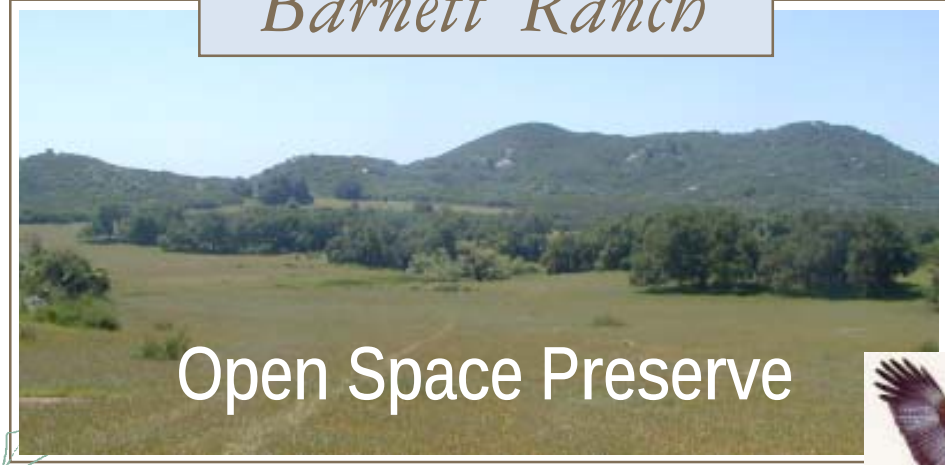
Barnett Ranch



Open Space Preserve

Area-Specific Management Directives

Clarkia delicata

April 9, 2004

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

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Barnett Ranch Open Space Preserve
Area-specific Management Directives

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SUMMARY OF FINDINGS

The 728-acre Barnett Ranch property is located in central San Diego County, in the County of San Diego's (County's) Ramona Community Planning Area east of State Route (SR) 67 and south of SR 78. Barnett Ranch is partially within the San Vicente Corridor identified in the County's Multiple Species Conservation Program (MSCP) Subarea Plan (1997), and was purchased by the County in 2002 to be dedicated as part of the MSCP Preserve. This document provides the area-specific management directives (ASMDs) for the Barnett Ranch property, pursuant to the requirements of the County's MSCP Subarea Plan and Framework Management Plan (County 2001). ASMDs are intended to describe specific management actions that are appropriate to the habitats and species found in a local area, take into account the particular circumstances of a given area, and enable the County to fulfill its responsibilities and obligations under the MSCP and the County's Implementing Agreement.

Barnett Ranch was a working ranch from the late 1800s until recently, with cattle grazed throughout the site and field crops formerly raised on the central plain. Grading has occurred for construction of several roadways and one residential pad. In addition, the entire site was burned by the 2003 Cedar Fire. Prior to the fire, 16 sensitive vegetation communities/habitats plus developed areas occurred on the property. The following vegetation communities on 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.

No federally or state listed endangered or threatened plant or animal species has been observed on site. Five sensitive plant species have been observed, including California Native Plant Society List 1B felt-leaved monardella (*Monardella hypoleuca* ssp. *lanata*) and delicate clarkia (*Clarkia delicata*), as well as Engelmann oak (*Quercus engelmannii*) trees. Twenty-eight sensitive animal species were observed/detected. Species that are both federal species of concern and state species of concern or state fully protected include orange-throated whiptail (*Cnemidophorus hyperythrus beldingi*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), loggerhead shrike (*Lanius ludovicianus*) and white-tailed kite (*Elanus leucurus*). Other species of particular interest include golden eagle (*Aquila chrysaetos*), which forages on the site and is fully protected under state law and addressed by the federal Bald Eagle Protection Act, and ringtail (*Bassariscus astutus*), which is state fully protected. Several of these species also are considered sensitive by the County. In addition to these sensitive biological resources, 27 cultural (including pre-historic and historic) resources have been recorded on the site, some of which are considered significant.

The previous disturbances on the site result in recovery/restoration being a particularly important part of management activities on the site. A key concept of the MSCP is the use of "Adaptive Management Techniques" directed at the conservation and recovery of individual species. Adaptive management and an associated ecological monitoring program are designed to inform managers of the status and trends of Covered Species, natural communities, and landscapes in a manner that provides data to allow informed management actions and decisions, with modifications to the management actions when monitoring of the resources indicates that changes are needed. It is particularly useful where there is uncertainty regarding the efficacy of certain management measures and/or the needs of target species. In the case of Barnett Ranch, uncertainty regarding the ability of native species to

recover from previous disturbances makes an adaptive management approach especially relevant. For this reason, the management actions presented in these ASMDs provide decision-points and potential responses, rather than definitively describing one set of actions to be taken on the property.

In accordance with the Framework Management Plan, each management directive has been designated as Priority 1 or Priority 2. This designation recognizes the fact that many of the directives cannot be immediately implemented, but instead will occur over the life of the MSCP. The ability to implement and the timing of many of the management directives will be directly related to the availability of funding in any fiscal year and on the priority. The priorities are, therefore, intended to assist in decisions on where and how to spend limited funds. Priority 1 designation is given to directives that protect the resources in the MSCP Preserve, including management actions that are necessary to ensure that Covered Species are adequately protected. Directives other than those required for Covered Species status and other long-term items that may be implemented during the life of the MSCP as funding becomes available are designated as Priority 2. The directives described in detail in Section 4 of this document are summarized as follows:

Biological Management and Enhancement

Priority 1

- Maintain the quality and diversity of native habitat types on the site.
- Maintain existing populations of sensitive species.
- Comply with applicable conditions of coverage for MSCP Covered Species.
- Control undesirable animal species as necessary.

Priority 2

- Conduct focused invasive species surveys.
- Restore disturbed areas to native habitat appropriate to the site.
- Enhance value of the site for sensitive species.
- Reintroduce or enhance populations of sensitive species.

Public Access, Trails, and Recreation

Priority 1

- Control public access in sensitive areas.
- Direct public access to appropriate locations.
- Limit types of public use to those appropriate for the site.
- Provide appropriate interpretive materials.
- Properly maintain public use facilities.

Priority 2

- Establish volunteer programs to implement management directives.

Litter/Trash

Priority 1

- Publicize and enforce regulations regarding littering/dumping.

Adjacency Management Issues

Priority 1

- Enforce Preserve boundaries.
- Educate residents of surrounding areas regarding adjacency issues.

Hydrological Management

Priority 1

- Retain Klondike Creek in its natural condition.

Grazing Policy

Priority 2

- Consider grazing as a technique to meet biological objectives.

Fire Prevention, Control, and Management

Priority 1

- Provide for human safety as the first priority of every fire management activity.
- Suppress 100 percent of all unplanned wildland fires, regardless of ignition source, to the smallest size possible but no more than 10 acres.
- Protect all values at risk from wildfire in a prioritized manner.
- Conduct rehabilitation of sites affected by wildland fire or fire management practices so that there is no permanent loss of natural resource values.
- Control fire risk and hazardous fuels such that ecological and social values are not placed at risk from extreme fire behavior or fire management actions.
- Ensure that future development adjacent to the site is constructed and maintained as necessary and appropriate to provide fire safety.
- Ensure the sustainability of ecological values consistent with an MSCP Preserve through the use of prescriptive fire.

In addition, these ASMDs specifically address access to the site for emergency, safety, and police services; describe the biological monitoring program; identify guidelines regarding academic and professional scientific research opportunities and biologic activities; and provide measures for cultural resource protection and interpretation.

1.0 INTRODUCTION

The 728-acre Barnett Ranch property is located in central San Diego, in the County of San Diego's (County's) Ramona Community Planning Area 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).

Barnett Ranch is partially within the San Vicente Corridor identified in the County's Multiple Species Conservation Program (MSCP) Subarea Plan (1997), and was purchased by the County in 2002 to be dedicated as part of the MSCP Preserve. The entire site was burned by the Cedar Fire in October 2003.

The MSCP Subarea Plan and Implementing Agreement required preparation of a Framework Management Plan for that portion of the MSCP Preserve which is within the County's Subarea. This Framework Management Plan (County of San Diego 2001) further required the preparation and implementation of area-specific management directives (ASMDs) in a phased manner for logical discrete areas of land within the Subarea as those lands are committed for permanent preservation. This document provides the ASMDs for the Barnett Ranch property. A detailed matrix of management responsibilities is included as Appendix A.

2.0 MULTIPLE SPECIES CONSERVATION PROGRAM

2.1 MSCP AND COUNTY SUBAREA PLAN

The MSCP began in July 1991, evolving from a way to address the mitigation needs of the City of San Diego Metropolitan Wastewater Department to a comprehensive plan to address the impacts of regional growth on native species and their habitats within a 900-square-mile area in southwestern San Diego County (Figure 3). As a Habitat Conservation Plan under federal requirements and a Natural Community Conservation Plan under state requirements, adoption of the MSCP allowed participating jurisdictions to receive (and grant to other parties as third party beneficiaries) permits to impact 85 federal- and state-listed and species of concern. To mitigate for the anticipated impacts, the MSCP identified areas of high biological value, and presented a process for the conservation and management of a 171,920-acre Preserve necessary to protect the covered species. The Preserve is being assembled through conservation of lands already in public ownership, public acquisition of private lands from willing sellers, and private development contributions through development regulations and mitigation of impacts.

The County Subarea represents 43 percent of the overall MSCP study area, and has a disproportionate share of the remaining undeveloped areas (Figure 4). As a result of the amount of undeveloped land, the County Subarea contains 63 percent of identified biological core areas and 81 percent of linkages. These linkages connect the remaining habitat in the western part of the MSCP area to the large federal landholdings outside of the MSCP area to the east. Thus, conservation within the County Subarea is considered crucial to the success of the MSCP.

The County Subarea is further subdivided into three segments: Lake Hodges, South County, and Metro-Lakeside-Jamul, with the Barnett Ranch site in the latter segment. In this segment, Preserve boundaries were not designated; rather, pre-approved mitigation areas consisting of high-value habitats were identified and a set of Preserve design goals and criteria for cores and linkages were established for consideration during project review. As described in additional detail in Section 3.3, the site is located partially within the identified San Vicente corridor (Figure 5).

The following activities are precluded on land that is dedicated as part of the MSCP Preserve: grading, excavation, or placement of soil, sand, rock, gravel, or other material; clearing of vegetation; construction, erection, or placement of any building or structure; vehicular activities; trash dumping; use for any purpose other than as open space; or planting of vegetation. In addition, fuel management activities are precluded, unless these activities are part of an approved site-specific plan or prescribed wildfire management program for the Preserve.

Where land is preserved, management is necessary to ensure that biological values are maintained over time and remain viable. This management is important because of the loss of habitat elsewhere, fragmentation of habitat, previous habitat disturbance, and indirect effects from surrounding land uses. Specifically, the County is required to manage, maintain and monitor land acquired within its Preserve boundaries. To allow for management, public use, and public safety activities to occur, exceptions to the above-noted prohibitions generally include the following:

1. Activities required to be conducted pursuant to a revegetation, habitat management, habitat restoration, recovery program for a covered species, or landscaping plan approved by the Director of Planning and Land Use.

2. Vegetation removal or application of chemicals for vector control purposes where expressly required by written order of the Department of Health Services for the County of San Diego, in a location and manner approved in writing by the Director of Planning and Land Use of the County of San Diego, pursuant to County of San Diego MSCP Subarea Plan Section 1.9.

3. Existing uses and recreational activities identified in approved plans.

4. Policing by local, state, and federal law enforcement agencies and fire protection agencies as necessary.

5. Approved scientific research and biological uses.

6. Necessary infrastructure consistent with the requirements of the Subarea Plan.

7. Existing unpaved equestrian and hiking trails in accordance or pursuant to an approved management plan or map.

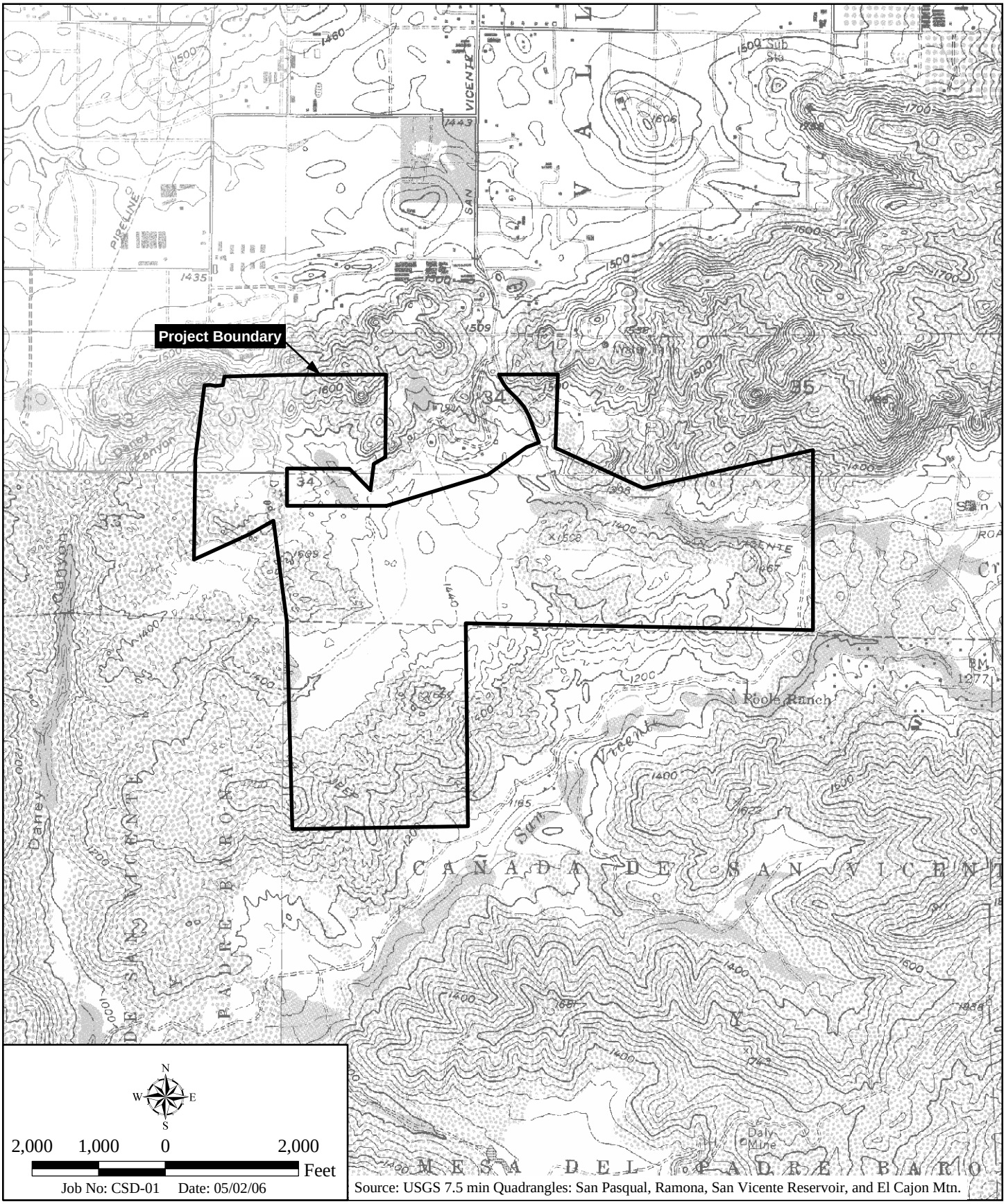
8. Nonmotorized bicycle use on specific trails in accordance or pursuant to an approved management plan or map.

9. Fire clearing as allowed under an approved site-specific plan or fire management plan.

Regional Location Map

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

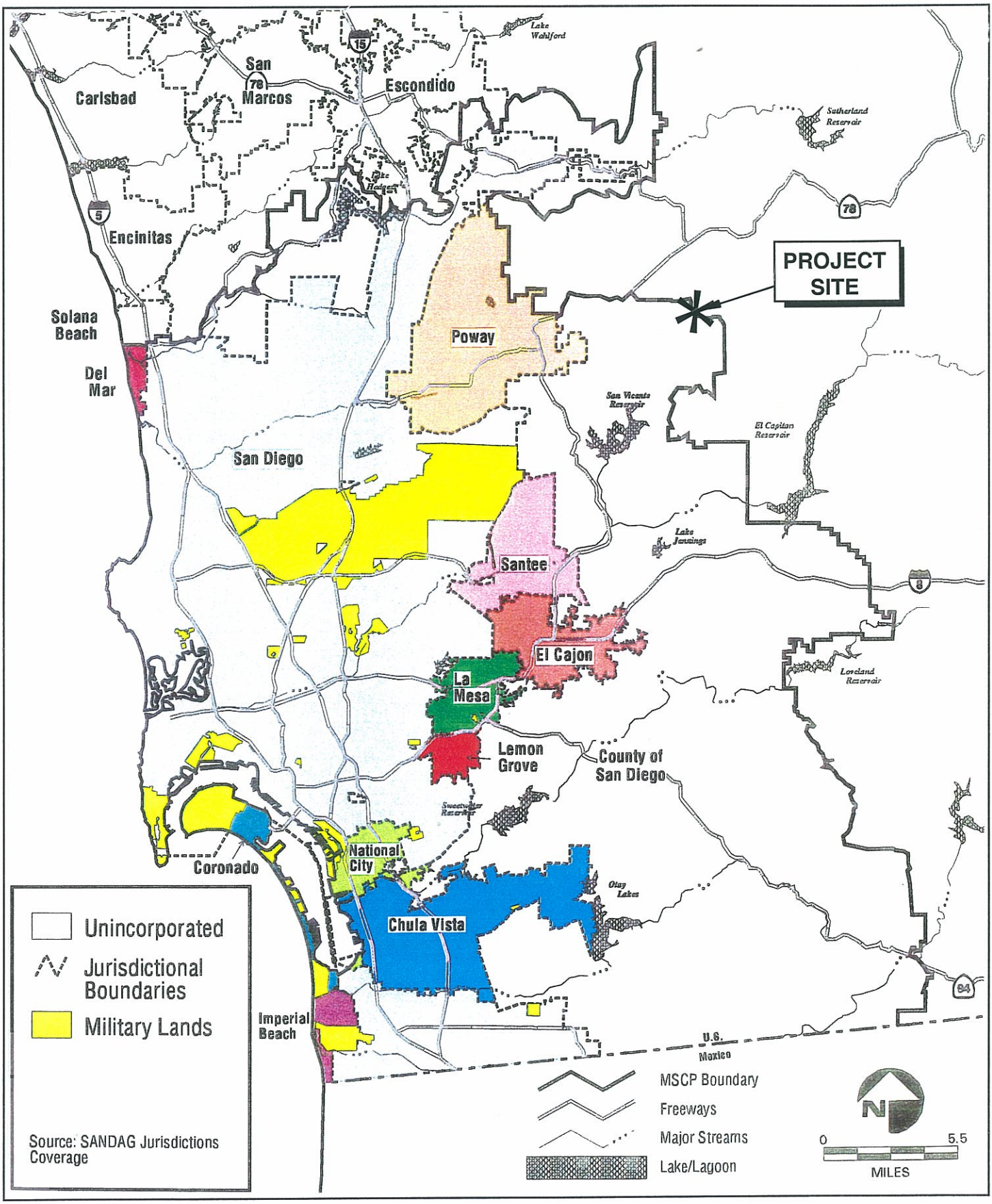
Figure 1



Project Vicinity Map

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

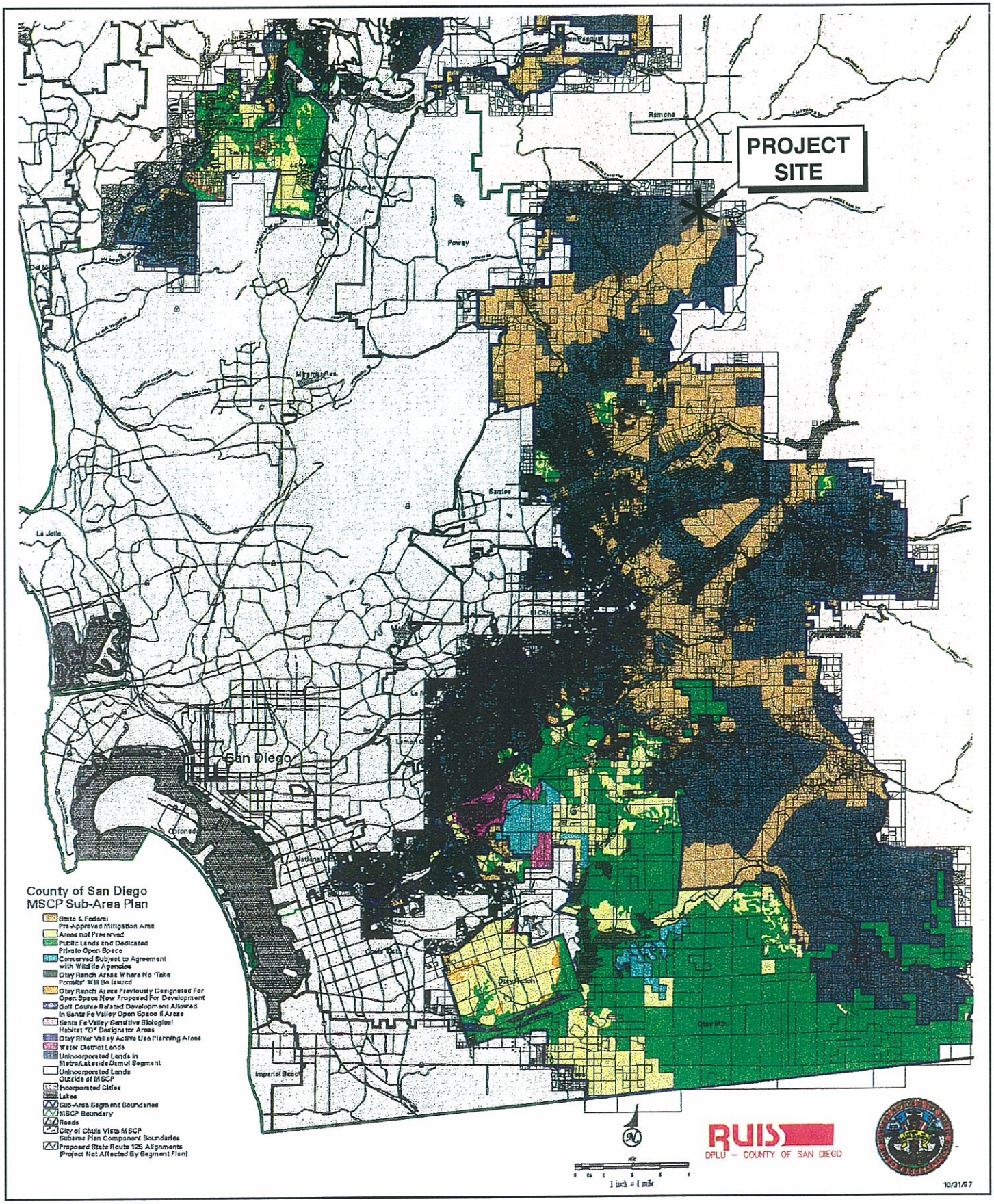
Figure 2



MSCP Planning Area

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

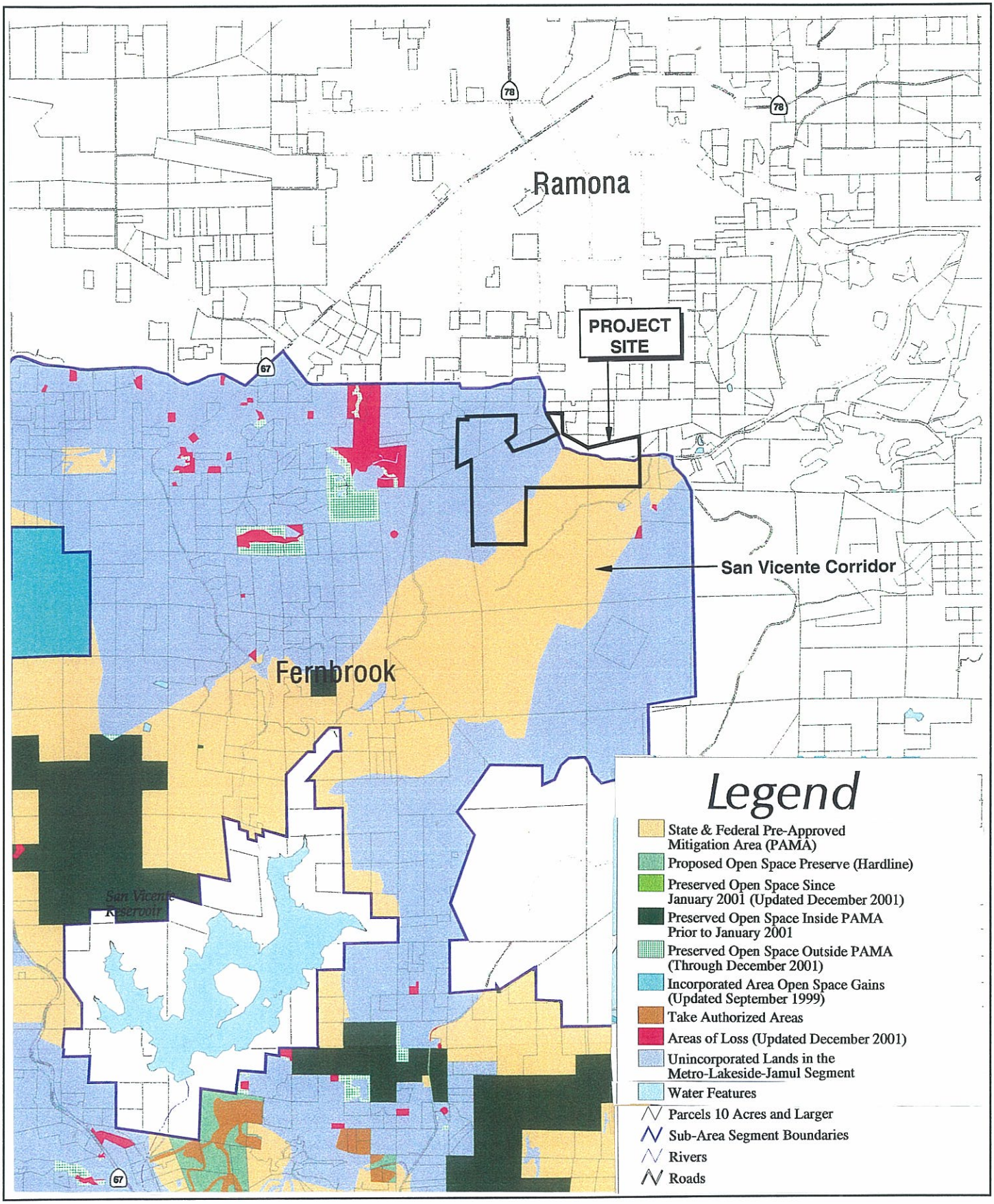
Figure 3



County of San Diego MSCP Subarea

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 4



San Vicente Corridor

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 5

The MSCP contains several elements of import with regard to habitat management: (1) species-specific management directives; (2) requirement for preparation of a Framework Management Plan; (3) establishment of a Habitat Management Technical Committee; and (4) adoption of the MSCP Biological Monitoring Plan.

Table 3-5 of the MSCP (City of San Diego 1998) contains management directives that are required as a condition of coverage for certain particularly sensitive species, which are addressed in this document as applicable. MSCP Section 6.3.1 and Implementing Agreement Section 10.10 required the County to prepare a Framework Management Plan, as described in additional detail below.

Pursuant to Section 14.7 of the Implementing Agreement, the County, in coordination with the U.S. Fish and Wildlife Service Refuge System, has established the Habitat Management Technical Committee (HMTC). This committee is comprised of Preserve management personnel from state, federal, and local jurisdictions, as well as water utilities. The HMTC addresses technical issues of Preserve management by reviewing and discussing existing and new management issues and responding with practical, case-sensitive solutions.

The MSCP also established approved monitoring protocol requirements in the MSCP Biological Monitoring Program (Ogden 1996). This plan is to be reviewed, utilized as a guide, and modified as necessary for biological purposes. The County has been proposed to act as the repository for all data regarding preserved land, and, in this capacity, will coordinate with the wildlife agencies to identify new monitoring methods and adaptive management techniques. The monitoring protocols originally adopted are under review, and are anticipated to be revised.

2.2 FRAMEWORK MANAGEMENT PLAN

The Implementing Agreement requires the County to ensure that there is adequate management of Preserve lands. To this end, as noted above, the MSCP and Implementing Agreement required submittal of a Framework Management Plan for the portion of the MSCP Preserve within the County's Subarea. The document was submitted to the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG; collectively, "Wildlife Agencies") on August 31, 2001. The County is responsible for management of the County-owned lands committed to the Preserve, meeting the conditions of coverage, and biological monitoring.

The overall MSCP goal is to maintain and enhance biological diversity in the region and conserve viable populations of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation and ultimate extinction. To this end, the Framework Management Plan sets forth management goals and objectives, along with general management directives that apply to all areas of the County's MSCP Subarea Plan. In order to assure that the goal of the MSCP Preserve is attained and fulfilled, management objectives for the County of San Diego MSCP Preserve are as follows:

1. To ensure the long-term viability and sustainability of native ecosystem function and natural processes throughout the MSCP Preserve.

2. To protect the existing and restored biological resources from activities causing disturbance or that are incompatible within and adjacent to the MSCP Preserve while accommodating compatible public recreational uses.

3. To enhance and restore, where feasible, the full range of native plant associations in strategic locations and functional wildlife connections to adjoining habitat in order to provide viable wildlife and sensitive species habitat.

4. To facilitate monitoring of selected target species, habitats, and linkages in order to ensure long-term persistence of viable populations of priority plant and animal species and to ensure functional habitats and linkages.

5. To provide for flexible management of the MSCP Preserve that can adapt to changing circumstances to achieve the above objectives.

Topics addressed as general management directives include restoration; public access, trails, and recreation; litter/trash and materials storage; adjacency management issues; flood control; fire prevention, control, and management; grazing; emergency, safety, and police services; monitoring; research opportunities; and cultural resources. Preserve management activities are intended to include, but not be limited to, such recovery actions as enhancement, restoration, avoidance, non-native predator control, and invasive plant control. A matrix of duties/checklist is required for each area.

The Framework Management Plan also includes the following items specific to the Metro-Lakeside-Jamul Segment: overall policies and guidelines, critical biological resource areas, and specific management policies and directives. Major issues identified for management in the Metro-Lakeside-Jamul Segment are the following, in order of priority:

1. Intense land uses and activities adjacent to and in covered species habitat.
2. Dumping, litter and vandalism.
3. Itinerant living quarters.
4. Mining, excavation, and related processing activities.
5. Exotic (non-native), invasive plants and animals.
6. Enhancement and restoration needs.
7. Water quality.
8. Utility, facility, and road repair, construction, and maintenance activities.
9. Cultural resources.

2.3 AREA-SPECIFIC MANAGEMENT DIRECTIVES

The Framework Management Plan incorporates a requirement for the subsequent preparation and implementation of ASMDs. These directives are required to be developed following baseline surveys, using generally accepted practices and procedures for management of biological Preserves, and in compliance with the criteria established by the Framework Management Plan. They are intended to be specific management actions that are appropriate for the habitats and species found in a local area and take into account the particular circumstances of the given area. In addition to addressing the general directives of the Framework Management Plan and species-specific management requirements of MSCP Table 3-5, ASMDs are required to address fuel management activities.

A key concept of the MSCP is the use of "Adaptive Management Techniques" directed at the conservation and recovery of individual species. This term refers to modifying management actions

when monitoring of the resources indicates that changes are needed. It is particularly useful where there is uncertainty regarding the efficacy of certain management measures and/or the needs of target species. Adaptive management and an associated ecological monitoring program are designed to inform managers of the status and trends of Covered Species, natural communities, and landscapes in a manner that provides data to allow informed management actions and decisions. Application of adaptive management principles can range from deliberate "learning by doing" to rigorous application of the scientific method, including formation of detailed hypotheses coupled with statistical analysis. Adaptive Management Techniques may be species-specific and consist of conservation measures that go beyond fencing and fuel management and are directed toward assisting a declining species to regain viability.

The MSCP provides for biological monitoring and preparation of an annual report. Based upon this review and biological monitoring effort, it is intended that adjustments in management will be made as necessary. The Monitoring Plan is intended to inform MSCP Preserve managers and staff of the general trends of wildlife use and species preservation, as well as indicate areas where special management focus is needed. It is the intent of these ASMDs to allow for modification of management techniques based on both site-specific observations and input from the HMTC.

3.0 PROPERTY DESCRIPTION

3.1 PHYSICAL CHARACTERISTICS

The site consists of a central undulating plain, surrounded by steep, rocky slopes. Elevation ranges from approximately 1,180 feet above mean sea level (amsl) in the southeastern corner of the site to approximately 1,670 feet amsl on the peak in the southern portion of the site. Klondike Creek crosses the northeastern corner of the site, with several smaller drainages located throughout the site.

Canyons and ridges similar to those on the project site surround the property. Daney Canyon lies approximately 2,000 feet to the west of the property. San Vicente Creek lies to the south of the property (approximately 150 feet at its closest point) flowing from northeast to southwest into the San Vicente Reservoir. The site drains to Daney Canyon and Klondike Creek, both of which drain into San Vicente Creek. Ultimately, this creek drains to the San Diego River.

Recent land use on site includes agriculture (grazing) within the middle section of the property. An estate residence exists on an approximately 15-acre inholding parcel in the northern portion of the site, three San Diego Gas & Electric (SDG&E) powerline easements run across the site, as do three paved roadways (San Vicente Road, Chuck Wagon Road and Deviney Lane). Other than a farmstead to the north, the site is surrounded by undeveloped or sparsely developed land on all sides (Figure 6). The Barona Ranch Indian Reservation lies approximately one-half mile east of the property.

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 7). Due to previous land use, the "O" and "A" soil horizons are essentially missing from Vista, Placentia and Greenfield sandy loams in the valley (Tierra Data and FIREWISE 2000, 2004). The erosion hazard for the on-site soils is generally considered to be severe, with the exception of Vista rocky coarse sandy loam, which is moderate (Bowman 1973).

3.2 BACKGROUND

Barnett Ranch was a working ranch from the late 1800s until recently. The early ranchers are believed to have raised field crops such as barley, wheat, and oats. Cattle and a few horses also were grazed on the ranch, likely throughout the site.

In the late 1990s, owners of the property began to process a proposal for residential development of the site. Instead, the County offer to purchase the property as a portion of its MSCP Preserve system was accepted, with escrow closing in January 2002. Following this purchase, the last cattle on the property were rounded up in May 2002 and moved to a neighboring site.

3.3 MSCP CONTEXT

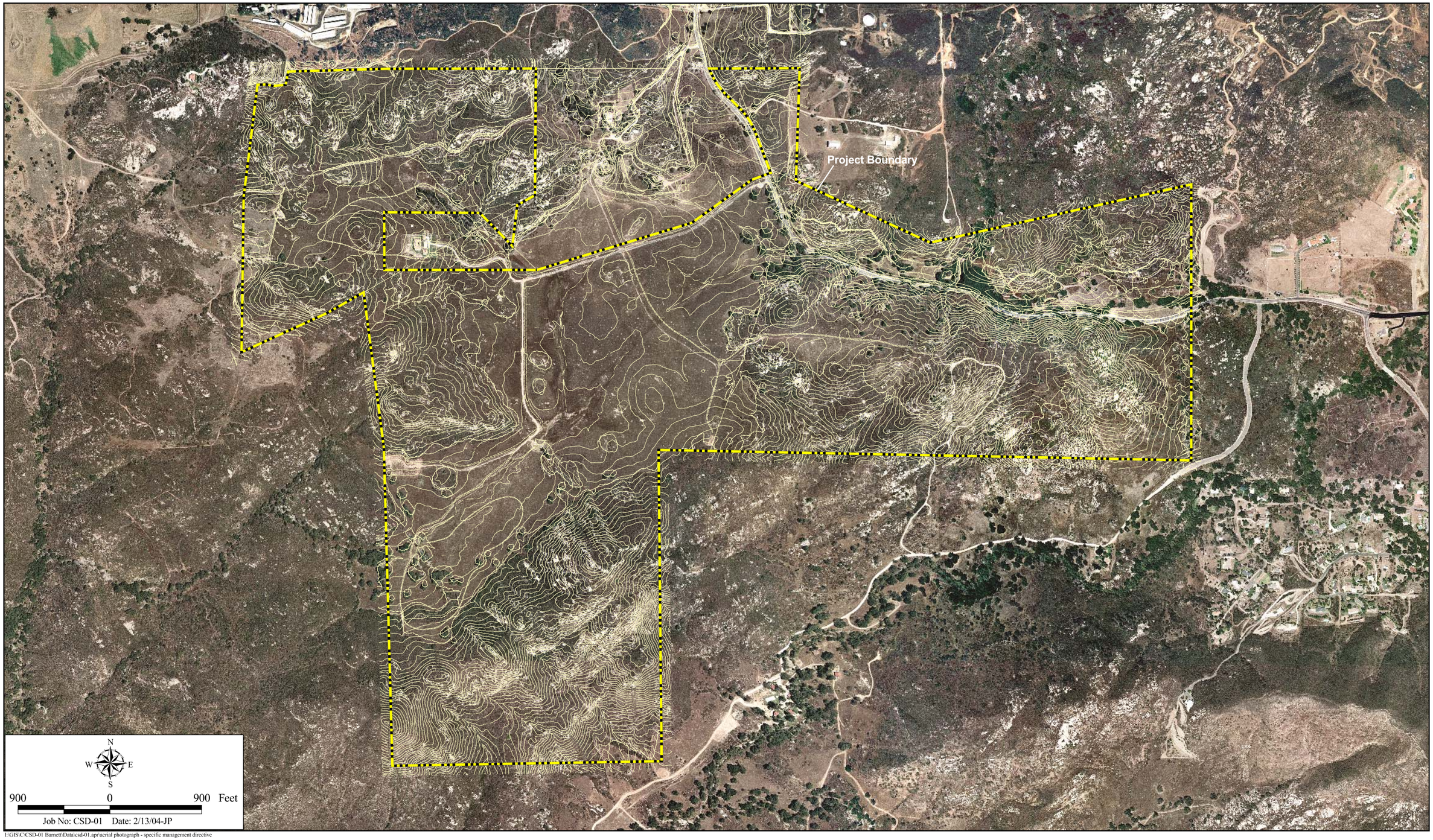
As previously noted, Barnett Ranch is partially within the San Vicente Corridor identified in the County's MSCP Subarea Plan (Figures 4 and 5). The south-facing slopes in the southern portion of the site contribute to the corridor's function. The regional corridor connects the biological core area around 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, which flow southwest and southeast may provide 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 eastern portion of the site.

3.4 BIOLOGICAL RESOURCES

HELIX Environmental Planning, Inc. (HELIX) prepared a Biological Resources Report for the property in 2004. This report summarized the results of biological surveys performed by others in 1998, and by HELIX and its subconsultants in 2001 and 2003. 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). 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; 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 herpetological, and small mammal



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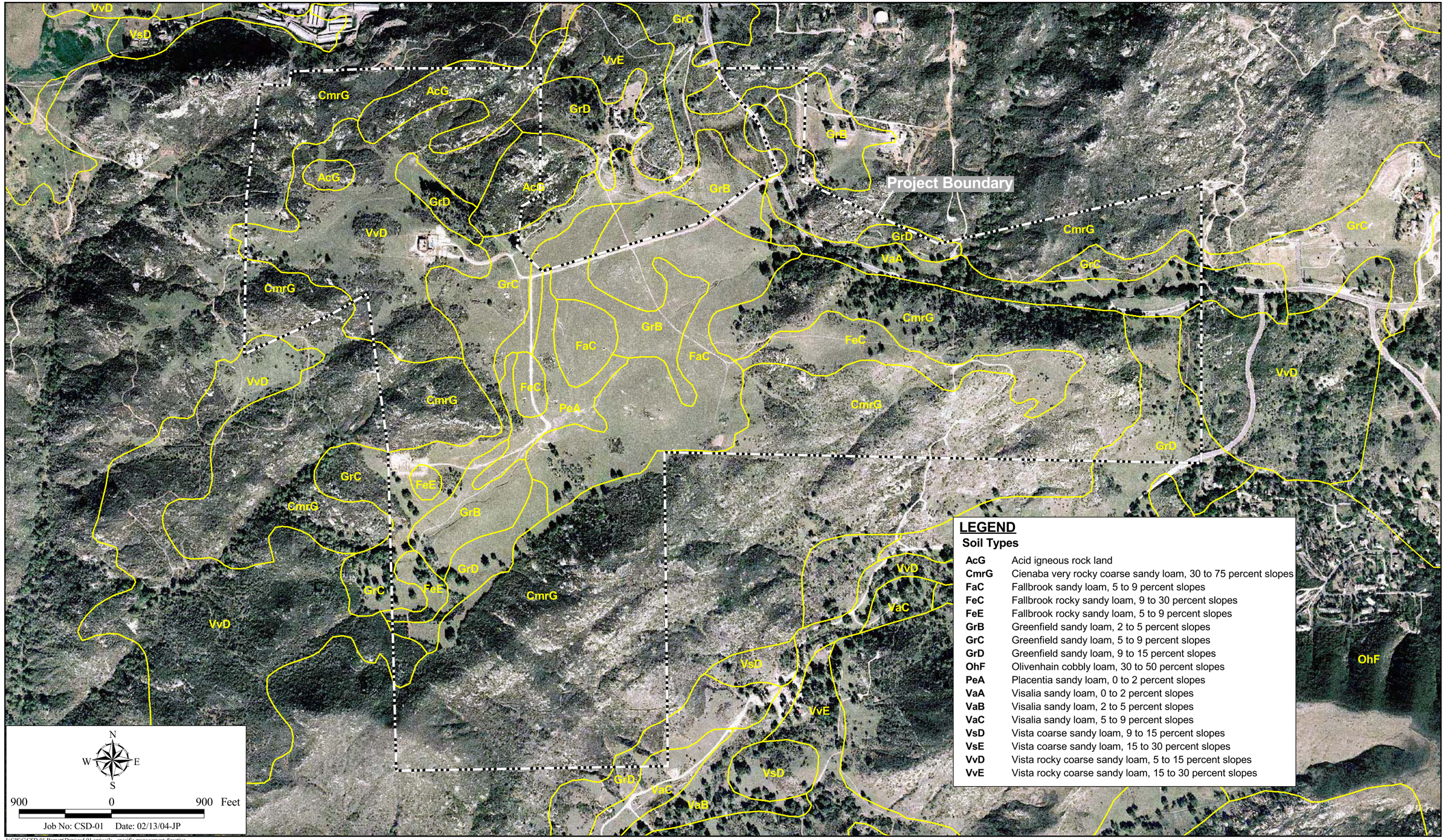
Aerial Photograph with Topography

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

HELIX

Figure 6



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Soils

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 7

inventory trapping and tracking surveys from April 24 through 29, 2003. All but the December bird count surveys were performed prior to the October 26, 2003 Cedar Fire.

3.4.1 Vegetation Communities

Sixteen vegetation communities/habitats plus developed areas occur on the property. These are listed in Table 1 with their respective acreages and shown on Figure 8. Descriptions of these communities are provided below. 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.

Table 1
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).

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.

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.

Freshwater Seep

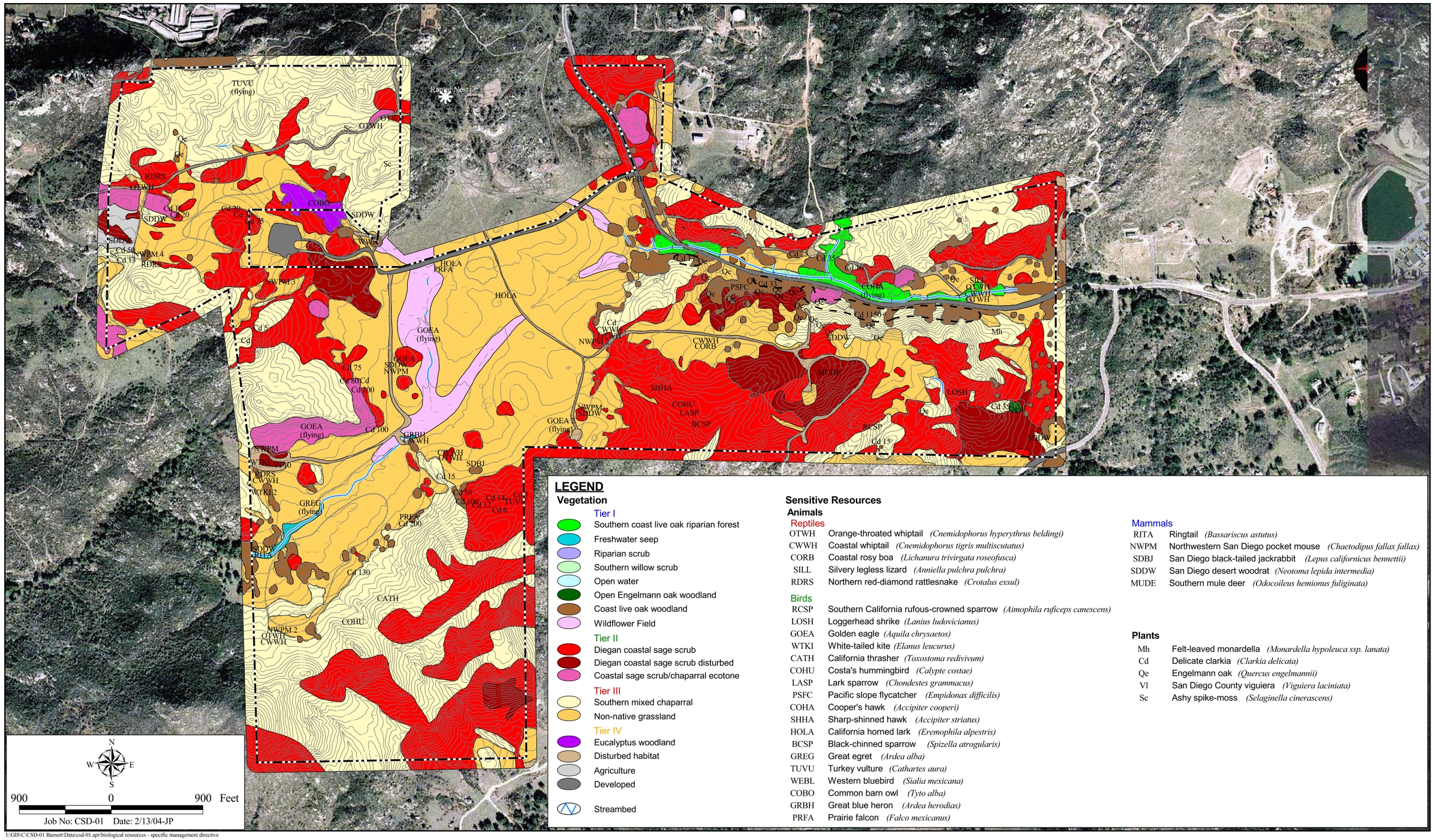
Freshwater seeps are made up of mostly perennial herbs, especially sedges (*Carex* spp.), rushes (*Juncus* ssp.), and water cress (*Nasturtium officinale*; Holland 1986). The on-site freshwater seep occurs in the western portion of the site in the lowest elevations of the grassland and totals approximately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

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 northeastern portion of the site north of San Vicente Road along the creek.

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.



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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Biological Resources

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 8

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.

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 southwestern portion of the site.

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*).

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 (*Castilleja exserta*) 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 was recovering from a previous fire, primarily occured in the northeastern portion of the site, and was characterized by an increased number of non-native grasses and less cover. Disturbed Diegan coastal sage scrub totals approximately 31.7 acres.

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.

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.

Non-native Grassland

Non-native grassland areas in the past may have supported native grassland or other native communities 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 these areas 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.

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.

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 extreme northwestern end of the site, where a misplaced fence allows cattle from off site to graze on site up to the fence.

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 eastern portion of the site and along the SDG&E power line easements across the northwestern, northern, and eastern portions of the site. Disturbed habitat totals approximately 13.6 acres on site.

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 crosses the southeastern tip of the property. Deviney Lane and the access road to the inholding estate traverse the property in a northeastern to southwestern alignment along the northern property boundary. Developed land totals approximately 6.8 acres on site.

3.4.2 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 the California Native Plant Society (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 B.

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 below approximately 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 D
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.

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. The majority of the species assessed were considered to have very low or low potential to occur. Of those species considered to have moderate potential to occur, only one, Gander's ragwort (*Senecio ganderi*) is state-listed (as rare). The following species were considered to have moderate potential to occur and are CNPS List 1B and County Group A species: Lakeside ceanothus (*Ceanothus cyaneus*), Mission Canyon bluecup (*Githopsis diffusa* ssp. *filicaulis*), Robinson's pepper-grass (*Lepidium verginicum* var. *robinsonii*), and Ramona horkelia (*Horkelia truncata*). Finally, San Diego barrel cactus (*Ferocactus viridescens*), a CNPS List 1B and County Group B species, was considered to have moderate potential to occur. None of the species evaluated was considered to have high potential to occur. A complete list of sensitive plant species evaluated is contained in Appendix C.

3.4.3 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 by the California Department of Forestry and Fire Protection (CDF), and 1 species is state fully protected. 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.

One cactus wren (*Campylorhynchus brunnicapillus couesi*), a state species of special concern and County sensitive species, was observed off site within prickly pear (*Optunia ficus indica*) near adjacent homes. Appropriate habitat for this species does not, however, occur on site. In addition, one County sensitive red-shouldered hawk (*Buteo lineatus*) also was observed off site.

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, also in the western portion of the site.

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 in the southwestern portion of the 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 in the western portion of the site, near the freshwater seep.

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 northern portion of the property.

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 in the northwestern portion of the site.

Great blue heron (*Ardea herodias*)
Status: --/CDF
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.

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 along the western edge of the property.

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.

Listed or Sensitive Animal Species with Potential to Occur

Not all animals that use the site will necessarily be observed during surveys. The potential for animal species not observed to occur was therefore assessed (Appendix D). Most of the species evaluated were considered to have very low or low potential to occur; none was considered to have high potential to occur. Of those with moderate (or low to moderate) potential to occur, three are federally listed as endangered: least Bell's vireo (*Vireo bellii pusillus*), Stephens' kangaroo rat (*Dipodomys stephensi*), and Pacific pocket mouse (*Perognathus longimembris pacificus*). The remaining species with moderate potential to occur are of lower sensitivity: monarch butterfly (*Danaus plexippus*), coast patch-nosed snake (*Salvadora healepis virgultea*), San Diego banded gecko (*Coleonyx variegates abbotti*), San Diego ringneck snake (*Diadophis punctatus similes*), Bell's sage sparrow (*Amphispiza belli belli*), merlin (*Falco columbarius*), Dulzura California pocket mouse (*Chaetodipus californicus femoralis*), greater western mastiff bat (*Eumops perotis californicus*), and southern grasshopper mouse (*Onychomys torridus ramona*).

The site is near the geographic and elevational limit of the range of coastal California gnatcatcher. While the species may occasionally use the site, Barnett Ranch is not anticipated to support a permanent gnatcatcher population. Similarly, while arroyo toad associated with San Vicente Creek may occasionally use the upland areas near the creek for estivation, the site is not expected to support a population.

3.4.4 Local Wildlife Corridors

The habitat on site supports resident wildlife including rabbits, ground squirrels, bobcats, rats, and mice, along with 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 8). 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 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.

3.5 CULTURAL RESOURCES

An Archaeological Resources Report was prepared for the property by Affinis in 2003. The report summarized the results of a records search and literature review, as well as review of site records and notes from a survey of the project site conducted in 1997. The 1997 surveys resulted in the documentation of 27 cultural resources scattered over much of the site, representing both prehistoric and historic use of the site. There was, however, virtually no ground visibility over most of the project area during these surveys, due to dense vegetation.

3.5.1 Pre-historic Period

The site provided a number of resources that would have been valuable to the Kumeyaay people that occupied the area. The variety of vegetation communities (and associated animal species) would have provided a wide variety of resources to be used for food, medicine, tools, shelter, ceremonial and other uses. In addition, numerous rock outcrops provided locations for milling and tool construction, and Klondike Creek and a spring said to have existed just north of the site would have provided water sources.

Two Native American habitation complexes have been identified on the property, and another habitation complex is located just north of the site. The sites within these habitation complexes contain bedrock milling features, a variety of artifact types (pottery, ground and flaked stone artifacts), and midden soil with apparent subsurface cultural deposits. Due to limited ground visibility, the amount and areal extent of cultural material may be much greater than what was noted during the survey. Several sites in the central plain have been disturbed by subsequent agricultural activities. Twelve of the identified prehistoric sites have not been tested to determine site boundaries and assess significance; therefore, they are considered potentially significant. Five milling stations with no

artifacts and apparently no subsurface cultural material were assessed as not significant, as were several isolates observed on the property.

Possible yoni features (ceremonial female fertility sites) have been identified at two sites within the project area; however, assessment of these sites is considered problematic because it is difficult, if not impossible, to distinguish these features from natural granitic rock shapes. If the yonis on the property are cultural features, these sites may be of significance to the Native American community.

3.5.2 Historic Period

In 1846, the last Mexican governor of California, Pio Pico, granted the Rancho Cañada de San Vicente y Mesa de Padre Barona, including the subject property, to Juan Bautista Lopez. In the 1880's, following partition of the Rancho by other parties, the Barnett family assembled a ranch of approximately 1,300 acres, including the project site; the original ranch house and complex are located to the north of the site's boundaries. Several extant features on the property indicate its history as a working ranch for over a century. These include fencelines that were constructed of stacked rock between bedrock outcrops, with barbed wire wrapped around segments of the rock, sometimes also including metal stakes and wooden fenceposts; a poured concrete rectangular water trough embossed with the date 1908; and a poured concrete and mortared rock rectangular well. In addition to these ranch-related features, a pit, probably blasted, is located in a knoll on the property. Although the function is unknown, it may be a prospect, as gold is known to have been panned in San Vicente Creek to the south. None of these features is considered significant.

3.6 MANAGEMENT ISSUES AND CONSTRAINTS

The project site has been heavily disturbed by a variety of historic and recent events, including cultivation, grazing, residential pad construction, roadway grading and, most recently, the Cedar Fire (Figure 9). These previous disturbances present a variety of issues that must be considered in determining the appropriate management strategies for the site. Residential pad construction and roadway grading have left limited areas of primarily bare dirt, with little biological value. Agricultural activities (which occurred on the site for many years and were discontinued upon County purchase) have resulted in some portions of the central plain consisting of primarily non-native species. The short-term result of the discontinuation of grazing was exceptional growth of these non-native species but, prior to the fire, it was observed that some native species were beginning to recolonize the area. Less than 18 months elapsed between removal of cattle from the site and the Cedar Fire, however, providing limited time to observe the recovery (or lack thereof) of native species in the central plain. The fire burned essentially all herbaceous vegetation on the site, as well as burning and toppling several of the oak trees.

These previous disturbances result in recovery/restoration being a particularly important part of management activities on the site. Along with numerous other open space areas throughout the MSCP Preserve, Barnett Ranch will provide important information regarding habitat recovery following fire (including the relative resilience of native versus non-native species). The recovery of Barnett Ranch is of particular interest because of the level of previous disturbance on the site, which may have depleted the native seed bank. This management plan, therefore, includes measures to monitor the recovery and an outline of potential management responses should natural recovery be determined to be inadequate for the persistence of Covered Species, or should funding to aid recovery

Lake Hodges

Sutherland Reservoir

Extent of Cedar Fire

Barnett Ranch

San Vicente Road

Wildcat Canyon Road

San Vicente Reservoir

El Capitan Reservoir

Cuyamaca Reservoir

78

67

79

15

805

52

8

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Extent of Cedar Fire

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 9

be available. The uncertainty regarding the ability for native species on the site to recover makes an adaptive management approach particularly important on this site.

As with any property, there are a number of constraints that will guide the management activities undertaken on Barnett Ranch. In any management action taken, the needs of Covered Species will need to be carefully considered, and may present a constraint to management activities that might otherwise be considered desirable; for example, the importance of continued value of the site for golden eagle foraging will need to be carefully weighed against the values associated with returning the non-native grassland portions of the site to native vegetation. The management of the extensive cultural resources present on the site also requires careful consideration. It is important that significant sites not be damaged or otherwise disturbed (except with an approved mitigation program). Sites that are not considered significant may represent an excellent opportunity for cultural resources interpretation.

Funds available to manage the MSCP Preserve are quite limited; therefore, the County often will not be able to provide funding for restoration and research activities. To some extent, this can be addressed by encouraging volunteer organizations and independent researchers to conduct activities on the site; some grant funding or special funding associated with fire recovery also may be available. In addition, compatibility with adjacent residential uses may present a constraint to some management activities (e.g., fire management issues).

4.0 MANAGEMENT GOALS AND OBJECTIVES

In accordance with the Framework Management Plan, these ASMDs have been designated as Priority 1 or Priority 2. This designation recognizes the fact that many of the directives cannot be immediately implemented, but instead will occur over the life of the MSCP. The ability to implement and the timing of many of the management directives will be directly related to the availability of funding in any fiscal year and on the priority. The priorities are, therefore, intended to assist in decisions on where and how to spend limited funds. Priority designations are as follows:

> ***Priority 1:*** Directives that protect the resources in the MSCP Preserve, including management actions that are necessary to ensure that Covered Species are adequately protected.
>
> ***Priority 2:*** Directives other than those required for Covered Species status and other long-term items that may be implemented during the life of the MSCP as funding becomes available.

4.1 BIOLOGICAL MANAGEMENT AND ENHANCEMENT

The Framework Management Plan provides that restoration or revegetation undertaken in the MSCP Preserve shall be performed in a manner acceptable to the County and consistent with the MSCP. Where Covered Species status identifies the need for reintroduction and/or increasing the population, the Covered Species will be included in restoration/revegetation plans, as appropriate.

4.1.1 Habitat

Priority 1: Maintain the quality and diversity of native habitat types on the site.

As described in Section 3.4.1, the pre-burn vegetation on Barnett Ranch included large areas of non-native grassland, but also included several native vegetation communities. The native vegetation communities also had, to varying extents, been invaded by non-native species. The recovery of pre-burn habitat quality and diversity is of the utmost importance, as it will directly affect the long-term viability of Covered Species on the site. A key portion of meeting this objective will be to control the spread of non-native, invasive plant species. The potential for type conversion is of particular concern because a portion of the site also burned in the mid-1990s.

The quality and diversity of on-site habitats, including the spread of invasive plant species, will be tracked as part of the monitoring program described in Section 4.9, below. This monitoring will address both stochastic response (e.g., recovery from fire) and ongoing (e.g., gradual spread of weeds) habitat changes. Generally, action will not be required unless the monitoring indicates that the objectives are not being met (although additional actions may be taken should funding be available). With regard to post-fire recovery, responses will need to consider the immediate need of controlling non-native species, while taking a longer-term view to determine whether habitat quality and diversity returns through natural processes.

The appropriate response to identified habitat changes will need to be gauged to the particular situation. These ASMDs are intended to provide an adaptive management framework within which the Habitat Manager, in consultation with qualified biologists and/or the HMTC as necessary, will respond to individual circumstances.

Control of Non-native Invasive Plant Species

It is anticipated that controlling the spread of non-native, invasive plant species will be an ongoing management activity. Priority 1 efforts will be focused on controlling the spread of such species in areas that supported native habitats prior to the fire or (in subsequent years) that have recovered to native habitat, and preventing the establishment of new non-native species (e.g., castor bean [*Ricinus communis*], fennel [*Foeniculum vulgare*]) on the site (please refer to Appendix E for information regarding non-native species currently known to occur). Activities will be conducted to the extent necessary to meet the applicable conditions of coverage.

Priorities for removal should be based on the invasive species' biology (growth form, time of flowering, reproductive capacity, etc.) and the immediate need of a specific area (particularly the needs of Covered Species). Weed removal efforts should, to the maximum extent practical, be timed to minimize dispersal of seeds, which, if allowed, would require an ever-increasing weed control effort. Because the rate of spread of small satellite populations is generally significantly higher than that of older, larger populations, it is recommended that priority be placed on outlying satellite weed populations in areas with otherwise high biological values (Bossard et al. 2000). Particular attention should be paid to controlling the spread of non-natives in vulnerable habitats. For example, if weeds become established in relatively open habitats, they could represent a long-term problem; by contrast, most weed species would eventually be crowded out by canopy closure in chaparral. It is not expected that, as part of these efforts, non-natives will be eradicated from native habitats or that non-native habitats will be restored to native conditions (see Priority 2, below).

A variety of potential control methods exist, including hand/mechanical removal, herbicide treatment, mowing, controlled burn and potentially grazing (refer to Section 4.6, below). In terms of controlling spread of invasive non-native plant species (as opposed to restoring areas already heavily invaded), it is anticipated that the first two methods will be the prevalent techniques. The appropriate technique, or combination of techniques, will depend a number of factors, including the species, extent of invasion, adjacency of sensitive resources, and staff/material availability. Effectiveness information will be gained from on-site experience, as well as coordination with the HMTC and other organizations such as the Nature Conservancy and California Invasive Plant Council. Generally, the least impactful method considered likely to be effective should be used. To minimize potential impacts, no removal activities should occur during the reproductive seasons of sensitive animal species known to occur on site.

Trained volunteers may be used to monitor and remove exotic species as part of neighborhood, community, school or other organization's activities program. If done on a volunteer basis, the Habitat Manager will prepare and provide information on methods and timing of removal if requested. It may also be possible to use work crews to assist in invasive plant species control activities. It is critical that anyone involved in the activities be trained to distinguish between native and non-native plants and supervised by qualified personnel.

For relatively small plant species (i.e., grasses and herbs), treatment of individuals and small populations may not be practical. If the population is of a size or type that the Habitat Manager determines warrants treatment, the most practical method of removal will likely be the application of herbicide. This may consist of one or more of the following:

- Spray seedlings after sufficient rains have fallen in winter and spring, and, to the extent possible, prior to emergence of native species that may be present in the area.
- Spray plants to prevent seed set.
- Use pre-emergent herbicide prior to the first significant rain.

For larger species, removal of individuals and/or individual herbicide application will likely be practical. Complete removal of individuals (including the entire root system) is preferred where practical, but should not be attempted when it would result in damage to surrounding areas. For species such as tree tobacco (*Nicotiana glauca*), pampas grass (*Cortaderia jubata*) and eucalyptus, treatment may consist of removal of above-ground plant material and stump application (painting with a 50 to 100 percent solution) of an herbicide (such as Rodeo® or Roundup®). If this approach is taken, it is very important that the herbicide is applied immediately following cutting to ensure the greatest uptake of herbicide into the plant. Stump grinding may also be useful in the case of large eucalyptus trees.

Any person applying herbicides must be trained and licensed in their application, and must observe all safety and environmental regulations (e.g., wear protective equipment, follow product label directions). A product such as Rodeo® should be used in or near aquatic or wetland areas. Application must not be conducted in windy or rainy weather, and should be conducted in a manner that minimizes overspray onto surrounding plants and contamination of downstream waters. Mixing or diluting of herbicide chemicals must occur within a designated staging area, and no clearing of application equipment or dumping of herbicides is permitted on site.

If seedheads are observed on species such as pampas grass, they should be bagged to prevent dispersal. Similarly, all excavated/scraped plant material must be removed from the site and properly disposed of in a licensed landfill. Holes and depressions created during removal of individual shrubs or trees must be filled in with surrounding soil and returned to the same grade as the surrounding area.

Other Changes in Quality or Diversity of Native Habitat Types

In addition to invasion by non-native species, changes in the quality and diversity of native habitat types on the site may result from a number of factors, including fire, flood, drought, or disease/infestation, as well as natural habitat succession. Specifically, the site (at least temporarily) lost the substantial majority of its habitat diversity as a result of the Cedar Fire. The management responses to this and potential future natural occurrences must be made in the context of natural habitat processes, sensitivity of potentially affected Covered Species, and regional conservation needs.

In general, it is expected that habitat will recover naturally from events such as fire, flood, or drought (with some control of non-native species likely needed, as noted above). Some short-term measures to minimize the potential for additional habitat damage may be necessary. In particular, the property will be monitored carefully during the 2004-05 rainy season (and, if vegetation has not substantially established itself, subsequent rainy seasons) to ensure that erosion/sedimentation resulting from the lack of vegetation does not occur to such an extent that it would hinder the recovery of habitat or Covered Species on the site. If determined to be necessary, potential responses include installation of sand bags and/or hydroseeding portions of the site with native plant materials.

If, as a result of monitoring activities (see Section 4.9), it is determined that the habitat is not recovering in a satisfactory manner/rate, management intervention may be necessary. Before taking any action, the Habitat Manager will, to the extent practicable, attempt to ascertain why the habitat is not satisfactorily recovering, and design management activities to address the noted issue(s). Examples of potential responses include, but are not limited to, seeding, planting, additional weed control, minor grading (e.g., if substantial siltation or erosion has occurred as a result of a flood), and temporary irrigation (trucked in). In the case of recovery from the Cedar Fire, it is recommended that coordination (comparison of monitoring results and design of responses) be undertaken with the HMTC and the San Diego Fire Recovery Network.

Although disease/infestation is a natural occurrence, it is a cause for concern because (1) particularly damaging diseases/insects have been introduced from foreign locations and (2) there is a diminished extent of habitat from which recovery/persistence can occur. Plants may be particularly vulnerable during drought or other climatic extremes, and should be more carefully monitored during such occurrences. If a disease is observed in plant materials on the site or in adjacent areas, the Habitat Manager will coordinate with the HMTC to determine the extent of the problem regionally and appropriate responses. Responses could include treatment or removal of infected plants, or measures to assist on-site vegetation in resisting the disease. In some extreme cases, subsequent replanting of the affected habitat may be necessary.

Examples of habitat succession that could occur on the site (apart from fire recovery) include growth of hydrophytic vegetation in the open water, conversion of southern willow scrub and freshwater seep to more mature riparian communities, increased shrub cover in wildflower fields, revegetation of disturbed areas, and increased density in shrub communities. In general, natural habitat succession

will be allowed to occur on site without management interference. In some instances, however, carefully considered manipulation may be appropriate. For example, because most of the Covered Species on site rely upon open vegetation communities, creation of an age class mosaic in on-site shrublands may be beneficial (see Section 4.7, below).

In all cases, the Habitat Manager should consider the potential effects of management action/inaction on Covered Species and other management considerations (e.g., public safety, public access). Determination of the appropriate response in complex situations may benefit from consultation with the HMTC, and ongoing or subsequent actions should be informed by monitoring of the response of the habitat and Covered Species to the management intervention (or lack thereof).

Priority 2: Conduct focused invasive species surveys.

When funding permits, focused invasive species surveys should be initiated with regular follow-up monitoring to assess invasion or re-invasion by exotics, and to schedule removal. Such work would be intended to supplement the Priority 1 efforts identified above, which are intended to control invasive species only to the extent necessary to meet the conditions for species coverage.

Priority 2: Restore disturbed areas to native habitat appropriate to the site.

Restoration Goals

There are two potential targets for restoration activities on the site (1) areas that were previously dominated by native species, now recovering from the fire and (2) areas that were cleared or dominated by non-native species prior to the fire. These conditions are not expected to result in a threat to Covered Species, subject to the Priority 1 requirements identified above. Rather, restoration activities contemplated under this subsection would be intended to enhance the value of the site for Covered Species. This objective will be far more difficult and expensive to achieve than those noted above as Priority 1 requirements.

As previously noted, it is anticipated that the site will recover naturally from the Cedar Fire. The recovery process involves several stages, each dominated by various types of species. As a result, the extent to which the process can be accelerated is limited. In some cases, however, it may become apparent through monitoring activities that depletion of the native seed bank (or another factor) is limiting recovery and that management intervention may be helpful.

The need for restoration activities in areas previously dominated by non-native species will be determined based on recovery monitoring. It is possible that native seeds in this area will be induced to germinate and/or non-native seeds will be destroyed by the fire, allowing natives to out-compete non-natives without management intervention. Given the extreme pre-burn dominance of filaree in certain portions of the project site, however, it is not currently considered realistic to completely eradicate it. The intent of any restoration effort, rather, will be to replace it as the dominant species with native species appropriate to the site.

In restoring disturbed areas, careful consideration should be given to restoring habitats that would likely have occurred on the site in its pre-disturbance condition. The mapping of the site undertaken in 2001 and 2003 (pre-fire) will represent the baseline for most of the site. Portions of the site that were mapped as non-native grassland, however, require further consideration. The oldest (circa 1925)

available aerial photography of the site indicates that two of the areas dominated at the time of vegetation mapping by non-native grassland historically supported coastal sage scrub. Furthermore, in some of these areas, buckwheat and sagebrush shrubs were beginning to return prior to the fire. The soil types are generally consistent across the valley portion of the site, indicating it is likely that the areas mapped as non-native grassland previously supported coastal sage scrub or an open shrub/native grassland matrix. The target community for these areas will be determined by monitoring what native species return in this area as the site recovers from the Cedar Fire. In making the final determination, however, careful consideration should be given to the fact that golden eagle foraging is an important value of the site. Consultation should be undertaken with local experts to determine the importance of the non-native grassland areas on the site as foraging habitat for the pair of golden eagles. If this area is determined to be important, it should be maintained in a relatively open state that is conducive to raptor foraging.

Not all non-native communities on the site should necessarily be removed. In particular, eucalyptus trees provide valuable raptor perching and nesting opportunities and, while their spread and numbers should be controlled, they should not be removed unless other trees on the site are determined to provide adequate values in this regard. Eventual replacement by native species is preferred, however, and if trees die or are removed, they should be replaced with appropriate native species such as oaks or sycamores.

The graded pad in the western portion of the site was beginning to recover to coastal sage scrub prior to the fire, but also was suffering from erosion. To the extent that funding is available, it is recommended that activities be undertaken to minimize erosion in this area (e.g., contour grading and hydroseeding). Not all of the areas mapped as disturbed should be revegetated or allowed to naturally regrow vegetation. As described in Section 4.2, some of these areas will need to be maintained for access by the public and management/emergency personnel.

Restoration Techniques

As mentioned above, a variety of techniques are available to control non-native invasive plant species, including hand/mechanical removal, herbicide treatment, mowing, controlled burn, and potentially grazing. Other methods that may be employed in habitat restoration efforts include mulching, broadcasting native seed, and planting native species.

Any recommended responses to enhance recovery in portions of the site that supported native habitats prior to the fire will be highly dependant on what issues are observed during monitoring, and cannot be detailed at this time. Depending on the number of oaks that do not recover from the fire, planting of seedlings may be desirable. Examples of other potential responses include additional weed control and/or native seeding. To the extent that funding is available and an issue with non-native species is observed in areas that previously supported primarily native species, restoration efforts should be concentrated in those areas, in accordance with the techniques described above, under Control of Non-native Invasive Plant Species.

To the extent that funding is available, it is recommended that test plots be established in areas that supported filaree-dominated non-native grassland prior to the fire. These test plots would be valuable not only in restoring a limited amount of habitat on the site, but also in gaining information to guide future management decisions both on- and off-site. Examples of potential test plots could include the following: (1) control (no treatment); (2) weed control only; (3) seeding only; and (4) weed control

and seeding. Depending on the availability of funding, additional types of plots (such as a variety of weed control methods) could be added. Each type of test plot should be replicated in at least two (and preferably more) locations, and factors such as soil type and aspect should be noted.

The weed control program should be carefully timed to maximize its impact. Specifically, it should occur early in the season, while the non-native species are growing but prior to emergence of the native species. In the case of mowing, timing is even more critical, as mowing too early in the growth cycle of non-native species can result in additional branching and regrowth of the plants. It should be noted that the likelihood of substantial amounts of native species returning in the central plain is diminished by the long-term nature of disturbance in this area, which probably severely depleted the native seed bank. Shrub species are considered to have a higher probability of recovering because of the large seed bank in the areas surrounding the central plain, while native grass and forb recovery is expected to be more problematic because of the limited seed bank in the surrounding area. A recommended seed mix for these species is included as Appendix F.

Depending on the recovery of the heavily filaree-infested portions of the site from the fire (and results of the associated restoration test plots, if undertaken), mechanical disturbance may be employed as a restoration technique. This would consist of scraping the existing soil, followed by one or more applications of herbicide. If undertaken, this would need to be followed up with seeding and/or planting of native species. Another potential technique would be to encourage landowners developing in the surrounding areas to spread duff (native plant material and topsoil) on the site (this should not be undertaken with burned material). A thick layer of duff may help to smother non-native species, and would provide valuable cover and a source of native seeds.

It is recommended that, until the effectiveness of various restoration techniques is more clearly understood, application of any technique be conducted at a relatively small scale, and in distinct areas that can be monitored for effectiveness. Although funding may not be available to conduct rigorous monitoring (e.g., transects), the Habitat Manager should, at a minimum, conduct qualitative monitoring of the various areas (refer to Section 4.9). In addition, experimentation and monitoring by independent scientists will be encouraged (Section 4.10). The Habitat Manager should incorporate information about restoration techniques as it becomes available from on-site research or from other applicable sources.

The use of heavy equipment, and any other potentially harmful or impact-causing methodologies, to remove non-native species may require some level of environmental or biological review, permitting requirements, and/or supervision to ensure against impacts to sensitive species. To the extent practicable, removal efforts will begin upstream/upwind and move downstream/downwind and take advantage of natural breaks/barriers to minimize the potential for re-invasion.

4.1.2 Sensitive Species

Priority 1: Maintain existing populations of sensitive species.

As described in Section 3.4.2, a number of sensitive species were observed on the site prior to the fire. None of these species is federal- or state-listed, but seven are MSCP Covered Species, including one individual of one plant species (felt-leaved monardella) and six animal species (orange-throated whiptail, Southern California rufous-crowned sparrow, golden eagle, Cooper's hawk, western bluebird, and southern mule deer). The continued existence (or recolonization) of these species, along with

other sensitive species, on the site is an important management objective. In particular, although it is not a Covered Species, the large population of delicate clarkia will be a focus of management efforts.

As described in Section 4.9, monitoring will be conducted to track the presence of these species on the site. As noted above with regard to maintenance of habitat quality, any management response should be preceded by a consideration of the likely reasons for the inadequate fire recovery or subsequent decline of the species. Examples of causes of species decline include predation, competition, disease, habitat modification, and (in the case of species such as golden eagle and southern mule deer) loss of habitat connectivity or off-site habitat. In some cases, the absence of the species from the site may be temporary or not readily explainable; in such instances, management action may not be appropriate. Even if the likely cause can be identified, potential management responses are often limited (for example, the Habitat Manager likely cannot do anything if the golden eagle disappears from the site because its nesting territory off site has been compromised). If the identified likely cause of species decline is a change in habitat (for example, if increase in shrub density results in a decrease in raptor foraging activity), it would be addressed as described above, with particular attention paid to the response of the relevant species to the management action. If predation or competition from other species appears to be an issue, the Habitat Manager may consider a program to remove the troublesome species from the site (see below).

As previously noted, it is generally anticipated that native plant species will recover adequately from the Cedar Fire because most species on the site are fire-adapted. Special attention should, however, be paid to the recovery of the delicate clarkia and felt-leaved monardella. The monardella is of concern because only one individual was observed on the site prior to the fire, likely resulting in a small seed-bank. The clarkia is of concern because it seemed to generally favor portions of the site where its exposure to direct sunlight was limited (i.e., by canopy cover or aspect), a condition that will not occur on extensive areas of the site for several years. If observed recovery is determined not to be adequate, seeding may be necessary. In circumstances where populations exist but appear to be declining, appropriate responses might include focused weed removal or seed collection and broadcasting.

In general, it is expected that animal species previously observed on the site will recolonize the site without the need for major enhancements or re-introduction efforts. Depending on the species, varying amounts of time likely will be required for recolonization (with species such as wide-ranging raptors likely to return more quickly than species with smaller ranges). If species do not return over a number of years, it may be necessary to reintroduce individuals from off site. To the extent possible, such individuals should be relocated from approved development areas in the site's vicinity.

The potential need for collection of plants/seeds/animals from off-site should be evaluated considering the overall sensitivity of the species, importance of the site's population in a regional context, and the likelihood of eventual recolonization in the absence of management intervention. Any collection effort should be designed to minimize the potential impact on the source site. It is recommended that such actions be coordinated with the HMTC.

Priority 1: Comply with applicable conditions of coverage for MSCP Covered Species.

Each of the Covered Species known to occur on the site, with the exception of western bluebird and southern mule deer, has conditions for coverage listed on Table 3-5 of the MSCP (City of San Diego 1998). For each species with conditions of coverage, the conditions are listed below, followed by an

explanation of how management activities on Barnett Ranch would comply. Monitoring considerations from Table 3-5 are addressed as applicable in Section 4.9 of this document.

Felt-leaved monardella: Area-specific management directives must also include measures to protect against detrimental edge effects and uncontrolled access.

This document includes discussion of adjacency management issues (Section 4.4) and access control (Section 4.2). There are no existing or proposed trails in the vicinity of the previously observed individual.

Orange-throated whiptail: Area-specific management directives must address edge effects.

Edge effects are addressed as applicable throughout this document. Specifically, potential edge effects associated with adjacent land uses are addressed in Section 4.4, while sections such as 4.2 (Public Access, Trails, and Recreation) and 4.3 (Litter/Trash and Materials Storage) address potential edge effects from activities on the property.

Cooper's hawk: In the design of future projects within the Metro-Lakeside-Jamul segment, Preserve areas shall conserve patches of oak woodland and oak riparian forest of adequate size for nesting and foraging habitat. Area-specific management directives must include 300-foot impact avoidance areas around active nests and minimization of disturbance in oak woodlands and oak riparian forests.

As part of the MSCP Preserve, all of the oak woodland and oak riparian forest on site would be conserved and managed. No trails exist or are proposed through these habitats. An existing trail that leads toward Engelmann oaks and coast live oak woodland near San Vicente Road would be closed to public access to minimize potential impacts from recreational activities.

Golden eagle: Area-specific management directives for areas with nest sites must include measures to avoid human disturbance while the nest is active, including establishing a 4,000-foot disturbance area within Preserve lands. Area-specific management directives also must include monitoring of nest sites to determine use/success.

The site is used only for foraging and does not support, and is not within 4,000 feet of, a golden eagle nest (Bittner, pers. comm. 2001); therefore, the noted conditions are not applicable.

Southern California rufous-crowned sparrow: Area-specific management directives must include maintenance of dynamic processes, such as fire, to perpetuate some open phases of coastal sage scrub with herbaceous components.

Open phases of coastal sage scrub would be maintained through implementation of the Fire Management Plan and potentially through grazing, as described in Sections 4.7 and 4.6, respectively.

Priority 1: Control undesirable animal species as necessary.

A wide variety of animal species can have adverse effects on sensitive species; this will be considered a Priority 1 task only if necessary to meet the conditions for species coverage. Examples of potential effects include herbivory (such as from horses or cattle, which could directly affect plant species and indirectly affect animal species), nest parasitism (such as from brown-headed cowbird [*Molothrus ater*]),

competition with food sources (such as Argentine ant [*Iridomyrmex humilis*] competing with harvester ant [*Pogonomyrmex* sp.], which is an important food source for some native reptiles), and predation.

Fencing around the site should be repaired/maintained in a manner adequate to keep horses or cattle (except horses allowed for recreational purposes pursuant to Section 4.2, below) out of the site. Fencing with three-strand wire is recommended to minimize interference with wildlife movement; however, other types of fencing may be employed if necessary. If any incursions are observed, the animals should be immediately removed and the fence repaired. Other typical management practices also should minimize (to the extent practical) the likelihood of invasion by animal species of concern. For example, importation of materials should be monitored to minimize the potential for introducing Argentine ant to the site and, to the extent practical, cats and dogs should not be allowed to freely roam the Preserve (coordination with neighbors will be an important part of this effort; see Section 4.4, Adjacency Management Issues, below).

It is currently not anticipated that cowbird trapping will be required on the site because (1) the proposed uses of the site are unlikely to encourage cowbird occupation and (2) federal-listed species that would be affected by cowbird presence (namely least Bell's vireo or coastal California gnatcatcher [*Polioptila californica californica*]) are not expected to make regular use of the site. The Habitat Manager should, however, reassess the potential need for trapping of this species in light of any change in site conditions.

Any trapping should be undertaken in accordance with standard protocols. Specifically, any trapping must be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. In the event that the Habitat Manager intends to undertake trapping of domestic animals, signs will be provided at access points noticing residents that such trapping occurs, and how to retrieve and contain their pets.

Priority 2: Enhance value of the site for sensitive species.

The ability of the site to support sensitive species was limited prior to the fire by the amount of non-native habitat present and quality of native habitat on site, but is now primarily limited by the general lack of vegetative cover. Pending availability of funding, its resources could be enhanced to regain/increase the populations of sensitive species documented as occurring on the site prior to the fire and/or make the site suitable for occupation by additional sensitive species.

Enhancement of the site's value for sensitive species primarily will take the form of vegetation management. This could include restoration of disturbed areas and/or manipulation of native habitats. Even in the absence of comprehensive restoration efforts, habitat values for certain species (such as rodents and, consequently, raptor foraging) could be increased simply by controlling the density and height (e.g., through mowing) of non-native grasses and forbs, especially filaree, on the site. The installation of artificial features such as nest boxes is not recommended; rather, emphasis should be on retaining and restoring the site's natural features.

As noted above, it is expected that species previously observed on the site will recolonize it without the need for major enhancements or re-introduction efforts. More substantial enhancements will likely be necessary in the event that reintroduction (through importation or attempting to induce colonization) of species that were not previously documented as occurring on the site is determined to be desirable. In many cases, these species were not present on the site because appropriate habitat characteristics

did not exist, or were outweighed by negative characteristics of the site. As referenced above, the goal of any restoration/enhancement effort should be to attempt to recreate historic conditions on the site, rather than to create habitat that would not have naturally existed.

The specific techniques used to enhance the value of the site for sensitive species will vary depending on the specific needs of the species, and which of those needs are not currently met on the site. Thus, decisions about appropriate enhancement techniques should be made in consultation with a biologist familiar with the requirements of the species.

In any enhancement effort, the potential effects of the effort on other sensitive species should be carefully considered. For example, increasing shrub cover in areas currently dominated by non-native grasses and forbs could provide benefit to species such as southern California rufous-crowned sparrow, but reduce the value of the area as raptor foraging habitat. Evaluation of such decisions should consider the sensitivity of the potentially affected species and the regional context (particularly value to the San Vicente Corridor) of the site. In particular, manipulation of existing native habitats should be approached with extreme caution, because of the potential for unintended consequences. In some limited cases, however, it may be appropriate. Any such proposed manipulations should be evaluated by a qualified biologist to ensure that they would result in a net increase of the site's biological values.

Priority 2: Reintroduce or enhance populations of sensitive species.

If appropriate habitat exists on site, it may be appropriate to introduce species that were not previously documented as occurring. In some cases, this may occur naturally through recolonization. In other cases, however, active management intervention may be required.

Examples of species that may be considered for future (re)introduction include Quino checkerspot butterfly, Stephens' kangaroo rat, and burrowing owl (*Athene cunicularia hypugea*). Work for the specific benefit of these species currently is not recommended because there are no known populations in close proximity to the site. Any population established on the site would therefore be isolated and highly subject to extirpation. If, however, populations of these species are observed as naturally occurring in the area and/or are introduced as part of a recovery plan for the species, introduction of a population on the site should be considered.

4.2 PUBLIC ACCESS, TRAILS, AND RECREATION

The Framework Management Plan states that appropriate recreational activities shall be accommodated in concurrence with the goals of the MSCP and County Subarea Plan, as follows:

a. Public access and passive recreation are permitted uses within specified areas of the Preserve. Access points, new trails and facilities, and a public control plan will be included in the specific framework habitat management plans and the area-specific management directives.

b. Riding or hiking trails will be allowed within the Preserves to allow passive recreational opportunities for the public. Passive recreation includes hiking, scientific research, bird watching, and under specified conditions and locations identified in management plans, mountain biking, horseback riding, sailing, sun bathing, fishing, and swimming. Equestrian, hiking, and bicycles may be allowed when in accordance with approved management plans and consistent with the County Subarea Plan. All recreational activities will be required to avoid impacts to narrow

endemics or unique critical populations of specific species, unless the activities are in "take" authorized areas as identified or allowed under the MSCP.

Priority 1: Control public access in sensitive areas.

Much of the previously existing perimeter fencing around the property was destroyed by the Cedar Fire. The fencing will be replaced with three-strand wire placed at the property line, and will be maintained as necessary to control public access to the site. Gates will be placed at several locations around the perimeter, as described in the following section.

Large signs indicating that the property is part of the MSCP Preserve should be placed at key public access points. In the near term, this likely will be limited to San Vicente Road; if additional residential development occurs along Chuckwagon Road, a sign may also be necessary where it crosses the site.

Interpretive signage installed on the property (see below) should explain the sensitivity of the site's biological and cultural resources and the importance of minimizing human impacts by staying on designated trails, prohibiting collection of specimens, etc. In the near term, signage should clearly state the damage that could be caused by off-trail travel through burned areas. If unauthorized trail formation is observed, those specific areas should be posted with clear signage reminding the public to remain on authorized trails and that not doing so could result in closure of the entire area to public use.

In some cases, barriers may be needed to protect sensitive areas or otherwise control public access. Specifically, barriers should be erected to clearly indicate that public access is not allowed on those dirt roads that are being closed to the public as part of the trails plan (see below). Temporary barriers may be necessary to effect temporary trail closures (e.g., during the breeding season of a sensitive species or trail maintenance activities) or to particularly discourage unauthorized entry into an area that temporarily has a heightened sensitivity (e.g., a restoration area). Barrier types may include vegetation, dried brush, rocks/boulders, or fencing. The appropriate barrier type should be selected based on location, setting, and use. To the extent possible, natural materials or split rail should be used rather than other materials that may pose a barrier to wildlife and/or be more visually intrusive (e.g., chain link fence).

Given the relatively low sensitivity of most of the site's biological resources and/or their wide-ranging nature (e.g., golden eagle), it is not currently anticipated that other barriers to control public access will be required. In the event that the sensitivity of a biological resource is increased, a higher-sensitivity resource is identified on the site, or damage is noted as a result of public access (including unauthorized trail formation), the Habitat Manager should erect barriers. With regard to cultural resources, it is generally anticipated that fencing would attract attention, rather than provide an effective means of protecting the sites; however, if damage resulting from unauthorized access is observed, this should be revisited. Depending on the severity of impacts, a qualified archaeologist should be consulted to determine appropriate remedial measures. It is particularly important to ensure that the historic well does not present a safety hazard; the Habitat Manager should provide an additional cover without damaging the historic integrity of the feature (this should be done in consultation with a qualified archaeologist) and/or erect barriers to prevent public entry into the area.

In accordance with the Draft Community Trails Master Plan (County of San Diego 2003), the following enforcement mechanisms will be employed as necessary to control public access, and enforce other applicable rules and regulations on the site:

- Post regulations prominently at trailheads and include them in trail brochures and maps.
- Communicate the reasons for the regulations to users affected.
- Enforce rules and regulations consistently.
- Utilize volunteer trail patrols and train them in techniques for gaining compliance.

Priority 1: Direct public access to appropriate locations.

The MSCP requires that public access (including trails, view overlooks, and staging areas) be located in the least sensitive areas of the MSCP Preserve. Because the site's primary function is the preservation of biological resources, recreational uses are considered secondary. No staging areas are proposed on site; users would access the site's trails from off-site staging areas. If public access causes substantial damage to the site's resources, it may be terminated.

The site already is traversed by several dirt roads. Several of these roads will be the basis of the site's trail system (Figure 10), while the others will be closed to public access. The most southwestern existing dirt road on the site would be closed to public access but would be maintained to allow for continued Park Ranger and emergency vehicle access to this portion of the property. Where they are part of the trail system, existing roads will be maintained at their current widths and will not otherwise be improved unless determined necessary as a result of future erosion problems.

The roads to be used as trails have been selected based on their ability to provide appropriate links in the Ramona Community Trails Plan. In fact, they would expand upon the Barnett Ranch trails identified in the Trails Plan. Specifically, trails on site would provide a link between the proposed San Vicente Memorial Trail (a Priority 1 trail) along San Vicente Road and trails tentatively identified in Monte Vista Ranch to the south and west of the site. In addition, provision of a trail on an existing dirt road northeast of San Vicente Road may allow a safer (albeit steeper) alternative than the roadway shoulder for users of the San Vicente Memorial Trail.

Because the site's trails are intended to provide a link in the regional trails system, gates will be necessary where the trails enter the site. The gates should be designed to discourage off-highway vehicle use, while allowing passage for authorized users. Options include an 'H'-style gate with a low step-over, a low chain, or bollards arranged to require users to make tight turns.

At this time, it is not anticipated that substantial additional trails will be desirable from a resource management standpoint. Specifically, although access to riparian or oak woodland areas may be considered desirable by the public, it represents a potential threat to these sensitive resources, which are the primary purpose of the MSCP Preserve. It is, however, considered potentially desirable to provide two short extensions of existing trails to cultural resources that are interesting, but not considered significant based on currently available information (see Figure 12). One of the resources consists of an isolated milling feature, while the other is a historic fence.

If the County determines that construction of these trails would be desirable, they should be evaluated in detail in the field, considering potential impacts to biological resources and practicality (e.g., trail

slope). In addition, although no associated artifacts were identified in association with the bedrock milling features during the original survey, based on the improved ground visibility since the Cedar Fire, artifactual material may now be visible. An archaeological assessment should be made to ensure that all of the milling features are adequately recorded, and if there are artifacts now visible, they should be collected. With the increased ground visibility, if there appears to be a potential for subsurface cultural material at the sites along proposed interpretive trails, the assessment should include subsurface testing. If such trail extensions are constructed, they should be accompanied by interpretive signage (see below). Other cultural resources on the site may be suitable for interpretation (i.e., they are not significant cultural resources), but are not currently recommended for interpretive trails because of the length of trail that would be required to reach them and/or the sensitivity of the associated habitat.

The desirability of additional trails may be reevaluated in the future. Any evaluation of future trails proposals should consider the biological and cultural resources potentially affected. If it is determined that additional trails are desirable, they should be planned to minimize potential impacts. Examples of appropriate measures include minimizing trail widths (typically no wider than four feet) and placing trail fences or other barriers at strategic locations to protect sensitive resources.

Priority 1: Limit types of public uses to those appropriate for the site.

Allowable recreational uses on the site will be limited to bird-watching, photography, and trail use. Users must comply with all applicable County ordinances and policies. Pets must be kep on leashes no longer than six feet and must be attended at all times. Poaching or collecting plant or animal species, archaeological or historical artifacts or fossils from the MSCP Preserve is generally prohibited; however, the County may authorize collecting upon approval for scientific research, revegetation or restoration purposes, or species recovery programs. Impact to historic features also is prohibited except upon approval by the County. Motorized vehicle use on trails, hunting, and discharge of firearms are prohibited except for law enforcement, Preserve management, and/or emergency purposes. Fishing, swimming, and wading in the stock pond or streams, along with camping (including homeless and itinerant worker camps) and feeding wildlife also are prohibited uses. Homeless and itinerant worker camps in habitat areas, although not currently an issue, should be removed immediately if found in the future, pursuant to existing enforcement procedures. The uses allowed and prohibited should be clearly specified on interpretive signage and trails maps, along with a statement that people must clean up after their pets.

It is intended that the site's trails will be available for non-motorized uses including horseback riding, hiking, and mountain biking. To minimize the potential for damage, the trail will be closed to equestrians and mountain bikes for three days following significant rainfall events (generally greater than one inch). In the event that substantial impacts to habitats or sensitive species are observed as a result of equestrian or mountain bike use, the Habitat Manager may impose additional restrictions, up to and including prohibition of such uses.

To enforce all applicable use regulations, County staff and/or volunteers (such as the Ramona Trails Association) should patrol the property on a regular basis. Patrols should be conducted on varying days/times to increase the likelihood of observing unauthorized activities. Violators initially should be approached and, in a non-confrontational manner, informed that they are not obeying the applicable regulations. If it appears that the situation is or may become dangerous, law enforcement representatives will be called to the scene.

I:\GIS\C\CSD-01 Barnett\Data\csd-01.apr\proposed public access - specific management directive

Proposed Public Access

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 10

Priority 1: Provide appropriate interpretive materials.

Interpretive materials will be important in ensuring that the public understands the value of the site and the importance of following the applicable use restrictions. Two types of interpretive materials are recommended: a kiosk and brochures.

It is recommended that a kiosk consisting of a small, roofed structure be placed adjacent to the site's main trail. The kiosk should include a map of the site (including relationship to regional trails), information on the site's sensitive resources, and a list of rules and regulations. It will also have an area for posting current information, such as volunteer events.

It is recommended that Barnett Ranch be included in a brochure of County properties in the area. At a minimum, the brochure should have (1) a map of the trails with their lengths and allowable uses labeled; (2) a list of rules and regulations; and (3) information about the value of open space preserved through the MSCP. Additional information could include photos of sensitive species and interesting information regarding natural or cultural resources.

To the extent that funding is available, it is recommended that interpretive materials address the effects of the 2003 wildfires on the MSCP Preserve. Such materials potentially could include interpretive signage installed at restoration experiment plots, explaining habitat recovery.

If the suggested spur trails identified above are constructed, they should be accompanied by interpretive signage explaining the prehistoric and historic uses of the site, as well as the characteristics of the individual features. For example, interpretive signage at the bedrock milling feature could explain the desirability of the site for habitation, and the importance of bedrock milling features in the subsistence of the Kumeyaay people. It could further explain that the features were often gathering places for the women while they did their work (grinding acorns, seeds, berries, etc.). To discourage pot-hunting, the signage also could explain that the feature is located far away from the main habitation sites and that no subsurface material is found there. A specific interpretive plan must be developed and approved by the Director of Parks and Recreation, and must include supervision by a qualified archaeologist approved by the Director of Parks and Recreation. Native American tribal councils will be contacted and consulted for input on any interpretive plan involving Native American resources.

Priority 1: Properly maintain public use facilities.

Proper maintenance of public use facilities is important in minimizing potential impacts.

Trails will be maintained to a level at or near their intended standards. Temporary trail closure may be necessary during maintenance. If necessary, temporary closure and appropriate safety signs should be posted. Maintenance activities will include clearing vegetation to retain adequate trail width (and reduce fire hazard associated with motor vehicles used during patrols) and minimizing erosion. Trails will be monitored to determine what specific repair/maintenance actions are needed. Potential measures to counter the effects of trail erosion include the use of stone or wood cross-joints, edge plantings of native grasses, and application of mulch on the trail. Trails should not be paved unless management and monitoring evidence shows that this is necessary. In addition to structural

maintenance of the trails, manure (and other pet feces) should be removed from the trail to minimize any potential problems associated with cowbirds.

All signs (including the kiosk) should be inspected on a regular basis for damage, and replaced as necessary. Litter/trash issues are addressed below.

Priority 2: Establish volunteer programs to implement management directives.

Although not necessarily required for the continued existence of Covered Species on the site, the use of volunteers may enhance limited County budgets by providing services such as habitat enhancement, monitoring, and trail patrol and maintenance. Potential sources of volunteer recruitment include local residents, service clubs, or interest groups. For example, local equestrian groups (such as the Ramona Trails Association) could patrol, monitor and repair trails, and members of an organization such as the Audubon Society could undertake bird counts. All volunteer activities should be overseen by and, as applicable, directly supervised by, the Habitat Manager to ensure that activities are consistent with management directives and do not result in impacts to sensitive resources.

4.3 LITTER/TRASH AND MATERIALS STORAGE

Priority 1: Publicize and enforce regulations regarding littering/dumping.

Lists of regulations provided on signs and brochures will clearly state that littering on the property is illegal and include appropriate contacts to report any littering observed. Litter should be removed on a regular basis to the extent practicable; any large material or large quantities of material should be removed as soon as possible. Penalties for littering and dumping will be imposed sufficient to prevent recurrence and reimburse costs to remove and dispose of debris, restore the area if needed, and pay for enforcement staff time. Areas where dumping recurs will be evaluated for potential barrier placement. Additional monitoring (possibly by local and recreational groups on a "Neighborhood Watch" type program) and enforcement will be provided as needed.

Permanent storage of materials (e.g., hazardous and toxic chemicals, equipment, etc.) will be prohibited on the property. Any temporary storage must be in accordance with applicable regulations, and otherwise designed to minimize any potential impacts.

4.4 ADJACENCY MANAGEMENT ISSUES

As described in Section 3.1, there is currently very little development in the vicinity of the site. The establishment of the MSCP Preserve system does not include regulatory authority on properties adjacent to the Preserve; however, the County will encourage adjacent property owners to follow guidelines when planning and implementing uses and activities when located immediately adjacent to the site. The Framework Management Plan guidelines are meant to ensure compatibility with the Preserve as follows:

A. Where feasible, plant materials used to landscape manufactured open space, road cuts/fills and recreational facilities should consist of native species similar/compatible with the adjacent habitat in the Preserve. If possible, those species should be based on plants with genetic materials of the area. In addition, planting of aggressive, non-native plant species identified in the County

Urban/Wildlife Interface document will be discouraged through public outreach programs and bulletins.

B. Areas and structures subject to heavy human use (e.g., ball fields, parking lots, hardscapes/playing courts, equestrian centers, staging areas, etc.) shall, to the extent feasible, be located away from the edge of the Preserve.

C. Lighting within 100 feet of the Preserve edge shall be confined to areas necessary to ensure public safety, and shall be limited to low-pressure sodium fixtures, shielded and directed away from the Preserve where possible.

D. Fencing along the Preserve boundary is desirable but not mandatory and may provide a barrier to fire, invasive species, and uncontrolled human access. Should a landowner or Preserve manager decide to install fencing, the type, style, and height must conform to existing regulations or those included in the applicable Specific Plan.

E. On a case-by-case basis, some limited trapping of non-native predators may be necessary at strategic locations, and where determined feasible to protect ground- and shrub-nesting birds, lizards, and other sensitive species from excessive predation. This management directive may be considered Priority 1 if necessary to meet the conditions for species coverage. If implemented, the program would only be on a temporary basis and where a significant problem has been identified and therefore needed to maintain balance of wildlife in the MSCP Preserve. The program would be operated in a humane manner, providing adequate shade and water, and checking all traps twice daily. Provide signage at access points and noticing of adjacent residents to inform people that trapping occurs, and how to retrieve and contain their pets.

Priority 1: Enforce Preserve boundaries.

The Habitat Manager will enforce, prevent, and remove illegal intrusions into the MSCP Preserve (e.g., orchards, decks) on an annual basis, in addition to a complaint basis. Barriers (e.g., fencing, rocks/boulders, vegetation) and/or signage will be installed where necessary to direct public access to appropriate locations.

Priority 1: Educate residents of surrounding areas regarding adjacency issues.

The Habitat Manager will disseminate educational information to residents adjacent to the Preserve to heighten environmental awareness, and inform residents of access, appropriate plantings, construction or disturbance within MSCP Preserve boundaries, pet intrusion, fire management, and other adjacency issues. This will include information regarding invasive plants and animals harmful to the MSCP Preserve and prevention methods. Residents also will be encouraged to voluntarily remove invasive exotics from their landscaping. This information should be disseminated as adjacent residences are occupied, and thereafter on an annual basis. Methods of dissemination could include distributing flyers and attending Homeowners' Association meetings and/or community group meetings.

4.5 HYDROLOGICAL MANAGEMENT

Priority 1: Retain Klondike Creek in its natural condition.

The Framework Management Plan provides for the standard maintenance of flood control channels. Klondike Creek through the site is (with the exception of corrugated metal pipes conveying flow underneath San Vicente Road) currently, and should be retained in, its natural condition. In general, no maintenance or improvement activities should be performed. It is recommended, however, that in the 2004/05 rainy season (and after other catastrophic events), the creek be monitored regularly for potential erosion/sedimentation issues. In the event that potential problems are identified, potential responses include the installation of erosion control devices such as gravel bags, straw wattles and/or riprap.

4.6 GRAZING POLICY

The Framework Management Plan provides that, upon completion of initial biological studies, prescribed grazing programs may be implemented that are deemed appropriate and a benefit to the resource. Potential benefits identified in the Framework Management Plan include enhancing species diversity of native grassland communities, controlling invasive pest plant species, maintaining open grassland for Stephen's kangaroo rat, and reducing fuel loads.

Priority 2: Consider grazing as a technique to meet biological objectives.

The use of grazing on site is not necessarily required for the conservation of Covered Species, as its functions can likely also be met through other means. Certain types of grazing should, however, be considered as one potential tool to meet those objectives.

Cattle grazing is not recommended on the site because using cattle on the relatively small site would require short rotation periods to avoid overgrazing. In addition, the use of cattle would require installation of extensive fencing to prevent intrusion into areas of high biological sensitivity. Grazing of smaller animals on site potentially could, however be used to serve two functions: (1) to decrease the prevalence of filaree in the central plain and (2) to maintain open shrub communities.

Sheep are considered the preferred grazing animal for the site because they could be tended by a shepherd and sheepdogs and thus could be kept out of sensitive areas without the need to install fences (although clear communication and supervision would be required). Additionally, they prefer forbs to shrubs and grasses, making them an excellent candidate for controlling filaree while avoiding impacts to native shrubs or grasses.

The appropriateness of using sheep to assist in the control of filaree should be evaluated at approximately five years post-fire, at which point it is expected that the shrubs in the surrounding areas will have largely re-established themselves. This will be helpful in providing clear boundaries as to where the sheep should and should not be allowed to graze. Furthermore, if any other methods to control the filaree have been instituted in the intervening period, information about the effectiveness of those methods will be available. If other control methods have proven effective, the need to bring sheep to the site for this purpose would be reduced. On the other hand, if they have been proven ineffective, then the use of sheep may be highly desirable. If sheep are used, they should be on the site

only seasonally during the winter-spring, when filaree is in the beginning and early stages of development, and their grazing should be rotated such that they are not forced to browse on shrub species to meet their nutritional requirements. If a grassland eventually is established on the central plain, seasonal grazing also could be helpful in reducing mulch, which tends to favor the growth of non-native grass species.

The use of sheep or perhaps goats also should be considered as a potential long-term management tool in shrublands on site. This would be helpful both in reducing fuel load on the site and in maintaining the open habitat that many of the site's sensitive species require. Goats would be considered preferable for this purpose because they are more likely to eat shrubs than are sheep; however, fencing to control their movements likely would be required. As the shrublands on site recover from the fire, the use of this potential technique should be weighed against other potential methods of maintaining open habitat, such as controlled burns or mechanical measures. Considerations include effectiveness, potential impacts, ability to implement other measures (for example, if neighbors oppose controlled burns), and cost-effectiveness.

If grazing is instituted at some point in the future, it would be critical for the Habitat Manager to ensure that herders selected are sensitive to the natural environment, educate them regarding the site's resources and areas of sensitivity, and supervise activities such that damage to the resources does not occur.

4.7 FIRE PREVENTION, CONTROL, AND MANAGEMENT

The San Diego County Fire Chiefs' Urban/Wildland Task Force has prepared County-wide brush management guidelines in concert with the Wildlife Agencies. A Memorandum of Understanding (MOU) among the Wildlife Agencies, California Department of Forestry and Fire Protection (CDF), and Fire Chiefs and Fire Districts was executed in February 1997 following completion of a Federal Endangered Species Act Section 7 consultation by the USFWS. The MOU is the basis for ensuring that fire control activities, fire prevention, and fire for habitat management are integrated into Preserve management plans. Fire management activities are permitted within the Preserve when conducted according to a fire management plan approved by the Wildlife Agencies, County and applicable fire district as part of ASMDs.

Although not required, a site-specific Wildland Fire Management Plan has been prepared for Barnett Ranch (Tierra Data and FIREWISE 2000, 2004). The plan includes a description of the context of fire management planning for the site, a long-term strategic fire protection plan, and a tactical fire suppression plan, along with detailed information regarding planning, implementation, and monitoring responsibilities.

Priority 1: Provide for human safety as the first priority of every fire management activity.

The entire Barnett Ranch property is within the wildland-urban interface, defined as the portion of burnable vegetation within 1.5 miles of occupied structure densities greater than 1 unit per 40 acres. As a result, fire safety for life and property is of paramount importance. Pursuant to the Framework Management Plan, fire suppression districts, personnel and equipment are expected to use whatever tactics necessary to control and extinguish wildfires to protect public safety as determined by the local fire official. To the extent compatible with firefighter and public safety, minimum impact suppression tactics will be used (see below). If extreme weather conditions are present, however, aggressive

firefighting strategies and tactics will be employed, and may override the tactics described in the Fire Management Plan's tactical fire suppression plan.

Priority 1: Suppress 100 percent of all unplanned wildland fires, regardless of ignition source, to the smallest size possible but no more than 10 acres.

Unplanned fires, such as those caused by lightning strikes, usually do not occur under acceptable fire weather parameters conducive to wildland wildfire containment. Although fire plays an important role in the ecosystem, wildland fire is not proposed to be used for accomplishing fuel management or resource management objectives due to the small size of the property and because of continuing development in the adjacent wildland-urban interface where structures are scattered throughout surrounding vegetation. Any objective that could be met by letting natural fires burn under a prescribed set of conditions can be more safely accomplished in a controlled environment using prescribed fire (see below), as natural fires do not allow for the assemblage of monitoring and holding forces in a pre-planned manner.

It is particularly important that wildfire be kept out of the site to the maximum extent practicable until the vegetation has recovered from the effects of the Cedar Fire. It is likely that in the first few years, there will be a large amount of grasses on the property, resulting in a very high potential for an wildfire to burn through the property. A wildfire in this early stage of the recovery process could be very detrimental to the re-emerging native species and result in further invasion and potentially full conversion to less desirable, short-lived species with minimal biological value, poor soil retention capability and flash-fire fuel characteristics. This also would likely result in a continuing short fire interval on the property. This heightened concern will be in effect until at least year 15, to allow time for the native obligate seeders to establish reserves in the soil seed bank.

Even beyond the initial recovery period, control of fires may be important in maintaining the resources on Barnett Ranch. Fire return intervals on the property currently range from 15 to 75 years. As a result, the vegetation communities on the property may be experiencing problems associated with high fire frequencies. Such problems can include a change in vegetation composition (e.g., increase in non-native species) or even a type conversion. As a result, it is recommended that fire intervals on the site be increased to at least 15 years in meadow, 30 years in shrublands and oak woodlands, and 45 years in riparian woodland.

As a result of these considerations, all unplanned wildfires will be suppressed as efficiently and quickly as possible without compromising firefighter safety. Confine, contain, and control suppression strategies will be emphasized using an Aggressive Initial Attack for wildland vegetation fires. This attack strategy typically means dispatching a minimum of five "type three" engines (closest engines to the fire location, regardless of their agency affiliation), a water tender, a lowboy transport with dozer, a hand crew, fixed wing and rotor wing aircraft, and an air tanker. The first personnel at the scene will determine whether additional resources are needed. In the event of very dry, moderate to high velocity Santa Ana winds, the initial and second alarm dispatches may be increased over their typical levels.

Priority 1: Protect all values at risk from wildfire in a prioritized manner.

Agencies responding to wildfires on Barnett Ranch will use methods to suppress wildland fires that minimize impacts of the suppression action, commensurate with effective wildfire containment and

control strategies, firefighter and public safety, and resource values to be protected. Minimum Impact Suppression Tactics (MIST) involve adjusting tactics, where feasible, to avoid sensitive natural and cultural resources. Specific guidelines for MIST on Barnett Ranch are included in the Fire Management Plan.

Prior to each fire season, an annual preparedness meeting will be held at which suppression strategies will be reviewed and agreements reached on what kinds of firefighting resources (e.g., off-road fire apparatus, bulldozers, retardant drops) should be used on the property. An update of GIS maps noting the locations of sensitive biological and cultural resources that will require protection also should be provided annually (or as updates become available) to each agency that would potentially respond to a fire on the property (CDF, Ramona Fire Protection District, U.S. Forest Service, and Barona Fire Department). Specifically, those species and habitat types with the least resistance to fire (e.g., Engelmann oaks and riparian woodland) will be prioritized for protection.

Priority 1: Conduct rehabilitation of sites affected by wildland fire or fire management practices so that there is no permanent loss of natural resource values.

The Fire Management Plan includes recommendations for post-fire treatments and practices including immediately rehabilitating firelines and bladed areas disturbed by fire suppression activity by ripping compacted swales, installing water bars or broad rolling dips, mulching, or other appropriate activity; formulating a post-burn weed eradication plan to prevent major infestations and establishment of noxious weeds; and evaluating the need to revegetate within the first few weeks after the fire, and soon enough before the winter rains that necessary arrangements can be made. Firelines and areas of concentrated fire suppression activities may need reseeding (and associated mulching) immediately after a fire. Any seed or mulch used on the site should be selected in a manner to ensure that it would not result in the introduction of invasive exotic plants.

Generally, seeding of burned areas is not recommended due to the unfavorable cost-versus-benefit ratio and concerns about interfering with the establishment of the native plant species. Revegetation should, however, be considered under the following circumstances: the fire was high-intensity; vegetation cover post-fire remains less than 30 percent; cover of targeted weeds is 20 to 80 percent; or the steepness of slope, inherent erodability of the soil, and proximity to drainages results in a high potential for erosion and sedimentation.

Ryegrass or other non-natives will not be used on Barnett Ranch unless a site-specific analysis concludes that soil loss is a greater risk than persistence of the non-native in the community or effect on native plant regeneration. Post-fire rehabilitation effectiveness monitoring should be conducted for any implemented treatments.

Priority 1: Control fire risk and hazardous fuels such that ecological and social values are not placed at risk from extreme fire behavior or fire management actions.

Controlling the risk of fire is focused in two key areas: (1) minimizing the potential for fire ignition and spread and (2) minimizing the intensity of the fire.

A fire prevention program will be initiated to reduce the probability of unwanted fire ignitions and potential damage to improvements on surrounding properties. As part of this program, the County and CDF will continue to evaluate the causes of fires and support projects that effectively limit fire

starts, especially arson and roadside ignitions. Fire prevention warning signs should be placed along public roadways that pass through the site. In cases of extreme fire danger (as indicated by the Fire Danger Rating System), the property may be closed to the public to reduce the potential for ignition. Annual fuel modification activities (e.g., mowing) will be undertaken along San Vicente and Chuck Wagon Roads to further minimize ignition potential. It also is recommended that the County consider establishing and maintaining a fuel break along the top of the slopes above these roads. This may provide additional benefit by providing habitat for species that prefer open areas, such as the Quino checkerspot butterfly.

The largest and most destructive wildfires are most strongly influenced by the interaction of winds and topographic features, with the vegetation mosaic playing only a limited role in controlling their movement. Age class mosaics can, however, provide anchor points that firefighters can use to control wildfires, allow for fire containment under more moderate weather scenarios, and reduce fire-related resource impacts (such as soil damage and subsequent erosion) because the fire intensities are much lower.

It is anticipated that, once they get beyond the initial recovery stage (during which the property will be susceptible to fire because of the amount of grasses), the vegetation communities on the site will be fairly fire-resistant for the next 10 to 15 years. Following that, however, if uniform stands of coastal sage scrub and chaparral develop on the site, a future fire would burn with great intensity, resulting in substantial ecosystem damage, potentially including the loss of Engelmann and coast live oaks on the site. To minimize this potential, it is recommended that an age-class mosaic be established on the property. In particular, a low-fuel profile zone could be established around potential future developments located to the west and north of on-site chaparral habitats to minimize the probability of a high intensity wildfire entering the development under a southwest wind condition. Similarly, a build-up of shrubby vegetation beneath the oak woodland could lead to crown fires, which also would destroy the oaks, likely along with seedlings and saplings; such build-up should, therefore, be avoided.

Options for implementing this recommendation include hand clearing beneath oaks, grazing and controlled burns. No burns for this purpose should be implemented until at least 15 years after the Cedar Fire to allow the native seed bank to recover. By this time, it is anticipated that substantial additional information regarding fire behavior and ecosystem response to fire will be available; the determination on appropriate management should be made based on a thorough review of information available at that time.

If it is determined that a prescribed burn will be undertaken, it should be done in accordance with the Prescribed Fire Prescription Matrix contained in the Fire Management Plan (or similar matrix as appropriate). This matrix is designed to assist fire agencies and land managers in their planning of prescribed fire use within various fuel models and fire weather parameters. Items to be completed prior to a burn include determining the objective for the burn, developing a prescription, receiving formal approval for the burn, and monitoring on site weather conditions and regional weather forecasts to ensure that the desired weather factors will be present on the day of the burn. In addition, a minimum of 48 hours notice will be given to residents adjacent to prescribed burn areas, and all who might view smoke from a prescribed burn area would be notified through news organizations. Should an ignited prescriptive fire begin burning out of prescription due to stronger than forecasted winds or a drop below the permissible relative humidity, all lighting would stop and all personnel on the scene would revert into a wildfire suppression mode, extinguishing all flames and hot spots on the site. Following any burn, a post-burn analysis will be undertaken to determine if the objectives of the burn were met.

Priority 1: Ensure that future development adjacent to the site is constructed and maintained as necessary and appropriate to provide fire safety.

Pursuant to the MOU, as determined by the local fire official, all project conditions are to include a statement that all fuel modification zones (typically a minimum of 100 feet) will occur within the project's development line, and not extend into Preserve lands. The intent of the fuel modification zone is to protect uses adjacent to the Preserve from wildfires. Plant materials within the fuel modification zone may be thinned, mowed, pruned, and/or removed as necessary. Future development also should be conditioned to require appropriate fire-retardant construction techniques. The County and CDF will provide education and assistance to adjacent homeowners to encourage them to assume personal responsibility for their properties.

Priority 2: Ensure the sustainability of ecological values consistent with an MSCP Preserve through the use of prescriptive fire.

Prescribed fires are those purposely ignited for accomplishing specific management objectives such as fuels management, control of exotic species, and/or restoration of natural communities. Prescriptive fire on Barnett Ranch is intended to fulfill two primary objectives: (1) maintenance of open habitat; and (2) control of exotic species. The MSCP Preserve area has been shaped by fire for thousands of years, and the plants that thrive in the ecosystem are fire-adapted, including some that require fire for their continued presence. Similarly, the wildlife that inhabit the ecosystems are indirectly dependent on fire to provide the habitats that they rely upon. Most of the MSCP Covered Species that occur on the property benefit from open canopy conditions. In particular, maintenance of open phases of coastal sage scrub is a condition of coverage for the southern California rufous-crowned sparrow.

Coastal sage scrub areas would be burned selectively, in an experimental design, in an effort to reduce the cover of non-native grasses and increase the density of native shrubs. In chaparral, the goal would be a patchy burn (50 to 75 percent fuel volume consumption) with varying low to moderate fire intensities on a 30-year rotation. In oak woodlands, fire could be used to encourage the propagation of native grassland species in the understory.

If native grassland is re-established and grazing is not used as a management tool on the site, these areas should be subject to moderate intensity, high frequency prescribed burns in the fall beginning in year five after the Cedar Fire (or as determined appropriate based on the time required for re-establishment) so that they are maintained in an optimum condition. The initial fire intervals would be annually for three years or less, followed by a mean fire rotation of ten years. If a shrub community, rather than a native grassland, is the community to which the central plain recovers, then the use of controlled burn should not be considered for at least 15 years.

While frequent fire can in some cases result in detrimental effects to habitat, in some circumstances fire can be used to control invasive plant species. If, for example, the native seed bank has been destroyed (by previous agricultural activities and/or the Cedar Fire) and invasive species aggressively occupy the site, a spring burn could be used to destroy the annual grass seeds. This would be followed by seeding in the fall with native species. (The reader is referred to Section 4.1.1 for other potential methods of controlling non-native species.)

Any use of prescriptive fire for ecological restoration processes will be subject to the same planning requirements as described above with regard to potential use of prescriptive fire to reduce fuel loads. In addition, post-fire activities will include follow-up surveys and monitoring to gather information on fire effects and determine if the specific management objectives were met.

4.8 EMERGENCY, SAFETY, AND POLICE SERVICES

The Framework Management Plan explains that the interface between current and future urban development and the MSCP Preserve requires increased coordination between Preserve managers and the agencies responsible for public safety and enforcement of immigration laws, and describes procedures for that coordination. The MSCP Preserve system, including Barnett Ranch, must accommodate access for emergency response, fire control and management, and enforcement of immigration laws. In the event that entry onto the property by law enforcement agencies is needed in the routine performance of their duties, use of existing roads and trails shall be encouraged. In emergencies where there is a direct threat to public safety, the law enforcement agency should contact the Habitat Manager whenever feasible. It is not currently envisioned that the construction of any new roads will be required by law enforcement agencies; however, if such facilities are necessary, proposals would be subject to all applicable state and federal laws, including review under the California Environmental Quality Act (CEQA) and/or National Environmental Policy Act (NEPA).

Law enforcement and fire control agencies, the National Guard, the Immigration and Naturalization Service, the Border Patrol, and organizations and agencies that respond to natural disasters shall be permitted to perform their activities on the property subject to all applicable requirements of state and federal law.

Enforcement of Immigration Laws

Given the site's location, it is not anticipated that enforcement of immigration laws will be a major Preserve management issue. Immigration officials (along with all other law enforcement officials) will be allowed access to the property as necessary to enforce the law. If it becomes apparent that extensive enforcement activities are necessary, the Habitat Manager will coordinate with the applicable agencies to inform field personnel of how to minimize damage to particularly sensitive resources.

Emergency Response

All medical, rescue, and other emergency agencies will be allowed to access the property to carry out operations necessary to the health, safety, and welfare of the public. The Habitat Manager will specifically coordinate with local fire officials regarding the provisions of the Fire Management Plan (see Section 4.7).

Repairs to Infrastructure

Infrastructure across the site includes San Vicente Road, utilities for the in-holding residence, and SDG&E powerlines. The County shall allow the applicable agencies to enter the property and complete necessary repairs consistent with normal practices and with state and federal take authorization in conformance with state and federal laws. In particular, SDG&E will carry out all necessary maintenance and repairs in accordance with its Subregional Natural Community

Conservation Plan. Utility companies should contact the Habitat Manager before engaging in non-emergency maintenance or repair activities.

4.9 MONITORING PLAN

Biological monitoring is intended to evaluate whether the Preserve system is meeting Subarea Plan conservation targets for Covered Species and their habitats, identify threats to Covered Species and habitats, and help prioritize management needs. The approved biological monitoring protocol requirements are cited in the MSCP Biological Monitoring Program (Ogden Environmental 1996). The monitoring plan identifies basic monitoring requirements cited in MSCP Table 3-5 (City of San Diego 1998) for the various native habitats, covered species, and corridors. It also includes a reporting program, a discussion of remediation and adaptive management, and recommendations for future research activities. The MSCP notes that it may be necessary to periodically revise the biological monitoring protocol as new scientific information becomes available (subject to approval by the Wildlife Agencies and agreement by the participating local jurisdictions). It is widely recognized that the original monitoring protocols are impractical and in need of revision.

Biological monitoring is the joint responsibility of the County and the Wildlife Agencies for all lands within the County's boundaries. Proper management of the MSCP Preserve requires ongoing and detailed analysis of the data collected through monitoring activities. To ensure uniformity in gathering and treatment of monitoring data, the Wildlife Agencies have the primary responsibility for coordinating the monitoring programs, analyzing data, and providing information and technical assistance to the jurisdictions.

The MSCP Biological Monitoring Program identified sites at which monitoring for various issues should be undertaken as surrogates for the Preserve. Because Barnett Ranch was not identified as a monitoring location in that document, limited monitoring is proposed, as described below. Protocols include applicable provisions from the MSCP Biological Monitoring Program and MHCP Biological Monitoring and Management Plan (SANDAG 2003), as well as professional experience. The identified protocols identify the minimum required, along with recommendations for additional monitoring that would be beneficial should additional resources be available. Because of budgetary limitations, the highest priority monitoring tasks will be those (1) that provide direct evidence of human-induced declines in key biological resources and (2) for which corrective or remedial management actions are possible.

4.9.1 Habitat Value

As documented on the Biological Technical Report for the site (HELIX 2004), extensive biological inventories were conducted on the site in 2001 and 2003. This data provides the baseline for conditions prior to the Cedar Fire. Habitat monitoring on Barnett Ranch will focus on (1) temporary habitat changes as a result of natural events (with short-term focus on fire recovery) and (2) loss of habitat value as a result of edge effects or other human-related impacts.

Temporary Habitat Changes

The MSCP Biological Monitoring Program proposes monitoring of temporary habitat changes resulting from fire through post-fire mapping of burned areas, incorporating mapped information into

a regional GIS burn layer, and correlating this information with the vegetation map. Post-fire field monitoring is not included as a component of the regional monitoring effort.

The site's habitat will be monitored to ensure that recovery from the Cedar Fire proceeds satisfactorily. At a minimum, the Habitat Manager will establish photo-documentation stations at several (at least 10) easily accessible locations on the property, representing a variety of pre-burn habitat types. Photographs will be taken on at least a quarterly basis (with more frequent photography recommended in spring) for the next 10 years to document the site's recovery. Photos should be taken as close as possible to the same dates each year to facilitate comparison. In addition, the Habitat Manager will regularly patrol the property to identify any areas where recovery appears to be unsatisfactory (e.g., lack of vegetative growth [specifically including lack of Engelmann oak seedling and sapling recruitment], extensive weed invasion, uncontrolled access, erosion). In particular, the Habitat Manager will monitor the property during or immediately following significant rain events until vegetation on site has substantially re-established itself to ensure that erosion/sedimentation does not occur to such an extent that it would hinder the recovery of habitat or Covered Species on site.

To the extent that funds are available, it is recommended that additional monitoring activities be undertaken, including both quantitative and additional qualitative methods. It is recommended that a plant and general wildlife survey be conducted in Spring 2004 to provide a list of the species occurring on the site. It is further recommended that these surveys be repeated every spring, and that vegetation mapping be conducted once every three years for 9 years or until a relatively stable condition is reached. When these surveys are conducted, patches of non-native invasive species should be mapped that (1) exceed approximately 100 square feet, (2) are highly invasive individuals of large species, and/or (3) are of a species not observed on the site prior to the fire.

It is also recommended that, to the extent funding is available, sampling quadrats be established in several areas representing a variety of pre-burn habitat types. Depending on the number of quadrats that is funded, they also should be selected to represent a variety of slope aspects. The quadrats should be sampled on a yearly basis, with results recorded to facilitate statistical analysis. Quantitative vegetation data collection will focus on estimates and/or direct counts of species cover, density, and frequency. Cover is the percentage of the ground surface that is covered by vegetation, and should be recorded by stratum (trees, shrubs, herbs). Density refers to the number of individuals in a given unit of area. Frequency is a measure of a species' presence and distribution in a community.

Due to the extensive nature of the 2003 wildfires, it is highly recommended that the results (and to the extent possible, the design) of these monitoring efforts be coordinated with both the HMTC and the San Diego Fire Recovery Network.

Monitoring of other temporary habitat changes resulting from natural events will utilize a similar approach, with monitoring geared to the affected resources. If any treatments are implemented in an attempt to rehabilitate sites affected by wildland fire or fire management practices, the effectiveness of those treatments also will be monitored.

Changes in Habitat Value

The monitoring effort is intended to achieve the plan objectives of documenting changes in Preserved habitats, evaluating the impacts of land uses and construction activities in and adjacent to the Preserve, and evaluating management activities and enforcement difficulties in the Preserve. The

primary objective is to identify temporal trends in vegetative conditions that may require active management.

Monitoring for changes in habitat value will be initiated on Barnett Ranch following the completion of fire recovery monitoring. Monitoring efforts have been designed considering two primary factors (1) the site was not identified as a regional habitat monitoring location and (2) limited funds are available for habitat monitoring and management.

At a minimum, the photo-documentation stations established as part of the fire recovery monitoring described above will be maintained. Photographs will be taken from each location at least every other spring. In addition, the Habitat Manager will regularly patrol the property looking for obvious signs of disturbance (e.g., trampling, weed invasion, erosion). Information will be recorded on field maps and field notes. In addition to these efforts, at five-year intervals, the vegetation mapping for the site will be updated.

If a quantitative survey program is undertaken, it is recommended that sampling quadrats will be established in a variety of habitat types to assess long-term habitat values. The monitoring design should be based on then-current MSCP protocols. If quadrats have been established as part of fire recovery monitoring, it is recommended that, to the extent practical, these also be used for long-term monitoring. The quadrats will be sampled at five-year intervals and generally should be timed to coincide with monitoring activities elsewhere in the Preserve; however, this schedule may be adjusted at the discretion of the Habitat Manager. For example, monitoring during a severe drought year will not provide useful information regarding long-term trends on the site. Any such schedule adjustment should, however, be weighed against the value of being able to compare data with the Preserve system as a whole.

4.9.2 Corridor Utilization

Wildlife corridor is defined by the MSCP Biological Monitoring Program as "a linear landscape feature that allows animal movement between two patches of habitat or between habitat and geographically discrete resources (e.g., water)." As previously noted, Barnett Ranch is located partially within the MSCP's San Vicente Corridor. This is a regional corridor, intended to link core habitat to the west with the National Forest to the east. Such corridors are necessary to maintain demographic and genetic exchange between wildlife populations. Local corridors, by contrast, allow resident animals access to necessary resources (e.g., water, food, cover, or den sites) within a large habitat patch, and may function as secondary connections to the regional corridor system. The drainage that exits the site's western boundary may function in this capacity.

The proposed corridor utilization monitoring locations on Barnett Ranch are intended to consider both regional and local corridor values. General locations are depicted on Figure 11; specific locations will be selected by the Habitat Manager or designee. Monitoring of the potential local corridor is considered a lower priority than the proposed regional corridor monitoring, and is not mandatory. The focus of monitoring efforts will be large mammals (deer, mountain lion, coyote, bobcat). Two types of monitoring will be conducted: tracking stations and roadkill recording.

Tracking stations will be monitored every three years, between late July and late September. This is the time period when young animals are dispersing away from their natal territories and such movements have the greatest likelihood of being detected. Stations will be checked every three to four

days over two weeks each month (July, August, September). In general, stations will be in the same location each year. If observations at the initially identified tracking stations are consistently low, however, the Habitat Manager should consider relocating or discontinuing the stations.

Prior to the initiation of fieldwork each year, the monitor will review the previous survey data and other information to be familiar with the survey sites and previous site conditions. During initial site reconnaissance, a qualitative assessment of each site's habitat condition will be made to document any change relative to previous survey years. Changes to areas within and directly adjacent to the habitat corridor will be detailed on field forms and maps/aerial photos (e.g., more development or disturbance since previous survey). Noise levels, lighting, and fencing conditions within and adjacent to the linkage will be assessed.

Tracking stations will be one or more of four types: (1) finely raked sand or dirt; (2) graphite-powdered cards; (3) bands of lime chalk; and (4) motion-triggered cameras. The number of tracking stations will be determined at the time specific locations are selected, but will likely require three to five stations in each of the identified generalized locations. Specific monitoring and track identification methods will be consistent with the MSCP Biological Monitoring Program, or other then-current regional protocols.

Data on roadkill will be monitored along San Vicente Road in the vicinity of Barnett Ranch. The Department of Public Works and/or Department of Animal Control, as applicable, will submit to the Parks and Recreation logs of the location and species of roadkilled animals.

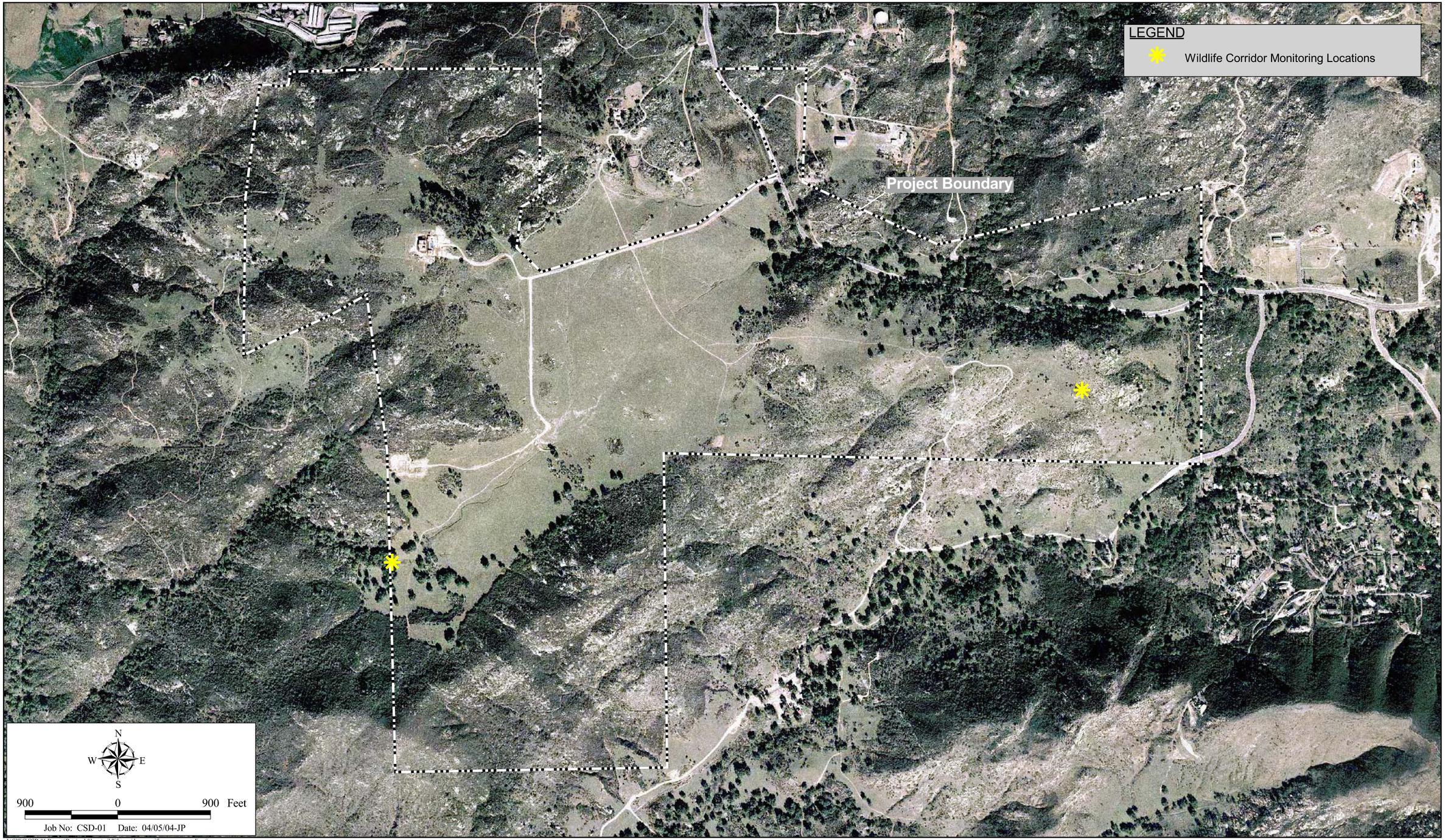
Data collected at the San Vicente Corridor tracking stations and from roadkill monitoring should be submitted for correlation with other regional monitoring data to determine the overall effectiveness of the corridor. An even spatial distribution of animal detection will indicate animals are successfully traversing the linkage, whereas animal sign at only one end of the corridor suggests that the linkage may be blocked (with the roadkill monitoring potentially providing insight regarding problem areas).

4.9.3 Covered Species

The project site does not support any species that are considered narrow endemics or listed as state- or federal-threatened or endangered. As a result, limited species monitoring is recommended. It is recommended that general wildlife and rare plant surveys be conducted in conjunction with the vegetation mapping estimates at five-year intervals. During these visits, the names of all species observed will be recorded, and sensitive species will be mapped. The number of rare plants present in each location also will be visually estimated. During routine patrols, the Habitat Manager also should visit the areas with the largest concentrations of rare plants, to ensure that no observable damage has occurred. Should additional funding become available, the site could be added as an MSCP monitoring location for one or more resource types (e.g., raptors, herpetofauna), in accordance with then-current protocols.

4.9.4 Management Effectiveness

The above-described monitoring methodologies will result in an assessment of the effectiveness of overall management activities, as measured by habitat quality and Covered Species presence. In addition to these generalized measures, if specific management activities (e.g., habitat restoration) are undertaken, it will be important to monitor their effectiveness. Specific monitoring activities should



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Wildlife Corridor Monitoring Locations

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 11

be designed based on the type of activity undertaken and the availability of resources (e.g., funding, volunteers). At a minimum, monitoring should include establishment of experimental and control plots, with photo documentation stations at each. Photos should be taken at quarterly intervals for 10 years, or until it is determined by the Habitat Manager that further documentation is no longer useful. Quantitative assessments should be undertaken if resources are available.

4.9.5 Reporting

The results of monitoring activities should be used to inform future management activities and be shared with the regional monitoring repository, HMTC, and other applicable organizations as identified above. It is anticipated that this will take the form of sharing databases and map products. Formal reports describing the monitoring data and conclusions are not required. If monitoring activities are undertaken by third parties (e.g., consultants, volunteers, or researchers), the Habitat Manager may request that reports be prepared describing the methodologies, results, and analysis (if applicable).

4.10 RESEARCH OPPORTUNITIES FOR ACADEMIC AND PROFESSIONAL SCIENTIFIC AND BIOLOGIC ACTIVITIES

The Framework Management Plan encourages research within the MSCP Preserve in order to gain valuable information unavailable through other means and provides the following guidelines with regard to scientific and biologic activities:

A. All scientific, research, monitoring and habitat restoration and enhancement activities are permitted within the Preserve, subject to approval by the Preserve manager/landowner and obtaining any necessary permits. All such activities shall be consistent with the area-specific management directives.

B. All or any of the above activities shall be carried out under a regional program implemented by the resource agencies, County of San Diego or Preserve manager.

C. Prior to beginning any of the above research activities, prior approval of the property owner/Preserve manager must be obtained.

To obtain mutual benefits for the County, the MSCP program, wildlife agencies, and researchers, the Framework Management Plan imposes the following specific requirements:

1. Coordination with County staff to discuss projects, potential locations, guidelines for access, and oversight responsibility.

2. Application to do research should occur through a letter sent to County staff, with a copy to the MSCP habitat management technical committee. The application should describe the participants, the precise location where work is to be done, the tasks and methodologies that would take place on Preserve lands, the dates and approximate length of time for the research, and any known or expected disturbances. The letter will need to present proof of insurance or indemnify all participants in the research effort to work at their own risk.

3. Applicants must agree to provide the data or the results of the research to County staff, and to the wildlife agencies within a reasonable timeframe after completion of the project. If working on a grant or similar funding arrangement, a letter from the grantor acknowledging and accepting this arrangement must be submitted.

4. If working in state or federally listed species habitat or wetlands, any necessary permits from the appropriate agencies must be obtained prior to the commencement of research, with a copy provided to the County or MSCP management entity.

5. The researchers will be held responsible for any damage or disturbance to native plants, animals, hydrology, or any other aspect of the natural ecosystem, and will need to provide restoration or other reparation if necessary.

The above guidelines and requirements will apply to Barnett Ranch. Based on the management issues on the Barnett Ranch site, it is anticipated that research regarding the following issues would be particularly appropriate:

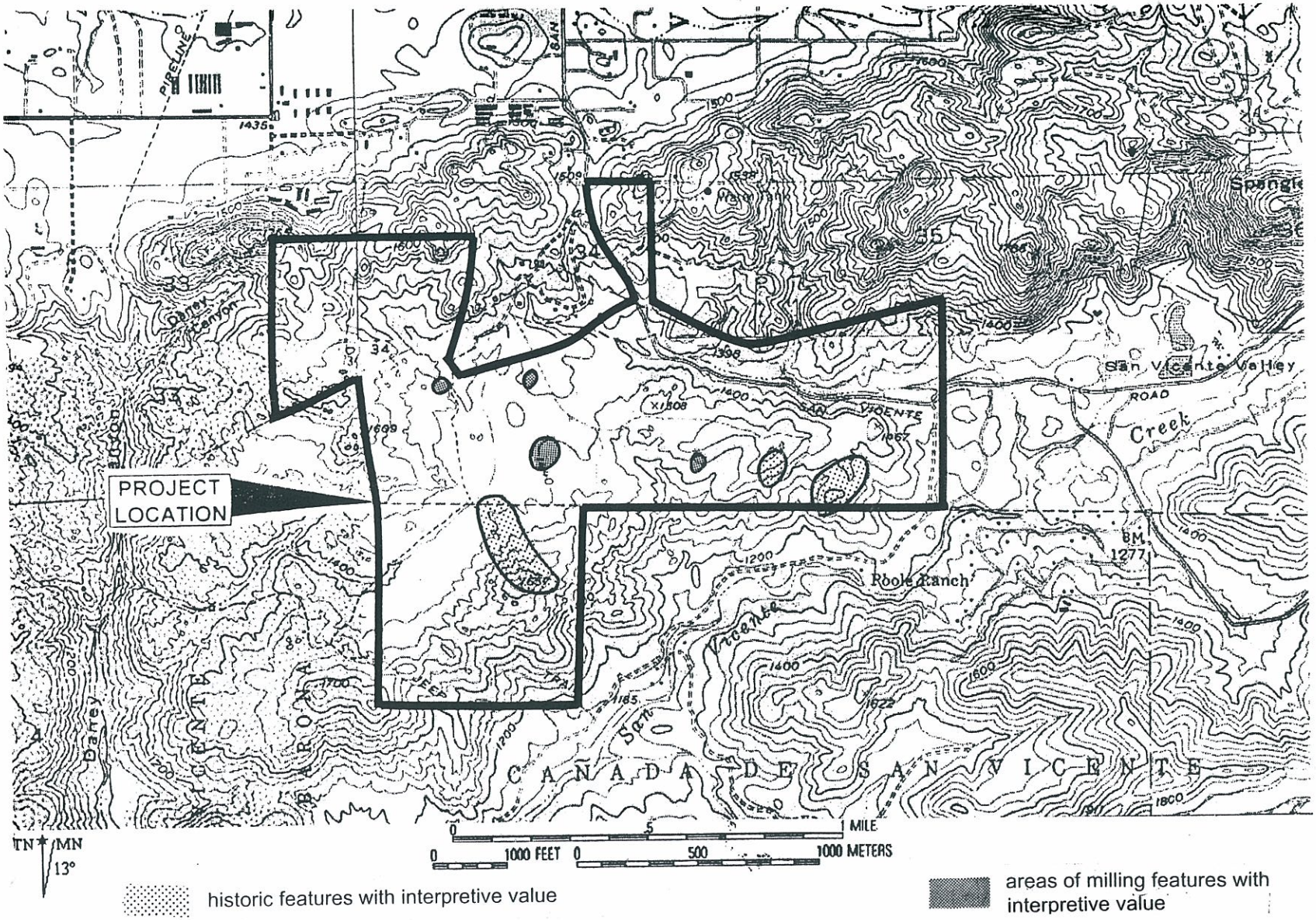
- Dispersal, seedbank ecology, and seed viability of non-native, invasive plants
- Effectiveness of various control methodologies on non-native, invasive plants
- Effectiveness of various native habitat restoration techniques
- Vegetation recovery from fire (particularly assessing competition between native and non-native species)
- Effectiveness (and appropriate methodology) of fire and grazing as appropriate management tools for specific Covered Species and priority habitats
- Effectiveness of alternate methods (e.g., mechanical removal) to simulate the effects of burns in maintaining open coastal sage scrub

4.11 CULTURAL RESOURCES

The Framework Management Plan requires that all Preserve lands will be inventoried for cultural resources, including historic structures, features, and landscaping, as well as historic and prehistoric archaeological sites, features, and artifacts. As described in Section 3.5, such an inventory has been performed for the site, but there was virtually no ground visibility over much of the property at the time. If funding is available, it is recommended hat an additional survey be performed on the site prior to the return of substantial vegetative cover.

Protection and preservation of such resources is required to comply with County of San Diego ordinances and applicable state and federal laws. The location of cultural resources sites (except sites that are the subject of approved interpretive plans) will be confidential, and will be available only for qualified cultural resource staff and land managers. Site locations will not be shown on maps or divulged to the public.

As noted in Section 4.2, above, and shown on Figure 12, some of the cultural resources sites may be suitable for public access and interpretation. Section 4.2 also includes requirements for further evaluation of these sites and development of an interpretive plan in the event that spur trails are proposed.



Source: Affinis

Potential Cultural Resource Interpretive Locations

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 12

All soil-disturbing activities (including, but not limited to, trail construction, placement of fencing and gates, or restoration of habitat) in identified areas of high or moderate archaeological sensitivity (Figure 13) will be evaluated for potential impacts to cultural resources. These areas will be avoided to the extent practical; however, it is recognized that complete avoidance (particularly for habitat restoration) may not be feasible or desirable. Prior to initiation of any ground-disturbing activities, a testing program must be undertaken to determine the extent and significance of the cultural resources that may be affected. A research design and testing plan would be developed by the archaeological consultant in coordination with County staff. If any of the sites are found to meet the criteria for inclusion in the California Register of Historical Resources, impacts should be avoided (through project redesign or active preservation measures, such as capping) to the maximum extent feasible.

If avoidance of impacts is not feasible, removal or disturbance of cultural resources shall not occur prior to receipt of written approval by the Director of Parks and Recreation, nor prior to completion of an approved mitigation program, such as data recovery or recordation. Representatives of the Native American community would be contacted during the design process of the mitigation program to solicit any concerns regarding cultural heritage issues. If so desired by the Kumeyaay representatives, Native American monitors should be on site during any testing program and during data recovery. If human remains and/or grave goods are discovered, procedures similar to those outlined in the Archaeological Resources Report (Affinis 2003) should be followed. Similarly, testing report format and contents would be as described in the Archaeological Resources Report.

All cultural material collected during the survey, testing program, and data recovery program should be permanently curated at an appropriate facility within San Diego County, such as the San Diego Archaeological Center (SDAC). If no testing program is necessary (if no trail or facility development is proposed), the cultural material collected during the survey, as well as maps, notes, and original site records, should be curated at the SDAC.

As part of routine site patrols, the Habitat Manager should note the condition and status of cultural resources. If damage is noted, remedial measures should be taken to protect the resource. Depending upon the extent of the damage, such measures should be developed in consultation with a qualified archaeologist.

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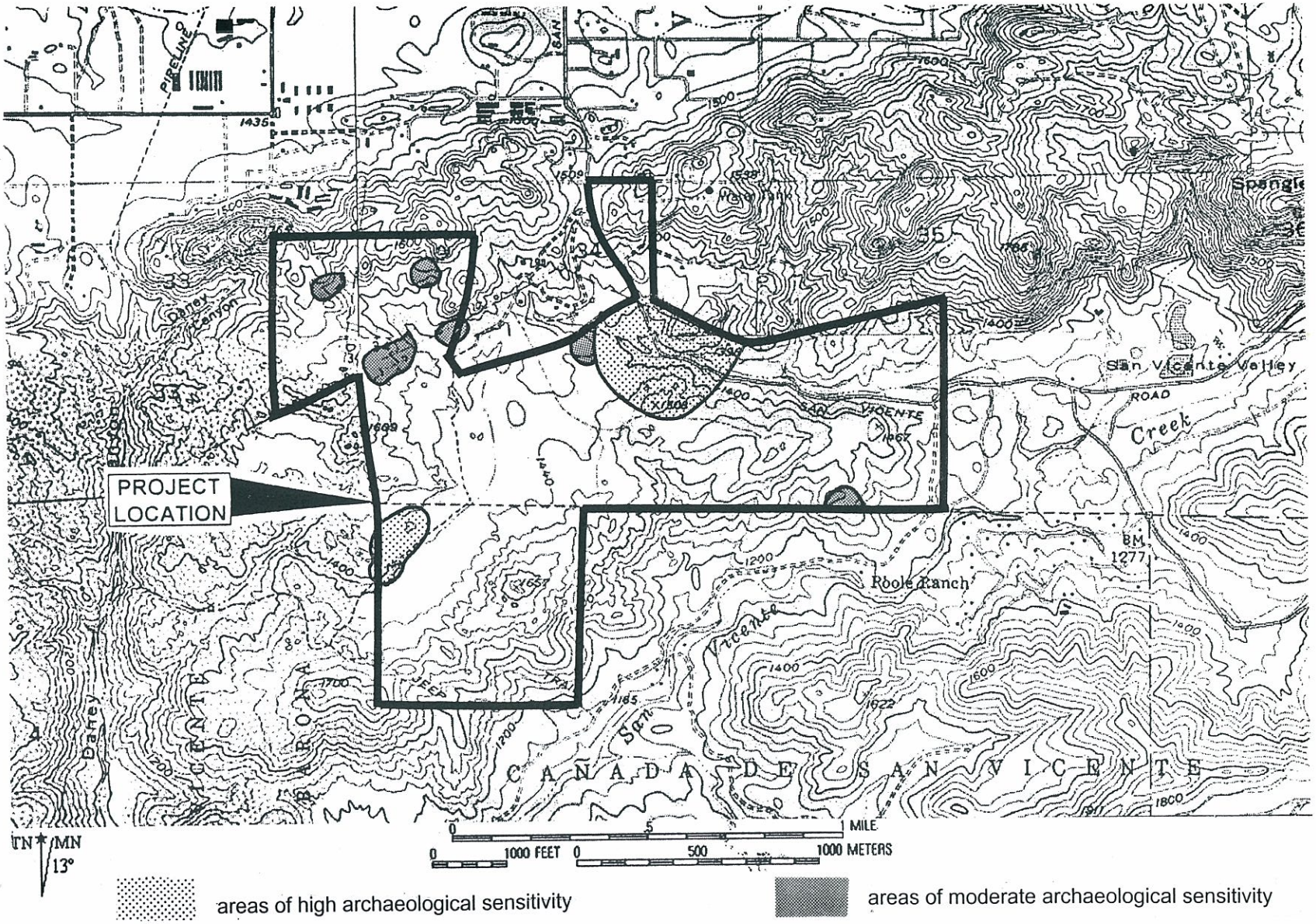

Source: Affinis

Areas of Moderate or High Archaeological Sensitivity

BARNETT RANCH AREA - SPECIFIC MANAGEMENT DIRECTIVES

Figure 13

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APPENDIX A

MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
BIOLOGICAL MANAGEMENT AND ENHANCEMENT (Section 4.1)								
Habitat (Section 4.1.1)								
Control spread of non-native, invasive plant species	1			X				Try to time activities to minimize seed dispersal and ecological damage of removal activities. Volunteers and/or work crews may assist.
Respond to erosion problems	1			X				Of particular concern until vegetation has recovered from Cedar Fire.
Respond to other changes in quality or diversity of native habitat types	1			X				Consultation with HMTC may be appropriate.
Conduct focused invasive species surveys	2					X		
Enhance recovery from the Cedar Fire	2					X		Need for action will be based on results of monitoring.
Restore non-native grassland	2					X		
Replace eucalyptus trees with native species	2					X		If trees die or are removed.
Minimize erosion from the undeveloped, graded pad	2					X		
Sensitive Species (Section 4.1.2)								
Analyze reasons for any observed species decline and, if possible, devise and implement response	1			X				
Implement responses if sensitive plant species do not return following Cedar Fire	1			X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
BIOLOGICAL MANAGEMENT AND ENHANCEMENT (Section 4.1; cont.)								
Sensitive Species (Section 4.1.2; cont.)								
Consider reintroduction of animals if they do not return over a number of years	1			X				
Maintain open phases of coastal sage scrub for the benefit of southern California rufous-crowned sparrow	1			X				
Remove any unauthorized horses or cattle from the property immediately	1			X				
Monitor importation of materials to minimize potential of introducing Argentine ant to the site	1			X				
Implement trapping of undesirable animal species as necessary	1			X				Priority 1 only if necessary to meet conditions for species coverage. Follow guidelines in ASMDs.
Develop and implement plans to enhance value of the site for sensitive species	2					X		
Develop and implement plans to reintroduce or enhance populations of sensitive species	2					X		
PUBLIC ACCESS, TRAILS, AND RECREATION (Section 4.2)								
Replace/maintain/repair perimeter fencing	1	X		X				
Install and maintain appropriate gates at access points	1	X		X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
PUBLIC ACCESS, TRAILS, AND RECREATION (Section 4.2; cont.)								
Install barriers along dirt roads closed to the public	1	X						
Install temporary barriers for temporary trail closures or in temporarily high-sensitivity areas	1			X				
Assess need for other barriers	1		X					Assessment based on resource sensitivity and damage from public access.
Ensure that historic well is not a safety hazard	1	X	X					Could include providing an additional cover and/or erecting barriers.
Maintain existing dirt roads for public and Ranger/emergency access	1			X				
Close trails to equestrians and mountain bikes for three days following rainfall events greater than one inch	1			X				
Impose additional restrictions if equestrian or mountain bike use results in damage	1			X				
Remove manure from trails	1			X				
Conduct patrols on varying days/times	1		X					
Enforce rules and regulations consistently	1		X					
Include regulations in trail brochures and maps	1	X		X				
Install and maintain regulatory signage	1	X		X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
PUBLIC ACCESS, TRAILS, AND RECREATION (Section 4.2; cont.)								
Post signage in areas of unauthorized trail use	1			X				
Install and maintain signs at key access points	1	X		X				Install sign along Chuck Wagon Road only if additional residential development occurs there.
Develop and distribute brochure	1	X		X				
Inspect trails, signs, fencing and gates	1		X					
Train and use volunteers	2	X		X				
Install and maintain interpretive signage	2					X		
Construct spur trails to access cultural resources, with interpretive signage	2					X		Requires evaluation of potential impacts.
LITTER/TRASH AND MATERIALS STORAGE (Section 4.3)								
Remove litter	1		X					
Remove large material or large quantities of material	1			X				
Impose penalties for littering and dumping	1			X				
Evaluate areas where dumping recurs for potential barrier placement	1			X				
Initiate additional monitoring or enforcement if dumping is a persistent problem	1			X				
Follow regulations regarding storage of materials	1			X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
ADJACENCY MANAGEMENT ISSUES (Section 4.4)								
Enforce Preserve boundaries	1		X	X	X			
Disseminate educational information to adjacent residents	1	X		X	X			Distribute flyers and/or attend Homeowners' Association meetings.
Conduct limited trapping of non-native predators	1/2			X				Priority 1 only if necessary to meet conditions for species coverage.
HYDROLOGICAL MANAGEMENT (Section 4.5)								
Implement appropriate response measures in the event of substantial erosion/sedimentation problems	1			X				
GRAZING POLICY (Section 4.6)								
Evaluate potential implementation of grazing on site	2						X	Beginning in post-fire Year 5.
FIRE PREVENTION, CONTROL, AND MANAGEMENT (Section 4.7)								
Hold preparedness meeting	1				X			Prior to each fire season.
Provide updates of GIS maps and prioritize resources to be protected	1				X			Provide information to all agencies that could respond to a fire.
Assess need for rehabilitation of sites affected by wildland fire or fire management practices; implement necessary responses	1			X				
Install and maintain fire prevention warning signs	1	X		X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
FIRE PREVENTION, CONTROL, AND MANAGEMENT (Section 4.7; cont.)								
Close property to public in cases of extreme fire danger	1			X				
Conduct fuel modification along San Vicente and Chuck Wagon Roads	1				X			
Evaluate need for additional fuel break	1	X		X				
Consider establishment of an age-class mosaic	1			X				Evaluate based on best available information starting in Year 15 after the Cedar Fire.
Follow appropriate procedures in planning, implementing, and evaluating any prescribed burn	1			X				
Provide education and assistance to adjacent homeowners regarding fire safety issues	1			X	X			
Evaluate (and implement, if appropriate) prescribed burns to sustain/enhance ecological values	2					X		
EMERGENCY, SAFETY, AND POLICE SERVICES (Section 4.8)								
Coordinate with law enforcement agencies to minimize damage to resources	1			X				Only required if extensive enforcement activities are necessary.
Coordinate with utilities regarding maintenance and repair activities	1			X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
MONITORING PLAN (Section 4.9)								
Establish photo-documentation stations to monitor fire recovery	1	X						At least 10 easily accessible locations, representing a variety of pre-burn habitat types.
Take photographs from photo-documentation stations	1						X	At least quarterly, preferably more often in spring, as close as possible to the same dates each year, for 10 years; thereafter, photograph at least every other spring.
Identify areas where fire recovery is unsatisfactory	1		X					
Identify areas with erosion or sedimentation issues	1		X					During or immediately following significant rain events until vegetation has substantially re-established itself.
Conduct plant and general wildlife survey and map patches of non-native invasive species	1/2	X			X	X	X	If funding is available, repeat every spring for 9 years or until relatively stable condition is reached; thereafter, update surveys at 5-year intervals.
Map vegetation	1/2						X	If funding is available, repeat once every 3 years for 9 years or until relatively stable condition is reached; thereafter, update mapping at 5-year intervals.

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
MONITORING PLAN (Section 4.9; cont.)								
Establish quadrats to sample vegetation	2	X			X		X	If funding is available, sample annually for fire recovery monitoring; thereafter, sample at 5-year intervals.
Coordinate design and results of monitoring efforts with HMTC and/or San Diego Fire Recovery Network	2			X				
Monitor other temporary habitat changes and treatments to rehabilitate sites	1			X				
Look for signs of disturbance and record information on field maps and field notes	1		X					
Establish regional and local corridor monitoring locations	1	X						
Monitor tracking stations	1/2						X	Every three years, between late July and late September. Local corridor monitoring is not mandatory.
Obtain information on roadkill along San Vicente Road	1				X			From Department of Public Works and/or Department of Animal Control
Submit corridor monitoring data for regional analysis	1				X			
Visit areas with largest concentrations of rare plants	1		X					

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
MONITORING PLAN (Section 4.9; cont.)								
Consider adding site as an MSCP monitoring location	2					X		
Monitor effectiveness of any specific management activities	1			X			X	At a minimum, establish photo-documentation stations and take photos quarterly for 10 years; undertake quantitative assessments if resources are available.
Share results of monitoring activities	1			X				With regional monitoring respository, HMTC or other organizations as applicable.
RESEARCH OPPORTUNITIES FOR ACADEMIC AND PROFESSIONAL SCIENTIFIC AND BIOLOGIC ACTIVITIES (Section 4.10)								
Ensure that any research activities follow the guidelines and requirements contained in the Framework Management Plan	1			X				
CULTURAL RESOURCES (Section 4.11)								
Conduct additional cultural resources surveys	2					X		Recommended due to current high ground visibility.
Avoid disclosure of cultural resources locations, except in association with approved interpretive plans	1			X				

Appendix A
MATRIX OF MANAGEMENT DUTIES FOR BARNETT RANCH (cont.)

ACTION ITEM	PRIORITY*	SCHEDULE						NOTES
		Start-up task	During regular patrols	Ongoing as needed	Annually	As funding is available	Other	
CULTURAL RESOURCES (Section 4.11; cont.)								
Evaluate all soil-disturbing activities for potential impacts to cultural resources; avoid to extent practicable	1			X				
Note condition and status of cultural resources	1		X					
Implement remedial measures if damage to cultural resources is noted	1			X				

Note: This matrix summarizes the responsibilities of the Habitat Manager. Additional detail regarding each of these responsibilities is contained in the referenced section of the ASMDs. Responsibilities of other parties are not summarized in this matrix. Firefighting activities will occur in accordance with the Fire Management Plan. The Department of Planning and Land Use will be responsible for review of proposed development on any adjacent property.

*Priority 1: Directives that protect the resources in the MSCP Preserve, including management actions that are necessary to ensure that Covered Species are adequately protected. Priority 2: Directives other than those required for Covered Species status and other long-term items that may be implemented during the life of the MSCP as funding becomes available.

APPENDIX B

EXPLANATION OF STATUS CODES FOR PLANT AND ANIMAL SPECIES

Appendix B
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

APPENDIX C

LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR

Appendix C 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.
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.

Appendix C LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR (cont.)		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
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.
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.

Appendix C LISTED OR SENSITIVE PLANT SPECIES WITH POTENTIAL TO OCCUR (cont.)		
SPECIES	STATUS*	POTENTIAL TO OCCUR
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.
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 B for a listing and explanation of status codes for plant and animal species.

APPENDIX D

LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR

Appendix D 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.

Appendix D LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR (cont.)		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Reptiles (cont.)		
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.
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.

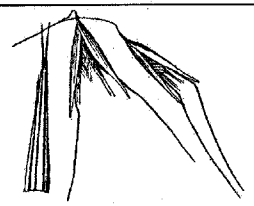
Appendix D LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR (cont.)		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Birds (cont.)		
Bell's sage sparrow (*Amphispiza belli belli*)	FSC/CSC County Sensitive	Moderate. Occurs in coastal sage scrub and chaparral communities, particularly 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.
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 comm-unities. 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.

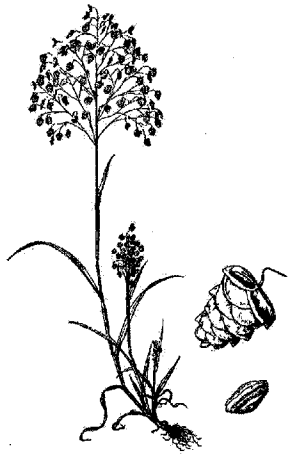
Appendix D LISTED OR SENSITIVE ANIMAL SPECIES WITH POTENTIAL TO OCCUR (cont.)		
SPECIES	**STATUS***	**POTENTIAL TO OCCUR**
VERTEBRATES (cont.)		
Mammals (cont.)		
Southern grasshopper mouse (*Onychomys torridus ramona*)	FSC/CSC County Sensitive	Moderate. Can occur in all arid habitats, including coastal 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.
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.

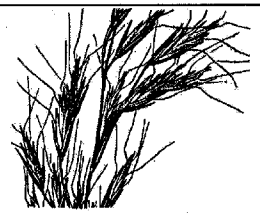
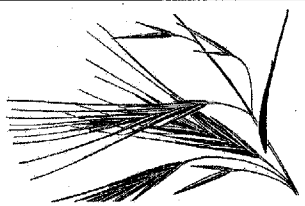
*Refer to Appendix B for a listing and explanation of status codes for plant and animal species.

APPENDIX E

NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES							
 Source 7	*Avena barbata*	Slender wild oat	Annual grass	12-48 inches tall	Erect, hollow stems. Inflorescences are drooping. Generally soft-hairy below awn.	Seed. Blooming period: March-June	Cal-IPC List Annual Grasses
 Source 7	*Avena fatua*	Wild oat	Annual grass	12-48 inches tall	Erect, hollow stems. Inflorescences are drooping. Spikelets have awns that form right angles at maturity. Generally soft-hairy below awn.	Seed. Blooming period: April-June	Cal-IPC List Annual Grasses

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES (cont.)							
 Source 7	*Briza* sp.	Quaking grass	Annual or perennial grass	1-24 inches tall	Stems are ascending to erect. Leaves can be basal to cauline with flat blades. Spikelets are erect to pendent, papery and can be compressed.	Seed. Blooming period: April-July	
 Source 7	*Briza minor*	Little quaking-grass	Annual grass	4-20 inches tall	Erect, loosely tufted grass. Leaves are linear, slender and pale green turning straw-colored with maturity. From early summer to early autumn, produces slender-stemmed inflorescence of ovate spikelets that are pale green and purple tinted, turning straw-colored.	Seed. Blooming period: April-July	

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES (cont.)							
 Source 7	*Bromus* sp.	Brome grass, red brome, foxtail brome, cheatgrass	Annual to perennial grass	1-30 inches tall	Leaves are generally long and slender. Inflorescences are generally awned and can be bright green, reddish purple or tan depending on species and stage of growth.	Seed. Blooming period: mid-April – June	Cal-IPC Lists A-1, A-2 and Annual Grasses
 Source 7	*Bromus diandrus*	Common ripgut grass, ripgut brome	Annual grass	12-36 inches tall	Flat leaf blades are generally hairy. Usually hairy sheaths. Open inflorescences with spreading or drooping branches.	Seed. Blooming period: April-June	Cal-IPC List Annual Grasses
 Source 7	*Gastridium ventricosum (Gastridium phleoides)*	Nit grass	Annual grass	4-16 inches tall	Leaves are narrow and 0.5-1.5 inches long. Spikelets have glumes that are translucent between veins.	Seed. Blooming period: June-August	

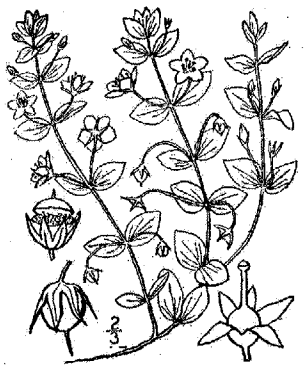
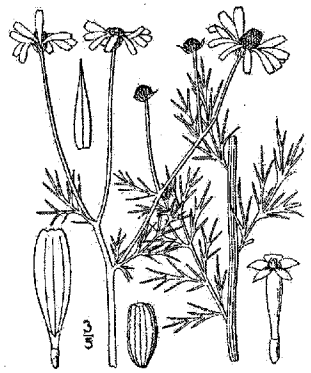
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES (cont.)							
 Source 7	*Lamarckia aurea*	Goldentop	Annual grass	3-16 inches tall	Generally erect stem. Leaves are long, narrow and flat. Inflorescences are dense, drooping clusters and golden yellow to purplish.	Seed. Blooming period: February-May	
 Source 7	*Lolium multiflorum*	Italian ryegrass, annual ryegrass	Annual grass	12-28 inches tall	Erect stem often with purplish base. Leaves are shiny, flat, dark green with prominent veins. Spikes are flat and can be up to 12 inches long with alternating spikelets.	Seed. Bloom period: early spring	Cal-IPC List Annual Grasses

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES (cont.)							
 Source 7	*Polypogon monspeliensis*	Annual beard grass, rabbitfoot grass	Annual grass	6-24 inches tall	Erect or prostrate-based plant. Leaves are narrow and often abruptly bent. Large, soft, furry seedheads resembling a rabbit's foot.	Seed. Blooming period: April-August	
 Source 7	*Schismus barbatus*	Mediterranean grass	Annual grass	2-14 inches tall	Leaves alternate, are narrow and linear. Sheaths have soft, scattered hairs. Spikelets are initially green and turn red as plant matures.	Seed. Blooming period: February-May	Cal-IPC List Annual Grasses

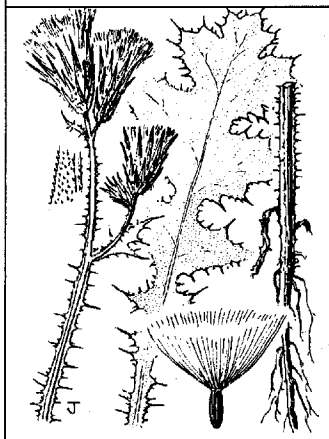
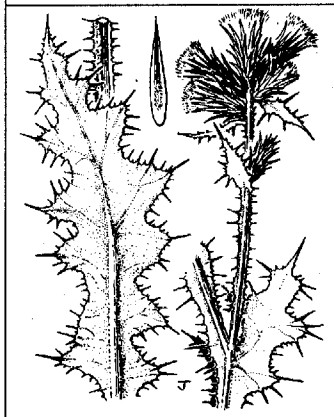
Appendix E
NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)

Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL GRASSES (cont.)							
 Source 7	*Vulpia myuros*	Fescue, rattail fescue	Annual grass	Up to 25 inches tall	Folded and narrow leaves. Sheaths and blades are hairless. Narrow, awned inflorescences.	Seed. Blooming period: late winter	
 Source 2.a	*Cortaderia jubata*	Pampas grass, jubata grass	Perennial grass	6-23 feet tall	Dark green, 3-5-foot-long leaves are flat or slightly V-shaped at cross section and grow from tufted base. Sheaths are densely hairy. Plumes are 1-3-feet-long and consist of hairy spikelets; deep violet when immature, turning pinkish, cream-white or tawny at maturity.	Seed. Blooming period: late July-September	Cal-IPC List A-1

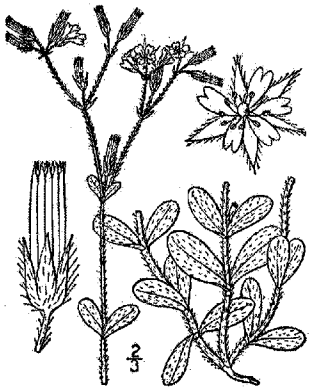
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL GRASSES							
 Source 7	*Cynodon dactylon*	Bermuda grass	Perennial grass	Blades are usually 1-4 inches tall; stems can grow 4-16 inches tall	Long, slender, creeping rhizomes and stolons. Generally smooth, gray-green leaves with a ring of white hairs at junction of blade and sheath. Stems are slightly flattened. Inflorescences are purple.	Seed and spreading by stolons. Blooming period: summer	
 Source 7	*Rhynchelytrum repens* (*Melinis repens*)	Natal grass	Perennial grass	12-40 inches tall	Grows in tufts. Long, slender blue-green leaves. Flowers vary from purple, pink and white and are densely covered silky hairs.	Seed. Blooming period: summer	

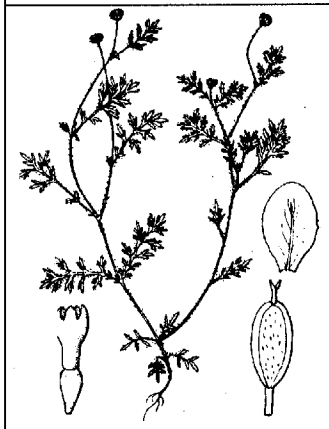
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL GRASSES (cont.)							
ANNUAL HERBS							
 Source 6.1	*Anagallis arvensis*	Scarlet pimpernel	Annual herb	2-16 inches tall	Stems can be erect or decumbent to form mats. Leaves are small ovate with brown speckles below and occasionally hairy. Flowers are 5-petaled, red-orange or occasionally white or blue.	Seed. Blooming time: May-September	
 Source 6.q	*Anthemis cotula*	Mayweed chamomile, stinking chamomile	Annual herb	6-24 inches tall	Plant is bushy and ill-smelling. Leaves are multi-divided into narrow segments. Flowers are white.	Seed. Blooming period: April-August	

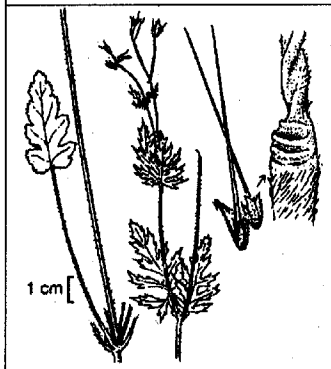
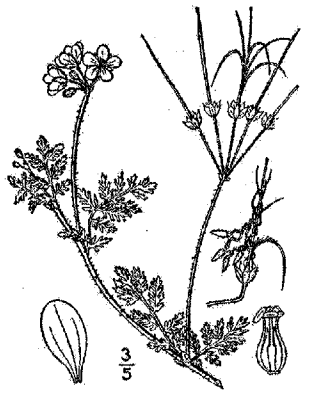
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 5.c	*Brassica* sp.	Mustard	Annual herb	4-40 inches tall	Stems are tall, erect and branched. Basal rosette. Flowers are generally yellow. Leaves are lobed and vary in size and shape by species.	Seed. Blooming period: February-April	Cal-IPC Lists A-2 and B

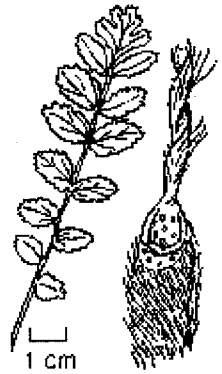
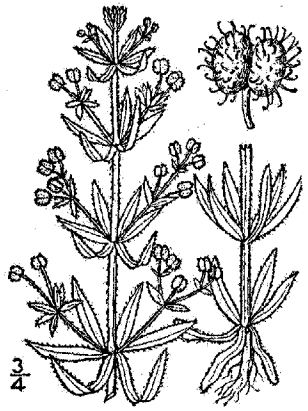
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.h	*Carduus pycnocephalus*	Italian thistle	Annual herb	8-80 inches tall	Leaves are white-woolly below, green and hairless above and deeply cut into 2-5 spiky lobes. Densely haired flower heads. Pink to purple flowers in clusters of 2-5.	Seed. Blooming period: mid-September–December	Cal-IPC List B
 Source 1.g	*Carduus tenuiflorus*	Slenderflower thistle	Annual (sometimes biennial) herb	12-48 inches tall	Spiny-winged stems are strongly ribbed and slightly woolly. Leaves are deeply cut into 2-5 pairs of lobes. Flowers are pink to purple in clusters of 5-20.	Seed. Blooming period: May-July	

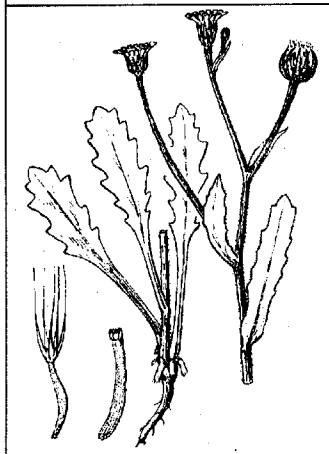
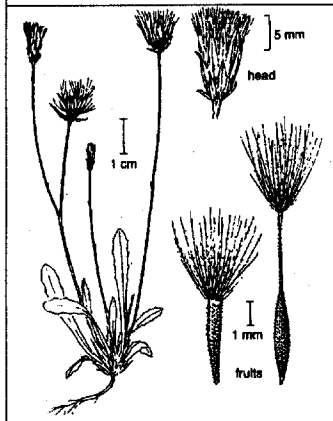
Appendix E
NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)

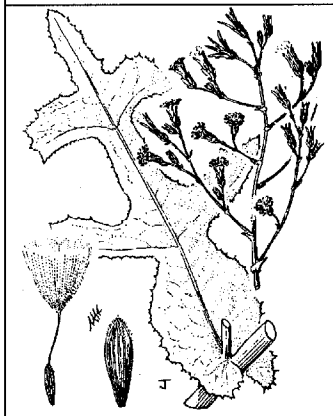
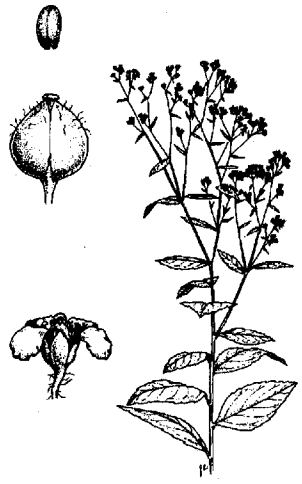
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 6.r	*Centaurea melitensis*	Star thistle	Annual herb	2-36 inches tall	Basal leaves are lobed and 2-4 inches long. Upper leaves are narrow and 1.25 inches long. Leaves are green, sometimes turning bluish-green and lightly covered with cobwebby hairs later in the season. Yellow, spiny flowerheads can be one to several, solitary or clustered.	Seed. Blooming period: April-June	Cal-IPC List B
 Source 6.c	*Cerastium glomeratum*	Mouse-ear chickweed, sticky chickweed	Annual herb	4-12 inches tall	Stems are slender with dense hairs, prostrate and spread to form mats. Leaves are densely hairy. Flowers are white, arranged in clusters at ends of stems and have five slightly notched petals.	Seed and spreading. Blooming period: February-May	

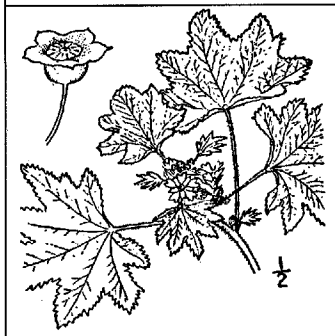
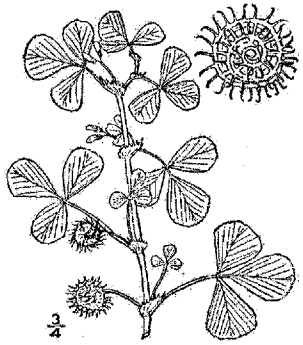
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 6.k	*Chamaesyce maculata*	Spotted spurge, spotted sandmat	Annual herb	12-36 inches tall	Stems are hairy and prostrate, forming dense mats. Leaves are dark green, usually marked with a red spot in the center, hairy and finely toothed. Tiny pinkish-white flowers.	Seed and spreading. Blooming period: April-October	
 Source 1.f	*Cotula australis*	Australian brass-buttons	Annual herb	Up to 8 inches tall	Stems are branched from base and sparsely hairy. Leaves are forked with 2-3 tips per leaf. Flowers are pale yellow.	Seed. Blooming period: January-May	

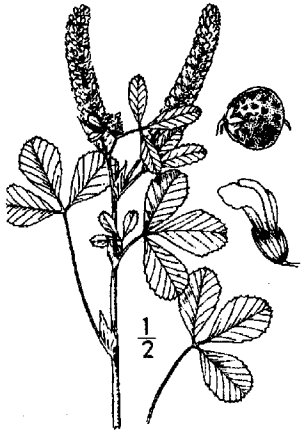
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 5.e	*Erodium botrys*	Long-beaked filaree, long-beaked storksbill	Annual herb	3-12 inches tall	Stem prostrate to ascending and short-hairy. Basal rosette. Ovate to oblong-ovate leaves are lobed to dissected and short-hairy. Flowers are lavender to red-violet with purple veins.	Seed. Blooming period: March-May	
 Source 6.j	*Erodium cicutarium*	Red-stem filaree	Annual herb	3-10 inches tall	Usually reddish branched stems leaning or lying on ground with small, fern-like leaves. Flowers are deep reddish-lavender to purplish-pink in clusters of 2-10.	Seed. Blooming period: February-June	

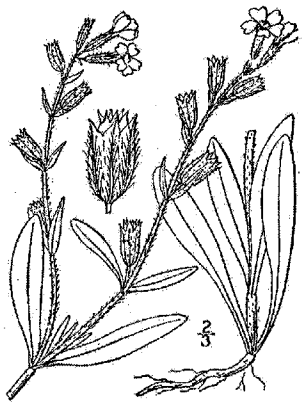
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 5.e	*Erodium moschatum*	Green-stem filaree, whitestem filaree	Annual herb	4-20 inches tall	Basal rosette. Leaves are simple, indented at edges. Flowers are crimson to crimson-purple.	Seed. Blooming period: February-May	
 Source 6.o	*Galium aparine*	Goosegrass, stickywilly, catchweed bedstraw	Annual herb	Up to 11 inches tall; stems grow up to 36 inches in length	Stems are square with downward pointing bristles, brittle and weak. Leaves are linear with stiff hairs and mostly in whorls of 6-8. Flowers are small, green or white.	Seed. Blooming period: March-July	

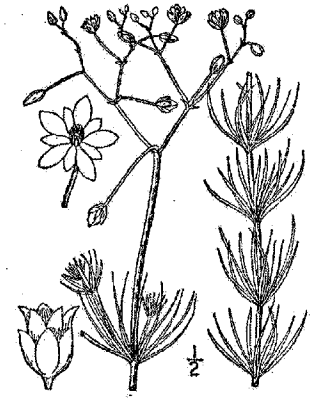
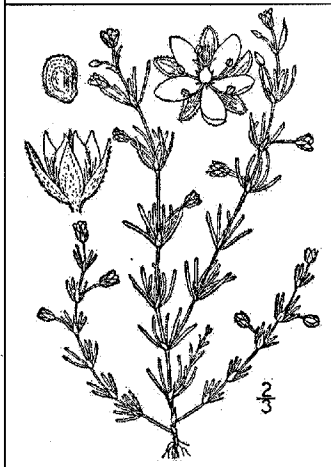
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.i	*Hedypnois cretica*	Crete hedypnois, cretanweed, crete weed	Annual herb	2-16 inches tall	Leaves generally oblong and finely bristly; hairs minutely forked or barbed at tip. Flowers are yellow with some petals black on tips.	Seed. Blooming period: March-May	
 Source 5.b	*Hypochaeris glabra*	Smooth cat's-ear	Annual herb	4-16 inches tall	Basal rosette of shiny, lobed leaves. Flowers are yellow, dandelion-like and at end of stems.	Seed. Blooming period: March-June	

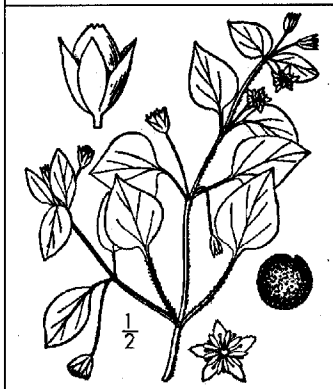
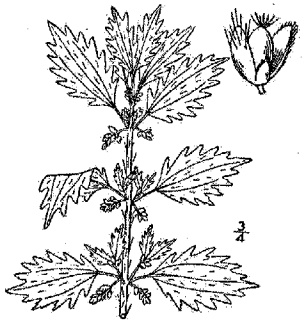
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.j	*Lactuca serriola*	Wild lettuce, prickly lettuce	Annual herb	12-60 inches tall	Branching occurs from principle stem. Leaves alternate, and are twisted at base to lie vertically, prickly below, toothed and green to bluish green. Flowers are yellow.	Seed. Blooming period: May-September	
 Source 2.b	*Lepidium* sp.	Pepper grass	Annual herb to shrub	6-96 inches tall	Multi-stemmed. Leaves vary among species. Flowers are clustered and vary in color among species (white or yellow).	Seed, root systems and pieces of rootstock. Blooming period: May-July	Cal-IPC List A-1

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.d	*Malva parviflora*	Cheeseweed, little mallow	Annual herb	Up to 78 inches tall	Stems are erect. Leaves are roundish, heart-shaped with wavy edges and up to 2.5 inches wide. Flowers are white or light pink.	Seed. Blooming period: March-July	
 Source 6.h	*Medicago polymorpha*	California bur-clover	Annual herb	4-16 inches tall	Stems are prostrate, mat-forming or ascending (vine). Leaves are trifoliate; leaflets are heart-shaped and toothed. Flowers are yellow and clustered.	Seed. Blooming period: March-June	Cal-IPC Considered But Not Listed

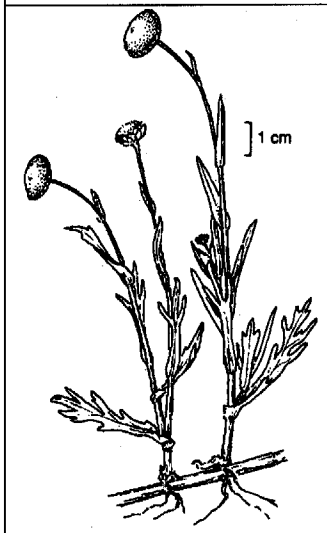
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.c	*Melilotus indica*	Indian sweet clover	Annual herb	24-72 inches tall	Trifoliate leaves; leaflet edges are serrated halfway or more, starting from tip. Flowers are small, yellow and arranged in multi-flowered terminal.	Seed. Blooming period: April-October	
 Source 6.g	*Raphanus sativus*	Wild radish	Annual herb	24-60 inches tall	Basal leaves are pinnately divided and 3-6 inches long. Upper leaves are smaller and mostly undivided. Flowers are clustered and vary from purple to white; petals are veined with purple to pink.	Seed. Blooming period: April-June	

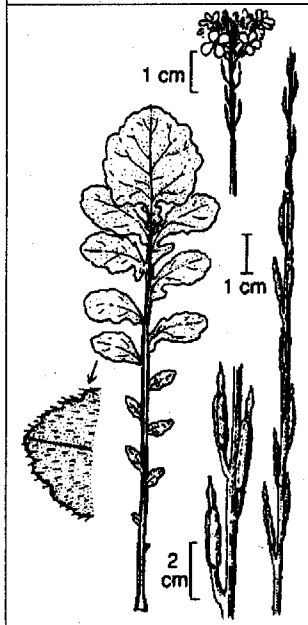
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 6.f	*Silene gallica*	Common catchfly, windmill pink	Annual herb	4-16 inches tall	Leaves are opposite and gradually reduced upwards. Flowers are 5-petaled, pinkish-lavender turning white and twisted (like sails of a windmill).	Seed. Blooming period: February-June	
 Source 6.p	*Sonchus asper*	Prickly sow thistle	Annual herb	12-60 inches tall	Plant contains milky juice. Lower leaves are lobed and toothed; edges are very spiny. Upper leaves have sharp, stiff prickles and large rounded basal lobes clasping the stem. Flowers are yellow and dandelion-like.	Seed. Blooming period: May-October	

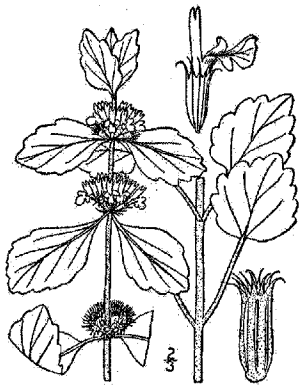
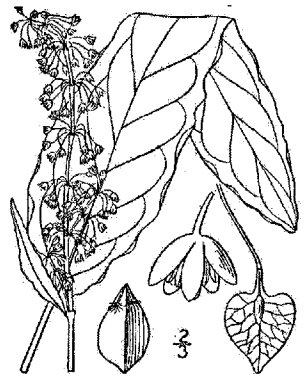
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 6.d	*Spergula arvensis* ssp. *arvensis*	Stickwort, spurry	Annual herb	6-24 inches tall	Mostly branched at the base. Somewhat sticky, erect and spreading. Leaves are pine needle-like, fleshy and arranged in whorls at nodes. Flowers are white and arranged in loose clusters at end of branches.	Seed. Blooming period: most months	
 Source 6.e	*Spergularia rubra*	Ruby sand-spurry	Annual or short-lived perennial herb	4-12 inches tall	Stems are prostrate and spreading. Leaves thin, not fleshy, short, linear and flat. Flowers are small and pink.	Blooming period: May-August	

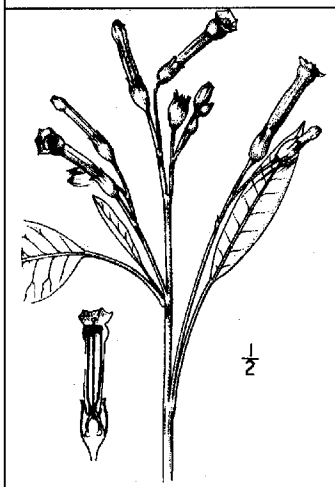
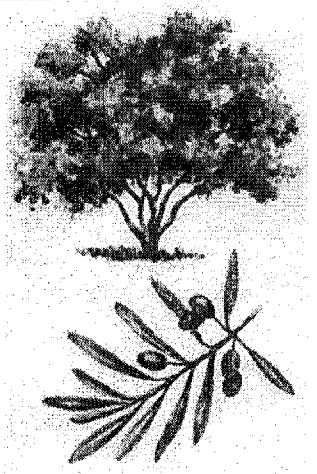
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
ANNUAL HERBS (cont.)							
 Source 1.b	*Stellaria media*	Common chickweed	Annual herb	4-12 inches tall	Stems with numerous branches, hairy, commonly prostrate and spread to form mats. Leaves are often hairy. Flowers are white.	Seed. Blooming period: March-November	
 Source 6.a	*Urtica urens*	Dwarf nettle, burning nettle	Annual herb	5-24 inches tall	Square stems with stinging hairs branch from base of mature plant. Leaves are opposite, ovate and have toothed edges and stinging hairs. Small greenish-white flowers clustered in the leaf axils.	Seed. Spread more from creeping roots than from seed. Blooming period: June-September	

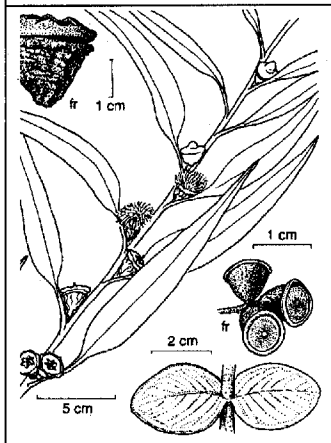
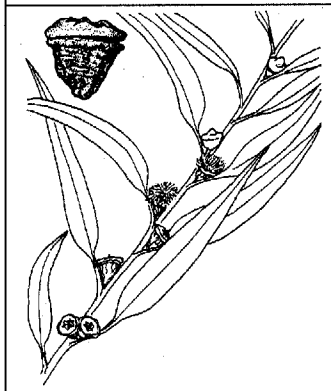
Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL HERBS							
 Source 1.a	*Atriplex semibaccata*	Australian saltbush	Perennial herb or subshrub	Up to 13 inches tall	Evergreen. Stems are prostrate and spreading to form dense mat up to 6 feet across. Leaves are silvery gray, oblong, toothed and often scaly. Diamond-shaped fleshy, reddish flowers and small, red fruit.	Seed. Blooming period: April-December	Cal-IPC List A-2
 Source 6.m	*Convolvulus arvensis*	Bindweed, morningglory	Perennial herb	12-48 inches tall	Often climbing or forming dense tangled mats. Leaves alternate and are arrowhead-shaped and pointed or with blunted lobes at base. Flowers are funnel-shaped and vary from white to pinkish.	Seed. Blooming period: late June-fall	Cal-IPC Considered But Not Listed. CA Dept. Food & Agriculture "C" list of noxious weeds

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL HERBS (cont.)							
 Source 5.a	*Cotula coronopifolia*	African brass-buttons	Perennial herb	Up to 20 inches tall	Stems are fleshy and decumbent. Leaves are linear to lance-shaped or oblong, irregularly toothed or lobed at tip. Flowers are bright yellow.	Seed and rooting from nodes. Blooming period: March-December	
 Source 4	*Gazania linearis*	Gazania, Colorado gold	Perennial herb	6-12 inches tall	Stems branch from base and are prostrate, spreading along ground; mat-like. Dark green leaves in loose basal rosette. Flowers are yellow or orange, generally with dark spot at base of petals.	Seed and spreading. Blooming period: summer-fall	Cal-IPC List More Information Needed

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL HERBS (cont.)							
 Source 5.d	*Hirschfeldia incana*	Perennial mustard, Mediterranean mustard, wild mustard	Perennial herb	Up to 36 inches tall	Fine gray-white haired stems are branched both from base and above. Leaves in basal rosette, flat on ground and pinnately lobed. Flowers are light yellow, 4-petaled and clustered.	Seed. Blooming period: May-October	Cal-IPC List More Information Needed
 Source 6.i	*Lathyrus latifolius*	Sweet pea	Perennial herb	3-10 feet tall	Lance-shaped leaves. Climbing growth habit; vine. Flowers can be white, pink, red or purple.	Seed. Blooming period: late spring; seed in summer	

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
PERENNIAL HERBS (cont.)							
 Source 6.n	*Marrubium vulgare*	Horehound	Perennial herb	12-30 inches tall	Stems are square and woolly. Leaves are paired at each stem joint, have a white-woolly wrinkled surface and coarsely toothed edges. Flowers are small, white and borne in dense clusters in leaf axils.	Seed. Blooming period: mid-summer	
 Source 6.b	*Rumex crispus*	Curly dock	Perennial herb	24-60 inches tall	Stems are erect, often reddish and slightly ridged. Leaves are mostly basal with curly/wavy edges, 4-12 inches long. Flowers occur in clusters on upper portion of stem and are greenish turning reddish-brown at maturity. Sometimes entire plant turns reddish-brown at maturity.	Seed. Blooming period: most of the year	

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
SHRUBS AND TREES							
 Source 1.e	*Nicotiana glauca*	Tree tobacco	Tree	Up to 20 feet tall	Generally gray trunk. Upright branches generally flexible, slender and often green. Leaves 2-6 inches in length and can range from light green, grayish- and bluish-green with waxy coating on both surfaces; leathery texture. Flowers are tubular and yellow.	Seed. Blooming period: spring-summer	Cal-IPC List More Information Needed
 Source 3	*Olea europaea*	Olive	Shrub or tree	Up to 35 feet tall	Gray, furrowed bark. Leaves are densely silver-scaly below, dark green and sparsely scaly above. Flowers are white. Fruits are oblong, oily, green turning black.	Seed. Blooming period: March-May	Cal-IPC List B

Appendix E NON-NATIVE PLANT SPECIES DOCUMENTED ON BARNETT RANCH (cont.)							
Diagram[1]	Scientific Name	Common Name	Life form	Growth Habit	Identifying Characteristics[2]	Method of Reproduction	Degree of Invasiveness[3]
SHRUBS AND TREES (cont.)							
 Source 5.f	*Eucalyptus* sp.	Eucalyptus, gum tree	Tree or shrub	Up to 180 feet tall	Usually rough bark, which peels off in long strips, leaving a smooth surface. Fruit is capsule-like, woody, flat with opening at top.	Seed and resprouting	Cal-IPC List A-1
 Source 5.f	*Eucalyptus globulus*	Blue gum, common eucalyptus	Tree	Up to 180 feet tall	Usually rough, grayish or brownish bark, which peels off in long strips, leaving a smooth, yellowish or grayish surface. Leaves are waxy blue, sickle-shaped and hang vertically. Fruits are blue-gray, woody and ribbed.	Seed and resprouting. Blooming period: November-April. Fruit ripens from October-March	Cal-IPC List A-1

[1]Sources

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   a. Volume II, page 85.
   b. Volume II, page 140.
   c. Volume II, page 525.
   d. Volume III, page 111.
   e. Volume III, page 679.
   f. Volume IV, page 403.
   g. Volume IV, page 539.
   h. Volume IV, page 541.
   i. Volume IV, page 589.
   j. Volume IV, page 593.

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   a. Page 125.
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3. Brenzel, Kathleen Norris. 2001. Western Garden Book. Sunset Books Publisher. 768 pp. Page 486.

4. Colorado State University Cooperative Extension and Denver Botanic Gardens. 2000. Plant Select® 1998. Photograph of ColoradoGold™Hardy Gazania. http://www.ext.colostate.edu/psel/ps9806a.html.

5. Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley, 1400 pp.
   a. Page 247.
   b. Page 297.
   c. Page 409.
   d. Page 427.
   e. Page 675.
   f. Page 773.

6. USDA-NRCS PLANTS Database / Britton, N.L., and A. Brown. 1913. *Illustrated flora of the northern states and Canada.*
   a. Volume 1, page 635.
   b. Volume 1, page 657.
   c. Volume 2, page 47.
   d. Volume 2, page 59.
   e. Volume 2, page 60.

f. Volume 2, page 67.
g. Volume 2, page 195.
h. Volume 2, page 351.
i. Volume 2, page 416.
j. Volume 2, page 430.
k. Volume 2, page 467.
l. Volume 2, page 716.
m. Volume 3, page 47.
n. Volume 3, page 110.
o. Volume 3, page 259.
p. Volume 3, page 317.
q. Volume 3, page 516.
r. Volume 3, page 559.

7. USDA-NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase). 1950. Manual of the grasses of the United States. USDA Misc. Publ. No. 200. Washington, DC.

[2]**Definitions**

Glume: a small leaf-like structure at the base of a grass spikelet.
Inflorescence: the flowering part of the plant.
Spike: a usually long inflorescence with stalkless flowers or spikelets.
Spikelet: flower cluster in grasses.
Stolon: horizontal branch from the base of a plant that produces new plants from buds at its tip or nodes.
Subshrub: a plant with woody lower stems and not woody (or less woody) upper stems and twigs that die back seasonally.
Trifoliate leaf: a leaf made up of three leaflets.

[3]**Degree of Invasiveness**

California Invasive Plant Council (Cal-IPC). 1999. Exotic Pest Plants of Greatest Ecological Concern in California.

List A: Most Invasive Wildland Pest Plant; documented as aggressive invaders that displace natives and disrupt natural habitats. Includes two sublists:

List A-1: Widespread pests that are invasive in more than three Jepson regions.
List A-2: Regional pests invasive in three or fewer Jepson regions.

List B: Wildland Pest Plants of Lesser Invasiveness; invasive pest plants that spread less rapidly and cause a lesser degree of habitat disruption; may be widespread or regional.

Red Alert: Pest plants with potential to spread explosively; infestations currently small or localized. If found, alert Cal-IPC, County Agricultural Commissioner, or California Department of Food and Agriculture.

Need More Information: Plants for which current information does not adequately describe nature of threat to wildlands, distribution, or invasiveness. Further information is requested from knowledgeable observers.

Annual Grasses: New in this edition; a preliminary list of annual grasses, abundant and widespread in California, that pose significant threats to wildlands. Information is requested to support further definition of this category in next List edition.

Considered But Not Listed: Plants that, after review of status, do not appear to pose a significant threat to wildlands.

APPENDIX F

RECOMMENDED PLANT PALETTE FOR NON-NATIVE GRASSLAND AREAS

Appendix F
RECOMMENDED PLANT PALETTE FOR NON-NATIVE GRASSLAND AREAS

This palette is derived from the list of observed plant species from the Barnett Ranch Open Space Preserve Biological Resources Report. It is intended to provide recommendations for improving and replenishing the native seed-stock in the non-native grassland areas of Barnett Ranch; however, it is not expected that the entire palette would be planted at one time, rather that when opportunities arise to improve the area, that the County would plant available seed of some species in the list. Several rounds of seeding can take place over a long period of time, layering seed, and eventually providing a dominant native palette. Species with a low application rate are suggested accent plants, while malpais bluegrass (*Poa secunda*) and purple needlegrass (*Nassella pulchra*), with the highest application rates, are recommended as dominant species.

NATIVE GRASSLAND SEED MIX			
SPECIES	MINIMUM % PURITY/ GERMINATION	% LIVE SEED	POUNDS/ACRE
Blue dicks (*Dichelostemma capitatum*)	90/80	72	0.5
Blue-eyed grass (*Sisyrinchium bellum*)	95/75	71.25	2.0
California everlasting (*Gnaphalium californicum*)	5/40	2	0.5
California filago (*Filago californica*)	N/A	N/A	0.5
Chia (*Salvia columbariae*)	90/60	54	2.0
Dove weed (*Eremocarpus setigerus*)	90/40	36	2.0
False-mustard (*Camissonia californicia*)	90/50	45	2.0
Fascicled tarplant (*Hemizonia fasciculata*)	20/80	16	2.0
Four-spot clarkia (*Clarkia purpurea* ssp. *quadrivulnera*)	90/80	72	2.0
Golden yarrow (*Eriophyllum confertiflorum*)	30/70	21	2.0
Goldfields (*Lasthenia californica*)	70/50	35	2.0
Grape soda lupine (*Lupinus exubitus*)	90/70	63	2.0
Malpais bluegrass (*Poa secunda*)	90/70	63	5.0
Melic (*Melica imperfecta*)	80/60	48	2.0
Minature lupine (*Lupinus bicolor* ssp. *microphyllus*)	98/85	83.3	2.0
Purple needlegrass (*Nassella pulchra*)	90/80	72	5.0
Purple owl's clover (*Castilleja exserta*)	50/50	25	0.5
Rancher's fiddleneck (*Amsinckia menziesii* var. *intermedia*)	40/60	24	2.0
San Diego goldenbush (*Isocoma menziesii* var. *menziesii*)	40/30	12	0.5
Sand peppergrass (*Lepidium lasiocarpum* var. *lasiocarpum*)	50/40	20	0.5
Sharp-tooth sanicle (*Sanicula arguta*)	N/A	N/A	0.5
Skunkweed (*Navarretia atractyloides*)	N/A	N/A	0.5
Slender buckwheat (*Eriogonum gracile*)	30/40	12	0.5
Small-flower soap-plant (*Chlorogalum parviflorum*)	N/A	N/A	0.5
Soap plant, amole (*Chlorogalum pomeridianum*)	N/A	N/A	0.5
Telegraph weed (*Heterotheca grandiflora*)	40/50	20	0.5
Tidy-tips (*Layia platyglossa*)	70/70	49	0.5
Wooly blue-curls (*Tricostema lanatum*)	30/10	3	0.5

N/A=Commercial standards not currently available for this species.