last Seen:**	2008-02-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-02-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-02-19

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.18439 / -120.70428	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3895905 E709036	**Elevation (ft):**	20
PLSS:	T31S, R12E, Sec. 31 (M)	**Acres:**	200.7

Location: SAN LUIS OBISPO CREEK, FROM MOUTH TO 2.5 MILES UPSTREAM, 1.5 MILES ENE OF POINT SAN LUIS.

Detailed Location: SITE OCCUPIES ABOUT 50 ACRES.

Ecological:

General: CAS SU 653. GOBIES FOUND HERE IN 1894 & 1916. NOT FOUND AGAIN UNTIL 1989 (LACM 44824-1) DESPITE COLLECTING BY MANY INDIVIDUALS IN THE INTERVENING YEARS. COLLECTED IN 1995. GOBIES COMMON & FISH COLLECTED FOR GENETIC SAMPLES ON 15-17 FEB 2008

Owner/Manager: UNKNOWN

Occurrence No.	54	**Map Index:**	12877	**EO Index:**	13128	**Element Last Seen:**	2008-02-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-02-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-02-19

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.13946 / -120.63571	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891067 E715399	**Elevation (ft):**	10
PLSS:	T32S, R12E, Sec. 13 (M)	**Acres:**	71.0

Location: PISMO CREEK (PRICE CANYON), FROM MOUTH TO 1.0 MILE UPSTREAM, PISMO BEACH.

Detailed Location: SITE OCCUPIES 7.5-10 ACRES. 2/13/96, 13 FISH RELOCATED OUT OF CONSTRUCTION ZONE.

Ecological:

General: LACM 36673-3, COLLECTED 6/16/77. POPULATION PRESUMED EXTANT IN 1990 BY SWIFT. 2280 COLLECTED IN 1995. 347 COLLECTED FROM SEVERAL SAMPLE DATES IN 1996. GOBIES COMMON AND FISH COLLECTED FOR GENETIC SAMPLES ON 15-17 FEB 2008.

Owner/Manager: DPR-PISMO SB, PVT

Occurrence No.	117	**Map Index:** 68139	**EO Index:**	68284		**Element Last Seen:**	2008-09-16
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	2008-09-16
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-01-12

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09777 / -120.63025	**Accuracy:**	80 meters
UTM:	Zone-10 N3886455 E716006	**Elevation (ft):**	10
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CREEK LAGOON, ADJACENT TO OCEANO DUNES STATE VEHICULAR RECREATION AREA, OCEANO.

Detailed Location: THE MOUTH OF THIS LAGOON CHANGES FROM YEAR TO YEAR. 2007 WAS FIRST YEAR OF ABUNDANT PROTECTION.

Ecological: ELONGATE LAGOON BEHIND BEACH, 1-6' DEEP, EXTENT VARIES DEPENDING ON TIDES & HIGH WATER EVENTS. SEASONAL PATCHES OF SUBMERGED & EMERGENT VEG; MUD, SILT, & GRAVEL SUBSTRATE. LAGOON SEVERELY DESSICATED 16 SEP 2008 WITH ONLY ~3 FETID POOLS.

General: MAR 05: 1ST RECOLONIZATION OBS. MOUTH OPEN 6 JUN 06, 1 AD; MOUTH CLOSED 19 SEP 06, 1 JUV (1ST OBS OF REPRO). 2007: APR: 2 AD; JUN: 100 AD, 1K JUV, 1K LARV; SEP: 100 AD, 1K JUV; DEC: 50 ADULTS. COMMON, OBS FEB, MAR, JUN 08. 0 OBS 16 SEP 08.

Owner/Manager: DPR-OCEANO DUNES SVRA

Myotis yumanensis

Element Code: AMACC01020

Yuma myotis

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S4?
	Other:	BLM_S-Sensitive, IUCN_LC-Least Concern, WBWG_LM-Low-Medium Priority			
Habitat:	**General:**	OPTIMAL HABITATS ARE OPEN FORESTS AND WOODLANDS WITH SOURCES OF WATER OVER WHICH TO FEED.			
	Micro:	DISTRIBUTION IS CLOSELY TIED TO BODIES OF WATER. MATERNITY COLONIES IN CAVES, MINES, BUILDINGS OR CREVICES.			

Occurrence No.	57	**Map Index:** 68426	**EO Index:**	68662		**Element Last Seen:**	1998-07-23
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-07-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-04-10

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.29350 / -120.38829	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3908721 E737496	**Elevation (ft):**	1400
PLSS:	T30S, R15E, Sec. 20 (M)	**Acres:**	0.0

Location: ABOUT 1 MILE SE OF PIPPIN CORNER, VICINITY OF SALINAS RIVER AND POSO CREEK.

Detailed Location: MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE, DATUM NOT GIVEN.

Ecological:

General: 7 FEMALES, 3 MALES, AND 1 UNKNOWN CAPTURED BY MIST NET AND RELEASED ON 23 JUL 1998.

Owner/Manager: UNKNOWN

Lasiurus blossevillii **Element Code:** AMACC05060

western red bat

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3?
	Other:	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority			
Habitat:	**General:**	ROOSTS PRIMARILY IN TREES, 2-40 FT ABOVE GROUND, FROM SEA LEVEL UP THROUGH MIXED CONIFER FORESTS.			
	Micro:	PREFERS HABITAT EDGES & MOSAICS WITH TREES THAT ARE PROTECTED FROM ABOVE & OPEN BELOW WITH OPEN AREAS FOR FORAGING.			

Occurrence No.	15	**Map Index:**	68426	**EO Index:**	68688	**Element Last Seen:**	1998-07-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-07-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-04-10

Quad Summary:	Santa Margarita Lake (3512034)
County Summary:	San Luis Obispo

Lat/Long:	35.29350 / -120.38829	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3908721 E737496	**Elevation (ft):**	1400
PLSS:	T30S, R15E, Sec. 20 (M)	**Acres:**	0.0

Location:	ABOUT 1 MILE SE OF PIPPIN CORNER, VICINITY OF SALINAS RIVER.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE, DATUM NOT GIVEN.
Ecological:	
General:	1 FEMALE CAPTURED BY MIST NET AND RELEASED ON 23 JUL 1998.
Owner/Manager:	UNKNOWN

Corynorhinus townsendii **Element Code:** AMACC08010

Townsend's big-eared bat

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4
	State:	None		**State:**	S2S3
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority			
Habitat:	**General:**	THROUGHOUT CALIFORNIA IN A WIDE VARIETY OF HABITATS. MOST COMMON IN MESIC SITES.			
	Micro:	ROOSTS IN THE OPEN, HANGING FROM WALLS & CEILINGS. ROOSTING SITES LIMITING. EXTREMELY SENSITIVE TO HUMAN DISTURBANCE.			

Occurrence No.	169	**Map Index:**	68337	**EO Index:**	68499	**Element Last Seen:**	2001-10-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-10-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-03-06

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.32886 / -120.70787	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3911924 E708338	**Elevation (ft):**	370
PLSS:	T30S, R12E, Sec. 08 (M)	**Acres:**	30.0

Location:	CAMP ROBERTS MILITARY RESERVATION, EAST OF CAMP SAN LUIS OBISPO, 0.4 AND 0.8 MI NORTH OF HWY 1.
Detailed Location:	MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY SOURCE. 1 INDIVIDUAL OBSERVED IN NORTHERN FEATURE; 100 INDIVIDUALS OBSERVED IN SOUTHERN FEATURE.
Ecological:	
General:	51 INDIVIDUALS OBSERVED ON 5 OCT, 50 INDIVIDUALS OBSERVED ON 6 OCT 2001.
Owner/Manager:	STATE-CAMP ROBERTS MR

Antrozous pallidus **Element Code:** AMACC10010

pallid bat

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive, WBWG_H-High Priority			
Habitat:	**General:**	DESERTS, GRASSLANDS, SHRUBLANDS, WOODLANDS & FORESTS. MOST COMMON IN OPEN, DRY HABITATS WITH ROCKY AREAS FOR ROOSTING.			
	Micro:	ROOSTS MUST PROTECT BATS FROM HIGH TEMPERATURES. VERY SENSITIVE TO DISTURBANCE OF ROOSTING SITES.			

Occurrence No.	77	**Map Index:**	52214	**EO Index:**	52214	**Element Last Seen:**	2000-06-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-08-21

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28115 / -120.66074	**Accuracy:**	specific area
UTM:	Zone-10 N3906732 E712747	**Elevation (ft):**	210
PLSS:	T30S, R12E, Sec. 26 (M)	**Acres:**	10.2

Location: UNDERCITY TUNNEL, RUNNING BETWEEN MARSH STREET AND CHORRO STREET, SAN LUIS OBISPO.

Detailed Location: LAT/LONG COORDINATES FROM MANIS INCLUDED HERE: 35.28725/-120.6607 WITH UNCERTAINTY OF 3218.688M.

Ecological: HABITAT CONSISTS OF A 1000' UNDERCITY TUNNEL, WHICH CONVEYS SAN LUIS OBISPO CREEK UNDERNEATH DOWNTOWN SAN LUIS OBISPO.

General: 1 MALE SPECIMEN COLLECTED BY WILLIAM E. RAINEY ON 10 FEB 1993, MVZ #182357. 20 ADULTS OBSERVED ON 1 JUN 2000.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	280	**Map Index:**	66612	**EO Index:**	66753	**Element Last Seen:**	1995-05-30
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-10-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36245 / -120.69633	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3915675 E709300	**Elevation (ft):**	1513
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, UPPER WHISKEY SPRINGS.

Detailed Location:

Ecological:

General: 1 MALE SPECIMEN COLLECTED BY UNIVERSITY OF NEW MEXICO BAT SURVEY TEAM ON 30 MAY 1995, CAS #23984.

Owner/Manager: UNKNOWN

Eumops perotis californicus

Element Code: AMACD02011

western mastiff bat

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T4
	State:	None		**State:**	S3?
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, WBWG_H-High Priority			
Habitat:	**General:**	MANY OPEN, SEMI-ARID TO ARID HABITATS, INCLUDING CONIFER & DECIDUOUS WOODLANDS, COASTAL SCRUB, GRASSLANDS, CHAPARRAL ETC			
	Micro:	ROOSTS IN CREVICES IN CLIFF FACES, HIGH BUILDINGS, TREES & TUNNELS.			

Occurrence No.	180	**Map Index:** 12855	**EO Index:** 66542	**Element Last Seen:**	1991-04-29
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1991-04-29
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2006-09-26

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28302 / -120.64684	**Accuracy:**	1 mile
UTM:	Zone-10 N3906969 E714007	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO.

Detailed Location: SPECIFIC LOCATION UNKNOWN. MAPPED ACCORDING TO LAT/LONG COORDINATES GIVEN BY PIERSON AND RAINEY.

Ecological:

General: SPECIMEN COLLECTED 29 APR 1991 AND DEPOSITED AT CNDDB.

Owner/Manager: UNKNOWN

Taxidea taxus

Element Code: AMAJF04010

American badger

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S4
	Other:	CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern			
Habitat:	**General:**	MOST ABUNDANT IN DRIER OPEN STAGES OF MOST SHRUB, FOREST, AND HERBACEOUS HABITATS, WITH FRIABLE SOILS.			
	Micro:	NEEDS SUFFICIENT FOOD, FRIABLE SOILS & OPEN, UNCULTIVATED GROUND. PREYS ON BURROWING RODENTS. DIGS BURROWS.			

Occurrence No.	198	**Map Index:** 57229	**EO Index:**	57245		**Element Last Seen:**	2002-07-08
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-07-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-10-05

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17664 / -120.62167	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3895223 E716579	**Elevation (ft):**	130
PLSS:	T31S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: PRICE CANYON ROAD, 3 MILES NORTH OF PISMO BEACH

Detailed Location:

Ecological: HABITAT CONSISTS OF OPEN, NON-NATIVE GRASSLAND WITH SCATTERED COAST LIVE OAK (QUERCUS AGRIFOLIA) WOODLANDS IN THE RAVINES. PRICE CANYON ROAD PARALLELS PISMO CREEK, A RIPARIAN CORRIDOR WITH A MATURE VEGETATION STRUCTURE.

General: 1 JUVENILE BADGER KILLED ON PRICE CANYON ROAD ON 8 JUL 2002.

Owner/Manager: UNKNOWN

Occurrence No.	199	**Map Index:** 58099	**EO Index:**	58135		**Element Last Seen:**	1991-04-05
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1991-04-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-11-17

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17676 / -120.59442	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3895296 E719061	**Elevation (ft):**	220
PLSS:	T31S, R13E, Sec. 33 (M)	**Acres:**	0.0

Location: WEST OF HIGHWAY 227, JUST SW OF THE JUNCTION OF HIGHWAY 227 AND THE EAST FORK OF PISMO CREEK, NNE OF GROVER CITY

Detailed Location:

Ecological: HABITAT CONSISTS OF GRAZED GRASSLAND BORDERED BY OAK WOODLAND AND CHAPARRAL.

General: RECENT DIGGINGS AND BURROWS PRESENT ON 5 APR 1991.

Owner/Manager: PVT

Occurrence No.	200	**Map Index:** 58100	**EO Index:**	58136		**Element Last Seen:**	1991-06-28
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1991-06-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-11-17

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13808 / -120.59170	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3891011 E719412	**Elevation (ft):**	140
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: VICINITY OF LA CANADA ROAD AND JAMES WAY, ARROYO GRANDE

Detailed Location:

Ecological: HABITAT CONSISTS OF A GRASSY HILLSIDE WITH BRUSHY RIPARIAN AND OAK WOODLANDS INTERSPERSED.

General: FAIRLY NUMEROUS FRESH DIGGINGS AND BURROWS PRESENT ON 15 MAR AND 28 JUN 1991.

Owner/Manager: UNKNOWN

Occurrence No.	346	**Map Index:**	64648	**EO Index:**	64727	**Element Last Seen:**	2006-04-17
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-04-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-05-09

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.27581 / -120.71072	**Accuracy:**	80 meters
UTM:	Zone-10 N3906033 E708215	**Elevation (ft):**	150
PLSS:	T30S, R12E, Sec. 32 (M)	**Acres:**	0.0

Location:	LOS OSOS VALLEY ROAD, JUST SE OF THE INTERSECTION WITH FOOTHILL ROAD, ~2 MILES WEST OF SAN LUIS OBISPO
Detailed Location:	
Ecological:	SURROUNDING HABITAT CONSISTS OF OAK WOODLAND SAVANNAH AND NON-NATIVE GRASSLAND.
General:	1 ADULT FOUND DOR ON 17 APR 2006.
Owner/Manager:	UNKNOWN

Occurrence No.	391	**Map Index:**	70300	**EO Index:**	71190	**Element Last Seen:**	2006-05-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-05-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-12-17

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.03881 / -120.59648	**Accuracy:**	80 meters
UTM:	Zone-10 N3879988 E719243	**Elevation (ft):**	81
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location:	OCEANO DUNES STATE VEHICULAR RECREATION AREA. ALONG TOSCO GATE RD, JUST E OF JACK LAKE, W OF CONOCO PHILLIPS REFINERY.
Detailed Location:	LOCATION IS IN OPEN, UNDEVELOPED LAND, LEASED TO STATE PARKS.
Ecological:	DUNE LUPINE-GOLDEN BUSH SERIES.
General:	LIVE ANIMAL OBSERVED, POSSIBLY AT NATAL DEN. OTHER MULTIPLE OBSERVATIONS OF BURROWS NEAR ROAD.
Owner/Manager:	DPR-OCEANO DUNES SVRA

Occurrence No.	422	**Map Index:**	73801	**EO Index:**	74784	**Element Last Seen:**	2008-08-11
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-08-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-03-05

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24687 / -120.65346	**Accuracy:**	80 meters
UTM:	Zone-10 N3902945 E713500	**Elevation (ft):**	160
PLSS:	T31S, R12E, Sec. 11 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO, ON TANK FARM RD, ABOUT 0.9 MI NW OF SLO CO AIRPORT, ABOUT 2.8 MI SOUTH OF JUNCTION OF HWY 101 & HWY 1.

Detailed Location: MAPPED TO PROVIDED COORDINATES.

Ecological: UNDEVELOPED NATURAL GRASSLAND AND WETLANDS WITHIN CHEVRON TANK FARM. SURROUNDING LAND FOR RESIDENTIAL, COMMERCIAL AND AGRICULTURAL USES. ALSO AN AIRPORT LOCATION. AUTHOR DESCRIBED HABITAT AS "EXCELLENT."

General: ON 11 AUG 2008 ADULT INDIVIDUAL WAS HIT BY VEHICLE ON TANK FARM RD. COLLISION POSSIBLY COULD HAVE OCCURRED ON THE NIGHT OF 10 AUG 2008. AUTHOR SUGGESTS INSERTING A WILDLIFE CULVERT UNDER TANK FARM RD.

Owner/Manager: UNKNOWN

Occurrence No.	423	**Map Index:**	73802	**EO Index:**	74785	**Element Last Seen:**	2008-08-10
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-08-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-03-05

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26905 / -120.70489	**Accuracy:**	80 meters
UTM:	Zone-10 N3905296 E708762	**Elevation (ft):**	130
PLSS:	T30S, R12E, Sec. 32 (M)	**Acres:**	0.0

Location: ON LOS OSOS VALLEY RD, ABOUT 0.5 MI WEST OF LAGUNA LAKE, ABOUT 0.65 MI SE OF LOS OSOS VALLEY RD AT FOOTHILL RD, SLO.

Detailed Location: MAPPED TO PROVIDED COORDINATES.

Ecological: HABITAT CONSISTS OF OPEN ANNUAL GRASSLAND ADJACENT TO LOS OSOS VALLEY ROAD TO THE WEST. ANNUAL GRASSLAND, FRESHWATER MARSH, AND A SMALL LAKE (LAGUNA LAKE) ADJACENT TO THE EAST & SE. FURTHER EAST, COASTAL SAGE SCRUB AND OAK WOODLAND.

General: ON 10 AUG 2008 DEAD MALE FOUND AT SE END OF LOS OSOS VALLEY. BASED ON BODY CONDITION, INDIVIDUAL DIED NIGHT BEFORE. VALLEY DOMINATED BY AGRICULTURAL PRACTICES WITH LITTLE TOPOGRAPHIC RELIEF ALONG FLOOR. ALSO URBAN DEVELOPMENT.

Owner/Manager: CITY OF SAN LUIS OBISPO

Emys marmorata

Element Code: ARAAD02030

western pond turtle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4
	State:	None		**State:**	S3
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_VU-Vulnerable, USFS_S-Sensitive			
Habitat:	**General:**	A THOROUGHLY AQUATIC TURTLE OF PONDS, MARSHES, RIVERS, STREAMS & IRRIGATION DITCHES, USUALLY WITH AQUATIC VEGETATION, BELOW 6000 FT ELEVATION.			
	Micro:	NEED BASKING SITES AND SUITABLE (SANDY BANKS OR GRASSY OPEN FIELDS) UPLAND HABITAT UP TO 0.5 KM FROM WATER FOR EGG-LAYING.			

Occurrence No.	875	**Map Index:**	72622	**EO Index:**	28203	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-10-20

Quad Summary: Oceano (3512015)
County Summary: San Luis Obispo

Lat/Long:	35.02846 / -120.62168	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3878785 E716971	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	133.0

Location: OSO FLACO LAKE, APPROXIMATELY 5 MILES SOUTH OF OCEANO.
Detailed Location:
Ecological:
General: OBSERVED BY D. HOLLAND, DATE UNKNOWN.
Owner/Manager: DPR-OCEANO DUNES SVRA, UNKNOWN

Occurrence No.	876	**Map Index:**	72634	**EO Index:**	28207	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-10-21

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)
County Summary: San Luis Obispo

Lat/Long:	35.16627 / -120.62761	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3894059 E716066	**Elevation (ft):**	100
PLSS:	T32S, R13E, Sec. 06 (M)	**Acres:**	598.0

Location: PISMO CREEK, NORTH OF GROVER CITY.
Detailed Location: TURTLES OCCUR IN OR ALONG CREEK.
Ecological:
General: OBSERVED BY D. HOLLAND, DATE UNKNOWN.
Owner/Manager: PVT, DPR-PISMO SB, UNKNOWN

Occurrence No.	889	**Map Index:**	13357	**EO Index:**	28198	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-09-05

Quad Summary: Santa Margarita Lake (3512034)
County Summary: San Luis Obispo

Lat/Long:	35.34501 / -120.43512	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3914323 E733088	**Elevation (ft):**	1550
PLSS:	T30S, R14E, Sec. 01 (M)	**Acres:**	202.0

Location: ALAMO CREEK, NE OF SANTA MARGARITA LAKE.
Detailed Location: TURTLES OCCUR IN OR ALONG CREEK.
Ecological:
General: OBSERVED BY D. HOLLAND, DATE UNKNOWN.
Owner/Manager: BLM, PVT

Occurrence No.	976	**Map Index:** 24413	**EO Index:**	6942		**Element Last Seen:**	2003-05-05
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Stable		**Record Last Updated:**	2003-07-30

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.34382 / -120.56332	**Accuracy:**	specific area
UTM:	Zone-10 N3913897 E721438	**Elevation (ft):**	1200
PLSS:	T30S, R13E, Sec. 03 (M)	**Acres:**	10.6

Location: UNNAMED TRIBUTARY TO RINCONADA CREEK, 1.5 MILES WSW OF THE INTERSECTION OF LAS PILITAS ROAD AND POZO ROAD.

Detailed Location: DESIGNATED SANTA MARGARITA RANCH POND 2A AND POND 2B.

Ecological: HABITAT CONSISTS OF A SMALL POND AND THE SMALL SCOUR POOL JUST DOWNSTREAM; SURROUNDING HABITAT CONSISTS OF FOOTHILL WOODLAND/GRAZED GRASSLAND.

General: ONE INDIVIDUAL OBSERVED ON 11 MAR 1993, BASKING ON A ROCK. 3 ADULTS OBSERVED 29 MAY & 2 NOV 2002. 5 ADULTS & 3 JUVENILES OBSERVED 19 MAR & 5 MAY 2003.

Owner/Manager: PVT

Occurrence No.	1002	**Map Index:** 33272	**EO Index:**	1880		**Element Last Seen:**	1995-03-30
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1995-03-30
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-10-18

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13206 / -120.54281	**Accuracy:**	80 meters
UTM:	Zone-10 N3890452 E723885	**Elevation (ft):**	150
PLSS:	T32S, R13E, Sec. 23 (M)	**Acres:**	0.0

Location: TAR SPRING CREEK, ON THE DOWNSTREAM SIDE OF BRANCH MILL ROAD BRIDGE, ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF FAST-MOVING WATER WITH LARGE BOULDERS & FALLEN-TREE TRUNKS, WHICH CREATE NUMEROUS POOLS; SURROUNDED BY WILLOW RIPARIAN VEGETATION, WITH A HEAVY UNDERSTORY.

General: 1 ADULT OBSERVED ON 30 MARCH 1995.

Owner/Manager: UNKNOWN

Occurrence No.	1003	**Map Index:** 33276	**EO Index:**	1877		**Element Last Seen:**	2003-08-09
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-11-18

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33813 / -120.68697	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3912996 E710214	**Elevation (ft):**	675
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: CHORRO RESERVOIR AND ASSOCIATED PONDS, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location:

Ecological: HABITAT CONSISTS OF A SERIES OF FRESH-WATER AND SEDIMENT PONDS.

General: ON 8 MAY 1993, 2 OBSERVED SWIMMING AND 6 CAPTURED/RELEASED (3M, 2F, 1JUV). ON 5 JUNE 1994, 10 ADULTS AND 2 JUVENILES OBSERVED BASKING. ON 28 MAY 1994, 1 ADULT OBSERVED SWIMMING. 1 ADULT OBSERVED ON 9 AUG 2003.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	1004	**Map Index:** 33300	**EO Index:**	1623		**Element Last Seen:**	1993-05-08
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-05-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-10-03

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34438 / -120.68061	**Accuracy:**	80 meters
UTM:	Zone-10 N3913703 E710776	**Elevation (ft):**	825
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: BOUNDARY SPRINGS, CAMP SAN LUIS NATIONAL GUARD RESERVATION.

Detailed Location: PAGE'S SITE #CLSO3.

Ecological:

General: 1 JUVENILE OBSERVED IN SHALLOW WATER ON 8 MAY 1993.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	1005	**Map Index:** 72624	**EO Index:**	1621		**Element Last Seen:**	1994-05-28
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-05-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-10-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34382 / -120.69473	**Accuracy:**	80 meters
UTM:	Zone-10 N3913612 E709494	**Elevation (ft):**	675
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: ALPHA RANGE POND, CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: PAGE'S SITE #CLSO12.

Ecological: HABITAT CONSISTS OF A FRESHWATER POND.

General: 2 ADULTS OBSERVED BASKING ON 21 MARCH 1994. 6 ADULTS OBSERVED BASKING ON 28 MAY 1994.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	1017	**Map Index:** 32711	**EO Index:**	1163		**Element Last Seen:**	1992-05-14
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1992-05-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-12-27

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24146 / -120.62019	**Accuracy:**	specific area
UTM:	Zone-10 N3902416 E716542	**Elevation (ft):**	240
PLSS:	T31S, R13E, Sec. 07 (M)	**Acres:**	54.5

Location: POND AND CREEK ON LA LOMITA RANCH, OFF ORCUTT ROAD, JUST OUTSIDE SAN LUIS OBISPO CITY LIMITS; SOUTH OF ISLAY HILL.

Detailed Location:

Ecological: FARM POND AND A SMALL CREEK ABOUT 3 TO 6 FEET ACROSS; VARIABLE WATER DEPTH FROM SHALLOW TO DEEP POOLS; RIPARIAN MAINLY OF WILLOWS.

General: APPROX. 10 ADULTS AND AT LEAST 1 JUVENILE OBSERVED; SITE IS PROTECTED; NESTING SITES BEING INCORPORATED INTO MANAGEMENT PLANS.

Owner/Manager: PVT-DOUGLAS MURDOCK

Occurrence No.	1018	**Map Index:** 32712	**EO Index:**	1161		**Element Last Seen:**	1992-04-05
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1992-04-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-12-27

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17963 / -120.59394	**Accuracy:**	specific area
UTM:	Zone-10 N3895615 E719097	**Elevation (ft):**	190
PLSS:	T31S, R13E, Sec. 33 (M)	**Acres:**	15.9

Location: EAST FORK OF PISMO CREEK FROM WHERE BRIDGE ON HWY 227 CROSSES CREEK, NW TO PROPERTY LINE; NNE OF GROVER CITY.

Detailed Location: MAP PROVIDED IN FSF UNCLEAR, SO MAPPED ACCORDING TO COORDINATES PROVIDED; SITE HAS BEEN PROPOSED FOR DEVELOPMENT INTO GOLF COURSE, BUT DELAYED DUE TO OWNER GOING INTO BANKRUPTCY.

Ecological: PERMANENT CREEK BORDERED BY GRASSLAND AND IN A FEW PLACES, WILLOWS; WIDTH VARIES FROM 4 TO 7 FEET; DEPTH VARIABLE FROM INCHES TO A COUPLE OF FEET.

General: "MANY" INDIVIDUALS (ADULTS AND JUVENILES) OBSERVED IN CREEK; PROTECTION OF CREEK ACCOMMODATED IN ORIGINAL PLANS; DEVELOPMENT IN ABEYANCE, BUT WITH OR IF DEVELOPMENT OCCURS, THEN POTENTIAL LOSS OF NESTING SITES.

Owner/Manager: PVT-MICHAEL SILVA

Occurrence No.	1019	**Map Index:**	32713	**EO Index:**	1175	**Element Last Seen:**	1992-07-29
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-07-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-12-26

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25423 / -120.64725	**Accuracy:**	specific area
UTM:	Zone-10 N3903774 E714046	**Elevation (ft):**	180
PLSS:	T31S, R12E, Sec. 01 (M)	**Acres:**	25.8

Location: UNNAMED CREEK IMMEDIATELY WEST OF BROAD STREET; 0.9 KM SSE OF ORCUTT ROAD X BROAD STREET.

Detailed Location:

Ecological: SMALL, PERMANENT CREEK FROM 3-6 FEET ACROSS; WATER DEPTH VARIABLE FROM INCHES TO 3 FEET; CREEK RUNS THROUGH OVERGRAZED GRASSLAND

General: SEVERAL ADULT TURTLES OBSERVED; UNKNOWN IF JUVENILES WERE ALSO OBSERVED; SUITABLE HILLSIDE NEARBY WILL REMAIN UNALTERED FROM DEVELOPMENT FOR NESTING SITES.

Owner/Manager: PVT-MARGARITA RANCH

Occurrence No.	1034	**Map Index:**	32728	**EO Index:**	1162	**Element Last Seen:**	1987-11-30
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-11-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-11-16

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.19890 / -120.60193	**Accuracy:**	specific area
UTM:	Zone-10 N3897735 E718318	**Elevation (ft):**	220
PLSS:	T31S, R13E, Sec. 29 (M)	**Acres:**	18.7

Location: POND; NORTHEAST OF JUNCTION OF ROUTE 227 & CORBETT CANYON ROAD; SOUTHEAST OF SAN LUIS OBISPO.

Detailed Location:

Ecological: POND.

General: TURTLE SIGHTING CONFIRMED BY B.H. BRATTSTROM ON 11/30/1987.

Owner/Manager: UNKNOWN

Occurrence No.	1063	**Map Index:**	32876	**EO Index:**	497	**Element Last Seen:**	1995-05-19
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-03-18

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34293 / -120.65301	**Accuracy:**	80 meters
UTM:	Zone-10 N3913601 E713289	**Elevation (ft):**	1040
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: STENNER CREEK HEADWATERS; BETWEEN SOUTH PORTAL OF CUESTA TUNNEL (AQUEDUCT) AND RR TRACKS; NORTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: HEADWATERS OF STENNER CREEK; MIXED HARDWOODS, PRIMARILY OAK & SYCAMORE ALONG HIGH-GRADIENT CREEK. SUBSTRATE PRIMARILY BEDROCK WITH COBBLE, BOULDER & SAND. EVIDENCE OF HEAVY FLOODING FROM JAN/APR RAINS. BANK GRADIENT STEEP (45-90 DEGREES).

General: 1 ADULT TURTLE FOUND WITHIN CONSTRUCTION DISTURBANCE AREA, RELOCATED DOWNSTREAM SOUTH OF RR TRACKS.

Owner/Manager: UNKNOWN

Occurrence No.	1064	**Map Index:**	32877	**EO Index:**	498	**Element Last Seen:**	1995-04-13
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-04-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-10-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35968 / -120.63880	**Accuracy:**	80 meters
UTM:	Zone-10 N3915490 E714536	**Elevation (ft):**	1300
PLSS:	T29S, R12E, Sec. 36 (M)	**Acres:**	0.0

Location: NORTH PORTAL OF CUESTA TUNNEL; APPROX. 0.7 KM NORTH OF HIGHWAY 101 AT THE RR CROSSING NORTH OF CUESTA PASS.

Detailed Location: AQUEDUCT IS A TRIBUTARY TO SANTA MARGARITA CREEK, NORTH OF SAN LUIS OBISPO.

Ecological: SMALL (<3M WIDE) DRAINAGE IN OAK WOODLAND/CHAPARRAL OF CUESTA HILLS. CANOPY DENSE, BASKING SITE ABUNDANCE HIGH. SUBSTRATE CONSISTS OF LOGS, BOULDER, GRAVEL, AND RIPRAP; BANK GRADIENT >35 DEGREES.

General: 1 ADULT TURTLE CAUGHT IN SHALLOW POOL ON CONSTRUCTION GRAVEL, RELOCATED TO MITIGATION PROPERTY IN ARROYO GRANDE.

Owner/Manager: UNKNOWN

Occurrence No.	1065	**Map Index:**	72625	**EO Index:**	19315	**Element Last Seen:**	1998-10-01
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-10-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-10-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30331 / -120.64250	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3909229 E714349	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	29.0

Location: HEADWATERS OF MIOSSI CREEK, APPROXIMATELY 1.5 KM EAST OF CALIFORNIA POLYTECHNIC STATE UNIVERSITY.

Detailed Location:

Ecological: SMALL PERENNIAL CREEK WITH POOLS, MIXED HARDWOOD RIPARIAN, RUSHES/SEDGES. UPLAND HABITAT ROLLING OAK SAVANNAH FOOTHILLS; HIGH DEGREE OF WATER-LEVEL COVER; BASKING SITE ABUNDANCE HIGH. SLOW SHALLOW SECTIONS WITH FLOATING AQUATIC VEGETATION.

General: 1 ADULT OBSERVED FORAGING IN SMALL (1M X 2M X 0.25M DEEP) POOL 150 FEET SOUTHEAST OF PIPELINE CROSSING. ONE INDIVIDUAL OBSERVED ON 1 OCT 1998.

Owner/Manager: PVT-MIOSSI

Occurrence No.	1066	**Map Index:**	32880	**EO Index:**	496	**Element Last Seen:**	1995-06-26
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-06-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-03-18

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32778 / -120.65087	**Accuracy:**	80 meters
UTM:	Zone-10 N3911925 E713523	**Elevation (ft):**	640
PLSS:	T30S, R12E, Sec. 11 (M)	**Acres:**	0.0

Location: APPROX. 3.0 KM NNE OF CALIFORNIA POLYTECHNIC STATE UNIVERSITY; 0.5 KM SOUTH OF SPRR; TRIBUTARY TO STENNER CREEK.

Detailed Location:

Ecological: SMALL PERMANENT DRAINAGE IN HILLS ABOVE CALPOLY; RIPARIAN CORRIDOR PRIMARILY SYCAMORES AND WILLOWS; COVER AND BASKING SITE ABUNDANCE HIGH; SUBSTRATE SAND, GRAVEL, COBBLE, BOULDER. BANKS STEEP (30-80 DEGREES), STREAM GRADIENT LOW.

General: 1 ADULT TURTLE OBSERVED BASKING ON MUD BANK (144MM PLASTRON).

Owner/Manager: PVT

Occurrence No.	1067	**Map Index:**	72628	**EO Index:**	493	**Element Last Seen:**	1995-05-30
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-10-20

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28665 / -120.61275	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3907446 E717098	**Elevation (ft):**	600
PLSS:	T30S, R13E, Sec. 29 (M)	**Acres:**	22.0

Location: TRIBUTARY TO CREEK IN RESERVOIR CANYON; APPROXIMATELY 4.0 KM EAST OF SAN LUIS OBISPO.

Detailed Location: TROUT OBSERVED IN DEEPER POOLS IN SOME PARTS OF STREAM; LIKELY MIGRATED UP DURING SPRING FLOODS.

Ecological: SMALL SEASONAL STREAM IN ROLLING GRASSLAND/OAK SAVANNAH COASTAL FOOTHILLS. SYCAMORE, OAKS, POISON OAK STANDS GIVE CANOPY COVER. STEEP BANK GRADIENT. SUBSTRATE COBBLE, BOULDER, GRAVEL, BEDROCK. FLOOD DAMAGE VISIBLE FROM JAN/APR 1995 RAINS.

General: 5/30/1995:1 ADULT AND 1 JUVENILE OBSERVED BASKING; 5/26/1995: 1 JUVENILE OBSERVED BASKING ON BEDROCK IN POOL OUTSIDE PIPELINE CONSTRUCTION AREA; 5/1/1995: 2 ADULTS OBSERVED: ONE WALKING ON STREAM BOTTOM IN SHALLOW RIFFLES, ONE BASKING.

Owner/Manager: PVT

Occurrence No.	1068	**Map Index:**	32882	**EO Index:**	492	**Element Last Seen:**	1995-05-01
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-10-28

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.27936 / -120.59953	**Accuracy:**	80 meters
UTM:	Zone-10 N3906666 E718320	**Elevation (ft):**	1040
PLSS:	T30S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location: HAMPTON CREEK; APPROX. 3.4 KM SOUTHEAST OF HIGHWAY 101 AT RESERVOIR CANYON ROAD; EAST OF SAN LUIS OBISPO.

Detailed Location:

Ecological: HIGH GRADIENT PERMANENT STREAM. LOW COVER PRIMARILY POISON OAK; CANOPY COVER BY MATURE OAKS AND SYCAMORES. UPLAND: ROLLING COASTAL FOOTHILLS WITH GRASSLAND OAK SAVANNAH.

General: 1 ADULT OBSERVED.

Owner/Manager: PVT

Occurrence No.	1069	**Map Index:**	32883	**EO Index:**	491	**Element Last Seen:**	1995-06-06
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-06-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-10-28

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.29178 / -120.62282	**Accuracy:**	80 meters
UTM:	Zone-10 N3907992 E716169	**Elevation (ft):**	460
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: TRIBUTARY TO RESERVOIR CANYON CREEK; 0.9 KM SOUTHEAST OF HIGHWAY 101 AT RESERVOIR CANYON ROAD; EAST OF SAN LUIS OBISPO.

Detailed Location:

Ecological: OAK GRASSLANDS/SAVANNAH WITH SMALL SEASONAL DRAINAGES. COVER LOW, LIMITED TO DENSE POISON OAK STANDS. SUBSTRATE PRIMARILY COBBLE, BOULDER, SAND, BEDROCK. BASKING SITE ABUNDANCE HIGH; BANK GRADIENT STEEP, LIKELY RESULT OF JAN/APR 1995 FLOODS

General: 1 ADULT TURTLE OBSERVED 6/6/95, 1 JUVENILE FOUND 5/30/95..

Owner/Manager: PVT

Occurrence No.	1074	**Map Index:**	72626	**EO Index:**	29091	**Element Last Seen:**	1996-01-11
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1996-01-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-10-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33696 / -120.72690	**Accuracy:**	80 meters
UTM:	Zone-10 N3912783 E706587	**Elevation (ft):**	270
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	0.0

Location: DAIRY CREEK, EL CHORRO REGIONAL PARK, NW OF SAN LUIS OBISPO.

Detailed Location: POND TURTLES WERE OBSERVED IN A POOL 0.85 KM UPSTREAM FROM HWY 1, BUT ANTICIPATE PRESENCE OF OTHERS THROUGHOUT.

Ecological: HABITAT CONSISTS OF SYCAMORE, LIVE OAK, AND WILLOW RIPARIAN WOODLAND. OTHER RARE SPECIES FOUND AT THIS SITE INCLUDE RANA AURORA DRAYTONII, DUDLEYA BLOCHMANIAE, AND PHRYNOSOMA CORONATUM FRONTALE.

General: 2 ADULTS OBSERVED ON 11 JAN 1996. SUBSTANTIAL SEDIMENT WAS NOTED IN THE STREAM DURING SITE VISITS ON 12 DEC 1995 AND 25 JAN 1996.

Owner/Manager: SLO COUNTY

Occurrence No.	1118	**Map Index:**	48757	**EO Index:**	48757	**Element Last Seen:**	2002-05-17
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2002-09-10

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32307 / -120.67858	**Accuracy:**	specific area
UTM:	Zone-10 N3911343 E711016	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 15 (M)	**Acres:**	14.4

Location: STENNER CREEK, 1.5 MILES NORTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: HABITAT CONSISTS OF A ROCK-FORMED PLUNGE POOL ON STENNER CREEK.

General: 1 JUVENILE OBSERVED ON 17 MAY 2002.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	1137	**Map Index:**	51891	**EO Index:**	51891	**Element Last Seen:**	2003-05-21
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-07-30

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35556 / -120.59388	**Accuracy:**	80 meters
UTM:	Zone-10 N3915132 E718629	**Elevation (ft):**	1278
PLSS:	T29S, R13E, Sec. 33 (M)	**Acres:**	0.0

Location: POND LOCATED ON THE UPPER END OF YERBA BUENA CREEK, IN SYCAMORE CANYON, 5.25 MILES NE OF SAN LUIS OBISPO.

Detailed Location: DESIGNATED SMR POND 15.

Ecological: HABITAT CONSISTS OF A LARGE, PERMANENT POND CONTAINING EMERGENT VEGETATION (ELEOCHARIS MACROSTACHYA) ALONG THE MARGINS; MIXED OAK WOODLAND SURROUNDS THE POND. CENTRARCHIDS, CATFISH, AND SUCKERS OCCUR IN THIS POND.

General: 5 ADULTS OBSERVED DURING AMPHIBIAN SURVEYS OF THE POND ON 14 JUN 2002. 2 ADULTS OBSERVED ON 21 MAY 2003.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	1139	**Map Index:** 51914	**EO Index:**	51914		**Element Last Seen:**	2002-04-08
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-04-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-07-30

Quad Summary: Lopez Mtn. (3512035), Santa Margarita (3512045)

County Summary: San Luis Obispo

Lat/Long:	35.37306 / -120.57204	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3917122 E720566	**Elevation (ft):**	1080
PLSS:	T29S, R13E, Sec. 27 (M)	**Acres:**	20.4

Location: TROUT CREEK, ADJACENT TO CUESTA RIDGE VINEYARD, 2 MILES SE OF SANTA MARGARITA.

Detailed Location:

Ecological: HABITAT CONSISTS OF A SERIES OF POOLS FORMED ON TROUT CREEK BEHIND BEAVER DAMS; DOMINANT PLANTS INCLUDE CATTAILS, TYPHA SP, AND BULRUSH. WILLOWS PARTIALLY SHADE THE POOLS AND PROVIDE BASKING AREAS. BULLFROGS PRESENT.

General: 3 ADULTS OBSERVED ON 8 APR 2002.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	1140	**Map Index:** 51924	**EO Index:**	51924		**Element Last Seen:**	2002-06-26
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-07-30

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35486 / -120.53649	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3915182 E723846	**Elevation (ft):**	1110
PLSS:	T29S, R13E, Sec. 36 (M)	**Acres:**	26.3

Location: RINCONADA CREEK, FROM THE CONFLUENCE WITH SALINAS RIVER UPSTREAM ~0.5 MILE TO POZO RD, 7.5 MILES NE OF SAN LUIS OBISPO

Detailed Location:

Ecological: HABITAT CONSISTS OF BEDROCK POOLS WITH LITTLE CANOPY COVER. SACRAMENTO SUCKER, SACRAMENTO SQUAWFISH, AND CALIFORNIA ROACH ALSO FOUND AT THIS SITE.

General: 1 ADULT CAPTURED (WHILE CROSSING POZO ROAD DURING A RAINSTORM) AND RELEASED IN THE CREEK, ON 6 MAR 2001. 3 ADULTS OBSERVED IN A POOL <0.5 MILE UPSTREAM FROM SALINAS RIVER, ON 26 JUN 2002.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	1141	**Map Index:** 51937	**EO Index:**	51937		**Element Last Seen:**	2002-05-18
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-05-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-07-31

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.34204 / -120.56720	**Accuracy:**	80 meters
UTM:	Zone-10 N3913691 E721090	**Elevation (ft):**	1217
PLSS:	T30S, R13E, Sec. 03 (M)	**Acres:**	0.0

Location: UPPER REACHES OF TACO CREEK, 5.5 MILES NE OF SAN LUIS OBISPO

Detailed Location: DESIGNATED SMR POND 3.

Ecological: HABITAT CONSISTS OF A MAN-MADE, SEASONAL CATTLE POND; ELEOCHARIS MACROSTACHYA IS DOMINANT ALONG THE MARGINS OF THE POND AND AT THE INLET. POND IS SURROUNDED BY GRAZED VALLEY OAK SAVANNAH. NO NON-NATIVE ANIMAL SPECIES FOUND IN THIS POND.

General: 4 ADULTS OBSERVED ON 18 MAY 2002.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	1143	**Map Index:** 55142	**EO Index:**	55142		**Element Last Seen:**	2003-05-21
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-04-13

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13911 / -120.58655	**Accuracy:**	80 meters
UTM:	Zone-10 N3891136 E719879	**Elevation (ft):**	212
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: ~1 MILE NORTH OF HIGHWAY 101, IN AN UNNAMED TRIBUTARY, NORTH OF ARROYO GRANDE

Detailed Location:

Ecological: HABITAT CONSISTS OF EMERGENT WETLAND VEGETATION ABOVE THE CREEK DRAINAGE; TYPHA LATIFOLIA AND SCIRPUS CALIFORNICA DOMINATE THE WETLAND.

General: ON 21 MAY 2003, 1 ADULT WAS FOUND IN THE EMERGENT WETLAND VEGETATION AND A LARGE CARAPCE (8" LONG X 4.5" WIDE X 3.5" TALL) WAS FOUND ~50 YARDS EAST (SUBMITTED TO SBNHM).

Owner/Manager: PVT

Occurrence No.	1155	**Map Index:** 63199	**EO Index:**	63291		**Element Last Seen:**	2005-05-15
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-11-22

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23083 / -120.68611	**Accuracy:**	80 meters
UTM:	Zone-10 N3901096 E710570	**Elevation (ft):**	80
PLSS:	T31S, R12E, Sec. 16 (M)	**Acres:**	0.0

Location: FILIPPONI ECOLOGICAL AREA, ON THE NORTH SIDE OF SAN LUIS OBISPO CREEK, EAST OF HIGHWAY 1, SOUTH OF SAN LUIS OBISPO

Detailed Location: BRIAN STARK (THE LAND CONSERVANCY) REPORTED THAT SWPT'S HAVE BEEN SEEN EACH YEAR SINCE 2001 AT THIS SITE.

Ecological: HABITAT CONSISTS OF A CREATED SWALE THAT WAS DRYING AND ONLY A FEW CM DEEP; DOMINATED BY WILLOWS, RUMEX, AND GREEN FILAMENTOUS ALGAE.

General: 1 ADULT OBSERVED ON 15 MAY 2005.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	1162	**Map Index:** 72518	**EO Index:**	65990		**Element Last Seen:**	2006-08-10
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2006-08-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-10-14

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24490 / -120.68086	**Accuracy:**	80 meters
UTM:	Zone-10 N3902668 E711011	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: JUST NORTH OF THE CONFLUENCE OF PREFUMO CREEK & SAN LUIS OBISPO CREEK, SAN LUIS OBISPO.

Detailed Location: SITE IS AN ABANDONED AREA WITHIN THE CITY OF SAN LUIS OBISPO'S WATER TREATMENT AREA; MANAGED FOR WILDLIFE (PRIMARILY WATERFOWL).

Ecological: HABITAT CONSISTS OF A LARGE, OPEN-WATER POND (12" IN DEPTH); LOG IN WATER USED AS A BASKING SITE.

General: 2 ADULTS OBSERVED ON 10 AUG 2006.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	1165	**Map Index:** 69523	**EO Index:**	70303		**Element Last Seen:**	2007-04-02
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2007-04-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-02-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.12440 / -120.56915	**Accuracy:**	80 meters
UTM:	Zone-10 N3889543 E721505	**Elevation (ft):**	127
PLSS:	T32S, R13E, Sec. 22 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CREEK, AT THE MYRTLE STREET GAUGING STATION, ARROYO GRANDE.

Detailed Location:

Ecological: HABITAT CONSISTS OF A PERENNIAL STREAM.

General: 1 ADULT OBSERVED BASKING ABOVE THE PLUNGE POOL LINE AT THE GAUGING STATION ON 2 APR 2007.

Owner/Manager: CITY OF ARROYO GRANDE

Occurrence No.	1174	**Map Index:** 72503	**EO Index:**	71680		**Element Last Seen:**	2006-03-23
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2006-03-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-10-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03788 / -120.60180	**Accuracy:**	80 meters
UTM:	Zone-10 N3879873 E718760	**Elevation (ft):**	38
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JACK LAKE, OCEANO DUNES STATE VEHICULAR RECREATION AREA, 4.5 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: HABITAT CONSISTS OF A FRESHWATER LAKE/POND SURROUNDED BY DUNES TO THE NORTH AND WEST, A CONOCO-PHILLIPS OIL REFINERY TO THE EAST, AND AGRICULTURAL FIELDS TO THE SOUTH. ARROYO WILLOW SERIES AROUND POND.

General: 14 ADULTS OBSERVED ON 23 MAR 2006.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	1193	**Map Index:** 71000	**EO Index:**	71918		**Element Last Seen:**	2003-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-03-07

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.22940 / -120.74237	**Accuracy:**	80 meters
UTM:	Zone-10 N3900819 E705453	**Elevation (ft):**	326
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: SEE CANYON CREEK, 3.4 MILES NORTHWEST OF THE JUNCTION OF SAN LUIS BAY DRIVE & HIGHWAY 101, SOUTHWEST OF SAN LUIS OBISPO.

Detailed Location: ON TRACT 2755 OF LA QUNITA RANCH.

Ecological: HABITAT CONSISTS OF A POOL WITHIN A PERENNIAL CREEK. CREEK IS BORDERED BY MATURE RIPARIAN CANOPY OF WILLOWS WITH OCCASIONAL SYCAMORES. CURRENT/SURROUNDING LAND USE: FARMING, RESIDENTIAL, GRAZING AND UNDEVELOPED.

General: 1 ADULT OBSERVED DURING THE SPRING OF 2003.

Owner/Manager: PVT

Anniella pulchra pulchra

Element Code: ARACC01012

silvery legless lizard

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4T3T4Q
	State:	None		**State:**	S3
	Other:	CDFW_SSC-Species of Special Concern, USFS_S-Sensitive			
Habitat:	**General:**	SANDY OR LOOSE LOAMY SOILS UNDER SPARSE VEGETATION.			
	Micro:	SOIL MOISTURE IS ESSENTIAL. THEY PREFER SOILS WITH A HIGH MOISTURE CONTENT.			

Occurrence No.	10	**Map Index:** 41175	**EO Index:**	41175		**Element Last Seen:**	1998-04-28
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-04-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-07-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31819 / -120.74946	**Accuracy:**	80 meters
UTM:	Zone-10 N3910654 E704584	**Elevation (ft):**	500
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: SSW OF CUESTA COLLEGE & O'SULLIVAN AIRFIELD, CAMP SAN LUIS OBISPO.

Detailed Location: LOCATION MAPPED TO PROVIDED UTM COORDINATES. 0.2 MILE WEST OF SUTTER AVE AT MERCED AVE.

Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND WITH ROCK OUTCROPPINGS, ON A NE ASPECT (29-40 DEGREE STEEPNESS).

General: 1 INDIVIDUAL OBSERVED ON 28 APR 1998 ON THE LCTA PLOT #323 - UNDER HERP BOARD #4. FAR06 REFERS TO THIS SIGHTING AS ANNIELLA PULCHRA NIGRA.

Owner/Manager: DOD-CALIFORNIA NATIONAL GUARD

Occurrence No.	19	**Map Index:** 52952	**EO Index:**	52952		**Element Last Seen:**	2003-01-18
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-01-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-10-20

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35750 / -120.55943	**Accuracy:**	80 meters
UTM:	Zone-10 N3915423 E721754	**Elevation (ft):**	1310
PLSS:	T29S, R13E, Sec. 34 (M)	**Acres:**	0.0

Location: BETWEEN POZO ROAD & TROUT CREEK, NE OF SAN LUIS OBISPO.

Detailed Location: FOUND UNDER AN OAK LOG.

Ecological: BLUE OAK/FOOTHILL PINE WOODLAND AT BASE OF NE FACING SLOPE. SOIL IS SANDY LOAM WITH OYSTER FOSSILS & THICK LAYER OF DECOMPOSING LEAF LITTER. UNDERSTORY OF NON-NATIVE GRASSES & NATIVE SHRUBS & FORBS. GRAZING & VINEYARDS SURROUNDING.

General: 2 ADULTS AND 1 VERY YOUNG JUVENILE FOUND WITHIN 10 M OF EACH OTHER ON 18 JAN 2003.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	48	**Map Index:** 73572	**EO Index:**	74559		**Element Last Seen:**	2006-06-07
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2006-06-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-02-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03709 / -120.60728	**Accuracy:**	80 meters
UTM:	Zone-10 N3879774 E718262	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: OCEANO DUNES STATE VEHICULAR RECREATION AREA, JUST NORTH OF LETTUCE LAKE, 4.5 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: DUNE SCRUB. THE SITE IS EAST OF THE OCEANO DUNES SVRA, WEST OF THE CONOCO PHILLIPS OIL REFINERY, AND NORTH OF AGRICULTURAL FIELDS.

General: 2 INDIVIDUALS FOUND IN A WOODRAT NEST AND 1 FOUND BURROWING UNDER ERICAMERIA ERICOIDES ON 7 JUN 2006.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	66	**Map Index:** 28636	**EO Index:**	74642		**Element Last Seen:**	1972-02-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1972-02-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-02-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03067 / -120.62355	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879026 E716795	**Elevation (ft):**	20
PLSS:	T11N, R35W (S)	**Acres:**	0.0

Location: OSO FLACO LAKE.

Detailed Location:

Ecological:

General: 2 INDIVIDUALS COLLECTED, 1 JUVENILE (CAS #196278) ON 17 APR 1971 AND 1 (CAS 3196338) ON 20 FEB 1972.

Owner/Manager: DPR-OCEANO DUNES SVRA

Phrynosoma blainvillii

Element Code: ARACF12100

coast horned lizard

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4G5
	State:	None		**State:**	S3S4
	Other:	BLM_S-Sensitive, CDFW_SSC-Species of Special Concern, IUCN_LC-Least Concern, USFS_S-Sensitive			
Habitat:	**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.	583	**Map Index:**	39846	**EO Index:**	34848	**Element Last Seen:**	1994-03-30
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-03-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33461 / -120.73203	**Accuracy:**	80 meters
UTM:	Zone-10 N3912511 E706127	**Elevation (ft):**	320
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	0.0

Location: EL CHORRO REGIONAL PARK, 0.7 MILES NW OF CAMP SAN LUIS OBISPO ENTRANCE, 0.3 MILE NNE OF HIGHWAY 1.

Detailed Location: 4.2 MILES NW OF SAN LUIS OBISPO. SOILS RANGE FROM CLAY TO SANDY, WITH SEVERAL ROCK OUTCROPS. SLOPES ARE RELATIVELY GENTLE WITH VARIOUS ASPECTS.

Ecological: MOSTLY ANNUAL GRASSLAND WITH NUMEROUS NATIVE GRASSLAND SPECIES. DOMINANT PLANTS: BROMUS MADRITONSIS, B. DIANDRUS, AVENA SPP, ERODIUM BOTRYS, BRASSICA SPP, RANUNULUS CALIFORNICA, VIOLA PEDUNCULATA, PLASIOBOTHYS SPP, SANICULA ARGUTA, ETC..

General: 1 LIZARD OBSERVED BY R. FARRIS. OTHER RARE SPECIES OBSERVED; RANA AURORA DRAYTONII, ELANUS LEUCURUS, DUDLEYA BLOCHMANIAE.

Owner/Manager: SLO COUNTY

Occurrence No.	584	**Map Index:**	39847	**EO Index:**	34849	**Element Last Seen:**	1994-05-12
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-05-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33928 / -120.73641	**Accuracy:**	80 meters
UTM:	Zone-10 N3913020 E705717	**Elevation (ft):**	320
PLSS:	T30S, R12E, Sec. 06 (M)	**Acres:**	0.0

Location: EL CHORRO REGIONAL PARK, 1.1 MILES NW OF CAMP SAN LUIS OBISPO ENTRANCE, 0.5 MILE NNE OF HIGHWAY 1 NEXT TO PENNINGTON CR.

Detailed Location: 4.6 MILES NW OF SAN LUIS OBISPO. SOILS RANGE FROM CLAY TO SANDY, WITH SEVERAL ROCK OUTCROPS. SLOPES ARE RELATIVELY GENTLE WITH VARIOUS ASPECTS.

Ecological: MOSTLY ANNUAL GRASSLAND WITH NUMEROUS NATIVE GRASSLAND SPECIES. DOMINANT PLANTS: BROMUS MADRITONSIS, B. DIANDRUS, AVENA SPP, ERODIUM BOTRYS, BRASSICA SPP, RANUNCULUS CALIFORNICA, VIOLA PEDUNCULATA, PLASIOBOTHYS SPP, SANICULA ARGUTA, ETC..

General: 1 LIZARD OBSERVED BY C. WISHNER. OTHER RARE SPECIES OBSERVED; RANA AURORA DRAYTONII, ELANUS LEUCURUS, DUDLEYA BLOCHMANIAE.

Owner/Manager: SLO COUNTY

Occurrence No.	609	**Map Index:** 39975	**EO Index:**	34977		**Element Last Seen:**	1994-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-10-21

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33134 / -120.72721	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3912158 E706574	**Elevation (ft):**	360
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	11.9

Location: EL CHORRO GOLF COURSE, EL CHORRO REGIONAL PARK, 0.4 MILE NORTH OF HIGHWAY 1 AT THE EXIT TO CAMP SAN LUIS OBISPO.

Detailed Location: GRASSLAND AREA

Ecological: NON-NATIVE ARGENTINE ANTS ARE OUT COMPETEING THE LIZARD'S PREFERED FOOD, NATIVE HARVESTER ANTS (THE LIZARDS GENERALLY DO NOT EAT THE NON-NATIVE ANTS).

General: 2 WERE OBSERVED THOUGH THEY WILL BE EXTIRPATED IF GOLF COURSE IS BUILT.

Owner/Manager: SLO COUNTY

Occurrence No.	624	**Map Index:** 53179	**EO Index:**	53179		**Element Last Seen:**	2003-08-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2003-11-05

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14314 / -120.51659	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3891741 E726243	**Elevation (ft):**	330
PLSS:	T32S, R14E, Sec. 18 (M)	**Acres:**	0.0

Location: CANYON DE LOS ALISOS, 0.3 MILE NORTH OF HUASNA ROAD, 4 MILES NE OF ARROYO GRANDE

Detailed Location:

Ecological: HABITAT CONSISTS PRIMARILY OF OAK WOODLAND/GRASSLAND/COASTAL SCRUB, DOMINATED BY MOCK HEATHER AND TAR PLANT; SLOPE ~15%. SITE CONTAINS PATCHES OF OPEN GROUND, BUT SOIL NOT CHARACTERIZED AS "SANDY" SOIL.

General: 1 JUVENILE OBSERVED ON 21 AUG 2003.

Owner/Manager: PVT

Occurrence No.	679	**Map Index:**	75654	**EO Index:**	76680	**Element Last Seen:**	2006-06-07
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-06-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-06-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03612 / -120.60635	**Accuracy:**	80 meters
UTM:	Zone-10 N3879668 E718350	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JUST EAST OF LETTUCE LAKE AND NE OF LITTLE OSO FLACO LAKE, 4.6 MILES SOUTH OF OCEANO.

Detailed Location: SOUTH OF TOSCO GATE ROAD, ALONG A PROPOSED VEHICLE ACCESS CORRIDOR KNOWN AS LITTLE OSO FLACO LAKE ALTERNATIVE.

Ecological: DUNE SCRUB HABITAT. THIS SITE IS BEING CONSIDERED FOR CONSTRUCTION OF A VEHICLE ALTERNATIVE TO THE OCEANO DUNES SVRA. AGRICULTURAL FIELDS ARE LOCATED TO THE SOUTH OF THIS SITE.

General: ONE ADULT OBSERVED AT THIS SITE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	680	**Map Index:**	75658	**EO Index:**	76681	**Element Last Seen:**	2007-04-23
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2007-04-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-06-29

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16573 / -120.51589	**Accuracy:**	80 meters
UTM:	Zone-10 N3894248 E726244	**Elevation (ft):**	591
PLSS:	T32S, R14E, Sec. 06 (M)	**Acres:**	0.0

Location: 0.9 MILE ESE OF ARROYO GRANDE CK (FILTRATION PLANT, 2.2 MI SW OF THE LOPEZ LAKE DAM & APPROX 4.8 MI NE OF ARROYO GRANDE.

Detailed Location:

Ecological: LIVE OAK, ANNUAL GRASSLAND SAVANNAH. SURROUNDING AREAS SUPPORT CATTLE RANCHING, AGRICULTURE, AND RESIDENTIAL AREAS.

General: 2 ADULTS AND 1 JUVENILE WERE DISCOVERED BY CONSTRUCTION PERSONNEL AND REPORTED TO ON-SITE BIOLOGICAL MONITOR. AREA IS IN THE LAS VENTANAS HOUSING DEVELOPMENT.

Owner/Manager: PVT

Occurrence No.	716	**Map Index:** 80486	**EO Index:**	81469		**Element Last Seen:**	2010-08-29
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2010-08-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-10-25

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.20442 / -120.67546	**Accuracy:**	80 meters
UTM:	Zone-10 N3898189 E711608	**Elevation (ft):**	235
PLSS:	T31S, R12E, Sec. 27 (M)	**Acres:**	0.0

Location: 0.4 MI S OF BALM RIDGE WAY AT BARON CANYON RANCH RD. 1 MI WNW OF INDIAN KNOB, ABOUT 1.2 MI E OF HWY 1.

Detailed Location: MAPPED TO COORDINATES PROVIDED. LIZARDS FOUND ON & ADJACENT TO A BUILDING SITE.

Ecological: HABITAT CONSISTS OF MANZANITA DOMINATED CHAPARRAL ON SHALY SLOPES, WITH HETEROMELES ARBUTIFOLIA, QUERCUS BERBERIDIFOLIA, PICKERINGIA MONTANA, & LOTUS SCOPARIUS. LOW DENSITY, RURAL RESIDENTIAL.

General: 3 ADULTS AND 4 JUVENILES WERE OBSERVED 29 AUG 2010. LIZARDS WERE FORAGING AROUND AN ANT HILL OR CROSSING THE SITE.

Owner/Manager: PVT

Central Foredunes

Element Code: CTT21220CA

Central Foredunes

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1.2
	Other:				
Habitat:	**General:**	☐			
	Micro:	☐			

Occurrence No.	1	**Map Index:** 12870	**EO Index:**	21353		**Element Last Seen:**	1985-03-17
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1985-03-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-05-15

Quad Summary: Point Sal (3412086), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.00098 / -120.63721	**Accuracy:**	specific area
UTM:	Zone-10 N3875702 E715627	**Elevation (ft):**	40
PLSS:	T12N, R13E, Sec. 26 (S)	**Acres:**	958.0

Location: WEST OF OSO FLACO LAKE, EXTENDING FROM OSO FLACO CREEK NORTH TWO MILES AND SOUTH TO THE SANTA MARIA RIVER MOUTH.

Detailed Location: 20 - 100 FT APPROX ELEV RANGE. BOUNDARY GENERALIZED FROM ENVICOM MAP.

Ecological: PATCHY COVER INCL ABRONIA MARITIMA, AMBROSIA CHAMISSONIS, CAKILE MARITIMA, MALACOTHRIX INCANA, CALYSTEGIA SOLDANELLA.

General: SOME AREAS OF ACTIVE DUNE INCLUDED W/IN BOUNDARY. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT

Occurrence No.	5	**Map Index:**	20582	**EO Index:**	9756	**Element Last Seen:**	1980-10-10
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-10-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.11697 / -120.63267	**Accuracy:**	specific area
UTM:	Zone-10 N3888579 E715736	**Elevation (ft):**	40
PLSS:	T32S, R12E, Sec. 25 (M)	**Acres:**	26.0

Location: DUE WEST OF GRAND AVE IN GROVER CITY AND EXTENDING ONE MILE IN BOTH THE NORTH AND SOUTH DIRECTIONS.

Detailed Location: AREA BORDERED BY THE BEACH TO THE WEST AND DUNE SCRUB TO THE EAST.

Ecological: ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, CAKILE CARPROBROTUS, CALYSTEGIA SOLDANELLA, AMBROSIA CHAMISSONIS.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DPR-PISMO SB

Occurrence No.	6	**Map Index:**	20583	**EO Index:**	11886	**Element Last Seen:**	1980-10-10
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-10-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09666 / -120.62810	**Accuracy:**	specific area
UTM:	Zone-10 N3886336 E716206	**Elevation (ft):**	40
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	7.0

Location: SOUTH OF THE CONFLUENCE OF LOS BERROS AND ARROYO GRANDE CREEKS, SW OF OCEAN AIRPORT.

Detailed Location: AREA BOUNDED BY BEACH TO THE WEST AND DUNE SCRUB TO THE EAST.

Ecological: ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, AMBROSIA CHAMISSONIS, CALYSTEGIA SOLDANELLA, CARPROBROTUS CAKILE.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No.	7	**Map Index:** 20584	**EO Index:**	11885		**Element Last Seen:**	1980-10-10
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1980-10-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07530 / -120.62866	**Accuracy:**	specific area
UTM:	Zone-10 N3883965 E716211	**Elevation (ft):**	40
PLSS:	T12N, R13E, Sec. 36 (S)	**Acres:**	28.8

Location: SOUTHWEST OF CIENEGA VALLEY & WNW OF DUNE LAKES ALONG COAST.

Detailed Location: TWO AREAS OF FOREDUNE VEGETATION BORDERED BY OPEN BEACH AND ACTIVE SAND DUNES.

Ecological: CAKILE CAPROBROTUS, ABRONIA LATIFOLIA, AMBROSIA CHAMISSONIS, CALYSTEGIA SOLDANELLA, MALACOTHRIX INCANA.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Central Dune Scrub

Element Code: CTT21320CA

Central Dune Scrub

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:				
Habitat:	**General:**				
	Micro:				

Occurrence No.	3	**Map Index:** 12913	**EO Index:**	16425		**Element Last Seen:**	1980-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1980-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-07-13

Quad Summary: Guadalupe (3412085), Point Sal (3412086), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	34.99304 / -120.61200	**Accuracy:**	specific area
UTM:	Zone-10 N3874876 E717949	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 31 (S)	**Acres:**	3929.5

Location: "GUADALUPE UNIT," NIPOMO DUNES COMPLEX. SOUTH OF OSO FLACO LAKE & NORTH OF SANTA MARIA RIVER.

Detailed Location: 0-200 FT ELEVATION RANGE. BORDERED BY ACTIVE DUNES, FRESHWATER MARSH, AGRICULTURE. SOME AREAS OF ACTIVE DUNES W/IN STAND.

Ecological: MONARDELLA UNDULATA VAR. FRUTESCENS, M. CRISPA, COREOPSIS GIGANTEA, CIRSIUM RHOTHOPHILUM. MORE INFO IN ELEMENT FILE NC21320.

General: SEVERAL RARE PLANTS IN AREA, LIST IN CNDDB. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No.	17	**Map Index:**	13035	**EO Index:**	5776	**Element Last Seen:**	1981-09-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-09-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05711 / -120.60543	**Accuracy:**	specific area
UTM:	Zone-10 N3881998 E718378	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 06 (M)	**Acres:**	1276.6

Location: NIPOMO DUNES, NORTH & NE OF OSO FLACO LAKE, "DUNE LAKES" & CALLENDER VICINITY.

Detailed Location: INCLUDES "JACK LAKE MEADOW" & "LITTLE COREOPSIS HILL", AREAS OF BOTANICAL INTEREST.

Ecological: ALL MAJOR COVER TYPES OF CENTRAL DUNE SCRUB. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: ABOUT 8 RARE PLANTS PRESENT. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Occurrence No.	18	**Map Index:**	12898	**EO Index:**	16414	**Element Last Seen:**	1981-09-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-09-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02736 / -120.62963	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3878645 E716249	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 13 (M)	**Acres:**	0.0

Location: NIPOMO DUNES, WEST OF OSO FLACO LAKE.

Detailed Location:

Ecological: BOUNDARY GENERALIZED FROM 1981 AIR PHOTO; LITTLE INFO ON COMPOSITION, SITE FORMERLY PASTED BY ORVS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DPR-PISMO SB

Occurrence No.	20	**Map Index:**	12910	**EO Index:**	12518	**Element Last Seen:**	1981-09-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-09-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Decreasing	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.08442 / -120.62588	**Accuracy:**	specific area
UTM:	Zone-10 N3884983 E716441	**Elevation (ft):**	40
PLSS:	T12N, R36W, Sec. 36 (M)	**Acres:**	165.4

Location: NIPOMO DUNES, PISMO STATE BEACH DUNE PRESERVE AND ADJACENT DUNES, EXTENDING SOUTH ABOUT 0.75 MILES, 0.5 MILES INLAND.

Detailed Location:

Ecological: ERICAMERIA ERICOIDES & LUPINUS W/POCKETS OF SALIX.

General: FIELD VERIFICATION NEEDED AS TO PRESENCE OF DUNE SCRUB WITHIN DPR PRESERVE. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DPR-PISMO SB

Occurrence No.	21	**Map Index:**	12922	**EO Index:**	16413	**Element Last Seen:**	1981-09-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-09-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Decreasing	**Record Last Updated:**	1998-07-13

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05640 / -120.62325	**Accuracy:**	specific area
UTM:	Zone-10 N3881880 E716754	**Elevation (ft):**	100
PLSS:	T11N, R36W, Sec. 01 (M)	**Acres:**	86.6

Location: NIPOMO DUNES, ABOUT 0.5 MILE INLAND, SW OF MUD LAKE.

Detailed Location:

Ecological: SMALL AREAS OF SCRUB W/ POCKETS OF WILLOW ARE REMNANTS OF FORMERLY MUCH LARGER AREA.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Central Maritime Chaparral

Element Code: CTT37C20CA

Central Maritime Chaparral

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:				
Habitat:	**General:**				
	Micro:				

Occurrence No.	2	**Map Index:** 12793	**EO Index:** 25333	**Element Last Seen:**	1980-XX-XX
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1980-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1998-07-14

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19774 / -120.65767	**Accuracy:**	1 mile
UTM:	Zone-10 N3897485 E713246	**Elevation (ft):**	750
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	0.0

Location: INDIAN KNOB TAR SANDS, ABOUT 4 MILES NORTH OF PISMO BEACH, SOUTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: DOMINATED BY ARCTOSTAPHYLOS PILOSULA. OTHER RARE SPECIES INCLUDE ERIODICTYON ALTISSIMUM, CALOCHORTUS OBISPOENSIS, AND AGROSTIS HOOVERI. VEGETATION ASSOCIATED WITH EDNA TAR SANDS DEPOSITS.

General: MORE ECOLOGICAL INFO AND OWNERSHIP INFO IN NC ELF, VAN80R03. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Serpentine Bunchgrass

Element Code: CTT42130CA

Serpentine Bunchgrass

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:				
Habitat:	**General:**				
	Micro:				

Occurrence No.	14	**Map Index:** 12853	**EO Index:** 16262	**Element Last Seen:**	1976-01-XX
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1976-01-XX
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1998-07-14

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30636 / -120.64814	**Accuracy:**	specific area
UTM:	Zone-10 N3909555 E713828	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	271.9

Location: CSU, SAN LUIS OBISPO POLYTECHNIC BOTANICAL GARDEN AND PETERSON RANCH UNIT (BRIZZIOLARI CANYON).

Detailed Location: BOUNDARY SHOWN REPRESENTS SERPENTINE SOILS INTERPETED AS GRASSLANDS IN VICINITY OF CSU, POLY USING SOIL CONSERVATION SERVICE SOIL MAPS WITH 1976-77 ORTHOPHOTO BASE.

Ecological: NASSELLA PULCHRA, VULPIA MYUROS VAR. HIRSUTA, MELICA CALIFORNICA, POA SP, ARISTIDA SP.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Coastal and Valley Freshwater Marsh

Element Code: CTT52410CA

Coastal and Valley Freshwater Marsh

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S2.1
	Other:				
Habitat:	**General:**				
	Micro:				

Occurrence No.	27	**Map Index:**	12992	**EO Index:**	16068	**Element Last Seen:**	1976-06-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1976-06-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-20

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07264 / -120.60782	**Accuracy:**	specific area
UTM:	Zone-10 N3883716 E718119	**Elevation (ft):**	100
PLSS:	T12N, R35W, Sec. 31 (S)	**Acres:**	531.4

Location: DUNE LAKES, 2 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: TYPHA SPP., SCIRPUS SPP, ETC. ON MARGINS OF VERY DEGRADED DUNE LAKE SYSTEM.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT

Occurrence No.	28	**Map Index:**	12938	**EO Index:**	16066	**Element Last Seen:**	1976-06-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1976-06-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-20

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02749 / -120.62040	**Accuracy:**	specific area
UTM:	Zone-10 N3878679 E717091	**Elevation (ft):**	12
PLSS:	T12N, R35W, Sec. 13 (S)	**Acres:**	176.6

Location: OSO FLACO LAKE, 4 MILES SOUTH OF OCEANO.

Detailed Location: MARGIN OF VERY DEGRADED LAKES.

Ecological: SCIRPUS CALIFORNICUS, ELEOCHARIS SP, BERULA ERECTA, HYDROCOTYLE RANUNCULOIDES, NASTURTIUM OFFICINALE.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: STATE, PVT

Occurrence No.	29	**Map Index:**	12704	**EO Index:**	13182	**Element Last Seen:**	1978-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1978-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26924 / -120.69995	**Accuracy:**	specific area
UTM:	Zone-10 N3905327 E709212	**Elevation (ft):**	118
PLSS:	T30S, R12E, Sec. 33 (M)	**Acres:**	81.1

Location: LAGUNA LAKE, SW OF SAN LUIS OBISPO.

Detailed Location:

Ecological: SCIRPUS FRINGE AROUND NATURAL LAKE.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: PVT

Occurrence No.	30	**Map Index:**	12905	**EO Index:**	16064	**Element Last Seen:**	1975-10-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-10-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-20

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.13272 / -120.62679	**Accuracy:**	specific area
UTM:	Zone-10 N3890339 E716229	**Elevation (ft):**	10
PLSS:	T32S, R13E, Sec. 19 (M)	**Acres:**	54.9

Location: PISMO LAKE, NORTH OF GROVER CITY.

Detailed Location:

Ecological: SCIRPUS SPP & TYPHA SPP.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: DPR-PISMO SB

Occurrence No.	44	**Map Index:**	13050	**EO Index:**	13500	**Element Last Seen:**	1980-08-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-08-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-20

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05663 / -120.59489	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3881968 E719341	**Elevation (ft):**	60
PLSS:	T12N, R35E, Sec. 05 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON APPROXIMATELY 2 MILES SOUTH OF OCEANO.

Detailed Location: MARSH IS ALONG HIGHWAY 1 AT BASE OF CANYON.

Ecological: SLOW-MOVING STREAMS FROM SEVERAL FRESHWATER MARSHES WITH TYPHA SP DOMINANT AND RIMMED BY SCIRPUS ACUTUS.

General: SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: UNKNOWN

Northern Interior Cypress Forest

Element Code: CTT83220CA

Northern Interior Cypress Forest

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:				
Habitat:	**General:**				
	Micro:				

Occurrence No.	1	**Map Index:** 12768	**EO Index:** 14971	**Element Last Seen:**	1986-05-20
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1986-05-20
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1998-09-01

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.36376 / -120.67446	**Accuracy:**	specific area
UTM:	Zone-10 N3915866 E711285	**Elevation (ft):**	2400
PLSS:	T29S, R12E, Sec. 34 (M)	**Acres:**	953.1

Location: CUESTA RIDGE BOTANICAL AREA, 2 MILES WEST OF SANTA MARGARITA.

Detailed Location: ONE LARGE AREA WITH SEVERAL OUTLIERS. SERPENTINE CHAPARRAL AROUND CYPRESSES.

Ecological: SARGENT CYPRESS STAND OF VARIED AGE CLASSES, DENSITY, UNDERSTORY. PARTS EVEN-AGED MONOCULTURE, PARTS MIXED AGED CYPRESS W/CHAPARRAL UNDERSTORY. PART BURNED 1939.

General: IN BOTANICAL AREA. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BACKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.

Owner/Manager: USFS-LOS PADRES NF

Branchinecta lynchi **Element Code:** ICBRA03030

vernal pool fairy shrimp

Listing Status:	**Federal:**	Threatened	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S2S3
	Other:	IUCN_VU-Vulnerable			
Habitat:	**General:**	ENDEMIC TO THE GRASSLANDS OF THE CENTRAL VALLEY, CENTRAL COAST MTNS, AND SOUTH COAST MTNS, IN ASTATIC RAIN-FILLED POOLS.			
	Micro:	INHABIT SMALL, CLEAR-WATER SANDSTONE-DEPRESSION POOLS AND GRASSED SWALE, EARTH SLUMP, OR BASALT-FLOW DEPRESSION POOLS.			

Occurrence No.	360	**Map Index:**	57149	**EO Index:**	57488	**Element Last Seen:**	2003-08-XX
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-08-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-03-01

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.24612 / -120.65643	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3902855 E713231	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 11 (M)	**Acres:**	373.0

Location: SOUTH END OF SAN LUIS OBISPO, JUST NORTHWEST OF SLO COUNTY AIRPORT, TANK FARM ROAD VICINITY.

Detailed Location: THIS SITE IS WITHIN THE FORMER UNOCAL SAN LUIS OBISPO TANK FARM.

Ecological: HABITAT CONSISTS OF ANNUAL GRASSLAND WITH SCATTERED SEASONAL WETLANDS AND PONDS. THIS FORMER TANK FARM (TANKS HAVE BEEN REMOVED) IS NOW USED FOR GRAZING.

General: UNKNOWN NUMBER OBSERVED DURING AUG 2003. 1000'S OF ADULTS OBSERVED ON 1 OCT 2005; 20 COLLECTED/DEPOSITED AT LACM.

Owner/Manager: PVT

Linderiella occidentalis

Element Code: ICBRA06010

California linderiella

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S2S3
	Other:	IUCN_NT-Near Threatened			
Habitat:	**General:**	SEASONAL POOLS IN UNPLOWED GRASSLANDS WITH OLD ALLUVIAL SOILS UNDERLAIN BY HARDPAN OR IN SANDSTONE DEPRESSIONS.			
	Micro:	WATER IN THE POOLS HAS VERY LOW ALKALINITY, CONDUCTIVITY, AND TDS.			

Occurrence No.	186	**Map Index:**	42793	**EO Index:**	42793	**Element Last Seen:**	2000-03-24
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-03-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2000-04-18

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.35546 / -120.69122	**Accuracy:**	80 meters
UTM:	Zone-10 N3914910 E709783	**Elevation (ft):**	1300
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location:	BETWEEN THE UPPER ENDS OF DAIRY CREEK & CHORRO CREEK, 4 MILES NORTH OF SAN LUIS OBISPO.
Detailed Location:	POND IS LOCATED ON LEVEL LAND SURROUNDED BY STEEP SLOPES.
Ecological:	HABITAT CONSISTS OF A POND (MOST LIKELY MAN-MADE); SURROUNDED BY GRAZED ANNUAL GRASSLAND. MAXIMUM POOL SURFACE IS 250 SQ METERS (MAX DEPTH = 70CM, AVE DEPTH = 45CM).
General:	100+ ADULTS OBSERVED ON 24 MAR 2000; VOUCHER SPECIMEN SUBMITTED TO LACM.
Owner/Manager:	DOD-CALIFORNIA NATIONAL GUARD

Cicindela hirticollis gravida

Element Code: IICOL02101

sandy beach tiger beetle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T2
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	INHABITS AREAS ADJACENT TO NON-BRACKISH WATER ALONG THE COAST OF CALIFORNIA FROM SAN FRANCISCO BAY TO NORTHERN MEXICO.			
	Micro:	CLEAN, DRY, LIGHT-COLORED SAND IN THE UPPER ZONE. SUBTERRANEAN LARVAE PREFER MOIST SAND NOT AFFECTED BY WAVE ACTION.			

Occurrence No.	30	**Map Index:** 28636	**EO Index:**	60086		**Element Last Seen:**	1969-07-20
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1969-07-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-04-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03067 / -120.62355	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879026 E716795	**Elevation (ft):**	20
PLSS:	T11N, R35W (S)	**Acres:**	0.0

Location: OSO FLACO LAKE.

Detailed Location:

Ecological:

General: 6 SPECIMENS DEPOSITED IN THE CALIFORNIA STATE COLLECTION OF ARTHROPODS (CDFA), COLLECTED BY ANDREWS 20 JUL 1969; 7 SPECIMENS DEPOSITED IN SAME COLLECTED, COLLECTED BY BATH, 13 JUL 1959.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	37	**Map Index:** 12874	**EO Index:**	60119		**Element Last Seen:**	1955-09-03
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1955-09-03
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-18

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.14198 / -120.64512	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891326 E714535	**Elevation (ft):**	10
PLSS:	T32S, R12E, Sec. 13 (M)	**Acres:**	30.9

Location: PISMO BEACH.

Detailed Location:

Ecological:

General: HISTORICAL RECORDS. 3 COLLECTED 7 JUN 1916; 2 COLLECTED 31 JUL 1924; UNKNOWN NUMBER COLLECTED 12 JUN 1939; 6 COLLECTED 3 SEP 1955.

Owner/Manager: DPR-PISMO SB

Coelus globosus

Element Code: IICOL4A010

globose dune beetle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:	IUCN_VU-Vulnerable			
Habitat:	**General:**	INHABITANT OF COASTAL SAND DUNE HABITAT; ERRATICALLY DISTRIBUTED FROM TEN MILE CREEK IN MENDOCINO COUNTY SOUTH TO ENSENADA, MEXICO.			
	Micro:	INHABITS FOREDUNES AND SAND HUMMOCKS; IT BURROWS BENEATH THE SAND SURFACE AND IS MOST COMMON BENEATH DUNE VEGETATION.			

Occurrence No.	41	**Map Index:**	20582	**EO Index:**	87613	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-08-28

Quad Summary: Oceano (3512015), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.11697 / -120.63267	**Accuracy:**	specific area
UTM:	Zone-10 N3888579 E715736	**Elevation (ft):**	40
PLSS:	T32S, R12E, Sec. 25 (M)	**Acres:**	26.0

Location: PISMO BEACH.

Detailed Location: LOCATION GIVEN ONLY AS PISMO BEACH, MAPPED TO THE CENTRAL FOREDUNES COMMUNITY WEST OF GRAND AVE IN GROVER CITY AND EXTENDING 1 MILE TO THE NORTH AND SOUTH.

Ecological: ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, CAKILE CARPROBROTUS, CALYSTEGIA SOLDANELLA, AMBROSIA CHAMISSONIS NOTED FOR FORDUNE COMMUNITY.

General: PRESENCE OF A POPULATION DOCUMENTED IN A 1976 PAPER. HOWEVER THIS PAPER ALSO NOTES THAT BEETLES HAVE NOT BEEN FOUND "FOR ABOUT 20 YEARS" (SINCE MID 1950'S?) AND MAY BE EXTIRPATED AT THIS SITE.

Owner/Manager: DPR-PISMO SB

Lichnanthe albipilosa

Element Code: IICOL67010

white sand bear scarab beetle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	INHABIT COASTAL SAND DUNES OF SAN LUIS OBISPO COUNTY, IN THE VICINITY OF DUNE LAKES.			
	Micro:	FOUND HOVERING CLOSE TO THE SURFACE OF THE DUNES NEAR THE LAKE, BUT SOME DISTANCE FROM THE SURF.			

Occurrence No.	2	**Map Index:**	36890	**EO Index:**	12875	**Element Last Seen:**	1980-04-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-04-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-12-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02877 / -120.62110	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3878820 E717023	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	133.2

Location: OSO FLACO LAKE, 5 MILES SOUTH OF OCEANO.

Detailed Location: SPECIMENS HAVE BEEN OBSERVED HOVERING CLOSE TO THE DUNE SURFACE, NEAR THE LAKE, SOME DISTANCE FROM THE SURF. THIS SPECIES IS DISTRIBUTED ALONG THE INLAND EDGE OF THE DUNES ADJACENT TO THE LAKE.

Ecological: LITTLE IS KNOWN REGARDING THIS BEETLE'S LIFE HISTORY.

General: FEMALE ALLOTYPE (CAS #13332) COLLECTED 27 APRIL 1968. OTHER COLLECTIONS: ONE FEMALE (27 APR 1968), ONE FEMALE (26 JUN 1976), ONE MALE (7 APR 1979), ONE MALE AND TWO FEMALES (15 MAY 1979), ONE MALE (7 APR 1979), AND TWO MALES (20 APR 1980).

Owner/Manager: DPR-OCEANO DUNE, PVT-UNION OIL

Occurrence No.	3	**Map Index:**	12992	**EO Index:**	22630	**Element Last Seen:**	1976-05-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1976-05-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-12-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07264 / -120.60782	**Accuracy:**	specific area
UTM:	Zone-10 N3883716 E718119	**Elevation (ft):**	60
PLSS:	T12N, R35W, Sec. 31 (S)	**Acres:**	531.4

Location: DUNE LAKES 3 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: LITTLE IS KNOWN ABOUT THIS BEETLE'S LIFE HISTORY.

General: ONE FEMALE COLLECTED (UCB-CIS).

Owner/Manager: PVT

Polyphylla nubila

Element Code: IICOL68040

Atascadero June beetle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	KNOWN ONLY FROM SAND DUNES IN SAN LUIS OBISPO COUNTY.			
	Micro:				

Occurrence No.	1	**Map Index:** 12855	**EO Index:** 5650	**Element Last Seen:**	1956-05-15
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1956-05-15
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2004-12-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28302 / -120.64684	**Accuracy:**	1 mile
UTM:	Zone-10 N3906969 E714007	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO.

Detailed Location:

Ecological:

General: ONE MALE COLLECTED 5/15/56 BY D.A. LARUE OF RIVERSIDE, CA. R.M. YOUNG OBTAINED SPECIMEN IN A TRADE WITH LARUE. ONE SPECIMEN COLLECTED 26 APR 1956 BY W.A. WALLACE.

Owner/Manager: UNKNOWN

Ablautus schlingeri

Element Code: IIDIP42010

Oso Flaco robber fly

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	SAND DUNES.			
	Micro:				

Occurrence No.	1	**Map Index:** 28636	**EO Index:** 58267	**Element Last Seen:**	1964-07-19
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1964-07-19
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03067 / -120.62355	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879026 E716795	**Elevation (ft):**	12
PLSS:	T11N, R35W (S)	**Acres:**	0.0

Location: OSO FLACO LAKE.

Detailed Location:

Ecological: AUTHOR STATES FLIES IN THIS GENUS ARE USUALLY FOUND IN SANDY AREAS.

General: 2 MALE PARATYPES COLLECTED 13 JULY 1959 AND DEPOSITED AT UCD; 1 FEMALE PARATYPE COLLECTED 19 JULY 1964 AND DEPOSITED AT UCR.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	2	**Map Index:**	58232	**EO Index:**	58268	**Element Last Seen:**	1962-08-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1962-08-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.10033 / -120.62987	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3886739 E716034	**Elevation (ft):**	25
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	55.7

Location: OCEANO.

Detailed Location: BEACH DUNES MAPPED.

Ecological: FOUND IN SAND DUNES.

General: MALE HOLOTYPE AND FEMALE ALLOTYPE, DEPOSITED AT UCR.

Owner/Manager: DPR-PISMO SB

Occurrence No.	3	**Map Index:**	58233	**EO Index:**	58269	**Element Last Seen:**	1965-09-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1965-09-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.12150 / -120.63448	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3889078 E715558	**Elevation (ft):**	10
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	20.7

Location: 1 MILE NORTH OF OCEANO.

Detailed Location: BEACH DUNES MAPPED

Ecological: FOUND ALONG SAND DUNES.

General: FEMALE COLLECTED 7 SEPT 1965.

Owner/Manager: DPR-PISMO SB

Areniscythris brachypteris

Element Code: IILEG49010

Oso Flaco flightless moth

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	OPEN, COASTAL SAND DUNE SLOPES IN SAN LUIS OBISPO COUNTY.			
	Micro:	LARVAE LIVE IN TUBES ATTACHED TO BURIED, GREEN PARTS OF PLANTS AT THE MARGIN OF THE ACTIVE, MOVING SAND DUNES.			

Occurrence No.	1	**Map Index:**	28636	**EO Index:**	58270	**Element Last Seen:**	1973-06-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1973-06-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03067 / -120.62355	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879026 E716795	**Elevation (ft):**	12
PLSS:	T11N, R35W (S)	**Acres:**	0.0

Location: OSO FLACO LAKE, 5 AIRMILES SOUTH OF OCEANO.

Detailed Location: MOTHS ARE COMMON ON OPEN DUNE SLOPES IN A NARROW ZONE ADJACENT TO THE STABLIZED CHAPARRAL AND LESS COMMON ON DRIFTING SAND DUNES 50M OR MORE FROM THE NEAREST VEGETATION; OCC, FOUND IN CLEARINGS A FEW METERS INTO THE STABILIZED FLORA.

Ecological: NO SPECIFIC PLANT ASSOCIATION WAS SEEN AS NO INDIVIDUALS WERE COLLECTED ON A LIVING PLANT.

General: 1 MALE AND 1 FEMALE PARATYPE, DEPOSITORY UNCLEAR.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	2	**Map Index:**	12992	**EO Index:**	58272	**Element Last Seen:**	1973-08-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1973-08-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07264 / -120.60782	**Accuracy:**	specific area
UTM:	Zone-10 N3883716 E718119	**Elevation (ft):**	75
PLSS:	T12N, R35W, Sec. 31 (S)	**Acres:**	531.4

Location: DUNE LAKES, 3 AIR MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: SOME ADULTS REARED FROM LARVAE COLLECTED BENEATH MONARDELLA CRISPA AND SENECIO BLOCHMANAE.

General: HOLOTYPE MALE, ALLOTYPE FEMALE (BOTH DEPOSITED AT CAS ON INDEFINITE LOAN FROM UCB), AND 56 MALE AND 34 FEMALE PARATYPES.

Owner/Manager: PVT

Plebejus icarioides moroensis

Element Code: IILEPG801B

Morro Bay blue butterfly

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T1T3
	State:	None		**State:**	S1S3
	Other:				
Habitat:	**General:**	INHABITS STABILIZED DUNES & ADJACENT AREAS OF COASTAL SAN LUIS OBISPO & NW SANTA BARBARA COUNTIES.			
	Micro:	LARVAL FOODPLANT THOUGHT TO BE LUPINUS CHAMISSONIS.			

Occurrence No.	2	**Map Index:** 28636	**EO Index:** 60814	**Element Last Seen:**	2004-04-12
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	2004-04-12
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2012-05-22

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03067 / -120.62355	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879026 E716795	**Elevation (ft):**	25
PLSS:	T11N, R35W (S)	**Acres:**	0.0

Location: OSO FLACO LAKE.

Detailed Location:

Ecological:

General: 2 SPECIMENS DEPOSITED AT UC DAVIS BOHART MUSEUM OF ENTOMOLOGY FROM 12 JUN 1981. OBSERVATIONS ON 10 & 12 APR 2004.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	3	**Map Index:** 60779	**EO Index:** 60815	**Element Last Seen:**	1979-04-29
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1979-04-29
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2007-11-27

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01294 / -120.60299	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3877103 E718717	**Elevation (ft):**	120
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	0.0

Location: SAND HILLS (GUADALUPE DUNES), 1. 5 MILES SE OSO FLACO LAKE.

Detailed Location:

Ecological:

General: 1 SPECIMEN DEPOSITED IN UC DAVIS BOHART MUSEUM OF ENTOMOLOGY.

Owner/Manager: TNC, USFWS, DPR, UNK

Chlosyne leanira elegans

Element Code: IILEPJA051

Oso Flaco patch butterfly

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4G5T1T2
	State:	None		**State:**	S1S2
	Other:				
Habitat:	**General:**	SAND DUNE HABITAT AROUND OSO FLACO LAKE, SAN LUIS OBISPO COUNTY.			
	Micro:	DISTRIBUTION CORRESPONDS TO ITS FOODPLANT, CASTILLEJA AFFINIS.			

Occurrence No.	1	**Map Index:** 45643	**EO Index:**	45643		**Element Last Seen:**	1983-05-07
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1983-05-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2001-08-24

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02527 / -120.61680	**Accuracy:**	1 mile
UTM:	Zone-10 N3878441 E717425	**Elevation (ft):**	
PLSS:	T11N, R36W, Sec. UN (X)	**Acres:**	0.0

Location: AREA SE OSO FLACO LAKE.

Detailed Location: TYPE LOCALITY.

Ecological: HABITAT CONSISTS OF STABILIZED DUNES, ERIOGONUM PARVIFOLIUM, ABRONIA UMBELLATA, ERYSIMUM INSULARE SUFFRUTESCENS, LOTUS SCOPARIUS, LUPINUS CHAMISSONIS, CASTILLEJA AFFINIS, CORETHROGYNE FILAGINIFOLIA, HAPLOPAPPUS ERICOIDES.

General: HOLOTYPE (COLLECTED 4/16/83) AND ALLOTYPE (COLLECTED 4/13/83) HOUSED AT THE NATURAL HISTORY MUSEUM OF LOS ANGELES COUNTY. PARATYPES (16 MALES 8 FEMALES) COLLECTED 4/28/77, 4/25/79, 4/16/83, 4/30/83, 5/7/83.

Owner/Manager: DPR-OCEANO DUNES SVRA

Danaus plexippus

Element Code: IILEPP2010

monarch butterfly

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5
	State:	None		**State:**	S3
	Other:				
Habitat:	**General:**	WINTER ROOST SITES EXTEND ALONG THE COAST FROM NORTHERN MENDOCINO TO BAJA CALIFORNIA, MEXICO.			
	Micro:	ROOSTS LOCATED IN WIND-PROTECTED TREE GROVES (EUCALYPTUS, MONTEREY PINE, CYPRESS), WITH NECTAR AND WATER SOURCES NEARBY.			

Occurrence No.	126	**Map Index:**	12765	**EO Index:**	22860	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-01-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.27025 / -120.67128	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3905499 E711818	**Elevation (ft):**	120
PLSS:	T30S, R12E, Sec. 34 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO, VIC HWY 101 AND HIGUERA ST, APPROX 0.25 MI N OF MADONNA RD.

Detailed Location: CLUSTERS FORM OVER THE CREEK ON CYPRESS AND CATTAILS.

Ecological: CLUSTERS ARE FOUND ON MONTEREY CYPRESS AND CATTAILS.

General: APPROXIMATELY 1000 OBSERVED; DATE OF OBSERVATION UNKNOWN. UNUSUAL SITE IN THAT IT IS LOCATED SO FAR INLAND.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	127	**Map Index:**	12891	**EO Index:**	4787	**Element Last Seen:**	1998-01-19
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-01-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Stable	**Record Last Updated:**	1998-07-06

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.12952 / -120.63243	**Accuracy:**	80 meters
UTM:	Zone-10 N3889972 E715724	**Elevation (ft):**	20
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: NORTH BEACH CAMPGROUND, NEAR MEADOW CREEK, PISMO STATE BEACH, NW OF GROVER BEACH

Detailed Location: GROVE OCCURS ALONG THE CREEK, ADJACENT TO THE HIGHWAY, NEAR THE RANGER STATION.

Ecological: CLUSTER TREES ARE A WINDROW OF EUCALYPTUS, PINE, CYPRESS, AND OAKS.

General: 100K OBSERVED IN 1987-88. 15K OBSERVED ON 20 JAN 90. 200K WINTERED IN 90-91 (LARGEST IN CA). 20K OBSERVED IN JAN 93. 17K OBSERVED IN 93-94. 12K OBSERVED IN 94-95. 150K OBSERVED ON 3 JAN 96. 80-120K OBSERVED BETWEEN NOV 97 AND 19 JAN 98.

Owner/Manager: DPR-PISMO SB

Occurrence No.	128	**Map Index:**	12892	**EO Index:**	22858	**Element Last Seen:**	1997-11-28
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-07-06

Quad Summary: Oceano (3512015), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.12524 / -120.63211	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3889498 E715765	**Elevation (ft):**	25
PLSS:	T32S, R12E, Sec. 19 (M)	**Acres:**	0.0

Location: PISMO DUNES STATE VEHICLAR RECREATION AREA DISTRICT OFFICE, WEST OF GROVER CITY

Detailed Location: CLUSTERS NORMALLY BREAK UP, BUT PERSISTED DURING THE 1987-88 SEASON. ORIGINAL SITE EXTIRPATED (BEHIND DISTRICT OFFICE); SITE HAS NOT BEEN USED SINCE 1992-93. TWO OTHER SITES USED ARE A EUCALYPTUS ROW AND AN AREA BEHIND A RESIDENCE.

Ecological: HABITAT CONSISTED OF A LINEAR GROVE OF MONTEREY PINES PARALLELING THE HIGHWAY PRIOR TO TREE-TRIMMING. A EUCALYPTUS WINDROW ALONG MEADOW CREEK WAS USED ALTERNATELY THEREAFTER.

General: 50 OBSERVED ON 11 FEB 87. 5000 CLUSTERED IN OCT 90 (EUCALYPTUS WINDROW); 10K CLUSTERED (MONTEREY PINES) IN NOV 90. NONE OBSERVED IN NOV 92; 3000 OBSERVED IN JAN 93. NONE FOUND IN 93-94, 94-95, OR 95-96. 700 OBSERVED ON 28 NOV 97 (EUC ROW).

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	129	**Map Index:**	13123	**EO Index:**	22855	**Element Last Seen:**	1983-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1983-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-01-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04747 / -120.56767	**Accuracy:**	1 mile
UTM:	Zone-10 N3881012 E721848	**Elevation (ft):**	160
PLSS:	T11N, R35W, Sec. 09 (S)	**Acres:**	0.0

Location: NE CORNER OF JCT OF HWY 1 AND WILLOW RD, APPROX 5 MI S OF ARROYO GRANDE.

Detailed Location:

Ecological: CLUSTERS ROOST IN GUM TREES.

General: TEMPORARY SITE.

Owner/Manager: UNKNOWN

Occurrence No.	130	**Map Index:** 12915	**EO Index:**	22857		**Element Last Seen:**	1982-12-18
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1982-12-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-06-17

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.11900 / -120.62597	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3888819 E716341	**Elevation (ft):**	20
PLSS:	T32S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: VICINITY OF CALVIN AND 4TH, GROVER CITY.

Detailed Location: THIS SITE IS LOCATED NOT FAR FROM THE NORTH PISMO STATE BEACH CAMPGROUND, A PROVEN MAJOR COLONY.

Ecological: HABITAT IS PLANTED EUCALYPTUS.

General: ENOUGH MONARCHS WERE OBSERVED FLYING LATE IN THE DAY (4:30 PM) TO INDICATE THE PRESENCE OF A SUBSTANTIAL CLUSTER SITE.

Owner/Manager: UNKNOWN

Occurrence No.	249	**Map Index:** 30291	**EO Index:**	4447		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1994-12-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-03-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10970 / -120.59897	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3887846 E718827	**Elevation (ft):**	90
PLSS:	T32S, R13E, Sec. 29 (M)	**Acres:**	14.8

Location: HALCYON CEMETERY, SE OF THE INTERSECTION OF ELM STREET AND "THE PIKE."

Detailed Location:

Ecological: HABITAT CONSISTED OF A WINDROW OF EUCALYPTUS ADJACENT TO THE CEMETERY.

General: REPORTEDLY A LARGE CLUSTER SITE PRIOR TO THE REMOVAL THE DENSE UNDERSTORY ASSOCIATED WITH THE SITE. SINGLE VISITS IN OCT 1990, WINTER 1993-94, AND DEC 1994 FOUND NO MONARCHS.

Owner/Manager: PVT-HALCYON

Occurrence No.	250	**Map Index:** 30292	**EO Index:**	4446		**Element Last Seen:**	1996-01-03
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-06-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10580 / -120.59700	**Accuracy:**	80 meters
UTM:	Zone-10 N3887418 E719017	**Elevation (ft):**	80
PLSS:	T32S, R13E, Sec. 29 (M)	**Acres:**	0.0

Location: SOUTH SIDE OF "THE PIKE," BETWEEN GARFIELD PLACE AND GAYNFAIR TERRACE, HALCYON.

Detailed Location: SITE IS LOCATED BEHIND THE HOUSE LOCATED ADJACENT TO THE EUCLYPTUS WINDROW.

Ecological: HABITAT CONSISTS OF A TALL EUCALYPTUS WINDROW.

General: 1000 MONARCHS OBSERVED CLUSTERING IN OCTOBER 1990. 10 FLYERS OBSERVED DURING A SINGLE VISIT IN 1993-94. 15 OBSERVED ON 3 JAN 1996. NONE OBSERVED ON 7 JAN 98.

Owner/Manager: PVT-HALCYON

Occurrence No.	251	**Map Index:**	30293	**EO Index:**	4445	**Element Last Seen:**	1990-10-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-06-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10279 / -120.59391	**Accuracy:**	80 meters
UTM:	Zone-10 N3887091 E719306	**Elevation (ft):**	60
PLSS:	T32S, R13E, Sec. 33 (M)	**Acres:**	0.0

Location: WEST SIDE OF HIAWATHA LANE, BETWEEN LA DUE STREET AND TEMPLE STREET, HALCYON

Detailed Location:

Ecological: AUTUMNAL SITE. HABITAT CONSISTS OF A TALL EUCALYPTUS GROVE IN AN EMPTY LOT.

General: 500+ OBSERVED CLUSTERING IN OCTOBER 1990. A LATE VISIT IN 1992-93 FOUND NO MONARCHS. A SINGLE VISIT IN 1993 -94 FOUND NO MONARCHS. NONE OBSERVED IN DEC 1994. 1 OBSERVED ON 3 JAN 1996. NONE OBSERVED ON 7 JAN 98.

Owner/Manager: PVT-HALCYON

Occurrence No.	252	**Map Index:**	30294	**EO Index:**	4443	**Element Last Seen:**	1998-01-07
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-06-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.10150 / -120.59665	**Accuracy:**	specific area
UTM:	Zone-10 N3886942 E719060	**Elevation (ft):**	100
PLSS:	T32S, R13E, Sec. 32 (M)	**Acres:**	2.1

Location: AT THE END OF HELENA AVENUE, HALCYON

Detailed Location: SITE IS LOCATED AT 1783 HELENA AVENUE, ON A EUCLYPTUS-COVERED HILLTOP, SOUTH OF THE END OF HELENA AVENUE. PREVIOUSLY THOUGHT TO BE AN AUTUMNAL SITE.

Ecological: HABITAT CONSISTS OF A PLANTED ROWS OF EUCALYPTUS ON A SMALL HILL.

General: 1000 MONARCHS OBSERVED IN 1990-91. 5000 MONARCHS OBSERVED IN 1992-93. 2500 OBSERVED IN 1993-94. 4000 OBSERVED IN 1994-95. 15K OBSERVED ON 3 JAN 96. 14K OBSERVED ON 7 JAN 98.

Owner/Manager: PVT-HALCYON

Occurrence No.	253	**Map Index:** 30296	**EO Index:**	4788		**Element Last Seen:**	1998-01-07
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-07-06

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25709 / -120.68357	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904014 E710734	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	25.6

Location: SOUTH OF MADONNA ROAD & WEST OF HWY 101, ALONG THE EAST BANK OF PREFUMO CREEK, SAN LUIS OBISPO.

Detailed Location:

Ecological: HABITAT CONSISTS OF SEVERAL INTERSECTING WINDROWS OF EUCALYPTUS TREES ALONG A CHANNELIZED PORTION OF PREFUMO CREEK.

General: ALTHOUGH NONE WERE OBSERVED IN JAN 1991, SITE REPORTEDLY HAS BEEN USED IN THE PAST. ~100 OBSERVED FLYING, BUT NO CLUSTERS WERE FOUND. 100 OBSERVED ON 7 JAN 98.

Owner/Manager: PVT-ZAPATA FARMS

Occurrence No.	292	**Map Index:** 33181	**EO Index:**	2802		**Element Last Seen:**	1998-01-07
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-06-30

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.11056 / -120.62761	**Accuracy:**	80 meters
UTM:	Zone-10 N3887879 E716214	**Elevation (ft):**	20
PLSS:	T32S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: OCEANO CAMPGROUND, PISMO DUNES STATE VEHICULAR RECREATION AREA.

Detailed Location: SITE IS LOCATED IN THE SLACK OF THE DUNES, BEHIND CAMPGROUND SITES #65 AND 68.

Ecological: CONSISTENT, SMALL PERMANENT SITE, USED IN SPITE OF PAST POOR YEARS. ROOST TREES CONSIST OF A SMALL GROVE OF MONTEREY PINES LOCATED BEHIND THE DUNES.

General: 1000+ OBSERVED IN NOV 1992. 100 OBSERVED IN JAN 1993. ESTIMATED 2000 PRESENT IN NOV 1993. 700 OBSERVED IN DEC 1994; 400 OBSERVED IN JAN 1995. 10K OBSERVED EARLIER; 250 PRESENT ON 3 JAN 96. 25 OBSERVED ON 28 NOV 97; 300 OBSERVED ON 7 JAN 98.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	320	**Map Index:** 33506	**EO Index:**	29553		**Element Last Seen:**	1996-01-03
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-01-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-10-21

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06280 / -120.59919	**Accuracy:**	80 meters
UTM:	Zone-10 N3882643 E718932	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: "DUNE LAKES" SITE, NORTH OF BLACK LAKE & ESE OF WHITE LAKE, WEST OF HWY 1, SOUTH OF ARROYO GRANDE.

Detailed Location: SITE IS LOCATED ESE OF WHITE LAKE, JUST BEFORE HWY 1 VEERS AWAY FROM SPRR.

Ecological: HABITAT CONSISTS OF A PLANTED GROVE OF EUCALYPTUS.

General: 25K OBSERVED ON 3 JAN 1996. NONE OBSERVED ON 7 JAN 1998.

Owner/Manager: UNKNOWN

Pyrgulopsis taylori

Element Code: IMGASJ0A50

San Luis Obispo pyrg

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:				
Habitat:	**General:**	FRESHWATER HABITATS IN SAN LUIS OBISPO COUNTY.			
	Micro:				

Occurrence No.	1	**Map Index:** 67897	**EO Index:**	68047		**Element Last Seen:**	1994-05-06
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-05-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-01-25

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31585 / -120.64772	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3910609 E713841	**Elevation (ft):**	530
PLSS:	T30S, R12E, Sec. 13 (M)	**Acres:**	0.0

Location: BRIZZIOLARI CREEK, 1.6 KM NORTH OF CALIFORNIA POLYTECHNIC UNIVERSITY.

Detailed Location: LOCATION GIVEN AS "BRIZZIOLARI CREEK, 1.6 KM N OF CALIFORNIA POLYTECNIC UNIVERSITY"

Ecological:

General: USNM CATALOG #883789 CONSISTING OF ABOUT 200 SPECIMENS COLLECTED AT SITE/STATION #RH-94-5 BY R. HERSHLER.

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:**	67901	**EO Index:**	68048	**Element Last Seen:**	2000-06-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-01-25

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34834 / -120.62995	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3914251 E715370	**Elevation (ft):**	1800
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO CREEK, CUESTA PASS.

Detailed Location: COLLECTION # 874459 FROM 2/3 WAY UP CUESTA PASS; COLLECTION #903986 FROM SPRING, SAN LUIS OBISPO CREEK, JUST E OF HWY 101 BELOW CUESTA PASS (NOT SHOWN ON TOPO MAP).

Ecological:

General: USNM CATALOG #903986 CONSISTS OF 1 SPECIMEN FROM SITE #27 BY R. HERSHLER; #874459 CONSISTS OF ABOUT 150 SPECIMENS COLLECTED BY J.J. LANDYE FROM SITE L91-18.

Owner/Manager: UNKNOWN

Occurrence No.	3	**Map Index:**	67900	**EO Index:**	68049	**Element Last Seen:**	1992-11-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-11-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34897 / -120.68194	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3914210 E710643	**Elevation (ft):**	250
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: ALONG CHORRO CREEK ABOUT 1 MILE NORTH OF CHORRO RESERVOIR DAM, CAMP SAN LUIS OBISPO.

Detailed Location: MAPPED TO THE TRS INFORMATION GIVEN IN HER95A0001. SPECIMEN LOCALITY STATED AS "CAMP SAN LUIS OBISPO, CHORRO CREEK, 0.1 MI W JUNCTION JEEP TRAIL + ROAD TO BOUNDARY SPRINGS."

Ecological:

General: USNM CATALOG #854590, CONSISTING OF 5 SPECIMENS COLLECTED BY L.M. PAGE, K.S. CUMMINGS, AND C.A. MAYER ON 10 NOV 1992.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	4	**Map Index:** 67902	**EO Index:**	68050		**Element Last Seen:**	1994-05-06
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-05-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-28

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.32538 / -120.61653	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3911734 E716651	**Elevation (ft):**	1400
PLSS:	T30S, R13E, Sec. 07 (M)	**Acres:**	0.0

Location: ABOUT 1 MILE WNW OF MOUNT LOWE, JUST EAST OF HWY 101, AND ABOUT 4 MILES NE OF SAN LUIS OBISPO PO (TOPO).

Detailed Location: MAPPED TO THE TRS INFORMATION GIVEN IN HER95A0001. SPECIMEN LOCALITY STATED AS "SAN LUIS OBISPO CREEK, UNNAMED SPRING, 4.8 KM N OF SAN LUIS OBISPO + E OF HW 101."

Ecological: SNAILS WERE FOUND IN MODERATE ABUNDANCE ON ROCKS AND IN LEAF LITTER ALONG THIS SMALL SPRING BROOK, WHICH WAS IN FAIRLY GOOD CONDITION DESPITE SOME RECREATIONAL IMPACTS AND HISTORIC DIVERSION NEAR THE SOURCE.

General: USNM CATALOG #860646, HOLOTYPE SPECIMEN & #883792, PARATYPE SPECIMEN, COLLECTED BY R. HERSHLER.

Owner/Manager: UNKNOWN

Tryonia imitator

Element Code: IMGASJ7040

mimic tryonia (=California brackishwater snail)

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2G3
	State:	None		**State:**	S2S3
	Other:	IUCN_DD-Data Deficient			
Habitat:	**General:**	INHABITS COASTAL LAGOONS, ESTUARIES AND SALT MARSHES, FROM SONOMA COUNTY SOUTH TO SAN DIEGO COUNTY.			
	Micro:	FOUND ONLY IN PERMANENTLY SUBMERGED AREAS IN A VARIETY OF SEDIMENT TYPES; ABLE TO WITHSTAND A WIDE RANGE OF SALINITIES.			

Occurrence No.	15	**Map Index:** 12911	**EO Index:**	23212		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1979-11-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-09-20

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.10108 / -120.62767	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3886827 E716233	**Elevation (ft):**	
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: MOUTH OF LAGOON AT OCEANO.

Detailed Location:

Ecological: HABITAT WAS FRESHWATER ON 2 NOV 1979.

General: COLLECTED BY MORRIS E. CARUTHERS (NO DATE GIVEN), PROBABLY ABOUT 1930-40; ONE EMPTY SHELL, FRESH-APPEARING. NO SPECIMENS FOUND IN 1970 OR 2 NOV 1979; KELLOGG BELIEVES THAT TRYONIA IMITATOR HAS BEEN EXTIRPATED AT THIS LOCATION.

Owner/Manager: DPR-PISMO SB

Eryngium aristulatum var. hooveri

Element Code: PDAPI0Z043

Hoover's button-celery

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	VERNAL POOLS.			
	Micro:	ALKALINE DEPRESSIONS, VERNAL POOLS, ROADSIDE DITCHES AND OTHER WET PLACES NEAR THE COAST. 3-45 M.			

Occurrence No.	1	**Map Index:** 40783	**EO Index:**	56040		**Element Last Seen:**	1969-08-25
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1969-08-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-07-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26430 / -120.69160	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3904796 E709985	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: LAGUNA DE SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF LAGUNA LAKE, SW OF SAN LUIS OBISPO.

Ecological: PER KEIL, 1996, THIS MAY BE THE ONLY EXTANT POPULATION OF THIS PLANT. FOUND IN SEASONALLY WET GRASSY FIELDS AND PASTURE, WITH HEMIZONIA PARRYI SSP. CONGDONII.

General: UNK # OF PLANTS SEEN IN 1905, 1908, 1912, 1946 & 1969. DURING 1996 SURVEY, PLANTS WERE FOUND E OF THE NW PORTION OF LAGUNA LAKE PARK: A FEW FOUND IN LET IT BE NATURE PRESERVE. 1 PLANT WAS FOUND IN THE PARK; SOME ON ADJACENT PVT PROPERTY.

Owner/Manager: CITY OF SAN LUIS OBISPO, PVT

Occurrence No.	10	**Map Index:** 57149	**EO Index:**	61445		**Element Last Seen:**	2003-09-09
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-09-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-25

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.24612 / -120.65643	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3902855 E713231	**Elevation (ft):**	
PLSS:	T31S, R12E, Sec. 11 (M)	**Acres:**	373.0

Location: SOUTH END OF SAN LUIS OBISPO, JUST NORTHWEST OF SLO COUNTY AIRPORT, TANK FARM ROAD VICINITY.

Detailed Location: MAPPED MOSTLY WITHIN THE N 1/2 OF SECTION 11.

Ecological: FOUND IN LOW AREAS AND SWALES AT THE NON-NATIVE ANNUAL GRASSLAND/WETLAND HABITAT INTERFACE. ASSOCIATED WITH LOLIUM MULTIFLORUM, LOTUS CORNICULATUS, XANTHIUM STRUMARIUM, AND CENTROMADIA PARRYI SSP. CONGDONII.

General: HUNDREDS OF PLANTS SEEN IN 2003. THE RARE CENTROMADIA SSP. CONGDONII AND CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS WERE ALSO OBSERVED IN THIS VICINITY.

Owner/Manager: PVT

Sanicula maritima

Element Code: PDAPI1Z0D0

adobe sanicle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	Rare		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			

Habitat:	**General:**	MEADOWS AND SEEPS, VALLEY AND FOOTHILL GRASSLAND, CHAPARRAL, COASTAL PRAIRIE.
	Micro:	MOIST CLAY OR ULTRAMAFIC SOILS. 30-240M.

Occurrence No.	1	**Map Index:**	12643	**EO Index:**	20058	**Element Last Seen:**	1980-03-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-04-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-05-23

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.31384 / -120.73308	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910205 E706085	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	81.0

Location:	ON OPEN SLOPE, W BASE OF CERRO ROMAULDO AND SW BASE ALONG O'CONNOR WAY, W OF SAN LUIS OBISPO.
Detailed Location:	AREA BELOW WATER TOWER SEARCHED IN 2000 (N POLYGON). ALSO LOCATED "ACROSS THE ROAD FROM ROCKY TOP RANCH" (S POLYGON); THE RANCH IS LOCATED AT 1779 O'CONNOR WAY.
Ecological:	IN BLACK MUCK OF GULLIES ON OPEN SLOPE. ASSOCIATED WITH RANUNCULUS, SISYRINCHIUM AND LOMATIUM. DISTURBED RIPARIAN AREA.
General:	SITE OF N POLYGON SEARCHED IN 2000; POSSIBLE PLANTS SEEN, BUT SITE DESTROYED BY CATTLE BEFORE ID COULD BE CONFIRMED. 1980 COLLECTION BY KEIL (S POLYGON) ATTRIBUTED TO THIS OCCURRENCE. NEEDS FIELDWORK.
Owner/Manager:	UNKNOWN

Occurrence No.	2	**Map Index:**	12619	**EO Index:**	20057	**Element Last Seen:**	1947-02-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1947-02-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.31246 / -120.74712	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3910023 E704811	**Elevation (ft):**	795
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location:	FIRST RIDGE W OF CERRO ROMAULDO, NEAR SAN LUIS OBISPO.
Detailed Location:	
Ecological:	ON OPEN SLOPE IN HEAVY CLAY.
General:	
Owner/Manager:	UNKNOWN

Occurrence No.	15	**Map Index:** 40783	**EO Index:**	40783		**Element Last Seen:**	1996-05-24
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1996-05-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-04-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26430 / -120.69160	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3904796 E709985	**Elevation (ft):**	140
PLSS:	T31S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: LAGUNA LAKE PARK, SAN LUIS OBISPO.

Detailed Location: MOIST SWALE ON GENTLE SLOPE NEAR POWERLINE CORRIDOR WEST OF DEVELOPED AREA OF PARK.

Ecological: MOIST, SPRING-FED SWALE IN FORMERLY GRAZED GRASSLAND DOMINATED BY EXOTIC ANNUALS WITH SOME NATIVE SPECIES. SEASONAL WETLAND WITH TRIFOLIUM WORMSKIOLDII, JUNCUS PHAEOCEPHALUS, STACHYS BULLATA, ET AL.

General: 50-100 PLANTS OBSERVED IN 1996. 1947 COLLECTION BY HOOVER AND 1950 COLLECTION BY BELL FROM LOS OSOS VALLEY ATTRIBUTED TO THIS SITE. INCLUDES FORMER OCCURRENCE #3.

Owner/Manager: CITY OF SAN LUIS OBISPO, UNK

Occurrence No.	20	**Map Index:** 62085	**EO Index:**	62121		**Element Last Seen:**	2005-09-09
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-09-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-05-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25889 / -120.66151	**Accuracy:**	specific area
UTM:	Zone-10 N3904261 E712735	**Elevation (ft):**	200
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	9.0

Location: 0.6 MILE EAST OF HWY 101 AT END OF MARGARITA AVE, AND BELOW RADIO TOWER TO THE NW, IN THE CITY OF SAN LUIS OBISPO.

Detailed Location: TWO POLYGONS MAPPED WITHIN THE SE 1/4 AND NW 1/4 OF THE NW 1/4 OF SECTION 2.

Ecological: IN SEEP WETLANDS, DRAINAGES, GRASSLAND W/PATCHES OF COASTAL SCRUB; SERPENTINE SOILS. AT FOOT OF S-FACING HILLSIDES. DOMINANT WETLAND PLANT AT SE OCCURRENCE IS JUNCUS PHAEOCEPHALUS. CIRSIUM FONTINALE OBISPOENSE ALSO PRESENT.

General: 500 PLANTS IN 4 PATCHES IN SE POLYGON IN 2005; EST. 300 PLANTS IN NW POLYGON IN 2005. RARE PLANTS NEARBY: DUDLEYA ABRAMSII MURINA, CALOCHORTUS OBISPOENSIS, C. SIMULANS, CHORIZANTHE BREWERI, C. PALMERI, CASTILLEJA DENSIFLORA OBISPOENSIS.

Owner/Manager: PVT

Cirsium fontinale var. obispoense

Element Code: PDAST2E162

Chorro Creek bog thistle

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G2T2
	State:	Endangered		**State:**	S2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND.			
	Micro:	SERPENTINE SEEPS. 35-365M.			

Occurrence No.	2	**Map Index:** 12738	**EO Index:**	845		**Element Last Seen:**	2006-03-30
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2006-03-30
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-07-25

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26783 / -120.68376	**Accuracy:**	specific area
UTM:	Zone-10 N3905204 E710688	**Elevation (ft):**	200
PLSS:	T30S, R12E, Sec. 34 (M)	**Acres:**	12.2

Location: LAGUNA LAKE PARK, ON NEARBY HILLSIDE N OF LAKE.

Detailed Location: SOME PLANTS NE OF MAIN PARKING LOT FOR LAGUNA LAKE.

Ecological: IN SUN ON S-FACING SLOPE OF SERPENTINE OUTCROP IN SEEP W/CAREX OBISPOENSIS. 7 SMALL COLONIES IN SEPARATE SEEPS. ALSO W/CALOCHORTUS OBISPOENSIS AND DUDLEYA MURINA. SEEN IN 3 SMALL DRAINAGES ON LOWER SLOPES OF HILL BEHIND EUCALYPTUS (1990).

General: ABOUT 1000 PLANTS SEEN IN 1981 OVER A 2.5 ACRE AREA. ALSO SEEN IN 1986. ABOUT 100 SEEN IN 1989, 82 FLOWERING STALKS SEEN IN 1990 IN 3 DRAINAGES, 1025 IN 1993, 1000S IN 1999, UNK # SEEN IN 2006.

Owner/Manager: CITY OF SAN LUIS OBISPO, PVT

Occurrence No.	3	**Map Index:** 12746	**EO Index:**	256		**Element Last Seen:**	2003-08-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-02-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34302 / -120.68178	**Accuracy:**	specific area
UTM:	Zone-10 N3913550 E710673	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	26.0

Location: CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION; ABOUT 0.5 MI NE OF CHORRO RESERVOIR, NEAR HEADWATERS OF CHORRO CREEK.

Detailed Location: PLANTS FOUND IN 1993 IN THE CROOK OF A LONG BEND IN THE MIDDLE ROAD, WHICH CLIMBS TO THE NE BELOW THE SPRING, BENDS AROUND ITS E END, AND CLIMBS TO THE SW ALONG THE NE FLANK OF THE SPRING.

Ecological: IN BOGGY FLAT ON OR ADJACENT TO SERPENTINE, ON MORE GENTLE SLOPES AND TERRACES. ASSOCIATED WITH JUNCUS, SCIRPUS, CAREX, AND HELENIUM BIGELOVII.

General: TYPE LOCALITY. 200-300 PLANTS IN 1993. 1845 IN 1994. 2871 IN 1995, 1782 IN 1996, 1055 IN 1997. 822 IN 1998. 4644 IN 1999. 4433 IN 2000. 2792 IN 2001. 3393 IN 2002. 643 IN 2003.

Owner/Manager: DOD-CALIFORNIA NATIONAL GUARD

Occurrence No.	4	**Map Index:** 12670	**EO Index:**	848		**Element Last Seen:**	1993-05-06
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-05-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-02-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26154 / -120.71560	**Accuracy:**	specific area
UTM:	Zone-10 N3904439 E707808	**Elevation (ft):**	200
PLSS:	T31S, R12E, Sec. 05 (M)	**Acres:**	24.8

Location: PREFUMO CANYON, NEAR WATERFALL; S SIDE OF PREFUMO CANYON ROAD. ABOUT 1.0 AIRMI SW OF ARM OF LAGUNA LAKE.

Detailed Location: PLANTS FOUND IN 1993 IN 3 SEPARATE GULLYS.

Ecological: ON STEEP SERPENTINE BANK ADJACENT TO WATERFALL AND STREAM WITHIN CHAPARRAL OAK WOODLAND. ASSOCIATED WITH QUERCUS DURATA, CAREX OBISPOENSIS, AND NASSELLA PULCHRA.

General: 150 PLANTS SEEN IN 1986, TOTAL OF AT LEAST 300 PLANTS IN 1993.

Owner/Manager: UNKNOWN

Occurrence No.	5	**Map Index:** 12658	**EO Index:**	849		**Element Last Seen:**	1993-05-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-05-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-02-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26450 / -120.72168	**Accuracy:**	80 meters
UTM:	Zone-10 N3904755 E707247	**Elevation (ft):**	350
PLSS:	T31S, R12E, Sec. 06 (M)	**Acres:**	0.0

Location: ALONG PREFUMO CYN RD APPROX 1.2 MI FROM GATE NEAR RESIDENTIAL AREA, WEST OF SAN LUIS OBISPO.

Detailed Location: ON S SIDE OF PREFUMO CANYON RD. PLANTS FOUND IN THE WALLS OF A STEEP ROAD CUT AND A NATURAL ROCKY OUTCROP WHICH EXISTED PRIOR TO THE ROAD.

Ecological: IN RIPARIAN, OAK WOODLAND, AND CHAPARRAL ON STEEP NORTH-FACING HILLSIDE. ASSOCIATED WITH UMBELLULARIA, PLATANUS, AND SALIX.

General: ABOUT 50 PLANTS SEEN IN 1986, 70 IN 1993. NO PLANTS FOUND N OF ROAD IN 1993; BUT IT'S LIKELY THAT THE ORIGINAL POP EXTENDED FURTHER INTO THE ROAD RIGHT-OF-WAY.

Owner/Manager: PVT

Occurrence No.	6	**Map Index:**	12683	**EO Index:**	852	**Element Last Seen:**	1994-01-XX
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-01-01

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36214 / -120.71023	**Accuracy:**	specific area
UTM:	Zone-10 N3915611 E708039	**Elevation (ft):**	1200
PLSS:	T29S, R12E, Sec. 32 (M)	**Acres:**	13.5

Location: EAST FORK OF PENNINGTON CREEK, 0.6-0.9 MI W OF WHISKEY SPRING, NORTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: PLANTS FOUND NEAR THE TOE OF A COMPLEX OF LANDSLIDES WITH SPRINGS AT SEVERAL LOCATIONS ALONG THEIR BASE. IN SERPENTINE ON SW-FACING SLOPE. W/HELENIUM BIGELOVII, CAREX OBISPOENSIS, CALOCHORTUS OBISPOENSIS, & CHORIZANTHE BREWERI.

General: UP TO 1000 PLANTS SEEN IN 1981 AND 1986, AT LEAST 2200 IN 1994. PROTECTED IN THE BIORESERVE ADMINISTERED BY THE BIOLOGY DEPT. AT CAL POLY SLO.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	7	**Map Index:**	12730	**EO Index:**	711	**Element Last Seen:**	1992-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-02-22

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24768 / -120.68672	**Accuracy:**	80 meters
UTM:	Zone-10 N3902963 E710471	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: FROOM CREEK, FROOM RANCH, W OF LOS OSOS VALLEY ROAD, S OF SAN LUIS OBISPO.

Detailed Location: USING "VIRTUAL" SURVEY, EO IS IN FAR NE 1/4 OF SECTION 9.

Ecological: ON SERPENTINE SOIL ALONG CREEK SURROUNDED BY GRASSLAND, COASTAL SCRUB, CHAPARRAL, AND OAK WOODLAND. WITH SOLIDAGO GUIRADONIS, CAREX SPP, JUNCUS SPP, AND MIMULUS GUTTATUS.

General: ABOUT 15 PLANTS SEEN IN 1987, 10 IN 1992.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:** 27718	**EO Index:**	710		**Element Last Seen:**	1993-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-02-22

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24263 / -120.69505	**Accuracy:**	specific area
UTM:	Zone-10 N3902385 E709726	**Elevation (ft):**	240
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	27.1

Location: APPROX. 1 AIRMI E OF MINE HILL, W OF HWY 101, SW OF FROOM CREEK.

Detailed Location: ADDITIONAL SITE INFORMATION FOUND AT CNDDB IN 1994 REPORT BY D. CHIPPING (CHI94R01).

Ecological: ON SERPENTINE SOIL IN RAVINE, SPRING, AND BOGGY SEEP. SURROUNDED BY GRASSLAND, COASTAL SCRUB, CHAPARRAL, AND OAK WOODLAND.

General: UNKNOWN HOW MANY PLANTS SEEN IN 1987, 250 IN 1993 IN SEVERAL SUBPOPULATIONS.

Owner/Manager: PVT

Occurrence No.	10	**Map Index:** 39851	**EO Index:**	34853		**Element Last Seen:**	1997-06-11
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1997-06-11
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30310 / -120.64356	**Accuracy:**	specific area
UTM:	Zone-10 N3909203 E714253	**Elevation (ft):**	560
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	21.8

Location: SLOPES ABOVE MIOSSI CREEK, ABOUT 0.8 MI EAST OF CAL POLY SLO AND 0.5 MI NORTH OF CUESTA CANYON CO PARK, SAN LUIS OBISPO.

Detailed Location: N-FACING SEEPS ON WEST SIDE OF MIOSSI CREEK, NORTH OF SAN LUIS OBISPO CREEK.

Ecological: IN VERY WET SEEPS/SPRINGS ON SERPENTINE CLAY SOILS. ASSOCIATED WITH MIMULUS GUTTATUS, POLYPOGON MONSPELIENSIS, ELEOCHARIS PARISHII, LOLIUM MULTIFLORUM, CAREX, JUNCUS XIPHIOIDES. QUERCUS AGRIFOLIA AND RHAMNUS CALIFORNICA AT EDGES ABOVE SEEP.

General: 1000+ PLANTS OBSERVED IN 1997. NO PLANTS OBSERVED ALONG MIOSSI CREEK.

Owner/Manager: PVT

Occurrence No.	11	**Map Index:**	28608	**EO Index:**	55762	**Element Last Seen:**	1987-07-01
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-07-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-07

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.27307 / -120.60498	**Accuracy:**	1 mile
UTM:	Zone-10 N3905956 E717842	**Elevation (ft):**	920
PLSS:	T30S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location: 0.125 MILE SE AND 1 MILE N ON S SLOPE OF RESERVOIR CANYON, JUNCTION OF RESERVOIR AND HAMPTON CREEK, SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED IN THE VICINITY OF RESERVOIR AND HAMPTON CREEK JUNCTION.

Ecological: SERPENTINE SPRING.

General: ONLY SOURCE OF INFORMATION ARE 1987 COLLECTIONS BY PENKALA AND RYAN. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:**	64464	**EO Index:**	64543	**Element Last Seen:**	2005-09-09
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-09-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-04-13

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26189 / -120.66533	**Accuracy:**	80 meters
UTM:	Zone-10 N3904586 E712381	**Elevation (ft):**	25
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: CITY OF SAN LUIS OBISPO, JUST NORTH OF LOMA BONITA, SOUTHEAST OF RADIO TOWER.

Detailed Location: APPROX. 1250 FEET EAST OF SOUTH HIGUERA STREET ON STEEP SOUTH-FACING HILLSIDE BELOW RADIO TOWER. MAPPED WITHIN THE NW 1/4 OF THE NW 1/4 OF SECTION 2.

Ecological: SMALL, STEEP DRAINAGE ON A SERPENTINE HILLSIDE WITH BROKEN SERPENTINE RUBBLE. PERENNIAL AND ANNUAL GRASSLAND SURROUNDING THE SITE, WITH PATCHES OF COASTAL SCRUB IN VICINITY. MANY OTHER RARE PLANTS ON SERPENTINE OUTCROPS IN VICINITY.

General: 300 PLANTS OBSERVED IN 2005. PLANTS ARE VERY LOCAL AND DO NOT OCCUR IN NEARBY DRAINAGES, ALTHOUGH SEEMINGLY APPROPRIATE HABITAT IS PRESENT. SITE FIRST IDENTIFIED BY HAVLICK IN AUGUST 2005. MANY RARE SPECIES IN THIS VICINITY.

Owner/Manager: UNKNOWN

Cirsium scariosum var. loncholepis

Element Code: PDAST2E1N0

La Graciosa thistle

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G5T1
	State:	Threatened		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	COASTAL DUNES, BRACKISH MARSHES, RIPARIAN SCRUB, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.			
	Micro:	LAKE EDGES, RIVERBANKS, OTHER WETLANDS; OFTEN IN DUNE AREAS. MESIC, SANDY SITES.			4-220 M.

Occurrence No.	8	**Map Index:** 13002	**EO Index:**	1226		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-02-05

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.04298 / -120.60604	**Accuracy:**	80 meters
UTM:	Zone-10 N3880429 E718360	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 07 (S)	**Acres:**	0.0

Location:	CALLENDAR DUNES, 0.35 MILE NNW OF JACK LAKE, SOUTH OF OCEANO.
Detailed Location:	ALONG WESTERN EDGE OF UNNAMED WETLAND.
Ecological:	IN DUNE SAND NEAR WATER. GROWING WITH RUBUS DISCOLOR, ACHILLEA MILLEFOLIUM, BACCHARIS PILULARIS, CLAYTONIA PERFOLIATA, JUNCUS LESUEURII, AND CAREX PANSA. ADJACENT WILLOW THICKET IS EXPANDING. THE RARE MONARDELLA CRISPA GROWING NEARBY.
General:	OCCURRENCE IS SMALL; ONLY 1 FLOWERING PLANT, 3 SEEDLINGS, AND 44 VEGETATIVE PLANTS SEEN IN 1990; ONE SEVERELY DAMAGED PLANT WAS FOUND 100 M E OF THE MAIN POPULATION. ONLY 2 PLANTS OBSERVED IN 1998.
Owner/Manager:	UNKNOWN

Occurrence No.	9	**Map Index:** 26526	**EO Index:**	1225		**Element Last Seen:**	1990-07-09
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-06-23

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.03761 / -120.60119	**Accuracy:**	specific area
UTM:	Zone-10 N3879844 E718816	**Elevation (ft):**	75
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	12.0

Location:	JACK LAKE, CALLENDER DUNES, SOUTH OF OCEANO.
Detailed Location:	AT THE NW EDGE AND THE EAST END OF THE LAKE.
Ecological:	PLANTS ON THE NW SIDE AT THE FOOT OF A DUNE IN OPEN SHADE AMONG WILLOWS, RUBUS, AND HELENIUM. IN SANDY SOIL WITH RUBUS LITTER. OTHER PLANTS IN DRY SAND UNDER BACCHARIS SCRUB.
General:	~30 IN 1979. SEEN AT JACK LAKE IN 1980. 23 PLANTS IN FLOWER AND 40 VEGETATIVE SEEN IN 1990. A NUMBER OF SEEDLINGS WERE SEEN AT THE NW SITE. NO PLANTS SEEN IN 1998 (J. CHESNUT). VAGUE COLLECTIONS FROM "JACK LAKE" ARE ALSO ATTRIBUTED HERE.
Owner/Manager:	PVT-UNION OIL

Occurrence No.	10	**Map Index:**	12983	**EO Index:**	1227	**Element Last Seen:**	1983-06-14
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06195 / -120.60964	**Accuracy:**	80 meters
UTM:	Zone-10 N3882526 E717981	**Elevation (ft):**	20
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: SOUTHEAST EDGE OF MUD LAKE, CALLENDER DUNES, SOUTH OF OCEANO.

Detailed Location:

Ecological: IN FRESHWATER MARSH ON BORDER OF DUNE LAKE. ASSOCIATED WITH SALIX LASIOLEPIS, POTENTILLA EGEDII VAR. GRANDIS, DISTICHLIS SPICATA, SCIRPUS CALIFORNICUS, POLYGONUM, AND RIBES DIVARICATUM.

General: FEWER THAN 10 PLANTS SEEN IN 1981, 100+ PLANTS SEEN IN 1983, NONE FOUND IN 1986. POPULATIONS FLUCTUATE GREATLY FROM YEAR TO YEAR. OFTEN MISIDENTIFIED AS C. BREVISTYLUM.

Owner/Manager: PVT

Occurrence No.	11	**Map Index:**	13000	**EO Index:**	3899	**Element Last Seen:**	1988-06-25
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-06-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-06-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06938 / -120.60713	**Accuracy:**	specific area
UTM:	Zone-10 N3883356 E718190	**Elevation (ft):**	20
PLSS:	T12N, R13E, Sec. 06 (S)	**Acres:**	30.2

Location: DUNE LAKES: BETWEEN BIG TWIN LAKE, CELERY LAKE, SMALL TWIN LAKE, AND BOLSA CHICA LAKE; SOUTH OF OCEANO.

Detailed Location: COLONIES HAVE BEEN RECORDED ALONG THE NORTH, SOUTH, AND EAST SHORE OF BIG TWIN LAKE, AND ALONG THE SOUTH SHORE OF SMALL TWIN LAKE.

Ecological: IN FRESHWATER MARSH ON BORDERS OF DUNE LAKES IN COASTAL SCRUB. ASSOCIATED WITH SALIX LASIOLEPIS, MYRICA CALIFORNICA, LONICERA INVOLUCRATA, RHAMNUS CALIFORNICUS, POTENTILLA EGEDEI VAR. GRANDIS, DISTICHLIS SPICATA, BACCHARIS PILULARIS, ET AL.

General: FEWER THAN 10 PLANTS OBSERVED IN 1981, 10-50 PLANTS OBSERVED IN 1984, 20 PLANTS SEEN IN 1988. A 1958 SMITH COLLECTION FROM "WHITE LAKE" IS ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	12989	**EO Index:**	1221	**Element Last Seen:**	2008-07-01
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-07-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-06-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01202 / -120.60687	**Accuracy:**	specific area
UTM:	Zone-10 N3876993 E718366	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	11.0

Location: SURPRISE LAKE, NORTH SIDE OF GUADALUPE DUNES ABOUT 0.5 MILE SOUTH OF OSO FLACO LAKE ROAD, SOUTH OF OCEANO.

Detailed Location: AT THE EAST END AND NORTHWEST EDGE OF DUNE SWALE LAKE.

Ecological: DUNE SLACK WETLAND WITH OPEN WATER. ASSOCIATED WITH BACCHARIS, CASTILLEJA EXSERTA, LESSINGIA FILAGINIFOLIA, RUBUS URSINUS, URTICA DIOICA, CAREX PANSA, AND JUNCUS LESEUERII. CIRSIUM BREVISTYLUM HAS OCCUPIED THE EAST SIDE OF THE LAKE.

General: FEWER THAN 50 PLANTS FOUND IN 1981, NONE FOUND IN 1986, 50 IN 1987, 25 IN 1988, 27 IN 1990, 54 PLANTS IN 1997, 7 PLANTS ON N-SIDE IN 1998 (NONE ON EAST SIDE). 10 PLANTS IN 2008.

Owner/Manager: DPR?

Occurrence No.	13	**Map Index:**	12908	**EO Index:**	17080	**Element Last Seen:**	1990-07-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-06-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03049 / -120.62574	**Accuracy:**	specific area
UTM:	Zone-10 N3879001 E716596	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	5.1

Location: NORTHWEST SHORE OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: MAPPED ALONG SOUTHERN SHORE OF PENINSULA AT WEST END OF LAKE; JUST EAST OF OUTLET.

Ecological: IN SANDY SOIL WITH GRASSES.

General: 34 PLANTS FOUND IN TWO COLONIES IN 1990 BY HENDRICKSON. NONE SEEN IN 1998. VAGUE COLLECTIONS FROM "OSO FLACO LAKE" ARE ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	14	**Map Index:** 12924	**EO Index:**	11802		**Element Last Seen:**	1969-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1990-06-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-06-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.11234 / -120.62755	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3888077 E716213	**Elevation (ft):**	20
PLSS:	T32S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: PISMO STATE BEACH.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS AROUND THE PORTION OF PISMO STATE BEACH IN SECTION 30.

Ecological:

General: SITE BASED ON A 1969 HOLSTEIN OBSERVATION. PLANTS NOT SEEN IN 1976. WETLAND AROUND PONDS NEAR PISMO STATE BEACH WERE SEARCHED IN 1990, NO SUITABLE HABITAT FOUND. A 1910 CONDIT COLLECTION FROM "OCEANO" IS ALSO ATTRIBUTED HERE.

Owner/Manager: UNKNOWN

Occurrence No.	20	**Map Index:** 26525	**EO Index:**	1224		**Element Last Seen:**	1990-08-08
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03982 / -120.61504	**Accuracy:**	specific area
UTM:	Zone-10 N3880059 E717547	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	6.3

Location: CALLENDAR DUNES, ABOUT 0.5 MILE WEST OF JACK LAKE, SOUTH OF OCEANO.

Detailed Location:

Ecological: IN DUNE SWALE WITH SALIX LASIOLEPIS, RUBUS URSINUS, RIBES, LONICERA, AND CIRSIUM BREVISTYLUM. FLAT, DAMP SANDY SOIL.

General: 11 PLANTS OBSERVED IN 1990. NO PLANTS SEEN IN 1998 (J. CHESNUT).

Owner/Manager: PVT-UNOCAL

Occurrence No.	30	**Map Index:** 61898	**EO Index:**	61934		**Element Last Seen:**	1975-04-21
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1975-04-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02226 / -120.63202	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3878074 E716044	**Elevation (ft):**	
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	0.0

Location: COLLECTED 1,000 YARDS SOUTHWEST OF OSO FLACO LAKE AND NORTHWEST OF SANTA MARIA.

Detailed Location: EXACT LOCATION UNKNOWN; MAPPED APPROXIMATELY 1000 YARDS SOUTHWEST OF OSO FLACO LAKE.

Ecological: GROWING IN SANDY SOIL.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1975 COLLECTION BY KEEFE.

Owner/Manager: UNKNOWN

Cirsium occidentale var. lucianum

Element Code: PDAST2E1Z6

Cuesta Ridge thistle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4T2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	CHAPARRAL.			
	Micro:	OPENINGS; ON SERPENTINITE. OFTEN ON STEEP ROCKY SLOPES AND ALONG DISTURBED ROADSIDES. 500-750 M.			

Occurrence No.	1	**Map Index:**	83429	**EO Index:**	84448	**Element Last Seen:**	1964-07-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1964-07-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-09

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.28916 / -120.45065	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3908091 E731836	**Elevation (ft):**	
PLSS:	T30S, R14E, Sec. 23 (M)	**Acres:**	0.0

Location: SALSIPUEDES CREEK, 5 MILES WEST OF POZO.

Detailed Location: MAPPED BY CNDDB 5 MILES WEST OF POZO CENTERED ON WEST POZO ROAD AND SALSIPUEDES CREEK AREA.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1964 COLLECTION BY HOOVER. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:**	83430	**EO Index:**	84449	**Element Last Seen:**	1995-05-02
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-03

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.31541 / -120.59630	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3910672 E718517	**Elevation (ft):**	2000
PLSS:	T30S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: SE BASE OF "PEAK 3", BLACK BUTTE RESEARCH NATURAL AREA, LOS PADRES NATIONAL FOREST.

Detailed Location: "PEAK 3" IS PRESUMED TO BE PEAK AT 2553 FT ELEVATION IMMEDIATELY SE OF MT. LOWE AND NW OF BLACK BUTTE. MAPPED BY CNDDB JUST SE OF SUMMIT CENTERED ON CANYON BETWEEN THIS SUMMIT AND SUMMIT OF BLACK BUTTE.

Ecological: STEEP ROCKY OPENING AT EDGE OF QUERCUS AGRIFOLIA WOODLAND. AT MARGIN OF UNBURNED AREA.

General: CONSIDERED "UNCOMMON" IN THE RESEARCH NATURAL AREA IN 1995.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	3	**Map Index:**	83431	**EO Index:**	84450	**Element Last Seen:**	1964-06-05
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1964-06-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-03

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30297 / -120.57915	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3909330 E720110	**Elevation (ft):**	
PLSS:	T30S, R13E, Sec. 21 (M)	**Acres:**	0.0

Location: WEST OF UPPER LOPEZ CANYON, LOS PADRES NATIONAL FOREST.

Detailed Location: NEAR SUMMIT OF RIDGE. UNSURE WHICH RIDGE AS LOPEZ CANYON WINDS AROUND BOTH SIDES OF LOPEZ MOUNTAIN. MAPPED BY CNDDB CENTERED ON LOPEZ CANYON AND LOPEZ MOUNTAIN AREA.

Ecological: OPEN WEST-FACING SLOPE.

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1964 HOOVER COLLECTION. NEEDS FIELDWORK.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	4	**Map Index:**	83434	**EO Index:**	84451	**Element Last Seen:**	1989-06-28
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1989-06-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36552 / -120.66035	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3916092 E712562	**Elevation (ft):**	2500
PLSS:	T29S, R12E, Sec. 35 (M)	**Acres:**	172.0

Location: 2.7-4.3 MILES WEST OF HIGHWAY 101 ALONG CUESTA RIDGE ROAD (USFS 29S11), NW OF CUESTA PASS, NORTH OF SAN LUIS OBISPO.

Detailed Location: ROADSIDES NEAR KSBY TV TOWERS. MAPPED BY CNDDB FROM 2.2-4.8 MILES W OF HIGHWAY 101 BASED ON MULTIPLE COLLECTIONS AT 2.7 MILES, 3 MILES, AND 4.3 MILES W OF HIGHWAY NEAR TV TOWERS AND IN/NEAR THE CUESTA RIDGE BOTANICAL AREA.

Ecological: WEST-FACING SLOPE, SERPENTINE. GRASSLAND-CHAPARRAL. ASSOCIATED WITH ARCTOSTAPHYLOS OBISPOENSIS, SALVIA MELLIFERA, CALYSTEGIA MACROSTEGIA SSP. CYCLOSTEGIA, CENTAUREA SOLSTITIALIS, MELICA TORREYANA, ERIOPHYLLUM, STACHYS, STIPA, AVENA, ETC.

General: TYPE LOCALITY. CONSIDERED "ABUNDANT" IN 1965 BY HOOVER AND "COMMON" IN 1989 BY JUNAK.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	5	**Map Index:**	83436	**EO Index:**	84453	**Element Last Seen:**	2011-06-02
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2011-06-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-03

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34579 / -120.63215	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3913964 E715177	**Elevation (ft):**	1600
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	30.0

Location: 0.3-0.6 MILE WEST OF HIGHWAY 101 ALONG CUESTA RIDGE ROAD (USFS 29S11), W OF CUESTA PASS, NORTH OF SAN LUIS OBISPO.

Detailed Location: IN ROADCUT, ROADSIDE. MAPPED BY CNDDB FROM 0.2-0.7 MILE WEST OF HIGHWAY BASED ON MULTIPLE COLLECTIONS FROM 0.3 MILE AND 0.3-0.6 MILE WEST OF HIGHWAY.

Ecological: OAK WOODLAND-CHAPARRAL, SOUTH-FACING SLOPE. ASSOCIATED SPECIES INCLUDE GNAPHALIUM CALIFORNICUM, SALVIA MELLIFERA, ERIOPHYLLUM CONFERTIFLORUM, MIMULUS AURANTIACUS, LUPINUS SP., AND NON-NATIVE GRASSES.

General: SEVERAL PLANTS OBSERVED IN 2011.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	12782	**EO Index:**	84456	**Element Last Seen:**	2009-05-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2009-05-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-03

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32830 / -120.66684	**Accuracy:**	1 mile
UTM:	Zone-10 N3911949 E712070	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: STENNER CREEK, NORTH OF SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB CENTERED ON UPPER REACHES OF STENNER CREEK.

Ecological: FOOTHILL GRASSLAND DOMINATED BY INTRODUCED OATS AND BROMES.

General: UNKNOWN NUMBER OF PLANTS SEEN. ONLY SOURCE OF INFORMATION IS A 2009 PHOTOGRAPH BY GREEN. NEEDS BETTER LOCATION INFORMATION.

Owner/Manager: UNKNOWN

Cirsium rhothophilum

Element Code: PDAST2E2J0

surf thistle

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Threatened		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	COASTAL DUNES, COASTAL BLUFF SCRUB.			
	Micro:	OPEN AREAS IN CENTRAL DUNE SCRUB; USUALLY IN COASTAL DUNES. 3-60M.			

Occurrence No.	13	**Map Index:**	12885	**EO Index:**	17062	**Element Last Seen:**	1990-04-08
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Decreasing	**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03565 / -120.63216	**Accuracy:**	specific area
UTM:	Zone-10 N3879559 E715997	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 14 (S)	**Acres:**	3.5

Location: ABOUT 0.5 MILE NORTHWEST OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: IN DUNES JUST IN FROM COAST, ABOUT 0.25 MILE NORTH OF MOUTH OF CREEK THAT DRAINS OSO FLACO LAKE.

Ecological: ON DUNE SCRUB ASSOCIATED WITH AMBROSIA CHAMISSONIS, MALACOTHRIX INCANA, ERIOGONUM PARVIFOLIUM, DITHYREA MARITIMA, AND CARPOBROTUS EDULIS.

General: 9 PLANTS SEEN IN 1986, 4 IN 1990. NONE FOUND IN 1995, 1998. MOST OF POPULATION BELIEVED TO BE WIPED OUT BY STATE VEHICULAR REC AREA (SVRA) EXPERIMENTAL REVEGETATION PROJECT.

Owner/Manager: DPR-PISMO SB

Occurrence No.	14	**Map Index:**	12872	**EO Index:**	13210	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Decreasing	**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02001 / -120.63431	**Accuracy:**	specific area
UTM:	Zone-10 N3877820 E715841	**Elevation (ft):**	40
PLSS:	T11N, R36W, Sec. 23 (S)	**Acres:**	11.5

Location: ABOUT 1 MILE SOUTH OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: TWO COLONIES; S-COLONY MAPPED ABOUT 0.5 MILE NNW OF "OSO FLACO 2" BENCHMARK, N-COLONY IS ABOUT 0.8 MI NNW OF BENCHMARK.

Ecological: S-COLONLY WITH OCCASIONAL PLANTS AT THE BASES OF SMALL TRANVERSE SAND RIDGES. N-COLONY IN CENTRAL COAST FOREDUNES WITH CARPOBROTUS CHILENSIS, CAKILE MARITIMA, AMBROSIA CHAMISSONIS, CAMISSONIA CHEIRANTHOIDES, AND MALACOTHRIX INCANA.

General: AS OF 1986 THERE HAS BEEN A REDUCTION IN OCCURRENCE SIZE IN THE S-COLONY. 280 PLANTS OBSERVED IN NEW N-COLONY IN 1998.

Owner/Manager: PVT-UNION OIL

Occurrence No.	15	**Map Index:** 12880	**EO Index:**	40813		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.12552 / -120.63601	**Accuracy:**	1 mile
UTM:	Zone-10 N3889520 E715408	**Elevation (ft):**	20
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: PISMO BEACH.

Detailed Location:

Ecological:

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS SITE NAME NOTED IN "VASCULAR PLANTS OF SLO COUNTY" BY R.F. HOOVER. LIKELY TO HAVE BEEN EXTIRPATED LONG AGO ACCORDING TO M. MCLEOD (1986). SEARCHED FOR BUT NOT SEEN IN 1998 (J. CHESNUT).

Owner/Manager: UNKNOWN

Occurrence No.	20	**Map Index:** 36767	**EO Index:**	17058		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Fluctuating		**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02523 / -120.63343	**Accuracy:**	80 meters
UTM:	Zone-10 N3878401 E715908	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 14 (S)	**Acres:**	0.0

Location: ABOUT 0.5 MILE SOUTH OF OUTLET OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: ON CREST AND TOP SLOPES OF DUNES ORIENTED PERPENDICULAR TO COASTLINE SOUTH OF PISMO STATE BEACH BOUNDARY.

Ecological: CENTRAL COAST FOREDUNES ASSOCIATED WITH CARPOBROTUS CHILENSIS, CAMISSONIA CHEIRANTHIFOLIA, CAKILE MARITIMA, AMBROSIA CHAMISSONIS, MALACOTHRIX INCANA, AND ABRONIA MARITIMA.

General: 100+ PLANTS OBSERVED IN 1983, BUT ONLY 7 WITH FLOWERING HEADS. A FEW PLANTS OBSERVED SCATTERED THROUGH SMALL TRANSVERSE DUNES IN 1986. 85 PLANTS OBSERVED IN 1998.

Owner/Manager: PVT-UNION OIL

Erigeron blochmaniae

Element Code: PDAST3M5J0

Blochman's leafy daisy

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	COASTAL DUNES.			
	Micro:	SAND DUNES AND HILLS. 3-185M.			

Occurrence No.	11	**Map Index:**	28637	**EO Index:**	29932	**Element Last Seen:**	1981-12-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-12-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.00823 / -120.61511	**Accuracy:**	specific area
UTM:	Zone-10 N3876554 E717624	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	11.0

Location: DUNES WEST OF SANTA MARIA VALLEY, ABOUT 1.5 MILES SSE OF OSO FLACO LAKE.

Detailed Location: TWO COLONIES MAPPED ABOUT 0.7 MILE EAST OF 'OSO FLACO' ELEVATION MARKER.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY VANDERWIER (1981).

Owner/Manager: UNKNOWN

Occurrence No.	12	**Map Index:**	28638	**EO Index:**	29931	**Element Last Seen:**	1979-08-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1979-08-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01349 / -120.60882	**Accuracy:**	specific area
UTM:	Zone-10 N3877152 E718185	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	5.9

Location: DUNES WEST OF SANTA MARIA VALLEY, ABOUT 1.3 MILES SOUTHEAST OF OSO FLACO LAKE.

Detailed Location: MAPPED ABOUT 1.2 MILES ENE OF 'OSO FLACO' ELEVATION MARKER.

Ecological: GROWING IN DUNE SAND.

General: 100+ PLANTS OBSERVED IN 1979.

Owner/Manager: DPR

Occurrence No.	13	**Map Index:**	28639	**EO Index:**	29930	**Element Last Seen:**	1981-04-04
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-04-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01902 / -120.61076	**Accuracy:**	specific area
UTM:	Zone-10 N3877761 E717993	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	6.8

Location: DUNES WEST OF SANTA MARIA VALLEY, ABOUT 0.9 MILE SOUTHEAST OF OSO FLACO LAKE.

Detailed Location: MAPPED ABOUT 1.3 MILES NORTHEAST OF 'OSO FLACO' ELEVATION MARKER.

Ecological: GROWING IN BACKDUNE SCRUB ON SAND WITH HAPLOPAPPUS ERICOIDES, LUPINUS CHAMISSONIS, ERIOGONUM PARVIFOLIUM, AND CORETHROGYNE FILAGINIFOLIA.

General: FEWER THAN 50 PLANTS OBSERVED IN 1981.

Owner/Manager: UNKNOWN

Occurrence No.	14	**Map Index:** 28640	**EO Index:**	29929		**Element Last Seen:**	1981-04-04
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1981-04-04
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-12-20

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03750 / -120.60382	**Accuracy:**	specific area
UTM:	Zone-10 N3879826 E718577	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	66.4

Location: GUADALUPE DUNES, VICINITY OF JACK LAKE & LETTUCE LAKE, ABOUT 4 MILES SOUTH OF OCEANO.

Detailed Location:

Ecological: GROWING IN BACKDUNE SCRUB ON SAND WITH HAPLOPAPPUS ERICOIDES, LUPINUS CHAMISSONIS, ERIOGONUM PARVIFOLIUM, AND CORETHROGYNE FILAGINIFOLIA.

General: FEWER THAN 50 PLANTS OBSERVED IN 1981.

Owner/Manager: UNKNOWN

Occurrence No.	15	**Map Index:** 29928	**EO Index:**	29928		**Element Last Seen:**	2002-09-26
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-09-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03500 / -120.62799	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3879496 E716378	**Elevation (ft):**	40
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	0.0

Location: GUADALUPE DUNES, VICINITY OF OSO FLACO LAKE. DUNES JUST N FROM BEACH ACCESS BOARDWALK.

Detailed Location: COLLECTIONS FROM "ALONG OUTLET OF OSO FLACO LAKE", "DUNES NEAR OSO FLACO LAKE", AND "OSO FLACO LAKE". MAPPED ACCORDING TO COORDINATES PROVIDED BY TAYLOR: 35.0349998474121, -120-627998352051.

Ecological: GROWING IN SAND DUNES.

General:

Owner/Manager: UNKNOWN

Occurrence No.	19	**Map Index:** 61597	**EO Index:**	61633		**Element Last Seen:**	1999-12-21
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1999-12-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-15

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.13002 / -120.63799	**Accuracy:**	80 meters
UTM:	Zone-10 N3890015 E715215	**Elevation (ft):**	0
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: PISMO BEACH, SOUTH OF NORTH BEACH CAMPGROUND AND NORTH OF GOLF COURSE, PISMO BEACH STATE PARK.

Detailed Location: ON EITHER SIDE OF "TRAIL" THROUGH FOREDUNES.

Ecological: DUNE SCRUB IN POOR CONDITION ON STABILIZED DUNE, ALONG TOP OF DUNE. SANDY SOIL. DOMINANTED BY CARPOBROTUS EDULIS. ASSOCIATES INCLUDE CROTON CALIFORNICA, LUPINUS CHAMISSONIS, LESSINGIA FILAGINIFOLIA, AND ERICAMERIA ERICOIDES.

General: 2 PLANTS SEEN IN 1999. THE RARE MALACOTHRIX INCANA FOUND IN FOREDUNES ABOUT 1050' SOUTH OF THIS SITE.

Owner/Manager: DPR-PISMO SB

Occurrence No.	21	**Map Index:** 60570	**EO Index:**	61636		**Element Last Seen:**	2003-10-08
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-10-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.08122 / -120.58963	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3884708 E719754	**Elevation (ft):**	45
PLSS:	T12N, R35W, Sec. 32 (S)	**Acres:**	21.7

Location: BASE OF NIPOMO MESA 0.25 MILE SOUTHWEAST OF HALCYON ROAD ALONG AN UNNAMED ROAD NEAR THE RAILROAD TRACKS.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED ALONG ROAD HEADING SOUTHWEST TOWARDS RR TRACKS FROM HALCYON ROAD.

Ecological: WET DRAINAGE DITCHES AT EDGE OF IRRIGATED FIELDS WITH WILLOWS AND STINGING NETTLE IN SOIL RELATED TO OLD SAND DUNES.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 2003 COLLECTION BY HELMKAMP.

Owner/Manager: UNKNOWN

Occurrence No.	22	**Map Index:** 61601	**EO Index:**	61637		**Element Last Seen:**	2003-07-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-07-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09204 / -120.57830	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3885933 E720758	**Elevation (ft):**	45
PLSS:	T32S, R13E, Sec. 33 (M)	**Acres:**	0.0

Location: 0.6 MILE SOUTH OF NIPOMO HILL IN ARROYO GRANDE AREA.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED 0.6 MILE SOUTH OF NIPOMO HILL.

Ecological: SAND/CLAY AREA CONSTISTING OF FORMER DUNES WITH MUCH LUPINUS ARBOREUS AND L. CHAMISSONIS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 2003 COLLECTION BY HELMKAMP.

Owner/Manager: UNKNOWN

Centromadia parryi ssp. congdonii

Element Code: PDAST4R0P1

Congdon's tarplant

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.1, BLM_S-Sensitive			
Habitat:	**General:**	VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	ALKALINE SOILS, SOMETIMES DESCRIBED AS HEAVY WHITE CLAY. 1-230 M.			

Occurrence No.	13	**Map Index:** 25136	**EO Index:**	6125		**Element Last Seen:**	20XX-XX-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	20XX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-08-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.27757 / -120.70969	**Accuracy:**	specific area
UTM:	Zone-10 N3906231 E708304	**Elevation (ft):**	150
PLSS:	T30S, R12E, Sec. 32 (M)	**Acres:**	16.0

Location: LOS OSOS VALLEY, NEAR THE JUNCTION OF LOS OSOS VALLEY ROAD AND W FOOTHILL BLVD, WEST OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS 2 POLYGONS ACCORDING TO 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA.

Ecological: GROWING IN GRASSLAND AND DISTURBED HABITAT.

General: GREATER THAN 500 PLANTS OBSERVED AT AN UNKNOWN DATE (PRESUMABLY IN THE 2000S).

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	14	**Map Index:** 49061	**EO Index:**	21810		**Element Last Seen:**	2001-11-05
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-11-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Decreasing		**Record Last Updated:**	2011-08-31

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25057 / -120.68713	**Accuracy:**	80 meters
UTM:	Zone-10 N3903282 E710426	**Elevation (ft):**	140
PLSS:	T31S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: FROOM RANCH, NORTH OF FROOM CREEK, 0.5 MILE NNW OF JUNCTION OF LOS OSOS VALLEY ROAD AND US 101, SAN LUIS OBISPO.

Detailed Location: PLANT OCCURS IN SWALES AROUND THE HOME DEPOT CONSTRUCTION SITE IN THE SE 1/4 OF THE SE 1/4 OF SECTION 4.

Ecological: PLANT OCCURS IN SWALES CREATED BY THE CONSTRUCTION PROCESS. SOME SWALES ARE TO BE MAINTAINED AS PART OF THE SITE DRAINAGE PLAN.

General: 150 PLANTS OBSERVED IN 2001. INCLUDES FORMER OCCURRENCE #55.

Owner/Manager: PVT

Occurrence No.	61	**Map Index:**	53654	**EO Index:**	53654	**Element Last Seen:**	2003-10-23
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-10-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2003-12-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32306 / -120.74748	**Accuracy:**	80 meters
UTM:	Zone-10 N3911198 E704751	**Elevation (ft):**	295
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, ON NORTH AND SOUTH SIDES OF WASHINGTON ROAD, SOUTH OF O'SULLIVAN AIRFIELD.

Detailed Location: ON NORTH AND SOUTH SIDES OF WASHINGTON ROAD, ABOUT 0.2-0.25 MILES WEST OF INTERSECTION OF GLENN AND WASHINGTON ROADS. GROWING AT SIDE OF ROAD AND AMONG CONCRETE, PIPE, AND CULVERT DEBRIS IN EQUIPMENT YARD. AT 280-310 FEET IN ELEVATION.

Ecological: RUDERAL HABITAT ON CLAY SOIL WITH SMALL GRAVEL. ASSOCIATED WITH PICRIS ECHIOIDES, SALSOLA TRAGUS, HETEROTHECA GRANDIFLORA, BACCHARIS PILULARIS, CENTAUREA SOLSTITIALIS.

General: FEWER THAN 10 PLANTS NORTH OF ROAD AND 2 PLANTS SOUTH OF ROAD IN 2003.

Owner/Manager: DOD-ARMY

Occurrence No.	64	**Map Index:**	83612	**EO Index:**	60644	**Element Last Seen:**	2010-08-19
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-08-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-29

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.24550 / -120.65612	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3902786 E713261	**Elevation (ft):**	125
PLSS:	T31S, R12E, Sec. 11 (M)	**Acres:**	387.0

Location: VICINITY OF TANK FARM ROAD; JUST NORTHWEST OF SAN LUIS OBISPO COUNTY AIRPORT, SOUTH END OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS 2 POLYS MOSTLY WITHIN N 1/2 OF SEC 11. PLANTS SCATTERED THROUGHOUT NW-POLY, MAPPED NONSPECIFICALLY AROUND PROPERTY. SE-POLY IS SPECIFIC. CALYSTEGIA SUBACAULIS AND ERYNGIUM ARISTULATUM HOOVERI ALSO OBSERVED IN VICINITY.

Ecological: IN SHALLOW DEPRESSIONS AND SWALES AT THE NON-NATIVE ANNUAL GRASSLAND AND WETLAND INTERFACE. ASSOCIATED WITH LOLIUM MULTIFLORUM, PICRIS ECHIOIDES, LOTUS CORNICULATUS, XANTHIUM STRUMARIUM, CYPERUS ERAGROSTIS, DISTICHLIS SPICATA, ETC.

General: THOUSANDS OF PLANTS SEEN IN 2003 IN LARGE NW POLY. >500 PLANTS (BETWEEN THIS OCCURRENCE AND OCCURRENCE #82) PRESUMABLY SEEN SOMETIME IN THE 2000S IN SMALL SE POLYGON. ABUNDANT IN WETLANDS "E OF TANK FARM RD & W OF AIRPORT" IN 2010.

Owner/Manager: PVT

Occurrence No.	69	**Map Index:**	60845	**EO Index:**	60881	**Element Last Seen:**	2005-07-13
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-07-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-29

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23611 / -120.66967	**Accuracy:**	specific area
UTM:	Zone-10 N3901716 E712052	**Elevation (ft):**	120
PLSS:	T31S, R12E, Sec. 10 (M)	**Acres:**	15.0

Location: SE OF LOS VERDES MONTESSORI SCHOOL; BOTH SIDES OF BUCKLEY ROAD NEAR ITS JUNCTION WITH VACHELL LANE AND JESPERSON ROAD.

Detailed Location: MAPPED BY CNDDB AS 10 POLYGONS TO ENCOMPASS INFORMATION FROM A 2004 DART MAP, A 2005 KEIL MAP AND 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA IN THE SOUTH 1/2 OF SECTION 10 THE NE 1/4 OF SECTION 15 AND THE NW 1/4 OF SECTION 14.

Ecological: ON RUDERAL MARGINS OF ROW-CROP FIELD. ASSOCIATED WITH PICRIS ECHOIODES, CONVOLVULUS ARVENSIS, CENTAUREA SOLSTITIALIS, POLYGONUM ARENASTRUM, PHYSALIS PHILADELPHICA, AND HORDEUM VULGARE.

General: 23 PLANTS SEEN IN 2004 IN THE NW 1/4 OF SE 1/4 OF SECTION 10. 35 PLANTS IN 2005 IN THE NE 1/4 OF SECTION 15. AN ADDITIONAL 500+ PLANTS WERE SEEN THROUGHOUT OCCURRENCE PRESUMABLY SOMETIME IN THE 2000S. INCLUDES FORMER OCCURRENCE #76.

Owner/Manager: PVT

Occurrence No.	75	**Map Index:**	63747	**EO Index:**	63842	**Element Last Seen:**	2005-10-19
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-10-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-01-24

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23043 / -120.68506	**Accuracy:**	specific area
UTM:	Zone-10 N3901054 E710667	**Elevation (ft):**	100
PLSS:	T31S, R12E, Sec. 16 (M)	**Acres:**	17.1

Location: ALONG SOUTH HIGUERA STREET, SOUTHERN END OF SAN LUIS OBISPO.

Detailed Location: 4675 S HIGUERA ST, ALONG A DIRT AGRICULTURAL ROAD.

Ecological: MESIC GRASSLAND AND WETLAND.

General: 1000 PLANTS OBSERVED IN 2005.

Owner/Manager: CITY OF SAN LUIS OBISPO, PVT

Occurrence No.	77	**Map Index:** 46372	**EO Index:**	63847		**Element Last Seen:**	1940-08-11
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1940-08-11
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31192 / -120.67407	**Accuracy:**	1 mile
UTM:	Zone-10 N3910116 E711455	**Elevation (ft):**	300
PLSS:	T30S, R12E, Sec. 15 (M)	**Acres:**	0.0

Location: ONE MILE NORTH OF SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS.

Ecological: OPEN CULTIVATED FIELD.

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1940 COLLECTION BY MIOSSI & MIOSSI. NEEDS FIELDWORK. SITE MAY BE EXTIRPATED.

Owner/Manager: UNKNOWN

Occurrence No.	82	**Map Index:** 83614	**EO Index:**	84643		**Element Last Seen:**	20XX-XX-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	20XX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-08-31

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24308 / -120.64186	**Accuracy:**	specific area
UTM:	Zone-10 N3902549 E714565	**Elevation (ft):**	180
PLSS:	T31S, R12E, Sec. 12 (M)	**Acres:**	1.0

Location: JUST NE OF SAN LUIS OBISPO COUNTY AIRPORT; WEST SIDE OF SR 277 BETWEEN FIERO LANE AND AEROVISTA PLACE, SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB ACCORDING TO 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA.

Ecological: GROWING IN GRASSLAND AND DISTURBED HABITAT.

General: GREATER THAN 500 PLANTS OBSERVED BETWEEN OCCURRENCE #64 AND #82; PLANTS WERE LIKELY OBSERVED SOMETIME IN THE 2000S.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	83	**Map Index:** 83615	**EO Index:**	84644		**Element Last Seen:**	20XX-XX-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	20XX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-08-31

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28708 / -120.69952	**Accuracy:**	specific area
UTM:	Zone-10 N3907307 E709205	**Elevation (ft):**	180
PLSS:	T30S, R12E, Sec. 28 (M)	**Acres:**	2.0

Location: LOS OSOS VALLEY; N SIDE OF W FOOTHILL BLVD ~1 MILE NE OF ITS JUNCTION WITH LOS OSOS VALLEY RD, W OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB ACCORDING TO 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA.

Ecological: GROWING IN GRASSLAND AND DISTURBED HABITAT.

General: GREATER THAN 500 PLANTS OBSERVED PRESUMABLY SOMETIME IN THE 2000S.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	84	**Map Index:**	83616	**EO Index:**	84645	**Element Last Seen:**	20XX-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	20XX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.27237 / -120.70032	**Accuracy:**	specific area
UTM:	Zone-10 N3905673 E709170	**Elevation (ft):**	130
PLSS:	T30S, R12E, Sec. 33 (M)	**Acres:**	34.0

Location: LOS OSOS VALLEY; NORTH END OF LAGUNA LAKE, WEST OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS 3 POLGYONS IN THE WESTERN HALF OF SECTION 33 AAND THE SE 1/4 OF SECTION 32 ACCORDING TO 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA.

Ecological: GROWING IN GRASSLAND AND DISTURBED HABITAT.

General: GREATER THAN 500 PLANTS OBSERVED PRESUMABLY SOMETIME IN THE 2000S.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	85	**Map Index:**	83617	**EO Index:**	84646	**Element Last Seen:**	20XX-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	20XX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26346 / -120.68490	**Accuracy:**	specific area
UTM:	Zone-10 N3904718 E710596	**Elevation (ft):**	140
PLSS:	T31S, R12E, Sec. 04 (M)	**Acres:**	9.0

Location: LOS OSOS VALLEY; EAST SIDE OF LAGUNA LAKE, WEST OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS 6 POLGYONS NEAR THE COMMON CORNER OF SECTIONS 3, 4, 33, AND 34 ACCORDING TO 2011 CITY OF SAN LUIS OBISPO DIGITAL DATA.

Ecological: GROWING IN GRASSLAND AND DISTURBED HABITAT.

General: >500 PLANTS OBSERVED PRESUMABLY SOMETIME IN THE 2000S.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	100	**Map Index:**	83632	**EO Index:**	84662	**Element Last Seen:**	1968-07-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1968-07-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-30

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.22066 / -120.60428	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3900144 E718046	**Elevation (ft):**	300
PLSS:	T31S, R13E, Sec. 17 (M)	**Acres:**	44.0

Location: BIDDLE RANCH ROAD BETWEEN EDNA ROAD AND ORCUTT ROAD, EDNA.

Detailed Location: INFORMATION ON COLLECTION LABEL SAYS "B. MEHLSHAU PROPERTY, EDNA". MAPPED BY CNDDB AS BEST GUESS AROUND THE PROPERTY OF D. MEHLSCHAU IN EDNA (2838 BIDDLE RANCH ROAD). IN THE SOUTH 1/2 OF SECTION 17 AND THE NORTH 1/2 OF SECTION 20.

Ecological: IN STUBBLE FIELD.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1968 COLLECTION. NEEDS FIELDWORK.

Owner/Manager: PVT

Centromadia parryi ssp. parryi

Element Code: PDAST4R0P2

pappose tarplant

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	COASTAL PRAIRIE, MEADOWS AND SEEPS, COASTAL SALT MARSH, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	VERNALLY MESIC, OFTEN ALKALINE SITES. 2-420M.			

Occurrence No.	27	**Map Index:** 81797	**EO Index:**	82755		**Element Last Seen:**	2008-08-10
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2008-08-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-02-16

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28066 / -120.71302	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3906566 E707993	**Elevation (ft):**	140
PLSS:	T30S, R12E, Sec. 29 (M)	**Acres:**	0.0

Location: LOS OSOS VALLEY; BETWEEN LOS OSOS VALLEY ROAD AND O'CONNOR WAY, WEST OF FOOTHILL ROAD, WEST OF SAN LUIS OBISPO.

Detailed Location: BOYSEN RANCH WETLAND MITIGATION AREA. MAPPED BY CNDDB AS BEST GUESS AROUND THE PONDS BETWEEN LOS OSOS VALLEY ROAD AND O'CONNER WAY AND WEST OF FOOTHILL ROAD.

Ecological: SHALLOW PONDS EXCAVATED IN SUMMER 2005 IN GRASSY RANCHLAND AREA TO ENHANCE WETLAND CHARACTERISTICS OF AREA. FIELDS HISTORICALLY FLOODED DURING TIMES OF HIGH PRECIPITATION; PONDS IMPOUND WATER FOR LONGER PERIODS OF TIME.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 2008 KEIL COLLECTION; MENTIONED AS OCCASIONAL TO LOCALLY ABUNDANT IN 2008.

Owner/Manager: PVT

Layia jonesii

Element Code: PDAST5N090

Jones' layia

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	CLAY SOILS AND SERPENTINE OUTCROPS. 5-400 M.			

Occurrence No.	1	**Map Index:**	12645	**EO Index:**	16729	**Element Last Seen:**	1984-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1984-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-05-24

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.30402 / -120.73168	**Accuracy:**	specific area
UTM:	Zone-10 N3909118 E706237	**Elevation (ft):**	240
PLSS:	T30S, R12E, Sec. 19 (M)	**Acres:**	14.4

Location: JUST S OF O'CONNER WAY, SOUTH OF CERRO ROMAULDO.
Detailed Location:
Ecological:
General: MCLEOD 1984 MAP IS ONLY INFORMATION; NEEDS FIELDWORK.
Owner/Manager: PVT

Occurrence No.	2	**Map Index:**	17836	**EO Index:**	16725	**Element Last Seen:**	1948-04-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1948-04-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.29887 / -120.70717	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3908598 E708479	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 20 (M)	**Acres:**	0.0

Location: WESTERN BASE OF MOUNT BISHOP NEAR SAN LUIS OBISPO.
Detailed Location:
Ecological: IN CLAY SOIL DERIVED FROM SERPENTINE ROCK.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1948 COLLECTION BY HOOVER.
Owner/Manager: PVT, DPR-MORRO BAY SP

Occurrence No.	3	**Map Index:**	12693	**EO Index:**	21813	**Element Last Seen:**	1936-03-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-04

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.26345 / -120.69302	**Accuracy:**	1 mile
UTM:	Zone-10 N3904699 E709857	**Elevation (ft):**	350
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: 1.75 MILE SOUTHWEST OF SAN LUIS OBISPO.
Detailed Location:
Ecological:
General:
Owner/Manager: PVT

Occurrence No.	4	**Map Index:**	12703	**EO Index:**	16727	**Element Last Seen:**	1936-03-27
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-11-20

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23302 / -120.69795	**Accuracy:**	1 mile
UTM:	Zone-10 N3901313 E709487	**Elevation (ft):**	500
PLSS:	T31S, R12E, Sec. 16 (M)	**Acres:**	0.0

Location: 0.75 MILE SOUTHEAST OF MINE HILL, SOUTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological:

General:

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	39802	**EO Index:**	35410	**Element Last Seen:**	1987-04-26
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-16

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30038 / -120.62003	**Accuracy:**	specific area
UTM:	Zone-10 N3908953 E716400	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 19 (M)	**Acres:**	24.7

Location: ABOUT 1 MILE NORTH OF RESERVOIR CANYON & 0.3 MILE EAST OF HIGHWAY 101, EAST OF SAN LUIS OBISPO.

Detailed Location: ABOUT 0.5 MILE NORTH OF WATER TANK NORTH OF RESERVOIR CANYON. POPULATION RUNS FROM 848' HILLTOP EAST ALONG RIDGE TO INTERMITTENT STREAM VALLEY AND ADJOINING W-FACING SLOPE.

Ecological: ON EXPOSED SERPENTINE RIDGETOP SURROUNDED BY GRASSLAND. GROWING WITH YUCCA AND DUDLEYA ABRAMSII MURINA. GROWING ON SOUTH, WEST, AND NORTH-FACING SLOPES. CHORIZANTHE BREWERI IS IN THIS VICINITY TOO.

General: ABOUT 50 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	13	**Map Index:** 61370	**EO Index:**	61406		**Element Last Seen:**	2003-05-28
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-19

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31971 / -120.74815	**Accuracy:**	specific area
UTM:	Zone-10 N3910825 E704699	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	7.1

Location: FIRST RIDGE WEST OF CERRO ROMUALDO, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA A. MOST SITES SURVEYED IN 2002; ONE COLONY SURVEYED IN 2003.

Ecological: CLAY STEEP SLOPE WITH SISYRINCHIUM BELLUM, CALYSTEGIA MACROSTEGIA, BLOOMERIA CROCEA, HEMIZONIA CONGESTA SSP. LUZULIFOLIA, DELPHINIUM PARRYI, CHLOROGALUM POMERIDIANUM, AND NASSELLA.

General: MORE THAN 800 PLANTS SEEN IN 2002. PLANTS WERE LOCALLY COMMON AND IT WAS A GOOD YEAR ACCORDING TO WETHERWAX AND PAINTER. THE RARE DUDLEYA ABRAMSII SSP. BETTINAE AND LOMATIUM PARVIFOLIUM ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	14	**Map Index:** 61373	**EO Index:**	61409		**Element Last Seen:**	2000-04-18
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-04-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33938 / -120.68937	**Accuracy:**	80 meters
UTM:	Zone-10 N3913130 E709993	**Elevation (ft):**	740
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: SOUTH END OF LARGE SERPENTINE OUTCROP WEST OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA T.

Ecological: CLAY STEEP SLOPE WITH SISYRINCHIUM BELLUM, CALYSTEGIA MACROSTEGIA, BLOOMERIA CROCEA, HEMIZONIA CONGESTA SSP. LUZULIFOLIA, DELPHINIUM PARRYI, CHLOROGALUM POMERIDIANUM, AND NASSELLA.

General: FEWER THAN 100 PLANTS SEEN IN 2002. THE RARE DUDLEYA ABRAMSII SSP. MURINA, STREPTANTHUS ALBIDUS SSP. PERAMOENUS, AND CHORIZANTHE BREWERI.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	15	**Map Index:** 59926	**EO Index:**	61451		**Element Last Seen:**	1979-05-01
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1979-05-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-26

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.31507 / -120.64993	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3910518 E713642	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	0.0

Location: POLY CANYON ABOVE BRIZZOLARI CREEK, SAN LUIS OBISPO.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN GENERAL VICINITY OF POLY CANYON.
Ecological: ON GRASSY HILLSIDE, CANYON ABOVE CREEK, SOIL IN AREA DERIVED FROM SERPENTINE.
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1979 COLLECTION BY ASHLEY. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Senecio aphanactis

Element Code: PDAST8H060

chaparral ragwort

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3?
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 2.2			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.			
	Micro:	DRYING ALKALINE FLATS. 15-800 M.			

Occurrence No.	12	**Map Index:** 12772	**EO Index:**	537		**Element Last Seen:**	1927-04-10
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1927-04-10
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-03-12

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.26414 / -120.66934	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3904826 E712010	**Elevation (ft):**	
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO, HILL NEAR CEMETERY.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB IN VICINITY OF HILL EAST OF SUTCLIFFE CEMETERY.
Ecological:
General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1927 COLLECTION BY EASTWOOD. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:**	12895	**EO Index:**	28268	**Element Last Seen:**	1940-03-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1940-03-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-04

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29913 / -120.63462	**Accuracy:**	1 mile
UTM:	Zone-10 N3908782 E715076	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: 1 MILE NORTH OF SAN LUIS OBISPO AND 300 YARDS NORTH OF SAN LUIS CREEK.

Detailed Location: EXACT LOCATIONS UNKNOWN. MAPPED AS BEST GUESS BY CNDDB NORTH AND EAST OF SAN LUIS CREEK, JUST NORTH OF SAN LUIS OBISPO.

Ecological: SERPENTINE ROCKS. ASSOCIATED WITH ASTRAGALUS SP., LOMATIUM SP., AND OTHER GRASSES.

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1940 COLLECTION BY MIOSSI. A 1908 COLLECTION BY CONDIT FROM "SCHOOL RIDGE, CPS CALIFORNIA POLYTECHNICAL SCHOOL" IS ALSO ATTRIBUTED TO THIS OCCURRENCE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	35	**Map Index:**	61270	**EO Index:**	61306	**Element Last Seen:**	2002-02-26
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-02-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-08-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33970 / -120.68944	**Accuracy:**	specific area
UTM:	Zone-10 N3913165 E709985	**Elevation (ft):**	700
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	10.0

Location: CAMP SAN LUIS OBISPO, OUTCROP WEST OF CHORRO RESERVOIR, NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: TRAINING AREA T. MAPPED WITHIN THE SW 1/4 OF THE SE 1/4 OF SECTION 4.

Ecological: GENTLE SERPENTINE SLOPE ON LARGE SERPENTINE ROCK OUTCROP.

General: FEWER THAN 50 PLANTS OBSERVED IN 2001. MORE THAN 100 PLANTS OBSERVED IN 2002.

Owner/Manager: STATE-CAMP ROBERTS MR

Symphyotrichum defoliatum

Element Code: PDASTE80C0

San Bernardino aster

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	MEADOWS AND SEEPS, MARSHES AND SWAMPS, COASTAL SCRUB, CISMONTANE WOODLAND, LOWER MONTANE CONIFEROUS FOREST, GRASSLAND.			
	Micro:	VERNALLY MESIC GRASSLAND OR NEAR DITCHES, STREAMS AND SPRINGS; DISTURBED AREAS. 2-2040M.			

Occurrence No.	44	**Map Index:**	60570	**EO Index:**	60606	**Element Last Seen:**	1993-11-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-11-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-04-23

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.08122 / -120.58963	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3884708 E719754	**Elevation (ft):**	55
PLSS:	T12N, R35W, Sec. 32 (S)	**Acres:**	21.7

Location:	ROADSIDE OF MOUNTAIN VIEW ROAD, BETWEEN HALCYON RD AND THE SOUTHERN PACIFIC RAILROAD OVERPASS, ARROYO GRANDE.
Detailed Location:	PART WAY UP STEEP, BRUSHY SLOPE ALONG SOUTH SIDE OF MOUNTAIN VIEW ROAD.
Ecological:	COASTAL ADOBE AND AGRICULTURAL SAND.
General:	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1993 JONES COLLECTION. ID IS UNCERTAIN FOR THIS SPECIMEN, AND COUNTY COULD BE TOO FAR NORTH FOR THE SPECIES RANGE. NEEDS FIELDWORK.
Owner/Manager:	UNKNOWN

Plagiobothrys uncinatus

Element Code: PDBOR0V170

hooked popcornflower

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	SANDSTONE OUTCROPS AND CANYON SIDES; OFTEN IN BURNED OR DISTURBED AREAS. 300-760 M.			

Occurrence No.	16	**Map Index:**	73379	**EO Index:**	74350	**Element Last Seen:**	1990-05-01
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-05-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-01-13

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.38013 / -120.67398	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3917684 E711285	**Elevation (ft):**	1780
PLSS:	T29S, R12E, Sec. 27 (M)	**Acres:**	0.0

Location: ALONG POWER LINE ACCESS ROAD WHICH INTERSECTS TASSAJERA CREEK RD, ~2.4 MI W OF HIGHWAY 101.

Detailed Location: N EDGE OF CUESTA RIDGE BOTANICAL AREA. MAPPED BY CNDDB AS BEST GUESS IN VICINITY OF THE POWER LINES W OF TASSAJERA CREEK RD TOWARD CUESTA RIDGE BOTANICAL AREA.

Ecological: CHAPARRAL, SHALE. ASSOCIATES INCLUDE APHANES OCCIDENTALIS, ERODIUM CICUTARIUM, CRYPTANTHA, PTEROSTEGIA DRYMARIOIDES, MADIA EXIGUA, CENTAUREA MELITENSIS, CAMISSONIA, CALANDRINIA BREWERI, CHORIZANTHE, POA ANNUA, PSILOCARPHUS TENELLUS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1990 JUNAK COLLECTION. NEEDS FIELDWORK.

Owner/Manager: USFS-LOS PADRES NF?

Dithyrea maritima

Element Code: PDBRA10020

beach spectaclepod

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	Threatened		**State:**	S2.1
	Other:	Rare Plant Rank - 1B.1, BLM_S-Sensitive			
Habitat:	**General:**	COASTAL DUNES, COASTAL SCRUB. FORMERLY MORE WIDESPREAD IN COASTAL HABITATS IN SO. CALIF.			
	Micro:	SEA SHORES, ON SAND DUNES, AND SANDY PLACES NEAR THE SHORE. 3-50M.			

Occurrence No.	12	**Map Index:** 12894	**EO Index:**	1223		**Element Last Seen:**	1998-05-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-05-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Decreasing		**Record Last Updated:**	2012-08-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03573 / -120.63269	**Accuracy:**	specific area
UTM:	Zone-10 N3879567 E715948	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 14 (S)	**Acres:**	7.7

Location: GUADALUPE DUNES, BETWEEN BEACH AND OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: 3 COLONIES MAPPED ACCORDING TO 1990 MAPS FROM BERG AND A 1998 MAP FROM CHESNUT.

Ecological: COASTAL AND BACK DUNES WITH CARPOBROTUS X. CHILENSIS, MALACOTHRIX INCANA, AMBROSIA CHAMISSONIS, ATRIPLEX LEUCOPHYLLA, LUPINUS CHAMISSONIS, AND HAPLOPAPPUS ERICOIDES.

General: 92 PLANTS OBSERVED IN SW POLYGON AND 54 PLANTS IN E POLYGON IN 1990. 2 PLANTS (12 RAMETS) OBSERVED IN N POLYGON IN 1998. SITE IS IN AREA OF EXPERIMENTAL REVEGETATION. A 1925 COOPER COLLECTION AND A 1960 BLAKLEY COLLECTION ATTRIBUTED HERE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	13	**Map Index:** 12880	**EO Index:**	20546		**Element Last Seen:**	1950-04-27
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-08-08

Quad Summary: Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.12552 / -120.63601	**Accuracy:**	1 mile
UTM:	Zone-10 N3889520 E715408	**Elevation (ft):**	20
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: PISMO STATE BEACH, 1.5 MILES SOUTH OF PISMO BEACH, 3 MILES WEST OF ARROYO GRANDE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB IN GENERAL VICINITY OF PISMO STATE BEACH.

Ecological: ON STABILIZED DUNE OF OCEAN BEACH.

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1950 COLLECTION BY THOMPSON. A 1908 CONDIT COLLECTION FROM "SAND HILLS OCEANO" ALSO ATTRIBUTED HERE. PLANTS WITHIN THE ACTIVE RIDING AREA HAVE BEEN EXTIRPATED ACCORDING TO CHESNUT (1998).

Owner/Manager: DPR-PISMO SB

Occurrence No.	24	**Map Index:** 40648	**EO Index:**	35655		**Element Last Seen:**	1981-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1981-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-01-19

Quad Summary: Point Sal (3412086), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.00053 / -120.63562	**Accuracy:**	specific area
UTM:	Zone-10 N3875656 E715773	**Elevation (ft):**	80
PLSS:	T11N, R36W, Sec. 26 (S)	**Acres:**	11.1

Location: GUADALUPE DUNES, ABOUT 2 MILES SOUTH OF OSO FLACO LAKE OUTLET AND 3.5 MILES WEST OF HIGHWAY 1, NORTHWEST OF GUADALUPE.

Detailed Location: 2 POLYGONS MAPPED BY CNDDB ACCORDING TO A 1981 MAP FROM VANDERWIER.

Ecological: CENTRAL COASTAL FOREDUNES.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1981 REPORT AND MAP BY J. VANDERWIER, UNKNOWN NUMBER OF PLANTS SEEN.

Owner/Manager: UNKNOWN

Occurrence No.	25	**Map Index:** 40819	**EO Index:**	40819		**Element Last Seen:**	1998-05-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-05-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-08-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01980 / -120.63388	**Accuracy:**	80 meters
UTM:	Zone-10 N3877797 E715881	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 23 (S)	**Acres:**	0.0

Location: ABOUT 0.8 MILE SOUTH OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: 0.25 MILE SOUTH OF OCEANO DUNES BOUNDARY SIGN. MAPPED BY CNDDB ACCORDING TO A 1998 MAP BY CHESNUT.

Ecological: CENTRAL COAST FOREDUNES. ASSOCIATED WITH CARPOBROTUS CHILENSIS, CAKILE MARITIMA, AMBROSIA CHAMISSONIS, CAMISSONIA CHEIRANTHOIDES, MALACOTHRIX INCANA, AMMOPHILA ARENARIA, ABRONIA MARITIMA, AND THE RARE CIRISIUM RHOTHOPHILUM.

General: 40 PLANTS (115 RAMETS) ESTIMATED IN 1998. A 1950 BACIGALUPI COLLECTION AND A 1967 HOOVER COLLECTION FROM DUNES SOUTH OF OSO FLACO LAKE ARE ALSO ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Nasturtium gambelii

Element Code: PDBRA270V0

Gambel's water cress

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Threatened		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	MARSHES AND SWAMPS.			
	Micro:	FRESHWATER AND BRACKISH MARSHES AT THE MARGINS OF LAKES AND ALONG STREAMS, IN OR JUST ABOVE THE WATER LEVEL. 5-330 M.			

Occurrence No.	1	**Map Index:**	12933	**EO Index:**	25062	**Element Last Seen:**	2005-09-28
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	2005-09-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-04-22

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03111 / -120.61940	**Accuracy:**	specific area
UTM:	Zone-10 N3879084 E717172	**Elevation (ft):**	20
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	20.0

Location: OSO FLACO LAKE, ALONG THE NORTHEAST & SOUTH EDGES OF THE LAKE, SOUTH OF OCEANO.

Detailed Location: SEVERAL COLONIES REPORTED & MAPPED SINCE 1984 INCL S EDGE OF LAKE, ALONG EITHER SIDE OF CAUSEWAY & ALONG NE ARM OF LAKE. LAST PURE N. GAMBELII SEEN ~1986; ALL NOW SHOW INTROGRESSION W/ N. OFFICINALE. PURE N. GAMBELII MAY BE EXTIRPATED HERE.

Ecological: AT EDGE OF FRESHWATER MARSH VEGETATION. INLAND FROM LAKE EDGE AMONG TYPHA LATIFOLIA WITH SPARGANIUM EURYCARPUM, AND CAREX CUSICKII. ALSO IN WILLOW RIPARIAN THICKET WITH SALIX LASIOLEPIS, BERULA ERECTA, AND RUBUS URSINUS. SATURATED SOILS.

General: W OF RD, N SHORE: 100 IN '84; 300 IN '89; 0 IN 1992 & 1998. W OF RD, S SHORE: 10 IN '88; 68 IN '98. E OF RD, NE SHORE: <5 IN '88; 0 IN '89; >150 IN '98. E OF RD, S SHORE: >400 IN '98. SEEN IN '99, '01, '05. DO ANY PURE GAMBELII REMAIN HERE?

Owner/Manager: PVT, DPR-OCEANO DUNES SVRA

Occurrence No.	2	**Map Index:**	13006	**EO Index:**	20403	**Element Last Seen:**	1947-08-02
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	1947-08-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1992-07-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06886 / -120.60517	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3883302 E718370	**Elevation (ft):**	20
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: NEAR SMALL TWIN LAKE, S OF ARROYO GRANDE.

Detailed Location:

Ecological: IN SWAMP AMONG DENSE GROWTH OF SCIRPUS AND SPARANGIUM.

General: EXTIRPATED BY DEVELOPMENT OR ALTERATION OF HABITAT (M. MCLEOD, PERS COMM; SEE PRI88U0001).

Owner/Manager: PVT

Occurrence No.	9	**Map Index:**	12976	**EO Index:**	25040	**Element Last Seen:**	1994-08-06
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	2005-12-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-04-19

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03005 / -120.60791	**Accuracy:**	specific area
UTM:	Zone-10 N3878991 E718223	**Elevation (ft):**	20
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	10.0

Location: SOUTHERN END OF LITTLE OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: MAPPED ACC TO A 1985 BOWLAND MAP & A 1989 PRICE MAP. A 1998 CHESNUT MAP SHOWS THAT THE W POLY SHOULD BE FURTHER SE & THERE IS ANOTHER POP TO THE NW OF THE E POLY; NO PLANTS WERE FOUND HERE & CNDDB HAS NO INFO TO SUPPORT THESE LOCATIONS.

Ecological: IN DRAINAGE DITCH ADJACENT TO FARMER'S FIELDS NEAR TYPHA/SCIRPUS VEGETATION ALONG MARGIN OF LAKE. FORMING A PURE STAND IN THE DITCH BORDERED BY CONIUM MACULATUM AND URTICA.

General: E-POLY: ~300 IN 1989 FORMING PURE STAND IN DITCH; ~500 IN 1993 & 1994; 0 IN 1998. W-POLY: <10 IN 1985, 0 IN 1989 & 2005. SPECIMENS FROM SITE APPEAR TO BE EITHER N. OFFICINALE OR N. GAMBELII X OFFICINALE; PURE N. GAMBELII MAY BE EXTIRPATED.

Owner/Manager: PVT (LEASED FROM STATE)

Occurrence No.	10	**Map Index:**	72460	**EO Index:**	16463	**Element Last Seen:**	1993-06-06
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	2005-08-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-04-19

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05831 / -120.58455	**Accuracy:**	80 meters
UTM:	Zone-10 N3882178 E720279	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 05 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON, BETWEEN SHERIDAN RD AND END OF CALLENDER RD, ENE OF CALLENDER.

Detailed Location: BEHIND HOUSE AT 1266 CALLENDER RD. APPROXIMATELY 150 YARDS UPSTREAM FROM PIPELINE CROSSING. BLACK LAKE CANYON HAS BEEN DESIGNATED AS A SENSITIVE RESOURCE AREA.

Ecological: STREAM AREA IN BLACK LAKE CANYON WITH ARENARIA PALUDICOLA ABOUT 100 YDS UPSTREAM (ALSO RARE). ALSO WITH SCIRPUS AMERICANUS, SPARGANIUM EURYCARPUM, TYPHA LATIFOLIA, AND SALIX LASIOLEPIS.

General: ABOUT 100 PLANTS SEEN IN 1988, APPROX 1000 IN 1992, 50 FLOWERING PLANTS IN 1993. NOT SEEN BY ELVIN IN 2005. NEARBY EUCALYPTUS TREES MAY BE ALTERING WATER REGIME.

Owner/Manager: PVT

Occurrence No.	11	**Map Index:** 26527	**EO Index:**	22986		**Element Last Seen:**	1994-08-06
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	2005-08-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-04-19

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05719 / -120.57617	**Accuracy:**	80 meters
UTM:	Zone-10 N3882071 E721046	**Elevation (ft):**	50
PLSS:	T12N, R13E, Sec. 04 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON, 0.8 MI NW OF JUNCTION OF HWY 1 AND WILLOW ROAD.

Detailed Location: BEHIND RESIDENCE AT 2188 CALLENDER ROAD. BLACK LAKE CANYON HAS BEEN DESIGNATED AS A SENSITIVE RESOURCE AREA.

Ecological: IN MARSHY CANYON BOTTOM IN SATURATED WET BOGGY SOIL. WITH SPARANGIUM EURYCARPUM, URTICA DIOICA, RUBUS URSINUS, TYPHA LATIFOLIA, & SCIRPUS AMERICANUS. ARENARIA PALUDICOLA (ALSO RARE) FOUND ~200 M UPSTREAM.

General: 500 PLANTS ESTIMATED IN 1994. NO PLANTS FOUND IN 1998, 1999, OR 2005. NEARBY EUCALYPTUS TREES MAY BE ALTERING WATER REGIME.

Owner/Manager: PVT

Occurrence No.	16	**Map Index:** 78626	**EO Index:**	79552		**Element Last Seen:**	1949-05-24
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1949-05-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-04-19

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09853 / -120.61411	**Accuracy:**	1 mile
UTM:	Zone-10 N3886574 E717475	**Elevation (ft):**	
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: OCEANO BEACH.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS NEAR OCEANO AND ARROYO GRANDE CREEK. A 2010 ELVIN COMMUNICATION MENTIONS THAT HOOVER'S "OCEANO BEACH" IS LIKELY FROM "THE MARSH AT THE MOUTH OF ARROYO GRANDE CREEK".

Ecological: AT EDGE OF MARSH BEHIND SAND DUNES.

General: SITE BASED ON A 1949 HOOVER COLLECTION.

Owner/Manager: UNKNOWN

Streptanthus albidus ssp. peramoenus

Element Code: PDBRA2G012

most beautiful jewel-flower

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2T2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND.			
	Micro:	SERPENTINE OUTCROPS, ON RIDGES AND SLOPES. 120-730M.			

Occurrence No.	46	**Map Index:**	44531	**EO Index:**	44531	**Element Last Seen:**	1909-05-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1909-05-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32640 / -120.67655	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3911717 E711192	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: CHORRO, NEAR SAN LUIS OBISPO, SAN LUIS OBISPO COUNTY.

Detailed Location: MAPPED BY CNDDB AT CHORRO, NORTH OF SAN LUIS OBISPO.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1909 COLLECTION BY BRANDEGEE. NEEDS FIELDWORK. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; THEY MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: UNKNOWN

Occurrence No.	47	**Map Index:**	44532	**EO Index:**	44532	**Element Last Seen:**	2002-05-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-03-08

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31742 / -120.74895	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910570 E704633	**Elevation (ft):**	600
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	11.4

Location: 1 MILE WEST OF CERRO ROMAULDO, WNW OF SAN LUIS OBISPO.

Detailed Location: MAPPED ACCORDING TO COORDINATES PROVIDED BY WETHERWAX AND PAINTER.

Ecological: GRASSLAND.

General: SITE BASED ON 1936 COLLECTION BY BOLT; NEEDS FIELDWORK. UNKNOWN NUMBER OF PLANTS SEEN IN 2002 DURING SURVEY FOR LAYIA JONESII. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: UNKNOWN

Occurrence No.	48	**Map Index:** 59926	**EO Index:**	44533		**Element Last Seen:**	1967-04-14
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1967-04-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-08-31

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31507 / -120.64993	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3910518 E713642	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	0.0

Location: WEST OF POLY CANYON, SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB TO ENCOMPASS MOST OF POLY CANYON.

Ecological: HILL.

General: MAIN INFO FOR OCCURRENCE IS 1967 COLLECTION BY HOOVER FROM W OF POLY CANYON. 1908 CONDIT COLLECTION FROM SCHOOL HILL, SAN LUIS OBISPO ATTRIBUTED HERE. ID OF COLLECTIONS NEARBY ARE IN QUESTION, MAY BE S. GLANDULOSUS. INCLUDES FORMER OCC 49.

Owner/Manager: UNKNOWN

Occurrence No.	50	**Map Index:** 44535	**EO Index:**	44535		**Element Last Seen:**	1906-05-21
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1906-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-02-09

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29003 / -120.62756	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3907788 E715742	**Elevation (ft):**	
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: RESERVOIR, SAN LUIS OBISPO.

Detailed Location: MAPPED AS BEST GUESS BY CNDDB AT RESERVOIR IN RESERVOIR CANYON, JUST EAST OF SAN LUIS OBISPO.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1906 COLLECTION BY UNANGST. NEEDS FIELDWORK. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; THEY MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: UNKNOWN

Occurrence No.	51	**Map Index:** 44536	**EO Index:**	44536		**Element Last Seen:**	2000-04-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-04-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-11-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26401 / -120.71674	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904712 E707698	**Elevation (ft):**	600
PLSS:	T31S, R12E, Sec. 05 (M)	**Acres:**	32.7

Location: PERFUMO CANYON, 1.2 MILES SOUTH OF LOS OSOS VALLEY ROAD.

Detailed Location:

Ecological: RIPARIAN AREA.

General: 1936 COLLECTION BY JOHANNSEN FROM 1.75 MILES SW OF SAN LUIS OBISPO IN SECTION 31 ATTRIBUTED TO THIS LOCATION. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; THEY MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: UNKNOWN

Occurrence No.	59	**Map Index:** 60301	**EO Index:**	60337		**Element Last Seen:**	2003-04-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-04-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-08-31

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33944 / -120.68922	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3913137 E710006	**Elevation (ft):**	700
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	8.3

Location: WEST OF CHORRO RESERVOIR, CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA T. ON LARGE SERPENTINE ROCK OUTCROP WEST OF CHORRO RESERVOIR.

Ecological: ON LOAMY CLAY OVER SERPENTINE BEDROCK. ASSOCIATES INCLUDE RANUNCULUS CALIFORNICA, COREOTHROGYNE, ALLIUM HAEMATOCHITON, PLANTAGO ERECTA, SISYRINCHIUM BELLUM, DUDLEYA ABRAMSII SSP. MURINA, AND CHORIZANTHE BREWERI.

General: FEWER THAN 20 PLANTS OBSERVED IN 2000. UNKNOWN NUMBER OBSERVED IN 2001 SURVEY FOR CALOCHORTUS OBISPOENSIS. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; THEY MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: DOD-CALIFORNIA NATIONAL GUARD

Occurrence No.	62	**Map Index:** 63149	**EO Index:**	63241		**Element Last Seen:**	2001-04-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-02-14

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26088 / -120.73639	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904324 E705918	**Elevation (ft):**	300
PLSS:	T31S, R12E, Sec. 06 (M)	**Acres:**	31.0

Location: PERFUMO CANYON ROAD, 2.8 MILES WEST OF LOS OSOS VALLEY ROAD, SW OF SAN LUIS OBISPO.

Detailed Location:

Ecological: CHAPARRAL WITH RIPARIAN AREA. BESIDE A STEEP, ROCKY BANK.

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2001 COLLECTION BY HELMKAMP. PRESENCE LISTED AS "UNCOMMON AND VERY LOCAL" IN 2001. COLLECTIONS IN THIS AREA ARE IN TAXONOMIC QUESTION; THEY MAY BE S. GLANDULOSUS SSP. GLANDULOSUS.

Owner/Manager: PVT, SCL COUNTY

Occurrence No.	85	**Map Index:** 79799	**EO Index:**	80792		**Element Last Seen:**	2007-04-19
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2007-04-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-09-01

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25777 / -120.65646	**Accuracy:**	80 meters
UTM:	Zone-10 N3904147 E713198	**Elevation (ft):**	308
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: HILLSIDE 0.3 AIR MILE ENE OF THE EASTERN END OF MARGARITA AVENUE, SAN LUIS OBISPO.

Detailed Location: ALONG TRAIL, ABOUT 0.1 MILE WEST OF WATER TANK.

Ecological: SERPENTINE OUTCROP IN NON-NATIVE GRASSLAND. SOUTHERN SLOPE OF A SERPENTINE MORRO. DOMINANTS INCLUDE COYOTE BRUSH AND NON-NATIVE GRASSES.

General: 15 PLANTS OBSERVED IN 2007.

Owner/Manager: PVT

Tropidocarpum capparideum

Element Code: PDBRA2R010

caper-fruited tropidocarpum

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	ALKALINE CLAY. 1-455 M.			

Occurrence No.	21	**Map Index:** 61590	**EO Index:** 61626	**Element Last Seen:**	2005-03-16
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	2005-03-16
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2011-04-27

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35522 / -120.54292	**Accuracy:**	specific area
UTM:	Zone-10 N3915208 E723261	**Elevation (ft):**	1140
PLSS:	T29S, R13E, Sec. 35 (M)	**Acres:**	3.5

Location: 5 MILES SE OF SANTA MARGARITA ON POZO ROAD.

Detailed Location: NEAR FIVEMILE BRIDGE OVER RINCONADA CREEK. BETWEEN POZO ROAD AND STAGECOACH POND. NEAR A LARGE QUERCUS LOBATA.

Ecological: ANNUAL GRASSLAND ADJACENT TO EPHEMERAL POND. ASSOC WITH AVENA BARBATA, BROMUS HORDEACEUS, B. DIANDRUS, HORDEUM MURINUM, ERODIUM BOTRYS, PLAGIOBOTHRYS NOTHOFULVUS, AMSINCKIA INTERMEDIA, LOTUS HUMISTRATUS, LUPINUS NANUS, & CASTILLEJA EXSERTA.

General: 1000 PLANTS OBSERVED IN 2005.

Owner/Manager: PVT

Nemacladus secundiflorus var. robbinsii

Element Code: PDCAM0F0B2

Robbins' nemacladus

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T2T3
	State:	None		**State:**	S2S3
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	DRY, SANDY OR GRAVELLY SLOPES. 350-1700 M.			

Occurrence No.	7	**Map Index:** 79329	**EO Index:** 80311	**Element Last Seen:**	1947-04-02
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1947-04-02
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2010-07-07

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19231 / -120.43350	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3897388 E733673	**Elevation (ft):**	
PLSS:	T31S, R14E, Sec. 25 (M)	**Acres:**	67.0

Location: UPPER ARROYO GRANDE, 6 MILES ABOVE COUNTY PARK.

Detailed Location: EXACT LOCATION UNKNOWN. UNCERTAIN WHICH COUNTY PARK COLLECTOR WAS REFERRING TO. MAPPED BY CNDDB AS A BEST GUESS 6 ROAD MILES EAST OF BIDDLE COUNTY PARK ALONG THE ROADWAY WHICH WAS SUBMERGED AFTER LOPEZ DAM WAS CONSTRUCTED IN THE 1960S.

Ecological: SANDY SOIL EXPOSED TO THE SUN.

General: OCCURRENCE KNOWN ONLY FROM A 1947 COLLECTION BY HOOVER. IDENTIFICATION OF SPECIMEN MAY BE UNCERTAIN, MAY BE N. S. VAR. SECUNDIFLORUS. NEEDS FIELDWORK.

Owner/Manager: PVT

Arenaria paludicola

Element Code: PDCAR040L0

marsh sandwort

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	MARSHES AND SWAMPS.			
	Micro:	GROWING UP THROUGH DENSE MATS OF TYPHA, JUNCUS, SCIRPUS, ETC. IN FRESHWATER MARSH. 10-170M.			

Occurrence No.	3	**Map Index:** 69268	**EO Index:**	70050		**Element Last Seen:**	1950-05-13
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	1993-09-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-05-15

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.02934 / -120.62639	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3878872 E716539	**Elevation (ft):**	10
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	0.0

Location:	WEST SHORE OF OSO FLACO LAKE.
Detailed Location:	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS A BEST GUESS.
Ecological:	MARSHY BORDER OF LAKE.
General:	SITE KNOWN FROM A 1950 COLLECTION BY ROBBINS. NO PLANTS WERE FOUND BY SURVEYS CONDUCTED IN 1987 AND 1993.
Owner/Manager:	DPR-PISMO SB

Occurrence No.	4	**Map Index:** 13005	**EO Index:**	12762		**Element Last Seen:**	1998-09-06
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	1999-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-05-10

Quad Summary:	Oceano (3512015)
County Summary:	San Luis Obispo

Lat/Long:	35.05746 / -120.60340	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3882042 E718562	**Elevation (ft):**	70
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location:	BLACK LAKE, WEST OF NIPOMO MESA AND SOUTH OF ARROYO GRANDE.
Detailed Location:	IN 1998 NINE PLANTS TRANSPLANTED TO LAND CONSERVANCY EASEMENT OF BLACK LAKE.
Ecological:	IN WET GROUND AT EDGE OF LAKE, GROWING UP THROUGH DENSE MATS OF JUNCUS, TYPHA, SCIRPUS AND SPARGANIUM.
General:	MAIN SOURCE OF INFO FOR THIS SITE IS 1947 COLLECTION BY HOOVER. SOME EVIDENCE OF PROPER HABITAT, BUT NO PLANTS FOUND IN 1987 (M. MCLEOD) OR 1998 (CHESNUT). 9 PLANTS TRANSPLANTED 5-16-98, 6 FOUND SEP 1998, NONE SURVIVING IN 1999.
Owner/Manager:	PVT

Occurrence No.	5	**Map Index:** 72462	**EO Index:**	18111		**Element Last Seen:**	1992-05-29
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1992-05-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-10-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05855 / -120.58319	**Accuracy:**	80 meters
UTM:	Zone-10 N3882207 E720402	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 05 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON, ABOUT 0.8 MILE EAST OF HIGHWAY 1, SOUTHEAST OF ARROYO GRANDE.

Detailed Location: BETWEEN SHERIDAN ROAD AND END OF CALLENDER ROAD; BEHIND HOUSE AT 1266 CALLENDER RD.

Ecological: FRESHWATER MARSH ASSOCIATED WITH RUBUS URSINUS, MYRICA CALIFORNICA, SALIX LASIOLEPIS, CAREX SP., AND CALAMAGROSTIS NUTKAENSIS. UPSTREAM FROM RORIPPA GAMBELLII.

General: ONLY 1 PLANT IN 1992. REPEATED SURVEYS SINCE THEN, NO PLANTS SEEN, PRESUMED EXTIRPATED (ELVIN, 2007). HABITAT CONVERSION DUE TO HIGH NUTRIENT LOAD, OTHER RIPARIAN VEGETATION DOMINATES AREA.

Owner/Manager: PVT

Occurrence No.	6	**Map Index:** 13006	**EO Index:**	21257		**Element Last Seen:**	1947-08-02
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1987-06-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-02-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06886 / -120.60517	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3883302 E718370	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: NEAR SMALL TWIN LAKE, SOUTH OF ARROYO GRANDE.

Detailed Location:

Ecological: COLLECTED IN SWAMP AMONG DENSE GROWTH OF SCIRPUS AND SPARGANIUM. WILLOW THICKETS AND BULLRUSHES SURROUNDING LAKE IN 1987.

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1947 COLLECTION BY HOOVER. NO PLANTS FOUND IN 1987 AND NO HABITAT REMAINS, ACCORDING TO MCLEOD.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:**	37045	**EO Index:**	30302	**Element Last Seen:**	1964-08-14
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	1987-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2007-04-27

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03791 / -120.60174	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3879876 E718766	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JACK LAKE, WEST OF NIPOMO MESA.

Detailed Location:

Ecological: TANGLED AMONG RUSHES.

General: VERY FEW PLANTS FOUND IN 1964. AREA VISITED IN 1987 BUT NO PLANTS FOUND; LAKE OVERGROWN SO PRIME HABITAT NO LONGER EXISTS.

Owner/Manager: UNKNOWN

Occurrence No.	9	**Map Index:**	12942	**EO Index:**	21256	**Element Last Seen:**	2006-XX-XX
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2006-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Decreasing	**Record Last Updated:**	2007-04-27

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03286 / -120.61867	**Accuracy:**	specific area
UTM:	Zone-10 N3879279 E717235	**Elevation (ft):**	50
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	1.7

Location: NORTHWESTERN EDGE OF OSO FLACO LAKE, NIPOMO DUNES, SOUTH OF ARROYO GRANDE.

Detailed Location: TWO ADJACENT COLONIES, MAPPED NEAR END OF THE NORTHEAST ARM OF OSO FLACO LAKE.

Ecological: PEAT MARSH WITH SPARANGIUM EURGARPUM, TYPHA LATIFOLIA, CAREX CUSICKII, BERULA ERECTA, EPILOBIUM CILIATUM, AND MIMULUS GUTTATUS. THE RARE RORIPPA GAMBELII ALSO OCCURS HERE.

General: 85 PLANTS OBSERVED IN 1998. PLANTS COLLECTED AT THIS SITE IN 1949 BY NOBS & SMITH AND ALSO BY C. HARDHAM. AREA SEARCHED IN 1987 BUT NO PLANTS SEEN BY MCLEOD. ABOUT 25 CLUMPS OBSERVED IN 2005, UNKNOWN NUMBER OBSERVED IN 2006.

Owner/Manager: DPR-PISMO SB

Occurrence No.	10	**Map Index:** 26528	**EO Index:**	8662		**Element Last Seen:**	1994-08-06
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	2005-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-05-11

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05565 / -120.57334	**Accuracy:**	specific area
UTM:	Zone-10 N3881907 E721309	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 09 (S)	**Acres:**	6.6

Location: BLACK LAKE CANYON, ABOUT 1.25 MILES EAST OF HIGHWAY 1, SOUTHEAST OF ARROYO GRANDE.

Detailed Location: ABOUT 0.25-0.5 MILE WEST OF END OF GUADALUPE ROAD. IN CANYON BOTTOM BEHIND RESIDENCE AT 2138 CALLENDER ROAD.

Ecological: IN MARSHY AREA OF CANYON BOTTOM, ASSOCIATED WITH ELEOCHARIS ROSTELLATA, EPIPACTIS GIGANTEA, SPARGANIUM, SEDGES, RUBUS URSINUS, MYRICA CALIFORNICA, AND SALIX LASIOLEPIS. ANOTHER RARE PLANT, RORIPPA GAMBELII, IS FOUND ABOUT 200 M DOWNSTREAM.

General: FEWER THAN 10 PLANTS OBSERVED IN 1985, UNKNOWN NUMBER OF PLANTS 1988, NONE FOUND IN 1992, 2 PLANTS OBSERVED IN 1994. NONE IN 1998 OR 2005. PRESUMED EXTIRPATED (ELVIN, 2007).

Owner/Manager: PVT

Occurrence No.	11	**Map Index:** 48198	**EO Index:**	48198		**Element Last Seen:**	1999-11-11
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	2005-XX-XX
Occ. Type:	Introduced Back into Native Hab./Range		**Trend:**	Unknown		**Record Last Updated:**	2007-04-27

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05480 / -120.56761	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3881825 E721834	**Elevation (ft):**	120
PLSS:	T11N, R35W, Sec. 09 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON AT GUADALUPE ROAD, SOUTH OF OCEANO.

Detailed Location: AT THE EASTERN EDGE OF "BASIN G". 3 PLANTS FROM 8" POTS TRANSPLATED 4-15-98 & 12 PLANTS FROM 4" POTS ON 5-16-98. ALL DERIVED FROM A SINGLE CLONE OF ARENARIA PALUDICOLA PREVIOUSLY LOCATED IN "BASIN H" OF BLACK LAKE.

Ecological: FRESHWATER MARSH WITH SALIX LASIOLEPIS, MYRICA CALIFORNICA, SPARGANIUM EURYCARPUM SSP. EURYCARPUM, SCIRPUS MICROCARPUS, AND JUNCUS EFFUSUS VAR. BRUNNEUS. TRANSPLANTS WERE PLANTED IN JUNCUS EFFUSUS TUSSOCKS.

General: TRANSPLANTED HERE IN 1998. 14 FOUND IN SEPT 1998, 11 IN MAY 1999, & 8 IN NOV 1999. REPEATED SURVEYS SINCE THEN, MOST RECENTLY IN 2005, FOUND NO PLANTS; PRESUMED EXTIRPATED (ELVIN, 2007). HABITAT CONVERSION DUE TO HIGH NUTRIENT LOAD.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:** 12880	**EO Index:**	48200		**Element Last Seen:**	1965-04-21
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	1965-04-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-04-16

Quad Summary: Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.12552 / -120.63601	**Accuracy:**	1 mile
UTM:	Zone-10 N3889520 E715408	**Elevation (ft):**	
PLSS:	T32S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: PISMO BEACH, SAN LUIS OBISPO COUNTY.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED IN GENERAL VICINITY OF PISMO BEACH BY CNDDB.

Ecological: ON SLIGHTLY DAMP SITES NEAR SPRING.

General: COLLECTED HERE IN 1965 BY HARDHAM. NOT OBSEVED HERE SINCE AND MOST IF NOT ALL SUITABLE HABITAT IN VICINITY HAS BEEN DEVELOPED. PRESUMED EXTIRPATED, BUT SMALL POCKEST OF REMAINING SUITABLE HABITAT SHOULD BE SURVEYED (ELVIN 2007).

Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:** 48202	**EO Index:**	48202		**Element Last Seen:**	1998-04-05
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	2005-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-04-26

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05645 / -120.56383	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3882017 E722174	**Elevation (ft):**	120
PLSS:	T11N, R35W, Sec. 04 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON, IN VICINITY OF PIPELINE CROSSING, SOUTH OF OCEANO.

Detailed Location: IN A SMALL BACKED-UP POND IN BLACK LAKE CANYON. ADJACENT TO WHERE CANYON HAS BEEN CLEARED FOR PIPELINE CROSSING.

Ecological:

General: SEVERAL RAMETS OBSERVED GROWING VEGETATIVELY IN 1998, LIKELY ASEXUAL REPRODUCTION OF RAMET TRANSPLANTED TO D. GURNEY'S PROPERTY IN 1995. REPEATED SURVEYS SINCE, MOST RECENTLY IN 2005, FOUND NO PLANTS. PRESUMED EXTIRPATED (ELVIN, 2007).

Owner/Manager: UNKNOWN

Chenopodium littoreum

Element Code: PDCHE091Z0

coastal goosefoot

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	COASTAL DUNES.			
	Micro:	10-30 M.			

Occurrence No.	5	**Map Index:**	78626	**EO Index:**	84498	**Element Last Seen:**	1931-05-30
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1931-05-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-10

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.09853 / -120.61411	**Accuracy:**	1 mile
UTM:	Zone-10 N3886574 E717475	**Elevation (ft):**	
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: OCEANO.

Detailed Location: BORDER OF SAND DUNES. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON OCEANO AND DUNES TO THE SOUTHWEST.

Ecological: SAND HILLS, DUNES.

General: ONLY SOURCES OF INFORMATION ARE TWO HISTORIC COLLECTIONS FROM 1910 AND 1931. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	13005	**EO Index:**	84502	**Element Last Seen:**	2010-06-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-06-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05746 / -120.60340	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3882042 E718562	**Elevation (ft):**	65
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: LAND CONSERVANCY PRESERVE AT BLACK LAKE, NEAR HIGHWAY 1, GUADALUPE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB CENTERED ON BLACK LAKE NEAR DUNES.

Ecological: IN DUNES. SANDY, SEMI-STABILIZED BEACH DUNE.

General: UNKNOWN NUMBER OF PLANTS SEEN. 1975 SMITH COLLECTION FROM "DUNE LAKES, ALONG SANDY ROAD IN DUNES" ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	7	**Map Index:**	83479	**EO Index:**	84506	**Element Last Seen:**	2011-07-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2011-07-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-10

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05068 / -120.59428	**Accuracy:**	80 meters
UTM:	Zone-10 N3881310 E719412	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 08 (S)	**Acres:**	0.0

Location: JUST WEST OF HIGHWAY 1, SOUTH OF CALLENDER ROAD, NIPOMO MESA.

Detailed Location: NORTH OF REFINERY TURN. MAPPED BASED ON COORDINATES PROVIDED BY CHESNUT. SITE IS NEAR BLACK LAKE DUNE PRESERVE.

Ecological: OPEN SAND IN DUNE SCRUB.

General: UNKNOWN NUMBER OF PLANTS SEEN.

Owner/Manager: UNKNOWN

Occurrence No.	8	**Map Index:**	83480	**EO Index:**	84508	**Element Last Seen:**	1966-05-15
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1966-05-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03694 / -120.60235	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3879768 E718712	**Elevation (ft):**	52
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	24.0

Location: ROAD ALONG JACK LAKE, APPROXIMATELY 9 KM SOUTH OF ARROYO GRANDE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB ALONG DIRT ROAD TO THE SOUTH, NEAREST TO JACK LAKE AND EDGE OF DUNES.

Ecological:

General: TYPE LOCALITY. ONLY SOURCE OF INFORMATION IS A 1966 HOOVER COLLECTION.

Owner/Manager: UNKNOWN

Occurrence No.	9	**Map Index:**	83481	**EO Index:**	84509	**Element Last Seen:**	1980-05-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1980-05-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03514 / -120.62477	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3879519 E716672	**Elevation (ft):**	50
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	0.0

Location: 0.25 MILE NORTH OF OSO FLACO LAKE.

Detailed Location:

Ecological: COASTAL DUNES.

General: SITE BASED ON 1962 BLAKELY COLLECTION. 1950 ROSE COLLECTION FROM "OSO FLACO LAKE REGION" AND 1980 GRIFFITHS COLLECTION FROM "LITTLE COREOPSIS HILL" ATTRIBUTED TO THIS SITE. GRIFFITHS LOCATION BASED ON COORDINATES PROVIDED BY BENET-PIERCE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	10	**Map Index:**	83515	**EO Index:**	84538	**Element Last Seen:**	2010-06-04
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-06-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-15

Quad Summary: Guadalupe (3412085), Point Sal (3412086), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.00342 / -120.63082	**Accuracy:**	1 mile
UTM:	Zone-10 N3875987 E716203	**Elevation (ft):**	45
PLSS:	T11N, R36W, Sec. 25 (S)	**Acres:**	0.0

Location: NIPOMO DUNES NATIONAL WILDLIFE REFUGE, GUADALUPE.

Detailed Location: ON THE ROAD AND IN DUNES. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS CENTERED ON REFUGE NEAR COAST AT ELEVATION PROVIDED.

Ecological: LOOSE, DEEP SAND. SEMI-STABILIZED DUNES.

General: UNKNOWN NUMBER OF PLANTS SEEN. NEED BETTER LOCATION INFORMATION.

Owner/Manager: USFWS-GUADALUPE-NIPOMO DUNES

Calystegia subacaulis ssp. episcopalis

Element Code: PDCON040J1

Cambria morning-glory

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T3
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 4.2, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND.			
	Micro:	60-500M.			

Occurrence No.	1	**Map Index:** 28540	**EO Index:** 29812	**Element Last Seen:**	1993-05-19
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	1993-05-19
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1996-12-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36392 / -120.63632	**Accuracy:**	specific area
UTM:	Zone-10 N3915966 E714750	**Elevation (ft):**	1360
PLSS:	T29S, R12E, Sec. 36 (M)	**Acres:**	3.8

Location: EAST OF SANTA MARGARITA CREEK ALONG CUESTA GRADE OF HIGHWAY 101, ABOUT 0.5 MILE NORTH OF CUESTA.

Detailed Location: SITE MAPPED ON WEST-FACING SLOPE ABOUT 100 METERS EAST OF RR TRACKS.

Ecological: GRASSLAND BELOW QUERCUS AGRIFOLIA FOREST. ASSOCIATED WITH NASSELLA PULCHRA, MEDICAGO POLYMORPHA, BROMUS MOLLIS, ERODIUM BOTRYS, AND E. CICUTARIUM.

General: 200 PLANTS OBSERVED IN 1993.

Owner/Manager: PVT

Occurrence No.	2	**Map Index:** 28538	**EO Index:** 29814	**Element Last Seen:**	1995-05-03
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	1995-05-03
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1996-12-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33774 / -120.72959	**Accuracy:**	80 meters
UTM:	Zone-10 N3912863 E706341	**Elevation (ft):**	320
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	0.0

Location: EL CHORRO REGIONAL PARK, NORTH OF HIGHWAY 1 AND WEST OF CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: MAPPED ABOUT 0.5 MILE NNE OF THE HIGHWAY AND 0.6 MILE NE OF RESERVATION BOUNDARY.

Ecological: IN GRASSLAND DOMINATED BY LOLIUM AND OTHER ANNUAL GRASSES. NASSELLA PULCHRA ALSO PRESENT SCATTERED IN THE GRASSLAND.

General: THE RARE DUDLEYA BLOCHMANIAE BLOCHMANIAE OCCURS NEARBY.

Owner/Manager: SLO COUNTY-EL CHORRO RP

Occurrence No.	3	**Map Index:**	28539	**EO Index:**	29813	**Element Last Seen:**	2002-05-22
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-02-02

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33297 / -120.71953	**Accuracy:**	specific area
UTM:	Zone-10 N3912355 E707268	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 08 (M)	**Acres:**	11.5

Location: CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION, NORTHWEST OF CALIFORNIA MENS COLONY AND NORTH OF HIGHWAY 1.

Detailed Location: TRAINING AREA R. TWELVE OBSERVATIONS MAPPED AS EIGHT POLYGONS BY CNDDB.

Ecological: GRASSLAND ON GRANITE & GRANITE DERIVED GRAVELS, OUTCROP & THIN SOIL. ASSOCIATES INCLUDE HAZARDIA SQUAROSA, EPILOBIUM CANUM, CORETHREOGYNE FILAGINIFOLIA, CALOCHORTUS CLAVATUS SSP. CLAVATUS, DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE, ETC.

General: 700-900 PLANTS OBSERVED IN 2000. 100-200 PLANTS SEEN IN 2001. FEWER THAN 250 PLANTS SEEN IN 2002. THE RARE CALOCHORTUS CLAVATUS SSP. CLAVATUS, FRITILLARIA AGRESTIS, AND DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	6	**Map Index:**	57149	**EO Index:**	57165	**Element Last Seen:**	2003-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-10-01

Quad Summary: Pismo Beach (3512026), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.24612 / -120.65643	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3902855 E713231	**Elevation (ft):**	125
PLSS:	T31S, R12E, Sec. 11 (M)	**Acres:**	373.0

Location: SOUTH END OF SAN LUIS OBISPO, JUST NORTHWEST OF SLO COUNTY AIRPORT, TANK FARM ROAD VICINITY.

Detailed Location: MAPPED MOSTLY WITHIN THE N 1/2 OF SECTION 11.

Ecological: ASSOCIATES: NON-NATIVE ANNUAL GRASSES, PLANTAGO LANCEOLATA, AND SPARSE NATIVE PERENNIAL BUNCHGRASSES. OOCURS ON MANMADE SLOPES AND LEVEL TOPOGRAPHY.

General: THOUSANDS OF PLANTS SEEN IN 2003. THE RARE CENTROMADIA SSP. CONGDONII AND ERYNGIUM ARISTULATUM VAR. HOOVERI WERE ALSO OBSERVED IN THIS VICINITY.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:** 57153	**EO Index:**	57169		**Element Last Seen:**	2003-05-06
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-10-01

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.36590 / -120.59737	**Accuracy:**	specific area
UTM:	Zone-10 N3916272 E718284	**Elevation (ft):**	1253
PLSS:	T29S, R13E, Sec. 32 (M)	**Acres:**	9.3

Location: SANTA MARGARITA RANCH, SOUTH OF SANTA MARGARITA, SOUTHWEST OF MILLER FLAT, EAST SLOPE OF SANTA LUCIA MOUNTAINS.

Detailed Location: JUST SOUTH OF POWER LINES. MAPPED WITHIN THE NE 1/4 OF THE NE 1/4 OF SECTION 32.

Ecological: CALIFORNIA ANNUAL GRASSLAND ON ROLLING FOOTHILLS ALONG A RIDGE WITH SERPENTINE OUTCROPS. NON-NATIVE ANNUAL GRASSES DOMINATE, WITH VIOLA PEDUNCULATA, CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, ET AL.

General: 500-1000 PLANTS ESTIMATED IN 2003.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	11	**Map Index:** 47407	**EO Index:**	57183		**Element Last Seen:**	2003-05-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-19

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23492 / -120.74367	**Accuracy:**	specific area
UTM:	Zone-10 N3901429 E705321	**Elevation (ft):**	411
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	12.2

Location: SEE CANYON, APPROXIMATELY 0.7 AIRMILE SOUTHWEST OF HEADWATERS OF FROOM CREEK.

Detailed Location: LA QUINTA DE AVILA RANCH. PLANTS SCATTERED THROUGHOUT GRASSLAND.

Ecological: SERPENTINE INFLUENCED CALIFORNIA ANNUAL GRASSLAND. WITH CASTILLEJA DENSIFLORA SSP. OBISPOENSIS.

General: A FEW HUNDRED PLANTS OBSERVED IN 2003. MANY RARE SPECIES OCCUR IN THIS VICINITY.

Owner/Manager: PVT

Occurrence No.	13	**Map Index:** 63673	**EO Index:**	63768		**Element Last Seen:**	2005-05-25
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-05-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-25

Quad Summary: Arroyo Grande NE (3512025), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.25106 / -120.60584	**Accuracy:**	specific area
UTM:	Zone-10 N3903513 E717822	**Elevation (ft):**	380
PLSS:	T31S, R13E, Sec. 05 (M)	**Acres:**	5.1

Location: SOUTHEAST OF THE CITY OF SAN LUIS OBISPO, NORTHEAST OF ORCUTT ROAD, 1.2 AIRMILES ENE OF ISLAY HILL.

Detailed Location: FOUR COLONIES OF PLANTS AT THIS SITE.

Ecological: GRAZED GRASSLAND HABITAT ON LOS OSOS-DIABLO SOIL COMPLEX. THE PLANTS WERE OFTEN, BUT NOT ALWAYS, NEAR ROCK OUTCROPS.

General: AT LEAST 100 PLANTS OBSERVED IN 2005. THE RARE CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCURS AT THIS SITE.

Owner/Manager: PVT

Occurrence No.	15	**Map Index:** 63675	**EO Index:**	63770		**Element Last Seen:**	2001-05-15
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-12

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36172 / -120.69092	**Accuracy:**	80 meters
UTM:	Zone-10 N3915605 E709794	**Elevation (ft):**	1550
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, JUST SOUTH OF DUGHI SPRING.

Detailed Location: TRAINING AREA U. MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY WETHERWAX AND PAINTER: UTM ZONE 10 NAD27 709890 3915412. MAPPED IN SW1/4 OF NE1/4 SECTION 33.

Ecological: CLAY, ON MODERATE SLOPE. ASSOCIATES INCLUDE CEANOTHUS CUNEATUS SSP. RAMULOSUS AND THE RARE CHORIZANTHE PALMERI.

General: FEWER THAN 20 PLANTS OBSERVED IN 2003. AREA BURNED IN 1994 HIGHWAY 41 FIRE. THE RARE CHORIZANTHE PALMERI ALSO OCCURS AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	16	**Map Index:** 63677	**EO Index:**	63772		**Element Last Seen:**	2003-05-01
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-12

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34196 / -120.68194	**Accuracy:**	specific area
UTM:	Zone-10 N3913432 E710661	**Elevation (ft):**	760
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	3.0

Location: EAST OF CHORRO CREEK, ABOUT 0.4 AIRMILE NORTHEAST OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA X. BETWEEN CIRSIUM FONTINALE VAR. OBISPOENSE EXCLOSURE AND CHORRO CREEK.

Ecological: GRASSLAND ON MODERATE TO STEEP SLOPE ON SHALLOW CLAY IN ROCK OUTCROP. ASSOCIATES INCLUDE BRACHYPODIUM DISTACHYON, BROMUS HORDEACEUS, AVENA BARBATA, NASSELLA, LOLIUM, CHLOROGALUM POMERIDIANUM, LACTUCA, MICROSERIS, ETC.

General: FEWER THAN 150 PLANTS OBSERVED AT SOUTH COLONY AND UNKNOWN NUMBER OF PLANTS AT NORTH COLONY IN 2003. THE RARE CALOCHORTUS OBISPOENSIS, C. ARGILLOSUS, AND SANICULA HOFFMANII ALSO OCCUR AT THIS SITE. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	17	**Map Index:**	63678	**EO Index:**	63773	**Element Last Seen:**	2000-04-20
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-04-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-01-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33581 / -120.69633	**Accuracy:**	80 meters
UTM:	Zone-10 N3912719 E709369	**Elevation (ft):**	630
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: ROCK OUTCROP WSW OF CHORRO RESERVOIR, NEAR STORAGE RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA N. NORTHWEST AND NORTH OF TWO OTHER STORAGE RESERVOIRS. MAPPED ACCORDING TO COORDINATES PROVIDED BY WETHERWAX AND PAINTER: UTM ZONE 10 NAD27 709466E 3912526N.

Ecological: SERPENTINE ROCK OUTCROP. ASSOCIATES INCLUDE SIDALCEA MALVIFLORA, CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE, ERODIUM SPP., AND HEDYPNOIS CRETICA.

General: FEWER THAN 50 PLANTS OBSERVED IN 2000. THE RARE CASTILLEJA DENSIFLORA SSP. OBISPOENSIS AND DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	18	**Map Index:**	63781	**EO Index:**	63876	**Element Last Seen:**	2002-06-18
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-06-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-01-26

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31704 / -120.73338	**Accuracy:**	specific area
UTM:	Zone-10 N3910560 E706049	**Elevation (ft):**	630
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	4.9

Location: NORTHWEST OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA V. MAPPED ACCORDING TO COORDINATES PROVIDED BY WETHERWAX AND PAINTER.

Ecological: OPENING IN COASTAL SCRUB/CHAPARRAL, SERPENTINE BARRENS, AND MEADOW/GRASSLAND. ASSOCIATES INCLUDE ARTEMISIA CALFORNICA, TOXICODENDRON, LOTUS STRIGOSUS, VICIA HASSEI, PSILOCARPUS TENELLUS, POGOGYNE SERPYLLIOIDES, AND SOLIVA SESSILIS.

General: FEWER THAN 100 PLANTS SEEN IN 1999. MORE THAN 150 PLANTS OBSERVED IN 2000, PLANTS LOCALLY COMMON. MORE THAN 100-150 PLANTS IN 2002. THE RARE DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE & CALOCHORTUS CLAVATUS SSP. CLAVATUS ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	19	**Map Index:**	63877	**EO Index:**	63972	**Element Last Seen:**	2003-04-01
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-02-02

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31501 / -120.72357	**Accuracy:**	80 meters
UTM:	Zone-10 N3910354 E706946	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	0.0

Location: NORTHEAST OF SUMMIT OF CERRO ROMUALDO, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA V. MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY WETHERWAX AND PAINTER: NAD27 ZONE 10 707042E 3910161N.

Ecological: SMALL OPENING IN COASTAL-SAGE SCRUB, MODERATE SLOPE. ASSOCIATES INCLUDE ARTEMISIA CALIFORNICA, BACCHARIS PILULARIS, MIMULUS AURANTIACUS, RHAMNUS CROCEA, SANICULA, SATUREJA DOUGLASII, POTENTILLA GLANDULOSA, MOSSES AND LICHENS.

General: FEWER THAN 50 PLANTS OBSERVED IN 2003.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	20	**Map Index:**	63878	**EO Index:**	63973	**Element Last Seen:**	2002-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-02-02

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31344 / -120.71107	**Accuracy:**	specific area
UTM:	Zone-10 N3910207 E708087	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	4.3

Location: NORTHWEST SIDE OF CHUMASH PEAK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA L.

Ecological: MEADOW AND COASTAL SAGE SCRUB ON SERPENTINE ROCK AND CLAY SUBSTRATE. ASSOCIATES INCLUDE ARTEMISIA CALIFORNICA, TOXICODENDRON DIVERSILOBUM, RHAMNUS CROCEA, MIMULUS AURANTIACUS, SALVIA SPATHACEA, AND LOTUS SCOPARIUS.

General: 1100+ PLANTS OBSERVED IN 2002. THE RARE DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE ALSO OCCURS AT THIS SITE IN ASSOCIATED BARRENS. CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCURS HERE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	21	**Map Index:** 63881	**EO Index:**	63976		**Element Last Seen:**	2003-08-04
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-02-03

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33625 / -120.69035	**Accuracy:**	specific area
UTM:	Zone-10 N3912781 E709911	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	1.9

Location: SOUTH OF CHORRO RESERVOIR, NEAR GATE ON RANGE ROAD, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREAS T AND W.

Ecological: GRASSLAND/MEADOW; LOAM; GENTLE TO MODERATE SLOPE. ASSOCIATES INCLUDE MIMULUS GUTTATUS, CALANDRINIA CILIATA, PLANTAGO, LOTUS, HEMIZONIA, HEDYPNOIS CRETICA, AND CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, ALIEN ANNUAL GRASSES.

General: FEWER THAN 100 PLANTS OBSERVED IN 2000 AND FEWER THAN 50 PLANTS OBSERVED IN 2002. SITE ALSO VISITED IN 2003, UNKNOWN NUMBER OF PLANTS OBSERVED. THE RARE CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCURS AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	22	**Map Index:** 62394	**EO Index:**	63979		**Element Last Seen:**	2003-08-04
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-02-02

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34072 / -120.69188	**Accuracy:**	specific area
UTM:	Zone-10 N3913274 E709761	**Elevation (ft):**	760
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	1.9

Location: NORTHWEST OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREAS T AND U.

Ecological: GRASSLAND/MEADOW; CLAY; STEEP TO MODERATE SLOPE. ASSOCIATES INCLUDE TRIFOLIUM FUCATUM, ASTRAGALUS CURTIPES, LOTUS SALSUGINOSUS, LOMATIUM CARUIFOLIUM, LESSINGIA, PLANTAGO ERECTA, ESCHSCHOLZIA CALIFORNICA, ETC.

General: FEWER THAN 200 PLANTS OBSERVED IN 2000. SITE ALSO VISITED IN 2001, 2002, AND 2003, UNKNOWN NUMBER OF PLANTS OBSERVED. THE RARE CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCURS AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	25	**Map Index:**	64676	**EO Index:**	64755	**Element Last Seen:**	2005-07-13
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-07-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-05-12

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.28088 / -120.65117	**Accuracy:**	80 meters
UTM:	Zone-10 N3906722 E713619	**Elevation (ft):**	300
PLSS:	T30S, R12E, Sec. 26 (M)	**Acres:**	0.0

Location:	EAST SIDE OF THE INTERSECTION OF JOHNSON AVE & SAN LUIS DRIVE, SAN LUIS OBISPO.
Detailed Location:	BETWEEN PARKING LOTS FOR SAN LUIS HIGH SCHOOL AND ADULT SCHOOL.
Ecological:	NASSELLA PULCHRA-DOMINATED AND WEED-DOMINATED RUDERAL / HIGHLY DISTURBED GRASSLAND WITH MANY WEEDS. ASSOCIATED WITH PICRIS, FOENICULUM, LACTUCA, LOLIUM, NASSELLA, AND AVENA. CLAY-LOAM SOIL.
General:	>500 INDIVIDUAL PLANTS ESTIMATED IN 2005.
Owner/Manager:	SAN LUIS COASTAL SCHOOL DIST

Dudleya abramsii ssp. bettinae

Element Code: PDCRA04011

Betty's dudleya

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND, CHAPARRAL.			
	Micro:	ON ROCKY, BARREN EXPOSURES OF SERPENTINE WITHIN SCRUB VEGETATION. 20-180 M.			

Occurrence No.	1	**Map Index:** 12640	**EO Index:** 13956	**Element Last Seen:**	1985-05-28
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	1985-05-28
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2008-02-08

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30308 / -120.74054	**Accuracy:**	specific area
UTM:	Zone-10 N3908996 E705434	**Elevation (ft):**	550
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	103.8

Location: LINSEY RANCH, ON O'CONNOR WAY 2 MI NW OF JCT W/FOOTHILL BLVD, W SIDE OF RD.

Detailed Location:

Ecological: SERPENTINE OUTCROPS IN COASTAL SCRUB. MOSTLY EAST-FACING EXPOSURES.

General: TYPE LOCATION. SANICULA MARITIMA AND LAYIA JONESII ARE ALSO LOCATED NEARBY. MORAN COLLECTION FROM "SW OF CERRO ROMUALDO" ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:** 61881	**EO Index:** 61917	**Element Last Seen:**	2003-05-30
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2003-05-30
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2005-07-06

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31899 / -120.74898	**Accuracy:**	specific area
UTM:	Zone-10 N3910744 E704625	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	16.5

Location: FIRST RIDGE WEST OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA A. MULTIPLE PATCHES MAPPED AS 6 POLYGONS BY CNDDB.

Ecological: SERPENTINE OUTCROP WITH MODERATELY STEEP SLOPES. ASSOCIATES INCLUDE ALLIUM HAEMATOCHITON, ASTRAGALUS CURTIPES, DICHELOSTEMMA CAPITATUM, LAYIA JONESII, CRYPTANTHA CLEVELANDII, ESCHSCHOLZIA CALIFORNICA, STREPTANTHUS ALBIDUS SSP. PERAMOENUS.

General: FEWER THAN 50 TO 100 PLANTS SEEN AT EACH OF 6 PATCHES IN 2000. FEWER THAN 50 TO 100 PLANTS SEEN IN 2002 AT EACH OF 6 PATCHES. FEWER THAN 50 PLANTS SEEN IN 2003 AT EACH OF 5 PATCHES. MANY OTHER RARE PLANT SPECIES ALSO FOUND IN THIS VICINITY.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Dudleya abramsii ssp. murina

Element Code: PDCRA04012

mouse-gray dudleya

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T2
	State:	None		**State:**	S2.3
	Other:	Rare Plant Rank - 1B.3, BLM_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND.			

Micro: SERPENTINE OUTCROPS. 90-300M.

Occurrence No.	1	**Map Index:** 59887	**EO Index:**	59923		**Element Last Seen:**	1987-05-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.24523 / -120.56777	**Accuracy:**	specific area
UTM:	Zone-10 N3902950 E721302	**Elevation (ft):**	1200
PLSS:	T31S, R13E, Sec. 10 (M)	**Acres:**	218.8

Location: BETWEEN WEST & EAST CORRAL DE PIEDRA CREEKS. 3 AIR MILES EAST OF ISLAY HILL.

Detailed Location:

Ecological: ROCKY SERPENTINE HILLS & SLOPES. ASPECTS VARIABLE, BUT PRIMARILY WESTERN. 10 TO 30 DEGREE SLOPES.

General: THOUSANDS OF PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	2	**Map Index:** 59888	**EO Index:**	59924		**Element Last Seen:**	1987-05-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.22973 / -120.56503	**Accuracy:**	specific area
UTM:	Zone-10 N3901237 E721594	**Elevation (ft):**	900
PLSS:	T31S, R13E, Sec. 15 (M)	**Acres:**	327.9

Location: NEAR EAST CORRAL DE PIEDRA CREEK. 3.5 AIR MILES ESE OF ISLAY HILL.

Detailed Location: 2 COLONIES. ONE COLONY CENTERED 3.0 AIR MILES ESE OF ISLAY HILL. SECOND COLONY CENTERED 3.8 AIR MILES ESE OF ISLAY HILL.

Ecological: ROCKY SERPENTINE HILLS & SLOPES. ASPECTS VARIABLE, BUT PRIMARILY WESTERN. 10 TO 30 DEGREE SLOPES. ASSOC INCLUDE YUCCA WHIPPLEI & ANNUAL GRASSES.

General: THOUSANDS OF PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	3	**Map Index:** 59893	**EO Index:**	59929		**Element Last Seen:**	1987-09-26
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-09-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-08

Quad Summary:	Pismo Beach (3512026)
County Summary:	San Luis Obispo

Lat/Long:	35.24486 / -120.68881	**Accuracy:**	specific area
UTM:	Zone-10 N3902646 E710288	**Elevation (ft):**	200
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	8.3

Location:	SAN LUIS OBISPO. JUST WEST OF INTERSECTION OF LOS OSOS VALLEY RD & HWY 101.
Detailed Location:	BETWEEN FROOM CREEK AND JEEP TRAIL. 2 COLONIES.
Ecological:	IN OPEN AREAS & IN SCATTERED SHRUBS ON ROCKY SERPENTINE SLOPES WITH SHALLOW SOILS. SPARSE SURROUNDING VEGETATION OF GRASSLANDS & COASTAL SCRUB. MODERATE EAST SLOPE.
General:	<50 PLANTS SEEN IN 1987. 1947 COLLECTION BY MORAN, LOCATION GIVEN AS 3.5 MILES SOUTH OF SAN LUIS OBISPO ALONG HWY 101, ALSO ATTRIBUTED TO THIS SITE.
Owner/Manager:	PVT

Occurrence No.	4	**Map Index:** 59520	**EO Index:**	59931		**Element Last Seen:**	2003-05-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-17

Quad Summary:	Pismo Beach (3512026)
County Summary:	San Luis Obispo

Lat/Long:	35.23769 / -120.73744	**Accuracy:**	specific area
UTM:	Zone-10 N3901749 E705881	**Elevation (ft):**	700
PLSS:	T31S, R11E, Sec. 12 (M)	**Acres:**	12.3

Location:	4 AIR MILES NORTH OF AVILA BEACH. NORTH SLOPE OF SEE CANYON.
Detailed Location:	2 COLONIES. ONE COLONY IN SW 1/4 OF SW 1/4 OF SEC 7. SECOND COLONY IS ALONG ROADSIDE IN SE 1/4 OF SE 1/4 OF SEC 12. ON LA QUINTA DE AVILA RANCH.
Ecological:	ON A SERPENTINE ROCK OUTCROP AND IN A BUNCHGRASS COMMUNITY. ASSOC RARE SPECIES INCLUDE: LOMATIUM PARVIFOLIUM, CHORIZANTHE BREWERI, CHORIZANTHE PALMERI, CALOCHORTUS OBISPOENSIS, CALOCHORTUS CLAVATUS SSP. CLAVATUS.
General:	100+ PLANTS SEEN IN EACH COLONY IN 2003. OTHER ASSOC RARE SPECIES INCLUDE: CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS, CALOCHORTUS SIMULANS.
Owner/Manager:	PVT

Occurrence No.	5	**Map Index:**	59896	**EO Index:**	59932	**Element Last Seen:**	1987-04-27
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.31552 / -120.62180	**Accuracy:**	specific area
UTM:	Zone-10 N3910629 E716198	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 18 (M)	**Acres:**	36.3

Location: APPROXIMATELY 3 ROAD MILES NW OF SAN LUIS OBISPO ON HWY 101.

Detailed Location: 2 COLONIES. ONE COLONY ON WEST SIDE OF HWY 101 IN NW 1/4 OF SEC 18. SECOND COLONY ON EAST SIDE OF HWY 101 IN SE 1/4 OF SEC 18, BENEATH TRANSMISSION LINES.

Ecological: ROCKY, SERPENTINE SLOPE AND RIDGE SURROUNDED BY GRASSLAND. ASSOC WITH THE RARE CHORIZANTHE BREWERI.

General: >100 PLANTS OBSERVED IN THE SW COLONY IN 1987. 1949 COLLECTION BY MORAN, LOCATION GIVEN AS CUESTA GRADE, ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	39712	**EO Index:**	59933	**Element Last Seen:**	1987-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30359 / -120.61402	**Accuracy:**	specific area
UTM:	Zone-10 N3909322 E716938	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 20 (M)	**Acres:**	6.8

Location: 3 AIR MILES ENE OF SAN LUIS OBISPO. 1.3 AIR MILES WSW OF SUMMIT OF BLACK BUTTE.

Detailed Location: MAPPED IN SW1/4 OF NW1/4 SEC 20.

Ecological: SERPENTINE RIDGE WITH VERY THIN SOILS. 20% SLOPE WITH NW ASPECT. ASSOC WITH ANNUAL GRASSES AND THE RARE CALOCHORTUS OBISPOENSIS.

General: 16 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:**	39802	**EO Index:**	59934	**Element Last Seen:**	1987-04-26
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30038 / -120.62003	**Accuracy:**	specific area
UTM:	Zone-10 N3908953 E716400	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 19 (M)	**Acres:**	24.7

Location: 3 AIR MILES EAST OF SAN LUIS OBISPO. 1.8 AIR MILES SW OF BLACK BUTTE.

Detailed Location: HILLTOP 0.3 AIR MILES EAST OF HWY 101. FROM HILLTOP EAST ALONG RIDGE TO INTERMITTENT STREAM VALLEY & ADJOINING WEST-FACING SLOPE.

Ecological: EXPOSED SERPENTINE ROCKS, RIDGETOPS, & GULLIES. ASSOC WITH YUCCA & THE RARE CHORIZANTHE BREWERI. SURROUNDED BY GRASSLAND.

General: >100 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:**	59899	**EO Index:**	59935	**Element Last Seen:**	1987-04-26
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.29049 / -120.60666	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3907885 E717642	**Elevation (ft):**	900
PLSS:	T30S, R13E, Sec. 29 (M)	**Acres:**	0.0

Location: 1.1 MILES EAST OF THE RESERVOIR IN RESERVOIR CANYON.

Detailed Location: ON SW FACING RIDGE BELOW AND AROUND 1009' ELEVATION MARK.

Ecological: EXPOSED SERPENTINE. LITTLE TO NO SOIL. ASSOC WITH YUCCA WHIPPLEI, INTRODUCED GRASSES, AND THE RARE CHORIZANTHE BREWERI. SURROUNDED BY GRASSLAND.

General: <500 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	9	**Map Index:**	59900	**EO Index:**	59936	**Element Last Seen:**	1987-02-19
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-02-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28739 / -120.62209	**Accuracy:**	specific area
UTM:	Zone-10 N3907507 E716246	**Elevation (ft):**	600
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	26.7

Location: EAST OF SAN LUIS OBISPO IN RESERVOIR CANYON. NORTH SIDE OF RESERVOIR CANYON ROAD.

Detailed Location: SOUTH FACING SLOPES AND RIDGETOP. MAPPED IN CENTER OF SEC 30.

Ecological: OPEN SERPENTINE ROCK OUTCROPS WITH LITTLE TO NO SOIL. SURROUNDED BY GRASSLAND.

General: >1000 PLANTS OBSERVED IN 1987.

Owner/Manager: UNKNOWN

Occurrence No.	10	**Map Index:**	59901	**EO Index:**	59937	**Element Last Seen:**	1987-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28026 / -120.59819	**Accuracy:**	specific area
UTM:	Zone-10 N3906769 E718440	**Elevation (ft):**	1200
PLSS:	T30S, R13E, Sec. 29 (M)	**Acres:**	5.5

Location: ROUGHLY 3 AIR MILES EAST OF SAN LUIS OBISPO. 0.5 AIR MILES ENE OF INTERSECTION OF RESERVOIR CANYON & HAMPTON CANYON.

Detailed Location: MAPPED IN SE1/4 OF SE1/4 SEC 29 AND INTO ADJACENT NE1/4 SEC 32.

Ecological:

General: 1987 MAP IS ONLY INFORMATION; NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	11	**Map Index:**	59902	**EO Index:**	59938	**Element Last Seen:**	1987-05-08
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.27244 / -120.61607	**Accuracy:**	specific area
UTM:	Zone-10 N3905862 E716834	**Elevation (ft):**	1500
PLSS:	T30S, R13E, Sec. 31 (M)	**Acres:**	62.3

Location: RIDGETOP SOUTH OF RESERVOIR CANYON.

Detailed Location: 3 COLONIES. WESTERN COLONY IS IN NW 1/4 OF NW 1/4 OF SEC 31. CENTER COLONY RUNS PARALLEL TO RIDGETOP, ALONG JEEP TRAIL SOUTH OF CANYON. EASTERN COLONY IS IN NW 1/4 OF SE 1/4 OF SEC 32, SOUTH OF WEST CORRAL DE PIEDRA CREEK.

Ecological: OPEN SERPENTINE OUTCROPS. LITTLE TO NO SOIL.

General: >300 PLANTS OBSERVED IN 1987 IN LARGE COLONY.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	39711	**EO Index:**	59939	**Element Last Seen:**	1992-05-28
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.25465 / -120.58711	**Accuracy:**	specific area
UTM:	Zone-10 N3903952 E719517	**Elevation (ft):**	1000
PLSS:	T31S, R13E, Sec. 04 (M)	**Acres:**	97.0

Location: 2.5 AIR MILES SW OF SUMMIT OF GAY MOUNTAIN. RIDGELINE SW OF WEST CORRAL DE PIEDRA CREEK.

Detailed Location:

Ecological: SERPENTINE OUTCROPS. ASSOC WITH YUCCA WHIPPLEI, STIPA PULCHRA, & THE RARE CHORIZANTHE PALMERI & CALOCHORTUS OBISPOENSIS.

General: THOUSANDS OF PLANTS SEEN IN 1992.

Owner/Manager: PVT

Occurrence No.	13	**Map Index:**	59904	**EO Index:**	59940	**Element Last Seen:**	2002-06-17
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-06-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35579 / -120.69063	**Accuracy:**	specific area
UTM:	Zone-10 N3914948 E709836	**Elevation (ft):**	1300
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	13.2

Location: 3.5 AIR MILES WNW OF CUESTA PASS, IN CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: MAPPED POLYGONS BASED UPON GPS COORDINATES PROVIDED.

Ecological: SERPENTINE BOULDERS & CLAY. MODERATE TO STEEP SLOPES. ASSOC INCLUDE: CEANOTHUS CUNEATUS VAR. RAMULOSUS, KOELERIA MACRANTHA, HESPEROYUCCA WHIPPLEI, CALOCHORTUS ARGILLOSUS, SALVIA COLUMBARIAE, ETC.

General: THE RARE ARCTOSTAPHYLOS OBISPOENSIS, CHORIZANTHE PALMERI, CHORIZANTHE BREWERI, CALOCHORTUS OBISPOENSIS, CALOCHORTUS CLAVATUS SSP. CLAVATUS, AND LOMATIUM PARVIFOLIUM OCCUR NEARBY.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	14	**Map Index:**	59915	**EO Index:**	59951	**Element Last Seen:**	2001-05-17
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-05-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-04-13

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34702 / -120.68023	**Accuracy:**	specific area
UTM:	Zone-10 N3913998 E710804	**Elevation (ft):**	900
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	5.2

Location: 2.9 AIR MILES WEST OF CUESTA PASS, IN CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: 0.7 AIR MILES NNE OF CHORRO RESERVOIR. NEAR THE MAIN BRANCH OF CHORRO CREEK. MAPPED IN SW1/4 OF NW1/4 SEC 3.

Ecological: ASSOC INCLUDE: CUPRESSUS SARGENTII, CEANOTHUS CUNEATUS VAR. RAMULOSUS, SALIX BREWERI, FRITILLARIA.

General: <10 PLANTS SEEN IN 2001.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	15	**Map Index:**	59916	**EO Index:**	59952	**Element Last Seen:**	2002-07-02
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-07-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33936 / -120.68957	**Accuracy:**	specific area
UTM:	Zone-10 N3913127 E709974	**Elevation (ft):**	700
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	34.5

Location: 3.4 AIR MILES WSW OF CUESTA PASS, IN CAMP SAN LUIS OBISPO NATIONAL GUARD RESERVATION.

Detailed Location: VICINITY OF CHORRO RESERVOIR. MAPPED AS FIVE POLYGONS BOTH N AND S OF CHORRO RESERVOIR.

Ecological: SERPENTINE ROCK, SERPENTINE INFLUENCED CLAY & LOAM. ASSOC INCLUDE: ERIOPHYLLUM CONFERTIFOLIUM, LOMATIUM UTRICULATUM, NASSELLA, UMBELLULARIA CALIFORNICA, QUERCUS DURATA, HESPEROYUCCA WHIPPLEI, ALLIUM HAEMATOCHITON, HEMIZONIA CONGESTA, ETC.

General: THE RARE CALOCHORTUS CLAVATUS SSP. CLAVATUS, CALOCHORTUS OBISPOENSIS, CHORIZANTHE BREWERI, CHORIZANTHE PALMERI, SANICULA HOFFMANNII, STREPTANTHUS ALBIDUS SSP. PERAMOENUS, SENECIO APHANACTUS, AND LAYIA JONESII OCCUR NEARBY.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	16	**Map Index:**	39805	**EO Index:**	59955	**Element Last Seen:**	1992-05-20
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34434 / -120.65457	**Accuracy:**	80 meters
UTM:	Zone-10 N3913754 E713143	**Elevation (ft):**	1100
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: 1.4 AIR MILES WSW OF CUESTA PASS, NEAR COASTAL AQUEDUCT.

Detailed Location: 1/4 MILE SW OF CUESTA TUNNEL. AROUND ROCKY OUTCROPS, NEAR A WELL.

Ecological: IN CREVICES ON BARE SERPENTINE ROCK. SOUTH-FACING SLOPE. ASSOCIATES INCLUDE YUCCA WHIPPLEI. THE RARE CALOCHORTUS OBISPOENSIS, CHORIZANTHE PALMERI, AND CHORIZANTHE BREWERI ALSO OCCUR NEARBY.

General: >100 INDIVIDUALS OBSERVED BETWEEN COMBINATION OF THIS OCCURRENCE AND OCCURRENCE 17 IN 1992.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	17	**Map Index:**	39804	**EO Index:**	59956	**Element Last Seen:**	1992-05-20
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33839 / -120.65899	**Accuracy:**	80 meters
UTM:	Zone-10 N3913085 E712757	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 11 (M)	**Acres:**	0.0

Location: 1.8 AIR MILES SW OF CUESTA PASS, BETWEEN RAILROAD LINE AND STENNER CREEK.

Detailed Location: ON SE FACING SLOPE BELOW THE RAIL LINE.

Ecological: IN CREVICES ON BARE SERPENTINE ROCK. ASSOC INCLUDE YUCCA WHIPPLEI. THE RARE CALOCHORTUS OBISPOENSIS, CHORIZANTHE PALMERI, AND CHORIZANTHE BREWERI ALSO OCCUR NEARBY.

General: >100 INDIVIDUALS OBSERVED BETWEEN COMBINATION OF THIS OCCURRENCE AND OCCURRENCE 16 IN 1992.

Owner/Manager: DWR, PVT-SPRR

Occurrence No.	18	**Map Index:**	59922	**EO Index:**	59958	**Element Last Seen:**	1994-08-15
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-08-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33494 / -120.74062	**Accuracy:**	80 meters
UTM:	Zone-10 N3912530 E705345	**Elevation (ft):**	290
PLSS:	T30S, R11E, Sec. 12 (M)	**Acres:**	0.0

Location: EL CHORRO REGIONAL PARK.

Detailed Location: DIRECTLY NORTH OF CUESTA COLLEGE. 0.1 MILE NORTH OF HWY 1, ON NW FACE OF HILLSIDE.

Ecological: GRASSLAND WITH OCCASIONAL ROCK OUTCROPS. SHALLOW SOILS OVER OUTCROPS. ASSOC INCLUDE THE RARE CALOCHORTUS CLAVATUS SSP. CLAVATUS & DUDLEYA BLOCHMANIAE SSP. BLOCHMANIAE.

General: TWO PLANTS OBSERVED IN 1994.

Owner/Manager: SLO COUNTY-EL CHORRO RP

Occurrence No.	19	**Map Index:**	59924	**EO Index:**	59960	**Element Last Seen:**	1983-03-30
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1983-03-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32252 / -120.67830	**Accuracy:**	specific area
UTM:	Zone-10 N3911284 E711042	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 15 (M)	**Acres:**	4.0

Location: ALONG STENNER CREEK RD, 1.2 ROAD MILES NORTH OF INTERSECTION WITH HWY 1.

Detailed Location: UPHILL OF ROAD ON ROADCUT.

Ecological: OPEN AREA WITH SERPENTINE SOIL. MODERATE SLOPE WITH NE ASPECT.

General: <1000 PLANTS OBSERVED IN 1983.

Owner/Manager: UNKNOWN

Occurrence No.	20	**Map Index:**	59926	**EO Index:**	59962	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.31507 / -120.64993	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3910518 E713642	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	0.0

Location: POLY CANYON.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS.
Ecological:
General: ONLY SOURCE OF INFO FOR THIS SITE IS A PHONE CONVERSATION WITH MCLEOD IN 1985. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No.	21	**Map Index:**	59927	**EO Index:**	59963	**Element Last Seen:**	1969-06-24
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1969-06-24
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.29364 / -120.64370	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3908154 E714265	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: SAN LUIS OBISPO, ADJACENT TO CUESTA PARK.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS NEAR CUESTA PARK.
Ecological: ON SERPENTINE.
General: ONLY SOURCE OF INFO FOR THIS SITE IS A 1969 COLLECTION BY HOOVER. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No.	22	**Map Index:**	46255	**EO Index:**	59964	**Element Last Seen:**	1950-05-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1950-05-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.28272 / -120.68215	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3906859 E710796	**Elevation (ft):**	1000
PLSS:	T30S, R12E, Sec. 27 (M)	**Acres:**	0.0

Location: CERRO SAN LUIS OBISPO.
Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS IN VICINITY OF CERRO SAN LUIS OBISPO.
Ecological:
General: ONLY SOURCE OF INFO FOR THIS SITE IS A 1950 COLLECTION BY KAMB. NEEDS FIELDWORK.
Owner/Manager: UNKNOWN

Occurrence No.	23	**Map Index:** 36730	**EO Index:**	59965		**Element Last Seen:**	1985-06-14
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1985-06-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26427 / -120.66901	**Accuracy:**	specific area
UTM:	Zone-10 N3904841 E712040	**Elevation (ft):**	300
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	6.7

Location: SOUTHERN SAN LUIS OBISPO. HILLSIDE ABOVE SOUTH HIGUERA.

Detailed Location: BELOW WATER TANK AND ABOVE CEMETERIES.

Ecological: STEEP, WEST FACING HILLSIDE WITH SERPENTINE OUTCROPS. GRASSLAND NEARBY. THE RARE CALOCHORTUS OBISPOENSIS ALSO OCCURS NEARBY.

General: <10,000 PLANTS OBSERVED IN 1985.

Owner/Manager: UNKNOWN

Occurrence No.	24	**Map Index:** 59930	**EO Index:**	59966		**Element Last Seen:**	1985-06-17
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1985-06-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26424 / -120.67820	**Accuracy:**	80 meters
UTM:	Zone-10 N3904818 E711204	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: SOUTHERN SAN LUIS OBISPO. NEAR MADONNA ROAD. N SIDE OF ROAD.

Detailed Location: BEHIND MOTEL ACROSS MADONNA RD FROM MADONNA PLAZA ENTRANCE.

Ecological: GRASSLAND / SERPENTINE KNOLL. OPEN AREA WITH SLIGHT TO MODERATE SLOPE.

General: <1000 PLANTS OBSERVED IN 1985.

Owner/Manager: PVT

Occurrence No.	25	**Map Index:** 59932	**EO Index:**	59968		**Element Last Seen:**	2005-04-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-04-11

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26151 / -120.65732	**Accuracy:**	specific area
UTM:	Zone-10 N3904560 E713110	**Elevation (ft):**	400
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	34.7

Location: SOUTHERN SAN LUIS OBISPO. SOUTH STREET HILL AND THE END OF MARGARITA AVENUE.

Detailed Location: SOUTH OF BROAD STREET, ABOVE ROAD TO RESERVOIR. SOUTHWESTERN COLONY ON PRIVATE PROPERTY AT THE END OF MARGARITA AVENUE.

Ecological: STEEP, NORTH-FACING SERPENTINE OUTCROP. ASSOCIATED WITH SELAGINELLA BIGELOVII AND GRASSES. THE RARE CALOCHORTUS OBISPOENSIS ALSO OCCURS NEARBY.

General: <1000 PLANTS OBSERVED IN 1985 AT NE COLONY. 8 PLANTS OBSERVED IN 2005 AT NEW SW COLONY. COLLECTION BY HOOVER FROM "END OF LAWRENCE DR" ATTRIBUTED TO THIS SITE. THE RARE CALOCHORTUS SIMULANS AND CASTILLEJA DENSIFLORA OBISPOENSIS ALSO HERE.

Owner/Manager: UNKNOWN

Occurrence No.	27	**Map Index:** 64444	**EO Index:**	64523		**Element Last Seen:**	1993-05-26
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-05-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-04-11

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34200 / -120.69984	**Accuracy:**	80 meters
UTM:	Zone-10 N3913399 E709034	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	0.0

Location: 1.5 KILOMETERS WNW OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location:

Ecological: STEEP SLOPES, ROCK OUTCROPS.

General: COLLECTED HERE BY JOHNSON AND YOUNG IN 1993.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Dudleya blochmaniae ssp. blochmaniae

Element Code: PDCRA04051

Blochman's dudleya

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2T2
	State:	None		**State:**	S2.1
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	COASTAL SCRUB, COASTAL BLUFF SCRUB, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	OPEN, ROCKY SLOPES; OFTEN IN SHALLOW CLAYS OVER SERPENTINE OR IN ROCKY AREAS W/LITTLE SOIL. 5-450M.			

Occurrence No.	18	**Map Index:**	17834	**EO Index:**	10026	**Element Last Seen:**	1987-09-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-09-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1991-12-05

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24299 / -120.68918	**Accuracy:**	specific area
UTM:	Zone-10 N3902437 E710260	**Elevation (ft):**	150
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	2.7

Location: FROOM RANCH. WEST OF INTERSECTION OF LOS OSOS VALLEY ROAD & US 101, JUST OUTSIDE CITY LIMITS OF SAN LUIS OBISPO.

Detailed Location:

Ecological: IN DRY SHALLOW CLAY SOILS OVERLYING SERPENTINE. WITH SHORT GRASSES AND OTHER HERBS.

General: FEWER THAN 100 PLANTS SEEN IN 1987.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:**	17835	**EO Index:**	10025	**Element Last Seen:**	1929-04-15
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1929-04-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1991-11-20

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.34470 / -120.76700	**Accuracy:**	1 mile
UTM:	Zone-10 N3913558 E702924	**Elevation (ft):**	140
PLSS:	T30S, R11E, Sec. 02 (M)	**Acres:**	0.0

Location: 8 MILES WEST OF SAN LUIS OBISPO, BETWEEN SLO & MORRO BAY.

Detailed Location: MAPPED ALONG HWY 1, 8 MI WEST OF SLO.

Ecological:

General: OLD COLLECTION DATA IS ONLY INFORMATION AVAILABLE.

Owner/Manager: UNKNOWN

Occurrence No.	20	**Map Index:**	17836	**EO Index:**	10027	**Element Last Seen:**	1947-05-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1947-05-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1991-11-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29887 / -120.70717	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3908598 E708479	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 20 (M)	**Acres:**	0.0

Location: WEST BASE OF MT. BISHOP (BISHOP PEAK) NEAR SAN LUIS OBISPO.

Detailed Location:

Ecological: AMONG SERPENTINE ROCKS.

General:

Owner/Manager: PVT, DPR-MORRO BAY SP

Occurrence No.	25	**Map Index:** 28666	**EO Index:**	30010		**Element Last Seen:**	2000-05-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-22

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.33416 / -120.69867	**Accuracy:**	specific area
UTM:	Zone-10 N3912531 E709161	**Elevation (ft):**	520
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	3.0

Location:	CAMP SLO NATIONAL GUARD RESERVATION; ABOUT 0.5-0.85 MI N OF CA MENS COLONY, 1.2 AIR MI DUE N OF BISHOP PEAK.
Detailed Location:	TRAINING AREA N.
Ecological:	ROCKY SERPENTINE SOIL IN WEEDY ANNUAL/PERENNIAL GRASSLAND.
General:	AT LEAST 1000 PLANTS IN 1996. 500+ PLANTS SEEN IN 2000. LOCALLY COMMON IN A VERY SMALL AREA.
Owner/Manager:	STATE-CAMP SAN LUIS OBISPO

Occurrence No.	28	**Map Index:** 40195	**EO Index:**	35197		**Element Last Seen:**	1994-05-12
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-05-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-11-18

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.33592 / -120.73132	**Accuracy:**	specific area
UTM:	Zone-10 N3912657 E706188	**Elevation (ft):**	360
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	38.6

Location:	EL CHORRO GOLF COURSE AT EL CHORRO REGIONAL PARK, NORTH OF HIGHWAY 1 AT CAMP SAN LUIS OBISPO.
Detailed Location:	SEVERAL COLONIES OBSERVED IN 1994.
Ecological:	GRASSLAND WITH OCCASIONAL ROCK OUTCROPS AND SHALLOW SOILS OVER THE OUTCROPS. RARE HORNED LIZARD AND RED-LEGGED FROG ALSO HERE.
General:	3000 PLANTS ESTIMATED IN 1994 BY WISHNER.
Owner/Manager:	UNKNOWN

Occurrence No.	34	**Map Index:** 61701	**EO Index:**	61737		**Element Last Seen:**	2001-06-13
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-06-13
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31665 / -120.74703	**Accuracy:**	specific area
UTM:	Zone-10 N3910488 E704809	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	2.3

Location: FIRST RIDGE WEST OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: THREE COLONIES MAPPED WITHIN TRAINING AREA A.

Ecological: COASTAL-SAGE SCRUB/GRASSLAND. ON SERPENTINE OUTCROP, RUBBLE, CLAY, LOAMY CLAY. ASSOCIATES INCLUDE ARTEMISIA CALIFORNICA, ERIOPHYLLUM CONFERTIFLORUM, LOTUS SCOPARIUS, HEMIZONIA CONGESTA SSP. LUZULIFOLIA, ACHILLEA MILLEFOLIUM, ETC.

General: 50-100 PLANTS SEEN AT NORTH COLONY IN 2000. 50-100 PLANTS SEEN AT SOUTH COLONY AND 40-50 PLANTS AT EAST COLONY IN 2001.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	35	**Map Index:** 61703	**EO Index:**	61739		**Element Last Seen:**	2002-04-23
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-04-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-06-22

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31716 / -120.73253	**Accuracy:**	specific area
UTM:	Zone-10 N3910574 E706126	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	3.2

Location: NORTHWEST SIDE OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA V. MAPPED WITHIN THE ESTIMATED NW 1/4 OF THE NW 1/4 OF SECTION 18.

Ecological: SERPENTINE BARRENS SURROUNDED BY ACHYRACHAENA MOLLIS, DICHELOSTEMMA CAPITATUM, TRIFOLIUM, LOTUS, SELAGINELLA BIGELOVII, ERODIUM, AND CALOCHORTUS CLAVATUS SSP. CLAVATUS.

General: FEWER THAN 300 PLANTS SEEN IN 2000. GREATER THAN 100 PLANTS SEEN IN 2002. PLANTS IN SMALL PATCHES IN SOIL POCKETS. PLANTS NOT FOUND ON NEARBY, SIMILAR OUTCROPS THAT HAVE BEEN HEAVILY IMPACTED BY CATTLE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	36	**Map Index:**	61704	**EO Index:**	61740	**Element Last Seen:**	2002-05-22
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-06-23

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32869 / -120.72087	**Accuracy:**	specific area
UTM:	Zone-10 N3911878 E707157	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 07 (M)	**Acres:**	5.9

Location: GUARD HILL & ALONG GUARD HILL ROAD, EAST OF DAIRY CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: ALONG GUARD HILL ROAD, TRAINING AREA R. SCATTERED PATCHES, SOME PLANTS VERY NEAR TO ROAD.

Ecological: GENTLE TO MODERATE SLOPE TO STEEP SLOPES. ASSOCIATES INCLUDE TRIFOLIUM AMPLECTENS, SANICULA ARGUTA, LUPINUS SPP., SIDALCEA MALVIFLORA SSP. LACINIATA, CHLOROGALUM POMERIDIANUM, DODECATHEON CLEVELANDII, RANUNCULUS CALIFORNICUS, ETC.

General: MORE THAN 500 PLANTS SEEN IN 2000 AND 2002.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	38	**Map Index:**	61707	**EO Index:**	61743	**Element Last Seen:**	2002-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-06-22

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31509 / -120.70959	**Accuracy:**	specific area
UTM:	Zone-10 N3910393 E708217	**Elevation (ft):**	620
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	4.3

Location: NORTHWEST SLOPE OF CHUMASH PEAK, CAMP SAN LUIS OBISPO.

Detailed Location: ABOVE GRAVEL PIT. TRAINING AREA L.

Ecological: SERPENTINE ROCK OUTCROP. ASSOCIATED WITH LOTUS SCOPARIUS, MIMULUS AURANTIACUS, LAMARCKIA AUREA, AIRA CARYOPHLLA, POLYPODIUM, LICHENS, AND MOSSES.

General: OVER 1500 PLANTS SEEN IN 2002.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	39	**Map Index:**	61713	**EO Index:**	61749	**Element Last Seen:**	2000-06-15
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-06-22

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33276 / -120.68800	**Accuracy:**	80 meters
UTM:	Zone-10 N3912399 E710134	**Elevation (ft):**	620
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: SOUTH OF CHORRO RESERVOIR, NORTH OF THE CALIFORNIA MENS COLONY, CAMP SAN LUIS OBISPO.

Detailed Location: NORTH OF SERPRENTINE SEEP AND STREAMLET. TRAINING AREA W.

Ecological: SERPENTINE ROCK OUTCROP. ASSOCIATED WITH NASSELLA PULCHRA, N. LEPIDA, CHLOROGALUM POMERIDIANUM, ESCHSCHOLZIA CALIFORNICA, CHORIZANTHE PALMERI, LOTUS SCOPARIUS, CENTAUREA CALCITRAPA.

General: FEWER THAN 50 PLANTS SEEN IN 2000.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Arctostaphylos cruzensis

Element Code: PDERI040B0

Arroyo de la Cruz manzanita

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	BROADLEAFED UPLAND FOREST, COASTAL BLUFF SCRUB, CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL SCRUB, & GRASSLAND.			
	Micro:	ON SANDY SOILS IN SEVERAL DIFFERENT HABITAT TYPES FROM CHAPARRAL TO COASTAL SCRUB TO WOODLAND. 60-310M.			

Occurrence No.	11	**Map Index:**	12612	**EO Index:**	20259	**Element Last Seen:**	1936-02-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-02-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.34524 / -120.75157	**Accuracy:**	1 mile
UTM:	Zone-10 N3913650 E704324	**Elevation (ft):**	200
PLSS:	T30S, R11E, Sec. 01 (M)	**Acres:**	0.0

Location: 2.4 MILES EAST OF HOLLISTER PEAK, EAST OF MORRO BAY.

Detailed Location:

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY B. BOLT.

Owner/Manager: PVT

Occurrence No.	13	**Map Index:**	12586	**EO Index:**	20258	**Element Last Seen:**	1966-01-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1966-01-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.27906 / -120.76524	**Accuracy:**	1 mile
UTM:	Zone-10 N3906280 E703247	**Elevation (ft):**	800
PLSS:	T30S, R11E, Sec. 35 (M)	**Acres:**	0.0

Location: ON SOUTH-FACING SLOPE OF BLUFFS NEAR TOP OF LOS OSOS MESA, A FEW MILES ESE OF MORRO BAY.

Detailed Location: MAPPED BETWEEN HIGHWAY 1 AND LOS OSOS VALLEY ROAD AND EAST OF TURRI ROAD.

Ecological: ON SOUTH-FACING SLOPE OF BLUFFS.

General: THREE COLLECTIONS ATTRIBUTED TO THIS SITE; ROOF IN 1961, KNIGHT AND ROOF IN 1966 AND BOLT IN 1936.

Owner/Manager: PVT

Arctostaphylos luciana

Element Code: PDERI040N0

Santa Lucia manzanita

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL.			
	Micro:	ON SHALE OUTCROPS, ON SLOPES, IN CHAPARRAL. 350-850M.			

Occurrence No.	1	**Map Index:**	28433	**EO Index:**	17572	**Element Last Seen:**	1995-06-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-06-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-11-10

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.32042 / -120.59521	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3911231 E718603	**Elevation (ft):**	2400
PLSS:	T30S, R13E, Sec. 16 (M)	**Acres:**	18.1

Location: BLACK BUTTE RESEARCH AREA. ON BURNED SUMMIT OF RIDGE IMMEDIATELY EAST OF MT. LOWE.

Detailed Location: THIS OCCURRENCE INCLUDES COLLECTIONS FROM "RIDGES WEST OF BEND IN LOPEZ CANYON", "3 MI SE OF CUESTA SUMMIT", "HEAD OF LOPEZ CANYON", & "MTNS EAST OF SAN LUIS OBISPO. ELEVATION 2500-2800 FEET".

Ecological: GROWING IN WHITE SHALE WITH SCATTERED PINUS ATTENUATA.

General: COLLECTION HISTORY FOR THIS VICINITY INCLUDES 1911 COLLECTION BY V.O. BAILEY (SN CAS), 3 COLLECTIONS IN 1964 BY R.F. HOOVER (#8620, 8621, 8651 SLO), ANONYMOUS COLLECTION FROM 1974 (#233 SLO), AND 1995 COLLECTION BY HRUSA & RAGAN (#12384).

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:**	28434	**EO Index:**	21095	**Element Last Seen:**	1936-05-04
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-05-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-11-01

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.28904 / -120.58557	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3907770 E719564	**Elevation (ft):**	2600
PLSS:	T30S, R13E, Sec. 28 (M)	**Acres:**	0.0

Location: 1.25 MILES WEST OF GAY MOUNTAIN, EAST OF SAN LUIS OBISPO.

Detailed Location:

Ecological: GROWING ON MONTEREY SHALE.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY BOLT.

Owner/Manager: UNKNOWN

Occurrence No.	3	**Map Index:**	28446	**EO Index:**	17234	**Element Last Seen:**	1966-02-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1966-02-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-11-10

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34686 / -120.62629	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3914096 E715706	**Elevation (ft):**	2000
PLSS:	T30S, R13E, Sec. 06 (M)	**Acres:**	108.1

Location: CUESTA PASS SUMMIT & 0.5 MILE EAST OF CUESTA PASS, NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED AT CUESTA PASS AND JUST EAST OF CUESTA PASS ALONG DIRT ROAD WHICH FOLLOWS THE MAIN RIDGE OF THE SANTA LUCIA RANGE.

Ecological: GROWING IN WOODLAND AMONG PINUS COULTERI AND P. ATTENUATA.

General: REPORTED IN 7 COLLECTIONS: RAYMOND (#134 UC), 1930; BOLT (#549 UC), 1936; HOOVER (#6528 SLO), 1946; ALLENDER (#13 SLO), 1962; BACIGALUPI & HECKARD (#8823 JEPS), 1963; HOOVER (#8629 SLO), 1964; GANKIN (#669) IN 1996. INCLUDES FORMER EO #6.

Owner/Manager: UNKNOWN

Occurrence No.	4	**Map Index:**	28447	**EO Index:**	17231	**Element Last Seen:**	1966-02-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1966-02-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-11-01

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.33489 / -120.60993	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3912803 E717226	**Elevation (ft):**	2200
PLSS:	T30S, R13E, Sec. 08 (M)	**Acres:**	0.0

Location: 2 MILES EAST OF CUESTA PASS, OFF OF HIGHWAY 101, NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED ABOUT 2 MILES SSE OF CUESTA PASS ALONG RIDGE ROAD TO MT. LOWE.

Ecological:

General: SITE REPORTED IN TWO COLLECTIONS BY GANKIN IN 1966; GANKIN #662 AND #666 DAV, U.C. DAVIS ARBORETUM ACCESSION #A66.089, A66.093.

Owner/Manager: USFS-LOS PADRES NF, UNKNOWN

Occurrence No.	5	**Map Index:**	28435	**EO Index:**	29483	**Element Last Seen:**	1936-04-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-04-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-11-01

Quad Summary: Arroyo Grande NE (3512025), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.24564 / -120.52067	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3903101 E725588	**Elevation (ft):**	2500
PLSS:	T31S, R14E, Sec. 07 (M)	**Acres:**	0.0

Location: 1.75 MILES NNE OF SLIDE HILL, EAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED ABOUT 1 MILE WNW OF BALD MOUNTAIN.

Ecological: GROWING IN WOODLAND-CHAMISE.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY H.C. LEE.

Owner/Manager: UNKNOWN

Occurrence No.	8	**Map Index:** 63156	**EO Index:**	63248		**Element Last Seen:**	2003-03-27
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-03-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-11-10

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35944 / -120.62472	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3915495 E715816	**Elevation (ft):**	2142
PLSS:	T29S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: SANTA MARGARITA RANCH, UPPER WATER CANYON, ABOUT 0.75 AIRMILE NNE OF CUESTA PASS.

Detailed Location: MAPPED ACCORDING TO LAT/LONG PROVIDED BY DART: N35 21' 33.6"/W120 37' 28.8"; DATUM UNKNOWN. OCCURRENCE MUCH LARGER THAN MAPPED EXTENT; NEEDS MAP DETAIL.

Ecological: STEEP SHALE SLOPES ARE COVERED WITH THREE TO FIVE FOOT SHRUBS OF ARCTOSTAPHYLOS LUCIANA, A. GLANDULOSA SSP. GLANDULOSA, AND DENDROMECON RIGIDA. THIS SITE APPARENTLY BURNED SOMETIME IN THE 1990'S.

General: ACCORDING TO DART, HABITAT THAT SUPPORTS A. LUCIANA STRETCHES ACROSS THE HIGHEST, STEEPEST RIDGES IN THE VICINITY OF WATER CANYON AND BEYOND. THOUSANDS OF SANTA LUCIANA MANZANITAS HERE. FULL EXTENT OF OCCURRENCE UNKNOWN; NEEDS REVISIT.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Arctostaphylos morroensis

Element Code: PDERI040S0

Morro manzanita

Listing Status:	**Federal:**	Threatened	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, COASTAL DUNES (PRE-FLANDRIAN), COASTAL SCRUB.			
	Micro:	ON BAYWOOD SANDS USUALLY WITH CHAPARRAL ASSOCIATES. 5-205M.			

Occurrence No.	11	**Map Index:** 12622	**EO Index:**	20188		**Element Last Seen:**	1970-01-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1970-01-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-11-01

Quad Summary: Pismo Beach (3512026), Port San Luis (3512027), San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.25968 / -120.74427	**Accuracy:**	1 mile
UTM:	Zone-10 N3904174 E705204	**Elevation (ft):**	500
PLSS:	T31S, R11E, Sec. 01 (M)	**Acres:**	0.0

Location: EDGE OF PREFUMO CANYON ROAD IN PREFUMO CANYON, SOUTHWEST OF SAN LUIS OBISPO.

Detailed Location:

Ecological:

General: THIS LOCATION IS BASED ON A SPECIMEN BY WOLF, COLL. IN 1970. IT IS PROBABLY AN OUTLYER AND IS NOT QUITE IN THE RIGHT HABITAT. MOST LIKELY REPRESENTS A SINGLE PLANT.

Owner/Manager: PVT

Arctostaphylos pechoensis

Element Code: PDERI04140

Pecho manzanita

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2			

Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL SCRUB.
	Micro:	GROWS ON SILICEOUS SHALE WITH OTHER CHAPARRAL ASSOCIATES. 150-850M.

Occurrence No.	4	**Map Index:**	28479	**EO Index:**	29684	**Element Last Seen:**	1938-10-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1938-10-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-07-14

Quad Summary:	Pismo Beach (3512026), Port San Luis (3512027)
County Summary:	San Luis Obispo

Lat/Long:	35.22529 / -120.75181	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3900343 E704605	**Elevation (ft):**	600
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location:	DAVIS CANYON, IRISH HILLS.
Detailed Location:	COLLECTED AT 600 FEET ELEVATION. VAGUE COLLECTION FROM "BETWEEN SEA CANYON AND IRISH HILLS" IS ATTRIBUTED TO THIS OCCURRENCE.
Ecological:	
General:	VICINITY REPORTED IN THREE COLLECTIONS; SCHREIBER (#2557 USFS AND #2560 RSA) IN 1938 AND SINSHEIMER (SN CAS, POM) IN 1934.
Owner/Manager:	UNKNOWN

Occurrence No.	11	**Map Index:**	63279	**EO Index:**	63371	**Element Last Seen:**	2003-05-27
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-11-30

Quad Summary:	Pismo Beach (3512026)
County Summary:	San Luis Obispo

Lat/Long:	35.22944 / -120.73943	**Accuracy:**	80 meters
UTM:	Zone-10 N3900829 E705720	**Elevation (ft):**	411
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location:	SEE CANYON, EAST OF SEE CANYON ROAD ABOUT 1.8 MILES NNW OF DAVIS CANYON CROSSING, SAN LUIS OBISPO.
Detailed Location:	ON A SOUTHWEST FACING SLOPE OF A MORRO ABOVE SEE CANYON CREEK. MAPPED FROM LAT/LONG PROVIDED BY DART: WGS84 N35 13' 46" / W120 44' 22".
Ecological:	PARENT MATERIAL IS MONTEREY SHALE WITH OUTCROPS SCATTERED ON THE HILLSIDE. THE HABITAT IS DRY, OPEN COAST LIVE OAK WOODLAND WITH SHRUBBY SPECIES SUCH AS MIMULUS AURANTIACUS, HETEROMELES ARBUTIFOLIA, LOTUS JUNCEUS VAR. BIOLETTII, ETC.
General:	TWO LARGE SHRUBS SEEN IN 2003. MANY RARE SPECIES IN THIS VICINITY.
Owner/Manager:	PVT

Occurrence No.	13	**Map Index:** 63597	**EO Index:**	63692		**Element Last Seen:**	1963-04-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1963-04-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-01-05

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.31348 / -120.60042	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910450 E718148	**Elevation (ft):**	2800
PLSS:	T30S, R13E, Sec. 17 (M)	**Acres:**	61.4

Location: ALONG CUESTA RIDGE EAST ABOUT 4 MILES SE OF CUESTA PASS.

Detailed Location: EXACT LOCATION UNKNOWN; MAPPED ALONG CUESTA RIDGE EAST TRAIL ABOUT 4 MILES SE OF CUESTA PASS.

Ecological: IN CHAPARRAL WITH ARCTOSTAPHYLOS GLADNULOSA CUSHINGIANA AND PRESUMED HYBRID BETWEEN 2 SPECIES, CEANOTHUS PAPILLOSUS, PINUS COULTERI, P. ATTENUATA, ETC.

General: ONLY SOURCE OF INFORMATION IS 1963 COLLECTION BY THORNE AND EVERETT. SITE IS OUT OF RANGE AS SPECIES IS KNOWN ONLY FROM THE PECHO HILLS. FURTHER VISITS NEEDED TO CONFIRM IDENTIFICATION.

Owner/Manager: UNKNOWN

Arctostaphylos pilosula

Element Code: PDERI04160

Santa Margarita manzanita

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3
	State:	None		**State:**	S3
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL.			
	Micro:	SHALE OUTCROPS & SLOPES; REPORTED GROWING ON DECOMPOSED GRANITE OR SANDSTONE IN SLO. 170-1100M.			

Occurrence No.	1	**Map Index:** 13323	**EO Index:**	20132		**Element Last Seen:**	1983-04-02
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1983-04-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1995-11-02

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.20774 / -120.44711	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3899067 E732390	**Elevation (ft):**	1040
PLSS:	T31S, R14E, Sec. 23 (M)	**Acres:**	0.0

Location: ALONG UPPER LOPEZ CANYON ROAD, 1.9 MILES FROM THE JUNCTION WITH HI MOUNTAIN ROAD, IN LOPEZ COUNTY PARK.

Detailed Location:

Ecological: ON SANDSTONE AND ASSOCIATED WITH CEANOTHUS, CERCOCARPUS, SALVIA, ADENOSTOMA.

General: FEWER THAN 100 PLANTS IN 1983.

Owner/Manager: SLO COUNTY

Occurrence No.	7	**Map Index:**	24168	**EO Index:**	26504	**Element Last Seen:**	1939-05-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1939-05-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-23

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.32083 / -120.44119	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3911627 E732606	**Elevation (ft):**	1625
PLSS:	T30S, R14E, Sec. 11 (M)	**Acres:**	0.0

Location: 1.1 MILES NW OF NEW DISTRICT SCHOOL, EAST END OF SANTA MARGARITA LAKE.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS AROUND THE PORTION OF SECTION 11 THAT ENCOMPASS ELEVATIONS OF 1500 FT & 1750 FT AND AT ABOUT 1 MILE NW OF NEW DISTRICT SCHOOL BASED ON TRS, ELEVATION, AND LOCATION INFORMATION FROM COLLECTION LABELS.

Ecological: CHAPARRAL, NE SLOPE.

General: SITE BASED ON SEVERAL HISTORIC COLLECTIONS FROM THIS AREA. SOME HERBARIUM RECORDS INDICATE PLANT IS AN "UNNAMED INFRAGENERIC HYBRID/INTERMEDIATE BETWEEN A. PILOSULA AND A. GLAUCA ACCORDING TO ANNOTATION BY P. WELLS, 1967."

Owner/Manager: UNKNOWN

Occurrence No.	11	**Map Index:**	13333	**EO Index:**	20127	**Element Last Seen:**	1986-05-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-05-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19149 / -120.44308	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3897273 E732804	**Elevation (ft):**	840
PLSS:	T31S, R14E, Sec. 26 (M)	**Acres:**	0.0

Location: NORTH OF CONFLUENCE OF PHOENIX CREEK & ARROYO GRANDE CREEK, EAST OF UPPER LOPEZ CANYON ROAD.

Detailed Location:

Ecological: IN CHAMISE CHAPARRAL WITH COAST LIVE OAK, BLACK SAGE ON SANTA MARGARITA FORMATION. LUPINUS LUDOVICIANUS NEARBY.

General: REPORTED AS OCCURRING NEAR THE UPPER END OF ADJACENT LUPINUS LUDOVICIANUS POPULATION IN 1986.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	13327	**EO Index:**	20126	**Element Last Seen:**	1986-07-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-07-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-23

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.21692 / -120.44605	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3900088 E732461	**Elevation (ft):**	560
PLSS:	T31S, R14E, Sec. 23 (M)	**Acres:**	0.0

Location: HUFFS HOLE CREEK NEAR CONFLUENCE WITH DRY CREEK, UPPER LOPEZ CANYON ROAD, NE OF LOPEZ LAKE.

Detailed Location:

Ecological: PLANTS IN CHAPARRAL, ASSOCIATED WITH LUPINUS LUDOVICIANUS.

General: REPORTED AS OCCURRING WITH A LUPINUS LUDOVICIANUS POPULATION IN 1986.

Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:**	39556	**EO Index:**	34558	**Element Last Seen:**	1990-06-23
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-06-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-08-27

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.33945 / -120.41520	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3913754 E734915	**Elevation (ft):**	1600
PLSS:	T30S, R15E, Sec. 06 (M)	**Acres:**	48.4

Location: NORTH OF TORO CREEK, ABOUT 1.2 MI NNE OF GAGING STATION, NEAR CONFLUENCE WITH SALINAS RIVER, E OF SANTA MARGARITA LAKE.

Detailed Location: ABOVE STEEP ROCKY HILLSIDE AND DRY FARMED AREA. SITE IS 0.25-0.5 MILE NORTHWEST OF RIVER ROAD, NORTH OF POZO ROAD. MAPPED WITHIN THE NW 1/4 SW 1/4 SECTION 6.

Ecological: OPEN, SHORT CHAMISE HABITAT ON VERY STEEP, ROCKY, OPEN SANDY SOILS. GROWING WITH ARCTOSTAPHYLOS GLAUCA SSP. GLAUCA.

General: 1 PLANT OBSERVED IN 1990, ALTHOUGH OTHER MANZANITAS ARE COMMON. THE PLANT WAS VERY SMALL.

Owner/Manager: BLM

Occurrence No.	14	**Map Index:**	85174	**EO Index:**	34559	**Element Last Seen:**	2003-01-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-01-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-29

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19927 / -120.66238	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3897645 E712812	**Elevation (ft):**	700
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	0.0

Location: VICINITY OF INDIAN KNOB, ABOUT 3.5 AIR MILES NNW OF PISMO BEACH, SOUTH OF SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION AND EXTENT OF POPULATION NOT CLEARLY INDICATED. SITE MAPPED BY CNDDB NEAR SUMMIT RIDGE OF INDIAN KNOB.

Ecological: CENTRAL MARITIME CHAPARRAL WITH PHASES DOMINATED BY ARCTOSTAPHYLOS PILOSULA; A. PILOSULA AND ADENOSTOMA; ADENOSTOMA AND SALVIA MELLIFERA. ASSOCIATED WITH ERIODICTYON ALTISSIMUM, CEANOTHUS SPP., HETEROMELES, DENDROMECON, MIMULUS, ETC.

General: RELATIVE COVER RANGES FROM LOW TO 100%. OBSERVED AT SITE IN 1966 (ABUNDANT AND FORMING PURE STANDS IN PLACES), 1980, 1982, 1985, 2002 (FORMING DENSE COLONIES), & 2003. INCLUDES FORMER A. WELLSII OCCURRENCE #9 AND A. PILOSULA OCCURRENCE #23.

Owner/Manager: PVT-GUIDETTI RANCH, TNC

Occurrence No.	15	**Map Index:**	28518	**EO Index:**	29779	**Element Last Seen:**	1936-02-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-02-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06224 / -120.51575	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3882767 E726543	**Elevation (ft):**	400
PLSS:	T11N, R35W, Sec. 01 (S)	**Acres:**	601.0

Location: SOUTH OF LOS BERROS CREEK NEAR HIGHWAY 1, SOUTHEAST OF ARROYO GRANDE.

Detailed Location: MAPPED BY CNDDB AROUND SECTION 1 BASED ON TRS INFORMATION ON COLLECTION LABEL.

Ecological: CHAPARRAL WITH TOXICODENDRON DIVERSILOBUM, MIMULUS AURANTIACUS, AND PAEONIA BROWNII.

General: SITE BASED ON 3 HISTORIC COLLECTIONS FROM THIS VICINITY. NEEDS FIELDWORK. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #1.

Owner/Manager: UNKNOWN

Occurrence No.	16	**Map Index:** 28517	**EO Index:**	29778		**Element Last Seen:**	1992-05-14
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1992-05-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-11-25

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.11968 / -120.55792	**Accuracy:**	80 meters
UTM:	Zone-10 N3889044 E722541	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 23 (M)	**Acres:**	0.0

Location: ARROYO GRANDE, ON NW-FACING SLOPE ABOVE BRANCH MILL ROAD JUST SOUTH OF THE MOUTH OF NEWSOME CANYON.

Detailed Location:

Ecological: GROWING ON STEEP NW-FACING SLOPE IN THE SHADE OF A DENSE OAK FOREST. ASSOCIATED WITH ARCTOSTAPHYLOS GLAUCA PUBERULA, PTERIDIUM AQUILINUM, MIMULUS AURANTIACUS, AND QUERCUS AGRIFOLIA.

General: ONLY 1 PLANT OBSERVED IN 1992. SHRUB IS UNLIKELY TO REPRODUCE UNDER CURRENT CONDITION OF SHADING (HENDRICKSON 1992). THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #2.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:** 28515	**EO Index:**	7569		**Element Last Seen:**	1936-04-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1936-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-24

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.15494 / -120.46200	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3893175 E731184	**Elevation (ft):**	1350
PLSS:	T32S, R14E, Sec. 10 (M)	**Acres:**	598.0

Location: TAR SPRING RIDGE; 1.5 TO 2 MILES NORTHWEST OF TAR SPRING RANCH, EAST OF ARROYO GRANDE.

Detailed Location: MAPPED BY CNDDB AROUND SECTION 10 ACCORDING TO TRS INFORMATION ON COLLECTION LABELS; ELEVATION ON ONE COLLECTION LABEL IS 1100 FEET, ELEVATION ON THE OTHER COLLECTION LABEL IS 1600 FT.

Ecological: ABUNDANT ON RIDGETOPS. IN CHAMISE CHAPARRAL WITH ARCTOSTAPHYLOS GLANDULOSA, DENDROMECON RIGIDA, AND QUERCUS BERBERIDIFOLIA.

General: ONLY SOURCES OF INFORMATION FOR THIS SITE ARE 1936 COLLECTIONS BY LEE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #3.

Owner/Manager: PVT

Occurrence No.	18	**Map Index:** 28516	**EO Index:**	12199		**Element Last Seen:**	1936-04-28
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1936-04-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-24

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.15557 / -120.42745	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3893326 E734330	**Elevation (ft):**	850
PLSS:	T32S, R14E, Sec. 12 (M)	**Acres:**	633.0

Location: 1.5 MILES NORTHWEST OF PARK RANCH, EAST OF ARROYO GRANDE.

Detailed Location: MAPPED BY CNDDB AROUND SECTION 12 ACCORDING TO TRS INFORMATION ON COLLECTION LABEL.

Ecological: CHAPARRAL-CHAMISE; ASSOCIATED WITH ADENOSTOMA FASCICULATUM, CEANOTHUS CUNEATUS, AND SALVIA MELLIFERA.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY LEE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #4.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:** 28512	**EO Index:**	29803		**Element Last Seen:**	1986-05-04
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1986-05-04
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-24

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19145 / -120.62325	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3896862 E716396	**Elevation (ft):**	300
PLSS:	T31S, R13E, Sec. 30 (M)	**Acres:**	0.0

Location: 1 MILE SOUTHWEST OF EDNA, IN ARROYO GRANDE OIL FIELD BETWEEN PRICE CANYON ROAD AND INDIAN KNOB, NORTH OF ARROYO GRANDE.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS ABOUT 1 AIR MILE SW OF EDNA AT AROUND 300 FEET IN ELEVATION BASED ON TRS AND ELEVATION INFORMATION ON COLLECTION LABELS.

Ecological: CHAPARRAL. ASSOCIATED WITH ARCTOSTAPHYLOS OBISPOENSIS (?) AND ADENOSTOMA FASCICULATUM. PRICE CANYON COLLECTION GROWING WITH QUERCUS AGRIFOLIA, TOXICODENDRON DIVERSILOBUM, AND SALVIA MELLIFERA.

General: SITE BASED ON A 1936 WIESLANDER COLLECTION AND A 1986 KNIGHT COLLECTION. NEEDS FIELDWORK. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #5.

Owner/Manager: PVT

Occurrence No.	20	**Map Index:** 28513	**EO Index:**	29804		**Element Last Seen:**	2006-09-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2006-09-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-03-01

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16937 / -120.58627	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3894493 E719823	**Elevation (ft):**	500
PLSS:	T32S, R13E, Sec. 04 (M)	**Acres:**	0.0

Location: HILL NORTH OF SUMMIT OF NOYES ROAD, 0.2 MILE SOUTHWEST OF JUNCTION WITH HIGHWAY 227, NORTH OF ARROYO GRANDE.

Detailed Location: AT TOP OF HILL JUST WEST OF JUNCTION OF HWY 227 AND NOYES RD.

Ecological: IN SANDY OR ROCKY SOIL. SCATTERED ABOUT QUERCUS AGRIFOLIA WOODLAND.

General: SITE BASED MAINLY ON COLLECTIONS FROM 1966 THROUGH 2006. 89 PLANTS OBSERVED IN 2004. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #6.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:** 37763	**EO Index:**	29805		**Element Last Seen:**	1995-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1995-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-02

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14473 / -120.60369	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891722 E718303	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 17 (M)	**Acres:**	44.5

Location: MOUTH OF CANYON NO.1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.

Detailed Location: NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD.

Ecological: GROWING AMONG COASTAL LIVE OAKS (HOLLAND AND OYLER, 1995) AND IN CHAPARRAL WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938). THE RARE CLARKIA SPECIOSA SSP. IMMACULATA IS FOUND NEARBY.

General: 10 PLANTS OBSERVED AT THIS SITE IN 1995. COLLECTION BY B. SCHREIBER IN 1938 IS ALSO ATTRIBUTED TO THIS SITE. THIS SPECIES IS APPARENTLY MORE COMMON ON NEARBY SITES. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #7.

Owner/Manager: UNKNOWN

Occurrence No.	22	**Map Index:**	28509	**EO Index:**	29787	**Element Last Seen:**	2001-05-09
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-05-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-03-01

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.16433 / -120.63060	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3893838 E715798	**Elevation (ft):**	350
PLSS:	T32S, R13E, Sec. 06 (M)	**Acres:**	0.0

Location: 3 MILES SOUTHWEST OF EDNA, UNION PACIFIC RIGHT OF WAY, EAST OF PISMO BEACH.

Detailed Location: MAPPED AS BEST GUESS BY CNDDB AROUND THE PORTION OF PRICE CANYON RD AND PISMO CREEK THAT IS ABOUT 3 MILES SW OF EDNA AND NEAR THE UNION PACIFIC RIGHT OF WAY. TWO COLLECTIONS INDICATE THAT THIS SITE IS IN SECTION 6. ELEVATIONS: 300-400 FT.

Ecological: MOSTLY ANNUAL GRASSLAND/RUDERAL HABITAT ALONG THE RIGHT OF WAY.

General: SITE BASED ON 4 COLL: WIESLANDER (1933) FROM "PISMO CRK, SEC 6", LEE (1936) FROM "PRICE CYN, 300FT, SEC 6", WELLS (1960) FROM "3 MI SW OF EDNA" & WHITE (2001) FROM "PRICE CYN, UNION PACIFIC RR ROW." WAS PREVIOUSLY A. WELLSII OCCURRENCE #8.

Owner/Manager: UNKNOWN

Occurrence No.	24	**Map Index:**	28511	**EO Index:**	29785	**Element Last Seen:**	1936-02-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-02-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.21445 / -120.66353	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3899327 E712668	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 23 (M)	**Acres:**	0.0

Location: 1.25 MILES NORTH OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO.

Detailed Location: IN PROJECTED SECTION 23. MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS THE PORTION OF SECTION 23 THAT IS ABOUT 1.25 AIR MILES NORTH OF INDIAN KNOB AND AT ABOUT 250 FEET IN ELEVATION BASED ON INFORMATION ON COLLECTION LABEL.

Ecological: IN CHAPARRAL ON SANDY SOIL. ASSOCIATED WITH SAGE, ADENOSTOMA FASCICULATUM, TOXICODENDRON DIVERSILOBUM, AND LOTUS SCOPARIUS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY LEE. NEEDS FIELDWORK. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #10.

Owner/Manager: TNC

Occurrence No.	25	**Map Index:**	85176	**EO Index:**	29786	**Element Last Seen:**	2004-07-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2004-07-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-29

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18069 / -120.70648	**Accuracy:**	80 meters
UTM:	Zone-10 N3895491 E708844	**Elevation (ft):**	200
PLSS:	T31S, R12E, Sec. 32 (M)	**Acres:**	0.0

Location: SOUTH SIDE OF AVILA BEACH ROAD, APPROXIMATELY 0.6 ROAD MILE SE OF SYCAMORE SPRINGS, SOUTH OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB ACCORDING TO COORDINATES FROM 2004 GRABER PHOTOS NEAR THE CENTER OF THE SE 1/4 OF SECTION 32.

Ecological: GROWING WITH QUERCUS AGRIFOLIA AND LOTUS SCOPARIUS.

General: SITE BASED ON 2004 GRABER PHOTOS. HISTORIC COLLECTIONS FROM THE 1930S FROM SYCAMORE SPRINGS AND 1 MILE EAST OF SYCAMORE SPRINGS WITH ELEVATIONS FROM 100-250 FT ATTRIBUTED HERE. NEEDS FIELDWORK. THIS WAS PREVIOUSLY A. WELLSII OCCURRENCE #11.

Owner/Manager: UNKNOWN

Occurrence No.	28	**Map Index:**	36552	**EO Index:**	31549	**Element Last Seen:**	1997-04-15
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-04-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-08-31

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15362 / -120.61712	**Accuracy:**	specific area
UTM:	Zone-10 N3892679 E717055	**Elevation (ft):**	500
PLSS:	T32S, R13E, Sec. 07 (M)	**Acres:**	7.8

Location: NORTH OF GROVER CITY, WEST OF CANYON NO. 1. 1.0-1.3 MILES NW OF JUNCTION CENTRAL BLVD AND NOYES ROAD.

Detailed Location:

Ecological: W-FACING SLOPE 400-580 FT ELEVATION. COASTAL SCRUB AND COAST LIVE OAK COMMUNITIES; BRIONES-PISMO LOAMY SANDS. CLARKIA SPECIOSA IMMACULATA NEARBY.

General: AT LEAST 100 PLANTS IN 1997. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #14.

Owner/Manager: PVT

Occurrence No.	29	**Map Index:** 64173	**EO Index:**	64268		**Element Last Seen:**	2003-05-08
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-03-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15611 / -120.56361	**Accuracy:**	80 meters
UTM:	Zone-10 N3893073 E721924	**Elevation (ft):**	416
PLSS:	T32S, R13E, Sec. 10 (M)	**Acres:**	0.0

Location: CORBETT (CORBIT?) CANYON, JUST SOUTH OF BEE CANYON, ARROYO GRANDE.

Detailed Location: MAPPED ACCORDING TO COORDINATES PROVIDED BY ALTHOUSE AND DART: WGS84 N35 9' 21. 7" / W120 33' 48.9".

Ecological: DISTURBED SITE COMPOSED OF FRAGMENTED COAST LIVE OAK WOODLAND, CHAPARRAL, AND GRASSLAND COMMUNITIES.

General: ROUGHLY 50-100 SHRUBS SCATTERED ACCROSS ~19 ACRES IN 2003. SITE NEEDS REVISIT IN ORDER TO FULLY MAP EXTENT OF POPULATION. THE RARE CHORIZANTHE RECTISPINA ALSO OCCURS AT THIS SITE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #15.

Owner/Manager: PVT

Occurrence No.	30	**Map Index:** 85177	**EO Index:**	64270		**Element Last Seen:**	2005-12-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-12-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14209 / -120.57076	**Accuracy:**	specific area
UTM:	Zone-10 N3891502 E721310	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 15 (M)	**Acres:**	9.0

Location: CARPENTER CANYON; JUST WEST OF CARPENTER CANYON ROAD (HWY 227) ABOUT 0.5 MILE NORTH OF PRINTZ ROAD, ARROYO GRANDE.

Detailed Location: PLANTS OCCUR IN A BAND ACROSS A SOUTHEAST FACING SLOPE BETWEEN OAK WOODLAND AND CHAPARRAL AREAS.

Ecological: CHAPARRAL, COAST LIVE OAK WOODLAND, AND ANNUAL GRASSLANDS ARE THE DOMINANT HABITATS. SOILS ARE A SANDY LOAM. ASSOCIATED WITH ADENOSTOMA FASCICULATUM, DENDROMECON RIGIDA, MIMULUS AURANTIACUS, AND HELIANTHEMUM SCOPARIUM.

General: 150-200 SHRUBS OBSERVED IN 2003. 50 SHRUBS OBSERVED ON ADJACENT PROPERTY IN 2005. THE RARE CHORIZANTHE RECTISPINA AND CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCUR ON SITE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #16.

Owner/Manager: PVT

Occurrence No.	31	**Map Index:** 64176	**EO Index:**	64271		**Element Last Seen:**	2003-08-01
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-08-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-03-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14337 / -120.59154	**Accuracy:**	specific area
UTM:	Zone-10 N3891598 E719413	**Elevation (ft):**	320
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	10.0

Location: SOUTH NOYES ROAD, CANYON NO. 2, ARROYO GRANDE.

Detailed Location: ON SOUTHEAST FACING SLOPE AND ALSO AT TOP OF SLOPE APPROXIMATELY 100 FEET EAST OF LARGE WATER TANK. MAPPED AS 2 POLYGONS NEAR WATER TANK.

Ecological: CHAPARRAL, COAST LIVE OAK WOODLAND, AND ANNUAL GRASSLANDS ARE THE DOMINANT HABITATS ON THIS PARCEL. SOILS ARE A SANDY LOAM. RARE CHORIZANTHE RECTISPINA ALSO OCCURS HERE.

General: 5 MANZANITA SHRUBS OCCUR IN A BAND ACROSS A SE FACING SLOPE BETWEEN OAK WOODLAND AND CHAPARRAL AREAS. INDIVIDUALS MORE THAN 40 YARDS APART, WITH TWO ADDITIONAL DEAD SHRUBS ONSITE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #17.

Owner/Manager: PVT

Occurrence No.	32	**Map Index:** 64177	**EO Index:**	64272		**Element Last Seen:**	2003-05-19
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-03-08

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13805 / -120.58360	**Accuracy:**	80 meters
UTM:	Zone-10 N3891026 E720151	**Elevation (ft):**	312
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: EAST OF ARROYO GRANDE, RIDGE WEST OF POORMAN CANYON, SOUTH OF PRINTZ ROAD.

Detailed Location: MAPPED ACCORDING TO COORDINATES PROVIDED BY ENGLAND: WGS84 N35 08' 17" / W120 35' 01".

Ecological: OPEN AREAS OF WITHIN THE MARGINS OF A QUERCUS AGRIFOLIA WOODLAND.

General: TWO INDIVIDUALS WERE LOCATED AND IDENTIFIED. ONE INDIVIDUAL IS AT COORDIANTES GIVEN GROWING AT THE BASE OF QUERCUS AGRIFOLIA, THE OTHER WAS LOCATED 10 METERS UPSLOPE, TO THE EAST. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #18.

Owner/Manager: PVT

Occurrence No.	33	**Map Index:** 64179	**EO Index:**	64274		**Element Last Seen:**	1985-03-05
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1985-03-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-29

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06772 / -120.56386	**Accuracy:**	1 mile
UTM:	Zone-10 N3883268 E722141	**Elevation (ft):**	
PLSS:	T11N, R35W, Sec. 04 (S)	**Acres:**	0.0

Location: NORTH END OF NIPOMO MESA; ALONG RIDGE SOUTH OF NATIVE SONS WHOLESALE NURSERY ON EL CAMPO ROAD.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED SOUTH OF NATIVE SONS WHOLESALE NURSERY.

Ecological: IN OPEN GRASSY FIELD AT SOUTHERN MARGIN OF OAK WOODLAND.

General: SITE BASED ON A 1985 COLLECTION BY GRIFFITHS. A VAGUE 1938 WIESLANDER COLLECTION FROM "LOS BERROS, 250 FT" IS ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #19.

Owner/Manager: PVT

Occurrence No.	34	**Map Index:** 64180	**EO Index:**	64275		**Element Last Seen:**	2010-06-18
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2010-06-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-02-29

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18798 / -120.69177	**Accuracy:**	specific area
UTM:	Zone-10 N3896329 E710165	**Elevation (ft):**	300
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	18.0

Location: SOUTH SLOPE OF MOUTH OF SQUIRE CANYON, EAST OF MONTE ROAD, SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS 2 POLYGONS BASED ON A 2004 ALTHOUSE & DART MAP AND A 2010 TERRA VERDE ENVIRONMENTAL CONSULTING MAP. A VAGUE 1933 JENSEN COLLECTION FROM "NEAR MILES, 500 FEET" IS ALSO ATTRIBUTED HERE.

Ecological: DENSE NORTH-FACING COAST LIVE OAK WOODLAND ON SANDY SOILS. PLANTS OCCUR IN PATCHES INTERMINGLED WITH OAK WOODLAND & GRASSLAND OPENINGS, ON SHALLOW SOILS OF DECOMPOSING SANDSTONE OUTCROPS. WITH DENDROMECON RIGIDA, MIMULUS AURANTIACUS, ETC.

General: WESTERN POLYGON: 200 PLANTS OBSERVED BY ALTHOUSE AND DART IN 2004, ALTHOUGH THEY BELIEVE THE POPULATION MAY BE AS LARGE AS 500 INDIVIDUALS. EASTERN POLYGON: 200-250 PLANTS OBSERVED IN 2010. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCC #20.

Owner/Manager: PVT

Occurrence No.	35	**Map Index:** 64182	**EO Index:**	64277		**Element Last Seen:**	1985-03-16
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1985-03-16
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2006-03-09

Quad Summary: Pismo Beach (3512026), Port San Luis (3512027)

County Summary: San Luis Obispo

Lat/Long:	35.20868 / -120.76290	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3898478 E703636	**Elevation (ft):**	1000
PLSS:	T31S, R11E, Sec. 23 (M)	**Acres:**	1452.0

Location: HIBBARD (HIBBERD?) NATURE PRESERVE, IMMEDIATELY ACROSS TRAIL NW OF CORRAL, 2.5 MILES FROM GATE.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED TO INCLUDE ENTIRE BOUNDARY OF HIBBARD NATURE PRESERVE.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1985 COLLECTION BY GRIFFITHS. NEEDS FIELDWORK. OWNED BY THE LAND CONSERVANCY OF SAN LUIS OBISPO COUNTY. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #21.

Owner/Manager: LAND CONSERVANCY, SLO COUNTY

Occurrence No.	36	**Map Index:** 64187	**EO Index:**	64282		**Element Last Seen:**	1993-09-03
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-09-03
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-03-02

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17864 / -120.61121	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3895467 E717526	**Elevation (ft):**	400
PLSS:	T31S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location: ORMONDE ROAD, 0.6 MILE (1 KILOMETER) SOUTH OF PRICE CANYON ROAD, NORTH OF PISMO BEACH.

Detailed Location: EXACT LOCATION UNKNOWN; MAPPED ~1 KILOMETER SOUTH OF PRICE CANYON ROAD ON ORMONDE ROAD NEAR COMMON CORNER OF SECTIONS 5, 6, 31, 32. MAPPED TO ENCOMPASS ORMONDE ROAD AND ADJACENT RIDGES. ELEVATIONS GIVEN RANGED FROM 300 FEET TO 510 FEET.

Ecological: CHAPARRAL.

General: BASED ON 1993 KEELEY COLLECTIONS. A 1988 COLLECTION FROM "ON ORMONDE RD" WITH THOUSANDS OF THIS SHRUB OBSERVED UNDER HIGH VOLTAGE LINES ON RIDGE ATTRIBUTED HERE AS IS 1936 COLLECTION FROM SEC 5. OCCURRENCE WAS PREVIOUSLY A. WELLSII OCC #22.

Owner/Manager: PVT

Occurrence No.	38	**Map Index:**	85178	**EO Index:**	86195	**Element Last Seen:**	1936-05-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Nipomo (3512014)

County Summary: San Luis Obispo

Lat/Long:	35.06737 / -120.38113	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3883651 E738808	**Elevation (ft):**	1100
PLSS:	T11N, R33W, Sec. 05 (S)	**Acres:**	0.0

Location: ABOUT 1/2 MILE EAST OF SUEY CREEK SCHOOL, EAST OF TWITCHELL RESERVOIR AND HUASNA VALLEY.

Detailed Location: MAPPED BY CNDDB AROUND THE PORTION OF SECTION 5 THAT IS ABOUT 0.5 MILE EAST OF SUEY CREEK SCHOOL (HISTORICAL) AND AROUND 1100 FEET IN ELEVATION BASED ON INFORMATION ON COLLECTION LABEL.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1936 LEE COLLECTION. NEEDS FIELDWORK.

Owner/Manager: PVT

Occurrence No.	40	**Map Index:**	85180	**EO Index:**	86197	**Element Last Seen:**	1975-05-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1975-05-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Huasna Peak (3512013), Nipomo (3512014), Caldwell Mesa (3512023), Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.13188 / -120.37009	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3890835 E739626	**Elevation (ft):**	1120
PLSS:	T32S, R15E, Sec. 21 (M)	**Acres:**	0.0

Location: ALONG HUASNA ROAD 1 MILE WEST OF PORTER RANCH, EAST OF ARROYO GRANDE.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS ABOUT 1 MILE WEST OF PORTER RANCH ALONG HUASNA ROAD; MAPPED AS A NON-SPECIFIC CIRCLE TO ENCOMPASS HIGHER ELEVATION AREAS ADJACENT TO ROAD SINCE ELEVATION ON COLLECTION LABEL SAYS 1120 FEET.

Ecological: CHAPARRAL EDGE WITH ADENOSTOMA, QUERCUS, LUPINUS, AND ORTHOCARPUS.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1975 WALLACE COLLECTION. NEEDS FIELDWORK.

Owner/Manager: PVT

Occurrence No.	41	**Map Index:**	85181	**EO Index:**	86198	**Element Last Seen:**	2007-03-28
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2007-03-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-03-02

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16326 / -120.51691	**Accuracy:**	80 meters
UTM:	Zone-10 N3893972 E726158	**Elevation (ft):**	610
PLSS:	T32S, R14E, Sec. 06 (M)	**Acres:**	0.0

Location: BETWEEN ARROYO GRANDE CREEK AND CANYON DE LOS ALISOS, SW OF LOPEZ LAKE.

Detailed Location: ON TALLEY FARMS PROPERTY. IN THE SE 1/4 OF THE SW 1/4 OF SECTION 6.

Ecological: COAST LIVE OAK WOODLAND.

General: 1 PLANT OBSERVED IN 2007 (ABOUT 7-10 FEET TALL AND ABOUT 10 FEET IN DIAMETER).

Owner/Manager: PVT

Occurrence No.	42	**Map Index:**	85182	**EO Index:**	86199	**Element Last Seen:**	1967-10-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1967-10-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16109 / -120.57782	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3893594 E720615	**Elevation (ft):**	500
PLSS:	T32S, R13E, Sec. 09 (M)	**Acres:**	37.0

Location: 0.7 MILE SE FROM NOYES ROAD ON HIGHWAY 227, ARROYO GRANDE.

Detailed Location: COLLECTION LABEL SAYS "0.7 MILE SOUTHWEST FROM NOYES ROAD ON STATE ROUTE 227" BUT HIGHWAY 227 DOES NOT GO IN A SW DIRECTION FROM ITS JUNCTION WITH NOYES RD. MAPPED BY CNDDB AS BEST GUESS 0.7 MILE SE FROM NOYES ROAD ON HIGHWAY 227.

Ecological: SANDY SOIL.

General: SITE BASED ON GANKIN COLLECTIONS FROM 1967. 1965 GANKIN COLLECTIONS FROM "SUMMIT CARPENTER CANYON" ARE ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: PVT

Occurrence No.	43	**Map Index:**	85183	**EO Index:**	86200	**Element Last Seen:**	2009-06-09
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2009-06-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.18423 / -120.60533	**Accuracy:**	80 meters
UTM:	Zone-10 N3896100 E718047	**Elevation (ft):**	230
PLSS:	T31S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location: ABOUT 3/4 MILE EAST OF THE JUNCTION OF PRICE CANYON WITH CANADA VERDE, NNE OF PISMO BEACH.

Detailed Location: MAPPED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 32.

Ecological: COAST LIVE OAK WOODLAND ON STEEP, ROCKY/SANDY SOIL SLOPE. THE RARE CLARKIA SPECIOSA SSP. IMMACULATA, SCROPHULARIA ATRATA, AND DELPHINIUM PARRYI SSP. BLOCHMANIAE WERE ALSO OBSERVED AT THIS SITE.

General: 1 PLANT OBSERVED IN 2009.

Owner/Manager: PVT

Occurrence No.	44	**Map Index:**	80486	**EO Index:**	86226	**Element Last Seen:**	2010-08-29
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-08-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-28

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.20442 / -120.67546	**Accuracy:**	80 meters
UTM:	Zone-10 N3898189 E711608	**Elevation (ft):**	665
PLSS:	T31S, R12E, Sec. 27 (M)	**Acres:**	0.0

Location: APPROXIMATELY 1 AIR MILE NW OF INDIAN KNOB; NEAR THE SOUTH END OF BALM RIDGE WAY, SOUTH OF SAN LUIS OBISPO.

Detailed Location: WITHIN THE BARON CANYON HOUSING DEVELOPMENT.

Ecological: GROWING IN DENSE CHAPARRAL WITH HETEROMELES ARBUTIFOLIA. ON STEEP, SHALE SLOPES.

General: 300-500 PLANTS OBSERVED IN 2010; SMALL NUMBER OF PLANTS WERE REMOVED FOR THE DEVELOPMENT OF A SINGLE FAMILY RESIDENCE.

Owner/Manager: PVT

Occurrence No.	45	**Map Index:**	85205	**EO Index:**	86227	**Element Last Seen:**	2010-06-20
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2010-06-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-28

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18094 / -120.71793	**Accuracy:**	80 meters
UTM:	Zone-10 N3895494 E707801	**Elevation (ft):**	550
PLSS:	T31S, R12E, Sec. 32 (M)	**Acres:**	0.0

Location: JUST EAST OF AVILA BEACH; APPROXIMATELY 0.4 AIR MILE SSW OF SYCAMORE SPRINGS, NORTH OF MALLAGH LANDING.

Detailed Location: IN THE WEST 1/2 OF THE SW 1/4 OF SECTION 32.

Ecological: AT THE TOP OF A RIDGELINE. SHALE DOMINATED STEEP SLOPES. SURROUNDING VEGETATION IS CHARACTERIZED BY CHAPARRAL DOMINATED SPECIES INCLUDING QUERCUS AGRIFOLIA, PICKERINGIA MONTANA, AND VARIOUS WEEDY SPECIES.

General: 35 PLANTS OBSERVED IN 2010, BUT LANGLE NOTED THAT THERE MAY HAVE BEEN MANY MORE PLANTS IN THIS OCCURRENCE THAN WERE OBSERVED.

Owner/Manager: PVT

Occurrence No.	51	**Map Index:**	85213	**EO Index:**	86235	**Element Last Seen:**	1972-08-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1972-08-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-28

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34887 / -120.63085	**Accuracy:**	1 mile
UTM:	Zone-10 N3914309 E715287	**Elevation (ft):**	1500
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	0.0

Location: CUESTA GRADE AND CUESTA RIDGE, ABOUT 8 MILES NORTH OF SAN LUIS OBISPO.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS NEAR CUESTA PASS. ONE COLLECTION LABEL SAYS "CUESTA GRADE, HWY 101, 1200 FT" AND THE OTHER SAYS "CUESTA RIDGE, W OF HWY 101, 8 MILES N OF SAN LUIS OBISPO, 1800 FT."

Ecological: ON STEEP BANK ABOVE ROAD.

General: SITE BASED ON A 1971 SHEVOCK COLLECTION AND A 1972 TILFORTH & DOURLEY COLLECTION. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	54	**Map Index:**	85233	**EO Index:**	86255	**Element Last Seen:**	2008-02-29
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2008-02-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-02-29

Quad Summary: Nipomo (3512014)

County Summary: San Luis Obispo

Lat/Long:	35.08503 / -120.39576	**Accuracy:**	80 meters
UTM:	Zone-10 N3885575 E737422	**Elevation (ft):**	1300
PLSS:	T12N, R33W, Sec. 30 (S)	**Acres:**	0.0

Location: HUASNA WELL SITE; JUST WEST OF TWITCHELL RESERVOIR NEAR THE HEAD OF TIM O'LEARY CANYON, HUASNA VALLEY.

Detailed Location: MAPPED BY CNDDB AROUND "WELL PAD 2" BUT THERE ARE ALSO PLANTS ALONG THE ROAD TO THIS WELL PAD AND MAY BE ADDITIONAL PLANTS JUST NORTH OF "WELL PAD 2" AT "WELL PAD 1" ACCORDING TO SOURCES.

Ecological: SURROUNDED BY COAST LIVE OAK WOODLAND.

General: AT LEAST 13 SHRUBS OBSERVED AT THIS SITE IN 2007 AND 2008; THESE PLANTS WILL BE REMOVED. AN ADDITIONAL 3 SHRUBS WERE OBSERVED SOMEWHERE ALONG ACCESS ROAD IN 2008; UNKNOWN IF THEY WILL BE IMPACTED. NEED MAP DETAIL FOR THIS AREA.

Owner/Manager: PVT

Arctostaphylos rudis

Element Code: PDERI041E0

sand mesa manzanita

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, COASTAL SCRUB.			
	Micro:	ON SANDY SOILS IN LOMPOC/NIPOMO AREA. 25-230M.			

Occurrence No.	15	**Map Index:** 13167	**EO Index:**	398		**Element Last Seen:**	1988-07-28
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-07-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-01

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05487 / -120.53819	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3881899 E724517	**Elevation (ft):**	300
PLSS:	T11N, R35W, Sec. 11 (S)	**Acres:**	0.0

Location: 1.5 MILES SOUTH OF LOS BERROS ALONG BLACK LAKE CANYON, NIPOMO MESA.

Detailed Location: ON BOTH SIDES OF UPPER CANYON, NORTH OF BLACK LAKE GOLF COURSE HOUSING DEVELOPMENT. NEAR BASINS A AND B.

Ecological: COASTAL SAGE SCRUB/DUNE SCRUB/MARITIME CHAPARRAL/COAST LIVE OAK WOODLAND. GROWING IN DRY SAND WITH ERICAMERIA ERICOIDES, ERIOGONUM PARVIFOLIUM, CEANOTHUS IMPRESSUS, TOXICODENDRON DIVERSILOBUM, PTERIDIUM AQUILINUM, AND QUERCUS AGRIFOLIA.

General: 200 PLANTS IN 1988.

Owner/Manager: PVT

Occurrence No.	16	**Map Index:** 28709	**EO Index:**	397		**Element Last Seen:**	1988-07-28
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-07-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-01

Quad Summary: Nipomo (3512014), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03963 / -120.50637	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3880281 E727462	**Elevation (ft):**	350
PLSS:	T11N, R34W, Sec. 18 (S)	**Acres:**	159.6

Location: 2 MILES WEST OF NIPOMO, ALONG BOTH SIDES OF POMEROY ROAD BETWEEN WILLOW ROAD AND W TEFFT STREET, NIPOMO MESA.

Detailed Location: MAPPED AS PER DIRECTIONS; NO MAP RECEIVED AT CNDDB FOR MAIN PORTION OF THIS POPULATION. TWO SUB-POPULATIONS LOCATED EAST OF POMEROY AND NORTH OF JUNIPER ROAD.

Ecological: IN AND AROUND OAK TREES. MANY OF THE MANZANITA HAVE BEEN CLEARED; WHAT REMAINS MAY NOT BE VIABLE. ALSO ASSOCIATED WITH ADENOSTOMA FASCICULATUM. SANDY SOIL, RELATIVELY LEVEL TERRAIN.

General: 85 PLANTS IN MAIN POMEROY ROAD POPULATION IN 1988. 50-75 PLANTS OBSERVED IN TWO COLONIES EAST AND NORTH OF POMEROY ROAD IN 1992.

Owner/Manager: PVT

Occurrence No.	18	**Map Index:**	13221	**EO Index:**	400	**Element Last Seen:**	1990-07-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-07-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-10-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07077 / -120.51351	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3883719 E726725	**Elevation (ft):**	460
PLSS:	T12N, R35W, Sec. 36 (S)	**Acres:**	0.0

Location: ABOUT 3 MILES NORTHWEST OF NIPOMO NEAR SUMMIT STATION ROAD, NIPOMO MESA.

Detailed Location: PLANTS FOUND IN THE VICINITY EAST OF SUMMIT STATION ROAD AT ABOUT THE 460 FT ELEVATION IN 1990 (NO MAP).

Ecological: ASSOCIATED WITH CEANOTHUS IMPRESSUS, ARTEMISIA CALIFORNICA, ERICAMERIA ERICOIDES, Q. AGRIFOLIA, ADENOSTOMA FASCICULATUM, & RHAMNUS CALIFORNICA.

General: FEWER THAN 50 PLANTS IN 1990. NO MAP RECEIVED AT CNDDB.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:**	13186	**EO Index:**	399	**Element Last Seen:**	1990-07-23
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-07-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-01-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07179 / -120.52841	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3883798 E725363	**Elevation (ft):**	380
PLSS:	T12N, R35W, Sec. 35 (S)	**Acres:**	198.5

Location: SOUTHEAST OF LOS BERROS AND WEST OF HWY 101; EXTENDS NORTH FROM SUMMIT STATION ROAD FOR ABOUT ONE MILE, NIPOMO MESA.

Detailed Location: THIS SITE PROBABLY INCLUDES A 1960 COLLECTION BY HOOVER (#8513 OBI) FROM "NIPOMO MESA, JUST ABOVE LOS BERROS" AND A 1970 COLLECTION BY MULLER (#2952 SBBG) FROM "GAS LINE MAINTENANCE ROAD TURNING OFF OF POMEROY-LOS BERROS ROAD".

Ecological: SANDY SOIL WITH QUERCUS AGRIFOLIA, ADENOSTOMA FASCICULATUM, CEANOTHUS IMPRESSUS VAR. NIPOMENSIS, RHAMNUS CROCEA, SALVIA MELLIFERA.

General: SCATTERED PLANTS IN 1970, AT LEAST 300 PLANTS IN 1987. ONLY MAP RECEIVED IS VAGUE ONE FROM 1987.

Owner/Manager: UNKNOWN

Occurrence No.	20	**Map Index:** 39599	**EO Index:**	34601		**Element Last Seen:**	1958-02-05
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1988-07-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: Santa Maria (3412084), Guadalupe (3412085), Nipomo (3512014), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01298 / -120.50488	**Accuracy:**	1 mile
UTM:	Zone-10 N3877328 E727672	**Elevation (ft):**	220
PLSS:	T11N, R34W, Sec. 19 (S)	**Acres:**	0.0

Location: NEAR JUNCTION OF NIPOMO-GUADALUPE RD (NIPOMO-OSO FLACO RD) AND GARBAGE DUMP, NIPOMO MESA.

Detailed Location: "OFF OF ROAD 0.25 MILE FROM JCT OF NIPOMO-GUADALUPE RD AND FROM GARBAGE DUMP". EXACT LOCATION NOT KNOWN; MAPPED ALONG WHAT IS NOW NAMED DIVISION STREET ABOVE SANTA MARIA VALLEY.

Ecological: ASSOCIATED WITH ADENOSTOMA FASCICULATUM.

General: NOT ABUNDANT WHEN COLLECTED BY GANKIN IN 1958. MCLEOD SEARCHED AREA IN 1988, NO PLANTS OBSERVED; HE NOTED THAT THERE WAS NO AVAILABLE HABITAT ANYWHERE IN THE AREA.

Owner/Manager: UNKNOWN

Occurrence No.	24	**Map Index:** 13122	**EO Index:**	20114		**Element Last Seen:**	1980-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1980-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1989-08-11

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05515 / -120.56809	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3881863 E721789	**Elevation (ft):**	80
PLSS:	T12N, R35W, Sec. 09 (S)	**Acres:**	0.0

Location: BLACK LAKE CANYON, NIPOMO MESA.

Detailed Location: MAPPED ABOUT 1.6 MILES EAST OF HIGHWAY 1 ALONG BOTH SIDES OF THE CREEK.

Ecological: CHAPARRAL.

General:

Owner/Manager: PVT

Occurrence No.	30	**Map Index:**	39588	**EO Index:**	34590	**Element Last Seen:**	1992-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-01

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04510 / -120.53149	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3880830 E725156	**Elevation (ft):**	320
PLSS:	T11N, R35W, Sec. 11 (S)	**Acres:**	23.6

Location: 2 MILES SOUTH LOS BERROS, SOUTH OF WILLOW ROAD BETWEEN POMEROY ROAD AND BLACK LAKE GOLF COURSE, NIPOMO MESA.

Detailed Location: PARCEL IS ABOUT 0.25-0.5 MILE WEST OF POMEROY ROAD AND UP TO 0.3 MILE SOUTH OF WILLOW ROAD.

Ecological: MARITIME CHAPARRAL AND COASTAL DUNE SCRUB WITH SCATTERED QUERCUS AGRIFOLIA. GROWING WITH ADENOSTOMA, ARTEMISIA CALIFORNICA, BACCHARIS PILULARIS, CEANOTHUS CUNEATUS, C. IMPRESSUS, CERCOCARPUS BETULOIDES, LOTUS SCOPARIUS, MIMULUS, ET AL.

General: ABOUT 150 PLANTS OBSERVED IN 1992. THE RARE CLARKIA SPECIOSA SSP. IMMACULATA ALSO OCCURS AT THIS SITE AS DOES THE UNCOMMON PRUNUS FASCICULATA SSP. PUNCTATA.

Owner/Manager: PVT

Occurrence No.	31	**Map Index:**	39604	**EO Index:**	34606	**Element Last Seen:**	1988-09-28
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-09-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-01

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06474 / -120.55419	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3882958 E723031	**Elevation (ft):**	300
PLSS:	T11N, R35W, Sec. 03 (S)	**Acres:**	66.4

Location: NORTH OF BLACK LAKE CANYON ALONG CHESAPEAKE PLACE, ABOUT 1 MILE SSW OF LOS BERROS, NIPOMO MESA.

Detailed Location: MAPPED IN SMALL VALLEY WITH THE AREA OF CHESAPEAKE PLACE FROM CAMINO PERILLO WEST TO ZENON WAY, NORTH OF BLACK LAKE CANYON.

Ecological: GROWING WITH ERICAMERIA ERICOIDES, ERIOGONUM PARVIFOLIUM, CROTON CALIFORNICUS, ERIASTRUM DENSIFLORUM, QUERCUS AGRIFOLIA, PTERIDIUM AQUILINUM, RHAMNUS CALIFORNICA, R. CROCEA, AND MIMULUS AURANTIACUS. ON N AND S-FACING SLOPES.

General: 300 PLANTS OBSERVED IN 1988.

Owner/Manager: PVT

Astragalus didymocarpus var. milesianus

Element Code: PDFAB0F2X3

Miles' milk-vetch

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	COASTAL SCRUB.			
	Micro:	CLAY SOILS. 20-90M.			

Occurrence No.	5	**Map Index:**	46254	**EO Index:**	46254	**Element Last Seen:**	1936-03-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2001-10-25

Quad Summary: Huasna Peak (3512013), Nipomo (3512014)

County Summary: San Luis Obispo

Lat/Long:	35.09621 / -120.37651	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3886861 E739145	**Elevation (ft):**	900
PLSS:	T32S, R15E, Sec. 33 (M)	**Acres:**	39.7

Location: 1.4 MI N OF PORTER RANCH.

Detailed Location: MAPPED AS BEST GUESS ALONG ROAD 1.4 MI N OF PORTER RANCH BY CNDDB.

Ecological: GRASS, 25% SLOPE.

General: NEEDS FIELDWORK,TRS (T32S R15E SEC 10) CITED BY SOURCE MAY BE INCORRECT.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	46255	**EO Index:**	46255	**Element Last Seen:**	1886-05-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1886-05-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2001-10-25

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28272 / -120.68215	**Accuracy:**	4/5 mile
UTM:	Zone-10 N3906859 E710796	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 27 (M)	**Acres:**	0.0

Location: SAN LUIS MOUNTAIN, LOWEST W SLOPE.

Detailed Location: TWO COLLECTIONS MAPPED TOGETHER AT CERRO SAN LUIS OBISPO AS BEST GUESS.

Ecological:

General: NEEDS FIELDWORK, INCLUDES 2 COLLECTIONS BY SUMMERS.

Owner/Manager: UNKNOWN

Occurrence No.	7	**Map Index:**	51319	**EO Index:**	46256	**Element Last Seen:**	2005-04-29
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-04-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-09-06

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25884 / -120.66197	**Accuracy:**	80 meters
UTM:	Zone-10 N3904254 E712694	**Elevation (ft):**	170
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: END OF MARGARITA AVENUE, 0.6 MILE EAST OF HIGHWAY 101, CITY OF SAN LUIS OBISPO.

Detailed Location: ADJACENT TO A SEASONAL STREAM. MAPPED ACCORDING TO COORDINATES PROVIDED BY DART. FOUR OLDER COLLECTIONS FROM SAN LUIS OBISPO ATTRIBUTED TO THIS SITE.

Ecological: GRAZED GRASSLAND HABITAT ON SERPENTINE CLAY SOILS. TWO SEASONAL STREAMS AND WETLAND SEEPS OCCUR IN VICINITY. ADJACENT TO A SEASONAL STREAM WITH NASELLA PULCHRA, LOLIUM MULTIFLORUM, LOMATIUM CARUIFOLIUM, SIDALCEA MALVIFLORA, AND OTHERS.

General: 25 PLANTS SEEN IN 2005. A COLLECTION WILL BE DEPOSITED AT THE HOOVER HERBARIUM AT CAL POLY STATE UNIVERSITY. THE RARE CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCURS AT THIS SITE.

Owner/Manager: PVT-KING VENTURES

Lupinus ludovicianus

Element Code: PDFAB2B2G0

San Luis Obispo County lupine

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND.			
	Micro:	OPEN AREAS IN SANDY SOIL, SANTA MARGARITA FORMATION. 50-525M.			

Occurrence No.	1	**Map Index:** 13455	**EO Index:** 19193	**Element Last Seen:**	1936-05-06
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1936-05-06
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.16268 / -120.39194	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3894199 E737545	**Elevation (ft):**	1160
PLSS:	T32S, R15E, Sec. 08 (M)	**Acres:**	0.0

Location: 1 MI N OF PARK RANCH.

Detailed Location:

Ecological:

General: SP SEEN IN 1936.

Owner/Manager: PVT

Occurrence No.	2	**Map Index:** 13423	**EO Index:** 19194	**Element Last Seen:**	1986-05-09
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	1986-05-09
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	1998-12-23

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.20606 / -120.40587	**Accuracy:**	specific area
UTM:	Zone-10 N3898977 E736151	**Elevation (ft):**	920
PLSS:	T31S, R15E, Sec. 30 (M)	**Acres:**	4.2

Location: ARROYO GRANDE CREEK, ABOUT 2.1 MILES EAST OF RANGER STATION ON HI MOUNTAIN ROAD.

Detailed Location: MAPPED ALONG SOUTH SIDE OF ROAD SOUTH OF ARROYO GRANDE CREEK. WITHIN THE N 1/2 NE 1/4 SECTION 30.

Ecological: IN COAST LIVE OAK WOODLAND IN SANTA MARGARITA FORMATION, SANDY SOIL.

General: 1000+ PLANTS IN 1986. GRAZING AND CULTIVATION IN VICINITY. MANY SEEDLINGS NOTED.

Owner/Manager: PVT

Occurrence No.	4	**Map Index:**	13411	**EO Index:**	19196	**Element Last Seen:**	1933-06-28
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	1986-07-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1989-08-11

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.19830 / -120.41127	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3898104 E735681	**Elevation (ft):**	760
PLSS:	T31S, R15E, Sec. 30 (M)	**Acres:**	0.0

Location: SAUCELITO CANYON, UPPER ARROYO GRANDE VALLEY.

Detailed Location:

Ecological:

General: POSSIBLY EXTIRPATED BY AGRICULTURE.

Owner/Manager: PVT

Occurrence No.	5	**Map Index:**	13340	**EO Index:**	12643	**Element Last Seen:**	1986-05-09
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-05-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-03-17

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.18976 / -120.44006	**Accuracy:**	specific area
UTM:	Zone-10 N3897088 E733084	**Elevation (ft):**	800
PLSS:	T31S, R14E, Sec. 35 (M)	**Acres:**	15.8

Location: CANYON OF ARROYO GRANDE CREEK, ABOUT 4.5 MILES EAST OF LOPEZ DAM, ABOVE CONFLUENCE WITH PHOENIX CREEK.

Detailed Location: MAPPED DUE NORTH OF CONFLUENCE OF ARROYO GRANDE CREEK AND PHOENIX CREEK.

Ecological: IN CHAMISE CHAPARRAL WITH BLACK SAGE, ERODIUM, MUILLA, AND BROMUS. ARCTOSTAPHYLOS PILOSULA SSP. PILOSULA GROWS NEAR UPPER END OF OCCURRENCE. ON SANTA MARGARITA FORMATION OF SAND OR SANDSTONE.

General: 2000+ PLANTS OBSERVED IN 1986. ONE OF 2 LARGEST POPULATIONS KNOWN.

Owner/Manager: PVT

Occurrence No.	6	**Map Index:**	12854	**EO Index:**	19192	**Element Last Seen:**	1980-XX-XX
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	1986-07-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-03-17

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.20218 / -120.64567	**Accuracy:**	specific area
UTM:	Zone-10 N3898003 E714327	**Elevation (ft):**	320
PLSS:	T31S, R12E, Sec. 25 (M)	**Acres:**	12.5

Location: ABOUT 0.8 MILE ENE OF INDIAN KNOB ALONG BOTH SIDES OF DIRT ROAD, NORTH OF PISMO BEACH.

Detailed Location: MAPPED ALONG BOTH SIDES OF ROAD WITHIN THE SW 1/4 NW 1/4 SECTION 25.

Ecological: ON SILICEOUS SANDSTONE OF SANTA MARGARITA FORMATION.

General: 200 PLANTS SEEN IN 1980; REDUCED TO 60 PLANTS AFTER CATTLE DRIVEN THROUGH SITE. SITE HAS NOT BEEN SEEN SINCE 1980; ACCESS LIMITED.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:** 13474	**EO Index:**	12332		**Element Last Seen:**	1994-06-14
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1994-06-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2010-03-17

Quad Summary: Pozo Summit (3512033), Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.35346 / -120.38725	**Accuracy:**	specific area
UTM:	Zone-10 N3915374 E737415	**Elevation (ft):**	1720
PLSS:	T29S, R15E, Sec. 32 (M)	**Acres:**	130.9

Location: PARK HILL ROAD, NORTH AND EAST OF RIVER ROAD, BETWEEN TORO CREEK AND YARO CREEK, NORTHEAST OF SANTA MARGARITA RESERVOIR.

Detailed Location: MAPPED WITHIN THE NE 1/4 OF THE NW 1/4 OF SECTION 32, EAST HALF OF SECTION 32, THE SW 1/4 OF THE NW 1/4 OF SECTION 33, AND THE WEST HALF OF THE SW 1/4 OF SECTION 33.

Ecological: ON HILLSIDES AND ADJACENT FLATLANDS WITH QUERCUS LOBATA, Q. AGRIFOLIA, AND PINUS SABINIANA. ASSOCIATED WITH ORTHOCARPUS, LASTHENIA, PENSTEMON, LUPINUS NANUS, BROMUS, CRYPTANTHA, AND CHORIZANTHE. ON SANDY SOILS OF SANTA MARGARITA FORMATION.

General: 2000+ PLANTS OBSERVED IN 1986. OBSERVED BUT NOT COUNTED IN 1987 AND 1990 THROUGH 1994. INCLUDES FORMER OCCURRENCES #8 AND 9. SITE VOLUNTARILY REGISTERED WITH TNC. PROBABLY THE LARGEST OCCURRENCE.

Owner/Manager: PVT

Occurrence No.	10	**Map Index:** 13067	**EO Index:**	19195		**Element Last Seen:**	1906-05-17
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1986-06-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-11-20

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16830 / -120.59267	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3894361 E719244	**Elevation (ft):**	520
PLSS:	T32S, R13E, Sec. 04 (M)	**Acres:**	0.0

Location: OAK PARK (SCH) ALONG ROAD 1.9 MILES SOUTHEAST OF TIBER SIDING ON SPRR, 2 MILES SOUTH OF EDNA STATION.

Detailed Location:

Ecological:

General: MALCOLM MCLEOD AND RHONDA RIGIGNS-PIMENTEL HAVE REPEATEDLY SEARCHED AREA, BUT NO PLANTS FOUND. OAK PARK SCHOOL WAS RAZED MANY YEARS AGO AND HOUSE NOW ON SITE.

Owner/Manager: PVT

Occurrence No.	11	**Map Index:**	13402	**EO Index:**	12642	**Element Last Seen:**	1958-06-05
Occ. Rank:	None			**Presence:**	Extirpated	**Site Last Seen:**	1986-05-30
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1994-06-30

Quad Summary: Nipomo (3512014), Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.12665 / -120.41308	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3890151 E735723	**Elevation (ft):**	1086
PLSS:	T32S, R14E, Sec. 19 (M)	**Acres:**	0.0

Location: SUMMIT BETWEEN ARROYO GRANDE & HUASNA.

Detailed Location:

Ecological:

General: REPORTED BY RIGGINS IN 1980 TO BE EXTIRPATED. FIELD IN AREA IS CULTIVATED AND HEAVILY GRAZED.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:**	12899	**EO Index:**	13876	**Element Last Seen:**	1982-04-09
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1982-04-09
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2010-03-17

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19729 / -120.63390	**Accuracy:**	specific area
UTM:	Zone-10 N3897486 E715411	**Elevation (ft):**	440
PLSS:	T31S, R12E, Sec. 25 (M)	**Acres:**	44.6

Location: HILLS N OF PRICE CANYON, N OF PISMO CR, NNE OF PISMO BEACH.

Detailed Location:

Ecological: PLANTS ON SANTA MARGARITA FORMATION SAND.

General: ACCESS DENIED SINCE 1980. PLANTS DO BEST AROUNG GOPHER DIGGINGS.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:**	36828	**EO Index:**	19189	**Element Last Seen:**	1986-XX-XX
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-23

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.21726 / -120.44611	**Accuracy:**	specific area
UTM:	Zone-10 N3900125 E732454	**Elevation (ft):**	560
PLSS:	T31S, R14E, Sec. 23 (M)	**Acres:**	2.8

Location: HUFFS HOLE NEAR CONFLUENCE WITH DRY CREEK ALONG LOPEZ CANYON ROAD, NORTHEAST OF LOPEZ LAKE.

Detailed Location: ALONG LOPEZ CANYON ROAD ABOUT 2.7 MILES NORTH OF HI MOUNTAIN ROAD. MAPPED WITHIN THE NE 1/4 NW 1/4 SECTION 23.

Ecological: AREA IS HILLY WITH OAK TREES AND DIVERSE CHAPARRAL. ARTCTOSTAPHYLOS PILOSULA SSP PILOSULA IN VICINITY.

General: 2 PLANTS ON NORTH SIDE OF ROAD CUT, SEVERAL BEHIND GATE ALONG HUFFS ROAD (VANDERWIER 1980). RIGGINS-PIMENTEL HAS SEEN UP TO 20 PLANTS, BUT NUMBER DOWN AS A RESULT OF ROAD MAINTENANCE (MCLEOD 1986).

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	20	**Map Index:**	13441	**EO Index:**	19188	**Element Last Seen:**	1986-XX-XX
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-23

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.20512 / -120.40055	**Accuracy:**	80 meters
UTM:	Zone-10 N3898886 E736638	**Elevation (ft):**	880
PLSS:	T31S, R15E, Sec. 29 (M)	**Acres:**	0.0

Location: SOUTH OF ARROYO GRANDE CREEK, ABOUT 2.5 MILES EAST OF ARROYO GRANDE RANGER STATION.

Detailed Location: MAPPED ALONG SOUTH SIDE OF ROAD ADJACENT TO BARLEY FIELD, MOSTLY WITHIN THE NW 1/4 NW 1/4 SECTION 29.

Ecological:

General: ABOUT 50 PLANTS OBSERVED IN 1982, 100 PLANTS IN 1986.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:**	36818	**EO Index:**	19186	**Element Last Seen:**	1982-05-20
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1982-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-23

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.18526 / -120.40911	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3896663 E735916	**Elevation (ft):**	1040
PLSS:	T31S, R15E, Sec. 31 (M)	**Acres:**	0.0

Location: SAUCELITO RIDGE, SOUTHEAST OF POTRERO FIELD & EAST OF LOPEZ LAKE.

Detailed Location: EXACT LOCATION NOT KNOWN. SITE IS DESCRIBED AS "T31S R15E SECTION 31 (UNCHARTED), RIDGE SE OF POTRERO FIELD...ACCESS VIA FIRE BREAK SAUCILITO CANYON 2.3 MILES SOUTH OF HI MOUNTAIN ROAD...ON SE-FACING SLOPES"

Ecological: ON OPEN SLOPES BORDERING CHAMISE DOMINATED CHAPARRAL.

General: ABOUT 150-200 PLANTS REPORTED IN 1982. FAIRLY INACCESSIBLE.

Owner/Manager: PVT

Occurrence No.	24	**Map Index:** 24010	**EO Index:**	7299		**Element Last Seen:**	2004-06-12
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-06-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-19

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35451 / -120.55121	**Accuracy:**	specific area
UTM:	Zone-10 N3915110 E722509	**Elevation (ft):**	1200
PLSS:	T29S, R13E, Sec. 35 (M)	**Acres:**	2.1

Location: SANTA MARGARITA RANCH, APPROX 0.6 MILE WEST OF JCT OF POZO ROAD AND LAS PILITAS ROAD, CUESTA RIDGE VINEYARD.

Detailed Location: WEST OF UNMAPPED DIRT ROAD ON THE NE SIDE OF LOW RIDGE. MAPPED IN SE1/4 OF SW1/4 SEC 35.

Ecological: IN GRASSLAND/SAVANNA WITH VALLEY OAK. ASSOCIATED WITH CHORIZANTHE RECTISPINA, TRICHOSTEMMA LANCEOLATUM, CLARKIA SPECIOSA SSP. SPECIOSA, LESSINGIA FILAGINIFOLIA, LINANTHUS LINIFLORUS, NAVARRETIA ATRACTYLOIDES, BROMUS HORDEACEUS, ETC.

General: 30 PLANTS OVER ABOUT 1/20 ACRE IN 1993. 250 PLANTS SEEN IN 2004. PLANTS WERE NOT EXTIRPATED BY VINEYARD INSTALLATION IN 2000.

Owner/Manager: PVT

Lupinus nipomensis

Element Code: PDFAB2B550

Nipomo Mesa lupine

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	COASTAL DUNES.			
	Micro:	DRY SANDY FLATS, RESTRICTED TO BACK DUNES, ASSOC. WITH CENTRAL DUNE SCRUB HABITAT - A RARE COMMUNITY TYPE. 10-50 M.			

Occurrence No.	1	**Map Index:** 13015	**EO Index:**	19046		**Element Last Seen:**	1998-05-13
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-05-13
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-12-24

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03570 / -120.60246	**Accuracy:**	specific area
UTM:	Zone-10 N3879630 E718706	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	8.6

Location: JUST SOUTHEAST OF JACK LAKE, SOUTH OF OCEANO, NIPOMO MESA.

Detailed Location: MAPPED SOUTH OF LAKE ALONG BOTH SIDES OF 4WD ROAD, ABOUT 0.4-0.5 MILE WEST OF RR TRACKS.

Ecological: CENTRAL COAST DUNE SCRUB WITH DISTURBED, SPARSE VEGETATION DOMINATED BY ERHARTA CALYCINA AND ERICAMERIA ERICOIDES WITH HORKELIA CUNEATA, CORETHROGYNE FILIFOLIA, CASTILLEJA EXSERTA, LAYIA GLANDULOSA, LUPINUS BICOLOR, BROMUS DIANDRUS, ET AL.

General: OBSERVED IN 1967, NOT SEEN IN 1980-1981, 17 PLANTS IN 1984, 83 IN 1985, 23 IN 1986, 177 IN 1987, 276 IN 1988, 149 IN 1998. OTHER RARE PLANTS IN AREA INCLUDE: DELPHINIUM PARRYI BLOCHMANIAE, CASTILLEJA MOLLIS, ERIGERON FOLIOSUS BLOCHMANIAE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	2	**Map Index:** 13078	**EO Index:**	13430		**Element Last Seen:**	2004-03-25
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-03-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04442 / -120.58839	**Accuracy:**	specific area
UTM:	Zone-10 N3880628 E719967	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 08 (S)	**Acres:**	74.3

Location: PGE CALLENDER SWITCHING STATION, NORTH OF SANTA MARIA OIL REFINERY BETWEEN HIGHWAY 1 & RR TRACKS, SOUTH OF OCEANO.

Detailed Location: SEVERAL COLONIES MAPPED IN AREA BOUNDED TO THE SOUTH BY THE UNOCAL REFINERY, TO THE NE BY SWITCHING STATION, AND TO THE WEST BY THE RR TRACKS.

Ecological: ON STABILIZED SAND DUNES WITH BACKDUNE SCRUB. ASSOCIATED WITH ERICAMERIA ERICOIDES, LUPINUS CHAMISSONIS, L. BICOLOR, CASTILLEJA EXSERTA, LOTUS SCOPARIUS, ERIOGONUM PARVIFOLIUM, ET AL. ERHARTA CALYCINA A SERIOUS PROBLEM IN SOME AREAS.

General: 273 PLANTS OBSERVED IN 1984, 803 IN 1985, 77 IN 1986, 317 IN 1987, 1035 IN 1988. 140 IN 2004. OTHER RARE PLANTS INCLUDE ERIGERON FOLIOSUS BLOCHMANIAE, DELPHINIUM PARRYI BLOCHMANIAE, AND CASTILLEJA MOLLIS.

Owner/Manager: PVT-UNOCAL, PVT-PGE

Occurrence No.	3	**Map Index:** 40676	**EO Index:**	19041		**Element Last Seen:**	1941-04-21
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	1988-04-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05737 / -120.59646	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3882047 E719195	**Elevation (ft):**	40
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: NEAR HIGHWAY 1, VICINITY OF BLACK LAKE.

Detailed Location: EXACT LOCATION NOT KNOWN; SITE MAPPED NORTH OF CALLENDER, BETWEEN ARROYO GRANDE AND OCEANO, IN VICINITY OF BLACK LAKE CANYON.

Ecological: DENSE CENTRAL COAST DUNE SCRUB OBSERVED IN THIS VICINITY IN 1988.

General: TYPE LOCALITY. SEEN AT LILY POND IN 1937; NOT FOUND IN 1980, 1981, 1988. MCLEOD SEARCHED AREA SOUTH OF BLACK LAKE GOLF COURSE IN 1984, BUT FOUND NO HABITAT. HOWALD SEARCHED LILY POND AREA IN 1988, NO PLANTS OBSERVED.

Owner/Manager: UNKNOWN

Occurrence No.	4	**Map Index:**	36830	**EO Index:**	19042	**Element Last Seen:**	1988-04-02
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-04-02
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-24

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03861 / -120.58276	**Accuracy:**	specific area
UTM:	Zone-10 N3879996 E720495	**Elevation (ft):**	160
PLSS:	T11N, R35W, Sec. 17 (S)	**Acres:**	18.7

Location: SOUTHEAST OF SANTA MARIA OIL REFINERY, ABOUT 1.2 MILES SSE OF JUNCTION OF HIGHWAY 1 AND CALLENDER ROAD, SOUTH OF OCEANO.

Detailed Location: APPROX 0.75 AIR MILE SOUTHEAST OF MAIN ENTRANCE TO UNOCAL REFINERY.

Ecological: CENTRAL COAST DUNE SCRUB. ASSOCIATED WITH ERICAMERIA ERICOIDES, SALVIA MELLIFERA, ERIOGONUM PARVIFOLIUM, CASTILLEJA EXSERTA, HORKELIA CUNEATA, CROTON CALIFORNICUS, ABRONIA UMBELLATA, CRYPTANTHA CLEVELANDII, ESCHSCHOLZIA CALIFORNICA ET AL.

General: FEWER THAN 50 PLANTS OBSERVED IN 1986, 44 IN 1987, 636 IN 1988. OTHER RARE PLANTS INCLUDE ERIGERON FOLIOSUS BLOCHMANIAE, DELPHINIUM PARRYI BLOCHMANIAE, PRUNUS FASCICULATA PUNCTATA, ERYSIMUM INSULARE SUFFRUTESCENS, AND MONARDELLA CRISPA.

Owner/Manager: PVT-UNOCAL

Occurrence No.	7	**Map Index:**	40425	**EO Index:**	35432	**Element Last Seen:**	1988-04-03
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-04-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-24

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03586 / -120.57127	**Accuracy:**	specific area
UTM:	Zone-10 N3879716 E721551	**Elevation (ft):**	180
PLSS:	T11N, R35W, Sec. 16 (S)	**Acres:**	6.3

Location: EAST OF SANTA MARIA OIL REFINERY, ABOUT 0.8 MILE SSW OF JCT OF HIGHWAY 1 AND WILLOW RD, SOUTH OF OCEANO ON NIPOMO MESA.

Detailed Location:

Ecological: PROBABLY WAS CENTRAL COAST DUNE SCRUB, BUT GRAZING HAS VIRTUALLY ELIMINATED ALL SHRUBS. VEGETATION COMPOSED OF BROMUS RUBENS, VULPIA BROMOIDES, CHORIZANTHE ANGUSTIFOLIUM, CRYPTANTHA CLEVELANDII, AMSINCKIA SPECTABLIS, ERHARTA CALYCINA, ETC.

General: 1300+ PLANTS OBSERVED IN 1988.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:**	40820	**EO Index:**	40820	**Element Last Seen:**	1998-05-19
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-05-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04237 / -120.59700	**Accuracy:**	specific area
UTM:	Zone-10 N3880381 E719186	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 07 (S)	**Acres:**	5.8

Location: CALLENDER DUNES NORTHEAST OF JACK LAKE, SOUTH OF OCEANO.

Detailed Location: TWO COLONIES MAPPED AT THIS OCCURRENCE; ABOUT 0.2 MILE NNE OF JACK LAKE AND 0.4 MILE NE OF JACK LAKE.

Ecological: STABILIZED DUNE SCRUB WITH CARDIONEMA, CONICOSIA, AND CROTON CALIFORNICA.

General: 80 PLANTS OBSERVED IN TWO COLONIES IN 1998. THE RARE MUCRONEA CALIFORNICA ALSO OCCURS HERE AND CIRSIUM LONCHOLEPIS OCCURS NEARBY.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	9	**Map Index:**	40821	**EO Index:**	40821	**Element Last Seen:**	1998-05-20
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04672 / -120.59970	**Accuracy:**	80 meters
UTM:	Zone-10 N3880858 E718928	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 07 (S)	**Acres:**	0.0

Location: CALLENDER DUNES, ABOUT 0.6 MILE NORTH OF JACK LAKE, SOUTH OF OCEANO.

Detailed Location: SINGLE COLONY MAPPED ABOUT 800 M SSW OF BENCHMARK AT CALLENDER.

Ecological: STABILIZED DUNE SCRUB WITH EHRHARTA CALYCINA DOMINANT. ASSOCIATED WITH CASTILLEJA EXSERTA, DUDLEYA LANCEOLATA, ERICAMERIA ERICOIDES, HORKELIA CUNEATA, LOTUS, ESCHSCHOLZIA, LINARIA, LESSINGIA, CARDIONEMA, CONICOSIA, AND CROTON CALIFORNICA.

General: 12 PLANTS OBSERVED IN 1998. THE RARE PRUNUS FASCISULATA VAR. PUNCTATA AND HORKELIA CUNEATA VAR. SERICEA OCCUR NEARBY.

Owner/Manager: DPR-OCEANO DUNES SVRA

Trifolium hydrophilum **Element Code:** PDFAB400R5

saline clover

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	MARSHES AND SWAMPS, VALLEY AND FOOTHILL GRASSLAND, VERNAL POOLS.			
	Micro:	MESIC, ALKALINE SITES. 0-300M.			

Occurrence No.	1	**Map Index:** 49386	**EO Index:**	49386		**Element Last Seen:**	1996-05-09
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1996-05-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-08-16

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.26704 / -120.68405	**Accuracy:**	80 meters
UTM:	Zone-10 N3905116 E710664	**Elevation (ft):**	150
PLSS:	T30S, R12E, Sec. 34 (M)	**Acres:**	0.0

Location:	EAST SIDE OF LAGUNA LAKE, ABOUT 1 AIR MILE SOUTH OF CERRO SAN LUIS OBISPO.
Detailed Location:	ALONG TRAIL. MAPPED WITHIN THE SW 1/4 OF THE SW 1/4 OF SECTION 34.
Ecological:	GROWING IN MOIST SOIL ON A GENTLY SLOPING, SPRING-FED SWALE. ASSOCIATED WITH TRIFOLIUM VARIEGATUM.
General:	SEVERAL HUNDRED PLANTS ESTIMATED IN 1996. SITE MAY HOST LARGEST EXTANT POPULATION.
Owner/Manager:	CITY OF SAN LUIS OBISPO

Eriodictyon altissimum

Element Code: PDHYD04010

Indian Knob mountainbalm

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G1
	State:	Endangered		**State:**	S1
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	CHAPARRAL (MARITIME), CISMONTANE WOODLAND, COASTAL SCRUB.			
	Micro:	RIDGES IN OPEN, DISTURBED AREAS WITHIN CHAPARRAL ON PISMO SANDSTONE. 80-270 M.			

Occurrence No.	5	**Map Index:** 12776	**EO Index:** 13720	**Element Last Seen:**	2012-05-12
Occ. Rank:	Excellent		**Presence:** Presumed Extant	**Site Last Seen:**	2012-05-12
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2013-02-13

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19940 / -120.66633	**Accuracy:**	specific area
UTM:	Zone-10 N3897651 E712453	**Elevation (ft):**	880
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	13.9

Location: 0.3 TO 0.6 AIR MILE WEST OF THE SUMMIT OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO, EAST OF HIGHWAY 101.

Detailed Location: GUIDETTI RANCH. MAPPED BY CNDDB IN THE WEST 1/2 OF SECTION 26 EXTENDING INTO THE EAST 1/2 OF SECTION 27 ACCORDING TO A 1985 MCLEOD MAP.

Ecological: ALONG ROADSIDES AND IN CHAPARRAL, ON LIGHT-COLORED PISMO SANDSTONE, DOMINATED BY ARCTOSTAPHYLOS PILULOSA.

General: PLANTS DESCRIBED AS "LOCALLY PLENTIFUL" IN 1966 AND "SOMEWHAT COMMON" AT SITE IN 2012.

Owner/Manager: TNC

Occurrence No.	7	**Map Index:** 88198	**EO Index:** 89205	**Element Last Seen:**	2010-08-29
Occ. Rank:	Good		**Presence:** Presumed Extant	**Site Last Seen:**	2010-08-29
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2013-02-13

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.20565 / -120.67699	**Accuracy:**	specific area
UTM:	Zone-10 N3898321 E711465	**Elevation (ft):**	700
PLSS:	T31S, R12E, Sec. 27 (M)	**Acres:**	34.0

Location: 1.0 TO 1.3 AIR MILES NW OF THE SUMMIT OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO, EAST OF HIGHWAY 101.

Detailed Location:

Ecological: CHAPARRAL DOMINATED BY ARCTOSTAPHYLOS PILOSULA ON SANDSTONE CONTAINING TAR DEPOSITS. DISTURBED ROADSIDES, HILLTOPS, AND SOUTH-FACING SLOPES IN FULL SUN. ALSO ASSOCIATED WITH HETEROMELES ARBUTIFOLIA AND QUERCUS AGRIFOLIA.

General: 500+ PLANTS OBSERVED IN 1991. 4 PLANTS OBSERVED IN 2010 IN A SMALL PORTION OF THIS OCCURRENCE.

Owner/Manager: PVT

Monardella undulata ssp. crispa

Element Code: PDLAM18070

crisp monardella

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	COASTAL DUNES, COASTAL SCRUB.			

Micro: OFTEN ON THE BORDERS OF OPEN, SAND AREAS, USUALLY ADJACENT TO TYPICAL BACKDUNE SCRUB VEGETATION. 5-120M.

Occurrence No.	1	**Map Index:**	12912	**EO Index:**	13649	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-08-27

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04137 / -120.60420	**Accuracy:**	specific area
UTM:	Zone-10 N3880255 E718532	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	377.2

Location: OCEANO/NIPOMO DUNES, FROM OSO FLACO LAKE NORTH TO CALLENDER, SOUTH OF OCEANO.

Detailed Location: NUMEROUS, SCATTERED LOCALITIES FROM THE WEST END OF OSO FLACO LAKE EAST PAST JACK LAKE AND NORTH TO BLACK LAKE.

Ecological: ON FOREDUNES IN SAND ASSOCIATED WITH ABRONIA, CARPOBROTUS, AMMOPHILA ARENARIA.

General: 200+ PLANTS IN 1979, MANY SCATTERED PLANTS IN 1995. SITE MANAGED BY THE NATURE CONSERVANCY AND DEPARTMENT OF PARKS AND RECREATION. INCLUDES FORMER OCCURRENCES #2, 3, 4, AND 5.

Owner/Manager: TNC, DPR-OCEANO DUNES SVRA

Occurrence No.	6	**Map Index:**	13129	**EO Index:**	17922	**Element Last Seen:**	1947-07-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1947-07-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2000-02-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02752 / -120.56313	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3878809 E722316	**Elevation (ft):**	120
PLSS:	T11N, R35W, Sec. 16 (S)	**Acres:**	0.0

Location: SHORT DISTANCE NORTH OF THE NORTH EDGE OF SANTA MARIA VALLEY ON GUADALUPE-ARROYO GRANDE ROAD (HIGHWAY 1).

Detailed Location: EXACT LOCATION NOT KNOWN; MAPPED ALONG HIGHWAY 1 NORTH OF THE SANTA MARIA RIVER VALLEY.

Ecological: ON SHIFTING SAND DUNES.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1947 COLLECTION BY HOOVER.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:**	37100	**EO Index:**	17927	**Element Last Seen:**	1936-03-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-12-15

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.07894 / -120.61605	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3884397 E717351	**Elevation (ft):**	100
PLSS:	T12N, R36W, Sec. 36 (S)	**Acres:**	0.0

Location: 1.5 MILES NORTH OF BLACK LAKE, SOUTH OF OCEANO.

Detailed Location: EXACT LOCATION NOT KNOWN; MAPPED ALONG DUNES IN VICINITY OF POCKET LAKE, SOUTHWEST OF CIENEGA VALLEY.

Ecological: STABILIZED SAND DUNE.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY LEE. COLLECTION BY BLAKLEY (#2465 SBBG) MAY ALSO BE FROM THIS VICINITY.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:**	13086	**EO Index:**	17923	**Element Last Seen:**	1986-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-10-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03561 / -120.58167	**Accuracy:**	specific area
UTM:	Zone-10 N3879665 E720603	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 17 (S)	**Acres:**	3.5

Location: ABOUT 1.1 MILES SW OF HIGHWAY 1 AT JUNCTION WITH WILLOW ROAD. EAST SIDE OF REFINERY, BETWEEN OCEANO AND GUADALUPE.

Detailed Location:

Ecological: GROWING IN BACKDUNE SCRUB ALONG MARGIN AND BASE OF SHIFTING SAND DUNE. CASTILLEJA MOLLIS AND LUPINUS NIPOMENSIS ARE ALSO PRESENT.

General: FEWER THAN 10 PLANTS IN 1984-1986. 1941 COLLECTION BY C.B. WOLF (#4357 OBI) IS ATTRIBUTED TO THIS SITE.

Owner/Manager: PVT

Occurrence No.	22	**Map Index:** 12985	**EO Index:**	17914		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-10-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01064 / -120.62164	**Accuracy:**	specific area
UTM:	Zone-10 N3876808 E717022	**Elevation (ft):**	100
PLSS:	T11N, R36W, Sec. 24 (S)	**Acres:**	99.7

Location: NORTHERN GUADALUPE DUNES, ABOUT 0.5-1.5 MI SOUTH OF OSO FLACO LAKE AND 2-3.5 MI WEST OF HWY 1, NORTHWEST OF GUADALUPE.

Detailed Location: NUMEROUS COLONIES MAPPED IN THIS AREA; MAP NEEDED TO APPRECIATE. 1993 GRAFF COLLECTION FROM BIG COREOPSIS HILL ATTRIBUTED TO THIS SITE.

Ecological: CENTRAL COASTAL DUNE SCRUB.

General: UNKNOWN NUMBER OF PLANTS REPORTED BY VANDERWEIR IN 1981 AND BY CHESNUT IN 1998. 10-50 PLANTS OBSERVED ALONG PIPELINE ROUTE ONLY IN 1984-1986 (BOWLAND, 1986).

Owner/Manager: PVT, DPR-OCEANO DUNES SVRA

Occurrence No.	29	**Map Index:** 40630	**EO Index:**	35637		**Element Last Seen:**	1981-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1981-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-10-07

Quad Summary: Point Sal (3412086), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.00062 / -120.63122	**Accuracy:**	80 meters
UTM:	Zone-10 N3875676 E716174	**Elevation (ft):**	80
PLSS:	T11N, R36W, Sec. 25 (S)	**Acres:**	0.0

Location: NORTHERN GUADALUPE DUNES, ABOUT 2 MI SOUTH OF OSO FLACO LAKE AND 3.5 MI WEST OF HIGHWAY 1, NORTHWEST OF GUADALUPE.

Detailed Location: ABOUT 0.5 MILE SSW OF OSO FLACO BENCHMARK; SINGLE COLONY MAPPED AT THIS SITE.

Ecological: CENTRAL COASTAL DUNE SCRUB.

General: UNKNOWN NUMBER OF PLANTS REPORTED BY VANDERWEIR IN 1981.

Owner/Manager: UNKNOWN

Occurrence No.	32	**Map Index:** 40825	**EO Index:**	40825		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-10-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01902 / -120.63085	**Accuracy:**	specific area
UTM:	Zone-10 N3877717 E716159	**Elevation (ft):**	100
PLSS:	T11N, R36W, Sec. 24 (S)	**Acres:**	3.4

Location: NORTHERN GUADALUPE DUNES, ABOUT 0.7 MILE SOUTHWEST OF OSO FLACO LAKE, NORTHWEST OF GUADALUPE.

Detailed Location: NUMEROUS COLONIES MAPPED IN THIS AREA. THIS EO CONSISTS OF TWO LITTLE POLYGONS.

Ecological: CENTRAL COASTAL DUNE SCRUB.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY J. CHESNUT (1998).

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	33	**Map Index:** 40826	**EO Index:**	40826		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-10-07

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01391 / -120.60829	**Accuracy:**	specific area
UTM:	Zone-10 N3877199 E718232	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 19 (S)	**Acres:**	6.3

Location: NORTHERN GUADALUPE DUNES, ABOUT 1.2 MILES SOUTHEAST OF OSO FLACO LAKE, NORTHWEST OF GUADALUPE.

Detailed Location: NUMEROUS COLONIES MAPPED IN THIS AREA. THIS EO CONSISTS OF ONLY TWO POLYGONS.

Ecological: CENTRAL COASTAL DUNE SCRUB.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY J. CHESNUT (1998).

Owner/Manager: DPR-OCEANO DUNES SVRA

Monardella palmeri

Element Code: PDLAM180H0

Palmer's monardella

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, USFS_S-Sensitive			
Habitat:	**General:**	CISMONTANE WOODLAND, CHAPARRAL.			
	Micro:	ON SERPENTINE, OFTEN FOUND ASSOCIATED WITH SARGENT CYPRESS FORESTS. 200-800M.			

Occurrence No.	1	**Map Index:** 58245	**EO Index:**	58281		**Element Last Seen:**	1987-06-02
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-06-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-11-29

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.29603 / -120.48055	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3908784 E729096	**Elevation (ft):**	1500
PLSS:	T30S, R14E, Sec. 21 (M)	**Acres:**	66.8

Location: POZO ROAD, NORTHWEST OF RINCONADA MINE; 2 AIRMI SOUTH OF SANTA MARGARITA LAKE.

Detailed Location: SOUTH OF POZO ROAD. MAPPED ALONG POZO ROAD ABOUT 0.5-0.75 MI WEST OF RINCONADA MINE TURNOFF.

Ecological: ROADSIDE BANK ON SERPENTINE.

General: SEVERAL"RINCONADA MINE" COLLECTIONS ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:**	58246	**EO Index:**	58282	**Element Last Seen:**	1987-07-01
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-07-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-29

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28633 / -120.62174	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3907391 E716281	**Elevation (ft):**	900
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	39.2

Location: RESERVOIR CANYON; ABOUT 1 MI NORTH OF SAN LUIS OBISPO OFF HWY 101.

Detailed Location: ABOUT 3/4 MI UP RESERVOIR CANYON TRAIL, ON SOUTH SIDE OF CANYON.

Ecological: AMONG QUERCUS DUMOSA ON STEEP N-FACING SLOPE; SERPENTINE SOIL. IN 3-5 YEAR OLD BURN.

General: NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	3	**Map Index:**	58247	**EO Index:**	58283	**Element Last Seen:**	1993-08-03
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-08-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35827 / -120.63930	**Accuracy:**	80 meters
UTM:	Zone-10 N3915333 E714494	**Elevation (ft):**	1360
PLSS:	T29S, R12E, Sec. 36 (M)	**Acres:**	0.0

Location: NORTH PORTAL CUESTA TUNNEL; JUST WEST OF HWY 101, APPROX 1 MI NORTHWEST OF CUESTA PASS.

Detailed Location: ON EAST SIDE OF THE CANYON, IN SCREE/CRUMBLED ROCK AT BASE OF ROADCUT; NE 1/4 OF SW 1/4 OF SECTION 36.

Ecological: SERPENTINE ROCK FACE.

General: 25 INDIVIDUALS OBSERVED IN 1993.

Owner/Manager: PVT

Occurrence No.	4	**Map Index:**	58248	**EO Index:**	58284	**Element Last Seen:**	1990-07-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-07-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-11-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34863 / -120.64660	**Accuracy:**	specific area
UTM:	Zone-10 N3914248 E713856	**Elevation (ft):**	2000
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	228.5

Location: RIDGE JUST WEST OF CUESTA PASS; ALONG THE ROAD LEADING TO THE TV TOWER (FOREST RD 29S11).

Detailed Location:

Ecological: SARGENT CYPRESS FOREST IN SERPENTINE CHAPARRAL. SOME MENTIONED ASSOC. INCLUDE: ARCTOSTAPHYLOS OBISPOENSIS, RHAMNUS CALIFORNICA, R. CROCEA, GALIUM, CHLOROGALUM POMERIDIANUM, STACHYS RIGIDA, PEDICULARIS DENSIFLORA, ETC.

General: COLLECTIONS FROM "RIDGE NORTHWEST OF CUESTA PASS" AND "CUESTA RIDGE BOTANICAL AREA" ALSO ATTRIBUTED TO THIS SITE. LOTS OF COLLECTIONS FROM THIS AREA, BUT ONLY ONE OLD MAP FROM 1977 RECEIVED. NEED BETTER MAP OF POPULATION.

Owner/Manager: USFS-LOS PADRES NF?

Occurrence No.	18	**Map Index:** 61357	**EO Index:**	61393		**Element Last Seen:**	2000-06-12
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-06-12
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34956 / -120.67264	**Accuracy:**	80 meters
UTM:	Zone-10 N3914296 E711487	**Elevation (ft):**	1450
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: SOUTH OF PICK & SHOVEL MINE, EAST OF CHORRO CREEK, NEAR EASTERN BOUNDARY OF CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA X. MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY WETHERWAX AND PAINTER: NAD 27 711583E 3914102N.

Ecological: OPENING IN CHAPARRAL ON SERPENTINE GRAVELS ON CLAY, GENTLE SLOPE.

General: FEWER THAN 15 PLANTS SEEN IN 2000.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	19	**Map Index:** 61359	**EO Index:**	61395		**Element Last Seen:**	2003-05-30
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-30
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-12-21

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31854 / -120.74938	**Accuracy:**	specific area
UTM:	Zone-10 N3910693 E704590	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	1.9

Location: FIRST RIDGE WEST OF CERRO ROMUALDO, ABOUT 0.65 MILE SOUTH OF THE WEST END OF O'SULLIVAN AIRFIELD, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA A.

Ecological: ON STEEP SLOPE IN ECOTONE BETWEEN RIPARIAN WOODLAND AND SERPENTINE GRASSLAND. WITH ERIOPHYLLUM CONFERTIFLORUM, CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, CHORIZANTHE PALMERI, OROBANCHE CALIFORNICA SSP. GRANDIS, OROBANCHE FASCICULATA.

General: APPROX 20 PLANTS SEEN IN 2000 AT SOUTHERN COLONY AND FEWER THAN 5 PLANTS SEEN IN 2003 IN NORTHERN COLONY. THE RARE DUDLEYA ABRAMSII SSP. BETTINAE, CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, AND CHORIZANTHE PALMERI ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Monardella frutescens

Element Code: PDLAM180X0

San Luis Obispo monardella

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	COASTAL DUNES, COASTAL SCRUB.			
	Micro:	STABILIZED SAND OF THE IMMEDIATE COAST. 10-100M.			

Occurrence No.	1	**Map Index:**	11880	**EO Index:**	18090	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-03-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05861 / -120.60639	**Accuracy:**	specific area
UTM:	Zone-10 N3882162 E718286	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	28.4

Location: NORTH & SOUTH OF BLACK LAKE, NORTHWEST OF CALLENDER & SOUTH OF OCEANO.

Detailed Location: NORTHERN COLONY EXTENDS FROM NE END OF LAKE TO 0.4 MILE WEST OF THE WEST END OF LAKE. SOUTHERN COLONY IS ABOUT 200 M SOUTH OF THE EAST END OF LAKE.

Ecological: ON SAND IN COASTAL STRAND COMMUNITY WITH ERICAMERIA ERICOIDES AND ERIOGONUM PARVIFOLIUM. EHRHARTA CALYCINA WAS NOT YET RAMPANT AS OF 1984.

General: OVER 100 PLANTS OBSERVED IN NORTHERN COLONY IN 1984. ABOUT 75 PLANTS OBSERVED IN 1998. THIS SITE INCLUDES FORMER OCCURRENCE #19.

Owner/Manager: PVT

Occurrence No.	2	**Map Index:**	12990	**EO Index:**	1222	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01925 / -120.61618	**Accuracy:**	specific area
UTM:	Zone-10 N3877775 E717498	**Elevation (ft):**	100
PLSS:	T11N, R36W, Sec. 24 (S)	**Acres:**	29.3

Location: VICINITY OF COREOPSIS HILL, ABOUT 0.3 MILE SOUTH TO 1.3 MILE SOUTHEAST OF OSO FLACO LAKE, WEST OF SANTA MARIA VALLEY.

Detailed Location: EIGHT COLONIES MAPPED ALONG THE NORTH END OF THE GUADALUPE DUNES INCLUDING COREOPSIS HILL.

Ecological: IN CENTRAL DUNE SCRUB ON OLDER, STABILIZED DUNES WITH COREOPSIS GIGANTEA AND ERICAMERIA ERICOIDES.

General: 100+ PLANTS OBSERVED IN 1985, 'MANY' PLANTS OBSERVED IN 1995. 325 PLANTS OBSERVED IN 1998. SITE IN GOOD CONDITION. INCLUDES FORMER OCCURRENCE #33.

Owner/Manager: PVT

Occurrence No.	4	**Map Index:**	13129	**EO Index:**	18088	**Element Last Seen:**	1947-07-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1947-07-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2000-02-23

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02752 / -120.56313	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3878809 E722316	**Elevation (ft):**	200
PLSS:	T11N, R35W, Sec. 16 (S)	**Acres:**	0.0

Location: NORTH EDGE OF SANTA MARIA VALLEY ON GUADALUPE-ARROYO GRANDE ROAD (HIGHWAY 1).

Detailed Location: MAPPED JUST NORTH OF VALLEY ALONG HIGHWAY 1.

Ecological: IN SANDY FIELD.

General: TYPE LOCALITY. THE ONLY SOURCE OF INFORMATION FOR THIS SITE IS TYPE COLLECTION BY HOOVER.

Owner/Manager: PVT

Occurrence No.	5	**Map Index:**	36875	**EO Index:**	18087	**Element Last Seen:**	1950-05-13
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1950-05-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.03270 / -120.62310	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3879252 E716831	**Elevation (ft):**	
PLSS:	T11N, R36W, Sec. 13 (S)	**Acres:**	0.0

Location: OSO FLACO LAKE REGION, SOUTH OF OCEANO.

Detailed Location:

Ecological: COASTAL DUNES.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1950 COLLECTION BY ROSE (#50126 CAS).

Owner/Manager: DPR-PISMO SB

Occurrence No.	6	**Map Index:**	13043	**EO Index:**	18085	**Element Last Seen:**	1986-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-01-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05093 / -120.59436	**Accuracy:**	specific area
UTM:	Zone-10 N3881337 E719404	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 08 (S)	**Acres:**	16.2

Location: CALLENDER PGE STATION, ALONG HIGHWAY 1 JUST SOUTH OF CALLENDER BLACK LAKE ROAD, BETWEEN OCEANO & GUADALUPE.

Detailed Location: SCATTERED COLONIES ALONG BOTH SIDES OF HIGHWAY FROM CALLENDER BLACK LAKE ROAD SOUTH ABOUT 0.6 MILE.

Ecological: ON STABILIZED DUNES IN DISTURBED BACKDUNE SCRUB SURROUNDED BY MATURE EUCALYPTUS GROVE. ASSOCIATED WITH LUPINUS ARBOREUS, L. CHAMISSONIS, ERICAMERIA ERICOIDES, AND RHAMNUS CALIFORNICA.

General: FEWER THAN 50 PLANTS FROM 1984-1986.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:**	12965	**EO Index:**	18084	**Element Last Seen:**	1974-07-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1974-07-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-22

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo, Pacific Ocean

Lat/Long:	35.09090 / -120.62002	**Accuracy:**	1 mile
UTM:	Zone-10 N3885715 E716958	**Elevation (ft):**	30
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: PISMO STATE BEACH NATURAL AREA, NEAR OCEANO.

Detailed Location: EXACT LOCATION NOT KNOWN; SITE MAPPED WITHIN PISMO DUNE PRESERVE.

Ecological: STABILIZED SAND DUNES AND IN SANDY FIELD.

General: PLANTS REPORTED FROM THIS SITE IN 1974 BY K. JONES. THREE COLLECTIONS FROM OCEANO ATTRIBUTED TO THIS SITE; MCMINN #3847 (OBI), R.F. HOOVER #6421 (OBI), AND HOOVER #7354 (OBI).

Owner/Manager: DPR-PISMO SB

Occurrence No.	15	**Map Index:**	13034	**EO Index:**	18078	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-01-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03713 / -120.59867	**Accuracy:**	specific area
UTM:	Zone-10 N3879796 E719048	**Elevation (ft):**	100
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	222.9

Location: CALLENDER DUNES AT NW END OF SANTA MARIA VALLEY, WEST OF SANTA MARIA REFINERY AND NE OF LITTLE OSO FLACO LAKE.

Detailed Location: MAPPED ALONG BACKDUNES OPPOSITE THE REFINERY, FROM SPRR TRACKS WEST ABOUT 1 MILE.

Ecological: IN DRY SAND FLATS BETWEEN DUNE RIDGES OR OCCASIONALLY ON DUNE SLOPES AND RIDGES. COMMONLY GROWING UP THROUGH OR AT THE BASE OF LARGER DUNE SCRUB PLANTS.

General: UNCOMMON IN 1979. 100+ PLANTS OBSERVED IN SINGLE COLONY AT LETTUCE LAKE IN 1998. INCLUDES FORMER OCCURRENCE #3.

Owner/Manager: DPR

Occurrence No.	20	**Map Index:**	13077	**EO Index:**	18077	**Element Last Seen:**	1981-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-01-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04563 / -120.58694	**Accuracy:**	80 meters
UTM:	Zone-10 N3880765 E720096	**Elevation (ft):**	130
PLSS:	T11N, R35W, Sec. 08 (S)	**Acres:**	0.0

Location: SOUTHEAST OF CALLENDER, AT SUBSTATION NORTH OF SANTA MARIA REFINERY ALONG HIGHWAY 1, BETWEEN OCEANO AND GUADALUPE.

Detailed Location: SINGLE COLONY MAPPED JUST SOUTH OF HIGHWAY, ABOUT 1 MILE WEST OF THE WESTERN END OF WILLOW ROAD.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1981 MAP BY HOWALD.

Owner/Manager: PVT-PGE

Occurrence No.	21	**Map Index:**	13044	**EO Index:**	18079	**Element Last Seen:**	1981-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1981-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-01-14

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05867 / -120.59528	**Accuracy:**	specific area
UTM:	Zone-10 N3882193 E719299	**Elevation (ft):**	200
PLSS:	T11N, R35W, Sec. 05 (S)	**Acres:**	16.2

Location: JUST NORTH OF BLACK LAKE CANYON, EAST SIDE OF HIGHWAY 1, SOUTH OF OCEANO.

Detailed Location:

Ecological: COASTAL DUNE SCRUB WITH BACCHARIS PILULARIS, CORETHROGYNE FILAGINIFOLIA, ERIOGONUM PARVIFOLIUM, LUPINUS CHAMISSONIS, RHAMNUS CALIFORNICA, TOXICODENDRON DIVERSILOBUM, ETC.

General: PLANTS REPORTED HERE IN 1981 AND 1988.

Owner/Manager: PVT

Sidalcea hickmanii ssp. anomala

Element Code: PDMAL110A1

Cuesta Pass checkerbloom

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3T1
	State:	Rare		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST.			
	Micro:	ROCKY SERPENTINE SOIL; ASSOCIATED WITH SARGENT CYPRESS FOREST. 600-800M.			

Occurrence No.	1	**Map Index:**	12754	**EO Index:**	14130	**Element Last Seen:**	2003-08-04
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-05-10

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.36971 / -120.67829	**Accuracy:**	specific area
UTM:	Zone-10 N3916518 E710921	**Elevation (ft):**	2500
PLSS:	T29S, R12E, Sec. 27 (M)	**Acres:**	140.0

Location: CUESTA RIDGE, ALONG RIDGE TOP ROAD, ABOUT 0.65 AIR MILES NORTHEAST LA TRINIDAD MINE, SANTA LUCIA RANGE.

Detailed Location: ALONG BOTH SIDES OF ROAD IN CUESTA RIDGE BOTANICAL AREA. PLANTS ON CAMP ROBERTS MILITARY RESERVATION ALSO, SEPARATED FROM BOTANICAL AREA BY BOUNDARY FENCE.

Ecological: IN DRY ROCKY OPEN PLACES IN AND AT THE EDGE OF SARGENT CYPRESS FOREST. ON SERPENTINE TOP OF RIDGE. ASSOCIATED WITH ARCTOSTAPHYLOS OBISPOENSIS.

General: THIS IS THE TYPE LOCALITY. MORE THAN 1000 PLANTS SEEN IN 1998 BY ANDREASEN; FIRE SEEMED TO HAVE SIGNIFICANTLY INCREASED THE NUMBER OF PLANTS. MORE THAN 100 PLANTS IN 2003. INCLUDES FORMER OCCURRENCE #4.

Owner/Manager: USFS-LOS PADRES NF, DOD

Occurrence No.	2	**Map Index:**	12834	**EO Index:**	14126	**Element Last Seen:**	1998-06-15
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-06-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-05-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35495 / -120.65370	**Accuracy:**	specific area
UTM:	Zone-10 N3914933 E713194	**Elevation (ft):**	2200
PLSS:	T29S, R12E, Sec. 35 (M)	**Acres:**	50.9

Location: RIDGE NORTHWEST OF CUESTA PASS, SANTA LUCIA MOUNTAINS.

Detailed Location: NORTH SLOPE OF CUESTA RIDGE, NORTH OF TV TOWER. MAPPED WITHIN THE NE 1/4 OF THE SE 1/4 OF SECTION 35.

Ecological: CHAPARRAL, WITH ARCTOSTAPHYLOS OBISPOENSIS, CEANOTHUS FOLIOSUS, ROSA SPITHAMEA, PICKERINGIA MONTANA, CALYSTEGIA MACROSTEGIA, PHACELIA GRISEA.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1993. 50-100 PLANTS SEEN IN 1998.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	5	**Map Index:**	40784	**EO Index:**	40784	**Element Last Seen:**	1910-04-17
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1910-04-17
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-01-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36031 / -120.66728	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3915499 E711946	**Elevation (ft):**	1800
PLSS:	T29S, R12E, Sec. 34 (M)	**Acres:**	160.2

Location: CHORRO CREEK ALONG SOUTH SIDE OF CUESTA RIDGE, SANTA LUCIA RANGE.

Detailed Location: EXACT LOCATION ALONG CREEK NOT KNOWN; MAPPED ALONG MAIN BRANCH OF CREEK BETWEEN 1000' AND 2000' ELEVATION.

Ecological: COMMON UP TO 2000' ELEVATION.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1910 COLLECTION BY CONDIT. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	61220	**EO Index:**	61256	**Element Last Seen:**	2003-05-15
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-05-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35907 / -120.68846	**Accuracy:**	specific area
UTM:	Zone-10 N3915316 E710024	**Elevation (ft):**	
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	8.2

Location: PRIMERA MINE VICINITY, FROM DUGHI SPRING SSE ABOUT 0.8 MILE, CAMP ROBERTS, NORTH OF SAN LUIS OBISPO.

Detailed Location: SCATTERED COLONIES MAPPED AS 7 POLYGONS BY CNDDB. MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY WETHERWAX AND PAINTER.

Ecological: MARGIN OF CHAPARRAL. WITH ARCTOSTAPHYLOS OBISPOENSIS, CEANOTHUS CUNEATUS VAR. RAMULOSUS, CEANOTHUS FOLIOSUS VAR. MEDIUS, CUPRESSUS SARGENTII, CAREX OBISPOENSIS, RANUNCULUS CALIFORNICUS, SISYRINCHIUM BELLUM.

General: FEWER THAN 77 PLANTS SEEN IN 2001, FEWER THAN 5 PLANTS SEEN IN 2002, AND FEWER THAN 10 PLANTS SEEN IN 2003. NOT ALL COLONIES SURVEYED EACH YEAR.

Owner/Manager: STATE-CAMP ROBERTS MR

Camissoniopsis hardhamiae

Element Code: PDONA030N0

Hardham's evening-primrose

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1Q
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND.			
	Micro:	DECOMPOSED CARBONATE. 330-500M.			

Occurrence No.	19	**Map Index:** 79560	**EO Index:** 80538	**Element Last Seen:**	1986-05-13
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1986-05-13
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2010-08-09

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.26034 / -120.42740	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3904949 E734034	**Elevation (ft):**	3100
PLSS:	T31S, R14E, Sec. 01 (M)	**Acres:**	0.0

Location: HI MOUNTAIN ROAD NEAR HI MOUNTAIN LOOKOUT.

Detailed Location: MAPPED BY CNDDB AS BEST GUESS AROUND THE PORTION OF HI MOUNTAIN LOOKOUT ROAD THAT IS AROUND 3100 FEET IN ELEVATION.

Ecological: CHAPARRAL AREA BURNED IN JULY 1985 IN LAS PILLITAS FIRE, SEEDED WITH BROMUS MOLLIS IN AUTUMN 1985.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1986 KEIL COLLECTION; MENTIONED AS "OCCASIONAL" IN 1986.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	20	**Map Index:** 79561	**EO Index:** 80539	**Element Last Seen:**	1986-04-08
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1986-04-08
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2010-08-09

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.32261 / -120.42252	**Accuracy:**	1 mile
UTM:	Zone-10 N3911868 E734298	**Elevation (ft):**	
PLSS:	T30S, R14E, Sec. 12 (M)	**Acres:**	0.0

Location: BLM LAND ON EAST SIDE OF SANTA MARGARITA LAKE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AT THE EAST END OF SANTA MARGARITA LAKE.

Ecological: RIDGETOP. BURNED OAK-CHAMISE CHAPARRAL.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1986 KEIL COLLECTION. NEEDS FIELDWORK.

Owner/Manager: BLM

Clarkia speciosa ssp. immaculata

Element Code: PDONA05111

Pismo clarkia

Listing Status:	**Federal:**	Endangered	**CNDDB Element Ranks:**	**Global:**	G4T1
	State:	Rare		**State:**	S1
	Other:	Rare Plant Rank - 1B.1			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	ON ANCIENT SAND DUNES NOT FAR FROM THE COAST. SANDY SOILS, OPENINGS. 25-185 M.			

Occurrence No.	2	**Map Index:** 13007	**EO Index:**	12326		**Element Last Seen:**	1996-07-19
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1996-07-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Increasing		**Record Last Updated:**	2011-07-27

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17645 / -120.60755	**Accuracy:**	specific area
UTM:	Zone-10 N3895232 E717866	**Elevation (ft):**	400
PLSS:	T32S, R13E, Sec. 32 (M)	**Acres:**	39.1

Location: TIBER CANYON; NW SIDE OF ORMONDE RD, ABOUT 1-1.5 MI NE OF JCT W/CENTRAL BLVD.

Detailed Location: PLANTS ALONG ROAD SHOULDER AND IN OPEN AREAS AWAY FROM ROAD.

Ecological: IN SMALL, OPEN, GRASSY AREA; SOMEWHAT WEEDY. WITH AVENA BARBATA, CROTON CA. ARCTOSTAPHYLOS WELLSII SEEN NEARBY.

General: 2000+ PLANTS IN SEVERAL SUBPOPULATIONS IN 1987, 1000 PLANTS SEEN IN 1990, 200 PLANTS IN 1993 (A BAD YEAR), 1000 IN 1996.

Owner/Manager: PVT, SLO COUNTY

Occurrence No.	3	**Map Index:** 12935	**EO Index:**	18829		**Element Last Seen:**	1928-06-17
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	199X-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-04

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15952 / -120.61311	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3893342 E717404	**Elevation (ft):**	120
PLSS:	T32S, R13E, Sec. 07 (M)	**Acres:**	0.0

Location: PRICE CANYON, 3 MI S OF EDNA.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED 3 AIRMILES SOUTH OF EDNA.

Ecological: DRY GRAVELLY SLOPE AT EDGE OF CHAPARRAL.

General: SEARCHED FOR IN 1983 BUT SSP. NOT FOUND.

Owner/Manager: PVT

Occurrence No.	4	**Map Index:** 13104	**EO Index:**	18828		**Element Last Seen:**	1987-05-23
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-05-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Decreasing		**Record Last Updated:**	1996-11-20

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16580 / -120.57740	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3894117 E720641	**Elevation (ft):**	600
PLSS:	T32S, R13E, Sec. 04 (M)	**Acres:**	0.0

Location: HIGHWAY 227 AT SUMMIT OF CARPENTER CANYON, AT SIDE ROAD WITH GATE. 3.8 MI S OF EDNA SCHOOL (NOW GONE).

Detailed Location:

Ecological: IN GRASSY DISTURBED AREA AT MARGIN OF CHAPARRAL WITH MIMULUS SP. AND ARCTOSTAPHYLOS SP.

General: TYPE LOCALITY. FEWER THAN 50 PLANTS IN 1983, ABOUT 30 PLANTS IN 1987, ALL WITHIN 10 FEET OF ROAD.

Owner/Manager: CALTRANS

Occurrence No.	5	**Map Index:** 12963	**EO Index:**	13830		**Element Last Seen:**	1996-XX-XX
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1996-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-07-27

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.19060 / -120.61784	**Accuracy:**	specific area
UTM:	Zone-10 N3896779 E716891	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 31 (M)	**Acres:**	47.3

Location: PRICE CANYON, 1 MILE SOUTH OF EDNA.

Detailed Location:

Ecological: OAK WOODLAND WITH QUERCUS AGRIFOLIA ON SANDSTONE/TAR SAND.

General: 4 POPULATIONS, FEWERTHAN 1000 PLANTS, SEEN IN 1983. OIL CO ACTIVITY NOT IN THIS IMMEDIATE VICINITY. 2000+ PLANTS IN 1987. POPULATION IN GOOD COND 1987. 1 SUBPOP IS LARGEST KNOWN. POPULATION SEEN BY MCLEOD IN 1996-SAME SIZE AS IN PAST YEARS.

Owner/Manager: SLO COUNTY

Occurrence No.	6	**Map Index:** 12971	**EO Index:**	18827		**Element Last Seen:**	1987-05-23
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-05-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Decreasing		**Record Last Updated:**	2004-06-04

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.12951 / -120.61317	**Accuracy:**	specific area
UTM:	Zone-10 N3890013 E717479	**Elevation (ft):**	80
PLSS:	T32S, R13E, Sec. 19 (M)	**Acres:**	2.8

Location: GROVER CITY, E & W SIDE OF 12TH ST AT MARGARITA ST.

Detailed Location: INCLUDES 1928 COLLECTIONS FROM, "BETWEEN PISMO & ARROYO GRANDE".

Ecological: COASTAL SCRUB/OAK WOODLAND IN SAND WITH ERICAMERIA ERICOIDES.

General: 4 POPULATIONS SEEN IN 1983. DISTURBED AREA WITH TRAILS. ABOUT 100 PLANTS SEEN IN 1987 IN AN AREA THAT IS MOWED REGULARLY. PORTION OF OCCURRENCE WEST OF 12TH STREET IS NOW EXTIRPATED.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:** 13065	**EO Index:**	18826		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1989-08-11

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.12219 / -120.59323	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3889244 E719316	**Elevation (ft):**	120
PLSS:	T32S, R13E, Sec. 21 (M)	**Acres:**	0.0

Location: ARROYO GRANDE CEMETERY, ARROYO GRANDE.

Detailed Location:

Ecological:

General: UNKNOWN WHEN SSP LAST SEEN. EXTIRPATED ACCORDING TO M. MCLEOD.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:** 13014	**EO Index:**	18824		**Element Last Seen:**	2003-05-19
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-07

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13667 / -120.59041	**Accuracy:**	specific area
UTM:	Zone-10 N3890857 E719535	**Elevation (ft):**	120
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	7.0

Location: 1 MILE NE OF JCT OF HWY 101 AND N. OAK PARK BLVD, AT THE JUNCTION OF JAMES WAY AND LA CANADA, NORTH OF HWY 101.

Detailed Location: FOUND IN NW CORNER OF JUNCTION. GREATER PLANT DENSITIES IN OPENINGS IN OAK WOODLAND TO EAST OF OAKS (SHADED AREAS).

Ecological: COAST LIVE OAK WITH ANNUAL GRASS UNDERSTORY.

General: 12 PLANTS IN 1997, BUT MAY BE 100'S OF PLANTS HERE. 20,000 OBSERVED AT W COLONY IN 2003, 8,000 OBSERVED AT E COLONY IN 2003. OWNED BY LAS JOLLAS DE RANCHO GRANDE HOMEOWNERS ASSOCIATION.

Owner/Manager: PVT

Occurrence No.	9	**Map Index:** 13067	**EO Index:**	18823		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	None		**Presence:**	Extirpated		**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-11-20

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16830 / -120.59267	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3894361 E719244	**Elevation (ft):**	440
PLSS:	T32S, R13E, Sec. 04 (M)	**Acres:**	0.0

Location: OAK PARK SCHOOL (ABANDONED) AT JUNCTION OF OAK PARK ROAD AND ORMONDE ROAD, NORTHWEST OF ARROYO GRANDE.

Detailed Location:

Ecological:

General: HISTORIC OCCURRENCE ACCORDING TO MCLEOD. ONLY STEPS REMAIN OF OLD SCHOOL. LUPINUS LUDOVICIANUS (OCCURRENCE #10) WAS AT THIS LOCATION ALSO.

Owner/Manager: PVT

Occurrence No.	10	**Map Index:**	22200	**EO Index:**	7960	**Element Last Seen:**	1992-06-17
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	2006-05-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-05-31

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04795 / -120.53442	**Accuracy:**	specific area
UTM:	Zone-10 N3881140 E724880	**Elevation (ft):**	345
PLSS:	T11N, R35W, Sec. 11 (S)	**Acres:**	4.5

Location: NIPOMO MESA, SOUTH OF BLACK LAKE CANYON AND WEST OF POMEROY ROAD, N SIDE OF WILLOW ROAD.

Detailed Location: BETWEEN REDBERRY PLACE AND WILLOW ROAD. SECOND POPULATION SOUTH OF WILLOW ROAD. PLANTS GROWING IN DISTURBED HABITAT.

Ecological: GROWING IN OPENING IN MARITIME CHAPARRAL/OAK WOODLAND ECOTONE AREA CONTAINING QUERCUS AGRIFOLIA, ADENOSTOMA FASCICULATUM, ARCTOSTAPHYLOS PILOSULA SSP. PISMOENSIS, CHORIZANTHE DIFFUSA, AND BROMUS DIANDRUS.

General: 615 PLANTS IN 1992. MITIGATION FOR PROPOSED BASIN INCLUDES FENCING, ON SITE PROPAGATION, & 10 YEARS OF MONITORING; PROJECT ON HOLD (1996) DUE TO FINANCIAL PROBLEMS. INCLUDES FORMER EO #15. NO HABITAT OR PLANTS OBSERVED IN 2006.

Owner/Manager: PVT

Occurrence No.	11	**Map Index:**	36462	**EO Index:**	31459	**Element Last Seen:**	1992-05-28
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-08-19

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.17959 / -120.59868	**Accuracy:**	specific area
UTM:	Zone-10 N3895600 E718666	**Elevation (ft):**	200
PLSS:	T31S, R13E, Sec. 32 (M)	**Acres:**	13.4

Location: BETWEEN ORMONDE ROAD AND HWY 227, SW SLOPES OF CANADA VERDE.

Detailed Location: NEAR PATCHETT ROAD.

Ecological: GRASSY FRINGE OF COASTAL SCRUB AND COASTAL LIVE OAK WOODLAND IN SANDY SOIL.

General: FEWER THAN 1000 PLANTS SEEN IN 1992.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	36551	**EO Index:**	31548	**Element Last Seen:**	1997-04-15
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1997-04-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-08-31

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15329 / -120.61936	**Accuracy:**	specific area
UTM:	Zone-10 N3892637 E716852	**Elevation (ft):**	350
PLSS:	T32S, R13E, Sec. 07 (M)	**Acres:**	4.1

Location: N OF GROVER CITY; 1.3 MI NW OF JCT CENTRAL BLVD AND NOYES ROAD.

Detailed Location:

Ecological: N-FACING SLOPE ALONG MARGIN OF COAST LIVE OAK AND VALLEY GRASSLAND HABITATS (UPPER EDGE OF OAK WOODLAND CANOPY). SANTA LUCIA SHALY CLAY LOAM. ARCTOSTAPHYLOS WELLSII NEARBY.

General: 20 PLANTS ESTIMATED IN 1997.

Owner/Manager: PVT

Occurrence No.	13	**Map Index:**	37762	**EO Index:**	32769	**Element Last Seen:**	1993-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-12-26

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.17810 / -120.68364	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3895251 E710932	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	27.7

Location: NORTHERN SLOPES OF GRAGG CANYON.

Detailed Location: PLANTS IN ISOLATED AREAS OF GRAZED PASTURE. MAPPED AS THREE NONSPECIFIC POLYGONS AT CNDDB.

Ecological: PLANTS ON LOWER SANDSTONE ROCK SHELVES IN SHALLOW SOILS.

General: SEVERAL THOUSAND PLANTS IN CLUSTERS IN 1993. MAP DETAIL NEEDED; MAPPED FROM INFO RECEIVED IN 1997 FROM CLIFTON AND FOOTE (THEIR RECOLLECTIONS OF WHERE PLANTS WERE SEEN IN 1993). CLIFTON REMEMBERS FEWER THAN 1000 PLANTS...

Owner/Manager: PVT-CHEVRON

Occurrence No.	14	**Map Index:**	37763	**EO Index:**	32770	**Element Last Seen:**	1995-06-11
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-06-11
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-12-26

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14473 / -120.60369	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891722 E718303	**Elevation (ft):**	260
PLSS:	T32S, R13E, Sec. 17 (M)	**Acres:**	44.5

Location: NW OF ARROYO GRANDE; 0.8-1.1 MI N OF HWY 101, W SIDE OF OLD OAK PARK ROAD (MAPPED FROM JUST W TO 0.4 MI W).

Detailed Location: MAPPED LOCALITY DELINEATES HABITAT WITHIN WHICH THE CLARKIA WAS FOUND; MAPPED AS NON-SPECIFIC POLYGON. BETTER LOCATION INFO NEEDED FOR THIS POPULATION. PART OF LOS ROBLES DEL MAR DEVELOPMENT.

Ecological: PLANTS ALONG THE EDGE OF THE OAK WOODLAND THROUGH THE CHAPARRAL, AND IN GRASSLAND. WITH NASSELLA PULCHARA AND AVENA BARBATA. ARCTOSTAPHYLOS WELLSII AND CALOCHORTUS OBISPOENSIS ALSO REPORTED FROM THIS SITE. 160-360 FT ELEVATION.

General: APPROX. 3000 PLANTS OBSERVED DURING MAY 11, 14, AND JUNE 11 CENSUS.

Owner/Manager: CITY OF PISMO BEACH

Occurrence No.	16	**Map Index:**	38350	**EO Index:**	33357	**Element Last Seen:**	199X-XX-XX
Occ. Rank:	None			**Presence:**	Possibly Extirpated	**Site Last Seen:**	2006-05-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-05-31

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05211 / -120.53847	**Accuracy:**	80 meters
UTM:	Zone-10 N3881592 E724500	**Elevation (ft):**	370
PLSS:	T11N, R35W, Sec. 11 (S)	**Acres:**	0.0

Location: NIPOMO MESA; BLACK LAKE CANYON GOLF COURSE, 0.9 MI NW OF JCT OF WILLOW AND POMEROY ROADS.

Detailed Location:

Ecological:

General: DATE SEEN, POPULATION SIZE, AND ECOLOGICAL INFORMATION NEEDED. MAY BE MONITORED BY V.L. HOLLAND AND D. OYLER, BUT NO INFO RECEIVED FROM THEM AT CNDDB. NO PLANTS OR HABITAT OBSERVED IN 2006.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:** 38351	**EO Index:**	33358		**Element Last Seen:**	199X-XX-XX
Occ. Rank:	None		**Presence:**	Possibly Extirpated		**Site Last Seen:**	2006-05-XX
Occ. Type:	Introduced Back into Native Hab./Range		**Trend:**	Unknown		**Record Last Updated:**	2006-05-31

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05350 / -120.53603	**Accuracy:**	80 meters
UTM:	Zone-10 N3881752 E724718	**Elevation (ft):**	380
PLSS:	T11N, R35W, Sec. 11 (S)	**Acres:**	0.0

Location: NIPOMO MESA; 0.8 MI NW OF JCT WILLOW AND POMEROY ROADS.

Detailed Location:

Ecological:

General: PLANTS WERE PRESENT AT LEAST 2 YEARS AFTER TRANSPLANT. DATE SEEN, SITE, AND POPULATION INFO NEEDED. NO PLANTS OR HABITAT OBSERVED IN 2006.

Owner/Manager: PVT?

Occurrence No.	18	**Map Index:** 55741	**EO Index:**	55757		**Element Last Seen:**	2003-06-05
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-06-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-04

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15879 / -120.55239	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3893396 E722938	**Elevation (ft):**	185
PLSS:	T32S, R13E, Sec. 11 (M)	**Acres:**	0.0

Location: EAST SIDE OF CORBIT CANYON, HILLSIDE OPPOSITE DEER CANYON.

Detailed Location: ONE COLONY LOCATED IN THE NE 1/4 OF THE NW 1/4 OF SECTION 11.

Ecological: GRASSLAND WITH SCATTERED SHRUBS AND SANDY SOILS. THE SITE HAS BEEN USED AS PASTURE LAND THUS DISTURBANCE IS EVIDENT.

General: ~500 INDIVIDUALS OBSERVED IN 2003.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:** 55743	**EO Index:**	55759		**Element Last Seen:**	2003-05-01
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-04

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15099 / -120.52813	**Accuracy:**	specific area
UTM:	Zone-10 N3892585 E725170	**Elevation (ft):**	394
PLSS:	T32S, R13E, Sec. 12 (M)	**Acres:**	8.9

Location: EAST OF ARROYO GRANDE VALLEY, APPROXIMATELY 0.75 AIRMILE NNW OF RADIO TOWERS.

Detailed Location: 10 SUBPOPULATIONS LOCATED WITHIN DESIGNATED POLYGON AS PROVIDED BY REPORTER. SITE LOCATED IN THE SOUTH HALF OF THE SE 1/4 OF SECTION 12.

Ecological: SUBPOPULATIONS ASSOCIATED WITH ANNUAL GRASSLAND (DOMINATED BY BROMUS SP.) OUTSIDE TO COAST LIVE OAK WOODLAND (QUERCUS AGRIFOLIA), THIN SOIL WITH CLAY LAYER, CLARKIA PURPUREA AND CLARKIA UNGUICULATA ALSO PRESENT.

General: 2500-3000 INDIVIDUALS OBSERVED IN 2001. "MANY" INDIVIDUALS OBSERVED IN 2003. 500-1000 INDIVIDUALS SLATED IN 2001 TO BE PRESERVED IN CONSERVATION EASEMENT WELL OUTSIDE HOMESITE LOT LINES.

Owner/Manager: PVT

Occurrence No.	20	**Map Index:** 55744	**EO Index:**	55760		**Element Last Seen:**	2003-06-08
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-06-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-04

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14525 / -120.55696	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891883 E722559	**Elevation (ft):**	360
PLSS:	T32S, R13E, Sec. 14 (M)	**Acres:**	10.6

Location: EAST OF CORBIT CANYON, APPROXIMATELY 0.5 AIRMILE NE OF CARPENTER CREEK CONFLUENCE WITH CORBIT CREEK.

Detailed Location: TWO COLONIES MAPPED FROM UTM COORDINATES PROVIDED. WESTERN COLONY ON THE WEST SIDE OF STAGECOACH ROAD AT VINTON ROAD. EASTERN COLONY 100' EAST OF STAGECOACH ROAD AT PALOMA LANE. POPULATIONS IN NE1/4 SEC 15 AND NW1/4 SEC 14.

Ecological:

General: IN 2003, 200 INDIVIDUALS OBSERVED AT WESTERN POLYGON & 3-400 INDIVIDUALS OBSERVED AT EASTERN POLYGON.

Owner/Manager: PVT, UNKNOWN

Occurrence No.	21	**Map Index:** 62519	**EO Index:**	62556		**Element Last Seen:**	2005-05-27
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-05-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-09-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.06682 / -120.54880	**Accuracy:**	specific area
UTM:	Zone-10 N3883201 E723517	**Elevation (ft):**	320
PLSS:	T11N, R35W, Sec. 03 (S)	**Acres:**	3.4

Location: ALONG VIEJO ROAD, BETWEEN STANTON ROAD AND CAMINO PERILLO, APPROXIMATELY 0.15 MI WEST OF CAMINO PERRO, NIPOMA MESA.

Detailed Location: ON SOUTH SIDE OF VIEJO ROAD.

Ecological: ON ROADSIDE IN GRASSLAND / OAK WOODLAND INTERFACE. THE DOMINANT SPECIES ARE NON-NATIVE, ANNUAL GRASSES (AVENA SPP., BROMUS HORDEACEUS) AND OCCASSIONAL ERHARTA CALYCINA. NATIVES INCLDUE SISYRICHNIUM BELLUM AND CASTILLEJA EXSERTA.

General: 250-500 PLANTS OBSERVED IN 2005.

Owner/Manager: PVT

Orobanche parishii ssp. brachyloba

Element Code: PDORO040A2

short-lobed broomrape

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4?T3
	State:	None		**State:**	S3.2
	Other:	Rare Plant Rank - 4.2			
Habitat:	**General:**	COASTAL BLUFF SCRUB, COASTAL DUNES, COASTAL SCRUB.			
	Micro:	SANDY SOIL NEAR BEACHES; REPORTED TO GROW ON HAPLOPAPPUS, ATRIPLEX CALIFORNICA. 3-170M.			

Occurrence No.	20	**Map Index:** 28609	**EO Index:**	17449		**Element Last Seen:**	1967-09-15
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1967-09-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-01-21

Quad Summary: Guadalupe (3412085), Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.01402 / -120.62261	**Accuracy:**	1 mile
UTM:	Zone-10 N3877180 E716925	**Elevation (ft):**	
PLSS:	T11N, R36W, Sec. 24 (S)	**Acres:**	0.0

Location: SOUTH OF OSO FLACO LAKE.

Detailed Location:

Ecological: DUNES, APPARENTLY ON CONVOLVULUS SOLDANELLA.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1967 COLLECTION BY R. HOOVER. ORIGINAL DET. O. CALIFORNICA; ANNOTATED TO O. PARISHI SSP. BRACHYLOBA (APPROACHING O. ROBBINSII) BY L. HECKARD IN 1971.

Owner/Manager: UNKNOWN

Chorizanthe breweri

Element Code: PDPGN04050

Brewer's spineflower

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.3, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB, CLOSED-CONE CONIFEROUS FOREST.			

Micro: ROCKY OR GRAVELLY SERPENTINE SITES; USUALLY IN BARREN AREAS. 45-800M.

Occurrence No.	2	**Map Index:** 36740	**EO Index:**	21145		**Element Last Seen:**	1958-06-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1958-06-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2013-02-12

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32331 / -120.67849	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3911370 E711024	**Elevation (ft):**	550
PLSS:	T30S, R12E, Sec. 15 (M)	**Acres:**	268.6

Location: STENNER CREEK NEAR SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION NOT KNOWN; SITE MAPPED ALONG CREEK NORTH FROM SAN LUIS OBISPO. CREEK SPELLED "STEINER" ON HERBARIUM LABEL.

Ecological: SERPENTINE SOIL.

General: MAIN SOURCE OF INFO FOR THIS SITE IS 1958 COLLECTION BY HARDHAM. HISTORICAL COLLECTIONS FROM GENERAL AREA OF SAN LUIS OBISPO ARE ATTRIBUTED TO THIS SITE, INCLUDING BREWER'S 1861 TYPE COLLECTION FROM SAN LUIS OBISPO. INCLUDES FORMER EO#1.

Owner/Manager: PVT

Occurrence No.	3	**Map Index:** 43063	**EO Index:**	21144		**Element Last Seen:**	2001-05-15
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2001-05-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33934 / -120.68927	**Accuracy:**	specific area
UTM:	Zone-10 N3913126 E710002	**Elevation (ft):**	780
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	5.9

Location: CAMP SAN LUIS OBISPO, RIDGE NORTHWEST OF CHORRO RESERVOIR, NORTH OF SAN LUIS OBISPO.

Detailed Location: TRAINING AREA X. MAPPED AS SEVEN SMALL POLYGONS.

Ecological: SERPENTINE OUTCROP/RIDGE. ALONG OLD ROAD CUT WITH YUCCA WHIPPLEI, AVENA SPP., NASSELLA SPP., AND HEMIZONIA SPP. ALSO IN THIS AREA IS THE RARE CALOCHORTUS OBISPOENSIS AND C. CLAVATUS CLAVATUS.

General: 20 PLANTS OBSERVED IN 1995. ABOUT 50 PLANTS SEEN IN 1999 AND MORE THAN 250 IN 2000. UNKNOWN NUMBER SEEN IN 2001. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	4	**Map Index:**	12820	**EO Index:**	21146	**Element Last Seen:**	1984-04-23
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1984-04-23
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31018 / -120.65196	**Accuracy:**	specific area
UTM:	Zone-10 N3909971 E713470	**Elevation (ft):**	650
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	7.3

Location: BRIZZIOLARI (POLY) CANYON ABOUT 0.5 MILE NORTHEAST OF CAL POLY S.L.O., SAN LUIS OBISPO.

Detailed Location: MAPPED ALONG BOTH SIDES OF ROAD ALONG CANYON BOTTOM WITHIN THE S 1/2 SE 1/4 SECTION 14.

Ecological: IN BARRENS AND AREAS WITH SERPENTINE GRAVELS. SURROUNDING COMMUNITIES INCLUDE YUCCA SCRUB, LIVE OAK WOODLAND, CHAPARRAL, AND COASTAL SAGE SCRUB. GROWING ON STEEP, NW- FACING AND SW-FACING SLOPES.

General: 10+ PLANTS OBSERVED IN EAST COLONY AND 50+ PLANTS IN WEST COLONY IN 1984. INCLUDES FORMER OCCURRENCE #5.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	6	**Map Index:**	12931	**EO Index:**	21142	**Element Last Seen:**	1984-04-27
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1984-04-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.29660 / -120.64453	**Accuracy:**	specific area
UTM:	Zone-10 N3908480 E714182	**Elevation (ft):**	550
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	5.9

Location: EAST OF CAL POLY S.L.O. ALONG S-END OF RIDGE BETWEEN BRIZIOLARI CREEK AND SAN LUIS OBISPO CREEK, NE OF SAN LUIS OBISPO.

Detailed Location: TWO COLONIES MAPPED ON LOWER SLOPES OF RIDGE ABOVE OLD HIGHWAY 101 (NOW CALLED MIOSSI ROAD).

Ecological: FOUND ALONG STEEP FACE OF SERPENTINE RIDGE ON SERPENTINE SOILS. ASSOCIATED WITH ERIOGONUM FASCICULATUM AND SELGINELLA BIGELOVII.

General: 100+ PLANTS OBSERVED IN 1984.

Owner/Manager: PVT

Occurrence No.	7	**Map Index:**	36732	**EO Index:**	21141	**Element Last Seen:**	1984-04-25
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1984-04-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28982 / -120.62660	**Accuracy:**	specific area
UTM:	Zone-10 N3907767 E715830	**Elevation (ft):**	450
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	4.2

Location: MOUTH OF RESERVOIR CANYON ABOUT 0.5 MILE SOUTH OF HIGHWAY 101, EAST OF SAN LUIS OBISPO.

Detailed Location: ON AND ABOVE (NORTH OF) OLD ROAD CUT.

Ecological: FOUND ON LOOSE SERPENTINE ROCK ON SOUTHWEST-FACING OLD ROAD CUT. LITTLE VEGETATION ON CUT. ASSOCIATED WITH CALOCHORTUS OBISPOENSIS.

General: 50+ PLANTS OBSERVED IN 1984

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	8	**Map Index:**	13111	**EO Index:**	21138	**Element Last Seen:**	1987-05-21
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-05-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.22996 / -120.57492	**Accuracy:**	specific area
UTM:	Zone-10 N3901240 E720693	**Elevation (ft):**	750
PLSS:	T31S, R13E, Sec. 15 (M)	**Acres:**	20.9

Location: ABOUT 1.5 MILES EAST OF BIDDLE RANCH ROAD (ORCUTT ROAD), NORTH OF EAST CORRAL DE PIEDRA CREEK AND SE OF SAN LUIS OBISPO.

Detailed Location: ON WEST FACING SLOPE DUE EAST OF RAYMOND BALL HOUSE. MAPPED ALONG RIDGE BETWEEN EAST CORRAL DE PIEDRA CREEK AND SOUTH BRANCH OF WEST CORRAL DE PIEDRA CREEK.

Ecological: GROWING WITH DUDLEYA ABRAMSII SSP. MURINA AND ANNUAL GRASSES ON SERPENTINE ROCK AND SOIL.

General: 200+ PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	12	**Map Index:**	12871	**EO Index:**	14227	**Element Last Seen:**	1977-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1977-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35084 / -120.64820	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3914489 E713705	**Elevation (ft):**	2000
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	80.4

Location: ALONG CUESTA RIDGE ABOUT 1 MILE WEST OF HIGHWAY 101 AT CUESTA PASS, NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: MAPPED MOSTLY WITHIN THE W 1/2 NW 1/4 SECTION 1 AND THE NE 1/4 NE 1/4 SECTION 2. ACCORDING TO J. SHEVOCK, MAP PROVIDED BY FAIRFAX IS NOT ACCURATE. SITE MAPPED AS NON-SPECIFIC POLYGON AT CNDDB.

Ecological: DRY DISTURBED GROUND IN AREAS OF ALTERED SERPENTINE ROCK.

General: LOCALLY ABUNDANT IN 1987. ALSO COLLECTED HERE BY HOOVER IN 1964.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	13	**Map Index:**	12760	**EO Index:**	14226	**Element Last Seen:**	1998-06-15
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-06-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-01-30

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.37037 / -120.67868	**Accuracy:**	specific area
UTM:	Zone-10 N3916590 E710884	**Elevation (ft):**	2500
PLSS:	T29S, R12E, Sec. 27 (M)	**Acres:**	209.8

Location: CUESTA RIDGE; FROM TV TOWER ABOUT 1.7 MI WNW OF CUESTA PASS NORTH TO HEAD OF SAN LUISITO CREEK, N OF SAN LUIS OBISPO.

Detailed Location: IN OPEN PLACES WITH DISTURBED RED SOILS AROUND SARGENT CYPRESS. MAPPED ALONG RIDGELINE ROAD FOR NEARLY 3 MILES OF CUESTA RIDGE; FROM SE 1/4 SW 1/4 SECTION 21 IN THE NORTH TO SW 1/4 SE 1/4 SECTION 35 IN THE SOUTH.

Ecological: SARGENT CYPRESS FOREST OR SERPENTINE CHAPARRAL WITH CUPRESSUS SARGENTII, ARCTOSTAPHYLOS OBISPOENSIS, QUERCUS DURATA, CALOCHORTUS OBISPOENSIS, AND CAREX OBISPOENSIS. HARD, RED, SERPENTINE SOILS.

General: 1000+ PLANTS OBSERVED IN 1984. 100'S OF PLANTS OBSERVED JUST SOUTH OF TV TOWER IN 1998. 1989 JUNAK AND AYERS COLLECTIONS FROM LOCATIONS "WEST OF PICK AND SHOVEL MINE" ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	14	**Map Index:**	12729	**EO Index:**	21137	**Element Last Seen:**	1987-09-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-09-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24443 / -120.68730	**Accuracy:**	specific area
UTM:	Zone-10 N3902601 E710427	**Elevation (ft):**	150
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	2.4

Location: FROOM RANCH, ABOUT 0.3 MILE WSW OF LOS OSOS VALLEY ROAD AT HIGHWAY 101, JUST SW OF SAN LUIS OBISPO CITY LIMITS.

Detailed Location: TWO COLONIES MAPPED JUST WEST OF FROOM CREEK ALONG LOWER SLOPES OF MINE HILL.

Ecological: IN GRASSLAND AND COASTAL SCRUB ON DRY SERPENTINE SLOPES, SOMETIMES PURE SERPENTINE.

General: FEWER THAN 1000 PLANTS OBSERVED IN 1987. KEIL SAYS THERE ARE A FEW LOCATIONS OF THIS PLANT IN VICINITY OF THIS OCCURRENCE.

Owner/Manager: PVT

Occurrence No.	15	**Map Index:**	39800	**EO Index:**	34802	**Element Last Seen:**	1977-03-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1977-03-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.18848 / -120.61746	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3896545 E716932	**Elevation (ft):**	200
PLSS:	T31S, R13E, Sec. 31 (M)	**Acres:**	0.0

Location: PRICE CANYON ROAD ABOUT 1 MILE SOUTHWEST OF HIGHWAY 227, SOUTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1977 COLLECTION BY IMPER CITED BY REVEAL AND HARDHAM (PHYTOLOGIA, 1989).

Owner/Manager: UNKNOWN

Occurrence No.	16	**Map Index:**	39801	**EO Index:**	34803	**Element Last Seen:**	1987-04-26
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.29048 / -120.60858	**Accuracy:**	specific area
UTM:	Zone-10 N3907880 E717468	**Elevation (ft):**	850
PLSS:	T30S, R13E, Sec. 29 (M)	**Acres:**	9.1

Location: ABOUT 1.1 MILE EAST OF RESERVOIR IN RESERVOIR CANYON AND 1.8 MILES WSW OF LOPEZ MOUNTAIN, EAST OF SAN LUIS OBISPO.

Detailed Location: ON SOUTHWEST-FACING SERPENTINE RIDGE AND SLOPE JUST BELOW 1009' MARK ON MAP. MAPPED WITHIN THE SE 1/4 NW 1/4 SECTION 29.

Ecological: SERPENTINE ROCK, VERY LITTLE SOIL. SOME YUCCA, SURROUNDED BY GRASSLAND. GROWING WITH DUDLEYA ABRAMSII MURINA ON WEST-RUNNING RIDGE BUT FOUND ON NORTH, SOUTH, AND WEST-FACING SLOPES.

General: 1000+ PLANTS OBSERVED IN 1987. 1986 COLLECTION BY KEIL AND WALTERS ATTRIBUTED FOR THIS SITE.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:**	39802	**EO Index:**	34804	**Element Last Seen:**	1987-04-26
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30038 / -120.62003	**Accuracy:**	specific area
UTM:	Zone-10 N3908953 E716400	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 19 (M)	**Acres:**	24.7

Location: ABOUT 1 MILE NORTH OF RESERVOIR CANYON & 0.3 MILE EAST OF HIGHWAY 101, EAST OF SAN LUIS OBISPO.

Detailed Location: ABOUT 0.5 MILE NORTH OF WATER TANK NORTH OF RESERVOIR CANYON. POPULATION RUNS FROM 848' HILLTOP EAST ALONG RIDGE TO INTERMITTENT STREAM VALLEY AND ADJOINING W-FACING SLOPE.

Ecological: ON EXPOSED SERPENTINE RIDGETOP SURROUNDED BY GRASSLAND. GROWING WITH YUCCA AND DUDLEYA ABRAMSII MURINA. GROWING ON SOUTH, WEST, AND NORTH-FACING SLOPES. LAYIA JONESII IN THIS VICINITY TOO.

General: 100+ PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	18	**Map Index:**	39803	**EO Index:**	34805	**Element Last Seen:**	1987-04-27
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.31272 / -120.61945	**Accuracy:**	specific area
UTM:	Zone-10 N3910323 E716419	**Elevation (ft):**	800
PLSS:	T30S, R13E, Sec. 18 (M)	**Acres:**	25.7

Location: ABOUT 0.2 MILE SE OF HIGHWAY 101 AT SAN LUIS OBISPO CREEK CROSSING AND 1 MILE WSW OF MOUNT LOWE, NE OF SAN LUIS OBISPO.

Detailed Location: EAST SIDE OF HWY AT BOTTOM OF CUESTA GRADE. ON SERPENTINE RIDGE 1.8 MI SE OF REAL ESTATE OFFICE AND APARTMENT COMPLEX AND UNDER POWERLINES 0.7 MI SOUTH OF WHERE THEY CROSS HWY. WITHIN W 1/2 SE 1/4 SECTION 18.

Ecological: ALONG TOP AND SLOPE OF ROCKY SERPENTINE RIDGE. GROWING WITH DUDLEYA ABRAMSII MURINA, SURROUNDED BY GRASSLAND.

General: ABOUT 100 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:**	39804	**EO Index:**	34806	**Element Last Seen:**	1992-05-20
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33839 / -120.65899	**Accuracy:**	80 meters
UTM:	Zone-10 N3913085 E712757	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 11 (M)	**Acres:**	0.0

Location: NEAR AQUEDUCT ABOUT 0.6 MILE SOUTHWEST OF SOUTH PORTAL OF CUESTA TUNNEL, NORTH OF SAN LUIS OBISPO.

Detailed Location: ALONG SLOPE ABOVE DIRT ROAD 1 AIR MI EAST OF CAMP SAN LUIS OBISPO BOUNDARY.

Ecological: BARREN, ROCKY SERPENTINE SLOPES WITH S OR SE EXPOSURE. GROWING WITH YUCCA WHIPPLEI AND CHORIZANTHE PALMERI.

General: UNKNOWN NUMBER OF PLANTS OBSERVED IN 1992.

Owner/Manager: PVT-SPRR, STATE

Occurrence No.	20	**Map Index:**	54012	**EO Index:**	34809	**Element Last Seen:**	2003-08-04
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-01-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35857 / -120.69327	**Accuracy:**	specific area
UTM:	Zone-10 N3915251 E709588	**Elevation (ft):**	1300
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	6.1

Location: CAMP SAN LUIS OBISPO, UPPER CHORRO CREEK RESERVOIR NEAR SPRINGS AND MINING SITES, NORTH OF SAN LUIS OBISPO.

Detailed Location: TRAINING AREA X. MAPPED AS SEVEN SMALL POLYGONS IN THE S MIDDLE OF SEC 33 AND THE NW1/4 SEC 33.

Ecological: STEEP ERODED SLOPES AND LEVEL GRADED ROADS ON SERPENTINE SOILS. SERPENTINE CHAPARRAL/WOODLAND, RECENTLY BURNED. PINUS SABINIANA, HETEROMELES, YUCCA WHIPPLEI, AND NASSELLA SPP. ARE DOMINANTS IN UNDISTURBED AREAS. PRIOR MINING AREA.

General: 1000 PLANTS OBSERVED IN 1995 AND 1999. FEWER THAN 170 PLANTS SEEN IN 2001. FEWER THAN 45 PLANTS SEEN IN 2002. MORE THAN 100 PLANTS SEEN IN 2003. OTHER RARE PLANTS IN THIS AREA INCLUDE CALOCHORTUS OBISPOENSIS AND C. CLAVATUS SSP. CLAVATUS.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	21	**Map Index:**	39714	**EO Index:**	34810	**Element Last Seen:**	1994-05-26
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1994-05-26
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-21

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26789 / -120.68159	**Accuracy:**	specific area
UTM:	Zone-10 N3905216 E710886	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 34 (M)	**Acres:**	28.0

Location: HILLSIDE EAST OF LAGUNA LAKE IN LAGUNA LAKE PARK, NORTH OF MADONNA ROAD, SAN LUIS OBISPO. NEAR MADONNA INN.

Detailed Location: 150-250 YARDS FROM PARKING LOT UP FROM ELECTRICAL TOWER ON HILLSIDE; ACROSS FROM EUCALYPTUS IN PARK.

Ecological: SERPENTINE GRASSLAND ON MODERATELY STEEP SW-FACING SLOPE. DOMINATED BY HORDEUM CALIFORNICUM, NASSELLA, DUDLEYA ABRAMSII MURINA, CALOCHORTUS OBISPOENSIS, LOMATIUM PARVIFOLIUM, AND CIRSIUM FONTINALE OBISPOENSE.

General: PLANTS COLLECTED IN THIS VICINITY BY SMELTZER & TURNQUIST (#109 OBI) IN 1982. ALSO SIGHTED HERE IN 1988 DURING CALOCHORTUS OBISPOENSIS SURVEY. ALSO COLLECTED IN THIS VICINITY (DIRECTLY BEHIND AND W OF MADONNA INN) BY TAYLOR IN 1994.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	22	**Map Index:**	39809	**EO Index:**	34811	**Element Last Seen:**	1993-08-03
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-08-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35926 / -120.64062	**Accuracy:**	80 meters
UTM:	Zone-10 N3915440 E714372	**Elevation (ft):**	1360
PLSS:	T29S, R12E, Sec. 36 (M)	**Acres:**	0.0

Location: ALONG ROAD JUST WEST OF NORTH PORTAL OF CUESTA TUNNEL, NORTH OF SAN LUIS OBISPO.

Detailed Location: ON ROADCUT AND ROADBED WITHIN THE NE 1/4 SW 1/4 SECTION 36.

Ecological: ON BARE, ROCKY SERPENTINE SUBSTRATE. GROWING IN LITTLE-USED ROAD.

General: 100-200 PLANTS OBSERVED IN 1993.

Owner/Manager: PVT

Occurrence No.	23	**Map Index:**	39805	**EO Index:**	34807	**Element Last Seen:**	1992-05-20
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34434 / -120.65457	**Accuracy:**	80 meters
UTM:	Zone-10 N3913754 E713143	**Elevation (ft):**	1100
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: ALONG ROAD ABOUT 0.2 MILE SOUTHWEST OF SOUTH PORTAL OF CUESTA TUNNEL, NORTH OF SAN LUIS OBISPO.

Detailed Location: MAPPED SOUTH OF ROAD AND NORTH OF AQUEDUCT.

Ecological: BARREN, ROCKY SERPENTINE SLOPES WITH S OR SE EXPOSURE. GROWING WITH YUCCA WHIPPLEI AND CHORIZANTHE PALMERI.

General: UNKNOWN NUMBER OF PLANTS OBSERVED IN 1992.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	24	**Map Index:**	57206	**EO Index:**	62065	**Element Last Seen:**	2003-05-27
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-20

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23889 / -120.73916	**Accuracy:**	80 meters
UTM:	Zone-10 N3901878 E705721	**Elevation (ft):**	411
PLSS:	T31S, R11E, Sec. 12 (M)	**Acres:**	0.0

Location: SEE CANYON, APPROXIMATELY 0.7 AIRMILE SOUTHWEST OF HEADWATERS OF FROOM CREEK.

Detailed Location: TWO POPULATIONS MAPPED AS ONE POLYGON BY CNDDB. MAPPED WITHIN THE SE 1/4 OF THE SE 1/4 OF SECTION 12.

Ecological: ON A SERPENTINE OUTCROP AND ASSOCIATED SOILS.

General: 1000 PLANTS SEEN IN 2003. MANY OTHER RARE SPECIES IN THIS VICINITY, INCLUDING LOMATIUM PARVIFOLIUM, DUDLEYA ABRAMSII SSP. MURINA, CHORIZANTHE PALMERI, CALOCHORTUS OBISPOENSIS, C. CLAVATUS SSP. CLAVATUS, C. SIMULANS, CASTILLEJA DENSIFLORA.

Owner/Manager: PVT

Occurrence No.	25	**Map Index:**	62036	**EO Index:**	62072	**Element Last Seen:**	2003-04-03
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36265 / -120.68831	**Accuracy:**	80 meters
UTM:	Zone-10 N3915714 E710029	**Elevation (ft):**	1600
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, TAILINGS AT LA TRINIDAD MINE, ABOUT 0.5 MILE EAST OF WHISKEY SPRING.

Detailed Location: MAPPED WITHIN THE S 1/2 OF THE NE 1/4 OF SECTION 33. ALONG DIRT ROAD TO MINE, IN TRAINING AREA X.

Ecological: SERPENTINE SCREE. ASSOCIATES INCLUDE ARCTOSTAPHYLOS OBISPOENSIS, PINUS SABINIANA, CEANOTHUS CUNEATUS VAR. RAMULOSUS, HETEROMELES ARBUTIFOLIA, ESCHSCHOLZIA CALIFORNICA, NASSELLA PULCHRA, AND AVENA SPP.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 2001 AND 2003. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	26	**Map Index:**	62037	**EO Index:**	62073	**Element Last Seen:**	2002-06-18
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-06-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35414 / -120.66526	**Accuracy:**	80 meters
UTM:	Zone-10 N3914818 E712146	**Elevation (ft):**	1675
PLSS:	T29S, R12E, Sec. 34 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, SOUTHEAST OF PICK & SHOVEL MINE, SW OF TV TOWERS ON CUESTA RIDGE.

Detailed Location: TRAINING AREA X. MAPPED IN THE SE 1/4 OF THE SE 1/4 OF SECTION 34.

Ecological: CHAPARRAL WTIH CEANOTHUS CUNEATUS VAR. RAMULOSUS, ARCTOSTAPHYLOS OBISPOENSIS, CALOCHORTUS OBISPOENSIS, CALOCHORTUS CLAVATUS, CALOCHORTUS ARGILLOSUS.

General: FEWER THAN 50 PLANTS SEEN IN 2002. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	27	**Map Index:**	62041	**EO Index:**	62077	**Element Last Seen:**	2000-06-12
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34463 / -120.67698	**Accuracy:**	80 meters
UTM:	Zone-10 N3913739 E711105	**Elevation (ft):**	1200
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, CHORRO CREEK ROAD, ABOUT 0.35 AIRMILE EAST OF CHORRO CREEK, NORTHEAST OF CHORRO RESERVOIR.

Detailed Location: TRAINING AREA X.

Ecological: SERPENTINE RUBBLE WITH HETEROMELES ARBUTIFOLIA, ADENOSTOMA FASCICULATUM, HESPEROYUCCA WHIPPLEI, MIMULUS AURANTIACUS, AND LOTUS SCOPARIUS.

General: FEWER THAN 20 PLANT SEEN IN 2000. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	28	**Map Index:**	62042	**EO Index:**	62078	**Element Last Seen:**	2000-06-12
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33064 / -120.68599	**Accuracy:**	80 meters
UTM:	Zone-10 N3912168 E710323	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, BETWEEN CALIFORNIA MENS COLONY & CHORRO RESERVOIR.

Detailed Location: TRAINING AREA W. MAPPED IN NE1/4 OF SE1/4 SECTION 9.

Ecological: SERPENTINE OUTCROP; RIDGECREST BELOW THE SUMMIT. ASSOCIATES INCLUDE ERIOPHYLLUM CONFERTIFLORUM, GILIA ACHILLEIFOLIA, LOMATIUM UTRICULATUM, ESCHSCHOLZIA CALIFORNICA, CHORIZANTHE PALMERI, NASSELLA PULCHRA, N. LEPIDA, & ALIEN ANNUAL GRASSES.

General: FEWER THAN 20 PLANTS SEEN IN 2000.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	29	**Map Index:** 62043	**EO Index:**	62079		**Element Last Seen:**	2003-04-28
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-04-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-20

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31727 / -120.74864	**Accuracy:**	specific area
UTM:	Zone-10 N3910553 E704661	**Elevation (ft):**	420
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	3.2

Location: CAMP SAN LUIS OBISPO, FIRST RIDGE WEST OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK.

Detailed Location: TRAINING AREA A. SEVERAL GPS POINTS MAPPED AS THREE POLYGONS.

Ecological: SERPENTINE OUTCROP ON STEEP SLOPE. ASSOCIATES INCLUDE ARTEMISIA CALIFORNICA, PHACELIA IMBRICATA, GILIA ACHILLEAFOLIA, LOTUS SCOPARIUS, ESCHSCHOLZIA CALIFORNICA, NASSELLA, AND SELAGINELLA BIGELOVII.

General: 20-30 PLANTS SEEN IN 2000. ABOUT 50 PLANTS SEEN IN 2002. FEWER THAN 50 PLANTS SEEN IN 2003.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	32	**Map Index:** 62082	**EO Index:**	62118		**Element Last Seen:**	1993-05-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-05-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-07-21

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.27934 / -120.61082	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906639 E717294	**Elevation (ft):**	1200
PLSS:	T30S, R13E, Sec. 32 (M)	**Acres:**	132.2

Location: RESERVOIR CANYON, MIDPARTS OF CANYON ON LOWER SLOPES AT LEAST 15 METERS ABOVE CREEK.

Detailed Location: LOCATION VAGUE. MAPPED AS BEST GUESS ON LOWER SLOPES OF MIDDLE PORTION OF RESERVOIR CANYON AT ELEVATION GIVEN ON LABEL (1200').

Ecological: OPEN DRY SLOPES AND FORMERLY DISTURBED AREAS OF SERPENTINE ALLUVIUM.

General: ONLY SOURCE OF INFORMATION IS 1993 COLLECTION BY HRUSA. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Chorizanthe rectispina

Element Code: PDPGN040N0

straight-awned spineflower

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G1
	State:	None		**State:**	S1
	Other:	Rare Plant Rank - 1B.3, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.			
	Micro:	OFTEN ON GRANITE IN CHAPARRAL. 85-1035 M.			

Occurrence No.	19	**Map Index:** 62797	**EO Index:**	62851		**Element Last Seen:**	2003-06-16
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-06-16
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-12-29

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.15527 / -120.56304	**Accuracy:**	80 meters
UTM:	Zone-10 N3892982 E721978	**Elevation (ft):**	365
PLSS:	T32S, R13E, Sec. 10 (M)	**Acres:**	0.0

Location: BADGER CANYON LANE, OFF CORBETT CANYON ROAD, JUST SOUTH OF BEE CANYON, ARROYO GRANDE.

Detailed Location: IN DISTURBED OPEN AREA.

Ecological: LARGEST POPULATION FOUND BENEATH A CROP OF COMMERCIAL RYE. THE OTHER POPULATIONS FOUND IN A DISTURBED OPEN AREA WITH QUERCUS AGRIFOLIA AND ARCTOSTAPHYLOS WELLSII IN VICINITY. WEEDY GRASSES, CHORIZANTHE STATICOIDES, C. DIFFUSA ALSO HERE.

General: IN 2003, THREE POPULATIONS WERE MAPPED TOTALING MORE THAN 2000 PLANTS. ARCTOSTAPHYLOS WELLSII ALSO OCCURS AT THIS SITE.

Owner/Manager: PVT

Occurrence No.	20	**Map Index:** 62798	**EO Index:**	62852		**Element Last Seen:**	2003-05-08
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-10-06

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14195 / -120.57027	**Accuracy:**	80 meters
UTM:	Zone-10 N3891487 E721355	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 15 (M)	**Acres:**	0.0

Location: CARPENTER CANYON, JUST WEST OF CARPENTER CANYON ROAD (HWY 227) ABOUT 0.5 MILE NORTH OF PRINTZ ROAD, ARROYO GRANDE.

Detailed Location: TWO POPULATIONS IDENTIFIED ON DISTURBED GROUND NEAR A DIRT ACCESS ROAD. ONLY ONE SET OF COORDINATES PROVIDED BY ALTHOUSE AND DART. MAPPED IN SE1/4 OF NW1/4 SEC 15.

Ecological: CHAPARRAL, COAST LIVE OAK WOODLAND, AND ANNUAL GRASSLANDS ARE DOMINANT HABITATS ON THIS PARCEL. WEEDY GRASSES, INCUDING EHRHARTA CALYCINA ARE DOMINANT. CAST LIVE OAK AND BLUE GUM EUCCLYPTUS WOODLANDS ARE ADJACENT.

General: 4000 PLANTS SEEN IN 2003. THE RARE ARCTOSTAPHYLOS WELLSII AND CASTILLEJA DENSIFLORA SSP. OBISPOENSIS ALSO OCCUR ON SITE.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:** 62799	**EO Index:**	62853		**Element Last Seen:**	2003-07-18
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-07-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-10-06

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14111 / -120.59388	**Accuracy:**	80 meters
UTM:	Zone-10 N3891342 E719206	**Elevation (ft):**	325
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: SOUTH SLOPE OF CANYON NO. 2, ABOUT 0.3 MILE WEST OF OLD OAK PARK BLVD AT NOYES ROAD, EAST OF ARROYO GRANDE.

Detailed Location: SINGLE PATCH FOUND AT WGS84 35 08 28 / 120 35 38. MAPPED IN NW1/4 OF SW1/4 SEC 16.

Ecological: OPEN SANDY AREAS IN COASTAL SCRUB DOMINATED BY MIMULUS AURANTIACUS AND ARTEMISIA CALIFORNICA AT THE EDGES OF A QUERCUS AGRIFOLIA WOODLAND WITH COASTAL SCRUB UNDERSTORY. ASPECT NW.

General: 50+ PLANTS OBESRVED IN 2003.

Owner/Manager: PVT

Occurrence No.	22	**Map Index:** 13014	**EO Index:**	62854		**Element Last Seen:**	2003-07-18
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-07-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-10-18

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13667 / -120.59041	**Accuracy:**	specific area
UTM:	Zone-10 N3890857 E719535	**Elevation (ft):**	160
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	7.0

Location: 1 MILE NE OF JCT OF HWY 101 AND N. OAK PARK BLVD, AT THE JUNCTION OF JAMES WAY AND LA CANADA, NORTH OF HWY 101.

Detailed Location: TRACT 1998. 2 COLONIES MAPPED, BOTH IN SW1/4 SEC 16.

Ecological: QUERCUS AGRIFOLIA AND ANNUAL GRASSES. SANDY SOILS ARE TYPICAL OF THE EAST ARROYO GRANDE AREA.

General: 300 PLANTS FOUND AT EASTERN COLONY IN 2003. PLANTS RESEMBLING CHORIZANTHE RECTISPINA OBSERVED IN 2003 AT WESTERN COLONY DURING SURVEY FOR CASTILLEJA DENSIFLORA SSP. OBISPOENSIS; NEEDS REVISIT TO CONFIRM IDENTIFICATION.

Owner/Manager: PVT

Occurrence No.	23	**Map Index:**	24010	**EO Index:**	62856	**Element Last Seen:**	2003-07-18
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-07-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-18

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35451 / -120.55121	**Accuracy:**	specific area
UTM:	Zone-10 N3915110 E722509	**Elevation (ft):**	300
PLSS:	T29S, R13E, Sec. 35 (M)	**Acres:**	2.1

Location: SANTA MARGARITA RANCH, APPROX 0.6 MILE WEST OF JCT OF POZO ROAD AND LAS PILITAS ROAD, CUESTA RIDGE VINEYARD.

Detailed Location: WEST OF UNMAPPED DIRT ROAD ON THE NE SIDE OF LOW RIDGE. MAPPED IN SE1/4 OF SW1/4 SEC 35.

Ecological: IN GRASSLAND/SAVANNA WITH VALLEY OAK. ASSOCIATED WITH CHORIZANTHE RECTISPINA, TRICHOSTEMMA LANCEOLATUM, CLARKIA SPECIOSA SSP. SPECIOSA, LESSINGIA FILAGINIFOLIA, LINANTHUS LINIFLORUS, NAVARRETIA ATRACTYLOIDES, BROMUS HORDEACEUS, ETC.

General: 30 PLANTS OVER ABOUT 1/20 ACRE IN 1993. 250 PLANTS SEEN IN 2004. PLANTS WERE NOT EXTIRPATED BY VINEYARD INSTALLATION IN 2000.

Owner/Manager: PVT

Occurrence No.	26	**Map Index:**	62838	**EO Index:**	62892	**Element Last Seen:**	2003-07-18
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-07-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-18

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14498 / -120.58964	**Accuracy:**	specific area
UTM:	Zone-10 N3891781 E719581	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	1.7

Location: JUST NORTH OF WATER TANK WEST OF NOYES ROAD AND SOUTH OF PRINTZ ROAD, EAST OF ARROYO GRANDE.

Detailed Location:

Ecological: OPEN, SANDY AREAS IN COASTAL SCRUB DOMINATED BY MIMULUS AURANTIACUS AND ARTEMISIA CALIFORNICA AT THE EDGES OF A QUERCUS AGRIFOLIA WOODLAND WITH COASTAL SCRUB. ASPECT NW.

General: 550+ PLANTS OBSERVED IN THREE PATCHES IN 2003.

Owner/Manager: PVT

Nemacaulis denudata var. denudata

Element Code: PDPGN0G011

coast woolly-heads

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G3G4T3?
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	COASTAL DUNES.			
	Micro:	0-100M.			

Occurrence No.	37	**Map Index:** 86436	**EO Index:**	87475		**Element Last Seen:**	2000-06-01
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-06-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-08-01

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04221 / -120.61899	**Accuracy:**	1 mile
UTM:	Zone-10 N3880316 E717180	**Elevation (ft):**	
PLSS:	T11N, R36W, Sec. 12 (S)	**Acres:**	0.0

Location: GUADALUPE DUNES NORTH OF OSO FLACO LAKE.

Detailed Location: NEAR FENCED BOUNDARY WITH ACTIVELY USED ORV AREA. EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB JUST NORTH OF OSO FLACO LAKE IN THE VICINITY OF THE OCEANO DUNES SVRA, WHICH IS PART OF THE GUADALUPE-NIPOMO DUNES COMPLEX.

Ecological: WITH OTHER PROSTRATE ANNUAL AND PERENNIAL HERBS.

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 2000 COLLECTION BY KEIL. A 2000 GREENHOUSE OBSERVATION FROM OSO FLACO AND A 2006 CHECKLIST (ACTUAL OBSERVATION DATE UNKNOWN) FROM OCEANO DUNES SVRA ALSO ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: DPR-OCEANO DUNES SVRA

Eriastrum luteum

Element Code: PDPLM03080

yellow-flowered eriastrum

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	BROADLEAFED UPLAND FOREST, CISMONTANE WOODLAND, CHAPARRAL.			
	Micro:	ON BARE SANDY DECOMPOSED GRANITE SLOPES. 360-1000M.			

Occurrence No.	1	**Map Index:** 57232	**EO Index:**	57248		**Element Last Seen:**	1986-05-28
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1986-05-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-03-21

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.37107 / -120.43981	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3917204 E732587	**Elevation (ft):**	1750
PLSS:	T29S, R14E, Sec. 26 (M)	**Acres:**	32.9

Location: ALONG LAS PILITAS ROAD, ABOUT 0.25-0.5 MILE W OF JUNCTION WITH PARK HILL ROAD.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, ALONG LAS PILITAS ROAD, APPROX. 3.2 MILES E OF PILITAS.

Ecological: CHAPARRAL AREAS BURNED IN LAS PILITAS FIRE IN LATE JUNE 1985; PART OF THE AREA WAS ALSO BURNED IN SEPT. 1979.

General: 1947 COLLECTION BY HOOVER "PILITAS CREEK" ATTRIBUTED TO THIS SITE. 1986 COLLECTION DATA OBTAINED FROM CALFLORA OCCURRENCE DATABASE. UNKNOWN NUMBER OF PLANTS SEEN IN 1947 AND 1986. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:** 57233	**EO Index:**	57249		**Element Last Seen:**	1991-07-25
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	1991-07-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-10-06

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.35845 / -120.49746	**Accuracy:**	specific area
UTM:	Zone-10 N3915670 E727383	**Elevation (ft):**	1850
PLSS:	T29S, R14E, Sec. 32 (M)	**Acres:**	3.2

Location: APPROX. 0.5 MILE N OF PILITAS.

Detailed Location: MAPPED WITHIN THE NW 1/4 OF THE SE 1/4 OF SECTION 32.

Ecological: OCCURS IN OPEN AREAS THAT HAVE BEEN NATURALLY CLEARED BY FIRE OR MECHANICALLY CLEARED AS FIRE BREAKS. ON TOPS OF HILLS; ON DECOMPOSED GRANITE. WITH ADENOSTOMA FASCICULATUM.

General: ABOUT 1000 PLANTS SEEN IN THIS POLYGON AND TWO OTHER POLYGONS TO THE NORTH (OCCURRENCES #12 & #13).

Owner/Manager: BLM, PVT

Occurrence No.	23	**Map Index:** 68643	**EO Index:**	69049		**Element Last Seen:**	1947-05-24
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1947-05-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2007-03-21

Quad Summary: Santa Margarita Lake (3512034), Wilson Corner (3512044)

County Summary: San Luis Obispo

Lat/Long:	35.37012 / -120.40303	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3917186 E735932	**Elevation (ft):**	
PLSS:	T29S, R15E, Sec. 30 (M)	**Acres:**	0.0

Location: NEAR ELDORADO [EL DORADO] SCHOOL.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF THE HISTORIC EL DORADO SCHOOL, APPROX. 3 AIR MI NNE OF EASTERN END OF SANTA MARGARITA LAKE.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1947 HOOVER COLLECTION. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Delphinium parryi ssp. blochmaniae

Element Code: PDRAN0B1B1

dune larkspur

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, COASTAL DUNES (MARITIME).			
	Micro:	ON ROCKY AREAS AND DUNES. 0-200 M.			

Occurrence No.	7	**Map Index:** 28610	**EO Index:**	29866		**Element Last Seen:**	1988-04-01
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-04-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-12-18

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04558 / -120.59008	**Accuracy:**	specific area
UTM:	Zone-10 N3880753 E719809	**Elevation (ft):**	140
PLSS:	T12N, R35W, Sec. 08 (S)	**Acres:**	135.5

Location: REFINERY PROPERTY ALONG HIGHWAY 1 ABOUT 4 AIR MILES SOUTH OF OCEANO.

Detailed Location: SITE IS SOUTHWEST OF HIGHWAY, EAST OF SPRR TRACKS, AND NORTH OF THE REFINERY.

Ecological: BACKDUNE SCRUB WITH HAPLOPAPPUS ERICOIDES DOMINANT. ASSOCIATED WITH ESCHSCHOLZIA CALIFORNICA, ORTHOCARPUS PURPURASCENS, COLLINSIA, PLANTAGO, CHORIZANTHE, THELYPODIUM, AND BROMUS DIANDRUS.

General: 32 PLANTS SCATTERED OVER THE PROPERTY OBSERVED IN 1988. AREA IS OPEN, REL. UNDISTURBED LAND; PROVIDES SAFETY BUFFER FOR REFINERY.

Owner/Manager: PVT-UNOCAL

Occurrence No.	8	**Map Index:**	28611	**EO Index:**	29865	**Element Last Seen:**	1988-04-01
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-04-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-18

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04781 / -120.57484	**Accuracy:**	specific area
UTM:	Zone-10 N3881034 E721194	**Elevation (ft):**	140
PLSS:	T12N, R35W, Sec. 09 (S)	**Acres:**	4.2

Location: NIPOMO MESA ALONG HIGHWAY 1, ABOUT 4.5 AIRMILES SSE OF OCEANO AND JUST WEST OF JUNCTION WITH WILLOW ROAD.

Detailed Location: NORTH SIDE OF EAST-WEST SECTION OF HIGHWAY, ABOUT 0.4 MILE WEST OF WHERE HIGHWAY MAKES SHARP TURN TO THE SOUTH.

Ecological: HAPLOPAPPUS ERICOIDES IS DOMINANT SHRUB; SITE IS BORDERED BY EUCALYPTUS GLOBULUS PLANTINGS. OTHER ASSOCIATES INCLUDE ERODIUM, AVENA, BROMUS DIANDRUS, ESCHSCHOLZIA, LASTHENIA, HORKELIA, LUPINUS BICOLOR, CLARKIA, AMSINCKIA, AND ORTHOCARPUS.

General: 56 PLANTS OBSERVED IN 1988.

Owner/Manager: PVT

Occurrence No.	9	**Map Index:**	28612	**EO Index:**	29864	**Element Last Seen:**	1969-05-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1969-05-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-11-16

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.08345 / -120.54002	**Accuracy:**	1 mile
UTM:	Zone-10 N3885065 E724272	**Elevation (ft):**	200
PLSS:	T12N, R35W, Sec. 35 (S)	**Acres:**	0.0

Location: LOS BERROS, SOUTHEAST OF ARROYO GRANDE.

Detailed Location: MAPPED IN VICINITY OF TOWN OF BERROS ALONG LOS BERROS CREEK.

Ecological:

General: THREE COLLECTIONS ATTRIBUTED TO THIS SITE; 1895 COLLECTION BY WATERMAN (SN UC) FROM "LOS BERROS", 1962 COLLECTION BY R.F. HOOVER (#11269 RSA) FROM "3 MILES WEST OF NIPOMO", AND H.C. LEE SN UC FROM "1 MILE NORTH OF LOS BERROS" IN 1936.

Owner/Manager: UNKNOWN

Occurrence No.	10	**Map Index:**	37067	**EO Index:**	29867	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.02079 / -120.61776	**Accuracy:**	specific area
UTM:	Zone-10 N3877942 E717349	**Elevation (ft):**	80
PLSS:	T11N, R36W, Sec. 24 (S)	**Acres:**	10.0

Location: COREOPSIS HILL, JUST SOUTH OF OSO FLACO LAKE, SOUTH OF OCEANO.

Detailed Location: TWO COLONIES ALONG THE NORTH EDGE OF THE GUADALUPE DUNES; ONE COLONY MAPPED 0.25 MILE SOUTH OF OSO FLACO LAKE, THE SECOND COLONY ABOUT 0.5 MILE SE OF LAKE.

Ecological: NORTH-FACING SLOPE IN STABILIZED DUNE SCRUB.

General: MORE THAN 300 PLANTS OBSERVED IN 1998. THREE HISTORIC COLLECTIONS ATTRIBUTED TO THIS VICINITY; BACIGALUPI (#3201 UC) IN 1950, KECK (#2225 POM) IN 1933, AND SUMMERS (SN POM) IN 1886.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	11	**Map Index:**	28608	**EO Index:**	29863	**Element Last Seen:**	1936-03-27
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-12-18

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.27307 / -120.60498	**Accuracy:**	1 mile
UTM:	Zone-10 N3905956 E717842	**Elevation (ft):**	1225
PLSS:	T30S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location: 2.2 MILES WSW OF PINEY RIDGE (2.5 MILES SOUTHWEST OF LOPEZ MOUNTAIN).

Detailed Location: MAPPED ACCORDING TO T-R-S PROVIDED ON COLLECTION LABEL.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY CARLSON.

Owner/Manager: UNKNOWN

Occurrence No.	15	**Map Index:**	40817	**EO Index:**	40817	**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03724 / -120.60059	**Accuracy:**	80 meters
UTM:	Zone-10 N3879804 E718872	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JUST SOUTHEAST OF JACK LAKE, WEST OF SANTA MARIA REFINERY, SOUTH OF OCEANO.

Detailed Location: SINGLE COLONY MAPPED ABOUT 100 M SE OF JACK LAKE.

Ecological: NORTH-FACING SLOPE IN STABILIZED DUNE SCRUB.

General: MORE THAN 300 PLANTS OBSERVED IN 1998.

Owner/Manager: DPR-OCEANO DUNES SVRA

Occurrence No.	16	**Map Index:** 40818	**EO Index:**	40818		**Element Last Seen:**	1998-XX-XX
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	1998-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-02-08

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04517 / -120.59906	**Accuracy:**	specific area
UTM:	Zone-10 N3880688 E718991	**Elevation (ft):**	60
PLSS:	T11N, R35W, Sec. 07 (S)	**Acres:**	9.3

Location: CALLENDER DUNES ABOUT 0.5 MILE NORTH OF JACK LAKE, SOUTH OF OCEANO.

Detailed Location: COLONIES MAPPED ABOUT 0.3 MILE AND 0.5 MILE NORTH OF JACK LAKE AND 0.2 MILE WEST OF RR TRACKS.

Ecological: NORTH-FACING SLOPE IN STABILIZED DUNE SCRUB.

General: MORE THAN 500 PLANTS OBSERVED IN 1998.

Owner/Manager: DPR-OCEANO DUNES SVRA

Delphinium parryi ssp. eastwoodiae

Element Code: PDRAN0B1B2

Eastwood's larkspur

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	SERPENTINE. OPENINGS. 75-500 M.			

Occurrence No.	2	**Map Index:** 84751	**EO Index:**	85777		**Element Last Seen:**	1936-05-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1936-05-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-01-17

Quad Summary: Arroyo Grande NE (3512025), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.24528 / -120.58792	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3902911 E719469	**Elevation (ft):**	600
PLSS:	T31S, R13E, Sec. 09 (M)	**Acres:**	0.0

Location: 2 MILES EAST OF ISLAY HILL.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB TO ENCOMPASS ELEVATIONS OF 600 FEET (180 METERS) ABOUT 2 MILES EAST OF ISLAY HILL ACCORDING TO A 1936 CARLSON COLLECTION.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1936 CARLSON COLLECTION.

Owner/Manager: UNKNOWN

Occurrence No.	3	**Map Index:**	84753	**EO Index:**	85780	**Element Last Seen:**	1953-05-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1953-05-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-17

Quad Summary: Tar Spring Ridge (3512024), Santa Margarita Lake (3512034), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.27297 / -120.53135	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906109 E724540	**Elevation (ft):**	
PLSS:	T30S, R13E, Sec. 36 (M)	**Acres:**	723.0

Location: LOPEZ CANYON, SANTA LUCIA RANGE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB ALONG THE ENTIRE LENGTH OF LOPEZ CANYON ACCORDING TO A 1953 HOOVER COLLECTION.

Ecological: ON STEEP, SUNNY WEST-FACING SLOPE IN CRUMBLING SHALE SOIL.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1953 HOOVER COLLECTION. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	4	**Map Index:**	47409	**EO Index:**	85783	**Element Last Seen:**	1984-02-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1984-02-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-18

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28146 / -120.61486	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906865 E716921	**Elevation (ft):**	
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	176.4

Location: 1 MILE SOUTH OF US 101 IN RESERVOIR CANYON.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS BEST GUESS TO ENCOMPASS TWO COLLECTIONS FROM ONE MILE SOUTH OF US 101 IN RESERVOIR CANYON AND 2.2 MILES SOUTHWEST OF PINEY RIDGE IN SECTION 32.

Ecological: GROWING ON 100% WEST-FACING SLOPE. IN SERPENTINE SOIL.

General: SITE BASED ON A 1967 HAVLIK COLLECTION AND A 1936 CARLSON COLLECTION. OTHER VAGUE COLLECTIONS FROM RESERVOIR CANYON ARE ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	5	**Map Index:**	36731	**EO Index:**	85787	**Element Last Seen:**	1998-05-10
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-05-10
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-17

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28325 / -120.64497	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3906998 E714177	**Elevation (ft):**	450
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: HILLSIDE ABOVE END OF LIZZIE STREET, ABOVE SAN LUIS OBISPO HIGH SCHOOL, SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AROUND THE HILLSIDE ABOVE THE END OF LIZZIE STREET, ABOVE SAN LUIS OBISPO HIGH SCHOOL.

Ecological: SERPENTINE GRASSLAND; NORTH SLOPE IN GRASSLAND WHERE MOISTURE COLLECTS. CLAY LOAM SOIL.

General: SITE BASED ON A 1998 KEIL COLLECION; MENTIONED AS LOCALLY COMMON. A 1977 ALTHOUSE COLLECTION FROM WOLFE'S HORSE RANCH IS ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	84761	**EO Index:**	85790	**Element Last Seen:**	1982-05-07
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1982-05-07
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-17

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.27271 / -120.68589	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3905741 E710482	**Elevation (ft):**	200
PLSS:	T30S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: NORTHEAST SIDE OF LAGUNA LAKE PARK.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS ALONG THE NORTHEAST SIDE OF LAGUNA LAKE PARK.

Ecological: SERPENTINE HILLSIDE.

General: SITE BASED ON A 1982 SMELTZER COLLECTION; MENTIONED AS OCCASIONAL. OTHER COLLECTIONS FROM LAGUNA LAKE PARK, MOUNT SAN LUIS AND THE "HILLS NEAR THE CEMETERY" ARE ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	7	**Map Index:**	76880	**EO Index:**	85799	**Element Last Seen:**	1906-05-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1906-05-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-18

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31443 / -120.64995	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3910446 E713641	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	340.0

Location: POLY CANYON, IRISH HILLS.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB ALONG POLY CANYON.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1906 COLLECTION. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	9	**Map Index:**	84773	**EO Index:**	85803	**Element Last Seen:**	2002-05-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-18

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31387 / -120.74686	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3910180 E704832	**Elevation (ft):**	600
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: FIRST RIDGE 1 MILE WEST OF CERRO ROMAULDO, CAMP SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB 1 MILE FROM CERRO ROMAULDO ON THE FIRST RIDGE WEST TO EMCOMPASS ELEVATIONS OF 600 FEET (180 METERS) ACCORDING TO A 1936 BOLT COLLECTION.

Ecological: GRASSLAND; AMONG SERPENTINE ROCKS ON RIDGE.

General: SITE BASED ON A 1936 BOLT COLLECTION. OTHER VAGUE COLLECTIONS FROM "THE FIRST RIDGE WEST OF CERRO ROMAULDO" ARE ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	10	**Map Index:**	84776	**EO Index:**	85805	**Element Last Seen:**	2000-04-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-04-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-18

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33840 / -120.69859	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3913002 E709157	**Elevation (ft):**	525
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	0.0

Location: EAST-FACING SLOPE ABOVE UNNAMED ROAD, NORTH SIDE OF SERPENTINE OUTCROP WEST OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS TO THE WEST OF CHORRO RESERVOIR TO ENCOMPAS ELEVATIONS OF 525 FEET (160 METERS) ACCORDING TO A 2000 WETHERWAX ET AL. COLLECTION.

Ecological: OAKS; BELOW EDGE OF SERPENTINE OUTCROP.

General: SITE BASED ON A 2000 WETHERWAX ET AL. COLLECTION. A 1928 EASTWOOD COLLECTION FROM "CHORRO CREEK, ON HILLS" IS ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	11	**Map Index:**	84777	**EO Index:**	85808	**Element Last Seen:**	1982-03-13
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1982-03-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2012-01-25

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.34099 / -120.73596	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3913211 E705753	**Elevation (ft):**	450
PLSS:	T30S, R12E, Sec. 06 (M)	**Acres:**	0.0

Location:	COUNTY EDUCATIONAL FACILITY AT RANCHO EL CHORRO.
Detailed Location:	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUES AROUND RANCHO EL CHORRO OUTDOOR SCHOOL.
Ecological:	GRASSY SERPENTINE HILLSIDES.
General:	SITE BASED ON A 1981 KEIL COLLECTION. A 1982 KEIL COLLECTION FROM "PENNINGTON CREEK BIOLOGICAL PRESERVE" IS ALSO ATTRIBUTED TO THIS SITE.
Owner/Manager:	UNKNOWN

Delphinium umbraculorum

Element Code: PDRAN0B1W0

umbrella larkspur

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2G3
	State:	None		**State:**	S2S3.3
	Other:	Rare Plant Rank - 1B.3, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CISMONTANE WOODLAND.			
	Micro:	MESIC SITES. 400-1600M.			

Occurrence No.	20	**Map Index:** 59234	**EO Index:** 59270	**Element Last Seen:**	1957-04-11
Occ. Rank:	Unknown		**Presence:** Presumed Extant	**Site Last Seen:**	1957-04-11
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2005-01-11

Quad Summary: Caldwell Mesa (3512023), Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.20977 / -120.38370	**Accuracy:**	1 mile
UTM:	Zone-10 N3899443 E738158	**Elevation (ft):**	
PLSS:	T31S, R15E, Sec. 20 (M)	**Acres:**	0.0

Location: HEADWATERS OF ARROYO GRANDE.

Detailed Location: APPROXIMATELY 5 AIR MILES EAST OF LOPEZ LAKE.

Ecological: AT HEADWATERS, ON STEEP SLOPES.

General: 1957 HOOVER COLLECTION IS THE ONLY SOURCE FOR THIS OCCURRRENCE. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	21	**Map Index:** 48640	**EO Index:** 59272	**Element Last Seen:**	1953-05-03
Occ. Rank:	None		**Presence:** Possibly Extirpated	**Site Last Seen:**	1953-05-03
Occ. Type:	Natural/Native occurrence		**Trend:** Unknown	**Record Last Updated:**	2008-06-04

Quad Summary: Tar Spring Ridge (3512024)

County Summary: San Luis Obispo

Lat/Long:	35.20478 / -120.46878	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3898688 E730425	**Elevation (ft):**	
PLSS:	T31S, R14E, Sec. 27 (M)	**Acres:**	4056.6

Location: LOPEZ CANYON (NOW LOPEZ LAKE).

Detailed Location:

Ecological: STEEP, SUNNY, WEST-FACING SLOPE IN CRUMBLING SHALE SOIL.

General: LOPEZ DAM CONSTRUCTED IN 1968, SITE POSSIBLY INUNDATED. NEEDS FIELDWORK.

Owner/Manager: SLO COUNTY, OTHER

Horkelia cuneata var. sericea

Element Code: PDROS0W043

Kellogg's horkelia

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	None		**State:**	S2?
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST, COASTAL SCRUB, COASTAL DUNES, CHAPARRAL.			
	Micro:	OLD DUNES, COASTAL SANDHILLS; OPENINGS. 10-200 M.			

Occurrence No.	3	**Map Index:**	40821	**EO Index:**	30421	**Element Last Seen:**	1998-05-20
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-05-20
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1999-02-09

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04672 / -120.59970	**Accuracy:**	80 meters
UTM:	Zone-10 N3880858 E718928	**Elevation (ft):**	80
PLSS:	T11N, R35W, Sec. 07 (S)	**Acres:**	0.0

Location: CALLENDER DUNES, ABOUT 0.6 MILE NORTH OF JACK LAKE, SOUTH OF OCEANO.

Detailed Location: SINGLE COLONY MAPPED ABOUT 800 M SSW OF BENCHMARK AT CALLENDER.

Ecological: STABILIZED DUNE SCRUB WITH EHRHARTA CALYCINA DOMINANT. ASSOCIATED WITH CASTILLEJA EXSERTA, DUDLEYA LANCEOLATA, ERICAMERIA ERICOIDES, HORKELIA CUNEATA, LOTUS, ESCHSCHOLZIA, LINARIA, LESSINGIA, CARDIONEMA, CONICOSIA, AND CROTON CALIFORNICA.

General: OBSERVED HERE DURING 1998 SURVEY FOR LUPINUS NIPOMOENSIS. FIRST REPORTED FROM THIS VICINITY IN 1933 COLLECTION BY D. KECK #2232. THE RARE PRUNUS FASCISULATA VAR. PUNCTATA OCCURS NEARBY.

Owner/Manager: UNKNOWN

Occurrence No.	4	**Map Index:**	28852	**EO Index:**	30422	**Element Last Seen:**	1969-05-03
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1969-05-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-03-10

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.04095 / -120.54421	**Accuracy:**	1 mile
UTM:	Zone-10 N3880341 E724006	**Elevation (ft):**	275
PLSS:	T12N, R35W, Sec. 15 (S)	**Acres:**	0.0

Location: 4 MILES WEST OF NIPOMO.

Detailed Location: EXACT LOCATION UNKNOWN. LOCATION MAPPED AT CNDDB IS A BEST GUESS: 4 AIR MILES WEST OF NIPOMO ON NIPOMO MESA.

Ecological: IN SANDY FIELD. 1 LARGE CLUMP OF SSP. SERICEA GROWING AMONG MANY PLANTS OF HORKELIA CUNEATA SSP. CUNEATA.

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1969 COLLECTION BY HOOVER. SPECIMENS FROM THIS AREA HAVE BEEN DETERMINED TO BE SSP. SERICEA VARYING TOWARDS SSP. CUNEATA (ERTTER 1993).

Owner/Manager: UNKNOWN

Occurrence No.	5	**Map Index:** 13010	**EO Index:**	30304		**Element Last Seen:**	1989-05-23
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1989-05-23
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1997-02-04

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.03858 / -120.60406	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3879946 E718552	**Elevation (ft):**	100
PLSS:	T12N, R35W, Sec. 18 (S)	**Acres:**	0.0

Location: JACK LAKE, 4 AIR MILES SOUTH OF OCEANO.

Detailed Location: NEAR UNOCAL OIL REFINERY.

Ecological:

General: SEVERAL COLLECTIONS FROM THIS VICINITY INCLUDING HOOVER (#9248) IN 1964 AND (#10544) IN 1967, POLLARD (SN) IN 1968, IN ADDITION TO VAGUE "GUADALUPE DUNES" COLLECTION BY DEMAREE (#18106).

Owner/Manager: PVT?

Horkelia cuneata var. puberula

Element Code: PDROS0W045

mesa horkelia

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4T2
	State:	None		**State:**	S2.1
	Other:	Rare Plant Rank - 1B.1, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, COASTAL SCRUB.			
	Micro:	SANDY OR GRAVELLY SITES. 70-810M.			

Occurrence No.	53	**Map Index:** 28510	**EO Index:**	55043		**Element Last Seen:**	1966-05-17
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1966-05-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-04-09

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19955 / -120.66126	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3897678 E712914	**Elevation (ft):**	670
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	0.0

Location: INDIAN KNOB RIDGE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF INDIAN KNOB RIDGE, APPROX. 3.7 MILES NNW OF PISMO BEACH, AND 1.7 MILES E OF HWY 101.

Ecological:

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1966. NEEDS FIELDWORK.

Owner/Manager: PVT-GUIDETTI RANCH, TNC, UNK

Occurrence No.	54	**Map Index:** 29111	**EO Index:**	55044		**Element Last Seen:**	1936-03-19
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1936-03-19
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-04-09

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.15892 / -120.63298	**Accuracy:**	1 mile
UTM:	Zone-10 N3893232 E715596	**Elevation (ft):**	225
PLSS:	T32S, R12E (M)	**Acres:**	0.0

Location: 1.1 MILE NE OF PISMO. "ARROYO GRANDE TRIANGLE."

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, 1.1 MILE NE OF THE TOWN OF PISMO BEACH.

Ecological:

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1936. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	55	**Map Index:** 55045	**EO Index:**	55045		**Element Last Seen:**	1971-04-24
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1971-04-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-04-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36153 / -120.65774	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3915655 E712810	**Elevation (ft):**	2450
PLSS:	T29S, R12E, Sec. 35 (M)	**Acres:**	0.0

Location: CUESTA RIDGE, IN CUESTA RIDGE BOTANICAL AREA ALONG THE RIDGE AT FIREBREAK.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, ALONG THE RIDGE AT FIREBREAK, APPROX. 4.5 MILES N OF SAN LUIS OBISPO, & 1.1 MILE W OF HWY 101.

Ecological: CUPRESSUS SARGENTII - QUERCUS DUMOSA DOMINATED WOODLAND ON SERPENTINE.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1971. NEEDS FIELDWORK.

Owner/Manager: USFS-LOS PADRES NF

Castilleja densiflora var. obispoensis

Element Code: PDSCR0D453

San Luis Obispo owl's-clover

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive			
Habitat:	**General:**	VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	10-215 M.			

Occurrence No.	1	**Map Index:** 47407	**EO Index:**	47407		**Element Last Seen:**	2003-05-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-09

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23492 / -120.74367	**Accuracy:**	specific area
UTM:	Zone-10 N3901429 E705321	**Elevation (ft):**	411
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	12.2

Location: SEE CANYON, APPROXIMATELY 0.7 AIRMILE SOUTHWEST OF HEADWATERS OF FROOM CREEK.

Detailed Location: TWO COLONIES MAPPED PRIMARILY IN THE NORTHEAST 1/4 OF SECTION 13.

Ecological: SERPENTINE INFLUENCED CALIFORNIA ANNUAL GRASSLAND. WITH CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS.

General: A FEW HUNDRED PLANTS OBSERVED IN 2003. INITIAL 1908 COLLECTION BY CONDIT (SN UC) "SEE CANYON" ATTRIBUTED TO SITE.

Owner/Manager: PVT

Occurrence No.	2	**Map Index:** 47408	**EO Index:**	47408		**Element Last Seen:**	2003-04-03
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-04-03
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-24

Quad Summary: Arroyo Grande NE (3512025), Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.14582 / -120.62679	**Accuracy:**	80 meters
UTM:	Zone-10 N3891793 E716195	**Elevation (ft):**	195
PLSS:	T32S, R13E, Sec. 18 (M)	**Acres:**	0.0

Location: EAST OF PISMO CREEK, NEAR EASTERN BOUNDARY OF PISMO BEACH TOWN.

Detailed Location:

Ecological: IN ANNUAL GRASSLAND OUTCROP ON RIDGETOP, IN OPENING BETWEEN SCRUB HABITAT. ASSOCIATED WITH ANNUAL GRASSES AND FORBES, SITE WEEDY.

General: 50-75 PLANTS OBSERVED IN 2003 BY CURLETTE. MUNZ COLLECTION FROM "PISMO BEACH" ATTRIBUTED TO THIS SITE.

Owner/Manager: PVT

Occurrence No.	3	**Map Index:** 47409	**EO Index:**	47409		**Element Last Seen:**	1987-04-17
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-04-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2002-03-12

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28146 / -120.61486	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906865 E716921	**Elevation (ft):**	700
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	176.4

Location: RESERVOIR CANYON.

Detailed Location: ON THE NORTHERN SIDE.

Ecological: AMONG GRASSES IN OPEN AREA, IN CLAY SOIL NEAR SERPENTINE OUTCROPS.

General: NEEDS FIELDWORK. COLLECTION FROM "2.2 MILES WEST-SOUTHWEST OF PINEY RIDGE" (N. CARLSON #238) ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	4	**Map Index:**	47410	**EO Index:**	47410	**Element Last Seen:**	2005-03-21
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-03-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25882 / -120.66243	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904251 E712652	**Elevation (ft):**	170
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	18.4

Location: PROPERTY AT END OF MARGARITA AVENUE, 0.6 MILE EAST OF HIGHWAY 101, SAN LUIS OBISPO.

Detailed Location: ON SHALLOW SOIL AREAS WHERE ANNUAL GRASSES ARE LESS DENSE. PLANTS OBSERVED IN THREE GENERAL AREAS ON THE PROPERTY. MORE SPECIFIC MAP DETAIL NEEDED.

Ecological: GRAZED GRASSLAND HABITAT ON SERPENTINE CLAY SOILS. TWO SEASONAL STREAMS AND WETLAND SEEPS OCCUR ON THE PROPERTY.

General: 3000 PLANTS OBSERVED IN 2005. SEVERAL OLD COLLECTIONS FROM SAN LUIS OBISPO ATTRIBUTED TO THIS SITE. THE RARE CALOCHORTUS SIMULANS, DUDLEYA ABRAMSII SSP. MURINA, AND ASTRAGALUS DIDYMOCARPUS VAR. MILESIANUS ALSO OCCUR AT THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	5	**Map Index:**	44531	**EO Index:**	47411	**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2002-03-12

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32640 / -120.67655	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3911717 E711192	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: NEAR CHORRO.

Detailed Location:

Ecological:

General: NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	6	**Map Index:**	40956	**EO Index:**	47412	**Element Last Seen:**	1908-04-12
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1908-04-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2002-03-12

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.26565 / -120.73209	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904861 E706297	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 31 (M)	**Acres:**	251.6

Location: "PERFUMO" [PREFUMO] CANYON.

Detailed Location: LOCATION INFORMATION IS VAGUE.

Ecological:

General: NEEDS FIELDWORK. ONLY SOURCE OF INFORMATION IS COLLECTION FROM 1908 BY E. UNANGST.

Owner/Manager: UNKNOWN

Occurrence No.	18	**Map Index:**	28508	**EO Index:**	55799	**Element Last Seen:**	1936-03-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1936-03-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-09

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18636 / -120.71440	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3896102 E708109	**Elevation (ft):**	175
PLSS:	T31S, R12E, Sec. 32 (M)	**Acres:**	0.0

Location: 0.6 MILE NNE OF SYCAMORE SPRINGS.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED IN THE VICINITY OF SYCAMORE SPRINGS.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1936 COLLECTION BY CARLSON. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	19	**Map Index:**	55784	**EO Index:**	55800	**Element Last Seen:**	2003-05-19
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-19
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-09

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13814 / -120.58411	**Accuracy:**	specific area
UTM:	Zone-10 N3891034 E720104	**Elevation (ft):**	290
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	10.0

Location: NORTH OF ARROYO GRANDE, APPROXIMATELY 0.5 AIRMILE WSE OF POORMAN CANYON.

Detailed Location: TWO COLONIES MAPPED AS ONE POLYGON LOCATED PRIMARILY IN THE WESTERN 1/2 OF THE SE 1/4 OF SECTION 16.

Ecological: CALIFORNIA ANNUAL GRASSLAND DOMINATED BY EHRHARTA CALYCINA. PATCHES WERE ALSO FOUND IN DISTURBED AREA ALONG MARGIN OF QUERCUS AGRIFOLIA WOODLAND.

General: 30+ INDIVIDUALS OBSERVED IN 2003. CASTILLEJA PRIMARILY FOUND IN AREAS OF THIN EHRHARTA CALYCINA GROWTH.

Owner/Manager: PVT

Occurrence No.	20	**Map Index:**	62798	**EO Index:**	55801	**Element Last Seen:**	2003-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-18

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14195 / -120.57027	**Accuracy:**	80 meters
UTM:	Zone-10 N3891487 E721355	**Elevation (ft):**	250
PLSS:	T32S, R13E, Sec. 15 (M)	**Acres:**	0.0

Location: CARPENTER CANYON, APPROXIMATELY 0.5 AIRMLE NORTH OF CONFLUENCE WITH POORMAN CANYON, NORTH OF ARROYO GRANDE.

Detailed Location: ONE COLONY MAPPED FROM COORDINATES PROVIDED IN THE SE 1/4 OF THE NW 1/4 OF SECTION 15.

Ecological: PLANTS LOCATED IN ANNUAL GRASSALND AT THE TOE OF SLOPE IN SANDY SOILS. CHAPARRAL, COAST LIVE OAK WOODLAND AND ANNUAL GRASSLANDS ARE THE DOMINANT HABITATS ON A 27 ACRE PARCEL ON CARPENTER CANYON ROAD (HWY 227) IN ARROYO GRANDE.

General: 150-200 INDIVIDUALS OBSERVED IN 2003.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:** 55786	**EO Index:**	55802		**Element Last Seen:**	2003-05-09
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-09

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13546 / -120.59195	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3890720 E719397	**Elevation (ft):**	159
PLSS:	T32S, R13E, Sec. 16 (M)	**Acres:**	0.0

Location: EAST OF CENTRAL NOYES ROAD, APPROXIMATELY 0.6 AIRMILE NORTH OF ST. PATRICKS SCHOOL, NORTH OF ARROYO GRANDE.

Detailed Location: ONE COLONY MAPPED AT THE CORNER OF LA CANADA AND JAMES WAY. LOCATED IN THE SW 1/4 OF THE SW 1/4 OF SECTION 16.

Ecological: PLANTS LOCATED ACROSS OPEN GRASSY AREAS BETWEEN QUERCUS AGRIFOLIA IN SANDY SOILS. CLARKIA SPECIOSA SSP. IMMACULATA PRESENT.

General: 100 INDIVIDUALS OBSERVED IN 2003. THIS AREA IS DESIGNATED AS OPEN SPACE.

Owner/Manager: PVT

Occurrence No.	22	**Map Index:** 55787	**EO Index:**	55803		**Element Last Seen:**	2003-05-01
Occ. Rank:	Poor		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-09

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.35330 / -120.54188	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3914998 E723361	**Elevation (ft):**	1138
PLSS:	T29S, R13E, Sec. 35 (M)	**Acres:**	0.0

Location: WEST OF POZO ROAD, IN VICINITY OF FIVEMILE BRIDGE.

Detailed Location: MAPPED FROM MAP PROVIDED, SITE LOCATED ALONG ACCESS ROAD TO CUESTA RIDGE VINEYARD, ALONG TACO CREEK.

Ecological: PLANT GROWING IN GRASSY AREA, PLOWED IN PAST YEARS BUT NOW A FALLOW STRIP OF LAND IN A SAFE HARBOR AREA FOR CALIFORNIA RED-LEGGED FROG.

General: 1 INDIVIDUAL OBSERVED IN 2003.

Owner/Manager: PVT-SANTA MARGARITA RANCH

Occurrence No.	23	**Map Index:** 55788	**EO Index:**	55804		**Element Last Seen:**	2003-05-06
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-06
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-06-09

Quad Summary:	Lopez Mtn. (3512035)
County Summary:	San Luis Obispo

Lat/Long:	35.36583 / -120.59777	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3916263 E718248	**Elevation (ft):**	1253
PLSS:	T29S, R13E, Sec. 32 (M)	**Acres:**	0.0

Location:	WEST OF MILLER FLAT, EAST SLOPE OF SANTA LUCIA MOUNTAINS.
Detailed Location:	MAPPED FROM COORDINATES PROVIDED. SITE LOCATED IN THE NE 1/4 OF THE NE 1/4 OF SECTION 32.
Ecological:	CALIFORNIA ANNUAL GRASSLAND ON ROLLING FOOTHILLS. PLANTS LOCATED ALONG RIDGE WITH SERPENTINE OUTCROPS. NON-NATIVE GRASSES DOMINATE.
General:	UNKNOWN NUMBER OF PLANTS OBSERVED IN 2003, PART OF SURVEY FOR CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS.
Owner/Manager:	PVT-SANTA MARGARITA RANCH

Occurrence No.	24	**Map Index:** 55792	**EO Index:**	55808		**Element Last Seen:**	2003-04-29
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-24

Quad Summary:	San Luis Obispo (3512036)
County Summary:	San Luis Obispo

Lat/Long:	35.33276 / -120.69280	**Accuracy:**	specific area
UTM:	Zone-10 N3912388 E709698	**Elevation (ft):**	480
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	8.7

Location:	BOTH SIDES OF CHORRO CREEK, APPROXIMATELY 0.5 AIRMILE NORTH OF THE CALIFORNIA MENS COLONY.
Detailed Location:	4 COLONIES OF PLANTS OBSERVED AT THIS SITE.
Ecological:	DISTURBED GRAZED GRASSLAND ON SERPENTINE CLAY SOILS. SHALLOW SOIL TO BEDROCK. PLANTS OCCUR ON EAST AND NORTH-FACING GENTLE SLOPES.
General:	FEWER THAN 100 PLANTS OBSERVED IN 2000 AT TWO NORTHERN COLONIES, FEWER THAN 50 PLANTS OBSERVED IN 2002 AT EASTERN COLONY, AND ABOUT 500 IPLANTS OBSERVED IN 2003 AT SOUTHERN COLONY. THE RARE CALYSTEGIA SUBACAULIS SUBACAULIS ALSO FOUND HERE.
Owner/Manager:	STATE-CAMP SAN LUIS OBISPO

Occurrence No.	26	**Map Index:** 62374	**EO Index:**	62411		**Element Last Seen:**	2005-04-01
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-04-01
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-24

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.18858 / -120.60948	**Accuracy:**	specific area
UTM:	Zone-10 N3896573 E717658	**Elevation (ft):**	200
PLSS:	T31S, R13E, Sec. 32 (M)	**Acres:**	7.8

Location: EAST OF PISMO CREEK AND NORTH OF CANADA VERDE, ABOUT 1 MILE SOUTH OF EDNA.

Detailed Location:

Ecological: GRAZED ANNUAL GRASSLAND WITH SHALLOW TO MODERATE SLOPE. ASSOCIATED WITH LUPINUS BICOLOR, MEDICAGO POLYMORPHA, LOLIUM MULTIFLORUM, BROMUS HORDEACEOUS, VULPIA MYUROS, RUMEX ACETOSELLA, AND ERODIUM CICUTARIUM.

General: 1500 PLANTS OBSERVED IN 2005.

Owner/Manager: UNKNOWN

Occurrence No.	30	**Map Index:** 62384	**EO Index:**	62421		**Element Last Seen:**	2003-05-18
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-18
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31574 / -120.74614	**Accuracy:**	specific area
UTM:	Zone-10 N3910389 E704892	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	1.9

Location: FIRST RIDGE WEST OF CERRO ROMAULDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA A.

Ecological: SERPENTINE OUTCROP, ON STEEP SLOPE WITH ERIOPHYLLUM CONFERTIFLORUM, CHORIZANTHE PALMERI, OROBANCHE CALIFORNICA SSP. GRANDIS, AND O. FASCICULATA.

General: FEWER THAN 50 PLANTS SEEN AT NORTHERN COLONY AND FEWER THAN 100 PLANTS SEEN AT SOUTHERN COLONY IN 2003. THE RARE CHORIZANTHE PALMERI, DUDLEYA ABRAMSII SSP. BETTINAE, AND MONARDELLA PALMERI ALSO OCCUR IN THIS VICINITY.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	31	**Map Index:**	62385	**EO Index:**	62422	**Element Last Seen:**	2002-04-22
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-04-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31885 / -120.73798	**Accuracy:**	80 meters
UTM:	Zone-10 N3910751 E705627	**Elevation (ft):**	200
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: WEST BASE OF CERRO ROMAULDO, NEAR GATE FOR ROAD TO WATER TOWER, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA V.

Ecological: IN GRASSLAND/MEADOW WITH CLAY SOILS ON MODERATE SLOPE. ASSOCIATES INCLUDE NASELLA PULCHRA, ALIEN ANNUAL GRASSES, MICROSERIS DOUGLASII, LAGOPHYLLA RAMOSISSIMA, TRIFOLIUM, AND MEDICAGO.

General: 4 PLANTS SEEN IN 2002.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	32	**Map Index:**	62386	**EO Index:**	62423	**Element Last Seen:**	2003-04-01
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-01
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31513 / -120.72204	**Accuracy:**	specific area
UTM:	Zone-10 N3910371 E707085	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 18 (M)	**Acres:**	1.9

Location: NORTHEAST SIDE OF CERRO ROMUALDO, ABOUT 0.35 MILE FROM SUMMIT, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA K.

Ecological: FERAL GRASSLAND/MEADOW WITH CASTILLEJA ATTENUATA, TRIFOLIUM DEPAUPERATUM, TRIPHYSARIA PUSILLA, VIOLA, ERODIUM, HYPOCHAERIS GLABRA, MEDICAGO, NASELLA, AND ARTEMISIA CALIFORNICA.

General: IN 2003, UNKNOWN NUMBER OF PLANTS SEEN AT NORTHERN COLONY AND MORE THAN 50 PLANTS SEEN AT SOUTHERN COLONY.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	33	**Map Index:**	62387	**EO Index:**	62424	**Element Last Seen:**	2002-05-08
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31277 / -120.71242	**Accuracy:**	80 meters
UTM:	Zone-10 N3910129 E707965	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 17 (M)	**Acres:**	0.0

Location: WEST SIDE OF CHUMASH PEAK, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA L.

Ecological: IN MEADOW ON MODERATE SLOPE. ASSOCIATES: TRIFOLIUM, TRYPHYSARIA, CLARKIA AFFINIS, CENTAUREUM, DAVYI, CHLOROGALUM POMERIDIANUM, SISYRINCHIUM BELLUM, SIDALCEA MALVIFLORA, CALYSTEGIA SUBACAULIS SSP. EPISOCOPALIS, ANAGALLIS ARVENSIS, ETC.

General: MORE THAN 1000 PLANTS SEEN IN 2002.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	34	**Map Index:**	62389	**EO Index:**	62426	**Element Last Seen:**	2003-04-18
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32971 / -120.69842	**Accuracy:**	specific area
UTM:	Zone-10 N3912039 E709195	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	2.4

Location: CHORRO VALLEY ROAD, ABOUT 0.25 AIR MILE NORTHWEST OF THE CALIFORNIA MENS COLONY, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREAS N AND T.

Ecological: IN FERAL GRASSLAND/BARRENS ON GENTLE SLOPE. ASSOCIATES INCLUDE ANNUAL GRASSES, LESSINGIA, ASTRAGALUS CURTIPES, PLANTAGO ERECTA, TRIFOLIUM HIRTUM, ALLIUM HAEMATOCHITON, AND LOTUS STRIGOSUS.

General: FEWER THAN 50 PLANTS SEEN IN 2003. THE RARE DUDLEYA BLOCHMANIAE ALSO OCCURS AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	35	**Map Index:**	62394	**EO Index:**	62431	**Element Last Seen:**	2000-04-18
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-04-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-24

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34072 / -120.69188	**Accuracy:**	specific area
UTM:	Zone-10 N3913274 E709761	**Elevation (ft):**	700
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	1.9

Location: NORTHWEST OF CHORRO RESERVOIR, NEAR GATE ON RANGE ROAD, CAMP SAN LUIS OBISPO.

Detailed Location: SOUTH OF LARGE SERPENTINE OUTCROP, AT BASE OF OUTCROP AND SLOPE BELOW. TRAINING AREAS T AND N.

Ecological: FERAL GRASSLAND/ MEADOW ON STEEP TO MODERATE SLOPE.

General: FEWER THAN 100 PLANTS SEEN IN 2000.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	39	**Map Index:** 62411	**EO Index:**	62448		**Element Last Seen:**	2005-04-29
Occ. Rank:	Excellent		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-29

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18881 / -120.69151	**Accuracy:**	specific area
UTM:	Zone-10 N3896423 E710187	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	8.1

Location: SOUTH SLOPE OF SQUIRE CANYON, EAST OF MONTE ROAD, SAN LUIS OBISPO.

Detailed Location: IN OLD DIRT ROADWAY WHERE SOILS ARE SHALLOW.

Ecological: VALLEY AND SOUTHERN COASTAL GRASSLAND ON THIN SANDY SOILS UNDERLAID BY SHALLOW DECOMPOSING SANDSTONE BEDROCK. ASSOCIATES INCLUDE NASSELLA PULCHRA, BROMUS HORDEACEOUS, VULPIA MYUROS, PLANTAGO ERECTA, AND ERODIUM SPP.

General: 11,000 PLANTS SEEN IN 2005. THE RARE ARCTOSTAPHYLOS WELLSII AND AGROSTIS HOOVERI OCCUR IN THE NEAR VICINITY.

Owner/Manager: PVT

Occurrence No.	40	**Map Index:** 62413	**EO Index:**	62450		**Element Last Seen:**	2005-05-25
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-05-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-08-29

Quad Summary: Arroyo Grande NE (3512025), Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.25025 / -120.60282	**Accuracy:**	80 meters
UTM:	Zone-10 N3903430 E718099	**Elevation (ft):**	370
PLSS:	T31S, R13E, Sec. 05 (M)	**Acres:**	0.0

Location: NORTHEAST OF ORCUTT ROAD, ABOUT 1.25 AIRMILE ENE OF TOP OF ISLAY HILL, SOUTHEAST OF SAN LUIS OBISPO.

Detailed Location: PARCEL #APN-044-051-018.

Ecological: ON A ROCKY HILLTOP IN LOS OSOS-DIABLO COMPLEX SOIL TYPE IN GRAZED GRASSLAND HABITAT.

General: 50 PLANTS OBSERVED IN 2005. ONE PLANT WAS IN FLOWER, THE REST WERE IN FRUIT. THE RARE CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS ALSO OCCURS AT THIS SITE.

Owner/Manager: PVT

Scrophularia atrata

Element Code: PDSCR1S010

black-flowered figwort

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2			
Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL DUNES, COASTAL SCRUB, RIPARIAN SCRUB.			
	Micro:	SAND, DIATOMACEOUS SHALES, AND SOILS DERIVED FROM OTHER PARENT MATERIAL; AROUND SWALES AND IN SAND DUNES. 10-250M.			

Occurrence No.	29	**Map Index:**	29110	**EO Index:**	30967	**Element Last Seen:**	198X-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	198X-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-04-14

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.20111 / -120.66049	**Accuracy:**	specific area
UTM:	Zone-10 N3897853 E712980	**Elevation (ft):**	640
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	6.3

Location: INDIAN KNOB, SOUTH OF SAN LUIS OBISPO AND NORTH OF PISMO BEACH.

Detailed Location: MAPPED ALONG ROAD ABOUT 0.25 MILE NORTHWEST OF 887' BENCHMARK.

Ecological: THE RARE ERIODICTYON ALTISSIMUM, CALOCHORTUS OBISPOENSIS, AND LUPINUS LUDOVICIANUS OCCUR NEARBY.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS MAP DETAIL PROVIDED BY MCLEOD. COLLECTION FROM "HILLS BORDERING SAN LUIS V. ON THE SOUTH, W OF EDNA" (HOOVER #9872 OBI) ALSO INCLUDED IN THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	30	**Map Index:**	21053	**EO Index:**	30968	**Element Last Seen:**	2003-04-03
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-04-03
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-05-12

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.14429 / -120.62992	**Accuracy:**	specific area
UTM:	Zone-10 N3891616 E715914	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 18 (M)	**Acres:**	13.9

Location: EAST SIDE OF PRICE CANYON, EAST OF PISMO CREEK, NORTH OF PISMO BEACH.

Detailed Location: NORTH FROM SEWAGE TREATEMENT FACILITY. APPROXIMATELY 2000 FEET FROM HIGHWAY 101.

Ecological: IN DRAINAGES LEADING TO PISMO CREEK. IN RIPARIAN AND COYOTE BRUSH SCRUB HABITAT ADJACENT TO INTERMITTENT DRAINAGE CHANNELS.

General: 300-400 PLANTS SEEN IN 2003. PLANTS IN DENSE CLUSTERS. 1959 COLLECTION BY HOOVER FROM PRICE CANYON ATTRIBUTED TO THIS SITE.

Owner/Manager: PVT

Occurrence No.	31	**Map Index:**	29109	**EO Index:**	30966	**Element Last Seen:**	1990-03-31
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1990-03-31
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1997-04-14

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.17590 / -120.71001	**Accuracy:**	specific area
UTM:	Zone-10 N3894951 E708536	**Elevation (ft):**	150
PLSS:	T32S, R12E, Sec. 05 (M)	**Acres:**	27.9

Location: MALLAGH LANDING, EAST OF AVILA BEACH ALONG CAVE LANDING ROAD.

Detailed Location:

Ecological: COASTAL SCRUB.

General: 14+ PLANTS OBSERVED IN 1991.

Owner/Manager: PVT

Occurrence No.	32	**Map Index:** 61299	**EO Index:**	61335		**Element Last Seen:**	2003-XX-07
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-XX-07
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-12

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.13804 / -120.62488	**Accuracy:**	80 meters
UTM:	Zone-10 N3890934 E716389	**Elevation (ft):**	100
PLSS:	T32S, R13E, Sec. 18 (M)	**Acres:**	0.0

Location: NORTH OF HIGHWAY 101 AT JAMES WAY AND VENTANA DRIVE, PISMO BEACH.

Detailed Location: NORTHWEST OF INTERSECTION. SOME PLANTS ADJACENT TO WETLAND AREAS, HOWEVER MOST PLANTS WERE FOUND ON THE DRIER SOUTH FACING SLOPES WITH COYOTE BUSH OVERSTORY.

Ecological: RIPARIAN SCRUB WITH BACCHARIS PILULARIS. CALCAREOUS SHALY SUBSOIL WITH A VERY FRIABLE SANDY SURFACE SOIL.

General: 200 PLANTS SEEN IN 2001. 150 SEEN IN 2003, 50-70 PLANTS TRANSPLANTED TO A PERMANENT SETBACK AREA FOR PRESERVATION ON EAST SIDE OF DRAINAGE.

Owner/Manager: PVT-INLAND PACIFIC BUILDERS

Occurrence No.	33	**Map Index:** 61300	**EO Index:**	61336		**Element Last Seen:**	2004-03-25
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-03-25
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-12

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18232 / -120.70077	**Accuracy:**	80 meters
UTM:	Zone-10 N3895683 E709361	**Elevation (ft):**	80
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	0.0

Location: AT SOUTHEAST CORNER OF MONTE ROAD AND ROUTE 101 ON-RAMP AND A SHORT WAY ALONG MONTE ROAD, EAST OF AVILA BEACH.

Detailed Location: FROM MONTE ROAD STREET SIGN PLANTS ARE FOUND UP TO 100 FEET EAST ALONG MONTE ROAD AND 30 FEET SOUTH ALONG ROUTE 101 AVILA ON-RAMP. MAPPED ACCORDING TO UTM COORDINATES PROVIDED BY EDELL: UTM ZONE 10 NAD83 709361E 3895683N.

Ecological: CENTRAL COAST SCRUB BELOW COAST LIVE OAK WOODLAND. SOIL IS LOPEZ VERY SHALY CLAY LOAM SOIL. ASSOCIATES INCLUDE: QUERCUS AGRIFOLIA, SALVIA MELLIFERA, MIMULUS AURANTIACUS, ARTEMISIA, LOTUS SCOPARIUS, AND TOXICODENDRON DIVERSILOBUM.

General: 15 PLANTS SEEN IN 2004.

Owner/Manager: CALTRANS, SLO COUNTY

Occurrence No.	34	**Map Index:** 61302	**EO Index:**	61338		**Element Last Seen:**	2004-03-24
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-03-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-12

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.17217 / -120.69430	**Accuracy:**	specific area
UTM:	Zone-10 N3894571 E709976	**Elevation (ft):**	160
PLSS:	T32S, R12E, Sec. 04 (M)	**Acres:**	3.9

Location: HIGHWAY 101, SOUTH END OF PALISADES PARK, ABOUT 0.4 - 0.7 MILE SOUTH OF GRAGG CANYON, NORTH OF SHELL BEACH.

Detailed Location: IN HIGHWAY 101 MEDIAN AND ON NORTHBOUND OUTSIDE RIGHT-OF- WAY.

Ecological: CENTRAL COAST SCRUB WITH BACCHARIS PILULARIS, ARTEMISIA CALIFORNICA, MIMULUS AURANTIACUS, ERIOPHYLLUM CONFERTIFLORUM, MIRABILIS SPP. SOILS ARE DERIVED FROM SHALE (PROBABLY DIATOMACEOUS).

General: IN 2004, 700 PLANTS OBSERVED BETWEEN THIS OCCURRENCE AND OCCURRENCE #35. POPULATIONS ARE PROBABLY MUCH MORE EXTENSIVE THAN MAPPED; ONLY ABOUT 25% OF SUITABLE HABITAT IN HIGHWAY RIGHT-OF-WAY WAS SURVEYED BETWEEN PRICE STREET AND AVILA ROAD.

Owner/Manager: CALTRANS

Occurrence No.	35	**Map Index:** 61303	**EO Index:**	61339		**Element Last Seen:**	2004-03-24
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2004-03-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-05-12

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.14887 / -120.64770	**Accuracy:**	specific area
UTM:	Zone-10 N3892086 E714282	**Elevation (ft):**	160
PLSS:	T32S, R12E, Sec. 12 (M)	**Acres:**	2.7

Location: HIGHWAY 101, JUST NORTH OF PISMO BEACH, ABOUT 0.10 TO 0.25 MILE NORTH OF WHERE HIGHWAY 1 SPLITS OF FROM 101.

Detailed Location: IN HIGHWAY 101 MEDIAN ON NORTHBOUND OUTSIDE RIGHT-OF-WAY.

Ecological: CENTRAL COAST SCRUB WITH BACCHARIS PILULARIS, ARTEMISIA CALIFORNICA, MIMULUS AURANTIACUS, ERIOPHYLLUM CONFERTIFLORUM, MIRABILIS SPP. SOILS ARE DERIVED FROM SHALE (PROBABLY DIATOMACEOUS).

General: IN 2004, 700 PLANTS OBSERVED BETWEEN THIS OCCURRENCE AND OCCURRENCE #34. POPULATIONS ARE PROBABLY MUCH MORE EXTENSIVE THAN MAPPED; ONLY ABOUT 25% OF SUITABLE HABITAT IN HIGHWAY RIGHT-OF-WAY WAS SURVEYED BETWEEN PRICE STREET AND AVILA ROAD.

Owner/Manager: CALTRANS

Carex obispoensis

Element Code: PMCYP039J0

San Luis Obispo sedge

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CLOSED-CONE CONIFEROUS FOREST, CHAPARRAL, COASTAL PRAIRIE, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	USUALLY IN TRANSITION ZONE ON SAND, CLAY, OR SERPENTINE; IN SEEPS. 5-790M.			

Occurrence No.	10	**Map Index:**	12778	**EO Index:**	13477	**Element Last Seen:**	1998-06-15
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-06-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-06-09

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.36779 / -120.66927	**Accuracy:**	specific area
UTM:	Zone-10 N3916324 E711746	**Elevation (ft):**	2465
PLSS:	T29S, R12E, Sec. 35 (M)	**Acres:**	119.3

Location: CUESTA RIDGE WEST, ABOUT 2-4 MILES NORTHWEST FROM CUESTA PASS, NORTH OF SAN LUIS OBISPO.

Detailed Location: POPULATION IS NEARLY CONTINUOUS THROUGH THE SARGENT CYPRESSES. MAPPED ALONG AND ADJACENT TO RIDGE-TOP ROAD FROM THE TV TOWER NEAR THE CENTER OF SECTION 35 NW TO THE SE 1/4 SECTION 28.

Ecological: UNDERSTORY OF THE SARGENT CYPRESS. IN THE OPEN AT SOME LOCATIONS IN VICINITY OF BROOKS AND STREAMS ON SERPENTINE SOIL. ASSOCIATED WITH ARCTOSTAPHYLOS OBISPOENSIS, RHAMNUS CROCEA, QUERCUS DURATA, GARRYA VEATCHII, HETEROMELES, AND ADENOSTOMA.

General: 1000+ PLANTS ALONG ENTIRE POPULATION IN 1984. 100S OF PLANTS JUST EAST OF TV TOWER IN 1998. SEVERAL HERBARIUM SPECIMENS FROM THIS LOCALITY.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	11	**Map Index:**	12774	**EO Index:**	22226	**Element Last Seen:**	1993-02-21
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-02-21
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-01-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36043 / -120.67046	**Accuracy:**	1/10 mile
UTM:	Zone-10 N3915506 E711657	**Elevation (ft):**	1800
PLSS:	T29S, R12E, Sec. 34 (M)	**Acres:**	0.0

Location: AT PICK AND SHOVEL MINE 0.75 MILE WEST OF TV TOWER NORTHWEST OF CUESTA PASS; NEAR CHORRO CREEK.

Detailed Location:

Ecological: UNDER SARGENT CYPRESS IN VICINITY OF BROOKS AND STREAMS AND ON SERPENTINE SOILS. OCCASIONALLY IN CHAPARRAL AND IN OPEN AREAS.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1992. SEVERAL COLLECTIONS ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Occurrence No.	12	**Map Index:** 12782	**EO Index:**	22223		**Element Last Seen:**	1959-04-29
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1959-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1989-08-11

Quad Summary: San Luis Obispo (3512036)
County Summary: San Luis Obispo

Lat/Long:	35.32830 / -120.66684	**Accuracy:**	1 mile
UTM:	Zone-10 N3911949 E712070	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	0.0

Location: STENNER (STEINER) CREEK, NORTH OF SAN LUIS OBISPO.
Detailed Location:
Ecological: ON BOGGY SLOPES AND MUDDY EDGES ON SERPENTINE.
General:
Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:** 13280	**EO Index:**	22221		**Element Last Seen:**	1977-10-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1977-10-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2012-12-12

Quad Summary: Santa Margarita Lake (3512034)
County Summary: San Luis Obispo

Lat/Long:	35.29061 / -120.47792	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3908189 E729352	**Elevation (ft):**	1750
PLSS:	T30S, R14E, Sec. 21 (M)	**Acres:**	0.0

Location: JUST NORTH OF RINCONADA MINE, APPROXIMATELY 2 AIR MILES SOUTH OF SANTA MARGARITA LAKE.
Detailed Location:
Ecological: ON SERPENTINE IN DRY SOIL.
General:
Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	16	**Map Index:** 40956	**EO Index:**	40956		**Element Last Seen:**	1938-06-14
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1938-06-14
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1999-03-05

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)
County Summary: San Luis Obispo

Lat/Long:	35.26565 / -120.73209	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904861 E706297	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 31 (M)	**Acres:**	251.6

Location: PREFUMO CANYON, WEST OF SAN LUIS OBISPO.
Detailed Location: EXACT LOCATION NOT KNOWN; SITE MAPPED ALONG ENTIRE LENGTH OF CANYON TO REFLECT UNCERTAINTY.
Ecological:
General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1938 COLLECTION BY A. EASTWOOD AND J.T. HOWELL.
Owner/Manager: UNKNOWN

Occurrence No.	21	**Map Index:**	62886	**EO Index:**	62940	**Element Last Seen:**	2003-08-04
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35659 / -120.68668	**Accuracy:**	specific area
UTM:	Zone-10 N3915045 E710193	**Elevation (ft):**	1000
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	6.4

Location: SOUTHEAST OF PRIMERA MINE, NORTHEAST OF NEW LONDON MINE, CAMP SAN LUIS OBISPO.

Detailed Location: ABOVE AREA LOCALLY KNOWN AS 'GRAND CANYON'. TRAINING AREA X. 4 PATCHES MAPPED WITHIN THE E 1/2 OF THE SE 1/4 OF SECTION 33 AND THE NE 1/4 OF THE NE 1/4 OF SECTION 4 (ESTIMATED).

Ecological: MARGIN OF CHAPARRAL; SOIL SERPENTINE-DERIVED. ASSOCIATES: ARCTOSTAPHYLOS OBISPOENSIS, CEANOTHUS CUNEATUS VAR. RAMULOSUS, C. FOLIOSUS VAR. MEDIUS, CUPRESSUS SARGENTII, RANUNCULUS CALIFORNICUS, SISYRINCHIUM BELLUM.

General: FEWER THAN 30 PLANTS SEEN IN 2001 AND GREATER THAN 100 PLANTS SEEN IN 2003. AREA BURNED IN 1994 HIGHWAY 41 FIRE. THE RARE SIDALCEA HICKMANII SSP. ANOMALA, ARCTOSTAPHYLOS OBISPOENSIS, CHORIZANTHE BREWERI ALSO HERE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	22	**Map Index:**	62887	**EO Index:**	62941	**Element Last Seen:**	2002-06-18
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-06-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35014 / -120.66995	**Accuracy:**	specific area
UTM:	Zone-10 N3914365 E711730	**Elevation (ft):**	1300
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	3.2

Location: SOUTH OF PICK & SHOVEL MINE, NORTHEAST OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: TRAINING AREA X. TWO PATCHES MAPPED THE SE 1/4 OF THE NE 1/4 OF SECTION 3 AND THE SW 1/4 OF THE SE 1/4 OF SECTION 34.

Ecological: ALONG STREAM ON SERPENTINE; CHAPARRAL/RIPARIAN INTERFACE. ALSO FOUND IN GRASSY MEADOW ON ADOBE CLAY. ASSOCIATES: QUERCUS DURATA, ADENOSTOMA FASCICULATUM, HETEROMELES ARBUTIFOLIA, ARCTOSTAPHYLOS OBISPOENSIS, MIMULUS AURANTIACUS, ETC.

General: FEWER THAN 10 PLANTS SEEN IN 2000 AND IN 2002. AREA BURNED IN 1994 HIGHWAY 41 FIRE. THE RARE ARCTOSTAPHYLOS OBISPOENSIS AND CALOCHORTUS ARGILLOSUS ALSO OCCUR AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	23	**Map Index:**	62890	**EO Index:**	62944	**Element Last Seen:**	2000-06-13
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	2000-06-13
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-19

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31916 / -120.75046	**Accuracy:**	80 meters
UTM:	Zone-10 N3910759 E704490	**Elevation (ft):**	420
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: FIRST RIDGE WEST OF CERRO ROMUALDO, SOUTH OF CHORRO CREEK, CAMP SAN LUIS OBISPO.

Detailed Location: CANYON AND EPHEMERAL STREAM, TRAINING AREA A.

Ecological: RIPARIAN, GRAVELLY CLAY-LOAM. ASSOCIATES INCLUDE QUERCUS AGRIFOLIA, UMBELLULARIA CALIFORNICA, CRYPTANTHA CLEVELANDII, PTERIDIUM AQUILINUM, SISYRINCHIUM BELLUM, ACHILLEA MILLEFOLIUM, AND NASSELLA PULCHRA.

General: FEWER THAN 10 PLANTS SEEN IN 2000. THE RARE SANICULA HOFFMANNII ALSO OCCURS AT THIS SITE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	26	**Map Index:**	62898	**EO Index:**	62952	**Element Last Seen:**	1987-08-04
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-08-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-20

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28030 / -120.61975	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3906726 E716478	**Elevation (ft):**	1000
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	566.5

Location: RESERVOIR CANYON.

Detailed Location: EXACT LOCATION UNKNOWN, MAPPED ON NORTH FACING SLOPES OF RESERVOIR CANYON. 1987 COLLECTION BY PENKALA AND RYAN (#170 UCSB #59917) FROM 1 MILE UP RESERVOIR ROAD ALONG RESERVOIR CANYON TRAIL, ON STEEP NE-FACING SLOPE ATTRIBUTED TO THIS SITE.

Ecological: UPPER N-FACING SERPENTINE SLOPES UNDER QUERCUS AGRIFOLIA.

General: COLLECTED HERE IN 1979 BY KEIL AND 1987 BY PENKALA AND RYAN. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	27	**Map Index:** 70764	**EO Index:**	71675		**Element Last Seen:**	1993-03-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1993-03-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-01-29

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34647 / -120.68204	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3913933 E710640	**Elevation (ft):**	
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	55.0

Location: CHORRO CREEK, 1 KM N OF CHORRO RESERVOIR, CAMP SAN LUIS OBISPO.

Detailed Location: MAPPED AS BEST GUESS BY CNDDB ALONG CHORRO CREEK FROM 0.5 TO 1.5 AIR KM N OF CHORRO RESERVOIR.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1993 JOHNSON & YOUNG COLLECTION. NEEDS FIELDWORK.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Cladium californicum

Element Code: PMCYP04010

California saw-grass

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G4
	State:	None		**State:**	S2.2
	Other:	Rare Plant Rank - 2.2			
Habitat:	**General:**	FRESHWATER AND ALKALI MARSHES, SEEPS.			
	Micro:	FRESHWATER OR ALKALINE MOIST HABITATS. 60-600M.			

Occurrence No.	9	**Map Index:** 40676	**EO Index:**	70445		**Element Last Seen:**	199X-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	199X-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2011-06-06

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05737 / -120.59646	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3882047 E719195	**Elevation (ft):**	50
PLSS:	T11N, R35W, Sec. 06 (S)	**Acres:**	0.0

Location: BOG NEAR HIGHWAY 1, CIRCA 4 MILES SOUTH OF ARROYO GRANDE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS A BEST GUESS NEAR JUNCTION OF BLACK LAKE CANYON AND HIGHWAY 1.

Ecological:

General: DENSE, PURE STANDS OBSERVED IN 1949. 1947 HOOVER COLLECTIONS FROM "BLACK LAKE CANYON IN BOGGY MEADOW" ALSO ATTRIBUTED HERE. PLANTS OBSERVED IN THIS VICINITY IN EARLY 1990S AS PART OF A WETLAND CLASSIFICATION STUDY.

Owner/Manager: UNKNOWN

Calochortus obispoensis

Element Code: PMLIL0D110

San Luis mariposa-lily

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.1
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, COASTAL SCRUB, VALLEY AND FOOTHILL GRASSLAND.			

Micro: OFTEN IN SERPENTINE GRASSLAND. 75-665M.

Occurrence No.	1	**Map Index:**	12781	**EO Index:**	14381	**Element Last Seen:**	2003-06-25
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-06-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-02-07

Quad Summary: San Luis Obispo (3512036), Atascadero (3512046)

County Summary: San Luis Obispo

Lat/Long:	35.36761 / -120.66974	**Accuracy:**	specific area
UTM:	Zone-10 N3916303 E711704	**Elevation (ft):**	2180
PLSS:	T29S, R12E, Sec. 35 (M)	**Acres:**	229.0

Location: CUESTA RIDGE, ABOUT 1-4 MILES WNW OF CUESTA PASS ALONG FIREBREAK, NORTH OF SAN LUIS OBISPO.

Detailed Location: MAPPED ALONG RIDGE FROM SE 1/4 CORNER OF SECTION 35 NORTH AND WEST TO THE E 1/2 SECTION 28. INCLUDES PORTIONS OF NE 1/4 SECTION 34 AND SW 1/4 SECTION 27.

Ecological: FOUND ON SHALE AND SERPENTINE WITH BROMUS, AVENA, CEANOTHUS CUNEATUS, PICKERINGIA MONTANA, LOTUS SCOPARIUS, BRASSICA GENICULATA, SISYRYNCHIUM, ADENOSTOMA FASCICULATUM, AND ARCTOSTAPHYLOS OBISPOENSIS.

General: SCATTERED ALONG FIREBREAK ON RIDGE. 44 PLANTS JUST S OF RADIO TOWER IN 1983, 100+ JUST N OF TOWER IN 1984. 600 OVER ENTIRE POP. IN 1988. 100'S IN 2 SMALL PARTS OF POP. IN 1998. 100 AT S END IN 2003.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	2	**Map Index:**	36737	**EO Index:**	14377	**Element Last Seen:**	1983-06-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1983-06-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34445 / -120.64273	**Accuracy:**	specific area
UTM:	Zone-10 N3913792 E714219	**Elevation (ft):**	1800
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	19.7

Location: CUESTA RIDGE, ABOUT 0.8 MILE WEST OF CUESTA PASS, NORTH OF SAN LUIS OBISPO.

Detailed Location: ALONG ROADS ON RIDGETOP DUE WEST OF CUESTA PASS. MAPPED AS FOUR POLYGONS.

Ecological: SEEN ON SHALE AND SERPENTINE WITH BROMUS, AVENA, CEANOTHUS CUNEATUS, PICKERINGIA MONTANA, LOTUS SCOPARIUS, BRASSICA GENICULATA, SISYRYNCHIUM, ADENOSTOMA FASCICULATUM, AND ARCTOSTAPHYLOS OBISPOENSIS.

General: ABOUT 240 PLANTS OBSERVED IN 4 COLONIES IN 1983.

Owner/Manager: PVT

Occurrence No.	3	**Map Index:**	36733	**EO Index:**	20477	**Element Last Seen:**	1939-05-30
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.30118 / -120.63652	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3909006 E714898	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 24 (M)	**Acres:**	0.0

Location: HILL 1 MILE NORTH OF SAN LUIS OBISPO ALONG HIGHWAY 101.

Detailed Location: SE-FACING SLOPE OF HILL. EXACT LOCATION NOT KNOWN; SITE MAPPED ALONG HWY 101 ABOUT 1-2 MILES NORTHEAST OF JUNCTION WITH HIGHWAY 1. M. MCLEOD SUGGESTS THIS SITE IS NORTH OF HWY 101 OPPOSITE RESERVOIR CANYON.

Ecological: FOUND BETWEEN SERPENTINE ROCKS AND CLAY SOIL AT 250 FEET ELEVATION. ASSOCIATED WITH GRASSES.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS 1939 COLLECTION BY MIOSSI. AREA SEARCHED IN 1988 BY M. MCLEOD BUT NO PLANTS FOUND. SERPENTINE HABITAT APPARENTLY STILL PRESENT AT THIS SITE.

Owner/Manager: PVT

Occurrence No.	4	**Map Index:**	12813	**EO Index:**	22131	**Element Last Seen:**	1988-06-04
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-06-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31809 / -120.65940	**Accuracy:**	specific area
UTM:	Zone-10 N3910832 E712773	**Elevation (ft):**	1021
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	12.4

Location: RIDGE ABOUT 1 MILE NORTH OF CAL POLY SAN LUIS OBISPO AND WEST OF POLY CANYON (BRIZZIOLARI CREEK), SAN LUIS OBISPO.

Detailed Location: ON SPUR OF CUESTA RIDGE ABOVE CAL POLY CAMPUS ACROSS FROM YUCCA FOREST TRAIL AND ABOVE THE HORSE UNIT.

Ecological: GROWING IN YUCCA SCRUB ON STEEP S-FACING SLOPE ON SERPENTINE DERIVED SOLS. ASSOCIATED WITH DUDLEYA ABRAMSII SSP. MURINA, CHORIZANTHE BREWERII, AND LOMATIUM PARVIFOLIUM.

General: 200-300 PLANTS OBSERVED IN 1988. 1965 COLLECTION BY HOOVER FROM "HILL WEST OF POLY CANYON" IS ATTRIBUTED TO THIS SITE.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	6	**Map Index:**	12753	**EO Index:**	22132	**Element Last Seen:**	2003-08-04
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-08-04
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-02-07

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34141 / -120.69059	**Accuracy:**	specific area
UTM:	Zone-10 N3913352 E709876	**Elevation (ft):**	1100
PLSS:	T30S, R12E, Sec. 04 (M)	**Acres:**	9.0

Location: CAMP SAN LUIS OBISPO, NEAR MAJOR WESTERN TRIBUTARY OF CHORRO CREEK, NORTHWEST OF CHORRO RESERVOIR, TRAINING AREA X.

Detailed Location: MAPPED AS SEVERAL SEPARATE COLONIES IN THIS AREA. MOSTLY MAPPED IN SE1/4 SECTION 4.

Ecological: SERPENTINE GRAVEL ON CLAY. ASSOCIATES: LOMATIUM UTRICULATUM, CHLOROGALUM POMERIDIANUM, ASTRAGALUS CURTIPES, HEMIZONIA CONGESTA SSP. LUZULIFOLIA.

General: ABOUT 120 PLANTS SEEN IN 2000. FEWER THAN 20 IN 2001. UNKNOWN NUMBER SEEN IN 2003. RARE ASSOCIATES INCLUDE CHORIZANTHE PALMERI, DUDLEYA ABRAMSII SSP. MURINA, SANICULA HOFFMANI, STREPTANTHUS ALBIDUS SSP. PERAMOENUS.

Owner/Manager: DOD-ARMY NATIONAL GUARD

Occurrence No.	8	**Map Index:**	13113	**EO Index:**	12276	**Element Last Seen:**	1946-06-23
Occ. Rank:	Fair			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-07-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-11-20

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.16377 / -120.57381	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3893900 E720974	**Elevation (ft):**	600
PLSS:	T32S, R13E, Sec. 03 (M)	**Acres:**	0.0

Location: SUMMIT AT HEAD OF CARPENTER CANYON, NORTH OF ARROYO GRANDE.

Detailed Location:

Ecological: FOUND ON SANDSTONE OUTCROP AT TOP OF BURNED-OVER HILL.

General: SCARCE IN 1946. M. MCLEOD HAS BEEN TO SITE OFTEN TO SURVEY CLARKIA SPECIOSA SSP. IMMACULATA AND HAS NEVER SEEN C. OBISPOENSIS AT THIS SITE. HE THINKS IT WOULD BE MORE VISIBLE AFTER A FIRE, AS IN 1946.

Owner/Manager: PVT

Occurrence No.	9	**Map Index:**	37763	**EO Index:**	34710	**Element Last Seen:**	1995-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.14473 / -120.60369	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3891722 E718303	**Elevation (ft):**	200
PLSS:	T32S, R13E, Sec. 17 (M)	**Acres:**	44.5

Location: MOUTH OF CANYON NO.1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.

Detailed Location: NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD.

Ecological: GROWING AMONG CHAMISE CHAPARRAL (HOLLAND AND OYLER, 1995) WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938). THE RARE CLARKIA SPECIOSA SSP. IMMACULATA AND ARCTOSTAPHYLOS WELLSII ARE FOUND NEARBY.

General: 5 PLANTS OBSERVED AT THIS SITE IN 1995. COLLECTION BY M.A. KING (SN UC) IN 1895 FROM ARROYO GRANDE IS ALSO ATTRIBUTED TO THIS SITE.

Owner/Manager: UNKNOWN

Occurrence No.	10	**Map Index:**	12675	**EO Index:**	14378	**Element Last Seen:**	1988-06-12
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-06-12
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36108 / -120.71150	**Accuracy:**	specific area
UTM:	Zone-10 N3915490 E707926	**Elevation (ft):**	800
PLSS:	T29S, R12E, Sec. 32 (M)	**Acres:**	22.7

Location: PENNINGTON CREEK ABOUT 1 MILE WEST OF WHISKEY SPRING, NORTH OF SAN LUIS OBISPO.

Detailed Location: MAPPED WITHIN THE SW 1/4 NE 1/4 AND S 1/2 NW 1/4 SECTION 23 AND ALSO IN THE NE 1/4 SE 1/4 SECTION 31. MAPPED AS FOUR POLYGONS.

Ecological: FOUND ON SERPENTINE OUTCROPS WITH YUCCA WHIPPLEI, NASSELLA PULCHRA, DUDLEYA ABRAMSII SSP. MURINA, CALOCHORTUS CLAVATUS CLAVATUS, AND LOMATIUM PARVIFOLIUM.

General: 4-5 COLONIES SEEN IN 1984. 100'S OF PLANTS SEEN AT WESTERN COLONY IN 1988. SITE ON CAL POLY SLO BIORESERVE.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	11	**Map Index:** 36732	**EO Index:**	22129		**Element Last Seen:**	1988-05-28
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-05-28
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: Lopez Mtn. (3512035), San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28982 / -120.62660	**Accuracy:**	specific area
UTM:	Zone-10 N3907767 E715830	**Elevation (ft):**	450
PLSS:	T30S, R13E, Sec. 30 (M)	**Acres:**	4.2

Location: MOUTH OF RESERVOIR CANYON ABOUT 0.5 MILE SOUTH OF HIGHWAY 101, EAST OF SAN LUIS OBISPO.

Detailed Location: ON AND ABOVE (NORTH OF) OLD ROAD CUT.

Ecological: FOUND ON SERPENTINE SOIL OF ROAD-CUT AND AMONG COASTAL AND YUCCA SCRUB ABOVE. ALSO ASSOCIATED WITH CHORIZANTHE BREWERI.

General: FEWER THAN 50 PLANTS IN 1984. 35 PLANTS SEEN IN 1988. INCLUDES FORMER OCCURRENCE #7.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	12	**Map Index:** 12843	**EO Index:**	22127		**Element Last Seen:**	1984-05-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1984-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31219 / -120.65214	**Accuracy:**	specific area
UTM:	Zone-10 N3910193 E713449	**Elevation (ft):**	500
PLSS:	T30S, R12E, Sec. 14 (M)	**Acres:**	7.0

Location: UPPER POLY CANYON ALONG BRIZZIOLARI CREEK, ABOUT 0.6 MILE NORTHEAST OF CAL POLY SAN LUIS OBISPO CAMPUS, SAN LUIS OBISPO.

Detailed Location: ALONG ROADS AND TRAIL ON BOTH SIDES OF BRIZZIOLARI CREEK. THREE COLONIES MAPPED NEAR THE MIDDLE OF THE E 1/2 SE 1/4 SECTION 14.

Ecological: FOUND ON SERPENTINE ROCK AND SOIL IN OAK WOODLAND/GRASSLAND WITH YUCCA WHIPPLEI, QUERCUS AGRIFOLIA, Q. DURATA, NASSELLA PULCHRA, CHORIZANTHE BREWERI, DUDLEYA ABRAMSII SSP MURINA, AND LOMATIUM PARVIFOLIUM.

General: 3 COLONIES SEEN IN 1984 RANGING IN SIZE FROM 10+ TO 50+ PLANTS.

Owner/Manager: CSU-CAL POLY, SAN LUIS OBISPO

Occurrence No.	13	**Map Index:**	36731	**EO Index:**	5651	**Element Last Seen:**	1988-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.28325 / -120.64497	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3906998 E714177	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 25 (M)	**Acres:**	0.0

Location: BEHIND (EAST OF) SAN LUIS OBISPO HIGH SCHOOL, SAN LUIS OBISPO.

Detailed Location:

Ecological: ON SERPENTINE AREA ABOVE AND BEHIND THE SCHOOL.

General: SITE IN SIMILAR CONDIDITION IN 1984 AND 1988.

Owner/Manager: UNKNOWN

Occurrence No.	14	**Map Index:**	12833	**EO Index:**	22128	**Element Last Seen:**	1984-06-02
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32860 / -120.65107	**Accuracy:**	3/5 mile
UTM:	Zone-10 N3912016 E713503	**Elevation (ft):**	1000
PLSS:	T30S, R12E, Sec. 11 (M)	**Acres:**	0.0

Location: SERRANO CREEK (MAPPED NEAR SERRANO), NORTH OF SAN LUIS OBISPO.

Detailed Location: UNABLE TO LOCATE SERRANO CREEK; SITE MAPPED NEAR SERRANO STATION.

Ecological:

General: SOME QUESTION AS TO WHERE EXACT LOCATION IS. MAY REFER TO CREEK NEAR SERRANO THAT IS NOT NAMED ON TOPO MAPS OR MAY REFER TO SERRANO CANYON ALONG CHORRO CREEK.

Owner/Manager: UNKNOWN

Occurrence No.	15	**Map Index:**	36730	**EO Index:**	539	**Element Last Seen:**	1988-07-05
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1988-07-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26427 / -120.66901	**Accuracy:**	specific area
UTM:	Zone-10 N3904841 E712040	**Elevation (ft):**	300
PLSS:	T31S, R12E, Sec. 03 (M)	**Acres:**	6.7

Location: HILL EAST OF SOUTH HIGUERA STREET NEAR CEMETERIES, SAN LUIS OBISPO.

Detailed Location: MAPPED JUST EAST OF SOUTH HIGUERA ROAD AT JUNCTION WITH ELKS ROAD.

Ecological: FOUND IN GRASSLAND ON STEEP, W-FACING HILLSIDE WITH SERPENTINE OUTCROPS. ASSOCIATED WITH DUDLEYA ABRAMSII SSP. MURINA.

General: ABOUT 1000 PLANTS SEEN IN 1985, 1200 PLANTS OVER 5 ACRES SEEN IN 1988.

Owner/Manager: PVT

Occurrence No.	16	**Map Index:** 12806	**EO Index:**	22126		**Element Last Seen:**	1988-07-05
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-07-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26121 / -120.65683	**Accuracy:**	80 meters
UTM:	Zone-10 N3904528 E713156	**Elevation (ft):**	500
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: RIDGE ABOUT 0.4 MILE WEST OF BROAD STREET AT JUNCTION WITH ORCUTT ROAD, SAN LUIS OBISPO,

Detailed Location: SERPENTINE RIDGE, ABOVE ROAD TO RESERVOIR. MAPPED WITHIN THE SW 1/4 NE 1/4 SECTION 2.

Ecological: NE-FACING SLOPE OF STEEP SERPENTINE RIDGE/OUTCROP. ASSOCIATED WITH DUDLEYA ABRAMSII SSP. MURINA AND SELAGINELLA BIGELOVII.

General: OVER 50 PLANTS SEEN IN 1985, 70 PLANTS OVER 5 ACRES SEEN IN 1988.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:** 12776	**EO Index:**	13252		**Element Last Seen:**	1980-02-02
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1980-02-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19940 / -120.66633	**Accuracy:**	specific area
UTM:	Zone-10 N3897651 E712453	**Elevation (ft):**	800
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	13.9

Location: 0.3 TO 0.6 AIR MILE WEST OF THE SUMMIT OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO, EAST OF HIGHWAY 101.

Detailed Location:

Ecological: FOUND ON LIGHT-COLORED PISMO SANDSTONE. ASSOCIATED WITH ERIODICTYON ALTISSIMUM, ARCTOSTAPHYLOS PILULOSA SSP PISMOENSIS, AND AGROSTIS HOOVERI.

General: OBSERVED IN 1980 SURVEY OF CENTRAL MARITIME CHAPARRAL (J. VANDERWIER). MAP PROVIDED BY M. MCLEOD (1985); UNKNOWN WHEN SEEN MY MCLEOD.

Owner/Manager: TNC, PVT-PGE

Occurrence No.	18	**Map Index:** 12718	**EO Index:**	22125		**Element Last Seen:**	1988-05-24
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-05-24
Occ. Type:	Natural/Native occurrence		**Trend:**	Increasing		**Record Last Updated:**	1998-09-15

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.24227 / -120.69377	**Accuracy:**	specific area
UTM:	Zone-10 N3902348 E709844	**Elevation (ft):**	250
PLSS:	T31S, R12E, Sec. 09 (M)	**Acres:**	9.8

Location: FROOM RANCH, ABOUT 0.5 MILE WSW OF LOS OSOS VALLEY ROAD AT HIGHWAY 101, JUST SW OF SAN LUIS OBISPO CITY LIMITS.

Detailed Location: TWO COLONIES MAPPED ALONG THE SOUTHERN BRANCH OF FROOM CREEK ALONG LOWER SLOPES OF MINE HILL.

Ecological: SERPENTINE GRASSLAND HILLSIDE BELOW ECOTONE WITH COASTAL SCRUB/CHAPARRAL, WITH CHORIZANTHE BREWERI, CALOCHORTUS CLAVATUS CLAVATUS, DUDLEYA ABRAMSII MURINA, AND PERIDERIDIA PRINGLEI. SEASONALLY MOIST CLAYEY SOILS W/ HIGH SERPENTINE CONTENT.

General: 200-400 PLANTS SEEN OVER SEVERAL ACRES IN 1988.

Owner/Manager: PVT

Occurrence No.	19	**Map Index:** 39709	**EO Index:**	34711		**Element Last Seen:**	1987-05-21
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1987-05-21
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.22808 / -120.57466	**Accuracy:**	specific area
UTM:	Zone-10 N3901032 E720722	**Elevation (ft):**	750
PLSS:	T31S, R13E, Sec. 15 (M)	**Acres:**	26.0

Location: ABOUT 1.5 MILES EAST OF BIDDLE RANCH ROAD (ORCUTT ROAD), NORTH OF EAST CORRAL DE PIEDRA CREEK AND SE OF SAN LUIS OBISPO.

Detailed Location: ON WEST FACING SLOPE DUE EAST OF RAYMOND BALL HOUSE. MAPPED ALONG RIDGE BETWEEN EAST CORRAL DE PIEDRA CREEK AND SOUTH BRANCH OF WEST CORRAL DE PIEDRA CREEK.

Ecological: GROWING WITH DUDLEYA ABRAMSII MURINA, ANNUAL GRASSES, AND YUCCA WHIPPLEI ON SERPENTINE ROCK-SOIL.

General: ABOUT 50 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	20	**Map Index:**	39711	**EO Index:**	34713	**Element Last Seen:**	1992-05-28
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.25465 / -120.58711	**Accuracy:**	specific area
UTM:	Zone-10 N3903952 E719517	**Elevation (ft):**	1200
PLSS:	T31S, R13E, Sec. 04 (M)	**Acres:**	97.0

Location: RIDGE WEST OF WEST CORRAL DE PIEDRA CREEK, ABOUT 3 MILES NORTHEAST OF SAN LUIS OBISPO.

Detailed Location: ALONG 1 MILE SECTION OF RIDGELINE, OPPOSITE THE MOUTH OF OIL WELL CANYON. OCCURRENCE RUNS THROUGH SEC 4, FROM NW TO SE.

Ecological: IN SERPENTINE ROCK OUTCROP AREAS AND ON GRASSY SLOPES. COMMON ALONG NE-FACING SIDE OF RIDGE, SCATTERED ON RIDGETOP AND SLOPES. ON BARE ROCKY AREAS AND IN GRASSLAND. WITH NASSELLA PULCHRA WHICH IS LOCALLY ABUNDANT.

General: 10,000S OF PLANTS OBSERVED IN 1992. VERY NICE SERPENTINE BUNCHGRASS HABITAT. RELATIVELY LITTLE DISTURBANCE.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:**	39712	**EO Index:**	34714	**Element Last Seen:**	1987-05-08
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-05-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.30359 / -120.61402	**Accuracy:**	specific area
UTM:	Zone-10 N3909322 E716938	**Elevation (ft):**	700
PLSS:	T30S, R13E, Sec. 20 (M)	**Acres:**	6.8

Location: ABOUT 0.5 MILE EAST OF HIGHWAY 101 & 1.4 MILE SOUTHWEST OF MT. LOWE, NORTH OF SAN LUIS OBISPO.

Detailed Location: ALONG ROCKY SERPENTINE RIDGE WITHIN THE SE 1/4 NE 1/4 SECTION 19 AND THE SW 1/4 NW 1/4 SECTI0N 20.

Ecological: SERPENTINE RIDGE WITH DUDLEYA ABRAMSII MURINA AND ANNUAL GRASSES ON 20% SLOPE AND NORTHWEST ASPECT. VERY THIN SOILS.

General: 16 PLANTS OBSERVED IN 1987.

Owner/Manager: PVT

Occurrence No.	22	**Map Index:** 39714	**EO Index:**	34716		**Element Last Seen:**	1988-05-26
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-05-26
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.26789 / -120.68159	**Accuracy:**	specific area
UTM:	Zone-10 N3905216 E710886	**Elevation (ft):**	400
PLSS:	T30S, R12E, Sec. 34 (M)	**Acres:**	28.0

Location: HILLSIDE EAST OF LAGUNA LAKE IN LAGUNA LAKE PARK, NORTH OF MADONNA ROAD, SAN LUIS OBISPO.

Detailed Location: 150-250 YARDS FROM PARKING LOT UP FROM ELECTRICAL TOWER ON HILLSIDE; ACROSS FROM EUCALYPTUS IN PARK.

Ecological: SERPENTINE GRASSLAND ON MODERATELY STEEP SW-FACING SLOPE. DOMINATED BY HORDEUM CALIFORNICUM, NASSELLA, DUDLEYA ABRAMSII MURINA, CHORIZANTHE BREWERII, LOMATIUM PARVIFOLIUM, AND CIRSIUM FONTINALE OBISPOENSE.

General: 300 PLANTS OBSERVED IN 1988.

Owner/Manager: CITY OF SAN LUIS OBISPO

Occurrence No.	24	**Map Index:** 39716	**EO Index:**	34718		**Element Last Seen:**	2002-06-17
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-06-17
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-02-07

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35676 / -120.69051	**Accuracy:**	specific area
UTM:	Zone-10 N3915056 E709844	**Elevation (ft):**	1400
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	6.4

Location: CAMP SAN LUIS OBISPO, UPPER CHORRO CREEK RESERVOIR NEAR SPRINGS AND MINING SITES, NORTH OF SAN LUIS OBISPO.

Detailed Location: TRAINING AREAS U AND X. MOSTLY MAPPED IN THE SE1/4 SECTION 33. MAPPED AS SEVERAL COLONIES.

Ecological: IN SERPENTINE CHAPARRAL/WOODLAND COMMUNITY. ON DISTURBED, STEEPLY SLOPING ROADSIDES. RARE ASSOCIATES: ARCTOSTAPHYLOS OBISPOENSIS, CALOCHORTUS ARGILLOSUS, C. OBISPOENSIS, C. CLAVATUS SSP. CLAVATUS, CHORIZANTHE BREWERI, C. PALMERI.

General: 1000 PLANTS OBSERVED IN 1995, FEWER THAN 40 PLANTS IN 2001, FEWER THAN 25 SEEN IN 2002. AREA BURNED IN 1994 HIGHWAY 41 FIRE. AMONG THE THREATS NOTED WAS A RECLAMATION PROJECT AT NEW LONDON MINE AND TAILINGS.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	25	**Map Index:**	39717	**EO Index:**	34719	**Element Last Seen:**	1993-06-25
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1993-06-25
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-01-30

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34142 / -120.65978	**Accuracy:**	80 meters
UTM:	Zone-10 N3913419 E712677	**Elevation (ft):**	1100
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: UPPER STENNER CREEK ALONG AQUEDUCT, ABOUT 0.6 MILE SOUTHWEST OF SOUTH PORTAL OF CUESTA TUNNEL, NORTH OF SAN LUIS OBISPO.

Detailed Location: ALONG DIRT ROAD AND ON SLOPE ABOVE ROAD ABOUT 1 AIR MILE EAST OF CAMP SLO NATIONAL GUARD RESERVATION BOUNDARY.

Ecological: BARREN, ROCKY, STEEP SERPENTINE SLOPES USUALLY WITH A S EXPOSURE. ASSOCIATED WITH YUCCA WHIPPLEI AND CHORIZANTHE PALMERI.

General: 100'S OF PLANTS OBSERVED IN 1992. RECOMMENDED MITIGATION WAS SALVAGE AND REPLANTING OF BULBS IN ADJACENT AREAS. 1993 JOHNSON & YOUNG COLLECTION FROM "3 KM N OF CHORRO RESERVOIR; CAMP SAN LUIS OBISPO" ATTRIBUTED TO THIS OCCURRENCE.

Owner/Manager: PVT-SPRR, DOM

Occurrence No.	26	**Map Index:**	39718	**EO Index:**	34720	**Element Last Seen:**	1998-06-15
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1998-06-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-09-15

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34544 / -120.65087	**Accuracy:**	80 meters
UTM:	Zone-10 N3913884 E713477	**Elevation (ft):**	1300
PLSS:	T30S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: UPPER STENNER CREEK JUST SOUTHWEST OF SOUTH PORTAL OF CUESTA TUNNEL, NORTH OF SAN LUIS OBISPO.

Detailed Location: ABOUT 400 FEET SOUTHWEST OF THE TUNNEL, ABOUT 0.3 MILE NORTHEAST OF RR TRACKS.

Ecological: EAST-FACING BANK IN OPENINGS OF EUCALYPTUS WITH NASSELLA PULCHRA, ERIOGONUM FASCICULATUM, SALVIA MELLIFERA, YUCCA WHIPPLEI, AND ANNUAL GRASSES. ALSO WITH RARE CALOCHORTUS CLAVATUS SSP. CLAVATUS.

General: 200 PLANTS OBSERVED IN 1993. RECOMMENED MITIGATION WAS SALVAGE AND REPLANTING OF BULBS IN ADJACENT AREAS. 3 PLANTS REPORTED FROM THIS GENERAL AREA BY R. PRESTON IN 1998.

Owner/Manager: PVT-SPRR

Occurrence No.	28	**Map Index:** 57000	**EO Index:**	57016		**Element Last Seen:**	1999-07-09
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1999-07-09
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-09-27

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.32391 / -120.67623	**Accuracy:**	specific area
UTM:	Zone-10 N3911442 E711227	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 10 (M)	**Acres:**	11.9

Location: ALONG STENNER CREEK ROAD, ABOUT 0.5 MILE EAST OF RAILROAD TRESTLE, NORTH OF SAN LUIS OBISPO.

Detailed Location:

Ecological: ADJACENT TO GRAVEL ROAD ON STEEP, N-FACING SLOPE. WITH ERIOPHYLLUM CONFERTIFLORUM, DUDLEYA, CLARKIA, CALOCHORTUS CLAVATUS, AND SILENE CALIFORNICA.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1999.

Owner/Manager: UNKNOWN

Occurrence No.	29	**Map Index:** 57206	**EO Index:**	57265		**Element Last Seen:**	2003-05-27
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-02-10

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23889 / -120.73916	**Accuracy:**	80 meters
UTM:	Zone-10 N3901878 E705721	**Elevation (ft):**	411
PLSS:	T31S, R11E, Sec. 12 (M)	**Acres:**	0.0

Location: SEE CANYON, APPROXIMATELY 0.7 AIRMILE SOUTHWEST OF HEADWATERS OF FROOM CREEK.

Detailed Location: MAPPED WITHIN THE SE 1/4 OF THE SE 1/4 OF SECTION 12.

Ecological: IN A ROCKY SERPENTINE BUNCHGRASS COMMUNITY. NASELLA PULCHRA IS A COMMON COMPONENT OF THIS HABITAT.

General: 50 PLANTS SEEN IN 2003. MANY OTHER RARE SPECIES IN THIS VICINITY, INCLUDING ARCTOSTAPHYLOS PECHOENSIS, LOMATIUM PARVIFOLIUM, DUDLEYA ABRAMSII SSP. MURINA, CHORIZANTHE BREWERI, C. PALMERI, CALOCHORTUS CLAVATUS SSP. CLAVATUS, ET AL.

Owner/Manager: PVT

Occurrence No.	30	**Map Index:**	62789	**EO Index:**	62843	**Element Last Seen:**	2002-08-15
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2002-08-15
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2008-02-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.35086 / -120.66662	**Accuracy:**	specific area
UTM:	Zone-10 N3914452 E712031	**Elevation (ft):**	1500
PLSS:	T30S, R12E, Sec. 03 (M)	**Acres:**	15.0

Location: CAMP SAN LUIS OBISPO, SOUTH TO SOUTHEAST OF PICK & SHOVEL MINE, TRAINING AREA X.

Detailed Location: MAPPED ALONG DIRT ROADS NEAR THE CENTER OF THE NE 1/4 OF SEC 3, IN THE NE 1/4 OF THE NE 1/4 OF SEC 3, AND IN THE SE 1/4 OF THE SE 1/4 OF SEC 34.

Ecological: CHAPARRAL; CLAY; GENTLE TO MODERATE SLOPE. RARE ASSOCIATES INCLUDE ARCTOSTAPHYLOS OBISPOENSIS, CALOCHORTUS ARGILLOSUS, C. CLAVATUS SSP. CLAVATUS, AND CHORIZANTHE BREWERI.

General: <20 PLANTS SEEN IN 2000 IN W COLONY; UNKNOWN NUMBER IN 2002 IN MIDDLE COLONY; <20 IN 2002 IN N COLONY. AREA BURNED IN 1994 HIGHWAY 41 FIRE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	32	**Map Index:**	62791	**EO Index:**	62845	**Element Last Seen:**	2003-03-06
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-03-06
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-10-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.31498 / -120.74673	**Accuracy:**	80 meters
UTM:	Zone-10 N3910304 E704840	**Elevation (ft):**	475
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: CAMP SAN LUIS OBISPO, FIRST RIDGE WEST OF CERRO ROMUALDO, EAST SIDE OF DRAINAGE CLOSEST TO EAST BOUNDARY FENCE.

Detailed Location: TRAINING AREA A. MAPPED IN NE1/4 OF SW1/4 SEC 13.

Ecological:

General: UNKNOWN NUMBER OF PLANTS SEEN DURING 2003 SURVEY FOR DUDLEYA ABRAMSII SSP. BETTINAE.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	33	**Map Index:** 62792	**EO Index:**	62846		**Element Last Seen:**	2000-06-11
Occ. Rank:	Fair		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-06-11
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-10-04

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33329 / -120.68882	**Accuracy:**	specific area
UTM:	Zone-10 N3912456 E710058	**Elevation (ft):**	700
PLSS:	T30S, R12E, Sec. 09 (M)	**Acres:**	4.9

Location: CAMP SAN LUIS OBISPO, BETWEEN CALIFORNIA MENS COLONY AND CHORRO RESERVOIR, TRAINING AREA W.

Detailed Location: MAPPED AS SEVERAL COLONIES.

Ecological: SERPENTINE OUTCROP. ASSOCIATES INCLUDE RHAMNUS CALIFORNICA, QUERCUS DURATA, LOTUS SCOPARIUS, CHLOROGALUM POMERIDIANUM, HEMIZONIA CONGESTA SSP. LUZULIFOLIA, CALOCHORTUS CLAVATUS, CHORIZANTHE PALMERI, NON-NATIVE ANNUAL GRASSES.

General: FEWER THAN 20 PLANTS SEEN AT FOUR COLONIES IN 2000. RARE SPECIES IN THIS VICINITY INCLUDE DUDLEYA ABRAMSII SSP. MURINA, CALOCHORTUS CLAVATUS SPP. CLAVATUS, CHORIZANTHE PALMERI.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	34	**Map Index:** 70778	**EO Index:**	71690		**Element Last Seen:**	2002-05-08
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2002-05-08
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2008-02-04

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.31986 / -120.75049	**Accuracy:**	80 meters
UTM:	Zone-10 N3910836 E704487	**Elevation (ft):**	400
PLSS:	T30S, R11E, Sec. 13 (M)	**Acres:**	0.0

Location: FIRST RIDGE W OF CERRO ROMUALDO, TRAINING AREA A, CAMP SAN LUIS OBISPO.

Detailed Location:

Ecological: STEEP SLOPE. OTHER RARE SPECIES: LAYIA JONESII, LOMATIUM PARVIFOLIUM, STREPTANTHUS ALBIDUS SSP. PERAMOENUS, DUDLEYA ABRAMSSI SSP. BETTINAE, CALOCHORTUS CLAVATUS SSP. CLAVATUS, CHORIZANTHE BREWERI, C. PALMERI.

General: FEWER THAN 20 PLANTS OBSERVED IN 2002.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Calochortus simulans

Element Code: PMLIL0D170

La Panza mariposa-lily

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2.3
	Other:	Rare Plant Rank - 1B.3, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	VALLEY AND FOOTHILL GRASSLAND, CISMONTANE WOODLAND, CHAPARRAL.			
	Micro:	DECOMPOSED GRANITE. 395-1100M.			

Occurrence No.	1	**Map Index:**	59520	**EO Index:**	59556	**Element Last Seen:**	2003-05-27
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-27
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-02-17

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.23769 / -120.73744	**Accuracy:**	specific area
UTM:	Zone-10 N3901749 E705881	**Elevation (ft):**	700
PLSS:	T31S, R11E, Sec. 12 (M)	**Acres:**	12.3

Location: 4.0 AIR MILES NORTH OF AVILA BEACH. ON LA QUINTA DE AVILA RANCH.

Detailed Location: 1 COLONY IN THE SE 1/4 OF THE SE 1/4 OF SECTION 12. SECOND COLONY IN THE SW 1/4 OF THE SW 1/4 OF SECTION 7.

Ecological: ON SERPENTINE INFLUENCED SOILS. NEARBY RARE SPECIES: LOMATIUM PARVIFOLIUM, DUDLEYA ABRAMSII SSP. MURINA, CHORIZANTHE BREWERI, CHORIZANTHE PALMERI, CALOCHORTUS OBISPOENSIS, CALOCHORTUS CLAVATUS SSP. CLAVATUS.

General: 50 PLANTS OBSERVED IN 2003. OTHER NEARBY RARE SPECIES: CASTILLEJA DENSIFLORA SSP. OBISPOENSIS, CALYSTEGIA SUBACAULIS SSP. EPISCOPALIS.

Owner/Manager: PVT

Occurrence No.	3	**Map Index:**	59522	**EO Index:**	59558	**Element Last Seen:**	1987-04-18
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1987-04-18
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2009-08-12

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.26413 / -120.41926	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3905388 E734764	**Elevation (ft):**	2600
PLSS:	T30S, R14E, Sec. 36 (M)	**Acres:**	160.7

Location: ROAD TO HI MOUNTAIN FROM POZO-ARROYO GRANDE SUMMIT.

Detailed Location: EXACT LOCATION UNCERTAIN. MAPPED BY CNDDB AT 3.4 AIR MILES SW OF POZO, ALONG THE SPUR ROAD TO HI MOUNTAIN FROM THE SUMMIT OF THE DIRT ROAD BETWEEN POZO AND ARROYO GRANDE. MAPPED IN SOUTHERN PORTIONS OF SECTION 36 AND SECTION 31.

Ecological: ON A SERPENTINE OUTCROP.

General: MAIN SOURCE OF INFORMATION FOR THIS SITE IS A 1964 COLLECTION BY HOOVER. 1986 SMITH COLLECTION FROM "RD TO HI MTN, ABOVE ARROYO GRANDE CREEK" AND 1987 SAINZ COLLECTION FROM "HI MOUNTAIN" ALSO ATTRIBUTED HERE.

Owner/Manager: UNKNOWN

Occurrence No.	14	**Map Index:** 57232	**EO Index:**	59668		**Element Last Seen:**	1982-05-30
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1982-05-30
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2009-08-11

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.37107 / -120.43981	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3917204 E732587	**Elevation (ft):**	1800
PLSS:	T29S, R14E, Sec. 26 (M)	**Acres:**	32.9

Location: LAS PILITAS ROAD, ABOUT 1/2 MILE SOUTH OF JUNCTION WITH PARK HILL ROAD, VICINITY OF SANTA MARGARITA LAKE.

Detailed Location:

Ecological: ON WEST-FACING ROADCUT.

General: MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1982 COLLECTION BY AUSTIN.

Owner/Manager: UNKNOWN

Occurrence No.	16	**Map Index:** 62524	**EO Index:**	62561		**Element Last Seen:**	2005-04-29
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	2005-04-29
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-09-09

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.25859 / -120.66134	**Accuracy:**	80 meters
UTM:	Zone-10 N3904228 E712752	**Elevation (ft):**	170
PLSS:	T31S, R12E, Sec. 02 (M)	**Acres:**	0.0

Location: CITY OF SAN LUIS OBISPO, END OF MARGARITA AVENUE, ABOUT 0.7 MILES EAST OF HIGHWAY 101.

Detailed Location: MAPPED IN THE SE 1/4 OF THE NW 1/ 4 OF SECTION 2.

Ecological: GRAZED GRASSLAND ON SERPENTINE CLAY SOILS.

General: 25 PLANTS SEEN IN 2005. RARE PLANTS CASTILLEJA DENSIFLORA SSP. OBISPOENSIS AND DUDLEYA ABRAMSII SSP. MURINA ALSO OCCUR HERE.

Owner/Manager: PVT

Chlorogalum pomeridianum var. minus

Element Code: PMLIL0G042

dwarf soaproot

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G5T2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	SERPENTINE. 240-970M.			

Occurrence No.	1	**Map Index:**	12860	**EO Index:**	853	**Element Last Seen:**	1965-06-08
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1965-06-08
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1996-10-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34969 / -120.64684	**Accuracy:**	1 mile
UTM:	Zone-10 N3914364 E713832	**Elevation (ft):**	1600
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	0.0

Location: RIDGE NORTHWEST OF CUESTA PASS, SANTA LUCIA RANGE.

Detailed Location: IN "THE VASCULAR PLANTS OF SAN LUIS OBISPO CO, CA" HOOVER NOTES DISTRIBUTION OF C. P. MINUS FROM "RIDGE NW OF CUESTA PASS AND NEAR SAN LUIS OBISPO TO HILLS EAST OF MORRO BAY", BUT ONLY THE CUESTA PASS SITE IS MAPPABLE AT CNDDB.

Ecological: SERPENTINE ROCK.

General: THE MAIN SOURCE OF INFO FOR THIS SITE IS 1965 COLLECTION BY HOOVER.

Owner/Manager: UNKNOWN

Occurrence No.	2	**Map Index:**	27720	**EO Index:**	709	**Element Last Seen:**	1992-05-28
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1995-12-19

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.25866 / -120.58871	**Accuracy:**	specific area
UTM:	Zone-10 N3904393 E719361	**Elevation (ft):**	1000
PLSS:	T31S, R13E, Sec. 04 (M)	**Acres:**	34.9

Location: RIDGE ABOUT 3 MILES EAST OF SAN LUIS OBISPO, SOUTHWEST OF WEST CORRAL DE PIEDRA CREEK.

Detailed Location: MAPPED ABOUT 1.3 MILES SSW OF BALD HILL.

Ecological: SERPENTINE GRASSLAND ASSOCIATED WITH CALOCHORTUS OBISPOENSIS, DUDLEYA ABRAMSII MURINA, CHORIZANTHE PALMERI, AND NASSELLA PULCHRA.

General: 100+ PLANTS OBSERVED IN 1992.

Owner/Manager: PVT

Occurrence No.	17	**Map Index:**	62352	**EO Index:**	62389	**Element Last Seen:**	2003-05-16
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	2003-05-16
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.36181 / -120.69193	**Accuracy:**	specific area
UTM:	Zone-10 N3915612 E709702	**Elevation (ft):**	1500
PLSS:	T29S, R12E, Sec. 33 (M)	**Acres:**	5.9

Location: NEAR DUGHI SPRING IN CAMP SAN LUIS OBISPO.

Detailed Location: 2 COLONIES IN TRAINING AREA U. ONE COLONY 0.17 AIR MILE SW OF DUGHI SPRING. SECOND COLONY 0.24 AIR MILE SSW OF DUGHI SPRING.

Ecological: IN MEADOW OPENINGS IN CHAPARRAL. ADOBE CLAY SOIL. ASSOC WITH HEMIZONIA CONGESTA SSP. LUZULIFOLIA, DICHELOSTEMMA CAPITATUM, HEDYPNOIS CRETICA, ARCTOSTAPHYLOS OBISPOENSIS, CHORIZANTHE PALMERI, AND CALOCHORTUS ARGILLOSUS.

General: <25 PLANTS OBSERVED IN EACH OF THE TWO COLONIES IN 2003. THIS AREA BURNED IN 1994. ALSO ASSOC WITH NASSELLA, BRACHYPODIUM DISTACHYON, LOLIUM, AVENA BARBATA, AND ALIEN ANNUAL GRASSES.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Occurrence No.	18	**Map Index:**	62353	**EO Index:**	62390	**Element Last Seen:**	2001-06-14
Occ. Rank:	Poor			**Presence:**	Presumed Extant	**Site Last Seen:**	2001-06-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2005-08-19

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.33314 / -120.71829	**Accuracy:**	80 meters
UTM:	Zone-10 N3912377 E707380	**Elevation (ft):**	800
PLSS:	T30S, R12E, Sec. 08 (M)	**Acres:**	0.0

Location: GUARD HILL AT CAMP SAN LUIS OBISPO.

Detailed Location: WITHIN TRAINING AREA R.

Ecological: EDGE OF COASTAL SAGE SCRUB. EPHEMERAL STREAM EDGE ON STEEP NNE-FACING SLOPE OF ADOBE CLAY. ASSOC WITH BACCHARIS PILULARIS, ARTEMISIA CALIFORNICA, ROSA SPITHAMEA, POTENTILLA GLANDULOSA, EPILOBIUM CANUM, HEMIZONIA CONGESTA SSP. LUZULIFOLIA.

General: <10 PLANTS OBSERVED IN 2001. ALSO ASSOC WITH CENTAUREA CALCITRAPA, HIRSCHFELDIA INCANA, CALOCHORTUS CLAVATUS SSP. CLAVATUS, AND ALIEN ANNUAL GRASSES.

Owner/Manager: STATE-CAMP SAN LUIS OBISPO

Fritillaria viridea **Element Code:** PMLIL0V0L0

San Benito fritillary

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL.			
	Micro:	SERPENTINE SLOPES. 200-1525M.			

Occurrence No.	5	**Map Index:** 12860	**EO Index:**	854		**Element Last Seen:**	1964-04-15
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1964-04-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	1996-10-28

Quad Summary: San Luis Obispo (3512036)

County Summary: San Luis Obispo

Lat/Long:	35.34969 / -120.64684	**Accuracy:**	1 mile
UTM:	Zone-10 N3914364 E713832	**Elevation (ft):**	1600
PLSS:	T30S, R12E, Sec. 01 (M)	**Acres:**	0.0

Location: RIDGE NORTHWEST OF CUESTA PASS.

Detailed Location:

Ecological:

General: SP SEEN 1964.

Owner/Manager: UNKNOWN

Occurrence No.	19	**Map Index:** 40956	**EO Index:**	60886		**Element Last Seen:**	2000-04-20
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	2000-04-20
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2005-04-05

Quad Summary: San Luis Obispo (3512036), Morro Bay South (3512037)

County Summary: San Luis Obispo

Lat/Long:	35.26565 / -120.73209	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3904861 E706297	**Elevation (ft):**	600
PLSS:	T30S, R12E, Sec. 31 (M)	**Acres:**	251.6

Location: PREFUMO CANYON, 1.2 MI SOUTH OF LOS OSOS VALLEY ROAD.

Detailed Location: DIRECTIONS UNCLEAR; MAPPED ALONG THE LENGTH OF THE CANYON.

Ecological: RIPARIAN AREA.

General: NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Fritillaria ojaiensis

Element Code: PMLIL0V0N0

Ojai fritillary

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	BROADLEAVED UPLAND FOREST (MESIC), CHAPARRAL, LOWER MONTANE CONIFEROUS FOREST.			
	Micro:	ROCKY SITES; ONE REPORTED AS "MOIST SHALE TALUS." 300-670M.			

Occurrence No.	12	**Map Index:**	40314	**EO Index:**	35321	**Element Last Seen:**	1986-XX-XX
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1986-XX-XX
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	1998-12-03

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.27789 / -120.47257	**Accuracy:**	specific area
UTM:	Zone-10 N3906790 E729874	**Elevation (ft):**	2400
PLSS:	T30S, R14E, Sec. 28 (M)	**Acres:**	6.9

Location: RIDGETOP EAST OF LITTLE FALLS SPRING AT HEAD OF LITTLE FALLS CREEK, SOUTH OF SANTA MARGARITA LAKE, LOS PADRES N.F.

Detailed Location: TWO COLONIES MAPPED JUST NORTH OF 2485' HILL ALONG RIDGE. MAPPED WITHIN THE NE 1/4 SE 1/4 SECTION 28 AND THE NW 1/4 SW 1/4 SECTION 27.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1986 MAP BY R. RAICHE. QUESTIONABLE OCCURRENCE: COULD BE EITHER FRITILLARIA LANCEOLATA OR F. OJAIENSIS ACC TO RAICHE; UNKNOWN IF VOUCHER MADE.

Owner/Manager: USFS-LOS PADRES NF

Agrostis hooveri

Element Code: PMPOA040M0

Hoover's bent grass

Listing Status:	**Federal:**	None	**CNDDB Element Ranks:**	**Global:**	G2
	State:	None		**State:**	S2
	Other:	Rare Plant Rank - 1B.2, BLM_S-Sensitive, USFS_S-Sensitive			
Habitat:	**General:**	CHAPARRAL, CISMONTANE WOODLAND, CLOSED-CONE CONIFEROUS FOREST, VALLEY AND FOOTHILL GRASSLAND.			
	Micro:	SANDY SITES. 60-610 M.			

Occurrence No.	6	**Map Index:**	56268	**EO Index:**	56284	**Element Last Seen:**	1969-06-05
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1969-06-05
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-08-04

Quad Summary: Oceano (3512015), Arroyo Grande NE (3512025)

County Summary: San Luis Obispo

Lat/Long:	35.12394 / -120.58193	**Accuracy:**	1 mile
UTM:	Zone-10 N3889464 E720341	**Elevation (ft):**	100
PLSS:	T32S, R13E, Sec. 21 (M)	**Acres:**	0.0

Location: OAK PARK DISTRICT, ARROYO GRANDE.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF ARROYO GRANDE AT HW1 101.

Ecological: IN FINE WHITE SAND AND CLAY FROM SANDSTONE.

General: 1948 COLLECTION BY HOOVER "CARPENTER CANYON ROAD TO ARROYO GRANDE" ATTRIBUTED TO THIS SITE. UNKNOWN NUMBER OF PLANTS SEEN IN 1948 AND 1969. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	7	**Map Index:**	28517	**EO Index:**	56285	**Element Last Seen:**	1992-05-14
Occ. Rank:	Good			**Presence:**	Presumed Extant	**Site Last Seen:**	1992-05-14
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2004-08-05

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.11968 / -120.55792	**Accuracy:**	80 meters
UTM:	Zone-10 N3889044 E722541	**Elevation (ft):**	300
PLSS:	T32S, R13E, Sec. 23 (M)	**Acres:**	0.0

Location: ARROYO GRANDE VALLEY, ABOVE BRANCH MILL ROAD, SOUTH OF NEWSOM CANYON.

Detailed Location: ONE POLYGON MAPPED APPROX. 0.1 MILE SE OF BRANCH MILL ROAD, 0.7 MILE NE OF HWY 101, AND 0.7 MILE SW OF NEWSOM SPRINGS. SPANS FAR NW1/4 SEC 26 AND FAR SW1/4 ADJACENT SEC 23.

Ecological: OAK FOREST ON STEEP NW-FACING SLOPE. PLANTS ARE IN MORE OPEN AREAS BETWEEN TREES. WITH MIMULUS AURANTIACUS AND LOTUS SCOPARIUS.

General: OVER 100 PLANTS SEEN IN 1992.

Owner/Manager: PVT

Occurrence No.	8	**Map Index:** 56270	**EO Index:**	56286		**Element Last Seen:**	1988-05-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1988-05-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-08-04

Quad Summary: Oceano (3512015)

County Summary: San Luis Obispo

Lat/Long:	35.05874 / -120.58567	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3882223 E720176	**Elevation (ft):**	200
PLSS:	T11N, R35W, Sec. 05 (S)	**Acres:**	94.2

Location: BLACK LAKE CANYON, SOUTH OF ARROYO GRANDE, NW OF NIPOMO.

Detailed Location: ONE POLYGON MAPPED IN THE W END OF BLACK LAKE CANYON, APPROX. 0.3 MILE N OF CALLENDAR ROAD, AND 0.3 MILE E OF VALLEY ROAD.

Ecological: GRASSLAND, COASTAL DUNE SAND.

General: LOCATION IS IN "BASIN H" OF EIR SURVEY AREA FOR COUNTY OF SAN LUIS OBISPO. PLANTS REPORTED PREVIOUSLY (UNKNOWN DATE), BUT NOT SEEN DURING 1988 SURVEY.

Owner/Manager: PVT

Occurrence No.	10	**Map Index:** 12776	**EO Index:**	56333		**Element Last Seen:**	1980-02-02
Occ. Rank:	Good		**Presence:**	Presumed Extant		**Site Last Seen:**	1980-02-02
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-08-05

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.19940 / -120.66633	**Accuracy:**	specific area
UTM:	Zone-10 N3897651 E712453	**Elevation (ft):**	800
PLSS:	T31S, R12E, Sec. 26 (M)	**Acres:**	13.9

Location: 0.3 TO 0.6 AIR MILE WEST OF THE SUMMIT OF INDIAN KNOB, SOUTH OF SAN LUIS OBISPO, EAST OF HIGHWAY 101.

Detailed Location:

Ecological:

General: MAP PROVIDED BY MCLEOD (1985). UNKNOWN NUMBER OF PLANTS SEEN IN 1980 AND 1985. OTHER RARE PLANTS AT THIS SITE: ERIODICTYON ALTISSIMUM, ARCTOSTAPHYLOS PILOSULA, AND CALOCHORTUS OBISPOENSIS. NEEDS FIELDWORK.

Owner/Manager: TNC, PVT-PGE

Occurrence No.	11	**Map Index:** 56318	**EO Index:**	56334		**Element Last Seen:**	XXXX-XX-XX
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	XXXX-XX-XX
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-08-17

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.17662 / -120.68420	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3895086 E710884	**Elevation (ft):**	400
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	144.9

Location: GRAGG CANYON, NW OF SHELL BEACH.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF GRAGG CANYON, E OF HWY 101, AND 1.2 MILES NW OF SHELL BEACH.

Ecological:

General: ONLY INFORMATION FOR THIS SITE IS 1996 CNPS INVENTORY 6 REVIEW COMMENTS BY CLIFTON, REFERENCING SEVERAL LARGE POPULATIONS AT THIS SITE. UNKNOWN DATE OF SITE VISIT. NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	13	**Map Index:** 13280	**EO Index:**	56339		**Element Last Seen:**	1946-06-15
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1946-06-15
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-08-04

Quad Summary: Santa Margarita Lake (3512034)

County Summary: San Luis Obispo

Lat/Long:	35.29061 / -120.47792	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3908189 E729352	**Elevation (ft):**	1800
PLSS:	T30S, R14E, Sec. 21 (M)	**Acres:**	0.0

Location: NEAR RINCONADA MINE, W OF POZO.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, IN THE VICINITY OF RINCONADA MINE, APPROX. 0.3 MILE S OF POZO ROAD, AND 1.0 MILE N OF LITTLE FALLS SPRING.

Ecological: IN WHITE, ROCKY (DIATOMACEOUS?) SOIL.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1946. NEEDS FIELDWORK.

Owner/Manager: USFS-LOS PADRES NF

Occurrence No.	14	**Map Index:** 28447	**EO Index:**	56340		**Element Last Seen:**	1964-06-05
Occ. Rank:	Unknown		**Presence:**	Presumed Extant		**Site Last Seen:**	1964-06-05
Occ. Type:	Natural/Native occurrence		**Trend:**	Unknown		**Record Last Updated:**	2004-08-04

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.33489 / -120.60993	**Accuracy:**	2/5 mile
UTM:	Zone-10 N3912803 E717226	**Elevation (ft):**	2000
PLSS:	T30S, R13E, Sec. 08 (M)	**Acres:**	0.0

Location: RIDGE SE OF CUESTA PASS.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB, ALONG RIDGE SE OF CUESTA PASS, APPROX. 1.0 MILE NW OF MT. LOWE.

Ecological: ON DISINTEGRATING SHALE.

General: UNKNOWN NUMBER OF PLANTS SEEN IN 1964. NEEDS FIELDWORK.

Owner/Manager: USFS-LOS PADRES NF, UNKNOWN

Occurrence No.	15	**Map Index:**	61677	**EO Index:**	61713	**Element Last Seen:**	2005-04-29
Occ. Rank:	Excellent			**Presence:**	Presumed Extant	**Site Last Seen:**	2005-04-29
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-05-23

Quad Summary: Pismo Beach (3512026)

County Summary: San Luis Obispo

Lat/Long:	35.18675 / -120.69155	**Accuracy:**	specific area
UTM:	Zone-10 N3896194 E710188	**Elevation (ft):**	307
PLSS:	T31S, R12E, Sec. 33 (M)	**Acres:**	2.1

Location: SOUTH SLOPE SQUIRE CANYON, ABOUT 0.6 AIRMILE NE OF MONTE ROAD AT HIGHWAY 101, SAN LUIS OBISPO.

Detailed Location: PLANTS FOUND IN ONE PATCH ON A STEEP SOUTH-FACING SLOPE OF AN EROSION-INDUCED DRAINAGE AT THE EDGE OF THE OAK WOODLAND. MAPPED IN SW1/4 OF NE1/4 SEC 33.

Ecological: DENSE NORTH-FACING COAST LIVE OAK WOODLAND ON SANDY SOILS. OCCURS WITH CHORIZANTHE BILOBA VAR. BILOBA, BACCHARIS PILULARIS, MIMULUS AURANTIACUS, LOTUS SCOPARIUS, PLANTAGO ERECTA, AND OTHERS.

General: 50 PLANTS OBSERVED IN 2004.

Owner/Manager: PVT

Occurrence No.	21	**Map Index:**	64768	**EO Index:**	64847	**Element Last Seen:**	1958-06-22
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1958-06-22
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2006-06-06

Quad Summary: Pismo Beach (3512026), Port San Luis (3512027)

County Summary: San Luis Obispo

Lat/Long:	35.22770 / -120.73849	**Accuracy:**	nonspecific area
UTM:	Zone-10 N3900639 E705810	**Elevation (ft):**	
PLSS:	T31S, R11E, Sec. 13 (M)	**Acres:**	290.9

Location: SEE CANYON NEAR THE TOWN OF AVILA.

Detailed Location: EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB ALONG SEE CANYON.

Ecological:

General: ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1958 COLLECTION BY HARDHAM FROM "SEE CANYON, AVILA." NEEDS FIELDWORK.

Owner/Manager: UNKNOWN

Occurrence No.	22	**Map Index:**	64769	**EO Index:**	64848	**Element Last Seen:**	1995-05-28
Occ. Rank:	Unknown			**Presence:**	Presumed Extant	**Site Last Seen:**	1995-05-28
Occ. Type:	Natural/Native occurrence			**Trend:**	Unknown	**Record Last Updated:**	2011-08-08

Quad Summary: Lopez Mtn. (3512035)

County Summary: San Luis Obispo

Lat/Long:	35.32059 / -120.60376	**Accuracy:**	1/5 mile
UTM:	Zone-10 N3911230 E717825	**Elevation (ft):**	2500
PLSS:	T30S, R13E, Sec. 17 (M)	**Acres:**	0.0

Location: IMMEDIATELY WNW OF "PEAK 2", BLACK BUTTE RESEARCH NATURAL AREA, LOS PADRES NATIONAL FOREST.

Detailed Location: "PEAK 2" IS PRESUMED TO BE MT. LOWE WITH RADIO FACILITY. MAPPED BY CNDDB WNW OF MT. LOWE PEAK ON SADDLE OF RIDGE BETWEEN PEAKS.

Ecological: IN BURNED-OVER PINUS ATTENUATA FOREST. MOSTLY ON POORLY DRAINED FLATS ON SADDLE OF RIDGE.

General: CONSIDERED "COMMON" IN 1995.

Owner/Manager: USFS-LOS PADRES NF

APPENDIX B
SITE PHOTOGRAPHS

Photograph 1. Pad 1, facing southeast. View of existing well pad and proposed expansion area. Annual, non-native grasses, pampas grass, and coyote brush occupy site. May 3, 2013.

Photograph 2. Pad 1, facing southwest. View of Pad 1 access road. Annual, non-native grasses and herbs, coyote brush, and coast live oak border existing roadway. May 3, 2013.

Photograph 3. Pad 2, facing northeast from center of proposed well pad. View of proposed well pad currently vegetated with coast live oak, poison oak, and annual herbs and grasses. May 2, 2013.

Photograph 4. Pad 2, facing southwest from center of proposed well pad. View of proposed well pad currently vegetated with coast live oak, poison oak, and annual herbs and grasses. May 2, 2013.

Photograph 5. Pad 3, facing west into middle of proposed well pad. View of coast live oak trees with poison oak understory. May 2, 2013.

Photograph 6. Pad 3, view southwest. View of coast live oak trees and poison oak occupying the site. May 2, 2013.

Photograph 7. Pad 3, facing south from Ormonde Road. View of proposed well pad location and pipe crossing currently vegetated with Arroyo willow and coast live oak. May 2, 2013.

Photograph 8. Pad 4, facing north. View of the existing well pad. May 2, 2013.

Photograph 9. Pad 4, facing west. View of the proposed well pad extension area. May 2, 2013.

Photograph 10. Pad 4, facing south. View of proposed well pad extension area and ditch culvert on the east side of the existing road. May 2, 2013.

Photograph 11. Pad 4, facing north. View of the proposed well pad extension area; maintained annual, non-native grassland comprise the majority of the area. Coast live oak and Arroyo willow are present within the culvert in the background. May 2, 2013.

Photograph 12. Pad 4, facing northeast. View of maintained annual, non-native grassland with entrance road to AGOF in the middle ground and Price Canyon Road in the background. May 2, 2013.

Photograph 13. Pad 4, facing south. View of the existing well pad. May 2, 2013.

Photograph 14. Pad 4, facing northwest. View of proposed well pad expansion area; maintained annual, non-native grassland, with scattered coast live oak and Arroyo willow trees in the background. May 2, 2013.

Photograph 15. Pad 5, facing southwest. View of existing roadway and proposed well pad expansion area; Santa Margarita manzanita shrubs line the roadside, with coast live oak trees in the background. May 2, 2013.

Photograph 16. Pad 5, facing south. View of existing roadway and well pad in background. Coast live oak and native shrubland border roadway. May 2, 2013.

Photograph 17. Pad 5, facing southeast. View of existing roadway with Santa Margarita manzanita located on the roadside in the foreground and coast live oak trees in the background. May 2, 2013.

Photograph 18. Pad 5, facing south from existing well pad. Thick poison oak and woody shrubs extend down the hillside. May 2, 2013.

Photograph 19. Pad 6, facing north. View of the existing well pad;
Santa Margarita manzanita and coast live oak trees are in the background.
April 30, 2013.

Photograph 20. Pad 7, facing east. View of existing well pad
and surrounding Santa Margarita manzanita shrubs. April 30, 2013.

Photograph 21. Pad 8, facing southeast from existing well pad. Coyote brush and Santa Margarita manzanita in the foreground, with pampas grass flowering stalks in the background. May 3, 2013.

Photograph 22. Pad 8, facing northwest. Chamise and Santa Margarita manzanita shrubs line the roadside adjacent to the existing well pad. May 3, 2013.

Photograph 23. Pad 8, facing west. Coast live oak and poison oak line the roadside adjacent to the well pad. May 3, 2013.

Photograph 24. Pad 8, facing east. View of Santa Margarita manzanita shrubs along the hillside within the northern portion of the study area. May 3, 2013.

Photograph 25. Pad 9, facing southeast from eastern extent of the existing well pad. View of proposed well pad expansion area currently occupied by scattered coast live oak trees within annual non-native grassland. May 3, 2013.

Photograph 26. Pad 9, facing west from the eastern extent of the existing well pad. View of proposed well pad expansion area currently occupied by coast live oak trees and annual non-native grassland. May 3, 2013.

Photograph 27. Pad 9, facing west. View from the eastern extent of the disturbance buffer area; rock outcroppings within annual non-native grassland and scattered coast live oak trees. May 3, 2013.

Photograph 28. Pad 9, facing southeast. View from the western extent of the existing well pad. May 3, 2013.

Photograph 29. Pad 9, facing west. View from the center of the existing well pad; coast live oak trees present along edge of existing roadway and well pad. May 3, 2013.

Photograph 30. Pad 10, facing northeast. View of eastern extent of proposed well pad. May 3, 2013.

Photograph 31. Pad 10, facing northwest. View of proposed well pad location currently occupied by annual non-native grassland. May 3, 2013.

Photograph 32. Pad 11, facing west from the eastern entrance to the site. View of existing infrastructure in the background and annual non-native grassland with scattered coyote brush and coast live oak. May 6, 2013.

Photograph 33. Pad 11, facing north from the center of the site. View of existing infrastructure in the background with annual non-native grassland in the foreground. May 6, 2013.

Photograph 34. Pad 11, facing east. View from west of existing well pad of a ditch culvert vegetated with annual non-native grasses; coast live oak trees in background along southern edge of existing well pad. May 6, 2013.

Photograph 35. Pad 11, facing southwest from center of survey area. Coast live oak trees within depression in center of study area with an understory of poison oak. May 6, 2013.

Photograph 36. Pad 11, facing northeast. View of eastern extent of study area and adjacent infrastructure. May 6, 2013.

Photograph 37. Pad 12, facing north. View of the existing well pad and Santa Margarita manzanita covering the rocky hillside. May 3, 2013.

Photograph 38. Pad 12, facing northwest. Santa Margarita manzanita, Arroyo willow, and coast live oak border existing well pad. May 3, 2013.

Photograph 39. Pad 12, facing south. View of the steep slope vegetated with Santa Margarita manzanita, coast live oak, and pampas grass. May 3, 2013.

Photograph 40. Pad 13, facing southeast. View from center of the proposed well pad; coast live oak trees within annual non-native grassland. May 3, 2013.

Photograph 41. Pad 13, facing south. View from center of the proposed well pad; coast live oak trees and annual non-native grassland with existing infrastructure in background. May 3, 2013.

Photograph 42. Pad 13, facing southwest from eastern extent of study area. View of existing well pad, non-native grassland, and scattered coast live oaks. May 3, 2013.

Photograph 43. Pad 13, facing northwest from eastern extent of study area. View of non-native grassland and scattered coast live oaks. May 3, 2013.

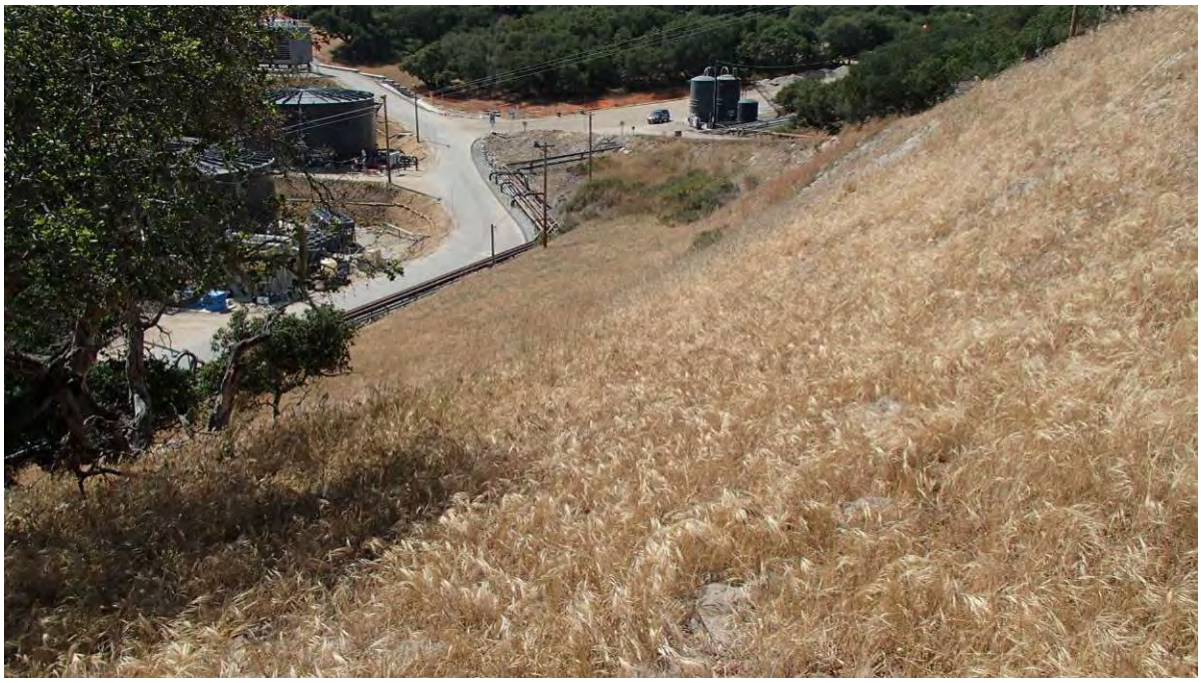
Photograph 44. Pad 14, looking northwest.
View of existing pad and soil stockpile location.

Photograph 45. Pad 14, looking south from southern extent of existing pad. View of proposed grading area and adjacent vegetation.

Photograph 46. Pad 14, looking east.
View of southern boundary of existing pad and adjacent vegetation.

Photograph 47. Pad 14, looking southeast. View of Pismo clarkia population in northern portion of Pad 14 survey area.

Photograph 48. Pad 15, facing east. View from the western extent of the site; slope is vegetated with annual non-native grassland with scattered coast live oak trees in background. May 2, 2013.



Photograph 49. Pad 15, facing west. View from north eastern extent of the site; annual non-native grassland and scattered coast live oak trees occupies slope. May 2, 2013.

Photograph 50. Pad 15, facing north. View from south-eastern extent of site, rocky slope with scattered coast live oak and annual, non-native grasses. May 2, 2013.

Photograph 51. Pad 16, facing southwest from northern extent of study area. View of existing and proposed well pad areas currently vegetated with annual grasses and herbs with coast live oaks surrounding area. May 3, 2013.

Photograph 52. Pad 16, facing northeast from southern extent of study area. View of existing and proposed well pad areas currently vegetated with annual grasses and herbs with coast live oaks surrounding area. May 3, 2013.

Photograph 53. Pad 17, facing northeast from center of existing access road. View of proposed well pad expansion area occupied by rocky hillside with scattered coast live oaks and annual grasses. May 2, 2013.

Photograph 54. Pad 17, facing southeast. View of existing roadside with coast live oak trees and annual grassland. May 2, 2013.

Photograph 55. Pad 17, facing east from existing access road. View of proposed well pad expansion area occupied by pampas grass patches, annual grasses, and coast live oak trees scattered across the rocky slope. May 2, 2013.

Photograph 56. Pad 17, facing southwest. View from existing access road; coast live oak trees with poison oak understory sits in the drainage ditch, with annual grassland in the middle ground. May 2, 2013.

Photograph 57. Pad 18, facing northeast. View of existing roadway and infrastructure. April 30, 2013.

Photograph 58. Pad 18, facing east from center of existing well pad. View of existing well pad and adjacent vegetation including coast live oak trees. April 30, 2013.

Photograph 59. Pad 18, facing north. View of existing structures on well pad. April 30, 2013.

Photograph 60. Pad 18, facing northeast. View of pipelines and AGOF Gate 2 entrance in background. April 30, 2013.

Photograph 61. Pad 19, facing west from existing well pad. View of proposed well pad expansion area. Santa Margarita manzanita and coyote brush in background. May 3, 2013.

Photograph 62. Pad 19, facing northwest from existing well pad. View of access road. Santa Margarita manzanita and chamise cover hillside. May 3, 2013.

Photograph 63. Pad 19, facing southeast from western extent of study area. View of the proposed well pad expansion area. Santa Margarita manzanita shrubland occupies area. May 3, 2013.

Photograph 64. Pad 20, facing north. View of existing well pad and Santa Margarita manzanita and coast live oak trees in the background. April 30, 2013.

Photograph 65. Pad 20, facing south. View from the western access road; Santa Margarita manzanita stands line both sides of the road. April 30, 2013.

Photograph 66. Pad 20, facing southwest from the main entrance road. View of the existing well pad with few Santa Margarita manzanitas are on the right and coyote brush on the left. April 30, 2013.

Photograph 67. Pad 20, facing northwest. View from the main access road; coast live oak trees, Santa Margarita manzanita, and black sage line roadsides. April 30, 2013.

Photograph 68. Pad 21, facing east. View from center of proposed roadway; Pismo clarkia is in the foreground within annual, non-native grassland and coast live oak trees in the background. May 2, 2013.

Photograph 69. Pad 21, facing west. View from the center of the proposed roadway; Pismo clarkia is in the foreground within annual, non-native grassland and coast live oak trees along southern boundary. May 2, 2013.

Photograph 70. Pad 21, facing southwest from center of proposed access road. View of proposed access road area in foreground and unnamed tributary to Pismo Creek in background. May 2, 2013.

Photograph 71. Pad 21, facing northwest. View of proposed access road location within annual grassland and scattered coast live oak trees. May 2, 2013.

Photograph 72. Pad 21, facing east-southeast. View of proposed access road within annual grassland occupied with scattered Pismo clarkia. Coast live oak trees border unnamed tributary of Pismo Creek. May 2, 2013.

Photograph 73. Pad 21, facing northwest. View of the northern boundary of the proposed well pad comprised of annual grasslands and scattered coast live oak. May 2, 2013.

Photograph 74. Pad 21, facing northeast. View from the southern side of the proposed well pad area; coast live oak trees scattered within annual grassland. May 2, 2013.

Photograph 75. Pad 21, facing north-northwest. View from the southern side of the proposed well pad area. View of a rock outcropping; coast live oak trees and annual grassland are in the background. May 2, 2013.

Photograph 76. Pad 22, facing east. View of the existing well pad, with surrounding coast live oak trees in the background. May 6, 2013.

Photograph 77. Pad 22, facing south from center of the existing well pad. View of coast live oak bordering well pad. May 6, 2013.

Photograph 78. Pad 22, facing northwest from center of existing well pad. View of existing well pad and Santa Margarita manzanita present at the base and along the ridgeline of the cliff face. May 6, 2013.

Photograph 79. Pad 23, facing east. View from the eastern end of the site; toyon and coast live oak trees occupy site. May 6, 2013.

Photograph 80. Pad 23, facing west. View from the eastern end of the site; coast live oak trees with poison oak understory. May 6, 2013.

Photograph 81. Pad 23, facing south. View of the main access road through the existing well pad, with coast live oak trees on both roadsides. May 6, 2013.

Photograph 82. Pad 23, facing north. View of the main access road through the existing well pad, with coast live oak trees on both sides, and thick poison oak on the right. May 6, 2013.

Photograph 83. Pad 24, facing east from entrance to existing pad. View of pipelines and existing well pad surrounded by annual grasses and coast live oak. May 6, 2013.

Photograph 84. Pad 24, facing southeast from entrance to existing pad. View of existing well pad and proposed expansion area currently vegetated with annual grasses and coast live oak trees. May 6, 2013.

Photograph 85. Pad 24, facing south-southeast from entrance to existing pad. View of existing infrastructure and proposed well pad expansion area currently vegetated with annual grasses and coast live oak trees. May 6, 2013.

Photograph 86. Pad 26, facing west. View of existing well pad and surrounding native shrubland. May 3, 2013.

Photograph 87. Pad 26, facing west. Chamise and black sagebrush line the rocky edge of the well pad, overlooking coast live oak trees in the background. May 2, 2013.

Photograph 88. Pad 26, facing west. View of existing well pad and surrounding black sage, chamise, and coast live oak trees. May 2, 2013.

Photograph 89. Pad 26, facing southwest. View of flowering Pismo clarkia in the foreground of an annual grass field. May 2, 2013.

Photograph 90. Pad 26, facing northwest. View from the northern edge of the existing well pad; coast live oak trees are in the background. May 2, 2013.

Photograph 91. Pad 27, facing southwest. View of proposed well pad expansion area currently vegetated with annual grassland surrounded by coast live oak trees, with scattered black sage and poison oak. May 2, 2013.

Photograph 92. Pad 27, facing southwest. View of proposed well pad expansion area currently occupied with annual, non-native grassland surrounded by coast live oak trees. May 2, 2013.

Photograph 93. Pad 28, facing north-northwest. View from the northern end of the well pad; Santa Margarita manzanita scrubland is present with few coyote brush and coast live oak trees. April 30, 2013.

Photograph 94. Pad 28, facing west. View from the center-west side of the existing well pad; coast live oak trees with poison oak understory. April 30, 2013.

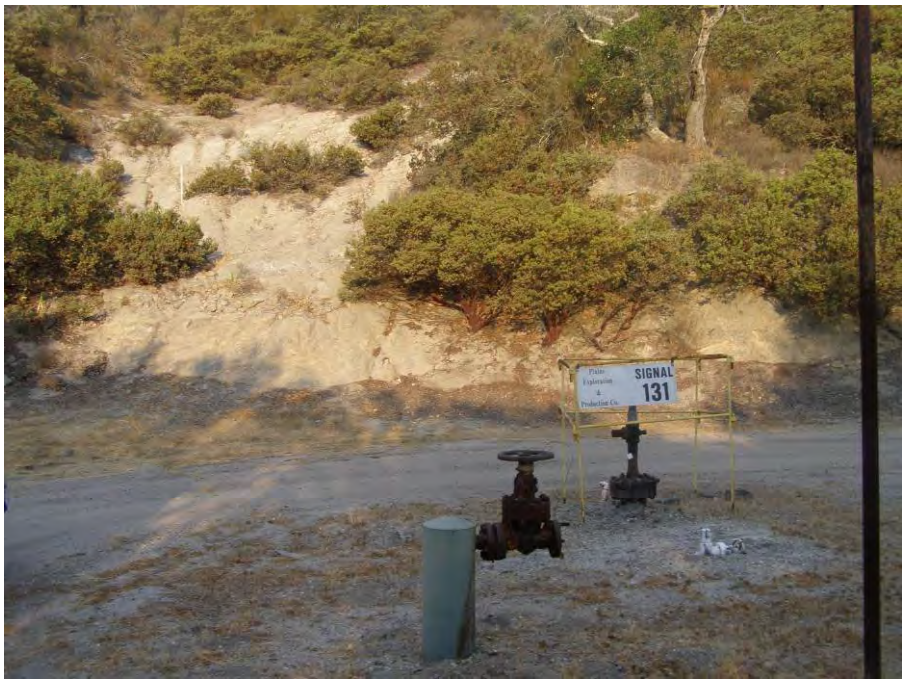
Photograph 95. Pad 28, facing south-southeast. View from the center of the existing well pad, to north of where the side road connects; coyote brush present along hill. April 30, 2013.

Photograph 96. Pad 28, facing east. View from the center-east of the existing well pad; Santa Margarita manzanita is in the foreground and coast live oak trees in the background. April 30, 2013.

Photograph 97. Pad 29, facing east. View from the center of the existing well pad; coast live oak trees are in the background. May 6, 2013.

Photograph 98. Pad 29, facing north. View from the center of the existing well pad; dense Santa Margarita manzanita shrubland present along hillside. May 6, 2013.

Photograph 99. Pad 29, facing south. View from the center of the existing well pad; Santa Margarita manzanita and coast live oak trees in the background. May 6, 2013.



Photograph 100. Pad 29, facing west. View from the center of the existing well pad; Santa Margarita manzanita is in the background, with one coast live oak tree. May 6, 2013.

Photograph 101. Pad 31, facing north from southern extent of existing well pad. View of existing graded area and surrounding vegetation including coast live oaks. May 1, 2013.

Photograph 102. Pad 31, facing south from northern extent of existing well pad. View of existing graded area and surrounding coast live oaks. May 1, 2013.

Photograph 103. Pad 33, facing west from eastern extent of existing well pad. View of existing well pad and surrounding vegetation comprised of annual grasses and herbs with chamise, black sage, and coast live oak trees.

Photograph 104. Pad 33, facing east from southwestern extent of existing well pad. View of existing well pad and surrounding vegetation comprised of annual grasses and herbs with chamise, black sage, and coast live oak trees.

Photograph 105. Pad 34, facing southeast. Coast live oak trees and Santa Margarita manzanita border existing well pad. April 30, 2013.

Photograph 106. Pad 34, facing northwest. Coast live oak trees and Santa Margarita manzanita border existing well pad. April 30, 2013.

Photograph 107. Pad 35, facing west. View of existing well pad bordered by Santa Margarita manzanita. April 30, 2013.

Photograph 108. Pad 35, facing north. Coast live oak trees and Santa Margarita manzanita border existing well pad. April 30, 2013.

Photograph 109. Pad 36, facing southwest. View of proposed access roadway and well pad currently occupied with annual grassland containing Pismo Clarkia. Coast live oak trees present in the background. May 7, 2013.

Photograph 110. Pad 36. View of a Pismo clarkia population within annual grassland currently occupying the proposed well pad and access road area. May 7, 2013.

Photograph 111. Pad 36, facing east. View of the drainage which bisects the proposed access road. Vegetation includes coast live oak, bush monkeyflower, and annual grasses. May 7, 2013.

Photograph 112. Pad 36, facing west. View upstream of the drainage which bisects the proposed access road. Vegetation includes annual grasses, coast live oak, and poison oak. May 7, 2013.

Photograph 113. Pad 36 Turnout, facing southeast. View of proposed turnout area vegetated with coast live oak, annual grassland, California wood fern, and black sage. May 7, 2013.

Photograph 114. Pad 41, facing south. View of proposed well pad area currently occupied by annual, non-native grassland. May 3, 2013.

Photograph 115. Pad 41, facing north. View of proposed well pad area currently occupied by annual, non-native grassland with scattered coyote bush. May 3, 2013.

Photograph 116. Pad 42, facing southwest. View of maintained annual, non-native grassland with coast live oak trees in the background. May 2, 2013.

Photograph 117. Pad 42, facing northeast. A swale is present between annual grassland on the left, and coast live oak trees on the right. May 2, 2013.

Photograph 118. Pad 42, facing southwest. View of proposed soil stockpile pad location currently dominated by annual, non-native grassland. May 2, 2013.

Photograph 119. Pad 42, facing east. View of proposed soil stockpile pad location currently dominated by annual, non-native grassland. May 2, 2013.

Photograph 120. Pad 44, facing southwest. View from the west side of the site; Santa Margarita manzanita and coast live oak trees border existing access road. April 30, 2013.

Photograph 121. Pad 44, facing southeast. View from the center of the existing well pad; Arroyo willow, coyote brush, and coast live oak trees border well pad. April 30, 2013.

Photograph 122. Pad 44, facing northwest. View from the center of the existing well pad; coast live oak trees and Santa Margarita manzanita are present. April 30, 2013.

Photograph 123. Pad 44, facing east. View from the eastern side of the site; Santa Margarita manzanita and coast live oak trees border existing access road. April 30, 2013.

Photograph 124. Pad 45, facing southeast from northern extent of pad 45 area. Existing spoil pile present along with annual non-native grasses in the foreground and coast live oak trees in the background. May 6, 2013.

Photograph 125. Pad 45, facing east. Santa Margarita manzanita shrubs are in the foreground, with scattered coast live oak trees in the background. May 6, 2013.

Photograph 126. Pad 45, facing southeast from northern extent of Pad 45 area. View of existing spoil pile and surrounding coast live oak trees with poison oak understory. May 6, 2013.

Photograph 127. Pad 45, facing west. Dense chamise scrubland is in the foreground, with coast live oak trees in the background. May 6, 2013.

Photograph 128. Pad 45, facing northwest from northern extent of Pad 45 area. View of existing stockpile with Santa Margarita manzanita scrubland on the left with coyote brush on the right. May 6, 2013.

Photograph 129. Pad 45, facing north from the center of the Pad 45 survey area. View of the main access road bordered by coast live oak trees, Santa Margarita manzanita, and chamise. May 6, 2013.

Photograph 130. Pad 45, facing southeast from southern extent of Pad 45 survey area. View of annual, non-native grassland with scattered coast live oak trees, and poison oak understory. May 6, 2013.

Photograph 131. Pad 45 facing southwest from the center of the Pad 45 survey area. View of the existing well pad and surrounding Santa Margarita manzanita, coast live oak trees, and pampas grass. May 6, 2013.

Photograph 132. Pad 45 facing east from center of Pad 45 survey area. View of existing access road bordered by Santa Margarita manzanita and coast live oak trees. May 6, 2013.

Photograph 133. Pad 45, facing northwest from southern extent of Pad 45 survey area. View of the existing well pad and surrounding coast live oak trees with scattered Santa Margarita manzanita. May 6, 2013.

Photograph 134. Pad 45, facing northwest from southern extent of Pad 45 survey area. View of annual grassland, coast live oak trees, poison oak, and scattered black sage and coyote brush. May 6, 2013.

Photograph 135. Pad 46, facing northeast center of study area. View of proposed well pad location currently vegetated with coast live oak trees and annual grasses and herbs. May 3, 2013.

Photograph 136. Pad 46, facing northeast from southwestern extent of study area. View of proposed access road location currently vegetated with native shrubland, annual grasses, and coast live oak trees. May 3, 2013.

Photograph 137. Pad 47, facing southeast from northern extent of study area. View of existing well pad and proposed well pad expansion area currently vegetated with annual grassland patch surrounded by coast live oak trees. May 2, 2013.

Photograph 138. Pad 48, facing east. View of proposed access route leading to proposed well pad area currently vegetated with chamise, black sage, and coast live oak trees. May 2, 2013.

Photograph 139. Pad 48, facing southwest from proposed access road. View of existing well pad and proposed access roadway currently occupied by a hillside vegetated with chamise and coast live oak trees. May 2, 2013.

Photograph 140. Northern Pipe Crossing, facing east. View of Pismo Creek riparian vegetation including coast live oak trees and thick poison oak understory. May 7, 2013.

Photograph 141. Northern Pipe Crossing, facing northeast. View of existing pipe crossing over Pismo Creek and surrounding riparian trees comprised of coast live oak, Western sycamore, and poison oak. May 7, 2013.

Photograph 142. Northern Pipe Crossing, facing northeast. View of existing pipe crossing with Pismo Creek flowing below. Thick riparian vegetation comprised of coast live oak, western sycamore, and poison oak.

Photograph 143. Edna Steam Generator Pad, facing northwest from south side of proposed steam generator location. View of existing steam generator and proposed location of new steam generator. July 11, 2013.

Photograph 144. Edna Steam Generator Pad, facing northeast from south side of proposed steam generator location. View of existing steam generator and proposed location of new steam generator. July 11, 2013.

Photograph 145. Hyla Steam Generator Pad, facing southeast. View of proposed location of new steam generators primarily occupied by currently graded areas bordered by coast live oak and eucalyptus trees. July 30, 2013.

Photograph 146. Hyla Steam Generator Pad, facing southwest. View of proposed location of new steam generators and access road currently occupied by graded areas bordered by coast live oaks and Peruvian pepper trees. July 30, 2013.

Photograph 147. Hyla Steam Generator Pad, facing south.
View of existing steam generator and adjacent coast live oak trees.
July 30, 2013.

Photograph 148. Hyla Steam Generator Pad, facing northeast.
View of coast live oak trees and protective fencing. This area is to the south of the proposed steam generator installation location. July 30, 2013.

Photograph 149. Price Canyon Road West Side, facing north. View of Price Canyon Road and adjacent roadside vegetated with annual grasses, ice plant, and eucalyptus trees. May 8, 2013.

Photograph 150. Price Canyon Road West Side, facing north. View of Price Canyon Road and adjacent roadside vegetated with annual, non-native grassland and scattered coast live oak trees. May 8, 2013.

Photograph 151. Price Canyon Road West Side, facing south from Gate 1. View of coast live oak trees lining both sides of Price Canyon Road, with ornamental rock rose bushes by the entrance. May 8, 2013.

Photograph 152. Price Canyon Road West Side, facing south from Gate 2. View of Price Canyon Road and adjacent maintained grass lawn, ornamental plantings, and eucalyptus. May 7, 2013.

Photograph 153. Price Canyon Road West Side, facing south from mid-way between Gate 1 and 2. View of Price Canyon Road and adjacent annual, non-native grasses with scattered coast live oak trees and rock outcrops. May 7, 2013.

Photograph 154. Price Canyon Road West Side, facing north from mid-way between Gate 1 and 2. View of Price Canyon Road and adjacent annual, non-native grassland, coast live oak, Arroyo willow, and eucalyptus trees. May 7, 2013.

Photograph 155. Price Canyon Road West Side, facing south from north of Gate 4. View of Price Canyon Road and adjacent vegetation comprised of ruderal weeds and annual, non-native grasses. May 9, 2013.

Photograph 156. Price Canyon Road West Side. View of a population of Pismo clarkia within the annual grassland located north of Gate 2. Coast live oak trees are in the background. May 9, 2013.

Photograph 157. Price Canyon Road East Side, facing southwest from Gate 4. View of Price Canyon Road and adjacent annual, non-native grassland. Grassland to the east of barbed wire fence is grazed by cattle. May 7, 2013.

Photograph 158. Price Canyon Road East Side, facing northeast from Gate 4. View of Price Canyon Road and adjacent annual, non-native grassland with Arroyo willow and eucalyptus trees in background. Grassland to the east of barbed wire fence is grazed by cattle. May 7, 2013.

Photograph 159. Price Canyon Road East Side, facing northeast from mid-way between Gates 3 and 4. View of grazed grassland with Arroyo willow and coast live oak trees lining the fence adjacent to Price Canyon Road. May 7, 2013.

Photograph 160. Price Canyon Road East Side, facing southwest from mid-way between Gates 3 and 4. View of Price Canyon Road, adjacent roadside vegetation comprised of annual, non-native grasses, and grazed grassland with scattered lupine and coast live oaks. May 7, 2013.

Photograph 161. Price Canyon Road East Side, facing south from Gate 3. View of Price Canyon Road, Gate 3 entrance, and adjacent vegetation. May 7, 2013.

Photograph 162. Price Canyon Road East Side, facing north from Gate 3. View of Price Canyon Road and adjacent coast live oak, poison oak, black sage, and annual grasses. Santa Margarita manzanita shrubs located within protective fencing. May 7, 2013.

Photograph 163. Price Canyon Road East Side, facing north from north of Gate 3. View of Price Canyon Road and adjacent vegetation including annual grasses, cottonwood, poison oak, and coast live oak trees. May 7, 2013.

Photograph 164. Price Canyon Road East Side and PCR Pipe Crossing, facing southwest from north of Gate 3. View from the south end of Pad 16, at the base of the roadside berm; proposed location of Price Canyon Road pipe undercrossing. May 7, 2013.

Photograph 165. Price Canyon Road East Side, facing north from south of Gate 3. View of Price Canyon Road, existing AGOF infrastructure, and roadside vegetation, including poison oak, blue elderberry, coast live oak, and eucalyptus. May 7, 2013.

Photograph 166. Price Canyon Road East Side, facing south from south of Gate 3. View of Price Canyon road on right and AGOF access road on left. Roadside vegetation present includes annual, non-native grasses and coast live oak, pine, and eucalyptus. May 7, 2013.

Photograph 167. Pad 25 Road Improvement, facing east.
A dirt access road with annual grassland on the right, and
Arroyo willow thickets in the background. May 3, 2013.

Photograph 168. Pad 25 Road Improvement, facing northeast.
View of proposed roadway location currently occupied by annual,
non-native grassland actively grazed by cattle. May 7, 2013.

Photograph 169. Pad 25 Road Improvement, facing west – upslope. View of proposed roadway location currently occupied by annual, non-native grassland actively grazed by cattle and bordered with coast live oak trees. May 7, 2013.

Photograph 170. Pad 25 Road Improvement, facing east - downslope. View of proposed roadway location currently occupied by annual, non-native grassland actively grazed by cattle and bordered with coast live oak trees. May 7, 2013.

Photograph 171. Pad 25 Road Improvement, facing south. View of proposed roadway location currently occupied by annual, non-native grassland grazed by cattle with scattered coast live oak trees in background. May 7, 2013.

Photograph 172. Ormonde Pipe Crossing, facing north. View of Ormonde Road and location of proposed pipe crossing on west side of road. Area is vegetated with annual grasses and coast live oak trees. June 14, 2013.

Photograph 173. Ormonde Pipe Crossing, facing northeast. View of Ormonde Road and location of proposed pipe crossing on east side of road. Area is vegetated with annual grasses, poison oak, and coast live oak. June 14, 2013.

Photograph 174. UPRR Pipe Crossing, facing west. View of proposed pipe crossing installation under railroad tracks. Annual, non-native grasses and iceplant line the side of the railroad tracks, with scattered tree tobacco, and coast live oak. May 7, 2013.

Photograph 175. Pipe Rack Corridor, facing northwest. View of the existing well pad located southeast of proposed pipe rack corridor which is proposed to be placed within the vegetation present at the background of this photo consisting of coast live oak trees with scattered chamise, Santa Margarita manzanita, poison oak, and a pine tree. May 1, 2013.

Photo 176. Adult California red legged frog observed at retention basin located within northern portion of AGOF facility. Sighting occurred on July 24, 2013 during non-breeding nighttime survey.

Photo 177. California red legged frog survey area, facing northeast – upstream. View of Pismo Creek just downstream of pipe crossing and adjacent riparian vegetation. August 9, 2013.

Photo 178. California red legged frog survey area, facing southwest – downstream. View of Pismo Creek downstream of pipe crossing and adjacent riparian vegetation. August 9, 2013.

Photo 179. California red legged frog survey area, facing south. View of Pad 17 pond located northwest of AGOF Gate 2. April 30, 2013.

Photo 180. California red legged frog survey area, Drainage B facing northeast. View of pool located at pipe outflow surrounded by cattail and coast live oak trees. June 13, 2013.

Photograph 181. California red legged frog survey area, facing west-northwest from center of Hyla Crossing structure. View upstream on Pismo Creek. February 11, 2013.

Photograph 182. California red legged frog survey area, facing southeast from center of Hyla Crossing structure. View downstream on Pismo Creek. Location of California red-legged sighting in January 2013. February 11, 2013.

Photograph 183. California red legged frog survey area, facing southwest. View downstream of outfall structure on Pismo Creek. This area supports pool habitat with low overhanging vegetation. February 11, 2013.

Photograph 184. California red legged frog survey area, facing northeast. View upstream from south of Pismo Creek outfall structure. This area supports pool habitat with low overhanging vegetation. February 11, 2013.

Photograph 185. California red legged frog survey area, facing northeast. View upstream from far southern extent of survey areas on Pismo Creek. This area is narrower with less overhanging vegetation than areas upstream. February 11, 2013.

APPENDIX C1
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

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			Survey Areas																																																	
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Acardiaceae																																																				
Rhus integrifolia	Lemonade berry	N												X																																						
Adoxaceae																																																				
Sambucus mexicana	Blue elderberry	N																	X					X																												
Aizoaceae																																																				
Carpobrotus edulis	Ice plant	E				X				X			X				X		X	X				X		X		X														X				X				X	
Anacardiaceae																																																				
Toxicodendron diversilobum	Poison oak	N	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X	X	X	X	X	X			X	
Schinus molle	Peruvian pepper tree	E				X																					X	X																	X					
Apiaceae																																																				
Conium maculatum	Poison hemlock	E	X				X						X					X										X				X	X					X	X						X	X				
Daucus pusillus	Wild carrot	N		X																					X												X				X								
Foeniculum vulgare	Sweet fennel	E	X		X	X												X										X									X								X	X				
Perideridia californica	California yampah	N		X																																																
Sanicula crassicaulis	Gamble weed	N																													X												X	X						
Torilis arvensis	Hedge parsley	E	X	X	X		X		X		X	X								X			X	X	X	X		X				X		X	X			X	X			X	X	X						
Apocynaceae																																																				
Asclepias fascicularis	Narrow leaf milkweed	N			X																																															
Vinca major	Greater periwinkle	E																					X					X															X							

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Araceae																																																						
Lemna minor	Duckweed	N																					X																										X		
Asteraceae																																																						
Agoseris grandiflora	California dandelion	N																								X				X																					X	
Ambrosia psilostachya	Western ragweed	N	X			X	X				X		X				X	X	X			X	X				X	X									X	X	X		X				X	X			X		
Anthemis cotula	Mayweed	N	X			X																																X							X	X					
Artemisia californica	California sagebrush	N			X	X	X	X										X									X	X			X	X		X					X	X	X	X			X	X	X				
Artemisia douglasiana	Mugwort	N																																									X			X					
Baccharis pilularis	Coyote brush	N	X		X	X	X		X	X	X		X	X	X	X			X	X		X	X	X	X		X	X	X	X		X	X	X		X		X	X	X	X		X	X	X	X			X	X
Baccharis plummerae	Plummer's Baccharis	N																							X																										
Baccharis salicifolia	Mule Fat	N																													X																				
Carduus pycnocephalus	Italian thistle	E	X	X	X		X				X	X	X		X		X	X	X	X			X	X	X	X		X										X	X		X	X			X	X				
Centaurea melitensis	Tocalote	E	X		X	X	X			X	X		X			X			X		X	X					X	X				X			X								X	X		X				X
Centaurea solstitialis	Yellow star thistle	E					X																															X													
Chaenactis glabriuscula	Common yellow pincushion	N																																			X														
Cirsium occidentale	Western thistle	N								X													X																												
Cirsium vulgare	Bull thistle	E	X																	X																		X											X		
Erigeron bonariensis	Flax-leaved horseweed	E																																															X		

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Conyza canadensis	Horseweed	N				X	X			X	X			X						X	X	X	X						X			X		X			X	X	X		X					X				
Corethrogyne filaginifolia	Common sandaster	N				X																									X				X															
Cotula coronopifolia	Brass buttons	E								X										X																														
Deinandra paniculata (*increscens* ssp. *foliosa*)[1]	Paniculate tarplant	N	X			X	X											X	X		X																		X											
Delairea odorata	Cape Ivy	E	X																																															
Dimorphotheca sinuata	African daisy	E																																																X
Ericameria ericoides	California goldenbrush	N										X			X		X		X				X																		X						X		
Ericameria linearifolia	Linear leaved goldenbush	N				X				X																																						X		
Erigeron sanctarum[1]	Saint's daisy	N														X																																	
Eriophyllum confertiflorum var. *confertiflorum*	Golden yarrow	N					X				X		X	X		X								X	X		X	X	X	X	X		X	X	X					X	X	X		X					X
Euthamia occidentalis	Western goldenrod	N											X																																					
Gamochaeta ustulata	Featherweed	N	X			X					X	X	X		X					X			X		X			X									X						X							
Helenium puberulum	Sneezeweed	N	X																																															
Helminthotheca (Picris) echioides	Bristly ox-tongue	E									X																																							
Hemizonia congesta ssp. *luzulifolia*	Hayfield tarweed	N											X																																X					
Heterotheca grandiflora	Telegraph weed	N			X	X					X	X	X	X			X	X	X	X	X	X	X	X	X	X		X	X	X	X	X		X			X	X	X		X				X	X			X	X

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Hypochaeris glabra	Smooth cats ear	E	X	X		X								X	X		X	X							X			X			X						X	X				X	X			X					
Isocoma menziesii var. *menziesii*	Coastal goldenbush	N	X																									X										X								X	X				
Lactuca serriola	Prickly wild lettuce	E																				X							X										X				X							X	
Lasthenia californica	California goldfields	N																																													X				
Logfia filaginoides	California filago	N	X	X		X	X			X	X	X	X	X	X			X	X				X	X	X		X			X	X			X			X	X		X	X	X	X			X				X
Madia sativa	Coast tarweed	N		X		X							X				X			X	X			X	X			X									X		X			X	X					X	X	
Malacothrix saxatilis	Cliff-aster	N																							X																										
Matricaria discoidea	Pineapple weed	E	X																X		X							X										X								X	X				
Pseudognaphalium biolettii	Two-color rabbit-tobacco	N								X											X				X		X			X	X												X								
Pseudognaphalium californicum	Ladies' tobacco	N	X		X		X			X	X	X	X	X	X		X	X	X		X	X	X	X	X	X		X	X		X	X	X		X					X		X	X	X							X
Pseudognaphalium canescens	Wright's cudweed	N	X			X					X		X	X	X			X					X					X	X		X	X										X	X			X					
Pseudognaphalium luteoalbum	Jersey cudweed	E			X	X	X			X	X		X	X			X		X	X	X			X	X				X			X									X					X	X			X	
Silybum marianum	Milk thistle	E																														X	X					X			X					X					
Sonchus asper	Prickly sow thistle	E	X			X				X			X	X							X		X				X		X				X													X				X	
Sonchus oleraceus	Common sow thistle	E								X			X					X	X	X			X	X		X			X	X	X			X					X							X	X				X
Stephanomeria exigua	Small wire lettuce	N				X				X			X																										X										X		
Symphyotrichum chilense	Pacific aster	N																						X																											
Taraxacum officinale	Common dandelion	E																	X													X		X				X				X									X

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Xanthium strumarium	Cocklebur	N				X				X			X				X		X	X									X																								
Boraginaceae																																																						
Amsinckia menziesii	Fiddleneck	N											X																															X	X								
Cryptantha clevelandii	Clevelands forget-me-not	N								X	X				X		X							X						X	X		X							X	X			X								
Eucrypta chrysanthemifolia	Spotted eucrypta	N		X			X								X		X								X																	X											
Phacelia cicutaria var. *hispida*	Hispid caterpillar phacelia	N			X		X					X													X								X	X																			
Phacelia rattanii	Rattan's phacelia	N		X																																								X									
Pholistoma auritum	Fiesta flower	N									X																																											
Brassicaceae																																																						
Brassica nigra	Black mustard	E	X			X												X		X		X				X		X											X				X		X	X		X			
Hirschfeldia incana	Summer mustard	E	X		X		X						X													X	X		X					X				X							X	X					
Lobularia maritima	Sweet alyssum	E																										X																									
Nasturtium officinale	Watercress	N	X																				X																														
Raphanus sativus	Wild radish	E											X							X						X																											
Sisymbrium orientale	Sisymbrium	E																								X		X																									
Thysanocarpus laciniatus	Fringe-pod	N											X											X																													

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																			
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Caprifoliaceae																																																						
Symphoricarpos mollis	Trailing snowberry	N	X	X																																					X											
Caryophyllaceae																																																						
Cerastium arvense	Field chickweed	N											X																																									
Silene gallica	Windmill pink	E		X		X	X				X	X	X		X	X	X	X					X	X	X			X									X		X			X	X		X			X				
Spergula arvensis	Stickwort	E											X		X																																						
Spergularia rubra	Sand spurrey	E				X				X				X													X									X									X							
Chenopodiacea																																																						
Chenopodium californicum	California goosefoot	N																																					X				X										
Chenopodium murale	Nettle leaf goosefoot	E																								X																												
Cistaceae																																																						
Helianthemum scoparium	Peak rush-rose	N	X							X	X					X																								X														
Convolvulaceae																																																						
Calystegia macrostegia ssp. *cyclostegia*	Morning-glory	N	X															X													X		X	X	X			X		X								X				
Convolvulus arvensis	Bindweed	E		X	X																						X	X				X	X		X						X	X	X			X	X				
Crassulaceae																																																						
Crassula connata	Pygmy weed	N	X		X					X	X			X	X			X		X	X									X					X																	
Dudleya lanceolata	Lanceleaf live-forever	N									X						X		X							X																											
Echevaria sp.	Hens and chicks	E																								X																												

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																	
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Cucurbitaceae																																																				
Marah macrocarpa	Chilicothe	N			X	X					X		X							X							X			X			X								X	X		X						X
Cyperaceae																																																			
Eleocharis macrostachya	Creeping spike rush	N	X																X	X																															
Carex barbarae	Santa Barbra sedge	N			X								X												X																										
Carex brevicaulis	Short stem sedge	N	X	X									X	X				X					X	X		X						X		X	X		X		X	X		X		X	X					X
Cyperus eragrostis	Tall flatsedge	N	X								X		X	X					X	X	X	X	X											X	X	X			X											X	
Schoenoplectus californicus	California bulrush	N																																							X										
Dennstaedtiaceae																																																			
Pteridium aquilinum	Western brackenfern	N											X											X	X																										
Dryopteridaceae																																																			
Dryopteris arguta	California wood fern	N		X	X								X			X	X	X						X		X				X	X			X			X				X	X							X	
Equisetaceae																																																			
Equisetum telmateia ssp. *braunii*	Giant Horsetail	N	X																																																
Ericaceae																																																			
Arctostaphylos glandulosa	Eastwood manzanita	N																						X	X																			X						
Arctostaphylos pilosula[2]	Santa Margarita manzanita[2]	N		X		X	X	X	X		X			X	X			X			X	X		X	X	X	X		X	X	X		X		X	X	X		X	X		X	X	X					X
Gaultheria shallon	Salal	N																						X																										

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Euphorbiaceae																																																			
Chamaesyce maculata	Spotted spurge	E																												X		X								X										
Croton californicus	California croton	N									X	X	X		X	X		X	X				X						X	X	X					X	X		X	X		X	X	X					
Croton setigerus	Dove weed	N																																				X												
Fabaceae																																																			
Acmispon americanus var *americanus*	Spanish lotus	N	X		X	X	X							X				X	X		X			X	X					X		X					X		X						X					X
Acmispon glaber var. *glaber*	Deerweed	N				X	X	X		X	X	X	X	X	X	X			X		X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X		X	X	X	X								X
Acmispon strigosus	Strigose lotus	N									X		X																X	X							X			X			X							X
Cytisus scoparius	Scotch broom	E																																									X							
Lotus corniculatus	Bird's foot trefoil	E																																					X											
Lupinus albifrons	Silver lupine	N			X		X																										X																	
Lupinus arboreus	Yellow bush lupine	N											X																																					
Lupinus bicolor	Bicolored or miniature lupine	N			X						X				X		X	X					X	X				X									X	X	X				X		X					
Lupinus hirsutissimus	Stinging lupine	N																																X									X							
Lupinus nanus	Sky lupine	N	X								X	X											X																							X					
Lupinus truncatus	Truncate-leaved lupine	N				X	X			X								X						X								X	X				X		X				X							X
Medicago polymorpha	Bur clover	E	X		X	X				X	X		X					X		X			X	X	X		X	X	X			X						X	X			X		X	X	X				
Melilotus albus	White sweetclover	E																											X																X			X	

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																	
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Melilotus indicus	Annual yellow sweetclover	E	X			X	X			X	X		X	X			X		X	X	X		X	X	X		X	X	X	X		X	X	X				X	X		X	X	X						X	X
Pickeringia montana	Chaparral pea	N								X																																									
Trifolium hirtum	Rose clover	E	X															X														X		X			X		X			X	X		X					X
Trifolium willdenovii	Tom cat clover	N									X												X	X													X													
Vicia benghalensis	Purple vetch	E			X	X					X					X		X	X	X			X					X		X	X		X						X				X		X					
Vicia sativa ssp. *nigra*	Garden vetch	E	X			X							X					X		X					X	X												X				X			X					
Fagaceae																																																			
Quercus agrifolia var. *agrifolia*	Coast live oak	N	X	X	X	X	X	X		X	X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		X	X	X	X
Quercus berberidifolia	Scrub oak	N														X																	X																		
Gentianaceae																															X																				
Centaurium davyi	Davy's centaury	N																																																	
Geraniaceae																																																			
Erodium botrys	Storks bill	E			X	X				X				X		X			X		X			X		X		X		X	X	X	X				X		X			X			X					X
Erodium cicutarium	Redstem filaree	E	X			X	X			X	X	X	X	X	X		X			X	X	X		X			X		X								X	X	X	X					X	X				
Geranium dissectum	Geranium	E								X	X		X						X	X								X										X					X			X					
Iridaceae																																																			
Sisyrinchium bellum	Blue eyed grass	N																																			X		X												
Juncaceae																																																			
Juncus bufonius var. *bufonius*	Toad rush	N				X				X									X	X																															
Juncus patens	Common rush	N																					X																												

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

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Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Juncus phaeocephalus	Brown headed rush	N			X															X																	X														
Juncus xiphioides	Irish leaved rush	N																																					X												
Lamiaceae																																																				
Marrubium vulgare	Horehound	E																																				X														
Salvia mellifera	Black sage	N				X	X			X	X	X			X	X	X								X		X	X	X		X	X	X	X	X					X	X		X	X						
Salvia spathacea	Hummingbird sage	N		X	X			X			X	X	X		X					X				X	X			X			X	X										X	X	X	X						
Stachys bullata	Wood mint	N																X										X										X					X								
Liliaceae																																																				
Calochortus albus	White globe lily	N											X											X	X						X										X										
Lythraceae																																																				
Lythrum hyssopifolium	Loosestrife	E								X																													X												
Malvaceae																																																				
Malva parviflora	Cheese weed	E								X																		X										X								X	X				
Montiaceae																																																				
Claytonia perfoliata	Miner's lettuce	N									X		X					X					X																													
Myrsinaceae																																																				
Anagallis arvensis	Scarlet pimpernel	E			X	X	X			X	X										X	X			X	X	X							X			X	X							X	X				
Myrtaceae																																																				
Eucalyptus cladocalyx	Sugar gum	E											X															X																								
Eucalyptus globulus	Blue gum	E				X																																														

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

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Onagraceae																																																				
Camissonia strigulosa	Strigose suncup	N																X																																	
Camissoniopsis bistorta	California suncup	N								X			X		X						X	X											X	X				X							X						
Clarkia epilobioides	Willow herb godetia	N											X																																						
Clarkia purpurea ssp. quadrivulnera	Four-spotted purple clarkia	N		X								X						X										X														X	X								
Clarkia speciosa ssp.immaculata[3,4,5]	Pismo clarkia	N									X		X		X	X							X			X	X										X					X	X							
Clarkia unguiculata	Elegant clarkia	N																										X														X	X							
Orobanchaceae																																																			
Castilleja attenuata	Valley tassels	N											X																																						
Castelleja densiflora ssp. *obispoensis*[2]	San Luis Obispo Owl's Clover	N																																				X													
Castilleja exserta ssp.*exserta*	Purple owl's clover	N									X												X														X						X								
Cordylanthus rigidus ssp. *rigidus*	Rigid bird's beak	N		X			X				X							X	X					X			X										X					X							X	
Pedicularis densiflora	Indian worrior	N		X																																						X		X						
Oxalidaceae																																																				
Oxalis corniculata	Oxalis	E				X																															X								X						
Oxalis pes-caprae	Bermuda buttercup	E				X																																														
Paeoniaceae																																									X		X	X							
Paeonia califonica	California Peony	N																																																	

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

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Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Papaveraceae																																																				
Dendromecon rigida	Bush poppy	N								X			X	X								X														X								X							
Phrymaceae																																																				
Mimulus aurantiacus	Bush monkeyflower	N	X	X		X	X			X	X			X	X	X	X	X	X	X	X	X		X		X	X	X	X	X		X	X	X	X	X				X		X	X	X				X		X
Mimulus guttatus	Seep monkey flower	N																					X																													
Pinaceae																																																				
Pinus radiata	Monterey pine	N																										X																								X
Plantaginaceae																																																				
Collinsia bartsiifolia var. *bartsifolia*	White Chinese houses	N		X																						X																X									
Keckiella cordifolia	Heart-leaved bush penstemon	N																	X												X	X		X																	
Nuttallanthus texanus	Blue toad flax	N											X																																							
Plantago coronopus	Buckthorn plantain	E										X	X		X								X																												
Plantago erecta	Erect plantain	N					X											X				X								X						X				X											X
Plantago lanceolata	Narrowleaf/English plantain	E	X		X	X												X	X		X	X			X		X	X								X	X	X							X					X
Plantanaceae																																																				
Platanus racemosa	Western sycamore	N	X		X								X																																X						
Poaceae																																																				
Agrostis exarata	Spike bentgrass	N																																																		X
Aira caryophyllea	Silver hairgrass	E		X		X					X	X			X	X		X					X	X	X	X		X		X	X		X	X			X		X		X	X	X							X

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

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Avena barbata	Slender wild oat	E	X	X	X	X	X			X	X	X		X	X	X	X		X				X		X	X	X	X	X	X		X	X				X	X	X		X	X	X		X			X		
Briza maxima	Big quaking grass	E											X																																					
Briza minor	Little quaking grass	E				X					X		X										X														X		X		X									
Bromus carinatus	California brome	N		X	X								X											X	X						X											X		X						
Bromus diandrus	Ripgut grass	E	X	X	X	X	X	X		X	X	X	X	X		X	X	X	X		X	X	X	X	X	X	X		X	X	X	X	X	X			X	X	X	X	X	X	X	X	X	X	X	X		
Bromus hordeaceus	Soft chess	E	X	X		X					X		X			X					X		X			X		X			X	X	X	X			X	X	X			X	X		X			X		
Bromus madritensis ssp. *rubens*	Red brome	E	X		X					X	X	X		X		X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	X	X	X		X	X	X		X		
Cortaderia selloan	Pampas grass	E	X		X	X				X	X		X	X	X	X		X	X		X	X	X	X	X			X		X	X	X	X	X					X	X						X			X	X
Cynodon dactylon	Bermuda grass	E			X	X	X			X	X		X	X			X		X	X		X	X		X		X		X		X	X		X					X		X					X				
Distichlis spicata	Saltgtass	N									X		X					X	X				X														X	X			X				X				X	
Ehrharta calycina	Veldt grass	E	X		X	X	X			X	X	X	X		X	X	X	X	X	X		X	X		X			X	X		X	X		X					X	X			X					X	X	
Elymus triticoides	Beardless wild rye	N				X																																							X					
Festuca myuros	Rattail sixweeks grass	E	X		X	X	X	X		X	X	X		X	X	X	X	X	X		X		X	X		X			X	X	X	X	X	X			X		X	X					X	X		X	X	
Festuca perennis	Italian ryegrass	E	X		X	X	X					X	X		X	X	X	X	X		X		X			X		X	X	X		X		X			X	X							X	X				
Hordeum marinum	Mediteranean barley	E														X					X							X				X					X	X							X					
Hordeum murinum ssp. *leporinum*	Hare barley	E					X				X	X			X		X		X										X																					
Lamarckia aurea	Golden top	E	X				X				X	X		X		X	X		X		X	X							X		X																			
Melica imperfecta	Smallflower melicgrass	N		X	X								X	X										X	X			X						X			X				X	X	X							

APPENDIX C1 (CONTINUED)
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Pennisetum clandestinum	Kikuyu grass	E																X										X																						
Phalaris aquatica	Harding grass	E											X																																					
Piptatherum miliaceum	Smilo grass	E	X							X										X																			X											
Poa annua	Annual blue grass	E			X														X															X																
Polypogon monspeliensis	Rabbitsfoot grass	E				X	X			X	X			X						X	X				X				X			X	X						X											
Polypogon viridis	Bentgrass	E	X		X					X			X																																					
Stipa pulchra	Purple needlegrass	N	X			X						X				X		X									X	X			X						X		X						X					
Triticum aestivum	Beardless wheat	E																																										X					
Vulpia bromoides	European foxtail fescue	E																							X																								
Polygonaceae																																																	
Chorizanthe diffusa	Diffuse spineflower	N											X														X				X		X		X						X								
Chorizanthe staticoides	Turkish rugging	N												X							X						X																						
Chorizanthe obovata	Spoon sepal spineflower	N								X																																							
Eriogonum gracile	Slender buckwheat	N																																									X						
Persicaria lapathifolia	Common knotweed	N																																														X	
Polygonum aviculare ssp. *depressum*	Prostrate knotweed	E								X						X					X																		X						X					
Rumex acetosella	Sheep sorrel	E	X			X												X						X	X	X		X			X			X			X	X	X						X					
Rumex crispus	Curly dock	E	X		X					X										X			X																										X	

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Rumex salicifolius	Willow dock	N									X	X			X		X		X				X									X		X			X		X	X											
Polypodiaceae																																																			
Polypodium calirhiza	Licorice fern	N																														X																			
Polemoniaceae																																																			
Gilia capitata ssp. *capitata*	Blue field gilia	N								X																																									
Navarretia atractyloides	Navarretia	N	X			X	X			X	X				X		X		X		X	X			X				X		X		X				X	X			X										
Linanthus californicus (*Leptodactylon californicum*[1])	California prickly phlox	N																																X						X											
Pteridaceae																																																			
Adiantum capillus-veneris	Maidenhair fern	N																																								X									
Pellaea mucronata var. *mucronata*	Bird's-foot cliffbrake	N			X	X													X						X						X	X	X	X							X	X		X						
Pentagramma triangularis var. *triangularis*	Goldenback fern	N																						X	X	X											X				X	X		X						
Ranunculaceae																																																			
Ranunculus californicus	California buttercup	N																					X																												
Rhamnaceae																																																			
Ceonothus cuneatus. var. *cuneatus*	Buckbrush										X				X																X									X	X									
Ceanothus thyrsiflorus	Blueblossom	N							X																																										
Ceanothus oliganthus	Hairy Ceanothus	N																																																	X
Frangula californica	California coffee-berry	N				X	X	X										X					X					X	X			X							X				X							X	

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																															
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Rhamnus crocea	Spiny redberry	N	X	X																							X															X	X	X						
Rosaceae																																																		
Adenostoma fasciculatum	Chamise	N		X			X			X	X	X	X		X						X	X		X	X		X		X		X		X	X	X	X				X	X			X						
Cercocarpus betuloides var. *betuloides*	Birchleaf mountain mahogany	N		X							X		X																		X			X	X						X	X	X	X						X
Heteromeles arbutifolia	Toyon	N	X	X	X	X					X				X								X	X	X	X		X		X	X	X		X	X		X		X	X	X	X	X	X					X	
Horkelia cuneata ssp. *cuneata*	Wedge leaved horkelia	N								X	X	X	X		X			X													X									X	X									
Horkelia cuneata ssp. *puberula*[3]	Mesa horkelia	N																	X																															
Rosa californica	California wild rose	N	X																				X														X													
Rubus ursinus	California blackberry	N	X		X						X		X					X					X					X				X		X			X						X		X				X
Rubiaceae																																																		
Galium angustifolium ssp. *angustifofium*	Chaparral bedstraw	N		X	X					X		X						X	X			X	X	X			X				X	X			X		X				X	X		X					
Galium aparine	Stickywilly, common bedstraw	N									X		X				X							X				X																	X				
Galium parisiense	Wall bedstraw	E		X														X								X																	X						
Salicaceae																																																	X	
Populus fremontii	Freemont Cottonwood	N																																															X	
Populus trichocarpa	Black cottonwood	N																																			X												X	
Salix lasiolepis	Arroyo willow	N	X		X	X				X	X			X	X		X			X	X		X	X	X		X	X								X		X	X	X		X				X		X	X

APPENDIX C1 (CONTINUED)
TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

			Survey Areas																																																			
Scientific Name	Common Name	Origin^	Pad 1*	Pad 2	Pad 3**	Pad 4	Pad 5	Pad 6	Pad 7	Pad 8	Pad 9	Pad 10	Pad 11	Pad 12	Pad 13	Pad 14	Pad 15	Pad 16	Pad 17	Pad 18	Pad 19	Pad 20	Pad 21	Pad 22	Pad 23	Pad 24	Pad 26	Pad 27	Pad 28	Pad 29	Pad 30	Pad 31	Pad 32	Pad 33	Pad 34	Pad 35	Pad 36***	Pad 41	Pad 42	Pad 44	Pad 45	Pad 46	Pad 47	Pad 48	Pad 25 Road Improvement	UPRR Pipe Crossing	Edna Unit Steam Generator	PCR Pipe Crossing	Pipe Casing Replacement	Pipe Rack Corridor
Solanaceae																																																						
Datura stramonium	Jimsonweed	E											X														X																		X					
Nicotiana glauca	Tree tobacco	E					X			X							X			X						X			X					X					X			X				X					
Solanum douglasii	Douglas' nightshade	N					X						X		X														X					X																	
Scrophulariaceae																																																						
Scrophularia atrata[2]	Black flowered figwort	N																		X				X	X																												
Themidaceae																																																						
Dichelostemma capitatum ssp.*capitatum*	Blue dicks	N			X		X				X				X					X					X		X		X		X	X	X				X					X										
Typhaceae																																																						
Typha sp.	Cattail	N		X						X										X																																	X	
Urticaceae																																																						
Urtica dioica	Stinging nettle	N											X										X																														
Verbenaceae																																																						
Verbena lasiostachys	Common verbena	N		X																																																		

^ N – Native Species; E – Exotic, Non-native Species
*Includes Northern Pipe Crossing area
**Includes Ormonde Pipe Crossing area
***Includes Pad 36 Turnout
[1] CNPS Rank 4.2 – California Rare Plant Rank: Plants of Limited Distribution (Watch List) and Moderately Threatened in California
[2] CNPS Rank 1B.2 – California Rare Plant Rank: Plants Rare, Threatened, or Endangered in California and Elsewhere and Moderately Threatened in California
[3] CNPS Rank 1B.1 – California Rare Plant Rank: Plants Rare, Threatened, or Endangered in California and Elsewhere and Seriously Threatened in California
[4] FE – Federally Endangered
[5] SR – State Rank Rare

APPENDIX C2
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

APPENDIX C2
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Acardiaceae				
Rhus integrifolia	Lemonade berry	N		X
Adoxaceae				
Sambucus mexicana	Blue elderberry	N		X
Aizoaceae				
Carpobrotus edulis	Ice Plant	E	X	X
Anacardiaceae				
Toxicodendron diversilobum	Poison oak	N	X	X
Schinus molle	Peruvian pepper tree	E	X	X
Apiaceae				
Conium maculatum	Poison hemlock	E	X	
Foeniculum vulgare	Sweet fennel	E	X	X
Torilis arvensis	Hedge parsley	E		X
Apocynaceae				
Nerium oleander	Oleander	E	X	
Asteraceae				
Ambrosia psilostachya	Western ragweed	N	X	X
Anthemis cotula	Mayweed	N	X	X
Artemisia californica	California sagebrush	N	X	
Baccharis pilularis	Coyote brush	N	X	X
Carduus pycnocephalus	Italian thistle	E	X	X
Conyza canadensis	Horseweed	N	X	X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Deinandra paniculata (*increscens* ssp. *foliosa*)[1,2]	Paniculate tarplant	N	X	
Ericameria ericoides	California goldenbrush	N		X
Gamochaeta ustulata	Featherweed	N	X	X
Hemizonia congesta ssp. *luzulifolia*	Hayfield tarweed	N		X
Heterotheca grandiflora	Telegraph weed	N	X	
Hypochaeris glabra	Smooth cats ear	E	X	X
Lactuca serriola	Prickly wild lettuce	E		X
Logfia filaginoides	California filago	N	X	
Madia sativa	Coast tarweed	N		X
Pseudognaphalium biolettii	Two-color rabbit-tobacco	N	X	X
Pseudognaphalium californicum	Ladies' tobacco	N	X	X
Pseudognaphalium canescens	Wright's cudweed	N	X	X
Pseudognaphalium luteoalbum	Jersey cudweed	E	X	
Silybum marianum	Milk thistle	E	X	X
Sonchus asper	Prickly sow thistle	E	X	X
Sonchus oleraceus	Common sow thistle	E	X	X
Stephanomeria exigua	Small wire lettuce	N	X	X
Taraxacum officinale	Common dandelion	E	X	
Boraginaceae				
Amsinckia menziesii	Fiddleneck	N		X
Brassicaceae				
Brassica nigra	Black mustard	E		X
Hirschfeldia incana	Summer mustard	E	X	X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Raphanus sativus	Wild radish	E	X	
Caryophyllaceae				
Silene gallica	Windmill pink	E	X	X
Cistaceae				
Cistus x purpureus	Red rock rose	E	X	X
Convolvulaceae				
Calystegia macrostegia ssp. *cyclostegia*	Morning-glory	N		X
Convolvulus arvensis	Bindweed	E	X	
Crassulaceae				
Crassula connata	Pygmy weed	N	X	X
Dudleya lanceolata	Lanceleaf live-forever	N		X
Dudleya pulverulenta	Chalk dudleya	N		X
Cucurbitaceae				
Marah macrocarpa	Chilicothe	N	X	X
Cyperaceae				
Carex barbarae	Santa Barbra sedge	N	X	X
Carex brevicaulis	Short stem sedge	N	X	
Cyperus eragrostis	Tall flatsedge	N	X	
Schoenoplectus californicus	California bulrush	N	X	
Dryopteridaceae				
Dryopteris arguta	California wood fern	N		X
Equisetaceae				
Equisetum telmateia ssp. *braunii*	Giant horsetail	N		X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Ericaceae				
Arbutus unedo	Strawberry tree	E		X
Arctostaphylos pilosula[2]	Santa Margarita manzanita	N	X	X
Arctostaphylos "Uva-ursi"	Bearberry	N	X	X
Euphorbiaceae				
Chamaesyce maculata	Spotted spurge	E	X	
Croton californicus	California croton	N	X	X
Fabaceae				
Acmispon americanus var. *americanus*	Spanish lotus	N	X	X
Acmispon glaber var. *glaber*	Deerweed	N	X	X
Acmispon strigosus	Strigose lotus	N	X	X
Lupinus bicolor	Bicolored or miniature lupine	N		X
Lupinus truncatus	Truncate-leaved lupine	N		X
Medicago polymorpha	Bur clover	E	X	X
Melilotus albus	White sweetclover	E	X	
Melilotus indicus	Annual yellow sweetclover	E	X	X
Trifolium hirtum	Rose clover	E	X	
Vicia benghalensis	Purple vetch	E	X	
Vicia sativa ssp. *nigra*	Garden vetch	E	X	X
Fagaceae				
Quercus agrifolia var. *agrifolia*	Coast live oak	N	X	X
Geraniaceae				
Erodium botrys	Storks bill	E		X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Erodium cicutarium	Redstem filaree	E	X	X
Geranium dissectum	Geranium	E	X	
Lamiaceae				
Salvia mellifera	Black sage	N	X	
Salvia spathacea	Hummingbird sage	N	X	
Liliaceae				
Calochortus albus	White globe lily	N		X
Malvaceae				
Malva parviflora	Cheese weed	E		X
Montiaceae				
Claytonia perfoliata	Miner's lettuce	N		X
Myrsinaceae				
Anagallis arvensis	Scarlet pimpernel	E	X	
Myrtaceae				
Eucalyptus cladocalyx	Sugar gum	E	X	X
Onagraceae				
Camissonia cheiranthifolia ssp. *cheiranthifolia*	Beach suncup	N		X
Camissoniopsis bistorta	California suncup	N		X
Clarkia purpurea ssp. *quadrivulnera*	Four-spotted purple clarkia	N	X	X
Clarkia speciosa ssp. *immaculata*[3]	Pismo clarkia	N		X
Clarkia unguiculata	Elegant clarkia	N		X
Epilobium ciliatum	Willow herb	N	X	

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Oxalidaceae				
Oxalis corniculata	Oxalis	E		X
Oxalis pes-caprae	Bermuda buttercup	E		X
Phrymaceae				
Mimulus aurantiacus	Bush monkeyflower	N	X	X
Mimulus guttatus	Seep monkey flower	N	X	
Pinaceae				
Pinus muricata	Bishop pine	N		X
Plantaginaceae				
Plantago coronopus	Buckthorn plantain	E	X	
Plantago erecta	Erect plantain	N	X	
Plantago lanceolata	Narrowleaf/English plantain	E	X	X
Poaceae				
Aira caryophyllea	Silver hairgrass	E	X	
Avena barbata	Slender wild oat	E	X	X
Briza maxima	Big quaking grass	E	X	X
Briza minor	Little quaking grass	E	X	
Bromus diandrus	Ripgut grass	E	X	X
Bromus hordeaceus	Soft chess	E	X	
Bromus madritensis ssp. *rubens*	Red brome	E	X	X
Cortaderia selloan	Pampas grass	E		X
Cynodon dactylon	Bermuda grass	E	X	
Distichlis spicata	Saltgtass	N	X	X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Ehrharta calycina	Veldt grass	E	X	X
Festuca myuros	Rattail sixweeks grass	E	X	X
Festuca perennis	Italian ryegrass	E	X	X
Hordeum marinum	Mediteranean barley	E	X	X
Hordeum murinum ssp. *leporinum*	Hare barley	E		X
Lamarckia aurea	Golden top	E	X	
Polypogon monspeliensis	Rabbitsfoot grass	E	X	
Stipa pulchra	Purple needlegrass	N	X	
Polygonaceae				
Eriogonum parvifolium	Seacliff buckwheat	N		X
Polygonum aviculare ssp. *depressum*	Prostrate knotweed	E		X
Rumex acetosella	Sheep sorrel	E	X	X
Rumex crispus	Curly dock	E	X	X
Rumex salicifolius	Willow dock	N	X	
Polypodiaceae				
Polypodium calirhiza	Licorice fern	N		X
Polemoniaceae				
Navarretia atractyloides	Navarretia	N		X
Pteridaceae				
Pentagramma triangularis var. *triangularis*	Goldenback fern	N	X	X
Rhamnaceae				
Ceanothus "Concha"	Blueblossom hybrid	Hybrid	X	
Frangula californica	California coffee-berry	N		X

APPENDIX C2 (CONTINUED)
PRICE CANYON ROAD TERRESTRIAL BOTANICAL SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Origin^	Price Canyon Road East Side	Price Canyon Road West Side
Rosaceae				
Heteromeles arbutifolia	Toyon	N		X
Rubus ursinus	California blackberry	N		X
Rubiaceae				
Galium aparine	Stickywilly, common bedstraw	N	X	
Salicaceae				
Populus fremontii	Fremont cottonwood	N	X	X
Salix lasiolepis	Arroyo willow	N	X	X
Sapindaceae				
Dodonaea viscosa 'Purpurea'	Purple hopeseed	E		X
Scrophulariaceae				
Myoporum laetum	Lollypop tree	E	X	
Scrophularia californica	California figwort	N		X
Typhaceae				
Typha sp.	Cattail	N	X	
Urticaceae				
Urtica dioica	Stinging nettle	N		X

^ N – Native Species; E – Non-native Species

[1] 4.2 – California Rare Plant Rank: Plants of Limited Distribution (Watch List) and Moderately Threatened in California

[2] 1B.2 – California Rare Plant Rank: Plants Rare, Threatened, or Endangered in California and Elsewhere and Moderately Threatened in California

[3] 1B.1 – California Rare Plant Rank: Plants Rare, Threatened, or Endangered in California and Elsewhere and Seriously Threatened in California

APPENDIX D
FOCUSED AQUATIC SURVEY PLANT SPECIES LIST

APPENDIX D
FOCUSED AQUATIC SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Native/ Exotic[1]	Wetland Indicator Status[2]
Agrostis exarata	Spike bentgrass	N	FACW
Anagallis arvensis	Scarlet pimpernel	E	NI
Apium nodiflorum	European marshwort	E	NI
Artemisia douglasiana	Mugwort	N	FACW
Arundo donax	Giant reed	E	FACW
Avena fatua	Wild oat	E	NI
Baccharis pilularis	Coyote brush	N	NI
Baccharis salicifolia	Mulefat	N	FACW
Bromus diandrus	Ripgut brome	E	NI
Bromus hordeaceus	Soft chess	E	FACU
Carduus pycnocephalus	Italian thistle	E	NI
Carex barbarae	Santa Barbara sedge	N	FAC
Carex brevicaulis	Short stem sedge	N	NI
Cirsium vulgare	Bull thistle	E	FACU
Clematis sp.	Clematis	N	–
Conium maculatum	Poison hemlock	E	FAC
Cornus sericea	Creek dogwood	N	NI
Cortaderia jubata	Andean pampas grass	E	FACU
Cynodon dactylon	Bermuda grass	E	FACU
Cyperus eragrostis	Flatsedge	N	FACW
Dryopteris arguta	California wood fern	N	NI
Eleocharis sp.	Spikerush	N	–
Epilobium ciliatum	Willow herb (wetland)	N	FACW
Epipactis gigantea	Stream orchid	N	OBL
Equisetum arvense	Common horsetail	N	FAC
Frangula californica (Rhamnus californica)	Coffee berry	N	NI
Helenium puberulum	Sneezeweed	N	FACW
Hydrocotyle verticillata	Whorled marsh-pennywort	N	OBL
Isolepis cernua	Neon grass	N	OBL
Juncus bufonius var. *bufonius*	Common toad rush	N	FACW
Juncus mexicanus	Mexican rush	N	FACW
Juncus patens	Common rush	N	FACW
Juncus phaeocephalus	Brown-headed rush	N	FACW

APPENDIX D (CONTINUED)
FOCUSED AQUATIC SURVEY PLANT SPECIES LIST

Scientific Name	Common Name	Native/ Exotic[1]	Wetland Indicator Status[2]
Lemna minor	Duckweed	N	OBL
Lythrum hyssopifolia	Hyssop loosestrife	E	OBL
Mimulus guttatus	Seep monkey flower	N	OBL
Nasturtium officinale (Rorippa nasturtium-aquaticum)	Water cress	N	OBL
Persicaria lapathifolia (Polygonum lapathifolium)	Willow weed, smartweed	N	FACW
Plantago lanceolata	English plantain	E	FACU
Plantago major	Broadleaf plaintain	E	FAC
Polypogon monspeliensis	Rabbitsfoot grass	E	FACW
Polypogon viridis (Argrostis viridis)	Beardless rabbit's foot grass	E	FACW
Populus trichocarpa (Populus balsamifera ssp. *Trichocarpa)*	Black cottonwood	N	FAC
Pseudognaphalium luteoalbum (Gnaphalium luteoalbum)	Everlasting cudweed	E	FACW
Quercus agrifolia	Coast live oak	N	NI
Raphanus sativus	Wild radish	E	NI
Rosa californica	California rose	N	FAC
Rubus ursinus	California blackberry	N	FACU
Rumex crispus	Curly dock	E	FAC
Salix laevigata	Red willow	N	FACW
Salix lasiolepis	Arroyo willow	N	FACW
Sambucus nigra (Sambucus mexicana)	Blue elderberry	N	FACU
Scirpus microcarpus	Panicled bulrush	N	OBL
Senecio vulgaris	Common groundsel	E	FACU
Sonchus asper	Prickly sow-thistle	E	FACU
Stachys ajugoides	Bugle hedge-nettle	N	OBL
Stellaria longipes ssp. *longipes*	Chickweed	N	FACW
Stipa miliacea (Piptatherum miliaceum)	Smilo grass	E	NI
Symphoricarpos albus	Snowberry	N	FACU
Torilis arvensis	Hedge parsley	E	NI
Toxicodendron diversilobum	Poison oak	N	NI
Typha sp.	Cattail	N	OBL
Urtica dioica	Stinging nettle	N	FAC
Xanthium strumarium	Cocklebur	N	FAC

APPENDIX D (CONTINUED)
FOCUSED AQUATIC SURVEY PLANT SPECIES LIST

[1] N=native, E=exotic, non-native

[2] FAC = Facultative, FACU = Facultative Upland, FACW = Facultative Wetland, NI = Non-Indicator, OBL = Obligate Wetland

APPENDIX E1
OAK TREE MEASUREMENTS

APPENDIX E1
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
2	Maino 16NW Upper	CLO	506	6.0	0.0	10.0	20.0	25.0	5	6.2	6.3	5.0	4.0	8.0							
2	Maino 16NW Upper	CLO	507	10.0	7.0	5.0	7.0	25.0	1	10.0											
2	Maino 16NW Upper	CLO	508	13.0	15.0	10.0	15.0	25.0	3	10.5	4.0	8.5									
2	Maino 16NW Upper	CLO	509	5.0	10.0	15.0	17.0	25.0	8	5.1	2.0	4.0	5.0	3.0	7.0	6.0	5.5				
2	Maino 16NW Upper	CLO	510	5.0	6.0	4.0	3.0	20.0	2	6.3	8.0										
2	Maino 16NW Upper	CLO	511	17.0	10.0	5.0	20.0	25.0	6	4.5	4.5	3.0	4.0	5.4	7.0						
2	Maino 16NW Upper	CLO	512	10.0	10.0	8.0	8.0	14.0	1	7.5											
2	Maino 16NW Upper	CLO	513	3.0	15.0	15.0	17.0	30.0	8	8.0	4.0	4.5	2.0	1.0	7.0	4.0					
2	Maino 16NW Upper	CLO	514	18.0	15.0	25.0	25.0	20.0	6	4.5	4.6	7.6	5.5	4.7	5.1						
2	Maino 16NW Upper	CLO	515	10.0	8.0	12.0	5.0	18.0	10	4.3	3.3	2.1	5.6	6.1	7.3	8.0	6.3	5.0	4.3		
2	Maino 16NW Upper	CLO	516	5.0	10.0	10.0	8.0	25.0	2	4.8	6.1										
2	Maino 16NW Upper	CLO	517	3.0	4.0	4.0	5.0	20.0	1	6.5											
2	Maino 16NW Upper	CLO	518	5.0	5.0	5.0	5.0	18.0	4	4.0	5.3	6.1	4.8								
2	Maino 16NW Upper	CLO	519	20.0	9.0	10.0	13.0	25.0	2	9.5	10.0										
2	Maino 16NW Upper	CLO	520	10.0	9.0	8.0	15.0	19.0	3	3.6	4.2	2.1									
2	Maino 16NW Upper	CLO	521	11.0	2.0	2.0	15.0	20.0	5	3.0	4.0	10.0	5.1	5.5							
2	Maino 16NW Upper	CLO	522	10.0	10.0	15.0	15.0	18.0	4	9.0	2.0	4.5	3.5								
2	Maino 16NW Upper	CLO	523	10.0	20.0	25.0	15.0	22.0	2	8.0	4.5										
2	Maino 16NW Upper	CLO	524	18.0	15.0	15.0	25.0	30.0	9	3.7	5.0	3.9	3.5	3.6	3.8	2.0	2.5	4.0			
2	Maino 16NW Upper	CLO	525	2.0	3.0	0.0	3.0	20.0	2	4.0	3.5										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
2	Maino 16NW Upper	CLO	526	5.0	0.0	15.0	22.0	30.0	3	11.0	10.0	5.0									
2	Maino 16NW Upper	CLO	527	15.0	5.0	9.0	14.0	30.0	5	4.5	4.7	2.0	6.0	5.1							
2	Maino 16NW Upper	CLO	528	15.0	10.0	5.0	10.0	25.0	4	3.2	7.0	2.0	4.3								
2	Maino 16NW Upper	CLO	529	10.0	5.0	5.0	10.0	30.0	2	6.0	6.3										
2	Maino 16NW Upper	CLO	530	25.0	5.0	10.0	23.0	40.0	3	8.9	10.0	9.5									
2	Maino 16NW Upper	CLO	531	5.0	0.0	5.0	13.0	25.0	4	4.3	8.1	3.0	4.5								
2	Maino 16NW Upper	CLO	532	5.0	8.0	11.0	15.0	25.0	1	7.5											
2	Maino 16NW Upper	CLO	533	5.0	8.0	11.0	15.0	25.0	7	13.0	10.0	4.5	6.5	5.5	4.0	4.0					
2	Maino 16NW Upper	CLO	534	15.0	5.0	10.0	15.0	30.0	4	10.2	5.5	6.5	3.0								
2	Maino 16NW Upper	CLO	535	25.0	25.0	15.0	10.0	25.0	3	9.0	10.0	6.0									
2	Maino 16NW Upper	CLO	536	16.0	15.0	10.0	3.0	19.0	6	3.0	2.5	2.0	3.5	4.0	5.0						
2	Maino 16NW Upper	CLO	537	15.0	9.0	25.0	18.0	25.0	4	10.5	10.0	9.0	7.0								
2	Maino 16NW Upper	CLO	538	3.0	5.0	15.0	5.0	18.0	1	9.0											
2	Maino 16NW Upper	CLO	539	5.0	5.0	8.0	0.0	15.0	1	7.2											
2	Maino 16NW Upper	CLO	540	10.0	15.0	25.0	20.0	25.0	2	11.7	8.3										
2	Maino 16NW Upper	CLO	541	12.0	10.0	17.0	15.0	30.0	1	13.3											
2	Maino 16NW Upper	CLO	542	18.0	15.0	15.0	21.0	25.0	2	18.0	20.0										
2	Maino 16NW Upper	CLO	543	25.0	18.0	15.0	10.0	20.0	5	10,4	10.2	9.0	8.0	8.0							
2	Maino 16NW Upper	CLO	544	15.0	13.0	25.0	20.0	20.0	2	18.0	13.0										
2	Maino 16NW Upper	CLO	185	9.0	9.0	8.0	11.0	18.0	2	9.1	9.3										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
2	Maino 16NW Upper	CLO	186	12.0	12.0	5.0	12.0	19.0	2	6.1	9.0										
2	Maino 16NW Upper	CLO	187	7.0	5.0	13.0	3.0	16.0	2	8.0	6.0										
2	Maino 16NW Upper	CLO	188	10.0	14.0	12.0	14.0	18.0	7	8.2	8.0	7.3	8.5	7.0	6.5	8.5					
2	Maino 16NW Upper	CLO	189	10.0	10.0	11.0	12.0	20.0	3	8.4	4.4	8.6									
2	Maino 16NW Upper	CLO	190	15.0	6.0	3.0	10.0	17.0	5	6.0	3.0	4.0	3.0	6.0							
2	Maino 16NW Upper	CLO	191	11.0	4.0	13.0	16.0	19.0	4	7.0	6.5	3.0	3.8								
2	Maino 16NW Upper	CLO	192	12.0	11.0	4.0	9.0	14.0	2	6.3	7.2										
2	Maino 16NW Upper	CLO	193	5.0	10.0	12.0	13.0	14.0	2	6.2	4.0										
2	Maino 16NW Upper	CLO	194	14.0	7.0	7.0	12.0	15.0	3	4.6	4.0	5.3									
2	Maino 16NW Upper	CLO	195	11.0	16.0	10.0	11.0	16.0	4	3.4	4.3	3.6	2.8								
2	Maino 16NW Upper	CLO	196	16.0	13.0	20.0	13.0	22.0	8	2.8	2.0	2.3	4.9	4.6	8.5	7.8	8.9				
2	Maino 16NW Upper	CLO	197	18.0	4.0	13.0	18.0	16.0	3	8.8	7.8	13.0									
2	Maino 16NW Upper	CLO	198	17.0	13.0	18.0	17.0	21.0	5	16.4	6.6	4.2	5.3	4.4							
2	Maino 16NW Upper	CLO	199	5.0	5.0	7.0	4.0	12.0	2	6.8	5.3										
2	Maino 16NW Upper	CLO	200	7.0	8.0	7.0	9.0	14.0	4	9.3	3.2	3.6	2.5								
2	Maino 16NW Upper	CLO	201	13.0	11.0	6.0	8.0	14.0	4	6.5	4.0	3.8	4.1								
2	Maino 16NW Upper	CLO	202	5.0	6.0	6.0	8.0	16.0	3	3.7	3.5	5.2									
2	Maino 16NW Upper	CLO	203	13.0	11.0	7.0	15.0	18.0	2	5.2	17.0										
2	Maino 16NW Upper	CLO	204	13.0	4.0	8.0	9.0	14.0	3	2.7	2.4	3.5									
2	Maino 16NW Upper	CLO	205	7.0	5.0	6.0	9.0	13.0	1	8.0											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
2	Maino 16NW Upper	CLO	206	7.0	3.0	7.0	12.0	16.0	1	6.3											
2	Maino 16NW Upper	CLO	207	15.0	9.0	7.0	11.0	12.0	5	3.8	3.2	6.8	3.5	1.8							
2	Maino 16NW Upper	CLO	208	13.0	6.0	9.0	13.0	16.0	2	8.5	7.4										
2	Maino 16NW Upper	CLO	209	10.0	8.0	6.0	12.0	15.0	1	8.6											
2	Maino 16NW Upper	CLO	210	10.0	18.0	8.0	6.0	17.0	2	12.2	12.0										
2	Maino 16NW Upper	CLO	211	8.0	9.0	7.0	8.0	21.0	2	14.0	11.0										
2	Maino 16NW Upper	CLO	212	18.0	11.0	16.0	28.0	31.0	2	16.0	17.0										
3	Dollie 108 G	CLO	306	2.0	14.0	22.0	12.0	30.0	1	21.0											
3	Dollie 108 G	CLO	307	3.0	4.0	3.5	3.5	7.0	1	1.2											
3	Dollie 108 G	CLO	308	2.5	1.5	2.0	2.0	4.0	1	1.0											
3	Dollie 108 G	CLO	309	10.0	13.0	14.0	11.0	24.0	2	7.0	4.0										
3	Dollie 108 G	CLO	310	9.0	8.0	9.0	4.0	12.0	4	1.0	1.0	0.8	3.0								
3	Dollie 108 G	CLO	311	10.0	9.0	7.0	8.0	14.0	5	2.8	1.2	0.8	1.0	3.0							
3	Dollie 108 G	CLO	312	26.0	25.0	24.0	22.0	27.0	3	12.0	7.0	6.0									
3	Dollie 108 G	CLO	313	1.5	1.5	1.5	1.5	2.5	2	0.4	0.5										
3	Dollie 108 G	CLO	314	3.0	3.5	3.5	3.0	11.0	1	1.3											
3	Dollie 108 G	CLO	315	3.5	3.0	3.0	3.5	10.0	1	1.4											
3	Dollie 108 G	CLO	316	5.0	7.0	5.0	5.0	9.0	1	3.5											
3	Dollie 108 G	CLO	317	23.0	24.0	22.0	18.0	30.0	1	14.0											
3	Dollie 108 G	CLO	318	7.0	4.0	7.0	5.0	12.0	2	2.0	2.5										
3	Dollie 108 G	CLO	319	10.0	11.0	11.0	6.0	15.0	1	3.3											
3	Dollie 108 G	CLO	320	10.0	9.0	9.0	7.0	18.0	1	4.5											
3	Dollie 108 G	CLO	321	10.0	8.0	8.0	8.0	18.0	1	5.7											
3	Dollie 108 G	CLO	322	9.0	6.0	9.0	8.0	13.0	5	1.6	2.0	2.4	1.2	1.8							
3	Dollie 108 G	CLO	323	5.0	9.0	7.0	7.0	10.0	1	3.5											
3	Dollie 108 G	CLO	324	0.0	36.0	35.0	26.0	45.0	1	27.0											
3	Dollie 108 G	CLO	325	3.0	5.0	5.0	6.0	13.0	1	3.0											
3	Dollie 108 G	CLO	326	4.0	5.0	6.0	3.0	14.0	1	3.0											
3	Dollie 108 G	CLO	327	6.0	9.0	6.0	7.0	16.0	1	6.0											
3	Dollie 108 G	CLO	328	11.0	7.0	8.0	7.0	17.0	1	4.2											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
3	Dollie 108 G	CLO	329	18.0	21.0	19.0	17.0	30.0	1	8.5											
3	Dollie 108 G	CLO	330	10.0	15.0	10.0	10.0	20.0	2	5.5	6.0										
3	Dollie 108 G	CLO	331	5.0	8.0	7.0	8.0	16.0	3	4.5	3.5	1.5									
3	Dollie 108 G	CLO	332	20.0	10.0	0.0	10.0	20.0	1	7.0											
4	Rock 12N	CLO	179	4.0	3.2	3.6	3.0	7.0	4	0.7	0.5	0.3	0.5								
4	Rock 12N	CLO	180	18.0	17.2	14.1	13.8	22.0	>20	1.3	1.3	1.6	2.0	1.6	1.0	1.0	0.7	0.7	1.3	1.3	1.0
4	Rock 12N	CLO	181	11.1	10.1	9.8	8.2	14.0	7	0.7	1.3	1.3	0.8	1.1	1.6	1.0					
4	Rock 12N	CLO	182	4.2	5.1	4.6	4.8	8.0	1	0.4											
4	Rock 12N	CLO	183	2.2	2.4	2.6	2.8	8.0	2	1.5	2.0										
4	Rock 12N	CLO	184	11.8	12.0	11.2	10.9	18.0	1	0.7											
4	Rock 12N	CLO	185	2.2	2.4	2.6	2.8	8.0	2	0.3	0.3										
4	Rock 12N	CLO	186	11.8	12.0	11.2	10.9	18.0	4	1.3	1.5	0.3	0.3								
4	Rock 12N	CLO	187	16.2	15.7	17.4	17.2	19.0	3	1.0	2.3	4.3									
4	Rock 12N	CLO	188	20.0	22.0	24.0	18.0	35.0	4	3.3	2.6	3.9	5.2								
4	Rock 12N	CLO	189	10.1	11.0	10.3	9.6	13.0	4	1.3	1.5	1.5	1.6								
4	Rock 12N	CLO	190	7.1	6.0	6.6	6.2	14.0	4	1.6	0.5	0.6	0.8								
4	Rock 12N	CLO	191	10.2	11.3	9.8	11.4	17.0	3	1.8	1.1	2.3									
4	Rock 12N	CLO	192	11.5	10.2	9.8	11.4	24.0	5	2.5	2.5	0.7	1.0	0.3							
4	Rock 12N	CLO	193	5.5	6.0	5.2	4.8	12.0	2	1.0	0.3										
4	Rock 12N	CLO	194	6.2	6.5	5.8	7.1	13.0	3	1.3	0.7	0.3									
4	Rock 12N	CLO	195	5.2	6.0	4.8	5.4	11.0	4	0.2	0.5	0.3	0.2								
4	Rock 12N	CLO	196	6.2	5.1	4.8	7.0	13.0	1	1.5											
4	Rock 12N	CLO	197	12.0	13.0	14.0	12.2	23.0	6	1.8	1.8	1.0	0.8	2.3	1.5						
4	Rock 12N	CLO	198	10.1	9.8	8.6	5.9	18.0	7	1.3	1.3	1.6	1.1	1.0	1.0	0.8					
4	Rock 12N	CLO	199	11.2	12.2	13.1	10.3	16.0	2	2.0	1.3										
4	Rock 12N	CLO	200	6.2	5.9	4.9	7.1	13.0	3	1.0	1.3	1.7									
4	Rock 12N	CLO	201	8.1	7.6	6.6	5.0	20.0	1	2.0											
4	Rock 12N	CLO	202	2.0	2.0	2.0	2.0	2 to 5	36	2 to 5											
4	Rock 12N	CLO	203	9.8	10.1	9.6	8.9	25.0	1	2.1											
4	Rock 12N	CLO	204	8.1	7.9	6.7	7.7	16.0	4	0.3	0.8	1.6	1.6								
4	Rock 12N	CLO	205	12.0	11.2	11.3	10.9	22.0	1	2.3											
4	Rock 12N	CLO	207	34.8	34.7	35.4	36.0	43.0	2	23.0	17.3										
4	Rock 12N	CLO	208	9.8	8.7	9.2	7.9	20.0	4	6.3	7.3	7.9	5.1								
4	Rock 12N	CLO	209	4.2	3.9	4.1	4.1	7.0	4	0.8	0.8	0.8	0.5								
4	Rock 12N	CLO	210	5.5	6.2	5.8	6.5	15.0	7	2.2	1.2	1.8	0.8	1.4	1.8	1.2					

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
4	Rock 12N	CLO	211	11.4	12.1	10.9	9.9	15.0	4	3.8	2.9	1.2	1.3								
4	Rock 12N	CLO	212	3.1	2.9	3.0	2.0	4.0	1	0.6											
5	Signal 9N-1	CLO	1A	10.0	20.0	12.0	12.0	25.0	1	15.8											
5	Signal 9N-1	CLO	2A	5.0	8.0	8.0	5.0	12.0	1	12.8											
5	Signal 9N-1	CLO	3A	15.0	10.0	10.0	15.0	25.0	1	15.6											
5	Signal 9N-1	CLO	4A	20.0	15.0	20.0	15.0	25.0	1	20.5											
5	Signal 9N-1	CLO	5A	8.0	10.0	4.0	2.0	10.0	2	4.2	4.4										
5	Signal 9N-1	CLO	6A	12.0	15.0	10.0	10.0	18.0	1	12.7											
5	Signal 9N-1	CLO	7A	8.0	20.0	15.0	5.0	15.0	1	15.9											
5	Signal 9N-1	CLO	8A	20.0	20.0	15.0	20.0	35.0	3	10.6	14.7	18.0									
5	Signal 9N-1	CLO	9A	5.0	10.0	10.0	1.0	10.0	2	10.4	7.3										
5	Signal 9N-1	CLO	10A	5.0	5.0	1.0	0.0	8.0	1	8.0											
5	Signal 9N-1	CLO	11A	8.0	12.0	8.0	6.0	20.0	1	9.2											
5	Signal 9N-1	CLO	601	20.0	20.0	15.0	20.0	35.0	1	10.3											
5	Signal 9N-1	CLO	602	13.0	15.0	15.0	10.0	35.0	1	13.0											
5	Signal 9N-1	CLO	603	15.0	18.0	15.0	10.0	35.0	2	14.0	7.0										
5	Signal 9N-1	CLO	604	12.0	25.0	30.0	15.0	35.0	3	17.1	12.7	9.5									
5	Signal 9N-1	CLO	605	8.0	10.0	15.0	18.0	20.0	2	12.4	7.6										
5	Signal 9N-1	CLO	606	8.0	8.0	5.0	4.0	18.0	1	6.6											
5	Signal 9N-1	CLO	607	18.0	10.0	15.0	0.0	25.0	4	9.3	7.3	7.5	7.4								
5	Signal 9N-1	CLO	608	15.0	15.0	10.0	10.0	20.0	6	8.0	4.5	11.0	3.5	3.5	4.0						
5	Signal 9N-1	CLO	609	20.0	10.0	20.0	15.0	30.0	3	13.0	16.0	7.0									
5	Signal 9N-1	CLO	610	7.0	5.0	7.0	5.0	8.0	1	2.0											
5	Signal 9N-1	CLO	611	25.0	5.0	22.0	20.0	35.0	3	21.0	23.0	9.0									
5	Signal 9N-1	CLO	612	20.0	20.0	25.0	30.0	30.0	9	11.5	15.0	9.5	5.3	10.5	7.0	11.0	8.0	13.0			
5	Signal 9N-1	CLO	613	20.0	17.0	25.0	10.0	20.0	4	4.5	5.0	9.0	7.0								
5	Signal 9N-1	CLO	614	10.0	15.0	25.0	20.0	18.0	8	9.5	6.0	6.0	8.0	10.0	12.0	13.0	3.0				
5	Signal 9N-1	CLO	615	5.0	20.0	15.0	5.0	13.0	2	8.5	6.0										
5	Signal 9N-1	CLO	616	10.0	23.0	20.0	10.0	25.0	5	6.0	11.0	7.0	4.0	8.0							
5	Signal 9N-1	CLO	oak 1	23.0	25.0	20.0	23.0	26.0	5	7.6	12.7	20.2	21.5	7.4							
5	Signal 9N-1	CLO	oak 2	12.0	15.0	13.0	10.5	22.0	4	10.6	10.6	13.0	7.8								
5	Signal 9N-1	CLO	oak 3	0.0	12.0	16.0	13.0	15.0	2	13.0	15.4										
5	Signal 9N-1	CLO	oak 4	0.0	20.0	13.0	13.0	15.0	1	17.4											
5	Signal 9N-1	CLO	oak 5	15.0	19.0	10.0	20.0	30.0	4	14.6	15.7	15.1	9.3								
5	Signal 9N-1	CLO	oak 6	15.0	20.0	18.0	20.0	20.0	7	13.0	6.0	8.0	12.0	14.0	5.5	13.0					

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
5	Signal 9N-1	CLO	oak 41	10.0	22.0	35.0	6.0	15.0	2	18.0	2.8										
6	Signal 306/303	CLO	2	-	-	-	-	-	-	15.66	13.89	21.51									
6	Signal 306/303	CLO	3	-	-	-	-	-	-	14.62	16.60										
6	Signal 306/303	CLO	4	-	-	-	-	-	-	19.63											
6	Signal 306/303	CLO	5	-	-	-	-	-	-	16.71	20.88										
6	Signal 306/303	CLO	6	-	-	-	-	-	-	10.44	18.27	7.10									
6	Signal 306/303	CLO	7	-	-	-	-	-	-	13.57	15.14										
7	Signal 161	CLO	213	4.2	4.8	5.1	4.2	11.0	2	2.5	1.2										
7	Signal 161	CLO	214	3.0	1.0	0.0	1.0	3.5	2	0.8	0.4										
7	Signal 161	CLO	215	15.1	4.8	8.0	12.0	20.0	1	14.6											
7	Signal 161	CLO	216	14.0	9.0	12.0	10.0	17.0	2	10.8	8.2										
7	Signal 161	CLO	217	10.0	6.0	19.0	17.0	22.0	4	7.8	4.8	6.6	2.4								
7	Signal 161	CLO	218	20.0	24.0	16.0	19.0	33.0	5	10.9	12.8	7.6	8.0	5.3							
7	Signal 161	CLO	219	13.0	15.0	20.0	25.0	23.0	3	8.5	11.9	9.2									
7	Signal 161	CLO	220	32.0	33.0	34.0	35.0	42.0	2	31.0	36.0										
7	Signal 161	CLO	221	20.0	17.0	15.0	16.0	24.0	6	6.2	5.8	5.9	4.8	5.2	4.4						
7	Signal 161	CLO	222	9.0	11.0	12.0	14.0	19.0	2	10.2	5.1										
7	Signal 161	CLO	223	19.0	15.0	17.0	17.0	27.0	1	13.2											
7	Signal 161	CLO	224	6.0	10.0	12.0	8.0	19.0	1	4.4											
7	Signal 161	CLO	225	5.0	6.0	8.0	5.0	13.0	4	1.5	2.5	1.5	1.7								
7	Signal 161	CLO	226	12.1	13.2	11.8	10.9	16.0	5	2.5	3.5	2.5	5.1	2.5							
8	Pulas 2	CLO	587	8.0	10.0	10.0	10.0	12.0	4	5.0	2.0	3.5	3.5								
8	Pulas 2	CLO	588	7.0	7.0	7.0	7.0	8.0	2	3.0	2.6										
8	Pulas 2	CLO	589	2.0	2.0	2.0	2.0	6.0	1	2.6											
8	Pulas 2	CLO	590	1.0	1.0	1.0	1.0	5.0	1	2.0											
8	Pulas 2	CLO	591	10.0	10.0	5.0	5.0	14.0	2	5.5	6.6										
8	Pulas 2	CLO	592	1.0	1.0	3.0	1.0	6.0	2	3.0	1.5										
8	Pulas 2	CLO	593	7.0	10.0	4.0	1.0	10.0	2	4.0	3.4										
8	Pulas 2	CLO	594	13.0	21.0	23.0	21.0	20.0	4	11.0	11.0	12.0	7.0								
8	Pulas 2	CLO	595	17.0	15.0	15.0	10.0	20.0	5	11.0	4.0	7.5	6.0	2.3							
8	Pulas 2	CLO	250	4.0	3.0	4.0	6.0	11.0	1	4.0											
8	Pulas 2	CLO	251	3.0	2.5	2.5	0.5	3.5	1	1.3											
8	Pulas 2	CLO	252	8.0	7.0	9.0	9.0	14.0	1	8.0											
8	Pulas 2	CLO	253	3.5	3.0	2.0	2.0	4.0	1	2.3											
8	Pulas 2	CLO	254	18.0	20.0	16.0	14.0	18.0	10	3.3	4.0	6.3	7.4	5.0	7.8	3.4	7.2	5.5	3.3		

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
8	Pulas 2	CLO	oak 30	7.0	15.0	12.0	15.0	20.0	2	6.6	6.2										
9	Signal 195-301 Connecter	CLO	628	15.0	2.0	1.0	10.0	20.0	2	9.5	4.5										
9	Signal 195-301 Connecter	CLO	629	15.0	30.0	30.0	20.0	25.0	2	21.0	7.5										
9	Signal 195-301 Connecter	CLO	630	0.0	20.0	14.0	0.0	20.0	1	13.0											
9	Signal 195-301 Connecter	CLO	631	5.0	15.0	15.0	12.0	20.0	4	10.0	7.0	6.0	4.5								
9	Signal 195-301 Connecter	CLO	632	1.0	10.0	10.0	1.0	13.0	1	6.6											
9	Signal 195-301 Connecter	CLO	633	20.0	10.0	13.0	15.0	25.0	2	12.5	9.0										
9	Signal 195-301 Connecter	CLO	634	1.0	1.0	1.0	1.0	6.0	6	3.0	1.0	1.0	1.0	1.0	3.0						
9	Signal 195-301 Connecter	CLO	635	20.0	15.0	5.0	7.0	25.0	5	3.0	4.0	6.0	12.0	6.5							
9	Signal 195-301 Connecter	CLO	636	35.0	25.0	15.0	20.0	30.0	3	10.5	11.0	7.5									
9	Signal 195-301 Connecter	CLO	637	5.0	10.0	15.0	10.0	35.0	1	8.5											
9	Signal 195-301 Connecter	CLO	638	25.0	0.0	0.0	25.0	25.0	3	5.5	6.3	7.5									
9	Signal 195-301 Connecter	CLO	639	10.0	3.0	4.0	10.0	10.0	7	3.1	3.3										
9	Signal 195-301 Connecter	CLO	640	24.0	25.0	5.0	20.0	35.0	1	12.5											
9	Signal 195-301 Connecter	CLO	641	20.0	25.0	12.0	15.0	35.0	6	7.0	12.0	4.5	6.0	5.5	5.0						
9	Signal 195-301 Connecter	CLO	642	15.0	0.0	20.0	24.0	20.0	3	11.5	8.5	7.7									
9	Signal 195-301 Connecter	CLO	643	10.0	30.0	15.0	21.0	35.0	3	11.5	2.3	6.3									
9	Signal 195-301 Connecter	CLO	644	5.0	3.0	5.0	7.0	24.0	1	5.5											
9	Signal 195-301 Connecter	CLO	645	23.0	15.0	1.0	10.0	25.0	1	13.0											
9	Signal 195-301 Connecter	CLO	646	17.0	15.0	12.0	15.0	30.0	4	13.0	12.0	4.5	12.0								

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	647	0.0	9.0	17.0	22.0	35.0	2	13.0	13.0										
9	Signal 195-301 Connecter	CLO	648	5.0	7.0	10.0	1.0	15.0	3	6.5	7.0	10.1									
9	Signal 195-301 Connecter	CLO	649	20.0	18.0	10.0	9.0	20.0	3	8.8	9.0	3.5									
9	Signal 195-301 Connecter	CLO	650	10.0	1.0	0.0	10.0	15.0	2	5.5	4.0										
9	Signal 195-301 Connecter	CLO	651	20.0	15.0	0.0	10.0	20.0	3	8.5	9.0	9.5									
9	Signal 195-301 Connecter	CLO	652	5.0	10.0	5.0	8.0	15.0	2	9.5	3.0										
9	Signal 195-301 Connecter	CLO	653	5.0	5.0	0.0	0.0	17.0	1	12.0											
9	Signal 195-301 Connecter	CLO	654	15.0	18.0	10.0	0.0	15.0	4	4.5	4.0	4.6	3.8								
9	Signal 195-301 Connecter	CLO	655	18.0	20.0	10.0	0.0	25.0	4	6.2	6.8	6.5	3.5								
9	Signal 195-301 Connecter	CLO	656	24.0	15.0	10.0	15.0	20.0	4	7.5	5.3	8.4	6.0								
9	Signal 195-301 Connecter	CLO	657	15.0	17.0	15.0	10.0	18.0	7	4.0	5.0	6.3	5.0	5.1	3.8	3.9					
9	Signal 195-301 Connecter	CLO	658	10.0	12.0	0.0	2.0	15.0	4	5.2	5.4	5.3	3.0								
9	Signal 195-301 Connecter	CLO	659	25.0	15.0	10.0	15.0	25.0	1	18.0											
9	Signal 195-301 Connecter	CLO	660	25.0	10.0	15.0	15.0	25.0	3	11.0	7.0	10.0									
9	Signal 195-301 Connecter	CLO	661	15.0	24.0	15.0	0.0	25.0	6	6.5	5.5	5.0	5.0	6.5	4.9						
9	Signal 195-301 Connecter	CLO	662	20.0	15.0	24.0	25.0	35.0	3	13.3	18.3	6.8									
9	Signal 195-301 Connecter	CLO	663	25.0	0.0	0.0	10.0	28.0	3	5.2	4.8	10.8									
9	Signal 195-301 Connecter	CLO	664	35.0	30.0	20.0	18.0	35.0	4	16.0	4.0	12.2	6.0								
9	Signal 195-301 Connecter	CLO	665	25.0	18.0	25.0	0.0	30.0	1	25.3											
9	Signal 195-301 Connecter	CLO	666	22.0	18.0	15.0	10.0	25.0	5	5.5	3.0	5.5	8.4	6.5							

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	667	17.0	18.0	5.0	22.0	25.0	6	8.0	6.3	6.6	2.0	7.5	7.0						
9	Signal 195-301 Connecter	CLO	668	27.0	20.0	22.0	15.0	30.0	1	23.5											
9	Signal 195-301 Connecter	CLO	669	15.0	15.0	21.0	5.0	30.0	3	8.3	6.0	11.5									
9	Signal 195-301 Connecter	CLO	670	0.0	20.0	20.0	5.0	25.0	2	9.0	7.5										
9	Signal 195-301 Connecter	CLO	671	10.0	21.0	15.0	12.0	27.0	2	9.5	8.5										
9	Signal 195-301 Connecter	CLO	672	10.0	21.0	0.0	15.0	20.0	3	8.6	8.0	5.8									
9	Signal 195-301 Connecter	CLO	673	22.0	18.0	17.0	15.0	30.0	5	7.5	3.5	4.5	6.5	7.8							
9	Signal 195-301 Connecter	CLO	674	25.0	5.0	0.0	15.0	18.0	6	7.0	6.5	6.8	2.0	3.4	4.5						
9	Signal 195-301 Connecter	CLO	675	10.0	0.0	3.0	10.0	21.0	4	8.0	6.3	5.0	6.1								
9	Signal 195-301 Connecter	CLO	676	18.0	17.0	10.0	15.0	22.0	4	7.0	3.9	3.8	7.1								
9	Signal 195-301 Connecter	CLO	677	15.0	10.0	5.0	2.0	18.0	3	7.8	7.0	8.5									
9	Signal 195-301 Connecter	CLO	678	12.0	15.0	22.0	21.0	23.0	1	14.6											
9	Signal 195-301 Connecter	CLO	679	10.0	8.0	15.0	11.0	25.0	1	10.2											
9	Signal 195-301 Connecter	CLO	680	21.0	5.0	0.0	10.0	28.0	2	10.3	3.5										
9	Signal 195-301 Connecter	CLO	681	15.0	24.0	0.0	10.0	25.0	5	5.0	9.0	5.0	4.1	4.3							
9	Signal 195-301 Connecter	CLO	682	10.0	15.0	25.0	0.0	25.0	1	12.0											
9	Signal 195-301 Connecter	CLO	683	15.0	35.0	0.0	15.0	25.0	2	14.2	8.5										
9	Signal 195-301 Connecter	CLO	684	20.0	35.0	0.0	24.0	28.0	2	10.0	12.5										
9	Signal 195-301 Connecter	CLO	685	21.0	28.0	35.0	15.0	30.0	1	19.0											
9	Signal 195-301 Connecter	CLO	686	23.0	15.0	12.0	17.0	22.0	1	18.3											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	687	10.0	2.0	3.0	15.0	15.0	2	11.0	12.0										
9	Signal 195-301 Connecter	CLO	688	15.0	22.0	0.0	0.0	24.0	3	7.2	2.0	13.2									
9	Signal 195-301 Connecter	CLO	689	10.0	7.0	9.0	15.0	25.0	4	7.0	5.0	9.0	7.2								
9	Signal 195-301 Connecter	CLO	690	12.0	8.0	0.0	3.0	18.0	4	4.0	6.0	7.2	4.2								
9	Signal 195-301 Connecter	CLO	691	18.0	35.0	20.0	0.0	25.0	8	5.4	5.7	10.0	10.1	8.5	6.5	7.0	9.0				
9	Signal 195-301 Connecter	CLO	692	18.0	15.0	10.0	5.0	27.0	3	9.8	7.0	13.0									
9	Signal 195-301 Connecter	CLO	693	24.0	32.0	35.0	24.0	35.0	7	6.0	6.1	5.2	4.5	10.7	11.0	16.0					
9	Signal 195-301 Connecter	CLO	694	5.0	35.0	28.0	17.0	29.0	3	9.0	7.5	8.6									
9	Signal 195-301 Connecter	CLO	695	8.0	15.0	5.0	2.0	24.0	1	7.0											
9	Signal 195-301 Connecter	CLO	696	15.0	25.0	5.0	0.0	18.0	6	6.5	5.0	8.0	7.3	7.2	6.0						
9	Signal 195-301 Connecter	CLO	697	24.0	18.0	15.0	14.0	30.0	2	10.0	14.5										
9	Signal 195-301 Connecter	CLO	698	10.0	5.0	15.0	10.0	23.0	1	12.5											
9	Signal 195-301 Connecter	CLO	699	24.0	11.0	15.0	9.0	35.0	7	11.0	3.0	9.5	8.0	6.5	3.4	4.4					
9	Signal 195-301 Connecter	CLO	700	25.0	0.0	0.0	0.0	15.0	2	6.6	6.2										
9	Signal 195-301 Connecter	CLO	701	20.0	0.0	0.0	10.0	15.0	2	5.5	6.0										
9	Signal 195-301 Connecter	CLO	702	15.0	7.0	10.0	15.0	30.0	4	5.5	7.8	6.5	4.0								
9	Signal 195-301 Connecter	CLO	703	25.0	10.0	0.0	15.0	28.0	4	6.5	5.0	10.0	5.0								
9	Signal 195-301 Connecter	CLO	704	10.0	15.0	5.0	5.0	20.0	6	5.4	4.0	3.0	4.4	6.0	4.5						
9	Signal 195-301 Connecter	CLO	705	10.0	20.0	10.0	10.0	25.0	3	6.5	6.5	5.9									
9	Signal 195-301 Connecter	CLO	706	25.0	35.0	18.0	10.0	35.0	7	13.5	12.0	5.5	7.0	7.5	6.5	5.0					

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	707	11.0	15.0	0.0	7.0	25.0	3	5.5	4.0	6.0									
9	Signal 195-301 Connecter	CLO	708	11.0	7.0	0.0	5.0	24.0	1	12.0											
9	Signal 195-301 Connecter	CLO	709	11.0	3.0	0.0	10.0	18.0	2	9.0	8.0										
9	Signal 195-301 Connecter	CLO	710	12.0	3.0	0.0	15.0	30.0	2	8.5	4.4										
9	Signal 195-301 Connecter	CLO	711	15.0	7.0	2.0	18.0	30.0	2	7.5	5.5										
9	Signal 195-301 Connecter	CLO	712	15.0	10.0	8.0	10.0	19.0	6	12.0	8.2	3.1	4.4	5.2	6.1						
9	Signal 195-301 Connecter	CLO	713	7.0	10.0	7.0	5.0	17.0	7	2.5											
9	Signal 195-301 Connecter	CLO	714	15.0	10.0	7.0	15.0	22.0	4	3.5	3.5	6.5	7.5								
9	Signal 195-301 Connecter	CLO	715	20.0	10.0	0.0	15.0	18.0	4	4.5	5.5	6.0	3.5								
9	Signal 195-301 Connecter	CLO	716	25.0	21.0	15.0	13.0	25.0	7	7.5	5.5	9.2	3.2	7.0	8.4	6.0					
9	Signal 195-301 Connecter	CLO	717	18.0	30.0	12.0	5.0	20.0	3	12.0	8.0	5.3									
9	Signal 195-301 Connecter	CLO	718	20.0	15.0	3.0	7.0	22.0	4	6.0	4.0	3.1	6.0								
9	Signal 195-301 Connecter	CLO	719	10.0	8.0	15.0	10.0	25.0	3	7.2	8.4	2.5									
9	Signal 195-301 Connecter	CLO	720	10.0	10.0	10.0	5.0	25.0	1	7.5											
9	Signal 195-301 Connecter	CLO	721	15.0	10.0	3.0	7.0	14.0	1	5.3											
9	Signal 195-301 Connecter	CLO	722	10.0	5.0	5.0	7.0	15.0	2	6.5	4.3										
9	Signal 195-301 Connecter	CLO	723	15.0	8.0	4.0	8.0	18.0	3	5.4	3.5	6.8									
9	Signal 195-301 Connecter	CLO	724	10.0	4.0	15.0	5.0	20.0	1	7.5											
9	Signal 195-301 Connecter	CLO	725	10.0	20.0	25.0	15.0	25.0	5	7.0	7.5	5.0	7.0	5.0							
9	Signal 195-301 Connecter	CLO	726	0.0	35.0	1.0	1.0	20.0	3	6.5	6.0	4.5									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	727	18.0	15.0	22.0	18.0	25.0	4	10.0	4.5	11.0	3.0								
9	Signal 195-301 Connecter	CLO	728	7.0	15.0	21.0	15.0	25.0	4	10.0	8.0	6.3	6.0								
9	Signal 195-301 Connecter	CLO	729	14.0	24.0	4.0	10.0	20.0	3	4.0	9.0	6.5									
9	Signal 195-301 Connecter	CLO	21 A	20.0	20.0	20.0	20.0	30.0	2	19.6	18.5										
9	Signal 195-301 Connecter	CLO	22 A	20.0	15.0	20.0	15.0	30.0	1	20.0											
9	Signal 195-301 Connecter	CLO	23 A	15.0	20.0	15.0	12.0	25.0	2	9.1	9.5										
9	Signal 195-301 Connecter	CLO	24 A	20.0	15.0	20.0	15.0	25.0	4	8.8	10.8	9.6	3.5								
9	Signal 195-301 Connecter	CLO	25 A	20.0	10.0	8.0	15.0	25.0	4	8.8											
9	Signal 195-301 Connecter	CLO	26 A	10.0	2.0	1.0	4.0	20.0	1	6.1											
9	Signal 195-301 Connecter	CLO	27 A	15.0	20.0	20.0	20.0	25.0	1	15.3											
9	Signal 195-301 Connecter	CLO	28 A	20.0	15.0	25.0	15.0	25.0	2	13.9	8.1										
9	Signal 195-301 Connecter	CLO	29 A	25.0	20.0	20.0	15.0	25.0	3	3.5	9.1	14.0									
9	Signal 195-301 Connecter	CLO	30 A	10.0	15.0	15.0	10.0	15.0	4	5.6	5.8	5.6	8.9								
9	Signal 195-301 Connecter	CLO	31 A	20.0	15.0	20.0	20.0	20.0	3	10.4	7.6	10.0									
9	Signal 195-301 Connecter	CLO	32 A	20.0	25.0	25.0	20.0	25.0	5	14.3	12.1	8.0	8.4	6.3							
9	Signal 195-301 Connecter	CLO	33 A	25.0	20.0	25.0	10.0	25.0	3	8.6	11.2	8.6									
9	Signal 195-301 Connecter	CLO	34 A	15.0	20.0	20.0	15.0	20.0	2	11.4	9.8										
9	Signal 195-301 Connecter	CLO	35 A	20.0	15.0	20.0	15.0	20.0	3	4.8	10.2	11.1									
9	Signal 195-301 Connecter	CLO	36 A	10.0	15.0	20.0	10.0	20.0	4	6.0	7.6	8.3	12.8								
9	Signal 195-301 Connecter	CLO	37 A	2.0	3.0	4.0	4.0	8.0	2	2.1	3.9										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	38 A	5.0	15.0	15.0	15.0	17.0	3	5.7	7.2	7.6									
9	Signal 195-301 Connecter	CLO	39 A	2.0	3.0	5.0	3.0	15.0	1	3.8											
9	Signal 195-301 Connecter	CLO	40 A	10.0	15.0	20.0	15.0	20.0	2	13.5	8.2										
9	Signal 195-301 Connecter	CLO	41 A	15.0	20.0	20.0	20.0	25.0	1	15.4											
9	Signal 195-301 Connecter	CLO	42 A	5.0	10.0	15.0	10.0	20.0	1	8.9											
9	Signal 195-301 Connecter	CLO	43 A	10.0	6.0	20.0	20.0	15.0	2	11.7	3.5										
9	Signal 195-301 Connecter	CLO	44 A	5.0	15.0	15.0	10.0	20.0	1	10.2											
9	Signal 195-301 Connecter	CLO	45 A	6.0	20.0	20.0	10.0	3.0	8	6.0	11.3										
9	Signal 195-301 Connecter	CLO	46 A	25.0	10.0	15.0	10.0	20.0	1	17.0											
9	Signal 195-301 Connecter	CLO	47 A	5.0	10.0	10.0	5.0	20.0	1	19.1											
9	Signal 195-301 Connecter	CLO	48 A	10.0	6.0	15.0	20.0	20.0	1	12.8											
9	Signal 195-301 Connecter	CLO	49 A	10.0	10.0	20.0	15.0	20.0	2	11.7	9.9										
9	Signal 195-301 Connecter	CLO	50 A	5.0	5.0	5.0	5.0	12.0	1	4.0											
9	Signal 195-301 Connecter	CLO	51 A	10.0	10.0	5.0	5.0	20.0	4	7.8	6.6	10.5	8.3								
9	Signal 195-301 Connecter	CLO	52 A	10.0	8.0	2.0	10.0	20.0	2	7.7	9.3										
9	Signal 195-301 Connecter	CLO	53 A	10.0	0.0	0.0	6.0	14.0	1	5.2											
9	Signal 195-301 Connecter	CLO	54 A	20.0	10.0	20.0	15.0	20.0	3	8.2	9.1	7.9									
9	Signal 195-301 Connecter	CLO	55 A	6.0	10.0	8.0	0.0	12.0	1	7.5											
9	Signal 195-301 Connecter	CLO	56 A	20.0	20.0	25.0	15.0	20.0	2	14.4	3.2										
9	Signal 195-301 Connecter	CLO	57 A	10.0	15.0	20.0	20.0	20.0	3	17.2	2.6	2.6									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	58 A	10.0	5.0	25.0	10.0	25.0	2	3.0	10.7										
9	Signal 195-301 Connecter	CLO	59 A	15.0	12.0	3.0	6.0	15.0	1	6.7											
9	Signal 195-301 Connecter	CLO	60 A	20.0	20.0	25.0	10.0	25.0	2	7.8	21.2										
9	Signal 195-301 Connecter	CLO	61 A	5.0	20.0	20.0	10.0	20.0	1	16.2											
9	Signal 195-301 Connecter	CLO	62 A	10.0	10.0	20.0	15.0	20.0	3	10.3	5.2	11.5									
9	Signal 195-301 Connecter	CLO	63 A	5.0	5.0	15.0	2.0	15.0	4	4.6	7.5	4.2	4.4								
9	Signal 195-301 Connecter	CLO	64 A	3.0	10.0	8.0	2.0	12.0	2	11.8	5.0										
9	Signal 195-301 Connecter	CLO	65 A	5.0	10.0	2.0	0.0	15.0	2	5.0	4.0										
9	Signal 195-301 Connecter	CLO	66 A	10.0	5.0	12.0	5.0	15.0	1	6.8											
9	Signal 195-301 Connecter	CLO	67 A	5.0	5.0	5.0	5.0	12.0	2	2.0	4.6										
9	Signal 195-301 Connecter	CLO	68 A	10.0	15.0	15.0	15.0	20.0	1	12.2											
9	Signal 195-301 Connecter	CLO	69 A	1.0	10.0	8.0	3.0	20.0	2	7.6	5.1										
9	Signal 195-301 Connecter	CLO	70 A	10.0	12.0	5.0	15.0	20.0	5	8.1	7.8	2.5	7.2	5.0							
9	Signal 195-301 Connecter	CLO	71 A	15.0	15.0	15.0	5.0	20.0	1	15.0											
9	Signal 195-301 Connecter	CLO	72 A	15.0	15.0	5.0	10.0	20.0	4	7.4	7.5	9.4	9.6								
9	Signal 195-301 Connecter	CLO	73 A	15.0	15.0	15.0	5.0	15.0	3	9.7	9.8	7.8									
9	Signal 195-301 Connecter	CLO	74 A	15.0	15.0	15.0	15.0	20.0	2	9.2	12.6										
9	Signal 195-301 Connecter	CLO	75 A	10.0	15.0	15.0	5.0	20.0	2	13.3	14.6										
9	Signal 195-301 Connecter	CLO	76 A	20.0	15.0	20.0	15.0	20.0	2	12.0	11.9										
9	Signal 195-301 Connecter	CLO	77 A	25.0	25.0	10.0	5.0	20.0	3	14.0	14.2	18.6									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	78 A	5.0	3.0	10.0	3.0	10.0	1	10.3											
9	Signal 195-301 Connecter	CLO	79 A	15.0	15.0	15.0	10.0	15.0	2	11.0	8.7										
9	Signal 195-301 Connecter	CLO	80 A	15.0	15.0	10.0	7.0	20.0	2	8.3	8.7										
9	Signal 195-301 Connecter	CLO	81 A	15.0	5.0	6.0	10.0	20.0	2	8.5	8.3										
9	Signal 195-301 Connecter	CLO	82 A	15.0	15.0	15.0	15.0	20.0	6	5.8	9.8	9.0	8.8	3.0	10.1						
9	Signal 195-301 Connecter	CLO	83 A	10.0	5.0	5.0	5.0	20.0	1	8.0											
9	Signal 195-301 Connecter	CLO	84 A	10.0	5.0	2.0	3.0	15.0	1	10.5											
9	Signal 195-301 Connecter	CLO	85 A	20.0	15.0	20.0	15.0	20.0	3	11.4	10.8	10.5									
9	Signal 195-301 Connecter	CLO	86 A	15.0	15.0	5.0	3.0	20.0	1	15.1											
9	Signal 195-301 Connecter	CLO	87 A	12.0	10.0	5.0	5.0	15.0	3	6.1	6.2	6.1									
9	Signal 195-301 Connecter	CLO	88 A	20.0	20.0	20.0	20.0	25.0	3	12.9	14.9	13.8									
9	Signal 195-301 Connecter	CLO	89 A	10.0	10.0	10.0	5.0	15.0	2	12.8	14.1										
9	Signal 195-301 Connecter	CLO	90 A	15.0	10.0	10.0	15.0	15.0	2	9.3	6.5										
9	Signal 195-301 Connecter	CLO	91 A	5.0	10.0	5.0	0.0	15.0	1	6.6											
9	Signal 195-301 Connecter	CLO	92 A	10.0	15.0	15.0	10.0	15.0	5	8.8	9.5	8.2	8.1	7.6							
9	Signal 195-301 Connecter	CLO	93 A	15.0	15.0	10.0	10.0	20.0	2	9.5	10.4										
9	Signal 195-301 Connecter	CLO	94 A	15.0	20.0	15.0	15.0	15.0	8	6.5	11.3	5.5	6.6	6.2	5.5	7.1	9.8				
9	Signal 195-301 Connecter	CLO	95 A	10.0	0.0	5.0	15.0	5.0	1	10.4											
9	Signal 195-301 Connecter	CLO	96 A	10.0	8.0	8.0	8.0	15.0	1	8.2											
9	Signal 195-301 Connecter	CLO	97 A	15.0	10.0	10.0	10.0	15.0	4	7.4	3.2	5.0	6.8								

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	98 A	5.0	5.0	15.0	10.0	20.0	3	7.2	8.0	6.1									
9	Signal 195-301 Connecter	CLO	99 A	15.0	10.0	15.0	15.0	20.0	5	8.5	9.3	6.6	8.4	11.3							
9	Signal 195-301 Connecter	CLO	100 A	15.0	10.0	5.0	2.0	10.0	3	14.7	6.3	5.2									
9	Signal 195-301 Connecter	CLO	101 A	10.0	15.0	15.0	5.0	15.0	6	4.2	4.8	5.3	5.2	3.8	4.1						
9	Signal 195-301 Connecter	CLO	102 A	15.0	5.0	0.0	10.0	15.0	2	6.6	5.5										
9	Signal 195-301 Connecter	CLO	103 A	15.0	15.0	10.0	15.0	15.0	3	11.4	5.1	6.9									
9	Signal 195-301 Connecter	CLO	104 A	10.0	10.0	10.0	10.0	15.0	4	6.0	6.2	5.2	5.0								
9	Signal 195-301 Connecter	CLO	105 A	10.0	10.0	5.0	8.0	12.0	2	5.8	5.2										
9	Signal 195-301 Connecter	CLO	106 A	10.0	8.0	10.0	8.0	15.0	4	5.0	7.1	9.3	6.8								
9	Signal 195-301 Connecter	CLO	107 A	15.0	10.0	18.0	8.0	20.0	4	4.7	4.3	8.8	10.0								
9	Signal 195-301 Connecter	CLO	108 A	5.0	2.0	2.0	8.0	10.0	2	3.2	4.1										
9	Signal 195-301 Connecter	CLO	109 A	5.0	2.0	2.0	2.0	12.0	1	4.0											
9	Signal 195-301 Connecter	CLO	110 A	5.0	6.0	7.0	8.0	10.0	4	2.3	2.8	3.0	5.0								
9	Signal 195-301 Connecter	CLO	111 A	5.0	8.0	15.0	5.0	15.0	2	5.1	11.7										
9	Signal 195-301 Connecter	CLO	112 A	10.0	5.0	5.0	5.0	20.0	2	5.1	7.3										
9	Signal 195-301 Connecter	CLO	113 A	10.0	15.0	15.0	15.0	20.0	1	16.8											
9	Signal 195-301 Connecter	CLO	114 A	5.0	5.0	5.0	10.0	15.0	2	5.8	9.8										
9	Signal 195-301 Connecter	CLO	115 A	8.0	6.0	4.0	6.0	8.0	3	5.1	4.2	6.3									
9	Signal 195-301 Connecter	CLO	116 A	0.0	15.0	8.0	6.0	15.0	2	9.2	7.9										
9	Signal 195-301 Connecter	CLO	oak 114	3.5	3.5	3.5	3.5	10.0	1	3.1											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
9	Signal 195-301 Connecter	CLO	oak 115	3.0	2.0	2.0	3.5	10.0	2	2.0	1.0										
10	Signal B Abandoned	CLO	117 A	15.0	20.0	15.0	15.0	25.0	3	13.2	16.4	8.7									
10	Signal B Abandoned	CLO	118 A	5.0	0.0	10.0	10.0	15.0	1	9.5											
10	Signal B Abandoned	CLO	119 A	5.0	5.0	5.0	10.0	10.0	2	4.1	4.8										
10	Signal B Abandoned	CLO	120 A	10.0	15.0	15.0	10.0	15.0	3	9.0	10.3	10.0									
10	Signal B Abandoned	CLO	121 A	5.0	5.0	20.0	6.0	15.0	3	10.4	8.8	6.8									
10	Signal B Abandoned	CLO	122 A	5.0	8.0	10.0	5.0	12.0	1	7.1											
10	Signal B Abandoned	CLO	123 A	6.0	5.0	10.0	5.0	15.0	1	7.1											
10	Signal B Abandoned	CLO	124 A	15.0	5.0	10.0	10.0	15.0	2	7.5	8.8										
10	Signal B Abandoned	CLO	125 A	10.0	5.0	0.0	5.0	10.0	2	5.6	4.1										
10	Signal B Abandoned	CLO	126 A	10.0	6.0	15.0	10.0	20.0	1	12.2											
10	Signal B Abandoned	CLO	127 A	6.0	5.0	6.0	5.0	15.0	1	6.1											
10	Signal B Abandoned	CLO	730	10.0	15.0	12.0	11.0	25.0	3	10.5	8.5	8.0									
10	Signal B Abandoned	CLO	731	18.0	10.0	32.0	15.0	30.0	4	8.0	12.5	13.0	10.0								
10	Signal B Abandoned	CLO	732	5.0	35.0	0.0	0.0	35.0	2	12.5	7.5										
10	Signal B Abandoned	CLO	733	10.0	35.0	35.0	5.0	35.0	6	10.0	11.5	6.0	3.0	5.0	5.5						
10	Signal B Abandoned	CLO	734	15.0	15.0	12.0	12.0	20.0	1	15.0											
10	Signal B Abandoned	CLO	735	15.0	20.0	5.0	15.0	20.0	3	7.5	4.2	10.0									
10	Signal B Abandoned	CLO	736	5.0	18.0	28.0	12.0	18.0	4	6.2	8.0	10.0	5.5								
10	Signal B Abandoned	CLO	737	5.0	15.0	5.0	0.0	15.0	1	7.5											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
12	Pulas 3	CLO	821	5.0	2.0	1.0	3.0	5.0	1	2.5											
12	Pulas 3	CLO	822	7.0	7.0	7.0	7.0	12.0	2	3.5	6.0										
12	Pulas 3	CLO	823	30.0	30.0	30.0	30.0	35.0	2	19.0	29.0										
12	Pulas 3	CLO	824	27.0	22.0	10.0	15.0	45.0	2	13.1	12.2										
12	Pulas 3	CLO	825	22.0	25.0	0.0	15.0	35.0	3	9.0	11.0	11.0									
12	Pulas 3	CLO	826	2.0	3.0	1.0	4.0	3.0	1	2.5											
12	Pulas 3	CLO	218 A	15.0	15.0	15.0	15.0	13.0	8	8.3	6.2	4.1	7.3	6.7	3.2	5.4	4.0				
12	Pulas 3	CLO	219 A	6.0	6.0	6.0	6.0	10.0	3	2.1	4.3	3.2									
12	Pulas 3	CLO	220 A	7.0	7.0	7.0	7.0	10.0	7	1.0	5.0	2.2	1.7	1.1	2.3	3.2					
12	Pulas 3	CLO	221 A	3.0	2.0	3.0	1.0	3.0	2	0.8	0.9										
12	Pulas 3	CLO	222 A	5.0	5.0	5.0	5.0	10.0	4	5.9	5.0	4.7	5.2								
13	Signal 171	CLO	382	0.0	18.0	10.0	0.0	20.0	4	15.3	13.3	15.4	17.0								
13	Signal 171	CLO	383	25.0	51.0	20.0	20.0	30.0	3	13.3	2.3	6.0									
13	Signal 171	CLO	384	20.0	18.0	22.0	10.0	20.0	2	14.0	15.6										
13	Signal 171	CLO	385	10.0	33.0	30.0	18.0	25.0	4	14.2	13.3	16.0	16.2								
13	Signal 171	CLO	386	12.0	6.0	8.0	15.0	15.0	2	14.0	12.0										
13	Signal 171	CLO	387	2.0	5.0	10.0	7.0	18.0	2	8.7	14.0										
13	Signal 171	CLO	388	6.0	20.0	20.0	20.0	23.0	1	15.0											
13	Signal 171	CLO	389	14.0	14.0	15.0	12.0	22.0	>15	7.3	5.1	7.6	8.1	6.8	4.6	8.5	8.5	7.0	6.5	6.2	7.1
13	Signal 171	CLO	390	15.0	20.0	13.0	15.0	30.0	1	21.6											
13	Signal 171	CLO	391	22.0	24.0	15.0	22.0	24.0	5	9.3	12.1	15.2	9.0	7.0							
13	Signal 171	CLO	392	0.0	0.0	15.0	0.0	15.0	1	5.8											
13	Signal 171	CLO	393	12.0	0.0	20.0	30.0	17.0	1	11.5											
13	Signal 171	CLO	394	0.0	0.0	18.0	0.0	10.0	1	10.5											
13	Signal 171	CLO	395	11.0	5.0	21.0	13.0	25.0	2	14.0	12.5										
13	Signal 171	CLO	396	23.0	15.0	30.0	25.0	30.0	3	12.0	12.0	10.0									
13	Signal 171	CLO	397	30.0	2.0	35.0	25.0	43.0	5	15.5	14.8	10.0	4.5	3.4							
13	Signal 171	CLO	398	2.0	5.0	15.0	5.0	35.0	4	13.3	4.2	3.2	3.1								
13	Signal 171	CLO	399	18.0	21.0	18.0	20.0	25.0	4	12.3	9.0	12.3	14.0								
13	Signal 171	CLO	400	25.0	12.0	24.0	23.0	30.0	1	16.7											
13	Signal 171	CLO	401	5.0	0.0	0.0	23.0	25.0	2	11.0	4.0										
13	Signal 171	CLO	402	9.0	3.0	13.0	25.0	34.0	2	15.0	11.5										
13	Signal 171	CLO	403	4.0	3.0	15.0	10.0	30.0	1	12.5											
13	Signal 171	CLO	404	23.0	17.0	20.0	43.0	35.0	3	10.0	17.5	17.0									
13	Signal 171	CLO	405	1.0	2.0	10.0	20.0	20.0	3	8.8	15.6	13.0									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
13	Signal 171	CLO	406	8.0	5.0	15.0	21.0	28.0	2	15.5	8.0										
13	Signal 171	CLO	407	3.0	5.0	5.0	3.0	8.0	1	4.5											
13	Signal 171	CLO	408	30.0	24.0	15.0	18.0	27.0	5	10.5	11.5	13.2	5.5	8.6							
13	Signal 171	CLO	409	21.0	13.0	16.0	10.0	20.0	3	10.3	9.8	4.2									
13	Signal 171	CLO	410	12.0	14.0	18.0	12.0	21.0	4	12.0	13.0	9.0	8.0								
13	Signal 171	CLO	411	15.0	18.0	25.0	25.0	35.0	2	14.0	24.0										
13	Signal 171	CLO	412	30.0	14.0	23.0	25.0	24.0	5	14.5	14.0	14.3	11.0	15.0							
13	Signal 171	CLO	413	15.0	10.0	17.0	13.0	33.0	3	15.0	14.5	14.0									
13	Signal 171	CLO	414	5.0	5.0	18.0	15.0	25.0	2	6.1	9.5										
13	Signal 171	CLO	415	0.0	0.0	15.0	20.0	20.0	2	12.0	12.5										
14	Signal 125	CLO	128	10.0	0.0	10.0	18.0	14.0	3	8.1	8.7	8.8	-	-	-	-					
14	Signal 125	CLO	129	4.0	0.0	6.0	10.0	12.0	1	7.5	-	-	-	-	-	-					
14	Signal 125	CLO	130	6.0	12.0	12.0	4.0	14.0	2	4.8	8.8	-	-	-	-	-					
14	Signal 125	CLO	131	18.0	15.0	18.0	13.0	24.0	7	16.0	15.1	15.3	13.2	11.1	9.0	6.2					
14	Signal 125	CLO	132	18.0	10.0	14.0	14.0	18.0	5	6.2	7.4	5.8	8.9	6.8	-	-					
14	Signal 125	CLO	133	2.0	7.0	6.0	2.0	10.0	3	3.1	1.9	2.1	-	-	-	-					
14	Signal 125	CLO	134	18.0	26.0	21.0	23.0	35.0	2	38.2	32.1	-	-	-	-	-					
14	Signal 125	CLO	135	16.0	14.0	25.0	18.0	22.0	4	24.2	23.0	20.1	26.1	-	-	-					
14	Signal 125	CLO	136	10.0	7.0	6.0	10.0	20.0	2	13.6	12.2		-	-	-	-					
14	Signal 125	CLO	137	5.0	3.0	5.0	7.0	14.0	2	5.3	4.8	-	-		-	-					
14	Signal 125	CLO	138	1.3	0.0	1.5	3.0	4.0	1	0.3	-	-	-	-	-	-					
14	Signal 125	CLO	140	10.0	2.0	0.0	6.0	14.0	1	7.9	-	-	-	-	-	-					
14	Signal 125	CLO	141	8.0	8.0	20.0	21.0	22.0	1	34.0	-	-	-	-	-	-					
14	Signal 125	CLO	142	16.0	0.0	0.0	4.0	5.0	1	11.0	-	-	-	-	-	-					
14	Signal 125	CLO	143	13.0	16.0	12.0	6.0	18.0	3	12.1	10.2	14.0	-	-	-	-					
14	Signal 125	CLO	144	12.0	14.0	16.0	12.0	15.0	1	15.3											
14	Signal 125	CLO	428	5.0	9.0	10.0	9.0	12.0	1	4.6	-	-	-	-	-	-					
14	Signal 125	CLO	429	8.0	12.0	11.0	15.0	16.0	2	4.3	10.3	-	-	-	-	-					
14	Signal 125	CLO	430	5.0	7.0	16.0	17.0	18.0	3	7.3	8.1	6.6	-	-	-	-					
14	Signal 125	CLO	431	35.0	20.0	18.0	25.0	25.0	7	16.2	15.4	12.2	12.4	4.3	7.1	5.8					
14	Signal 125	CLO	432	30.0	28.0	32.0	30.0	25.0	5	16.6	15.2	15.1	13.7	14.4	-	-					
14	Signal 125	CLO	433	15.0	10.0	15.0	35.0	25.0	3	13.1	12.2	10.5	-	-	-	-					
14	Signal 125	CLO	434	15.0	10.0	35	25.0	40.0	3	12.0	14.5	14.7	-	-	-	-					
14	Signal 125	CLO	435	35.0	20.0	18.0	20.0	25.0	5	14.5	14.3	18.3	21.5	19.5	-	-					
14	Signal 125	CLO	436	18.0	30.0	35.0	10.0	35.0	3	13.1	16.4	14.2	-	-	-	-					

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
14	Signal 125	CLO	437	15.0	18.0	35.0	10.0	45.0	3	17.5	18.2	19.2	-	-	-	-					
14	Signal 125	CLO	438	5.0	2.0	5.0	5.0	10.0	1	3.5	-	-	-	-	-	-					
14	Signal 125	CLO	439	0.0	10.0	18.0	10.0	30.0	1	16.5	-	-	-	-	-	-					
14	Signal 125	CLO	440	27.0	15.0	35.0	25.0	23.0	7	17.1	18.3	22.2	4.1	8.2	6.1	4.2					
14	Signal 125	CLO	441	14.0	14.0	25.0	25.0	20.0	3	8.0	7.5	12.2	-	-	-	-					
14	Signal 125	CLO	442	18.0	10.0	5.0	5.0	18.0	1	8.2	-	-	-	-	-	-					
14	Signal 125	CLO	443	5.0	5.0	7.0	4.0	9.0	3	2.2	2.4	3.3	-	-	-	-					
14	Signal 125	CLO	444	10.0	30.0	15.0	20.0	35.0	3	12.2	13.4	12.1	-	-	-	-					
14	Signal 125	CLO	445	15.0	15.0	35.0	18.0	35.0	5	11.1	12.3	18.2	15.0	17.2	-	-					
14	Signal 125	CLO	446	15.0	10.0	8.0	18.0	25.0	1	12.2	-	-	-	-	-	-					
14	Signal 125	CLO	447	7.0	5.0	20.0	15.0	12.0	1	10.4	-	-	-	-	-	-					
14	Signal 125	CLO	448	3.0	5.0	10.0	10.0	15.0	2	8.1	11.3		-	-	-	-					
15	B-Low Signal 171	CLO	105	8.0	15.0	9.0	15.0	13.0	2	14.5	10.1										
15	B-Low Signal 171	CLO	106	8.0	14.0	15.0	14.0	13.0	5	8.8	9.9	6.8	7.9	7.6							
15	B-Low Signal 171	CLO	107	20.0	13.0	18.0	15.0	22.0	3	8.4	10.3	12.4									
15	B-Low Signal 171	CLO	108	8.0	14.0	15.0	14.0	13.0	5	8.8	9.9	6.8	7.9	7.6							
15	B-Low Signal 171	CLO	109	6.0	3.0	15.0	10.0	12.0	2	9.1	3.5										
15	B-Low Signal 171	CLO	110	6.0	3.0	8.0	8.0	10.0	1	6.0											
15	B-Low Signal 171	CLO	111	8.0	7.0	8.0	9.0	11.0	1	12.1											
15	B-Low Signal 171	CLO	112	10.0	8.0	21.0	13.0	14.0	6	6.8	4.0	5.5	7.0	7.2	4.1						
15	B-Low Signal 171	CLO	113	0.0	6.0	13.0	13.0	15.0	5	7.0	10.3	10.2	7.1	7.3							
15	B-Low Signal 171	CLO	114	13.0	18.0	20.0	19.0	17.0	3	12.0	12.6	14.9									
15	B-Low Signal 171	CLO	115	29.0	13.0	25.0	24.0	24.0	3	23.6	22.3	25.0									
15	B-Low Signal 171	CLO	116	12.0	14.0	16.0	16.0	23.0	3	12.0	11.2	9.5									
15	B-Low Signal 171	CLO	117	0.0	0.0	15.0	10.0	27.0	4	14.8	9.4	10.8	4.9								

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
15	B-Low Signal 171	CLO	118	8.0	4.0	8.0	8.0	12.0	2	5.1	4.5										
15	B-Low Signal 171	CLO	119	0.0	9.0	16.0	9.0	22.0	1	12.7											
16	Signal 149	CLO	241	33.0	18.0	32.0	20.0	30.0	5	12.5	8.2	6.9	13.7	16.0							
16	Signal 149	CLO	242	5.0	3.5	6.0	7.0	13.0	3	3.9	2.5	0.8									
16	Signal 149	CLO	243	3.0	3.0	3.0	3.0	12 to 15	15	<1.3											
16	Signal 149	CLO	244	1.0	1.5	2.0	2.0	3.0	2	0.7	0.9										
16	Signal 149	CLO	245	21.0	22.0	25.0	23.0	35.0	7	8.5	7.5	7.2	16.4	12.4	12.0	8.8					
16	Signal 149	CLO	246	28.0	31.0	30.1	32.0	40.0	9	8.1	10.1	9.6	9.8	7.6	9.3	14.1	12.5	16.1			
16	Signal 149	CLO	247	8.0	8.0	5.0	7.0	21.0	1	4.8											
16	Signal 149	CLO	248	9.0	7.0	7.0	10.0	25.0	2	6.2	6.5										
16	Signal 149	CLO	249	4.2	3.1	2.8	4.1	10.0	5	1.2	2.6	2.4	1.9	2.0							
16	Signal 149	CLO	250	New growth																	
16	Signal 149	CLO	251	9.0	12.0	4.0	0.0	13.0	1	5.9											
16	Signal 149	CLO	252	10.0	9.0	11.0	9.0	11.0	2	4.8	6.8										
16	Signal 149	CLO	253	10.0	16.0	10.0	9.0	12.0	3	2.9	1.1	1.2									
16	Signal 149	CLO	254	13.0	11.0	10.0	15.0	16.0	3	10.5	7.4	2.3									
16	Signal 149	CLO	255	4.0	4.5	3.2	2.6	13.0	8	0.6	2.1	3.8	2.7	2.2	1.6	2.3	1.9				
16	Signal 149	CLO	256	14.0	11.0	9.0	13.0	15.0	5	8.5	5.7	4.8	5.7	dead							
16	Signal 149	CLO	257	10.1	9.0	12.0	13.0	16.0	4	5.9	6.3	4.9	2.8								
16	Signal 149	CLO	258	9.0	5.0	3.0	5.0	12.0	1	9.3											
16	Signal 149	CLO	260	20.0	18.0	21.0	15.0	28.0	7	6.0	11.0	11.0	7.5	10.0	8.5	11.5					
16	Signal 149	CLO	261	12.0	8.0	14.0	16.0	12.0	2	4.0	2.5										
16	Signal 149	CLO	262	6.0	6.0	8.0	7.0	14.0	3	2.5	2.7	3.0									
16	PCR pipe crossing	CLO	oak 42	22.0	25.0	15.0	17.0	35.0	2	19.6	16.5										
16	Signal 149	CLO	oak 46	1.0	1.0	1.0	1.0	3.0	2	1.0	0.8										
17	Signal 113-114-115 Connector	CLO	416	20.0	27.0	23.0	15.0	35.0	4	9.3	18.3	8.9	13.1								
17	Signal 113-114-115 Connector	CLO	417	20.0	27.0	28.0	0.0	32.0	2	16.5	23.5										
17	Signal 113-114-115 Connector	CLO	418	40.0	45.0	35.0	23.0	43.0	1	32.0											
17	Signal 113-114-115 Connector	CLO	419	3.0	5.0	5.0	7.0	15.0	1	5.2											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
17	Signal 113-114-115 Connector	CLO	420	8.0	18.0	15.0	3.0	23.0	2	11.1	10.7										
17	Signal 113-114-115 Connector	CLO	421	10.0	10.0	21.0	18.0	22.0	1	19.3											
17	Signal 113-114-115 Connector	CLO	422	0.0	17.0	15.0	0.0	14.0	2	8.5	9.5										
17	Signal 113-114-115 Connector	CLO	423	20.0	15.0	12.0	15.0	18.0	2	10.6	9.8										
17	Signal 113-114-115 Connector	CLO	424	6.0	19.0	20.0	10.0	12.0	4	7.8	9.4	9.7	10.1								
17	Signal 113-114-115 Connector	CLO	425	12.0	9.0	6.0	8.0	15.0	1	7.5											
17	Signal 113-114-115 Connector	CLO	426	25.0	17.0	8.0	17.0	23.0	1	12.1											
17	Signal 113-114-115 Connector	CLO	427	25.0	23.0	18.0	18.0	20.0	4	9.1	12.4	9.6	13.3								
17	Signal 113-114-115 Connector	CLO	120	21.0	24.0	10.0	27.0	35.0	3	14.1	12.2	22.1									
17	Signal 113-114-115 Connector	CLO	121	22.0	23.0	23.0	27.0	40.0	2	15.2	23.6										
17	Signal 113-114-115 Connector	CLO	122	21.0	18.0	19.0	17.0	24.0	3	15.9	11.5	23.8									
17	Signal 113-114-115 Connector	CLO	123	13.0	15.0	13.0	15.0	23.0	2	7.9	15.1										
17	Signal 113-114-115 Connector	CLO	124	18.0	14.0	20.0	23.0	23.0	5	10.4	9.7	13.0	9.8	15.1							
17	Signal 113-114-115 Connector	CLO	125	18.0	20.0	24.0	12.0	24.0	2	23.9	9.5										
17	Signal 113-114-115 Connector	CLO	126	8.0	12.0	10.0	0.0	7.0	1	8.9											
17	Signal 113-114-115 Connector	CLO	127	16.0	24.0	14.0	0.0	16.0	1	23.1											
18	Rock 12J	CLO	265	4.5	5.5	4.0	5.5	11.0	3	3.0	1.5	1.0									
18	Rock 12J	CLO	266	8.0	10.0	15.0	12.0	16.0	1	12.0											
18	Rock 12J	CLO	267	3.5	2.0	3.5	3.0	8.0	1	2.5											
18	Rock 12J	CLO	268	5.0	4.5	4.0	4.5	12.0	1	2.5											
19	Signal 66C-Ext. pulas 4	CLO	819	7.0	7.0	5.0	2.0	12.0	1	4.0											
19	Signal 66C-Ext. pulas 4	CLO	820	10.0	4.0	5.0	3.0	8.0	2	2.5	0.5										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
19	Signal 66C-Ext. pulas 4	CLO	216 A	6.0	6.0	6.0	4.0	15.0	1	7.1											
19	Signal 66C-Ext. pulas 4	CLO	217 A	6.0	7.0	6.0	5.0	18.0	3	8.8	7.0	6.2									
20	Signal 162	CLO	257	17.0	15.0	11.0	13.0	23.0	2	13.0	4.0										
20	Signal 162	CLO	258	13.0	10.0	15.0	10.0	25.0	4	7.9	9.0	12.0	10.0								
20	Signal 162	CLO	259	20.0	22.0	22.0	16.0	25.0	6	10.3	14.0	7.5	13.4	5.2	7.8						
20	Signal 162	CLO	260	15.0	21.0	13.0	16.0	16.0	4	7.8	6.9	7.9	4.2								
20	Signal 162	CLO	596	6.0	6.0	6.0	6.0	15.0	5	4.2	4.0	3.0	3.1	2.0							
20	Signal 162	CLO	597	15.0	25.0	30.0	24.0	35.0	3	14.5	14.8	8.0									
20	Signal 162	CLO	598	10.0	30.0	25.0	15.0	25.0	8	12.2	10.8	4.9	7.2	6.9	4.7	6.0	7.7				
20	Signal 162	CLO	599	8.0	15.0	23.0	13.0	20.0	8	8.2	6.1	4.3	4.5	4.2	2.3	2.5	2.4				
20	Signal 162	CLO	oak 34	7.0	7.0	7.0	7.0	12.0	2	4.5	4.0										
20	Signal 162	CLO	oak 35	2.0	5.0	15.0	12.0	12.0	4	6.0	1.8	0.8	5.2								
20	Signal 162	CLO	oak 36	10.0	9.0	5.0	11.0	10.0	2	6.3	4.7										
20	Signal 162	CLO	oak 37	10.0	15.0	17.0	15.0	20.0	3	12.7	6.1	10.8									
20	Signal 162	CLO	oak 38	17.0	0.0	27.0	25.0	30.0	2	13.4	14.2										
20	Signal 162	CLO	oak 39	12.0	10.0	9.0	7.0	15.0	3	4.3	5.6	5.4									
20	Signal 162	CLO	oak 40	18.0	15.0	17.0	20.0	35.0	3	12.7	6.0	20.0									
21	Signal 20 Abandoned	CLO	738	20.0	5.0	15.0	21.0	15.0	1	13.1											
21	Signal 20 Abandoned	CLO	739	15.0	15.0	15.0	15.0	25.0	3	15.0	13.0	12.0									
21	Signal 20 Abandoned	CLO	740	5.0	5.0	5.0	5.0	12.0	2	4.5	4.0										
21	Signal 20 Abandoned	CLO	741	5.0	5.0	5.0	5.0	14.0	1	3.5											
21	Signal 20 Abandoned	CLO	742	4.0	4.0	4.0	4.0	14.0	1	4.0											
21	Signal 20 Abandoned	CLO	743	10.0	10.0	12.0	15.0	18.0	2	6.0	5.5										
21	Signal 20 Abandoned	CLO	744	5.0	5.0	5.0	5.0	8.0	3	2.5	2.5	3.0									
21	Signal 20 Abandoned	CLO	745	10.0	0.0	10.0	15.0	35.0	2	26.0	12.0										
21	Signal 20 Abandoned	CLO	746	8.0	9.0	8.0	8.0	14.0	8	3.1	4.0	3.0	2.0	4.1	3.5	3.7	4.0				

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
21	Signal 20 Abandoned	CLO	747	12.0	9.0	15.0	12.0	25.0	2	12.0	9.0										
21	Signal 20 Abandoned	CLO	748	35.0	39.0	5.0	40.0	45.0	2	35.0	25.0										
21	Signal 20 Abandoned	CLO	749	21.0	19.0	15.0	10.0	25.0	1	16.5											
21	Signal 20 Abandoned	CLO	750	15.0	24.0	24.0	24.0	25.0	1	19.0											
21	Signal 20 Abandoned	CLO	751	7.0	12.0	12.0	9.0	15.0	3	5.2	5.8	6.1									
21	Signal 20 Abandoned	CLO	752	21.0	20.0	25.0	24.0	25.0	2	15.8	14.6										
21	Signal 20 Abandoned	CLO	753	21.0	15.0	24.0	24.0	30.0	2	12.4	22.5										
21	Signal 20 Abandoned	CLO	754	3.0	3.0	4.0	2.0	10.0	1	3.4											
21	Signal 20 Abandoned	CLO	755	9.0	9.0	10.0	9.0	15.0	2	7.2	5.1										
21	Signal 20 Abandoned	CLO	756	15.0	15.0	17.0	15.0	22.0	1	10.4											
21	Signal 20 Abandoned	CLO	757	2.0	2.0	2.0	2.0	4.0	2	2.5	3.0										
21	Signal 20 Abandoned	CLO	758	15.0	9.0	5.0	11.0	18.0	2	5.5	8.0										
21	Signal 20 Abandoned	CLO	759	15.0	9.0	21.0	18.0	23.0	1	12.5											
21	Signal 20 Abandoned	CLO	760	11.0	17.0	15.0	5.0	20.0	1	11.5											
21	Signal 20 Abandoned	CLO	761	40.0	27.0	40.0	36.0	30.0	4	18.9	13.5	17.3	12.0								
21	Signal 20 Abandoned	CLO	762	0.0	21.0	21.0	0.0	25.0	2	11.0	11.8										
21	Signal 20 Abandoned	CLO	763	33.0	28.0	30.0	28.0	40.0	3	22.0	18.0	18.5									
21	Signal 20 Abandoned	CLO	128 A	8.0	5.0	5.0	5.0	12.0	3	6.5	3.8	2.1									
21	Signal 20 Abandoned	CLO	129 A	15.0	10.0	15.0	10.0	18.0	6	12.1	10.0	10.0	9.8	11.1	4.2						
21	Signal 20 Abandoned	CLO	130 A	N/A	N/A	N/A	N/A	N/A	N/A	N/A											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
21	Signal 20 Abandoned	CLO	131 A	2.0	2.0	2.0	2.0	5.0	2	1.2	2.3										
21	Signal 20 Abandoned	CLO	132 A	20.0	20.0	20.0	20.0	25.0	1	12.2											
21	Signal 20 Abandoned	CLO	133 A	5.0	5.0	5.0	7.0	6.0	1	4.1											
21	Signal 20 Abandoned	CLO	134 A	4.0	4.0	4.0	4.0	5.0	1	3.1											
21	Signal 20 Abandoned	CLO	135 A	6.0	6.0	6.0	6.0	7.0	2	3.3	4.2										
21	Signal 20 Abandoned	CLO	136 A	10.0	10.0	10.0	10.0	10.0	2	4.8	3.2										
21	Signal 20 Abandoned	CLO	137 A	3.0	3.0	3.0	3.0	6.0	2	2.1	1.9										
21	Signal 20 Abandoned	CLO	138 A	10.0	8.0	15.0	8.0	16.0	4	4.3	5.5	7.1	6.8								
21	Signal 20 Abandoned	CLO	139 A	10.0	15.0	25.0	10.0	25.0	1	17.2											
21	Signal 20 Abandoned	CLO	140 A	12.0	15.0	0.0	0.0	12.0	1	10.0											
21	Signal 20 Abandoned	CLO	141 A	10.0	12.0	15.0	12.0	30.0	2	14.2	2.7										
21	Signal 20 Abandoned	CLO	142 A	12.0	15.0	18.0	15.0	25.0	1	15.5											
21	Signal 20 Abandoned	CLO	143 A	15.0	18.0	12.0	10.0	30.0	1	16.6											
21	Signal 20 Abandoned	CLO	144 A	12.0	12.0	15.0	10.0	28.0	1	14.8											
21	Signal 20 Abandoned	CLO	145 A	16.0	18.0	15.0	15.0	26.0	2	14.0	9.7										
21	Signal 20 Abandoned	CLO	146 A	10.0	15.0	10.0	8.0	25.0	3	9.5	9.4	8.3									
21	Signal 20 Abandoned	CLO	147 A	20.0	20.0	18.0	10.0	28.0	4	14.4	10.5	12.0	11.6								
21	Signal 20 Abandoned	CLO	148 A	10.0	16.0	20.0	18.0	40.0	3	15.8	10.0	18.6									
21	Signal 20 Abandoned	CLO	149 A	18.0	8.0	10.0	15.0	17.0	4	10.0	11.1	10.1	10.7								
21	Signal 20 Abandoned	CLO	150 A	15.0	18.0	18.0	15.0	26.0	2	20.1	6.1										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
21	Signal 20 Abandoned	CLO	151 A	18.0	15.0	12.0	18.0	25.0	3	14.0	11.5	12.5									
21	Signal 20 Abandoned	CLO	152 A	12.0	20.0	12.0	6.0	18.0	1	15.9											
21	Signal 20 Abandoned	CLO	153 A	12.0	15.0	20.0	10.0	20.0	1	19.5											
21	Signal 20 Abandoned	CLO	154 A	10.0	6.0	10.0	12.0	18.0	1	11.4											
21	Signal 20 Abandoned	CLO	155 A	16.0	25.0	18.0	18.0	40.0	4	15.5	20.1	17.0	21.1								
21	Signal 20 Abandoned	CLO	oak 109	10.0	6.0	6.0	6.0	12.0	1	5.5											
21	Signal 20 Abandoned	CLO	oak 110	4.0	8.0	4.0	4.0	8.5	2	4.1	3.3										
21	Signal 20 Abandoned	CLO	oak 111	5.0	3.0	3.0	3.0	7.0	1	4.1											
21	Signal 20 Abandoned	CLO	oak 112	3.0	3.0	4.0	3.0	6.0	6	4.5	1.5	1.5	1.0	1.8	2.0						
21	Signal 20 Abandoned	CLO	oak 113	7.0	8.0	7.0	8.0	9.0	3	2.0	2.0	1.5									
22	Signal P1-I1	CLO	235 A	8.0	10.0	18.0	18.0	20.0	2	13.6	14.2										
22	Signal P1-I1	CLO	236 A	10.0	15.0	10.0	12.0	25.0	2	16.0	8.3										
22	Signal P1-I1	CLO	237 A	10.0	10.0	10.0	25.0	28.0	2	2.0	9.7										
22	Signal P1-I1	CLO	238 A	20.0	18.0	20.0	20.0	30.0	1	19.1											
22	Signal P1-I1	CLO	239 A	15.0	20.0	20.0	20.0	40.0	1	17.1											
22	Signal P1-I1	CLO	240 A	15.0	25.0	15.0	20.0	30.0	1	17.0											
22	Signal P1-I1	CLO	241 A	20.0	25.0	12.0	20.0	28.0	1	16.1											
22	Signal P1-I1	CLO	242 A	5.0	5.0	5.0	5.0	15.0	3	4.2	3.1	5.3									
22	Signal P1-I1	CLO	243 A	8.0	8.0	8.0	8.0	15.0	4	3.0	4.5	5.5	1.0								
22	Signal P1-I1	CLO	244 A	5.0	5.0	8.0	10.0	18.0	6	9.7	3.5	4.8	5.9	2.4	3.3						
22	Signal P1-I1	CLO	245 A	6.0	10.0	10.0	8.0	20.0	3	4.0	8.1	7.4									
22	Signal P1-I1	CLO	246 A	6.0	6.0	6.0	6.0	15.0	2	2.4	7.0										
22	Signal P1-I1	CLO	247 A	15.0	12.0	15.0	10.0	20.0	4	14.1	9.2	10.0	5.3								
22	Signal P1-I1	CLO	248 A	10.0	12.0	15.0	10.0	18.0	3	11.5	8.2	6.0									
22	Signal P1-I1	CLO	249 A	6.0	6.0	6.0	6.0	10.0	1	6.5											
22	Signal P1-I1	CLO	250 A	6.0	5.0	4.0	6.0	14.0	5	2.5	2.6	4.5	4.6	3.0							
22	Signal P1-I1	CLO	251 A	10.0	10.0	10.0	10.0	20.0	1	18.0											
22	Signal P1-I1	CLO	252 A	12.0	12.0	12.0	12.0	15.0	5	8.0	4.2	3.2	2.9	3.8							

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
22	Signal P1-I1	CLO	845	18.0	21.0	15.0	10.0	18.0	1	11.8											
22	Signal P1-I1	CLO	846	23.0	31.0	23.0	25.0	45.0	2	21.0	19.0										
22	Signal P1-I1	CLO	847	13.0	28.0	22.0	15.0	45.0	1	19.0											
22	Signal P1-I1	CLO	848	13.0	15.0	15.0	12.0	25.0	4	10.0	8.0	7.1	11.6								
22	Signal P1-I1	CLO	849	20.0	18.0	27.0	18.0	35.0	2	13.0	12.5										
22	Signal P1-I1	CLO	850	15.0	28.0	35.0	0.0	25.0	1	9.8											
22	Signal P1-I1	CLO	851	18.0	21.0	24.0	20.0	35.0	1	11.7											
22	Signal P1-I1	CLO	852	34.0	24.0	35.0	37.0	40.0	1	18.7											
22	Signal P1-I1	CLO	853	23.0	27.0	24.0	15.0	45.0	3	11.3	6.2	14.0									
22	Signal P1-I1	CLO	854	5.0	5.0	18.0	14.0	25.0	1	9.5											
22	Signal P1-I1	CLO	855	0.0	0.0	0.0	15.0	20.0	1	8.5											
22	Signal P1-I1	CLO	856	10.0	8.0	22.0	25.0	25.0	1	10.1											
22	Signal P1-I1	CLO	857	7.0	8.0	15.0	15.0	25.0	2	5.5	7.2										
22	Signal P1-I1	CLO	858	0.0	0.0	21.0	8.0	18.0	1	6.8											
22	Signal P1-I1	CLO	859	25.0	22.0	27.0	28.0	30.0	3	4.5	6.5	5.2									
22	Signal P1-I1	CLO	860	8.0	8.0	2.0	10.0	12.0	1	3.1											
22	Signal P1-I1	CLO	861	8.0	9.0	9.0	10.0	15.0	3	3.0	1.5	1.6									
22	Signal P1-I1	CLO	862	11.0	12.0	10.0	12.0	13.0	2	3.4	2.1										
22	Signal P1-I1	CLO	908	1.0	1.0	0.0	0.5	1.0	1	0.5											
22	Signal P1-I1	CLO	909	8.0	9.0	3.0	5.0	15.0	1	7.4											
22	Signal P1-I1	CLO	910	1.0	5.0	8.0	0.0	20.0	1	7.0											
22	Signal P1-I1	CLO	911	7.0	10.0	25.0	15.0	25.0	1	15.0											
22	Signal P1-I1	CLO	912	15.0	12.0	10.0	6.0	18.0	2	8.0	7.5										
22	Signal P1-I1	CLO	913	16.0	12.0	15.0	12.0	25.0	1	10.5											
22	Signal P1-I1	CLO	914	15.0	21.0	7.0	16.0	18.0	3	8.2	7.1	8.2									
22	Signal P1-I1	CLO	915	15.0	18.0	27.0	10.0	21.0	4	12.0	8.5	8.6	8.7								
22	Signal P1-I1	CLO	916	20.0	25.0	24.0	8.0	25.0	3	11.0	13.5	15.5									
22	Signal P1-I1	CLO	917	5.0	15.0	10.0	0.0	15.0	3	5.4	4.5	3.5									
22	Signal P1-I1	CLO	918	20.0	13.0	15.0	8.0	20.0	2	5.5	6.0										
22	Signal P1-I1	CLO	919	12.0	17.0	10.0	10.0	20.0	2	8.5	9.0										
22	Signal P1-I1	CLO	920	15.0	20.0	25.0	5.0	25.0	1	10.5											
22	Signal P1-I1	CLO	921	15.0	15.0	15.0	20.0	15.0	3	8.5	11.5	16.5									
22	Signal P1-I1	CLO	922	10.0	15.0	20.0	15.0	20.0	2	12.6	4.5										
22	Signal P1-I1	CLO	923	12.0	20.0	10.0	15.0	20.0	2	11.0	8.5										
22	Signal P1-I1	CLO	924	15.0	18.0	12.0	10.0	20.0	3	7.5	8.5	3.6									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
22	Signal P1-I1	CLO	925	15.0	15.0	15.0	15.0	20.0	1	14.0											
22	Signal P1-I1	CLO	926	6.0	7.0	10.0	9.0	30.0	1	8.5											
22	Signal P1-I1	CLO	927	8.0	10.0	12.0	15.0	20.0	1	13.0											
22	Signal P1-I1	CLO	928	0.0	0.0	15.0	5.0	20.0	1	8.5											
22	Signal P1-I1	CLO	929	15.0	20.0	15.0	21.0	25.0	1	13.0											
22	Signal P1-I1	CLO	930	18.0	15.0	16.0	15.0	15.0	1	8.7											
22	Signal P1-I1	CLO	931	0.0	20.0	0.0	0.0	20.0	1	4.8											
22	Signal P1-I1	CLO	932	0.0	20.0	0.0	0.0	20.0	1	5.5											
22	Signal P1-I1	CLO	933	8.0	12.0	8.0	13.0	15.0	3	6.0	13.0	11.5									
22	Signal P1-I1	CLO	934	5.0	25.0	18.0	12.0	20.0	2	9.5	10.5										
22	Signal P1-I1	CLO	935	20.0	15.0	20.0	0.0	25.0	1	11.0											
22	Signal P1-I1	CLO	936	12.0	3.0	31.0	20.0	25.0	2	10.3	13.0										
22	Signal P1-I1	CLO	937	2.0	0.0	20.0	25.0	25.0	4	3.7	9.9	7.8	5.4								
22	Signal P1-I1	CLO	938	10.0	12.0	10.0	15.0	25.0	2	7.2	6.9										
22	Signal P1-I1	CLO	939	18.0	18.0	9.0	21.0	25.0	1	18.0											
22	Signal P1-I1	CLO	940	10.0	15.0	5.0	15.0	23.0	2	12.1	10.8										
22	Signal P1-I1	CLO	941	15.0	9.0	5.0	12.0	25.0	2	8.5	9.2										
22	Signal P1-I1	CLO	942	1.0	1.0	1.0	1.0	4.0	1	1.1											
23	Signal 129	CLO	764	12.0	10.0	9.0	7.0	25.0	1	11.5											
23	Signal 129	CLO	765	12.0	15.0	33.0	15.0	25.0	3	16.0	14.0	15.0									
23	Signal 129	CLO	766	9.0	12.0	18.0	15.0	25.0	1	9.4											
23	Signal 129	CLO	767	25.0	15.0	32.0	41.0	30.0	1	16.0											
23	Signal 129	CLO	768	21.0	18.0	12.0	12.0	29.0	2	16.0	9.0										
23	Signal 129	CLO	769	22.0	17.0	20.0	3.0	30.0	2	13.0	5.0										
23	Signal 129	CLO	770	0.0	0.0	35.0	0.0	12.0	1	10.0											
23	Signal 129	CLO	771	0.0	10.0	14.0	12.0	24.0	2	7.0	6.8										
23	Signal 129	CLO	772	0.0	5.0	25.0	0.0	15.0	1	14.0											
23	Signal 129	CLO	773	12.0	15.0	35.0	24.0	35.0	2	15.3	16.5										
23	Signal 129	CLO	774	15.0	45.0	23.0	10.0	35.0	2	2.8	5.5										
23	Signal 129	CLO	775	30.0	18.0	2.0	12.0	20.0	1	15.0											
23	Signal 129	CLO	776	3.0	3.0	3.0	2.0	9.0	3	2.7	1.0	1.2									
23	Signal 129	CLO	777	0.0	0.0	30.0	10.0	13.0	1	14.0											
23	Signal 129	CLO	778	28.0	15.0	24.0	15.0	35.0	1	13.0											
23	Signal 129	CLO	779	21.0	12.0	25.0	22.0	30.0	2	7.0	12.0										
23	Signal 129	CLO	780	22.0	12.0	18.0	15.0	25.0	3	11.0	6.0	10.5									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
23	Signal 129	CLO	781	10.0	14.0	15.0	35.0	35.0	2	16.0	5.0										
23	Signal 129	CLO	782	5.0	22.0	10.0	23.0	18.0	3	9.0	10.5	6.0									
23	Signal 129	CLO	783	20.0	5.0	30.0	21.0	25.0	3	17.0	3.5	16.5									
23	Signal 129	CLO	784	21.0	25.0	18.0	26.0	20.0	3	13.0	9.3	9.3									
23	Signal 129	CLO	785	18.0	35.0	25.0	8.0	35.0	2	10.0	12.3										
23	Signal 129	CLO	786	22.0	26.0	14.0	18.0	35.0	2	13.0	5.0										
23	Signal 129	CLO	787	10.0	12.0	10.0	8.0	28.0	1	11.0											
23	Signal 129	CLO	788	15.0	10.0	18.0	10.0	15.0	1	10.0											
23	Signal 129	CLO	789	10.0	28.0	22.0	15.0	40.0	3	11.5	12.0	13.5									
23	Signal 129	CLO	790	0.0	30.0	0.0	0.0	30.0	1	11.4											
23	Signal 129	CLO	791	20.0	10.0	0.0	0.0	20.0	2	7.0	7.6										
23	Signal 129	CLO	792	15.0	0.0	0.0	0.0	10.0	1	4.8											
23	Signal 129	CLO	793	12.0	13.0	10.0	8.0	40.0	1	29.5											
23	Signal 129	CLO	794	35.0	0.0	0.0	0.0	45.0	1	14.0											
23	Signal 129	CLO	795	0.0	0.0	0.0	18.0	13.0	1	7.0											
23	Signal 129	CLO	796	0.0	28.0	15.0	15.0	30.0	1	7.5											
23	Signal 129	CLO	797	15.0	35.0	1.0	9.0	30.0	2	11.3											
23	Signal 129	CLO	798	30.0	25.0	30.0	31.0	45.0	1	25.0											
23	Signal 129	CLO	799	25.0	31.0	24.0	16.0	28.0	1	13.0											
23	Signal 129	CLO	800	25.0	40.0	35.0	15.0	30.0	3	14.0	15.0	13.0									
23	Signal 129	CLO	801	0.0	20.0	25.0	10.0	35.0	2	10.0	8.0										
23	Signal 129	CLO	802	21.0	30.0	35.0	15.0	28.0	6	6.0	8.3	8.4	10.1	5.8	6.2						
23	Signal 129	CLO	803	10.0	31.0	21.0	5.0	20.0	2	8.0	5.0										
23	Signal 129	CLO	804	22.0	20.0	35.0	18.0	28.0	2	14.0	16.5										
23	Signal 129	CLO	805	11.0	35.0	10.0	15.0	43.0	1	23.0											
23	Signal 129	CLO	806	0.0	30.0	30.0	10.0	40.0	1	18.0											
23	Signal 129	CLO	807	15.0	15.0	15.0	15.0	18.0	5	9.0	8.0	5.5	6.3	6.5							
23	Signal 129	CLO	808	15.0	18.0	25.0	10.0	15.0	2	13.0	12.5										
23	Signal 129	CLO	809	0.0	15.0	20.0	15.0	15.0	2	10.5	11.5										
23	Signal 129	CLO	810	15.0	15.0	1.0	0.0	12.0	3	6.5	2.5	4.5									
23	Signal 129	CLO	811	0.0	15.0	13.0	10.0	15.0	3	3.3	8.1	4.1									
23	Signal 129	CLO	812	5.0	0.0	25.0	15.0	35.0	2	7.5	11.5										
23	Signal 129	CLO	813	10.0	25.0	35.0	10.0	35.0	5	9.5	10.5	6.5	11.0	7.0							
23	Signal 129	CLO	814	18.0	33.0	25.0	10.0	30.0	1	13.0											
23	Signal 129	CLO	815	15.0	21.0	33.0	25.0	35.0	1	13.0											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
23	Signal 129	CLO	816	0.0	0.0	0.0	30.0	13.0	1	10.0											
23	Signal 129	CLO	817	0.0	25.0	0.0	0.0	28.0	2	9.0	12.0										
23	Signal 129	CLO	818	21.0	13.0	10.0	0.0	25.0	1	11.0											
23	Signal 129	CLO	156 A	0.5	0.5	1.5	0.5	7.0	1	2.1											
23	Signal 129	CLO	157 A	10.0	10.0	20.0	12.0	30.0	1	19.5											
23	Signal 129	CLO	158 A	10.0	18.0	15.0	12.0	30.0	1	18.0											
23	Signal 129	CLO	159 A	5.0	5.0	5.0	5.0	15.0	2	5.5	4.8										
23	Signal 129	CLO	160 A	7.0	5.0	4.0	7.0	11.0	3	2.4	2.6	3.0									
23	Signal 129	CLO	161 A	4.0	3.0	3.0	3.0	14.0	1	3.1											
23	Signal 129	CLO	162 A	6.0	3.0	5.0	5.0	13.0	2	3.0	2.5										
23	Signal 129	CLO	163 A	10.0	8.0	10.0	15.0	18.0	2	4.8	13.0										
23	Signal 129	CLO	164 A	15.0	15.0	15.0	15.0	20.0	1	17.8											
23	Signal 129	CLO	165 A	5.0	3.0	6.0	6.0	13.0	2	4.5	4.2										
23	Signal 129	CLO	166 A	5.0	5.0	6.0	8.0	13.0	4	2.2	3.4	3.1	3.0								
23	Signal 129	CLO	167 A	2.0	2.0	2.0	2.0	5.0	1	1.0											
23	Signal 129	CLO	168 A	1.0	6.0	8.0	6.0	22.0	1	5.6											
23	Signal 129	CLO	169 A	15.0	20.0	15.0	20.0	30.0	1	17.8											
23	Signal 129	CLO	170 A	15.0	10.0	5.0	8.0	18.0	5	4.5	2.5	5.4	5.8	4.0							
23	Signal 129	CLO	171 A	5.0	5.0	5.0	5.0	12.0	1	4.1											
23	Signal 129	CLO	172 A	8.0	8.0	8.0	8.0	15.0	3	3.0	3.5	4.2									
23	Signal 129	CLO	173 A	3.0	3.0	5.0	5.0	13.0	1	4.3											
23	Signal 129	CLO	174 A	6.0	6.0	5.0	7.0	15.0	2	4.2	2.5										
23	Signal 129	CLO	175 A	15.0	10.0	10.0	15.0	20.0	1	15.5											
23	Signal 129	CLO	176 A	10.0	15.0	20.0	15.0	26.0	1	17.6											
23	Signal 129	CLO	177 A	0.0	10.0	20.0	10.0	20.0	1	11.0											
23	Signal 129	CLO	178 A	3.0	3.0	3.0	3.0	7.0	3	1.0	1.0	1.0									
23	Signal 129	CLO	179 A	10.0	10.0	10.0	10.0	20.0	4	4.1	6.0	4.5	8.5								
23	Signal 129	CLO	180 A	15.0	20.0	15.0	15.0	30.0	1	14.0											
23	Signal 129	CLO	181 A	10.0	15.0	20.0	18.0	25.0	9	14.1	8.2	3.5	7.3	2.5	5.2	4.5	4.0	6.1			
23	Signal 129	CLO	182 A	10.0	10.0	8.0	8.0	18.0	3	5.0	5.3	4.7									
23	Signal 129	CLO	183 A	10.0	18.0	10.0	6.0	22.0	1	16.5											
23	Signal 129	CLO	184 A	6.0	12.0	12.0	6.0	15.0	1	8.7											
23	Signal 129	CLO	185 A	20.0	20.0	20.0	15.0	38.0	1	20.8											
23	Signal 129	CLO	186 A	10.0	8.0	15.0	12.0	23.0	2	8.5	9.6										
23	Signal 129	CLO	187 A	3.0	3.0	3.0	3.0	7.0	1	3.1											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
23	Signal 129	CLO	188 A	5.0	5.0	5.0	5.0	18.0	1	5.3											
23	Signal 129	CLO	189 A	15.0	15.0	15.0	15.0	20.0	2	3.1	8.2										
23	Signal 129	CLO	190 A	8.0	8.0	8.0	8.0	22.0	2	5.3	5.4										
23	Signal 129	CLO	191 A	5.0	5.0	5.0	5.0	18.0	1	5.0											
23	Signal 129	CLO	192 A	10.0	10.0	10.0	5.0	22.0	2	4.8	7.2										
23	Signal 129	CLO	193 A	5.0	5.0	5.0	5.0	12.0	2	2.1	4.5										
23	Signal 129	CLO	194 A	6.0	6.0	6.0	6.0	15.0	3	5.1	2.0	1.8									
23	Signal 129	CLO	195 A	2.0	2.0	2.0	2.0	8.0	1	1.9											
23	Signal 129	CLO	196 A	3.0	3.0	3.0	3.0	6.0	1	1.8											
23	Signal 129	CLO	197 A	3.0	3.0	3.0	3.0	7.0	1	2.0											
23	Signal 129	CLO	198 A	20.0	20.0	20.0	20.0	40.0	1	21.0											
23	Signal 129	CLO	199 A	8.0	2.0	0.0	2.0	3.0	1	2.1											
23	Signal 129	CLO	200 A	20.0	12.0	10.0	10.0	19.0	1	12.6											
23	Signal 129	CLO	201 A	5.0	6.0	2.0	2.0	8.0	1	7.0											
23	Signal 129	CLO	202 A	15.0	18.0	18.0	10.0	30.0	1	22.1											
23	Signal 129	CLO	203 A	10.0	5.0	15.0	18.0	18.0	1	9.6											
23	Signal 129	CLO	204 A	8.0	15.0	16.0	10.0	20.0	2	10.4	3.1										
23	Signal 129	CLO	205 A	10.0	8.0	5.0	8.0	10.0	2	4.3	5.1										
23	Signal 129	CLO	206 A	6.0	10.0	8.0	7.0	18.0	2	9.1	7.3										
23	Signal 129	CLO	207 A	14.0	12.0	6.0	10.0	15.0	2	5.6	5.7										
23	Signal 129	CLO	208 A	2.0	2.0	2.0	2.0	5.0	2	1.0	2.0										
23	Signal 129	CLO	209 A	20.0	25.0	25.0	18.0	20.0	3	13.0	13.7	15.1									
23	Signal 129	CLO	210 A	10.0	10.0	15.0	10.0	20.0	1	16.0											
23	Signal 129	CLO	211 A	6.0	6.0	6.0	6.0	18.0	1	8.5											
23	Signal 129	CLO	212 A	8.0	8.0	7.0	20.0	22.0	1	10.2											
23	Signal 129	CLO	213 A	15.0	12.0	18.0	18.0	25.0	1	18.5											
23	Signal 129	CLO	214 A	18.0	10.0	3.0	25.0	18.0	1	13.1											
23	Signal 129	CLO	215 A	5.0	4.0	2.0	3.0	7.0	3	1.0	1.5	0.9									
24	Cut Shack Demo	CLO	863	0.0	18.0	15.0	0.0	30.0	1	8.1											
24	Cut Shack Demo	CLO	864	8.0	7.0	12.0	10.0	7.0	2	3.5	2.0										
24	Cut Shack Demo	CLO	865	31.0	26.0	31.0	21.0	40.0	4	21.4	21.1	12.0	19.1								
24	Cut Shack Demo	CLO	866	18.0	33.0	0.0	0.0	35.0	1	15.5											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
24	Cut Shack Demo	CLO	867	12.0	28.0	33.0	30.0	35.0	1	19.5											
24	Cut Shack Demo	CLO	868	33.0	28.0	0.0	15.0	45.0	1	20.8											
24	Cut Shack Demo	CLO	869	18.0	21.0	28.0	12.0	30.0	1	16.6											
24	Cut Shack Demo	CLO	870	21.0	5.0	8.0	15.0	24.0	3	8.0	8.8	4.5									
24	Cut Shack Demo	CLO	871	10.0	33.0	0.0	15.0	25.0	2	13.5	10.5										
24	Cut Shack Demo	CLO	872	15.0	33.0	18.0	21.0	35.0	4	8.0	10.5	13.5	14.5								
24	Cut Shack Demo	CLO	873	12.0	8.0	20.0	5.0	20.0	1	11.5											
24	Cut Shack Demo	CLO	874	31.0	10.0	0.0	0.0	10.0	1	12.5											
24	Cut Shack Demo	CLO	875	15.0	21.0	18.0	21.0	35.0	2	12.0	12.5										
24	Cut Shack Demo	CLO	876	23.0	18.0	23.0	18.0	35.0	2	14.0	10.0										
24	Cut Shack Demo	CLO	877	21.0	18.0	25.0	12.0	35.0	2	11.0	9.5										
24	Cut Shack Demo	CLO	878	7.0	1.0	0.0	1.0	7.0	1	2.0											
24	Cut Shack Demo	CLO	879	15.0	0.0	1.0	25.0	23.0	1	8.5											
24	Cut Shack Demo	CLO	880	18.0	5.0	5.0	21.0	25.0	2	4.5	12.0										
24	Cut Shack Demo	CLO	881	18.0	15.0	0.0	0.0	18.0	2	10.5	4.5										
24	Cut Shack Demo	CLO	882	0.0	15.0	0.0	0.0	12.0	1	4.5											
24	Cut Shack Demo	CLO	883	35.0	10.0	0.0	0.0	30.0	1	12.7											
24	Cut Shack Demo	CLO	884	30.0	0.0	0.0	0.0	24.0	1	7.5											
24	Cut Shack Demo	CLO	885	28.0	0.0	0.0	0.0	21.0	1	6.5											
24	Cut Shack Demo	CLO	886	0.0	0.0	15.0	8.0	24.0	1	5.1											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
24	Cut Shack Demo	CLO	887	18.0	12.0	10.0	21.0	31.0	1	13.0											
24	Cut Shack Demo	CLO	888	51.0	55.0	45.0	30.0	50.0	1	33.5											
24	Cut Shack Demo	CLO	889	12.0	25.0	11.0	0.0	51.0	1	13.5											
24	Cut Shack Demo	CLO	890	20.0	18.0	12.0	28.0	40.0	1	22.0											
24	Cut Shack Demo	CLO	891	0.0	18.0	0.0	0.0	15.0	2	8.0	3.5										
24	Cut Shack Demo	CLO	892	20.0	17.0	0.0	18.0	40.0	1	12.0											
24	Cut Shack Demo	CLO	893	15.0	5.0	0.0	2.0	12.0	1	7.7											
24	Cut Shack Demo	CLO	894	25.0	12.0	0.0	10.0	45.0	1	13.5											
24	Cut Shack Demo	CLO	895	22.0	21.0	25.0	23.0	45.0	1	12.0											
24	Cut Shack Demo	CLO	897	0.0	5.0	18.0	8.0	25.0	1	8.6											
24	Cut Shack Demo	CLO	898	18.0	0.0	0.0	5.0	23.0	1	11.3											
24	Cut Shack Demo	CLO	900	25.0	0.0	0.0	0.0	40.0	3	8.2	8.3	8.0									
24	Cut Shack Demo	CLO	901	33.0	25.0	0.0	15.0	50.0	1	23.0											
24	Cut Shack Demo	CLO	902	17.0	15.0	0.0	5.0	21.0	2	15.0	9.2										
24	Cut Shack Demo	CLO	903	25.0	25.0	0.0	0.0	20.0	1	12.5											
24	Cut Shack Demo	CLO	904	10.0	15.0	20.0	17.0	30.0	2	10.5	10.0										
24	Cut Shack Demo	CLO	905	18.0	15.0	15.0	12.0	30.0	3	4.5	10.5	15.1									
24	Cut Shack Demo	CLO	906	15.0	32.0	18.0	5.0	32.0	1	8.0											
24	Cut Shack Demo	CLO	907	12.0	21.0	31.0	5.0	35.0	4	5.0	12.3	8.1	18.2								
24	Cut Shack Demo	CLO	oak 102	7.0	1.0	0.0	1.0	6.0	1	2.8											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
25	Pad 25 road improvement	CLO	238	17.6	21.2	20.1	19.8	30.0	1	31.2											
25	Pad 25 road improvement	CLO	239	48.0	52.0	50.0	24.0	32.0	1	38.0											
25	Pad 25 road improvement	CLO	240	15.7	17.6	19.2	18.0	27.5	1	25.2											
26	Maino 20K	CLO	501	25.0	28.0	18.0	20.0	45.0	6	4.0	11.0	13.0	15.0	16.0	15.0						
26	Maino 20K	CLO	503	15.0	35.0	25.0	20.0	45.0	6	12.0	12.0	14.0	15.0	14.5	13.0						
26	Maino 20K	CLO	504	10.0	12.0	10.0	4.0	12.0	5	3.5	4.5	4.0	3.0	3.0							
26	Maino 20K	CLO	505	8.0	9.0	8.0	5.0	4.0	3	3.0	2.5	2.7									
26	Maino 20K	CLO	183	26.0	28.0	24.0	18.0	30.0	5	18.0	16.0	14.0	12.0	12.0							
26	Maino 20K	CLO	184	26.0	20.0	31.0	18.0	32.0	10	13.0	12.0	13.0	15.0	15.0	11.0	14.0	13.0	9.0	12.0		
26	Maino 20 K	CLO	oak 65	15.0	15.0	25.0	20.0	25.0	2	7.7	12.2										
26	Maino 20 K	CLO	oak 66	21.0	5.0	25.0	18.0	30.0	3	6.5	4.5	12.4									
26	Maino 20 K	CLO	oak 67	30.0	25.0	22.0	25.0	35.0	4	15.3	10.9	11.9	13.5								
26	Maino 20 K	CLO	oak 68	18.0	30.0	30.0	25.0	40.0	6	9.9	16.5	8.6	14.2	6.9	14.7						
26	Maino 20 K	CLO	oak 69	25.0	30.0	15.0	15.0	25.0	8	5.3	5.6	11.9	8.8	8.9	8.9	6.5	4.2				
27	Maino 17N	CLO	333	31.0	15.0	10.0	51.0	20.0	4	12.1	23.1	22.0	27.0								
27	Maino 17N	CLO	334	13.0	10.0	12.0	15.0	15.0	2	11.2	11.8										
27	Maino 17N	CLO	335	20.0	15.0	10.0	20.0	15.0	4	11.4	12.2	11.6	10.8								
27	Maino 17N	CLO	336	15.0	35.0	30.0	22.0	36.0	1	23.0											
27	Maino 17N	CLO	337	9.0	3.0	5.0	10.0	10.0	2	2.6	2.2										
27	Maino 17N	CLO	338	3.0	3.1	2.9	3.2	6.0	1	2.4											
27	Maino 17N	CLO	339	19.0	20.0	21.0	30.0	25.0	7	11.8	14.0	11.5	13.7	10.0	12.9	15.5					
27	Maino 17N	CLO	340	10.0	6.0	7.6	19.0	27.0	1	17.5											
27	Maino 17N	CLO	341	18.0	38.0	40.0	21.0	45.0	1	57.3											
27	Maino 17N	CLO	342	3.0	5.0	6.0	4.0	10.0	2	1.5	1.7										
27	Maino 17N	CLO	343	18.0	10.0	22.0	24.0	35.0	5	11.2	16.6	14.0	21.0	12.4							
28	Signal 9J2	CLO	827	4.0	4.0	4.0	4.0	9.0	1	2.5											
28	Signal 9J2	CLO	828	12.0	17.0	15.0	9.0	12.0	1	11.0											
28	Signal 9J2	CLO	829	0.0	0.0	20.0	0.0	15.0	2	6.3	6.0										
28	Signal 9J2	CLO	830	15.0	22.0	15.0	16.0	25.0	2	14.0	6.0										
28	Signal 9J2	CLO	831	10.0	27.0	21.0	0.0	25.0	2	8.0	11.5										
28	Signal 9J2	CLO	832	4.0	10.0	1.0	18.0	19.0	2	8.5	10.5										
28	Signal 9J2	CLO	833	24.0	30.0	0.0	24.0	30.0	4	10.5	11.4	11.2	11.9								
28	Signal 9J2	CLO	834	14.0	5.0	0.0	12.0	14.0	1	4.6											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
28	Signal 9J2	CLO	835	18.0	20.0	15.0	12.0	25.0	1	15.8											
28	Signal 9J2	CLO	836	20.0	25.0	0.0	0.0	25.0	4	5.8	5.9	7.1	10.0								
28	Signal 9J2	CLO	837	25.0	27.0	30.0	35.0	35.0	3	7.5	7.0	0.5									
28	Signal 9J2	CLO	838	0.0	25.0	18.0	0.0	25.0	1	5.3											
28	Signal 9J2	CLO	839	25.0	25.0	22.0	15.0	35.0	5	5.3	6.0	6.5	7.1	5.8							
28	Signal 9J2	CLO	840	31.0	40.0	35.0	15.0	25.0	4	10.6	10.2	7.0	10.3								
28	Signal 9J2	CLO	841	35.0	10.0	20.0	35.0	35.0	2	13.3	5.8										
28	Signal 9J2	CLO	842	20.0	0.0	0.0	15.0	13.0	2	5.5	4.0										
28	Signal 9J2	CLO	843	0.0	21.0	12.0	10.0	25.0	1	11.0											
28	Signal 9J2	CLO	844	14.0	13.0	10.0	12.0	27.0	1	11.5											
28	Signal 9J2	CLO	223 A	10.0	8.0	12.0	15.0	13.0	2	5.7	12.9										
28	Signal 9J2	CLO	224 A	5.0	5.0	5.0	5.0	11.0	3	2.9	3.5	4.8									
28	Signal 9J2	CLO	225 A	6.0	5.0	5.0	6.0	12.0	1	4.1											
28	Signal 9J2	CLO	226 A	6.0	6.0	6.0	6.0	12.0	1	5.5											
28	Signal 9J2	CLO	227 A	4.0	6.0	3.0	0.0	10.0	1	2.0											
28	Signal 9J2	CLO	228 A	8.0	12.0	12.0	10.0	18.0	1	13.3											
28	Signal 9J2	CLO	229 A	15.0	18.0	15.0	12.0	20.0	2	16.1	20.5										
28	Signal 9J2	CLO	230 A	15.0	15.0	20.0	12.0	18.0	2	19.5	11.4										
28	Signal 9J2	CLO	231 A	10.0	15.0	10.0	8.0	15.0	3	12.1	8.3	9.6									
28	Signal 9J2	CLO	232 A	6.0	6.0	6.0	6.0	7.0	5	2.1	2.3	4.0	3.0	2.0							
28	Signal 9J2	CLO	233 A	5.0	5.0	5.0	5.0	12.0	1	5.0											
28	Signal 9J2	CLO	234 A	5.0	12.0	20.0	15.0	18.0	2	10.3	13.6										
29	Signal 131/B-Lo Pulas 2	CLO	943	5.0	1.0	5.0	5.0	8.0	2	1.2	1.1										
29	Signal 131/B-Lo Pulas 2	CLO	944	1.0	1.0	1.0	1.0	3.0	2	1.1	1.0										
29	Signal 131/B-Lo Pulas 2	CLO	945	18.0	21.0	15.0	18.0	22.0	2	10.1	9.7										
29	Signal 131/B-Lo Pulas 2	CLO	946	1.0	6.0	12.0	12.0	20.0	1	5.5											
29	Signal 131/B-Lo Pulas 2	CLO	947	18.0	19.0	20.0	23.0	30.0	4	11.0	14.5	10.5	10.5								
29	Signal 131/B-Lo Pulas 2	CLO	948	11.0	0.0	0.0	10.0	10.0	2	3.0	2.2										
29	Signal 131/B-Lo Pulas 2	CLO	949	15.0	0.0	10.0	9.0	20.0	1	5.5											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
29	Signal 131/B-Lo Pulas 2	CLO	950	7.0	6.0	8.0	6.0	22.0	1	8.5											
29	Signal 131/B-Lo Pulas 2	CLO	951	18.0	15.0	21.0	12.0	21.0	1	8.2											
29	Signal 131/B-Lo Pulas 2	CLO	952	18.0	15.0	12.0	0.0	25.0	1	10.5											
29	Signal 131/B-Lo Pulas 2	CLO	953	10.0	5.0	8.0	15.0	25.0	3	5.5	6.5	5.0									
29	Signal 131/B-Lo Pulas 2	CLO	954	8.0	6.0	10.0	15.0	18.0	1	8.0											
29	Signal 131/B-Lo Pulas 2	CLO	955	1.0	1.0	1.0	1.0	6.0	2	0.5	1.1										
29	Signal 131/B-Lo Pulas 2	CLO	956	16.0	12.0	8.0	15.0	13.0	3	14.5	10.2	3.3									
29	Signal 131/B-Lo Pulas 2	CLO	957	2.0	2.0	2.0	2.0	5.0	4	1.2	1.0	1.1	1.2								
29	Signal 131/B-Lo Pulas 2	CLO	958	10.0	11.0	15.0	13.0	15.0	2	6.0	4.5										
29	Signal 131/B-Lo Pulas 2	CLO	959	2.0	2.0	2.0	2.0	10.0	1	2.2											
29	Signal 131/B-Lo Pulas 2	CLO	960	1.0	1.0	1.0	1.0	5.0	1	2.7											
29	Signal 131/B-Lo Pulas 2	CLO	961	12.0	12.0	0.0	12.0	12.0	1	8.9											
30	Signal 124	CLO	487	15.0	18.0	10.0	12.0	20.0	1	13.00	–										
30	Signal 124	CLO	488	20.0	18.0	17.0	15.0	15.0	2	16.00	17.00										
30	Signal 124	CLO	489	13.0	10.0	15.0	12.0	28.0	1	22.00	–										
30	Signal 124	CLO	490	7.0	5.0	4.0	4.0	9.0	1	3.50	–	–	–								
30	Signal 124	CLO	491	23.0	19.0	20.0	22.0	35.0	1	22.00	–	–	–								
30	Signal 124	CLO	492	5.0	5.0	5.0	8.0	8.0	3	4.50	3.00	2.50	–								
30	Signal 124	CLO	493	7.0	7.0	8.0	10.0	14.0	2	7.50	3.00	–	–								
30	Signal 124	CLO	494	3.0	5.0	8.0	10.0	15.0	2	3.50	2.00	–	–								
30	Signal 124	CLO	495	25.0	25.0	20.0	15.0	15.0	4	15.00	12.00	10.00	9.00								
30	Signal 124	CLO	171	20.0	16.0	15.0	17.0	18.0	4	32.00	8.00	16.00	12.00								
30	Signal 124	CLO	172	9.0	5.0	7.0	8.0	13.0	1	5.10	–	–	–								
30	Signal 124	CLO	173	8.0	7.0	8.0	6.0	13.0	1	8.00	–	–	–								
30	Signal 124	CLO	174	10.0	12.0	9.0	11.0	17.0	1	7.40	–	–	–								

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
30	Signal 124	CLO	175	8.0	7.0	10.0	9.0	14.0	1	6.00	–	–	–								
30	Signal 124	CLO	176	13.0	10.0	7.0	8.0	15.0	1	6.00	–	–	–								
30	Signal 124	CLO	177	4.0	5.0	7.0	3.0	5.5	1	1.50	–	–	–								
31	Pulas 8	CLO	497	15.0	20.0	5.0	10.0	15.0	3	3.0	1.0	4.0									
31	Pulas 8	CLO	498	17.0	22.0	15.0	20.0	23.0	4	4.5	16.0	14.0	15.5								
31	Pulas 8	CLO	499	0.0	10.0	20.0	5.0	35.0	1	13.2											
31	Pulas 8	CLO	500	15.0	35.0	0.0	0.0	35.0	1	11.5											
31	Pulas 8	CLO	178	21.0	10.0	16.0	16.0	26.0	3	11.9	12.0	13.0									
31	Pulas 8	CLO	179	8.0	12.0	24.0	6.0	13.0	2	13.9	14.5										
31	Pulas 8	CLO	180	18.0	19.0	10.0	11.0	22.0	3	9.3	11.8	6.5									
31	Pulas 8	CLO	181	14.0	11.0	18.0	24.0	24.0	2	14.3	3.4										
32	Signal 123	CLO	479	15.0	20.0	16.0	6.0	30.0	1	15.00	–	–	–	–	–	–					
32	Signal 123	CLO	480	10.0	15.0	9.0	8.0	15.0	4	2.50	2.60	3.00	3.00	–	–	–					
32	Signal 123	CLO	481	17.0	18.0	22.0	15.0	25.0	1	16.00	–	–	–	–	–	–					
32	Signal 123	CLO	482	18.0	10.0	8.0	25.0	48.0	4	15.00	8.00	6.00	7.00	–	–	–					
32	Signal 123	CLO	483	8.0	7.0	13.0	10.0	15.0	1	7.00	–	–	–	–	–	–					
32	Signal 123	CLO	484	3.0	3.0	3.0	3.0	7.0	1	2.00	–	–	–	–	–	–					
32	Signal 123	CLO	485	8.0	5.0	5.0	5.0	13.0	2	3.00	2.50	–	–	–	–	–					
32	Signal 123	SCO	486	1.0	1.0	1.0	1.0	5.0	1	1.00	–	–	–	–	–	–					
32	Signal 123	CLO	167	13.0	9.0	9.0	12.0	18.0	1	10.00	–	–	–	–	–	–					
32	Signal 123	CLO	168	13.0	12.0	13.0	10.0	24.0	2	12.00	11.00	–	–	–	–	–					
32	Signal 123	CLO	169	5.0	6.0	9.0	7.0	14.0	1	3.00	–	–	–	–	–	–					
32	Signal 123	CLO	170	18.0	25.0	18.0	20.0	45.0	7	10.00	24.00	8.00	32.00	4.00	24.00	24.00					
33	Pulas 6	CLO	275	5.0	9.0	9.0	9.0	16.0	2	5.3	1.4										
33	Pulas 6	CLO	276	14.0	11.0	16.0	15.0	25.0	6	6.0	4.5	7.5	6.5	6.0	3.0						
33	Pulas 6	CLO	277	11.0	12.0	10.0	16.0	23.0	6	4.6	4.7	5.0	3.0	2.0	5.3						
33	Pulas 6	CLO	278	17.0	9.0	18.0	15.0	26.0	7	4.3	5.5	3.2	2.1	3.1	7.2	7.6					
33	Pulas 6	CLO	279	19.0	16.0	17.0	15.0	27.0	7	5.6	6.5	5.2	6.5	7.0	3.5	2.8					
33	Pulas 6	CLO	280	10.0	10.0	9.0	8.0	19.0	6	4.6	1.9	1.3	3.1	2.4	1.1						
33	Pulas 6	CLO	281	10.0	13.0	23.0	16.5	27.0	3	10.8	9.2	6.2									
33	Pulas 6	CLO	282	7.0	15.0	20.0	14.0	25.0	6	6.0	8.5	7.5	5.8	4.6	6.3						
33	Pulas 6	CLO	283	9.0	8.0	10.0	10.0	20.0	2	7.8	4.2										
33	Pulas 6	CLO	284	5.0	5.0	3.0	4.0	11.0	3	1.7	1.6	1.0									
33	Pulas 6	CLO	285	5.0	6.0	5.0	6.0	13.0	1	4.0											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
33	Pulas 6	CLO	286	10.0	10.0	9.0	9.0	15.0	4	5.2	3.5	5.1	2.2								
33	Pulas 6	CLO	287	7.0	15.0	13.0	10.0	18.0	3	4.4	4.0	6.0									
33	Pulas 6	CLO	288	6.0	12.0	4.0	9.5	22.0	1	5.0											
33	Pulas 6	CLO	289	15.0	12.0	16.0	14.0	23.0	3	8.4	3.8	5.2									
33	Pulas 6	CLO	290	7.0	10.0	13.0	4.0	24.0	3	3.2	2.8	5.8									
33	Pulas 6	CLO	291	20.0	13.0	7.0	6.0	20.0	3	3.0	6.5	10.5									
33	Pulas 6	CLO	292	20.0	14.0	13.0	22.0	16.0	3	6.0	8.5	9.0									
33	Pulas 6	CLO	293	3.0	3.0	10.0	13.0	18.0	1	6.3											
33	Pulas 6	CLO	294	11.0	10.0	12.0	11.0	16.0	1	7.0											
33	Pulas 6	CLO	295	13.0	14.0	12.0	15.0	22.0	2	4.6	7.0										
33	Pulas 6	CLO	296	4.5	4.0	1.0	2.0	5.0	1	1.3											
33	Pulas 6	CLO	297	2.0	3.0	2.0	5.0	5.0	3	1.0	0.1	1.1									
33	Pulas 6	CLO	298	3.0	2.5	1.0	1.5	3.5	1	1.3											
33	Pulas 6	CLO	299	1.0	1.0	2.0	1.5	3.0	1	0.1											
33	Pulas 6	CLO	300	3.0	4.0	2.0	4.0	6.0	1	1.8											
33	Pulas 6	CLO	302	1.0	1.5	2.0	1.5	4.0	1	0.5											
34	Signal 135	CLO	23	-	-	-	-	-	-	10.44	7.83	4.18									
34	Signal 135	CLO	24	-	-	-	-	-	-	9.92											
34	Signal 135	CLO	25	-	-	-	-	-	-	1.04											
34	Signal 135	CLO	26	-	-	-	-	-	-	6.27	6.27	6.27	6.27								
34	Signal 135	CLO	27	-	-	-	-	-	-	8.14	11.49	8.88	7.83	13.57							
34	Signal 135	CLO	28	-	-	-	-	-	-	3.13	2.09	6.79									
34	Signal 135	CLO	29	-	-	-	-	-	-	12.53	9.92	9.40	18.80								
34	Signal 135	CLO	30	-	-	-	-	-	-	8.35	6.27										
34	Signal 135	CLO	31	-	-	-	-	-	-	14.62	10.44										
34	Signal 135	CLO	32	-	-	-	-	-	-	16.18	13.47										
34	Signal 135	CLO	33	-	-	-	-	-	-	15.66	14.62	16.71	16.71								
34	Signal 135	CLO	34	-	-	-	-	-	-	14.62	9.40	13.57	15.66								
34	Signal 135	CLO	35	-	-	-	-	-	-	3.13	2.92	6.27									
34	Signal 135	CLO	36	-	-	-	-	-	-	2.40	2.92	1.04	2.61	3.13							
34	Signal 135	CLO	37	-	-	-	-	-	-	6.27											
34	Signal 135	CLO	38	-	-	-	-	-	-	6.79											
34	Signal 135	CLO	39	-	-	-	-	-	-	4.18											
34	Signal 135	CLO	40	-	-	-	-	-	-	12.53	5.22	10.44									
35	Signal 180	CLO	8	-	-	-	-	-	-	10.13											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
35	Signal 180	CLO	9	-	-	-	-	-	-	5.43											
35	Signal 180	CLO	10	-	-	-	-	-	-	6.16	11.59	3.34	10.44	8.88							
35	Signal 180	CLO	11	-	-	-	-	-	-	10.44											
35	Signal 180	CLO	12	-	-	-	-	-	-	13.05											
35	Signal 180	CLO	13	-	-	-	-	-	-	2.09											
35	Signal 180	CLO	14	-	-	-	-	-	-	6.27											
35	Signal 180	CLO	15	-	-	-	-	-	-	2.92											
35	Signal 180	CLO	16	-	-	-	-	-	-	2.92											
35	Signal 180	CLO	17	-	-	-	-	-	-	12.01											
35	Signal 180	CLO	18	-	-	-	-	-	-	9.92											
35	Signal 180	CLO	19	-	-	-	-	-	-	14.10											
35	Signal 180	CLO	20	-	-	-	-	-	-	15.66											
35	Signal 180	CLO	21	-	-	-	-	-	-	19.84	4.70	8.35									
35	Signal 180	CLO	22	-	-	-	-	-	-	10.44	8.56										
36	Signal 48	CLO	617	20.0	5.0	15.0	35.0	30.0	2	9.0	12.5										
36	Signal 48	CLO	618	20.0	0.0	10.0	30.0	15.0	2	6.3	6.6										
36	Signal 48	CLO	619	10.0	25.0	20.0	10.0	22.0	4	7.3	6.0	7.1	9.0								
36	Signal 48	CLO	620	2.0	2.0	2.0	2.0	8.0	1	2.5											
36	Signal 48	CLO	621	10.0	5.0	0.0	15.0	15.0	2	5.0	6.5										
36	Signal 48	CLO	622	20.0	0.0	22.0	20.0	30.0	3	11.5	8.0	10.7									
36	Signal 48	CLO	623	15.0	15.0	20.0	10.0	30.0	2	12.0	10.0										
36	Signal 48	CLO	624	10.0	10.0	25.0	18.0	28.0	1	14.3											
36	Signal 48	CLO	625	15.0	15.0	12.0	8.0	15.0	2	10.3	8.6										
36	Pad 36 turnout	CLO	626	15.0	0.0	18.0	20.0	20.0	3	12.5	5.5	7.0									
36	Pad 36 turnout	CLO	627	10.0	18.0	15.0	15.0	30.0	4	11.0	10.8	6.1	13.5								
36	Signal 48	CLO	12A	10.0	20.0	25.0	15.0	20.0	3	13.1	11.5	8.0									
36	Signal 48	CLO	13A	2.0	2.0	10.0	2.0	8.0	2	4.3	4.1										
36	Signal 48	CLO	14A	20.0	25.0	20.0	20.0	25.0	4	15.0	13.9	16.1	13.9								
36	Signal 48	CLO	15A	2.0	3.0	8.0	1.0	15.0	2	8.0	7.6										
36	Signal 48	CLO	16A	1.0	8.0	0.0	0.0	7.0	1	6.5											
36	Signal 48	CLO	17A	20.0	20.0	20.0	10.0	25.0	7	11.0	13.4	18.5	9.6	8.5	13.6	5.7					
36	Signal 48	CLO	18A	10.0	15.0	15.0	5.0	15.0	2	8.2	7.8										
36	Pad 36 turnout	CLO	19A	10.0	20.0	15.0	10.0	20.0	2	15.0	9.5										
36	Pad 36 turnout	CLO	20A	2.0	4.0	6.0	2.0	10.0	1	4.3											
36	Pad 36 turnout	CLO	oak 7	22.0	20.0	15.0	20.0	25.0	5	10.6	10.1	6.4	6.1	13.3							

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
36	Pad 36 turnout	CLO	oak 8	8.0	9.0	10.0	8.0	15.0	1	5.6											
41	Morehouse 303	CLO	263	3.0	4.4	5.0	2.5	9.0	1	1.9											
41	Morehouse 303	CLO	264	1.5	1.5	2.0	2.0	4.0	1	1.3											
42	Waste Stockpile	CLO	64	-	-	-	-	-	-	5.74	9.29										
42	Waste Stockpile	CLO	65	-	-	-	-	-	-	3.55	11.49	5.53	7.10	4.70							
42	Waste Stockpile	CLO	66	-	-	-	-	-	-	40.20											
42	Waste Stockpile	CLO	67	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	68	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	69	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	70	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	71	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	72	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	73	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	74	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	75	-	-	-	-	-	-	1.88											
42	Waste Stockpile	CLO	76	-	-	-	-	-	-	1.57	1.67										
42	Waste Stockpile	CLO	77	-	-	-	-	-	-	2.40											
42	Waste Stockpile	CLO	78	-	-	-	-	-	-	8.14	6.58	4.18	7.31	9.40							
42	Waste Stockpile	CLO	79	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	80	-	-	-	-	-	-	1.98											
42	Waste Stockpile	CLO	81	-	-	-	-	-	-	1.04											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Waste Stockpile	CLO	82	-	-	-	-	-	-	26.10											
42	Waste Stockpile	CLO	83	-	-	-	-	-	-	24.02											
42	Waste Stockpile	CLO	84	-	-	-	-	-	-	22.97											
42	Waste Stockpile	CLO	85	-	-	-	-	-	-	20.88											
42	Waste Stockpile	CLO	86	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	87	-	-	-	-	-	-	2.09	1.98	1.04	1.88								
42	Waste Stockpile	CLO	88	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	89	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	90	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	91	-	-	-	-	-	-	5.12											
42	Waste Stockpile	CLO	92	-	-	-	-	-	-	2.40											
42	Waste Stockpile	CLO	93	-	-	-	-	-	-	1.98	3.34	2.09									
42	Waste Stockpile	CLO	94	-	-	-	-	-	-	14.31	8.88	6.79	8.56	12.53							
42	Waste Stockpile	CLO	95	-	-	-	-	-	-	2.19	3.24	3.34	1.57	3.13							
42	Waste Stockpile	CLO	96	-	-	-	-	-	-	6.47	4.49	5.22									
42	Waste Stockpile	CLO	97	-	-	-	-	-	-	1.04	0.00										
42	Waste Stockpile	CLO	98	-	-	-	-	-	-	5.01	5.22										
42	Waste Stockpile	CLO	99	-	-	-	-	-	-	1.04	0.00										
42	Waste Stockpile	CLO	100	-	-	-	-	-	-	1.36	2.40	1.25									
42	Waste Stockpile	CLO	101	-	-	-	-	-	-	1.04											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Waste Stockpile	CLO	102	-	-	-	-	-	-	1.36	2.09	5.22	4.18	4.70							
42	Waste Stockpile	CLO	103	-	-	-	-	-	-	5.43	6.68	7.41									
42	Waste Stockpile	CLO	104	-	-	-	-	-	-	1.04											
42	Waste Stockpile	CLO	106	1.0 to 6.0	1.0 to 6.0	1.0 to 6.0	1.0 to 6.0	3.0 to 9.0	118 saplings												
42	Waste Stockpile	CLO	107	10.0	10.0	11.0	10.5	16.0	3	0.50	6.60	2.00									
42	Waste Stockpile	CLO	108	5.0	6.0	5.5	6.0	12.0	2	2.50	2.30										
42	Waste Stockpile	CLO	109	22.0	23.0	27.0	25.0	25.0	1	22.00											
42	Waste Stockpile	CLO	110	13.0	15.0	13.0	14.0	20.0	4	5.00	5.00	3.50	3.30								
42	Waste Stockpile	CLO	111	19.7	19.2	20.1	18.4	20.0	20	3.0 - 4.0											
42	Waste Stockpile	CLO	112	8.0	9.0	8.0	9.0	17.0	1	4.00											
42	Waste Stockpile	CLO	113	15.2	14.6	13.4	12.2	25.0	1	5.00											
42	Waste Stockpile	CLO	114	20.0	20.0	22.0	23.0	25.0	2	8.00	7.50										
42	Waste Stockpile	CLO	115	14.0	13.0	15.0	14.0	16.0	7	3.10	3.60	4.40	5.60	6.30	6.70	8.20					
42	Waste Stockpile	CLO	116	15.0	16.0	17.0	15.0	25.0	4	10.00	10.00	6.00	5.00								
42	Waste Stockpile	CLO	117	15.0	16.0	17.0	15.0	25.0	3	22.00	14.00	5.00									
42	Waste Stockpile	CLO	118	8.0	7.0	7.0	8.0	23.0	1	8.00											
42	Waste Stockpile	CLO	119	11.2	12.4	8.2	6.1	18.0	12	5.00	3.00	3.00	2.50	2.50	5.00	4.00	3.00	2.00	1.00	1.00	1.00
42	Waste Stockpile	CLO	120	13.0	12.0	10.0	13.0	25.0	1	18.00											
42	Waste Stockpile	CLO	121	7.3	7.1	7.5	7.7	20.0	1	9.00											
42	Waste Stockpile	CLO	122	5.8	6.2	6.4	7.1	18.0	2	5.00	9.10										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Waste Stockpile	CLO	123	5.0	4.6	4.4	5.1	9.0	1	2.50											
42	Waste Stockpile	CLO	124	2.6	2.4	2.3	2.7	5.0	1	1.00											
42	Waste Stockpile	CLO	125	7.4	6.2	5.8	6.4	12.0	5	1.50	4.00	4.00	1.00	1.30							
42	Waste Stockpile	CLO	126	6.1	5.8	5.2	4.4	9.0	4	4.00	1.00	2.00	1.00	1.50							
42	Waste Stockpile	CLO	127	4.6	4.2	4.1	4.8	9.0	2	2.00	1.80										
42	Waste Stockpile	CLO	128	4.0	3.6	3.2	4.1	8.0	4	0.50	0.80	0.10	1.50								
42	Waste Stockpile	CLO	129	7.4	7.1	6.2	5.8	15.0	2	5.00	2.00										
42	Waste Stockpile	CLO	130	6.3	6.1	6.4	6.8	13.0	4	1.50	2.00	5.00	1.50								
42	Waste Stockpile	CLO	131	4.5	3.8	4.1	3.9	12.0	3	2.50	0.50	0.50									
42	Waste Stockpile	CLO	132	1.0	1.8	1.6	1.5	4.2	2	0.25	0.50										
42	Waste Stockpile	CLO	133	5..1	4.7	4.5	5.4	14.0	3	2.50	1.50	3.00									
42	Waste Stockpile	CLO	134	5.1	2.2	4.4	5.4	7.0	4	2.50	2.50	2.00	2.00								
42	Waste Stockpile	CLO	135	8.2	7.6	6.8	7.1	16.0	4	3.00	3.00	7.00	6.00								
42	Waste Stockpile	CLO	136	8.4	7.4	6.6	7.2	17.0	5	6.0	7.0	4.0	4.0	6.0							
42	Waste Stockpile	CLO	137	21.0	22.0	24.0	26.0	30.0	10	5.2	6.3	12.0	10.0	10.0	11.0	9.0	8.0	7.0	6.0		
42	Waste Stockpile	CLO	138	23.0	26.0	20.0	21.0	35.0	2	1.5	1.7										
42	Waste Stockpile	CLO	139	10.5	10.1	11.4	12.2	21.0	7	6.0	4.0	4.0	7.0	3.0	5.0	1.0					
42	Waste Stockpile	CLO	140	8.4	9.2	11.1	9.1	22.0	1	6.0											
42	Waste Stockpile	CLO	141	10.1	9.8	7.6	12.1	28.0	1	9.0											
42	Waste Stockpile	CLO	142	12.1	10.2	11.3	9.8	22.0	2	6.0	5.0										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Waste Stockpile	CLO	143	20.0	21.0	21.0	19.0	30.0	4	1.0	6.0	10.0	10.0								
42	Waste Stockpile	CLO	144	12.1	13.1	10.4	9.8	30.0	4	6.0	9.0	6.0	3.0								
42	Waste Stockpile	CLO	145	12.1	10.8	11.2	10.9	27.0	2	9.0	1.4										
42	Waste Stockpile	CLO	146	11.1	12.1	10.8	9.9	18.0	2	6.0	4.0										
42	Waste Stockpile	CLO	147	10.2	10.8	11.3	10.6	24.0	4	2.0	6.0	3.0	5.0								
42	Waste Stockpile	CLO	148	7.4	6.9	6.8	7.2	20.0	3	7.0	2.0	9.0									
42	Waste Stockpile	CLO	149	19.5	18.2	20.1	19.2	20.0	6	6.0	5.0	7.0	3.0	3.5	1.0						
42	Waste Stockpile	CLO	150	4.3	3.9	4.1	4.0	12.0	5	1.0	1.5	1.0	1.3	1.3							
42	Waste Stockpile	CLO	151	4.8	5.1	5.0	4.9	8.0	2	1.0	1.0										
42	Waste Stockpile	CLO	152	12.4	11.8	12.2	11.7	21.0	2	1.6	1.6										
42	Waste Stockpile	CLO	153	6.2	7.1	5.8	4.9	15.0	4	0.8	0.5	0.4	0.6								
42	Waste Stockpile	CLO	154	12.0	11.1	10.8	9.2	25.0	2	2.1	0.8										
42	Waste Stockpile	CLO	155	10.0	11.2	9.8	10.6	23.0	4	2.1	0.3	0.2	1.5								
42	Waste Stockpile	CLO	156	15.2	14.3	16.4	15.8	22.0	3	1.6	0.8	4.1									
42	Waste Stockpile	CLO	157	11.3	10.9	9.8	10.5	26.0	2	3.3	2.5										
42	Waste Stockpile	CLO	158	9.8	10.2	9.6	10.0	20.0	4	1.6	0.7	0.3	0.7	0.0							
42	Waste Stockpile	CLO	159	5.5	5.9	5.1	5.7	18.0	1	1.5											
42	Waste Stockpile	CLO	160	15.0	17.0	18.0	24.0	25 to 30	>20	1.3	2.0	1.3	0.5	2.3	1.8	2.6	3.3	2.0	1.1	1.6	1.6
42	Waste Stockpile	CLO	161	13.0	12.2	14.0	11.0	10.0	2	3.0	3.3										
42	Waste Stockpile	CLO	162	20.1	19.8	18.0	17.2	25.0	4	2.0	1.6	1.6	1.8								

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Waste Stockpile	CLO	163	21.0	22.0	20.0	18.0	35-40	4	6.2	3.0	4.6	3.3								
42	Waste Stockpile	CLO	164	20.5	21.0	22.0	20.0	38.0	3	4.3	3.3	2.0									
42	Waste Stockpile	CLO	165	15.0	16.1	14.0	13.1	12.0	2	1.3	1.0										
42	Waste Stockpile	CLO	166	14.1	16.1	12.0	13.1	28.0	5	3.3	2.6	2.3	2.6	2.6							
42	Waste Stockpile	CLO	167	3.5	4.1	3.8	4.0	9.0	1	0.7											
42	Waste Stockpile	CLO	168	3.0	2.8	3.1	3.0	10.0	1	0.8											
42	Waste Stockpile	CLO	169	13.2	14.1	13.6	12.8	21.0	6	1.8	1.3	2.6	3.6	1.0	0.8						
42	Waste Stockpile	CLO	170	10.1	8.5	9.2	8.6	18.0	3	1.3	1.3	1.1									
42	Waste Stockpile	CLO	171	17.0	16.0	15.0	16.0	25.0	2	2.5	2.1										
42	Waste Stockpile	CLO	172	23.0	22.0	21.0	20.0	40.0	1	8.2											
42	Waste Stockpile	CLO	173	17.1	16.2	15.8	19.0	38.0	6	3.3	2.6	2.3	2.8	3.1	2.0						
42	Waste Stockpile	CLO	174	14.2	24.0	13.0	12.0	32.0	7	1.6	3.3	3.1	1.6	1.1	1.0	1.3					
42	Waste Stockpile	CLO	175	8.1	12.0	10.2	13.1	25.0	1	6.9											
42	Waste Stockpile	CLO	176	8.0	7.8	8.0	7.6	13.0	4	1.3	1.1	0.8	0.7								
42	Waste Stockpile	CLO	177	13.0	12.2	11.4	10.8	32.0	1	2.5											
42	Waste Stockpile	CLO	178	19.1	18.6	17.2	16.5	44.0	1	5.9											
42	Stockpile Waster Pad	CLO	oak 103	2.0	12.0	18.0	15.0	40.0	1	16.4											
42	Stockpile Waster Pad	CLO	oak 104	30.0	18.0	12.0	20.0	45.0	6	12.9	14.2	10.5	4.6	10.8	8.6						
42	Stockpile Waster Pad	CLO	oak 105	0.0	10.0	20.0	24.0	35.0	3	7.4	15.0	13.2									
42	Stockpile Waster Pad	CLO	oak 106	7.0	8.0	7.0	7.0	30.0	1	7.3											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
42	Stockpile Waster Pad	CLO	oak 107	5.0	10.0	10.0	10.0	30.0	1	9.3											
42	Stockpile Waster Pad	CLO	oak 108	3.0	5.0	3.0	6.0	20.0	1	5.4											
42	Stockpile Waster Pad	CLO	oak 109	12.0	5.0	0.0	0.0	7.0	1	2.3											
42	Stockpile Waster Pad	CLO	oak 110	0.0	6.0	10.0	1.0	10.0	1	1.4											
42	Stockpile Waster Pad	CLO	oak 111	10.0	12.0	10.0	8.0	30.0	3	8.0	2.0	7.2									
42	Stockpile Waster Pad	CLO	oak 112	9.0	15.0	15.0	15.0	30.0	2	10.4	7.3										
42	Stockpile Waster Pad	CLO	oak 113	8.0	9.0	12.0	12.0	15.0	1	9.9											
44	Signal 141	CLO	41	-	-	-	-	-	-	2.82											
44	Signal 141	CLO	42	-	-	-	-	-	-	4.80											
44	Signal 141	CLO	43	-	-	-	-	-	-	5.74	6.16										
44	Signal 141	CLO	44	-	-	-	-	-	-	16.50	8.88	12.11	16.71	12.84							
44	Signal 141	CLO	45	-	-	-	-	-	-	6.27	1.04	5.22	1.04	2.09							
44	Signal 141	CLO	46	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	47	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	48	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	49	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	50	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	51	-	-	-	-	-	-	3.13	5.22										
44	Signal 141	CLO	52	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	53	-	-	-	-	-	-	2.61											
44	Signal 141	CLO	54	-	-	-	-	-	-	8.88											
44	Signal 141	CLO	55	-	-	-	-	-	-	7.83	4.70										
44	Signal 141	CLO	56	-	-	-	-	-	-	4.07	5.01	3.97	3.76	2.30							
44	Signal 141	CLO	57	-	-	-	-	-	-	7.52	5.85	6.27	2.09	0.00							
44	Signal 141	CLO	58	-	-	-	-	-	-	7.31	5.74	8.35	2.61	7.31							
44	Signal 141	CLO	59	-	-	-	-	-	-	1.04											
44	Signal 141	CLO	60	-	-	-	-	-	-	4.18	6.27										
44	Signal 141	CLO	61	-	-	-	-	-	-	4.39	5.22										
44	Signal 141	CLO	62	-	-	-	-	-	-	6.27	6.37										
44	Signal 141	CLO	63	-	-	-	-	-	-	1.57	3.45										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
45	Signal 121	CLO	449	10.0	18.0	12.0	24.0	28.0	5	13.0	11.5	11.0	13.0	11.0							
45	Signal 121	CLO	450	14.0	23.0	20.0	13.0	25.0	3	5.0	13.0	14.0									
45	Signal 121	CLO	451	15.0	28.0	25.0	18.0	30.0	4	10.5	10.5	5.0	5.0								
45	Signal 121	CLO	452	25.0	20.0	18.0	15.0	23.0	2	15.0	16.0										
45	Signal 121	CLO	453	8.0	3.0	7.0	5.0	11.0	1	3.0											
45	Signal 121	CLO	454	4.0	5.0	5.0	3.0	12.0	1	3.7											
45	Signal 121	CLO	455	5.0	15.0	20.0	10.0	15.0	1	15.0											
45	Signal 121	CLO	456	15.0	17.0	5.0	15.0	22.0	5	13.0	12.0	10.0	9.0	7.0							
45	Signal 121	CLO	457	12.0	9.0	10.0	18.0	28.0	4	13.0	14.0	7.0	9.0								
45	Signal 121	CLO	458	15.0	12.0	22.0	15.0	35.0	5	13.0	16.0	14.0	13.0	12.0							
45	Signal 121	CLO	459	0.0	0.0	30.0	30.0	25.0	1	22.0											
45	Signal 121	CLO	460	30.0	15.0	10.0	12.0	35.0	1	14.5											
45	Signal 121	CLO	461	0.0	3.0	4.0	2.0	6.0	1	1.0											
45	Signal 121	CLO	462	10.0	17.0	15.0	24.0	22.0	4	12.0	13.0	15.0	11.0								
45	Signal 121	CLO	463	10.0	4.0	5.0	8.0	12.0	2	4.0	3.8										
45	Signal 121	CLO	464	6.0	8.0	5.0	7.0	18.0	1	8.0											
45	Signal 121	CLO	465	9.0	18.0	10.0	12.0	20.0	4	4.5	3.0	2.5	2.0								
45	Signal 121	CLO	466	10.0	6.0	15.0	4.0	17.0	2	10.0	12.5										
45	Signal 121	CLO	467	10.0	9.0	15.0	20.0	15.0	3	14.0	12.0	6.0									
45	Signal 121	CLO	468	20.0	21.0	15.0	13.0	35.0	3	21.0	22.0	4.5									
45	Signal 121	CLO	469	3.0	3.0	3.0	3.0	6.0	1	2.0											
45	Signal 121	CLO	470	25.0	28.0	18.0	15.0	35.0	3	14.0	12.0	13.0									
45	Signal 121	CLO	471	15.0	20.0	13.0	10.0	22.0	2	22.0	18.0										
45	Signal 121	CLO	472	35.0	18.0	20.0	25.0	25.0	6	3.0	4.0	7.0	8.0	6.0	5.5	3.5					
45	Signal 121	CLO	473	10.0	15.0	18.0	20.0	18.0	7	5.5	4.8	4.7	3.5	5.7	6.2	5.3					
45	Signal 121	CLO	474	15.0	15.0	17.0	3.0	25.0	1	14.0											
45	Signal 121	CLO	475	10.0	25.0	20.0	18.0	40.0	1	15.0											
45	Signal 121	CLO	476	6.0	8.0	17.0	21.0	45.0	3	9.0	13.0	14.0									
45	Signal 121	CLO	477	15.0	30.0	25.0	18.0	45.0	3	12.0	13.0	12.5									
45	Signal 121	CLO	478	25.0	15.0	28.0	15.0	35.0	2	12.0	14.0										
45	Signal 121	CLO	144	11.0	23.0	18.0	22.0	22.0	8	10.0	12.0	10.0	14.0	8.0	13.0	12.0	11.0				
45	Signal 121	CLO	145	12.0	6.0	18.0	20.0	23.0	2	15.0	4.0										
45	Signal 121	CLO	146	9.0	10.0	19.0	9.0	17.0	2	10.1	11.3										
45	Signal 121	CLO	147	9.0	6.0	5.0	7.0	16.0	5	3.4	0.5	0.3	3.0	0.3							
45	Signal 121	CLO	148	4.0	7.0	4.0	6.0	8.0	3	1.5	0.5	1.0									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
45	Signal 121	CLO	149	7.0	13.0	7.0	11.0	17.0	4	4.4	6.6	3.4	4.0								
45	Signal 121	CLO	150	8.0	10.0	12.0	14.0	14.0	2	4.4	4.2										
45	Signal 121	CLO	151	4.0	5.0	8.0	6.0	13.0	1	4.6											
45	Signal 121	CLO	152	21.0	19.0	26.0	23.0	28.0	8	6.0	8.0	6.0	26.0	28.0	32.0	8.0	28.0				
45	Signal 121	CLO	153	15.0	13.0	22.0	16.0	22.0	1	13.3											
45	Signal 121	CLO	154	5.0	3.0	8.0	6.0	11.0	1	9.0											
45	Signal 121	CLO	155	8.0	9.0	11.0	9.0	10.0	5	3.0	2.0	4.0	2.0	0.3							
45	Signal 121	CLO	156	10.0	12.0	9.0	12.0	18.0	4	9.0	9.8	5.2	2.5								
45	Signal 121	CLO	157	9.0	7.0	5.0	3.0	12.0	1	8.0											
45	Signal 121	CLO	158	13.0	17.0	20.0	5.0	22.0	2	9.6	9.0										
45	Signal 121	CLO	159	6.0	9.0	12.0	7.0	11.0	1	2.0											
45	Signal 121	CLO	160	16.0	9.0	9.0	8.0	13.0	3	12.0	10.0	11.0									
45	Signal 121	CLO	161	21.0	23.0	16.0	23.0	30.0	6	18.0	20.0	16.0	1.0	1.5	2.5						
45	Signal 121	CLO	162	2.0	2.0	2.0	4.0	8.0	1	2.0											
45	Signal 121	CLO	166	11.0	26.0	28.0	12.0	25.0	8	12.0	13.0	18.0	18.0	14.0	20.0	18.0	5.0				
46	Maino 19 U Extension	CLO	217	17.0	12.0	22.0	18.0	30.0	3	11.0	12.0	13.0									
46	Maino 19 U Extension	CLO	218	7.0	8.0	18.0	13.0	26.0	3	11.0	14.0	10.0									
46	Maino 19 U Extension	CLO	219	10.0	9.0	13.0	8.0	23.0	3	6.0	3.0	3.5									
46	Maino 19 U Extension	CLO	220	9.0	11.0	9.0	20.0	25.0	3	9.0	9.8	6.7									
46	Maino 19 U Extension	CLO	221	9.0	6.0	6.0	7.0	22.0	3	6.7	8.0	2.5									
46	Maino 19 U Extension	CLO	222	10.0	5.0	18.0	20.0	22.0	2	9.6	7.0										
46	Maino 19 U Extension	CLO	223	11.0	13.0	11.0	16.0	14.0	4	8.8	10.2	5.0	8.0								
46	Maino 19 U Extension	CLO	224	6.0	14.0	21.0	17.0	22.0	7	7.0	5.4	4.3	4.3	6.0	8.0	6.3					
46	Maino 19 U Extension	CLO	225	16.0	16.0	24.0	21.0	20.0	3	13.0	12.0	15.0									
46	Maino 19 U Extension	CLO	226	22.0	17.0	16.0	19.0	25.0	3	16.0	18.0	17.0									
46	Maino 19 U Extension	CLO	227	7.0	0.0	6.0	20.0	18.0	2	7.8	6.3										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
46	Maino 19 U Extension	CLO	228	6.0	7.0	9.0	13.0	20.0	3	7.4	6.3	6.3									
46	Maino 19 U Extension	CLO	229	16.0	5.0	10.0	11.0	19.0	1	12.2											
46	Maino 19 U Extension	CLO	230	3.0	7.0	2.0	2.0	8.0	1	8.0											
46	Maino 19 U Extension	CLO	231	16.0	12.0	9.0	18.0	26.0	3	18.0	18.0	8.0									
46	Maino 19 U Extension	CLO	232	14.0	13.0	10.0	5.0	22.0	4	16.0	7.0	9.0	3.0								
46	Maino 19 U Extension	CLO	233	18.0	19.0	14.0	16.0	21.0	2	8.5	16.2										
46	Maino 19 U Extension	CLO	234	19.0	12.0	23.0	24.0	24.0	3	18.5	13.2	19.0									
46	Maino 19 U Extension	CLO	235	19.0	24.0	16.0	17.0	26.0	4	17.0	16.0	14.0	9.0								
46	Maino 19 U Extension	CLO	236	21.0	10.0	14.0	22.0	24.0	4	9.0	7.0	12.0	6.0								
46	Maino 19 U Extension	CLO	237	11.0	6.0	7.0	6.0	18.0	2	9.0	3.0										
46	Maino 19 U Extension	CLO	238	16.0	18.0	32.0	17.0	24.0	4	13.0	16.0	17.0	13.0								
46	Maino 19 U Extension	CLO	239	9.0	10.0	20.0	9.0	24.0	4	9.0	7.0	4.0	10.0								
46	Maino 19 U Extension	CLO	240	4.0	0.0	4.0	11.0	16.0	1	7.0											
46	Maino 19 U Extension	CLO	241	8.0	11.0	13.0	19.0	20.0	3	13.0	6.0	14.0									
46	Maino 19 U Extension	CLO	242	3.0	8.0	20.0	11.0	21.0	1	10.1											
46	Maino 19 U Extension	CLO	243	11.0	11.0	17.0	13.0	23.0	2	8.0	7.0										
46	Maino 19 U Extension	CLO	244	14.0	18.0	16.0	20.0	23.0	5	6.0	12.0	13.0	15.0	11.0							
46	Maino 19 U Extension	CLO	245	16.0	7.0	7.0	14.0	18.0	4	9.0	4.0	2.0	1.0								
46	Maino 19 U Extension	CLO	246	14.0	9.0	11.0	13.0	22.0	4	6.5	8.0	9.0	9.5								
46	Maino 19 U Extension	CLO	247	6.0	7.0	5.0	12.0	22.0	6	3.1	3.0	4.0	3.0	2.0	1.0						

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
46	Maino 19 U Extension	CLO	248	13.0	13.0	6.0	12.0	19.0	2	8.5	13.5										
46	Maino 19 U Extension	CLO	249	11.0	4.0	15.0	11.0	22.0	1	22.0											
46	Marino 19 U Extension	CLO	548	0.0	10.0	20.0	20.0	25.0	4	11.0	13.0	13.0	10.0								
46	Marino 19 U Extension	CLO	549	10.0	5.0	15.0	25.0	15.0	4	2.3	2.8	3.3	4.1								
46	Marino 19 U Extension	CLO	550	0.0	0.0	25.0	0.0	15.0	1	8.0											
46	Marino 19 U Extension	CLO	551	5.0	15.0	20.0	15.0	35.0	1	10.0											
46	Marino 19 U Extension	CLO	552	15.0	5.0	20.0	15.0	32.0	1	9.8											
46	Marino 19 U Extension	CLO	553	0.0	0.0	7.0	0.0	20.0	1	8.0											
46	Marino 19 U Extension	CLO	554	0.0	0.0	30.0	25.0	35.0	1	10.2											
46	Marino 19 U Extension	CLO	555	0.0	0.0	18.0	25.0	30.0	2	8.2	9.5										
46	Marino 19 U Extension	CLO	556	10.0	25.0	20.0	15.0	30.0	2	10.0	11.5										
46	Marino 19 U Extension	CLO	557	25.0	1.0	18.0	15.0	25.0	1	10.0											
46	Marino 19 U Extension	CLO	558	5.0	10.0	10.0	12.0	25.0	2	5.5	6.5										
46	Marino 19 U Extension	CLO	559	10.0	3.0	25.0	15.0	35.0	4	10.2	11.4	8.4	6.8								
46	Marino 19 U Extension	CLO	560	25.0	15.0	10.0	18.0	25.0	3	10.0	6.2	8.6									
46	Marino 19 U Extension	CLO	561	22.0	15.0	18.0	10.0	25.0	3	8.0	9.0	12.0									
46	Marino 19 U Extension	CLO	562	12.0	12.0	12.0	12.0	18.0	2	3.5	5.0										
46	Marino 19 U Extension	CLO	563	15.0	20.0	15.0	20.0	40.0	4	14.0	6.0	3.0	2.0								
46	Marino 19 U Extension	CLO	564	10.0	30.0	25.0	15.0	35.0	8	6.0	7.0	10.0	4.0	3.0	3.0	2.0	1.0				
46	Marino 19 U Extension	CLO	565	5.0	7.0	10.0	15.0	45.0	2	3.0	10.0										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
46	Marino 19 U Extension	CLO	566	2.0	2.0	2.0	2.0	6.0	1	0.6											
46	Marino 19 U Extension	CLO	567	20.0	15.0	30.0	20.0	40.0	1	11.5											
46	Marino 19 U Extension	CLO	568	15.0	0.0	0.0	20.0	35.0	1	10.0											
46	Marino 19 U Extension	CLO	569	20.0	10.0	15.0	20.0	35.0	1	11.0											
46	Marino 19 U Extension	CLO	570	7.0	10.0	15.0	10.0	20.0	2	8.0	8.5										
46	Marino 19 U Extension	CLO	571	25.0	15.0	10.0	20.0	30.0	4	15.0	7.0	9.0	14.0								
46	Marino 19 U Extension	CLO	572	25.0	20.0	24.0	25.0	45.0	6	21.0	15.0	11.0	8.0	4.0	16.0						
46	Marino 19 U Extension	CLO	573	20.0	20.0	25.0	25.0	40.0	2	4.0	14.0										
46	Marino 19 U Extension	CLO	574	25.0	0.0	10.0	30.0	37.0	2	11.0	15.0										
46	Marino 19 U Extension	CLO	575	22.0	10.0	10.0	15.0	35.0	1	10.0											
46	Marino 19 U Extension	CLO	576	15.0	20.0	0.0	10.0	25.0	2	12.0	8.0										
46	Marino 19 U Extension	CLO	577	20.0	20.0	20.0	20.0	25.0	3	10.0	10.0	13.0									
46	Marino 19 U Extension	CLO	578	10.0	10.0	15.0	8.0	15.0	3	6.5	6.7	6.8									
46	Marino 19 U Extension	CLO	579	15.0	5.0	15.0	10.0	18.0	4	8.0	5.5	4.0	8.5								
46	Marino 19 U Extension	CLO	580	15.0	15.0	20.0	20.0	25.0	4	15.0	12.0	4.0	4.0								
46	Marino 19 U Extension	CLO	581	15.0	8.0	0.0	10.0	35.0	1	11.0											
46	Marino 19 U Extension	CLO	582	20.0	15.0	10.0	15.0	35.0	3	7.8	9.0	8.5									
46	Marino 19 U Extension	CLO	583	18.0	1.0	1.0	1.0	15.0	1	3.0											
46	Marino 19 U Extension	CLO	584	15.0	1.0	3.0	10.0	30.0	3	3.5	3.5	5.0									
46	Marino 19 U Extension	CLO	585	10.0	5.0	10.0	3.0	15.0	2	5.0	3.0										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
46	Marino 19 U Extension	CLO	586	2.0	2.0	2.0	2.0	12.0	2	2.0	2.1										
47	Maino 6 abandoned	CLO	344	15.0	3.0	12.0	30.0	20.0	4	11.5	9.8	3.8	3.6								
47	Maino 6 abandoned	CLO	347	33.0	30.0	32.0	10.0	26.0	9	10.6	13.9	10.8	6.7	12.3	12.0	7.7	5.9	9.5			
47	Maino 6 abandoned	CLO	348	12.0	15.0	15.0	13.0	30.0	7	8.5	9.2	8.9	7.9	12.1	12.7	10.2					
47	Maino 6 abandoned	CLO	349	23.0	25.0	14.0	12.0	32.0	5	8.5	12.1	8.4	12.2	9.1							
47	Maino 6 abandoned	CLO	350	5.0	3.0	15.0	15.0	20.0	3	4.0	9.0	8.0									
47	Maino 6 abandoned	CLO	351	28.0	30.0	25.0	22.0	33.0	5	11.4	10.0	7.1	5.9	9.3							
47	Maino 6 abandoned	CLO	352	35.0	5.0	16.0	14.0	31.0	4	9.8	10.2	4.5	3.3								
47	Maino 6 abandoned	CLO	353	15.0	2.0	20.0	25.0	30.0	1	14.2											
47	Maino 6 abandoned	CLO	354	10.0	20.0	25.0	5.0	25.0	8	4.0	13.0	8.0	11.0	3.0	6.0	17.0	16.0				
47	Maino 6 abandoned	CLO	355	22.0	18.0	16.0	0.0	25.0	3	9.5	8.8	9.6									
47	Maino 6 abandoned	CLO	356	12.0	3.0	7.0	6.0	15.0	1	5.3											
47	Maino 6 abandoned	CLO	357	18.0	17.5	30.0	15.0	40.0	3	12.2	16.2	13.5									
47	Maino 6 abandoned	CLO	358	18.0	20.0	12.0	6.0	25.0	2	9.5	9.7										
47	Maino 6 abandoned	CLO	359	0.0	8.0	7.0	4.0	15.0	2	5.9	8.3										
47	Maino 6 abandoned	CLO	360	30.0	4.0	25.0	10.0	25.0	3	12.4	11.7	15.4									
47	Maino 6 abandoned	CLO	361	15.0	0.0	20.0	15.0	20.0	2	8.2	8.5										
47	Maino 6 abandoned	CLO	362	30.0	40.0	33.0	20.0	42.0	7	16.3	15.1	14.5	16.5	15.5	13.5	18.5					
47	Maino 6 abandoned	CLO	363	24.0	15.0	12.0	24.0	18.0	4	8.2	13.8	12.8	10.8								
47	Maino 6 abandoned	CLO	364	7.0	5.0	21.0	18.0	25.0	1	24.6											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
47	Maino 6 abandoned	CLO	365	13.0	28.0	15.0	15.0	20.0	1	16.0											
47	Maino 6 abandoned	CLO	366	12.0	26.0	18.0	16.0	34.0	1	18.2											
47	Maino 6 abandoned	CLO	367	18.0	23.0	15.0	18.0	35.0	5	12.0	16.5	18.5	17.0	18.5							
47	Maino 6 abandoned	CLO	368	14.0	5.0	0.0	13.5	15.0	2	11.0	10.1										
47	Maino 6 abandoned	CLO	369	13.0	18.0	14.0	0.0	15.0	5	8.4	7.9	4.0	5.3	9.0							
47	Maino 6 abandoned	CLO	370	13.0	25.0	18.0	27.0	20.0	8	12.0	11.0	14.5	15.7	10.5	8.0	19.0	16.0				
47	Maino 6 abandoned	CLO	371	15.0	10.0	25.0	22.0	18.0	6	10.0	14.0	14.3	9.8	7.0	12.0						
47	Maino 6 abandoned	CLO	372	20.0	18.0	35.0	19.0	20.0	5	9.0	8.5	4.0	6.7	7.0							
47	Maino 6 abandoned	CLO	373	13.0	22.0	15.0	18.0	17.0	5	8.0	13.5	6.0	10.3	12.8							
47	Maino 6 abandoned	CLO	374	25.0	15.0	30.0	18.0	30.0	6	13.0	18.0	14.1	17.0	20.3	15.0						
47	Maino 6 abandoned	CLO	375	0.0	0.0	20.0	0.0	18.0	2	10.5	9.6										
47	Maino 6 abandoned	CLO	376	30.0	25.0	25.0	10.0	34.0	9	9.0	13.4	10.5	8.0	11.0	10.5	9.0	12.5	11.5			
47	Maino 6 abandoned	CLO	377	21.0	15.0	30.0	8.0	28.0	3	10.8	22.2	12.0									
47	Maino 6 abandoned	CLO	378	0.0	15.0	20.0	18.0	22.0	6	9.8	10.3	13.0	8.0	12.0	4.0						
47	Maino 6 abandoned	CLO	379	15.0	30.0	40.0	18.0	45.0	5	10.0	11.0	10.5	12.0	11.5							
47	Maino 6 abandoned	CLO	380	20.0	0.0	13.0	15.0	17.0	4	8.0	9.0	8.5	7.0								
47	Maino 6 abandoned	CLO	381	10.0	20.0	18.0	18.0	19.0	3	10.0	16.0	12.0									
47	Maino 6 abandoned	CLO	oak 73	24.0	0.0	5.0	12.0	35.0	2	10.2	11.1										
47	Maino 6 abandoned	CLO	oak 74	0.0	0.0	30.0	30.0	30.0	6	8.6	10.8	3.0	8.0	8.1	7.8						
47	Maino 6 abandoned	CLO	oak 75	30.0	31.0	25.0	25.0	25.0	18	6.8	7.2	10.4	4.1	11.2	3.5	1.5	8.6	8.8	7.2	6.8	4.5

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
47	Maino 6 abandoned	CLO	oak 75 cont.	-	-	-	-	-	-	15.3	12.4	8.5	8.4	14.1	10.2						
47	Maino 6 abandoned	CLO	oak 76	10.0	8.0	10.0	15.0	21.0	5	3.2	8.2	13.1	14.0	3.7							
47	Maino 6 abandoned	CLO	oak 77	24.0	21.0	24.0	25.0	35.0	7	8.8	11.4	10.4	12.6	3.1	7.5	4.3					
47	Maino 6 abandoned	CLO	oak 78	5.0	10.0	20.0	21.0	20.0	5	6.9	6.0	6.2	2.0	4.0							
47	Maino 6 abandoned	CLO	oak 79	15.0	5.0	10.0	15.0	20.0	4	7.6	10.5	9.7	6.8								
47	Maino 6 abandoned	CLO	oak 80	2.0	1.0	5.0	10.0	10.0	2	3.2	2.0										
47	Maino 6 abandoned	CLO	oak 81	25.0	20.0	31.0	25.0	25.0	9	9.0	5.1	5.8	4.9	8.1	14.3	9.7	10.5	11.2			
47	Maino 6 abandoned	CLO	oak 82	14.0	18.0	25.0	30.0	25.0	5	10.5	13.3	9.8	3.2	2.0							
47	Maino 6 abandoned	CLO	oak 83	10.0	0.0	31.0	21.0	25.0	2	8.4	13.1										
47	Maino 6 abandoned	CLO	oak 84	15.0	18.0	12.0	8.0	35.0	3	8.2	7.1	7.5									
47	Maino 6 abandoned	CLO	oak 85	15.0	5.0	18.0	21.0	30.0	4	11.5	10.2	9.6	5.3								
47	Maino 6 abandoned	CLO	oak 86	10.0	10.0	15.0	13.0	20.0	3	9.2	8.5	4.4									
47	Maino 6 abandoned	CLO	oak 87	10.0	12.0	15.0	14.0	30.0	1	11.2											
47	Maino 6 abandoned	CLO	oak 88	10.0	10.0	25.0	30.0	30.0	2	10.2	15.5										
47	Maino 6 abandoned	CLO	oak 89	18.0	20.0	10.0	15.0	35.0	1	11.6											
47	Maino 6 abandoned	CLO	oak 90	24.0	18.0	15.0	25.0	40.0	3	9.2	8.1	13.6									
47	Maino 6 abandoned	CLO	oak 91	8.0	12.0	8.0	10.0	35.0	2	12.4	4.4										
47	Maino 6 abandoned	CLO	oak 92	10.0	8.0	12.0	18.0	20.0	3	2.0	6.8	4.9									
47	Maino 6 abandoned	CLO	oak 93	3.0	0.0	5.0	18.0	30.0	3	8.5	11.2	8.1									
47	Maino 6 abandoned	CLO	oak 94	5.0	21.0	24.0	15.0	35.0	2	9.9	15.6										

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
47	Maino 6 abandoned	CLO	oak 95	5.0	2.0	10.0	10.0	20.0	1	9.6											
47	Maino 6 abandoned	CLO	oak 96	11.0	12.0	15.0	15.0	40.0	3	13.3	10.1	8.2									
47	Maino 6 abandoned	CLO	oak 97	18.0	20.0	30.0	18.0	45.0	6	14.5	15.6	13.2	8.1	6.8	2.0						
47	Maino 6 abandoned	CLO	oak 98	1.0	15.0	31.0	20.0	45.0	2	22.6	14.5										
47	Maino 6 abandoned	CLO	oak 99	10.0	11.0	10.0	10.0	15.0	2	4.6	5.1										
47	Maino 6 abandoned	CLO	oak 100	31.0	33.0	34.0	18.0	35.0	4	15.0	18.0	11.5	16.8								
48	B-Lo Morehouse 3	CLO	182	14.0	13.0	9.0	8.0	18.0	3	18.0	14.0	14.0									
48	B-Lo Morehouse 3	CLO	oak 70	30.0	20.0	5.0	10.0	40.0	3	15.5	11.6	4.4									
48	B-Lo Morehouse 3	CLO	oak 71	15.0	8.0	8.0	18.0	40.0	2	10.3	3.8										
48	B-Lo Morehouse 3	CLO	oak 72	15.0	8.0	8.0	10.0	15.0	3	12.0	11.2	9.3									
N/A	Pipe rack corridor	CLO	236	7.0	7.0	6.0	5.5	11.0	1	4.4											
N/A	Pipe rack corridor	CLO	237	13.0	9.0	8.0	10.0	18.0	1	6.1											
N/A	Pipe rack corridor	CLO	269	7.0	5.0	4.0	5.0	13.0	2	3.1	1.1										
N/A	Pipe rack corridor	CLO	270	3.5	3.0	2.5	4.0	7.0	1	1.3											
N/A	Pipe rack corridor	CLO	271	3.0	4.0	3.0	2.0	7.0	2	1.3	1.1										
N/A	Pipe rack corridor	CLO	272	13.0	17.0	12.0	14.0	20.0	4	5.0	3.6	3.4	4.9								
N/A	Pipe rack corridor	CLO	273	3.5	2.5	0.0	1.0	7.0	1	0.1											
N/A	Pipe rack corridor	CLO	274	10.0	8.0	9.0	8.0	22.0	1	4.2											
N/A	UPRR Pipe Crossing	CLO	304	20.0	22.0	18.0	24.0	32.0	3	11.4	19.9	3.5									
N/A	UPRR Pipe Crossing	CLO	305	19.0	21.0	17.0	22.0	32.0	3	19.9	5.5	3.0									

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
N/A	Pipe rack corridor	CLO	oak 16	24.0	15.0	25.0	25.0	35.0	1	20.7											
N/A	Pipe rack corridor	CLO	oak 17	10.0	15.0	25.0	24.0	30.0	3	7.3	14.3	9.4									
N/A	Pipe rack corridor	CLO	oak 18	20.0	10.0	12.0	10.0	20.0	2	10.1	8.2										
N/A	Pipe rack corridor	CLO	oak 19	25.0	10.0	35.0	10.0	35.0	3	14.2	6.7	14.5									
N/A	Pipe rack corridor	CLO	oak 20	20.0	0.0	25.0	10.0	20.0	2	7.8	6.8										
N/A	Pipe rack corridor	CLO	oak 21	25.0	0.0	0.0	30.0	35.0	2	12.0	9.5										
N/A	Pipe rack corridor	CLO	oak 22	30.0	0.0	10.0	18.0	25.0	4	6.4	10.0	10.2	5.9								
N/A	Pipe rack corridor	CLO	oak 23	20.0	18.0	25.0	15.0	25.0	1	17.0											
N/A	Pipe rack corridor	CLO	oak 24	10.0	2.0	4.0	5.0	14.0	1	4.2											
N/A	Pipe rack corridor	CLO	oak 25	10.0	10.0	22.0	12.0	20.0	3	8.7	3.2	5.0									
N/A	Pipe rack corridor	CLO	oak 26	18.0	17.0	15.0	12.0	30.0	3	6.4	8.5	9.7									
N/A	Pipe rack corridor	CLO	oak 27	5.0	20.0	15.0	5.0	20.0	1	7.2											
N/A	Pipe rack corridor	CLO	oak 28	10.0	15.0	10.0	5.0	15.0	3	5.8	5.8	3.3									
N/A	Pipe rack corridor	CLO	oak 29	8.0	10.0	3.0	2.0	15.0	3	4.7	3.0	1.3									
N/A	Pipe rack corridor	CLO	oak 30	10.0	5.0	12.0	10.0	20.0	1	5.5											
N/A	Pipe casing replacement	CLO	oak 43	7.0	7.0	7.0	7.0	10.0	1	2.5											
N/A	Pipe casing replacement	CLO	oak 44	10.0	2.0	0.0	15.0	10.0	1	4.0											
N/A	Pipe casing replacement	CLO	oak 45	0.0	15.0	15.0	10.0	18.0	1	8.6											
N/A	Northern pipe crossing	CLO	oak 47	12.0	10.0	5.0	7.0	15.0	5	6.1	7.5	12.5	6.8	3.6							
N/A	Northern pipe crossing	CLO	oak 48	1.0	7.0	3.0	4.0	6.0	1	5.2											

APPENDIX E1 (CONTINUED)
OAK TREE MEASUREMENTS

				Canopy Measurements (ft)				Approx. Height (ft)	Number of Stems	Diameter at breast height (Inches)											
Pad #	Pad Name	Species	Waypoint	North	East	South	West			Stem 1	Stem 2	Stem 3	Stem 4	Stem 5	Stem 6	Stem 7	Stem 8	Stem 9	Stem 10	Stem 11	Stem 12
N/A	Ormonde pipe crossing	CLO	oak 49	33.0	21.0	24.0	33.0	40.0	5	13.0	20.4	18.0	19.5	13.0							
N/A	Ormonde pipe crossing	CLO	oak 50	5.0	5.0	3.0	2.0	6.0	2	1.8	2.0										

APPENDIX E2
OAK TREE HEALTH

APPENDIX E2
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
2	Maino 16NW Upper	CLO	506	poison oak	–	–	broken branches	could not access closer than 25ft to the N due to PO
2	Maino 16NW Upper	CLO	507	poison oak	–	–	–	–
2	Maino 16NW Upper	CLO	508	poison oak	–	–	cavity–trunk/decay/rot	5 broken branches
2	Maino 16NW Upper	CLO	509	termites/poison oak	dieback/deadwood	–	broken branches	–
2	Maino 16NW Upper	CLO	510	poison oak	thinning crown	–	cavity–trunk/damaged roots	poison oak vine wraps around oak
2	Maino 16NW Upper	CLO	511	poison oak	deadwood/thinning crown	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	512	poison oak	dieback/deadwood	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	513	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	514	poison oak	dieback/deadwood/thinning crown	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	515	poison oak	dieback/deadwood/thinning crown	–	decay/rot	–
2	Maino 16NW Upper	CLO	516	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	517	poison oak	dieback/deadwood/thinning crown	–	cavity–trunk	lots of poison oak
2	Maino 16NW Upper	CLO	518	poison oak	deadwood	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	519	poison oak	–	–	cavity–trunk/cavity–branch/decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	520	poison oak	dieback/deadwood/thinning crown	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	521	poison oak	dieback/deadwood	–	broken branches/cavity–branch/decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	522	poison oak	dieback	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	523	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	524	poison oak	–	–	cavity–trunk/cavity–branch/decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	525	poison oak	dieback/deadwood/thinning crown	–	cavity–trunk/cavity–branch	lots of poison oak
2	Maino 16NW Upper	CLO	526	poison oak	dieback/deadwood	–	decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	527	poison oak	dieback/thinning crown	–	–	lots of poison oak; dying
2	Maino 16NW Upper	CLO	528	poison oak	deadwood	–	cavity–trunk	lots of poison oak
2	Maino 16NW Upper	CLO	529	poison oak	dieback/deadwood/thinning crown	–	decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	530	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	531	poison oak	dieback/deadwood/thinning crown	–	decay/rot	lots of poison oak
2	Maino 16NW Upper	CLO	532	poison oak	–	–	cavity–trunk	lots of poison oak
2	Maino 16NW Upper	CLO	533	poison oak	deadwood	–	cavity–trunk/cavity–branch	lots of poison oak
2	Maino 16NW Upper	CLO	534	poison oak	deadwood	–	cavity–trunk/cavity–branch	lots of poison oak
2	Maino 16NW Upper	CLO	535	poison oak	dieback	–	cavity–trunk	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
2	Maino 16NW Upper	CLO	536	poison oak	dieback/deadwood	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	537	poison oak	dieback/deadwood	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	538	poison oak	–	–	cavity–trunk	lots of poison oak
2	Maino 16NW Upper	CLO	539	poison oak	dieback/deadwood/thinning crown	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	540	poison oak	dieback/deadwood/thinning crown	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	541	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	542	termites/poison oak	dieback/deadwood	–	poor pruning	lots of poison oak
2	Maino 16NW Upper	CLO	543	poison oak	dieback/thinning crown	–	cavity–branch	lots of poison oak
2	Maino 16NW Upper	CLO	544	poison oak	dieback	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	185	poison oak	deadwood	–	broken branches/cavity–trunk	lots of poison oak
2	Maino 16NW Upper	CLO	186	poison oak	–	–	–	lots of poison oak
2	Maino 16NW Upper	CLO	187	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	188	poison oak	–	–	–	–
2	Maino 16NW Upper	CLO	189	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	190	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	191	poison oak	dieback/deadwood	–	–	–
2	Maino 16NW Upper	CLO	192	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	193	poison oak	–	–	–	–
2	Maino 16NW Upper	CLO	194	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	195	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	196	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	197	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	198	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	199	poison oak	–	–	–	–
2	Maino 16NW Upper	CLO	200	poison oak	–	–	–	–
2	Maino 16NW Upper	CLO	201	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	202	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	203	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	204	poison oak	deadwood	–	–	–
2	Maino 16NW Upper	CLO	205	poison oak	dieback/deadwood	–	–	–
2	Maino 16NW Upper	CLO	206	poison oak	–	–	broken branches	–
2	Maino 16NW Upper	CLO	207	–	–	–	–	–
2	Maino 16NW Upper	CLO	208	–	–	–	–	–
2	Maino 16NW Upper	CLO	209	–	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
2	Maino 16NW Upper	CLO	210	poison oak	deadwood	–	poor pruning	–
2	Maino 16NW Upper	CLO	211	poison oak	deadwood	–	–	out of boundary
2	Maino 16NW Upper	CLO	212	poison oak	–	–	–	–
3	Dollie 108 G	CLO	306	poison oak	–	–	–	–
3	Dollie 108 G	CLO	307	poison oak	–	–	–	–
3	Dollie 108 G	CLO	308	poison oak	–	–	–	–
3	Dollie 108 G	CLO	309	poison oak	–	–	–	–
3	Dollie 108 G	CLO	310	poison oak	–	–	–	–
3	Dollie 108 G	CLO	311	–	–	–	–	–
3	Dollie 108 G	CLO	312	poison oak	–	–	–	–
3	Dollie 108 G	CLO	313	poison oak	–	–	–	–
3	Dollie 108 G	CLO	314	poison oak	–	–	–	–
3	Dollie 108 G	CLO	315	poison oak	–	–	–	–
3	Dollie 108 G	CLO	316	poison oak	–	–	–	–
3	Dollie 108 G	CLO	317	poison oak	–	–	–	–
3	Dollie 108 G	CLO	318	–	–	–	–	–
3	Dollie 108 G	CLO	319	–	–	–	–	–
3	Dollie 108 G	CLO	320	–	–	–	–	–
3	Dollie 108 G	CLO	321	–	–	–	–	–
3	Dollie 108 G	CLO	322	–	–	–	–	–
3	Dollie 108 G	CLO	323	–	–	–	–	–
3	Dollie 108 G	CLO	324	poison oak	–	–	–	–
3	Dollie 108 G	CLO	325	poison oak	–	–	–	–
3	Dollie 108 G	CLO	326	poison oak	–	–	–	–
3	Dollie 108 G	CLO	327	–	–	–	–	–
3	Dollie 108 G	CLO	328	–	–	–	–	–
3	Dollie 108 G	CLO	329	–	–	–	–	–
3	Dollie 108 G	CLO	330	poison oak	–	–	–	–
3	Dollie 108 G	CLO	331	poison oak	–	–	–	–
3	Dollie 108 G	CLO	332	–	–	–	–	–
4	Rock 12N	CLO	179	new growth/on slope	–	–	–	new growth on slope
4	Rock 12N	CLO	180	galls/poison oak	wilt/dieback/deadwood /thinning crown	leal scorch/twig blight	broken branches/poor pruning/mechanical injury/lopsided canopy/decay/rot/damaged roots	multi–stem tree; bad shape
4	Rock 12N	CLO	181	–	dieback/thinning crown	–	poor pruning/mechanical injury/lopsided canopy	bad pruning
4	Rock 12N	CLO	182	–	–	–	–	new growth
4	Rock 12N	CLO	183	–	–	–	poor pruning/mechanical injury	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
4	Rock 12N	CLO	184	–	–	–	–	new growth
4	Rock 12N	CLO	185	–	–	–	–	–
4	Rock 12N	CLO	186	–	–	–	poor pruning	–
4	Rock 12N	CLO	187	–	–	–	–	–
4	Rock 12N	CLO	188	–	–	–	–	–
4	Rock 12N	CLO	189	–	–	–	poor pruning	–
4	Rock 12N	CLO	190	–	–	–	–	–
4	Rock 12N	CLO	191	–	–	–	poor pruning/mechanical injury/torn branch scaring/cavity–trunk	–
4	Rock 12N	CLO	192	–	–	–	–	multi–stem tree
4	Rock 12N	CLO	193	–	dieback/deadwood/thinning crown	–	broken branches/poor pruning	–
4	Rock 12N	CLO	194	–	–	–	–	–
4	Rock 12N	CLO	195	poison oak	–	–	–	–
4	Rock 12N	CLO	196	poison oak	–	–	–	–
4	Rock 12N	CLO	197	poison oak	–	–	–	multi–stem tree
4	Rock 12N	CLO	198	–	–	–	–	–
4	Rock 12N	CLO	199	–	chlorosis/thinning crown	leal scorch	broken branches/poor pruning/mechanical injury	–
4	Rock 12N	CLO	200	–	–	–	–	–
4	Rock 12N	CLO	201	–	–	–	broken branches/poor pruning/mechanical injury/torn branch scaring	–
4	Rock 12N	CLO	202	–	–	–	–	saplings
4	Rock 12N	CLO	203	–	–	–	–	–
4	Rock 12N	CLO	204	–	dieback		broken branches	multi–stem tree
4	Rock 12N	CLO	205	–	–	–	poor pruning	–
4	Rock 12N	CLO	206	–	–	–	–	–
4	Rock 12N	CLO	207	–	–	–	–	–
4	Rock 12N	CLO	208	–	–	–	–	multi–stem tree
4	Rock 12N	CLO	209	–	–	–	–	new growth
4	Rock 12N	CLO	210	–	–	–	–	cut back
4	Rock 12N	CLO	211	–	–	–	–	–
4	Rock 12N	CLO	212	–	–	–	–	–
5	Signal 9N–1	CLO	1A	borers	dieback/deadwood	–	–	–
5	Signal 9N–1	CLO	2A	borers	deadwood/thinning crown	–	broken branches/decay/rot	–
5	Signal 9N–1	CLO	3A	–	deadwood	–	decay/rot	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
5	Signal 9N–1	CLO	4A	borers	dieback/deadwood	–	–	–
5	Signal 9N–1	CLO	5A	–	deadwood	–	–	–
5	Signal 9N–1	CLO	6A	borers	dieback	–	–	–
5	Signal 9N–1	CLO	7A	poison oak	deadwood	heart rot	torn branch scaring/lopsided canopy	–
5	Signal 9N–1	CLO	8A	–	deadwood/thinning crown	–	broken branches	–
5	Signal 9N–1	CLO	9A	borers/poison oak	dieback/deadwood/thinning crown	–	decay/rot	–
5	Signal 9N–1	CLO	10A	–	dieback/deadwood/thinning crown	–	broken branches/lopsided canopy/decay/rot	–
5	Signal 9N–1	CLO	11A	poison oak	dieback/deadwood	–	–	–
5	Signal 9N–1	CLO	601	poison oak	dieback/thinning crown	–	–	–
5	Signal 9N–1	CLO	602	poison oak	dieback/deadwood	–	–	–
5	Signal 9N–1	CLO	603	poison oak	thinning crown	–	–	lots of poison oak
5	Signal 9N–1	CLO	604	poison oak	dieback/deadwood	–	–	lots of poison oak
5	Signal 9N–1	CLO	605	poison oak	dieback/deadwood	–	–	lots of poison oak
5	Signal 9N–1	CLO	606	poison oak	–	–	cavity–trunk	lots of poison oak
5	Signal 9N–1	CLO	607	ants/poison oak	dieback/deadwood	–	cavity–trunk	–
5	Signal 9N–1	CLO	608	poison oak	–	–	cavity–trunk	–
5	Signal 9N–1	CLO	609	termites	wilt/dieback/deadwood/thinning crown	heart rot	cavity–trunk/cavity–branch/decay/rot	lots of poison oak
5	Signal 9N–1	CLO	610	–	–	–	–	lots of poison oak
5	Signal 9N–1	CLO	611	poison oak	dieback/deadwood/thinning crown	–	cavity–trunk/cavity–branch/decay/rot	tree is dying
5	Signal 9N–1	CLO	612	termites/poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	–
5	Signal 9N–1	CLO	613	poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	lots of poison oak
5	Signal 9N–1	CLO	614	poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	lots of poison oak
5	Signal 9N–1	CLO	615	poison oak	deadwood/thinning crown	–	–	lots of poison oak
5	Signal 9N–1	CLO	616	poison oak	thinning crown	–	cavity–trunk	lots of poison oak
5	Signal 9N–1	CLO	Oak 1	termites/borers	dieback/deadwood		torn branch scaring	–
5	Signal 9N–1	CLO	Oak 2		dieback		broken branch/decay/rot	–
5	Signal 9N–1	CLO	Oak 3		dieback/thinning crown		broken branch/torn branch scaring/lopsided canopy/decay/rot	dead branch tip, flagging
5	Signal 9N–1	CLO	Oak 4	termites/borers/ants/galls	dieback/deadwood/thinning crown	lesions/heart rot	broken branch/poor pruning/torn branch scaring/lopsided canopy	
5	Signal 9N–1	CLO	Oak 5		dieback/deadwood	lesions	broken branch/torn branch scaring	

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
5	Signal 9N–1	CLO	Oak 6	termites/borers/galls/poison oak	dieback/deadwood/thinning crown		broken branch/torn branch scaring/cavity–trunk/cavity–branch/decay/rot	
5	Signal 9N–1	CLO	Oak 41	poison oak	wilt/dieback		lopsided canopy	
6	Signal 306/303	CLO	2	–	–	–	–	–
6	Signal 306/303	CLO	3	–	–	–	–	–
6	Signal 306/303	CLO	4	–	–	–	–	–
6	Signal 306/303	CLO	5	–	–	–	–	–
6	Signal 306/303	CLO	6	–	–	–	–	–
6	Signal 306/303	CLO	7	–	–	–	–	–
7	Signal 161	CLO	213	–	–	–	–	–
7	Signal 161	CLO	214	–	–	–	–	–
7	Signal 161	CLO	215	–	–	–	–	–
7	Signal 161	CLO	216	–	dieback/deadwood/thinning crown	–	–	–
7	Signal 161	CLO	217	–	dieback/deadwood/thinning crown	–	–	–
7	Signal 161	CLO	218	–	–	–	–	multi–stem tree
7	Signal 161	CLO	219	poison oak	deadwood/thinning crown	–	–	–
7	Signal 161	CLO	220	poison oak	–	–	–	large and healthy
7	Signal 161	CLO	221	poison oak	–	–	–	–
7	Signal 161	CLO	222	–	–	–	–	–
7	Signal 161	CLO	223	–	–	–	–	rat nest
7	Signal 161	CLO	224	–	–	–	–	–
7	Signal 161	CLO	225	–	–	–	–	–
7	Signal 161	CLO	226	–	–	–	–	multi–stem tree
8	Pulas 2	CLO	587	–	–	–	–	–
8	Pulas 2	CLO	588	–	–	–	–	–
8	Pulas 2	CLO	589	–	–	–	–	–
8	Pulas 2	CLO	590	–	–	–	–	–
8	Pulas 2	CLO	591	–	–	–	–	–
8	Pulas 2	CLO	592	–	–	–	–	–
8	Pulas 2	CLO	593	–	–	–	–	–
8	Pulas 2	CLO	594	–	–	–	–	–
8	Pulas 2	CLO	595	–	–	–	–	–
8	Pulas 2	CLO	250	–	–	–	–	–
8	Pulas 2	CLO	251	–	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
8	Pulas 2	CLO	252	–	–	–	–	–
8	Pulas 2	CLO	253	–	–	–	–	–
8	Pulas 2	CLO	254	–	–	–	–	–
8	Pulas 2	CLO	Oak 30	–	–	–	–	–
9	Signal 195–301 Connecter	CLO	628	–	–	–	poor pruning/mechanical injury	–
9	Signal 195–301 Connecter	CLO	629	poison oak	deadwood	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	630	poison oak	–	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	631	poison oak/moss	wilt	–	poor pruning/mechanical injury	lots of poison oak
9	Signal 195–301 Connecter	CLO	632	poison oak	–	–	poor pruning/cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	633	poison oak	–	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	634	poison oak	wilt	–	broken branches/poor pruning	–
9	Signal 195–301 Connecter	CLO	635	–	–	–	poor pruning	–
9	Signal 195–301 Connecter	CLO	636	poison oak	dieback/deadwood/thinning crown	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	637	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	638	poison oak	dieback/deadwood	–	broken branches/lopsided canopy	lots of poison oak
9	Signal 195–301 Connecter	CLO	639	ants/poison oak	–	–	–	–
9	Signal 195–301 Connecter	CLO	640	ants/poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	641	poison oak	deadwood	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	642	oak moth/poison oak	dieback/deadwood/thinning crown	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	643	poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	644	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	645	ants	deadwood	–	cavity–branch	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	646	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	647	termites/borers/poison oak	dieback/deadwood	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	648	poison oak	–	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	649	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	650	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	651	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak
9	Signal 195–301 Connecter	CLO	652	poison oak	dieback/deadwood	–	broken branches	lots of poison oak
9	Signal 195–301 Connecter	CLO	653	borers/poison oak	dieback/deadwood	dying	cavity–trunk/cavity–branch/lopsided canopy/decay/rot/fire/lightning	lots of poison oak
9	Signal 195–301 Connecter	CLO	654	poison oak	dieback/deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	655	poison oak	–	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	656	poison oak	deadwood	–	cavity–trunk/cavity–branch	lots of poison oak
9	Signal 195–301 Connecter	CLO	657	poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	658	galls/poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	659	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	660	poison oak	dieback/deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	661	poison oak	deadwood	–	decay/rot	lots of poison oak
9	Signal 195–301 Connecter	CLO	662	borers/poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	663	termites/borers/poison oak	deadwood	–	lopsided canopy/decay/rot	lots of poison oak
9	Signal 195–301 Connecter	CLO	664	ants/galls/poison oak	dieback/deadwood	–	decay/rot/annulohypoxylon	lots of poison oak
9	Signal 195–301 Connecter	CLO	665	poison oak	dieback/deadwood	–	cavity–trunk	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	666	ants/poison oak	–	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	667	galls/poison oak	deadwood	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	668	galls/poison oak	deadwood	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	669	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	670	termites/poison oak	dieback/deadwood	heart rot	torn branch scaring/lopsided canopy	lots of poison oak
9	Signal 195–301 Connecter	CLO	671	oak moth/poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	672	poison oak	dieback/deadwood	heart rot	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	673	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	674	poison oak	deadwood	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	675	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	676	poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	677	poison oak	–	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	678	poison oak	deadwood	–	cavity–branch	lots of poison oak
9	Signal 195–301 Connecter	CLO	679	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	680	poison oak	dieback/deadwood	–	broken branches/cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	681	poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	682	poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	683	termites/poison oak	deadwood	–	torn branch scaring/cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	684	termites/borers/poison oak	deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	685	poison oak	dieback/deadwood	–	–	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	686	–	dieback/deadwood	–	torn branch scaring/cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	687	poison oak	deadwood	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	688	poison oak	deadwood	–	cavity–trunk/lopsided canopy	–
9	Signal 195–301 Connecter	CLO	689	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	690	poison oak	deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	691	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	692	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch/decay/rot	–
9	Signal 195–301 Connecter	CLO	693	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	694	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	695	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	696	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	697	poison oak	deadwood	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	698	poison oak	dieback/deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	699	poison oak	–	–	–	–
9	Signal 195–301 Connecter	CLO	700	poison oak	deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	701	poison oak	dieback/deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	702	poison oak	–	–	–	–
9	Signal 195–301 Connecter	CLO	703	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	704	ants/poison oak	deadwood	–	decay/rot	lots of poison oak
9	Signal 195–301 Connecter	CLO	705	termites/poison oak	dieback	–	cavity–trunk/cavity–branch/decay/rot	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	706	borers/ants/poison oak	wilt/dieback/deadwood	–	cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	707	termites/poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	708	termites/oak moth/poison oak	dieback/deadwood	heart rot	cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	709	termites/oak moth/poison oak	–	–	cavity–trunk/cavity–branch/decay/rot	–
9	Signal 195–301 Connecter	CLO	710	oak moth/poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	711	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	712	termites/borers/poison oak	–	heart rot	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	713	poison oak	dieback	–	–	–
9	Signal 195–301 Connecter	CLO	714	mistletoe	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	715	poison oak	–	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	716	termites/poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	717	borers/poison oak	–	–	torn branch scaring/cavity–trunk	–
9	Signal 195–301 Connecter	CLO	718	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	719	termites/borers/poison oak	–	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	720	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	721	poison oak	–	–	–	–
9	Signal 195–301 Connecter	CLO	722	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	723	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	724	poison oak	dieback/thinning crown	–	–	–
9	Signal 195–301 Connecter	CLO	725	poison oak	deadwood	–	cavity–branch	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	726	termites/borers	dieback/deadwood	–	cavity–trunk/lopsided canopy/decay/rot	–
9	Signal 195–301 Connecter	CLO	727	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	728	–	deadwood	–	decay/rot	–
9	Signal 195–301 Connecter	CLO	729	poison oak	deadwood	–	wire/nails/barb wire/cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	21 A	ants/poison oak	dieback/deadwood	–	poor pruning	–
9	Signal 195–301 Connecter	CLO	22 A	galls/poison oak	dieback/deadwood	–	poor pruning	–
9	Signal 195–301 Connecter	CLO	23 A	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	24 A	ants/poison oak	dieback/deadwood	–	poor pruning	–
9	Signal 195–301 Connecter	CLO	25 A	poison oak	deadwood	heart rot	–	–
9	Signal 195–301 Connecter	CLO	26 A	–	deadwood	–	broken branches	–
9	Signal 195–301 Connecter	CLO	27 A	poison oak	dieback/deadwood	–	–	heart rot in one trunk
9	Signal 195–301 Connecter	CLO	28 A	–	dieback/deadwood	–	poor pruning/one dead trunk	–
9	Signal 195–301 Connecter	CLO	29 A	borers/poison oak	dieback/deadwood/thinning crown	–	poor pruning/cavity–branch/decay/rot	–
9	Signal 195–301 Connecter	CLO	30 A	–	dieback/deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	31 A	poison oak	dieback/deadwood	–	broken branches/cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	32 A	galls/poison oak	dieback/deadwood	–	poor pruning/lopsided canopy	–
9	Signal 195–301 Connecter	CLO	33 A	ants/poison oak	deadwood	heart rot	decay/rot/two dead trunks	–
9	Signal 195–301 Connecter	CLO	34 A	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	35 A	poison oak	dieback/deadwood	–	–	two dead trunks due to heart rot
9	Signal 195–301 Connecter	CLO	36 A	ants/poison oak	dieback/deadwood	–	–	dead poison oak vines on trunk

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	37 A	–	deadwood	–	broken branches/poor pruning	–
9	Signal 195–301 Connecter	CLO	38 A	ants	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	39 A	–	–	–	–	–
9	Signal 195–301 Connecter	CLO	40 A	poison oak	dieback/deadwood	–	broken branches/wire/nails/barb wire	–
9	Signal 195–301 Connecter	CLO	41 A	poison oak	dieback/deadwood	–	wire/nails/barb wire	–
9	Signal 195–301 Connecter	CLO	42 A	poison oak	dieback	–	cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	43 A	–	dieback/deadwood	–	poor pruning/wire/nails/barb wire/lopsided canopy	–
9	Signal 195–301 Connecter	CLO	44 A	galls	dieback/deadwood	–	wire/nails/barb wire	–
9	Signal 195–301 Connecter	CLO	45 A	poison oak	dieback/deadwood	–	wire/nails/barb wire	–
9	Signal 195–301 Connecter	CLO	46 A	termites/poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	47 A	termites/woodpeckers/poison oak	dieback/deadwood	–	wire/nails/barb wire	–
9	Signal 195–301 Connecter	CLO	48 A	termites/poison oak	deadwood	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	49 A	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	50 A	poison oak	deadwood	–	two dead trunks	–
9	Signal 195–301 Connecter	CLO	51 A	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	52 A	poison oak	deadwood	–	cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	53 A	galls/poison oak	deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	54 A	termites/ants/poison oak	dieback/deadwood	–	–	lots of poison oak
9	Signal 195–301 Connecter	CLO	55 A	termites/poison oak	deadwood	–	lopsided canopy	two area of dead wood
9	Signal 195–301 Connecter	CLO	56 A	galls/poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	57 A	termites/poison oak	dieback/deadwood	–	cavity–branch/lopsided canopy/decay/rot	–
9	Signal 195–301 Connecter	CLO	58 A	galls	deadwood	–	lopsided canopy/one dead trunk	–
9	Signal 195–301 Connecter	CLO	59 A	galls	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	60 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	61 A	galls	dieback/deadwood	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	62 A	termites	dieback/deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	63 A	poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	64 A	galls/poison oak	dieback/deadwood	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	65 A	–	deadwood	heart rot	cavity–trunk/lopsided canopy	two areas of dead wood
9	Signal 195–301 Connecter	CLO	66 A	borers/poison oak	dieback/deadwood	–	cavity–trunk/decay/rot/one dead trunk	–
9	Signal 195–301 Connecter	CLO	67 A	poison oak	–	–	one dead trunk	–
9	Signal 195–301 Connecter	CLO	68 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	69 A	–	dieback/deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	70 A	borers/poison oak	deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	71 A	borers/poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	72 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	73 A	galls/poison oak	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	74 A	–	dieback/deadwood	–	wire/nails/barb wire/cavity–trunk	–
9	Signal 195–301 Connecter	CLO	75 A	–	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	76 A	ants	dieback/deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	77 A	fungus	dieback/deadwood	–	cavity–trunk/cavity–branch/lopsided canopy/decay/rot/damaged roots/dead trunk split at roots & fallen over	–
9	Signal 195–301 Connecter	CLO	78 A	–	dieback/deadwood	–	cavity–trunk/cavity–branch/lopsided canopy/decay/rot	–
9	Signal 195–301 Connecter	CLO	79 A	–	dieback/deadwood	–	wire/nails/barb wire/cavity–trunk	–
9	Signal 195–301 Connecter	CLO	80 A	poison oak	deadwood	–	broken branches/one dead trunk	–
9	Signal 195–301 Connecter	CLO	81 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	82 A	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	83 A	–	deadwood	–	broken branches	–
9	Signal 195–301 Connecter	CLO	84 A	–	dieback/deadwood	–	cavity–branch/lopsided canopy/one dead trunk	–
9	Signal 195–301 Connecter	CLO	85 A	–	deadwood	–	broken branches/cavity–trunk	–
9	Signal 195–301 Connecter	CLO	86 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	87 A	poison oak	deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	88 A	–	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	89 A	galls/poison oak	deadwood/thinning crown	–	cavity–trunk	lots of poison oak
9	Signal 195–301 Connecter	CLO	90 A	galls	deadwood/thinning crown	–	cavity–trunk	–
9	Signal 195–301 Connecter	CLO	91 A	–	–	–	one dead trunk	covered in poison oak vines
9	Signal 195–301 Connecter	CLO	92 A	galls	dieback/deadwood	heart rot	broken branches/one dead trunk	–
9	Signal 195–301 Connecter	CLO	93 A	poison oak	dieback/deadwood	–	one dead trunk	–
9	Signal 195–301 Connecter	CLO	94 A	poison oak	deadwood	heart rot	–	–
9	Signal 195–301 Connecter	CLO	95 A	poison oak	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	96 A	poison oak	deadwood	–	cavity–trunk	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	97 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	98 A	poison oak	deadwood	–	broken branches/wire/nails/barb wire/cavity–trunk/decay/rot	poison oak vine
9	Signal 195–301 Connecter	CLO	99 A	poison oak	dieback/deadwood	–	one dead trunk	–
9	Signal 195–301 Connecter	CLO	100 A	poison oak	dieback/deadwood	–	cavity–trunk/lopsided canopy	–
9	Signal 195–301 Connecter	CLO	101 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	102 A	–	dieback/deadwood	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	103 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	104 A	–	dieback/deadwood	–	three dead trunks	–
9	Signal 195–301 Connecter	CLO	105 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	106 A	–	deadwood	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	107 A	galls	deadwood	–	one dead trunk	–
9	Signal 195–301 Connecter	CLO	108 A	–	dieback/deadwood/thinning crown	–	lopsided canopy	–
9	Signal 195–301 Connecter	CLO	109 A	–	–	–	–	–
9	Signal 195–301 Connecter	CLO	110 A	–	dieback/deadwood	–	cluster of four small trees	–
9	Signal 195–301 Connecter	CLO	111 A	poison oak	deadwood	–	broken branches/cavity–trunk/decay/rot	–
9	Signal 195–301 Connecter	CLO	112 A	–	dieback/deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	113 A	galls	dieback/deadwood	–	cavity–branch	–
9	Signal 195–301 Connecter	CLO	114 A	galls	–	–	cavity–trunk/cavity–branch	–
9	Signal 195–301 Connecter	CLO	115 A	–	deadwood	–	–	–
9	Signal 195–301 Connecter	CLO	116 A	termites	deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
9	Signal 195–301 Connecter	CLO	Oak 114		dieback		broken branch	
9	Signal 195–301 Connecter	CLO	Oak 115		dieback		broken branch	
10	Signal B Abandoned	CLO	117 A	galls	dieback/deadwood	–	–	–
10	Signal B Abandoned	CLO	118 A	–	dieback	–	lopsided canopy	–
10	Signal B Abandoned	CLO	119 A	termites	–	–	cavity–trunk/decay/rot	–
10	Signal B Abandoned	CLO	120 A	–	dieback/deadwood	–	–	–
10	Signal B Abandoned	CLO	121 A	galls	dieback/deadwood	–	–	–
10	Signal B Abandoned	CLO	122 A	termites	deadwood	–	–	–
10	Signal B Abandoned	CLO	123 A	–	deadwood	–	–	–
10	Signal B Abandoned	CLO	124 A	–	dieback/deadwood	–	cavity–trunk	–
10	Signal B Abandoned	CLO	125 A	–	deadwood	–	–	–
10	Signal B Abandoned	CLO	126 A	–	deadwood	–	–	wood rat nest
10	Signal B Abandoned	CLO	127 A	termites/galls	dieback/deadwood	–	–	–
10	Signal B Abandoned	CLO	730	ants	deadwood	heart rot	–	–
10	Signal B Abandoned	CLO	731	–	deadwood	–	cavity–branch	–
10	Signal B Abandoned	CLO	732	poison oak	deadwood	–	lopsided canopy	–
10	Signal B Abandoned	CLO	733	poison oak	dieback/deadwood	–	–	–
10	Signal B Abandoned	CLO	734	–	deadwood	–	–	–
10	Signal B Abandoned	CLO	735	galls	dieback/deadwood	–	torn branch scaring/decay/rot	–
10	Signal B Abandoned	CLO	736	–	deadwood	–	lopsided canopy	–
10	Signal B Abandoned	CLO	737	termites	deadwood	heart rot	cavity–trunk/lopsided canopy	–
12	Pulas 3	CLO	821	–	–	–	–	–
12	Pulas 3	CLO	822	–	–	–	–	–
12	Pulas 3	CLO	823	poison oak	dieback/deadwood	–	cavity–trunk	–
12	Pulas 3	CLO	824	–	dieback/deadwood	–	–	–
12	Pulas 3	CLO	825	–	–	–	–	–
12	Pulas 3	CLO	826	–	–	–	–	–
12	Pulas 3	CLO	218 A	ants	deadwood	–	–	–
12	Pulas 3	CLO	219 A	–	deadwood	–	–	–
12	Pulas 3	CLO	220 A	ants	deadwood	–	–	–
12	Pulas 3	CLO	221 A	–	–	–	–	–
12	Pulas 3	CLO	222 A	–	deadwood	–	–	–
13	Signal 171	CLO	382	–	–	–	cavity–branch	large area not surveyed due to massive amount of poison oak; roughly 15 trees missed

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
13	Signal 171	CLO	383	–	–	–	cavity–branch	large area not surveyed due to massive amount of poison oak; roughly 15 trees missed
13	Signal 171	CLO	384	–	–	–	–	–
13	Signal 171	CLO	385	–	dieback	–	cavity–branch	–
13	Signal 171	CLO	386	–	dieback	–	cavity–trunk/cavity–branch/decay/rot	–
13	Signal 171	CLO	387	–	–	–	cavity–trunk/cavity–branch/decay/rot	–
13	Signal 171	CLO	388	–	–	–	decay/rot	–
13	Signal 171	CLO	389	–	–	–	–	large, multi–stem tree
13	Signal 171	CLO	390	–	–	–	–	–
13	Signal 171	CLO	391	–	–	–	–	–
13	Signal 171	CLO	392	–	–	–	–	–
13	Signal 171	CLO	393	–	–	–	cavity–trunk	–
13	Signal 171	CLO	394	–	dieback	–	–	–
13	Signal 171	CLO	395	termites	dieback	–	cavity–trunk/decay/rot	–
13	Signal 171	CLO	396	galls	chlorosis/dieback	leal scorch	–	–
13	Signal 171	CLO	397	oak moth	wilt	–	cavity–branch/decay/rot	–
13	Signal 171	CLO	398	termites/galls/woodpeckers	wilt/deadwood	–	cavity–trunk/decay/rot	–
13	Signal 171	CLO	399	–	–	–	cavity–trunk	–
13	Signal 171	CLO	400	–	–	–	–	–
13	Signal 171	CLO	401	–	–	–	–	–
13	Signal 171	CLO	402	termites	–	–	cavity–trunk/cavity–branch/decay/rot	–
13	Signal 171	CLO	403	–	–	–	–	–
13	Signal 171	CLO	404	ants	wilt/dieback	–	–	–
13	Signal 171	CLO	405	ants/oak moth	wilt	–	cavity–trunk/decay/rot	–
13	Signal 171	CLO	406	oak moth	wilt	–	–	–
13	Signal 171	CLO	407	–	–	–	–	–
13	Signal 171	CLO	408	woodpeckers	–	–	–	–
13	Signal 171	CLO	409	–	–	–	cavity–trunk/cavity–branch/decay/rot	–
13	Signal 171	CLO	410	poison oak	dieback/deadwood	–	–	–
13	Signal 171	CLO	411	poison oak	deadwood	–	–	–
13	Signal 171	CLO	412	poison oak	–	–	decay/rot	–
13	Signal 171	CLO	413	woodpeckers	–	–	–	–
13	Signal 171	CLO	414	poison oak	–	leal scorch/twig blight	–	–
13	Signal 171	CLO	415	poison oak	–	–	–	–
14	Signal 125	CLO	128	poison oak	–	–	–	–
14	Signal 125	CLO	129	poison oak	–	–	broken branches/torn branch scaring	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
14	Signal 125	CLO	130	poison oak	–	–	–	–
14	Signal 125	CLO	131	poison oak	–	–	–	–
14	Signal 125	CLO	132	poison oak	deadwood	–	–	–
14	Signal 125	CLO	133	poison oak	–	–	–	–
14	Signal 125	CLO	134	poison oak	–	–	–	–
14	Signal 125	CLO	135	poison oak	deadwood	–	–	–
14	Signal 125	CLO	136	poison oak	–	–	–	–
14	Signal 125	CLO	137	–	–	–	–	–
14	Signal 125	CLO	138	poison oak	–	–	–	–
14	Signal 125	CLO	139	poison oak	–	–	broken branches	–
14	Signal 125	CLO	140	poison oak	–	–	–	–
14	Signal 125	CLO	141	poison oak	–	–	poor pruning	–
14	Signal 125	CLO	142	poison oak	–	–	broken branches	–
14	Signal 125	CLO	143	poison oak	deadwood	–	poor pruning/torn branch scaring	–
14	Signal 125	CLO	144	–	–	–	–	–
14	Signal 125	CLO	428	termites/woodpeckers/poison oak	wilt/deadwood	–	–	–
14	Signal 125	CLO	429	ants/poison oak	dieback/deadwood	–	broken branches	–
14	Signal 125	CLO	430	poison oak	–	–	–	–
14	Signal 125	CLO	431	poison oak	dieback	–	–	lots of poison oak
14	Signal 125	CLO	432	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	433	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	434	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	435	poison oak	–	–	cavity–branch/decay/rot	lots of poison oak
14	Signal 125	CLO	436	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	437	poison oak	–	–	cavity–branch/decay/rot	lots of poison oak
14	Signal 125	CLO	438	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	439	poison oak	–	–	–	lots of poison oak
14	Signal 125	CLO	440	galls/poison oak	dieback/deadwood	–	decay/rot	lots of poison oak
14	Signal 125	CLO	441	poison oak	dieback/deadwood	–	–	lots of poison oak
14	Signal 125	CLO	442	poison oak	–	exudations	–	lots of poison oak; dead oak
14	Signal 125	CLO	443	poison oak	–	–	–	–
14	Signal 125	CLO	444	woodpeckers/poison oak	dieback/deadwood	–	torn branch scaring/decay/rot	lots of poison oak
14	Signal 125	CLO	445	poison oak	–	–	poor pruning/torn branch scaring	lots of poison oak
14	Signal 125	CLO	446	poison oak	–	–	poor pruning/mechanical injury/torn branch scaring	lots of poison oak
14	Signal 125	CLO	447	termites/borers/poison oak	–	–	poor pruning/torn branch scaring/cavity–branch	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
14	Signal 125	CLO	448	poison oak	wilt/dieback	–	broken branches	lots of poison oak
15	Low Signal 171	CLO	105	–	–	–	–	–
15	Low Signal 171	CLO	106	–	–	–	–	–
15	Low Signal 171	CLO	107	–	–	–	–	–
15	Low Signal 171	CLO	108	–	dieback	–	broken branches	–
15	Low Signal 171	CLO	109	–	–	–	–	–
15	Low Signal 171	CLO	110	–	–	–	torn branch scaring	–
15	Low Signal 171	CLO	111	–	dieback/deadwood	–	–	–
15	Low Signal 171	CLO	112	Spanish moss	deadwood	–	–	–
15	Low Signal 171	CLO	113	termites/woodpeckers	wilt/dieback/deadwood /thinning crown	–	–	–
15	Low Signal 171	CLO	114	–	–	–	–	–
15	Low Signal 171	CLO	115	–	–	–	–	–
15	Low Signal 171	CLO	116	poison oak	–	–	–	–
15	Low Signal 171	CLO	117	poison oak	dieback/deadwood	–	broken branches	on cliff
15	Low Signal 171	CLO	118	–	–	–	–	–
15	Low Signal 171	CLO	119	–	dieback/deadwood/thinning crown	–	cavity–trunk/cavity–branch	–
16	Signal 149	CLO	241	–	–	–	–	recently pruned
16	Signal 149	CLO	242	–	–	–	–	recently pruned
16	Signal 149	CLO	243	–	–	–	broken branches/mechanical injury/torn branch scaring	–
16	Signal 149	CLO	244	–	–	–	–	–
16	Signal 149	CLO	245	–	–	–	damaged roots	pruned
16	Signal 149	CLO	246	–	–	–	–	multi–stem tree
16	Signal 149	CLO	247	–	–	–	–	–
16	Signal 149	CLO	248	–	wilt/dieback/thinning crown	–	–	–
16	Signal 149	CLO	249	–	–	–	–	all new growth
16	Signal 149	CLO	250	–	–	–	–	new growth coming from trees in buffer
16	Signal 149	CLO	251	–	–	–	–	on border
16	Signal 149	CLO	252	–	–	–	–	–
16	Signal 149	CLO	253	–	–	heart rot	broken branches	–
16	Signal 149	CLO	254	–	–	–	–	–
16	Signal 149	CLO	255	–	–	–	–	multi–stem tree
16	Signal 149	CLO	256	–	dieback	–	broken branches	–
16	Signal 149	CLO	257	–	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
16	Signal 149	CLO	258	–	dieback/deadwood/thinning crown	leal scorch/lesions/exudations/heart rot	broken branches/torn branch scaring/cavity–branch/lopsided canopy/decay/rot	–
16	Signal 149	CLO	260	–	–	–	–	–
16	Signal 149	CLO	261	–	–	–	–	lots of new growth near ground surface
16	Signal 149	CLO	262	–	–	–	–	lots of new growth near ground surface
16	PCR pipe crossing	CLO	Oak 42	galls	dieback/deadwood			
16	Signal 149	CLO	Oak 46				broken branch/mechanical injury	
17	Signal 113–114–115 Connector	CLO	416	–	deadwood	–	–	–
17	Signal 113–114–115 Connector	CLO	417	poison oak	deadwood	–	torn branch scaring/cavity–branch/lopsided canopy/decay/rot	–
17	Signal 113–114–115 Connector	CLO	418	borers/ants/woodpeckers/poison oak	deadwood	–	–	covered in PO
17	Signal 113–114–115 Connector	CLO	419	–	–	–	–	–
17	Signal 113–114–115 Connector	CLO	420	–	dieback/deadwood	–	cavity–branch	–
17	Signal 113–114–115 Connector	CLO	421	termites	dieback/deadwood	–	cavity–trunk/cavity–branch	–
17	Signal 113–114–115 Connector	CLO	422	–	chlorosis/wilt	–	broken branches/poor pruning	–
17	Signal 113–114–115 Connector	CLO	423	–	–	–	–	–
17	Signal 113–114–115 Connector	CLO	424	ants	–	–	torn branch scaring	–
17	Signal 113–114–115 Connector	CLO	425	poison oak	–	–	–	–
17	Signal 113–114–115 Connector	CLO	426	termites/ants/woodpeckers	dieback	–	–	–
17	Signal 113–114–115 Connector	CLO	427	termites/woodpeckers	dieback/deadwood	–	–	–
17	Signal 113–114–115 Connector	CLO	120	–	deadwood	–	–	–
17	Signal 113–114–115 Connector	CLO	121	–	deadwood	–	–	–
17	Signal 113–114–115 Connector	CLO	122	poison oak	deadwood	–	cavity–trunk/cavity–branch/decay/rot	–
17	Signal 113–114–115 Connector	CLO	123	–	deadwood	–	broken branches	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
17	Signal 113–114–115 Connector	CLO	124	–	deadwood	–	cavity–trunk	–
17	Signal 113–114–115 Connector	CLO	125	–	–	–	–	–
17	Signal 113–114–115 Connector	CLO	126	–	–	–	–	–
17	Signal 113–114–115 Connector	CLO	127	–	deadwood	–	–	–
18	Rock 12J	CLO	265	–	–	–	–	–
18	Rock 12J	CLO	266	–	–	–	–	Blight? Red discoloration of bark
18	Rock 12J	CLO	267	–	–	–	–	–
18	Rock 12J	CLO	268	poison oak	–	–	–	–
19	Signal 66C–Ext. pulas 4	CLO	819	–	–	–	–	–
19	Signal 66C–Ext. pulas 4	CLO	820	–	–	–	–	–
19	Signal 66C–Ext. pulas 4	CLO	216 A	–	–	–	–	–
19	Signal 66C–Ext. pulas 4	CLO	217 A	–	deadwood	–	–	–
20	Signal 162	CLO	257	poison oak	deadwood	–	mechanical injury	–
20	Signal 162	CLO	258	poison oak	deadwood	–	–	–
20	Signal 162	CLO	259	poison oak	deadwood	–	broken branches/poor pruning	–
20	Signal 162	CLO	260	–	–	–	–	–
20	Signal 162	CLO	596	–	–	–	–	–
20	Signal 162	CLO	597	termites	deadwood	–	–	–
20	Signal 162	CLO	598	poison oak	deadwood	–	–	–
20	Signal 162	CLO	599	galls	deadwood	–	–	–
20	Signal 162	CLO	Oak 34					
20	Signal 162	CLO	Oak 35				broken branch/poor pruning/mechanical injury	
20	Signal 162	CLO	Oak 36	ants			broken branch/poor pruning/mechanical injury	
20	Signal 162	CLO	Oak 37	termites/borers/poison oak	dieback/deadwood		decay/rot	
20	Signal 162	CLO	Oak 38	poison oak	wilt/dieback/deadwood /thinning crown			
20	Signal 162	CLO	Oak 39		wilt/dieback			
20	Signal 162	CLO	Oak 40	ants	dieback/deadwood		cavity–trunk/decay/rot	
21	Signal 20 Abandoned	CLO	738	ants	wilt/dieback	–	–	–
21	Signal 20 Abandoned	CLO	739	poison oak	dieback/deadwood/thi nning crown	dying lichen	torn branch scaring/cavity–trunk/cavity–branch/decay/rot	–
21	Signal 20 Abandoned	CLO	740	ants	–	–	–	–
21	Signal 20 Abandoned	CLO	741	poison oak	–	–	–	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
21	Signal 20 Abandoned	CLO	742	–	–	–	–	–
21	Signal 20 Abandoned	CLO	743	poison oak	–	–	–	–
21	Signal 20 Abandoned	CLO	744	poison oak	–	–	–	–
21	Signal 20 Abandoned	CLO	745	poison oak	dieback/deadwood	–	decay/rot	lots of poison oak
21	Signal 20 Abandoned	CLO	746	poison oak	–	–	–	lots of poison oak
21	Signal 20 Abandoned	CLO	747	poison oak	–	–	–	lots of poison oak; different type of oak
21	Signal 20 Abandoned	CLO	748	termites/woodpeckers/poison oak	dieback/deadwood	–	decay/rot	–
21	Signal 20 Abandoned	CLO	749	ants/poison oak	wilt/deadwood	–	–	lots of poison oak
21	Signal 20 Abandoned	CLO	750	ants/poison oak	wilt/dieback/deadwood	–	–	lots of poison oak
21	Signal 20 Abandoned	CLO	751	poison oak	dieback/deadwood	–	–	–
21	Signal 20 Abandoned	CLO	752	poison oak	dieback/deadwood	–	–	–
21	Signal 20 Abandoned	CLO	753	poison oak	–	–	cavity–trunk	lots of poison oak
21	Signal 20 Abandoned	CLO	754	poison oak	–	–	–	–
21	Signal 20 Abandoned	CLO	755	borers/ants	–	–	–	–
21	Signal 20 Abandoned	CLO	756	–	dieback/deadwood/thinning crown	–	lopsided canopy	–
21	Signal 20 Abandoned	CLO	757	–	–	–	–	–
21	Signal 20 Abandoned	CLO	758	–	–	–	–	dying
21	Signal 20 Abandoned	CLO	759	poison oak	dieback	–	–	–
21	Signal 20 Abandoned	CLO	760	ants/poison oak	–	–	–	–
21	Signal 20 Abandoned	CLO	761	–	–	–	–	lots of poison oak
21	Signal 20 Abandoned	CLO	762	–	deadwood	–	lopsided canopy/decay/rot	lots of poison oak
21	Signal 20 Abandoned	CLO	763	ants	–	–	–	–
21	Signal 20 Abandoned	CLO	128 A	–	–	–	–	–
21	Signal 20 Abandoned	CLO	129 A	poison oak	deadwood	–	one dead trunk	–
21	Signal 20 Abandoned	CLO	130 A	–	–	–	branches overhanging tree in buffer	–
21	Signal 20 Abandoned	CLO	131 A	–	–	–	–	–
21	Signal 20 Abandoned	CLO	132 A	poison oak	wilt/deadwood	–	–	–
21	Signal 20 Abandoned	CLO	133 A	ants	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	134 A	poison oak	–	–	–	–
21	Signal 20 Abandoned	CLO	135 A	–	–	–	–	–
21	Signal 20 Abandoned	CLO	136 A	–	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	137 A	poison oak	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	138 A	poison oak	dieback	–	wire/nails/barb wire	–
21	Signal 20 Abandoned	CLO	139 A	ants/poison oak	dieback/deadwood	–	lopsided canopy	–
21	Signal 20 Abandoned	CLO	140 A	poison oak	deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
21	Signal 20 Abandoned	CLO	141 A	termites	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	142 A	termites/ants/poison oak	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	143 A	termites/borers/fungus	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	144 A	woodpeckers	deadwood	fungus	–	–
21	Signal 20 Abandoned	CLO	145 A	termites/poison oak	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	146 A	termites/borers/ants	–	–	broken branches/torn branch scaring/cavity–trunk	–
21	Signal 20 Abandoned	CLO	147 A	galls	deadwood	fungus	wire/nails/barb wire/cavity–trunk	–
21	Signal 20 Abandoned	CLO	148 A	termites/ants/poison oak	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	149 A	ants/poison oak	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	150 A	termites/ants/galls	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	151 A	termites/poison oak	deadwood	–	cavity–trunk	–
21	Signal 20 Abandoned	CLO	152 A	poison oak	deadwood	–	lopsided canopy	–
21	Signal 20 Abandoned	CLO	153 A	poison oak	deadwood	–	lopsided canopy	–
21	Signal 20 Abandoned	CLO	154 A	ants	deadwood	–	–	–
21	Signal 20 Abandoned	CLO	155 A	termites/ants	deadwood	–	cavity–trunk/decay/rot	–
21	Signal 20 Abandoned	CLO	Oak 109					dying
21	Signal 20 Abandoned	CLO	Oak 110		dieback			
21	Signal 20 Abandoned	CLO	Oak 111	ants	dieback			
21	Signal 20 Abandoned	CLO	Oak 112	poison oak	dieback			
21	Signal 20 Abandoned	CLO	Oak 113	oak moth	dieback	leaf scorch		
22	Signal P1–I1	CLO	235 A	termites/borers	deadwood	–	poor pruning/cavity–trunk/cavity–branch	–
22	Signal P1–I1	CLO	236 A	termites	deadwood	–	poor pruning/cavity–branch	–
22	Signal P1–I1	CLO	237 A	–	–	–	torn branch scaring/lopsided canopy	–
22	Signal P1–I1	CLO	238 A	–	deadwood	–	–	–
22	Signal P1–I1	CLO	239 A	–	deadwood	–	–	–
22	Signal P1–I1	CLO	240 A	termites	deadwood	fungus	–	–
22	Signal P1–I1	CLO	241 A	termites	deadwood	–	–	–
22	Signal P1–I1	CLO	242 A	–	–	–	–	–
22	Signal P1–I1	CLO	243 A	–	deadwood	–	–	–
22	Signal P1–I1	CLO	244 A	–	deadwood	–	poor pruning	–
22	Signal P1–I1	CLO	245 A	galls	–	–	–	–
22	Signal P1–I1	CLO	246 A	–	–	–	–	–
22	Signal P1–I1	CLO	247 A	galls	deadwood	–	poor pruning	–
22	Signal P1–I1	CLO	248 A	galls	deadwood	–	–	–
22	Signal P1–I1	CLO	249 A	–	wilt/deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
22	Signal P1–I1	CLO	250 A	galls/poison oak	deadwood	–	–	–
22	Signal P1–I1	CLO	251 A	poison oak	deadwood	–	broken branches	–
22	Signal P1–I1	CLO	252 A	poison oak	–	–	–	–
22	Signal P1–I2	CLO	845	poison oak	dieback/deadwood	–	–	–
22	Signal P1–I3	CLO	846	poison oak	dieback/deadwood	–	–	–
22	Signal P1–I4	CLO	847	poison oak	wilt	–	–	lots of poison oak
22	Signal P1–I5	CLO	848	galls/poison oak	deadwood	–	–	lots of poison oak
22	Signal P1–I6	CLO	849	poison oak	–	–	–	–
22	Signal P1–I7	CLO	850	poison oak	–	–	–	–
22	Signal P1–I8	CLO	851	borers/poison oak	deadwood	–	–	–
22	Signal P1–I9	CLO	852	borers	–	–	–	–
22	Signal P1–I10	CLO	853	–	deadwood	–	–	–
22	Signal P1–I11	CLO	854	–	–	–	–	–
22	Signal P1–I12	CLO	855	–	–	–	lopsided canopy	–
22	Signal P1–I13	CLO	856	–	–	–	–	–
22	Signal P1–I14	CLO	857	poison oak	dieback	–	–	–
22	Signal P1–I15	CLO	858	poison oak	dieback	–	lopsided canopy	–
22	Signal P1–I16	CLO	859	poison oak	dieback	–	–	–
22	Signal P1–I17	CLO	860	poison oak	–	–	–	–
22	Signal P1–I18	CLO	861	poison oak	–	–	–	–
22	Signal P1–I19	CLO	862	poison oak	–	–	–	–
22	Signal P1–I1	CLO	908	–	–	–	–	–
22	Signal P1–I1	CLO	909	poison oak	–	–	–	–
22	Signal P1–I1	CLO	910	poison oak	wilt/dieback/deadwood	–	lopsided canopy	–
22	Signal P1–I1	CLO	911	galls/poison oak	dieback/deadwood	–	–	–
22	Signal P1–I1	CLO	912			–	–	dying
22	Signal P1–I1	CLO	913			–	–	–
22	Signal P1–I1	CLO	914	galls	deadwood	–	–	–
22	Signal P1–I1	CLO	915	termites/borers	dieback/deadwood	–	broken branches/decay/rot	–
22	Signal P1–I1	CLO	916			–	–	–
22	Signal P1–I1	CLO	917			–	–	–
22	Signal P1–I1	CLO	918	poison oak	wilt/dieback/deadwood	–	–	–
22	Signal P1–I1	CLO	919	termites/borers/poison oak	–	–	broken branches	–
22	Signal P1–I1	CLO	920	poison oak	–	–	–	–
22	Signal P1–I1	CLO	921	poison oak	dieback/deadwood	–	cavity–branch	–
22	Signal P1–I1	CLO	922	poison oak	deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
22	Signal P1–I1	CLO	923	galls/poison oak	deadwood	–	–	–
22	Signal P1–I1	CLO	924	termites/borers/poison oak	–	–	–	–
22	Signal P1–I1	CLO	925	poison oak	–	–	–	–
22	Signal P1–I1	CLO	926	poison oak	–	–	–	–
22	Signal P1–I1	CLO	927	poison oak	–	–	–	–
22	Signal P1–I1	CLO	928	poison oak	deadwood	–	lopsided canopy/decay/rot	–
22	Signal P1–I1	CLO	929	galls/poison oak	–	–	–	–
22	Signal P1–I1	CLO	930	poison oak	dieback	–	–	–
22	Signal P1–I1	CLO	931	poison oak	–	–	lopsided canopy	–
22	Signal P1–I1	CLO	932	poison oak	–	–	lopsided canopy	–
22	Signal P1–I1	CLO	933	poison oak	dieback	–	–	–
22	Signal P1–I1	CLO	934	poison oak	dieback/deadwood	–	cavity–branch	–
22	Signal P1–I1	CLO	935	poison oak	dieback/deadwood	–	–	–
22	Signal P1–I1	CLO	936	ants/poison oak	dieback/deadwood	–	cavity–branch	–
22	Signal P1–I1	CLO	937	ants/poison oak	dieback/deadwood	–	lopsided canopy	–
22	Signal P1–I1	CLO	938	poison oak	–	–	–	–
22	Signal P1–I1	CLO	939	poison oak	deadwood	–	cavity–trunk	–
22	Signal P1–I1	CLO	940	poison oak	dieback/deadwood	–	poor pruning/cavity–trunk	–
22	Signal P1–I1	CLO	941	poison oak	dieback/deadwood/thinning crown	–	poor pruning	–
22	Signal P1–I1	CLO	942	–	–	–	–	–
22	Signal P1–I1	CLO	943	–	–	–	–	–
22	Signal P1–I1	CLO	944	–	wilt	–	–	–
22	Signal P1–I1	CLO	945	borers/galls	dieback/deadwood	–	poor pruning/mechanical injury	–
22	Signal P1–I1	CLO	946	–	–	–	poor pruning/mechanical injury	–
22	Signal P1–I1	CLO	947	poison oak	deadwood	–	poor pruning	–
22	Signal P1–I1	CLO	948	poison oak	dieback	–	–	–
22	Signal P1–I1	CLO	949	–	–	–	–	–
22	Signal P1–I1	CLO	950	–	wilt/dieback/thinning crown	–	–	–
22	Signal P1–I1	CLO	951	poison oak	–	–	–	–
22	Signal P1–I1	CLO	952	poison oak	–	–	mechanical injury	–
22	Signal P1–I1	CLO	953	–	–	–	–	–
22	Signal P1–I1	CLO	954	poison oak	dieback	–	–	–
22	Signal P1–I1	CLO	955	–	–	–	–	–
22	Signal P1–I1	CLO	956	termites/galls	dieback/deadwood	heart rot	decay/rot	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
22	Signal P1–I1	CLO	957	–	–	–	–	–
22	Signal P1–I1	CLO	958	poison oak	dieback	–	–	dying
22	Signal P1–I1	CLO	959	–	–	–	–	–
22	Signal P1–I1	CLO	960	–	dieback	–	–	–
22	Signal P1–I1	CLO	961	poison oak	deadwood	–	lopsided canopy	–
23	Signal 129	CLO	764	poison oak	wilt	–	poor pruning	–
23	Signal 129	CLO	765	poison oak	–	–	–	–
23	Signal 129	CLO	766	poison oak	deadwood/thinning crown	–	–	lots of poison oak
23	Signal 129	CLO	767	poison oak	dieback/deadwood	–	–	lots of poison oak
23	Signal 129	CLO	768	termites/galls/poison oak	dieback/deadwood	–	cavity–trunk	lots of poison oak
23	Signal 129	CLO	769	termites/borers/poison oak	dieback/deadwood	heart rot	–	lots of poison oak
23	Signal 129	CLO	770	poison oak	dieback/deadwood	–	lopsided canopy	–
23	Signal 129	CLO	771	–	dieback/deadwood	–	–	lots of poison oak
23	Signal 129	CLO	772	termites/borers	deadwood/thinning crown	–	decay/rot	–
23	Signal 129	CLO	773	termites/borers	deadwood	–	cavity–trunk	–
23	Signal 129	CLO	774	galls	dieback/deadwood	–	cavity–trunk/cavity–branch	–
23	Signal 129	CLO	775	–	dieback/deadwood/thinning crown	–	–	–
23	Signal 129	CLO	776	poison oak	–	–	–	–
23	Signal 129	CLO	777	termites/borers	dieback/deadwood/thinning crown	heart rot	cavity–trunk/lopsided canopy/decay/rot	–
23	Signal 129	CLO	778	poison oak	–	–	–	–
23	Signal 129	CLO	779	termites/borers/poison oak	deadwood	–	decay/rot	–
23	Signal 129	CLO	780	poison oak	deadwood	–	cavity–trunk	lots of poison oak
23	Signal 129	CLO	781	poison oak	deadwood	–	–	–
23	Signal 129	CLO	782	galls	deadwood	–	–	lots of poison oak
23	Signal 129	CLO	783	oak moth	–	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	784	termites/borers/poison oak	dieback/deadwood	–	cavity–trunk	–
23	Signal 129	CLO	785	borers/oak moth/poison oak	dieback/deadwood	–	–	–
23	Signal 129	CLO	786	poison oak	deadwood	–	–	–
23	Signal 129	CLO	787	poison oak	thinning crown	–	–	–
23	Signal 129	CLO	788	poison oak	wilt/dieback/deadwood/thinning crown	–	–	lots of poison oak
23	Signal 129	CLO	789	poison oak	dieback/deadwood	–	–	lots of poison oak
23	Signal 129	CLO	790	poison oak	deadwood	–	lopsided canopy	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
23	Signal 129	CLO	791	poison oak	deadwood	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	792	poison oak	deadwood	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	793	–	–	–	downed tree	lots of poison oak
23	Signal 129	CLO	794	poison oak	dieback	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	795	poison oak	–	–	lopsided canopy	–
23	Signal 129	CLO	796	ants/poison oak	–	–	–	lots of poison oak
23	Signal 129	CLO	797	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	lots of poison oak
23	Signal 129	CLO	798	poison oak	dieback	–	–	lots of poison oak
23	Signal 129	CLO	799	poison oak	wilt/dieback/deadwood	–	decay/rot	lots of poison oak
23	Signal 129	CLO	800	poison oak	–	–	–	lots of poison oak
23	Signal 129	CLO	801	poison oak	deadwood	–	–	lots of poison oak
23	Signal 129	CLO	802	poison oak	deadwood	–	cavity–trunk/decay/rot	lots of poison oak
23	Signal 129	CLO	803	poison oak	deadwood	–	–	lots of poison oak
23	Signal 129	CLO	804	poison oak	dieback/deadwood	–	–	lots of poison oak
23	Signal 129	CLO	805	poison oak	dieback	–	lopsided canopy/decay/rot	lots of poison oak
23	Signal 129	CLO	806	poison oak	dieback	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	807	poison oak	–	–	–	lots of poison oak
23	Signal 129	CLO	808	termites/borers/poison oak	deadwood	–	cavity–trunk/decay/rot	–
23	Signal 129	CLO	809	poison oak	deadwood	–	cavity–trunk/cavity–branch	–
23	Signal 129	CLO	810	poison oak	deadwood	–	cavity–trunk/lopsided canopy	–
23	Signal 129	CLO	811	poison oak	dieback	–	–	–
23	Signal 129	CLO	812	poison oak	dieback/deadwood	–	–	–
23	Signal 129	CLO	813	borers/poison oak	wilt/dieback/deadwood	–	cavity–trunk/decay/rot	–
23	Signal 129	CLO	814	galls/poison oak	dieback/deadwood	–	cavity–branch	–
23	Signal 129	CLO	815	poison oak	dieback/deadwood	–	broken branches/decay/rot	–
23	Signal 129	CLO	816	galls/poison oak	dieback/deadwood	–	lopsided canopy	–
23	Signal 129	CLO	817	poison oak	–	–	lopsided canopy	lots of poison oak
23	Signal 129	CLO	818	poison oak	–	–	–	–
23	Signal 129	CLO	156 A	–	–	–	poor pruning	–
23	Signal 129	CLO	157 A	termites/poison oak	deadwood	–	poor pruning/lopsided canopy	–
23	Signal 129	CLO	158 A	poison oak	deadwood	–	–	–
23	Signal 129	CLO	159 A	poison oak	deadwood	–	poor pruning	–
23	Signal 129	CLO	160 A	ants	–	–	poor pruning	–
23	Signal 129	CLO	161 A	–	deadwood	–	–	–
23	Signal 129	CLO	162 A	borers	deadwood	–	poor pruning/mechanical injury	–
23	Signal 129	CLO	163 A	ants	wilt/deadwood	–	poor pruning	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
23	Signal 129	CLO	164 A	–	deadwood	–	–	–
23	Signal 129	CLO	165 A	galls/poison oak	–	–	poor pruning/mechanical injury	–
23	Signal 129	CLO	166 A	ants	–	–	poor pruning/mechanical injury	–
23	Signal 129	CLO	167 A	–	–	–	broken branches/mechanical injury	–
23	Signal 129	CLO	168 A	–	wilt/deadwood	–	–	–
23	Signal 129	CLO	169 A	borers	dieback/deadwood	–	–	–
23	Signal 129	CLO	170 A	termites/borers/ants/poison oak	deadwood	–	broken branches	–
23	Signal 129	CLO	171 A	poison oak	deadwood	–	–	–
23	Signal 129	CLO	172 A	–	–	leaf blight	–	–
23	Signal 129	CLO	173 A	poison oak	deadwood	leaf blight	–	–
23	Signal 129	CLO	174 A	–	deadwood	–	–	–
23	Signal 129	CLO	175 A	termites/poison oak	deadwood	fungus	–	–
23	Signal 129	CLO	176 A	borers/poison oak	deadwood	fungus	cavity–branch	–
23	Signal 129	CLO	177 A	termites/poison oak	deadwood	–	lopsided canopy	–
23	Signal 129	CLO	178 A	–	–	–	–	–
23	Signal 129	CLO	179 A	poison oak	deadwood	–	–	–
23	Signal 129	CLO	180 A	galls/poison oak	deadwood	–	–	–
23	Signal 129	CLO	181 A	poison oak	–	–	–	lots of poison oak
23	Signal 129	CLO	182 A	poison oak	–	–	–	–
23	Signal 129	CLO	183 A	termites/poison oak	deadwood	–	cavity–branch	–
23	Signal 129	CLO	184 A	poison oak	deadwood	–	cavity–trunk	lots of poison oak
23	Signal 129	CLO	185 A	termites/poison oak	deadwood	fungus	decay/rot	–
23	Signal 129	CLO	186 A	poison oak	wilt/dieback/deadwood	–	cavity–trunk/decay/rot	–
23	Signal 129	CLO	187 A	poison oak	deadwood	–	–	–
23	Signal 129	CLO	188 A	–	deadwood	–	–	–
23	Signal 129	CLO	189 A	poison oak	deadwood	–	–	–
23	Signal 129	CLO	190 A	–	deadwood	–	–	–
23	Signal 129	CLO	191 A	galls	dieback/deadwood	–	–	–
23	Signal 129	CLO	192 A	ants/galls/poison oak	deadwood	leaf blight	–	–
23	Signal 129	CLO	193 A	–	deadwood	–	–	–
23	Signal 129	CLO	194 A	–	deadwood	–	–	–
23	Signal 129	CLO	195 A	–	deadwood	–	–	–
23	Signal 129	CLO	196 A	–	deadwood	leaf blight	–	–
23	Signal 129	CLO	197 A	–	–	–	–	–
23	Signal 129	CLO	198 A	termites/galls/poison oak	deadwood	–	cavity–branch	–
23	Signal 129	CLO	199 A	poison oak	–	–	lopsided canopy	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
23	Signal 129	CLO	200 A	galls	dieback/deadwood	fungus	–	–
23	Signal 129	CLO	201 A	poison oak	deadwood	–	cavity–trunk/decay/rot	–
23	Signal 129	CLO	202 A	termites	deadwood	–	cavity–branch/decay/rot	–
23	Signal 129	CLO	203 A	–	dieback/deadwood	–	lopsided canopy/decay/rot	–
23	Signal 129	CLO	204 A	galls	deadwood	fungus	–	–
23	Signal 129	CLO	205 A	–	deadwood	leaf blight	–	–
23	Signal 129	CLO	206 A	termites/galls	dieback/deadwood	–	–	–
23	Signal 129	CLO	207 A	galls	dieback/deadwood	–	–	–
23	Signal 129	CLO	208 A	–	deadwood	–	–	–
23	Signal 129	CLO	209 A	galls	deadwood	fungus	–	–
23	Signal 129	CLO	210 A	termites/borers	deadwood	–	–	–
23	Signal 129	CLO	211 A	–	dieback/deadwood	–	–	–
23	Signal 129	CLO	212 A	termites/borers	deadwood	–	–	–
23	Signal 129	CLO	213 A	termites	deadwood	–	–	–
23	Signal 129	CLO	214 A	termites/poison oak	deadwood	fungus	lopsided canopy	–
23	Signal 129	CLO	215 A	–	–	leaf blight	–	–
24	Cut Shack Demo	CLO	863	galls/poison oak	–	–	lopsided canopy	–
24	Cut Shack Demo	CLO	864	poison oak	–	–	–	located on cliff
24	Cut Shack Demo	CLO	865	borers/galls/poison oak	dieback/deadwood	–	–	lots of poison oak
24	Cut Shack Demo	CLO	866	borers/poison oak	dieback/deadwood	–	cavity–trunk/lopsided canopy	–
24	Cut Shack Demo	CLO	867	borers/poison oak	dieback/deadwood	–	–	lots of poison oak
24	Cut Shack Demo	CLO	868	borers/poison oak	dieback/deadwood	–	–	–
24	Cut Shack Demo	CLO	869	poison oak	wilt/dieback/deadwood /thinning crown	heart rot	cavity–trunk	–
24	Cut Shack Demo	CLO	870	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	–
24	Cut Shack Demo	CLO	871	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak; dying
24	Cut Shack Demo	CLO	872	poison oak	–	–	cavity–trunk/cavity–branch	lots of poison oak
24	Cut Shack Demo	CLO	873	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	874	borers/poison oak	deadwood	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	875	borers/poison oak	deadwood	–	–	lots of poison oak
24	Cut Shack Demo	CLO	876	poison oak	deadwood	–	–	–
24	Cut Shack Demo	CLO	877	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	878	–	wilt	–	mechanical injury/lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	879	poison oak	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	880	galls/poison oak	dieback/deadwood	–	lopsided canopy	–
24	Cut Shack Demo	CLO	881	borers/poison oak	–	–	lopsided canopy	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
24	Cut Shack Demo	CLO	882	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	883	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	884	poison oak	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	885	poison oak	deadwood	–	cavity–trunk/lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	886	poison oak	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	887	poison oak	wilt/dieback/deadwood	–	broken branches/cavity–trunk/cavity–branch/decay/rot	lots of poison oak
24	Cut Shack Demo	CLO	888	–	deadwood	–	–	lots of poison oak
24	Cut Shack Demo	CLO	889	poison oak	dieback/deadwood	–	–	lots of poison oak
24	Cut Shack Demo	CLO	890	poison oak	–	–	–	–
24	Cut Shack Demo	CLO	891	oak moth/poison oak	wilt/dieback/deadwood	–	lopsided canopy/decay/rot	lots of poison oak
24	Cut Shack Demo	CLO	892	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	893	borers/poison oak	–	–	cavity–trunk/lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	894	poison oak	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	895	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	897	–	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	898	poison oak	–	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	900	poison oak	dieback	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	901	poison oak	deadwood	–	lopsided canopy	–
24	Cut Shack Demo	CLO	902	poison oak	dieback/deadwood	–	lopsided canopy/decay/rot	–
24	Cut Shack Demo	CLO	903	poison oak	dieback	–	lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	904	poison oak	–	–	–	lots of poison oak
24	Cut Shack Demo	CLO	905	poison oak	dieback/deadwood	–	cavity–trunk	lots of poison oak
24	Cut Shack Demo	CLO	906	poison oak	–	–	wire/nails/barb wire/cavity–trunk/lopsided canopy	lots of poison oak
24	Cut Shack Demo	CLO	907	galls/poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	lots of poison oak
24	Cut Shack Demo	CLO	Oak 102	oak moth	dieback		broken branch/torn branch scaring/lopsided canopy	
25	Pad 25 road improvement	CLO	238	–	–	–	–	–
25	Pad 25 road improvement	CLO	239	galls/woodpeckers	–	–	torn branch scaring/decay/rot	king snake in tree; only 1 large stem sticks out into buffer
25	Pad 25 road improvement	CLO	240	–	–	–	–	–
26	Maino 20K	CLO	501	poison oak	dieback	–	broken branches	–
26	Maino 20K	CLO	503	poison oak	dieback/deadwood/thinning crown	–	lopsided canopy	lots of poison oak
26	Maino 20K	CLO	504	–	–	–	–	dead

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
26	Maino 20K	CLO	505	–	–	–	–	lots of poison oak
26	Maino 20K	CLO	183	poison oak	deadwood	–	–	S. Oak
26	Maino 20K	CLO	184	poison oak/spanish moss	–	–	poor pruning	S. Oak
26	Maino 20 K	CLO	Oak 65	poison oak	dieback/deadwood		decay/rot	
26	Maino 20 K	CLO	Oak 66	galls/poison oak	dieback/deadwood		decay/rot	
26	Maino 20 K	CLO	Oak 67	borers/poison oak	dieback/deadwood		poor pruning	
26	Maino 20 K	CLO	Oak 68	poison oak	dieback			lots of poison oak
26	Maino 20 K	CLO	Oak 69	poison oak	dieback/deadwood		decay/rot	lots of poison oak
27	Maino 17N	CLO	333	poison oak	–	–	–	–
27	Maino 17N	CLO	334	poison oak	–		–	–
27	Maino 17N	CLO	335	poison oak	–		–	–
27	Maino 17N	CLO	336	poison oak	–		–	–
27	Maino 17N	CLO	337	poison oak	–		–	multi–stem tree
27	Maino 17N	CLO	338	–	–		–	–
27	Maino 17N	CLO	339	–	–		–	rat nest
27	Maino 17N	CLO	340	–	wilt/dieback		lopsided canopy	lichen
27	Maino 17N	CLO	341	–	–		broken branches/cavity–trunk/lopsided canopy/decay/rot	–
27	Maino 17N	CLO	342	–	–		–	–
27	Maino 17N	CLO	343	termites/ants/woodpeckers/poison oak	–		broken branches/cavity–trunk	–
28	Signal 9J2	CLO	827	–	–	–	–	–
28	Signal 9J2	CLO	828	poison oak	–	–	–	–
28	Signal 9J2	CLO	829	poison oak	deadwood	–	lopsided canopy	–
28	Signal 9J2	CLO	830	galls/poison oak	–	–	cavity–trunk	lots of poison oak
28	Signal 9J2	CLO	831	termites/borers/galls/poison oak	dieback/deadwood	–	–	–
28	Signal 9J2	CLO	832	galls/poison oak	–	–	cavity–trunk	–
28	Signal 9J2	CLO	833	–	dieback/deadwood	–	cavity–branch	–
28	Signal 9J2	CLO	834	poison oak	–	–	–	–
28	Signal 9J2	CLO	835	galls/poison oak	dieback/deadwood	–	decay/rot	–
28	Signal 9J2	CLO	836	poison oak	dieback/deadwood	–	lopsided canopy/decay/rot	–
28	Signal 9J2	CLO	837	poison oak	dieback/deadwood	–	–	–
28	Signal 9J2	CLO	838	termites/borers/galls/poison oak	dieback	–	lopsided canopy	–
28	Signal 9J2	CLO	839	poison oak	dieback/deadwood/thinning crown	–	–	lots of poison oak
28	Signal 9J2	CLO	840	poison oak	–	–	–	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
28	Signal 9J2	CLO	841	poison oak	dieback/deadwood	–	cavity–trunk	–
28	Signal 9J2	CLO	842	poison oak	deadwood	–	lopsided canopy	–
28	Signal 9J2	CLO	843	–	–	–	–	–
28	Signal 9J2	CLO	844	poison oak	dieback/deadwood	–	decay/rot	–
28	Signal 9J2	CLO	223 A	termites/galls/poison oak	deadwood	–	broken branches	–
28	Signal 9J2	CLO	224 A	–	wilt/deadwood	–	–	–
28	Signal 9J2	CLO	225 A	–	deadwood	–	–	–
28	Signal 9J2	CLO	226 A	poison oak	deadwood	–	–	–
28	Signal 9J2	CLO	227 A	poison oak	–	–	lopsided canopy	–
28	Signal 9J2	CLO	228 A	termites/borers/poison oak	deadwood	–	–	–
28	Signal 9J2	CLO	229 A	termites/poison oak	deadwood	–	broken branches/poor pruning/cavity–trunk	–
28	Signal 9J2	CLO	230 A	termites/poison oak	deadwood	–	broken branches/cavity–trunk	–
28	Signal 9J2	CLO	231 A	termites/poison oak	dieback/deadwood	–	broken branches	–
28	Signal 9J2	CLO	232 A	–	deadwood	–	–	–
28	Signal 9J2	CLO	233 A	–	dieback/deadwood	–	–	–
28	Signal 9J2	CLO	234 A	termites/borers/poison oak	deadwood	–	broken branches/poor pruning/mechanical injury	–
29	Signal 131/B-Lo Pulas 2	CLO	943	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	944	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	945	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	946	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	947	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	948	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	949	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	950	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	951	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	952	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	953	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	954	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	955	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	956	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	957	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	958	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	959	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	960	–	–	–	–	–
29	Signal 131/B-Lo Pulas 2	CLO	961	–	–	–	–	–
30	Signal 124	CLO	487	–	–	–	Cavity-trunk	

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
30	Signal 124	CLO	488	Poison Oak	Dieback/ Deadwood	–	Decay/rot	
30	Signal 124	CLO	489	Poison Oak	Dieback/ Deadwood	–	–	
30	Signal 124	CLO	490	–	–	–	–	
30	Signal 124	CLO	491	Poison Oak	Dieback	–	–	
30	Signal 124	CLO	492	–	–	–	–	
30	Signal 124	CLO	493	–	–	–	–	
30	Signal 124	CLO	494	–	–	–	–	
30	Signal 124	CLO	495	–	–	–	Torn branch scarring, cavity-trunk, decay/rot	
30	Signal 124	CLO	171	Poison Oak	Deadwood	–	Torn branch scar	
30	Signal 124	CLO	172	–	–	–	Mechanical injury	
30	Signal 124	CLO	173	–	–	–	–	
30	Signal 124	CLO	174	Poison Oak	–	–	–	
30	Signal 124	CLO	175	–	–	–	–	
30	Signal 124	CLO	176	Poison Oak	–	–	–	
30	Signal 124	CLO	177	–	–	–	–	
31	Pulas 8	CLO	497	poison oak	–	–	–	–
31	Pulas 8	CLO	498	poison oak	deadwood	lesions	broken branches	–
31	Pulas 8	CLO	499	poison oak	–	–	–	–
31	Pulas 8	CLO	500	borers/poison oak	dieback/deadwood	–	–	–
31	Pulas 8	CLO	178	poison oak	–	–	broken branches/mechanical injury	–
31	Pulas 8	CLO	179	–	dieback/deadwood	–	broken branches	lots of poison oak
31	Pulas 8	CLO	180	–	–	–	–	–
31	Pulas 8	CLO	181	poison oak	deadwood	–	–	–
32	Signal 123	CLO	479	Poison Oak	–	–	–	
32	Signal 123	CLO	480	Poison Oak	–	–	–	
32	Signal 123	CLO	481	Poison Oak	–	–	–	
32	Signal 123	CLO	482	Poison Oak	–	–	–	
32	Signal 123	CLO	483	Ants	–	–	–	
32	Signal 123	CLO	484	Poison Oak	–	–	Mechanical injury/torn branch scar	
32	Signal 123	CLO	485	Poison Oak	–	–	–	
32	Signal 123	SCO	486	Poison Oak	–	–	–	

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
32	Signal 123	CLO	167	Poison Oak	–	–	–	
32	Signal 123	CLO	168	–	–	–	–	
32	Signal 123	CLO	169	–	–	–	–	
32	Signal 123	CLO	170	Poison Oak	–	–	–	
33	Pulas 6	CLO	275	poison oak	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	276	poison oak	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	277	poison oak	–	–	broken branches/poor pruning/mechanical injury	multi–stem tree
33	Pulas 6	CLO	278	poison oak	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	279	poison oak	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	280	poison oak	–	–	–	–
33	Pulas 6	CLO	281	poison oak	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	282	poison oak	–	–	poor pruning/mechanical injury	multi–stem tree
33	Pulas 6	CLO	283	–	–	–	poor pruning/mechanical injury	–
33	Pulas 6	CLO	284	–	–	–	–	–
33	Pulas 6	CLO	285	poison oak	–	–	–	–
33	Pulas 6	CLO	286	–	–	–	poor pruning/mechanical injury	multi–stem tree
33	Pulas 6	CLO	287	–	–	–	poor pruning/mechanical injury	–
33	Pulas 6	CLO	288	–	–	–	broken branches	–
33	Pulas 6	CLO	289	–	–	–	–	multi–stem tree
33	Pulas 6	CLO	290	–	–	–	broken branches/poor pruning/mechanical injury	–
33	Pulas 6	CLO	291	poison oak	–	–	broken branches	–
33	Pulas 6	CLO	292	poison oak	–	twig blight/heart rot	poor pruning/cavity–trunk	–
33	Pulas 6	CLO	293	–	–	–	broken branches/mechanical injury	–
33	Pulas 6	CLO	294	–	–	–	–	–
33	Pulas 6	CLO	295	poison oak	–	–	poor pruning/mechanical injury/decay/rot	–
33	Pulas 6	CLO	296	poison oak	–	–	mechanical injury	–
33	Pulas 6	CLO	297	poison oak	–	–	–	–
33	Pulas 6	CLO	298	–	–	–	–	–
33	Pulas 6	CLO	299	–	–	–	–	–
33	Pulas 6	CLO	300	–	–	–	mechanical injury	–
33	Pulas 6	CLO	302	–	–	–	–	–
34	Signal 135	CLO	23	–	–	–	–	–
34	Signal 135	CLO	24	–	–	–	–	–
34	Signal 135	CLO	25	–	–	–	–	–
34	Signal 135	CLO	26	–	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
34	Signal 135	CLO	27	–	–	–	–	health–OK
34	Signal 135	CLO	28	–	–	–	–	health–OK
34	Signal 135	CLO	29	–	–	–	–	health–OK
34	Signal 135	CLO	30	–	–	–	–	Poor health – rot
34	Signal 135	CLO	31	–	–	–	–	–
34	Signal 135	CLO	32	–	–	–	–	–
34	Signal 135	CLO	33	–	–	–	–	–
34	Signal 135	CLO	34	–	–	–	–	–
34	Signal 135	CLO	35	–	–	–	–	–
34	Signal 135	CLO	36	–	–	–	–	–
34	Signal 135	CLO	37	–	–	–	–	–
34	Signal 135	CLO	38	–	–	–	–	–
34	Signal 135	CLO	39	–	–	–	–	–
34	Signal 135	CLO	40	–	–	–	–	–
35	Signal 180	CLO	8	–	–	–	–	–
35	Signal 180	CLO	9	–	–	–	–	–
35	Signal 180	CLO	10	–	–	–	–	–
35	Signal 180	CLO	11	–	–	–	–	–
35	Signal 180	CLO	12	–	–	–	–	–
35	Signal 180	CLO	13	–	–	–	–	–
35	Signal 180	CLO	14	–	–	–	–	–
35	Signal 180	CLO	15	–	–	–	–	–
35	Signal 180	CLO	16	–	–	–	–	–
35	Signal 180	CLO	17	–	–	–	–	–
35	Signal 180	CLO	18	–	–	–	–	–
35	Signal 180	CLO	19	–	–	–	–	–
35	Signal 180	CLO	20	–	–	–	–	–
35	Signal 180	CLO	21	–	–	–	–	–
35	Signal 180	CLO	22	–	–	–	–	–
36	Signal 48	CLO	617	poison oak	dieback/deadwood	–	cavity–branch	lots of poison oak
36	Signal 48	CLO	618	poison oak	dieback	–	–	lots of poison oak
36	Signal 48	CLO	619	poison oak	dieback/deadwood	–	decay/rot	lots of poison oak
36	Signal 48	CLO	620	termites/poison oak	deadwood/thinning crown	–	–	lots of poison oak
36	Signal 48	CLO	621	ants/poison oak	–	–	cavity–trunk/cavity–branch	lots of poison oak
36	Signal 48	CLO	622	ants/poison oak	–	–	–	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
36	Signal 48	CLO	623	termites/borers/poison oak	–	heart rot	cavity–trunk/decay/rot	lots of poison oak
36	Signal 48	CLO	624	ants	wilt	–	–	lots of poison oak
36	Signal 48	CLO	625	–	wilt	–	–	lots of poison oak
36	Pad 36 turnout	CLO	626	–	dieback/deadwood	–	cavity–branch	–
36	Pad 36 turnout	CLO	627	poison oak	dieback/deadwood	heart rot	poor pruning/cavity–trunk/cavity–branch/decay/rot	–
36	Signal 48	CLO	12A	poison oak	dieback/deadwood	–	broken branches/poor pruning/lopsided canopy	–
36	Signal 48	CLO	13A	ants/poison oak	dieback/deadwood	heart rot	poor pruning/cavity–branch/decay/rot	–
36	Signal 48	CLO	14A	–	dieback/deadwood	–	lopsided canopy	–
36	Signal 48	CLO	15A	ants/poison oak	dieback/deadwood	heart rot	lopsided canopy/decay/rot	–
36	Signal 48	CLO	16A	–	thinning crown	–	poor pruning/lopsided canopy	–
36	Signal 48	CLO	17A	galls/poison oak	dieback/deadwood	–	poor pruning/one dead trunk	–
36	Signal 48	CLO	18A	–	dieback	–	–	–
36	Pad 36 turnout	CLO	19A	–	dieback/deadwood	–	–	–
36	Pad 36 turnout	CLO	20A	–	dieback	–	–	–
36	Pad 36 turnout	CLO	Oak 7	borers	dieback/deadwood/thinning crown		broken branch/torn branch scaring/cavity–trunk/cavity–branch/lopsided canopy/decay/rot	
36	Pad 36 turnout	CLO	Oak 8		dieback			Tree in green outside of survey area
41	Morehouse 303	CLO	263	poison oak	–	–	–	scrub oak
41	Morehouse 303	CLO	264	–	–	–	–	scrub oak
42	Waste Stockpile	CLO	64	–	–	–	–	–
42	Waste Stockpile	CLO	65	–	–	–	–	–
42	Waste Stockpile	CLO	66	–	–	–	–	–
42	Waste Stockpile	CLO	67	–	–	–	–	sapling
42	Waste Stockpile	CLO	68	–	–	–	–	sapling
42	Waste Stockpile	CLO	69	–	–	–	–	sapling
42	Waste Stockpile	CLO	70	–	–	–	–	sapling
42	Waste Stockpile	CLO	71	–	–	–	–	sapling
42	Waste Stockpile	CLO	72	–	–	–	–	sapling
42	Waste Stockpile	CLO	73	–	–	–	–	sapling
42	Waste Stockpile	CLO	74	–	–	–	–	sapling
42	Waste Stockpile	CLO	75	–	–	–	–	–
42	Waste Stockpile	CLO	76	–	–	–	–	–
42	Waste Stockpile	CLO	77	–	–	–	–	–
42	Waste Stockpile	CLO	78	–	–	–	–	–
42	Waste Stockpile	CLO	79	–	–	–	–	sapling

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
42	Waste Stockpile	CLO	80	–	–	–	–	–
42	Waste Stockpile	CLO	81	–	–	–	–	sapling
42	Waste Stockpile	CLO	82	–	–	–	–	–
42	Waste Stockpile	CLO	83	–	–	–	–	–
42	Waste Stockpile	CLO	84	–	–	–	–	–
42	Waste Stockpile	CLO	85	–	–	–	–	–
42	Waste Stockpile	CLO	86	–	–	–	–	25 saplings
42	Waste Stockpile	CLO	87	–	–	–	–	–
42	Waste Stockpile	CLO	88	–	–	–	–	sapling
42	Waste Stockpile	CLO	89	–	–	–	–	sapling
42	Waste Stockpile	CLO	90	–	–	–	–	–
42	Waste Stockpile	CLO	91	–	–	–	–	–
42	Waste Stockpile	CLO	92	–	–	–	–	–
42	Waste Stockpile	CLO	93	–	–	–	–	–
42	Waste Stockpile	CLO	94	–	–	–	–	–
42	Waste Stockpile	CLO	95	–	–	–	–	–
42	Waste Stockpile	CLO	96	–	–	–	–	–
42	Waste Stockpile	CLO	97	–	–	–	–	–
42	Waste Stockpile	CLO	98	–	–	–	–	–
42	Waste Stockpile	CLO	99	–	–	–	–	–
42	Waste Stockpile	CLO	100	–	–	–	–	–
42	Waste Stockpile	CLO	101	–	–	–	–	sapling
42	Waste Stockpile	CLO	102	–	–	–	–	clump or multi–step in oak
42	Waste Stockpile	CLO	103	–	–	–	–	–
42	Waste Stockpile	CLO	104	–	–	–	–	bushy
42	Waste Stockpile	CLO	106	–	wilt/dieback/thinning crown	–	lopsided canopy/decay/rot	–
42	Waste Stockpile	CLO	107	–	–	–	–	–
42	Waste Stockpile	CLO	108	–	dieback	–	–	–
42	Waste Stockpile	CLO	109	–	–	–	–	–
42	Waste Stockpile	CLO	110	–	–	–	–	scar on trunk 18" length, 1" width
42	Waste Stockpile	CLO	111	–	–	–	broken branches	–
42	Waste Stockpile	CLO	112	poison oak	chlorosis/wilt/dieback/thinning crown	leaf scorch	–	–
42	Waste Stockpile	CLO	113	poison oak	–	–	–	spanish moss

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
42	Waste Stockpile	CLO	114	–	wilt/dieback	leal scorch/twig blight/lesions	torn branch scaring/cavity–branch/decay/rot	–
42	Waste Stockpile	CLO	115	–	dieback	leal scorch/twig blight	–	–
42	Waste Stockpile	CLO	116	–	–	–	–	–
42	Waste Stockpile	CLO	117	–	–	–	–	–
42	Waste Stockpile	CLO	118	–	–	–	–	–
42	Waste Stockpile	CLO	119	–	–	–	–	–
42	Waste Stockpile	CLO	120	–	–	–	–	–
42	Waste Stockpile	CLO	121	–	wilt/dieback	twig blight	–	–
42	Waste Stockpile	CLO	122	–	wilt/dieback	leal scorch	–	–
42	Waste Stockpile	CLO	123	–	–	–	–	–
42	Waste Stockpile	CLO	124	–	–	–	–	–
42	Waste Stockpile	CLO	125	–	dieback	–	–	–
42	Waste Stockpile	CLO	126	–	–	–	–	–
42	Waste Stockpile	CLO	127	–	–	leal scorch	–	–
42	Waste Stockpile	CLO	128	–	–	–	–	–
42	Waste Stockpile	CLO	129	–	–	–	–	–
42	Waste Stockpile	CLO	130	–	–	–	–	–
42	Waste Stockpile	CLO	131	–	wilt/dieback	–	–	–
42	Waste Stockpile	CLO	132	–	–	–	–	–
42	Waste Stockpile	CLO	133	–	–	–	–	–
42	Waste Stockpile	CLO	134	–	–	twig blight	mechanical injury/cavity–trunk	–
42	Waste Stockpile	CLO	135	–	wilt	leal scorch	–	–
42	Waste Stockpile	CLO	136	Spanish moss	–	–	–	–
42	Waste Stockpile	CLO	137	–	–	–	–	–
42	Waste Stockpile	CLO	138	Spanish moss	–	–	–	–
42	Waste Stockpile	CLO	139	poison oak	–	–	–	–
42	Waste Stockpile	CLO	140	poison oak	–	–	–	–
42	Waste Stockpile	CLO	141	–	–	–	–	–
42	Waste Stockpile	CLO	142	–	wilt/dieback/thinning crown	leal scorch	–	–
42	Waste Stockpile	CLO	143	–	–	leal scorch	–	–
42	Waste Stockpile	CLO	144	–	–	–	–	–
42	Waste Stockpile	CLO	145	–	–	–	poor pruning/cavity–trunk	–
42	Waste Stockpile	CLO	146	–	–	–	–	–
42	Waste Stockpile	CLO	147	–	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
42	Waste Stockpile	CLO	148	–	–	–	–	–
42	Waste Stockpile	CLO	149	–	–	–	–	–
42	Waste Stockpile	CLO	150	–	–	–	–	–
42	Waste Stockpile	CLO	151	–	–	–	–	pruned
42	Waste Stockpile	CLO	152	–	–	–	–	–
42	Waste Stockpile	CLO	153	poison oak	–	–	–	pruned
42	Waste Stockpile	CLO	154	poison oak	–	–	cavity–trunk	–
42	Waste Stockpile	CLO	155	–	–	–	–	–
42	Waste Stockpile	CLO	156	poison oak	–	–	–	–
42	Waste Stockpile	CLO	157	poison oak	–	–	–	–
42	Waste Stockpile	CLO	158	poison oak	–	–	–	–
42	Waste Stockpile	CLO	159	–	–	–	–	–
42	Waste Stockpile	CLO	160	poison oak	–	–	–	pruned; multi–stem tree along road
42	Waste Stockpile	CLO	161	poison oak	–	–	poor pruning/mechanical injury	–
42	Waste Stockpile	CLO	162	poison oak	–	–	poor pruning/mechanical injury	–
42	Waste Stockpile	CLO	163	poison oak	–	–	–	large tree; woot rat nest
42	Waste Stockpile	CLO	164	–	–	–	–	–
42	Waste Stockpile	CLO	165	–	–	–	–	–
42	Waste Stockpile	CLO	166	–	–	–	broken branches/mechanical injury	–
42	Waste Stockpile	CLO	167	–	–	–	–	new growth
42	Waste Stockpile	CLO	168	–	–	–	–	new growth
42	Waste Stockpile	CLO	169	–	–	–	–	4–tree clump
42	Waste Stockpile	CLO	170	–	–	–	poor pruning/lopsided canopy	–
42	Waste Stockpile	CLO	171	–	–	–	poor pruning	–
42	Waste Stockpile	CLO	172	–	–	–	–	–
42	Waste Stockpile	CLO	173	–	–	–	–	nice tree
42	Waste Stockpile	CLO	174	–	–	–	–	–
42	Waste Stockpile	CLO	175	–	chlorosis/dieback/thinning crown	leal scorch/twig blight	cavity–trunk	bad shape
42	Waste Stockpile	CLO	176	–	–	–	–	–
42	Waste Stockpile	CLO	177	–	–	twig blight	–	–
42	Waste Stockpile	CLO	178	–	–	–	broken branches/poor pruning/mechanical injury	tree removed in area
42	Stockpile Waster Pad	CLO	Oak 103		dieback/deadwood			
42	Stockpile Waster Pad	CLO	Oak 104		wilt/dieback/deadwood			
42	Stockpile Waster Pad	CLO	Oak 105	ants/poison oak	deadwood		lopsided canopy	
42	Stockpile Waster Pad	CLO	Oak 106	poison oak	dieback			

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
42	Stockpile Waster Pad	CLO	Oak 107	ants/poison oak				
42	Stockpile Waster Pad	CLO	Oak 108	poison oak				
42	Stockpile Waster Pad	CLO	Oak 109	poison oak			lopsided canopy	
42	Stockpile Waster Pad	CLO	Oak 110	poison oak			lopsided canopy	
42	Stockpile Waster Pad	CLO	Oak 111	ants/poison oak				
42	Stockpile Waster Pad	CLO	Oak 112	ants/poison oak				
42	Stockpile Waster Pad	CLO	Oak 113		dieback			
44	Signal 141	CLO	41	–	–	–	–	–
44	Signal 141	CLO	42	–	–	–	–	–
44	Signal 141	CLO	43	–	–	–	–	health–poor
44	Signal 141	CLO	44	–	–	–	–	–
44	Signal 141	CLO	45	–	–	–	–	–
44	Signal 141	CLO	46	–	–	–	–	–
44	Signal 141	CLO	47	–	–	–	–	–
44	Signal 141	CLO	48	–	–	–	–	–
44	Signal 141	CLO	49	–	–	–	–	–
44	Signal 141	CLO	50	–	–	–	–	–
44	Signal 141	CLO	51	–	–	–	–	curving in ground
44	Signal 141	CLO	52	–	–	–	–	cut multiple times
44	Signal 141	CLO	53	–	–	–	–	health–good
44	Signal 141	CLO	54	–	–	–	–	health–declining
44	Signal 141	CLO	55	–	–	–	–	health–declining
44	Signal 141	CLO	56	–	–	–	–	health–declining; multiple small stems
44	Signal 141	CLO	57	–	–	–	–	health–declining
44	Signal 141	CLO	58	–	–	–	–	health–good
44	Signal 141	CLO	59	–	–	–	–	health–good
44	Signal 141	CLO	60	–	–	–	–	health–good
44	Signal 141	CLO	61	–	–	–	–	health–good
44	Signal 141	CLO	62	–	–	–	–	health–good
44	Signal 141	CLO	63	–	–	–	–	health–good
45	Signal 121	CLO	449	galls/poison oak	dieback	–	cavity–trunk/decay/rot	lots of poison oak; section not surveyable due to PO
45	Signal 121	CLO	450	poison oak	–	–	cavity–branch	lots of poison oak
45	Signal 121	CLO	451	poison oak	dieback/deadwood	–	–	lots of poison oak
45	Signal 121	CLO	452	poison oak	–	–	cavity–trunk	lots of poison oak
45	Signal 121	CLO	453	poison oak	–	–	–	–
45	Signal 121	CLO	454	–	–	–	torn branch scaring	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
45	Signal 121	CLO	455	poison oak	–	–	torn branch scaring	lots of poison oak
45	Signal 121	CLO	456	poison oak	–	–	cavity–trunk	lots of poison oak
45	Signal 121	CLO	457	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	458	poison oak	deadwood/thinning crown	–	–	lots of poison oak; dying
45	Signal 121	CLO	459	–	–	–	lopsided canopy/decay/rot	–
45	Signal 121	CLO	460	–	dieback	–	–	cable hanger through tree
45	Signal 121	CLO	461	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	462	poison oak	dieback	–	–	lots of poison oak
45	Signal 121	CLO	463	–	–	–	–	–
45	Signal 121	CLO	464	–	–	–	–	–
45	Signal 121	CLO	465	–	–	–	broken branches/poor pruning/mechanical injury/torn branch scaring/damaged roots	–
45	Signal 121	CLO	466	poison oak	dieback/deadwood	–	cavity–trunk	lots of poison oak
45	Signal 121	CLO	467	poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	lots of poison oak
45	Signal 121	CLO	468	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	469	–	–	–	–	–
45	Signal 121	CLO	470	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	471	poison oak	dieback/deadwood	–	cavity–trunk/decay/rot	lots of poison oak
45	Signal 121	CLO	472	poison oak	dieback/deadwood	–	cavity–trunk	lots of poison oak
45	Signal 121	CLO	473	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	474	poison oak	–	–	–	lots of poison oak
45	Signal 121	CLO	475	poison oak	dieback/deadwood	–	–	lots of poison oak
45	Signal 121	CLO	476	–	–	–	–	–
45	Signal 121	CLO	477	poison oak	wilt/dieback/deadwood	–	–	lots of poison oak
45	Signal 121	CLO	478	poison oak	dieback/deadwood	–	–	lots of poison oak
45	Signal 121	CLO	144	poison oak	–	–	broken branches/mechanical injury	–
45	Signal 121	CLO	145	poison oak	–	–	–	–
45	Signal 121	CLO	146	–	–	–	–	–
45	Signal 121	CLO	147	–	–	–	–	–
45	Signal 121	CLO	148	–	–	–	–	–
45	Signal 121	CLO	149	–	–	–	mechanical injury	–
45	Signal 121	CLO	150	–	–	–	–	–
45	Signal 121	CLO	151	poison oak	–	–	–	–
45	Signal 121	CLO	152	poison oak	deadwood	–	broken branches	–
45	Signal 121	CLO	153	poison oak	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
45	Signal 121	CLO	154	–	–	–	–	–
45	Signal 121	CLO	155	poison oak	–	–	–	–
45	Signal 121	CLO	156	poison oak	–	–	–	–
45	Signal 121	CLO	157	–	–	–	–	–
45	Signal 121	CLO	158	poison oak	–	–	broken branches/torn branch scaring	–
45	Signal 121	CLO	159	poison oak	–	–	–	–
45	Signal 121	CLO	160	poison oak	–	–	–	–
45	Signal 121	CLO	161	poison oak	–	–	broken branches/poor pruning/cavity–trunk	–
45	Signal 121	CLO	162	poison oak	–	–	–	–
45	Signal 121	CLO	166	–	deadwood	–	broken branches	–
46	Maino 19 U Extension	CLO	217	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	218	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	219	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	220	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	221	poison oak	–	–	cavity–trunk	–
46	Maino 19 U Extension	CLO	222	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	223	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	224	–	deadwood	–	–	–
46	Maino 19 U Extension	CLO	225	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	226	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	227	poison oak	–	–	broken branches	–
46	Maino 19 U Extension	CLO	228	poison oak	–	–	broken branches	–
46	Maino 19 U Extension	CLO	229	–	–	–	–	–
46	Maino 19 U Extension	CLO	230	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	231	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	232	poison oak	–	–	broken branches	–
46	Maino 19 U Extension	CLO	233	–	–	–	–	–
46	Maino 19 U Extension	CLO	234	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	235	poison oak/Spanish moss	deadwood	–	–	–
46	Maino 19 U Extension	CLO	236	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	237	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	238	poison oak/Spanish moss	–	–	–	–
46	Maino 19 U Extension	CLO	239	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	240	poison oak	deadwood	–	broken branches	–
46	Maino 19 U Extension	CLO	241	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	242	poison oak	deadwood	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
46	Maino 19 U Extension	CLO	243	poison oak/Spanish moss	deadwood	–	–	–
46	Maino 19 U Extension	CLO	244	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	245	poison oak	deadwood	–	–	–
46	Maino 19 U Extension	CLO	246	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	247	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	248	poison oak	–	–	–	–
46	Maino 19 U Extension	CLO	249	poison oak	–	–	–	–
46	Marino 19 U Extension	CLO	548	poison oak	–	–	cavity–trunk/cavity–branch/decay/rot	–
46	Marino 19 U Extension	CLO	549	poison oak	dieback/deadwood	–	cavity–trunk	–
46	Marino 19 U Extension	CLO	550	oak moth	dieback/deadwood	–	lopsided canopy/decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	551	poison oak	dieback/deadwood	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	552	poison oak	dieback/deadwood/thinning crown	–	broken branches/lopsided canopy	lots of poison oak
46	Marino 19 U Extension	CLO	553	poison oak	–	–	lopsided canopy/decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	554	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak
46	Marino 19 U Extension	CLO	555	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak
46	Marino 19 U Extension	CLO	556	poison oak	dieback	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	557	poison oak	dieback	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	558	poison oak	dieback	–	cavity–branch/decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	559	poison oak	dieback/deadwood	–	decay/rot	–
46	Marino 19 U Extension	CLO	560	poison oak	dieback/deadwood	–	broken branches	–
46	Marino 19 U Extension	CLO	561	poison oak	dieback/deadwood	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	562	poison oak	dieback	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	563	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	564	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	565	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	566	poison oak	–	–	broken branches/torn branch scaring	lots of poison oak
46	Marino 19 U Extension	CLO	567	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	568	poison oak	–	–	lopsided canopy	lots of poison oak
46	Marino 19 U Extension	CLO	569	poison oak	dieback/deadwood	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	570	poison oak	deadwood/thinning crown	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	571	poison oak	dieback/deadwood	–	cavity–trunk/cavity–branch	lots of poison oak
46	Marino 19 U Extension	CLO	572	termites/galls/poison oak	dieback/deadwood	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	573	poison oak	dieback/deadwood	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	574	poison oak	dieback/deadwood	–	lopsided canopy	lots of poison oak

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
46	Marino 19 U Extension	CLO	575	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	576	termites/woodpeckers/poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	577	poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	578	termites/galls/poison oak	dieback	–	decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	579	poison oak	deadwood	–	broken branches/decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	580	poison oak	dieback	–	cavity–branch/decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	581	termites	dieback/deadwood	–	decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	582	ants/poison oak	–	–	–	lots of poison oak
46	Marino 19 U Extension	CLO	583	poison oak	–	–	–	–
46	Marino 19 U Extension	CLO	584	termites/borers/poison oak	dieback/deadwood	–	decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	585	pit scale/poison oak	deadwood	–	decay/rot	lots of poison oak
46	Marino 19 U Extension	CLO	586	poison oak	–	–	–	lots of poison oak
47	Maino 6 abandoned	CLO	344	poison oak	–		–	lichen
47	Maino 6 abandoned	CLO	347	–	deadwood		–	–
47	Maino 6 abandoned	CLO	348	poison oak	deadwood	heart rot	broken branches	–
47	Maino 6 abandoned	CLO	349	–	–	–	–	–
47	Maino 6 abandoned	CLO	350	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	351	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	352	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	353	poison oak	–	–	wire/nails/barb wire	rat nest
47	Maino 6 abandoned	CLO	354	poison oak	–	–	mechanical injury/wire/nails/barb wire	–
47	Maino 6 abandoned	CLO	355	–	–	–	wire/nails/barb wire	–
47	Maino 6 abandoned	CLO	356	–	–	–	–	–
47	Maino 6 abandoned	CLO	357	–	–	–	–	–
47	Maino 6 abandoned	CLO	358	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	359	–	–	–	–	–
47	Maino 6 abandoned	CLO	360	ants/poison oak	wilt/dieback	–	–	lichen
47	Maino 6 abandoned	CLO	361	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	362	poison oak	wilt/dieback	–	–	–
47	Maino 6 abandoned	CLO	363	ants/poison oak	–	–	cavity–trunk	–
47	Maino 6 abandoned	CLO	364	termites/poison oak	wilt/dieback	heart rot	–	–
47	Maino 6 abandoned	CLO	365	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	366	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	367	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	368	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	369	poison oak	–	–	–	–

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
47	Maino 6 abandoned	CLO	370	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	371	poison oak	dieback	–	–	–
47	Maino 6 abandoned	CLO	372	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	373	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	374	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	375	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	376	ants/poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	377	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	378	poison oak	–	heart rot	cavity–trunk	–
47	Maino 6 abandoned	CLO	379	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	380	poison oak	dieback	–	cavity–branch/decay/rot	–
47	Maino 6 abandoned	CLO	381	poison oak	–	–	–	–
47	Maino 6 abandoned	CLO	Oak 73	poison oak	dieback/deadwood		decay/rot	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 74	poison oak	dieback/deadwood		lopsided canopy	poor shape
47	Maino 6 abandoned	CLO	Oak 75	galls/poison oak	dieback/deadwood			
47	Maino 6 abandoned	CLO	Oak 76	galls/poison oak/fungus S.O.D.	dieback/deadwood/thinning crown		decay/rot	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 77	poison oak	dieback/deadwood		decay/rot	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 78	termites/borers/galls/poison oak	dieback/deadwood	heart rot	cavity–trunk/lopsided canopy/decay/rot	poor shape
47	Maino 6 abandoned	CLO	Oak 79	ants/poison oak	dieback		cavity–trunk	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 80	poison oak	thinning crown		lopsided canopy	
47	Maino 6 abandoned	CLO	Oak 81	poison oak	dieback/deadwood			lots of poison oak
47	Maino 6 abandoned	CLO	Oak 82	poison oak	dieback		decay/rot	
47	Maino 6 abandoned	CLO	Oak 83	poison oak	dieback/deadwood		lopsided canopy	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 84	poison oak	dieback/deadwood			lots of poison oak
47	Maino 6 abandoned	CLO	Oak 85	poison oak	dieback/deadwood		decay/rot	lots of poison oak
47	Maino 6 abandoned	CLO	Oak 86	poison oak	deadwood			lots of poison oak
47	Maino 6 abandoned	CLO	Oak 87	ants/poison oak	deadwood			
47	Maino 6 abandoned	CLO	Oak 88	ants/poison oak	dieback/deadwood		decay/rot	
47	Maino 6 abandoned	CLO	Oak 89	poison oak	dieback/deadwood			
47	Maino 6 abandoned	CLO	Oak 90	poison oak	dieback/deadwood		decay/rot	
47	Maino 6 abandoned	CLO	Oak 91	poison oak	dieback/deadwood		decay/rot	
47	Maino 6 abandoned	CLO	Oak 92	poison oak	dieback/deadwood			
47	Maino 6 abandoned	CLO	Oak 93	poison oak	dieback			
47	Maino 6 abandoned	CLO	Oak 94	poison oak	dieback/deadwood			
47	Maino 6 abandoned	CLO	Oak 95		wilt/dieback/deadwood		decay/rot	

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
47	Maino 6 abandoned	CLO	Oak 96	borers/ants/oak moth	dieback		mechanical injury/wire/nails/barb wire	
47	Maino 6 abandoned	CLO	Oak 97	galls/poison oak	dieback	leal scorch	decay/rot	poor shape
47	Maino 6 abandoned	CLO	Oak 98	ants/poison oak	deadwood		cavity–trunk/lopsided canopy	
47	Maino 6 abandoned	CLO	Oak 99	termites/borers/ants/oak moth	dieback			
47	Maino 6 abandoned	CLO	Oak 100	poison oak				
48	B–Lo Morehouse 3	CLO	182	poison oak	deadwood	–	–	–
48	B–Lo Morehouse 3	CLO	Oak 70	poison oak	dieback/deadwood		decay/rot	lots of poison oak
48	B–Lo Morehouse 3	CLO	Oak 71	galls/poison oak				lots of poison oak
48	B–Lo Morehouse 3	CLO	Oak 72	galls/poison oak	dieback/deadwood		cavity–trunk	lots of poison oak; trunk 15.5 is dead
N/A	Pipe rack corridor	CLO	236	–	–	–	–	–
N/A	Pipe rack corridor	CLO	237	–	–	–	–	Done; construction activities prevented survey of 4 oaks in corner of pad.
N/A	Pipe rack corridor	CLO	269	–	–	–	–	–
N/A	Pipe rack corridor	CLO	270	–	–	–	–	–
N/A	Pipe rack corridor	CLO	271	–	–	–	broken branches/poor pruning/mechanical injury/torn branch scaring	–
N/A	Pipe rack corridor	CLO	272	–	–	–	broken branches/poor pruning/mechanical injury	–
N/A	Pipe rack corridor	CLO	273	–	–	–	–	–
N/A	Pipe rack corridor	CLO	274	–	–	–	broken branches/mechanical injury	–
N/A	UPRR Pipe Crossing	CLO	304	–	–	–	broken branches/poor pruning	–
N/A	UPRR Pipe Crossing	CLO	305	–	–	–	broken branches/poor pruning	–
N/A	Pipe rack corridor	CLO	Oak 16	galls	dieback		broken branch	
N/A	Pipe rack corridor	CLO	Oak 17	borers/galls	dieback		broken branch/mechanical injury/torn branch scaring	
N/A	Pipe rack corridor	CLO	Oak 18	galls	dieback		lopsided canopy	
N/A	Pipe rack corridor	CLO	Oak 19	galls	dieback/deadwood			
N/A	Pipe rack corridor	CLO	Oak 20	galls/poison oak	dieback/deadwood			
N/A	Pipe rack corridor	CLO	Oak 21	galls	dieback/deadwood			
N/A	Pipe rack corridor	CLO	Oak 22	galls/poison oak	dieback/deadwood		cavity–branch/lopsided canopy/decay/rot	lots of poison oak
N/A	Pipe rack corridor	CLO	Oak 23	poison oak	dieback/deadwood			
N/A	Pipe rack corridor	CLO	Oak 24	poison oak	dieback			lots of poison oak
N/A	Pipe rack corridor	CLO	Oak 25	poison oak	dieback			species?
N/A	Pipe rack corridor	CLO	Oak 26	galls/poison oak	dieback			
N/A	Pipe rack corridor	CLO	Oak 27		dieback		lopsided canopy	
N/A	Pipe rack corridor	CLO	Oak 28				poor pruning/mechanical injury	species?
N/A	Pipe rack corridor	CLO	Oak 29				poor pruning/mechanical injury	species?

APPENDIX E2 (CONTINUED)
OAK TREE HEALTH

Pad #	Pad Name	Species	Waypoint	Pests	Vigor	Disease	Structure	Notes
N/A	Pipe rack corridor	CLO	Oak 30				broken branch/poor pruning/mechanical injury	
N/A	Pipe casing replacement	CLO	Oak 43					
N/A	Pipe casing replacement	CLO	Oak 44	ants			broken branch/lopsided canopy	
N/A	Pipe casing replacement	CLO	Oak 45					
N/A	Northern pipe crossing	CLO	Oak 47		wilt/dieback		broken branch/poor pruning/mechanical injury	
N/A	Northern pipe crossing	CLO	Oak 48		wilt/dieback/thinning crown			
N/A	Ormonde pipe crossing	CLO	Oak 49	poison oak	dieback/deadwood			
N/A	Ormonde pipe crossing	CLO	Oak 50					

APPENDIX F1
CALIFORNIA RED-LEGGED FROG COMPILED SURVEY DATA

APPENDIX F1
COMPILED CALIFORNIA RED-LEGGED FROG SURVEY DATA

Survey Details	Date	Time	Personnel	Weather	Pismo Creek, Upstream of Hyla Crossing	Pismo Creek, Downstream of Hyla Crossing	Pismo Creek, upstream of Northern Pipe Crossing	Pismo Creek, downstream of Northern Pipe Crossing	Cañada Verde	Drainage B	Retention Basin	Pad 17 pond
CRLF Daytime Survey #1, & Gambell's water cress survey	June 3, 2013	0800–1500	Johanna Kisner, Kelly Kephart	Air = 68F, overcast, cool, light mist, wind less than 5 mph	Water = 16.5C Good pool habitat Wildlife: 20+ crayfish, 1 PATR calling, heard 1 large frog jump into water	Several deep pools Wildlife: small fish, 1 PATR, beaver dams	N/A	N/A	N/A	N/A	Surveyed; no frogs observed	Water = 17C, ~5-in. deep, 10'x20' Small pond captures drainage from site Veg: cattails and arroyo willow Wildlife: 20+ PATR tadpoles, small fish, beaver dams
CRLF Night Survey #1	June 4, 2013	2100–0100	Johanna Kisner, Kelly Kephart	Air = 54F, clear sky, no moon, wind less than 5 mph	Water = 16C Wildlife: 4 bullfrogs, 50+ calling PATR, 3 large sculpin, hundreds of crayfish	Wildlife: 3 bullfrogs, many crayfish, 2 beavers, 20+ PATR	N/A	N/A	N/A	N/A	Surveyed; no frogs observed	Surveyed; no frogs observed
CRLF Daytime Survey #1 continued, & Gambel's watercress survey*	June 6, 2013	0830–1200	Johanna Kisner, Kelly Kephart	Air = 55F, overcast, wind less than 5 mph	N/A	N/A	Did not survey due to aggressive yellow jackets in area	Water = 16C Stopped at pipe crossing due to yellow jackets	N/A	N/A	Surveyed; no frogs observed	Surveyed; no frogs observed
CRLF Night Survey #2	June 7, 2013	2100–0100	Kelly Kephart, Tiffany Whitsitt, David Kisner	Air = 55F, partly cloudy, wind 3.5 mph	Surveyed, but no frogs observed From this point forward all surveys at this location were conducted via kayak from Hyla crossing to 400 meters upstream and in pond just downstream of crossing due to access problems	Surveyed, but no frogs observed From this point forward all surveys at this location were conducted at the furthest downstream reach of Pismo Creek due to problems with access.	Did not survey due to aggressive yellow jackets in area	Did not survey due to aggressive yellow jackets in area	N/A	N/A	Wildlife: calling PATR; 4 large eyeshine (unidentifiable, too much vegetation to access via kayak)	Wildlife: 2 PATR calling, PATR tadpoles
CRLF Daytime Survey #2	June 11, 2013	0800–1500	Julie Love, Kelly Kephart	Mostly cloudy, air temperature 61–74°F with up to 5 mph winds from NW.	Wildlife: PATR calling	Wildlife: PATR calling	N/A	N/A	N/A	N/A	Surveyed; no frogs observed	Surveyed; no frogs observed
CRLF Daytime Survey #2 continued	June 14, 2013	0800–1500	Julie Love, Kelly Kephart	Clear skies, air temperature 61–77°F with up to 5 mph wind from WSW.	N/A	N/A	New survey area added during wetland delineation. Surveyed; no frogs observed	Surveyed, but no frogs observed	N/A	N/A	N/A	N/A

APPENDIX F (CONTINUED)
COMPILED CALIFORNIA RED-LEGGED FROG SURVEY DATA

Survey Details	Date	Time	Personnel	Weather	Pismo Creek, Upstream of Hyla Crossing	Pismo Creek, Downstream of Hyla Crossing	Pismo Creek, upstream of Northern Pipe Crossing	Pismo Creek, downstream of Northern Pipe Crossing	Cañada Verde	Drainage B	Retention Basin	Pad 17 pond
CRLF Night Survey #2 continued	June 14, 2013	2100–0100	Kelly Kephart, Tiffany Whitsitt, Billy Fletcher	Air = 55F, clear, wind 4.6 mph or less	Wildlife: 1 adult bullfrog (eyeshine)	Surveyed, but no frogs observed	Wildlife: 5 bullfrog, 2 PATR, 1 rat	Surveyed, but no frogs observed	N/A	New survey area added during wetland delineation. Wildlife: PATR calling	Wildlife: 4 large eyeshine (unidentifiable, too much vegetation to access via kayak)	Surveyed; no frogs observed
CRLF Daytime Survey #2 continued	June 21, 2013	0800–1500	Julie Love, Kelly Kephart	Clear skies, air temperature 59–74°F with up to 5 mph winds from NW	N/A	N/A	N/A	N/A	New survey area added during wetland delineation. Surveyed; no frogs observed	Wildlife: PATR tadpoles	N/A	N/A
CRLF Night Survey #3	June 22, 2013	2100–0100	Kelly Kephart, Tiffany Whitsitt, Chris Julian	Air = 65F, warm, no wind, no clouds, supermoon	Wildlife: 2 PATR	Wildlife: 1 frog (unknown), ~5 calling PATR	Veg: Arundo Wildlife: ~5 PATR calling, 4 bullfrog eyeshine, crayfish	Abundant oil sheen on water Wildlife: 1 rat, crayfish	Steep drainage, entered via cattle path to OHWM, open water ~10-15' deep w/ debris (willow branches) Wildlife: 5+ PATR calling, 2 bullfrog eyeshine	Wildlife: ~5 PATR (1 eyeshine + 4 calling)	No frogs observed, accessed pond via kayak	Surveyed; no frogs observed
CRLF Night Survey #4	June 30, 2013	2100–0030	Johanna Kisner, Jamie Deutsch, Kelly Kephart	Air = 69F, warm, clear, no clouds, slight breeze ~2mph NW	Wildlife: 3 adult bullfrogs, PATR calling	Wildlife: several PATR calling	Wildlife: 2 adult bullfrogs, 1 PATR calling	Oil sheen on water Wildlife: lots of crayfish, small fish, no frogs	Wildlife: 1 adult bullfrog, great horned owl foraging in field	Wildlife: 10+ PATR calling and 50+ tadpoles	Wildlife: 4 mallards, 3 bullfrogs calling, ~10 PATR eyeshine, 2 unkown eyeshine	Surveyed; no frogs observed
CRLF Non-breeding Day Survey #1	July 23, 2013	0730–1130	Johanna Kisner, Jamie Deutsch, David Kisner	Air = 61F, foggy, cool, low clouds	Water = 18C Kayak access Wildlife: 1 bullfrog "bark" and splash into water	Wildlife: 1 crayfish, 1 dragonfly nymph, no frogs or tadpoles, (~15) 1-in fish, (2) 2-in fish.	Wildlife: hundreds of crayfish, small fish	Tar in water Wildlife: no frogs	Wildlife: 1 southwestern pond turtle, coyote in field	12'x20' section: 8-10 PATR tadpoles, 1 large toe-biter, no frogs Culvert outflow: 80+ PATR tadpoles, 1 small toe biter, no frogs	Water = 22C Kayak access Wildlife: 1 calling bullfrog, 1 6-inch bass	Surveyed; no frogs observed
CRLF Non-breeding Night Survey #1	July 24, 2013	2100–0100	Johanna Kisner, David Kisner, Anthony Schuetze	Air = 63.5F, foggy, partly cloudy, wind 0–2 mph from SW	Wildlife: 2 adult bullfrogs, 100+ crayfish, 2 prickly sculpin	Surveyed; no frogs observed	Wildlife: 1 medium adult bullfrog; 1 PATR, 1 unknown Rana species	Tar in water Wildlife: 100s crayfish, small fish	Surveyed; no frogs observed	Wildlife: 50+ PATR tadpoles and 1 calling, toe-biter	Water = 22C Wildlife: 3 mallards, 1 large adult CRLF, 1 adult bullfrog calling (accessed via kayak)	Surveyed; no frogs observed

* Conducted survey of Drainage A from west of retention basin to large wetland just north of Price Canyon Road; however, the area was determined not suitable habitat for CRLF so was not included in additional surveys.
PATR= Pacific treefrog

APPENDIX F2
CALIFORNIA RED-LEGGED FROG SURVEY DATA SHEETS

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 06/03/2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Pismo Creek upstream & downstream of Hyla crossing, retention basin, pad 17 pond;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** (BREEDING) **NON-BREEDING**

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 0800 **End Time:** 1500

Cloud cover: overcast **Precipitation:** 0.01 inches

Air Temperature: 68F **Water Temperature:** 16.5C - 17C

Wind Speed: <5 mph **Visibility Conditions:** clear; 10 mile visibility

Moon phase: Waning crescent **Humidity:** 93% (start), 63% (end)

Description of weather conditions: Overcast with light mist, air temperature 68F, no wind.

Brand name and model of light used to conduct surveys: Maglite 4D and Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8X42 and Nikon Monarch 8X42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 06-04-2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co./ Pismo Creek upstream & downstream of Hyla crossing, retention basin, pad 17 pond;

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:

Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): **1** **2** **3** **4** **5** **6** **7** **8**

Begin Time: 2100 **End Time:** 0100

Cloud cover: None **Precipitation:** 0 in.

Air Temperature: 54F **Water Temperature:** 16C

Wind Speed: <5 mph **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waning crescent, not visible **Humidity:** 83% (start), 90% (end)

Description of weather conditions: Clear skies, no moon, air temperature 54F, winds less than 5 mph.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? **YES** **NO**

Brand, model, and power of binoculars: Eagle Optics 8X42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	7	1(O) 1(H)	adult	med-large	
	70+	50+ (H)			

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

One possible CRLF jumped from vegetation into creek, but was not able to be identified.

Most observations were upstream and downstream of the Hyla Crossing

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 06/06/2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Upper reach of Pismo Creek to northern pipe crossing, Drainage A to wetland, retention basin, pad 17 pond;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a P hase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** (BREEDING) **NON-BREEDING**

Survey number (circle one): (1) (continued) **2** **3** **4** **5** **6** **7** **8**

Begin Time: 0830 **End Time:** 1200

Cloud cover: Overcast **Precipitation:** 0 in.

Air Temperature: 55F **Water Temperature:** 16C

Wind Speed: <5 mph **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waning crescent **Humidity:** 90% (start), 61% (end)

Description of weather conditions: Overcast, winds less than 5 mph, air temperature 55F.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8X42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 06/07/2013 (mm/dd/yyyy)

Survey Biologist: Kephart (Last name) Kelly (first name)

Survey Biologist: Kisner (Last name) David (first name)

Survey Biologist: Whitsitt (Last name) Tiffany (first name)

Site Location: San Luis Obispo Co.; Upstream & downstream of Hyla crossing, retention basin, pad 17 pond;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey number (circle one): **1 2** (**3**) **4 5 6 7 8**

Begin Time: 2100 **End Time:** 0100

Cloud cover: Partly cloudy **Precipitation:** 0 in.

Air Temperature: 55F **Water Temperature:** not recorded

Wind Speed: 3.5 mph or less **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waning crescent, almost new **Humidity:** 84% (start), 93% (end)

Description of weather conditions: Partly cloudy, air temperature 55F, winds 3.5 mph or less.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (**YES**) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 06/11/2013 (mm/dd/yyyy)

Survey Biologist: Love (Last name) Julie (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Pismo Creek upstream & downstream of Hyla crossing, retention basin, pad 17 pond;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** (BREEDING) **NON-BREEDING**

Survey number (circle one): **1 2 3** (4) **5 6 7 8**

Begin Time: 0800 **End Time:** 1500

Cloud cover: Mostly cloudy **Precipitation:** 0 in.

Air Temperature: 61 - 74F **Water Temperature:** not recorded

Wind Speed: up to 5 mph, from NW **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waxing crescent **Humidity:** 81% (start), 52% (end)

Description of weather conditions: Mostly cloudy, air temperature 61 - 74F, winds up to 5 mph from NW.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 06/14/2013 (mm/dd/yyyy)

Survey Biologist: Love (Last name) Julie (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Pismo Creek upstream & downstream of northern pipe crossing;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** (BREEDING) **NON-BREEDING**

Survey number (circle one): **1 2 3 (4) 5 6 7 8**
(continued)

Begin Time: 0800 **End Time:** 1500

Cloud cover: None **Precipitation:** 0 in.

Air Temperature: 61 - 77F **Water Temperature:** not recorded

Wind Speed: up to 5 mph from WSW **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waxing crescent **Humidity:** 72% (start), 37% (end)

Description of weather conditions: Clear skies, air temperature 61 - 77F with up to 5 mph winds from WSW.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 06/14/2013 (mm/dd/yyyy)

Survey Biologist: Kephart (Last name) Kelly (first name)
Fletcher Billy

Survey Biologist: Whitsitt (Last name) Tiffany (first name)

Site Location: San Luis Obispo Co.; Pismo Creek Upstream & downstream of Hyla crossing, upstream and downstream of northern pipe crossing, Drainage B, retention basin, and pad 17 pond;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey number (circle one): **1** (**2**) **3** **4** **5** **6** **7** **8**

Cont.

Begin Time: 2100 **End Time:** 0100

Cloud cover: Partly cloudy **Precipitation:** 0 in.

Air Temperature: 55F **Water Temperature:** not recorded

Wind Speed: 4.6 mph or less **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waxing crescent **Humidity:** 87% (start), 89% (end)

Description of weather conditions: Partly cloudy, air temperature 55F, winds 4.6 mph or less.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (**YES**) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%
Rana sp.					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 06/21/2013 (mm/dd/yyyy)

Survey Biologist: Love (Last name) Julie (first name)

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Cañada Verde Tributary, Drainage B;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoran Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** (BREEDING) **NON-BREEDING**

Survey number (circle one): **1 2 3 (4) 5 6 7 8**
(continued)

Begin Time: 0800 **End Time:** 1500

Cloud cover: None **Precipitation:** 0 in.

Air Temperature: 59 - 74F **Water Temperature:** not recorded

Wind Speed: up to 5 mph from NW **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waxing gibbous **Humidity:** 69% (start), 39% (end)

Description of weather conditions: Clear skies, air temperature 59 - 74F with up to 5 mph winds from NW.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	2	1(O) 1(H)	adult	large	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: crawdads, prickly sculpin

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____
(FWS Field Office) (date) (biologist)

Date of Survey: 06/22/2013 (mm/dd/yyyy)

Survey Biologist: Kephart (Last name) Kelly (first name)

Survey Biologist: Whitsitt (Last name) Tiffany (first name)

Survey Biologist: Julian (Last name) Chris (first name)

Site Location: San Luis Obispo Co.; Pismo Creek upstream & downstream of the Hyla and northern pipe crossings, Cañada Ver Tributary, retention basin, pad 17 pond, and drainage B;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:

Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey number (circle one): **1 2 3 4** (**5**) **6 7 8**

Begin Time: 2100 **End Time:** 0100

Cloud cover: None **Precipitation:** 0 in.

Air Temperature: 65F **Water Temperature:** not recorded

Wind Speed: 0 mph **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Supermoon **Humidity:** 72% (start), 80% (end)

Description of weather conditions: Clear skies, warm, full supermoon. Air temperature 65F with no winds.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (**YES**) **NO**

Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pacific Treefrog	22	3(O)19(H)	adult	full	100%
American bullfrog	6	O	adult	large	100%
unknown frog	1	O	adult	large	0%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: bullfrogs, crawdads, and 1 rat observed.

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 06/30/2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)
Deutsch Jamie

Survey Biologist: Kephart (Last name) Kelly (first name)

Site Location: San Luis Obispo Co.; Pismo Creek Upstream & downstream of the Hyla and Northern pipe crossings, Cañada Tributary, retention basin, pad 17 pond, and drainage B;
(Couuty, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:
Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey number (circle one): **1 2 3 4 5** (**6**) **7 8**

Begin Time: 2100 **End Time:** 0030

Cloud cover: None **Precipitation:** 0 in.

Air Temperature: 69F **Water Temperature:** not recorded

Wind Speed: <2 mph **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Third quarter **Humidity:** 61% (start), 75% (end)

Description of weather conditions: Clear skies, warm, air temperature 69F, slight breeze less than 2 mph.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (**YES**) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
American bullfrog	9	6(O) 3(H)	adult	large	100%
Pacific treefrog	30+	10(O)20+(H)	adult	full	100%
Pacific treefrog	50+	o	tadpoles	n/a	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: bullfrog and crawdads

Other notes, observations, comments, *etc.*

small fish, great horned owl.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

[redacted]

Date of Survey: 07/23/2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)
Kisner David

Survey Biologist: Deutsch (Last name) Jamie (first name)

Site Location: San Luis Obispo Co.; Pismo Creek Upstream & downstream of the Hyla and Northern pipe crossings, Cañada Verde Tributary, retention basin, pad 17 pond, and drainage B;
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:

Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): (DAY) **NIGHT** **BREEDING** (NON-BREEDING)

Survey number (circle one): **1 2 3 4 5 6** (7) **8**

Begin Time: 0730 **End Time:** 1130

Cloud cover: Partly cloudy **Precipitation:** 0 in.

Air Temperature: 61F **Water Temperature:** 18C

Wind Speed: <5 mph **Visibility Conditions:** Partly foggy, 10 mile visibility

Moon phase: Supermoon **Humidity:** 86% (start), 50% (end)

Description of weather conditions: Air temperature 61F, foggy, cool, low clouds, winds less than 5 mph.

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? (YES) **NO**
Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
American bullfrog	2	H	Adult	large	100%
Pacific Treefrog	90+	O	Tadpoles	n/a	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: bullfrogs, crawdads, large fish (trout?)

Other notes, observations, comments, *etc.*

1 southwestern pond turtle on Carpenter Canyon Tributary
1 coyote
small fish

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 07/24/2013 (mm/dd/yyyy)

Survey Biologist: Kisner (Last name) Johanna (first name)

Survey Biologist: Kisner (Last name) David (first name)

Site Location: San Luis Obispo Co.; Pismo Creek Upstream & downstream of the Hyla and Northern pipe crossings, Cañada Tributary, retention basin, pad 17 pond, and drainage B;

(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: Freeport McMoRan Oil & Gas - Phase V

Brief description of proposed action:

Freeport McMoRan Oil & Gas proposes to expand operations at the 1,480-acres Arroyo Grande Oil Field through a Phase V Development Plan. The following principal activities are proposed to occur over approximately 10 years: addition of 11 new well pads (with access roads) and modification of 34 existing well pads; Drilling ~350 wells; decommission of old wells; installation of five 85 MMBtu/hr steam generators; installation of additional production and steam lines to support Phase V production; expansion of existing electrical power system/lines; and replacement of an existing pipe bridge over Pismo Creek.

Type of Survey (circle one): **DAY** **NIGHT** **BREEDING** **NON-BREEDING**

Survey number (circle one): **1** **2** **3** **4** **5** **6** **7** **8**

Begin Time: 2100 **End Time:** 0100

Cloud cover: Partly cloudy **Precipitation:** 0 in.

Air Temperature: 63.5F **Water Temperature:** 22C

Wind Speed: 0 - 2 mph from SW **Visibility Conditions:** clear, 10 mile visibility

Moon phase: Waning gibbous **Humidity:** 94% (start), 90% (end)

Description of weather conditions: Foggy, partly cloudy, air temperature 63.5F, wind 0 - 2 mph from SW

Brand name and model of light used to conduct surveys: Maglite 4D, Surefire

Were binoculars used for the surveys (circle one)? **YES** **NO**

Brand, model, and power of binoculars: Eagle Optics 8x42, Nikon Monarch 8x42

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
CA red-legged frog	1	O	adult	large	100%
American bullfrog	4	3(O)1(H)	adult	med-lrg	100%
unknown Rana sp. likely bullfrog	1	O	adult	large	10%
Pacific treefrog	2	1(O)1(H)	adult	full	100%
Pacific treefrog	50+	O	tadpoles	n/a	100%

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: prickly sculpin, crawdads, bullfrogs

Other notes, observations, comments, *etc.*

3 Mallards at large pond
small fish

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

APPENDIX G
WILDLIFE SPECIES OBSERVED DURING BIOLOGICAL SURVEYS IN SPRING 2013

APPENDIX G
WILDLIFE SPECIES OBSERVED
DURING BIOLOGICAL SURVEYS IN SPRING 2013

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State)[1]
Crustaceans		
Cambaridae Family	Crayfish	-
Fish		
Cottus asper	Prickly sculpin	None/None
Cyprinidae family	Chub	-
Gasterosteus aculeatus	Three-spine stickleback	None/None
Micropterus sp.	Bass	-
Rhinichthys osculus	Speckled dace	None/None
Reptiles		
Aspidoscelis tigris	Western whiptail	None/None
Elgaria multicarinata	Alligator lizard	None/None
Emys marmorata	Southwestern pond turtle	None/CSC
Lampropeltis getula californiae	California king snake	None/None
Phrynosoma blainvillii	Blainville's horned lizard	None/CSC
Uta stansburiana	Side-blotched lizard	None/None
Amphibians		
Pseudacris regilla	Pacific tree frog	None/None
Rana catesbeiana	American bullfrog	None/None
Rana draytonii	California red-legged frog	FT/CSC
Birds		
Accipiter cooperii	Cooper's hawk	None/WL (Nesting)
Aeronautes saxatalis	White-throated swift	None/None
Agelaius phoeniceus	Red-winged black bird	None/None
Anas Platyrhynchos	Domestic mallard duck	None/None
Aphelocoma californica	Western scrub-jay	None/None
Aquila chrysaetos	Golden eagle	BCC/FP (Nesting & Wintering)
Baeolophus inornatus	Oak titmouse	BCC/SA (Nesting)
Bombycilla cedrorum	Cedar waxwing	None/None
Bubo virginianus	Great horned owl	None/None
Buteo jamaicensis	Red-tailed hawk	None/None
Buteo lineatus	Red-shouldered hawk	None/None
Callipepla californica	California quail	None/None

APPENDIX G (CONTINUED)
WILDLIFE SPECIES OBSERVED
DURING BIOLOGICAL SURVEYS IN SPRING 2013

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State)[1]
Calypte anna	Anna's hummingbird	None/None
Carduelis psaltria	Lesser goldfinch	None/None
Carduelis tristis	American goldfinch	None/None
Carpodacus mexicanus	House finch	None/None
Carpodacus purpureus	Purple finch	None/None
Cathartes aura	Turkey vulture	None/None
Chamaea fasciata	Wrentit	None/None
Chondestes grammacus	Lark sparrow	None/SA (Nesting)
Circus cyaneus	Northern harrier	None/CSC (Nesting)
Colaptes auratus	Northern flicker	None/None
Columba livia	Rock dove	None/None
Contopus sordidulus	Western wood pewee	None/None
Corvus brachyrhynchos	American crow	None/None
Empidonax difficilis	Pacific-slope flycatcher	None/None
Falco peregrinus	Peregrine falcon	BCC/FP (Nesting)
Falco sparverius	American kestrel	None/None
Hirundinidae Family	Swallow	-
Junco hyemalis	Dark-eyed junco	None/None
Melanerpes formicivorus	Acorn woodpecker	None/None
Melospiza melodia	Song sparrow	None/None
Mimus polyglottos	Northern mockingbird	None/None
Molothrus ater	Brown-headed cowbird	None/None
Myiarchus cinerascens	Ash-throated flycatcher	None/None
Parulidae Family	Warbler	-
Petrochelidon pyrrhonota	Cliff swallow	None/None
Pheucticus melanocephalus	Black-headed grosbeak	None/None
Picoides nuttallii	Nuttall's woodpecker	BCC/SA (Nesting)
Picoides pubescens	Downy woodpecker	None/None
Picoides villosus	Hairy woodpecker	None/None
Pipilo crissalis	California towhee	None/None
Pipilo maculatus	Spotted towhee	None/None
Polioptila caerulea	Blue-gray gnatcatcher	None/None
Psaltriparus minimus	Bushtit	None/None

APPENDIX G (CONTINUED)
WILDLIFE SPECIES OBSERVED
DURING BIOLOGICAL SURVEYS IN SPRING 2013

Scientific Name	Common Name	Applicable Regulatory Status (Federal/State)[1]
Sayornis nigricans	Black phoebe	None/None
Sialia mexicana	Western bluebird	None/None
Stelgidopteryx serripennis	Northern rough-winged swallow	None/None
Sturnus vulgaris	European starling	None/None
Tachycineta bicolor	Tree swallow	None/None
Tachycineta thalassina	Violet-green swallow	None/None
Thryomanes bewickii	Bewick's wren	None/None
Toxostoma redivivum	California thrasher	None/None
Trochilinae Subfamily	Hummingbird	None/None
Tyrannus vociferans	Cassin's kingbird	None/None
Vermivora celata	Orange-crowned warbler	None/None
Vireo gilvus	Warbling vireo	None/None
Vireo huttoni	Hutton's vireo	None/None
Wilsonia pusilla	Wilson's warbler	None/None
Zenaida macroura	Mourning dove	None/None
Mammals		
Canis latrans	Coyote	None/None
Capra aegagrus hircus	Domestic goat	None/None
Castor canadensis	North American beaver	None/None
Lynx rufus	Bobcat	None/None
Neotoma fuscipes macrotis	Dusky-footed woodrat	None/None
Odocoileus hemionus	Mule deer	None/None
Otospermophilus beecheyi	California ground squirrel	None/None
Sciurus griseus	Western gray squirrel	None/None
Sylvilagus bachmani	Brush rabbit	None/None
Thomomys bottae	Botta's pocket gopher	None/None

[1] (CDFW 2011b).

Regulatory Status Definitions:
FE = Federally-listed Endangered.
FT = Federally-listed Threatened.
FC = Candidate for Federal Listing.
BCC = USFWS Birds of Conservation Concern.
SE = State-listed Endangered.
ST = State-listed Threatened.
FP = California Fully Protected.
CSC = California Species of Special Concern.

APPENDIX G (CONTINUED)
WILDLIFE SPECIES OBSERVED
DURING BIOLOGICAL SURVEYS IN SPRING 2013

WL = Species is on the CDFW Watch List, which means that the species is not currently considered a Species of Special Concern.
SA = CDFW Special Animal (tracked in CNDDB but maintains no other applicable sensitivity designation).