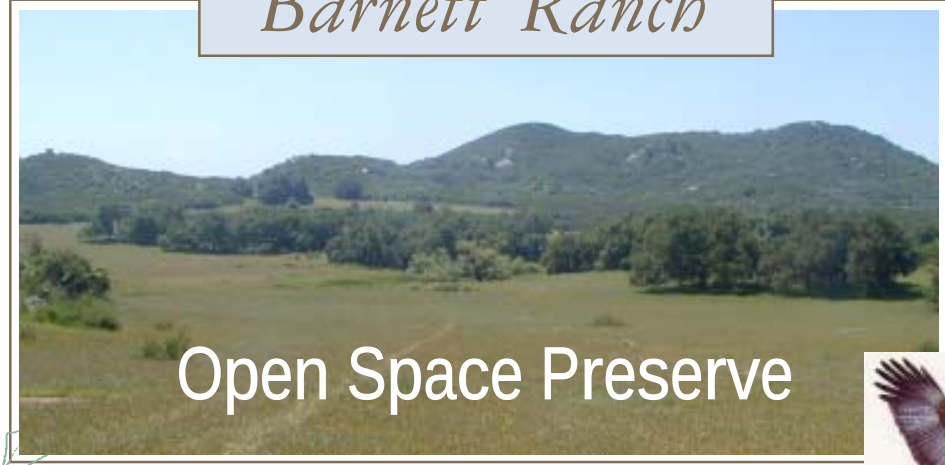
Barnett Ranch



Open Space Preserve

Clarkia delicata

Biological Resources Report

January 30, 2004

Prepared for:
County of San Diego
Department of Parks and Recreation

Prepared by;
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Barnett Ranch Open Space Preserve
Biological Resources Report

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SUMMARY OF FINDINGS

This biological resources report was prepared for the County of San Diego (County) in order to provide information on baseline biological conditions prior to the Cedar Fire of 2003 and to assist in the formation of Area Specific Management Directives (ASMDs) for the Barnett Ranch Open Space Preserve (Preserve) on the approximately 728-acre Barnett Ranch located in the unincorporated Ramona Community Planning Area of central San Diego County east of State Route (SR) 67 and south of SR 78.

The project site supports 16 vegetation communities: southern coast live oak riparian forest, southern willow scrub, freshwater seep, riparian scrub, open water, open Engelmann oak woodland, coast live oak woodland, wildflower field, Diegan coastal sage scrub (including disturbed), coastal sage-chaparral scrub, southern mixed chaparral, non-native grassland, eucalyptus woodland, extensive agriculture, disturbed habitat, and developed land.

No federally or state listed threatened or endangered plant species were observed on site; however, one plant species of federal special concern was observed: felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*). In addition, four plant species recognized as sensitive by the California Native Plant Society and/or the County were observed: delicate clarkia (*Clarkia delicata*), San Diego County viguiera (*Viguiera laciniata*), Engelmann oak (*Quercus engelmannii*), and ashy-spike moss (*Selaginella cinerascens*).

No animal species listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) or California Department of Fish and Game were observed on the site; however, 10 animals observed on site are federal species of concern: orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*), coastal whiptail (*Cnemidophorus tigris stejnegeri*), coastal rosy boa (*Lichanura trivirgata roseofusca*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), loggerhead shrike (*Lanius ludovicianus*), California thrasher (*Toxostoma redivivum*), white-tailed kite (*Elanus leucurus*), Costa's hummingbird (*Calypte costae*), lark sparrow (*Chondestes grammacus*), and Pacific slope flycatcher (*Empidonax difficilis*). Ten animals observed on site are California species of special concern: silvery legless lizard (*Anniella pulchra pulchra*), prairie falcon (*Falco mexicanus*), northern red-diamond rattlesnake (*Crotalus exsu*l), golden eagle (*Aquila chrysaetos*), Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), California horned lark (*Eremophila alpestris actia*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), San Diego black-tailed jackrabbit (*Lepus californicus bennettii*), and San Diego desert woodrat (*Neotoma lepida intermedia*). Five species are listed as County sensitive: great egret (*Ardea alba*), turkey vulture (*Cathartes aura*), western bluebird (*Sialia mexicana*), common barn owl (*Tyto alba*), and southern mule deer (*Odocoileus hemionus fuliginata*). Additionally, one species (black-chinned sparrow [*Spizella atrogularis*]) is listed as a Bird of Conservation Concern under the USFWS, one (great blue heron [*Ardea herodias*]) is protected under the California Department of Forestry, and one (ringtail [*Bassariscus astutus*]) is state fully protected.

The property supports drainages that flow southwest and southeast, eventually flowing into the San Vicente Creek and Reservoir. These on-site creeks provide connection to regional corridors. In addition, the canyon bottoms containing these riparian resources likely provide local corridors that allow use of these resources by resident wildlife.

1.0 INTRODUCTION

This biological resources report was prepared for the County of San Diego (County) to provide information on baseline biological conditions and to assist in the formulation of Area Specific Management Directives (ASMDs) for the Barnett Ranch Open Space Preserve (Preserve).[1] The County purchased the Preserve in 2002 as part of its habitat acquisition obligation for the San Diego County Multiple Species Conservation Program (MSCP). Under the Implementing Agreement (IA) with the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG), the County is required to manage its preserve lands pursuant to the ASMD (a.k.a. Habitat Management Plan) that will aid in preserving the site biodiversity in perpetuity.

1.1 LOCATION

The Preserve covers approximately 728 acres and is made up of six parcels (Assessor's Parcel Numbers 285-060-26, 285-070-25, 328-010-01, 285-071-04, 285-081-01, and 285-070-30). The property is located in the County's Ramona Community Planning Area in central San Diego County east of State Route (SR) 67 and south of SR 78 (Figure 1). The site is located south of the community of Ramona, east of the communities of Rosemont and Irvings Crest, and west of the San Diego Country Estates. The irregularly shaped property straddles San Vicente Road, which runs through the property in a generally northwest/southeast direction (Figure 2). The Preserve straddles Township 13 and 14 South, Range 1 East on the San Bernardino Meridian U.S. Geological Survey Ramona, San Vicente Reservoir, El Cajon Mountain, and San Pasqual quadrangles (Figure 2).

1.2 PHYSIOGRAPHY AND LAND USE

The site consists of a series of hilltops and ridges and a central undulating plain. Elevation ranges from approximately 1,150 feet above mean sea level (amsl) in the south of the site to approximately 1,670 feet amsl on the peak on the southern side of the site.

The Preserve supports native and non-native habitats. Undeveloped land immediately surrounds the property on most sides, except to the north where a farmstead is situated (Figure 3). Recent land use on site includes agriculture (grazing) within the middle section of the property. An estate residence exists in the northwestern portion of the site, three SDG&E powerline easements run across the site, and three paved roadways (San Vicente Road, Chuck Wagon Road, and Deviney Lane) are partially on site. Vacant land exists on the remainder of the property (Figure 4).

Twelve soils types occur on the property: acid igneous rock land (AcG), Cieneba very rocky coarse sandy loam (CmrG; 30 to 75 percent slopes), Fallbrook sandy loam (FaC; 5 to 9 percent slopes), Fallbrook rocky sandy loam (FeC and FeE; 5 to 9 and 9 to 30 percent slopes, respectively), Greenfield sandy loam (GrB, GrC, and GrD; 2 to 5, 5 to 9, and 9 to 15 percent slopes, respectively), Placentia sandy loam (PeA; 0 to 2 percent slopes), Visalia sandy loam (VaA and VaC; 0 to 2 and 5 to 9 percent slopes, respectively), and Vista rocky coarse sandy loam (VvD; 5 to 15 percent slopes; Bowman 1973; Figure 5).

[1]All but two surveys on the property were performed prior to the October 26, 2003 Cedar Fire, which swept across the property and burnt the entire site. No assessments of the affect on habitat or wildlife has been made in this report.

Canyons and ridges similar to those on the project site surround the property. Daney Canyon lies to the west of the property encompassing the Santa Maria Creek Aqueduct. Further west lie rural residential developments. San Vicente Creek lies to the south of the property flowing from northeast to southwest into the San Vicente Reservoir. The Barona Indian Reservation lies to the south and southeast of the property.

2.0 SURVEYS AND METHODS

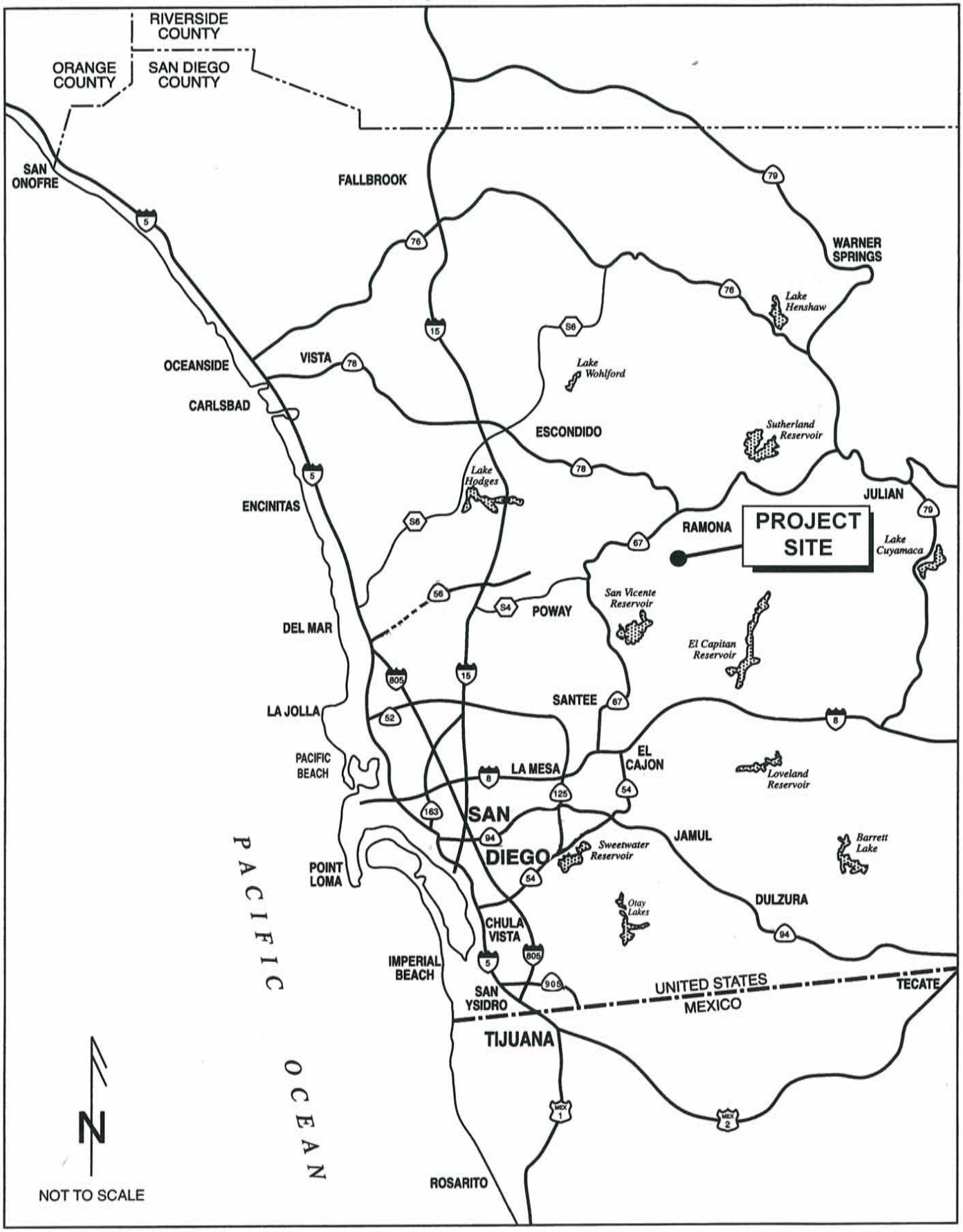
2.1 LITERATURE REVIEW

Prior to conducting biological field surveys, HELIX Environmental Planning, Inc. (HELIX) conducted a search of the California Natural Diversity Database (CNDDB) and the California Native Plant Society (CNPS) online database (CNPS 2004) for information regarding sensitive species known to occur within the project vicinity.

2.2 GENERAL BIOLOGICAL SURVEY

A previous biological resources survey of the Barnett Ranch property was performed in 1998 (Scheidt 1998). In 2001, HELIX conducted the following biological resource surveys: general vegetation mapping, general botanical and zoological surveys, wetland delineation, rare plant surveys, and protocol coastal California gnatcatcher (*Polioptila californica californica*) surveys. Focused surveys for the Stephens' kangaroo rat (*Dipodomys stephensi*) and small mammal trapping surveys were conducted by HELIX subconsultant Philippe Vergne of ENVIRA (USFWS Permit No. PRT-831207; Vergne 2001). Table 1 lists the date and personnel for each survey as well as weather conditions when available and applicable.

HELIX mapped the site's vegetation in the field with the aid of a 1" to 300' scale aerial photograph and 1" to 300' scale topographic map of the property. The general botanical surveys were performed on foot. Roads and trails were used as access, and forays were made into the surrounding vegetation where possible, taking into account different soil types, slopes, and aspects. Sensitive plant species were identified in the field or later identified using plant keys and expertise of other HELIX staff. The general zoology survey was conducted using direct observation and identification of song or alarm calls or through indirect observation (namely of burrow, scat, and tracks). A list of all plant and animal species observed on site was prepared and are included in Appendices A and B, respectively. A listing and explanation of all status codes regarding the plant and animal species are included as Appendix C.

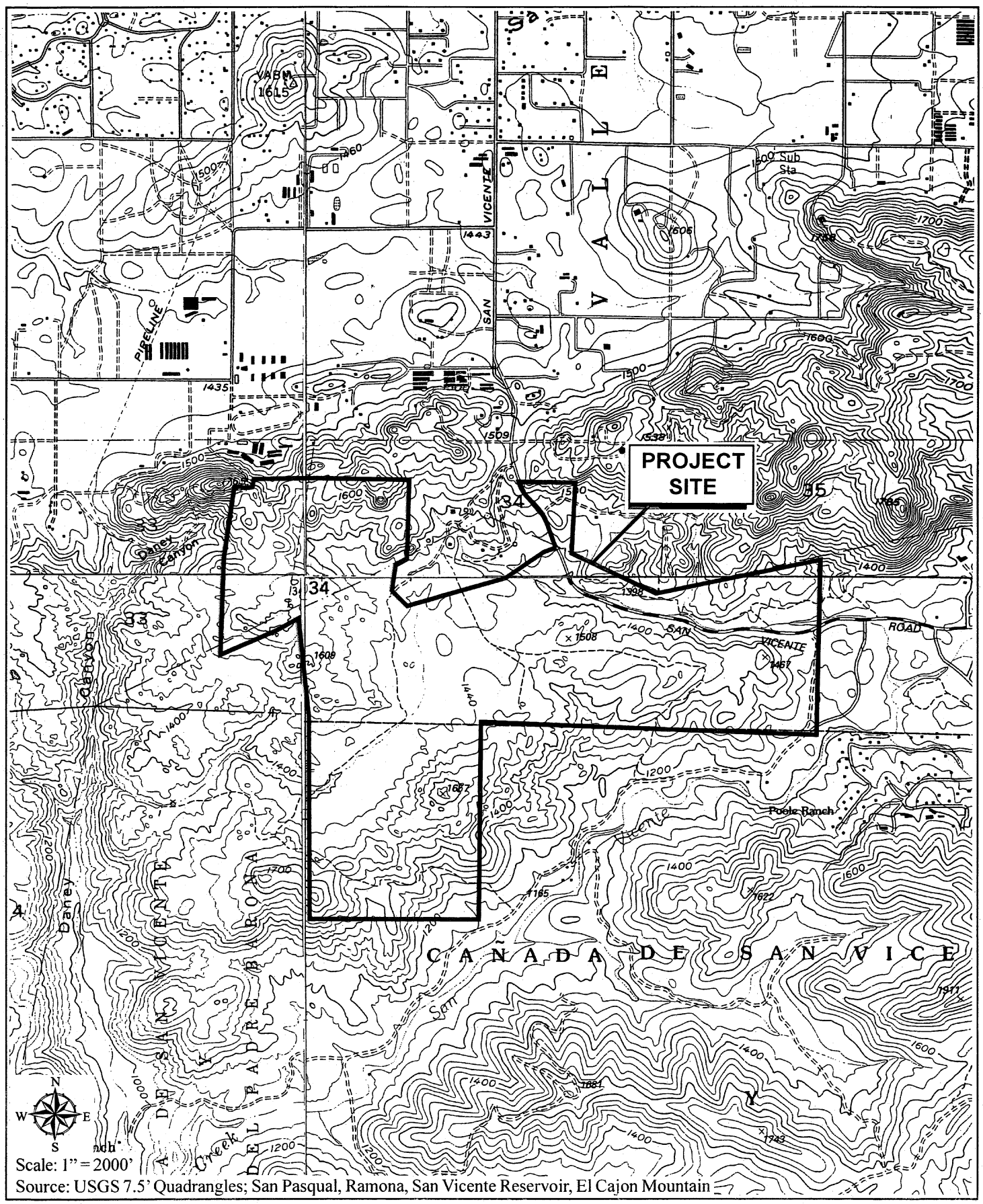


Regional Location Map

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

Figure 1

HELIX



Scale: 1" = 2000'

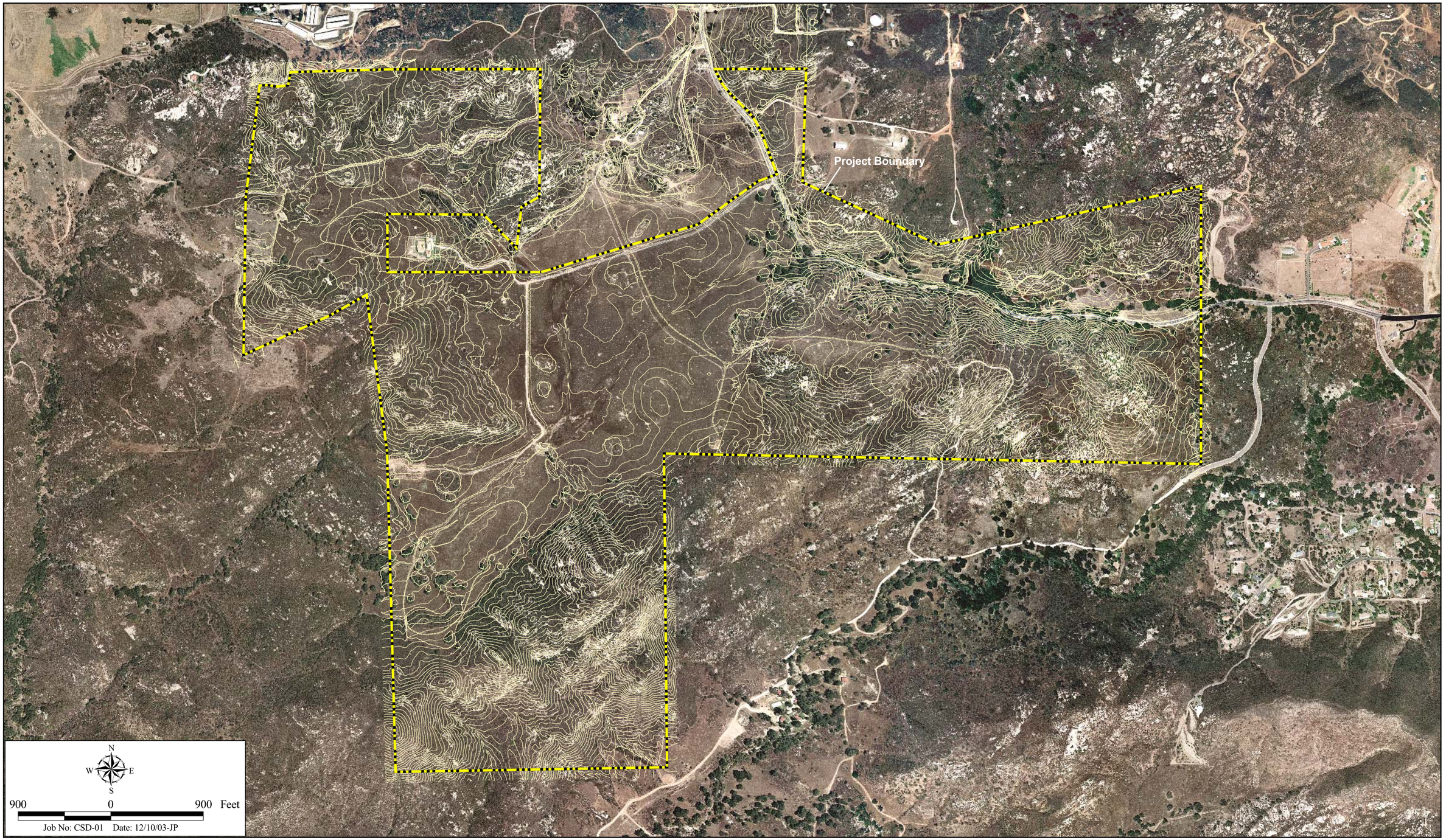
Source: USGS 7.5' Quadrangles; San Pasqual, Ramona, San Vicente Reservoir, El Cajon Mountain

Project Vicinity Map

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

HELIX

Figure 2

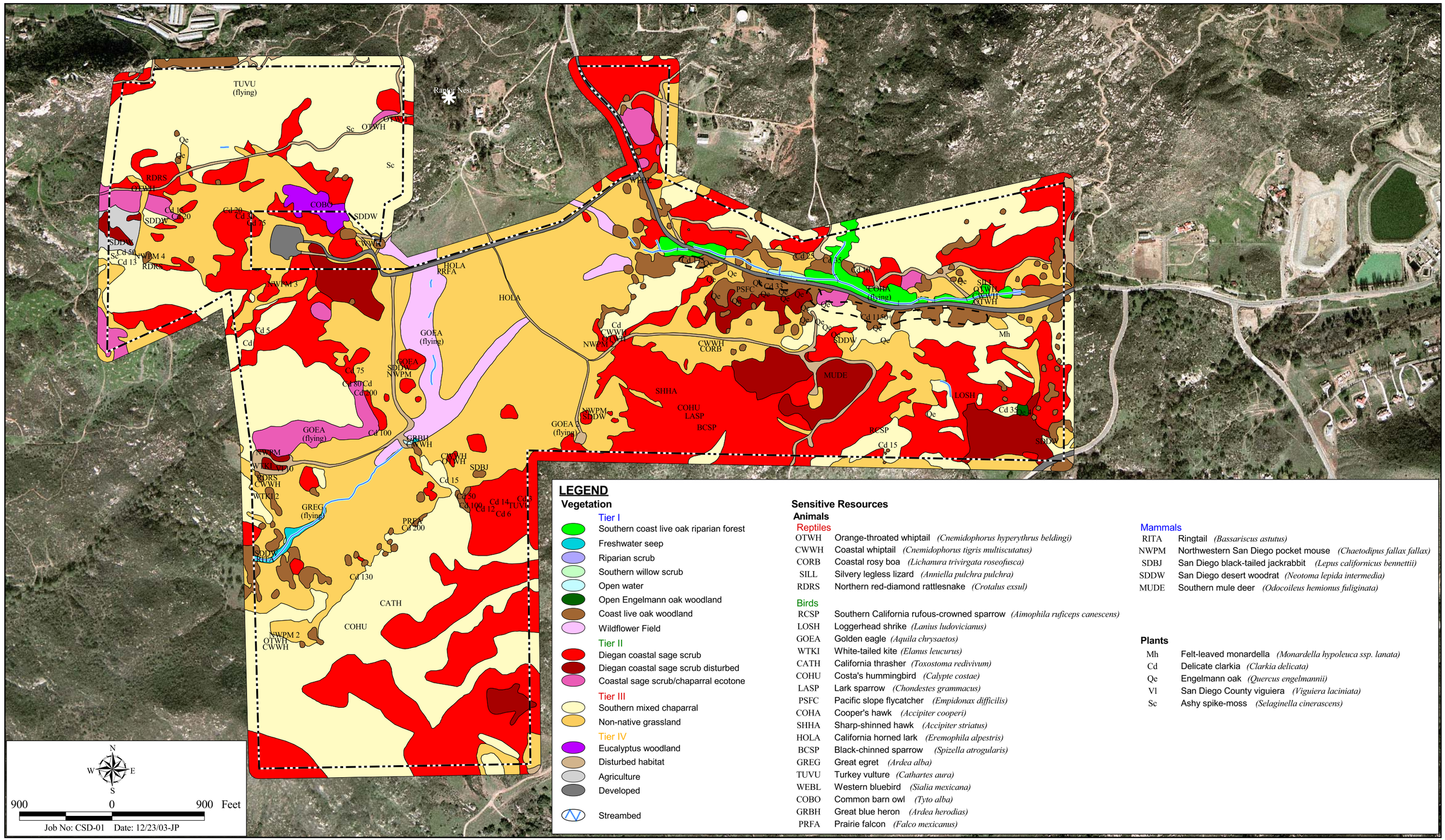


Aerial Photograph with Topography

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

HELIX

Figure 3



LEGEND

Vegetation

Tier I
- Southern coast live oak riparian forest
- Freshwater seep
- Riparian scrub
- Southern willow scrub
- Open water
- Open Engelmann oak woodland
- Coast live oak woodland
- Wildflower Field

Tier II
- Diegan coastal sage scrub
- Diegan coastal sage scrub disturbed
- Coastal sage scrub/chaparral ecotone

Tier III
- Southern mixed chaparral
- Non-native grassland

Tier IV
- Eucalyptus woodland
- Disturbed habitat
- Agriculture
- Developed

- Streambed

Sensitive Resources

Animals

Reptiles

OTWH	Orange-throated whiptail	*(Cnemidophorus hyperythrus beldingi)*
CWWH	Coastal whiptail	*(Cnemidophorus tigris multiscutatus)*
CORB	Coastal rosy boa	*(Lichanura trivirgata roseofusca)*
SILL	Silvery legless lizard	*(Anniella pulchra pulchra)*
RDRS	Northern red-diamond rattlesnake	*(Crotalus exsul)*

Birds

RCSP	Southern California rufous-crowned sparrow	*(Aimophila ruficeps canescens)*
LOSH	Loggerhead shrike	*(Lanius ludovicianus)*
GOEA	Golden eagle	*(Aquila chrysaetos)*
WTKI	White-tailed kite	*(Elanus leucurus)*
CATH	California thrasher	*(Toxostoma redivivum)*
COHU	Costa's hummingbird	*(Calypte costae)*
LASP	Lark sparrow	*(Chondestes grammacus)*
PSFC	Pacific slope flycatcher	*(Empidonax difficilis)*
COHA	Cooper's hawk	*(Accipiter cooperi)*
SHHA	Sharp-shinned hawk	*(Accipiter striatus)*
HOLA	California horned lark	*(Eremophila alpestris)*
BCSP	Black-chinned sparrow	*(Spizella atrogularis)*
GREG	Great egret	*(Ardea alba)*
TUVU	Turkey vulture	*(Cathartes aura)*
WEBL	Western bluebird	*(Sialia mexicana)*
COBO	Common barn owl	*(Tyto alba)*
GRBH	Great blue heron	*(Ardea herodias)*
PRFA	Prairie falcon	*(Falco mexicanus)*

Mammals

RITA	Ringtail	*(Bassariscus astutus)*
NWPM	Northwestern San Diego pocket mouse	*(Chaetodipus fallax fallax)*
SDBJ	San Diego black-tailed jackrabbit	*(Lepus californicus bennettii)*
SDDW	San Diego desert woodrat	*(Neotoma lepida intermedia)*
MUDE	Southern mule deer	*(Odocoileus hemionus fuliginata)*

Plants

Mh	Felt-leaved monardella	*(Monardella hypoleuca ssp. lanata)*
Cd	Delicate clarkia	*(Clarkia delicata)*
Qe	Engelmann oak	*(Quercus engelmannii)*
VI	San Diego County viguiera	*(Viguiera laciniata)*
Sc	Ashy spike-moss	*(Selaginella cinerascens)*

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900 0 900 Feet

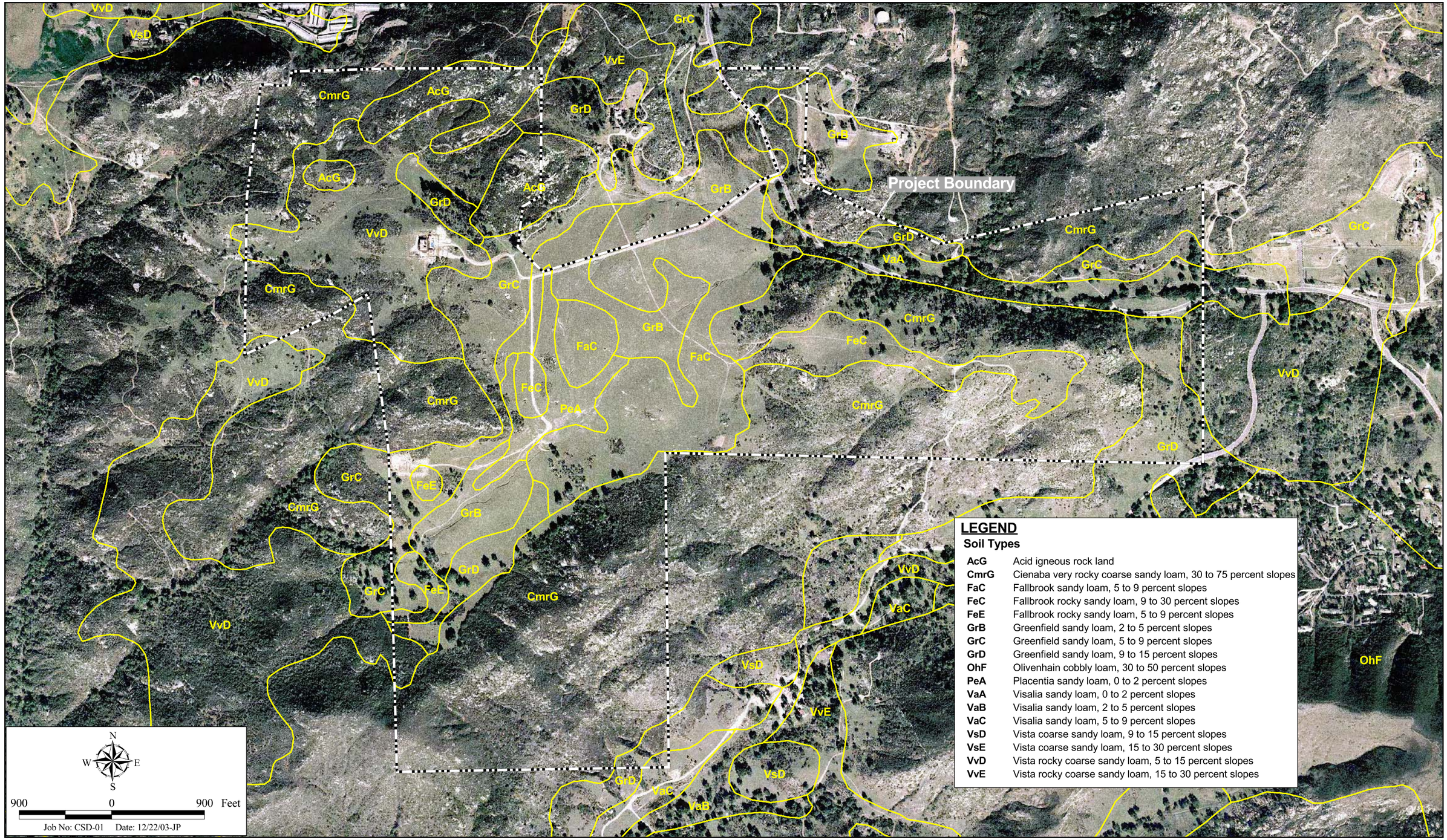
Job No: CSD-01 Date: 12/23/03-JP

Vegetation and Sensitive Resources

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

HELIX

Figure 4


Project Boundary
VvD
VsD
CmrG
AcG
GrD
VvE
GrC
GrB
FeE
FaC
FeC
PeA
VaA
VaC
VaB
VsE
OhF
N
S
E
W
900
0
900 Feet
Job No: CSD-01 Date: 12/22/03-JP
LEGEND
Soil Types
AcG Acid igneous rock land
CmrG Cienaba very rocky coarse sandy loam, 30 to 75 percent slopes
FaC Fallbrook sandy loam, 5 to 9 percent slopes
FeC Fallbrook rocky sandy loam, 9 to 30 percent slopes
FeE Fallbrook rocky sandy loam, 5 to 9 percent slopes
GrB Greenfield sandy loam, 2 to 5 percent slopes
GrC Greenfield sandy loam, 5 to 9 percent slopes
GrD Greenfield sandy loam, 9 to 15 percent slopes
OhF Olivenhain cobbly loam, 30 to 50 percent slopes
PeA Placentia sandy loam, 0 to 2 percent slopes
VaA Visalia sandy loam, 0 to 2 percent slopes
VaB Visalia sandy loam, 2 to 5 percent slopes
VaC Visalia sandy loam, 5 to 9 percent slopes
VsD Vista coarse sandy loam, 9 to 15 percent slopes
VsE Vista coarse sandy loam, 15 to 30 percent slopes
VvD Vista rocky coarse sandy loam, 5 to 15 percent slopes
VvE Vista rocky coarse sandy loam, 15 to 30 percent slopes

Soils

Table 1 SURVEY INFORMATION			
SURVEY DATE	**PERSONNEL***	**SURVEY TYPE**	**TIME AND WEATHER CONDITIONS**
4/27/01	LS, STr, DLa	General zoological survey	N/A
4/28/01	STa	General vegetation survey	0800-1500; Clear, 63-73°F, wind 0-3 mph
5/8/01	LS, STr, DLa	Rare plant survey	N/A
5/9/01	LS, STr, DLa	General botanical survey, vegetation mapping	N/A
6/1/01 to 6/10/01	PV	Stephens' kangaroo rat survey, focused herpetology and small mammal inventory trapping surveys	N/A
6/7/01	DLe†, STa	Protocol California gnatcatcher (CAGN) survey #1 (main section)	0630-1200; Clear, 62-84°F, wind 0-5 mph
6/12/01	LS, STr	Jurisdictional delineation and mapping	N/A
6/14/01	DLe, STa	Protocol CAGN survey #2 (main section)	0630-1200; Clear, 70-84°F, wind 0-3 mph
6/21/01	DLe, STa	Protocol CAGN survey #3 (main section)	0600-1125; Mostly cloudy, 64-75°F/humid, wind 0-3 mph
6/21/01	DLe, STa	Protocol CAGN survey #1 (northeast section)	1125-1200; Mostly cloudy, 75°F/humid, wind 0-2 mph
6/29/01	DLe	Protocol CAGN survey #2 (northeast section)	0900-1015; Clear, 75-80 °F, wind 0-5 mph
7/9/01	DLe	Protocol CAGN survey #3 (northeast section)	0845-0945; Partly cloudy and clearing, 70-74°F, wind 2-3 mph
7/30/01	LS, STr	Jurisdictional delineation and mapping, rare plant survey	N/A
2/7/03	DLa, STr, LS	Quino checkerspot butterfly (QCB) habitat assessment	N/A
3/12/03	DLa	Protocol QCB survey#1	1110-1610; Clear, 73-77°F, wind 0-3 mph
3/26/03	DLa	Protocol QCB survey#2	1020-1515; Clear, 72-78°F, wind 1-7 mph
4/27/03 to 4/29/03	PV	Stephens' kangaroo rat survey, focused herpetology and small mammal inventory trapping surveys	N/A
5/9/03	DLa, LS	Rare plant survey #1	N/A
5/30/03	DLa, DLe	Rare plant survey #2	N/A
4/30/03	STa, DLe	Bird count #1	N/A
5/2/03	STa, DLe	Bird count #2	N/A

Table 1 (cont.) SURVEY INFORMATION			
SURVEY DATE	**PERSONNEL***	**SURVEY TYPE**	**TIME AND WEATHER CONDITIONS**
6/16/03	LS, DLa, BP	Rare plant survey #3	1100-1530; Clear, 75-81°F, wind 0-5 mph
6/18/03	DLe, STa	Protocol CAGN survey #1	0800-1200; Overcast, 61-75°F, wind 0-5 mph
6/25/03	DLe, STa	Protocol CAGN survey #2	0800-1200; Clear, 59-75°F, wind 0-5 mph
12/12/03	DLe, STa	Bird count #3	0830-1256; Clear, 57-67°F, wind 0-5 mph
12/17/03	DLe, STa	Bird count #4	0807-1222; Overcast to clearing, 53-75°F, wind 0-5 mph

*Personnel initials: BP = Brian Parker; DLa = Derek Langsford; DLe = Debbie Leonard; LS = Larry Sward; PV = Philippe Vergne; STa = Scott Taylor; STr = Sally Trnka.
†Formerly Debbie Pudoff.

Focused Surveys

In 2003, HELIX conducted two protocol coastal California gnatcatcher surveys in June; two non-protocol quino checkerspot butterfly (QCB; *Euphydryas editha quino*) presence/absence surveys in March (HELIX 2003); four bird counts in April, May, and December; and three rare plant surveys in May and June. ENVIRA conducted a second series of protocol surveys for Stephens' kangaroo rat as well as focused herpetology, and small mammal inventory trapping and tracking surveys from April 24 through 29, 2003.

Coastal California Gnatcatcher

Due to extensive amounts of Diegan coastal sage scrub present on site, USFWS protocol surveys for the federally listed threatened coastal California gnatcatcher were deemed necessary to determine if the site supported the species. The approximately 728-acre property was divided into two sections due to its size for purposes of these surveys. Each section was surveyed three times in 2001 according to the latest (1997) USFWS protocol for presence/absence of the species. Two surveys occurred in 2003. The survey route followed paved roads, dirt roads, and trails (where available) and through brushy areas (where roads or trails were not available). A taped vocalization was played sparingly during each survey. Generally, the tape was played for no longer than 5 seconds, with intervals of non-play entailing 8 minutes or longer. The gnatcatcher survey report for the project is included as Appendix D.

Quino Checkerspot Butterfly

Due to the presence of potential habitat per USFWS 2002 protocol and the 2001 observation of an individual approximately 5 miles away, surveys for the federally listed endangered quino checkerspot butterfly (QCB) were deemed necessary. A QCB habitat assessment was conducted in February 2003 to determine locations of potential QCB habitat on site (HELIX 2003). As the purpose of the assessment was to determine presence rather than absence, surveys were conducted in areas where the most suitable habitat was found (i.e., areas with host plant and nectaring resources). Four such areas were located on site (Figure 6), all of which were of open areas supporting host and nectaring resources such as dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja exserta*). While not all covered areas would be surveyed under USFWS protocol, conditions during the surveys were per the Year 2002 Survey Protocol Information (USFWS 2002a) and Survey Recommendations for the QCB (USFWS 2002b). Two non-protocol QCB presence/absence surveys were conducted in March 2003. The quino checkerspot butterfly site assessment and non-protocol survey report for the project is included as Appendix E.

Stephen's Kangaroo Rat

USFWS protocol surveys (trapping) for the federally listed endangered Stephen's kangaroo rat were conducted from June 1 to June 10, 2001 and from April 24 to April 29, 2003 by HELIX subconsultant Philippe Vergne of ENVIRA. Focused herpetological and mammal surveys also were conducted in April 2003 by ENVIRA, and the survey report is included as Appendix F. These surveys included pit arrays with tracking areas around them and scent stations (Figure 7). In addition to live animal sightings, the presence of animals was assessed by noting nests, tracks, scat, burrows, and skeletal remains.

USFWS focused Stephen's kangaroo rat survey protocol calls for five nights of trapping, preferably during a new moon phase when nocturnal species are likely to be active. Twelve-inch kangaroo rat modified Sherman traps baited with birdseed were used. The traps were set at dusk and reopened at dawn. All animals were identified and released at the point of capture (ENVIRA 2003).

Other Mammals and Herpetofauna

Other Mammals

Ten areas of varying vegetation communities were selected for the placement of scent stations, which consisted of 2-foot wooden stakes inserted into the ground, each with a can of cat food nailed to the top of the stake. Flour on wax paper surrounding the scent station was used to record animal prints (ENVIRA 2003).

Herpetofauna

Focused herpetofauna surveys included the use of sampling arrays, which were made up of 3 drift fence arms with a total of 7 five-gallon pitfalls traps each. The fence arms were 30 centimeters tall by 15 meters long. Pitfall buckets were buried to ground level with the bucket lids arranged to provide shade (ENVIRA 2003).

Bird Counts

Bird count surveys did not follow any protocol outlined in the MSCP Biological Monitoring Plan (Ogden 1996) because of the focus on covered species as indicators of ecosystem function and the requirement for stratified random sampling within habitats. This method is impractical in dense chaparral, especially in remote areas away from trails or roads. In addition, accessing random locations would damage the habitat the MSCP is trying to conserve; as a result, a modified protocol was used based on the bird count method in the *Handbook of Field Methods for Monitoring Landbirds* (Ralph et al. 1993).

Twenty-four points were identified at which to conduct bird counts on the property (Figure 8). Five categories of vegetation communities in which the points were placed were created for purposes of the bird counts survey sheets: Diegan coastal sage scrub, non-native grassland, southern mixed chaparral, coast live oak woodland, and "other" (meaning the remaining vegetation communities; Figure 3). On April 30, May 2, December 12, and December 17, 2003, HELIX biologists Scott Taylor and Debbie Leonard conducted the bird counts. Mr. Taylor surveyed Points 1 through 12, and Ms. Leonard surveyed Points 13 through 24 (Figure 8). Approximately 10 minutes were spent at each point in which the biologists counted and identified birds. Birds were counted perched and flying overhead within a 150-foot radius. The order of survey of point locations was reversed for the second survey in each season. The December surveys occurred after the Cedar Fire. Details of methods are presented with the data in Appendix G.

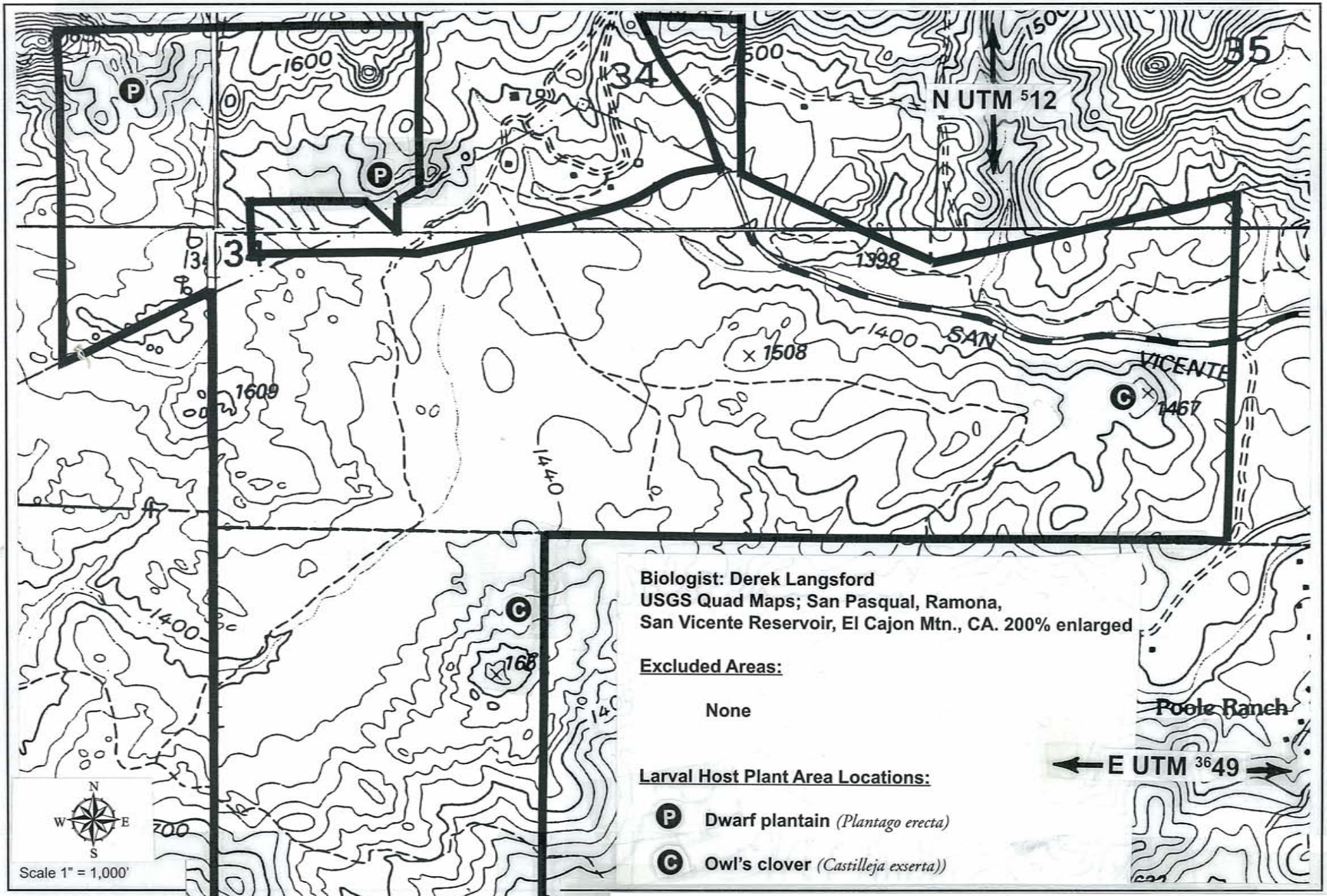
2.3 WETLAND DELINEATION

Areas of wetland vegetation were identified in areas with depressions or drainage channels. Potential federal jurisdiction non-wetland waters, CDFG jurisdictional streambed, and County Resource Protection Ordinance (RPO) areas also were identified and mapped.

The formal wetland delineation was conducted by W. Larry Sward and Sally Trnka on June 12 and July 30, 2001, from which data sheets are provided (Appendix H). Each area was inspected according to U.S. Army Corps of Engineers (ACOE) wetland delineation guidelines. Wetland boundaries of the ACOE were determined using the three criteria (vegetation, hydrology, and soils) established for wetland delineations as described within the Wetlands Delineation Manual (Environmental Laboratory 1987). Other references used to determine jurisdictional areas included vegetation and topographic maps of the site, and a recent aerial photo.

2.4 SURVEY LIMITATIONS

All detected animal species were identified by direct observation, vocalizations, or the observance of scat, tracks, or other signs during generalized and focused surveys. There are a few limitations as to the comprehensiveness of the direct results of the zoological surveys. Some nocturnal, secretive, or seasonally restricted animal species would not have been observed during the general or focused zoological surveys. Examples include bats, rodents, migrant birds that winter in or visit the project study area, nocturnal lizards, snakes, and many invertebrate species; however, the focused surveys attempted to identify species in many of these groups. Some species would not have been detected due to the limitations of the methods and season of the focused survey.

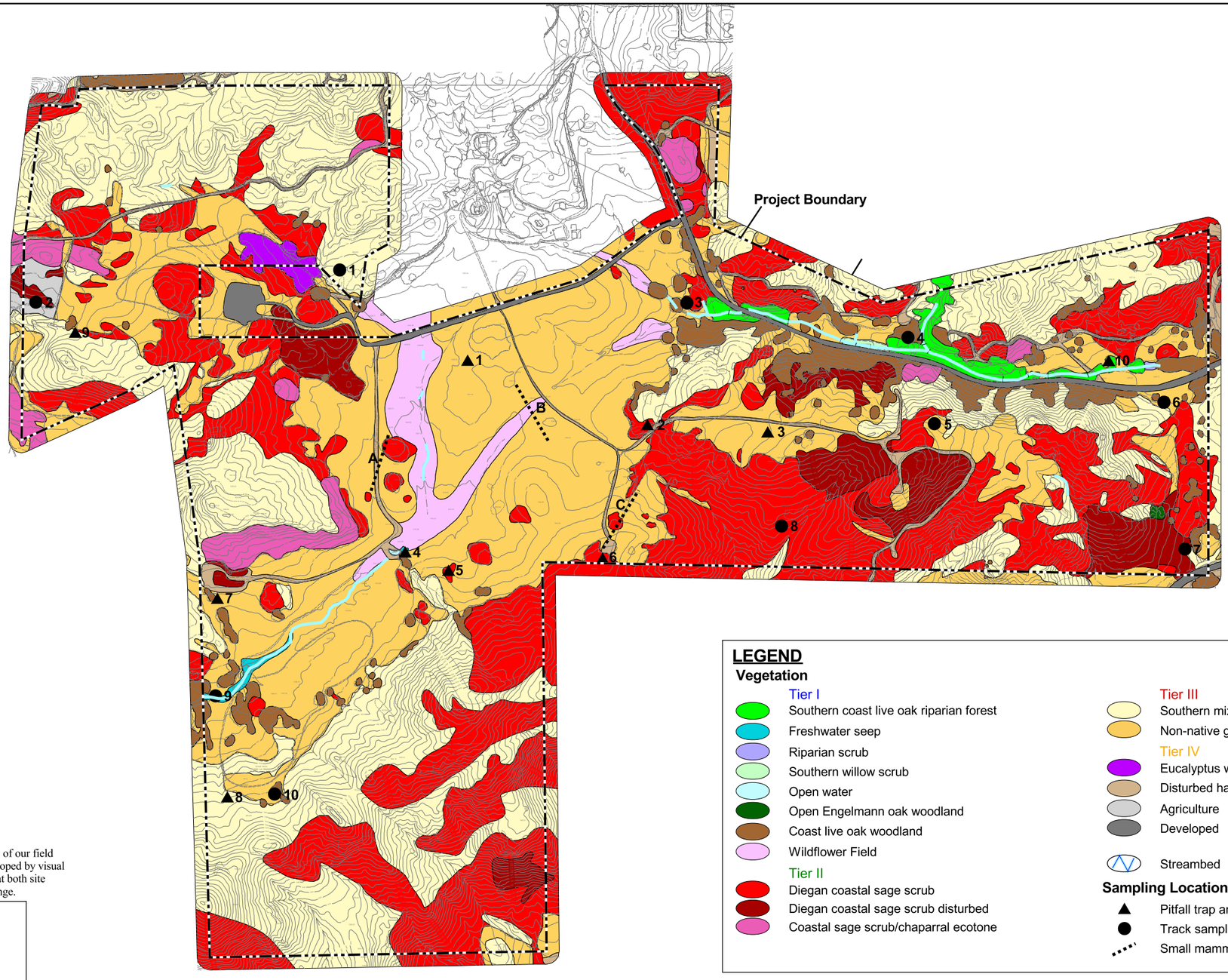


Site Assessment and Host Plant Location Map

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

Figure 6

HELIX



LEGEND

Vegetation

Tier I
- Southern coast live oak riparian forest
- Freshwater seep
- Riparian scrub
- Southern willow scrub
- Open water
- Open Engelmann oak woodland
- Coast live oak woodland
- Wildflower Field

Tier II
- Diegan coastal sage scrub
- Diegan coastal sage scrub disturbed
- Coastal sage scrub/chaparral ecotone

Tier III
- Southern mixed chaparral
- Non-native grassland

Tier IV
- Eucalyptus woodland
- Disturbed habitat
- Agriculture
- Developed

Streambed

Sampling Locations
- ▲ Pitfall trap array locations
- ● Track sampling sites
- Small mammal trap lines

Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

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Job No: CSD-01 Date: 12/22/03-JP

Small Mammal and Herpetological Survey Locations

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

HELIX

Figure 7

Paved (including San Vicente Road, Chuck Wagon Road, and Deviney Lane) as well as several unpaved roads and trails provided access to the site in order to conduct the biological surveys. The Stephen's kangaroo rat, small mammal, and herpetological surveys included trapping, pit fall arrays, and scent stations. It should be noted that despite efficacy of pit trap arrays in detecting herpetofauna, long-term trapping (several seasons over several years) is required to obtain a comprehensive list of species presence on a site.

Most surveys were performed in daylight; therefore, many nocturnal animals expected to occur on site were not directly observed. Additionally, some species occur in such low numbers that they can be easily missed, especially in dense habitats. For these reasons, other means such as database searches, habitat requirements, and knowledge of species distribution were used to determine the probability that other sensitive species may be present when field survey is not feasible or warranted.

The low rainfall of 2000-2001 did not allow for much native herbaceous growth during the survey period for rare plants in 2001. Due to the dry conditions, it is likely that some herbaceous species were not observable during the general botanical or rare plant surveys. There is a possibility that one or more sensitive plant species were missed due to timing of the surveys, as some species bloom earlier or later and could easily be missed. Rainfall in 2003 was close to normal, and conditions on site were suitable for most rare plants to have been observed if they were present on site.

2.5 NOMENCLATURE

Nomenclature used in this report comes from Hickman, ed. (1993) for plants; Garth and Tilden (1986) for butterflies; Collins and Taggart (2002), Stebbins (1985), and Landenslayer, et al. (1991) for amphibians and reptiles; American Ornithologists' Union (1998) for birds, and Jones et al. (1997) for mammals. The vegetation community categories are from Holland (1986) and Oberbauer (1996). If common plant names were not listed in Hickman (1993), Beauchamp (1986) was used.

3.0 RESULTS OF FIELD SURVEYS AND MAPPING

3.1 VEGETATION COMMUNITIES/HABITATS

Sixteen vegetation communities/habitats plus developed areas occur on the property. These are listed in Table 2 with their respective acreages and shown on Figure 4. Descriptions of these communities are provided below in order of sensitivity.

3.1.1 Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest is an open to locally dense evergreen sclerophyllous riparian woodland that is dominated by coast live oak (*Quercus agrifolia*). This community occurs on fine-grained alluvial soils on the floodplains along large streams in the canyons and valleys of coastal southern California (Holland 1986). Associated species found on site include Engelmann oak (*Q. engelmannii*), delicate clarkia (*Clarkia delicata*), California fuchsia (*Epilobium canum*), and poison oak (*Toxicodendron diversilobum*). Southern coast live oak riparian forest occurs in the northeastern portion of the project site (north and south of San Vicente Road) and totals approximately 7.81 acres.

Table 2 EXISTING VEGETATION COMMUNITIES/HABITATS	
VEGETATION COMMUNITY	**ACRE(S)[1]**
High Sensitivity (Tier I)[2]	
Southern coast live oak riparian forest (61310)[3]	7.81
Southern willow scrub (63320)	0.53
Freshwater seep (45400)	1.27
Riparian scrub (63000)	0.11
Open water (13100)	0.07
Open Engelmann oak woodland (71181)	0.3
Coast live oak woodland (71160)	29.1
Wildflower field (42300)	15.9
Moderate Sensitivity (Tier II)	
Diegan coastal sage scrub (32500)	185.1
Disturbed Diegan coastal sage scrub (32500)	31.7
Coastal sage-chaparral scrub (37G00)	14.3
Low Sensitivity (Tier III)	
Southern mixed chaparral (37120)	211.2
Non-native grassland (42220)	205.7
Other (Tier IV)	
Eucalyptus woodland (11100)	2.3
Extensive agriculture (18300)	2.0
Disturbed habitat (11300)	13.6
Developed land (12000)	6.8
TOTAL	**727.8**

[1]Upland habitats are rounded to the nearest tenth, while wetland habitats are rounded to the nearest hundredth.
[2]Tiers refer to the MSCP habitat classification system.
[3]Vegetation categories and numerical codes are from Holland (1986) and Oberbauer (1996).

3.1.2 Southern Willow Scrub

Southern willow scrub consists of dense, broadleaved, winter-deciduous stands of trees dominated by shrubby willows (*Salix* sp.) in association with mule fat (*Baccharis salicifolia*). This habitat occurs on loose, sandy or fine gravelly alluvium deposited near stream channels during flood flows. Frequent flooding maintains this early seral community, preventing succession to a riparian woodland or forest (Holland 1986).

The on-site southern willow scrub vegetation community includes mule fat, arroyo willow (*Salix lasiolepis*), yerba mansa (*Anemopsis californica*), and spike rush (*Eleocharis* sp.). This vegetation community occurs in one location adjacent to a patch of southern coast live oak riparian forest on the

north side of San Vicente Road on the property. Southern willow scrub on site totals approximately 0.53 acre.

3.1.3 Freshwater Seep

Freshwater seeps are made up of mostly perennial herbs, especially sedges (*Carex* spp.), rushes (*Juncus* ssp.), and water cress (*Nasturtium officinale*; Holland 1986). The on-site freshwater seep occurs in the western portion of the site in the lowest elevations of the grassland and totals approximately 1.27 acres.

3.1.4 Riparian Scrub

Riparian scrub is an umbrella term for several shrub-dominated communities that occur along drainages and/or riparian corridors, including southern willow scrub, mule fat scrub, and tamarisk scrub. For Barnett Ranch, it is used to describe a riparian community that supports indicators of more than one specific community. Riparian scrub totals approximately 0.11 acre and occurs in the northeast portion of the site north of San Vicente Road along the creek.

3.1.5 Open Water

Open water habitat includes lakes, ponds, or other bodies of water that do not support emergent plant cover. Open water is comprised of the cattle stock pond near the center of the site and totals approximately 0.07 acre.

3.1.6 Open Engelmann Oak Woodland

Engelmann oak woodland typically is comprised of Engelmann oaks growing in the ecotone between grassland and shrub fields with an understory of typical "grassland" species or combined with coast live oak trees. In San Diego County, Engelmann oak woodland also can occur with a chaparral understory on hillsides. A small patch of Engelmann oak woodland occurs in the southeastern corner of the site between disturbed Diegan coastal sage scrub and southern mixed chaparral. Isolated Engelmann oaks elsewhere on site are treated as specimens (rather than woodland) growing in the chaparral or coastal sage scrub because they are not grouped tightly enough to provide a woodland habitat. Engelmann oak woodland consists of a group of four trees in the eastern portion of the site and totals approximately 0.3 acre.

3.1.7 Coast Live Oak Woodland

Coast live oak woodland is an evergreen woodland dominated by coast live oak found predominantly on north-facing slopes and shaded ravines with a poorly developed shrub understory including toyon (*Heteromeles arbutifolia*), currant (*Ribes* sp.), poison oak, and laurel sumac (*Malosma laurina*). This vegetation community also supports Engelmann oak and poison oak. Individual oak trees are mapped as coast live oak woodland. Coast live oak woodland totals approximately 29.1 acres and occurs in patches throughout the property, which are most concentrated in the valley along San Vicente Road and in the southwest of the site.

3.1.8 Wildflower Field

Wildflower fields are described by Holland (1986) as "an amorphous grab bag of herb-dominated [vegetation] types noted for conspicuous annual wildflower displays." Typical wildflower fields support California poppy (*Eschscholzia californica*), tidy tips (*Layia platyglossa*), and miniature lupine (*Lupinus bicolor*). Wildflower fields on site occur in the lower elevations of the central block of grassland and are dominated by fascicled tarplant (*Deinandra fasciculata*).

3.1.9 Diegan Coastal Sage Scrub (including disturbed)

Diegan coastal sage scrub is a vegetation community commonly characterized by drought-adapted subshrubs such as California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), laurel sumac, and black sage (*Salvia mellifera*). Additional species such as yellow bush snapdragon (*Keckiella antirrhinoides*), monkey flower (*Mimulus aurantiacus*), blue dicks (*Dichelostemma capitatum*), and purple owl's clover also occur on site. Diegan coastal sage scrub totals approximately 185.1 acres and is found in patches throughout the site. Disturbed Diegan coastal sage scrub recovering from a previous fire, primarily occurs in the northeastern portion of the site, and is characterized by an increased number of non-native grasses and less cover. Disturbed Diegan coastal sage scrub totals approximately 31.7 acres.

3.1.10 Coastal Sage-Chaparral Scrub

Coastal sage-chaparral scrub is a mixture of sclerophyllous chaparral shrubs and drought-deciduous sage scrub species regarded as an ecotone (transition) between two vegetation communities. This singular community contains floristic elements of both communities including California sagebrush, California buckwheat, laurel sumac, chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus berberidifolia*), and ceanothus (*Ceanothus* sp.), all of which are found on site. Additional species on site include white sage (*Salvia apiana*), chia (*Salvia columbariae*), and chaparral mallow (*Malacothamnus fasciculatus*). Patches of coastal sage-chaparral scrub are distributed within the northwestern and northeastern portions of the property. This community varies in species composition but always contains coastal sage and chaparral species. Coastal sage-chaparral scrub on site totals approximately 14.3 acres.

3.1.11 Southern Mixed Chaparral

Southern mixed chaparral is composed of broad-leaved sclerophyllous shrubs such as chamise, ceanothus, and scrub oak that can grow to 6 to 10 feet tall and form dense often nearly impenetrable stands with poorly developed understories. This is the most common vegetation type on site, which covers most of the ridges and hilltops and much of the slopes in the eastern and southern portions of the site. Much of it is thick and virtually impenetrable. The vegetation is dominated by chamise which in small areas can form 100 percent of the cover; however, other species almost always coexist with chamise. Codominants at different locations include Ramona ceanothus (*Ceanothus tomentosus*), black sage, mission manzanita (*Xylococcus bicolor*), chaparral whitethorn (*Ceanothus leucodermis*), laurel sumac, and scrub oak. Southern mixed chaparral on site totals approximately 211.2 acres.

3.1.12 Non-native Grassland

Non-native grassland areas in the past may have supported native grassland but have been invaded by exotic annuals. The flora of non-native grasslands include a dense to sparse cover of introduced grasses and often numerous species of showy-flowered, non-native and native, annual forbs. This habitat is often associated with deep, fine-textured soils with some clay content. Introduction of exotic grasses in California due to grazing and agricultural practices coupled with severe droughts has contributed to the conversion of native grasslands to non-native grassland (Jackson 1985). Whereas native grasslands support mostly perennials such as needlegrass (*Nasella* sp.), non-native grasslands (including those on site) support mostly annuals. Regardless of species composition, all grasslands throughout the County serve as valuable raptor foraging habitat and have additional value due to the native forbs they often support. Characteristic species in the grasslands on site include oats (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), and ryegrass (*Lolium* sp.); however, the prevalence of filaree (*Erodium* spp.) throughout the areas of non-native grassland results in there being less than ideal habitat for rodents and raptor foraging. The relative population of filaree, annual grasses, and forbs varies with location on the site. Approximately 205.7 acres of non-native grassland occur on site.

3.1.13 Eucalyptus Woodland

Eucalyptus woodland is dominated by eucalyptus (*Eucalyptus* sp.), an introduced tree species that has often been planted purposely for wind blocking, ornamental, and hardwood production purposes and can naturalize and spread if conditions allow. This species produces a large amount of leaf and bark litter, the chemical and physical characteristics (in combination with the tree species' closed canopy) of which limit the ability of other species to grow in the understory, decreasing floristic diversity. The sparse understory offers only limited wildlife habitat; however, as a wildlife habitat, these woodlands provide excellent nesting sites for a variety of raptors, including red-tailed hawks (*Buteo jamaicensis*). During winter migrations, a large variety of warblers may be found feeding on the insects that are attracted to the eucalyptus flowers. A patch of eucalyptus woodland is located in the western portion of the project site north of the existing home. Eucalyptus woodland totals approximately 2.3 acres on site.

3.1.14 Extensive Agriculture

This category is being used in this report to discuss disturbed habitat due to extensive cattle grazing. Vegetation within the agricultural area consists of non-native grasses such as chess (*Bromus* sp.) and barley (*Hordeum* spp.). The agricultural area totals approximately 2.0 acres and is located in the very northwestern end of the site where grazing from adjacent property up to a fence that runs north-south.

3.1.15 Disturbed Habitat

Disturbed habitat includes land cleared of vegetation (e.g., dirt roads), contains a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance (previously cleared or abandoned landscaping), or shows signs of past or present animal usage that removes any capability of providing viable habitat.

On site, disturbed habitat includes dirt roads carved out of native vegetation and non-native grassland. In the southwestern corner of the site, these dirt roads lead to an abandoned residential building pad along the ridge in the east of the site and along the SDG&E power line easements across the northwest, northern, and eastern portions of the site. Disturbed habitat totals approximately 13.6 acres on site.

3.1.16 Developed Land

Developed land is where permanent structures and/or pavement have been placed, which prevents the growth of vegetation, or where landscaping is clearly tended and maintained. On site, this cover type is represented by San Vicente Road, Chuck Wagon Road, Deviney Lane, and the access road to the inholding estate. San Vicente Road traverses the property in a northwestern to eastern direction on the northeast portion of the property. Chuck Wagon Road runs across the tip of the property in the far southeastern corner. Deviney Lane and the access road to the inholding estate traverse the property in a northeastern to southwestern alignment parallel to the northern property boundary through the agricultural area. Developed land totals approximately 6.8 acres on site.

3.2 PLANT SPECIES OBSERVED ON SITE

A total of 273 plant species were observed during the vegetation mapping and general botanical and rare plant surveys on the site. A complete list of plants observed is included in Appendix A.

3.3 ANIMAL SPECIES OBSERVED ON SITE

A total of 145 animal species were identified/detected during the general zoology surveys, including 23 reptile, 77 bird, 22 mammal, and 23 butterfly species. A complete list of animals observed or detected during all zoological surveys are included in Appendix B. All of the animal species were identified by direct observation or vocalizations, the presence of scat and/or tracks, or other signs.

3.4 WILDLIFE CORRIDORS

Two types of corridor can potentially occur on a site: regional and local. Local corridors allow animals access to resources such as food, water, and shelter. For example, animals can use these corridors to travel from riparian to upland habitats and back. Some animals require riparian habitat for breeding and upland habitat for burrowing. Regional corridors provide these functions and also link two or more large areas of open space along which large animals can move and disperse.

3.4.1 Regional Corridors

The MSCP Plan and County Subarea Plan (County 1997) identifies a regional wildlife corridor along the San Vicente Valley immediately south of the site. The south-facing slopes in the south of the site from the northern hillside of the valley contributes to the corridor's function. The regional corridor connects the biological core area around San Vicente Reservoir to the National Forest east of San Diego Country Estates.

The majority of wildlife of concern is not likely to use the agricultural areas that cover the middle section of the property and extend off site to the north. However, natural habitat occurs on the

remainder of the property and is connected to off-site habitat in all directions. Drainages on site flow southwest and southeast but eventually flow into the San Vicente Creek and Reservoir. These drainages may provided access to and from the regional corridor.

Regional corridor animals such as mountain lions (*Felis concolor*) are wide-ranging and tend to use canyon bottoms with ridges being used only secondarily, whereas mule deer (*Odocoileus hemionus*) set up small home ranges and largely avoid canyon bottoms (Ogden 1992). Mountain lions were not observed on site; however, mule deer were observed in the east of the site.

3.4.2 Local Corridors

The habitat on site does support resident wildlife including rabbits, ground squirrels, bobcats, rats, and mice, and wider-ranging species found in more urban settings such as coyotes. These species tend to have small, local ranges and likely use creek beds, dirt roads, and trails to move about the site. Coyote and bobcat scat and carcasses were observed during general biological and zoological surveys. Bobcats are small enough to pass through and occupy dense chaparral unlike coyotes, which generally require more open habitat for movement.

The site is also used by several reptile and bird species. Reptiles do not migrate long distances, while birds are the most unrestricted wildlife that use the site. Although the property does not support the federally listed threatened coastal California gnatcatcher, several sensitive bird species were observed. The site provides a large area of habitat for local use by many bird species and likely provides an avenue for bird movement from surrounding vacant land.

Intermittent and permanent creeks and wetlands on site provide resources for local wildlife (Figure 4). These resources are maintained by natural rainfall and are ultimately connected to habitat both on and off site. The canyon sides and bottoms containing these resources likely provide local wildlife corridors that allow use of these resources.

The conclusion from the collective observations and analysis is that the site likely contributes to regional habitat connectivity by contributing to the regional corridor in San Vicente Valley and providing access to the corridor along drainages. While not contributing directly to regional corridor function, the majority of the site does provide links as well as additional resources that species using the regional corridor may use.

4.0 SENSITIVE RESOURCES

Sensitive resources are those defined as (1) habitat areas or vegetation communities that are unique, are of relatively limited distribution, or are of particular value to wildlife; and (2) species that have been given special recognition by federal, state, or local government agencies and organizations due to limited, declining, or threatened populations.

4.1 SENSITIVE VEGETATION COMMUNITIES

The following vegetation communities on the site are considered sensitive: southern coast live oak riparian forest, southern willow scrub, freshwater seep, riparian scrub, open water, open Engelmann

oak woodland, coast live oak woodland, wildflower field, Diegan coastal sage scrub (including disturbed), coastal sage-chaparral scrub, southern mixed chaparral, and non-native grassland.

4.2 JURISDICTIONAL WETLAND RESOURCES

Pursuant to the RPO, County wetlands require only one of the three factors required for federal jurisdiction to be present (County 1991). For this site, County RPO wetlands are identical to state jurisdictional wetlands. All wetland vegetation on site is considered sensitive and includes jurisdictional southern coast live oak riparian forest, southern willow scrub, freshwater seep, riparian scrub, and open water as well as ephemeral streams (Table 2).

4.3 SENSITIVE PLANT SPECIES

No plant species considered threatened or endangered by the USFWS or CDFG was observed on site, although one species is listed as a federal species of concern: felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*). Four additional species recognized as sensitive by CNPS and/or the County were observed: delicate clarkia, San Diego County viguiera (*Viguiera laciniata*), Engelmann oak, and ashy-spike moss (*Selaginella cinerascens*). A brief description of each species is provided below, with a listing of and explanation for status codes for both plant and animal species presented in Appendix C.

Felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*)
Status: FSC/--; CNPS List 1B; R-E-D 2-2-2; County Group A; MSCP Covered
Distribution: Orange and San Diego counties and northwestern Baja California, Mexico (Baja)
Habitat(s): Dry, rocky areas below 4,500 feet within chaparral and cismontane woodland but typically beneath mature chamise in xeric situations.
Status on site: One individual was located on the eastern edge of the property in Diegan coastal sage scrub.

Delicate clarkia (*Clarkia delicata*)
Status: --/--; CNPS List 1B; R-E-D 1-2-1; County Group B
Distribution: Generally occurs between approximately 490 and 4,265 feet in elevation.
Habitat(s): Shaded areas of southern oak woodland.
Status on site: Individual species prevalent within oak woodland and at the edge of chaparral on north-facing slopes were observed near the western property boundary. Occurs in Diegan coastal sage scrub and coastal sage scrub/chaparral ecotone in the western portion of the site, within Diegan coastal sage scrub (including disturbed), southern mixed chaparral, and coast live oak woodland throughout the eastern portion of the site (south of San Vicente Road), and in oak woodland north of San Vicente Road. Over 2,000 individuals have been observed on site.

San Diego County viguiera (*Viguiera laciniata*)
Status: --/--; CNPS List 4; R-E-D 1-2-1; County Group D
Distribution: Generally occurs approximately below 4,000 feet within coastal sage scrub and rocky slopes within San Diego County and Baja.
Habitat(s): Chaparral and rocky slopes in coastal, foothill, and desert areas
Status on site: A patch of 10 individuals was observed near the western property boundary within disturbed Diegan coastal sage scrub near the graded, undeveloped building pad. These are unlikely to be natural occurrences, as San Diego County viguiera is not known elsewhere in the vicinity and this population is outside its natural range.

Engelmann oak (*Quercus engelmannii*)
Status: --/--; CNPS List 4; R-E-D 1-2-2; County Group A
Distribution: San Diego, Orange, and Riverside counties; Santa Catalina Island; Baja
Habitat(s): Chaparral, cismontane woodland, riparian woodland, valley, and foothill grasslands
Status on site: Engelmann oaks are present as a small area of Engelmann oak woodland in the southeastern corner of the site and as scattered individuals in the eastern portion of the site. Four individuals are located in disturbed Diegan coastal sage scrub near the patch of Engelmann oak woodland, 11 individuals were observed in coast live oak woodland, 5 individuals were observed in southern mixed chaparral, and 1 specimen was located within Diegan coastal sage scrub.

Ashy spike-moss (*Selaginella cinerascens*)
Status: --/--; County Group D
Distribution: Orange and San Diego counties and northwestern Baja
Habitat(s): Flat mesas in coastal sage scrub and chaparral.
Status on site: This species was observed in southern mixed chaparral near the western boundary of the site.

4.4 LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

While the project study area was surveyed for rare plants in 2001 and 2003, there is a possibility that one or more sensitive plant species were missed due to either or both extraordinarily dry conditions in 2001-2002 or timing of surveys. As a result, sensitive plant species with the potential to occur on the site were assessed based on known distribution, habitat requirements, soils, and existing site conditions. Sensitive plant species not observed but with potential to occur on site are listed and discussed in Table 3. The species are listed by status and alphabetized (by scientific name) where status is the same.

Table 3
LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL TO OCCUR
Willowy monardella (*Monardella linoides* ssp. *viminea*)	FE/SE CNPS List 1B R-E-D 2-3-2 County Group A MSCP Covered	Low. Found in San Diego County below 1,000 feet in rocky washes generally associated with riparian communities, coastal sage scrub or chaparral. Not reported from vicinity of project site.
San Diego thornmint (*Acanthomintha ilicifolia*)	FT/SE CNPS List 1B R-E-D 2-3-2 County Group A MSCP Covered	Very low. Occurs on clay lenses in a variety of open habitats. Range is limited to coastal areas of San Diego County and Baja. Site is too far east, although suitable soils are present. Would have been observed if present.
Encinitas baccharis (*Baccharis vanessae*)	FT/SE CNPS List 1B R-E-D 2-3-3 County Group A MSCP Covered	Very low. San Diego County endemic that prefers southern maritime and southern mixed chaparrals.

Table 3 (cont.)
LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL TO OCCUR
Spreading navarretia (*Navarretia fossalis*)	FT/-- CNPS List 1B R-E-D 2-3-2 County Group A MSCP Narrow Endemic	None. Ranges from western Riverside through southwestern San Diego counties into Baja. Known to occur in only 17 pools from just four areas within San Diego County: San Marcos, National City, Ramona, and Otay Mesa (Bauder 1986).
Dunn's mariposa lily (*Calochortus dunnii*)	FSC/SR CNPS List 1B R-E-D 2-2-2 County Group A MSCP Covered	Very low. Prefers openings and fire breaks in chaparral and yellow pine forests. Appears to be restricted to gabbroic and metavolcanic soils. Southern Peninsular Range of San Diego County and possibly Baja. Project area is north of all sites reported in the CNDDB.
Gander's ragwort (*Senecio ganderi*)	FSC/SR CNPS List 1B R-E-D 3-2-3 County Group A MSCP Covered	Low to moderate. Found in southwestern San Diego County between approximately 1,310 and 3,935 feet. An understory plant within chaparral.
Orcutt's brodiaea (*Brodiaea orcuttii*)	FSC/-- CNPS List 1B R-E-D 1-3-2 County Group A MSCP Covered	Low. Occurs in vernal pools and ephemeral streams and seeps. Ranges from Riverside and San Bernardino counties south to Baja.
Lakeside ceanothus (*Ceanothus cyaneus*)	FSC/-- CNPS List 1B R-E-D 3-2-2 County Group A MSCP Covered	Low to moderate. Occurs from Riverside and San Diego counties to Baja. Found in mixed chaparral, often forming dense stands with chamise. Would likely have been detected on site if present.
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	FSC/-- CNPS List 1B R-E-D 1-2-1 County Group B MSCP Covered	Low. Found in western San Diego County and adjacent Baja, generally in coastal chaparral. Site is likely too far inland.
Southern tarplant (*Centromadia parryi* ssp. *australis*)	FSC/-- CNPS List 1B County Group A R-E-D 3-3-2	Low. Found in coastal San Diego, Los Angeles, Orange, Ventura, and Santa Barbara counties below approximately 650 feet. Occurs in marshes, vernal pools, and seasonally moist grasslands. Site likely too inland to support this species.
Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)	FSC/-- CNPS List 1B R-E-D 2-2-2 County Group A	Low. Occurs on north-facing slopes and drainages in chaparral. Found in scattered locations below approximately 2,300 feet in elevation from the foothills to the coast in Orange and San Diego counties and south into Baja. Site is likely too far inland.

Table 3 (cont.)
LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL TO OCCUR
Variegated dudleya (*Dudleya variegata*)	FSC/-- CNPS List 1B R-E-D 2-2-2 County Group A MSCP Covered	Low. Generally found in the vicinity of vernal pools within open coastal sage scrub and chaparral. Occurs largely in southern San Diego County and Baja.
Palmer's goldenbush (*Ericameria palmeri* ssp. *palmeri*)	FSC/-- CNPS List 2 R-E-D 2-2-1 County Group B	Low. Ranges from southern San Diego County into Baja. Prefers coastal sage scrub and chaparral along drainages. This is a large shrub that would likely have been observed if present.
San Diego barrel cactus (*Ferocactus viridescens*)	FSC/-- CNPS List 2 R-E-D 1-3-1 County Group B MSCP Covered	Moderate. Found in San Diego County and Baja on dry slopes in coastal sage scrub.
Mission Canyon bluecup (*Githopsis diffusa* ssp. *filicaulis*)	FSC/-- CNPS List 1B R-E-D 3-3-2 County Group A	Moderate. Ranges from Riverside County south to Baja. Found in sandy openings within chaparral.
Palmer's grapplinghook (*Harpagonella palmeri*)	FSC/-- CNPS List 2 R-E-D 1-2-1 County Group B	Low. Annual herb occurring on clay soils in chaparral, coastal sage scrub and grasslands. Though prostrate, should have been observed if present.
Heart-leaved pitcher sage (*Lepechinia cardiophylla*)	FSC/-- CNPS List 1B R-E-D 3-2-2 County Group A MSCP Covered	Low. Generally found in cismontane woodland, Coniferous forest, and dry chaparral areas. Habitat on site only marginally suitable.
San Diego goldenstar (*Muilla clevelandii*)	FSC/-- CNPS List 1B R-E-D 2-2-2 County Group A MSCP Covered	Very low. Ranges from southwestern San Diego County to northwestern Baja. Found in clay soils within coastal sage scrub or chaparral. Generally associated with vernal pools, which are not found on site.
Little mousetail (*Myosurus minimus* ssp. *apus*)	FSC/-- CNPS List 3 R-E-D 2-3-2 County Group A	Very low. Ranges include Riverside, San Diego, and San Bernardino counties as well as Baja. Found in association with vernal pools, which do not occur on site.
Parry's tetracoccus (*Tetracoccus dioicus*)	FSC/-- CNPS List 1B R-E-D 3-3-2 County Group A MSCP Covered	Low to moderate. Deciduous shrub occurring in chaparral and coastal sage scrub. Mostly found in north San Diego County. Prefers low growing chamise chaparral.

Table 3 (cont.) LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
Lewis's evening-primrose (*Camissonia lewisii*)	--/CEQA CNPS List 3 R-E-D ?-?-2 County Group C	Very low. Found in coastal bluff habitats not found on site.
Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*)	--/CEQA CNPS List 1B R-E-D 3-2-2 County Group A	Moderate. Occurs in openings in coastal sage scrub and chaparral. Suitable habitat occurs on site.
Ramona horkelia (*Horkelia truncata*)	--/-- CNPS List 1B R-E-D 3-1-2 County Group A	Moderate. A gabbro endemic also found on granitic soils occurring in chaparral communities.

*Refer to Appendix C for a listing and explanation of status codes for plant and animal species.

4.5 SENSITIVE ANIMAL SPECIES

Twenty-eight sensitive animal species were observed/detected on site. No animal species considered threatened or endangered by the USFWS or CDFG were observed on the site although 10 species found on site are federal species of concern, 10 species are state species of special concern, 5 species are listed as County sensitive, 1 species is a bird of conservation concern, 1 species is listed as sensitive under the California Department of Forestry (CDF), and 1 species is state fully protected.

One state species of special concern and County sensitive cactus wren (*Campylorhynchus brunnicapillus couesi*) was observed off site near adjacent homes within prickly pear (*Optunia ficus indica*). In addition, one County sensitive red-shouldered hawk (*Buteo lineatus*) was also observed off site. A brief description of each species is provided below. The species are grouped into reptiles, birds, and mammals, then listed by status and alphabetized (by scientific name) where status is the same.

4.5.1 Reptiles

Orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*)
Status: FSC/CSC; County Sensitive; MSCP Covered
Distribution: Southern Orange and San Bernardino (Colton) counties south to the cape of Baja
Habitat(s): Coastal sage scrub, chaparral, edges of riparian woodlands, washes, and in weedy, disturbed areas adjacent to these habitats. Important habitat requirements include open, sunny or shaded areas, and abundant invertebrate prey base, particularly termites (*Reticulitermes* sp.).
Status on site: One individual was observed in coastal sage scrub/chaparral ecotone adjacent to a dirt road near the western property boundary. In addition, seven individuals were captured during small mammal and herpetofauna inventory surveys.

Coastal whiptail (*Cnemidophorus tigris stejnegeri*)
Status: FSC/--; County Sensitive
Distribution: Ventura County south in cismontane California to south-central Baja
Habitat(s): Open coastal sage scrub, chaparral, and woodlands, frequently along edges of dirt roads traversing its habitats. Important habitat components include open, sunny areas, shrub cover with accumulated leaf litter, and an abundance of invertebrate prey, particularly termites.
Status on site: Twenty-four individuals captured during small mammal and herpetofauna inventory surveys.

Coastal rosy boa (*Lichanura trivirgata roseofusca*)
Status: FSC/--; County Sensitive
Distribution: Mojave and Colorado deserts of central southern California east to the basin ranges of western Arizona
Habitat(s): Dry, rocky brushlands and arid habitats usually near intermittent streams, but does not require permanent water.
Status on site: One individual was captured during trapping and pit fall inventory surveys in grassland.

Silvery legless lizard (*Anniella pulchra pulchra*)
Status: --/CSC; County Sensitive
Distribution: San Francisco Bay south through western California into northern Baja
Habitat(s): Components include loose soil and leaf-litter, adequate soil moisture, warmth, and an abundance of invertebrate prey.
Status on site: One young individual was captured during trapping and pit fall inventory surveys within southern coast live oak riparian woodland.

Northern red-diamond rattlesnake (*Crotalus exsul*)
Status: --/CSC; County Sensitive
Distribution: Extreme southeastern Los Angeles County (Diamond Bar) into southern San Bernardino County, and south into southern Baja
Habitat(s): Favors rocky outcrops in coastal sage scrub, chaparral, creosote bush scrub, and areas dominated by cactus. Also encountered along rocky canyon bottoms and on the flats adjacent to rocky, desert foothills.
Status on site: One individual was observed in Diegan coastal sage scrub near the western boundary of the project site. Two were captured during trapping and pit fall inventory surveys.

4.5.2 Birds

Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*)
Status: FSC/CSC; County Sensitive; MSCP Covered
Distribution: Ventura County southeast through Los Angeles, Orange, Riverside and San Diego counties to northwestern Baja
Habitat(s): Coastal sage scrub where it occurs on rocky hillsides and in canyons, but also may be found in open sage scrub/grassy areas of successional growth (i.e., after a fire).
Status on site: Observed in Diegan coastal sage scrub in the southeastern portion of the property.

Loggerhead shrike (*Lanius ludovicianus*)
Status: FSC/CSC; County Sensitive
Distribution: Breeding occurs in Canada, with species migrating to the southern U.S. and Mexico for winter
Habitat(s): Open habitats, including grasslands, shrublands, and ruderal vegetation with adequate perching locations.
Status on site: Observed in Diegan coastal sage scrub in the southeastern portion of the property.

California thrasher (*Toxostoma redivivum*)
Status: FSC/--
Distribution: Resident in California west of Sierra Nevada
Habitat(s): Chaparral, foothills, and dense shrubs in parks or gardens
Status on site: Observed in southern mixed chaparral on site.

White-tailed kite (*Elanus leucurus*)
Status: Nesting; FSC/Fully Protected; County Sensitive
Distribution: Resident in coastal and interior California, Arizona, and southern Texas. Also in American tropics.
Habitat(s): Open country and farmlands with scattered trees or fencerows; mesquite grasslands
Status on site: Breeding pair observed in coast live oak woodland and non-native grassland. Also observed flying overhead in middle of site.

Costa's hummingbird (*Calypte costae*)
Status: Nesting; FSC/--
Distribution: Commonly found in the far western region of the U.S. and Mexico with limits of central California (north) and central Mexico (south).
Habitat(s): Chaparral and low desert regions
Status on site: Observed in southern mixed chaparral and Diegan coastal sage scrub

Lark sparrow (*Chondestes grammacus*)
Status: Nesting; FSC/--
Distribution: Found in a large portion of the contiguous U.S. (with the exception of the east coast) and a relatively small area in the northwest. Species also found in the central-southern region of Canada and in a large portion of Mexico.
Habitat(s): Commonly breeds in prairies, savannah, mesas, farmlands, open woodland, and other open areas with scattered trees and patches of bare ground. In winter and during migration, they are found in similar areas but also can be found in brushy fields and semi-arid areas (Byers et al. 1995; Rising 1996).
Status on site: Observed in Diegan coastal sage scrub on site.

Pacific slope flycatcher (*Empidonax difficilis*)
Status: Nesting; FSC/--
Distribution: Breeds from Alaska south along coast to Baja; winters south of U.S.-Mexico border
Habitat(s): Moist, shaded coniferous or mixed forests; canyons
Status on site: Observed in coast live oak woodland.

Golden eagle (*Aquila chrysaetos*)
Status: Nesting and wintering; BEPA/CSC and Fully Protected; County Sensitive; MSCP Covered
Distribution: Breeds from Alaska east across northern Canada south to Mexico, Canadian prairie provinces, and Labrador. Winters in southern part of breeding range and in much of U.S. (except southeast).
Habitat(s): Forages in grassy and open, shrubby habitats. Nests most often on cliffs, less often in trees. Tends to require places of solitude and are usually found at a distance from human habitation.
Status on site: Observed perched and flying over the site.

Cooper's hawk (*Accipiter cooperi*)
Status: --/CSC; County Sensitive; MSCP Covered
Distribution: Winter migrant in San Diego County. Tends to inhabit lowland riparian areas and oak woodlands in proximity to suitable foraging areas such as shrublands or fields.
Habitat(s): Usually observed soaring overhead above landscape. Prefers oak woodlands for nesting.
Status on site: Observed in southern coast live oak riparian forest on north side of San Vicente Road.

Sharp-shinned hawk (*Accipiter striatus*)
Status: --/CSC; County Sensitive
Distribution: Breeds from Alaska through Mackenzie to Newfoundland and south to California, New Mexico, northern Gulf Coast states, and the Carolinas. Winters across the U.S. north to British Columbia and the Canadian Maritimes.
Habitat: Breeds in dense coniferous forests, less often in deciduous forests
Status on site: Observed flying overhead.

California horned lark (*Eremophila alpestris actia*)
Status: --/CSC; County Sensitive
Distribution: Coastal slopes and lowlands from Sonoma County to northern Baja
Habitat(s): Sandy beaches, agricultural fields, grasslands, and open areas
Status on site: Two individuals were observed in non-native grassland in the north-central portion of the site.

Prairie falcon (*Falco mexicanus*)
Status: --/CSC; County Sensitive
Distribution: Breeds from British Columbia and Canadian prairie provinces south to Mexico and northern Texas. Winters in breeding range and sparingly farther east.
Habitat(s): Barren mountains, dry plains, and prairies
Status on site: Observed flying overhead in the agricultural and non-native grassland areas.

Black-chinned sparrow (*Spizella atrogularis*)
Status: Nesting; BCC/--
Distribution: Breeds from central California, southern Nevada, southern Utah, Arizona, southern New Mexico, and western Texas southward. Winters along Mexican border.
Habitat(s): Low, dense chaparral on arid mountain slopes; in sagebrush
Status on site: Within Diegan coastal sage scrub in the central portion of the property.

Great egret (*Ardea alba*)
Status: --/--; County Sensitive
Distribution: Breeds locally from Oregon south to western Mexico, from Minnesota to Mississippi Valley and southeast, and along Atlantic Coast north to southern New England. Winters regularly from Oregon south through southwestern U.S., Texas, in the Gulf Coast states to Mexico, and on Atlantic Coast north to New Jersey.
Habitat(s): Fresh and salt marshes, marshy ponds, tidal flats
Status on site: Observed flying overhead.

Turkey vulture (*Cathartes aura*)
Status: --/--; County Sensitive
Distribution: Widespread in western states, year round in coastal California, southern Arizona, Texas, and points farther south.
Habitat(s): Usually observed soaring overhead above landscape.
Status on site: An individual was observed flying over the property during surveys.

Western bluebird (*Sialia mexicana*)
Status: --/--; County Sensitive; MSCP Covered
Distribution: Breeds from southern British Columbia and western Alberta south to Baja and east throughout the mountains of the west to eastern New Mexico and extreme western Texas.
Habitat: Prefers open woodlands and grasslands where they nest in holes in trees.
Status on site: Observed near the junction of San Vicente Road and Deviney Lane.

Common barn owl (*Tyto alba*)
Status: --/--; County Sensitive
Distribution: Resident from southern British Columbia, the Dakotas, Michigan, and southern New England southward.
Habitat: Open country, forest edges and clearings, cultivated areas, and cities
Status on site: Observed in eucalyptus trees.

Great blue heron (*Ardea herodias*)
Status: --/CDF; County Sensitive
Distribution: Breeds locally from coastal Alaska, south-central Canada, and Nova Scotia south to Mexico and West Indies. Winters as far north as southern Alaska, central U.S., and southern New England. Also in Galapagos Islands.
Habitat: Lakes, ponds, rivers, and marshes
Status on site: Observed in pond on site eating tadpoles.

4.5.3 Mammals

Ringtail (*Bassariscus astutus*)
Status: --/Fully Protected; County Sensitive
Distribution: Southwestern Oregon, California, Nevada, Utah, Colorado, and Kansas south through Arizona, New Mexico, Oklahoma, and Texas.
Habitat(s): Found in various riparian habitats and in brush stands of moist forest and shrub habitats at low to middle elevations. Strictly nocturnal.
Status on site: Visual observation in rock pile and oak woodland in area of scent station No. 9 (Figure 7).

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)
Status: --/CSC; County Sensitive
Distribution: Los Angeles and southern San Bernardino counties south into west-central Baja
Habitat(s): Open areas of coastal sage scrub and weedy growth, often on sandy substrates
Status on site: Observed or detected in five locations throughout the site, primarily within non-native grassland.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)
Status: --/CSC; County Sensitive
Distribution: Southern Santa Barbara County, south on the coastal slope to the vicinity of San Quintin and Baja. Localities on the eastern edge of its range include Jacumba and San Felipe Valley in San Diego County.
Habitat(s): Occurs primarily in open habitats, including coastal sage scrub, chaparral, grasslands, croplands, and open disturbed areas if there is at least some shrub cover present.
Status on site: This species was observed on site visually as well as by identifiable scat and tracks.

San Diego desert woodrat (*Neotoma lepida intermedia*)
Status: --/CSC; County Sensitive
Distribution: Coastal slope of southern California from San Luis Obispo County south into coastal northwestern Baja
Habitat(s): Open chaparral and coastal sage scrub, often building large, stick nests in rock outcrops or around clumps of cactus or yucca.
Status on site: One nest was observed, and individuals were identified at five scent stations.

Southern mule deer (*Odocoileus hemionus fuliginata*)
Status: --/--; County Sensitive; MSCP Covered
Distribution: Southern Riverside County (Tahquitz Valley) south on the coastal slope to the vicinity of San Quintin and Baja
Habitat(s): Coastal sage scrub, riparian and montane forests, chaparral, grasslands, croplands, and open areas if there is at least some scrub cover present. Crepuscular activity and movements are along routes that provide the greatest amount of protective cover.
Status on site: This species was observed on site visually as well as by identifying scat and tracks.

4.6 LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

Listed or sensitive animal species with potential to occur on site are listed in Table 4. The species are grouped into invertebrates, amphibians, reptiles, birds, and mammals, then listed by status, and alphabetized (by scientific name) where status is the same.

Table 4
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL TO OCCUR
INVERTEBRATES		
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE/-- County Sensitive	Low. Suitable habitat occurs in four locations onsite. this species was not observed during focused surveys.
Harbison's dun skipper (*Euphyes vestris harbisoni*)	FSC/-- MSCP Narrow Endemic	Low. Found in riparian habitats and chaparral where perennial sources of water provide adequate habitat for the larval foodplant, San Diego sedge (*Carex spissa*). Host plant not observed on site.
Hermes copper (*Lycaena hermes*)	FSC/-- County Sensitive	Very low. Host plant spiny redberry (*Rhamnus crocea*) not found on site.
Monarch butterfly (*Danaus plexippus*)	--/-- County Sensitive	Moderate transiently. Preferred food (milkweeds), not observed on site.
VERTEBRATES		
Amphibians		
Arroyo toad (*Bufo microscaphus californicus*)	FE/CSC County Sensitive MSCP Covered	Low. Generally occurs in areas with open sandbars along perennial creeks or watercourses.
California red-legged frog (*Rana aurora draytoni*)	FT/CSC County Sensitive MSCP Rare Narrow Endemic	Very low. Generally found in ponds in humid forests, woodland, grasslands, and stream sides, especially where cattails (*Typha* spp.) or other plants provide good cover. Frequents marshes, streams, lakes, reservoirs, ponds, and other generally permanent water sources. Disperses after rains and may appear in damp woods and meadows far from water. Believed extirpated from San Diego County.
Large-blotched salamander (*Ensatina eschscholtzi klauberi*)	FSC/CSC County Sensitive	Very low. Found in riparian, montane oak, and coniferous woodland. Site is likely outside range of this subspecies; however, one sighting reported several miles east of project site.
Western spadefoot toad (*Spea hammondii*)	FSC/CSC County Sensitive	Low. Southern California habitats include coastal sage scrub, chaparral, and grassland. Important habitat components include temporary pools for breeding.
Reptiles		
Southwestern pond turtle (*Clemmys marmorata pallida*)	FSC/CSC County Sensitive MSCP Covered	None. Species requires permanent or long-standing ponds, which are not found on site.
Coast patch-nosed snake (*Salvadora hexalepis virgultea*)	FSC/CSC County Sensitive	Moderate. Found in coastal sage scrub, chaparral, riparian grassland and agricultural fields (Zeiner 1988). Prefers open habitats with friable or sandy soils, burrowing rodents for food and enough cover to escape being preyed upon.

Table 4 (cont.) LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Reptiles (cont.)		
Two-striped garter snake (*Thamnophis hammondii*)	FSC/CSC County Sensitive	Very low. Found primarily along permanent creeks and streams but also around vernal pools and along intermittent streams. Occasionally found in chaparral or other habitats relatively far from permanent water.
San Diego banded gecko (*Coleonyx variegatus abbotti*)	FSC/-- County Sensitive	Low to moderate. Found in chaparral and coastal sage scrub in areas with rock outcrops.
San Diego ringneck snake (*Diadophis punctatus similis*)	FS/-- County Sensitive	Low to moderate. Generally occurs in moist habitats such as oak woodlands and canyon bottoms but is also encountered in grassland, chaparral, and coastal sage scrub.
Birds		
Southwestern willow flycatcher (*Empidonax traillii extimus*)	FE/SE County Sensitive MSCP Covered	Very low. Breeds within thickets of willows or other riparian understory, usually along streams, ponds, lakes, or in canyon drainage bottoms. Riparian habitat on site is only marginally suitable.
Least Bell's vireo (*Vireo bellii pusillus*)	FE/SE County Sensitive MSCP Covered	Low to moderate. Prefers riparian woodland and is most frequent in areas that combine an understory of dense, young willows or mule fat with a canopy of tall willows. Appropriate habitat is limited on site.
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/CSC County Sensitive MSCP Covered	Low. Inhabits mainly coastal sage scrub, which is abundant on site. Surveys in 2001 and 2003 were negative.
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	Nesting; FSC/SE County Sensitive	Very low. Generally occurs along larger river systems, where it nests in riparian forest dominated by willows and cottonwoods. Habitat on site is likely unsuitable.
Bank swallow (*Riparia riparia*)	FSC/ST County Sensitive	Low. Round in riparian communities. Nests are excavated from cliff faces. Suitable nesting areas not found on site.
Bell's sage sparrow (*Amphispiza belli belli*)	FSC/CSC County Sensitive	Moderate. Occurs in coastal sage scrub and chaparral communities, particularly where shrub density of low. Generally found only in larger habitat patches, suggesting it is particularly susceptible to habitat fragmentation. Suitable habitat found on site.

Table 4 (cont.)
LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

SPECIES	STATUS*	POTENTIAL TO OCCUR
VERTEBRATES (cont.)		
Birds (cont.)		
Burrowing owl (*Athene cunicularia hypugea*)	FSC/CSC County Sensitive MSCP Covered	Low. Occupies native or non-native grassland, open coastal sage scrub, and fallow agricultural fields. Focused survey results were negative.
Northern harrier (*Circus cyaneus*)	--/CSC County Sensitive MSCP Covered	Low. Inhabits marsh habitats, where it nests on the ground. Generally forages in grasslands, which are abundant on site.
Yellow warbler (*Dendroica petechia brewsteri*)	--/CSC County Sensitive	Low. A spring and summer breeding resident in southern California. Primarily restricted to riparian woodland scrub habitats dominated by willows, sycamores or cottonwoods. Suitable habitat is uncommon on site.
Merlin (*Falco columbarius*)	Wintering; --/CSC County Sensitive	Moderate. Generally winters near the coast in woodlands, often adjacent to grassland communities. Appropriate habitat is present on site.
Yellow-breasted chat (*Icteria virens*)	--/CSC County Sensitive	Low. Prefers willow scrub, and riparian woodland. Nests in dense riparian areas, generally close to the ground. Suitable habitat is found on site, but is not of high quality.
Mammals		
Stephens' kangaroo rat (*Dipodomys stephensi*)	FE/ST County Sensitive	Low to moderate. Suitable habitat on site, but no species observed during focused surveys.
Pacific pocket mouse (*Perognathus longimembris pacificus*)	FE/CSC County Sensitive	Moderate. Occurs in coastal southern California, generally in grasslands with sandy soils. Apparently suitable habitat occurs on site.
Pallid bat (*Antrozous pallidus pacificus*)	FSC/CSC County Sensitive	Low. Roosts colonially in caves, mines, crevices, and abandoned buildings. Suitable roosting areas on site are very limited.
Dulzura California pocket mouse (*Chaetodipus californicus femoralis*)	FSC/CSC County Sensitive	Moderate. Occurs in chaparral and coastal sage scrub habitats, often adjacent to grasslands. Suitable habitat is abundant on site.
Greater western mastiff bat (*Eumops perotis californicus*)	FSC/CSC County Sensitive	Moderate. The species inhabits crevices in cliff faces, high buildings, trees, and tunnels. Suitable roosting habitat on site.
Southern grasshopper mouse (*Onychomys torridus ramona*)	FSC/CSC County Sensitive	Moderate. Can occur in all arid habitats, including coastal sage scrub and chaparral, particularly where vegetation is open.
Townsend's western big-eared bat (*Plecotus townsendii*)	FSC/CSC County Sensitive	Low. Roosts in mines or caves. No suitable roosting habitat on site.

Table 4 (cont.) LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Mammals (cont.)		
Long-eared myotis (*Myotis evotis*)	FSC/-- County Sensitive	Low. Prefers thinly forested areas and is found around buildings or trees, but is occasionally found in caves. Found from Mexico to Canada, but not reported for the project vicinity.
Fringed myotis (*Myotis thysanodes*)	FSC/-- County Sensitive	Low. Generally found in pinyon-juniper woodland or conifer woodlands, which are not found on site.. Within San Diego County, known from Cleveland National Forest, which is well east of the project site.
Long legged myotis (*Myotis volans*)	FSC/-- County Sensitive	Low. Roosts in buildings, pockets and crevices in rock ledges at high elevations. Ranges from Alaskan panhandle through western and western plain states and Baja and western Mexico. Elevation on site is likely too low.
Yuma myotis (*Myotis yumanensis*)	FSC/-- County Sensitive	Very low. Found in forests and woodlands with access to water sources for foraging. Forms colonial roosts in caves, crevices, mines, or buildings. Site is south of reported range.
California leaf-nosed bat (*Macrotus californicus*)	--/CSC County Sensitive	Low. Found in arid scrub communities, often near streams or drainages. Mines in caves or mines, which are not found on site.
American badger (*Taxidea taxus*)	--/CSC County Sensitive MSCP Covered	Low. Occurs in level, open areas in grasslands, agricultural fields, and open shrub habitats. It digs large burrows in dry, friable soils. Burrows would likely have been detected during the multiple surveys of the site.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	--/CSC County Sensitive	Very low. Generally occurs in arid situations, including scrub or woodland communities. Roosts in caves or mines near a water source. Suitable roosting areas are extremely limited on site.

*Refer to Appendix C for a listing and explanation of status codes for plant and animal species.

4.7 BIRD COUNTS

A total of approximately 1,778 birds were counted and 62 species were identified during the bird count surveys. Table 5 below provides a summary of the bird counts. Bird count raw data sheets are included in Appendix G.

Table 5 BIRD COUNT SUMMARY*					
STATION NUMBER	DATE OF COUNT				TOTAL
	4/30/03	5/2/03	12/12/03	12/17/03	
1	14	8	9	15	46
2	20	16	8	6	50
3	20	7	21	27	75
4	27	7	8	3	45
5	37	15	9	26	87
6	15	16	12	9	52
7	10	7	6	6	29
8	7	12	14	14	47
9	9	22	38	2	71
10	17	12	41	5	75
11	9	20	27	7	63
12	6	14	13	5	38
13	22	37	3	1	63
14	23	25	7	4	59
15	35	25	6	12	78
16	54	33	12	5	104
17	56	36	6	51	149
18	37	22	17	4	80
19	48	45	13	3	109
20	32	39	4	11	86
21	35	36	44	3	118
22	17	23	31	10	81
23	20	41	26	11	98
24	31	28	14	2	75
TOTAL BIRDS	**601**	**546**	**389**	**242**	**1,778**

*Flocks were estimated as having 10 individuals for purposes of this quantitative analysis.

4.8 REGIONAL AND REGULATORY CONTEXT

The biological resources on the site are assessed in terms of their local importance in light of County regulations and its regional and national importance in light of federal and state regulations. The majority of the property is within the County's MSCP Plan, but a portion of the site north of San Vicente Road lies outside of the MSCP.

4.8.1 Evaluation of Resources

The site supports a variety of indigenous southern California habitats in an area of San Diego County experiencing increasing development pressure from Ramona to the north and San Diego County Estates to the east. The importance of these habitats is evaluated in terms of the sensitivity of the

habitat and the sensitive species they support as well as the role of the sites as local and regional wildlife corridors. Through this type of evaluation, it can be determined how best to manage the property.

Sensitive species observed on site are those listed in Sections 4.3 and 4.5 and Tables 3 and 4. These species are those recognized by the USFWS, CDFG, or the County as in need of protection. Sensitive habitats are those recognized by the same agencies, as well as the ACOE, as in need of protection. For areas outside the MSCP sensitive habitat are identified by the USFWS, CDFG, and County through the MSCP, the County's MSCP Subarea Plan, and Biological Mitigation Ordinance (BMO). Sensitive habitat lands are identified by the County in its RPO as those that "support unique vegetation communities, or habitats of rare or endangered species or sub-species of animals or plants as defined by Section 15380 of the CEQA Guidelines." Habitats considered sensitive are listed in Section 4.1.

Wildlife corridors can be local or regional in scale and may function in different ways depending on species and time of year. They represent areas where wildlife movement is concentrated due to natural or manmade constraints. Local corridors allow animals access to resources such as food, water, and shelter. Animals can use these corridors (such as hillsides and tributary drainages to main drainages) to travel among different habitats (i.e., riparian and upland habitats). Some animals require riparian habitat for breeding and upland habitat for burrowing. Regional corridors provide these functions and also link two or more large areas of open space. They provide avenues for wildlife dispersal, migration, and contact between otherwise distinct populations. Natural Community Conservation Planning (NCCP) focuses on coastal sage scrub and conservation of connected areas to provide habitat for a suite of species that primarily use this habitat.

The site was not found nor is likely to support any species listed as threatened or endangered under the federal or state Endangered Species Acts (ESAs). While survey limitations prevented some species that may have been on the site from being observed, listed species such as quino checkerspot butterfly, southern arroyo toad, coastal California gnatcatcher, Stephens' kangaroo rat, least Bell's vireo, southern willow flycatcher, and burrowing owl all have a low to very low probability of occurring on site. Protocol surveys for the quino checkerspot butterfly and the coastal California gnatcatcher were completed in spring 2000 per permitting requirements and were negative. Additional surveys for the quino checkerspot butterfly and the coastal California gnatcatcher were conducted in spring 2003 and also were negative.

The large complex of undisturbed coastal sage, coastal sage-chaparral scrub, coast live oak woodland, and southern mixed chaparral that covers approximately 440 acres of the site is of significant biological value as habitat for native species and also may provide some value as a regional wildlife corridor.

The Diegan coastal sage scrub present on site is of intermediate potential value for long-term conservation pursuant to NCCP Process Guidelines (CDFG 1993), but the site does not appear to be used by California gnatcatchers. The site's greater value is for conservation of other sensitive species, such as orange-throated whiptails, which were observed on site. Coastal sage scrub, southern mixed chaparral, and non-native grassland are the dominant vegetation communities on the property and immediately off site, which provide opportunity for movement of coastal sage scrub-dependent species across the landscape. The site thus will form an important linkage to larger expanses of coastal sage scrub habitat located nearby.

4.8.2 Overall Site Evaluation

The Preserve has moderate value in terms of regional habitat sensitivity, quality of the coastal sage habitat, and presence of NCCP target species, but the large acreage of undisturbed natural habitat has significant value for regional conservation purposes as well as potential wildlife corridor function.

The site also supports sensitive habitats, including southern coast live oak riparian forest, southern willow scrub, freshwater seep, riparian scrub, open water, open Engelmann oak woodland, wildflower field, and non-native grassland. The vegetation communities provide habitat for bobcat, coyotes, raptors and other birds, small mammals, reptiles (including orange-throated and coastal whiptails), insects, and plants. The site provides habitat for a large number of sensitive species as well as non-sensitive native southern Californian species.

4.8.3 Regulatory Issues

Development of any facilities or improvements to access of the site may be subject to regulations at the federal, state, and County levels. Regulations that would apply include the federal ESA and Clean Water Act, the California Fish and Game Code, CEQA, and the County's regulations. The California Fish and Game Code regulates impacts to species listed as threatened or endangered under the California ESA and impacts to rivers, streams, or lakes from which plants or wildlife derive benefit per Section 1603. In addition, areas enrolled in the NCCP program but without adopted NCCP Plans are subject to the state's NCCP Guidelines (CDFG 1993). The USFWS takes jurisdiction over species listed as threatened or endangered under the FESA, whereas discharge of fill into Waters of the U.S. in non-agricultural situations is regulated by the ACOE under Section 404 of the federal Clean Water Act. The NRCS is the lead federal agency for wetlands in agricultural lands. The California Regional Water Quality Control Board (RWQCB) provides waivers or certifications under Section 401 of the Clean Water Act.

Natural resources within the County's MSCP are regulated by the County BMO, which details avoidance requirements for sensitive species and mitigation for impacts to sensitive habitats. Any project must conform to the BMO and MSCP Subarea Plan through the making of Findings of Conformance.

The County regulates natural resources outside the MSCP via its RPO, which covers wetlands, sensitive plants and animals, sensitive habitats, and habitats containing sensitive animals or plants. Wetland habitats are defined per the County RPO and for this project are expected to be identical to state jurisdictional wetlands pursuant to Section 1603 of the California Fish and Game Code.

5.0 CERTIFICATION/QUALIFICATION

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6.0 REFERENCES CITED

American Ornithologists' Union. 1998. *Checklist of North American Birds*, 7th Edition. 829 pp.

Beauchamp, R.M. 1986. *A Flora of San Diego County, California*. Sweetwater Press, National City, California. 241 pp.

Bowman, R. 1973. *Soil Survey of the San Diego Area*. USDA in cooperation with the USDI, UC Agricultural Experiment Station, Bureau of Indian Affairs, Department of the Navy, and the U.S. Marine Corps.

Byers, Clive, John Curson, and Urban Olsson. 1995. Sparrows and Buntings. Houghton Mifflin, Boston.

California Department of Fish and Game (CDFG). 1993. Natural Community Conservation Planning (NCCP) Process Guidelines. California Resource Agency. Updated 1995 and 1997.

California Native Plant Society (CNPS). 2004. *Inventory of Rare and Endangered Plants of California*, Version 6.3. CNPS Internet searchable database. http://www.northcoast.com/~cnps/cgi-bin/cnps/sensinv.cgi. January 16.

Collins, Joseph T. and Travis W. Taggart. 2002. *Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians*, 5th Edition. Publication of The Center for North American Herpetology, Lawrence, Kansas. iv + 44 pp.

County of San Diego (County). 1997. Multiple Species Conservation Program Subarea Plan.

1991. The Resource Protection Ordinance.

ENVIRA. 2003. Small Mammal and Herpetology Surveys on Barnett Ranch Open Space Preserve County of San Diego, California. Prepared for HELIX Environmental Planning, Inc. June.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi. 100 pp. with Appendices.

Garth, J.S. and J.W. Tilden. 1986. *California Butterflies*. University of California Press, Berkeley, California. California Natural History Guides 51.

HELIX Environmental Planning, Inc (HELIX). 2003. Report Site Assessment and Non-protocol Level Presence/Absence Surveys for the Quino Checkerspot Butterfly (*Euphydryas editha quino*). June 4.

Hickman, J.C., ed. 1993. *The Jepson Manual: Higher Plants of California*. University of California Press, Berkeley. 1400 pp.

Holland R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. Nongame-Heritage Program, State of California, Department of Fish and Game, Sacramento, 157 pp.

Jackson, L. 1985. Ecological origins of California's Mediterranean grasses. *Journal of Biogeography* 12: 349-361.

Jones, C., R.S. Hoffman, D.W. Rice, R.J. Baker, M.D. Engstrom, R.D. Bradley, D.J. Schmidly, and C.A. Jones. 1997. Revised checklist of North American mammals north of Mexico. Occasional Papers of the Museum, Texas Tech University 173: 1-25.

Landenslayer, Jr., W.F., W.E. Grenfell, Jr., and D.C. Zeiner. 1991. A Checklist of the Amphibians, Reptiles, Birds and Mammals of California. California Fish and Game 77: 109-141.

Oberbauer, T. 1996. Terrestrial Vegetation Communities in San Diego County Based on Holland's Descriptions. San Diego Association of Governments, San Diego, California. 6 pp.

Ogden Environmental and Energy Services Company, Inc. 1996. Biological Monitoring for the Multiple Species Conservation Program. January, revised April.

1992. Baldwin Otay Ranch Wildlife Corridor Studies. Prepared for the Otay Ranch Project Team. November

Ralph, C. John, Geoffrey R. Geupel, Peter Pyle, Thomas E. Martin, and David F. DeSante. 1993. *Handbook of Field Methods for Monitoring Landbirds*. Gen. Tech. Rep. PSW-GTR-144. Albany, CA: Pacific Southwest Research Station, Forest Service, U.S. Department of Agriculture. 41 pp.

Rising, James D. 1996. A Guide to the Identification and Natural History of The Sparrows of the United States and Canada.

Scheidt, Vincent N. 1998. Ramona Serena Biological Resources Survey Report, Evaluation of Resource Values, and Findings of NCCP Conformance. February.

Stebbins, R.C. 1985. *A Field Guide to Western Reptiles and Amphibians*.

U.S. Fish and Wildlife Service (USFWS). 2002a. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

2002b. Quino Checkerspot Butterfly 2002 Survey Recommendations. February 12.

Vergne, Philippe. 2001. Presence/Absence Survey for Stephens Kangaroo Rat on Barnett Ranch, Ramona, California. June.

Zeiner, David, W. Laudenslayer, and K. Mayer, eds. 1988. California Statewide Wildlife Habitat Relationships System. Volume 1: Amphibians and Reptiles. The Resource Agency, Sacramento, California.

Appendix A
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots			
Anacardiaceae	*Malosma laurina*	laurel sumac	DCSS, NNG, SMC
	Rhus ovata	sugar bush	DCSS, SMC
	Rhus trilobata var. *pilosissima*	basket-brush	SMC, DCSS, CLOW
	Toxicodendron diversilobum	poison oak	CLOW, SMC
Apiaceae	*Daucus pusillus*	rattlesnake weed	DCSS, SMC
	Foeniculum vulgare	fennel	
	Lomatium dasycarpum ssp. *dasycarpum*	wooly-fruit lomatium	SMC
	Sanicula arguta	sharp-tooth sanicle	SMC, NNG
Asclepiadaceae	*Asclepias californica*	California milkweed	NNG
	Asclepias fascicularis	narrow-leaf milkweed	NNG
Asteraceae	*Acourtia microcephala*	sacapellote	SMC, DCSS
	Ambrosia acanthicarpa	annual bur-sage	
	Ambrosia psilostachya	western ragweed	NNG, FS, DCSS, SWS, WF
	*Anthemis cotula**	mayweed	NNG, WF
	Artemisia californica	California sagebrush	DCSS
	Artemisia dracunculus	tarragon	DCSS
	Baccharis pilularis	coyote brush	DH
	Baccharis salicifolia	mule fat	SWS
	Brickellia californica	brickellbrush	DCSS, SMC
	*Carduus pycnocephalus**	Italian thistle	SMC, FS
	*Carduus tenuiflorus**	thistle	DH
	*Centaurea melitensis**	star thistle	NNG, DCSS, WF
	Chaenactis artemisiifolia	artemisia pincushion	DCSS, SMC
	Chaenactis glabriuscula var. *glabriuscula*	yellow pinchusion	DCSS, SMC
	Cirsium occidentale var. *californicum*	California thistle	DCSS
	Cirsium vulgare	bull thistle	
	*Cotula australis**	Australian brass-buttons	DH, EW, SWS
	*Cotula coronopifolia**	African brass-buttons	FS
	Cynara cardunculus	cardoon	
	Hemizonia fasciculata	fascicled tarplant	NNG, DCSS, WF
	Erigeron foliosus var. *foliosus*	leafy daisy	DCSS
	Eriophyllum confertiflorum	golden-yarrow	SMC, DCSS
	Filago californica	California filago	DCSS, NNG, SMC
	Filago sp.		SMC, NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots (cont.)			
Asteraceae (cont.)	*Gazania linearis**	gazania	DH
	Gnaphalium bicolor	bicolor cudweed	DCSS, SMC, FS, SWS
	Gnaphalium californicum	California everlasting	DCSS, SMC
	Gnaphalium luteo-album	everlasting	DCSS, SMC, SWS
	Gnaphalium palustre	lowland cudweed	WF
	Gutierrezia californica	California matchweed	
	Gutierrezia sarothrae	San Joaquin matchweed	DCSS
	Hazardia squarrosa var. *grindelioides*	saw-toothed goldenbush	DCSS, DH, SMC
	*Hedypnois cretica**	Crete hedypnois	NNG
	Helianthus annuus	western sunflower	DCSS
	Heterotheca grandiflora	telegraph weed	
	*Hypochaeris glabra**	smooth cat's-ear	NNG, DCSS, CLOW, SMC
	Isocoma menziesii var. *menziesii*	San Diego goldenbush	NNG
	*Lactuca serriola**	wild lettuce	SMC, NNG
	Lasthenia californica	goldfields	SMC, DCSS, NNG
	Layia platyglossa	tidy-tips	NNG, SMC
	Osmadenia tenella	osmadenia	DCSS
	Psilocarphus brevissimus var. *brevissimus*	dwarf woolly-heads	DCSS
	Psilocarphus tenellus	slender woolly-heads	DCSS
	Rafinesquia sp.	chicory	DCSS
	*Sonchus asper**	prickly sow thistle	NNG, FS, SWS, WF
	Stephanomeria virgata ssp. *virgata*	virgate wreath-plant	SMC
	Stylocline gnaphaloides	everlasting nest straw	DCSS
	Taraxacum officinale	common dandelion	
	Uropappus lindleyi	silver puffs	DCSS, SMC
	Viguiera laciniata†	San Diego County viguiera	DCSS-D
	Xanthium strumarium	cocklebur	
Boraginaceae	*Amsinckia menziesii* var. *intermedia*	rancher's fiddleneck	DH, DCSS, NNG
	borage species		SMC
	Cryptantha intermedia	nievitas	DCSS, SMC
	Cryptantha micrantha	cryptantha	
	Pectocarya linearis ssp. *ferocula*	slender pectocarya	SMC, NNG

	Pectocarya penicillata	winged pectocarya	SMC

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots (cont.)			
Brassicaceae	*Brassica* sp.*	mustard	NNG, CSCS, SWS, EW, CLOW, SMC, WF
	Capsella bursa-pastoris	shepherd's purse	
	*Hirschfeldia incana**	perennial mustard	DH, DCSS, NNG
	Lepidium lasiocarpum var. *lasiocarpum*	sand peppergrass	DCSS
	Lepidium sp.*	peppergrass	DCSS
	*Raphanus sativus**	wild radish	NNG
	Sisymbrium irio	London rocket	
Caprifoliaceae	*Lonicera subspicata* var. *denudata*	San Diego honeysuckle	SMC, DCSS
	Sambucus mexicana	blue elderberry	DCSS, EW, FS
Caryophyllaceae	*Cerastium glomeratum**	mouse-ear chickweed	CLOW, NNG, SMC, FS, EW
	*Silene gallica**	common catchfly	DH, DCSS, NNG, FS, SMC, WF
	Silene laciniatas	southern pink	DCSS, SMC
	Spergula arvensis ssp. *arvensis**	stickwort	NNG
	*Spergularia rubra**	ruby sand-spurry	NNG
	Spergularia sp.	sand-spurrey	NNG
	*Stellaria media**	common chickweed	CLOW
Chenopodiaceae	*Atriplex semibaccata**	Australian saltbush	NNG
	Salsola tragus	Russian thistle	
Cistaceae	*Helianthemum scoparium*	peak rush rose	SMC, DCSS
Convolvulaceae	*Calystegia macrostegia*	morning-glory	DCSS, SMC
	*Convolvulus arvensis**	bindweed	DH, NNG
Crassulaceae	*Crassula connata*	pygmy-weed	DCSS, NNG
	Dudleya pulverulenta	chalk-lettuce	SMC
Cucurbitaceae	*Marah macrocarpus*	wild cucumber	DCSS, CLOW, SMC
Cuscutaceae	*Cuscuta californica*	dodder	DCSS
	Cuscuta sp.	dodder	DCSS
Ericaceae	*Xylococcus bicolor*	mission manzanita	SMC
Euphorbiaceae	*Chamaesyce maculata**	spotted spurge	DCSS
	Chamaesyce polycarpa	desert sand mat	DCSS, SMC
	Croton californicus	croton	
	Eremocarpus setigerus	dove weed	DH, AG, NNG, DCSS, NNG
	Euphorbia sp.	spurge	
	*Ricinus communis**	castor-bean	

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots (cont.)			
Fabaceae	*Astragalus pomonensis*	Pomona locoweed	
	*Lathyrus latifolius**	sweet pea	SMC
	Lathyrus vestitus	sweet pea	SMC, DCSS
	Lotus argophyllus	silver-leaf lotus	SMC, DCSS, SCLORF
	Lotus purshianus	Spanish-clover	NNG, CLOW, DCSS, WF
	Lotus scoparius var. *scoparius*	coastal deer weed	SMC, DH, DCSS, NNG
	Lotus sp.	birds' foot trefoil	DCSS, NNG, SMC
	Lotus strigosus	Bishop's lotus	SMC, NNG, DCSS
	Lupinus bicolor ssp. *microphyllus*	miniature lupine	NNG
	Lupinus excubitus	grape soda lupine	NNG
	Lupinus hirsutissimus	stinging lupine	DCSS, NNG
	Lupinus truncatus	collar lupine	DCSS
	*Medicago polymorpha**	bur-clover	SWS
	*Melilotus alba**	white sweet clover	
	*Melilotus indica**	Indian sweet clover	NNG, FS, SWS
	Melilotus sp.	sweetclover	WF
	Trifolium sp.	clover	SMC
	Vicia ludoviciana var. *ludoviciana*	deerpea vetch	NNG
Fagaceae	*Quercus agrifolia* var. *agrifolia*	coast live oak	CLOW, DCSS, SMC
	Quercus berberidifolia	scrub oak	SMC
	Quercus dumosa	Nuttall's scrub oak	
	Quercus engelmannii x *berberidifolia*	Engelmann/scrub oak hybrid	OEOW, CLOW
	Quercus engelmannii†	Engelmann oak	SMC, CLOW, DCSS, DCSS-D
Geraniaceae	*Erodium botrys**	long-beak filaree	DH
	*Erodium cicutarium**	red-stem filaree	DH, SMC, DCSS, NNG
	*Erodium moschatum**	green-stem filaree	DH, SMC, NNG, DCSS, CLOW, WF
Grossulariaceae	*Ribes indecorum*	white flowering currant	SMC, DCSS
Hydrophyllaceae	*Emmenanthe penduliflora*	whispering bells	DCSS
	Eriodictyon trichocalyx var. *trichocalyx*	yerba santa	SMC
	Eucrypta chrysanthemifolia var. *chrysanthemifolia*	common eucrypta	DCSS, SMC

	Nemophila menziesii	baby blue-eyes	SMC, CLOW
	Phacelia cicutaria var. *hispida*	caterpillar phacelia	DCSS, SMC, NNG

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots (cont.)			
Hydrophyllaceae (cont.)	*Phacelia minor*	wild Canterbury-bell	DCSS, SMC
	Phacelia parryi	parry phacelia	DCSS
	Phacelia sp.	phacelia	DCSS
	Pholistoma racemosum	filaree-leaf nemophila	DCSS, SMC
Lamiaceae	*Marrubium vulgare**	horehound	CLOW
	Monardella hypoleuca ssp. *lanata*†	felt-leaved monardella	SMC
	Salvia apiana	white sage	SMC, DCSS
	Salvia columbariae	chia	SMC, DCSS, NNG
	Salvia mellifera	black sage	
	Stachys ajugoides var. *rigida*	hedge-nettle	FS
	Trichostema lanatum	woolly blue-curls	NNG
Lythraceae	*Lythrum californicum*	California loosestrife	WF
Malvaceae	*Malacothamnus fasciculatus*	chaparral mallow	SMC, DCSS, CLOW
	*Malva parviflora**	cheeseweed	NNG
	Sidalcea malvaeflora ssp. *sparsifolia*	checker-bloom	CLOW, NNG, DCSS
Myrtaceae	*Eucalyptus globulus**	blue gum	EW
	Eucalyptus sp.*	eucalyptus	EW
Nyctaginaceae	*Mirabilis californica*	wishbone bush	DCSS
Oleaceae	*Olea europaea*	olive	CLOW
Onagraceae	*Camissonia bistorta*	California sun cup	SMC
	Camissonia californicia	false-mustard	DH, NNG
	Camissonia sp.	sun cup	NNG, DCSS, SMC
	Clarkia delicata†	delicate clarkia	CLOW, SMC, DCSS, DCSS-D, CSCS, CLOW
	Clarkia epilobioides	canyon godetia	DCSS, SMC
	Clarkia purpurea ssp. *quadrivulnera*	four-spot clarkia	CLOW, NNG
	Clarkia sp.	clarkia	DCSS
	Epilobium canum ssp. *canum*	California fuchsia	CLOW
Paeoniaceae	*Paeonia californica*	California peony	SMC
Papaveraceae	*Eschscholzia californica*	California poppy	DCSS, SMC

	Papaver californicum	poppy	DCSS
Plantaginaceae	*Plantago erecta*	California plantain	DCSS
Polemoniaceae	*Eriastrum sapphirinum*	wool-star	DCSS, SMC
	Gilia sp.	gilia	DCSS, SMC

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	**SPECIES NAME**	**COMMON NAME**	**HABITAT‡**
Angiosperm Dicots (cont.)			
Polemoniaceae (cont.)	*Linanthus dianthiflorus*	ground pink	SMC
	Navarretia atractyloides	skunkweed	NNG
	Navarretia hamata	skunkweed	DCSS, SMC
	Navarretia sp.	skunkweed	SMC
Polygonaceae	*Chorizanthe fimbriata*	fringed spineflower	DCSS
	Chorizanthe sp.	spineflower	DCSS
	Eriogonum fasciculatum ssp. *fasciculatum*	California buckwheat	DCSS, SMC
	Eriogonum fasciculatum ssp. *foliolosum*	leafy buckwheat	DCSS
	Eriogonum gracile	slender buckwheat	NNG
	Lastarriaea coriacea	lastarriaea	DCSS
	Pterostegia drymarioides	California thread-stem	DCSS
	*Rumex crispus**	curly dock	NNG
	Rumex sp.	dock	NNG
Portulacaceae	*Calandrinia ciliata*	red maids	SMC
	Claytonia perfoliata var. *perfoliata*	miner's lettuce	SMC, CLOW, DCSS, EW, SWS
Primulaceae	*Anagallis arvensis**	scarlet pimpernel	SWS, NNG, DCSS, FS, RS
Ranunculaceae	*Clematis pauciflora*	ropevine	SMC
	Clematis sp.	virgin's bower	DCSS
	Delphinium parryi	blue larkspur	SMC
	*Delphinium purpusii**	purpus' larkspur	SMC
	Delphinium sp.	larkspur	DCSS, SMC
	Ranunculus aquatilus	water crowfoot	DCSS
	Ranunculus californicus	California buttercup	FS
	Thalictrum fendleri var. *polycarpum*	meadow rue	SMC
Rhamnaceae	*Ceanothus leucodermis*	chaparral whitethorn	SMC, CLOW
	Ceanothus tomentosus	Ramona ceanothus	SMC
	Rhamnus ilicifolia	holly-leaf redberry	SMC, DCSS
Rosaceae	*Adenostoma fasciculatum*	chamise	SMC, CLOW, DCSS

	Prunus ilicifolia ssp. *ilicifolia*	holly-leafed cherry	CLOW, SMC
	Rosa californica	California rose	CLOW

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Angiosperm Dicots (cont.)			
Rubiaceae	*Galium angustifolium* ssp. *angustifolium*	narrow-leaved bedstraw	SMC
	*Galium aparine**	goosegrass	CLOW, SMC, DCSS
	Galium nuttallii ssp. *nuttallii*	San Diego bedstraw	DCSS
	Galium sp.	bedstraw	CLOW, DCSS, SMC
Salicaceae	*Salix laevigata*	red willow	
	Salix lasiolepis	arroyo willow	SWS
Saururaceae	*Anemopsis californica*	yerba mansa	SWS, FS, WF
Saxifragaceae	*Lithophragma parviflorum*	prarie star	SMC
Scrophulariaceae	*Antirrhinum coulterianum*	Coulter's snapdragon	SMC
	Antirrhinum nuttallianum	Nuttall's snapdragon	DCSS, SMC, CLOW
	Castilleja exserta	purple owl's clover	SMC, DCSS
	Collinsia heterophylla	Chinese houses	SMC
	Cordylanthus rigidus ssp. *setigerus*	bird's beak	SMC
	Keckiella antirrhinoides	chaparral beard-tongue	SMC, DCSS
	Linaria canadensis	blue toadflax	SMC, DCSS, NNG
	Mimulus aurantiacus	monkey-flower	DCSS, SMC
	Mimulus brevipes	hillside monkey-flower	SMC, DCSS
	Mimulus guttatus	common monkey-flower	FS
	Penstemon spectabilis	beard-tongue	SMC, DCSS, NNG
	Scrophularia californica var. *floribunda*	California figwort	DCSS, SMC
Solanaceae	*Datura wrightii*	jimson weed, thorn-apple	DCSS
	*Nicotiana glauca**	tree tobacco	DH, DCSS, NNG
Urticaceae	*Urtica dioica* ssp. *holosericea*	stinging nettle	
	*Urtica urens**	dwarf nettle	CLOW, NNG
Violaceae	*Voila pedunculata*	Johnny jump-up	CLOW
Viscaceae	*Phoradendron* sp.	mistletoe	
Pteridophytes			

Pteridaceae	*Cheilanthes clevelandii*	Cleveland lip fern	DCSS
	Cheilanthes newberryi	cotton fern	SMC
	Pellaea andromedifolia	coffee fern	CLOW, DCSS, SMC

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	SPECIES NAME	COMMON NAME	HABITAT‡
Pteridophytes (cont.)			
Pteridaceae (cont.)	*Pellaea mucronata* var. *mucronata*	bird's-foot fern	SMC, DCSS
	Pentagamma triangularis var. *triangularis*	goldenback fern	SMC
Selaginellaceae	*Selaginella bigelovii*	Bigelow's mossfern	DCSS, SMC
	Selaginella cinerascens†	ashy spike-moss	SMC
Angiosperm Monocots			
Cyperaceae	*Eleocharis acicularis*	spike -rush	NNG
	Eleocharis macrostachya	pale spike-rush	NNG
	Eleocharis sp.	spike-rush	NNG, FS, SWS
	Scirpus pungens	common threesquare	WF
Iridaceae	*Sisyrinchium bellum*	blue-eyed grass	NNG
Juncaceae	*Juncus bufonius*	toad rush	WF
	Juncus mexicanus	Mexican rush	WF
	Juncus sp.	rush	NNG
	Juncus xiphioides	iris-leaved rush	NNG
Liliaceae	*Allium* sp.	wild onion	DCSS
	Calochortus sp.	mariposa lily	SMC
	Calochortus splendens	lilac mariposa lily	SMC
	Calochortus weedii var. *weedii*	weed's mariposa lily	DCSS
	Chlorogalum parviflorum	small-flower soap-plant	NNG, SMC
	Chlorogalum pomeridianum	soap plant, amole	NNG
	Dichelostemma capitatum	blue dicks	SMC, DCSS, NNG, CLOW
	Yucca whipplei	Our Lord's candle	DCSS, SMC
Poaceae	*Achnatherum coronatum*	giant stipa	SMC, DCSS
	*Avena barbata**	slender wild oat	DCSS, SMC
	*Avena fatua**	wild oat	DH, DCSS, NNG
	*Briza minor**	little quaking-grass	FS
	Briza sp.*	quaking grass	SWS, WF

	*Bromus diandrus**	common ripgut grass	CLOW, AG, NNG, CSCS, SWS, WF
	*Bromus hordeaceus**	soft chess	DCSS, NNG, CSCS, EW, FS, SWS, WF
	Bromus madritensis ssp. *rubens**	foxtail chess	DCSS, AG, SMC, NNG, CSCS

Appendix A (cont.)
PLANT SPECIES OBSERVED

FAMILY	**SPECIES NAME**	**COMMON NAME**	**HABITAT‡**
Angiosperm Monocots (cont.)			
Poaceae (cont.)	*Bromus* sp.*	mustard	CLOW
	*Bromus tectorum**	cheat grass	
	*Cortaderia jubata**	pampas grass	CLOW
	*Cynodon dactylon**	Bermuda grass	NNG, FS, WF
	Distichlis spicata	saltgrass	DCSS
	*Gastridium ventricosum**	nit grass	SMC
	Hordeum sp.	barley	CLOW, NNG, EW, SWS, AG, WF
	*Lamarckia aurea**	goldentop	NNG, DCSS, SMC
	*Lolium multiflorum**	Italian ryegrass	FS, NNG
	*Lolium perenne**	English ryegrass	
	Melica imperfecta	melic	SMC, DCSS
	Muhlenbergia microsperma	littleseed muhly	DCSS
	Muhlenbergia rigens	deergrass	DCSS
	Nassella pulchra	purple needlegrass	DCSS
	Poa secunda	Malpais bluegrass	SMC
	*Polypogon monspeliensis**	annual beard grass	NNG, FS, SWS, WF
	*Rhynchelytrum repens**	natal grass	DCSS
	*Schismus barbatus**	Mediterranean grass	DCSS
	*Vulpia myuros**	fescue	NNG, SMC

*Denotes non-native plant species
†Denotes sensitive plant species
‡Habitat Acronyms: AG = agriculture; CLOW = coast live oak woodland; CSCS = coastal sage-chaparral scrub; DCSS = Diegan coastal sage scrub; DCSS-D = Diegan coastal sage scrub-disturbed; DH = disturbed habitat; EW = eucalyptus woodland; FS = freshwater seep; NNG = non-native grassland; OEOW = open Engelmann oak woodland; RS = riparian scrub; SCLORF = southern coast live oak riparian forest; SMC = southern mixed chaparral; SWS = southern willow scrub; WF = wildflower field.

Appendix B
ANIMAL SPECIES OBSERVED OR DETECTED

SCIENTIFIC NAME		COMMON NAME	HABITAT*
INVERTEBRATES			
Spider	Family Agelenidae	funnel-web spider	
Beetle	*Chrysochus cobaltinus*	blue milkweed beetle	
	Eleodes sp.	skunk beetle	
	Tetraopes basalis	milkweed longhorn beetle	
Hymenoptera – Ants, wasps, bees			
	Pogonomyrmex sp.	harvester ant	NNG
	Apis mellifera	honeybee (swarm)	SMC
	Bombus terricola occidentalis	bumblebee	
	Pepsis formosa	tarantula hawk	
	Polistes exclamans	paper wasp	
	Family Vespidae	yellow jacket	
Lepidoptera – Butterflies			
	Anthocharis sara	Sara orangetip	
	Apodemia mormo virgulti	Behr's metalmark	DCSS
	Brephidium exilis	pygmy blue	
	Chlosyne gabbii	Gabb's checkerspot	SMC
	Coenonympha california	California ringlet	NNG
	Colias eurytheme	alfalfa sulfur	NNG
	Vanessa cardui	painted lady	DCSS, SMC
	Erynnis funeralis	funereal dusky-wing	DCSS
	Hemiargus ceraunus	Ceraunus (Edward's) blue	
	Hylephila phyleus	fiery skipper	DCSS
	Plebejus acmon	acmon blue	DCSS
	Leptotes marina	marine blue	DCSS
	Nathalis iole	dainty sulfur	NNG
	Nymphalis antiopa	mourning cloak	CLOW
	Papilio erymedon	pale swallowtail	DCSS
	Papilio rutulus	western tiger swallowtail	SWS
	Pontia protodice	common white	DCSS
	Pyrgus albescens	checkered skipper	DCSS
	Speyeria callippe comstocki	Comstock's fritillary	DCSS
	Vanessa annabella	west coast lady	
	Glaucopsyche lygdamus australis	southern blue	
	Vanessa atalanta	red admiral	
	Colias eurytheme	orange sulfur	

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES			
Amphibians			
Plethodondidae – Salamanders			
	Batrachoseps pacificus	Pacific slender salamander	
Buronidae – True toads			
	Bufo boreas	western toad	
Hylidae – Tree frogs			
	Hyla regilis	Pacific tree frog	
Reptiles			
Phrynosomatidae – Lizards			
	Phrynosoma coronatum†	coast horned lizard	
	Sceloporus occidentalis	western fence lizard	DCSS
	Sceloporus orcuttii	granite spiny lizard	DCSS
	Uta stansburiana	side-blotched lizard	DCSS
	Xantusia henshawi	granite night lizard	DCSS
Teiidae – Whiptails and Relatives			
	Cnemidophorus hyperythrus beldingi†	orange-throated whiptail	NNG
	Cnemidophorus tigris stejnegeri†	coastal whiptail	DCSS
	Crotalus exsul†	northern red-diamond rattlesnake	DCSS
Anguidae	*Gerrhonotus multicarinatus*	southern alligator lizard	
Anniellidae	*Anniella pulcha pulcha*†	silvery legless lizard	
Boidae	*Lichanura trivirgata*†	rosy boa	
Colubridae	*Masticophis flagellum*	coachwhips	
	Masticophislateralis	striped racer	
	Pituophis melanoleucucs	gopher snake	
	Lampropeltis getulus	common kingsnake	
	Hypsiglena torquata	night snake	
Scincidae	*Eumeces gilberti*	Gilbert's skink	
Viperidea	*Crotalus viridis*	western rattlesnake	

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)			
Birds			
Ardeidae – Herons, egrets, and bitterns			
	Ardea alba (rookery)†	great egret	overhead
	Ardea herodias†	great blue heron	
Anatidae	*Anas platyrhynchos*	mallard	
Charadriidae	*Charadrius vociferous*	killdeer	
Cathartidae – American Vultures			
	Cathartes aura†	turkey vulture	overhead
Accipitridae – Hawks, Old World Vultures, and Harriers			
	Accipiter triatus†	sharp-shinned hawk	fly over
	Accipiter cooperi†	Cooper's hawk	
	Aquila chrysaetos (nesting and wintering)†	golden eagle	perched, flying overhead, pair flying
	Buteo lineatus†	red-shouldered hawk	CLOW
	Buteo jamaicensis	red-tailed hawk	NNG
	Elanus leucurus†	white-tailed kite	CLOW, NNG, breeding pair
Falconidae – Falcons			
	Falco mexicanus†	prairie falcon	AG, flying overhead
	Falco sparverius	American kestrel	
Strigiformes – Owls			
	Bubo virginianus	great horned owl	EW (off site)
Phasianidae – Quail			
	Callipepla californica	California quail	DCSS
Recurvirostridae – Avocets and stilts			
	Himantopus mexicanus	black-necked stilt	
Columbidae – Pigeons and Doves			
	Columba fasciata	band-tailed pigeon	
	Zenaida macroura	mourning dove	DCSS, NNG
Tytonidae	*Tyto alba*†	barn owl	
Cuculidae – Cuckoos and Relatives			
	Geococcyx californianus	greater roadrunner	DCSS
Trochilidae – Hummingbirds			
	Calypte anna	Anna's hummingbird	SMC, DCSS
	Calypte costae†	Costa's hummingbird	SMC, DCSS

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)			
Birds (cont.)			
Picidae – Woodpeckers and Wrynecks			
	Picoides nuttallii	Nuttall's woodpecker	CLOW
	Colaptes auratus	northern flicker	SMC
	Melanerpes formicivorus	acorn woodpecker	CLOW
Tyrannidae – Tyrant Flycatchers			
	Empidonax difficilis†	Pacific slope flycatcher	CLOW
	Myiarchus cinerascens	ash-throated flycatcher	EW
	Sayornis nigricans	black phoebe	CLOW
	Sayornis saya	Say's phoebe	SMC
	Tyrannus verticaulis	western kingbird	SMC
	Tyrannus vociferans	Cassin's kingbird	
Vireonidae	*Vireo huttonii*	Hutton's vireo	CLOW
Alaudidae – Larks	*Eremophila alpestris actia*†	California horned lark	NNG
Hirundinidae	*Tachycineta thalassina*	violet-green swallow	
	Hirundo rustica	barn swallow	
	Hirundo pyrrhonota	cliff swallow	DCSS, NNG, SMC, fly over
	Tachycineta bicolor	tree swallow	CLOW
Corvidae – Jays, Magpies, and Crows			
	Aphelocoma californica	western scrub jay	CLOW
	Corvus brachyrhynchos	American crow	CLOW
	Corvus corax	common raven	SMC
Paridae – Titmice	*Baeolophus inornatu*	oak titmouse	CLOW
Aegithalidae – Bushtit			
	Psaltriparus minimus	bushtit	DCSS
Troglodytidae – Wrens			
	Campylorhynchus brunneicapillus couesi†	San Diego cactus wren	off site
	Salpinctes obsoletus	rock wren	
	Troglodytes aedon	house wren	
	Thryomanes bewickii	Bewick's wren	DCSS, SMC
Turdidae – Thrushes			
	Sialia currucoides	mountain bluebird	
Muscicapidae – Old World Warblers, Gnatcatchers, Kinglets, Thrushes, Bluebirds, and Wrentit			
	Chamaea fasciata	wrentit	SMC
	Sialia mexicana	western bluebird	

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)			
Birds (cont.)			
Mimidae – Mockingbirds and Thrashers			
	Mimus polyglottos	northern mockingbird	SMC
	Toxostoma redivivum†	California thrasher	SMC
Motacillidae – Pipits and Wagtails			
	Anthus rubencens	American pipit	CLOW
Sturnidae – Starlings			
	Sturnus vulgaris	European starling	EW
Ptilogonatidae – Silky Flycatchers			
	Phainopepla nitens	phainopepla	DCSS
Emberizidae – Warblers, Sparrows, Blackbirds and Relatives			
	Aimophila ruficeps canescens†	southern California rufous-crowned sparrow	DCSS
	Chondestes grammacus (nesting)†	lark sparrow	DCSS
	Euphagus cyanocephalus	Brewer's blackbird	
	Guiraca caerulea	blue grosbeak	DCSS
	Junco hyemalis	dark-eyes junco	CLOW
	Melospiza melodia	song sparrow	EW, CLOW
	Molothrus ater	brown-headed cowbird	EW
	Passerina amoena	lazuli bunting	DCSS
	Pheucticus melanocephalus	black-headed grosbeak	
	Pipilo maculatus	spotted towhee	SMC, DCSS
	Pipilo crissalis	California towhee	SMC, DCSS
	Piranga ludoviciana	western tanager	DCSS
	Spizella atrogularis†	black-chinned sparrow	
	Sturnella neglecta	western meadowlark	NNG
	Zonotrichia leucophrys	white-crowned sparrow	SMC, CLOW
Parulidae	*Dendrocia coronata*	yellow-rumped warbler	CLOW
Fringillidae – Finches			
	Carpodacus mexicanus	house finch	DCSS
	Carduelis psaltria	lesser goldfinch	DCSS
Passeridae	*Passer domesticus*	house sparrow	
Icteridae	*Icterus bullockii*	Bullock's oriole	CLOW, EW
	Icterus galbula	northern oriole	
Laniidae	*Lanius ludovicianus*†	loggerhead shrike	DCSS
Introduced species	*Meleagris gallopavo*	turkey	

Appendix B (cont.)
ANIMAL SPECIES OBSERVED OR DETECTED

FAMILY	SCIENTIFIC NAME	COMMON NAME	HABITAT*
VERTEBRATES (cont.)			
Mammals			
Leporidae	*Lepus californicus bennettii*†	San Diego black-tailed jackrabbit	(incl. scat)
	Sylvilagus audubonii	desert cottontail	(incl. scat)
Sciuridae – Squirrels, Chipmunks, and Marmots			
	Spermophilus beecheyi	California ground squirrel	
Geomyidaae	*Thomomys bottae*	Botta's pocket gopher	(mounds)
Heteromyidae – Pocket mice and kangaroo rat			
	Chaetodipus fallax fallax†	Northwestern San Diego pocket mouse	
	Dipodomys simulans	Dulzura kangaroo rat	
Cricetidae – Cricetine mice and rats			
	Neotoma lepida intermedia†	San Diego desert woodrat	(nest)
	Reithrodontomys megalotis	western harvest mouse	
	Peromyscus californicus	parasitic mouse	
	Peromyscus maniculatus	deer mouse	
	Microtus californicus	California vole	
Canidae – Foxes, Wolves, and Relatives			
	Canis latrans	coyote (scat and carcass)	
	Urocyon cinereoargenteus	gray fox	
Procyonidae – Racoons and relatives			
	Bassariscus astutus	ringtail	
	Procyon lotor	raccoon	
Mustelidae	*Mustela frenata*	long-tailed weasel	
	Mephitis mephitis	striped skunk	
Felidae – Cats			
	Lynx rufus	bobcat	(scat and carcass)
Cervidae			
	Odocoileus hemionus†	mule deer	(incl. scat)
Introduced Species			
Equine	*Equus caballus*	horse (observed)	
Bovine	*Bos taurus*	cow (observed)	

†Denotes sensitive animal species
*Habitat acronyms: AG = agriculture; CLOW = coast live oak woodland; DCSS = Diegan coastal sage scrub; EW = eucalyptus woodland; NNG = non-native grassland; SMC = southern mixed chaparral; SWS = southern willow scrub.

Appendix C
EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

FEDERAL, STATE, AND LOCAL CODES

U.S. Fish and Wildlife Service (USFWS)

FE	Federally listed endangered
FT	Federally listed threatened
FSC	Federal species of concern
BCC	Bird of Conservation Concern (discussed in more detail below)
BEPA	Bald Eagle Protection Act

California Department of Fish and Game (CDFG)

SE	State listed endangered
SR	State listed rare
ST	State listed threatened
CSC	California species of special concern

County of San Diego

Plant Sensitivity

Group A	Plants rare, threatened or endangered in California or elsewhere
Group B	Plants rare, threatened or endangered in California but more common elsewhere
Group C	Plants that may be quite rare, but more information is needed to determine rarity status
Group D	Plants of limited distribution and are uncommon, but not presently rare or endangered

Animal Sensitivity

County Sensitive	Animals considered under California Environmental Quality Act (CEQA) review of projects.

Federal and State Forest Service Codes

Federal FS U.S. Department of Agriculture Forest Service Sensitive

The USDA Forest Service defines sensitive species as those plant and animal species identified by a regional forester for which population viability is a concern, as evidenced by significant current or predicted downward trends in population numbers or density, or significant current or predicted downward trends in habitat capability that would reduce a species existing distribution. Regional foresters shall identify sensitive species occurring within the region. More information is available at http://www.fs.fed.us/r5/projects/sensitive-species.

State CDF California Department of Forestry and Fire Protection Sensitive

The Board of Forestry classifies as "sensitive species" those species that warrant special protection during timber operations. The list of "sensitive species" is given in §895.1 (Definitions) of the California Forest Practice Rules, which are available online at www.fire.ca.gov.

EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

OTHER CODES AND ABBREVIATIONS

USFWS Birds of Conservation Concern (BCC)

This report from 2002 aims to identify accurately the migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent USFWS' highest conservation priorities and draw attention to species in need of conservation action. USFWS hopes that by focusing attention on these highest priority species, the report will promote greater study and protection of the habitats and ecological communities upon which these species depend, thereby ensuring the future of healthy avian populations and communities. The report is available online at http://migratorybirds.fws.gov/reports/bcc2002.pdf.

California Environmental Quality Act (CEQA)

For plants with no current federal or state legal standing, "CEQA" refers to the fact that under the Act, impacts to species may be found significant under certain circumstances (e.g., the species are regionally sensitive and/or are protected by a local policy, ordinance, or habitat conservation plan; or the impact involves interference with certain movements or migrations, with wildlife corridors or with nursery sites).

MSCP Narrow Endemic Species

Some native species, primarily plants with restricted geographic distributions, soil affinities, and/or habitats, are referred to as a narrow endemic species. For vernal pools and identified narrow endemic species, the jurisdictions will specify measures in their respective subarea plans to ensure that impacts to these resources are avoided to the maximum extent practicable.

CALIFORNIA NATIVE PLANT SOCIETY (CNPS) CODES

LISTS

1A = Presumed extinct.

1B = Rare, threatened, or endangered in California and elsewhere. Eligible for state listing.

2 = Rare, threatened, or endangered in California but more common elsewhere. Eligible for state listing.

3 = Distribution, endangerment, ecology, and/or taxonomic information needed. Some eligible for state listing.

4 = A watch list for species of limited distribution. Needs monitoring for changes in population status. Few (if any) eligible for state listing.

R-E-D CODE

R (Rarity)
1 = Rare, but found in sufficient numbers and distributed widely enough that the potential for extinction is low at this time.
2 = Distributed in a limited number of occurrences, occasionally more if each occurrence is small.
3 = Distributed in one to several highly restricted occurrences, or present in such small numbers that it is seldom reported.

E (Endangerment)
1 = Not endangered
2 = Endangered in a portion of its range
3 = Endangered throughout its range

D (Distribution)
1 = More or less widespread outside California
2 = Rare outside California
3 = Endemic to California

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August 6, 2003

CSD-01

Mr. Dan Marquez
U.S. Fish and Wildlife Service
6010 Hidden Valley Road
Carlsbad, California 92009

Subject: Year 2003 Gnatcatcher Survey Report for Barnett Ranch Open Space Preserve

Dear Mr. Marquez:

This letter presents the results of surveys for the coastal California gnatcatcher (*Polioptila californica californica*) for the Barnett Ranch Open Space Preserve (County of San Diego, Department of Parks and Recreation). This letter describes the methods used to perform the surveys and the results. The surveys were conducted for the County as part of an inventory of sensitive species on site. This report is being submitted to the USFWS as a condition of HELIX Environmental Planning Inc.'s Threatened and Endangered Species Permit TE778195, under which the surveys were performed.

INTRODUCTION

The property covers approximately 728 acres and is located in the unincorporated Ramona Community Planning Area of central San Diego County, east of State Route (SR) 67 and south of SR 78 (Figure 1). The site is located south of the community of Ramona, east of the communities of Rosemont and Irvings Crest. The irregularly shaped property straddles San Vicente Road, which runs through the property in a generally northwest/southeast direction. The site is vacant except for dirt roads, three SDG&E easements, a paved road, and an approximate 15-acre estate residence. Klondike Creek also flows through the property. Besides the estate, the property is vacant (cattle grazing just recently ceased) and supports native and non-native habitats. Undeveloped land surrounds the property except where a rural residential property occurs to the north with horses and cattle.

METHODS

Deborah Leonard (formerly Pudoff) and Scott Taylor performed two surveys, and not all Diegan coastal sage scrub was surveyed due to budget constraints. Only the areas with the highest potential for gnatcatcher presence were surveyed. The two surveys were conducted according to the schedule in Table 1 and as close to the current (1997) USFWS protocol as possible. Approximately 132 acres of habitat were surveyed during each visit. The surveys were conducted on foot

(Figure 2) with the aid of binoculars and taped gnatcatcher vocalizations that were played regularly.

Table 1
SURVEY INFORMATION

Date of Survey	Biologists	Start/ Stop Times	Acres Surveyed/ Survey Rate**	Start/Stop Weather Conditions
June 18, 2003	D. Leonard*, S. Taylor	0800/1200	66 acres/ 16.5 acres per hour	Overcast, 61°F, 0-2 mph/Partly cloudy, 75°F, 3-5 mph
June 25, 2003	D. Leonard, S. Taylor	0800/1200	66 acres/ 16.5 acres per hour	Clear, 59°F, 0 mph/ Clear, 75°F, 3-5 mph

*Formerly D. Pudoff
**Per biologist

PLANT COMMUNITY DESCRIPTIONS

The site supports fifteen vegetation communities and developed land as briefly described below and shown on Figure 3.

Southern Coast Live Oak Riparian Forest

Southern coast live oak riparian forest is an evergreen, riparian woodland that is predominated by coast live oak (*Quercus agrifolia*). This community occurs on fine-grained alluvial soils in the canyons and valleys of coastal southern California. Associated species found on site include Engelmann oak (*Quercus engelmannii*), delicate clarkia (*Clarkia delicata*), California fuchsia (*Epilobium canum*), and poison oak (*Toxicodendron diversilobum*).

Southern Willow Scrub

Southern willow scrub consists of winter-deciduous stands of trees predominated by shrubby willows (*Salix* sp.) in association with mule fat (*Baccharis salicifolia*). This habitat occurs on alluvium deposited near stream channels. On site, characteristic species in southern willow scrub include arroyo willow (*Salix lasiolepis*), mule fat, yerba mansa (*Anemopsis californica*), and spike rush (*Eleocharis* sp.).

Freshwater Seep

Freshwater seep on site is a low-lying wet area that contains such species as spike-sedge (*Eleocharis* sp.) and rush (*Juncus* sp.).

Riparian Scrub

Riparian scrub contains elements of several riparian communities where one community (e.g., southern willow scrub, mule fat scrub) cannot be easily defined.

Open Water

Open water on site is associated with a cattle pond and does not support emergent plant cover.

Open Engelmann Oak Woodland

Engelmann oak woodland typically is comprised of Engelmann oaks growing in the ecotone between grassland and shrubland with an understory of typical "grassland" species or combined with coast live oak trees. In San Diego County, Engelmann oak woodland can also occur with a chaparral understory on hillsides. Isolated Engelmann oaks elsewhere on site are treated as specimens, rather than woodland, growing in the chaparral or coastal sage scrub because they are not grouped tightly enough to provide a woodland habitat.

Coast Live Oak Woodland

Coast live oak woodland is an evergreen woodland predominated by coast live oak and is found usually on north facing slopes and in shaded ravines. Coast live oak woodland on site is predominantly coast live oak with Engelmann oak and poison oak.

Native Grassland

Native grassland on site is predominated by perennial bunchgrasses such as purple needle grass (*Nassella pulchra*) with annual and perennial forbs such as common golden stars (*Bloomeria crocea* ssp. *crocea*) and California blue-eyed grass (*Sisyrinchium bellum*).

Wildflower Field

Wildflower field on site is comprised almost completely of native, annual species, particularly tarplant. Portions of the agriculture shown on Figure 3 are now wildflower field.

Diegan Coastal Sage Scrub (including disturbed)

Diegan coastal sage scrub on site is a vegetation community characterized by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), and black sage (*Salvia mellifera*). Additional species such as yellow bush penstemon (*Keckiella antirrhinoides*), monkey flower (*Mimulus aurantiacus*), and laurel sumac (*Malosma laurina*) also occur on site. Disturbed Diegan coastal sage scrub primarily occurs in the northeastern portion of the site and is characterized by an increased number of non-native grasses and less cover of native shrubs.

Coastal Sage-Chaparral Scrub

Coastal sage-chaparral scrub is a mixture of chaparral shrubs and sage scrub species regarded as an ecotone, or transition, between the two vegetation communities. This singular community contains floristic elements of both communities including California sagebrush, California buckwheat, laurel sumac, chamise (*Adenostoma fasciculatum*), scrub oak (*Quercus berberidifolia*), and ceanothus species (*Ceanothus* sp.), all of which are found on site. Additional species on site include white sage (*Salvia apiana*) and chaparral mallow (*Malacothamnus fasciculatus*).

Southern Mixed Chaparral

Southern mixed chaparral is composed of shrubs such as chamise, ceanothus, and scrub oak that can grow six to ten feet tall and form dense, often nearly impenetrable stands with poorly developed understories. This is the most common vegetation type on site covering most of the ridges and hilltops and much of the slopes in the eastern and southern portions of the site. Much of it is thick and virtually impenetrable. The vegetation is dominated by chamise that in small areas can form 100 percent of the cover; however, other species almost always coexist with chamise. Co-dominants at different locations include Ramona ceanothus (*Ceanothus tomentosus*), black sage, mission manzanita (*Xylococcus bicolor*), chaparral whitethorn (*Ceanothus leucodermis*), laurel sumac, and scrub oak.

Non-native Grassland

Non-native grassland areas in the past may have supported native grassland, but have been invaded by exotic annuals. Characteristic species in the grasslands on site include filaree (*Erodium* sp.), oats (*Avena* sp.), red brome (*Bromus madritensis* ssp. *rubens*), ripgut (*Bromus diandrus*), ryegrass (*Lolium* sp.), and mustard (*Brassica* sp.). Large portions of the agriculture shown on Figure 3 are now non-native grassland.

Eucalyptus Woodland

Eucalyptus woodland is predominated by eucalyptus (*Eucalyptus* sp.), an introduced genus that is often planted purposely (i.e., as wind blocks, ornamentals and hardwood production) and can naturalize and spread if conditions allow.

Disturbed Habitat

Disturbed habitat includes land that has been cleared of vegetation (e.g., dirt roads) or contains a preponderance of non-native plant species such as ornamentals or ruderal exotic species that take advantage of disturbance. On site, disturbed habitat includes dirt roads that criss-cross the property.

Developed

Developed land is that where permanent structures and/or pavement have been placed, preventing the growth of vegetation, or where landscaping is clearly tended and maintained. On site, this cover type is represented by San Vicente Road, Chuck Wagon Road, and Deviney Lane.

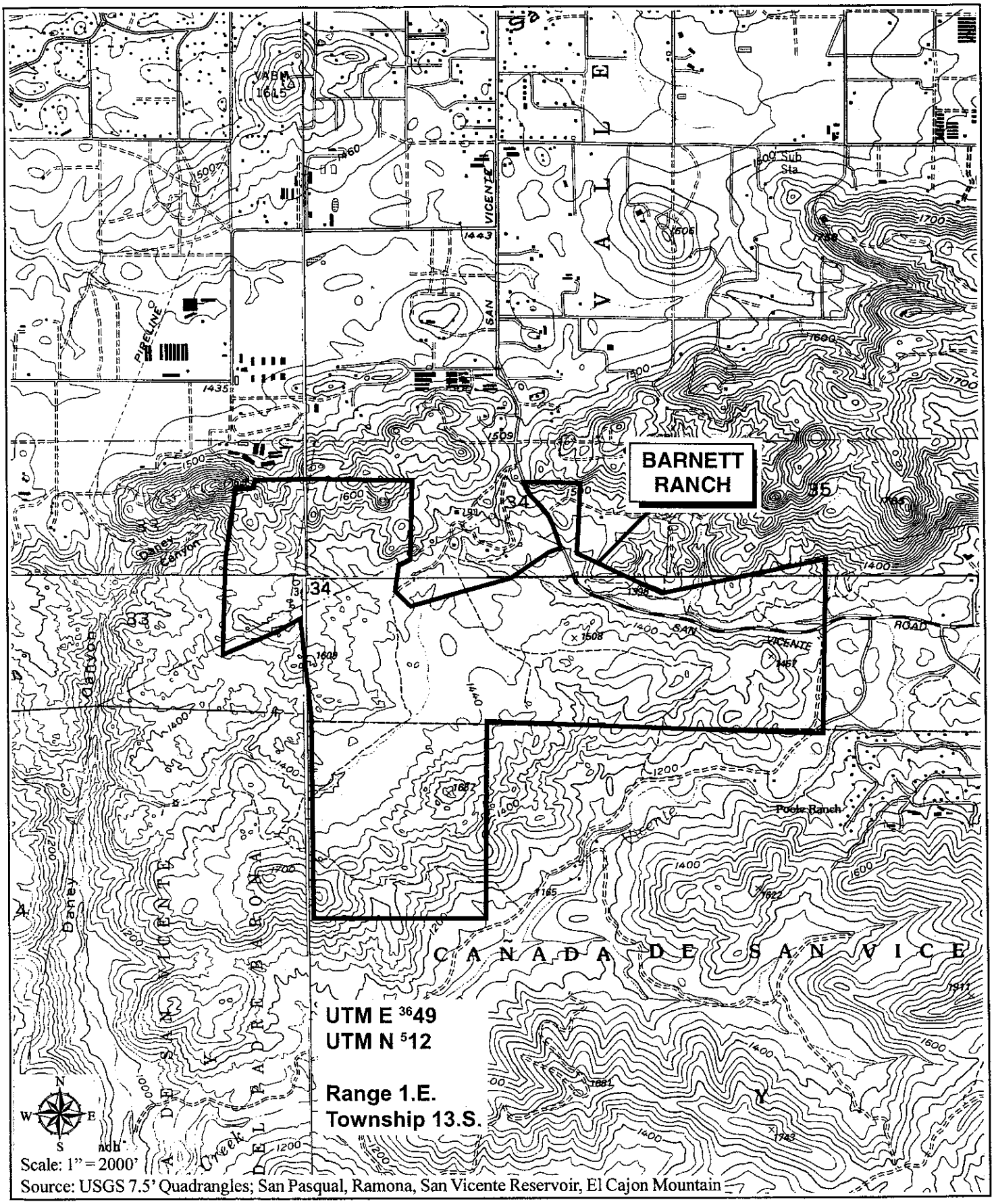
SURVEY RESULTS

The coastal California gnatcatcher was not observed on site in the areas surveyed within the Barnett Ranch Open Space Preserve. Please contact me if you have any questions about the surveys or the contents of this letter.

Sincerely,

Deborah Leonard (Pudoff)
Biologist

Enclosures: Figure 1 Site Location Map
Figure 2 Gnatcatcher Survey Routes
Figure 3 Vegetation Map

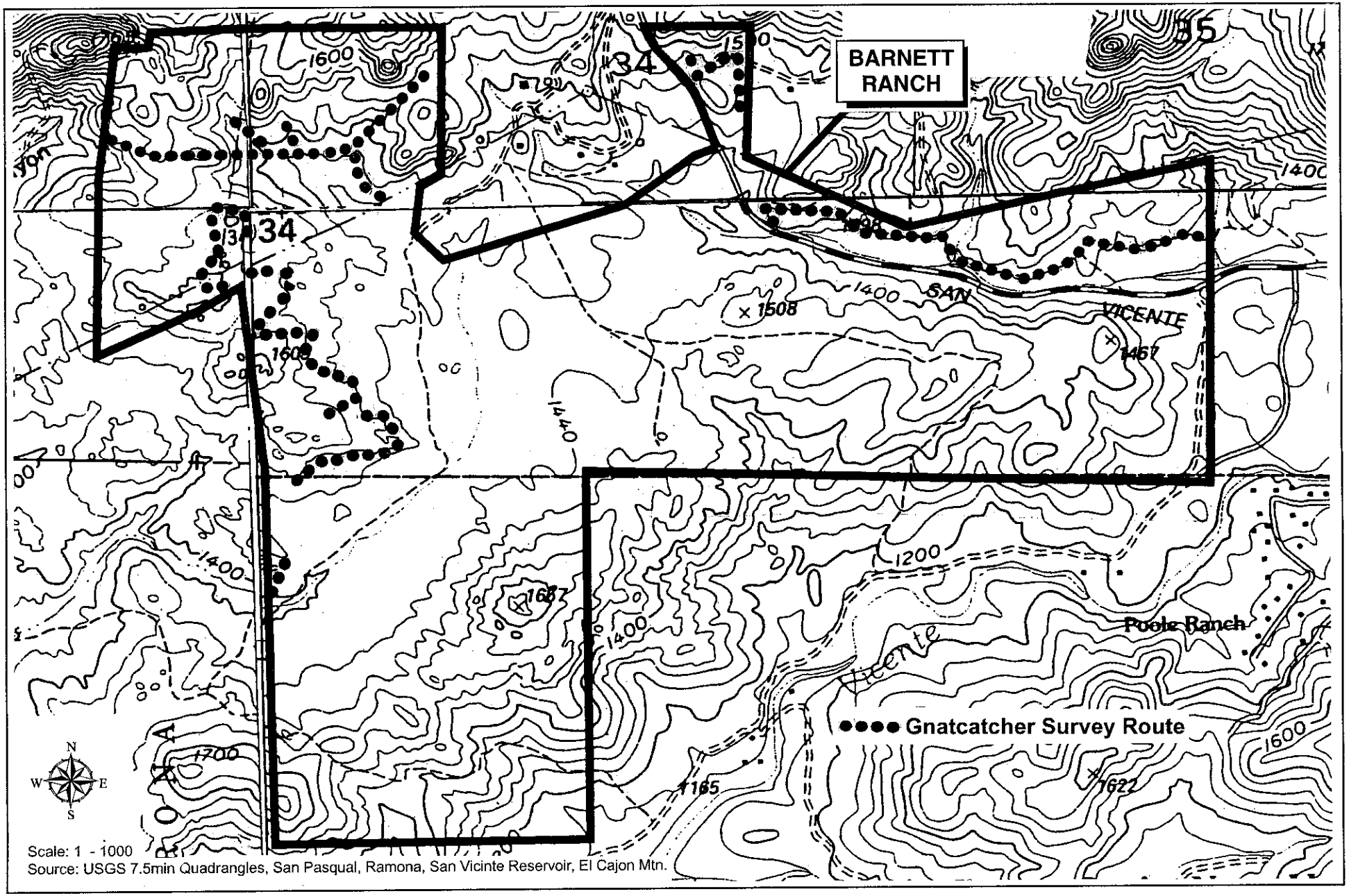


Site Location Map

BARNETT RANCH OPEN SPACE PRESERVE

Figure 1

HELIX

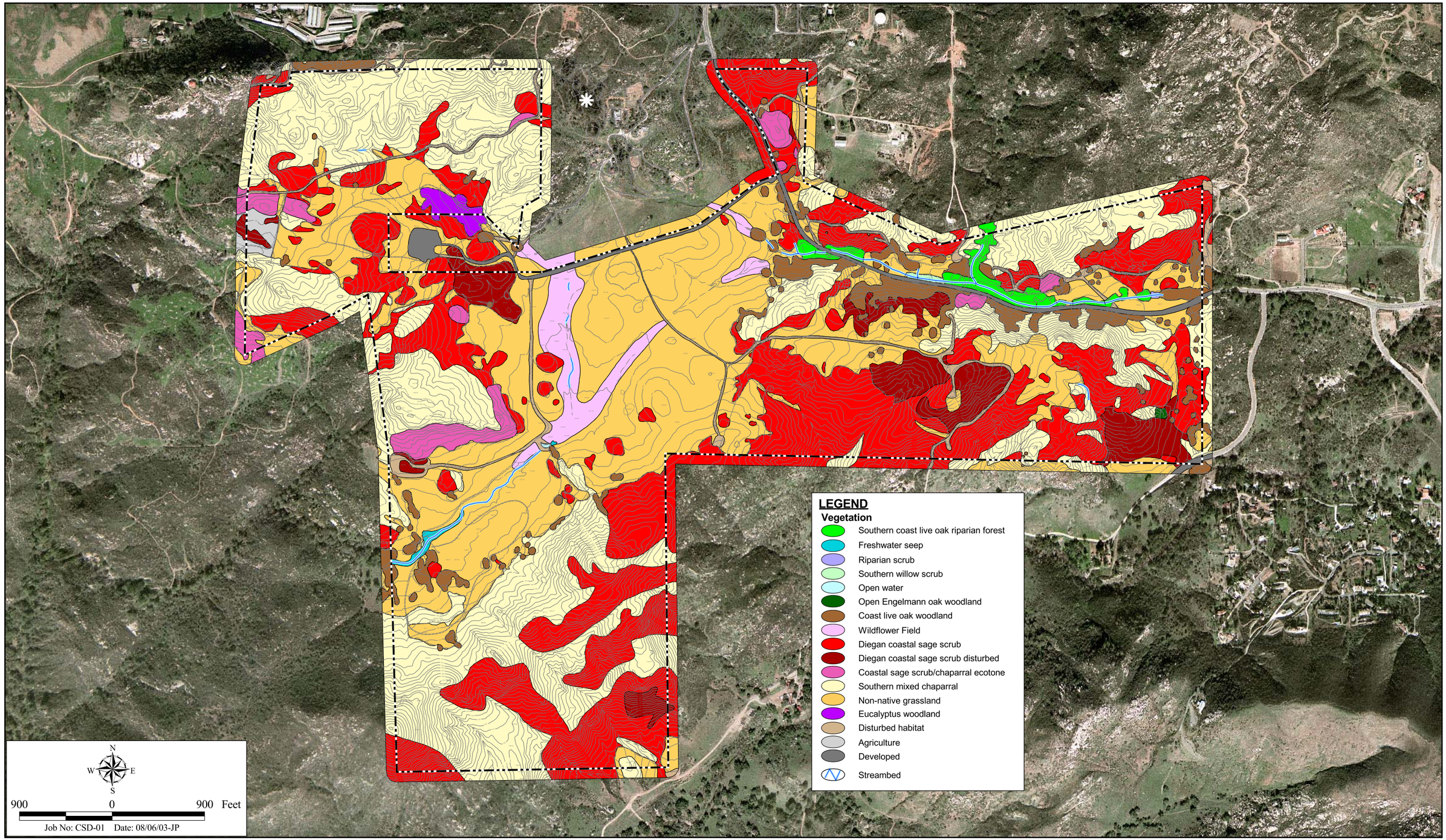


Gnatcatcher Survey Routes

BARNETT RANCH OPEN SPACE PRESERVE

Figure 2

HELIX



Vegetation Map

BARNETT RANCH OPEN SPACE PRESERVE

HELIX

Figure 3

2003 Report
Site Assessment and Non-Protocol Level
Presence/Absence Surveys for the
Quino Checkerspot Butterfly
(*Euphydryas editha quino*)

Prepared for:

Barnett Ranch Open Space Preserve Ramona, San Diego County, California
County of San Diego Department of Parks and Recreation

Prepared by:

HELIX Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, California 91941-6476
(Threatened/Endangered Species Permit: TE778195)

June 4, 2003

Surveys performed by:

Derek H. Langsford

INTRODUCTION

This report documents the results of HELIX Environmental Planning, Inc.'s (HELIX) year 2003 quino checkerspot butterfly (QCB; *Euphydryas editha quino*) surveys on the County of San Diego's (County's) Barnett Ranch Open Space Preserve (OSP) property. The surveys were performed under HELIX's Threatened/Endangered species permit (TE778195). The Barnett Ranch OSP property encompasses approximately 720 acres both north and south of San Vicente Road between Chuckwagon Road and Bunnie King Lane, south of Ramona, San Diego County, California. The site is vacant apart from dirt roads that traverse the site, three SDG&E easements with power lines, and a paved road serving an estate residence on an inholding parcel. The surveys were performed as part of the baseline biological studies for the County.

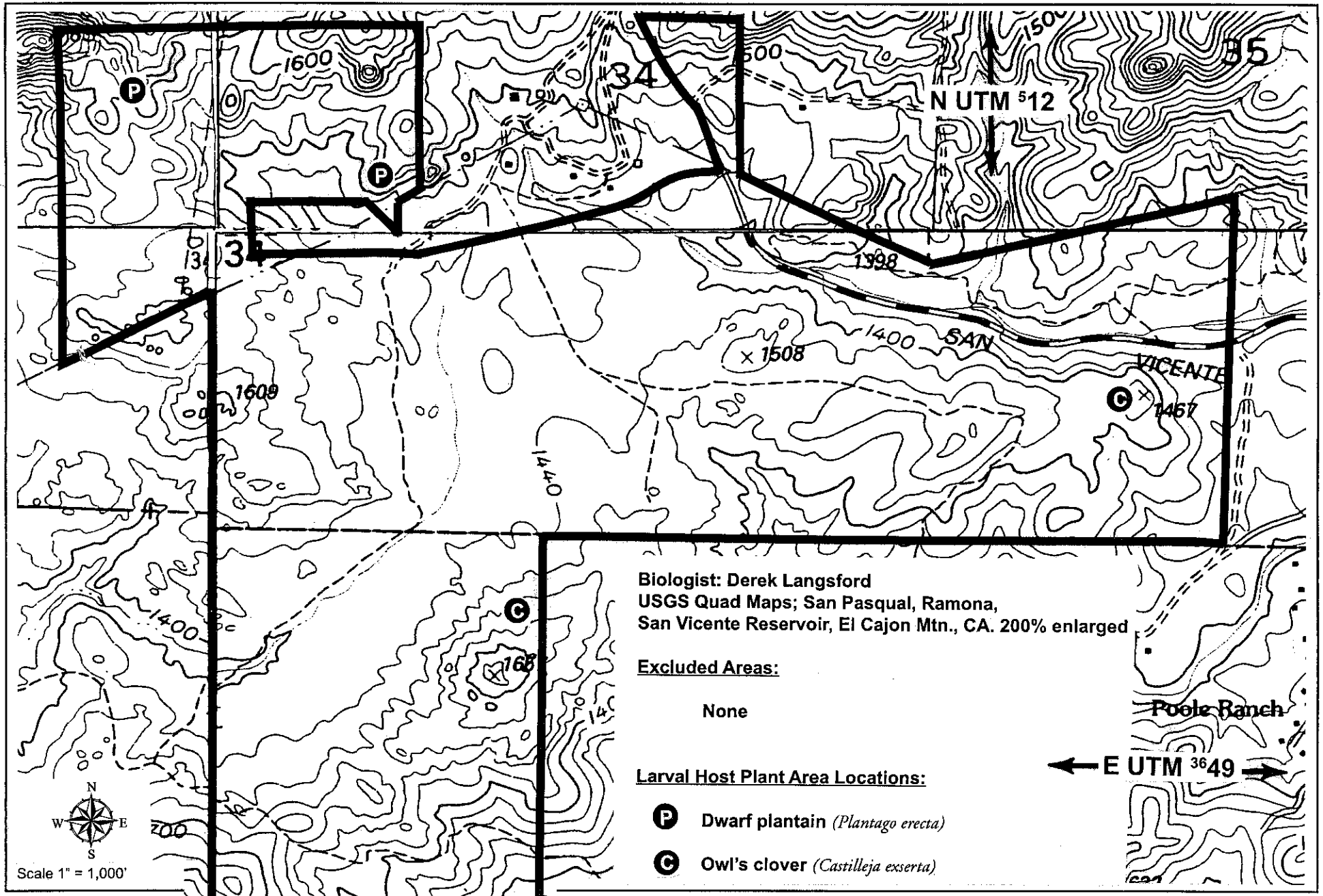
METHODS

Non-protocol QCB presence/absence surveys (two surveys total) were conducted on site. As the purpose of the surveys was to determine presence rather than absence, the surveys were conducted in the areas where the most suitable habitat was found (i.e., with host plant and nectaring resources present). While not covering all areas that would be surveyed under U.S. Fish and Wildlife Service (USFWS) protocol, conditions during the surveys were per the Year 2002 Survey Protocol Information (USFWS 2002a) and Survey Recommendations for the QCB (USFWS 2002b). Prior to the surveys, a habitat assessment was conducted on February 7, 2003 by HELIX biologists Derek Langsford, Ph.D., Sally Trnka, and Brian Parker, with the surveys being performed by Dr. Langsford. Dates, times, and weather conditions for the beginning and ending of the surveys are presented in Appendix A. Copies of field notes from each survey are provided in Appendix B. Appendix C provides lists of the butterflies observed during each survey.

RESULTS

The central portion of the Barnett Ranch OSP property consists of an undulating central plateau surrounded by low hills. A ridge extends east from this plateau and forms the southern side of a steep-sided valley. The property extends across that valley and includes the slopes to the north. Habitats consist of non-native grassland/ruderal habitats in the flat areas (previously grazed), with coastal sage scrub, coastal sage-chaparral scrub, and southern mixed chaparral on the hillsides. In the valley, coast live oak woodland and coast live oak riparian forest follow the drainage. Scattered oaks also occur on the plateau. Potential habitat for the QCB that was surveyed consisted of the few areas on site that were open, supported host plant and had plants that are considered to be nectaring resources for adult QCB (see host plant locations, Figure 1). The remainder of the site consisted of either dense closed canopy vegetation (southern mixed chaparral, coastal sage-chaparral scrub, and oak woodland), dense grassland/ruderal habitat, or disturbed or developed habitat without host or nectaring plants.

Dwarf plantain (*Plantago erecta*) and purple owl's clover (*Castilleja exserta*) was present in four places on site (Figure 1). The areas supporting host plants were in open coastal sage scrub had not been invaded by exotic weeds, something that has been facilitated by over 80 years of grazing on a large portion of the site.



Site Assessment and Host Plant Location Map

BARNETT RANCH

Figure 1

HELIX

The following primary nectar resources were observed on site: buckwheat (*Eriogonum fasciculatum*), cryptantha (*Cryptantha* sp.) and fiddleneck (*Amsinkia* sp.). In the coast live oak woodland area, Chinese houses (*Collinsia concolor*) was detected during rare plant surveys in May, but this habitat is not suitable for QCB.

The most commonly occurring butterfly species were painted ladies (*Vanessa cardui*), Behr's metalmarks (*Apodemia mormo virgulti*), common whites (*Pontia protodice*) and sara orangetips (*Anthocharis sara*). The QCB was not observed during any of the surveys conducted on the Barnett Ranch OSP. Surveys were discontinued because the site did not appear to provide the resources necessary to support a population of QCBs.

CONCLUSION

The Barnett Ranch OSP appears to have limited potential to support QCB. The main limiting factor seems to be the limited presence of host plant, especially dwarf plantain, the primary host plant of the QCB larvae. A history of grazing would appear to have significantly contributed to the scarcity of host plant on the site, as most open areas are dominated by weedy, non-native annuals.

REFERENCES CITED

U.S. Fish and Wildlife Service (USFWS). 2002a. Quino Checkerspot Butterfly (*Euphydryas editha quino*) 2002 Survey Protocol Information. February.

2002b. Quino Checkerspot Butterfly 2002 Survey Recommendations. February 12.

Appendix A
SUMMARY OF FIELD SURVEY CONDITIONS AND RESULTS

Site Visit #	Survey Date	Survey Time (24 hr; start/end)	Weather Conditions (start/end)*	Results
1	March 12, 2003	1110/1610	Clear, 73°F, wind 1-3 mph Clear, 77°F, wind <1 mph	No QCB.
2	March 26, 2003	1020/1515	Clear, 78°F, wind <3 mph Clear, 72°F, wind 1-7 mph	No QCB.

*Temperature was taken on the ground in the shade.

Appendix B
COPIES OF FIELD NOTES

QUINO CHECKERSPOT GENERAL FORM

Biologist name Derek Langsford

HELIX permit no. TE778195[redacted]

Subconsultant permit no. _____

Survey date 3/12/03 Site visit no. 1

Site name Barnett Ranch - non protocol presence surveys

Locality Ramona

Total site acres 720 Total acres surveyed ~ 70 acres

Total hours of field survey 5 hrs Average acres surveyed per hour ~ 14

Time	Sky	Wind	Temperature F
Start 11.10 AM	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	73° F in sh.
End 4:10 PM	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	77° - 2°
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments

Surveyed most likely areas for QCB. - very little host plant + areas in edges or with open veg w/ bare ground no sign of QCB - probably too little host plant to support a pop.

Attached
- ☐ List of butterflies observed
- ☐ List of larval host plants, nectar plants, and plant communities observed on the site
- ☐ Field maps
- ☐ Copy of original field notes
- ☐ Photographs
- ☐ Other _____

Barnett Ranch CSD-01

QCB #1

11:10 start 73° winds 1-3

plants	Animals
miners lettuce	ravens
camissonia sp	junco
plagiobothrys	side blotch
cryptantha	w. fence liz
Lx Plantago sp	OTWH
plantago sp	Paint lady
viola sp (yellow)	S. blue
peonia	Behr's mm
Amsinckia	whbl
Scroph cal	Cass OS
Dich pul	Bushtits
acmispon?	Tu TV
lit ago	Am Kes
Lomatium	RTHA
cucumber	CaQuail
Keck ant	
sanicula	
lup hirs	
pen spec	

QUINO CHECKERSPOT GENERAL FORM

Biologist name: Derek Langsford

HELIX permit no.: TE778195[redacted]

Subconsultant permit no.:

Survey date: 3/26/03 Site visit no.: #2

Site name: Barnett Ranch

Locality: Ramona

Total site acres: 720 Total acres surveyed: ~ 70

Total hours of field survey: ~5 hrs Average acres surveyed per hour: ~ 14

Time	Sky	Wind	Temperature F
Start 1020	(Clear) Patch Overcast/Cloudy Drizzle Shower	(<1) 1-3 4-7 8-12 12-15 >15	78°F in sh
End 3:15	(Clear) Patch Overcast/Cloudy Drizzle Shower	<1 (1-3 4-7) 8-12 12-15 >15	72°F in sh
Start	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	
End	Clear Patch Overcast/Cloudy Drizzle Shower	<1 1-3 4-7 8-12 12-15 >15	

Description of areas surveyed/commments: neck plagio, amsinckia, chrisi, dichelostemma owls clover veg more lush - lots of flowers but still no more P. erecta erodium & outcompeting natives in most places.

Attached
- ☐ List of butterflies observed
- ☐ List of larval host plants, nectar plants, and plant communities observed on the site
- ☐ Field maps
- ☐ Copy of original field notes
- ☐ Photographs
- ☐ Other ____________

CSD-01 QCB #2 3/26/03

warm, clear, abundant annuals many in bloom.. blackbrush = bloom

CAQU

RIHA ch

Brsp liz

OTUH

scrub jays

TUM ch

des cottontail

SBLiz

bel sco

cas exe

plus spe

encpl bu

malacothamnus

start 78°F calm 10:20

fin 72°F 1-3 w/w 3:15

Appendix C

LISTS OF BUTTERFLIES OBSERVED DURING EACH SURVEY

Butterflies Observed (larvae or adults) CSD-01 #1 3/12/03	Number	Comments
Pale Swallowtail (*Papilio eurymedon*)		
Anise Swallowtail (*P. zelicaon*)		
West Tiger Swallowtail (*P. rutulus*)		
Sara Orangetip (*Anthocharis sara*)	𝍸	
Felder's Orangetip (*A. cethura*)		
Cabbage White (*Artogeia rapae*)		
Sleepy Orange (*Eurema nicippe*)		
Common White (*Pontia protodice*)	𝍸 ||	
California Dogface (*Zerene eurydice*)		
Alfalfa Butterfly (*Colias eurytheme*)		
Harford's Sulfur (*C. harfordi*)		
California Ringlet (*Coenonympha californica*)	1	
Monarch (*Danaus plexippus*)		
Queen (*D. gilippus*)		
Henne's Checkerspot (*Euphydryas chalcedona hennei*)		
Calcedon Checkerspot (*E. chalcedona chalcedona*)		
Quino Checkerspot (*E. editha quino*)		
Gabb's Checkerspot (*Charidryas gabbii*)		
Leanira Checkerspot (*Thessalia leanira wrighti*)		
Mylitta Cresent (*Phyciodes mylitta*)		
Painted Lady (*Vanessa cardui*)	𝍸 𝍸 𝍸 𝍸 1	
West Coast Lady (*V. annabella*)		
Virginia Lady (*V. virginiensis*)	1	
Red Admiral (*V. atalanta*)	11	
Buckeye (*Junonia coenia*)		
Mourning Cloak (*Nymphalis antiopa*)		
California Sister (*Adelpha bredowii californica*)		
Satyr Anglewing (*Polygonia satyrus*)		
Lorquin's Admiral (*Basilarchia lorquini*)		
Western Tailed Blue (*Everes amyntula*)		
Southern Blue (*Glaucopsyche lygdamus australis*)	1	
Echo Blue (*Celastrina ladon echo*)		
Sonoran Blue (*Philotes sonorensis*)		
Marine Blue (*Leptotes marina*)		
Acmon Blue (*Icaricia acmon*)		
Pygmy Blue (*Brephidium exilis*)		
Gray Hairstreak (*Strymon melinus*)		
Brown Elfin (*Incisalia augustinus*)		
Perplexing Hairstreak (*Callophrys perplexa*)		
Grt Purple Hairstreak (*Atlides halesus*)		
Behr's Metalmark (*Apodemia mormo virgulti*)	𝍸 𝍸 1	
Wright's Metalmark (*Calephelis wrighti*)		
V. small skipper	1	
	11	

FDW

CSD-01 #2 3/26/03

Butterflies Observed (larvae or adults)	Number	Comments
Pale Swallowtail (*Paplio eurymedon*)		
Anise Swallowtail (*P. zelicaon*)	|	
West Tiger Swallowtail (*P. rutulus*)		
Sara Orangetip (*Anthocharis sara*)	||||| ||||| ||||| ||||| ||||| |||	
Felder's Orangetip (*A. cethura*)		
Cabbage White (*Artogeia rapae*)		
Sleepy Orange (*Eurema nicippe*)		
Common White (*Pontia protodice*)	||||| ||	
California Dogface (*Zerene eurydice*)		
Alfalfa Butterfly (*Colias eurytheme*)		
Harford's Sulfur (*C. harfordi*)		
California Ringlet (*Coenonympha californica*)		
Monarch (*Danaus plexippus*)		
Queen (*D. gilippus*)		
Henne's Checkerspot (*Euphydryas chalcedona hennei*)		
Calcedon Checkerspot (*E. chalcedona chalcedona*)		
Quino Checkerspot (*E. editha quino*)		
Gabb's Checkerspot (*Charidryas gabbii*)		
Leanira Checkerspot (*Thessalia leanira wrighti*)		
Mylitta Cresent (*Phyciodes mylitta*)		
Painted Lady (*Vannessa cardui*) [illegible]	|||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||||| ||	
West Coast Lady (*V. annabella*)		
Virginia Lady (*V. virginiensis*)	|	
Red Admiral (*V. atalanta*)	|	
Buckeye (*Junonia coenia*)	|	
Mourning Cloak (*Nymphalis antiopa*)		
California Sister (*Adelpha bredowii californica*)		
Satyr Anglewing (*Polygonia satyrus*)		
Lorquin's Admiral (*Basilarchia lorquini*)		
Western Tailed Blue (*Everes amyntula*)		
Southern Blue (*Glaucopsyche lygdamus australis*)	|	
Echo Blue (*Celastrina ladon echo*)		
Sonoran Blue (*Philotes sonorensis*)		
Marine Blue (*Leptotes marina*)		
Acmon Blue (*Icaricia acmon*) Orange on hind wing	|	
Pygmy Blue (*Brephidium exilis*)		
Gray Hairstreak (*Strymon melinus*)		
Brown Elfin (*Incisalia augustinus*)		
Perplexing Hairstreak (*Callophrys perplexa*)		
Grt Purple Hairstreak (*Atlides halesus*)		
Behr's Metalmark (*Apodemia mormo virgulti*)	||||| ||||| ||||| ||||| |	
Wright's Metalmark (*Calephelis wrightii*)		
FDW	|||	
CA whit	||||| |	

Small Mammal and Herpetology Surveys
On Barnett Ranch Open Space Preserve
County of San Diego, California

Prepared for

Helix Environmental Planning, Inc.
8100 La Mesa Blvd., Suite 150
La Mesa, CA 91941

June, 2003

Prepared By

ENVIRA, 23849 Gymkhana Road, Ramona, CA 92065
fax 760-788-0450 E-mail PHVERGNE@aol.com

TABLE OF CONTENT

1. EXECUTIVE SUMMARY

Philippe Vergne was contracted by Helix Environmental Planning, Inc, to conduct small mammal and herpetology inventory trapping survey on the estimated 700 acres Barnett Ranch site.

The property is designated as an Open space preserve under management by the County of San Diego Department of Parks and Recreation.

Following is a report describing the results of those surveys and habitat assessment on the above-described property.

Also included in the current report is a summary of focussed small mammal trapping surveys of the site performed for ten days (two five day sessions) from June 1 to 10 , 2001 by Philippe Vergne, a certified SKR biologists (PRT-831207).

A total of 126 individuals from 19 native species of reptiles and amphibians were captured during the current trapping effort. A total of 281 individuals from 6 small mammal species were captured during the combined small mammal trapping surveys. An additional 13 mammal species were identified from the scent station and through visual observations.

During the field surveys and inventory trapping surveys, good to high quality occupied habitat was observed on site for the following sensitive species: the San Diego horned lizard, the orange-throated whiptail, the coastal western whiptail, the northern red diamond rattlesnake, the San Diego desert woodrat, and the northwestern San Diego pocket mouse. The Stephens' kangaroo rat was not captured and is not currently present on the site although good quality habitat for this species is found within the grasslands on site.

Based on the wildlife observations on site, and apparent usage of the area by small and large mammals , in addition to on site refugia. the Barnett Ranch open space site has areas that could be considered as important wildlife corridors.

Several raptor species were observed on site. There is good quality habitat on site that provides nesting and/or roosting habitats for eagles hawks and falcons. The grassland and scrub habitat also provides foraging habitat for raptor species.

2. PROJECT DESCRIPTION

The site occupies an estimated 700 acres adjacent to San Vicente Road in the Town of Ramona in San Diego County, California (Figure 1). The property is located in unsectioned lands, T13S, R1E, of the USGS 7.5" Ramona, San Vicente Reservoir , El Cajon Mountain and San Pasqual Quadrangle.

The property is designated as an Open space preserve under management by the County of San Diego Department of Parks and Recreation.

3. METHODS

A literature review and records check was conducted for sensitive reptile, amphibian and small mammal resources within the vicinity of the proposed project. In addition to the literature review, a general field survey of the project area was conducted. The field survey provided information on the existing conditions on the site and the potential for sensitive resources to be present.

Focussed herpetological and small mammal inventory surveys were conducted using pit trap arrays, scent stations, small mammal live trapping and visual observation . It should be noted that despite the efficacy of pit trap arrays in detecting herptefauna, long term trapping (years over several seasons) is required to get accurate representation of species presence on any given site.

Focused trapping surveys for the Stephens' kangaroo rat -SBR were conducted on areas containing potential SKR habitat in 2001 and results of that survey are included in the current report.

3.1 LITERATURE REVIEW

A literature review was conducted prior to the trapping effort. This included a review of standard field guides and texts on sensitive and non-sensitive biological resources, as well as the following sources:

- List of sensitive biological resources provided by the California Natural Diversity Data Base (CNDDB);
- Biological resources reports for the project site and adjacent properties; and
- General texts and other documents identifying potential resources on the site.

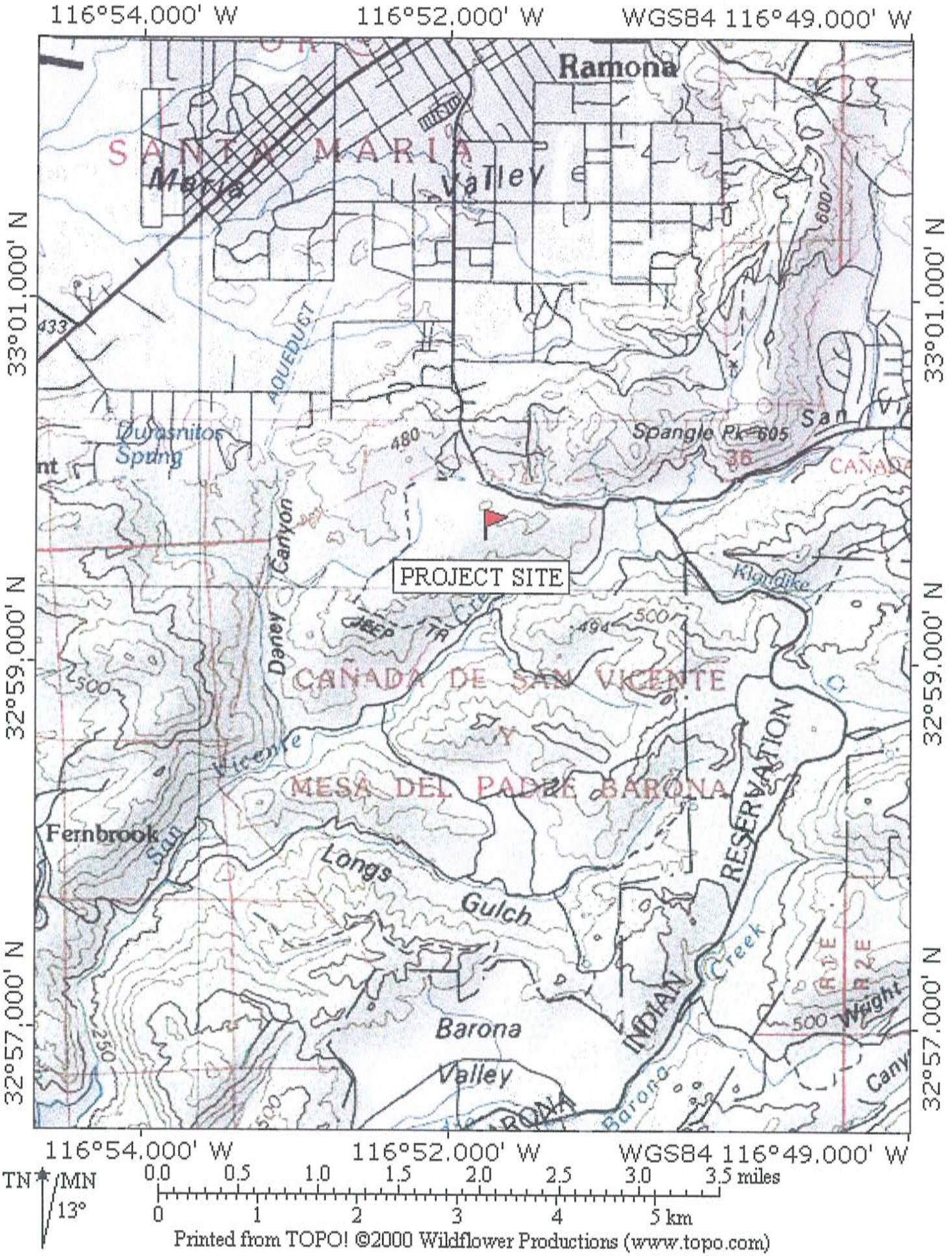
All technical information reviewed is included in the References section of this document.

3.2 GENERAL BIOLOGICAL SURVEYS

A reconnaissance level survey was conducted on the property, by driving and walking to assess suitable habitat for sensitive biological resources within the project boundaries.

The field surveys were focused on sensitive biological resources, and included observations of potential habitat for sensitive species. Sign surveyed for included nests, tracks, scat, burrows, skeletal remains, and live

Figure 1. Site vicinity Map for Barnett Ranch Project



animals. During the surveys, notes were made on the plant and animal species observed, the surface characteristics and topography of the project area, and the suitability of the habitat for the sensitive species.

As part of the habitat assessment, we conducted a focused evaluation of the on site habitats in order to identify the most suitable trap and scent station sites. Based on the field survey findings, we selected the trapping areas and scent station locations plotted in Figure Two.

A list of plant and wildlife species observed is included in Appendix A.

3.3 BIOLOGICAL INVENTORY TRAPPING SURVEYS

Two types of trapping surveys were conducted as part of the current inventory as follows:

1- *Focused Small Mammal Surveys*

Focused surveys for small mammals were conducted according to U.S. Fish and Wildlife Service (USFWS) protocols established for SKR.

The current protocol calls for 5 nights of trapping, conducted when the animal is active aboveground at night and preferably during a new moon phase. Twelve-inch kangaroo rat modified Sherman Traps were used in the trapping survey. Each trap was baited with a mixture of bird seed placed at the back of the traps. The traps we reopened at dusk each night and inspected at night and dawn each morning. All animals were identified and released at the point of capture.

Notes were recorded on the habitats, soils and other relevant characteristics where the traps were placed.

The current small mammal trapping surveys were conducted from April 24 to April 29, 2003.

2- Focused Herpetofauna Surveys

Focused surveys for herpetofauna were conducted using pitfall traps with drift fences.

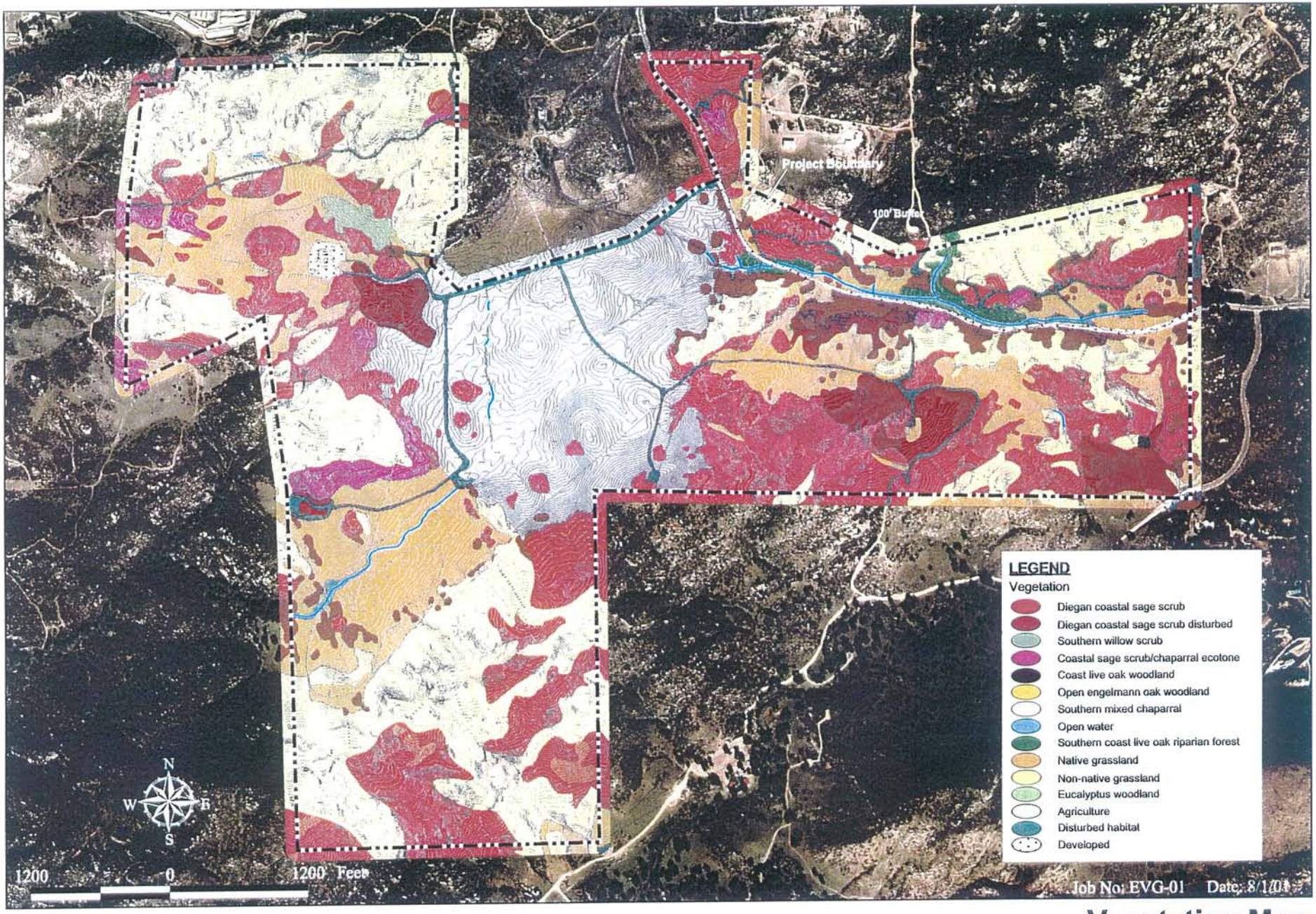
The herp arrays were designed as per the methodology of Case and Fisher, 2001. The sampling arrays had three-15 meter drift fence arms, with a total of seven 5-gallon pitfall traps each. The drift fence arms were 30 cm tall by 15 meter long.Pitfall buckets were 5 gallons with holes at bottom for drainage. Buckets were buried to ground level. Bucket Lids with 2.5 cm spacers were used to provide shade. Sections of 6 cm diameter by 15 cm cardboard tubing were used in the buckets to give smaller animals protection from predation.

3.4 *BIOLOGICAL INVENTORY SCENT STATION SURVEYS*

A total of ten areas were selected on site for the placement of scent stations. Scent stations were placed in the various plant communities observed on the property. Several of the areas selected exhibited potential as wildlife corridors.

The scent stations consisted of 2 foot wooden stakes with cans of cat food nailed to the top. Flour on wax paper was used to record prints.

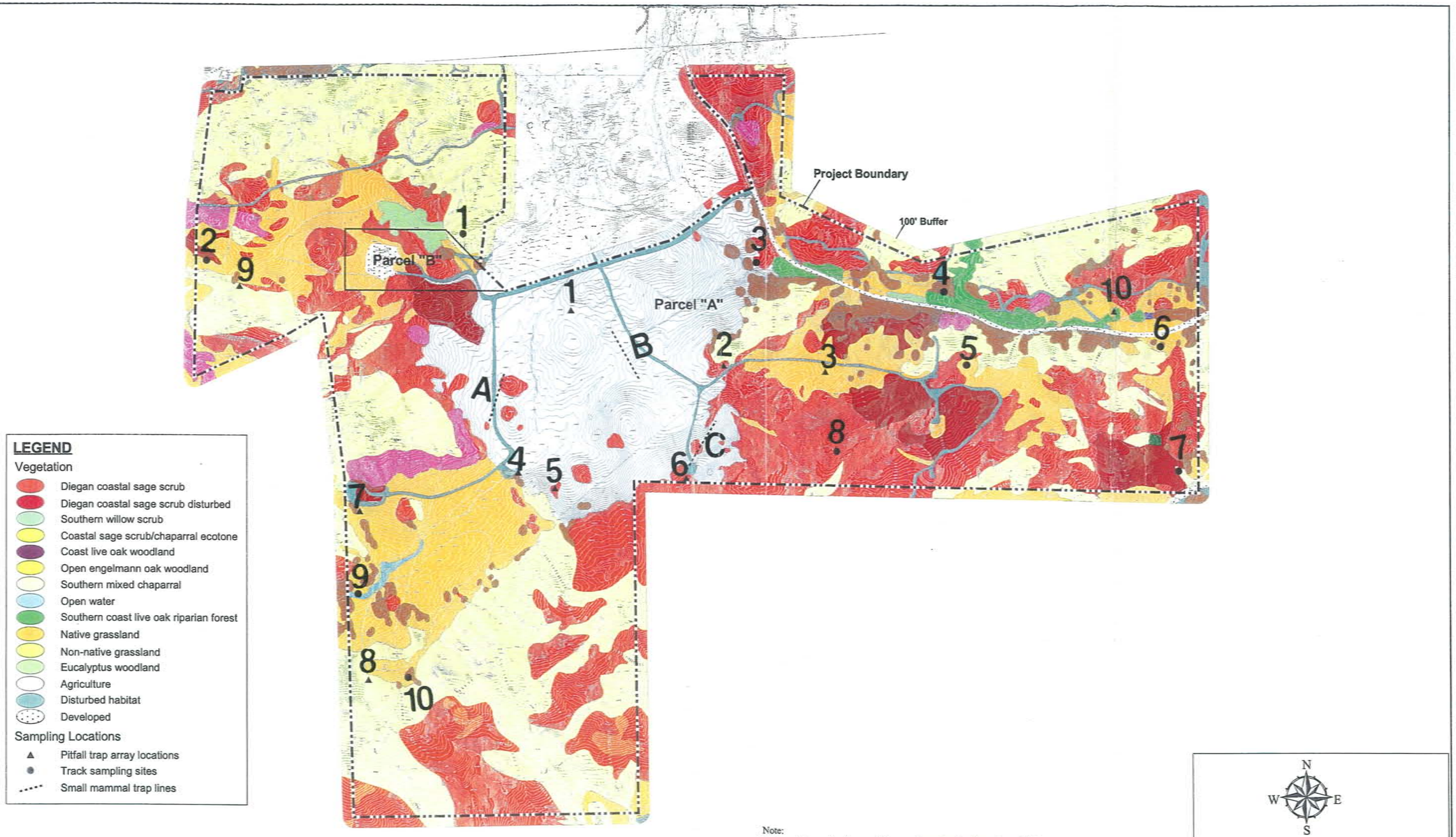
Figure Two **Barnett Ranch Open Space Preserve Vegetation Map**



Vegetation Map

BARNETT RANCH

HELIX



Note:
This map is based on site conditions as observed at the time of our field investigations. The information presented herein was developed by visual inspection and/or aerial photograph interpretation. Note that both site conditions and applicable regulatory requirements may change.

Sampling Locations

BARNETT RANCH

HELIX

4. RESULTS

4.1. DATA REVIEW

The existing conditions within the site were recorded, paying specific attention to habitats that may potentially contain sensitive species. Sensitive species potentially present include those listed, or candidates for listing by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG) and California Native Plant Society (CNPS). All sensitive species were considered as potentially present on the project site if its known geographical distribution encompassed all or part of the project area or if its distribution was near the site and its general habitat requirements were present.

Sensitive small mammal and herpetological wildlife species identified from the data review as potentially occurring on the project site were the: 1) San Diego horned lizard (Phrynosoma coronatum blainvillei), 2) Orange-throated whiptail (Cnemidophorus hyperythrus), 3) Northern red-diamond rattlesnake (Crotalus ruber ruber), 4)coastal western whiptail (Cnemidophorus tigris multiscutatus), 5) San Diego desert woodrat (Neotoma lepida intermedia), 6) Northwestern San Diego pocket mouse (Chaetodipus fallax fallax), and the endangered 7) Stephens kangaroo rat (Dipodomys stephensi)

Appendix B contains a table of the sensitive species identified for the project area, their preferred habitat requirements, seasonal distribution, legal standing and the potential for their presence or absence on site. Following is a brief summary of the more detailed information provided in the table.

4.2 SITE CHARACTERISTICS

Topography

Topography on the grassland areas of the site is primarily gently sloping terrain, with elevations ranging from 1400 to 1600 feet.

Soils and Cover

The soils on site range from fine sandy loams to clay loam mixes. The soil types encountered on site are suitable for use by kangaroo rats and most small mammal fossorial species. Some of the grassland areas on the property have excessive clay content and portions of the property are low-lying and subject to flooding/moisture retention and are therefore unsuitable for long term occupancy by small burrowing mammals.

Areas of deep duff cover, downed wood, and rock outcrops are located throughout the site. These areas offer high quality habitat for herpetological species.

Vegetation and Disturbances

Nine major vegetation communities are present on the site: native grasslands, disturbed annual grasslands, sage scrub, chaparral, southern willow scrub,coast live oak woodland, engelman oak woodland, limited riparian woodlands, and eucalyptus woodland. A detailed vegetation mapping and inventory of the site was performed by Helix environmental as presented in Figure Three.

Within the trapping areas the vegetation communities were dominated by the following species:

-The disturbed annual grasslands are dominated by filaree (Erodium cicutarium and E. botrys)), bromes (Bromus diandrus, B. madritensis, B. mollis), wild oats (Avena barbata), fiddleneck (Amsinckia

tessellata), shortpod mustard (Hirschfeldia incana), and rag weed (Ambrosia artemisifolia). The non native grasslands on site have been heavily grazed and are dominated by dense filaree.

-The sage scrub community is found in remnant locations within the grassland areas, and at the edge of the grasslands. Dominant plant species in the sage scrub community are flat-top buckwheat (Eriogonum fasciculatum), horehound (Marrubium vulgare), California sagebrush (Artemesia californica) , deer weed and white sage (Salvia apiana).

-Areas of mature chaparral, dominants within this community include Sugar bush (Rhus ovata), poison oak (Toxicodendron diversilobum), tarragon (Artemesia dracunculus), black sage (Salvia mellifera), chamise (Adenostoma fasciculatum), and chaparral bearded tongue (Penstemon spectabilis).

-Also present were oak-riparian woodland along the main drainage and oak woodlands.

Disturbances present on the site include power easements, paved road, dirt parking areas, housing pad, stock tanks and a small pond. Recent use of the site for cattle grazing is evident. A couple of horses still forage on site.

Weather Conditions

Mid day temperatures were in the high sixties to low seventies throughout the survey. Moderate rainfall occurred twice during the survey period. Once during the small mammal trapping effort, and one during the herpetological survey. Trapping was suspended for two days during each of the rainfall periods to prevent potential loss of animals.

4.3.BIOLOGICAL SURVEYS

A total of 126 individuals from 19 native species of reptiles and amphibians were captured during the current trapping effort. A total of 281 individuals from 6 small mammal species were captured during the combined small mammal trapping surveys.

An additional 13 mammal species were identified from the scent station and through visual observations. These are the black-tailed jackrabbit (*Lepus californicus*), the Audubon's cottontail (*Sylvilagus audubonii*), Botta's pocket gopher (*Thomomys bottae*), California meadow vole (*Microtus calfornicus*), the California ground squirrel (*Spermophilus beecheyi*), racoon (*Procyon lotor*), ringtail *(Bassariscus astulus*), long-tailed weasel (*Mustela frenata*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargentus*), striped skunk (*Mephitis mephitis*), mule deer (*Odocoileus hemionus*)

The combined results of the 2001 and current small mammal trapping surveys are given in Table 1. The results of the herpetological pit trap surveys are given in Table 2. The results of the scent station survey are given in Table 3.

Table 1

Focused Trapping Results for Barnett Ranch Open Space Preserve

Trap Line	Trap Nights	Dulzura Kangaroo Rat *Dipodomys simulans*	Deer Mouse *Peronyscus maniculatis*	NW San Diego Pocket Mouse *Chaetodipus fallax fallax*	Harvest Mouse *Reithrodontomys megalotis*	San Diego Desert Woodrat *Neotoma lepida*	Parasitic Mouse *Peromyscus californicus*
2001 Survey	2100	91	104	12			
2003 Survey -A	150	7	14	2	5	3	
2003 Survey-B	150	9	11		3		
2003 Survey-C	150	6	7	4		1	2
Totals	**2,550**	**113**	**136**	**18**	**8**	**4**	**2**

TABLE TWO **PIT ARRAYS HERPETOFAUNA CAPTURE FOR BARNETT RANCH**

PIT ARRAY COORDINATES	ARRAY NUMBER	HABITAT TYPE	Gopher Snake *Pituophis melanoleucus*	kingsnake *Lampropeltis getulus*	Rosy Boa *Lichanura trivergata*	Striped Racer *Masticophis lateralis*	Coachwhip *Masticophis flagellum*	Western Rattlesnake *Crotalus veridis*	Red Diamond Rattlesnake *Crotalus ruber*	Night Snake *Hypsiglena torquata*	San Diego Horned Lizard *Phrynosoma coronatum*	Granite Night Lizard *Xantusia henshawi*	Side-blotched Lizard *Uta stansburiana*	Western Fence Lizard *Sceloporus occidentalis*	Orange-throated whiptail *Cnemidophorus hyperrythrus*	Coastal Western whiptail *Cnemidophorus tigris*	Western skink *Eumeces gilberti* Gilbert's Skink	California legless lizard *Anniella pulchra*	Pacific Slender Salamander *Batrachoseps pacificus*	Western Toad *Bufo boreas*	Pacific Treefrog *Hyla regilla*
	1	DAG	2				1				3		5	2						1	
	2	SS/CHAP		2									4	1	3	4					
	3	DAG/NAG	4		1			1			2		3			3					
	4	DAG/OW	5	1								1	4	3		2			1	9	3
	5	SS											3		1	3				1	
	6	SS	1										2								
	7	SS/DAG				1			1				3	2		2					
	8	SS/CHAP											2		1	3	2			1	
	9	SS/DAG/OW							1		1	1	3								
	10	OR/DAG		1						2			5		2	7		1		2	
TOTAL	**10**		**12**	**4**	**1**	**1**	**1**	**1**	**2**	**2**	**6**	**2**	**34**	**8**	**7**	**24**	**2**	**1**	**1**	**14**	**3**

DAG- DISTURBED ANNUAL GRASSLANDS
SS- SAGE SCRUB
CHAP - CHAPARRAL
NAG - NATIVE GRASSLANDS
OW - OAK WOODLAND
OR - OAK RIPARIAN

TABLE THREE **SCENT STATION SPECIES IDENTIFICATION RESULTS FOR BARNETT RANCH**

SCENT STATION COORDINATES	ARRAY NUMBER	HABITAT TYPE	Coyote *Canis latrans*	Gray Fox *Urocyon cinereorgenteus*	Ringtail *Bassariscus astutus*	Racoon *Procyon lotor*	Striped Skunk *Mephitis mephitis*	Long-tailed Weasel *Mustela frenata*	Bobcat *Lynx rufus*	Mule Deer *Odocoileus hemionus*	California ground Squir *Spermophilus beecheyi*	Botta's Pocket Gopher *Thomomys bottae*	Dulzura K-rat *Dipodomys simulans*	Mice *Peromyscus s*	Wood Rats *Neotoma sp.*	California Meadow vole *Microtus californicus*	Black-tailed Jackrabbit *Lepus californicus*	Audubon's Cottontail *Silvilagus audubonii*
	1	SS/CHAP	X				X		X				X	X	X			
	2	SS/NAG	X	X		X					X			X	X			X
	3	SS/DAG	X										X	X				
	4	OW/OR/DAG	X			X	X	X					X	X				
	5	ND/SS					X				X		X	X	X			
	6	DAG	X				X		X					X				
	7	DAG/SS				X			X				X	X	X			
	8	SS												X				
	9	NAG/OW	X	X										X	X			
	10	DAG/CHAP	X										X	X				
OTHER																		
VISUAL			X		X #9	X		X	X	X (3 F/1M)		X (mounts)				X (dead specir	X	X
TRACKS			X			X			X	X							X	X
SCAT			X						X	X							X	X

DAG- DISTURBED ANNUAL GRASSLANDS
SS- SAGE SCRUB
CHAP - CHAPARRAL
NAG - NATIVE GRASSLANDS
OW - OAK WOODLAND
OR - OAK RIPARIAN

4.4 OTHER

Raptors and Raptor Habitat

Most of the raptor species (eagles, hawks, falcons and owls) are experiencing population declines as a result of habitat loss. Some, such as the peregrine falcon, have also experienced population losses as a result of environmental toxins affecting reproductive success, animals destroyed as pests or collected for falconry, and other direct impacts on individuals. Only a few species, such as the red-tailed hawk and barn owl, have expanded their range in spite of or a result of human modifications to the environment. As a group, raptors are of concern to state and federal agencies.

Several raptor species were observed on site during the course of herpetological and small mammal surveys . These included the white tailed kite (Elanus leucurus), the red-tailed hawk (Buteo jamaicensis), Red-shouldered hawk (Buteo lineatus), American Kestrel (Falco sparverius), Cooper's hawk (Accipiter cooperii), Golden eagle (Aquila chrysaetos), Barn owl (Tyto alba).

Habitat Fragmentation and Wildlife Movement

Wildlife movement and the fragmentation of wildlife habitat have come to be recognized as important wildlife issues that must be considered in assessing impacts to wildlife. In summary, habitat fragmentation is the division or breaking up of larger habitat areas into smaller areas that may or may not be capable of independently sustaining wildlife and plant populations. Wildlife movement (more properly recognized as species movement) is the temporal movement of species along various types of corridors. Wildlife corridors are especially important for connecting fragmented wildlife habitat areas.

Animal populations persist longer in large patches of suitable habitat than in small patches, and will persist longer in patches close to other suitable patches than in patches more isolated from suitable neighbor.

5. CONCLUSIONS

Measuring and predicting species presence in an area of varied ecotone such as represented by the Barnett Ranch Open Space Preserve is a long term process which can span several years. Trapping results are affected by a multitude of factors including but not limited to physiographic features of landscape, vegetation types and densities, animal abundance, distribution and trapability. The results of the current survey should represent a point- in- time evaluation of a portion of the plausible resources on the property. Only through long term studies can these resources be quantified.

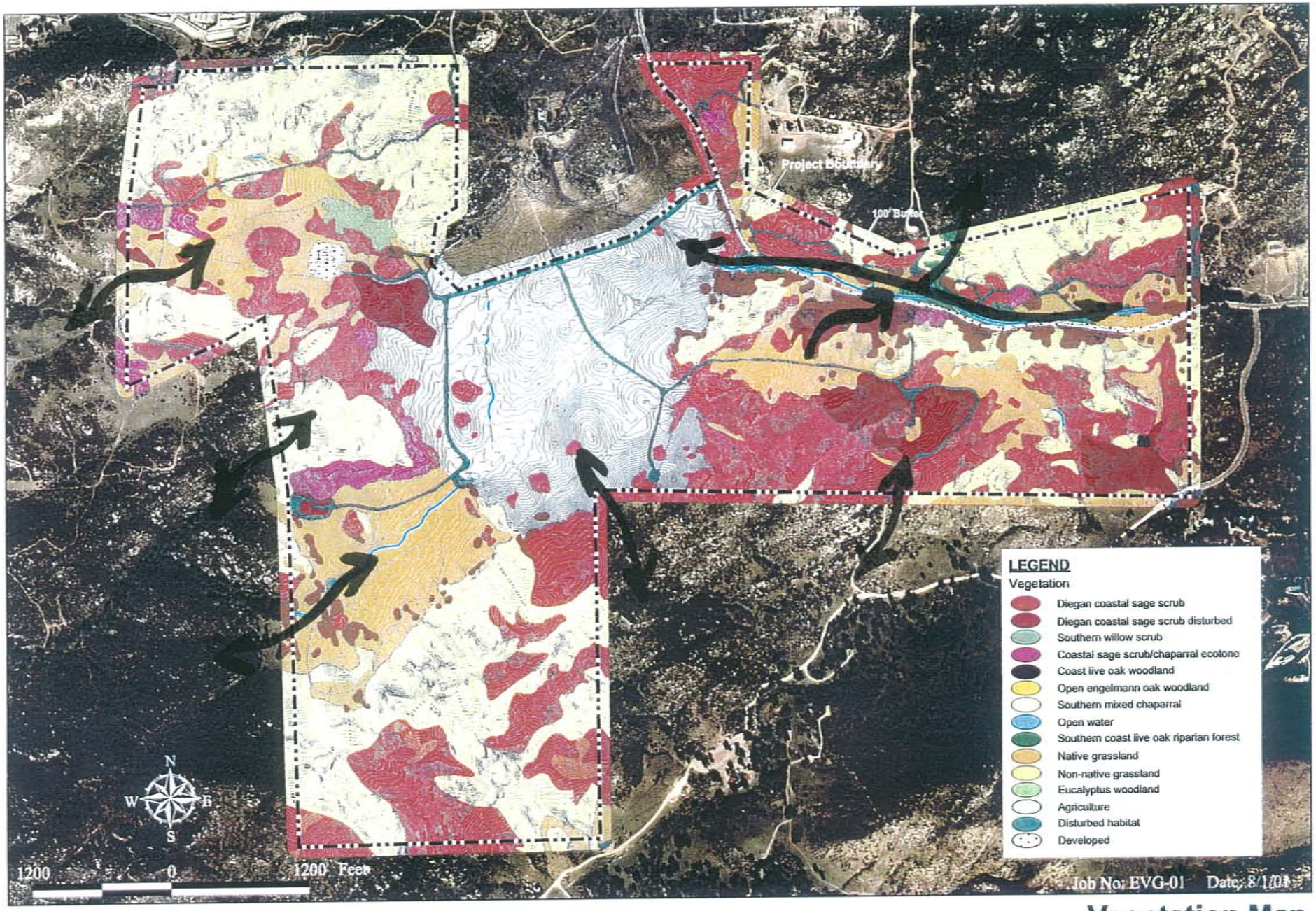
During the field surveys and inventory trapping surveys, good to high quality occupied habitat was observed on site for the following sensitive species: the San Diego horned lizard, the orange-throated whiptail, the coastal western whiptail, the northern red diamond rattlesnake, the San Diego desert woodrat, and the northwestern San Diego pocket mouse.

The Stephens' kangaroo rat was not captured and is not currently present on the site although good quality habitat for this species is found within the grasslands on site.

There is good quality habitat on site that provides nesting and/or roosting habitats for eagles hawks and falcons. The grassland and scrub habitat also provides foraging habitat for raptor species.

Based on the wildlife observations on site, and apparent usage of the area by small and large mammals , in addition to on site refugia. the Barnett Ranch open space site has areas that could be considered as important wildlife corridors. Potential wildlife corridors on site are identified in Figure 4.

Figure Four **Wildlife Corridor Routes For Barnett Ranch Open Space Preserve**



Vegetation Map

BARNETT RANCH

HELIX

REFERENCES

Burt, W. H., 1986. A Field Guide to the Mammals in North American North of Mexico. Houghton Mifflin Company, Boston, Massachusetts.

Case T.J. and Fisher R.N. 2001, Measuring and Predicting Species Presence: Coastal Sage Scrub Case Study

California Natural Diversity Data Base, 1999. Data Base report on threatened, endangered, rare or otherwise sensitive species and communities in the vicinity of the project site.

Garrett, K. and J. Dunn, 1981. Birds of Southern California. Los Angeles Audubon Society. The Artisan Press, Los Angeles, California.

Grinnell, J., 1933. Review of the Recent Mammal Fauna of California. University of California Publications in Zoology. 40:71-234.

Hall, E.R., 1981. The Mammals of North America, Volumes I and II. John Wiley and Sons, New York, New York.

Hanes, T.L., R.D. Friesen and K. Keane, 1989. Alluvial Scrub Vegetation in Coastal Southern California. U.S. Department of Agriculture, Forest Service Gen. Tech. Rep. PSW-110.

Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press.

Ingles, L.G., 1965. Mammals of the Pacific States. Stanford University Press, Stanford, California.

Laudenslayer, Jr., W.F., W.E. Grenfell, Jr., and D.C. Zeiner, 1991. A Check-list of the Amphibians, Reptiles, Birds and Mammals of California. California Fish and Game 77:109-141.

Munz, P.A., 1974. A Flora of Southern California. University of California Press, Berkeley, California.

O'Farrell, M.J. and C. Uptain, 1989. Assessment of Population and Habitat Status of the Stephens' kangaroo rat (Dipodomys stephensi). The Resources Agency, Sacramento, California.

Price, M.V. and P.R. Endo, 1989. Estimating the Distribution and Abundance of a Cryptic Species, Dipodomys stephensi (Rodentia: Heteromydidae) and Implications for Management. Conservation Biology 3:293 - 301.

Remsen, Jr., J.V., 1978. Bird Species of Special Concern in California. Non-game Wildlife Investigations. Wildlife Management Branch Administrative Report No 78-1. Report prepared for the California Department of Fish and Game.

Soil Conservation Service, 1980. Soil of Riverside County, California.

Stebbins, R.C., 1985. A Field Guide to Western Reptiles and Amphibians, Houghton Mifflin Company, Boston.

The Wildlife Society, Southern California Chapter, 1993. Biology and Management of Rodents in Southern California, Workshop on rodents.

U.S. Fish and Wildlife Service, 1996. Review of plant and animal taxa for listing as endangered or

threatened species; notice of review. Federal Register Vol. 61, No. 40.

Vergne, PJ. Results of Trapping Survey for SKR on Ten Projects in the Ramona area (2000-2003).

Williams, D.F., 1986. Mammaliam Species of Special Concern in California. Wildlife Management Division Administrative Report 86-1. prepared for The Resources Agency, California Department of Fish and Game.

Appendix A -Floral and Faunal Compendium

* denotes non-native species

ANGIOSPERMAE: DICOTYLEDONES	DICOT FLOWERING PLANTS
Anacardiaceae	**Sumac family**
Malosma laurina	Laurel sumac
Rhus ovata	Sugar bush
Rhus trilobata	Squaw bush
Toxicodendron diversilobum	Poison oak
Apiaceae	**Carrot family**
**Foeniculum vulgare*	Sweet fennel
Asteraceae	**Sunflower family**
Ambrosia acanthicarpa	Annual bur-sage
Ambrosia artemisifolia	Common ragweed
Ambrosia psilostachya	Western ragweed
Artemisia californica	California sagebrush
Artemisia dracunculus	Tarragon
Baccharis salicifolia	Mulefat
Chaenactis glabriuscula	Coastal pincushion
Chrysothamnus nauseosus	Rabbit brush
**Cirsium vulgare*	Bull thistle
**Cynara cardunculus*	Artichoke thistle
Gutierrezia californica	California matchweed
Helianthus annuus	Annual sunflower
Heterotheca grandiflora	Telegraph weed
Lasthenia californica	Goldfields
Layia glandulosa	White tidy tips
Layia platglossa	Tidy tips
Lessingia filaginifolia	Cudweed aster
**Taraxacum officinale*	Common dandelion
Xanthium strumarium	Cocklebur
Boraginaceae	**Borage family**
Amsinckia menziesii	Fiddleneck
Cryptantha intermedia	Popcorn flower
Cryptantha micrantha	Tiny popcorn flower

Brassicaceae	**Mustard family**
**Capsella bursa-pastoris*	ShepherdÆs purse
**Hirschfeldia incana*	Short-podded mustard
**Raphanus sativa*	Wild radish
**Sisymbrium irio*	London rocket
Caprifoliaceae	**Honeysuckle family**
Sambucus mexicana	Blue elderberry
Chenopodiaceae	**Saltbush family**
**Salsola tragus*	Russian thistle
Cucurbitaceae	**Gourd family**
Marah macrocarpa	Wild cucumber
Cuscutaceae	**Dodder family**
Cuscuta californica	California dodder
Euphorbiaceae	**Spurge family**
Croton californica	Croton
Eremocarpus setigerus	Doveweed
Euphorbia nutans	Spurge
**Ricinus communis*	Castor bean
Fabaceae	**Pea family**
Astragalus pomonensis	Locoweed
Lathyrus vestitus	Wild lavender pea
Lotus scoparius	Deer weed
Lupinus bicolor	Miniature lupine
Lupinus concinnus ?	Elegant lupine
Melilotus alba	White sweetclover
Fagaceae	**Oak family**
Quercus berberidifolia	Scrub oak
Quercus engelmannii	Engelmann oak
Quercus agrifola	Coast live oak
Geraniaceae	**Geranium family**
**Erodium cicutarium*	Red-stemmed filaree
**Erodium botrys*	Long beak filaree
Hydrophyllaceae	**Waterleaf family**
Emmenanthe penduliflora	Whispering bells
Nemophila menziesii	Baby blue-eyes

Lamiaceae	**Mint family**
**Marrubium vulgare*	Horehound
Salvia apiana	White sage
Salvia columbariae	Chia
Salvia mellifera	Black sage
Myrtaceae	**Myrtle family**
**Eucalyptus* sp.	Eucalyptus
**Eucalyptus globulus*	Blue gum
Papaveraceae	**Poppy family**
Eschscholzia sp.	Poppy
Eschscholzia californica	*California poppy*
Polygonaceae	**Buckwheat family**
Eriogonum fasciculatum	California buckwheat
Rumex crispus	Curly dock
Rosaceae	**Rose family**
Adenostoma fasciculatum	Chamise
Salicaceae	**Willow family**
Salix laevigata	Red willow
Salix lasiolepis	Arroyo willow
Scrophulariaceae	**Snapdragon family**
Mimulus guttatus	Yellow monkeyflower
Penstemon spectabilis	Chaparral beardÆs tongue
Scrophularia californica	Snapdragon
Solanaceae	**Nightshade family**
Datura wrightii	Jimson weed
Nicotiana glauca	Indian tobacco
Urticaeae	**Nettle family**
Urtica dioica	Stinging nettle
Viscaceae	**Mistletoe family**
Phoradendron sp.	Mistletoe

ANGIOSPERMAE: MONOCOTYLEDONAE	**MONOCOT FLOWERING PLANTS**
Liliaceae	**Lily family**
Dichelostema pulchellum	Blue dicks
Poaceae	**Grass family**
Achnatherum sp.	Needlegrass
**Avena barbata*	Slender wild oats
Bromus carinatus	California brome
**Bromus diandrus*	Ripgut brome
**Bromus madritensis*	Red brome
**Bromus mollis*	Soft chess
**Bromus tectorum*	Cheatgrass
**Lolium perenne*	Perennial ryegrass
**Schismus barbatus*	Mediterranean grass

Taxonomy and nomenclature follow Hickman 1993 and Munz 1974.

FAUNA

Plethodondidae	**Salamanders**
Batrachoseps pacificus	Pacific slender salamander
Bufonidae	**True Toads**
Bufo boreas	Western toad
Hylidae	**Treefrogs**
Hyla regilis	Pacific tree frog
Iguanidae	**Iguanas and their allies**
Sceloporus occidentalis	Western fence lizard
Uta stansburiana	Side-blotched lizard
Phrynosoma coronatum blainvillei	San Diego horned lizard
Xantusiidae	**Night lizards**
Xantusia henshawl	Desert night lizard
Teiidae	**Whiptails and their allies**
Cnemidophorus hyperythrus	Orange-throated whiptail
Cnemidophorus tigris multiscutatus	Coastal whiptail
Anguidae	**Alligator lizards**
Gerrhonotus multicarinatus	Southern alligator lizard
Anniellidae	**Legless Lizards**
Anniella pulchra pulchra	California legless lizard Silvery
Boidae	**Boas and pythons**
Lichanura trivirgata	Rosy boa
Colubridae	**Colubrids**
Masticophis flagellum	Coachwhip
Masticophis lateralis	Striped Racer
Pituophis melanoleucucs	Gopher snake
Lampropeltis getulus	Common kingsnake
Hypsiglena torquata	Night snake
Scincidae	
Eumeces gilberti	Western Skink
Viperidae	**Vipers**
Crotalus ruber	Red diamond rattlesnake
Crotalus viridis	Western rattlenake

AVES	BIRDS
Ardeidae	**Herons and bitterns**
Ardea herodias	Great blue heron
Anatidae	**Swans, geese and duck**
Anas platyrhynchos	Mallard
Charadriidae	**Plovers and relatives**
Charadrius vociferus	Killdeer
Cathartidae	**Vultures**
Cathartes aura	Turkey vulture
Accipitridae	**Kites, hawks and eagles**
Elanus leucurus	White-tailed kite
Accipiter cooperi	CooperÆs hawk
Buteo lineatus	Red-shouldered hawk
Buteo jamaicensis	Red-tailed hawk
Aquila chrysaetos	Golden eagle
Falconidae	**Caracaras and falcons**
Falco sparverius	American kestrel
Phasianidae	**Quails and pheasants**
Callipepla californica	California quail
Recurvirostridae	**Avocets and stilts**
Himantopus mexicanus	Black-necked stilt
Columbidae	**Pigeons and doves**
Columba fasciata	Band-tailed pigeon
Zenaida macroura	Mourning dove
Tytonidae	**Barn owl**
Tyto alba	Barn owl
Cuculidae	**Typical cuckoos**
Geococcyx californianus	Greater roadrunner
Trochlidae	**Hummingbirds**
Calypte anna	AnnaÆs hummingbird
Calypte costae	CostaÆs hummingbird
Picidae	**Woodpeckers and relatives**
Colaptes auratus	Northern flicker

Tyrannidae	**Tyrant flycatchers**
Sayornis nigricans	Black phoebe
Tyrannus verticaulis	Western kingbird
Alaudidae	**Larks**
Eremophila alpestris	Horned lark
Hirundinidae	**Swallows**
Tachycineta thalassina	Violet-green swallow
Hirundo rustica	Barn swallow
Corvidae	**Crows and ravens**
Aphelocoma californica	Western scrub jay
Corvus brachyrhynchos	American crow
Corvus corax	Common raven
Paridae	**Titmice**
Parus inornatus	Plain titmouse
Aegithalidae	**Bushtits**
Psaltriparus minimus	Bushtit
Troglodytidae	**Wrens**
Troglodytes aedon	House wren
Turdidae	**Thrushes**
Sialia currucoides	Mountain bluebird
Mimidae	**Mimic thrushes**
Mimus polyglottos	Northern mockingbird
Toxostoma redivivum	California thrasher
Sturnidae	**Starlings**
Sturnus vulgaris	European starling
Ptilogonatidae	**Silky flycatchers**
Phainopepla nitens	Phainopepla
Emberizidae	**Warblers, sparrows, blackbirds and relatives**
Pipilo erythrophthalmus	Spotted towhee
Pipilo crissalis	California towhee
Sturnella neglecta	Western meadowlark
Euphagus cyanocephalus	BrewerÆs blackbird
Molothrus ater	Brown-headed cowbird

Fringillidae	**Finches**
Carpodacus neomexicanus	House finch
Carduelis psaltria	Lesser goldfinch
Passeridae	**Old World sparrows**
Passer domesticus	House sparrow
Introduced species	
Meleagris gallopavo	Turkey
MAMMALIA	**MAMMALS**
Leporidae	**Rabbits and hares**
Sylvilagus audubonii	AudubonÆs cottontail
Lepus californicus	Black-tailed jackrabbit
Sciuridae	**Squirrels, chipmunks and marmots**
Spermophilus beecheyi	California ground squirrel
Geomyidae	**Pocket gophers**
Thomomys bottae	BottaÆs pocket gopher
Heteromyidae	**Pocket mice and kangaroo rats**
Chaetodippus fallax fallax	Northwestern San Diego pocket mouse
Dipodomys simulans	Dulzura kangaroo rat
Cricetidae	**Cricetine mice and rats**
Reithrodontomys megalotis	Western harvest mouse
Peromyscus californicus	Parasitic mouse
Peromyscus maniculatus	Deer mouse
Neotoma lepida	Desert woodrat
Microtus californicus	California vole
Canidae	**Foxes, wolves and relatives**
Canis latrans	Coyote
Urocyon cinereoargenteus	Gray fox
Procyonidae	**Raccoons and relatives**
Bassariscus astutus	*Ringtail*
Procyon lotor	Raccoon
Mustelidae	**Weasels and relatives**
Mustela frenata	Long-tailed weasel
Mephitis mephitis	Striped skunk
Felidae	**Cats**
Lynx rufus	Bobcat

Cervidae	**Deer, elk and relatives**
Odocoileus hemionus	Mule deer

Nomenclature follows Garth & Tilden 1986, Hall 1981, Laudenslayer et al. 1991, and Stebbins 1966.

Appendix B. Sensitive Biological Resources - Barnett Ranch Open Space Reserve				
Resource	Habitat And Distribution	Activity Period	Status Designation	Occurrence Probability
FISH				
NA	Small pond only carp observed			
AMPHIBIANS				
Western spadefoot *Scaphiopus hammondii*	Grasslands and occasionally hardwood woodlands; largely terrestrial but for breeding, requires rainpools or other ponded water for 3+ weeks; burrows in loose soils during dry season; Central Valley and foothills, coast ranges, inland valleys, to Baja Calif.	October - April (following onset of winter rains)	FED: ND STATE: CSC	Low potential in habitats on or near site. Low probability on site. Not observed.
Arroyo southwestern toad *Bufo microscaphus californicus*	Washes and arroyos with open water; sand or gravel beds; for breeding, pools with sparse overstory vegetation. Coastal and a few desert streams from Santa Barbara Co. to Baja Calif.	Mar - Jul	FED: END STATE: CSC	Very limited potential. Could occur in vicinity and use grasslands for foraging
REPTILES				
Southwestern pond turtle *Clemmys marmorata pallida*	Permanent or nearly permanent water in a wide variety of habitats; requires basking sites such as partially submerged logs, rocks, or open mud banks. Central California to northwestern Baja California.	Year-round with reduced activity Nov. - Mar.	FED: ND STATE: CSC	None. Not observed in small man created pond on site.
Rosy boa *Lichanura trivagata*	Mix brushy cover and rocky soils. Desert and chaparral, found from the coast to the Mojave and Colorado deserts. Prefers moderate to dense vegetation.	Year round	FED: ND STATE: ND	Present. Suitable habitat on site. Captured during survey
Coastal Western whiptail *Cnemidophorus tigris multiscutatus*	Floodplains and terraces with perennial plants and open areas nearby; sea level to 3,000 feet elevation; inland and coastal valleys of Riverside, Orange, and San Diego Cos. to Baja Calif.	Mar. - Jul. (with reduced activity Aug. - Oct.)	FED: ND STATE: CSC	Present. Suitable habitat on site. Captured during survey

Northern Red Diamond Rattlesnake *Crotalus ruber ruber*	Desert shrub, open chaparral, woodlans, grasslands. San Bernardino, Riverside, San Diego Cos. to Baja Calif.		FED: ND STATE: CSC	Present. Suitable habitat on site. Captured during survey
BIRDS				
White-tailed kite *Elanus leucurus*	Open country in South America and southern North America.	Year-round	FED: ND STATE: ND (nesting)	Observed during survey.
Cooper's hawk *Accipiter cooperi*	Woodland and semi-open habitats, riparian groves and mountain canyons. Uncommon permanent resident in coastal, mountains, and deserts of Southern California. Transients fairly common on coast in fall.	Year round; predominant in summer	FED: ND STATE: CSC	Observed during the surveys.
Golden eagle *Aquila chrysaetos*	Grasslands, brushlands, deserts, oak savannas, open coniferous forests and montane valleys. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	Year round diurnal	FED: ND STATE: CSC (nesting and wintering)	Observed during the surveys.

MAMMALS				
Townsend's western big-eared bat ***Plecotus townsendii,***	Requires caves, mines, tunnels, buildings or other similar structures for roosting. May use separate sites for night, day, hibernation or maternity roosts. Found in all but subalpine and alpine habitats throughout California.	Year round Nocturnal	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property.
Pallid bat ***Antrozous pallidus***	Day roost in caves, crevices, mines and occasionally hollow trees and buildings. Night roosts may be more open sites, such as porches and open buildings. Hibernation sites are probably rock crevices. Grasslands, shrublands, woodlands and forest from sea level through to mixed conifer. Throughout Southern California.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: CSC	Low. Because there are no suitable roost sites in the property limits, this species does not roost on the property. However, it may forage over the property .

Spotted bat Euderma maculatum	Found in the western North America from southern British Columbia to the Mexican border, at a small number of widely scattered localities. Habitats range from arid deserts and grasslands through mixed conifer forest up to 10,600 foot elevation. Prefers rock crevices in cliffs, also uses caves and buildings.	Spring, Summer, Fall Nocturnal Hibernates in Winters	FED: ND STATE: CSC	Good. Because there are suitable roost sites on the property and nearby

California mastiff bat Eumops perotis californicus	Historically from north-central California south to northern Baja California, eastward across the southwestern United States, and northwestern Mexico to west Texas and Coahuila (Hall, 1981; Williams, 1986). In California, most records are from rocky areas at low elevations where roosting occurs primarily in crevices.		FED: ND STATE: CSC	Good. Because there are suitable roost sites on the property and nearby
San Diego black-tailed jackrabbit ***Lepus californicus bennettii***	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats.	Year round, diurnal and crepuscular activity	FED: ND STATE: CSC	Observed on site
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	Sandy herbaceous areas, usually with rocks or coarse gravel. Arid coastal areas in grassland, coastal scrub and chaparral. San Diego, San Bernardino, Los Angeles, and Riverside Counties.	Nocturnal; active year round.	FED: ND STATE: CSC	Captured on site

Stephens' kangaroo rat *Dipodomys stephensi*	Open areas with sparse perennial cover with areas of loose soil where the soil depth is at least 0.5 meters. Also inhabit disturbed areas such as fallow fields by using the burrows of other rodents, including pocket gophers and Beechey ground squirrel.	Nocturnal; active year round	FED: END STATE: THR	None captured but suitable habitat on site. Not currently present.

San Diego desert woodrat *Neotoma lepida intermedia*	Moderate to dense canopies, particularly in rocky areas. Coastal sage scrub and chaparral. Coastal southern California.	Nocturnal; active year round	FED: ND STATE: CSC	Captured on site

Legend

FED: Federal Classifications

END Taxa listed as endangered
THR Taxa listed as threatened
PE Taxa proposed to be listed as endangered
PT Taxa proposed to be listed as threatened
ND Not designated as a sensitive species

STATE: State Classifications

END Taxa listed as endangered
THR Taxa listed as threatened
CE Candidate for endangered listing
CT Candidate for threatened listing
CFP California Fully Protected. Species
CSC California Species of Special Concern..
SA Special Animal. Taxa of concern to the California Natural Diversity Data Base
ND Not designated as a sensitive species

PICTURE ONE - PIT ARRAY IN SAGE SCRUB COMMUNITY

FIGURE TWO - PIT ARRAT IN DISTURBED ANNUAL GRASSLANDS /OAK

PICTURE THREE - PIT ARRAY IN CHAPARRAL COMMUNITY

FIGURE FOUR - PIT ARRAT IN DISTURBED ANNUAL GRASSLANDS

PICTURE FIVE - GOLDEN EAGLE FLYING IN OAKS ON PROPERTY

FIGURE SIX - COACHWIP ON DIRT ROAD ON PROPERTY

PICTURE SEVEN - GOPHER SNAKE FROM ONE OF THE PIT TRAPS

FIGURE SIX - GOPHER SNAKE EATING TADPOLES IN POND ON PROPERTY

Appendix G
BIRD COUNT METHODOLOGY AND DATA SHEETS

Bird Count Methodology (adapted from U.S. Department of Agriculture General Technical Report PSW-GTR-144)

- Approach point with minimal disturbance;
- Record point, date and time;
- Begin counts immediately thereafter;
- Count birds in first 3 minutes and latter 7 minutes separately;
- Record species in order of observation;
- Record in appropriate habitat column. For other habitat types, use other (OTR) and make a note of habitat;
- Record in appropriate distance column (less than 150 feet or greater than or equal to 150 feet). Be as precise as possible for those near 150 feet;
- Record flyovers in their own column;
- Record juveniles or recently fledged birds separately on another line;
- An unseen bird that flushes on approach or leaving point should be counted if no other individuals of that species are observed during count;
- If a flock is encountered it maybe followed after to determine composition and size; and
- An unknown call or bird may be tracked down after the count to confirm identity.

Keep a list of any other species observed between points or outside a 150-foot area while walking to or from point locations.

Aerial Photograph

BIOLOGICAL RESOURCES REPORT FOR THE
BARNETT RANCH OPEN SPACE PRESERVE

Project Boundary

N
W E
S

500 0 500 Feet

Job No: CSD-01 Date: 12/22/03-JP

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Vegetation and Sensitive Resources

BIOLOGICAL RESOURCES REPORT FOR THE BARNETT RANCH OPEN SPACE PRESERVE

TUVU (flying)
Raptor Nest
OTWH
Sc
Qe
RDRS
COBO
SDDW
Cd 15
Cd 20
Cd 30
Cd 75
CWWH
Cd 50
Cd 13
NWPM 4
NWPM 3
HOLA
PRFA
Cd 5
Cd
GOEA (flying)
GOEA
NWPM
Cd 80
Cd 200
Cd 100
GRBH
WTKI
VI 10
WTKI 2
GREG (flying)
SDDW
RITA
Cd 130
CATH
COHU
NWPM 2
WEBL
Cd 17
Cd 25
Cd 35
Cd 10
PSFC
Cd 32
COHA (flying)
SILL
Cd 1150
Mh
CWWH
CORB
MUDE
SHHA
LOSH
NWPM
SDDW
COHU
LASP
BCSP
GOEA 2 (flying)
RCSP
Cd 35
Cd 15
SDBJ
Cd 14
Cd 12
Cd 6
Cd TUVU
PREA
Cd 200

LEGEND

Vegetation

Tier I
- Southern coast live oak riparian forest
- Freshwater seep
- Riparian scrub
- Southern willow scrub
- Open water
- Open Engelmann oak woodland
- Coast live oak woodland
- Wildflower Field

Tier II
- Diegan coastal sage scrub
- Diegan coastal sage scrub disturbed
- Coastal sage scrub/chaparral ecotone

Tier III
- Southern mixed chaparral
- Non-native grassland

Tier IV
- Eucalyptus woodland
- Disturbed habitat
- Agriculture
- Developed

- Streambed

Sensitive Resources

Animals

Reptiles

OTWH	Orange-throated whiptail *(Cnemidophorus hyperythrus beldingi)*
COWH	Coastal whiptail *(Cnemidophorus tigris multiscutatus)*
CORB	Coastal rosy boa *(Lichanura trivirgata roseofusca)*
SILL	Silvery legless lizard *(Anniella pulchra pulchra)*
RDRS	Northern red-diamond rattlesnake *(Crotalus exsul)*

Birds

RCSP	Southern California rufous-crowned sparrow *(Aimophila ruficeps canescens)*
LOSH	Loggerhead shrike *(Lanius ludovicianus)*
GOEA	Golden eagle *(Aquila chrysaetos)*
WTKI	White-tailed kite *(Elanus leucurus)*
CATH	California thrasher *(Toxostoma redivivum)*
COHU	Costa's hummingbird *(Calypte costae)*
LASP	Lark sparrow *(Chondestes grammacus)*
PSFC	Pacific slope flycatcher *(Empidonax difficilis)*
COHA	Cooper's hawk *(Accipiter cooperi)*
SHHA	Sharp-shinned hawk *(Accipiter striatus)*
HOLA	California horned lark *(Eremophila alpestris)*
BCSP	Black-chinned sparrow *(Spizella atrogularis)*
GREG	Great egret *(Ardea alba)*
TUVU	Turkey vulture *(Cathartes aura)*
WEBL	Western bluebird *(Sialia mexicana)*
COBO	Common barn owl *(Tyto alba)*
GRBH	Great blue heron *(Ardea herodias)*
PRFA	Prairie falcon *(Falco mexicanus)*

Mammals

RITA	Ringtail *(Bassariscus astutus)*
NWPM	Northwestern San Diego pocket mouse *(Chaetodipus fallax fallax)*
SDBJ	San Diego black-tailed jackrabbit *(Lepus californicus bennettii)*
SDDW	San Diego desert woodrat *(Neotoma lepida intermedia)*
MUDE	Southern mule deer *(Odocoileus hemionus fuliginata)*

Plants

Mh	Felt-leaved monardella *(Monardella hypoleuca ssp. lanata)*
Cd	Delicate clarkia *(Clarkia delicata)*
Qe	Engelmann oak *(Quercus engelmannii)*
Vl	San Diego County viguiera *(Viguiera laciniata)*
Sc	Ashy spike-moss *(Selaginella cinerascens)*

N
W E
S

500 0 500 Feet

Job No: CSD-01 Date: 12/22/03-JP

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