Resource Management Plan
for
Sage Hill Preserve
San Diego County





June 2010

PARKS AND RECREATION
COUNTY OF SAN DIEGO
Where having fun is natural.

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Appendix A Sage Hill Land Management Agreement

Appendix B Baseline Biological Survey Report for the Sage Hill Preserve, County of San Diego

Appendix C Cultural Resources Phase I Survey and Inventory, Sage Hill Preserve, San Diego County, California

1.0 Introduction

Sage Hill Preserve (Preserve) consists of approximately 231.5 acres[1] located in the Elfin Forest community of unincorporated San Diego County, California (Figure 1). The Preserve was acquired in 2009 for inclusion in the North County Multiple Species Conservation Program (North County MSCP) preserve system. The Preserve consists of very high to high value natural communities as well as areas that have been marginally impacted by human activities. Currently, the Preserve is not open to the public; however, there are existing trails onsite and public access is planned for this Preserve.

1.1. Purpose of Management Plan

This Resource Management Plan (RMP) has been prepared as a guidance document to manage and preserve the biological and cultural resources within the Preserve, and to provide Area-Specific Management Directives (ASMDs) pursuant to the requirements of the Draft North County MSCP Plan (North County MSCP Plan) and Draft Framework Resource Management Plan (Framework RMP) (County of San Diego 2009a). More specifically, this RMP will:

a) guide the management of vegetation communities/habitats, plant and animal species, cultural resources, and programs described herein to protect and, where appropriate, enhance biological and cultural values;

b) serve as a guide for appropriate public uses of the property;

c) provide a descriptive inventory of the vegetation communities/habitats, plant and animal species, and the archaeological and/or historical resources that occur on this property;

d) establish the baseline conditions from which adaptive management will be determined and success will be measured; and

e) provide an overview of the operation and maintenance requirements to implement management goals.

Chapter 5 of this RMP includes ASMDs for Sage Hill Preserve.

It is recognized that the County owned land is only a small portion of the MSCP preserve system. The County does ensure management of other lands that are dedicated as a conservation easement for discretionary project mitigation, through requiring land developers to prepare Resource Management Plans. The County will spearhead a larger coordinated effort to ensure that other conserved lands in the area that make up the MSCP preserve are also being monitored and managed

[1] The assessor's parcel data list the Preserve to be 232.55 acres; however, calculations generated from the San Diego Geographic Information System (SanGIS) data show the Preserve as 231.5 acres. Therefore, this report references the property as 231.5 acres.



1 inch = 5 miles

Miles

0 1.25 2.5 5

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Sage Hill Preserve Regional Map

AECOM

Figure 1

consistent with this RMP and the overall goals of the MSCP Plan (City of San Diego, 1998) and North County MSCP Plan once it is finalized.

1.1.1 MSCP Background

The MSCP is a comprehensive habitat conservation planning program and one of three subregional habitat planning efforts in San Diego County which contribute to preservation of regional biodiversity through coordination with other habitat conservation planning efforts throughout southern California. Agencies participating in the MSCP include the County, other local jurisdictions, the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). Local jurisdictions and special districts implement their respective portions of the MSCP Plan (City of San Diego 1998) through Subarea plans, which describe specific implementing mechanisms for the MSCP.

The combination of the subregional MSCP Plan and Subarea plans serve as a Multiple Species Habitat Conservation Plan (HCP) pursuant to Section 10(a)(1)(B) of the Federal Endangered Species Act (FESA), the Natural Community Conservation Planning (NCCP) Program pursuant to the California NCCP Act of 1991 and the California Endangered Species Act (CESA). The Preserve is owned and operated by the County and is included within the North County MSCP preserve system.

1.1.2 North County MSCP Plan

The County is preparing the North County MSCP Plan as a habitat conservation planning effort which will expand the County's MSCP into the northwestern unincorporated areas of the County. This North County MSCP Plan will help conserve habitat that benefits numerous species, including the 63 covered species. This North County MSCP Plan will also enhance the region's quality of life by providing the residents of San Diego County with passive recreational and educational opportunities as well as a functioning natural environment in which to live. The North County MSCP Plan area encompasses approximately 489 square miles in and around the unincorporated communities of Bonsall, De Luz, Fallbrook, Harmony Grove, Lilac, Pala, Pauma Valley, Rainbow, Ramona, Rincon Springs, Twin Oaks Valley, and Valley Center.

The North County MSCP Plan goal is to preserve 106,780 acres of natural lands in a network of preserves. The North County MSCP preserve system will be assembled by a variety of means, beginning with the conservation and management of existing public lands.

1.1.3 Framework Management Plan and Area-Specific Management Directives

According to Section 6.3.1 of the MSCP Plan the County is required to prepare a Framework RMP for the portion of the North County MSCP preserve within the North County MSCP Plan's boundaries. The Framework RMP provides general direction for all preserve management and biological monitoring within the preserve system.

The Framework RMP also incorporates a requirement for the subsequent preparation and implementation of ASMDs to address management and monitoring issues at the site-specific level. ASMDs will be developed in accordance with the Framework RMP using the information gained during the biological and cultural resources baseline surveys. Chapter 5 of this RMP includes ASMDs for Sage Hill Preserve.

1.2. Implementation

1.2.1 Management Approach

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 monitoring program are designed to inform land 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.

It is anticipated that the recommended management actions provided in this RMP will be dynamic in nature. Applying adaptive management, the effectiveness and appropriateness of recommended management actions would be determined through review of management goal and objective achievement so that changes can be made to management directives and implementation measures as needed. Adaptive management techniques depend upon the specific issues impacting the resources. Therefore, the techniques herein may be subject to change or revisions when applied. Additionally, the monitoring protocols/requirements for MSCP covered species and habitats will be revisited periodically by participants of the MSCP and are subject to change based on adoption of updated protocols. It is anticipated that this RMP will be revised once every five years, as needed. The RMP may be revised on a shorter time scale if there is a change in circumstance, for example, acquisition of additional Preserve land.

1.2.2 Responsible Parties/Designation of Land Manager

The County is responsible for management, biological monitoring, and meeting the conditions of MSCP coverage on County-owned lands conserved as part of the MSCP Preserve system within the County's jurisdiction, which includes County-

owned land. The Preserve is operated, administered, and managed by the County Department of Parks and Recreation (DPR) and the DPR District Park Manager assigned to the Preserve is the land manager. DPR (District Park Manager and staff of the Resources Management Division) will also be responsible for the implementation and enforcement of the RMP.

The Preserve is located in the management district of one supervising park ranger, three park rangers, three seasonals, and two volunteers. Perimeter patrolling of the Preserve occurs on a daily basis and interior patrolling occurs once a week. It is expected that many of the implementation measures, especially the maintenance tasks, will be carried out by the rangers who are most familiar with the site and currently patrol the Preserve.

1.2.3 Regulatory Context

The County's park rangers manage County parks and enforce preserve rules and regulations pursuant to San Diego County Code of Regulatory Ordinances Title 4, Division 1, Chapter 1 County Parks and Recreation. In addition, per County Code of Regulatory Ordinance Sec 41.111, 41.112, 41.113, all wildlife, plant, historical artifacts, and geologic features are protected and are not to be damaged or removed. Any person who violates any provision of these sections is guilty of a misdemeanor as provided in Sections 11.116, 11.117, and 11.118 of this Code, punishable by fines up to $2,500 a day for each day the person violates these sections. The park rangers will contact law enforcement who will cite the offending individual. In addition, if an individual does not comply with signs within a facility and ignores park ranger instructions, the individual could potentially be charged with a misdemeanor by law enforcement.

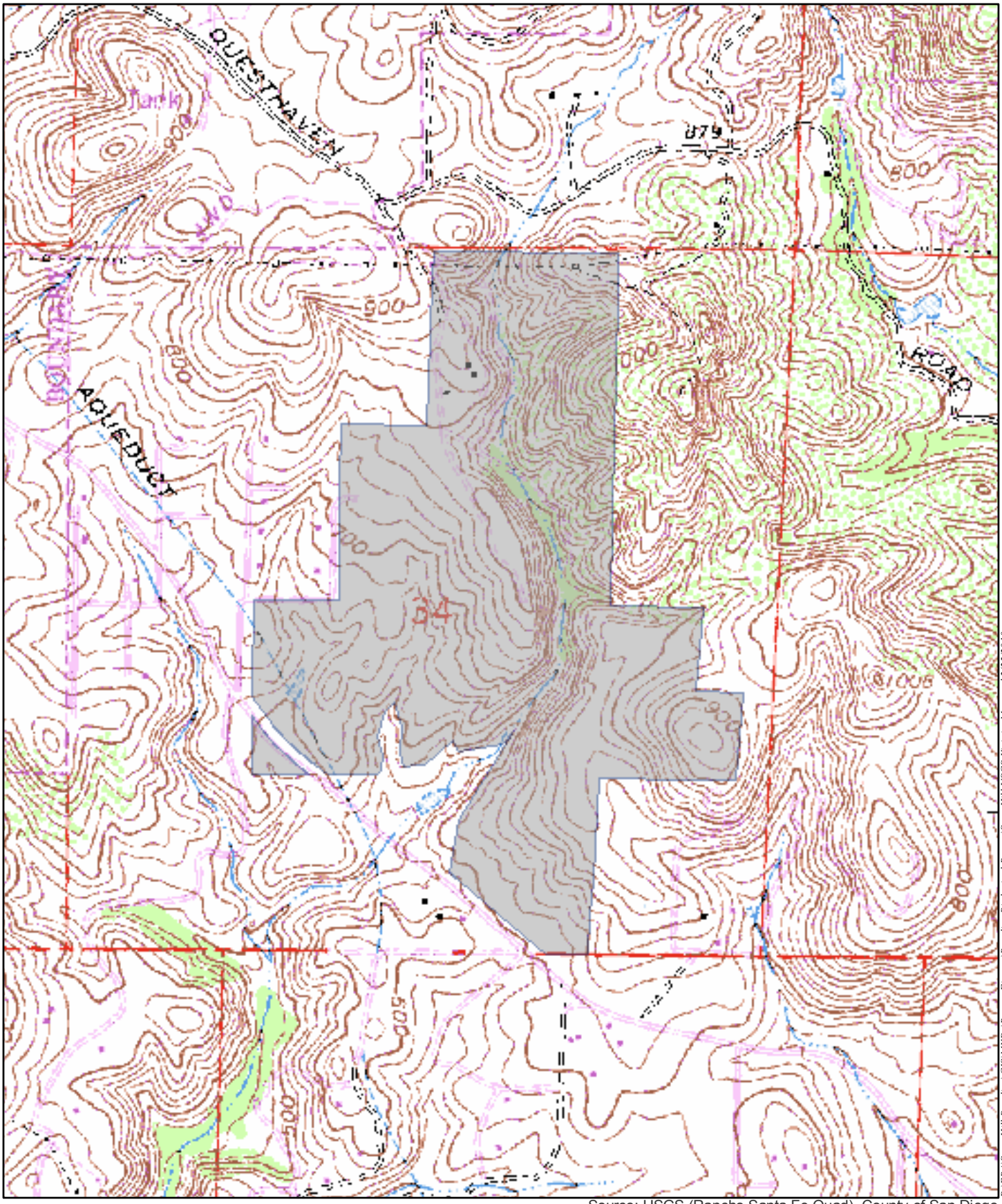
1.2.4 Limitations and Constraints

Implementation and the timing of many of the management directives will be based on funding in any fiscal year and will be determined through the DPR Operations Division who will prioritize preserve needs in their work plan for the fiscal year based on the priority of the directives in the RMP for each preserve.

2.0 Property Description

2.1 Legal Description

The Preserve property is specifically located along Elfin Forest Road between Fortuna del Norte and Aguilera Lane, in the Elfin Forest community of unincorporated San Diego County (Figure 2). The Preserve is mapped in the Rancho Santa Fe USGS 7.5 minute quadrangle map at Township 12 South, Range 3 West, Section 34. The Preserve consists of assessor's parcel numbers 679-060-0400, 679-060-0600, 679-060-0700, 679-080-1000, 679-080-1100, 679-100-0100, 679-100-0200, 679-100-0300, 679-100-0400, and 679-100-0600.



Source: USGS (Rancho Santa Fe Quad), County of San Diego

1 inch = 1,000 feet

0 250 500 1,000 Feet

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Sage Hill Preserve USGS Vicinity Map

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Figure 2

2.2 Geographical Setting

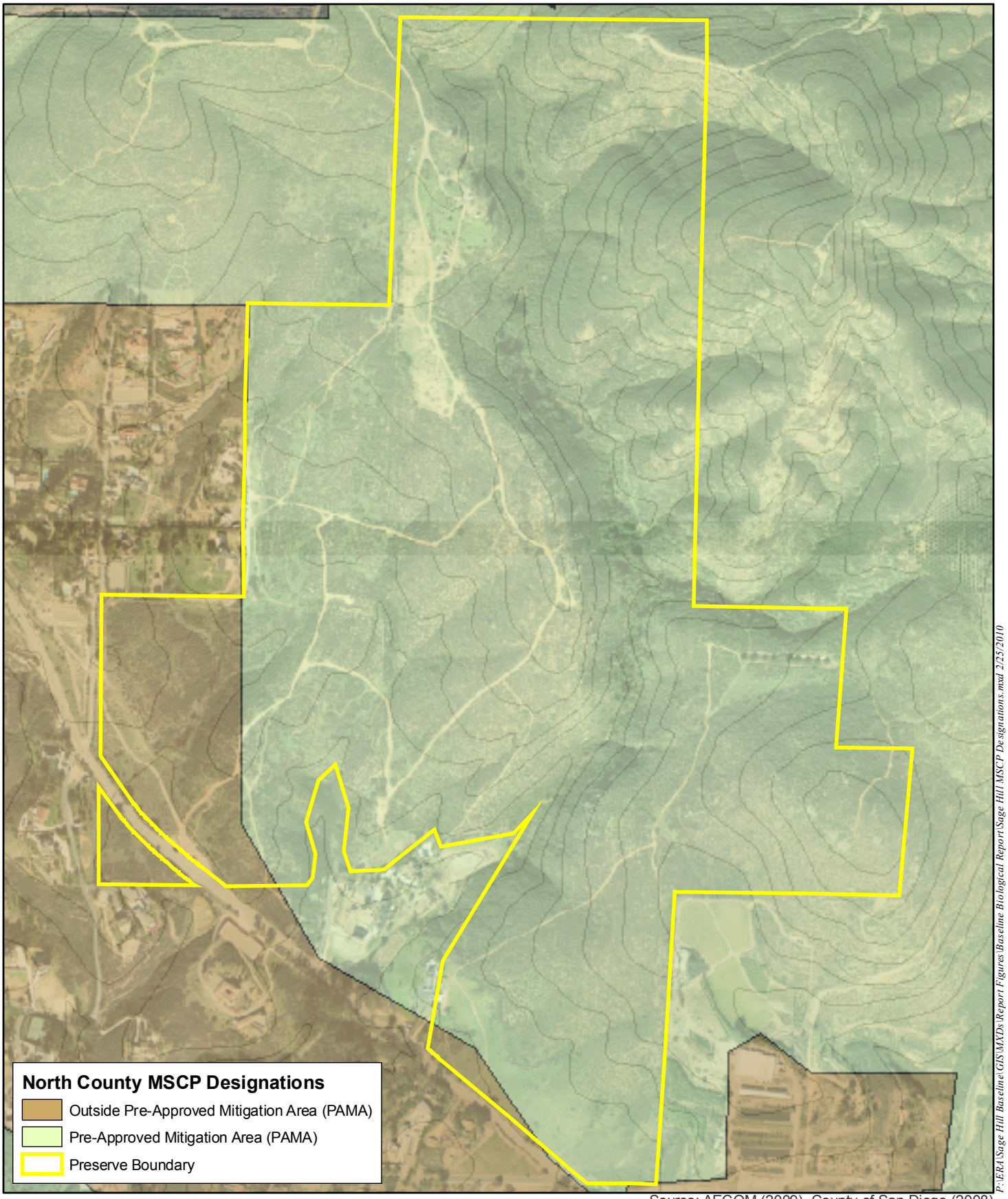
The Preserve is located in the Peninsular Geomorphic Range, in the coastal foothills of western San Diego County, approximately 7.4 miles east of the Pacific Ocean. The Preserve's terrain contains primarily moderate to steep slopes with some flat terrain along the top of the ridgelines. The elevation change is approximately 400 feet, ranging from 590 feet above mean sea level (MSL) near the southern edge of the Preserve to 990 feet above MSL on the eastern edge. A canyon with a small, un-named perennial stream bisects the Preserve from north to south.

2.2.1 Site Access

Existing access points to the Preserve (Figure 7) include: 1) two gates in the southern area of the Preserve along Elfin Forest Road; 2) gate located in the northwestern portion of the Preserve adjacent to Carib Drive; and 3) gate in northwestern corner of the Preserve.

2.2.2 MSCP Context

The Preserve is located in the Elfin Forest and Harmony Grove Cores and approximately 214 acres of the Preserve is designated under the North County MSCP as Pre-Approved Mitigation Areas (PAMA) and 18 acres Outside PAMA (Figure 3). Open space property is located directly to the northwest, north, and east and is designated as PAMA and rural residential development to the south and west designated as Outside PAMA.



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Source: AECOM (2009), County of San Diego (2008)

1 inch = 600 feet

0 150 300 600 Feet

Sage Hill Preserve MSCP Designations

AECOM

Figure 3

2.3 Physical and Climatic Conditions

2.3.1 Geology and Soils

Preserve geology was mapped in the Oceanside 30' X 60' quadrangle (Kennedy and Tan, 2005). The Preserve is underlain by Cretaceous volcanic and metavolcanic rocks, including granite, granodiorite and unidentified hard metavolanic rocks (Bowman 1973). The Preserve also contains areas of granitic alluvium eroded from these rocks.

The Preserve contains seven mappable soil phases in five soil series (Figure 4). Soils were mapped using data from the web soil survey (NRCS 2009); and soil series and phase descriptions are taken from Bowman (1973).

Cieneba rocky coarse sandy loam, 9 to 30 percent slopes, eroded

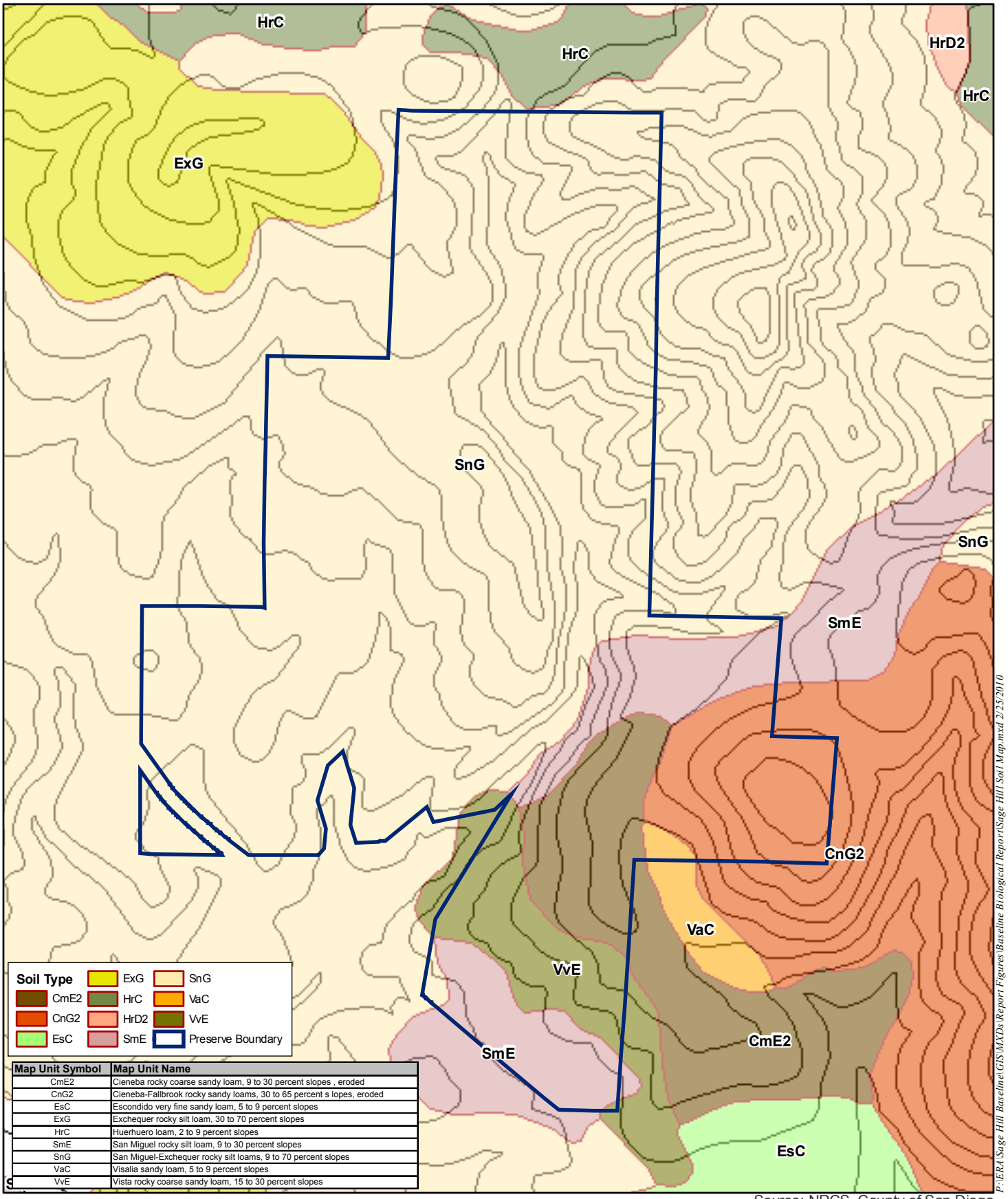
This soil is a coarse sandy loam, 5 to 15 inches deep over hard granodiorite. The slope is rolling to hilly, and 10 to 30 percent is covered by rock outcrops and very large granodioritic boulders. Available water holding capacity is 1 inch to 1.5 inches. Included in mapping are small areas of Vista rocky coarse sandy loam and Las Posas rocky sandy loam.

Cieneba-Fallbrook rocky sandy loams, 30 to 65 percent slopes, eroded

This complex is about 50 percent Cieneba coarse sandy loam and 40 percent Fallbrook sandy loam. The remainder is covered by rock outcrops and large boulders. Included in the mapping are small areas of Vista rocky coarse sandy loam. The Cieneba portion is coarse sandy loam 5 to 15 inches deep. The soil is moderately rapidly permeable, excessively drained, and has 1 inch to 1.5 inches of water available. Fertility is low. Fallbrook sandy loam is 20 to 34 inches deep. The soil is slowly to moderately permeable, well drained, and has 3 to 5 inches of water available. Fertility is medium in this soil. For both soils, runoff is rapid to very rapid and the erosion hazard is high to very high. Sheet and gully erosion are moderate.

San Miguel rocky silt loam, 9 to 30 percent slopes

This soil is a well-drained silt loam 15 to 34 inches thick, derived from hard metavolcanic rock, and rocks cover approximately 10 percent of the surface. Fertility is very low. Permeability is slow, and available water holding capacity is 2.5 to 3 inches, although some moisture is available from the clay subsoil. Runoff is medium to rapid, and erosion hazard is moderate to high. This soil mapping unit includes small areas of Escondido soils, Exchequer soils, and Friant soils, as well as small areas were the slope is up to 50 percent.



Map Unit Symbol	Map Unit Name
CmE2	Cieneba rocky coarse sandy loam, 9 to 30 percent slopes , eroded
CnG2	Cieneba-Fallbrook rocky sandy loams, 30 to 65 percent s lopes, eroded
EsC	Escondido very fine sandy loam, 5 to 9 percent slopes
ExG	Exchequer rocky silt loam, 30 to 70 percent slopes
HrC	Huerhuero loam, 2 to 9 percent slopes
SmE	San Miguel rocky silt loam, 9 to 30 percent slopes
SnG	San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes
VaC	Visalia sandy loam, 5 to 9 percent slopes
VvE	Vista rocky coarse sandy loam, 15 to 30 percent slopes

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Source: NRCS, County of San Diego

1 inch = 700 feet

0 175 350 700 Feet

Sage Hill Preserve Soil Map

AECOM

Figure 4

San Miguel-Exchequer rocky silt loams, 9 to 70 percent slopes

This complex occurs on mountainous uplands, at elevations of 400 to 3,300 feet. It is about 50 percent San Miguel silt loam and 40 percent Exchequer silt loam, and the rest is covered by rock outcroppings. Included in mapping were small areas of Escondido soils and Friant soils. The San Miguel soil has a rooting depth is 18 to 23 inches, and fertility is very low. The soil is slowly permeable and has 2.5 to 3 inches of water holding capacity. The Exchequer soil has a rooting depth is 8 to 17 inches, and fertility is very low. The soil is moderately permeable and has 1 to 2 inches of water available. For both soil types drainage is good, runoff is medium to rapid, and the erosion hazard is moderate to very high.

Visalia sandy loam, 5 to 9 percent slopes

This fertile soil is a sandy loam that can be up to 60 inches deep. It is derived from granitic alluvium, and occurs on low slopes, where runoff is slow and erosion hazard is slight. Permeability is moderately rapid, and the available water holding capacity is 8 to 9.5 inches. Included in this soil in mapping are small areas of Greenfield soils, Placentia soils, Ramona soils, and Tujunga soils.

Vista rocky coarse sandy loam, 15 to 30 percent slopes

This soil is sandy loam that is 20 to 34 inches deep over weathered granodiorite or quartz diorite. It occurs on moderately steep slopes, with 10-20 percent covered with rock outcrops and large boulders. The available water holding capacity is 2 to 4.5 inches. Runoff is medium to rapid, and erosion hazard is moderate to high. Included in mapping are small areas of Fallbrook soils and Cieneba soils.

2.3.2 Climate

San Diego County has a Mediterranean climate, with cool wet winters and warm, dry summers. To provide more detail, temperature and precipitation data were taken from the California Irrigation Management Irrigation System (CIMIS 2009) weather station in Escondido, approximately 12 miles east of the Preserve (33.08^{o}N, 116.98^{o}W, 390' elevation). The data were averaged by month across 10 years (July 1999-July 2009) to determine the monthly mean temperature, the mean minimum temperature, and the mean maximum temperature, as well as mean monthly precipitation (Table 1). Overall, December is the coldest month and August is the hottest, while June is the driest and February is the wettest month, on average (Table 1).

Table 1. Mean Monthly Temperatures and Precipitation, July 1999-July 2009

Month	Mean Monthly Temperatures Mean (Min to Max)(°F)	Mean Monthly Total Precipitation (in)
January	51.8° (36.4° to 68.9°)	1.18”
February	52.4° (39.0° to 66.7°)	2.52”
March	55.1° (41.7° to 69.8°)	1.08”
April	57.7° (44.2° to 71.8°)	0.82”
May	62.8° (50.1° to 76.9°)	0.19”
June	66.5° (53.5° to 81.4°)	0.01”
July	70.9° (57.2° to 86.7°)	0.03”
August	71.2° (57.2° to 87.7°)	0.10”
September	68.0° (53.4° to 85.7°)	0.03”
October	62.7° (48.0° to 79.8°)	0.71”
November	56.5° (41.1° to 73.9°)	0.65”
December	51.2° (36.1° to 68.4°)	0.86”

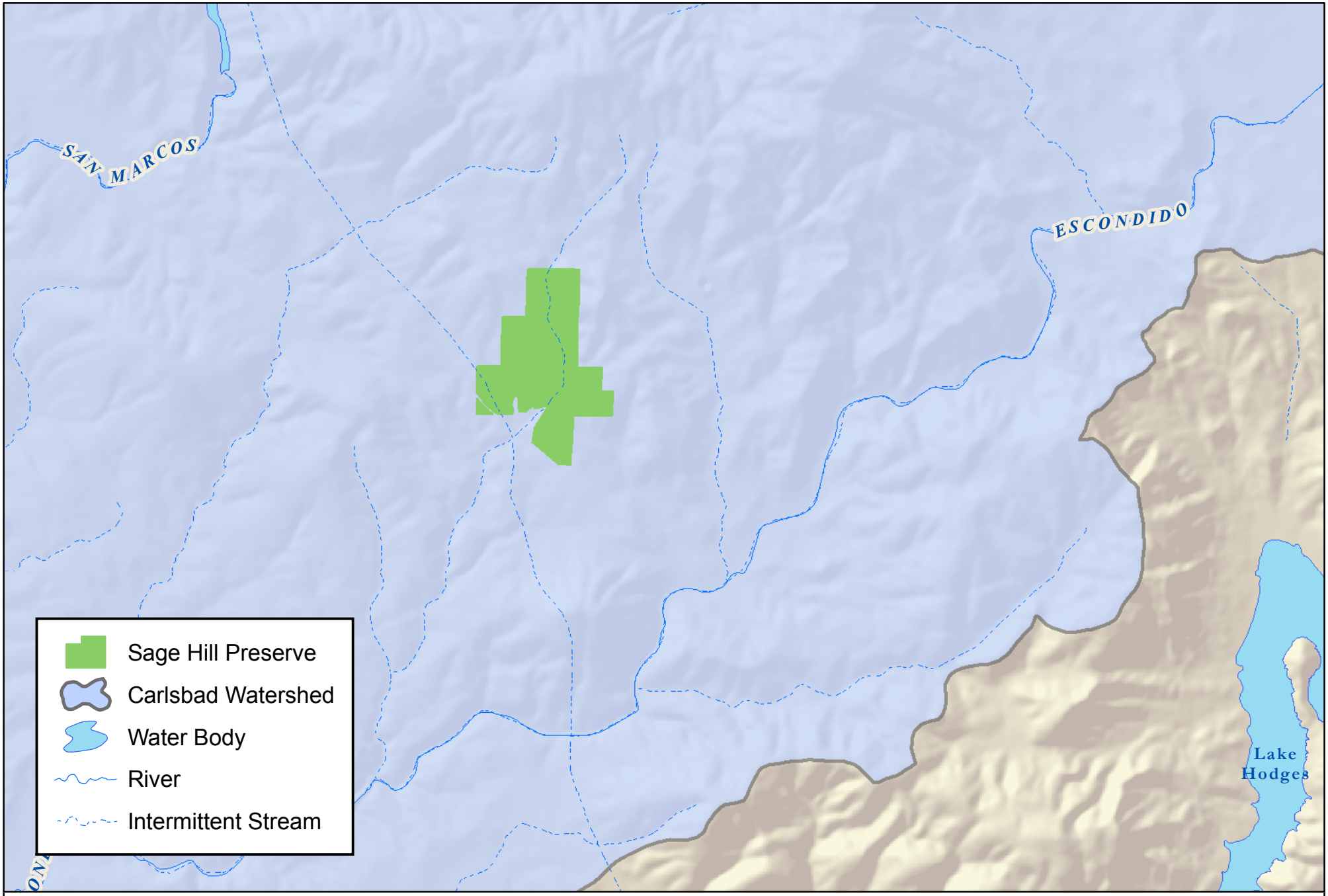
2.3.3 Hydrology

The Preserve is within the Escondido Creek Watershed, which is part of the Carlsbad Hydrologic Unit (CWN, 2009). An unnamed tributary of Escondido Creek bisects the Preserve north to south (Figure 5). The tributary is mapped as an intermittent blue-line stream. In 2009, it flowed throughout the year.

2.3.4 Fire History

The Preserve burned entirely in 1943 and 1996 (SanGIS 2009) (Figure 6). While fires occurred nearby in 1988 and 1994, they did not enter the Preserve. Based on the continued dominance of chaparral and coastal sage scrub in the Preserve’s vegetation, the Preserve’s native species can tolerate fires that return every 53 years.

The Preserve is located within the jurisdiction of the California Department of Forestry and Fire Protection (CalFire) and the Elfin Forest/Harmony Grove Fire Department. The Preserve is also located in a wildfire-prone area and has been mapped by CalFire as a “Very High Fire Severity Zone” and is located within Fuel Management Priority Area 6 (Rancho Project Area) as defined by the Forest Area Safety Task Force (County of San Diego 2009b).



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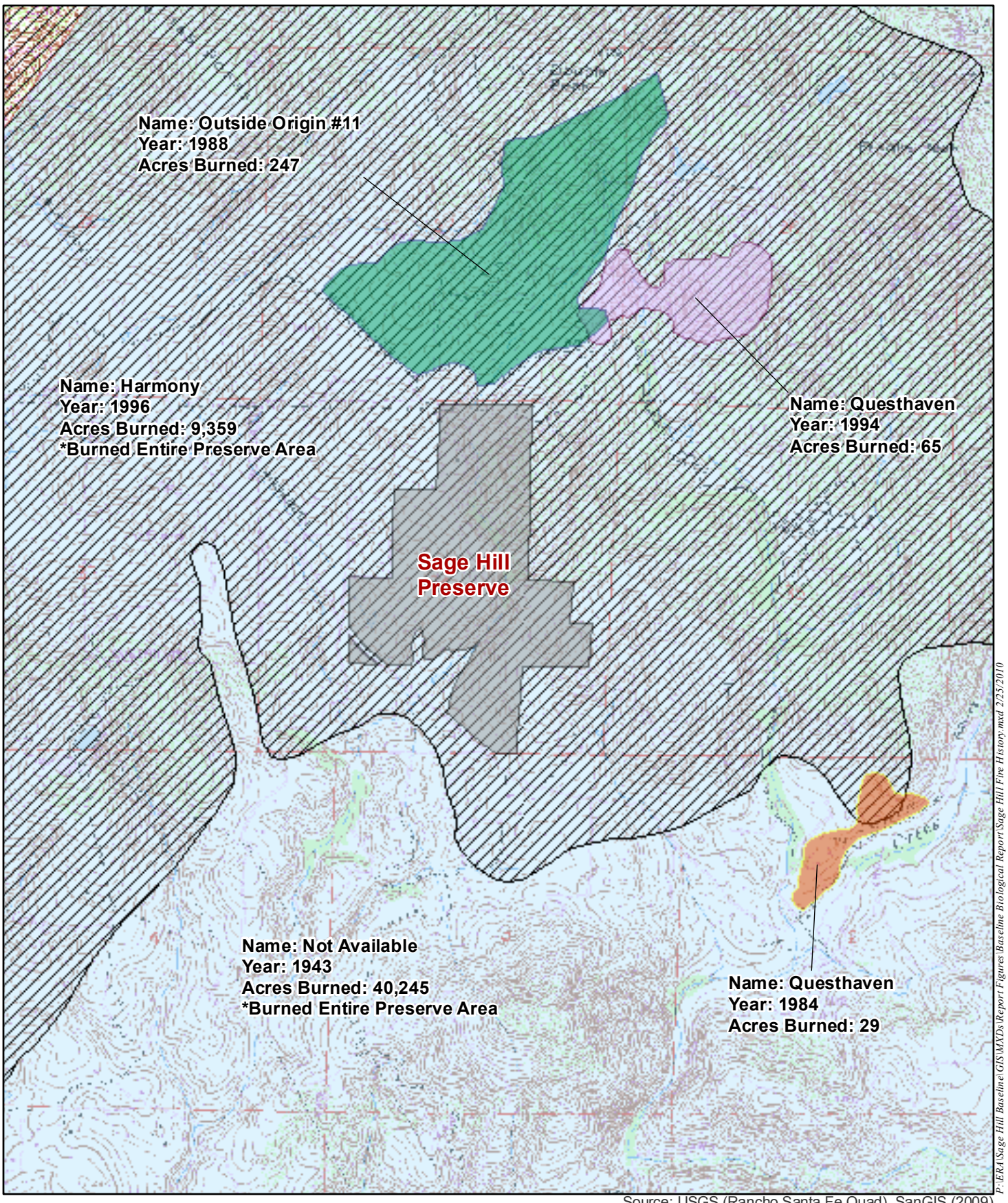
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Feet

Figure 5. Hydrology
Sage Hill Preserve

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Source: USGS (Rancho Santa Fe Quad), SanGIS (2009)

1 inch = 2,000 feet

0 500 1,000 2,000 Feet

Sage Hill Preserve Fire History

AECOM

Figure 6

2.4 Land Use

2.4.1 On-Site Land Use

The Preserve consists of native habitat and is currently not open to the public. Five and one half miles of un-offical trails are found throughout the Preserve originating from Elfin Forest Road and south of Questhaven Road. SDG&E utilizes existing dirt roads to access their utility poles on the Preserve. Olivenhain Municipal Water District and the San Diego County Water Authority utilizes the existing dirt road in the southern portion of the Preserve to access their easements.

2.4.2 Adjacent Properties

The Preserve is bordered by private property on all sides, and these parcels include single-family residences, agricultural land, and undeveloped parcels. Open space parcels are located to the north of the Preserve. Portions of the open space parcels adjacent to the northern area of the Preserve are owned and managed by the Standard Pacific Corporation and the others privately owned.

2.4.3 Easements or Rights

Several easements are present within the Preserve. San Diego Gas & Electric (SDG&E) retains an easement for two overhead power lines that traverse the Preserve from north to south through the central portion of the Preserve and from east to west in the western portion. SDG&E also operates a 200 foot easement that runs east to west through a portion of the northern area of the Preserve. SDG&E conducts operation and maintenance activities for their facilities consistent with the SDG&E Subregional Natural Community Conservation Plan (NCCP) (SDG&E 1995). The SDG&E NCCP was approved by the wildlife agencies and is compatible with this RMP.

San Diego County Water Authority (SDCWA) and Olivenhain Municipal Water District (OMWD) maintain parallel easements on the dirt road located in the southern portion of the Preserve to access their infrastructure. SDCWA conducts maintenance for their facilities consistent with the SDCWA Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP). The Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the NCCP/HCP is currently out for public review. The NCCP/HCP is consistent with the County of San Diego Multiple Species Conservation Program (North County MSCP) and is compatible with this RMP. OMWD is a member agency of the SDCWA and conducts maintenance for their facilities consistent with the SDCWA Subregional Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP).

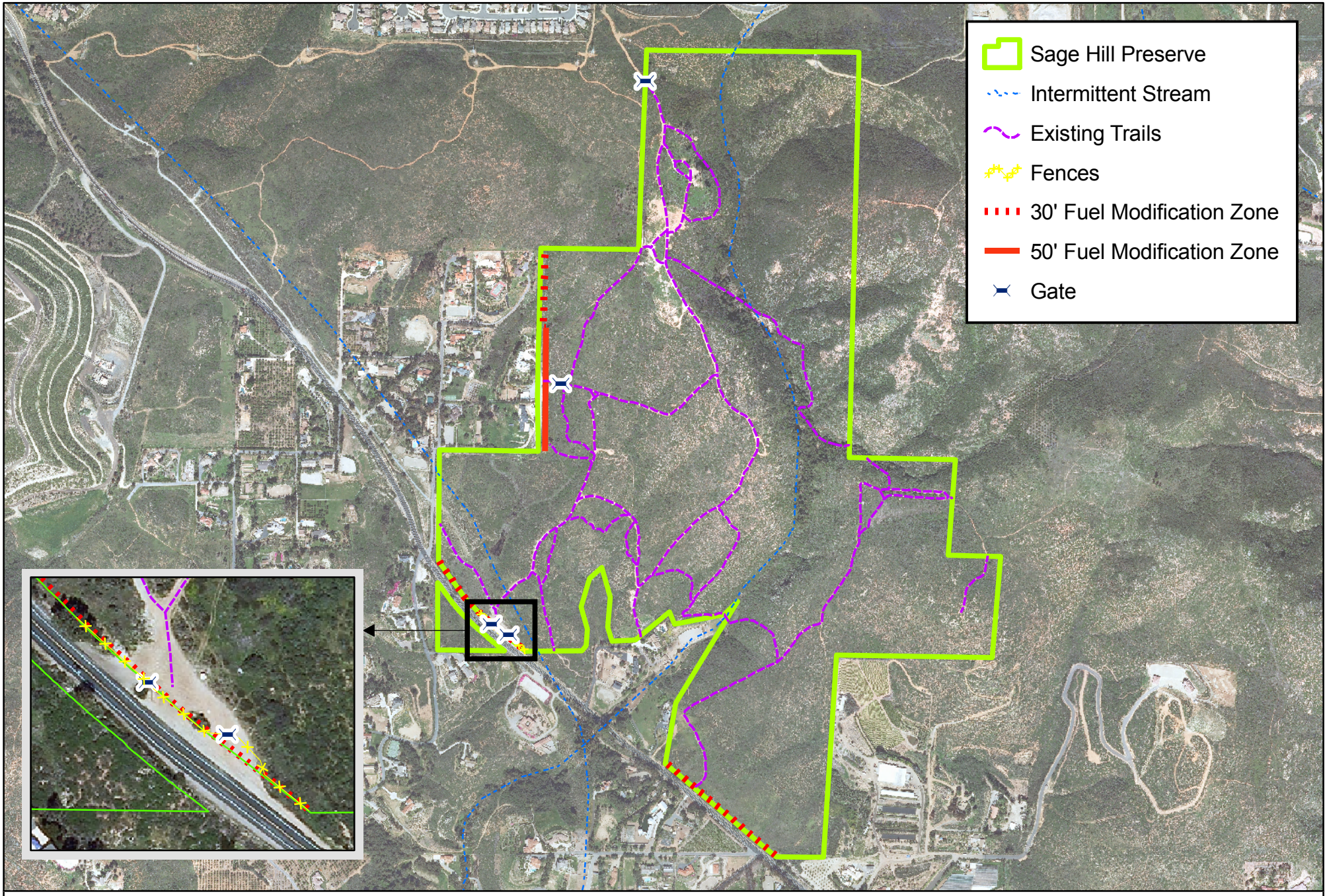
The San Diego Association of Government's (SANDAG) TransNet Environmental Mitigation Program holds a conservation easement on approximately 170 acres of the Preserve. The purpose of the purchase and grant of the Conservation Easement Deed for the Preserve includes: (1) provide mitigation for transportation projects funded by TransNet; (2) protect critical habitat for California gnatcatcher,

southern maritime chaparral and southern willow scrub/brackish marsh habitats; (3) further implement the Department of Fish and Game (DFG) Natural Community Conservation Planning (NCCP) efforts in North San Diego County; and (4) enhance a general wildlife corridor between larger habitat areas. Per the Sage Hill Land Management Agreement (Agreement; Appendix A) the County (DPR) has agreed to manage the Preserve consistent with the terms and conditions of the Agreement, the Conservation Easement Deed and this Resource Management Plan, so that the Preserves Conservation Values (as defined in the Conservation Easement Deed), including its mitigation value to SANDAG are maintained and protected. The Conservation Easement Deed recorded on this property requires that DPR manage at least 170 acres of the land to standards that retain the mitigation value of the Preserve in perpetuity. The conditions of the Agreement include the preparation of an assessment of the biological and cultural resources in the Preserve and a Resource Management Plan. As stated in the Agreement, the Resource Management Plan should at a minimum include Area Specific Management Directives, a monitoring program, Trails Plan, and a Vegetation/Fire Management Plan. Management and monitoring activities within the Preserve will be recorded by DPR staff and these records will be housed within the Department for auditing purposes.

SANDAG and the Wildlife Agencies will have final approval of the Resource Management Plan including the Public Access Plan and Vegetation Management Plan.

2.5 Trails

The Preserve currently contains approximately five and one half miles of un-official trails that traverse a large portion of the Preserve (Figure 7). These existing un-official trails include both dirt roads and single-track footpaths which run through the following habitats: non-native grassland, Diegan coastal sage scrub, southern maritime chaparral, coastal sage-chaparral scrub, coastal and valley freshwater marsh, and southern coast live oak riparian forest. The dirt roads are well established and are also used by the San Diego Gas & Electric (SDG&E), San Diego County Water Authority (SDCWA), and Olivenhain Municipal Water District (OMWD) to access infrastructure within the Preserve.



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Parks and Recreation County of San Diego

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Feet

Figure 7
Trails, Fencing and Gates
Sage Hill Preserve

Path: E:\MXDs\10\10_04_SageHill_TrailsGatesFences.mxd, 05/10/10, ekochert

3.0 Biological Resources Description

In 2009 AECOM conducted baseline biological resources surveys of the Preserve. The results of these surveys can be found in the biological resources report entitled, *Baseline Biological Survey Report for the Sage Hill Preserve, County of San Diego*, dated March 2010, and attached as Appendix A. The survey results were used in the preparation of this RMP.

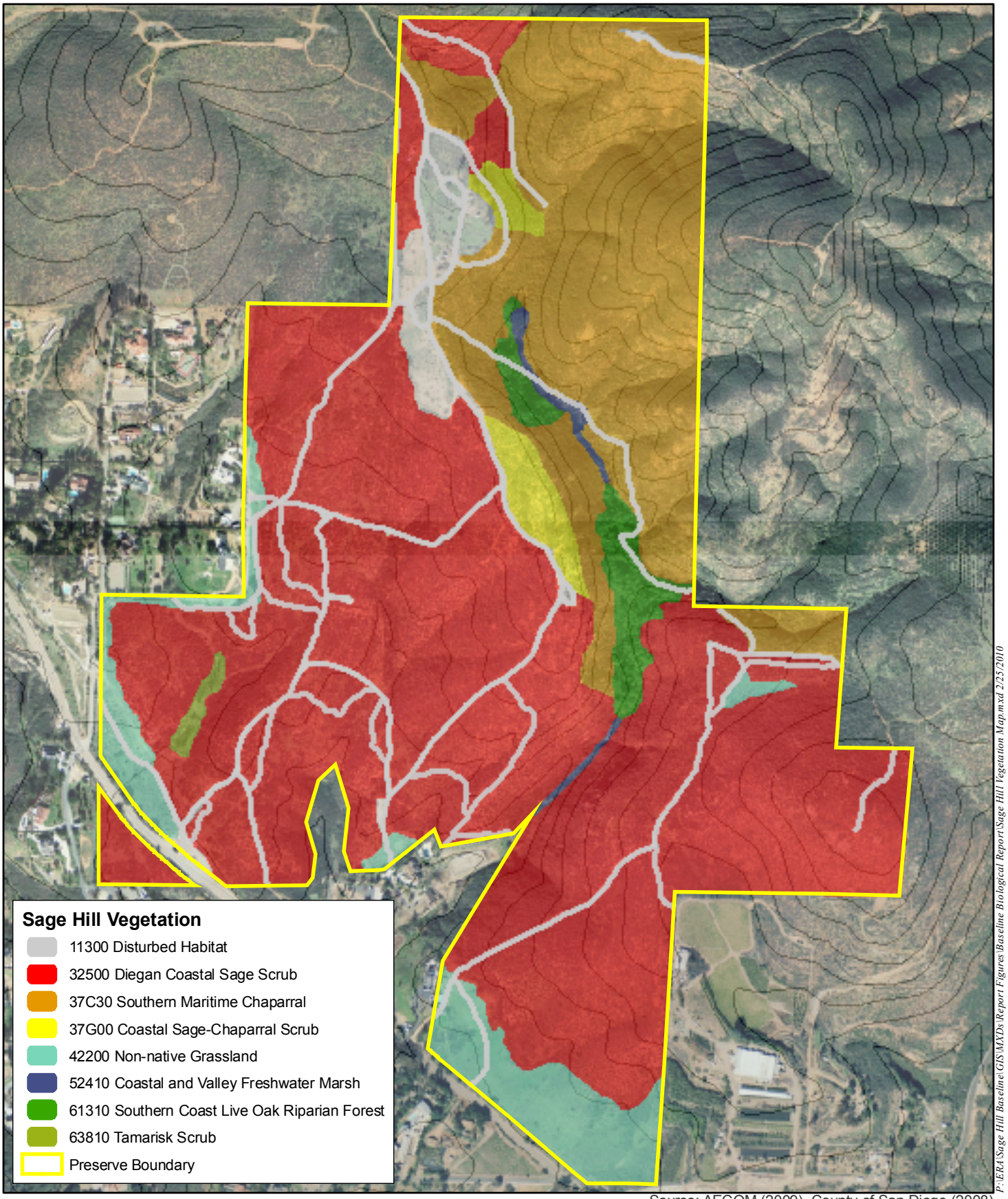
The surveys documented eight vegetation types and 239 species within the Preserve. The species detected included 146 plant species (of which 97 were native), wildlife surveys detected 13 butterfly species, four amphibian species (including one non-native), nine reptile species, 48 bird species (including one non-native), and 20 mammal species (including one non-native). Of these species, there are 11 special-status species of which six are North County MSCP-covered species (two plants and four animals).

3.1 Vegetation Communities/Habitat

The vegetation on the Preserve is dominated by two vegetation communities: Diegan coastal sage scrub, and southern maritime chaparral (Figure 8, Table 2). The remainder is composed of six other vegetation types, including freshwater marsh, coastal sage-chaparral scrub, southern coast live oak riparian forest, non-native grassland, disturbed habitat, and tamarisk scrub. A description of the vegetation communities and the dominant plant species detected during the survey are found below. A description of the vegetation communities and the dominant species detected are found below.

Table 2. Vegetation Communities within the Preserve

Vegetation Community	Acres
Diegan Coastal Sage Scrub	138.5
Southern Maritime Chaparral	53.6
Coastal sage-Chaparral Scrub	4.6
Coastal and Valley Freshwater Marsh	1.2
Southern Coast Live Oak Riparian Forest	5.5
Non-Native grassland	14.7
Disturbed Habitat	12.6
Tamarisk Scrub	0.9
Total	**231.5**



P:\ERA\Sage Hill Baseline GIS\MXDs Report Figures\Baseline Biological Report\Sage Hill Vegetation Map.mxd 2/25/2010

Source: AECOM (2009), County of San Diego (2008)

1 inch = 600 feet

0 150 300 600 Feet

Sage Hill Preserve Vegetation Map

AECOM

Figure 8

Diegan Coastal Sage Scrub (Holland Code 32500)

Diegan coastal sage scrub is a vegetation type dominated by native drought-deciduous shrubs that are most physiologically active in the early spring (Holland 1986). The approximately 138.5 acres of coastal sage scrub in the Preserve occurs through the middle of the Preserve, running from the northwest to southeast edge. This vegetation type is mostly dominated by black sage (*Salvia mellifera*), which comprises 25 to 50 percent of the vegetative cover. Other common native shrubs include coastal sagebrush (*Artemisia californica*), which dominates the 2.5 acre patch of coastal sage scrub upslope from the dirt parking area, and laurel sumac (*Malosma laurina*), California buckwheat (*Eriogonum fasciculatum*), and wart-stemmed ceanothus (*Ceanothus verrucosus*). Non-native grasses, most commonly red brome (*Bromus madritensis* ssp. *rubens*), occur at low density in gaps in the coastal sage scrub. This is also the most diverse vegetation type on the Preserve, with over 38 plant species.

Southern Maritime Chaparral (Holland Code 37C30)

Southern maritime chaparral is considered a "sensitive habitat land" under the County of San Diego's Resource Protection Ordinance (County of San Diego, 2008). This vegetation type is restricted to the coastal areas of San Diego County, and is dominated by woody sclerophyllous shrubs. The approximately 53.6 acres of southern maritime chaparral found within the Preserve occurs in the northeastern portion of the Preserve. This vegetation is dominated overwhelmingly by uniform, probably even-aged stands of wart-stemmed ceanothus. Black sage is common in gaps in the ceanothus. A number of other shrubs are present as scattered individuals, including Torrey scrub oak (*Quercus* X *acutidens*), coastal sagebrush, laurel sumac, California buckwheat, coast live oak (*Quercus agrifolia*), spiny redberry (*Rhamnus crocea*), and chamise (*Adenostoma fasciculatum*). The special-status plant species summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*) also occurs in this habitat. Non-native grasses, including red brome and soft brome (*Bromus hordeaceus*) occur along trails through this vegetation type. Over 24 plant species were detected in this vegetation community.

Coastal Sage-Chaparral Scrub (Holland Code 37G00)

On the border between the Diegan sage scrub and the southern maritime chaparral are a few vegetation patches where wart-stemmed ceanothus has invaded the coastal sage scrub, resulting in approximately 4.5 acres of coastal sage-chaparral scrub. Black sage dominates this vegetation, forming 25 to 50 percent of the vegetative cover. Wart-stemmed ceanothus forms roughly one-third of the cover, and other common species include coastal sagebrush and laurel sumac. Red brome occurs at low density in open areas and along paths. Six other plant species were seen as scattered individuals and patches in this vegetation community.

Coastal and Valley Freshwater Marsh (Holland Code 52410)

Small freshwater wetlands occur along parts of the creek and pond in the center of the Preserve, along the un-named creek between the oak stands, and along the stream south of the oaks, for roughly 1.23 acres in total. As the wetland is dominated by herbaceous plants, it is categorized as a marsh. The dominant species is San Diego sedge (*Carex spissa*), which comprises 25 to 50 percent the vegetative cover, with arroyo willow (*Salix lasiolepis*) as a subdominant at 15 to 25% cover, and a local dominant in patches (Appendix A). Other species include laurel sumac, water cress (*Rorippa nasturtium-aquaticum*), cattail (*Typha latifolia*), mule fat (*Baccharis salicifolia*), and common California bulrush (*Scirpus californicus*). The special-status Palmer's sagewort (*Artemisia palmeri*) also grows in this habitat. Curly dock (*Rumex crispus*) and spearmint (*Mentha spicata*) are the most common non-natives in this vegetation community, which contains six other plant species (Appendix A).

Southern Coast Live Oak Riparian Forest (Holland Code 61310)

Coast live oak trees dominate the area immediately west and upslope from the un-named creek and marsh, and also cover parts of the creek. Collectively, they form about 5.5 acres of southern coast live oak riparian forest. Although the oaks are the structural dominant, they form 50 to 75 percent of the vegetative cover, and poison oak (*Toxicodendron diversilobum*) is more common in terms of cover because it dominates the understory and fills in gaps. Arroyo willows (*Salix lasiolepis*) are present as scattered individuals, as are a number of other shrubs, including wart-stemmed ceanothus, laurel sumac, toyon (*Heteromeles arbutifolia*), Mexican elderberry (*Sambucus mexicana*), lemonadeberry (*Rhus integrifolia*), honeysuckle (*Lonicera subspicata* var. *denudata*) and fuchsia-flowered gooseberry (*Ribes speciosum*). Over 19 plant species were found in this vegetation, including 15 native species. Non-natives include pampas grass (*Cortaderia selloana*), red brome, fennel (*Foeniculum vulgare*) and smilo grass (*Piptatherum miliaceum*).

Non-Native Grassland (Holland Code 42200)

Open fields dominated by non-native grasses and herbs cover approximately 14.7 acres of the Preserve. Primarily, they are fuel modification zones cleared adjacent to residences along the southern and western boundaries of the Preserve, with all plants growing at low density. There is a small area of grassland in the eastern extension of the Preserve, in an area modified by human activity. Non-native grasses such as red brome and wild oats (*Avena* spp.) are the dominant plant in most of the patches, but the largest patch is an open area dominated by filaree at low density (*Erodium cicutarium*). These areas contain scattered coastal sage scrub species, the most common of which coastal sagebrush, laurel sumac, and California buckwheat. The fields also contain native wildflowers, including fascicled tarplant (*Deinanda fasciculate*), San Diego morning glory (*Calystegia macrostegia*), California poppy (*Eschscholzia californica*), and blue-eyed grass (*Sisyrinchium*

bellum). A wide variety of non-native plants also occur as scattered individuals and as small patches.

Disturbed Habitat (Holland Code 11300)

There are two distinct types of disturbed habitat. First, on the northwest side of the Preserve, an area of approximately 12.6 acres was historically used for agriculture and horticulture. Currently, this disturbed area is dominated by non-native species, including stands of crown daisy (*Chrysanthemum coronarium*) that cover approximately one-third of the area, black mustard, and a stand of blue gum (*Eucalyptus globulus*). A number of other non-natives are found in this area, including ornamentals such as agaves (*Agave americana*) and non-native pines. There are also some native species, including wart-stemmed ceanothus, toyon, and laurel sumac growing along the edge of this vegetation type. Second, existing roads and trails were mapped as disturbed habitat. These paths were largely bare ground, but were fringed by non-native annual grasses such as red brome, and a variety of mostly non-native annual species.

Tamarisk Scrub (Holland Code 63810)

A stand of tamarisk (*Tamarix ramosissima*) dominates the bottom of the drainage on the southwestern side of the Preserve. The area of approximately 0.9 acres has three zones, with the southern half covered by a dense stand of tamarisk, the middle by a substantially smaller stand of Italian thistle (*Carduus pycnocephalus*) and crown daisy, and northern portion by a small stand of arroyo willow (*Salix lasiolepis*). Other non-native species occur as individuals and scattered clumps around the edges.

3.2 Plant Species

3.2.1 Plant Species Present

Floristic inventories detected 146 plant species at the Preserve. The Baseline Biological Survey Report (Appendix A) includes the complete list of all plant species observed during the surveys.

3.2.2 Rare, Threatened, or Endangered Plant Species Present

The following section discusses special-status plant species observed within the Preserve. A special-status plant species is one listed by federal or state agencies as threatened or endangered; considered to be of special status by one or more special interest groups, such as the California Native Plant Society (e.g., CNPS List 1, 2, 3, and 4 Plant Species); or is included on the County's Sensitive Plant list (Group A, B, C, or D Listed Plants).

Special-status plant species observed within the Preserve (Figure 9) consist of summer holly (*Comarostaphylis diversifolia ssp. diversifolia*), wart-stemmed ceanothus (*Ceanothus verrucosus*), and Palmer's sagewort (*Artemisia palmeri*).

Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)

CNPS list 1B; County of San Diego List A; North County MSCP Covered Species

Summer holly is a chaparral shrub that occurs along the coast in scattered pockets from San Diego up to Santa Barbara (Calflora 2009). A close relative of manzanitas (*Arctostaphylos*), summer holly has fleshy, animal dispersed fruits, and a woody lignotuber from which it can potentially regenerate if the top is destroyed by fire or frost. There is no evidence that its seeds germinate in response to fire (Keeley 1987). Like other obligate resprouters (plants that resprout after fire, but whose seeds are not germinated by fire), it probably needs long fire-free intervals (30-50 years) to successfully reproduce (Keeley and Davis 2007). In the Preserve, 11 individuals were found near the top of the mountain in the northeastern corner, and more are located in the chaparral to the east of the Preserve boundary. All of the summer holly in the Preserve is 1 to 2 m (3 to 6 feet) tall, and they are growing in southern maritime chaparral.

Wart-stemmed ceanothus (*Ceanothus verrucosus*)

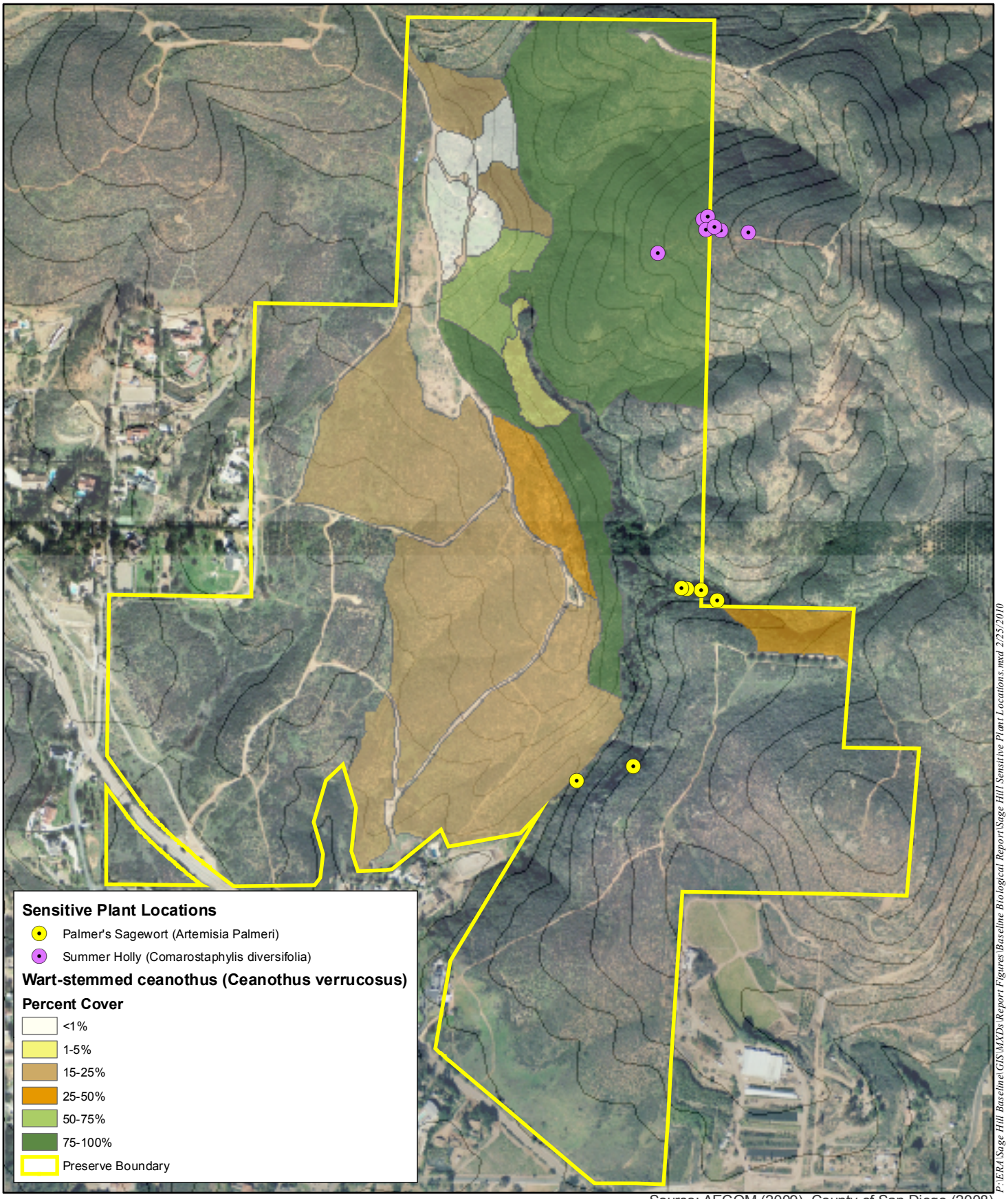
CNPS list 2; San Diego County List B; North County MSCP Covered Species

Wart-stemmed ceanothus grows to roughly three meters in height and is locally common within its limited range, which is San Diego County (west of Interstate15), northern Baja California, and Cedros Island, Baja California, at altitudes less than 1,000 feet (Fross and Wilken 2006, Lightner 2006). This ceanothus is an obligate resprouter, meaning that adults die during fires, and the next generation sprouts from seeds whose germination is stimulated by the fire (Fross and Wilken 2006, Keeley 1987). This species dominates the southern maritime chaparral in the Preserve. Additionally, it is a codominant in the coastal sage-chaparral scrub, and scattered individuals are found in the coastal sage scrub and even on the borders of the disturbed habitat.

Palmer's sagewort (*Artemisia palmeri*)

CNPS list 4; San Diego County List D

Palmer's sagewort is a biennial or perennial plant from a woody base that grows up to 3 meters tall (Hickman 1993, Lightner, 2006). This member of the sagebrush genus is confined to San Diego County and adjacent Baja California, and it is mostly found in coastal ravines, especially where there is fog drip or other moisture available. There are no data on Palmer's Sagewort response to fire, but if the plant responds like the related California sagebrush (*Artemisia californica*), a fraction of the plants may regrow after fire, and seeds will germinate, but fires at less than



P:\ERA\Sage Hill Baseline GIS\MXDs Report Figures\Baseline Biological Report\Sage Hill Sensitive Plant Locations.mxd 2/25/2010

Source: AECOM (2009), County of San Diego (2008)

1 inch = 600 feet

0 150 300 600 Feet

Sage Hill Preserve Sensitive Plants

AECOM

Figure 9

10 year intervals would eliminate the plant (Hauser, 2006). In the Preserve, this species is found most commonly along the un-named creek south of the oak riparian forest, within roughly 20 feet of the water. It is also found on the rock face east of the stream, particularly at the bottom of the face and along the northern edge. Additional plants grow along the trail that runs uphill and east of the oak riparian forest.

3.2.3 Rare, Threatened, or Endangered Plant Species not Observed but with High Potential to Occur

Additional information on the species listed below can be found in the Baseline Biological Survey Report (Appendix A). The list of plants below is based on data from CNPS, CNDDB and the San Diego Natural History Museum Plant Atlas.

Ashy spike-moss (*Selaginella cinerascens*)

CNPS List 4.1, County of San Diego List D

Ashy spike-moss has a potential to occur within undisturbed coastal sage scrub habitat throughout the Preserve.

Southwestern spiny rush (*Juncus acutus* var. *leopoldii*)

CNPS List 4.2, County of San Diego List D

Southwestern spiny rush has a potential to occur within the marsh and riparian areas of the Preserve.

Catalina mariposa lily (*Calochortus catalinae*)

CNPS List 4.2, County of San Diego List D

Catalina mariposa lily has a potential to occur within the coastal sage scrub and chaparral habitat of the Preserve.

Cooper's rein orchid (*Piperia cooperi*)

CNPS List 4.2, County of San Diego List D

Cooper’s rein orchid has a potential to occur within the chaparral habitat located in the northeastern portion of the Preserve.

Encinitas baccharis (*Baccharis vanessae*)

Federally Threatened, State Endangered, CNPS List 1B.1, County of San Diego List A, North County MSCP Covered Species

Encinitas baccharis has a potential to occur within the coastal mixed chaparral habitat located in the central portion of the Preserve.

Graceful tarplant (*Holocarpha virgata* ssp. *elongate*)

CNPS List 4.2, County of San Diego List D

Graceful tarplant has the potential to occur within the grassland habitats located in the southern portions of the Preserve.

San Diego marsh-elder (*Iva hayesiana*)

CNPS List 2.2, County of San Diego List B

San Diego marsh-elder has the potential to occur within the riparian habitat of the Preserve.

Golden-rayed pentachaeta (*Pentachaeta aurea*)

CNPS List 4.2, County of San Diego List D

Golden-rayed pentachaeta has the potential to occur within the coastal sage scrub and grassland habitats of the Preserve.

Rayless ragwort (*Senecio aphanactis*)

CNPS List 2.2, County of San Diego List B

Rayless ragwort has the potential to occur within the coastal sage scrub habitat of the Preserve.

Robinson peppergrass (*Lepidium virginicum* var. *robinsonii*)

CNPS List 1B.2, County of San Diego List A

Robinson peppergrass has a potential to occur within the coastal sage scrub and chaparral habitat of the Preserve.

Seaside calandrinia (*Calandrinia maritime*)

CNPS List 4.2, County of San Diego List D

Seaside calandrinia has a potential to occur within the coastal sage scrub and grassland habitat located in the sandy soils of the Preserve.

3.2.4 Non-native and/or Invasive Plant Species

Thirty –two California Invasive Plant Council (Cal-IPC) listed plants were identified during the field surveys. These invasive nonnative plants include: tamarisk (*Tamarix ramosissima*), pampas grass (*Cortaderia selloana*), red brome (*Bromus madritensis* ssp. *rubens*), hottentot fig (*Carpobrotus edulis*), fennel (*Foeniculum vulgare*), onionweed (*Asphodelus fistulosus*), artichoke thistle (*Cynara cardunculus*), Italian thistle (*Carduus pycnocephalus*), fountain grass (*Pennisetum setaceum*), wild oats (*Avena fatua*), black mustard (*Brassica nigra*), ripgut brome (*Bromus diandrus*), Mediterranean mustard (*Hirschfeldia incana*), Italian ryegrass (*Lolium multiflorum*), rat-tail fescue (*Mulpia myuros*), tree-of-heaven (*Ailanthus altissima*), tocalote (*Centaurea melitensis*), tree tobacco (*Nicotiana glauca*), periwinkle (*Vica major*), Mexican fan palm (*Washingtonia robusta*), Tasmanian blue gum (*Eucalyptus globulus*), crown daisy (*Chrysanthemum coronarium* or *Glebionis coronarium*), soft chess (*Bromus hordeaceus*), smooth cat's ear (*Hypochaeris glabra*), olive tree (*Olea europaea*), bristly ox-tongue (*Picris echiodes*), smilo grass (*Piptatherum miliaceum*), Russian thistle (*Salsola tragus*), Peruvian peppertree (*Schinus mille*), filaree (*Erodium cicutarium*), curly dock (*Rumex crispus*), and annual beard grass (*Polypogon monspeliensis*).

Eleven of the above listed invasive non-native plants are described below because they can be readily controlled or removed (Figure 10).

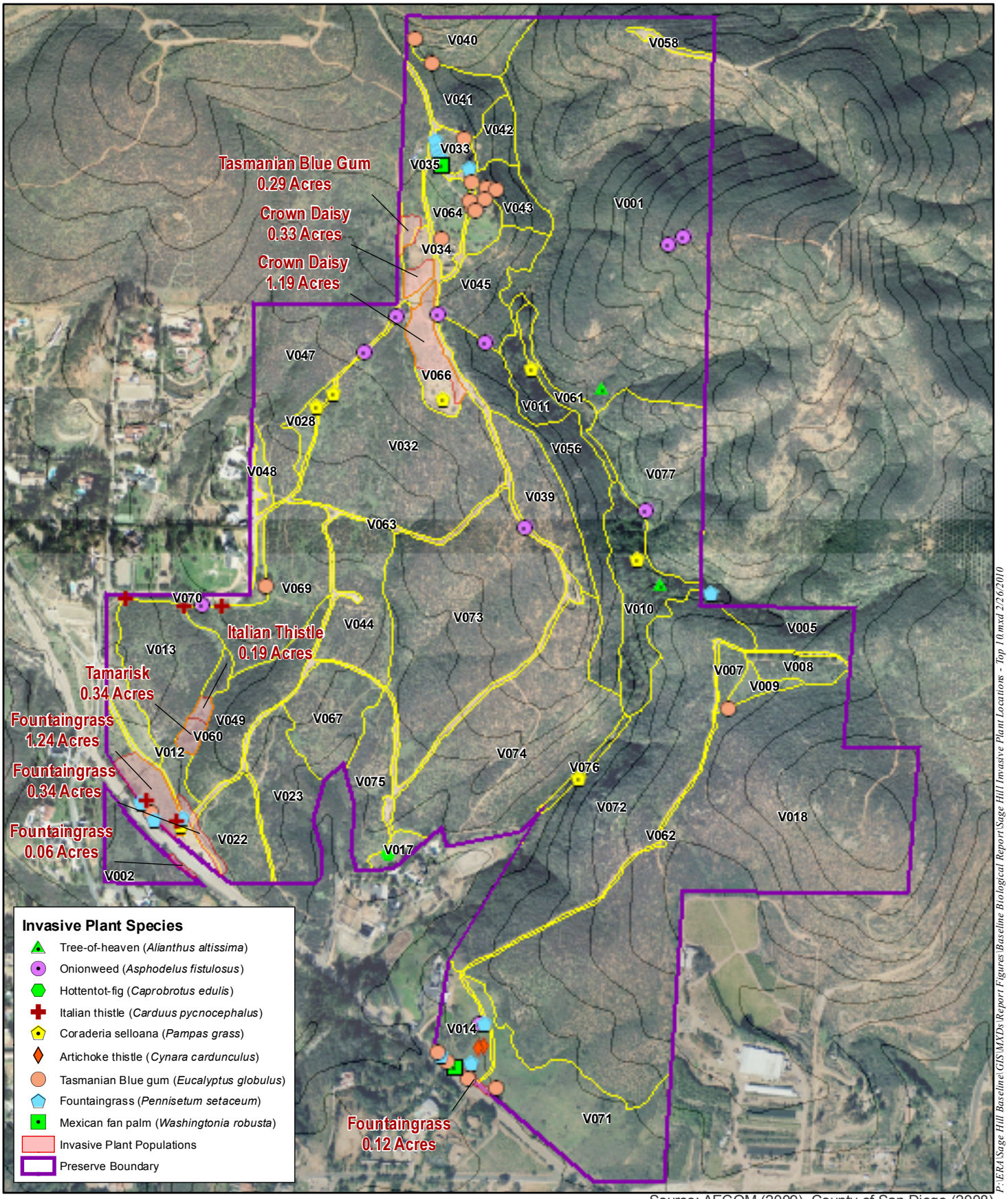
Tamarisk (*Tamarix ramosissima*) is a high rated, highly invasive non-native (CAL-IPC 2006). The species is found in the southern area of the Preserve and accounts for 0.34 acres. The patch is small enough that it could be cleared by a crew.

Pampas grass (*Cortaderia selloana*) is a high rated, highly invasive non-native (CAL-IPC 2006). Several individuals occur around the oak trees and along the un-named tributary, in a wet area in coastal sage scrub in the northwestern area of the Preserve, and in the disturbed areas. These individuals could be readily removed.

Hottentot fig (*Carpobrotus edulis*) is a high rated invasive non-native (CAL-IPC 2006). Currently, there is one small patch on the Preserve near the private residence adjacent to the southern area of the Preserve. This patch could be readily removed.

Crown daisy (*Chrysanthemum coronarium, Glebionis coronarium*) is a moderately rated invasive non-native (CAL-IPC 2006) that dominates patches of the Preserve and other areas of San Diego County. At the Preserve, it occurs in the tamarisk patch and dominates parts of the disturbed habitat in the area previous used as a nursery. Both infestations can be controlled or removed.

Eucalyptus (Tasmanian blue gum) (*Eucalyptus globulus*) is a moderately rated invasive non-native (CAL-IPC 2006) that occurs around the disturbed habitat in the area previous used as a nursery, in the non-native grasslands near Elfin Forest Road, and in coastal sage scrub near both areas for a total of approximately 0.29 acres.



P:\ERA\Sage Hill Baseline GIS\MXDs Report Figures\Baseline Biological Report\Sage Hill Invasive Plant Locations - Top 10.mxd 2/26/2010

Source: AECOM (2009), County of San Diego (2008)

1 inch = 600 feet

0 150 300 600 Feet

Sage Hill Preserve Target Invasive Non-native Plant Species

AECOM

Figure 10

Onionweed (*Asphodelus fistulosus*) is moderately rated invasive non-native by Cal-IPC. It occurs in several patches in the disturbed area of former agriculture and on the edge of the adjacent chaparral. It also occurs as scattered individuals along trails in polygons. Finally, a few plants were discovered in small openings high on the mountain. These plants were uprooted, but more may be present. All patches are small and could be readily controlled.

Artichoke thistle (*Cynara cardunculus*) is a moderately rated invasive non-native by Cal-IPC. It occurs along the road in non-native grassland and could be readily controlled.

Italian thistle (*Carduus pycnocephalus*) is a moderately rated invasive non-native by Cal-IPC. It occurs on the margin of the west side of the preserve, primarily in the tamarisk patch and the grassland upslope for a total of 0.19 acre onsite. Control of all the patches would be straightforward, although it might take some time to get the seed bank removed.

Fountain grass (*Pennisetum setaceum*) is a moderately rated invasive non-native by Cal-IPC. It occurs in patches along the road, in grasslands adjacent to the road, and on the edge of the disturbed areas for a total of 1.76 acres onsite. It can be controlled in all areas.

Mexican fan palm (*Washingtonia robusta*) is a moderate rated invasive non-native that is the subject of an alert by CAL-IPC (2006). There are two small individuals on the Preserve: one a seedling along Elfin Forest Road, the other a two meter tall sapling in the disturbed habitat at the north end of the Preserve previously used as a nursery. Both are recommended for removal to prevent the plants from establishing in the Preserve.

Tree-of-Heaven (*Ailanthus altissima*) is a moderately rated invasive non-native (CAL-IPC 2006). Three individuals have been detected at the Preserve in the un-named tributary watershed. Their removal would prevent an infestation from occurring.

3.3 Wildlife Species

3.3.1 Wildlife Species Present

Invertebrates

A complete list of invertebrate species identified on the Preserve below the level of family is included in the faunal list of the Baseline Biological Survey Report (Appendix A). No special-status butterfly species or other invertebrate species were detected during the 2009 surveys and no special-status invertebrate species have a high potential to occur at the Preserve.

Butterflies

Butterfly species observed on the Preserve include Acmon blue (*Plebejus acmon*), Behr's metalmark (*Apodemia mormo virgulti*), Buckeye (*Junonia coenia*), Cabbage white (*Pieris rapae*), California dogface (*Colias eurydice*), California ringlet (*Coenonympha tullia california*), Checkered/Common White (*Pontia protodice*), Funeral duskywing (*Erynnis funeralis*), Painted lady (*Vanessa* sp.), Pygmy blue (*Brephidium exile*), Sara Orange tip (*Anthocharis sara*), Southern blue (*Glaucophsyche lygdamus australis*), and Western tiger swallowtail (*Papilio rutulus*).

No Quino checkerspot butterfly (*Euphydryas editha quino*), Hermes copper butterfly (*Lycaena hermes*), or other sensitive butterfly species were detected in the Preserve. Limited potential habitat for Quino checkerspot and Hermes copper is found onsite. Limited patches of dot-seed plantain were observed within coastal sage scrub in the southern portion of the Preserve on primarily west facing slopes. The patches occurred in areas with cryptogamic crusts, which included the occasional purple owl's clover. Spiny redberry occurs in a small patch in the northeast portion of the Preserve on predominantly north facing slope, and the patch extends off-site to the north-east. California buckwheat, a potential nectar source for both butterfly species, is common through much of the area, including adjacent to the spiny redberry.

Amphibians

Four amphibian species were detected in the Preserve during 2009 surveys including: Bullfrog (*Rana catesbeiana*), Pacific treefrog (*Hyla regilla*), Western spadefoot toad (*Spea hammondii*), and California toad (*Bufo boreas halophilus*).

Reptiles

Nine species of reptiles were detected on the Preserve during 2009 surveys. Five species were caught in the pit-fall trap arrays including: California kingsnake (*Lampropeltis getula californiae*), coastal western whiptail (*Cnemidophorus tigris stejengeri*), southern alligator lizard (*Elgaria multicarinata webbii*), western fence lizard (*Sceloporus occidentalis*), and western skink (*Eumeces skiltonianus*). Four species were observed incidentally during the survey effort including: southern pacific rattlesnake (*Crotalus oreganus helleri*), coast horned lizard (*Phrynosoma coronatum*), night snake (*Hypsiglena torquata*), and California whipsnake (*Masticophis lateralis*)

Birds

Forty-eight bird species were detected within the Preserve, of which 41 (85 percent) were detected during point count surveys. A complete list of bird species detected in the Preserve during 2009 surveys is included in the faunal list of the Baseline Biological Survey Report (Appendix A).

Coastal California gnatcatchers (*Polioptila californica californica*) were detected during each of the three diurnal point count surveys, as well as during multiple other surveys, with up to six territories observed including three potential pairs (Figure 12). One potential pair was observed actively calling to each other in Diegan coastal sage scrub around the northern survey point. Two other pairs were detected in Diegan coastal sage scrub and mixed coastal sage and chaparral scrub along the tributary adjacent to survey points in the north and east. Single individuals were observed multiple times calling from Diegan coastal sage scrub at the survey point located in the southeast. Individuals were detected in Diegan coastal sage scrub at survey points in the center and southern areas of the Preserve as well. Multiple individuals were detected in the vicinity of all of these points throughout the course of this project. An individual was also detected in Diegan coastal sage scrub at the edge of tamarisk scrub near the western survey point. Coastal California gnatcatchers appear to be concentrated on the western side of the tributary where the slope is more moderate (< 15%).

Rufous-crowned sparrow (*Aimophila ruficeps canescens*) was observed multiple times with one individual observed vocalizing in Diegan coastal sage scrub at a survey point in the southern area of the Preserve, and a family group with four fledges was observed in the non-native grassland located in the southern area of the Preserve. This species was also observed incidentally at the north end of the Preserve in non-native grassland.

Several raptor and owl species were observed including the white-tailed kite (*Elanus leucurus*), Cooper's hawk (*Accipiter cooperii*), western screech owl (*Otus kennicottii*) and a great horned owl (*Bubo virginianus*). A white-tailed kite was observed foraging over Diegan coastal sage scrub and tamarisk scrub and willow. A single Cooper's hawk was observed multiple times in Diegan coastal sage scrub along Elfin Forest Road on the south and west side of the Preserve. Three adults were also observed in a possible territory dispute over the non-native grassland. A potentially nesting adult red-tailed hawk (*Buteo jamaicensis*) was observed several times in southern coast live oak. This may have been the source of fledges observed just outside of the preserve in the residential area just northeast of Elfin Forest Road. The single record of a western screech owl refers to the remains of a depredated individual discovered in riparian forest. Lastly, a great horned owl was observed in southern coast live oak in the vicinity of this kill.

California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculatus*), and wrentit (*Chamaea fasciata*) were detected at every survey point regardless of habitat type. Additionally, lesser goldfinch (*Carduelis psaltria*) and cliff swallow (*Hirundo pyrrhonota*) were found at every survey point located entirely in coastal sage scrub. A spotted towhee fledge and three hooded oriole fledges were observed on 5/28/2009.

Nocturnal surveys resulted in sightings of five species. Common poorwill (*Phalaenoptilus nuttallii*) were detected in coastal sage scrub throughout the Preserve but only in the first hour after sunset. A pair of common barn owls (*Tyto alba*) was detected just after dusk foraging over disturbed coastal sage scrub at the southwest corner of the Preserve near the dirt parking area along Elfin Forest Road. A Cooper's hawk was detected in Diegan coastal sage scrub near the survey point in the western

area of the Preserve. Other species detected during nocturnal surveys include California towhee and spotted towhee, both observed just after dusk.

Brown-headed cowbird (*Molothrus ater*) was the only non-native invasive bird species observed.

Mammals

A complete list of mammal species observed within the Preserve during the 2009 surveys is included in the faunal list of the Baseline Biological Survey Report (Appendix A).

Small Mammals

In total, 15 small mammal species were recorded at the Preserve during small mammal trapping and other surveys. Species included; black rat (*Rattus rattus*), cactus mouse (*Peromyscus eremicus fraterculus*), California mouse (*Peromyscus californicus insignis*), California pocket mouse (*Chaetodipus californicus*), California vole (*Microtus californicus*), deer mouse (*Peromyscus maniculatus gamelii*), San Diego desert woodrat (*Neotoma lepida intermedia*), Dulzura pocket mouse (*Chaetodipus californicus femoralis*), dusky footed woodrat (*Neotoma macrotis macrotis*), northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*), and western harvest mouse (*Reithrodontomys megalotis longicaudis*). Burrows of Botta's pocket gopher (*Thomomys bottae*) were observed in the non-native grassland, and meadow vole (*Microtus californicus sanctidiegi*) was observed in the riparian area. One Crawford's desert shrew (*Notiosorex crawfordi*) was observed in the pit-fall trap array. Dulzura kangaroo rat (*Dipodomys simulans*) was found in coastal sage scrub and non-native grassland

The trapping results provided good information on the distribution of small mammals in the Preserve. The San Diego pocket mouse was found in every array, while cactus mouse, California pocket mouse, deer mouse, and western harvest mouse were all trapped in the three habitat types sampled. The dusky footed woodrat and California mouse were detected in coastal sage scrub and oak riparian arrays. The least prevalent species were the desert woodrat, which was found in the coastal sage scrub array, and the non-native black rat, which was detected in the oak riparian array.

Medium and Large Mammals

A total of four mammal species were detected in the Preserve through direct observation and tracks and sign surveys: coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), brush rabbit (*Sylvilagus bachmani*), and bobcat (*Felis rufus*). Coyote were repeatedly observed using the ridgeline trail that begins at the eastern-most Elfin Forest Road access point, including an observation of an adult with a single young. Coyote scat was also observed throughout the oak woodland trail that runs along the drainage and the trail that follows the ridge east of the historic nursery location that leads to the far eastern knoll. Mule deer scat was also observed throughout the Preserve. Several

observations of multiple individuals were recorded from the oak woodland along the drainages. Upon encountering these individuals they moved to the northeastern portion of the Preserve and out to the adjacent open space. Bobcat sign was recorded through observations of the dead kill and characteristic piling of the prey entrails at the eastern viewpoint.

Bats

A total of six bat species were identified within the Preserve. The most common species detected included western pipistrelle (*Pipistrellus hesperus*), followed by the big brown bat (*Eptesicus fuscus*) and California myotis (*Myotis californicus*). The Mexican free-tailed bat (*Tadarida brasiliensis*), Yuma myotis (*Myotis yumanensis)*, and western mastiff bat (*Eumops perotis*) were infrequently recorded.

Only five species of bats were recorded during walking surveys. Majority of the bats recorded during the walking surveys were near the riparian corridor. The habitat on the western portion of the walking route provided limited use for bats. Similar patterns were observed in the passive monitoring stations. The most commonly recorded species during the walking surveys were the western pipistrelle, big brown bat, and California myotis. The Mexican free-tailed and western mastiff bats were infrequently recorded. Unlike the passive monitoring systems, no Yuma myotis were recorded during the walking surveys.

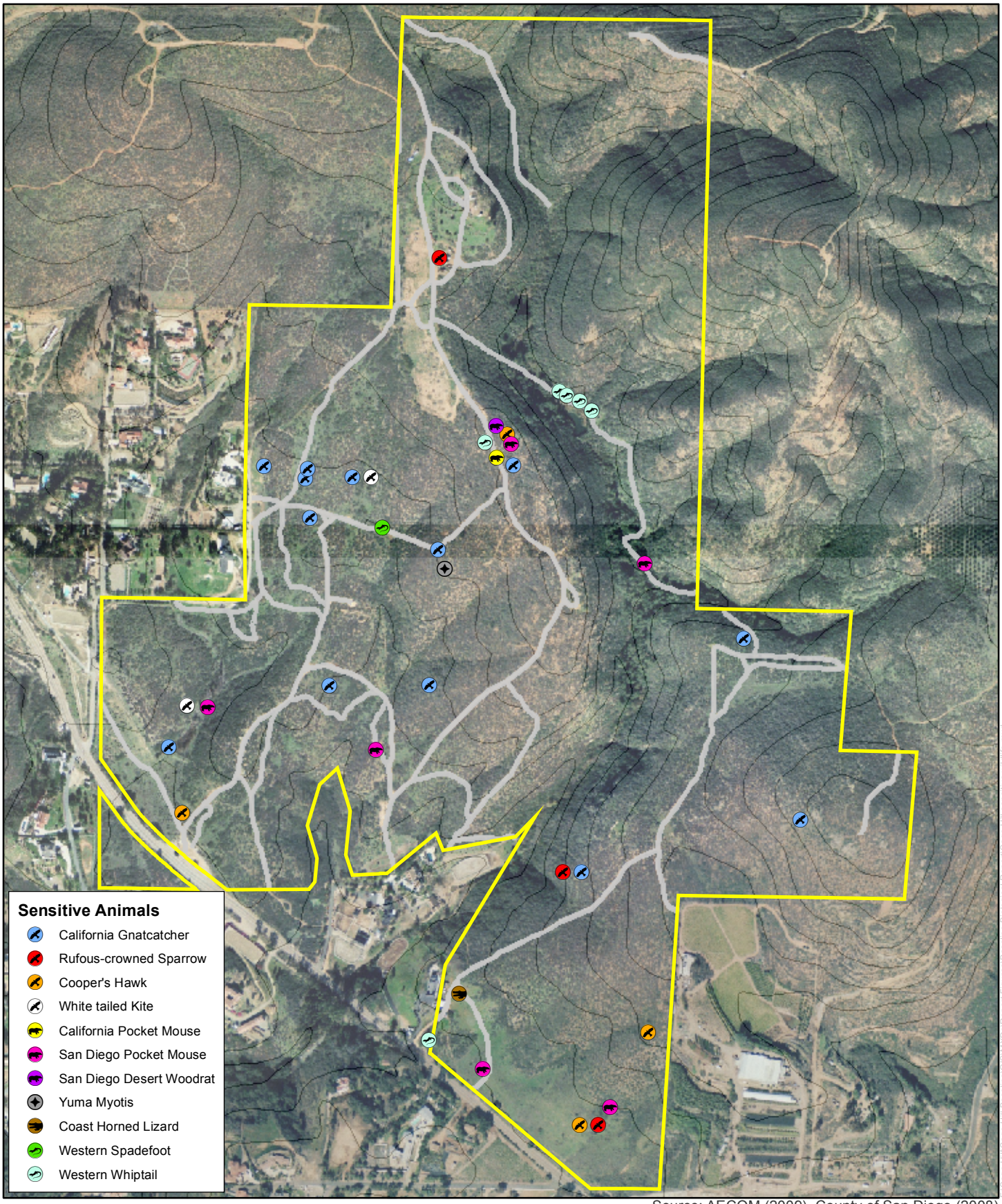
3.3.2 Rare, Threatened, or Endangered Wildlife Species Present

This section discusses special-status wildlife species observed at the Preserve (Figure 11). A special-status wildlife species is one listed by federal or state agencies as threatened or endangered; is included on the County's Sensitive Animal List (Group 1 or 2 Species); or is covered under the MSCP. Twelve special-status wildlife species were detected at the Preserve. Each of these 12 species is addressed below in more detail.

Western Spadefoot (*Spea hammondii*)

State Species of Special Concern; San Diego County Group 2, North County MSCP Covered Species

Western spadefoot ranges from central northern California through the Coast Ranges from San Francisco and south into Baja California, Mexico, at elevations from sea level to 4,500 feet (Stebbins 2003; Zeiner et al. 1988). Habitat for the western spadefoot includes lowlands, washes, floodplains of rivers, alluvial fans, alkali flats, temporary ponds, and vernal pools. Although this species is generally found in areas of open vegetation with sandy or gravelly soil (Stebbins 2003), it has been observed in vernal pools containing clay soils on Otay Mesa. Surface activity can occur from October through April depending on rainfall, and oviposition occurs between late February and May (Jennings and Hayes 1994). The western spadefoot diet consists of crickets, butterflies, ants, flies, and earthworms (Morey and Gullin, as cited in Jennings and Hayes 1994). Decline in western spadefoot populations is primarily due to habitat loss and fragmentation and possibly pesticide use. Western spadefoot was observed in coastal sage scrub in the western portion of the Preserve.



F:\Sage Hill\Sage Hill Baseline\GIS\MXDs\Report Figures\Baseline Biological Report\Sage Hill sensitive wildlife.mxd

Source: AECOM (2009), County of San Diego (2008)

1 inch = 600 feet

0 150 300 600 Feet

Sage Hill Preserve Sensitive Wildlife

AECOM

Figure 11

Coast Horned Lizard (*Phrynosoma coronatum)*

State Species of Special Concern; San Diego County Group 2; North County MSCP Covered Species

Coast horned lizard ranges from coastal southern California to the desert foothills and into Baja California. In San Diego County, it has a wide range but spotty distribution. It is often associated with coastal sage scrub, especially areas of level to gently sloping ground, with well-drained loose or sandy soil, but can also be found in annual grasslands, chaparral, oak woodland, riparian woodland, and coniferous forest between 30 and 7,030 feet (Jennings and Hayes 1994). This animal usually avoids dense vegetation, preferring 20 to 40 percent bare ground in its habitat. Where it can be found, the coast horned lizard can be locally abundant, with densities near 20 adults per acre. Adults are active from late March to late August; young are active from August to November or December. They are largely dependent upon native harvester ants (*Pogonomyrmex* sp.) for food. Populations along the coast and inland have been severely reduced by loss of habitat. Coast horned lizard was observed in the nonnative grassland along Elfin Forest Road, immediately north of the eastern access point.

Coastal Western Whiptail (*Cnemidophorus tigris multiscutatus*)

Federal Species of Concern; San Diego County Group 2

This large whiptail lizard is found west of the coastal ranges in Southern California and Baja California. It is often associated with dense vegetation such as chaparral and sage scrub especially in and around sandy washes and streambeds (Stebbins 2003). It is active from spring to late fall. Peak activity typically occurs in the morning, as temperatures begin to rise, or later in the day if the weather is cool. Breeding generally occurs between May and August. The primary threat to this species is the reduction of habitat within its range. Coastal western whiptail was found in reptile arrays in coastal sage scrub in the central portion of the Preserve, and in riparian habitat along the drainage.

Coastal California Gnatcatcher (*Polioptila californica californica*)

Federally Threatened, State Species of Special Concern, San Diego County Group 1, North County MSCP Covered Species

The coastal California gnatcatcher is a non-migratory, resident species found on the coastal slopes of southern California, ranging from Ventura County southward through Los Angeles, Orange, Riverside, and San Diego Counties into Baja California, Mexico (Atwood and Bontrager 2001). Coastal California gnatcatchers typically occur in or near sage scrub habitat, although chaparral, grassland, and riparian woodland habitats are used where they occur adjacent to sage scrub. Breeding occurs from February through August, and nests are constructed most

often in California sagebrush. The primary cause of decline in the coastal California gnatcatcher is due to habitat loss and degradation.

Coastal California gnatcatchers were detected during each of the three diurnal point count surveys, as well as during multiple other surveys, with up to six territories observed including three potential pairs. Coastal California gnatcatchers appear to be concentrated on the western side of the un-named tributary where the slope is more moderate (< 15%).

Rufous-crowned sparrow (*Aimophila ruficeps canescens*)

Federal Species of Special Concern, State Species of Special Concern, San Diego County Group 1, North County MSCP Covered Species

This subspecies of rufous-crowned sparrow is a San Diego County resident and ranges throughout southern California from Los Angeles County to Baja California, Mexico (Collins 1999). Southern California rufous-crowned sparrows are found in chaparral and coastal sage scrub habitats and occasionally in grasslands adjacent to these habitats. The species exhibits a strong preference for moderate to steep, dry, rocky slopes interspersed with grasses and rock outcrops (Unitt 2004; Collins 1999). Breeding occurs from March through June and pair bonds are formed that may last year-round (Collins 1999). Urbanization, range restrictions, and loss of habitat have decreased the amount of suitable habitat for southern California rufous-crowned sparrows.

Rufous-crowned sparrows were observed within Diegan coastal sage scrub and non-native grassland within the Preserve.

Cooper's Hawk (*Accipiter cooperii*)

State Species of Concern and San Diego County Group 1

Cooper's hawk is wholly endemic to North America, but widespread, with both migratory and resident populations ranging from southern Canada, continent-wide to southern Mexico. The California population is resident but numbers in winter increase as the population is augmented by migrants from the North (Curtis et. al. 2006; Unitt 2004). Currently this species can be found breeding throughout the state in appropriate habits, generally below 6,000 feet excluding deserts where it is an uncommon in winter visitor and transient only, save a few oasis where it may still breed (Garrett and Dunn 1981).

Cooper's hawk nest in deciduous trees in crotches 3-23 m (10-80 ft), but usually 6-15 m (20-50 ft), above the ground. Also nests in conifers on horizontal branches, in the main crotch, often just below the lowest live limbs. The Cooper's Hawk was listed in 1978 as a species of concern on the basis of population declines due to shooting, destruction of riparian woodland, and pesticide contamination (Remsen

1978); but recent studies suggest that populations have recovered in many areas (Curtis et. al. 2006; Unitt 2004). Its shift to the use of more urban areas was likely a major factor leading to population increases (Unitt 2004). However, with the colonization of urban habits also comes an increased incidence of collision with windows and disease (Curtis 2006; Unitt 2004). A single Cooper's hawk was observed multiple times in Diegan coastal sage scrub along Elfin Forest Road on the south and west side of the Preserve.

White-tailed Kite (*Elanus leucurus*)

CDFG fully protected species and a San Diego County Group 1

White-tailed kite is a common to uncommon, yearlong resident in coastal and valley lowlands; rarely found away from agricultural areas. Habitat for white-tailed kite includes herbaceous and open stages of most habitats found mostly in cismontane California. They use trees with dense canopies for cover. They also roost in saltgrass and Bermuda grass. They have had extended range and increased numbers in recent decades. They forage in undisturbed, open grasslands, meadows, farmlands and emergent wetlands. They make nests of loosely piled sticks and twigs and lined with grass, straw, or rootlets. Previous population declines have been attributed to shooting, habitat loss, and poisoning of small rodents (Dunk 1995; Unitt 2004). In the past three decades this species has dramatically expanded in numbers and range in the western U.S (Dunk 1995). A white-tailed kite was observed foraging over Diegan coastal sage scrub and tamarisk scrub and willow within the Preserve.

Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

The northwestern San Diego pocket mouse ranges from Los Angeles County and extreme southern San Bernardino County, southward into west-central Baja California, Mexico (Hall 1981). In San Diego County, northwestern San Diego pocket mouse is known from Del Mar, Dulzura, Jacumba, Lake Hodges, Pala, San Diego, and San Marcos (Bond 1977). Habitat for this subspecies is most often sparse or disturbed coastal sage scrub or grasslands with sandy soils. Breeding occurs from March to May; giving birth to a litter averaging four young (Zeiner et al. 1990). Threats to northwestern San Diego pocket mouse are most likely due to development, resulting in loss of habitat. A total of 88 individuals were recorded in all habitats sampled within the Preserve, with the highest observations occurring in coastal sage scrub and nonnative grassland.

Dulzura California pocket mouse (*Chaetodipus californicus femoralis*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

Dulzura (California) pocket mouse ranges throughout most of San Diego County into northern Baja California, Mexico. It is generally found on chaparral-covered slopes. Breeding occurs from March to July, giving birth between two and seven young with an average of four (Zeiner et al. 1990). Dulzura pocket mouse is threatened by habitat loss due to urbanization and agricultural land uses. A total of 23 individuals were recorded; 19 were in the coastal sage scrub grids in the west and central portion of the Preserve and four were recorded in the nonnative grassland grid near Elfin Forest Road.

San Diego Desert Woodrat (*Neotoma lepida intermedia*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

The San Diego desert woodrat occurs in coastal California from San Luis Obispo south through the Transverse and Peninsular Ranges into Baja California. They commonly inhabit Joshua tree woodlands, pinyon-juniper woodlands, mixed chaparral, sagebrush, and desert habitats (Zeiner and others 1990). In general, desert woodrats breed from late October or November through April, and females can produce up to four litters of two to four young each year (Bleich and Schwartz 1975). Seven individuals were found in a small mammal trapping grid in coastal sage scrub in the western portion of the Preserve.

Southern Mule Deer *(Odocoileus hemionus fuliginata)*

San Diego County Group 2

Southern mule deer are common across the western U.S. in a variety of habitats from forest edges to mountains and foothills (Whitaker 1996). Southern mule deer prefer edge habitats, rarely travel or forage far from water and are most active around dawn and dusk. Southern mule deer scat was observed throughout the Preserve.

Yuma myotis (*Myotis yumanensis*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

Yuma myotis ranges from British Columbia, the western United States, and south into Mexico (Batcon 2007). Habitat for the Yuma myotis typically includes open forests and woodlands with water sources, but will utilize desert riparian areas along

the Colorado River Valley (Zeiner et al. 1990). They roost in buildings, caves, crevices, mines, and have been known to use bridges and abandoned swallow nests. Maternity colonies are large, typically thousands of females with young born in May and June. The main threat to the Yuma myotis is human disturbance to maternity roosts (Schmidley 1991). Yuma myotis was observed during a walking survey through the riparian drainage within the Preserve.

3.3.3 Rare, Threatened or Endangered Wildlife with High Potential to Occur

Additional information on the species listed below can be found in the Baseline Biological Resources Evaluation (Appendix A).

Orange-throated whiptail (*Cnemidophorus hypecythrus*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 1; North County MSCP Covered Species

This species has a potential to occur throughout the Preserve.

Coast patch-nosed snake (*Salvadora hexalepis virgultea*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

This species has a potential to occur in any of the habitats found on the Preserve.

Coastal rosy boa (*Charina trivirgata roseofusca*)

Federal Species of Concern; San Diego County Group 2

This species has the potential to occur in any of the habitats found on the Preserve.

Silvery legless lizard (*Anniella pulchra pulchra*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 2

This species has the potential to occur in the riparian habitat of the Preserve.

Red diamond rattlesnake (*Crotalius rubber*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 1; North County MSCP Covered Species

This species has the potential to occur in any of the habitats found on the Preserve.

Sharp-shinned hawk (*Accipiter striatus*)

State Species of Special Concern; San Diego County Group 1

This species has high potential to occur as a migrant within the Preserve.

San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)

Federal Species of Concern; State Species of Special Concern; San Diego County Group 1; North County MSCP Covered Species

This species has the potential to occur in open or semi-open habitats, such as coastal sage scrub and open chaparral areas in the Preserve.

Mountain lion (*Felis concolor*)

California Specially Protected; San Diego County Group 2; North County MSCP Covered Species

The Preserve and the surrounding open space provide habitat for mountain lion to use for foraging and cover. Mule deer sign was common and it is anticipated that mountain lion move through the Preserve.

3.3.4 Non-native and/or Invasive Wildlife Species

Three nonnative wildlife species were observed within the Preserve including: bullfrog (*Rana catesbeiana*), black rat (*Rattus rattus*) and brown-headed cowbird (*Molothrus ater*). Several bullfrogs were heard near the pond within the riparian corridor and the black rat was caught in the riparian corridor as well. Brown-headed cowbirds were observed on one occasion during a bird point count in coastal sage scrub in the western portion of the Preserve.

3.4 Overall Biological and Conservation Value

The majority of the Preserve is part of the Elfin Forest Core with a small area within the Harmony Grove Core. The Elfin Forest Core area consists of 2,823 acres south of San Marcos and north of Del Dios Highway. Also includes patches of the unincorporated area around Lake San Marcos. The Harmony Grove Core area consists of 4,609 acres adjacent to Elfin Forest and northwest of Lake Hodges.

Based on the MSCP Habitat Evaluation Model Map, the majority of the Preserve is rated as very high value with a small portion in the eastern area rated as high.

The southern willow scrub and riparian scrub within the southern area of the Preserve is considered MSCP Tier I habitat and supports several special status species including Cooper's hawk and southern California rufous-crowned sparrow. Special-status species found within these habitats include: San Diego marsh elder and southwestern spiny rush. Southern maritime chaparral habitat is mapped in the

eastern area of the Preserve and is considered MSCP Tier I habitat. On-site this habitat supports the following special-status plant species: Del Mar manzanita and Nuttall's scrub oak. Coastal sage scrub located in the southeastern area of the Preserve is considered MSCP Tier II habitat and supports California adolphia, San Diego barrel cactus, coastal California gnatcatcher, and red diamond rattlesnake.

The California Gnatcatcher Habitat Evaluation Model for North County MSCP shows the western portion of the Preserve rated very high to high habitat value. There is no habitat in the Preserve to support Stephens' kangaroo rat or arroyo toad.

3.4.1 Wildlife Linkages and Corridors

With respect to regional corridors, the Preserve is bounded by development on the north, south, and west, inhibiting wildlife movement and the potential for regional corridors linking those areas. There is limited potential for wildlife use along the unnamed tributary within the Preserve that continues to the west through development. The corridor is small, surrounded by development and likely only provides for local movement. No regionally significant corridors are present on the Preserve however the unnamed tributaries and drainages provide connectivity to Escondido Creek to the east.

However, the Preserve is adjacent to open space to the northeast and medium and large animal tracks and scat were found on the Preserve indicating that the easterly extensions of the oak woodland and the trail that begins from the eastern most access point on Elfin Forest Road are well used by animals moving to and from the Preserve to the adjacent open space. The habitat connectivity between the Preserve and open space provides a broader area for local wildlife corridors for food, cover and water, than the Preserve would provide on its own. There is also some evidence that animals are moving from the open space to access the water resources on the Preserve.

4.0 CULTURAL RESOURCES

San Diego County is characterized by a rich and varied historical past. Cultural resources which reflect this history consist of archaeological remains, historic buildings, artifacts, photographs, oral histories, Native American memories and public documents. This RMP identifies the known cultural resources within Sage Hill Preserve and describes areas of potential resources.

In 2009, an archaeological survey was completed for the Preserve in compliance with the California Environmental Quality Act (CEQA) and County environmental guidelines to assist in continued and future land use and resource protection planning. The results of this study can be found in the report titled *Cultural Resources Phase I Survey and Inventory, Sage Hill Preserve, San Diego County, California*, dated February 2010, and is attached as Appendix B (Cooley and Jordan 2010). This Phase I inventory involved site records searches, literature reviews, Native American

consultation, historic map checks, field survey, and resource documentation. The survey and inventory results were used in the preparation of this RMP.

4.1 Site History

While the areas surrounding the Preserve were key pieces in the local development of the rancho system, the topography of the Preserve left it an island of irregular terrain surrounded by livestock-grazing ranchos. Boundaries of these private land holdings were built on, or grew to mirror, the areas of more level land and valleys that encompassed major drainages to support livestock ranching and other agricultural pursuits. Approximately three miles south sat San Diego alcalde (mayor) Juan María Osuna's 1840s grants Rancho San Dieguito. A native pueblo was established here circa 1833, though had been abandoned by 1840 following complaints by native residents that Osuna left them only the lowest quality land (Christenson and Sweet 2008:85). Following Osuna's death and the passage of the Land Act of 1851, his widow Juliana had the grant confirmed by the U.S. in 1871. Directly north of San Dieguito and southwest of the Preserve sat Andres Ybarra's 1842 grant of Los Encinitos (altered to Las Encinitas upon confirmation in 1871). Approximately four miles to the northwest was Juan Maria Romualdo Marron's 1842 grant, Agua Hedionda, on the former San Luis Rey Mission's sheep ranch (Christenson and Sweet 2008:53). Rancho Los Vallecitos de San Marcos, granted c. 1840 to Jose Maria Alvarado, was located approximately two miles directly north of the Preserve. Rincon del Diablo, Juan Bautista Alvarado's 1843 land grant, sat approximately three miles to the northeast of the Preserve and directly below that sat the land grant of Rancho Bernardo, made c. 1842 to Joseph Snook, English coastal trader and son-in-law to Juan Bautista Alvarado.

While the surrounding lands passed hands over the years, the Preserve remained available. The Seeley-Wright Stage Coach line ran south of the Preserve, with a station developed in Andres Ybarra's old adobe on Las Encinitas Rancho in 1872 (O'Connell 1987:2-3). By this time, the rancho was owned by San Diego immigrants and entrepreneurs Marcus Schiller and Joseph Mannasse, who used the land to ranch the stock they sold as part of their general merchandise endeavor in Old Town.

In the 1880s, the lands surrounding the Preserve saw an influx of German and Dutch settlers as speculators subdivided large tracts to attract whole communities of immigrants into new "colonies." The town of Barham was established north of the Preserve, and the San Marcos Land Company bought much of the former Los Vallecitos de San Marcos Rancho in 1887, subdividing the holding into residential plots (City of San Marcos 2008).

The end of the 19th century saw the first land ownership within the boundaries of the present Preserve. Under the provisions of the Land Act of 1820, Kale Bailey, Ebenezer Davis, and Clarence Wray all purchased portions of what is today the Preserve in the early years of the 1890s, while Urbano Morales took possession of a parcel in 1895 under the Homestead Act of 1862. Research of statewide and local

collections has yielded information only on Ebenezer Davis. Davis, a naturalized US citizen, was born c. 1843 in Canada with the 1890 Great Register of San Diego County voter register listing him as 47 years old, a farmer, and a resident of Escondido. By 1892, his local residence had changed to Aliso and by 1893, he had purchased the southern ½ of the southwestern quadrangle and the western half of the southeastern quadrangle of Section 34 in the Preserve. While this legal location is located just south of the location of CA-SDI-15354 and a structure seen on the 1901 USGS topographic map, there is no land patent for the quarter section that the resource is recorded in. In 1894, at age 52, Davis is still listed as a local resident of Aliso with a post office address in Olivenhain. Davis appears in the 1899-1900 and 1901 directories as a rancher in Olivenhain. He does not appear in subsequent directories through 1910 investigated to date.

By 1901, roads are mapped though the Preserve, with three residences illustrated in the property's present-day boundaries, including one that appears to be within the Preserve claimed by Urbano Morales six years earlier. These are no longer shown on the 1942 Escondido 15" USGS topographic quadrangle or on the 1948 Rancho Santa Fe 7.5" USGS topographic quadrangle. No new development is shown in the Preserve in either of these maps, though San Marcos to the north is clearly a burgeoning residential center by mid-century.

In the northeastern corner of the property, aerial photographs indicate that a knoll top was developed as early as 1953 for a nursery facility at the southern terminus of a road connecting to Questhaven Road. Structures can be seen on the 1960 aerial as well as on the 1983 Rancho Santa Fe 7.5" USGS topographic quadrangle. A sign of the county's rapid development during the 20th century, the second San Diego Aqueduct was constructed through the southwest corner of the Preserve. Consisting of two parallel pipelines whose construction began in 1957 and 1968, respectively, the aqueduct currently continues to carry Colorado River water to support municipal, residential and commercial uses for six cities, one public utility district, five water districts, eight municipal water districts, three irrigation districts, and one federal agency within San Diego County (Bureau of Reclamation 2009).

4.2 Native American Consultation

A letter was sent to the Native American Heritage Commission (NAHC) on August 24 2009. A response letter from Mr. Dave Singleton of the NAHC, dated August 25, 2009 was received via fax on August 25, 2009. The search of the Sacred Lands File by the NAHC failed to indicate the presence of resources in the Preserve or the immediate surrounding project area. The NAHC response also included a list of local Native American Contacts. On August 31, 2009, letters were sent to the local Native American contacts provided by the NAHC, requesting further consultation. On September 20, 2009, a response from the letters sent out was received from Carmen Lucas of the Kwaaymii Laguna Band of Mission Indians indicating no comments concerning the project. Mr. Clinton Linton of the Santa Ysabel Band of Diegueño Indians, one of the contacts listed by the NAHC, was retained contractually to provide Native American monitoring services for the field survey,

through his company Red Tail Monitoring & Research. During the field survey, a representative from Red Tail Monitoring & Research was present each day. Mr. Linton was also requested to provide input of Kumeyaay concerns and information regarding prehistoric resources present within the Preserve. A letter report (Memorandum to Record) was received from Mr. Linton, dated October 9, 2009, expressing concerns about collecting of site materials by local residents. He indicates that future trail alignments should be routed to adequately avoid site areas so that such surface collecting will not occur.

4.3 Cultural Resource Descriptions

4.3.1 Prehistoric Archaeological Sites

CA-SDI-4496

During the current survey, the location for CA-SDI-4496, on the Preserve, was examined with good visibility, and no prehistoric cultural materials were observed. This area has also been highly disturbed by the installation of the Second Aqueduct, (constructed prior to 1975), which runs through the middle of the plotted site location.

CA-SDI-15,353

This resource was originally recorded during the Phase I survey reported by Harris and Gallegos (1999). It was described as a bedrock milling and lithic scatter site, consisting of four milling features containing 16 milling elements including 10 slicks, 5 basins and on cup-shaped mortar. Also noted was a scatter of metavolcanic and basalt flakes.

During the current survey the site was relocated and appears to remain mostly intact. Two dirt roads traverse the site, intersecting within the site area. The road on the west is the remnants of an historic road alignment dating to the early 1900s (P-37-031060). The milling features were re-identified and appeared as previously recorded.

CA-SDI-15,355

This resource was originally recorded during the Phase I survey reported by Harris and Gallegos (1999). It was described as a scatter of one metavolcanic and three quartz flakes. During the current survey, one metavolcanic flake was observed in the area of the previously recorded location for the site. The site area appears to remain mostly intact. A dirt road runs east-west immediately south of the site. Another road located to the west may represent the remnants of an historic road alignment dating to the early 1900s (P-37-031059).

CA-SDI-15,356

This resource was originally recorded during the Phase I survey reported by Harris and Gallegos (1999). It was described as a scatter of six basalt and four quartz flakes. During the current survey, two quartz and two metavolcanic flakes were observed in the area immediately east of the previously recorded location for the site. Because of their proximity and similarity, the materials noted in the current survey are interpreted to be part of the same site assemblage. The site area appears to remain mostly intact. An old dirt road, not recently used, is present along the western edge of the site, and a dirt road more recently in use runs north-south approximately 30 m to the west of the site and may represent the remnants of an historic road alignment dating to the early 1900s (P-37-031059).

Isolates

P-37-031054

This resource consists of an isolate metavolcanic debitage flake, measuring approximately 3 cm by 3 cm.

P-37-031055

This resource consists of an isolate metavolcanic debitage flake, measuring approximately 3.5 cm by 2 cm.

4.3.2 Prehistoric and Historic Multi-Component Sites

CA-SDI-15,354/H

This resource was originally recorded during the Phase I survey reported by Harris and Gallegos (1999). It was described as a historic and prehistoric archaeological site with the historic component consisting of a rock foundation/wall from a structure, two piles of rocks, and a scatter of historic refuse. The prehistoric component consisted of a scatter of flaked stone tools and lithic debitage.

Prehistoric artifacts recovered in the investigation included one flake tool, one hammerstone, and 313 pieces of debitage. Also recovered was 8.3 grams of shellfish shell. The 24 historic artifacts were identified as consisting of consumer items, farmstead items, kitchen items, building materials, hardware, household items, and unidentified fragments. The historic component was interpreted to be the remains of a farmstead dating to a wet period, locally, between 1890 and 1910, with wheat the likely crop grown. The prehistoric debitage assemblage was judged to be similar in reduction practices to that recovered from sites CA-SDI-4932 and CA-SDI-15,353. These results suggested a Late Prehistoric Period campsite occupation of the site with hunting activity practiced by the occupants.

During the current survey the site was relocated and appears to remain mostly intact, although grading of unknown purpose has occurred sometime in the past. One dirt road not recently used/improved traverses the site. This road may represent the remains of the original access to the farmstead (P-37-031060). The foundation was re-identified and appears to be intact in the state it was described by Gallegos et al. (2001). Not mentioned by Gallegos et al. as part of the site is what may be a wind break of olive bushes along the edge of the north canyon and what appears likely to be a small field where crops or orchards of some kind were grown.

A structure is seen in the general location of the site on the 1901 Escondido (1:62,000) and San Luis Rey (1:125,000) topographic maps. In the 1928 aerial (County of San Diego), a structure cannot be identified; however, scarring where the agricultural fields are located is visible as well as what may be the olive trees/wind break. In 1953 and 1960 aerials, the row of olive trees/wind break is clearly visible. According to Land Patent records, the San Diego City and County Directory, and the Great Register of San Diego County (voter registry), the ranch at CA-SDI-15,354/H was most likely initially established and owned by farmer and rancher Ebenezer R. Davis, a Canadian-born naturalized U.S. citizen who was later shown as a resident of Olivenhain.

CA-SDI-4932

The original form on file at the SCIC for this resource is an undated form by a Mrs. Weber, which indicates the presence of “flakes”. Little other information is present and some of what is present is inconsistent (e.g., the contour elevation is indicated as 300 ft, which does not match its plotted location). This form records the site as being on top of the western ridge overlooking the central unnamed drainage on the Preserve. This site was also recorded at the Museum of Man by Lepley in 1977 as SDMM-W-1286. This form records the site as, both, on top of the western ridge overlooking the central unnamed drainage as well as down below in the drainage. It is described as an “occupation site with scattered artifacts over a wide area” and with a “bedrock mortar in creek below site” with a “fist sized rock found in mortar”. Artifacts listed included “projectile points, scrapers, flakes. No potsherds.” (Lepley in Gallegos and Associates 1999)

During the current survey the site was relocated and appears to remain mostly intact. A dirt road traverses the site with a circular turn-around within the site area. Gallegos et al. also noted in their test results, the presence of historic materials such as glass and crockery ceramics (2001: 3; 4-5). They did not, however, interpret the site as having a historic component. During the current survey, a few pieces of glass and crockery were also observed. While no subsurface disturbance was observed, a conversation with a local resident indicates the site is known and is actively surface collected by local hikers. While reconnaissance survey in the drainage below the ridge location was attempted, vegetation along the drainage is very dense and contains a considerable presence of poison oak. Despite these conditions, the bedrock mortar indicated on the 1977 SDMM form, and which could not be relocated

during the 1999 and 2000 investigations, due to vegetation issues, was relocated during the current survey. It is situated down in the drainage valley below the site as indicated on the 1977 form. The boulder contained a mortar, approximately 12 cm in depth; a second small, shallow, incipient mortar; and several ill-defined slicks. A cobble mano was also present on the outcrop.

4.3.3 Historic Sites

CA-SDI-19,709/P-37-031056

This Resource consists of the remnants of a twentieth century nursery. Present is non-native vegetation including a pine tree, eucalyptus trees, and cacti; multiple areas of rock alignments (planters) in the shapes of squares and rectangles with paths between them; a raised foundation of local rock and concrete that was possibly used as a pedestal for a well; ceramic and glass fragments; wire mesh fencing and a gate; remnants of a foundation; and many terracotta and ceramic plant pot fragments. No standing structures were identified during the current survey.

CA-SDI-19,710/P-37-031057

This resource consists of an approximately 1,000 ft north-northwest/south-southeast trending segment of the Second San Diego Aqueduct. The Second San Diego Aqueduct consists of two pipelines sharing the same route: the third pipeline, constructed between 1958 and 1960, and the fourth pipeline, constructed in the late 1960s and completed in the early 1970s. The Second San Diego Aqueduct is 94-miles long and runs from the Colorado River Aqueduct to the Otay Reservoir. Within the Preserve there is one cylindrical concrete feature located at the southern end of the currently recorded segment (PO43149AV) and another located 20 feet northwest of the northern end of the segment. (PO33149AV).

CA-SDI-19,711/P-37-031058

This resource consists of an earthen dam, a concrete dam, and metal pipes along the unnamed drainage located in the central part of the Preserve. There is no indication of the dams on the 1928 aerial (County of San Diego) or on the 1942 Escondido (1:62,500) and 1948 Rancho Santa Fe (1:24,000) topographic maps. Aerials from 1953 and 1960 show scaring in the area of the earthen dam and a trail that is still in use is visible along the length of the drainage. CA-SDI-19,710(twentieth century nursery) and CA-SDI-15,354 (historic structure foundation and agricultural field dating to the late 1800s/early 1900s) are located on ridgelines to the north and south, respectively. It is not known whether the water conveyance systems within the drainage are contemporaneous to these other resources or to each other.

P-37-031059

This resource consists of a historic road alignment. Remnants of the road can be seen on modern aerials and portions are still in use as hiking and horse trails.

P-37-031060

This resource consists of a historic road alignment. Remnants of the road can be seen on modern aerials and portions are still in use as hiking and horse trails.

4.3.4 Resources of Unknown Age

None were identified within the Preserve.

4.4 Resource Significance

The Preserve was observed to contain 13 cultural resources; two of which are isolates that are not considered significant. One of the 11 total sites was determined to not exist on the property due to a likely mismapping of its location by the original recorder. Of the 10 remaining cultural resource sites within the Preserve two contain both a prehistoric and a historic component, five date to the historic period, and three are prehistoric sites. Three sites, CA-SDI-4932, CA-SDI-15,353, and CA-SDI-15,354/H, were previously tested and found to be significant. Two other sites, CA-SDI-15,355 and CA-SDI-15,356, were tested and found not to be significant under CEQA criteria (Gallegos et al. 2001). If future facilities, such as trails, staging areas or other construction are proposed, significant adverse effects on the significant resources could occur.

As summarized in Table 3 below, 11 non-isolate resources have been recorded within, or immediately adjacent to the Preserve. Three of these resources (CA-SDI-4932, CA-SDI-15,353, and CA-SDI-15,354/H) have been determined to have high research potential, and, consequently, are significant cultural resources under CEQA criteria. The three other resources evaluated (CA-SDI-4496, CA-SDI-15,355 and CA-SDI-15,356) were determined to either not exist or to have low research potential and, therefore, to not be significant cultural resources under CEQA criteria. Despite previous testing efforts, the complete extent of site CA-SDI-4932 may still need to be determined to assess the potential for future impacts and determine appropriate avoidance and/or treatment measures. This may require testing for boundary determination in areas around the site currently constrained by vegetation. Native American representatives should also be consulted to confirm concurrence with the previous evaluation results. Should proposed development also pose impacts to previously tested site CA-SDI-15,354/H, further evaluation of this site is recommended in order to fully assess the historic component of this site, particularly given its spatial relationship to the residence indicated on the 1901 topographic quadrangles.

Table 3. Sage Hill Preserve Cultural Sites Recommendations

Trinomial or Primary or Temp Site#	Description	Evaluation Recommendation
CA-SDI-4496	Prehistoric site – lithic scatter/quarry/campsite	Not relocated
CA-SDI-4932	Prehistoric camp site – one milling feature, historic scatter	CEQA Significant; Avoidance and Preservation, or Treatment Plan
CA-SDI-15,353	Prehistoric camp site and milling site – four milling features	CEQA Significant; Avoidance and Preservation, or Treatment Plan
CA-SDI-15,354/H	Former historic farmstead residence location, trash scatter/trees; and prehistoric campsite location	CEQA Significant; Avoidance and Preservation, or Treatment Plan
CA-SDI-15,355	Prehistoric site – sparse lithic scatter	Not Significant
CA-SDI-15,356	Prehistoric site – sparse lithic scatter	Not Significant
CA-SDI-19,709	Mid 20th-century nursery	Avoidance and Preservation
CA-SDI-19,710	Second San Diego Aqueduct	Avoidance and Preservation
CA-SDI-19,711	Water conveyance feature	Avoidance and Preservation
P-37-031059	Historic road alignment	Avoidance and Preservation
P-37-031060	Historic road alignment	Avoidance and Preservation

5.0 RESOURCE MANAGEMENT

5.1 Management Goals and Objectives

Management of the natural and cultural resources within the Preserve will be guided by the general goals and objectives of both the County and the MSCP.

5.1.1 County-Specific

County-specific goals and objectives used to guide the management of resources within the Preserve can be found in the County Strategic Plan, the DPR Strategic Plan, as well as the San Dieguito Community Plan. The County's overall goal or mission, as indicated in the 2010-2015 Strategic Plan, is to provide the residents of San Diego County with superior County services in terms of quality, timeliness and value in order to improve the region's quality of life. The Strategic Plan for Parks and Recreation is closely aligned with the County's strategic initiatives.

The DPR Strategic Plan 2008-2013, outlines the department's priorities for accomplishing its mission over a five-year period. The overall goal or mission of DPR is to provide opportunities for high quality parks and recreation experiences and to preserve regionally significant natural and cultural resources. DPR makes this mission a reality through programs that create healthy communities, protect valuable natural and cultural resources, provide recreation opportunities, reduce crime and vandalism, and foster economic development.

In addition, County specific goals and guidelines can be found in the San Diego County General Plan. Specifically, the Preserve is located within the San Dieguito Community Plan. The San Dieguito Community Plan provides goals and policies which are designed to fit the specific or unique circumstances existing within this community. Goals provided in this plan seek to preserve the present state of spaciousness and rural living within the San Dieguito Plan area; encourage the preservation and enhancement of unique natural features; and provide a wide variety of recreational activities and facilities which will meet the needs and enrich the lives of all San Dieguito residents. To this end, the San Dieguito Plan provides policies and recommendations which are meant to guide the allocation of County resources towards prescribed outcomes consistent with the goals.

5.1.2 MSCP-Related

The MSCP Plan and the North County MSCP Plan provide both general and preserve segment-specific goals and objectives. The Preserve is located within a Pre-Approved Mitigation Area (PAMA) and approximately 18 acres is located outside of PAMA and is part of the Elfin Forest Core with a small portion in the Harmony Grove Core. 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 habitat, thereby preventing local extirpation and ultimate extinction. This is intended to minimize the need for future listings, while enabling economic growth in the region.

In order to maintain the biodiversity and ecosystem health in the region while ensuring quality of life and economic growth opportunities, the North County MSCP Plan incorporates the following underlying biological and social goals:

- Develop a preserve system that will preserve ecosystem functions and values, maintain the range of natural biological communities and native species within the Plan area and contribute to the recovery of endangered, threatened, and sensitive species and their habitats.

- Protect the quality of life for residents and visitors by maintaining the scenic beauty, natural biological diversity, cultural resources, and recreational opportunities within the Plan area.

In addition, the Framework RMP provides specific conservation goals for the Elfin Forest and Harmony Grove Cores. Two of the eight conservation goals listed for each core are applicable to the Preserve:

- Minimize impacts to the following sensitive habitats: chaparral on mafic soils supporting sensitive plant species including summer holly and wart-stemmed ceanothus; and coastal sage scrub to maintain populations and connectivity of coastal sage scrub-dependent species, including coastal California gnatcatcher.

- Removal of non-native species (e.g., tamarisk, arundo, brown-headed cowbirds, crayfish, and bullfrogs).

5.1.3 Management Directives and Implementation Measures

Based on the above management goals and objectives, recommended management directives have been identified. In accordance with the Framework RMP, specific conservation actions that will be performed on preserve lands fall into three categories: land stewardship, adaptive management actions, and biological monitoring. In general, land stewardship consists of the activities necessary for maintaining the integrity (i.e., functional ecosystem and protected resources) of preserved lands. Adaptive management actions include activities that are designed to benefit specific ecological features (e.g., certain species, vegetation communities or ecological processes) based upon information that has been gained through casual observations or scientific monitoring. Biological monitoring refers to focused assessments of species or vegetation communities.

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

The North County MSCP Framework RMP provides habitat specific management and monitoring guidelines which address the major factors that impact specific habitat types including: Riparian, Marsh and Wet Meadow Habitat; Coastal Sage Scrub, Chaparral, and Grassland Habitat; Oak Woodlands and Coniferous Forest; and Vernal Pools. The major factors that can impact these habitats include: hydrology, invasive non-native plant and animal species, and fire. Species that are most likely to benefit from these habitat based management and monitoring guidelines are detailed for each habitat type. Additionally, the North County MSCP Plan conservation analysis for specific species (such as narrow endemics, threatened or endangered species) provides species specific management and monitoring guidance.

This RMP includes management directives and implementation measures to meet MSCP goals and objectives under the following elements: A) Biological Resources, B) Vegetation Management, C) Public Use, Trails, and Recreation, D) Operations and Facility Maintenance and E) Cultural Resources.

5.2 Biological Resources Element (A)

5.2.1 Biological Monitoring

Biological monitoring will be performed onsite to gather information that will assist DPR in making land management decisions to conform to MSCP goals and objectives, as well as DPR objectives. The biological monitoring that will occur will be designed to guide decisions at the individual preserve level. The first year of monitoring has been conducted (baseline surveys) and the results are included as Appendix A. Additional monitoring results will be incorporated into stand alone monitoring reports. These reports may recommend revisions to the management directives contained within this RMP.

Monitoring at the preserve scale is focused on obtaining information for management purposes, but can be useful for subregional and ecoregional monitoring assessment as well. DPR will monitor the status and trends of covered species (in accordance with the Framework RMP) and collect data on key environmental resources within preserves to select, prioritize, and measure the effectiveness of management activities. In most instances, the array of threats or stressors on preserved habitats, their mechanisms of action, and the responses of the habitats and associated species are not completely understood at this time. Therefore, ASMD's must comprehensively address resource management issues for each preserve. Information collected within each preserve will be aggregated for analysis at the subregion and ecoregion scales.

The key to successful monitoring at the individual preserve level is: close coordination with stakeholder groups that are performing subregional monitoring; sharing of data, future plans and schedules; and keeping abreast of monitoring methods as they are developed. To ensure uniformity in the gathering and treatment of data, a (SANDAG) land management working group has been formed and will designate a land manager who will assist jurisdictions in coordinating monitoring programs, analyzing data, and providing other information and technical assistance. The County is an active participant in the development of monitoring methods for the MSCP. Once these methods are fully developed, and as feasible, these methods may be adapted for North County MSCP preserves.

DPR will follow the habitat and species specific monitoring requirements outlined in the North County MSCP Plan. Additionally, DPR will utilize the SDSU Prioritization Report, and follow USGS monitoring protocols for rare plants (McEachern et al. 2007), SDSU habitat and vegetation monitoring protocols (Deutschman et.al 2009), and USFWS monitoring protocols for animals (USFWS 2008). These references will assist DPR in developing monitoring methods at the preserve level, as well as the management directives that are identified for specific species in this document.

Management Directive A.1 – Conduct habitat monitoring to ensure MSCP goals and DPR objectives are met (*Priority 1*)

***Implementation Measure A.1.1*:** DPR will conduct habitat monitoring initially on an annual basis for coastal sage scrub and southern maritime chaparral habitat (SANDAG is seeking mitigation credits for these two types of habitat) and other habitat types within the Preserve at five-year intervals. On-going monitoring within the Preserve will identify any adverse changes in vegetation community distribution and habitat quality, such as changes from fire, invasion by non-natives or decline of existing species, and indicate if modifications to current management actions are needed. More frequent monitoring may be required following a significant fire within the Preserve. The main product of this monitoring will be a report which will include a discussion of monitoring objectives, monitoring methods to meet those objectives and an updated vegetation community map.

***Implementation Measure A.1.2*:** DPR will conduct general wildlife and rare plant surveys at five-year intervals utilizing and refining baseline monitoring methods to facilitate trend and distribution status analysis. This information will be included in the monitoring report.

***Implementation Measure A.1.3*:** DPR will conduct monitoring for invasive plant species at five-year intervals to assess invasion or re-invasion by invasive nonnative plants within the Preserve. These surveys will focus on areas where invasive, non-native plants have been detected in the past, but also look for new occurrences in the Preserve. This information will be included in the monitoring report.

Management Directive A.2 – Meet the corridor monitoring requirements of the MSCP (*Priority 2*)

A majority of the Preserve is part of the Elfin Forest Core, which includes 2,823 acres south of San Marcos and north of Del Dios Highway. The Core area also includes patches of the unincorporated area around Lake San Marcos. The Preserve generally forms the western boundary of the Elfin Forest Core, connecting future preserve lands in Pre-Approved Mitigation Areas (PAMA) to the west and east. The Preserve also functions as a “stepping stone” to other DPR preserved properties along the Escondido Creek corridor.

During baseline biological surveys of the Preserve it was noted that animals are accessing the adjacent open space to the northeast through the oak woodland habitat and utilizing the existing trails within the Preserve to access adjacent open space. SANDAG’s conservation easement within the Preserve took into account the presence of this existing wildlife corridor. Therefore, while corridor monitoring within the Preserve will take place at the preserve-level, it anticipated that it will provide data for better understanding wildlife movement on a regional scale.

***Implementation Measure A.2.1*:** DPR will conduct corridor monitoring at five-year intervals in conjunction with habitat monitoring and general wildlife and rare plant surveys (as described in implementation measures A.1.1 and A.1.2). The scope of monitoring will be sufficient to determine if corridors are being utilized, but not to determine the extent of use (i.e., how many individuals of any given species use a corridor). The main product of this monitoring will be a report documenting the results of the current assessment of habitat linkage function including a list of focal species detected.

5.2.2 MSCP Covered Species-Specific Monitoring and Management

Not all species occurring within the Preserve are expected to require species-specific management. It is expected, rather, that other management directives and implementation measures outlined under the Biological Resources and Vegetation Management elements should be sufficient to protect and manage optimal habitat conditions for most, if not all, species to maintain and/or thrive within the Preserve.

The North County MSCP provides habitat specific management and monitoring guidelines that will benefit certain covered species for the following habitat types: Riparian, Marsh and Wet Meadow Habitat; Coastal Sage Scrub, Chaparral, and Grassland Habitat; Oak Woodlands and Coniferous Forest; and Vernal Pools. The Framework RMP outlines the major factors that are a risk to these specific habitats and discusses management and monitoring to reduce the threats. Additionally the North County MSCP Plan conservation analysis provides species specific monitoring and management conditions for covered species that may need more specialized management directives.

Management Directive A.3 – Provide for management and monitoring of North County MSCP Covered Species (*Priority 1*)

DPR will implement habitat based and, in some cases, species specific monitoring and management as outlined in the Framework RMP and the conservation analysis of the North County MSCP for all North County MSCP covered species detected within the Preserve.

In order to avoid repetition, the following is a list of common risk/threats to North County MSCP covered species found on the Preserve and the corresponding management directives or implementation measures to address these factors:

- ***Invasive non-native plants*:** Implementation measure A.1.3 and management directives B.2 and B.3

- ***Invasive non-native animals*:** Multiple implementation measures under management directive A.4

- ***Wildfires*:** Multiple implementation measures under management directive B.4.

Summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)

Monitoring: Trend Monitoring (Medium Priority)

Monitor in accordance with habitat based implementation measures A.1.1 and A.1.2.

Management: Habitat Maintenance

Summer holly will benefit from chaparral habitat based management actions. The habitat will be managed to reduce the threat of invasive non-native plants and wildfires.

Wart-stemmed ceanothus (*Ceanothus verrucosus*)

Monitoring: Trend Monitoring (Medium Priority)

Monitor in accordance with habitat based implementation measures A.1.1 and A.1.2.

Management: Habitat Maintenance

Wart-stemmed ceanothus will benefit from chaparral habitat based management actions. The habitat will be managed to reduce the threat of invasive non-native plants and wildfires.

Western Spadefoot (*Spea hammondii*)

Monitoring: Status Monitoring (Low Priority)

Monitor in accordance with habitat based implementation measures A.1.1 and A.1.2.

Management: Habitat maintenance and species specific

The overarching management approach for this species is habitat maintenance. Species specific implementation measures are discussed below.

***Implementation Measure A.3.1*:** Provide for restoration of riparian habitat to maintain/enhance the amount and quality of existing breeding and foraging/aestivation habitat (see implementation measures under management directive B.1).

***Implementation Measure A.3.2*:**, Monitor and remove non-native species such as fish (*e.g.* mosquitofish), American bullfrogs, and crayfish as larvae are highly vulnerable to these non-native aquatic predators (See implementation measures under management directive A.4).

Coast Horned Lizard (*Phrynosoma coronatum)*

Monitoring: Status Monitoring (Low Priority)

Habitat Based – Coastal Sage Scrub, Chaparral, and Grassland Habitat

Management: Habitat Maintenance

Coast horned lizard will benefit from grassland habitat based management actions. The habitat will be managed to reduce the threat of non-native wildlife species (e.g., Argentine ant).

Coastal California Gnatcatcher (*Polioptila californica californica*)

Monitoring: Trend Monitoring (Medium Priority)

Coastal California gnatcatcher would benefit from habitat based monitoring within coastal sage scrub habitat.

Management: Habitat Maintenance

Coastal California gnatcatcher will benefit from coastal sage scrub habitat based management actions. The habitat will be managed to reduce the threat of invasive non-native plants and wildlife species and wildfires.

Rufous-crowned sparrow (*Aimophila ruficeps canescens*)

Monitoring: Trend Monitoring (Medium Priority)

Rufous-crowned sparrow will benefit from habitat based monitoring within coastal sage scrub and chaparral habitat.

Management: Habitat Maintenance

Rufous-crowned sparrow will benefit from coastal sage scrub and chaparral habitat based management actions. Threats to this species include wildfires and non-native wildlife species. The habitat will be managed to reduce the threat of invasive non-native wildlife species and wildfires.

5.2.3 Non-Native Invasive Wildlife Species Control

Management Directive A.4 – Reduce, control, or where feasible eradicate invasive, non-native fauna known to be detrimental to native species and/or the local ecosystem (*Priority 2*)

Invasive, non-native species detected within the Preserve during the 2009 surveys included bullfrogs, brown-headed cowbirds, and black rats. These species do not currently appear to be posing an immediate threat to native species and/or the local ecosystem; however, they have potential to out compete native species for valuable resources. Argentine ants (*Linepithema humile*) and goldspotted oak borer (*Agrilus coxalis*) were not observed on the Preserve, but will be monitored as these invasive species can adversely impact plants and animal species.

***Implementation Measure A.4.1*:** DPR will conduct surveys for the presence of invasive, non-native wildlife species of management concern, including bullfrogs, cowbirds, black rats, Argentine ants, and goldspotted oak borer at five-year intervals in conjunction with habitat monitoring and general wildlife surveys (as described in implementation measures A.1.1 and A.1.2).

***Implementation Measure A.4.2*:** If detrimental effects of these species are detected within the Preserve, preparation and implementation of a trapping and removal program, or other means of humane control should be initiated.

***Implementation Measure A.4.3*:** 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. If implemented, the program would only be on a temporary basis and where significant problem has been identified and therefore needed to maintain balance of wildlife in Sage Hill Preserve and the MSCP Preserve. The program would be operated in a humane manner. Signage at access points and noticing of adjacent residents will inform people that trapping occurs, and how to retrieve and contain their pets.

Implementation Measure A.4.4: DPR will institute an equestrian education program regarding the potential negative impacts to native ecosystems from the accumulation of non-point source pollutants (e.g., increased potential for occurrence of cowbirds) and on frequently used trails. This could be accomplished through implementation of a signage program and interaction between rangers and trail users. See also implementation measure B.3.2.

5.2.4 Future Research

The MSCP Preserve presents a rich array of research opportunities for the academic and professional communities, primarily in disciplines related to biology, ecology, and natural resources management, but also ranging to environmental design, sociology, and park use and administration. The County of San Diego encourages research within the MSCP Preserve in order to gain valuable information unavailable through other means.

There are a multitude of unanswered questions posed by the development of a multiple species and habitat system where little literature or previous research exists on the majority of species inhabiting the region. In addition, research on vegetation associations and habitats, natural regeneration, restoration, fragmentation, edge effects, genetics, viability, predation, wildlife movement, and much more, would be useful to provide information on the health and dynamics of an urbanized open space system as well as how to improve conditions. The MSCP Biological Monitoring Plan makes recommendations for further research to supplement the required monitoring program.

Management Directive A.5 – Allow for future research opportunities for the Academic and Professional Scientific and Biologic Activities within the Preserve (*Priority 2*)

> ***Implementation Measure A.5.1*:** DPR will accept and review proposals for scientific research, monitoring, and habitat restoration and enhancement activities which are permitted within the MSCP Preserve. Proposed research activities will be subject to approval by DPR. All such activities must obtain any necessary permits and shall be consistent with this RMP. Additionally, any person conducting research of any kind within the Preserve shall obtain a Right-of-Entry Permit from DPR, which will outline the precautions to be taken to preserve and protect sensitive biological and cultural resources within the Preserve and require results of any research to be made available to DPR.

5.3 Vegetation Management Element (B)

In 2010 AECOM prepared a Vegetation Management Plan for the Preserve (AECOM 2010) in addition to the baseline surveys. The Plan outlines invasive non-native plant species management, habitat restoration, and fire management. These recommendations were used to develop the management directives and implementation measures provided below.

5.3.1 Habitat Restoration

Management Directive B.1 – Restore degraded habitats to protect and enhance populations of rare and sensitive species through stabilization of eroded lands and strategic revegetation (*Priority 1*)

***Implementation Measure B.1.1*:** ~~Four~~ areas within the Preserve are proposed for restoration: patch of tamarisk scrub located in the western area of the Preserve; nonnative grassland outside of the designated fuel modification zone in the southeastern area of the Preserve; and the historic nursery location in the northern area of the Preserve. The tamarisk scrub will be restored to riparian scrub and the non-native grassland, and nursery location will be restored to Diegan coastal sage scrub. Restoration activities will utilize current, accepted techniques and avoid/minimize impacts to sensitive species or native habitats. Any proposed revegetation activities will use only local native species.

***Implementation Measure B.1.2*:** DPR will close redundant trails located throughout the Preserve to allow for passive restoration.

5.3.2 Non-Native Plant Species Removal and Control

Management Directive B.2 – Reduce, control, or where feasible eradicate invasive, non-native flora known to be detrimental to native species and/or the local ecosystem (*Priority 1*)

As described in Section 3.2.4 above, native and naturalized plant species primarily dominate the vegetation communities within the Preserve. However, tamarisk, pampas grass, hottentot fig, onionweed, artichoke thistle, Italian thistle, fountain grass, fennel, Mexican fan palm, eucalyptus, and crown daisy are found within the northeastern and central areas of the Preserve. Larger populations of invasive non-native plants are concentrated in the northern and southern areas of the Preserve. Tamarisk, a highly invasive species is found in a 0.34 acre patch in the western area of the Preserve.

Tamarisk, pampas grass, and hottentot fig are rated by Cal-IPC as highly invasive non-native plant species and will be treated first. Crown daisy is rated by Cal-IPC as moderate and covers approximately two acres in the Preserve and could be readily removed.

***Implementation Measure B.2.1*:** DPR park rangers will treat tamarisk, pampas grass, and hottentot fig within the Preserve following the methods outlined in the Sage Hill Preserve Vegetation Management Plan. DPR will also coordinate with volunteer groups to do non-native plant species removal days at locations identified in the Vegetation Management Plan and during invasive plant surveys and monitoring (as described in implementation measure A.1.3).

Implementation Measure B.2.2: DPR park rangers will remove eucalyptus saplings in the historic nursery location on an as needed basis.

Implementation Measure B.2.3**:** DPR will coordinate with other agencies, non-profit organizations, and/or volunteer groups in order to seek funding and implement removal of tamarisk, pampas grass, hottentot fig, crown daisy, or other invasive non-native plants found during plant surveys and monitoring (as described in implementation measures A.1.2 and A.1.3) within the Preserve.

Management Directive B.3 – Manage and minimize the expansion of invasive, non-native flora within the Preserve (*Priority 2*)

Implementation Measure B.3.1**:** DPR will implement an educational program for Preserve visitors and adjacent residents in order to discourage introduction of invasive, non-native plants into the Preserve. Information provided will include identification of invasive plants harmful to the Preserve, and prevention methods. The program may also encourage residents to voluntarily remove invasive exotics from their landscaping. See also implementation measure D.9.1.

Implementation Measure B.3.2**:** DPR will implement an equestrian education program regarding the potential negative impacts to native ecosystems from the accumulation of non-point source pollutants (e.g., spread of non-native seeds) on frequently used trails. This could be accomplished through a signage program/brochures and interaction between rangers and trail users. Specific signage could state, “Don’t Plant a Pest! Feeding horses weed-free feed for at least 72 hours prior to Preserve entry helps preserve our natural environment”. See also implementation measure A.4.4.

5.3.3 Fire prevention, control, and management

Sage Hill Preserve is located in a wildfire-prone area and has been mapped by CalFire as a “Very High Fire Severity Zone” and is located within the Forest Area Safety Task Force (FAST) Rancho Project Area. The Vegetation Management Plan prepared for the Preserve outlined fuels reduction recommendations for vegetation habitats within the Preserve, management strategies to reduce the causes of fire, and post fire management.

Current fire management activities in the Preserve include two fuel modification zones (Figure 7):

(1) 30 to 50-foot fuel modification zone in the northwestern area of the Preserve where the Preserve abuts private residences (this fuel modification zone on the Preserve provides the adjacent residences a 100-foot buffer as measured from the residential structures); and

(2) 30-foot fuel modification zone from the right-of-way of Elfin Forest Road along the entire southern boundary of the Preserve.

Emergency access roads are found within the Preserve in the form of existing dirt roads.

Management Directive B.4 – Provide for necessary fire management activities that are sensitive to natural and cultural resources protection (*Priority 1*)

***Implementation Measure B.4.1*:** The County will maintain the established fuel modification zones on the Preserve providing adjacent residences a 100-foot buffer as measured from the residential structures. The intent of a fuel modification zone is to protect habitable structures adjacent to the Preserve from wildfires. It may further protect the resources within the Preserve by absorbing some of the "edge effects" that might otherwise occur within the Preserve.

Management of a fuel modification zone, if needed, will adhere to Cal Fire and/or Elfin Forest/Harmony Grove Fire Department requirements.

***Implementation Measure B.4.2*:** A private residence in the southern area of the Preserve that occurs adjacent to the un-named drainage includes a structure within 45 feet of the Preserve boundary. The additional 55 feet of fuel modification has come from unapproved clearing within the Preserve boundary. DPR will coordinate with the Elfin Forest/Harmony Grove Fire Department to determine if the 55 foot fuel modification zone is appropriate.

***Implementation Measure B.4.3*:** A private residence on the slope on the eastern side of the drainage requires nearly 100 percent of the fuel modification zone necessary to protect the structures on the north and east sides occur within the Preserve boundary. The habitat adjacent to the private residence on the eastern side of the drainage is non-native grassland. DPR will maintain a 100 foot fuel modification zone in this area of the Preserve adjacent to the residence. DPR will coordinate with the Elfin Forest/Harmony Grove Fire Department.

***Implementation Measure B.4.4*:** The existing dirt roads within the Preserve acting as access roads will be maintained as needed to keep the roads fuel free. Approved trails will be maintained at County Trails Master Plan (County of San Diego 2005) standards. In addition, DPR will continue to coordinate with CAL FIRE and/or the Elfin Forest/Harmony Grove Fire Department to determine what improvements need to be made to make fire response feasible throughout the Preserve.

5.4 Public Use, Trails, and Recreation Element (C)

Public Access

THE PRESERVE IS CURRENTLY NOT OPEN TO THE PUBLIC*

A Public Access Plan has been developed that analyzes four different trail system alternatives for the Preserve. A preferred public access plan may combine elements of each alternative to ensure compatibility with the North County MSCP and mitigation bank constraints for the Preserve. A preferred alternative will be chosen in consultation with the Wildlife Agencies.

Management Directive C.1 – Limit types of public uses to those that are appropriate for the site (*Priority 1*)

***Implementation Measure C.1.1*:** The following public uses are prohibited in the Preserve. Park rangers are responsible for enforcing these restrictions and may call the sheriff for legal enforcement, as appropriate.

a. Off-road or cross-country vehicle and public off-highway recreational vehicle activity are considered incompatible uses in the MSCP preserve, and are therefore prohibited in the Preserve, except for law enforcement, Preserve management, utility maintenance, and/or emergency purposes.

b. Hunting or discharge of firearms is an incompatible use in the MSCP preserve, and is therefore prohibited in the Preserve, except for law enforcement, and/or emergency purposes.

c. Poaching or collecting plant or animal species, archaeological or historical artifacts or fossils from the Preserve is generally prohibited; however, the County may authorize collecting upon approval for scientific research, revegetation or restoration purposes, or species recovery programs. In addition, impacts to historic features are prohibited except upon approval by the County.

d. Fishing, swimming, and wading in rivers, streams, or creeks

e. Camping (including homeless and itinerant worker camps)

f. Feeding wildlife

g. Domestic animals, except horses and leashed dogs

h. Smoking

i. Campfires/Open Flames

j. Off-trail biking, equestrian use, or hiking

k. Littering

Management Directive C.2 – Manage public access in sensitive biological and cultural resource areas within the Preserve (*Priority 1*)

***Implementation Measure C.2.1*:** DPR has identified and mapped narrow endemics and critical populations, and all covered species populations in the Preserve so that these areas can be avoided and/or monitored. Updated information on sensitive species in relation to public access points will be obtained during general wildlife and rare plant surveys in conjunction with habitat monitoring (as described in implementation measures A.1.1 and A.1.2).

***Implementation Measure C.2.2*:** DPR will provide sufficient signage to clearly identify public access to the Preserve when open to the public. Barriers such as vegetation, rocks/boulders or fencing may be necessary to protect highly sensitive areas. The appropriate types of barriers to be used will be determined based on location, setting and use. DPR will monitor new developments adjacent to the Preserve to enforce non-authorized trail use.

Management Directive C.3 – Provide appropriate interpretive and educational materials (*Priority 2*)

***Implementation Measure C.3.1*:** DPR will share outreach and educational information and notify the public of volunteer opportunities that advance the management, monitoring, and stewardship resources available, and objectives of this RMP. This information will be provided on the DPR website, www.sdparks.org.

***Implementation Measure C.3.2*:** Educational trail-side signage and educational kiosks within the Preserve will include information on the following topics: North County MSCP; sensitive biological and cultural resources within the Preserve; and the Escondido Creek Watershed, which is part of the Carlsbad Hydrologic Unit. In addition, signage provided at access points and on trails maps provides a form of education. See also implementation measures D.4.1, E.2.4, and E.3.1.

***Implementation Measure C.3.3*:** When possible, park rangers assigned to this Preserve should organize and conduct interpretative walks or programs within the Preserve discussing biological and cultural resources. During these interpretative walks or programs the ranger should distribute the “Living Close to Nature” brochure. This brochure discusses how to live in harmony with wildlife. The interpretative walks and programs should be conducted in accordance with park ranger availability.

5.4.2 Fencing and Gates

Currently, gates are located in the following areas within the Preserve (Figure 7): 1) on existing dirt road within northwestern portion of Preserve located off of Carib Road; 2) on existing dirt road within northern portion of Preserve that connects to an

off-site dirt road that eventually connects to Questhaven Road; and 3) two gates are located in the southwestern corner of Preserve along Elfin Forest Road. A concrete split-rail fence is located in the southwestern corner of the Preserve along Elfin Forest Road; the fencing is split into two 128 foot segments and a 144 foot segment. The fencing is separated by two 20 foot double leaf gates (Figure 7).

Management Directive C.4 – Install and maintain fencing and gates within the Preserve (*Priority 1*)

***Implementation Measure C.4.1*:** Ranger staff will install fencing and/or gates at points of unauthorized public access as appropriate. Points of unauthorized access will be identified in conjunction with trail monitoring activities (as described in implementation measure C.5.1).

***Implementation Measure C.4.2*:** Ranger staff will regularly inspect and maintain all fencing and gates within the Preserve. Fencing segments and gates will be repaired or replaced as necessary.

5.4.3 Trail and Access Road Maintenance

********THE PRESERVE IS CURRENTLY NOT OPEN TO THE PUBLIC*******

No public access roads or staging areas are proposed for the Preserve. The Preserve will only include a multi-use trail system.

Management Directive C.5 – Properly maintain trails for user safety, to protect natural and cultural resources, and to provide high-quality user experiences (*Priority 1*)

***Implementation Measure C.5.1*:** Ranger staff will monitor trails for degradation and off-trail access and use, and provide necessary repair/maintenance per the Community Trails Master Plan (County of San Diego 2005). See also implementation measure B.4.2.

***Implementation Measure C.5.2*:** If temporary closure of a trail is deemed necessary for maintenance or remediation, temporary closure actions will be accompanied by educational support, and public notification through signs and public meeting announcements. An implementation schedule should be written by DPR Operations staff when maintenance or remediation is deemed necessary.

The trail will be posted with signage that indicates temporary closure and the primary reason for the temporary closure (e.g., erosion issues, and sensitive biological resource impacts). Finally, signs should provide contact information for anyone wishing to provide input on trail use or gain additional information regarding temporary closure of trails.

Once posted, the trails in need of maintenance should be blocked with A-frame barricades and/or caution tape. Enforcement of the temporary closure of a trail would require increased ranger patrols of these areas and investigations to determine if the barriers are effective.

***Implementation Measure C.5.3*:** DPR will restore degraded habitats and reduce detrimental edge effects through maintenance and stabilization of trails and strategic revegetation. Measures to counter the effects of trail erosion may include the use of stone or wood cross-joints, edge plantings of native grasses, and mulching of the trail per the Community Trails Master Plan (County of San Diego 2005) and approved Best Management Practices (BMPs). See also implementation measure B.1.1.

***Implementation Measure C.5.4*:** If unauthorized trail formation is observed by ranger staff, those specific areas will be posted with clear signage reminding the public to remain on authorized trails. Also see management directive C.6.

5.4.4 Signage and Lighting

No lighting is proposed to be installed at the Preserve.

Management Directive C.6 – Develop, install, and maintain appropriate signage to effectively communicate important information to Preserve visitors (*Priority 1*)

Signs educate, provide direction, and promote sensitive resources and enjoyment of natural areas. Types of signs within the Preserve may include those necessary to: protect sensitive biological and cultural resources (see A.4.4, B.3.2, and E.2.4); provide educational and interpretive information (see C.3.2 and E.3.1); explain rules of the Preserve (see C.1.1 and D.2.1); direct public access (see C.2.2 and C.5.4); and, provide Preserve operations information (see A.4.3 and C.5.2).

***Implementation Measure C.6.1*:** Park ranger staff will regularly inspect and maintain all posted signs within the Preserve in good condition. Current posted signs include the following rules and regulations: Off-roading and ATV Vehicles Prohibited 41.130 and 76.101(a), Dogs on Leash At All Times 41.123(c), Weapons and Fireworks Prohibited 41.117, All Plants and Animals Are Protected 41.111 and 41.112, No Open Flames 41.118, and No Dumping. Signs shall be kept free from vandalism and will be repaired or replaced as necessary.

5.5 Operations and Facility Maintenance Element (D)

5.5.1 Litter/Trash and Materials Storage

Management Directive D.1 – Maintain a safe and healthy environment for Preserve users (*Priority 1*)

***Implementation Measure D.1.1*:** The permanent storage of hazardous and toxic materials within the Preserve will be prohibited. Any temporary storage must be in accordance with applicable regulations, and otherwise designed to minimize any potential impacts.

***Implementation Measure D.1.2*:** DPR staff will remove "snake boards", plywood sheets and fiberglass roofing panels that were found in the Preserve during AECOM's 2009 surveys.

Management Directive D.2 – Publicize and enforce regulations regarding littering/dumping (*Priority 1*)

***Implementation Measure D.2.1*:** Lists of regulations will be provided to Preserve users (e.g., posted on kiosks) clearly stating that littering within the Preserve is illegal, and will provide appropriate DPR contacts to report any littering observed.

***Implementation Measure D.2.2*:** Regulations regarding littering/dumping will be enforced by park rangers (County Code of Regulatory Ordinance Section 41.116). Penalties for littering and dumping will be imposed by law enforcement officers sufficient to prevent recurrence and reimburse costs to remove and dispose of debris, restore the area if needed, and pay for additional DPR staff time. Areas where dumping recurs will be evaluated for potential barrier placement. Additional monitoring and enforcement will be provided as needed.

5.5.2 Hydrological Management

Native habitats in the MSCP Preserve have evolved, in part, on the distribution and flow characteristics of water. MSCP Preserve property should be managed to maintain existing natural drainages and watershed and to restore or minimize changes to natural hydrological processes. Proposed structures and activities should be evaluated for effects on hydraulics, and remedial actions should be taken as needed. Best Management Practices (BMPs) should be used both within and outside the preserve system to maintain water quality.

An un-named tributary of Escondido Creek bisects the Preserve north to south.

Management Directive D.3 – Retain un-named tributary in its natural condition. *(Priority 1)*

***Implementation Measure D.3.1*:** In the event a multi-use trail system is chosen that crosses the un-named tributary, potential threats to jurisdictional waters shall be identified and impacts avoided or minimized to the maximum extent practicable.

***Implementation Measure D.3.2*:** DPR staff will monitor the banks of the un-named tributary to determine if erosion is occurring. If erosion is occurring, appropriate BMPs will be installed.

Management Directive D.4 – Watershed education to promote water quality and water sustainability. (*Priority 2*)

Implementation Measure D.4.1: DPR will include watershed interpretive signs as part of the multi-use trail system.

5.5.3 Emergency, Safety and Police Services

The Framework Resource Management Plan explains that the interface between current and future urban development and MSCP preserve areas requires increased coordination between the preserve managers and agencies responsible for public safety. The MSCP preserve system, including Sage Hill Preserve, must accommodate access for emergency response and fire control and management. In the event that entry into the Preserve by law enforcement agencies is needed in the routine performance of their duties, use of existing roads and trails should be encouraged. In emergencies where there is a direct threat to public safety, the law enforcement agency should contact DPR whenever feasible.

Law enforcement and fire control agencies, and organizations and agencies that respond to natural disasters shall be permitted to perform their activities within any preserve system subject to all applicable requirements of state and federal law.

Management Directive D.5 – Maintain or increase the ability of emergency response personnel to deal with emergencies within the Preserve or vicinity (*Priority 1*)

***Implementation Measure D.5.1*:** Law enforcement officials will be invited to access Preserve property as necessary to enforce the law. If it becomes apparent that extensive enforcement activities are necessary, DPR will coordinate with the applicable agencies to inform field personnel of how to minimize damage to particularly sensitive resources.

***Implementation Measure D.5.2*:** All medical, rescue, and other emergency agencies will be allowed to access Preserve property to carry out operations necessary to protect the health, safety, and welfare of the public. Access issues are further discussed in implementation measure B.4.2.

Management Directive D.6 – Provide for a safe recreational experience for Preserve visitors (*Priority 1*)

***Implementation Measure D.6.1*:** In the event of a natural disaster, such as a fire or flood, park ranger staff shall evacuate the Preserve and coordinate with the Emergency Operations Center. In addition, staff will coordinate with the local agency in charge of responding to the emergency and, if possible, assist where necessary.

5.5.4 Adjacency Management Issues

As described in Section 2.4.2, there is currently private property on all sides of the Preserve including single-family residences, agricultural land, and undeveloped parcels. Open space parcels are located to the north of the Preserve with residential development directly north of these parcels. The establishment of the MSCP preserve system does not include regulatory authority on properties adjacent to the Preserve; however, the County will require adjacent property owners to follow permitting conditions when planning and implementing uses and activities can be regulated.

Management Directive D.7 – Coordinate with adjacent open space land managers (Priority 1)

Implementation Measure D.7.1: DPR will coordinate with the Standard Pacific Corporation (in association with their contiguous open spaces) on an annual basis, or more regularly as needed, to ensure contiguous preserved land is managed consistently and in accordance with the North County MSCP.

Management Directive D.8 - Enforce Preserve boundaries (*Priority 1*)

***Implementation Measure D.8.1*:** DPR will enforce, prevent, and remove illegal intrusions into the Preserve (e.g., orchards, decks) on an annual basis, in addition to a complaint basis.

Management Directive D.9 – Educate residents of surrounding areas regarding adjacency issues (*Priority 2*)

***Implementation Measure D.9.1*:** DPR will provide information on this RMP to residents adjacent to the Preserve to heighten environmental awareness, and inform residents of access, appropriate landscaping, construction or disturbance within the Preserve boundaries, pet intrusion, fire management, and other adjacency issues. This RMP will also be accessible on the DPR website and will thus be available to adjacent residents and to the general public.

5.6 Cultural Resources Element (E)

The goal of this section of the RMP is long-term preservation, public interpretation of the cultural resources, and interaction with the bands in whose traditional tribal territory this Preserve exists.

Management Directive E.1 – Identify, record, and assess the significance of cultural resources within the Preserve in areas over 20 percent slope (*Priority 2*)

As stated in the *Cultural Resources Phase I Survey and Inventory, Sage Hill Preserve, San Diego County, California*, dated February 2010 (Cooley and Jordan 2010; Appendix B), nearly half of the Preserve exceeds 20 percent in slope and most of this terrain is densely vegetated, which largely precluded archaeological survey. Though unlikely, resources could exist in these unsurveyed areas. If future facilities, such as trails, staging areas or other construction are proposed into these areas, significant adverse effects on these potentially significant unknown resources could occur.

> ***Implementation Measure E.1.1*:** Identify and record cultural resource sites in those areas of the Preserve where, if in the future, brush is removed as a result of wildfire or planned ground disturbing activities including clearing, grubbing or new trail development efforts. Any cultural materials collected from the Preserve will be curated at a qualified curation facility. No removal or modification of cultural resources shall occur without written approval by the Director of Parks and Recreation.

Management Directive E.2 – Preserve and protect significant cultural resources to ensure that sites are available for appropriate uses by present and future generations (*Priority 2*)

> ***Implementation Measure E.2.1*:** Threats to the cultural resources from natural (e.g., fire, erosion, floods) or human-caused events shall be identified, and impacts prevented, reduced, eliminated, or adverse effects mitigated. Threats could include movement of resources after a heavy rain/flood or due to erosion after a fire event. Fire suppression activities could also threaten resources. Avoidance or mitigation measures will be identified if impacts are caused by future projects within the Preserve.
>
> ***Implementation Measure E.2.2*:** The condition and status of cultural resources shall be noted as part of routine monitoring activities conducted at five-year intervals (or on a more frequent basis as determined by DPR) and remedial measures shall be taken if damage is noted. Monitoring activities should also photo-document site conditions so that comparisons can be made over time. Any monitoring of the sites in the Preserve should follow the guidelines found in

the County of San Diego *Report Format and Content Requirements, Cultural Resources: Archaeological and Historical Resources* (2007).

All site location information will be kept strictly 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.

***Implementation Measure E.2.3*:** All management activities within the Preserve including, but not limited to, trail construction and/or maintenance, placement of fencing and gates, and restoration of habitat will take into consideration potential impacts to cultural resources and shall avoid adverse impacts to any cultural resources to the maximum extent possible. No ground disturbing activities will be allowed on or in any cultural resource site within the Preserve until the impacts have been assessed. For those sites already evaluated and determined not significant, no further action is required.

If avoidance of significant sites is not feasible, appropriate mitigation measures will be established. Removal or disturbance of cultural resources shall not occur prior to completion of an approved mitigation program, such as data recovery or recordation. Preservation in place is the preferred mitigation measure.

***Implementation Measure E.2.4*:** Signs shall be posted at all trail heads and throughout the Preserve to notify users that sensitive cultural resources within the Preserve cannot be damaged and that removal of any archaeological material is prohibited by law. Protection and preservation of cultural resources will comply with County of San Diego ordinances (Title 4; Public Property, Division 1; Parks and Beaches, Article 2, Section 41.113), and applicable state and federal laws, which will be enforced by park ranger staff. These signs shall be maintained as described in implementation measure C.6.1.

The County will ensure that park ranger staff has sufficient training through the DPR Ranger Academy to actively protect archaeological sites from vandalism and other forms of human impact. If a Preserve user is suspected of vandalism to cultural resources, the appropriate law enforcement authorities shall be notified. More aggressive measures may be needed if vandalism and damage continue or increase.

Management Directive E.3 – Promote the beneficial uses of cultural resources through interpretation and educational programs (*Priority 2*)

***Implementation Measure E.3.1*:** Off-site, and when possible, on-site interpretive programs for Native American heritage, local and regional history, and prehistory will be developed for the Preserve. These may include lectures, walks, kiosks, signs, historic brochures, and displays, but will not include excavations, collecting of artifacts, or disclosure of confidential site locations unless an interpretive plan is developed and approved by the Director of Parks and Recreation. The plan

will include supervision by a qualified archaeologist approved by the Director of Parks and Recreation. See also implementation measures C.3.1-3.

Management Directive E.4 – Honor Native American Heritage and promote Native American ceremonies, gathering, and cultural practices (*Priority 2*)

***Implementation Measure E.4.1*:** DPR will continue to coordinate and consult with the San Pasqual Band of Mission Indians in order to keep them informed of activities associated with the Preserve. Consultation shall be conducted frequently in order to identify appropriate management of pre-contact and ethnographic cultural resources. The tribes will be encouraged to participate in evaluation, recordation, protection and preservation of cultural resources.

***Implementation Measure E.4.2*:** The County will open the Preserve to traditional uses by the San Pasqual Band of Mission Indians. All activities by Native Americans in the Preserve shall be conducted with a Right-of-Entry permit specifically designed for the Preserve.

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APPENDIX A

Sage Hill Land Management Agreement
(See www.co.san-diego.ca.us/parks/management_plans.html)

SAGE HILL LAND MANAGEMENT AGREEMENT

SANDAG Document Number 5001158

This Sage Hill Land Management Agreement ("Agreement") is made this 13TH day of FEBRUARY, 2009.

Between:

COUNTY OF SAN DIEGO
DEPARTMENT OF PARKS AND RECREATION
9150 Chesapeake Drive, Suite 200
San Diego, CA 92123
858-966-1301
("County")

And:

SAN DIEGO ASSOCIATION OF GOVERNMENTS
401 B Street, Suite 800
San Diego, California 92101
Attn: Office of General Counsel
619-699-6945
("SANDAG")

The purpose of this Agreement is to establish the terms and conditions for the County's long-term land management of the Sage Hill property (Sage Hill) for mitigation purposes consistent with the San Diego Association of Government's (SANDAG) *TransNet* Environmental Mitigation Program and the *TransNet* Extension Ordinance and Expenditure Plan. The County and SANDAG are to be referred to jointly as "Parties."

RECITALS

Whereas, in April 2003 the SANDAG Board of Directors (SANDAG Board) adopted the 2030 Regional Transportation Plan (RTP) entitled MOBILITY 2030, The Transportation Plan for the San Diego Region; and

Whereas, the RTP includes a list of transportation network improvements and other transportation programs that are intended to improve the mobility of people and goods throughout the region; and

Whereas, the *TransNet* Extension Ordinance and Expenditure Plan (*Transnet* Extension Ordinance) was adopted by the SANDAG Board on May 28, 2004, and approved by the voters on November 2, 2004, to provide for continuation of the half-cent transportation

voters on November 2, 2004, to provide for continuation of the half-cent transportation sales tax for 40 years to relieve traffic congestion, improve safety, and match state/federal funds; and

Whereas, the *TransNet* Extension Ordinance included the establishment and implementation of an Environmental Mitigation Program (EMP), including 11 principles that further defined the major elements of the EMP; and

Whereas, the *TransNet* EMP is intended, in part, to provide for early large-scale acquisition and management of important habitat areas and to create a reliable approach for funding required mitigation for future transportation improvements, thereby enabling the purchase of habitat that may become more scarce in the future, reducing future costs and accelerating project delivery; and

Whereas, proactive mitigation of transportation projects would provide an opportunity to implement the *TransNet* EMP by providing opportunities for early large-scale conservation, permit streamlining, and certain cost savings; and

Whereas, the purposes of the purchase and grant of the Conservation Easement Deed for Sage Hill ("Acquisition") are to (1) provide mitigation for transportation projects funded by *TransNet*; (2) protect critical habitat for the California gnatcatcher, southern maritime chaparral and southern willow scrub/brackish marsh habitats; (3) further implement the Department of Fish and Game's (DFG) Natural Community Conservation Planning (NCCP) efforts in North San Diego County; and (4) enhance a general wildlife corridor between larger habitat areas; and

Whereas, Sage Hill is located along Elfin Forest Road between Fortuna del Norte and Aguilera Lane, in the Elfin Forest community of unincorporated San Diego County. Elfin Forest is an unincorporated rural residential neighborhood that is bordered to the north and northwest by the master-planned community of San Elijo Hills within the San Marcos city limits; to the west by upscale rural residential neighborhoods within the Encinitas city limits; to the south by The Bridges at Rancho Santa Fe and Cielo, two rural residential developments proximate to the unincorporated community of Rancho Santa Fe; and to the east by the rural residential communities of Harmony Grove, Del Dios and Mt. Israel, (See Exhibit A, which is attached hereto and incorporated herein by this reference); and

Whereas, the Acquisition will help to enhance existing efforts to conserve coastal sage scrub, southern willow scrub/brackish marsh and southern maritime chaparral habitats that support Del Mar manzanita, Encinitas baccharis, Orcutt's spineflower and the coastal California gnatcatcher.

Whereas, on May 9, 2008, a private nonprofit corporation, The Conservation Fund ("TCF"), entered into a contract to purchase Sage Hill from Elfin Forest, LLC; and

Whereas, on June 18, 2008, the County entered into an Agreement for Reimbursement of Non-Refundable Deposit with TCF, which contemplated the ultimate purchase of Sage Hill by the County, subject to various conditions, including approval by the SANDAG Executive Director under the *TransNet* EMP, and allocation of funds from state, federal and local sources, including SANDAG *TransNet* funds, to cover TCF's purchase costs; and

Whereas, on August 25, 2008, SANDAG obtained concurrence and commitment from the DFG and the U. S. Fish and Wildlife Service (USFWS) (collectively "Wildlife Agencies"), to utilize Sage Hill as mitigation for future regional and local transportation projects; and

Whereas, on September 17, 2008; the County of San Diego Board of Supervisors approved the acquisition of Sage Hill from TCF; and

Whereas on September 26, 2008, the SANDAG Board of Director's approved the TransNet EMP property acquisition criteria and process in conformance with the *TransNet* EMP Memorandum of Agreement signed on March 19, 2008 by SANDAG, Caltrans, and the Wildlife Agencies; and

Whereas, on October 17, 2008, the Executive Director of SANDAG, in reliance upon the Wildlife Agencies' August 25, 2008, concurrence and commitment letter, and contingent upon the Wildlife Conservation Board's approval of SANDAG's use of Sage Hill for mitigation purposes, authorized SANDAG's $8,027,433 contribution towards the Acquisition cost of Sage Hill under the *TransNet* EMP; and

Whereas, in exchange for SANDAG's contribution of $8,027,433 to this Acquisition, on or about January 30, 2009, TCF will grant SANDAG a Conservation Easement Deed across the entirety of Sage Hill; and

Whereas, on or about January 30, 2009, TCF will convey fee title to Sage Hill to the County of San Diego, encumbered with SANDAG's Conservation Easement Deed; and

Whereas, SANDAG intends to enter into this Agreement with the County for management of Sage Hill consistent with the terms outlined herein, and as further outlined in the Conservation Easement Deed recorded in SANDAG's favor on approximately January 30, 2009.

NOW, THEREFORE, in consideration of the foregoing recitals, which are incorporated herein by this reference, the Parties hereby agree as follows:

AGREEMENT

1. Management of Land as Mitigation: The County agrees to manage Sage Hill, consistent with the terms and conditions of this Agreement, the Conservation Easement

Deed and the related Resource Management Plan, so that its Conservation Values (as defined in the Conservation Easement Deed), including its mitigation value to SANDAG are maintained and protected. The Conservation Easement Deed recorded on this property requires that the County, or its contractor or agent, manage at least 170.77 acres of the land to standards that retain the mitigation value of the Sage Hill habitat in perpetuity. Consistent with the terms of this Agreement, the County, its contractor or agent, will manage the land to assure that the site retains its Conservation Values, including its value as mitigation for regional and local street transportation projects.

2. One-Time Costs. At the close of escrow on the Sage Hill Acquisition, on or about January 30, 2009, SANDAG will deposit $261,000 in an interest-bearing account to be held, maintained and operated by the County to cover one-time stewardship costs.

Initial one-time stewardship costs (estimated at $1000/acre as of the date of this Agreement) includes activities such as installing fencing and signage, removing debris and invasive vegetation as well as the preparation of a Resource Management Plan (estimated at $500/acre as of the date of this Agreement) as required by the *TransNet* EMP.

The Resource Management Plan (RMP) for Sage Hill will be prepared by the County, or its contractor or agent, in collaboration with SANDAG, within one year of the date this Agreement is fully-executed, and will be subject to approval by SANDAG.

At a minimum, the RMP shall set forth the following:

1. Area Specific Management Directives (ASMDs) designed to identify a list of actions for the management (stewardship and adaptive) of Sage Hill, including a baseline documentation report; and
2. An ongoing-monitoring program, and
3. A Trails Plan, and
4. A Vegetation/Fire Management Plan.

The ASMDs will also address foreseen and unforeseen changes that may affect the habitat value of the property.

The Resource Management Plan will be developed in collaboration with SANDAG staff, will detail matters including, but not limited to, enforcement requirements, contractor performance bonding and insurance requirements, and recordkeeping requirements for audit purposes, consistent with the *TransNet* Extension Ordinance and Public Utilities Code Section 132321, and will be subject to approval by SANDAG.

Funds not utilized for one-time stewardship start-up costs will revert back to SANDAG at the end of three years from the signing of this Agreement.

3. Ongoing Costs Endowment. The Parties have agreed that the on-going costs to manage these lands in perpetuity (annual stewardship and adaptive and monitoring

costs of approximately $26,000) will be funded through an endowment in the amount of $870,000 to be established at the close of escrow by SANDAG in an interest-bearing account to be held, maintained and operated by SANDAG at a rate of return intended to cover the annual stewardship and adaptive and monitoring costs.

On July 1 of each calendar year, the County shall provide to SANDAG a written request for an annual payment for the management of the property of $26,000 or such other amount as agreed to by the parties. Included in this request, will be an itemized accounting of how funds from the previous year were spent and how the next year's funds are expected to be spent to implement the ASMDs described in Section 2 above.

4. Unforeseen Changes in Costs. The Parties recognize that natural events may require additional management due to foreseen and unforeseen events. The County will manage the property for foreseen events pursuant to the ASMDs with the annual funding provided by SANDAG. The Parties will reserve the right to negotiate additional management costs necessary to maintain the habitat and mitigation value of the property due to unforeseen events above and beyond the control of the County.

5. Recordkeeping. The County will keep records on the Sage Hill management and monitoring activities and costs for a period of at least five years for purposes of annual audits as required by the *TransNet* Extension Ordinance.

6. Term. This Agreement shall become effective as of the date first written above and will continue in full force and effect for an initial term of fifteen (15) years. The Parties, or their successors, agree to review the terms and conditions of this Agreement at least every two years during the initial fifteen (15) year term. Unless notice of intent to terminate is given with in twelve (12) months of the end of the term, an additional twelve (12) month term shall be automatically added to this Agreement. Such automatic renewal shall continue indefinitely until notice of intent to terminate is given. Such notice of termination shall provide at least twelve (12) months notice before the termination is effective. If this Agreement is extended beyond the initial fifteen (15) year term, the Parties, or their successors, agree to review the terms and conditions of this Agreement at least every five years, beginning in the year 2024.

7. Modification. This Agreement may not be modified unless the Parties agree to its written modification.

8. Severability. The invalidity in whole or in part of any provision of this Agreement will not void or affect the validity of any other provisions of this Agreement.

9. Provisions Cumulative. The foregoing provisions are cumulative and in addition to and not in limitation of any other rights or remedies available to the County or SANDAG.

10. Notices to Parties. Any statements, communications or notices to be provided pursuant to this Agreement must be sent to the attention of the persons indicated

above. Each party agrees to promptly send notice of any changes of this information to the other party, at the address first above written.

IN WITNESS WHEREOF, the parties below are authorized to act on behalf of their organizations, and have executed this Agreement as of the date set forth below.

COUNTY OF SAN DIEGO

Renée E. Bahl
Department of Parks and Recreation

SAN DIEGO ASSOCIATION OF GOVERNMENTS

Diane Eidam
Deputy Executive Director

Approved as to Form:

Karen Landers
Senior Deputy County Counsel

Approved as to Form:

Julia Coleman
Associate Legal Counsel

APPENDIX B

Baseline Biological Survey Report for the Sage Hill Preserve, County of San Diego

(See www.co.san-diego.ca.us/parks/management_plans.html)

APPENDIX C

Cultural Resources Phase I Survey and Inventory
Sage Hill Preserve, San Diego County, California

(See www.co.san-diego.ca.us/parks/management_plans.html)