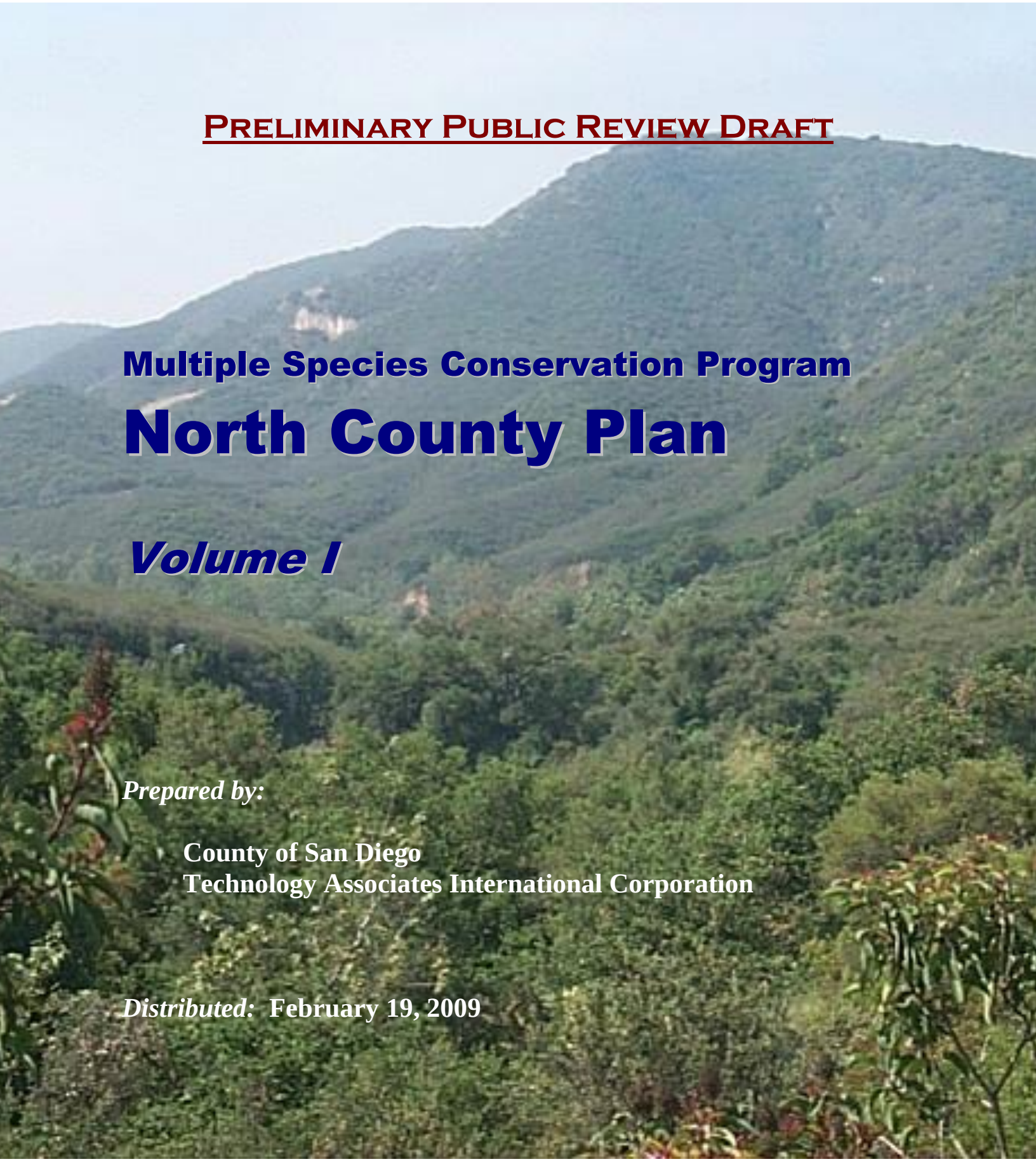

PRELIMINARY PUBLIC REVIEW DRAFT

Multiple Species Conservation Program

North County Plan

Volume I

Prepared by:

County of San Diego
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LIST OF ABREVIATIONS AND ACRONYMS

BLM	United States Bureau of Land Management
BMP	Best Management Practice
Caltrans	California Department of Transportation
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
County	County of San Diego
CWA	Clean Water Act
EIR/EIS	Environmental Impact Report / Environmental Impact Statement
ESA	Federal Endangered Species Act
FRMP	Framework Resource Management Plan
GIS	Geographic Information System
HCP	Habitat Conservation Plan
MHCP	Multiple Habitat Conservation Program
MSCP	Multiple Species Conservation Program
NCCPA	California Natural Community Conservation Planning Act
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
PAMA	Pre-Approved Mitigation Area
RWQCB	California Regional Water Quality Control Board
SANDAG	San Diego Association of Governments
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service

1. INTRODUCTION

1.1. Overview

San Diego County (County) is home to many rare, threatened, and endangered species. On a national and global scale, the region has been identified as a major "hotspot" for biodiversity. It is also one of the most rapidly growing regions in the country. This combination of high biodiversity, large numbers of rare and unique species, and rapid urbanization has led to conflicts between economic growth and biological conservation. The North County Plan (Plan) is one of several large habitat conservation planning efforts in the County (Figure 1-1). This Plan expands the County Multiple Species Conservation Program (MSCP) into the northwestern unincorporated areas of the County. Without comprehensive conservation plans such as this Plan, species may continue to be added to the federal and state threatened and endangered species lists and fail to be adequately protected on the landscape. This Plan provides economic benefits by reducing constraints on future development outside of proposed preserve areas and decreasing the costs of compliance with federal and state laws protecting biological resources. Implementation of this Plan will also protect biodiversity and enhance the quality of life in the San Diego region.

The area included in this Plan 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. This Plan will help conserve habitat that benefits numerous species, including the 63 species covered under the Plan.

This Plan is being prepared as a multiple species Habitat Conservation Plan (HCP) pursuant to section 10(a)(1)(B) of the federal Endangered Species Act (ESA), as well as an Natural Community Conservation Plan (NCCP) under the California Natural Community Conservation Planning Act (NCCPA). This Plan also satisfies the special rule conditions of ESA section 4(d) for the California gnatcatcher *(Polioptila californica californica*). This Plan will provide the County with permits and authorizations for the Incidental Take of listed threatened, endangered, and/or other species of concern. Take Authorizations issued by the California Department of Fish and Game (CDFG) and the U.S. Fish and Wildlife Service (USFWS; together referred to as the Wildlife Agencies) allow for otherwise lawful actions, such as development, that may incidentally take or harm individuals of a species or its habitat. The County, as the Take Authorization holder, may share the benefits of that authorization by permitting public or private projects (Third-Party Participants) that comply with the Plan. Conservation and management responsibilities, assurances of implementation, and corresponding authorizations for all parties are contained in the Implementing Agreement between the County as the Take Authorization holder and the Wildlife Agencies. The Implementing Agreement and associated Permits provide that state and federal Take Authorizations will be in effect for a period of 50 years.

Permits issued pursuant to the Plan do not include section 404 Clean Water Act permits from the Army Corps of Engineers (USACE), section 401 Clean Water Act permits from the Regional Water Quality Control Board (RWQCB), or section 1600 California Fish and Game Code permits from the CDFG for impacts to wetlands, streams, lakes, and/or other waters, nor does this Plan rely upon such permits. However, this Plan may be used as the basis for future consultation requirements under section 7 of the ESA and issuance of a Biological Opinion for a section 404 Clean Water Act permit from the USACE, thereby streamlining wetland permits and protection of Covered Species.

1.2. Goals and Objectives

"An objective of the MSCP is to conserve a connected system of biologically viable habitat lands in a manner that maximizes the protection of sensitive species and precludes the need for future listings of species as threatened or endangered" (MSCP 1998). In order to maintain biodiversity and ecosystem health in the region while ensuring quality of life and economic growth opportunities, this Plan incorporates the following underlying goals:

- **Biological 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.
- **Economic Goals**: Provide a regulatory process that allows for efficient permitting of residential and commercial development, community infrastructure projects, agricultural expansion, and ongoing agricultural activities as well as greater certainty for economic and urban development through the identification of appropriate locations for new development.
- **Social Goals**: 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.

Biological goals for the Plan follow standard principles of conservation biology and a science-based approach to conservation planning. Goals, objectives, and conservation strategies for the Plan were established based on the needs of 63 target species and their habitats in the Plan area. The NCCP Conservation Guidelines, MSCP Species Predictive Models, Habitat Evaluation Models, and the SITES Preserve Selection Algorithm were all used to establish goals, objectives, and conservation strategies for individual species and habitats within the Plan area.

The economic and social goals reflect the Deal/Negotiation Points (County of San Diego, 1995) adopted by the County to guide the development of HCP/NCCP plans. This Plan is intended to be compatible with the County's General Plan and ordinances. As such, it compliments existing policies in achieving economic goals by providing a regional conservation plan to streamline the permitting process. Preservation of open space and habitats also contributes to the quality of life and long-term vitality of the region and community, particularly when combined with other elements such as clean air, efficient transportation, and sustainable agriculture.

The County's Strategic Initiatives, which form the core of the County's Strategic Plan (County of San Diego, 2006b), has three focal areas: kids, the environment, and safe and livable communities. These three initiatives reflect the County's commitment to: (1) improve

opportunities for children; (2) promote natural resource management strategies that ensure environmental preservation, quality of life, and economic vitality; and (3) promote safe and livable communities. In keeping with the Strategic Initiatives, this Plan reflects a strong commitment to the environment and balances habitat conservation with housing, recreation, and economic development needs in the County. This Plan also helps to complete one of the main objectives listed in the Strategic Plan, to implement habitat conservation programs.

1.3. Purpose and Need

This Plan is designed to create an efficient and economical framework for complying with state and federal endangered species laws while accommodating future growth in the region while maintaining functioning ecosystems and protecting rare species within the Plan area. While the responsibility for habitat conservation under the Plan rests initially with the County and other public and private entities whose activities directly affect declining species and their habitats, benefits from successful implementation are shared by a broader group of individuals and organizations. This broader group includes the existing communities and residents of the County as well as other residents throughout California and the United States. Accordingly, the following groups of Participants will be involved in implementing the Plan:

- *Federal and state governments*, representing the interests of communities outside the County. These governments and the communities they represent benefit from the survival and continuation of species that their laws are designed to protect. Federal and state governments will mitigate impacts of public projects that they undertake by conserving habitat in the Pre-Approved Mitigation Areas (PAMA).
- *Local governments* with jurisdiction in the Plan area, representing the interests of communities in this area. Existing communities benefit from the preservation of their natural heritage and the visual and recreational values of regional open space. These entities will also mitigate impacts of public projects by conserving habitat in the PAMA.
- *Private landowners and developers* with projects that require mitigation for impacts to protected species and their habitats. Landowners and developers benefit from the Plan because it identifies agreed upon areas for project mitigation, provides guidance on where biological resources may be impacted and where they should be conserved, and establishes a permit authorization process. This eliminates uncertainty and duplication of agency review that often accompany project proposals. To the extent that development costs are passed on to future residents and businesses, private landowners and developers also represent their interests indirectly.
- *San Diego County residents* also have an interest in maintaining open space for the preservation of their natural heritage and the visual and recreational values of natural lands. Current residents have also benefited from past development that has resulted in the rarity of a number of natural resources. Therefore, a broad-based solution is being contemplated for current residents to share in funding the acquisition and management of open space programs.

Continued economic development of the County has been impacted by the listing of endangered and threatened species under the ESA. In particular, 1993 federal listing of the California gnatcatcher as a threatened species greatly complicated the region's ability to accommodate future growth and development in coastal areas. The federal listing of the Arroyo toad (*Bufo*

californicus) and Stephens' kangaroo rat (*Dipodomys stephensi*) as endangered species has also posed similar obstacles to development and agricultural operations. Furthermore, the traditional project-by-project mitigation process for resolving conflicts between species preservation and development impacts is costly and cumbersome and has generally resulted in ineffective conservation of isolated, fragmented habitat. These generally small unconnected habitat fragments cannot guarantee the continued viability of species populations or of ecosystem functions which typically require large, connected habitat blocks. Under this Plan, the highest quality habitat and critical linkage areas are targeted for preservation with development directed to more appropriate and less biologically sensitive locations.

Completion of this Plan provides that the County will receive permits and management authorizations to directly impact or take species deemed to be adequately conserved by the Plan, provided such taking is incidental to otherwise lawful activities. The term take is defined by the ESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, and includes any adverse modification to the species' habitat." These permits or management authorizations are referred to as Take Authorizations. This Plan will also replace the current 4(d) rule associated with the California gnatcatcher.

Lethal take of individuals or populations is not expected to be permitted or to occur for most animal species during implementation of the Plan. For California Fully Protected Species (i.e., Light-footed clapper rail and Golden eagle) lethal take of individuals is forbidden and the Plan will only allow habitat alteration or disturbance that will not affect breeding individuals. This Plan also addresses the Migratory Bird Treaty Act and constitutes a Special Purpose Permit under 50 C.F.R section 21.27 just for the following listed species: Southwestern willow flycatcher (*Empidonax traillii extimus*), least Bell's vireo (*Vireo bellii pusillus*), coastal California gnatcatcher, and light-footed clapper rail (*Rallus longirostris levipes*). This plan will allow for take of the aforementioned species subject to the terms and conditions specified herein. Any such take of the aforementioned species will not be in violation of the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. §§ 703-712).

2. PLAN AREA DESCRIPTION

2.1. Geographic Location

The Plan area is bounded on the west by the Marine Corps Base Camp Pendleton, and the cities of Oceanside, Carlsbad, Solana Beach and Encinitas; on the north by Riverside County; on the east predominantly by the Cleveland National Forest; and on the south by the MSCP South County Subarea plan, which extends from Lake Hodges to Rancho Santa Fe. Major communities within the Plan area include Bonsall, De Luz, Fallbrook, Harmony Grove, Lilac, Pala, Pauma Valley, Rainbow, Rincon Springs, Twin Oaks Valley, Valley Center, and much of Ramona (Figure 2-1). Within the described geographical area, only lands within the County's regulatory authority (84% of the area described) are considered to be part of this Plan and may receive Take Authorization. Tribal lands under the control of the Indian Reservations, U.S. Forest Service lands, special district lands, etc…, although within the geographic boundaries of this Plan, are not considered herein. With the exclusion of these lands, the Plan area covers approximately 294,849 acres of northern San Diego County.

Topography in the Plan area ranges from flat valleys to rugged mountains. Relatively gentle slopes occur near the coastal and inland river valleys, while steeper hills are found in the central and eastern portions of the Plan area, with elevations up to 4,221 feet at Pine Mountain, 3,886 feet at Rodriguez Mountain, 3,189 feet at Margarita Peak, and 3,043 feet at Whale Mountain. Eight other major peaks, including Mount Woodson, Paradise Mountain, and Mount Olympus, exceed 2,000 feet in elevation. The Plan area covers portions of the San Juan, Santa Margarita, San Luis Rey, San Dieguito, Penasquitos, San Diego, and Carlsbad watersheds. Other creeks with significant biological values originate in and flow through the Plan area including San Marcos Creek and Agua Hedionda Creek, along with its tributary, Buena Creek. One coastal lagoon (San Elijo Lagoon) is located within the Plan area, at the mouth of Escondido Creek.

2.2. Land Ownership and Land Use

2.2.1. Major Land Ownership

Land within the Plan area is mostly held in private ownership (91%). Public ownership includes the County of San Diego, State of California, federal government, and local entities (such as incorporated jurisdictions, utilities, and local right-of-ways) (Table 2-1; Figure 2-2).

Table 2-1. Major Land Ownership within the Plan Area

Land Owner[1]	Acres within Plan Area	
Private[2]	267,771	90.8%
Bureau of Land Management	8,384	2.8%
County	8,141	2.8%
Public (Roads & Right-of-Ways)[3]	5,866	2.0%
State (Caltrans)	1,818	0.6%
Other (less and 0.5% each)	2,869	1.0%
Total	**294,849**	**100.0%**

Notes:

[1]Acreages are based on the 2008 Public Land Ownership cover maintained by SANDAG. Some category names have been changed and reorganized for presentation here.
[2]This includes ownership of conservation related private organizations.
[3]Roads and their associated right-of-ways fall under the ownership of various public entities including the state, county and various municipalities.

2.2.2. Major Land Ownership NOT in Plan Area

Within the geographic extent of the Plan, several entities hold land not subject to this Plan and therefore these lands have been excluded. These lands include: tribal trust lands, U.S. Forest Service lands, and special district lands (i.e., water district lands, school districts, sanitation districts, etc…). The acreage of these lands is included for reference in Table 2-2.

Table 2-2. Major Land Ownership NOT within the Plan Area

Land Owner[1]	Acres[2]
U.S. Forest Service	11,648
Tribal Lands	30,912
City	1,388
Water Districts	6,002
School Districts	887
Other (less than 200 acres each)	332
Total	**51,169**

Notes:

[1]Acreages are based on the 2008 Public Land Ownership cover maintained by SANDAG. Some category names have been changed and reorganized for presentation here.
[2]While within the geographic extent of the Plan area, these lands are not subject to this Plan and were not included in the planning process.

2.2.3. Major Land Uses

Land use within the Plan area can be categorized predominantly as vacant and undeveloped land (34.9%), residential (all types total 29.5%), and agriculture (23.6%). Figure 2-3 maps the distribution of these land use categories and acreages are reported in Table 2-3.

Table 2-3. Major Land Uses within the Plan Area

Land Use[1]	Acres within Plan Area	
Vacant and Undeveloped Land	102,725	34.9%
Spaced Rural Residential	73,808	25.0%
Agriculture	69,535	23.6%
Open Space Preserves, Golf Courses & Parks	23,132	7.9%
Urban Residential	13,323	4.5%
Roads, Road Right-of-Ways, & Airports	8,408	2.9%
Other	3,918	1.2%
Total	**294,849**	**100%**

Notes:

[1]Acreages are based on the 2008 Land Use cover maintained by SANDAG. Some category names have been changed and reorganized for presentation here.

2.3. Vegetation Communities

The Plan area contains approximately 167,302 acres of natural vegetation communities and 127,547 acres of altered landscapes. The predominant natural vegetation communities are chaparral (25.7%) and costal sage scrub (10.1%). Agriculture (26.6%) and developed land (15.9%) predominant in the altered landscape (Figure 2-4; Table 2-4).

Table 2-4. Vegetation Communities within the Plan Area

Vegetation Community	Total for Plan Area	
Chaparral	75,865	25.7%
Southern Maritime Chaparral	451	0.2%
Coastal Dunes and Beaches	5	0.0%
Coastal Sage Scrub	29,888	10.1%
Coastal Sage Scrub/Chaparral	5,179	1.8%
Grassland	22,355	7.6%
Native Grassland	851	0.3%
Engelmann Oak Woodland	8,478	2.9%
Oak Forest	332	0.1%
Oak Woodland	12,684	4.3%
Montane Coniferous Forest	1,238	0.4%
Natural Upland Subtotal	***157,326***	**53.4%**
Marsh	478	0.2%
Wet Meadow	380	0.1%
Open Water	400	0.1%
Riparian Forest	5,012	1.7%
Riparian Scrub	2,327	0.8%
Riparian Woodland	1,379	0.5%
Wetland Subtotal	***9,976***	**3.4%**
All Natural Habitats Subtotal	**167,302**[1]	**56.7%**
Agricultural Land	78,437	26.6%
Developed	46,976	15.9%
Non-vegetated Channels & Floodways	305	0.1%
Non-native / Disturbed	1,323	0.4%
Eucalyptus Woodland	506	0.2%
Non-Natural Subtotal	**127,547**	**43.3%**
Total	**294,849**	**100%**

[1] The total acreage here differs from the "Vacant and Undeveloped Land" total in Table 2-3 because the total in this table includes natural vegetation within areas that have different land use designations (i.e., spaced rural residential, open space preserves, road right-of-ways)

2.4. Existing Open Space

2.4.1. County Lands

The following is a list of open space preserves owned and/or managed by the County of San Diego. As part of its commitment to conserve natural and cultural resources, the County's Department of Parks and Recreation conducts regular biological assessments of these areas (Figure 2-5).

(1) Barnett Ranch Preserve

Barnett Ranch Preserve is located in the unincorporated Ramona Community Plan area of central San Diego County, east of State Route 67 and south of State Route 78. The County acquired the 729-acre Barnett Ranch as an Open Space Preserve in 2002.

(2) Del Dios Open Space Preserve

The County acquired the 464-acre Del Dios Highlands Open Space Preserve near Lake Hodges in 2002. Horseback riding, hiking, and biking trails are proposed within the preserve that will connect the area to the Elfin Forest Recreational Reserve and the San Dieguito River Park Joint Powers Authority's "Coast-to-Crest Trail," which stretches from Del Mar to Julian. Several sensitive plant and wildlife species have been observed within this preserve including the Encinitas baccharis and golden eagle. The Preserve also contains diverse habitat and important wildlife corridors. These wildlife corridors support a functional connection between the Multiple Habitat Conservation Plan (MHCP) to the north and the Lake Hodges Segment of the South County MSCP to the south. It also provides connectivity with preserved lands in the Escondido Creek watershed.

(3) Escondido Creek Open Space

Escondido Creek Open Space properties are located west of incorporated Escondido, adjacent to Escondido Creek. The multiple proximal properties acquired by the County between 2001 and 2004 and comprise 165 acres. As of 2009, no public uses have been identified for these properties. The County acquired the properties with the concept of partnering with other agencies and conservancies in the Escondido Creek watershed to create a wildlife corridor through Escondido Creek to San Elijo Lagoon Ecological Reserve. Vegetation communities within the properties range from southern mixed chaparral to coastal sage scrub. Sensitive biological resources include Orcutt's brodiaea, wart-stemmed ceanothus, and sea dahlia. In addition, California gnatcatchers are found in coastal sage scrub habitat within these properties.

(4) Gopher Canyon Preserve

Gopher Canyon Preserve is located in the community of Bonsall and was acquired by the County in 1991 for open space purposes. The preserve totals 24 acres and contains coastal sage scrub and riparian vegetation. California gnatcatchers have been found on-site within the coastal sage scrub vegetation community.

(5) Hellhole Canyon Preserve

Hellhole Canyon Preserve is located east of Valley Center and bordered on the north by over 3,200 acres of U.S. Bureau of Land Management (BLM) land. Facilities in the 1,907-acre preserve (which is crossed by approximately 11 miles of hiking and equestrian trails) include a staging area, restroom and drinking water areas, and primitive group camping areas. Bicycles are not allowed on the trails within the preserve. The majority of the preserve was originally owned by the BLM, but was acquired by the County in 1973. Two recent acquisitions have added nearly 200 acres to this preserve: the Brown property in 2005 of 155 acres and the Pulver property in 2007 of 43 acres. Habitats within the Preserve include riparian oak woodland and chaparral. Most of the preserve consists of dense mixed chaparral and is characterized by scrub oak, manzanitas, redberry, and ceanothus. Wildlife species include mountain lions, coyotes, several species of rattlesnakes, San Diego horned lizard, black-chinned sparrows, and Bewick's wrens.

(6) Magdalena Ecke Park

The Magdalena Ecke Park was donated to the County in 1974 by the Ecke family and is located within the southern and western portion of the North Mesa Plan area of the Encinitas Ranch Specific Plan in the City of Encinitas. The preserve consists of 30 acres and is to be maintained as open land. Vegetation communities within the park include southern maritime chaparral, Diegan coastal sage scrub, and riparian woodlands.

(7) Mount Gower Preserve

The Mount Gower Preserve is located southeast of Ramona and consists of 1,590 acres. Sensitive species within the preserve include the California gnatcatcher, golden eagle, San Diego horned lizard, and orange-throated whiptail. San Diego thornmint and Parry's tetracoccus also occur within the preserve. Several streams within the preserve also support riparian woodlands comprised of sycamores, willows, and oaks.

(8) Mount Olympus Preserve

The Mount Olympus Preserve totals 712 acres and is located east of Rainbow and south of the Riverside County border. The County acquired the preserve in 1991 for habitat conservation purposes. Currently the property in not open for recreational use. The preserve contains steep slopes vegetated with chaparral. Peninsular manzanita and Lakeside ceanothus are sensitive plants found in the preserve. The conceptual recreation plan for Mt. Olympus would be for a passive recreation facility and multi-use trails. A staging area with equestrian use amenities could potentially be sited at the property access point and main trailhead.

(9) Ramona Grasslands Preserve

The Ramona Grasslands Preserve is located west of the town of Ramona, with over 2,900 acres currently conserved. The Preserve features sensitive habitats such as vernal pools, alkali playas, and native grasslands. Many rare animal and plant species inhabit the preserve including the

Stephens' kangaroo rat, San Diego fairy shrimp, and Coulter's saltbush. A number of ferruginous hawks annually winter in the preserve, as well.

(10) San Elijo Lagoon Ecological Preserve

The San Elijo Lagoon Ecological Preserve consists of 904 acres of coastal wetlands located between the cities of Solana Beach and Encinitas. The preserve supports an exceptional number of plant and animal species. Sensitive wildlife species include the California brown pelican, western snowy plover, and California gnatcatcher. Six plant communities within the preserve include coastal strand, salt marsh, freshwater marsh, riparian scrub, coastal sage scrub, and southern mixed chaparral.

(11) San Luis Rey River Park

The proposed park would stretch approximately nine miles, parallel to State Route 76 and the San Luis Rey River, from near Oceanside to Interstate 15. As of 2009, nearly 266 acres had been preserved to create the park. Sensitive habitat areas (San Luis Rey River and associated riparian habitats) and sensitive species (least Bell's vireo, California gnatcatcher, and arroyo toad) are found in the park.

(12) Santa Margarita County Park

The Santa Margarita County Preserve was acquired by the County in 1992 for habitat conservation purposes. 47 acres of contiguous habitat was added to the preserve in 2007. The park totals 220.53 acres and is located northwest of Fallbrook. The preserve is open to the public for hiking and equestrian trail uses. There are approximately three miles of existing trails on the property, with a staging area that is approximately seven acres. The County has a formal partnership agreement with the Fallbrook Land Conservancy to maintain the trails and staging area. Riparian vegetation associated with the Santa Margarita River, which flows through the park, includes sycamores, coast live oaks, cottonwoods, and willows and supports the least Bell's vireo, Arroyo chub, and southwestern pond turtle.

(13) Simon Preserve

The Simon Preserve located southeast of Ramona, totals 682 acres. A seasonal stream lined with coast live oaks, willows, and cottonwoods is found within the preserve. In addition, several sensitive plant and animal species are found within the preserve, including the San Diego thorn-mint, Orcutt's brodiaea, Engelmann oak, and California gnatcatcher.

(14) Wilderness Gardens Preserve

The Wilderness Gardens Preserve was acquired by the County in 1973 and consists of 737 acres. The preserve is located east of the Pala Indian Reservation and south of the San Luis Rey River. Mixed woodlands and chaparral exist throughout the preserve. Approximately six miles of designated trails within the preserve are available for public use, although pets and horses are not allowed. Visitors can access the preserve from Highway 76, with parking and picnic tables available in a designated staging area.

2.4.2. Federal Lands

U.S. Bureau of Land Management (BLM). The BLM administers several parcels throughout the Plan area, located in three main areas. Approximately 1,970 acres of BLM land are located near the Santa Margarita River in two disjunct patches east and west of De Luz. Approximately 3,215 acres are located in the Hellhole Canyon area, north and east of the County's Hellhole Canyon Open Space Preserve. A third parcel, approximately 1,522 acres in size, is located near Mount Gower; this land is managed by the County and was being transferred to the County, under the provisions of the Resource and Public Purpose Act, at the time of Plan development. Several smaller parcels owned by the BLM include 264 acres near Mount Olympus, 70 acres north of the County's Barnett Ranch Preserve, and 369 acres near El Capitan Reservoir.

U.S. Forest Service (USFS). A portion of the Cleveland National Forest, which is administered by the USFS, borders the Plan area. These 11,648 acres are located in the far north end of the Plan area in the Santa Margarita Mountains, adjacent to the Riverside County border. The Cleveland National Forest is managed for wildlife, natural and cultural resources, and recreation. These lands are outside the Plan area, as the County does not have jurisdiction over these lands and will not rely upon these lands for conservation credit, although the area is largely wilderness and serves as an important core area of natural habitat. The Cleveland National Forest has recently developed a Forest Plan that will guide future land use.

2.4.3. State Lands

The only portion of land within the Plan area that is administered by the CDFG is a 465-acre parcel located south of Palomar Mountain State Park and to the west of the La Jolla Indian Reservation.

Caltrans owns over 1,800 acres of rights-of-way within the Plan area (Table 2-1 and Figure 2-2). Although these areas are shown as part of the Plan area, these lands are not generally subject to land use authority of the County. However, it is possible that many of these lands will remain in a natural or semi-natural state and may contribute to the assembly of the preserve system.

2.4.4. Other Open Space Areas

The Fallbrook Land Conservancy owns and/or manages a number of properties in the Fallbrook area. These properties include the 321-acre Heights of Pala Mesa Mitigation Bank and the 1,205-acre Margarita Peak Preserve that was recently purchased by the Department of Defense and Wildlife Conservation Board.

The Center for Natural Lands Management currently owns 323 acres in the Elfin Forest area, as part of the Rancho La Costa Habitat Conservation Area, which was conserved as part of the MHCP (AMEC et al. 2003) within several coastal incorporated cities.

2.4.5. Transportation and Utility Corridors

Major transportation corridors within the Plan area include Interstate 15 and State Routes 67, 76, and 78. There are also a number of circulation element roads that handle large volumes of traffic (Figure 2-6). Improvement and expansion projects are planned for a number of these roadways within the Plan area to accommodate current and future traffic needs.

Electric and natural gas transmission lines are the responsibility of San Diego Gas & Electric Company (SDGE), which has developed an independent HCP/NCCP plan. Impacts resulting from current operations and maintenance, as well as future expansions and improvements, will be addressed by SDGE's HCP/NCCP plan.

Water supply infrastructure is managed by 12 independent special districts within the Plan area. These districts own and operate reservoirs, pipelines, treatment plants, and other related infrastructure. Most of these special district lands have been removed from the Plan area, as each district generally has land use authority independent from the County. There are two special districts, the San Diego County Water Authority and Metropolitan Water District of Southern California, for which lands owned in fee or easement have not been expressly excluded from the Plan area. Most of the lands owned by these agencies are in relatively narrow, linear corridors and often cross privately owned parcels and land owned by other agencies (see Figure 2-4). As a result, it is difficult to exclude these particular areas from the Plan for analysis purposes. Impacts from these projects are expected to be covered under the County Water Authority's HCP/NCCP Plan, currently being prepared.

2.5. County Land Use Regulation

Existing County plans, codes, and policies guide land use and development in the Plan area. Implementation of these policies occurs mainly through discretionary or ministerial permit review. In this section, some of the most important regulatory instruments are discussed.

General Plan. The County's General Plan is currently being updated. The updated General Plan will shape the future of growth in the unincorporated communities of the County. The end product will be a plan that guides protection of the environment, population and economic growth, and sets requirements for facilities and services. In developing the update, the same data used in this Plan has been employed in the General Plan to model biological constraints for development. The goal of this action is to create a set of complimentary plans.

Resource Protection Ordinance (RPO). The County's RPO (Ordinance No. 9842 Chapter 6) protects the fragile, irreplaceable resources that are vital to the general welfare of present and future residents, such as unique topography, ecosystems, natural characteristics, wetlands, floodplains, steep slopes, sensitive biological habitats, and prehistoric and historic sites. Certain discretionary projects require a resource protection study to prevent the degradation of these resources.

Biological Mitigation Ordinance (BMO). The County's BMO (Appendix A) will be the primary instrument for determining mitigation requirements for discretionary development

projects. This ordinance deals with avoidance, minimization, and mitigation requirements, along with exemptions to these requirements for the Plan area.

2.5.1. Relationship of Ordinances to this Plan

Conservation of habitat as a condition of development approval occurs in accordance with both the BMO and RPO. Developmental constraints as outlined in both the BMO and RPO will be incorporated into projects. These ordinances will diminish impacts of development in the Plan area specifically through avoidance or minimization of habitat impacts and compensatory mitigation of unavoidable impacts.

In cases where the BMO provides more specific development constraints or restrictions than the RPO, the constraints of the BMO will take precedence. Certain sections of the RPO will therefore be superseded within the Plan area by the BMO (see Appendix B for revisions). For example, Article IV, Section 6, Sensitive Habitat Lands of the RPO, will be entirely superseded by the BMO. Section 5 of the RPO, Steep Slope Lands, may be modified to allow for a more flexible system to manage steep slope encroachment and create better conservation design. Section 1 will be modified to allow impacts to vernal pools in downtown Ramona.

2.6. Human Population Growth

As described earlier, the rapid human population growth in this region has led to conflicts with conservation of sensitive species. San Diego County experienced a 3% annual growth rate during the 1980s and a 1.3% growth rate during the 1990s. In 1990, the population of San Diego County was 2.5 million, including 1.1 million employed residents. The total housing growth between 1990 and 2002 was slightly less than one percent per year.

In 2000, San Diego County's population was 2.8 million and is projected to grow to 3.9 million by 2030 (Growth Management Forecast by SANDAG as of November 2002). This increase is expected to be largely due to natural increases rather than new residents moving into the County. The Unincorporated area of the County makes up 84% of the total land area of San Diego County and supports approximately 16% of the population. The existing population of the Unincorporated area (451,585) is projected to grow to approximately 666,576 by 2020 (County of San Diego, 2006). The establishment of a regional preserve system will affect the planned location of this future growth, and compliment other quality of life objectives for the region (such as improving transportation access and air quality) connected with open space conservation.

2.7. Agriculture

Agriculture has long played an important role in the County. With its many microclimates and farming areas, San Diego growers raise more than 200 different crops and commodities. In 1927, the first year for which statistics are available, County growers farmed a little more than 97,000 acres. Two-thirds of those acres were planted in field crops. Valuable crops included lemons, canning tomatoes, celery, alfalfa hay, table grapes, and navel oranges. As markets and farming conditions have changed, so have the crops grown. Avocados have overtaken lemons and oranges as the dominant fruit grown in the County. As of 2005, the County's 26,000 acres of avocados accounted for $251 million of the $1.5 billion in crop value. Nursery and flower crops are now the most valuable crops grown here, accounting for more than 66% of the county's agricultural value, and 30% of the state's total value. Within the Plan area, agricultural activity has continued to occur while it has decreased in other parts of the County.

3. CONSERVATION PLANNING METHODS

3.1. Overview

This chapter describes the planning and analyses that have guided development of the Plan. The heart of the conservation planning process is the geographic design of the preserve system boundaries. The preserve design approach for the Plan is similar to the approach used in the San Diego MSCP (MSCP, 1998) and MHCP (AMEC et al., 2003). This approach incorporates basic preserve design principles using the best available data and habitat modeling techniques. In addition, this Plan incorporates the recommendations from independent science advisors (Appendix C), which included the use of systematic preserve design algorithms and detailed consideration of the conservation role of certain agricultural lands.

The proposed North County preserve system incorporates existing preserves and ensures connections between these preserves through soft-line conservation areas. Soft-line areas are referred to as the Pre-Approved Mitigation Area (PAMA). It is not expected that all land within these soft-line areas (PAMA) will be incorporated into the preserve system. Ultimately, as conservation takes place within the PAMA, a preserve system will be assembled that connects current preserves and creates a cohesive regional preserve system. This preserve system will allow biodiversity to move across the landscape, lead to recovery of covered species, and maintain natural processes. The preserve system incorporates a variety of natural habitats across a range of elevations in an effort to allow species and habitats to shift spatially as a result of global climate change. The conservation planning process was undertaken with this ultimate preserve system in mind. It is also assumed that approximately one-quarter of the natural upland habitat within the PAMA will be utilized for development. These developed areas will conform to specific criteria in order to retain a viable preserve system. This Plan applies a no-net-loss standard to wetlands; however, not all wetlands are captured within the PAMA. Special consideration was also given to the distribution of rare and narrow endemic species to ensure their long-term sustainability within the Plan area.

3.2. Preserve Design Methods

3.2.1. Preserve Design Principles

The basic tenets of preserve design described in academic literature were applied to the conservation planning efforts of the southern California Natural Community Conservation Program (Noss et al. 1997). The following basic tenets, served as guidelines for the development of the North County preserve (i.e., the development of PAMA):

- **Conserve target species throughout the Plan area**: Species that are well-distributed across their native ranges are less susceptible to extinction than are species confined to small portions of their ranges.

- **Larger preserves are better**: Large blocks of habitat containing large populations of the target species are superior to small blocks of habitat containing small populations.
- **Keep preserve areas close**: Blocks of habitat that are close to one another are better than blocks of habitat far apart.
- **Keep habitat contiguous**: Habitat that occurs in less fragmented, contiguous blocks is preferable to habitat that is fragmented or isolated by urban lands. This will also minimize edge effects.
- **Link preserves with corridors**: Interconnected blocks of habitat serve conservation purposes better than do isolated blocks of habitat. Corridors or linkages function better when the habitat within them resembles habitat that is preferred by target species.
- **Preserves should be diverse**: Blocks of habitat should contain a diverse representation of physical and environmental conditions.
- **Protect preserves from encroachment**: Blocks of habitat that are roadless or otherwise inaccessible to human disturbance serve to better conserve target species than do accessible habitat blocks.
- **Maintain natural processes**: Preserves that are designed to maintain natural processes will sustain native biodiversity better than preserves in which such processes are disrupted.

Noss (2003) defined a detailed comprehensive checklist for regional conservation planning and design of preserve systems. The preserve design checklist developed for this Plan (listed below) underwent a scientific review process and is consistent with the Noss (2003) checklist.

- The PAMA incorporates best preserve selection algorithm modeling results from the preserve selection algorithm (SITES).
- Build-out of preserves identified by the Plan (including allowed development within the PAMA) will result in an intact and viable preserve system.
- The preserve will include large blocks of unfragmented habitat, following natural topography (ridges and watersheds).
- The preserve will include large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species.
- The preserve will maintain key existing linkage areas between core habitat blocks and restore or enhance as necessary the connections to other private or public open space lands, subareas, and/or habitat patches outside the Plan area.
- Major ecological gradients will be captured within contiguous preserve areas.
- The preserve configuration minimizes edge effects between habitat preserves and development and the edge-to-preserve area ratio.
- The preserve will include high biodiversity lands as indicated by spatially representative examples of extensive patches of sensitive vegetation communities ranked as very high and high biological value by the habitat evaluation maps or as identified through subsequent fieldwork during Plan preparation.

The conservation principles outlined above have also been incorporated into the design criteria to be applied to individual projects when they are processed by the County.

3.2.2. Data

The County utilized the most current land use and biological data available to develop this Plan. Data layers were created to reflect the location of sensitive species, vernal pools, vegetation communities, topography, soils, climate zones, and other pertinent information. Other geographic information system (GIS) data layers were obtained through SanGIS (a regional repository for GIS data) and from the Wildlife Agencies. Habitat modeling was used, where appropriate, to supplement the biological data. The analysis of this biological data and models in relationship to conservation are more fully described in the Conservation Analysis (Volume II).

Vegetation Data. A regional vegetation map was originally created in 1995 for the MHCP and MSCP by digitizing 1:24,000-scale color aerial photographs. Vegetation classification follows Holland's (1986) classification method, as modified by Oberbauer (2005). Vegetation mapping has been continually updated in areas where vegetation was subsequently removed (i.e., as a result of development or agriculture). The last update for the vegetation data layer occurred in December 2005.

Agricultural land within the Plan area was mapped into five categories: (1) intensive agriculture (primarily greenhouses, dairy, and poultry farms), (2) orchards and vineyards, (3) row crops, (4) field/pasture (irrigated), and (5) rangeland (non-irrigated). Non-irrigated rangeland includes native and non-native grassland and falls within the grassland vegetation type. This differentiation allows for a more accurate evaluation of the biological value of agricultural lands, as opposed to viewing all agricultural lands uniformly. Color infrared orthophotos from 2000 were also used to refine agriculture types. In a few cases, the agriculture type was not discernable from aerial photographs and the area was identified as general agriculture. In addition to allowing for the categorization of agricultural areas, aerial photographs allowed revision of vegetation maps to reflect new agricultural or developed areas previously mapped as natural vegetation.

Species Point Locality Data. A species point locality database was created using point locations from:

1. the regional species GIS data layer (REGSS; an ongoing compilation of the MSCP and MHCP conservation planning efforts),
2. the California Natural Diversity Database,
3. the USFWS species data,
4. the USFS species data,
5. the San Diego County Bird Atlas and Mammal Atlas,
6. review of existing environmental documentation (i.e., Environmental Impact Reports and/or Biological Technical Reports) from projects in the Plan area,

7. review of the scientific literature (the extent of this review is uncertain, but several species points were added from figures in scientific papers), and
8. personal communications and data from local biologists (e.g., species points for Hellhole Canyon provided by Kris Preston and other miscellaneous points).

Data from these sources were complied into a database that represents a cumulative documentation of species presence in the Plan area. Species absence data (survey data documenting that a species is definitively not in a given area) is not reflected in this database. The database is cumulative in that it represents species locality information documented over many years. Most data comes from the recent past (within the last 5 to 20 years), but some data is more historic and was originally collected decades ago. Data points were checked for duplication.

Predicted Species Distributions. The predicted distribution for most species addressed by the Plan was determined using a predicted species distribution model developed for the County (San Diego County Species Distribution Model Matrix Version 15, 2006). The predicted species distribution model uses six coarse-grained factors contained in six County-wide GIS data layers to assess where species are predicted to occur. The factors included habitat type (i.e., vegetation communities, such as coastal sage scrub, riparian scrub, etc.), ecoregion (contiguous areas of similar biogeographic conditions), elevation, topography (slope), soil parent material, and soil structure. The model evaluates whether the species would be predicted to occur within each cell in a raster-based GIS layer (100 x 100 foot cell size) based on the combination of these six factors. A more detailed description of the predicted species distribution model factors and the factors used for each species addressed by the Plan are contained within the Conservation Analysis (Volume II; Appendix A). The accuracy of each species predicted range was evaluated by overlaying known locations in the GIS database (recorded observations of one or multiple individuals of a particular species) and by review of the model results by species experts.

Habitat Evaluation Models. Within the Plan area, species-specific habitat evaluation models were created for three key species (California Gnatcatcher, Stephens' Kangaroo Rat, and arroyo Toad) and are described below.

1. California Gnatcatcher Habitat Evaluation. The purpose of the California Gnatcatcher Habitat Evaluation is to rank patches of scrub habitats based on nesting habitat value to the gnatcatcher. The criteria for determining habitat value were patch size and shape, slope, and climate (precipitation and January mean minimum temperatures), all of which were shown to be correlated with use by the California Gnatcatcher (Figure 3-1).

2. Stephens' Kangaroo Rat (SKR) Habitat Evaluation. SKR are closely associated with sparsely vegetated habitats having a high proportion of bare ground on deep, well-drained, loamy soils that facilitate burrowing. SKR are most abundant in annual grasslands or open coastal sage scrub (generally less than 30% canopy closure) that support a high proportion of annual forbs and sparse perennial vegetation. Although occasionally found on slopes approaching 45%, they are generally associated with and apparently prefer gentler slopes (about 7-11%). Factors of soils, vegetation, and slope were combined to create the SKR Habitat Evaluation (Figure 3-2).

3. Arroyo Toad (AST) Habitat Evaluation. The AST Habitat Evaluation was based on modeling completed by USFWS to identify stream reaches suitable as AST habitat. The USFWS modeling evaluated stream gradient, stream order, floodplain width, and soils. Using the AST priority stream reaches as a starting point, the AST habitat areas were identified by defining a valley floor area around the priority stream reaches out to 80 feet above the stream channel. Within the AST valley floor area, the habitat was ranked as follows: (1) Very High – areas of native vegetation within 500 feet of the stream course, (2) High – all other areas of native vegetation, (3) Moderate – areas mapped as extensive agriculture, (4) Low to None – areas mapped as developed (Figure 3-3).

3.2.3. Preserve Design Methods

The general steps followed during the planning process are outlined below, with steps 4-7 being iterative and involving public and stakeholder review.

1. Preserve Design Criteria and Conservation Planning Goals
2. Habitat and Species Distribution Modeling and Analysis
3. Gap Analysis (identifying unprotected key resources)
4. Preserve Design (using preserve selection algorithm modeling)
5. Identification of Pre-Approved Mitigation Areas (soft-line areas)
6. Connectivity Analysis
7. Conservation Analysis
8. NCCP Plan Development and Implementing Agreement

Critical review and input was received and applied throughout the process from independent science advisors, state and federal resource agencies, interest groups, and the general public (including many focused workshops and public meetings).

3.2.4. Preserve Design Modeling

The Plan's preserve design began with the incorporation of biological and land use data into the GIS-based habitat evaluation model and SITES preserve selection algorithm. These GIS tools assisted in the identification of the basic preserve design (i.e., PAMA) for the Plan area, within which conservation efforts will be focused. Conservation analysis of the preserve design quantified the targeted conservation of habitats and species within the Plan area and evaluated the configuration of the preserve design relative to the each species' habitat needs. Only lands within the Plan area were included in the SITES model. The Rincon Band of Luiseño Indians has been planning their own HCP in coordination with this planning effort using similar data and methods. To the extent possible, these plans utilized the same data and environmental analysis to create complimentary, but independent, HCPs.

Upon review of the preserve design, the Wildlife Agencies believed several corridors that relied only upon natural habitats needed to be enhanced to provide adequate conservation. One of the main enhancements to the SITES preserve model (i.e., PAMA) was a north-south movement corridor for the California gnatcatcher. A corridor of natural and agricultural habitats was added adjacent to Interstate 15, where a significant number of California gnatcatcher sightings have occurred within Caltrans right-of-ways. This corridor is generally 1,000 feet wide on either side of the highway, but excludes areas that are highly developed, do not contain a significant amount of coastal sage scrub, or are planned as hardlined development projects.

Land around the San Marcos Landfill was also added since this area was initially excluded from the Plan area when the SITES model was run. Yet, it contains important habitat and linkage areas for the California gnatcatcher and other species using coastal sage scrub.

In addition, several large development projects being planned that were located mostly within the draft preserve designed using the SITES model. In several cases, these projects were important to meet state requirements for the County to provide adequate housing. The draft preserve was altered as development footprints were negotiated with the Wildlife Agencies.

3.2.5. Preserve Components

The final North County preserve design (Figure 2-1) includes hardline take-authorized/preserve areas, Pre-approved Mitigation Areas (PAMA), preserve areas, and agricultural lands that provide considerable habitat value to species. The interaction of these components that results in a functional preserve system is described below.

Existing Conserved Areas. Areas in public ownership with significant biological resources are important cornerstones for the North County preserve. Therefore, when designing the preserve, as many of the existing preserved areas as feasible we included. Current conservation easements that remain outside of PAMA will remain as conserved open space, but will not be managed as a part of the North County preserve system.

Pre-Approved Mitigation Areas. The PAMA represents areas that the County and Wildlife Agencies recognize as important to preserve in order to meet the Plan's conservation goals. The PAMA concept was developed for the unincorporated areas of south San Diego County as a means of implementing the South County MSCP Subarea Plan (County of San Diego, 1997). The following description was developed during that process:

> The Pre-approved Mitigation Area for the South County MSCP Subarea was defined as habitat areas that the Wildlife Agencies had pre-approved for mitigation because this area had (1) high composite habitat value, (2) critical core and linkages, or (3) helped meet the conservation goals for the MSCP as identified in the County Plan (USFWS and CDFG 1996).

The PAMA for this Plan has been developed as the biologically-preferred preserve design, which is based on the core and linkage concept of landscape-level conservation planning used in other HCP/NCCP Plans, such as the San Diego MSCP (MSCP, 1998) and MHCP (AMEC et al.,

2003). This concept develops the preferred preserve configuration around large contiguous areas of habitat, areas supporting important species populations or habitat areas, and important functional linkages and movement corridors between them. Within the PAMA, conservation of the large habitat areas and functional linkages and corridors will be emphasized during implementation of the Plan. Assembly of the North County preserve within the PAMA will happen as a result of mitigation and other public/private acquisitions. Ultimately this will result in a preserve system that will help towards covered species "recovery" in the Plan area.

Hardlined Areas. Hardlined take-authorized/preserve areas were created for significant upcoming land development projects and a few anticipated County projects. Project proponents met with County and Wildlife Agency staff to develop designs for their projects that were compatible with the preserve design. These projects have predetermined areas where development and preservation will occur.

Key Agricultural Areas. Key agricultural areas are important as those that provide habitat for the arroyo toad, Stephens' kangaroo rat, and other species. Due to the nature of the landscape in the Plan area, agricultural lands are also important for landscape linkages between and among critical blocks of habitat in the PAMA.

3.2.6. Public Participation

The County sponsored the development of the Plan and provided overall project management. It also administered state and federal planning funds provided for HCP and NCCP efforts. The County is also a co-lead agency for the MSCP North County Environmental Impact Statement/Environmental Impact Report (EIS/EIR) along with the USFWS. A number of other agencies and organizations have played significant roles in the Plan's development and are listed in Chapter 12 (Acknowledgements).

Throughout the planning process the County has provided opportunities for public input. A general summary of public outreach and involvement activities are presented below.

- Presentations at public community planning group meetings
- Board of Supervisors and Planning Commission hearings
- Public stakeholder meetings advertised in local newspapers
- Stakeholder meetings for interest groups
- Regular Stakeholder/Steering Committee meetings with representatives from various interest groups (Wildlife Agencies, environmental groups, agricultural groups, and land developers)
- Workshops in the Ramona regarding the Ramona vernal pool study
- Notice to all property owners in the Plan area describing the Plan's purpose and process
- Toll-free hotline to answer questions and add interested parties to the stakeholder list
- Public notification through the CEQA and NEPA processes
- Letters sent to all Tribal Governments and Water Districts inviting their participation

- Meetings with private citizens and interest groups
- Stakeholder updates on planning issues to those who responded to outreach material
- Continuous updates on website with program overview, issue papers, schedules, background materials, maps, documents, and public meeting materials

3.2.7. History of Preserve Design

After initial efforts, planning begin in earnest when the County invited independent science advisors (ISA) (Appendix C) to review computer models, field research data, and potential preserve design methods. The ISA included nationally recognized experts on conservation planning and resource conservation. A meeting with these scientists was held in the spring of 2001, which resulted in a number of revisions for the modeling process and the suggestion to use the SITES preserve selection algorithm preserve design. The SITES model assisted in creating a clear, repeatable preserve design based on stated objectives. The County, working with its consultants, customized the modeling process and incorporated the SITES preserve selection algorithm to address the recommendations of the ISA.

In February 2002, the ISA met a second time and were presented with the revisions based on their recommendations (AMEC et al., 2002); including the use of SITES for the overall preserve design and identification of soft-line preserve areas. The written report, (Appendix C) summarizing their conclusions on the conservation planning process, states: "There is absolutely no doubt among us that this is a cutting-edge conservation plan with the rare combination of scientific defensibility and pragmatism."

A connectivity analysis was performed to identify connections between large blocks of habitat that may be used by wide-ranging, fragmentation-sensitive species. Connectivity through upland and riparian areas was analyzed using GIS data layers including vegetation maps, orthophotos, and topographic maps, as well as by several field visits. The PAMA boundaries were adjusted iteratively to include necessary linkages that were not captured in previous versions.

Agricultural areas were also analyzed for their utility in maintaining connectivity between core areas. Agricultural lands have been found to provide conservation value to certain species proposed for coverage; Stephens' kangaroo rats are benefited by grazing and Arroyo toad may utilize some agricultural lands for foraging and/or aestivation. However, biological value to native species varies by species and by agriculture type. For example, some raptors forage extensively in irrigated pastures, crop fields, and orchards, but these habitats are of lesser value for many native species. In general, most vertebrates will travel through some habitats that are unsuitable for breeding. In these instances, such as along Keys Creek, San Luis Rey River, and Moosa Canyon, agricultural lands were added to the PAMA to protect corridors from severe encroachment by residential development.

Where natural habitat linkages were narrow, the PAMA designation was expanded to include some agricultural lands in order to broaden it to 2,500 feet in width. The goal is that a viable linkage of approximately 2,000 feet in width will be maintained as agriculture and natural land. Agricultural lands were also added to the PAMA to buffer core habitat areas in the De Luz area and around important habitat areas on Daley Ranch in Escondido.

Significant areas of development that were not apparent in older aerial photographs or that occurred during the creation of this Plan were removed from the earlier versions of the draft PAMA. These developed areas mainly occurred around downtown Valley Center, east of Daley Ranch, Jesmond Dene, several areas in De Luz, San Diego Country Estates, unincorporated islands within Escondido, and near Bonsall. Areas conserved were also updated to reflect current conservation levels. Other adjustments were made to the PAMA between version 7.0 and 8.0 of the Preserve Planning Map to improve connectivity based on field visits and updated aerial photographs. The main additions occurred around Paradise Mountain, near Bonsall, north of Daley Ranch, and Stewart Canyon. The linkage along the upper San Luis Rey River was also shifted southward to follow the river, rather than crossing the highway away from the river into existing ornamental plant nurseries.

Several administrative adjustments were made between version 7.0 and 8.0 of the North County preserve map. These included adjustments to the Plan area to remove lands annexed or purchased by incorporated cities, removing Forest Service lands from the eastern boundary, removing City of San Diego lands around Lake Sutherland and Pamo Valley, matching boundaries with the South County MSCP Subarea Plan, and adding parcels on the eastern boundary where parcels or ownerships had been split between this Plan and the MSCP East County Plan.

3.3. Coordination with Other Agencies or Districts

Other Conservation Plans. Conservation plans are being or have been prepared by the County Water Authority, SDGE, San Diego Association of Governments (SANDAG), Orange County, and Riverside County for lands adjacent to the Plan area. Preserve areas in adjacent Plan areas were integrated into the planning process to ensure that the core biological areas in this Plan area were well connected with core biological areas across jurisdictional borders. Lands within the unincorporated area owned by cities participating in the MHCP were excluded from this Plan to avoid confusion and duplicate coverage.

Tribes. Tribal reservations are excluded from the Plan area; therefore, the Plan does not rely on biological resources on tribal lands to achieve adequate conservation. However, early in the planning process letters were sent to all of the tribes in the area inviting their participation in Plan development.

In December 2004, the County of San Diego Board of Supervisors authorized the Department of Planning & Land Use to coordinate its planning and implementation of the North County Plan with the Rincon San Luiseno Band of Mission Indians (Tribe). In August 2005, the Tribe signed a planning agreement with the USFWS. It has been the intent of all parties to coordinate these separate planning efforts and to utilize the same environmental analysis and share information for conservation planning purposes. This should result in a more functional preserve system and better conservation for certain species, thereby providing more certainty and flexibility in public and private projects. All reasonable efforts have been made to coordinate with the Rincon tribe.

Military Lands. Military installations are subject to their own set of environmental regulations and are not subject to the land use jurisdiction of the County for lands owned by the federal

government. Expansion of adjacent military installations, such as Camp Pendleton or Fallbrook Naval Weapons Station, will not be subject to this Plan. These expansions will be treated similar to annexations by tribal governments.

Special Districts. Special districts include those entities not normally subject to the land use jurisdiction of the County, such as school districts, water districts, and utility purveyors. Special districts are neither required nor expected to participate in this Plan. However, in the event that their projects will result in Incidental Take of species covered by this Plan they can utilize this Plan in their application for an Incidental Take permit through a consultation with USFWS and/or CDFG, as appropriate. This can be accomplished by demonstrating substantial conformance to the Plan by complying with the BMO (Appendix A), permit conditions, and the Implementing Agreement (Appendix D).

Water Districts. Water districts were contacted and given the opportunity to participate in this planning effort. It was mutually agreed that excluding water district lands from the Plan area would be the simplest route since water districts generally have a separate permitting process. Therefore, lands owned by water districts have been excluded from the Plan area. However, water districts retain the option of later participation for their projects by complying with this Plan. Exceptions include lands owned by San Diego County Water Authority and Metropolitan Water District of Southern California.

School Districts. Lands owned by school districts within the Plan area generally contain little to no habitat values, so have no effect on the Plan at the time of Plan adoption. A recent acquisition by Palomar Community College District near the intersection of Interstate 15 and SR-76 was excluded from the Plan area.

Caltrans. Caltrans is not subject to this Plan, but since lands owned by Caltrans are linear features associated with roads, they were not mapped as excluded from the Plan area. Planning for future improvements to SR-76, west of Interstate 15, were coordinated with Caltrans and this Plan makes all reasonable efforts to accommodate these improvements by accounting for these impacts in the analysis.

4. IMPACTS

4.1. Overview

It is expected that up to of 43,830 acres of natural lands will be impacted in the Plan area (Table 4-1). These impacts will be mitigated through a combination of private contributions and public acquisitions. In addition, acreage above and beyond that required for mitigation will be acquired to assemble a functional preserve system of approximately 114,000 acres. In this section we discuss the known, expected, or possible future impacts within the Plan area.

A total of 136,835 of natural lands exist within the PAMA. Of the future development impact, 28,255 acres is expected to occur within the PAMA. Thus, future development at the estimated level is not expected impact assembly of the North County preserve. While impacts to natural lands in Table 4-1 are based on an assumption of discretionary review of development projects, a similar analysis that assessed the potential impacts of single family residential development that does not go through the discretionary review process showed that no more than 13,000 acres could be cleared within the PAMA under the clearing exemption identified herein.

Table 4-1. Projected Future Impacts to Natural Habitats (in acres)

Type of Impact	Projected Impact	Expected Mitigation	Contributor of Mitigation
Hardline Development Projects	2,077.5	3,562.0	Project Proponents
Future Development Projects	34,703.0 [1]	38,555.0	Project Proponents
Agricultural Clearing	7,000.0	4,575	County
New Trails	50	100.0	County
Total	43,830.5	46,792.0	

[1] This estimate assumes that development occurs in accordance with the densities allowed under the General Plan Update (see Appendix F).

4.2. Hardline Development Projects

The projects described in this section have planned development footprints within the Plan area that have been negotiated as Take-Authorized areas along with associated conserved lands. The process of negotiating these development footprints took into account impacts to assembly of the North County preserve.

The development footprints shown for these projects only authorize take for Covered Species within their boundaries, they do not confer any other development rights or constitute a preliminary agreement or approval by the County for project development. All projects must comply with all applicable County ordinances and analyze a full range of alternatives under CEQA. Planning of these projects was also coordinated with the County's regulatory process which assures compliance with County ordinances and the CEQA process. Changes to projects commonly occur as they proceed through the regulatory process and these changes may affect the development footprint agreed to during Plan preparation. Adjustments to the development

footprint are anticipated and are allowed by following deviation procedures described in Section 8.6.2 Preserve Design Adjustments.

If the final approved project converts Take Authorized areas into open space that contributes to the overall preserve system, these areas can then be used to decrease the need for off-site mitigation or mitigate other projects. Take Authorization will be conferred to the project upon dedication of the open space agreed to in the project, both of which may take place in a phased manner. In the event the project changes its footprint in a way that results in a greater impact, an amendment to the Plan would be required for the project to continue. A landowner may also opt to change project footprint so that it results in equivalent or lesser impacts. An alternate method for processing an amendment is to develop a proposal that conforms to the BMO (Appendix A), assuming that the PAMA reflected in the North County preserve map (Figure 2-1) is the basis for evaluation.

The projects hardlined under this Plan include the following projects, which are described in more detail in Appendix E:

- Campus Park (GPA 03-004, SPA 03-008, TM 5338)
- Meadowood (GPA 04-02, SP 04-01, TM5354)
- Campus Park West (SPA 05-001 / GPA 05-003 / TN 5424 / STP 05-014)
- Cielo del Norte (GPA 01-02, SP 99-001, TM 5182)
- Merriam Mountains (TM 5381, GPA 04-006)
- Lilac Ranch (GPA 04-008, TM 5385)
- Montecito Ranch (GPA 04-013, TM 5084)
- Paradigm Development (PAA 06-004)
- Warner Ranch (GPA 06-009, SPA 06-002, TM 5508)
- McClellan-Palomar Airport (runway expansion and future industrial development)
- San Marcos Landfill (operations on closed landfill)

The overall effect of hardlined projects on vegetation communities within the Plan area are summarized in Table 4-2 with respect to on-site design. Impacts not mitigated on-site will be mitigated elsewhere within the PAMA. For all hardline projects combined, including off-site conservation, total conservation achieved is approximately 58%.

Table 4-2. Summary of Hardline Project Impacts and Conservation in acres (This table will be updated prior to analysis of the Plan)

Vegetation Community	Development Impact	Other Open Space*	Biological Open Space	Percent in Biological Open Space	Estimated offsite mitigation
Chaparral	837.2	526.7	1777.7	56.6%	2.5
Coastal Dunes and Beaches	0.0	0.0	0.0	n/a	0.0
Coastal Sage Scrub	471.5	12.6	806.5	62.5%	164.6
Coastal Sage Scrub/Chaparral	8.9	2.2	5.2	31.9%	2.2
Engelmann Oak Woodland	1.3	0.0	30.9	95.9%	0.0
Marsh	6.5	0.7	2.6	26.2%	3.5
Meadow	0.0	0.0	0.1	100.0%	0.0
Montane Coniferous Forest	0.0	0.0	0.0	n/a	0.0
Native Grassland	4.2	0.0	10.2	70.6%	3.2
Non-native Grassland	658.5	4.8	239.6	26.5%	123.2
Oak Forest	0.0	0.0	0.0	n/a	0.0
Oak Woodland	25.1	7.9	89.8	73.2%	16.4
Open Water	1.5	1.4	1.0	25.8%	0.0
Riparian Forest	42.3	4.1	222.6	82.8%	63.1
Riparian Scrub	14.4	2.2	25.2	60.4%	11.8
Riparian Woodland	5.9	0.0	16.6	73.7%	0.0
Southern Maritime Chaparral	0.3	0.0	33.6	99.3%	0.0
NATURAL HABITATS SUBTOTAL	*2077.5*	*562.6*	*3261.5*	*55.3%*	*390.6*
Eucalyptus Woodland	18.8	11.4	3.1	9.3%	0.0
Agricultural Land	686.7	66.5	166.6	18.1%	0.0
Developed/Disturbed Land	309.4	14.7	60.0	15.6%	0.0
GRAND TOTAL	***3092.4***	***655.2***	***3491.2***	***48.2%***	***390.6***

* "Other Open Space" includes lands that are to be set aside in a natural or semi-natural state, but do not contribute to a regional preserve system; these numbers are subject to further refinement.

Note: Impacts for off-site improvements are not included for all projects. Off-site impacts are reported for each project in Appendix E. Off site mitigation for each vegetation community is approximate.

4.3. Other Development Projects Within the PAMA

This section deals with development projects that have been processed or were being processed during the development of this Plan. Regulations in place during Plan development prevent any of these projects from precluding the assembly of the North County preserve.

4.3.1. Known and Anticipated Projects

Vesting Tentative Maps within the Plan area approved prior to the adoption of this Plan will be exempted from requirements to comply with this Plan since they have already fully analyzed their project impacts and the mitigation required for them. These projects are also included under the list of hardline projects and anticipated projects, but are included here as well because of their potentially unique status if they are adopted prior to the approval of this Plan. These include the following list of projects:

- Merriam Mountains (TM 5381; in process; also a hardline project)
- Montecito Ranch (TM 5250; in process; also a hardline project)
- Topmark Communities (TM 5427, in process)
- Rancho Esquilago (TM 5198; in process)

Also, a number of projects were undergoing environmental review with the County and/or the Wildlife Agencies during the development of this Plan and were considered likely to be completed before the Plan could be adopted (Table 4-3). As of December 2008, these projects were expected to receive their Take Authorization outside of this Plan through other existing means such as section 7 consultation through the USFWS or Habitat Loss Permit issued by the County through section 4(d) of the ESA.

Most of these projects were incorporated into the conservation analysis for this Plan by designating them as "Anticipated Project Uplands." Areas of the projects mapped as natural upland habitats and occurring within the proposed PAMA were calculated at a 40 percent conservation level which is an average level of conservation being proposed, based on a visual estimation of current project footprints.

Table 4-3. Anticipated Projects (This table will be revised with an updated list prior to analysis of the Plan)

Project Name	Project Number	Location
Mountain Gate	TM 5193	Jesmond Dene (North of Escondido)
Olive Hill	TM 4976	Bonsall
Orchard Run	TM 5087	Valley Center
Polo Club	TM 4736 / HLP 04-010	Bonsall
Lilac Subdivision	TM 5014 (PM 14765)	Valley Center/Lilac
Morris Ranch	TM 4240	Bonsall
Rosemary's Mountain	MUP 87-021-01	Fallbrook
Palisades Estates	TM 5158	Bonsall

These projects are likely to proceed through environmental review, but are not likely to be subject to the BMO because environmental review will be completed before implementation of the plan.

4.3.2. Potential Future Projects

Some projects were being processed at the County concurrently with the development of this Plan; however, at the time of plan development, they were not far enough along in the planning process to consider them "anticipated" projects (Table 4-4). If not approved before the adoption of this Plan, these projects must comply with the BMO. Projects approved (e.g., approved Tentative Map (TM), Tentative Parcel Map (TPM) Major Use Permit (MUP), etc.) prior to implementation of this Plan require permits for take of listed species. This is usually accomplished through the County's Habitat Loss Permit process or through a consultation with USFWS and/or CDFG. Projects receiving take prior to the adoption of this Plan will not be required to comply with this Plan unless the project is modified to require additional discretionary permits subject to the BMO.

Table 4-4. Other Proposed Projects within the Pre-Approved Mitigation Area (This table will be revised with an updated list prior to analysis of the Plan)

Project	Project Numbers
Arie De Jong (formerly Schnoebelen)	TPM 20451 / ER 99-02-025
Bankers Union	TPM 20773
Bonsall Mass Grading	AD 03-080
Brook Forest	TM 5177 / ER 99-08-032 / GPA 03-008
Brown	TPM 20717
Chaffin (Red Mountain)	TM 5217, 5227, 5228 / ER 00-02-029
Chandler	TM 5284
Choi TM	TM 5264 / ER 01-02-044
Cielo Azul	TM 5395
Crook TPM	TPM 20851
Cumming Ranch	TM 5344
Development Venture	TM 5254 / ER 01-14-032
Elton Estate	L 13402, ER 00-08-034A, HLP 02-002
Gregory Canyon Landfill	Ballot initiative; EIR circulated in 2006
Hidden Hills	No application made yet.
Joudi Country Estates	TM 4700
Lindsey	TPM 20746
Oakrose Ranch	TM 5204r2 / ER00-08-012
Oswald	TPM 20533
Pala Mesa	TM 5231 / ER 88-02-059
Pala Mesa Highlands	TM 5187r8 / SPA 99-005 / ER 89-08-026
Paradise Mountain	No application made yet.
Ranch Esquilago	TM 5198
Ridge Ranch Phase II	No application made yet.
Silvola TPM	TPM 20658
Teyssier TM	TM 5194 rpl2
Topmark Communities	TM 5427
Victoria Shangrila	TM 5261 / ER 01-08-039
Welk Garden Villas	MUP 98-015
Spanish Trails	TM 5173 / ER 99-02-026
Champagne Gardens SPA	SP 94-002
Pala Mesa SPA	SP 03-005
Note: Project list is current as of May 2008; to be updated in future versions.	

4.4. Expected Future Impacts

4.4.1. Expected Future Development Impacts

This section estimates the additional amount of development expected in the Plan area (see also Appendix F). The County used zoning information from the General Plan Update to estimate the

acres of natural habitats that will be lost due to future development. Some of this development is discussed in section 4.3. But much of the future development is not any stage of planning. It is anticipated that a total of 34,703 acres of natural habitats will be impacted. This estimate includes both future single family residences as well as large discretionary projects.

4.4.2. County Trails Program

Passive recreational activities (e.g., hiking, bird watching, horse riding, bicycling) are anticipated within preserves and are normally compatible with Plan conservation goals. In general, passive activities only pose a significant threat to biological or cultural resources when the level of recreational use becomes too intense or is in close proximity to species sensitive to human activity. Appropriate recreational activities shall be accommodated in concurrence with the goals and management guidelines of this Plan. Therefore, trails are conditionally compatible within the preserves. Any conflicts between species conservation and trail use/creation within the preserve must be evaluated and conflicts should be resolved, erring on the side of species protection.

On January 12, 2005, the San Diego County Board of Supervisors unanimously approved the adoption of the County Trails Program. This program will be utilized to develop a system of interconnected regional and community multi-use trails and pathways. The Community Trails Master Plan (CTMP) will be the implementing document for the Trails Program and contains adopted regional trails and individual community trails and pathways plans. The community trails maps contained in the CTMP show proposed trails as quarter-mile-wide corridors (general alignments) in which a trail may be located and developed in the future. Using a general alignment allows the trail to be located, based on a route study, to avoid extreme topographical conditions, sensitive habitat, and other site-specific constraints. The CTMP design and management guidelines identify a variety of structures and techniques that can be employed to design trails around sensitive resource areas or minimize resource impacts.

The Regional Trails Plan encompasses nine regional trails; however, only the California Coastal Trail, which passes through San Elijo Lagoon, is located in the Plan area. Construction and maintenance of this trail is covered under this Plan. Trails, other than the California Coastal Trail, constructed as part of private development projects must be included in the analysis of impacts for the projects and must comply with the BMO. This analysis should take into consideration that trails are considered a compatible use within preserve areas; however, trails must be sited to minimize impacts to sensitive habitats and species and must also be appropriately mitigated if impacts to habitats or species occur. It is expected that 50 acres of natural habitat will be impacted by the development of new trails.

4.5. Impacts from Agricultural, Fire, and Other Clearing

Certain exemptions to this Plan exist for: 1) the clearing of natural habitats around structures for fire safety; 2) the clearing of natural habitats for agricultural expansion; and 3) residential brushing and clearing of vegetation on a parcel zoned for single family residential as defined in the BMO(§86.513(a)).

4.5.1. Agricultural Clearing

One of the benefits that will be realized by the private sector is the ability to expand agricultural operations into non-PAMA areas without the need to mitigate. This expansion will be mitigated for by County contributions to the preserve. Other requirements, such as CEQA may still apply. Outside of the PAMA, the clearing of natural habitat for establishment of agricultural operations will not require mitigation for habitat loss if an agricultural conservation easement is dedicated over the site being cleared and if there is no clearing of Tier I habitats or impacts to narrow endemic species. A minimum of 3000 acres of Tier II and Tier III vegetation communities outside PAMA can be exempted from mitigation requirements under this Plan. At the time that acreage has been reached, additional mitigation waivers can be granted based on the "rough step" (Section 5.4.3) conservation of habitat types (see Agricultural Expansion Policy 7.5.2).

If the minimum 3,000 acres of exempt expansion are utilized within Tier II and Tier III vegetation communities outside PAMA, it is estimated that 1,970 acres of potential mitigation would no longer be available to help assemble the North County preserve system. This is based on an analysis of Tier II and III vegetation communities outside the PAMA and the mitigation ratios required for those habitat types. For example, chaparral makes up 39% of the eligible land outside the PAMA, which translates to 1,170 of the 3,000 acres exempt from mitigation. At a 0.5:1 ratio, this would have resulted in 585 acres of mitigation in the PAMA. A total of 7,000 acres of agricultural expansion are assumed for analysis purposes based on current trends in agriculture; however this number may be exceeded provided that the "rough step" requirement is met. Assuming 7,000 acres of expansion, using the same logic above, this would result in 4,600 fewer acres of mitigation, which is accounted for in the mitigation analysis in Appendix F. This would include approximately 1,364 acres of chaparral, 1,814 acres of coastal sage scrub, 315 acres of chaparral/coastal sage scrub, and 1,082 acres of non-native grassland.

4.5.2. Fire Clearing

Typical clearing for fire safety is up to 100 feet from a home, which amounts to approximately one acre (200 by 200 feet). Additional clearing (approximately one acre) will also be required along driveways and roadways, and for accessory structures such as sheds, barns and corrals. This means that about two acres are normally required to accommodate fire safety around a typical home in the unincorporated area. Homeowners should also incorporate fire hardening principles to all dwelling. This does not change regulations in place at the time of Plan development, and would permit clearing that may be necessary around the property boundary to accommodate fire safety for existing residences nearby.

Impact. The fire clearing discussed here refers only to new clearing around structures that has not been analyzed and mitigated for as part of a larger subdivisions or development projects. If none of the projects currently in process or any additional projects were ever developed, and all parcels were cleared to the maximum extent allowed by General Plan density and the exemptions under this plan, the clearing could result in the impact of up to 19,000 acres (13,000 acres within PAMA and 6,000 acres outside) of natural habitats within the Plan area. This is the maximum clearing that could occur associated new with single family dwellings not built as part of a subdivision or other development project. Subdivision and other development projects that go

through discretionary permit review with the County incorporate fire clearing into their plan design and the impacts of this clearing are mitigated for as part of the total project mitigation. It is not expected that this or the additional clearing exemption discussed in section 4.5.3 will inhibit preserve assembly.

Tracking. Impacts to natural vegetation have been calculated for the Plan area and will be mitigated for with County contributions to the preserve assembly. Habitat losses will be tracked in HabiTrack for clearing associated with new permits.

4.5.3. Residential Brushing and Clearing

Residential brushing and clearing on a parcel that is zoned for single family residential use shall be permitted under this Plan. The allowable clearing shall comply with the terms outlined in the BMO provided it does not exceed 5 acres outside of PAMA and 2 acres within the PAMA.

Impact. The residential brushing and clearing discussed here would allow for an additional 3 acres of clearing above fire clearing in areas outside of PAMA. The total impact of this exemption would be up to 9,000 acres of natural habitats. Again, this number reflects the maximum amount possible if none of the projects currently in process or any additional projects were ever developed, and all parcels were cleared to the maximum extent allowed by General Plan density and the exemptions under this plan.

Tracking. Impacts to natural vegetation have been calculated for the Plan area and will be mitigated for with County contributions to the preserve assembly. Habitat losses will be tracked in HabiTrack for clearing associated with new permits.

4.6. San Luis Rey River Park and State Route 76 Plan area

The County has coordinated planning efforts with Caltrans, USFWS and CDFG to incorporate improvements to State Route 76 (SR-76) and the proposed San Luis Rey River Park Master Plan (County of San Diego, 2005) into this Plan. This Plan provides a means by which both projects can address their impacts to natural communities and sensitive species and thereby gain coverage for their activities.

San Luis Rey River Park. The San Luis Rey River Park is planned as a cultural, recreational, and ecological focal point for the County. The Park Master Plan establishes the framework for the acquisition and development of a river park within an eight-mile, approximately 1,500-acre corridor of the San Luis Rey River and was approved in 2008. This park will be assembled as part of the North County preserve in accordance with the methods outlined in Chapter 7. The project proposes to incorporate riparian and floodplain restoration, preservation, recreational needs, and natural/cultural resource education and conservation. In summary, this park is planned to be composed primarily of open space areas (95%) with trails and interpretive kiosks. Active recreational fields are planned at both ends of the park, or where opportunities present themselves based on lands available from willing sellers. Habitat restoration for sensitive species in the area will be incorporated as part of the construction of active use areas.

State Route 76 (SR-76). Two improvement projects are currently under way in this corridor. For the SR-76 middle project (Melrose to South Mission Road), environmental studies were completed and the Final EIR/EIS was approved Nov. 26 2008. The document identified the existing alternative as the preferred build alternative. Construction will begin in early 2010. For the SR-76Project east project (South Mission Road to I-15), initial scoping of alternatives and baseline environmental studies are underway. The current schedule anticipates completion of environmental studies and agency approval in 2010 and all construction completed by 2013. As part of these projects, Caltrans has an environmental enhancements program along the SR 76 corridor. Caltrans has purchased two properties, protecting some 400 acres of native habitat, and continues to investigate properties along the corridor that meet the needs of the project stakeholders and also integrate with the highway projects. This "project" and its scope will continue to evolve as input is received from approving agencies and local groups who share a common interest in protecting and enhancing the San Luis Rey River Valley.

The SR-76 Plan area was incorporated into this analysis as a 200-foot-wide potential alignment corridor for road improvements based on preliminary work done by Caltrans. An additional buffer of 150 feet was included to address potential indirect impacts. The entire SR 76 Plan area is calculated in the conservation analysis as zero percent conserved so all species and habitats within this area were calculated as if they are taken. This does not mean to imply that this entire area will be impacted, but this analysis was done to estimate anticipated impacts as the basis for preparation of a Biological Opinion and issuance of a section 10(a) permit.

4.7. Ramona Grasslands and Vernal Pool Conservation Strategy

The Ramona Grasslands cover an area of approximately 4,500 acres west of the town of Ramona and represent a portion of the last remaining native grassland in the County. This area also hosts a unique assemblage of resources: the southernmost population of the endangered Stephens' kangaroo rat; vernal pools and associated species including the endangered San Diego fairy shrimp; several sensitive plant species; and a diverse raptor community, including the largest population of wintering ferruginous hawks in the County. Santa Maria Creek and associated habitats are important for neotropical migrant songbirds and the endangered Arroyo toad. Oak savannah, riparian woodlands, alkali playas, native perennial grasslands, and rock outcrops contribute to the diversity and ecosystem functions within the grasslands.

The challenge is to accommodate planned growth in the community of Ramona and preserve the functions of the Ramona Grasslands. Starting in about 2002, the County invited landowners in the Ramona Grasslands area to discuss the possibility of partnering to create a significant grassland preservation area, while still accommodating development projects. Through the cooperation of landowners in designing projects that minimized grassland impacts and acquisition of habitat lands by the County, CDFG, USFWS, and The Nature Conservancy, a significant amount of grassland habitat has already been preserved. The Ramona Grasslands Preserve functions as a core habitat area within a regional network of existing and anticipated conservation lands. The coastal sage scrub, chaparral, and oak woodlands of the surrounding landscape, together with the grasslands, riparian habitat, and vernal pools, constitute an exceptional concentration of regionally and globally significant resources. Management plans include the Ramona Airport Habitat Management Plan and the Ramona Area Specific Management Directives.

Although the majority of remaining vernal pools in the Santa Maria Valley occur in the Ramona Grasslands, about 50 to 70 vernal pools still exist on vacant lots and backyards throughout downtown Ramona. The downtown Ramona area has been the subject of small parcel land subdivisions over the past 80 to 100 years, resulting in small lot residential and commercial development within the town center. However, within the past few decades, it has become apparent that the development has been placed in an area of historic and current vernal pool habitat. Consequently, the preservation of vernal pool habitats in the Ramona area is complicated by the intermingled pattern of vernal pools within urban and residential areas.

Most vernal pools in the downtown Ramona area have been impaired as a result of direct modification and impacts from surrounding land uses (i.e., pollutants in runoff, development of adjacent upland habitat and associated vernal pool watershed, lack of interconnectivity, exotic weed invasion, and direct human-related disturbance). The existence of the federally listed San Diego fairy shrimp and a number of other sensitive species requires a coordinated planning approach, which is outlined in Section 7.3.3.

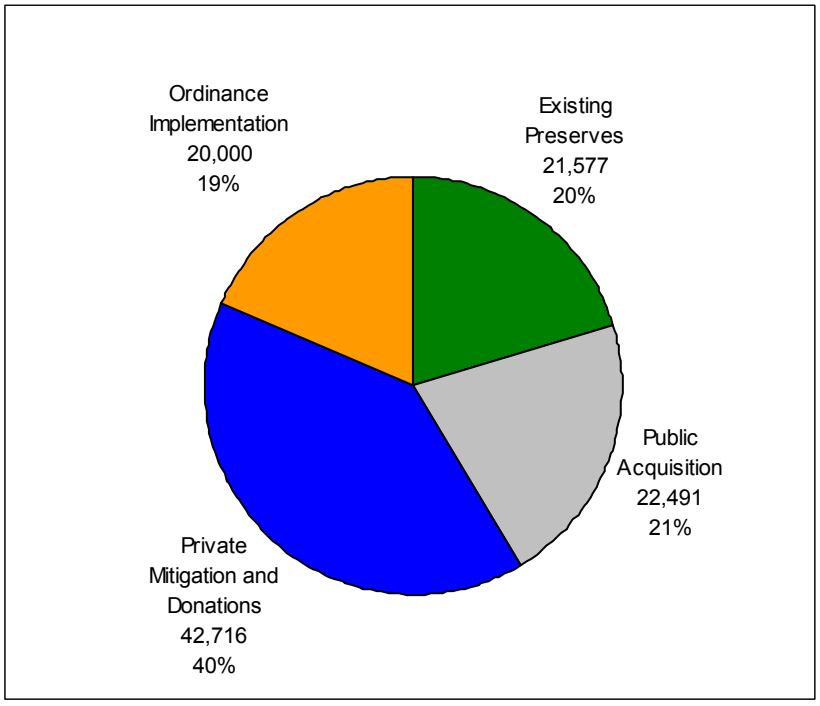
5. PRESERVE ASSEMBLY AND FINANCING

5.1. Preserve Assembly

The goal for this Plan is to preserve 106,780 acres of natural lands in a network of preserves. Another 7,022 acres of surrounding agricultural and disturbed habitats are estimated to be needed to maintain natural processes within the preserve system. However, the exact number of acres required of these agricultural and disturbed habitats is uncertain and their incorporation will be achieved primarily through development project review.

The North County preserve system proposed in this Plan will be assembled over the course of the permit by a variety of means. These include the conservation of existing public lands, public acquisitions, and development mitigation (Figure 5-1). Private donations of land to the North County preserve system may also occur over the course of the permit period, but are not relied upon for assembling the preserve system. In addition, public acquisitions may occur at values less than fee title acquisitions (see Section 5.3.6). The following sections detail policies of this Plan regarding how the preserve will be assembled and what entities are responsible for the various aspects of conservation.

Figure 5-1 Estimated Preserve Assembly Contributions



Existing Preserves

Preserve assembly begins with management of existing public open space lands. The North County preserve system has incorporated public lands to minimize the need to conserve privately owned lands. Existing publicly owned lands will be managed consistent with the Framework Resource Management Plan (FRMP). Federal, State, and County governments will contribute 18,742 acres of natural habitat lands that they currently administer to the preserve (see breakdown in Table 5-1). Existing privately held open space easements within the PAMA consist of another 2,835 acres of natural lands. Together, existing public and private preserved lands to be included in the North County preserve total 21,577 acres. Some of the publicly owned lands have been acquired since inception of Plan development and will therefore be credited as gains achieved as a result of this Plan.

Federal Contributions

Bureau of Land Management. In a Memorandum of Understanding executed with the California Executive Council on Biological Diversity (now the California Biodiversity Council), the USFWS, the CDFG, City of San Diego, County of San Diego, and SANDAG, the BLM has committed to permanently conserve, maintain, and manage habitat on its lands within the county in accordance with local conservation strategies. The same agreement pertains to this Plan area.

U.S. Fish & Wildlife Service. At the time of Plan development, there were no plans to establish a National Wildlife Refuge in the Plan area. Without a National Wildlife Refuge, USFWS cannot own and manage land; therefore, it is assumed that USFWS will not own or manage land. However, the federal government can provide funds to the State of California to support acquisitions. For example, through the Section 6 Endangered Species Fund, the USFWS has made significant contributions ($26.5 million) for the acquisition of habitat in the Ramona Grasslands including the Cagney Ranch, Davis/Eagle Ranch, and Gildred Ranch. From 2000 to 2007, these purchases totaled approximately 2,137 acres within the Plan area. The USFWS is still developing what their additional contribution will be to the project.

Other. Department of Defense recently authorized funding for acquisition of lands around military bases (see description in Section 5.3). The South Coast Conservation Forum has identified key conservation areas in San Diego County largely coinciding with the PAMA areas around Camp Pendleton. As of December 2008, 1,256 acres have been conserved including the Santa Margarita Peak property and recent additions to the County's Santa Margarita Open Space Preserve. Additional funds will be available in the future, so this program has a high potential to help assemble a significant portion of the preserve system in the Plan area.

Table 5-1. Preserve Assembly Overview

Source	Location	Existing	Future[1]
Estimated Future Contributions to Preserve		***284***	***81,542***
	Public Sources (minimum estimate)	--	20,171
	TransNet (estimate[2])	284	2,316
	Non-profit organizations (estimate)	--	500
	Private project mitigation (estimate based on analysis in Appendix F)	--	38,555
	Ordinance Implementation	--	20,000
Existing Public Contributions to Preserve		***18,458***	***0***
	BLM – DeLuz/Santa Margarita area	1,970	--
	BLM - Hellhole Canyon	3,215	--
	BLM - Mt. Olympus area	264	--
	BLM - Barnett Ranch area	70	--
	BLM - El Capitan	369	--
	Margarita Peak	1206	--
	CDFG land on Palomar Mtn	471	--
	Caltrans right-of-way (neutral)[3]	400	--
	Barnett Ranch (South County MSCP preserve)	64	--
	Del Dios Highlands [4]	465	--
	Escondido Creek properties	207	--
	Gopher Canyon	24	--
	Guajome Adobe Regional Park (preserved areas)	6	--
	Hellhole Canyon	1,755	--
	Magdalena Ecke	30	--
	McClellan-Palomar Airport	166	--
	Mt. Gower (currently owned by BLM)	1,522	--
	Mt. Olympus	712	--
	Ramona Grasslands - Cagney [5]	418	--
	Ramona Grasslands - Hardy [6]	69	--
	Ramona Grasslands - Oak Country [6]	224	--
	Ramona Grasslands - Highland Valley [6]	480	--
	Ramona Grasslands - Eagle Ranch [6]	865	--
	Ramona Grasslands - Gildred [6]	866	--
	San Elijo Lagoon	554	--
	Santa Margarita	305	--
	Simon Preserve	682	--
	Val Sereno (in Encinitas) [7]	55	--
	Wilderness Gardens	701	--
	Elfin Forest (for MHCP; owned by CNLM)	323	--
Private Contributions to Preserve		***2,835***	***3,661***
	Existing Open Space Easements in PAMA [est.]	2,294	--

	Heights of Pala Mesa Mitigation Bank	321	--
	Campus Park [7]	--	315
	Campus Park West [7]	--	94
	Meadowood	--	123
	Cielo del Norte [7]	--	348
	Merriam Mountains [7]	--	1,227
	Lilac Ranch	--	556
	Harmony Grove Village [7]	--	135
	Montecito Ranch [7]	221	357
	Paradigm Development	--	161
	Warner Ranch	--	347
Combined Subtotal		***21,577***	***85,203***
Total Acres of Natural Land:			***106,780***

Notes: Goal for natural habitat conservation (in acres): ***106,780***

[1] Acquisitions prior to plan implementation are considered existing.

[2] Based on mitigation for an estimated 400 acres of mitigation for impact to natural habitats from Highway 76 improvement project (of which 284 aces have been purchased) and an additional regional benefit of 2,200 acres.

[3] Caltrans rights-of-way are not regulated by this plan. Approximately 400 acres of natural vegetation mapped within PAMA and within Caltrans right-of-ways. These lands are effectively a neutral part of the preserve and are not likely to be managed for natural resources.

[4] The County manages this property; however, the state funded a significant portion of the purchase of the Derbas property.

[5] Twelve acres were used as mitigation for County projects; therefore, these are considered Baseline Preserve lands rather than MSCP Gains.

[6] The County manages this property; however, state and federal sources funded a significant portion of the purchase.

[7] These hardline projects include acreages for on-site biological open space and estimates for off-site mitigation requirements, which are subject to change.

State Contributions

As of 2009, State Parks and CDFG owned relatively little land in the Plan area; however, adoption of this Plan will enable state funding to be used for habitat acquisitions. There are 471 acres of State Park land on Palomar Mountain. In addition, the state contributed approximately half the funds for the purchase of Santa Margarita Peak (1,206 acres), which is being managed by Fallbrook Land Conservancy. The state also contributed funds toward the purchase of part of the Del Dios Highlands property, which is managed by the County. The CDFG is still developing what their additional contribution will be to the project.

Caltrans has contributed toward land acquisition through mitigation of road projects. The majority of these contributions are likely to take place through TransNet funding (see below). Although, Caltrans is not subject to this Plan, their projects must comply with CEQA and

propose mitigation measures for impacts to species and natural habitats. In addition, Caltrans owns 1,805 acres of right-of-way within the Plan area, some of which contains important natural habitat lands such as the coastal sage scrub habitat adjacent to Interstate 15 which functions as a linkage for California gnatcatchers. Within these right-of-ways it is likely that there will be future impacts from road projects. However, although not managed for biological resources, some of this land is also likely to remain undisturbed and contribute to the preserve system.

For the purpose of the preserve assembly analysis, it is assumed that the 400 acres of natural lands in Caltrans right-of-ways would be neutral since these areas are not regulated by this Plan. Therefore, these areas should not increase public or private conservation requirements. It is likely that a significant portion of these 400 acres will remain mostly in their natural condition since many of them are relatively steep slopes beside highways.

Regional Contributions

Funding may become available from a variety of countywide (i.e., regional) sources. These sources will likely originate from ballot initiatives. A more complete list of potential regional funding sources is given in Section 5.3.1. Regional sources are anticipated to contribute significant funds for acquisition, but are not relied upon for Plan implementation or species coverage.

TransNet Reauthorization. In 2005, "Proposition A" re-authorized TransNet, which will provide funding for mitigation of road improvement projects as well as acquisition of land for conservation purposes. The specific amount of funding to be contributed by this source is yet to be determined. For the purposes of estimating sources for preserve assembly, it is assumed that TransNet will contribute 2,600 acres of natural habitat to the preserve system. This is based on an estimated 400 acres of mitigation for improvements to SR-76. The SR-76 Plan area analyzed for this Plan (Figure 5-2) projects 207 acres of impact to natural habitats and at an average ratio of 2:1 this would amount to approximately 400 acres of mitigation. So far, 284 acres have been acquired for the preserve in association with SR-76 development. Even if the SR-76 Plan area over-estimates impacts or mitigation, there are other local roads that are proposed for funding which will require mitigation as well. TransNet also proposes acquisition of natural lands as part of a "regional benefit"; estimated here to be 2,200 acres based on the following assumptions. The TransNet Environmental Mitigation Program identifies $200 million for a Regional Habitat Conservation Fund to acquire additional habitat lands and fund management activities. If half of the funds were used for acquisitions, at an average of $15,000 per acre, this would purchase approximately 6,700 acres. Additionally, if only one-third of the acquisitions were to occur in the Plan area, this would amount to 2,200 acres.

County Contributions

The existing County Open Space Preserves and Parks managed by County Department of Parks and Recreation will form the basis of the County's contribution toward the assembly of the North County preserve system (Chapter 2; Table 5-1). The County will also contribute up to 20,000 acres in acquisitions toward the assembly of the preserve system, of which a portion has already been acquired in fulfillment of this goal.

A number of additional funding sources are described in Section 5.3 that can be matched with County funds to acquire more land. For acquisitions involving multiple contributing agencies, the long-term stewardship, monitoring and adaptive management costs will be considered when crediting contributions toward the preserve assembly.

Private Contributions

Private contributions to the North County preserve network may come from donations, land exchange, or development mitigation. In total, 42,716 acres are expected to come from future private donations and dedications. Of these, development mitigation is expected to contribute the most to the preserve. It is estimated that conservation associated with private development mitigation will amount to approximately 38,555 acres, based on a build out analysis of the current draft of the County's General Plan update (Appendix F) and estimated hardline project contributions (Table 5-1; Appendix E). The remaining 500 acres are anticipated to be conserved by non-profit groups.

Ordinance Implementation

County RPO Open Space Easements. According to the most recent amendment to the County's RPO, when areas identified as steep slopes are subject to development only minimal encroachment is allowed on the steep slopes and the remainder must be set aside in an open space easement. This aspect of the Ordinance will facilitate the assembly of the preserve to a certain degree. Within the PAMA, such open space easements will be allowed to mitigate for on-site projects impacts, however any remainder of steep slopes on the parcel would not be available for off-site or other project mitigation. The language of the RPO will be modified for lands within the PAMA to state that new agricultural operations will not be allowed in the open space easement (Appendix B). Outside of PAMA, new agricultural operations will still be permitted in steep slope easements. The County's RPO also limits development in wetlands, associated wetlands buffers, and in floodways/floodplains. The ordinance requires the use of open space or flowage easements in these areas to ensure that future development will not occur. It is anticipated that open space easements designated in accordance with the RPO will result in the preservation of 20,000 acres of open space. The lands set aside through ordinance implementation will be managed in accordance with the FRMP (Appendix G) as part of the North County preserve system.

Other Contributions

Other organizations such as non-profit conservation organizations have played an important role in acquiring habitat lands in the County. Although there is no requirement for these organizations to acquire natural lands, it can reasonably be assumed that such organizations will contribute to the assembly of the preserve. For calculation purposes, it is estimated that such organizations will contribute roughly 500 acres toward the North County preserve system. However, the actual contribution may be much larger.

Other organizations that could potentially contribute to the preserve assembly include Tribal governments, cities, water districts, school districts, or other special districts. This could come in the form of donations or project mitigation. For example, several open space parcels have been

transferred to the County by Olivenhain Municipal Water District and County Water Authority in exchange for the County providing management of these lands.

5.2. Preserve Costs

Implementation of this Plan will require funding for acquisition, management, restoration, adaptive management, biological monitoring, administration, legal, and other costs. This section describes how the preserve will be assembled and the estimated costs of program implementation. The budgets established for the Plan were based in part upon the research prepared for the past plans, refined to reflect current economic conditions, and experience implementing the South County MSCP Subarea Plan. In this North County Plan, all costs are shown in 2009 dollars. Implementation of the Plan will play a significant role in achieving state and federal conservation objectives at the local level. Thus, it is anticipated that acquisition and ongoing costs (management, monitoring, and administration) for the North County preserve system will be financed by local, regional, state, and federal entities.

5.2.1. Land Acquisition

Costs of undeveloped land vary widely in San Diego County, depending on distance from the coast, employment centers and other regional destinations, availability of roads and other public services, and presence of physical constraints to development. Cost estimates based on County and partner acquisitions since the inception of the South County MSCP Subarea Plan provide us with an average cost of $15,000/acre in 2009 dollars (Table 5-2).

Table 5-2. Cost Estimates for Land Acquisition

Responsible Agency		Baseline Preserves (acres)	Future Gains (acres)	Total (acres)	Estimated Current Land Value of Future Gains [1]
Public Agencies	[2]	12,926	27,534	40,461	$413,014,500
Other	[3]	323	500	823	$7,500,000
Private	[4]	2,835	62,661	65,496	$939,918,000
Total		**16,085**	**90,696**	**106,780**	**$1,360,432,500**

Notes:

All costs are given in 2009 dollars.

[1]	Cost estimate based on current vacant land values of $15,000 per acre. Baseline preserve lands are not counted in estimate, only future gains.
[2]	This includes land owned by Federal, State and County agencies. It also includes an estimate of Caltrans rights-of-way that are likely to remain in a natural state and lands that may be purchased using a Regional funding source.
[3]	This includes non-profit organizations and MHCP preserve areas.
[4]	These costs are born by private parties and are not part of the overall public cost of the program.

5.2.2. Land Management

Lands acquired as part of Plan implementation will be managed for their natural resources as described in Chapter 9 and the FRMP (Appendix G). Land management involves stewardship, adaptive management, and biological monitoring. Cost estimates for each of these is shown in Table 5-3 and described further below.

Private owners of land inside the Plan area who do not develop their land, and are therefore not third-party Participants of the County's take authorization permit, will have no obligations for management of their land. Therefore, there will be no obligation to provide adaptive management or monitoring on these lands.

Table 5-3. Estimate of Acres and Cost for Land Management by Group

Responsible Agency	Stewardship Acreage	Adaptive Management & Monitoring Acreage	Total Annual Cost [1]
Public Agencies	40,461	106,780	$9,385,079
Other[2]	823	0	$82,280
Private	65,496	0	$6,549,641
Total	**106,780**	**106,780**	**$16,017,000**

Notes:

All costs are given in 2009 dollars.

1 Based on an estimated average cost of $100/ac for stewardship, $50/ac for adaptive management and monitoring costs.

2 This includes non-profit organizations and MHCP preserve areas.

5.2.3. Stewardship

Public Agencies. Public agencies will bear the majority of the responsibility for managing the preserve system. Future management responsibilities may shift if agreements are made between the County and the Wildlife Agencies. Public agencies will be responsible to continue providing stewardship on baseline preserve lands. Management of preserve lands acquired in the future is anticipated to be funded by the respective purchasing agencies or a regional funding source, if available.

Private Landowners. It is anticipated that some of the lands conserved as mitigation for development will be dedicated to public or private entities to manage. It is the responsibility of the project proponent to arrange for stewardship on these preserved lands. This includes funding of initial and ongoing stewardship activities. Examples of such activities include fencing, hazardous waste removal, trash removal, and signage. If a regional funding source becomes available, stewardship on these lands may be performed using these funds. For purposes of the financial analysis, it is assumed that stewardship on all private mitigation lands will be funded by private sources.

Cost Estimate. Estimated costs of preserve stewardship activities are greater in incorporated areas where habitat lands are often bordered by urban development, and lower in more rural

locations such as much of the unincorporated county. We estimated stewardship costs at $100 per acre, based on current stewardship funding needs for County baseline preserves. These estimates are comparable to recent local estimates that range from $80 (San Diego Association of Governments 2004) to $144 (for the MHCP; AMEC et al. 2003) per acre annually. Costs of preserve stewardship may be reduced through the participation and efforts of volunteers, as well as efficiencies gained by managing large blocks of land. At preserve buildout, the estimated annual cost of stewardship of 106,780 acres of preserve land would be $10.7 million (in 2009 dollars). Annual costs of preserve management in the years prior to buildout would be considerably less and vary according to the amount and distribution of land within the preserve at that time.

5.2.4. Adaptive Management and Monitoring

Public agencies will be responsible for all adaptive management and monitoring within the preserve system. The exception to this is when a landowner retains ownership of a dedicated preserve area. In such a case, the landowner will be responsible for carrying out adaptive management and monitoring tasks in coordination with public agencies.

Adaptive Management. Tasks include: pilot projects to evaluate the best management practices to apply within preserves; studies that react to findings of the monitoring program and address needs of individual species, groups of species or habitat types; programs to enhance the conservation values of properties in the preserve (e.g., removal of non-native species and maintaining natural fire regimes); and addressing Changed Circumstances as described in Section 8.5 of this document. An annual prioritization of programs to fund Adaptive Management will be made by preserve managers in light of regional needs and priorities.

Biological Monitoring. Public agencies will participate in a coordinated biological monitoring program. Biological monitoring includes initial surveys, mapping, data collection, and data analysis. Different monitoring activities will occur each year, and annual costs vary based on the type and frequency of monitoring activities and condition of the biological resources. For purposes of this analysis, it is assumed that only lands conserved within PAMA will be monitored.

Cost Estimate. It is anticipated that each public agencies will fund adaptive management and monitoring on the lands they own. The County estimates that current funding levels will provide for adaptive management and monitoring on an all baseline and future county acquisitions. Future regional funding sources are also anticipated to fund adaptive management and monitoring activities throughout the preserve system. A regional approach to adaptive management and monitoring will ensure greater efficiency and effectiveness than concentrating on individual preserves.

A contingency budget is included in adaptive management and biological monitoring budgets as 15% of annual costs to meet the long-term needs of adaptive management such as those considered Changed Circumstances (Section 8.5). The contingency budget will be accumulated over time; that is, funds not used during one fiscal year will be saved and combined with additional funds in subsequent years.

The estimated costs for adaptive management and monitoring activities is approximately $5.3 million per year at preserve buildout (based on an estimated $50 per acre in 2009 dollars; Table 5-3). This estimate includes administrative costs. Costs for biological monitoring assume a coordinated monitoring system in which specialists will be performing monitoring tasks for multiple HCP/NCCP plans at once.

5.2.5. Program Administration and Equipment

There will be a variety of administrative tasks required to implement this program. These tasks will be carried out by a number of agencies and are intended not only to organize program implementation, but to provide accountability and transparency for the program. The following are examples of administrative functions that will be required.

- *Land Acquisition Process.* Land acquisition, including identification of potential acquisition-sites, appraisal, negotiation, and management of the acquisition process.
- *Financial Planning and Management.* Financial planning and management of revenues and expenditures for habitat acquisition, preserve management, and monitoring, including administration of the regional funding program and coordination of requests for federal and state funding of program activities.
- *Legal Support.* Legal support for land acquisition and preserve management, administration of fee titles, easements, and other land contracts.
- *Report Preparation.* Reporting of plan implementation, including annual accounting of land acquisitions, land dedications, and habitat losses.
- *Database Maintenance.* Maintenance and updates of the regional geographic information system database on vegetation communities, species, and conservation easements.
- *Coordination.* Program implementation and coordination, including coordination among local jurisdictions and other take authorization holders for Plan implementation and coordination with the Wildlife Agencies and other public agencies.
- *Support Personnel and Facilities.* General administrative support for the above activities, including support personnel, accounting, facilities, and equipment.
- *Equipment.* Equipment includes vehicles, computers, office supplies, and field equipment (e.g, maps, navigation aids, and cameras).

The extent to which the above functions may be performed by the County depends on the organizational structure ultimately selected for Plan implementation.

Cost Estimate. Administrative costs are included in the estimates for acquisitions, stewardship, adaptive management, and monitoring. Based on a review of operating expenses for the South County MSCP Subarea and by developing generic service budgets, the County Department of Parks and Recreation estimated annual costs for program administration were between $9.40 and $10.75 per acre, during years of maximum administrative costs, falling to roughly $2.00 per acre per year after the acquisition program is completed. Annual administrative costs (in 2009 dollars) are projected to rise from approximately $940,000 in 2009 to a maximum of $5.3 million during the period of land acquisition, then decline to $305,000 at buildout (2009 dollars).

In addition, there are also initial land management costs that will be required when a preserve is dedicated such as surveying boundaries, installing fencing and signage, and hazardous waste removal. It is assumed for this Plan that start-up costs, which may be expended over several years, will amount to approximately $1,000 per acre for initial management tasks (Table 5-4).

5.2.6. Total Cost Estimate

During the course of assembling the preserve system, inflation, economic cycles, supply and demand for housing in the region will all impact the actual costs of land acquisition. A conservative portrait of total program costs including land acquisition, ongoing stewardship, adaptive management, biological monitoring, and program administration is detailed in Table 5-4. For analysis purposes, the model does not assume a particular rate of acquisition since experience in the South County MSCP Subarea has shown large year-to-year variations. Instead, the model shows the current value of all lands to be conserved and the cost of management and administrative activities when the preserve has been completely assembled. This scenario does not account for the probable cost savings of non-financial conservation methods described in Section 5.3.6.

Table 5-4. Total Estimated Program Costs

Activities		Baseline Cost	Cost at Buildout
One-time Costs		**$0**	**$1,486,113,485**
Acquisitions & Mitigation	[1]		$1,360,434,000
Real Estate Services	[2]		$4,753,440
Initial Management Tasks	[3]		$90,695,600
ASMD Development	[4]		$30,230,445
Annual Costs		**$2,412,675**	**$16,017,015**
Stewardship	[5]	$804,225	$5,339,005
Adaptive Management & Monitoring	[6]	$1,608,450	$10,678,010
Program Administration & Equipment		*Included in estimates above.*	

Notes:

All costs are given in 2009 dollars.

[1]	Based on the total new acquisition costs from Table 5-3.
[2]	Estimated at $100/ac based on past acquisitions. Estimate applied to future acquisitions by public agencies.
[3]	Based an estimated average of $1000/ac for all new acquisitions by public agencies.
[4]	Based on an estimated average of $500/ac for all baseline lands and new acquisitions by public agencies.
[5]	Based on an estimated average of $50/ac for all preserve lands.
[6]	Based on an estimated average of $100/ac for all preserve lands.

5.3. Preserve Financing

It is anticipated that during the life of this plan, regional funding sources will replace current public funding sources for acquisitions and land management. However, the plan was not developed to be contingent upon these future sources. In this section we outline current and future sources of funding.

5.3.1. Federal

Federal HCP Land Acquisition Grants. These grants provide funds to states and territories to acquire land associated with approved HCPs. However, these grants do not fund the mitigation as required by HCPs; instead, they support acquisitions by the state or local governments that complement actions associated with the HCP.

Department of Defense. The Department of Defense in the FY-03 Defense Authorization Act (codified as Title 10 U.S.C.2684a) received authority for military installations to execute agreements with public and private partners to acquire real estate interests adjacent to or near military installations to reduce or eliminate current or preclude future restrictions on military operations. The South Coast Conservation Forum (SCCF) was organized to support this program and has identified key areas for conservation around Camp Pendleton and the Fallbrook Naval Weapons Station in San Diego, Orange, and Riverside Counties. Federal funds appropriated for this program are used to purchase easements or fee title to lands in order to extinguish development rights, or conserve open space that eases restrictions on training operations on or near an installation, protect their watersheds, or decrease potential conflicts with operations on or near the installation. The County has been working with the SCCF to identify and acquire sensitive lands with federal funding around Camp Pendleton that are threatened by urban encroachment. We anticipate that over the life of the project the County will partner with the Department of Defense for the acquisition of up to 20,000 acres of land.

Farm Bill. The American Farmland Trust, the San Diego County Farm Bureau and the U.C. Cooperative Extension assisted the County in the development of recommendations for the Farm Bill that will enhance the funding opportunities for conservation within this Plan.

5.3.2. State

Propositions & Acts. In 2002, state voters passed Proposition 50, the "Water, Clean Drinking Water, Coastal and Beach Protection Act of 2002." The $3.44 billion bond measure will fund habitat restoration, coastal protection projects, and improvements to public water systems for safer drinking water. By approving Proposition 50 and Proposition 40, the $2.6 billion "California Clean Water, Clean Air, Safe Neighborhood Parks, and Coastal Protection Act of 2002", Californians approved over $6 billion in parks, wildlife and water bonds in 2002. The MSCP has developed priority project lists and will submit proposals for this funding as it becomes available.

Californians approved Proposition 84 in November of 2006. This bond act will provide over $5 billion dollars in funding for "Water Quality, Safety and Supply; Flood control; Natural Resource Protection; and Park Improvements". More than $500 million dollars is earmarked for land conservation and other natural resource protection activities. Funds are specifically designated for: wildlife habitat conservation ($225M), forest conservation ($180M), protection of ranches, farms, and oak woodlands ($45M) and incentives for conservation in local planning ($90M). The County will seek additional funding for MSCP through Proposition 84 as grant opportunities arise.

The Oak Woodlands Conservation Act of 2001 authorizes the Wildlife Conservation Board (WCB) to purchase oak woodland conservation easements and provide grants for land improvements and restoration efforts. In addition, the WCB is authorized to award cost-sharing incentive payments to private landowners who enter into long-term agreements. Such agreements will be structured to include management practices that benefit oak woodlands and promote the economic sustainability of the farming or ranching operation. The Act requires that at least 80 percent of the money be used for grants for the purchase of easements, for restoration activities or for enhancement projects. In addition, the funds may be used for grants that provide cost-share incentive payments and long-term agreements. The remaining 20 percent may be used for public education and outreach efforts by local governments, park and open space districts, resource conservation districts and nonprofit organizations. Within this 20 percent category, funds may also be used for grants designed to provide technical assistance and to develop and implement oak conservation elements in local general plans. While the Act does not specify how funds are to be allocated, it requires that priority be given to grants that result in the purchase of oak woodland conservation easements. The County will seek additional funding for MSCP through the Oak Woodlands Conservation Act as grant opportunities arise.

The Rangeland, Grazing Land and Grassland Protection Act of 2002 provides $53 million in grants (Prop. 12, 40 and 50 bond funds) to protect California's environment. The state Coastal Conservancy and the Wildlife Conservation Board oversee the administration of the grants. The purpose of the program is to protect California's rangeland, grazing land and grasslands through the use of conservation easements. The County will seek additional funding for MSCP through the Rangeland, Grazing Land and Grassland Protection Act as grant opportunities arise.

State Programs. The State of California Department of Conservation administers the California Farmland Conservation Program, a state-wide grant funding program that supports local efforts to establish agricultural conservation easements and planning projects for the purpose of preserving important agricultural land resources. The California Farmland Conservation Program provides grants to local governments and qualified non-profit organizations. The MSCP will support and if appropriate, partner with landowners, to obtain this grant funding.

The County of San Diego will continue to apply for funding from the state as it becomes available for local parks and open space projects through grants as well as direct allocations. California Department of Fish and Game Local Assistance Grants are a potential source of funds for certain adaptive management activities.

5.3.3. Regional

TransNet Extension Ordinance and Expenditure Plan (TransNet). In 1987, the TransNet Program ($3.3 billion) - a half-cent sales tax to finance transportation projects – was approved by the voters. TransNet funding is a combination of local, state, and federal funding used to improve the San Diego region's transportation network. SANDAG administers this major public works program. Funding is distributed in equal thirds among highway, transit, and local road projects. In addition, $1 million is earmarked annually for bicycle paths and facilities.

Although TransNet was set to expire in 2008, San Diego voters approved the TransNet Extension Ordinance and Expenditure Plan in November 2004, which extends the TransNet tax through 2048. The new TransNet plan includes an Environmental Mitigation Program (EMP). The overall goal of the EMP is to provide a total of $850 million for environmental mitigation of projects identified the SANDAG Regional Transportation Plan. Specifically, $450 million is allocated to mitigate impacts of the regional transportation projects identified in the RTP, and $200 million is allocated to mitigate impacts of local transportation projects. The EMP also identifies $200 million for a Regional Habitat Conservation Fund to be used for habitat acquisition, management, and monitoring activities that are not necessarily associated with the mitigation of transportation projects.

Monies from the Regional Habitat Conservation Fund for "management and monitoring implementation" activities will be allocated based on the following schedule: $1 million in FY 05-06; $2 million in FY 06- 07; $4 million in FY 07-08; and $4 million in each year for the next 10 years. Funding for this category may be reduced due to restrictions on borrowing of such funds for management purposes.

Funding for "habitat restoration activities" will be allocated based on the following schedule: $5 million per year beginning in FY 14-15 and continuing through FY 22-23. Actual expenditures for restoration activities will be based on requirements for mitigation of upland and wetland habitat impacts of transportation projects, and may exceed the targets set forth above.

Funding for advanced land acquisitions under this program is available as of 2006, with approximately $290 million of habitat land to be purchased over no more than a fifteen year period.

Other. While the primary regional funding source intended to support implementation of this Plan is the TransNet Extension Ordinance and Expenditure Plan, this does not preclude the development and/or utilization of supplemental regional funding mechanisms, including additional ballot measures, creation of special tax districts, or habitat maintenance assessment districts.

5.3.4. County

General Fund. The County will allocate general funds for costs to implement the Plan. The County Board of Supervisors approved approximately $9.5 million of General Fund allocations for implementation of the MSCP for FY 07-08 (County of San Diego 2007d). This includes funding for maintenance of park facilities, preparation of Area-Specific Management Directives,

MSCP basic stewardship, and continued plan development. The Board has endorsed funding at this level through FY 11-12. Base funding for land management costs will be maintained for baseline preserves owned by the County and will be increased as lands are acquired in the future.

Landfill Tipping Fees. Future landfills within the Plan area will gain an immediate benefit from the implementation of the Plan. The Gregory Canyon Landfill will be a privately owned landfill with a capacity of 1 million tons a year. The County will receive $1.50/ton of as the landfills commitment to conservation. Over the life of the landfill, 30 million tons of waste are allowed, which will generate $45 million for conservation. These monies will be used for land acquisitions and management.

5.3.5. Private

Future development within the Plan area will result in the acquisition of 42,216 acres of natural lands. Private funds will be used for these acquisitions. In situations where private landowners must fund stewardship, adaptive management, and/or monitoring activities on lands they retain, there are a variety of funding options. These will be considered on a case by case basis upon approval of the project according to current County policies. In any case, a reasonable assurance that funds will be provided for the required activities must be provided in some form of written analysis, usually a Resource Management Plan. These funds must be adequate for the expected timeframe, which, in most cases will be perpetual. Options for funding future implementation include, but are not limited to, endowments, assured funding from homeowners associations, or special assessment districts (e.g., landscape maintenance districts or community facility districts).

5.3.6. Non-financial Methods of Habitat Conservation

Preserve lands will be preserved through a variety of mechanisms. Program elements associated with land preservation range from direct acquisition of land to tax-incentive approaches such as the voluntary placement of easements on preserve lands. Privately owned habitat may be acquired for the preserve using alternative methods that do not require the expenditure of public funds, including land exchange, transfer of development rights, and private land donation, which could be supported by tax credits. This section provides an overview of these alternative methods of land conservation.

Private Land Donation. Although not relied upon for preserve assembly, private owners may choose to donate habitat lands to public agencies or qualified non-profit conservation organizations. Alternative forms of donation include:

- outright gift of fee title;
- voluntary donation of conservation easements;
- donation of a remainder interest, where the donor or a family member retains the right to use or live on the property for a specified period;
- donation by will, where the donation occurs as a bequest; or

- sale at less than fair market value and donation of the remainder of the fair market value.

Outright donation has the greatest tax advantages. Other forms of donation continue specified rights for use of the property by the donor or others but realize smaller tax advantages. Financial incentives are available to landowners who donate land or easement for conservation purposes. The value of the property interest that is donated may qualify as a charitable contribution for federal and state income tax purposes. Donating land with significant conservation value, but limited development value, can also reduce the total value of an estate subject to inheritance tax. Grant of conservation easement or an "enforceable restriction" for conservation purposes qualifies a property to be assessed for property tax based on current use, which is often substantially lower than market value. Tax credits directly reduce tax obligations and are financially more attractive than tax deductions, which reduce taxable income. Also see the Natural Heritage Preservation Tax Credit Act below.

Conservation Easements. The conservation easement is a flexible tool that protects land while leaving it in private ownership. The easement, a legal document, guides future uses of a property regardless of ownership. A landowner generally donates the easement to a qualified conservation organization or government agency, which in turn ensures that the conditions of the easement are met over time. All conservation easements must be actively managed to count towards preserve goals. Easements provide numerous benefits:

- The landowner retains title to the property and can live on it, sell it, or pass it on to heirs, knowing that it will always be protected.
- Often families are forced to sell land to raise cash to pay estate taxes. Easements may eliminate or greatly reduce estate taxes, preventing the forced sale of properties. Easements may also provide income tax and property tax reductions by eliminating unwanted development value.
- Easements can reduce the potential for disagreement over future uses when lands are passed on to the next generation.
- Easements offer permanent protection, applying to all future landowners. A land trust or government agency ensures that restrictions are followed in perpetuity.
- Landowners have many rights associated with the land they own (e.g., the right to harvest timber, build structures, extract minerals or farm) and are subject to zoning and other laws. By placing an easement on land, some of these rights are relinquished. For example, a landowner might give up the right to build additional residences while retaining the right to grow crops.
- Easements can be tailored to protect the land's natural and cultural values, meet financial and personal needs, and attain conservation goals.

Agricultural Conservation Easement. An agricultural conservation easement is a deed restriction landowners voluntarily place on their property to protect resources such as productive agricultural land, ground and surface water, wildlife habitat, historic sites or scenic views. They are used by landowners ("grantors") to authorize a qualified conservation organization or public agency ("grantee") to monitor and enforce the restrictions set forth in the agreement. Conservation easements are flexible documents tailored to each property and the needs of individual landowners. They may cover an entire parcel or portions of a property. The landowner usually works with the prospective grantee to decide which activities should be limited to protect specific resources. Agricultural conservation easements are designed to keep land available for farming.

After granting an agricultural conservation easement, landowners retain title to their property and can still restrict public access, farm, use the land as collateral for a loan or sell their property. Land subject to an easement remains on the local tax rolls. Landowners continue to be eligible for state and federal farm programs.

Landowners can sell or donate an agricultural conservation easement to a qualified conservation organization or government body. In either case, it is important to determine the value of the easement to establish a price or to calculate tax benefits that may be available under federal and state law. The value of an agricultural conservation easement is generally the fair market value of the property minus its restricted value, as determined by a qualified appraiser. In general, more restrictive agreements and intense development pressure result in higher easement values.

Farm Program. In May 2005, the County Board of Supervisors adopted Board Policy I-133, Support and Encouragement of Farming in San Diego County. Pursuant to this Policy, the Planning Department has developed a County Farming Program Plan. The goals of the Farming Program Plan are to coordinate the General Plan Update, MSCP and other County programs to promote economically viable farming in San Diego County and to create land use policies and programs that recognize the value of working farms to regional conservation efforts. The American Farmland Trust, the San Diego County Farm Bureau and the U.C. Cooperative Extension assisted the County of San Diego in developing the Farming Program Plan that was adopted in January 2009.

Tax Credit Program. Through California's Natural Heritage Preservation Tax Credit Act of 2000 (Public Resources Code Section 37000 et seq.), a tool is available to protect and conserve open space, agricultural lands, water, wildlife habitat, archaeological resources, and state and local parks. Under this program, state tax credits are available to private landowners who donate qualified land (fee title or conservation easement), water or water rights to state resource departments, local government entities and designated non-profit organizations for conservation purposes. Designed to complement other resource protection efforts, the Natural Heritage Preservation Tax Credit Program provides an opportunity to private landowners interested in reducing their state tax liability. The law authorizes a tax credit against the California Personal Income on Corporation Tax Laws in an amount equal to 55% of the fair market value of any qualified and contributed land. The credit may be taken in the tax year the contribution of land is made. Coupled with existing land protection and conservation measures, the State of California is rewarding landowner stewardship practices that preserve our natural resources (Wildlife Conservation Board, 2005).

Land Exchange. A public land exchange is any transaction other than a sale that transfers publicly owned land (federal, state, county or municipal) from one owner to another. A public land exchange usually involves trading public land for private land, but it can involve trading land between different land management agencies. The exchange may involve the surface, subsurface mineral rights, or both. The exchange may include a financial payment to equalize the value of the trade. As an example, in 1998 voters in the City of San Diego ratified Ordinance No. O-18569 (New Series) authorizing the transfer of approximately 30 acres of City-owned land in exchange for 47.7 acres of land within the Plan area for the San Dieguito River Park.

Public agencies that own developable lands without important habitat can exchange those lands for private lands with important habitat. The BLM has used this method in San Diego County to acquire habitat lands. Additionally, public agencies with developable lands could exchange lands with other public agencies or nonprofit organizations owning habitat lands.

Development Rights. Although this Plan does not require such a program to achieve the goals, such a program could be complimentary to this Plan. The County is currently examining a Purchase of Agricultural Easement (PACE) program to encourage the purchase of conservation (including agricultural conservation) on private lands within the PAMA where the property owner proposes such actions. This program may be utilized to retain lands in agriculture for conservation and other purposes. If such a program were adopted in the future, it could be useful in maintaining agriculture that provides habitat value and preventing further encroachment of development onto sensitive habitat lands.

Other. The County, other agencies, and nonprofit organizations could undertake programs to encourage charitable donations for conservation purposes on lands where the landowner has given their express permission. Nature walks, bird watching, and other activities could be organized in conjunction with fund raising for habitat acquisition. Trails, benches, and other improvements may be funded by individuals or corporate sponsors, in exchange for public recognition of financial contribution. General conservation activities, such as recycling, could be promoted in the community with proceeds directed to habitat conservation.

5.4. Acquisition Process

Privately owned lands will need to be acquired to assemble the proposed preserve system and complement protection of resources achieved through project avoidance and mitigation measures. The acquisition of lands for the preserve will be based on purchases from willing sellers at fair market value or otherwise mutually acceptable terms of the buyer and seller. Land acquisition may also be accomplished through non-cash transactions such as land exchanges or by the use of land conservation and agricultural easements. Condemnation proceedings will not be used unless specifically requested by a property owner.

In the Plan area, land meeting any of the following criteria should be considered a high priority for conservation and candidate for public acquisition:

- lands that comprise essential linkages across the Plan area or that are located in important corridors for the movement of species intended to be covered by the Plan;
- lands that create large core habitat areas with intact natural habitat and little or no fragmentation by roads or other development; or
- lands that are inhabited by a significant population of narrow endemic species or rare native habitats (including vernal pools and other wetlands) or support an important population or habitat of a covered species.

The more of these criteria, in number or degree, a piece of land meets, the higher its conservation priority. Listed below are some areas expected to meet the criteria above. Priority 1 areas are

those that are expected to meet all of the criteria above, while Priority 2 areas are expected to meet one or two criteria.

Priority 1. Large areas of grasslands in Santa Maria Valley (Ramona) and Guejito Creek area (especially those areas supporting vernal pools and/or Stephens' kangaroo rat); areas in the San Luis Rey River corridor supporting significant populations of Arroyo toad; areas with gabbro soils such as parts of Mount Olympus, Magee Ridge and San Marcos Mountains; and the Santa Margarita River area and lands surrounding Camp Pendleton.

Priority 2. Major corridors along San Luis Rey River and Moosa Canyon; coastal sage scrub habitats supporting high densities of California gnatcatchers in the Elfin Forest area; areas with high densities of Engelmann oak woodlands such as the foothills east of Ramona; cactus patches supporting cactus wren; and corridors connecting the San Luis Rey River to Palomar Mountain.

5.4.1. Conservation Banking

In April 1995, California became the first state to embrace conservation banking as a means of conserving endangered species. Since then, many conservation banks have been established throughout the state, but especially in southern California, an endangered species hotspot. A conservation or mitigation bank is privately or publicly owned land managed for its natural resource values. In exchange for permanently protecting the land, the bank operator is allowed to sell habitat credits to developers who need to satisfy legal requirements for compensating environmental impacts of development projects. Conservation banks are intended to protect resources in large, connected areas in advance of the need for mitigation, and therefore are considered a valuable tool for assembling the preserve.

A conservation or mitigation bank is a free-market enterprise that:

- Offers landowners economic incentives to protect natural resources;
- Saves developers time and money by providing them with the certainty of pre-approved compensation lands; and
- Provides for long-term protection of habitat.

A conservation bank generally protects habitat for threatened and endangered species. Credits are established for the specific sensitive species that occur on the site. Conservation banks are created in conjunction with the Wildlife Agencies and require their approval. In the case of wetland conservation banks, approval by USACE is also required. Proposed banks should follow the official policy adopted by the California Resources Agency and the California EPA and the supplemental policy issued by the USFWS and CDFG for banks in the NCCP region of southern California.

Conservation banks could also be established by public agencies, private nonprofit organizations, or private parties in conjunction with a mitigation fee program, where impacts to habitat may be mitigated by payment of a fee to the County rather than provision of off-site mitigation lands. The fees collected by the County would then be used to purchase additional open space land.

The cost of off-site mitigation, whether or not a bank is used, will depend on the demand for and supply of mitigation lands.

As of January 2009, the Heights of Pala Mesa was the only active conservation bank in the Plan area. This 317-acre bank is located near Fallbrook just northeast of the intersection of Interstate 15 and State Route 76. According to the most recent data available from USFWS (2007), 28.9 acres of mostly chaparral are available for sale, of which 16.9 acres are currently preserved.

Mitigation banking is the same concept as conservation banking, but is specifically for wetland restoration, creation, and enhancement undertaken to compensate for unavoidable wetland losses. Use of mitigation bank credits must occur in advance of development, when the compensation cannot be achieved at the development site or would not be as environmentally beneficial. Mitigation banking helps to consolidate small, fragmented wetland mitigation projects into large contiguous sites that will have much higher wildlife habitat values.

5.4.2. Permanent Resource Protection

Land set aside for conservation purposes in the Plan area in accordance with this Plan will be permanently protected. For both private and public acquisitions, dedication of preserve lands will be mandatory and secured with fee title transfers or conservation easements as described below.

County Regulations. The County will update, consolidate, and codify the environmental regulations contained in the Plan into land use regulations and ordinances, including the RPO (as presented in Appendix B) and BMO. Additionally, the County implements CEQA through the development review and approval process, which requires protection of significant biological resources and mitigation of project impacts. Findings of consistency with the Plan will be required for all projects requesting issuance of Take Authorizations.

Assurance of Long-Term Biological Integrity. The long-term biological integrity of lands conserved by the Plan will be assured by one of the following options:

- Lands set aside as mitigation for development, whether on site or off site, will be protected with biological conservation easements, perpetual open space easements equivalent to conservation easements or, dedications in fee to the County or other government agency or non-profit entity with a stated conservation mission.
- Lands set aside in order to make preserve design findings in the BMO will be permanently protected with biological conservation easements, perpetual open space easements equivalent to conservation easements or, dedications in fee to the County or other government agency or non-profit entity with a stated conservation mission.
- Public lands (federal, state, and local) committed to conservation will be protected with dedications, zoning, general plan designations, or other protective measures to ensure such lands are preserved and managed consistent with the Plan in perpetuity.
- Both private and public facility development will be regulated by the requirements of this Plan, BMO, and Implementing Agreement. Development will be directed toward the least biologically sensitive portion of the site by using the standards and criteria established in the Plan. Agreements or permits implementing these land regulations will be recorded with the County

Recorder. The indirect impacts of the development will be addressed in agreement(s) or permit(s) to ensure protection of sensitive resources remaining on the premises outside of the development area.

Open Space Easements serve the function of conservation of land in its natural state for perpetuity or any specified time frame. The County may require the dedication of an Open Space Easement as a condition of project approval. In contrast, Conservation Easements, as set forth in Civil Code section 815 and following may only be voluntarily conveyed. Both open space and conservation easements assure perpetual conservation of the land and require the consent of the grantee to vacate the easement.

Public access on preserved lands will be considered and incorporated wherever possible, provided it will not significantly impact the biological and cultural resource values to be protected by the conservation of that land. In selecting mitigation sites (those compensating for impacts elsewhere), lands needed for future public use should be considered. These future impacts should be considered when determining the number of acres that can be credited for mitigation. The extent and nature of future public access should also be considered when easements or dedications are recorded on these lands, as well.

5.4.3. Rough Step Requirement

A rough proportionality of habitat losses (i.e., impacts) and gains (i.e., conservation) must be maintained by this program in order to remain in compliance. Habitat losses should not exceed a rough proportion of the habitat gains. The rough step is a ratio of gains to losses, based on the conservation goals for vegetation communities (see Chapter 6). This accounting will be presented in annual reports for each habitat type. Rough step must be maintained cumulatively to remain in compliance with the permit. Deviations of up to 10% are permitted annually and are expected to occur. This is especially true in the early phases of implementation due to the opportunistic nature of acquisitions and the fact that impacts in several habitat types can be mitigated out-of-kind (i.e., within tier). Exceeding the rough step requirement for losses by more than 10% for a particular vegetation community signals a need for corrective actions to be taken. Without corrective actions, the incidental take permit could be suspended in whole or in part.

As an example, coastal sage scrub has an overall conservation goal of 18,439 acres, while it is assumed that 11,829 acres within the Plan area will be lost. This would result in a gain to loss ratio of 1.56:1. If that ratio of gains to losses were to fall below 1.404:1 (i.e., 10% below 1.56:1), corrective action would be required.

6. PRESERVE ANALYSIS

6.1. Overview

A systematic approach was followed to evaluate the adequacy of the preserve design and other conservation measures to protect each of the 63 species. The methods and results of this analysis are discussed in more detail in Volume II of this Plan. This evaluation was also used to determine if additional species-specific conditions were necessary. The overall process for analyzing the North County preserve involved several major steps, each of which has had several iterations during the planning and analysis process:

1. Review available data, and refine and update the GIS database for biological resources and preserve areas.
2. Use the GIS database to quantify expected levels of conservation and take for vegetation communities and species throughout the Plan area.
3. Analyze preserve design given current land use constraints (build-out analysis).
4. Evaluate preserve viability for each of the 63 species.
5. Specify actions that must be implemented to assure adequate conservation for Covered Species.

6.2. Vegetation Communities Conserved

Approximately 57% of the lands in the 294,849 acre Plan area support natural vegetation communities (Figure 2-4), the rest have been disturbed, converted to agriculture, or developed. The County identified different conservation targets for each natural upland habitat depending on habitat type, location, expected impact from development, and other factors. The overall levels of conservation expected for each vegetation community are reported in Table 6-1, which total 106,780 acres of natural habitat, of which 21,577 acres have already been conserved. An additional 7,022 acres of agricultural, non-native, disturbed, and eucalyptus habitat are also anticipated to be maintained or restored within PAMA in order to maintain the integrity of the preserve system. However, the exact number of acres required of these agricultural and disturbed habitats is uncertain and their incorporation will be achieved primarily through development project review.

Table 6-1. Conservation Summary by Vegetation Community

Vegetation Community	Total Acres in Plan Area	Total in PAMA		Expected Conservation in PAMA		Total in Plan Area Conserved
Chaparral	75,865	66,931	88%	78%	51,898	***68%***
Southern Maritime Chaparral	451	427	95%	89%	378	***84%***
Coastal Dunes and Beaches	5	5	100%	100%	5	***100%***
Coastal Sage Scrub	29,888	23,463	79%	79%	18,439	***62%***
Coastal Sage Scrub/Chaparral	5,179	4,040	78%	77%	3,129	***60%***
Grassland	22,355	14,841	66%	73%	10,817	***48%***
Native Grassland	851	822	97%	75%	619	***73%***
Engelmann Oak Woodland	8,478	8,148	96%	75%	6,133	***72%***
Oak Forest	332	308	93%	77%	237	***71%***
Oak Woodland	12,684	9,580	76%	78%	7,431	***59%***
Montane Coniferous Forest	1,238	1,237	100%	79%	974	***79%***
Natural Upland Subtotal	***157,326***	***129,802***	***83%***	***77%***	***100,060***	***64%***
Marsh	478	448	94%	93%	416	***87%***
Wet Meadow	380	341	90%	99%	337	***89%***
Open Water	400	229	57%	97%	221	***55%***
Riparian Forest	5,012	3,315	66%	96%	3,183	***64%***
Riparian Scrub	2,327	1,674	72%	95%	1,593	***68%***
Riparian Woodland	1,379	1026	74%	95%	970	***70%***
Wetland Subtotal[1]	***9,976***	***7,033***	***70%***	***96%***	***6,720***	***67%***
All Natural Habitats Subtotal	**167,302**	**136,835**	***82%***	**80%**	**106,780**	***64%***
Agricultural Land	78,437	20,292	26%	33%	6,367	***8%***
Developed	46,976	7,302	16%	5%	346	***1%***
Non-vegetated Channels & Floodways	305	288	94%	98%	282	***93%***
Non-native / Disturbed	1,323	834	63%	77%	568	***43%***
Eucalyptus Woodland	506	119	24%	79%	87	***17%***
Non-Natural Subtotal	***127,547***	***28,835***	***23%***	***27%***	***7,650***	***6%***
Grand Totals	**294,849**	**165,670**	***56%***	**71%**	**114,430**	***39%***
Notes:						
[1]All impacts to wetlands will be mitigated, such that no net loss is achieved.						

6.3. Species Conserved

There are 63 species (29 plants and 34 animals) proposed for coverage under this Plan (Table 6-2). This list includes sensitive species known in the Plan area, for which there is a basic body of ecological knowledge, and which are likely to benefit from implementation of the Plan. This includes species listed as rare, threatened, endangered, sensitive (as recognized by the Wildlife Agencies and/or environmental groups), as well as a few widespread, but regionally uncommon species useful for evaluating preserve function (e.g., connectivity and ecosystem function).

Table 6-2 summarizes the overall levels of conservation estimated for species addressed in the Plan. Based on the Conservation Analysis (Volume II), EIS/EIR for the Plan, Implementing Agreement, and any additional information deemed necessary, the Wildlife Agencies will prepare lists of species adequately conserved by the Plan. The Conservation Analysis (Volume II) contains a thorough evaluation, analysis, and discussion of all natural communities and all 63 species. The Conservation Analysis also includes background biological information on each of the species, including their conservation status, distribution, habitat requirements, known species locations and predicted habitat areas, threats to species survival, and special considerations for preserve design and management. Each species analysis in the Conservation Analysis also includes a summary of specific conditions for coverage and guidelines for preserve management, monitoring, and research needs for each species as described in this volume.

Table 6-2. Species Conservation Summary

	Common Name	Scientific Name	Listing Status[1]	Minimum Conservation Estimate for Known Locations	Basis for Estimate[2]	Conservation Estimate for Predicted Range in Natural Habitat Blocks < 50 acres	Conservation Estimate for all Predicted Habitat
	PLANTS						
1	San Diego Thornmint	*Acanthomintha ilicifolia*	FT/CE/A/1B	*80%*	NE	*78%*	66%
2	Spineshrub	*Adolphia californica*	-/-/B/2	*80%*	NE	*49%*	33%
3	San Diego ambrosia	*Ambrosia pumila*	FE/-/A/1B	*80%*	NE	*66%*	50%
4	Del Mar Manzanita	*Arctostaphylos glandulosa* ssp. *crassifolia*	FE/-/A/1B	*80%*	NE	*76%*	63%
5	Rainbow manzanita	*Arctostaphylos rainbowensis*	-/-/A/1B	*80%*	NE	*71%*	68%
6	Coulter's Saltbrush	*Atriplex coulteri*	-/-/A/1B	*80%*	NE	*100%*	100%
7	Parish brittlescale	*Atriplex parishii var. parishii*	FSC/-/A/1B	*80%*	NE	*77%*	78%
8	Encinitas Baccharis	*Baccharis vanessae*	FT/CE/A/1B	*80%*	NE	*70%*	68%
9	Nevin's barberry	*Berberis nevinii*	FE/CE/A/1B	*80%*		*96%*	96%
10	San Diego goldenstar	*Bloomeria clevelandii*	FSC/-/A/1B	*80%*	NE	*60%*	49%
11	Thread-leaf brodiaea	*Brodiaea filifolia*	FT/CE/A/1B	*90%*	NE	*45%*	28%
12	Orcutt's brodiaea	*Brodiaea orcuttii*	FSC/-/A/1B	*95%*	NE, Wetland, VP	*65%*	54%
13	Wart-stem ceanothus	*Ceanothus verrucosus*	FSC/-/B/2	*81%*		*69%*	67%
14	Southern tarplant	*Centromadia parryi* ssp. *australis*	FSC/-/A/1B	*80%*	NE	*75%*	67%
15	Orcutt's Spineflower	*Chorizanthe orcuttiana*	FE/CE/A/1B	*80%*	NE	*76%*	64%
16	Summer-holly	*Comarostaphylis diversifolia* ssp. *diversifolia*	FSC/-/A/1B	*71%*		*71%*	69%

17	Short-leaf dudleya	*Dudleya blochmaniae* ssp. *brevifolia*	FSC/CE/A/1B	*80%*	NE	*76%*	64%
18	Sticky dudleya	*Dudleya viscida*	FSC/-/A/1B	*71%*		*73%*	73%
19	San Diego button-celery	*Eryngium aristulatum* var. *parishii*	FE/CE/A/1B	*95%*	VP	*67%*	42%
20	Coast barrel cactus	*Ferocactus viridescens* var. *viridescens*	FSC/-B//2	*76%*		*63%*	54%
21	Felt-leaf monardella	*Monardella hypoleuca* ssp. *lanata*	-/-/A/1B	*77%*		*74%*	72%
22	Little mousetail	*Myosurus minimus*	FSC/-/C/3	*95%*	VP	*67%*	42%
23	Spreading navarretia	*Navarretia fossalis*	FT/-/A/1B	*95%*	VP	*68%*	45%
24	Chapparal beargrass	*Nolina cismontana*	-/-/A/-	*80%*	NE	*71%*	69%
25	Gander's butterweed	*Packera ganderi*	FSC/CR/A/1B	*80%*	NE	*75%*	63%
26	Nuttall's scrub oak	*Quercus dumosa*	FSC/-/A/1B	*87%*	NE	*75%*	72%
27	Engelmann Oak	*Quercus engelmannii*	-/-/D/4	*69%*		*73%*	73%
28	San Miguel savory	*Satureja chandleri*	-/-/A/4	*N/A*		*75%*	74%
29	Parry's tetracoccus	*Tetracoccus dioicus*	FSC/-/A/1B	*80%*	NE	*74%*	73%
	INVERTEBRATES						
30	San Diego fairy shrimp	*Branchinecta sandegonensis*	FE/-/1	*95%*	VP,NE	*84%*	77%
31	Quino checkerspot butterfly	*Euphydryas editha quino*	FE/-/1	*80%*	NE	*69%*	60%
32	Harbison's dun skipper	*Euphys vestris harbisoni*	Proposed FT/-/1	*95%*	NE, Wetland	*69%*	59%
33	Hermes copper	*Lycaena hermes*	FSC/-/1	*80%*	NE	*69%*	67%
34	Riverside fairy shrimp	*Streptocephalus wootoni*	FE/-/1	*95%*	VP, NE	*73%*	44%
						80%	
	REPTILES & AMPHIBIANS						
35	Arroyo toad	*Bufo californicus*	FE/CSC/1	*95%*	Wetland	*76%*	66%

36	Southwestern pond turtle	*Clemmys marmorata pallida*	FSC/CSC/1	*95%*	NE, Wetland	*82%*	69%
37	Orange-throated whiptail	*Cnemidophorus hyperythrus*	FSC/CSC/2	*66%*		*66%*	58%
38	Red diamond rattlesnake	*Crotalus ruber ruber*	FSC/CSC/2	*68%*		*69%*	66%
39	Coast horned lizard	*Phrynosoma coronatum*	FSC/CSC/2	*78%*		*68%*	62%
40	Western spadefoot toad	*Spea hammondii*	FSC/CSC/2	*95%*	Wetland, VP	*67%*	59%
41	California newt	*Taricha torosa torosa*	-/CSC/2	*95%*	Wetland	*76%*	58%
42	Two stripe garter snake	*Thamnophis hammondii*	FSC/CSC/1	*95%*	Wetland, VP	*81%*	68%
	BIRDS						
43	Tricolored blackbird	*Agelaius tricolor*	FSC/CSC/1	*95%*	NE, Wetland	*66%*	40%
44	Rufous-crowned sparrow	*Aimophila ruficeps canescens*	FSC/CSC/1	*75%*		*67%*	62%
45	Grasshopper sparrow	*Ammodramus savannarum perpallidus*	FSC/-/1	*73%*		*61%*	49%
46	Bell's sage sparrow	*Amphispiza belli belli*	-/CSC/1	*94%*		*66%*	61%
47	Golden eagle	*Aquila chrysaetos canadensis*	-/CSC-FP/1	*77%*	BGEPA	*69%*	60%
48	Burrowing owl	*Athene cunicularia hypugaea*	FSC/CSC/1	*83%*	NE	*63%*	38%
49	Cactus wren	*Campylorhynchus brunneicapillus sandiegensis*	-/CSC/1	*80%*	NE	*64%*	59%
50	Northern harrier	*Circus cyaneus hudsonius*	-/CSC/1	*52%*		*63%*	42%
51	Southwestern willow flycatcher	*Empidonax traillii extimus*	FE/CE/1	*96%*	Wetland	*80%*	66%
52	Yellow-breasted chat	*Icteria virens*	-/CSC/1	*98%*	Wetland	*80%*	66%
53	Osprey	*Pandion haliaetus*	-/CSC/1	*100%*		*73%*	55%
54	White-faced ibis	*Plegadis chihi*	-/CSC/1	*95%*	Wetland	*94%*	94%

55	California gnatcatcher	*Polioptila californica californica*	FT/CSC/1	*72%*		*67%*	62%
56	Light-footed clapper rail	*Rallus longirostris levipes*	FE/CE-FP/1	*95%*	Wetland	*95%*	96%
57	Least Bell's vireo	*Vireo bellii pusillus*	FE/CE/1	*95%*	Wetland	*80%*	65%
	MAMMALS						
58	Pallid bat	*Antrozous pallidus*	-/CSC/2	*0%*		*66%*	59%
59	Townsend's big-eared bat	*Plecotus townsendii pallescens*	FSC/CSC/2	*80%*		*73%*	38%
60	Stephens' kangaroo rat	*Dipodomys stephensi*	FE/CT/1	*80%*	NE	*63%*	66%
61	Mountain lion	*Felis concolor*	-/CSP/2	*100%*		*70%*	52%
62	San Diego black-tailed jackrabbit	*Lepus californicus bennettii*	FSC/CSC/2	*77%*		*66%*	65%
63	American badger	*Taxidea taxus*	-/CSC/2	*100%*		*65%*	52%

Notes:

1

FSC Federal Species of Concern	CT California Threatened	CSP California Specially Protected

Sensitive Plants (California Native Plant Society and County of San Diego)	CNPS	County
Considered rare, threatened, or endangered in California and elsewhere.	**1B**	**A**
Considered rare, threatened, or endangered in CA, but more common elsewhere.	**2**	**B**
Plants which need more information	**3**	**C**
Limited distribution – a watch list	**4**	**D**

Sensitive Animals (County of San Diego)

1 Animals of high sensitivity (listed or specific natural history requirements)

2 Animals declining, but not in immediate threat of extinction or extirpation

2 These policies are described further in Chapter 4.
SAP = Narrow Endemic Policy (requires at least 80% conservation).
Wetland = Wetland Avoidance Policy (requires no-net-loss, estimated at 95% conservation).
VP = Vernal Pool Policy (requires no-net-loss, estimated at 95% conservation).
BGEPA = Bald and Golden Eagle Protection Act (an existing federal act)

6.3.1. Species Not Covered by the Plan

Through the conservation and management actions implemented for the Covered Species, the Plan will also benefit many species not on the Covered Species list (Appendix H). Each of these species is expected to benefit at a level approximately corresponding to the level of habitat conservation realized by the implementation of this Plan (e.g., chaparral-dependent species would be conserved at a level similar to chaparral in general). Most of these species have a very low probability of occurring within the Plan area, while others were not covered because it was thought they were unlikely to be listed in the future. A brief explanation of why coverage was not pursued is provided for each of these species in Appendix H.

Listed species not on the Covered Species list will continue to be regulated under the ESA and CESA. Take of listed species can be authorized separately from the Plan under separate section 7 consultations, section 10 HCPs, and state incidental take permits under section 2081 of the California Fish and Game Code. Alternatively, species can be added to the Plan Covered Species list using the amendment process. This process for adding species to the Covered Species list may involve additional or reprioritized management practices or habitat acquisition, as discussed in Section 8.6.4.

Significant impacts to sensitive species that are not covered may require additional protection or mitigation under CEQA. Mitigation measures for non-covered sensitive species (e.g., County Sensitive Plant List) are addressed in the BMO (Appendix A).

7. DEVELOPMENT POLICIES AND REGULATIONS

The North County preserve system will be assembled primarily by conserving and adaptively managing habitat in the Pre-approved Mitigation Area (PAMA). The PAMA includes lands that have been identified as having important conservation value for the species and natural communities addressed by this Plan. The target conservation levels for each vegetation community in the Plan are provided in Table 6-1. The Conservation Analysis (Volume II) assesses the ability of the regulations in this chapter and BMO to assemble the preserve system proposed in this Plan. Wetland habitat is subject to the no net loss policy and will therefore be conserved through avoidance or off-site mitigation if avoidance is infeasible.

Conservation efforts, whether through acquisitions or regulations, will be focused primarily in the PAMA. Regulations regarding impacts to natural communities and species will differ inside and outside of the PAMA. An intentional effort was made to create an adequate and efficient preserve system entirely within the boundaries of the PAMA, even after permitting development within the PAMA. Embedded throughout the PAMA are many areas of existing, natural, open space that are already protected as parks or held in conservation easements. This chapter discusses policies and regulations that will streamline permitting of development projects throughout the Plan area (both inside and outside the PAMA) and contribute to the assembly of a functional regional preserve system.

7.1. Project Mitigation

The BMO (Appendix A) will be the primary instrument for determining mitigation requirements for discretionary development projects. This ordinance deals with avoidance, minimization, and mitigation requirements, along with exemptions to these requirements for the Plan area. The details of this ordinance are summarized and explained below.

Biological mitigation under the Plan should be consistent with federal and state guidelines (i.e., NEPA and CEQA) and include the following measures, listed in order of priority.

1. Avoid impacts by not taking a proposed action or modifying the location or characteristics of the action.
2. If avoidance is not possible, then:
    a. Minimize impacts by limiting the degree or magnitude of an action.
    b. Rectify the impact by repairing, rehabilitating, or restoring the impacted environment.
    c. Reduce or eliminate impacts over time by preservation and maintenance during the life of an action.
    d. Compensate for impacts by replacing or providing substitute resources or environments.

The emphasis given to specific mitigation measures may differ depending on the area impacted and other factors such as size, location, and relationship to the PAMA or existing preserves. Impacts inside the PAMA should follow the mitigation guidelines above. Impacts outside of the PAMA, unless there is a species subject to the Narrow Endemic Policy (Section 7.4.1), should mitigate by conserving land within the PAMA.

For this discussion, "on-site conservation" refers to the protection of natural habitat located within the boundaries of a project. On-site conservation is accomplished through avoiding or limiting encroachment on habitat, protecting habitat through appropriate means (see Section 0), and managing and monitoring habitat for biological resources. On-site conservation will be credited as a mitigation measure only when it is within the PAMA, unless it is a rare instance when preservation of a specific on-site biological resource is important for the overall conservation of the species and the species is likely to remain viable if conserved on-site (e.g., viable significant populations of a narrow endemic species).

"Off-site mitigation" refers to mitigation for unavoidable impacts to sensitive species or habitat when the mitigation area is outside of the project area. Off-site mitigation may be accomplished by permanently protecting existing habitat inside the PAMA, purchase of mitigation credits in an approved mitigation bank inside the PAMA, or enhancement or restoration of habitat areas inside the PAMA. Off-site mitigation areas must be managed and monitored for biological resources, as well.

7.2. Project Design Criteria

The following design criteria apply only to projects within the PAMA.

Project Design Criteria. In order to minimize impacts to natural habitats and species within the PAMA, development projects must be designed to minimize impacts to sensitive species and natural habitats. This can be achieved by a combination of project design strategies, including but not limited to, avoidance of impacts within PAMA, consolidation of homes, developing in previously disturbed habitat, and minimizing road impacts. The design of the development project must be developed in concert with the preserve design in order to ensure the viability of the ultimate preserve system. Project designs are also subject to limitations that may be imposed by other federal, state, and local laws and ordinances, which may require certain features necessary for other purposes, such as public health and safety.

Preserve Design Criteria. The residual preserve (i.e., avoided lands) must meet certain criteria to assure the adequacy of the preserve's configuration. These criteria are listed in the BMO (§86.517) and are the basis for determining if a project has avoided impacts to the maximum extent practicable, as required by this Plan. Lands conserved to mitigate project impacts will be conserved in perpetuity through a conservation easement or other similar method (BMO §86.518). Mitigation for habitat impacts must be with habitat in the same mitigation tier or higher, unless in-kind mitigation is required (BMO §86.518). The preserve design criteria must be met for all new discretionary projects within the PAMA that may have a significant effect on Covered Species or natural communities. Appendix I provides additional site specific design guidelines for area of high conservation priority within the PAMA.

Linkage Design Criteria. Linkages provide corridors for wildlife movement and habitat in which species reside more permanently. Linkages unite core habitat areas and allow for genetic exchange between populations, refugia after fires or floods, and dispersal corridors. Regional linkages are identified in Figure 7-1. Projects within linkage areas must meet additional design criteria (BMO §86.517(c)).

Corridor Design Criteria. Important wildlife movement corridors should be identified during biological surveys. These corridors should be maintained to accommodate movement of species that are documented or likely to use these areas for dispersal. The criteria for corridors must be met for projects as described in the BMO (§86.517(d)). Where wildlife corridors cross roads, additional guidelines must be followed for constructing wildlife road crossings (Section 7.6).

7.2.1. Habitat-Based Mitigation

The BMO (Appendix A) establishes mitigation ratios for impacts to habitats (i.e., natural communities) in the Plan area. The mitigation ratios (Table 7-1) for this Plan assist in directing development impacts to areas outside the PAMA, and away from the most sensitive habitat types. This is done by establishing more favorable mitigation ratios for impacts outside the PAMA and requiring conservation within the PAMA.

Table 7-1. Mitigation Ratios for Unavoidable Impacts to Habitat

	Impacted Land in PAMA	Impacted Land outside PAMA
TIER I	2:1	1:1
TIER II	1.5:1	1:1
TIER III	1:1	0.5:1

Natural communities are combined into tiers for the purpose of assigning mitigation ratios (see Appendix A, Attachment D). The tier level for each natural community was determined according to its relative rarity and value to sensitive species. In addition to mitigation for habitat types, other species-specific mitigation measures may apply.

Crediting of on-site open space outside of the PAMA will not generally be permitted since it does not contribute to the long-term conservation of natural communities and species in the Plan area. The County may grant an exception for any of the following circumstances.

- A significant population of a narrow endemic species is present on-site.
- A vernal pool is located on site.
- The requirement to purchase off-site open space would result in the applicant being deprived of all reasonable economic use of the property in violation of federal or state constitutional prohibitions against the taking of property without just compensation. In this case, an exception may be granted in order to accommodate development.

On-Site Mitigation with Agricultural Lands. Where a project within the PAMA contains agricultural lands that are important for creating a functional preserve (e.g., adequate corridor

widths, natural land buffers), these agricultural areas can be credited toward mitigation of impacts to Tier III habitat in the project area. Agricultural lands credited as mitigation must follow management practices that maintain the biological functions identified for that area, as described in Appendix I.

In-kind Mitigation. In-kind mitigation is required for several vegetation communities due to their rarity and/or irreplaceability. In-kind mitigation requires mitigation of a particular habitat type with the same habitat type (e.g., riparian with riparian, or oak forest with oak forest) to ensure adequate conservation of these rare vegetation communities. Some of the vegetation communities that require in-kind mitigation include Engelmann oak woodlands due to the fact that the core of the global distribution of is within the Plan area. Wetlands also require in-kind mitigation because each type provides a unique set of functions and values (e.g., habitat for different plants and animals, water treatment, water storage and conveyance), which must be maintained to achieve a no net loss of these functions and values as required by law. Other communities that require in-kind mitigation include: Southern maritime chaparral, Maritime succulent scrub, and grasslands, which all have very limited distributions and contain a variety of listed and unique endemic species.

7.3. Wetlands Conservation

The Plan will achieve no net loss of wetland habitats through the avoidance, minimization, and mitigation measures. These terms are consistent with the federal policy of no net loss of wetland functions and values, and the Environmental Protection Agency's (EPA) 404(b)(1) guidelines (40 C.F.R. Part 230). Compliance with these terms will constitute the full extent of mitigation measures for the take of Covered Species required or recommended by the USFWS pursuant to the ESA, NEPA, and by CDFG pursuant to the NCCPA and CEQA. The wetland communities that occur within the Coastal Zone also include areas subject to section 30233 of the California Coastal Act and applicable Local Coastal Plan regulations.

Resource Protection Ordinance (RPO). The County regulates wetlands according to the RPO, which applies to most discretionary projects throughout the unincorporated area. The RPO generally requires wetlands to be avoided, except under specific circumstances. Unavoidable impacts must be mitigated at a 3:1 mitigation ratio, with at least 1 part creation; the other 2 parts can be restoration or enhancement. For projects within the Plan area that are subject to RPO, the requirements of the Plan will be satisfied by meeting Project Design and Preserve Design Criteria (Section 7.2; BMO) and mitigating wetland impacts to achieve no net loss of wetland functions and values.

Compliance will be ensured throughout the Plan area in the course of individual project entitlement reviews and the associated CEQA process, pursuant to the RPO and the County's CEQA Guidelines (County of San Diego, 2007c). The development review process will provide an evaluation of wetlands avoidance and minimization and will ensure that mitigation occurs within the watershed for unavoidable impacts to wetlands, thereby achieving no net loss of wetland functions or values in the region. These wetland policies will apply only to wetlands and projects as described in the RPO. The RPO will also be modified to add that when a

biologically superior alternative exists, impacts to RPO defined wetlands may be allowed (Appendix B).

Federal and State Regulations. Aside from the County's wetlands conservation policies, wetlands are afforded protection under existing federal and state policies. The federal Clean Water Act (CWA), the California Porter-Cologne Water Quality Control Act and the California Fish and Game Code (CFG Code) provide protection to wetland habitats and species through various regulatory permitting processes and agreements. Where applicable, project proponents must submit an application for and receive federal CWA section 404 permit and/or state CDFG Code section 1600 agreement prior to impacting most wetlands. Additionally, all applicants should contact the RWQCB for any water discharge requirements prior to allowing any discharges (aside from rainwater) to discharge to a conveyance system or waterway.

Mitigation for an impact to wetlands must be consistent with the federal policy of no net loss of wetland functions and values, and section 404(b)(1) guidelines (40 C.F.R. Part 230). Habitats and species that are the subject of these permits require, as conditions of their approval, conservation and/or mitigation resulting in avoidance or functionally equivalent mitigation. State guidelines for wetland permitting also adhere to a no net loss policy for wetland acreage, functions and values. The CFG Code (section 1600 et seq.) states that projects which substantially alter the flow, bed, bank, or channel of any river, stream or lake should first notify the CDFG, which may determine that a Streambed Alteration Agreement is required. As part of the County's wetland conservation policies, compliance with conditions of the federal CWA section 404 permit and state section CFG Code 1600 agreement must be demonstrated prior to issuance of a grading permit.

Projects regulated by federal agencies will continue to be subject to section 7 consultations under the Endangered Species Act (ESA). Projects subject to a section 7 consultation will be evaluated to insure that the project is consistent with the conservation goals and requirements of this Plan. Projects undergoing section 7 consultations that are consistent with the provisions of this Plan may receive Take Authorization for covered wetland species subject to incidental take through the County's permit.

Wetland mitigation. Mitigation for wetlands is not intended to result in additive or duplicative mitigation requirements for the same wetlands impacts evaluated under the federal and/or state wetland permitting process. Thus, the County preserves the right to provide flexibility in the CEQA mitigation analysis and the Mitigation Monitoring and Reporting Program requirements. Specifically the County's process will enable a project applicant to utilize the mitigation measures imposed by a federal or state agency for the wetlands impacts, provided that the federal or state agency mitigation measures are equivalent or greater than those imposed by the County through this Plan.

Wetland-Obligate Species. Table 7-2 contains a list of species dependent on open water or wetland vegetation communities for their survival. Conservation levels for the wetland-obligate species listed below was analyzed based on the criteria governing wetlands.

Table 7-2. Wetland Obligate Species Covered by the Plan

Common Name	*Scientific Name*	Wetland Habitat Types
PLANTS		
Orcutt's brodiaea	*Brodiaea orcuttii*	riparian, vernal pools
San Diego button-celery	*Eryngium aristulatum var. parishii*	vernal pools
Little mousetail	*Myosurus minimus*	vernal pools
Spreading navarretia	*Navarretia fossalis*	vernal pools
INVERTEBRATES		
San Diego fairy shrimp	*Branchinecta sandiegonensis*	vernal pools
Harbison's dun skipper	*Euphys vestries harbisoni*	freshwater marsh, riparian
Riverside fairy shrimp	*Streptocephalus wootoni*	vernal pools
REPTILES & AMPHIBIANS		
Southwestern pond turtle	*Clemmys marmorata pallida*	open water, riparian
Arroyo toad	*Bufo californicus*	riparian, unvegetated channels
Western spadefoot toad	*Spea hammondii*	freshwater marsh, vernal pools
California newt	*Taricha torosa torosa*	riparian
Two stripe garter snake	*Thamnophis hammondii*	riparian, vernal pools
BIRDS		
Tricolored blackbird	*Agelaius tricolor*	riparian, freshwater marsh
Southwestern willow flycatcher	*Empidonax traillii*	riparian woodlands
Yellow-breasted chat	*Icteria virens*	riparian woodlands
Osprey	*Pandion haliaetus*	open water
White-faced ibis	*Plegadis chihi*	freshwater marsh, estuaries, salt marsh
Light-footed clapper rail	*Rallus longirostris levipes*	freshwater and saltwater/alkali marshes
Least Bell's vireo	*Vireo bellii pusillus*	riparian woodlands

7.3.1. Wetland Buffers

Wetlands preserved pursuant County policies and this Plan must be adequately protected to ensure the functions and values of the wetland are maintained if the surrounding uses intensify. Wetlands should be considered in the overall preserve design of a project in order to ensure the continued functions and values of wetlands conserved on-site. However, because of the linear nature of riparian wetlands and the topographical constraints to development, some wetland areas will inevitably be adjacent to development. Thus, development can diminish the functions and values of a wetland ecosystem because of the intensity of the adjacent human activities there. Biological buffer areas are a well documented method of protecting certain wetland functions and values (Castelle et al., 1992), such as, water quality (Mahony and Erman, 1981), foraging habitat for nesting birds (ERCE and RECON, 1991), noise impacts to breeding birds (Harris, 1985), and non-native predators or parasites (Kus, 1999).

The width of wetland buffers will be determined based on the functions and values present in the wetland area that it serves to protect. Wetland buffers can vary and shall be measured from the edge (i.e., dripline) of the wetland. Buffer widths will be determined using the RPO and the County's CEQA Guidelines for Biological Resources (County of San Diego, 2007c) in effect at the time of plan implementation and the same buffer widths will be required throughout the life of the plan. Buffer widths will not be allowed to be below 50-feet. Compatible uses within wetland buffers are also described in the RPO. For example, a 50-foot buffer would be appropriate for a lower quality wetland with no sensitive species present and little hydrophytic vegetation. Wider buffers (100-200 feet) are more appropriate for higher quality wetlands such as those within regional wildlife corridors or wetlands that support significant populations of sensitive species.

7.3.2. Vernal Pool Policy

Additional protective measures to be implemented in the conservation of vernal pools are provided in this Plan. Impacts to vernal pools and their watersheds in naturally occurring complexes shall be avoided to the maximum extent practicable, unless it would constitute a taking of property or if the Downtown Ramona Vernal Pool Policy (Section 7.3.3) applies. Conservation of vernal pools must avoid impacts to vernal pool watersheds. A minimum planar buffer of 100 feet from the vernal pool watershed to development shall be incorporated to minimize adverse changes to vernal pool hydrology. Unavoidable impacts shall be mitigated by creating (including restoring damaged historical vernal pools) vernal pools at a 1:1 ratio and restoring/enhancing vernal pools at no less than the ratio prescribed for Tier I habitats in the BMO(Appendix A). Impacts to vernal pools in the vicinity of downtown Ramona shall be mitigated consistent with Section 7.3.3.

Definition. Vernal pools are defined as seasonally flooded depressions that support a distinctive living community adapted to extreme variability in hydrologic conditions (seasonally very dry and very wet conditions). Vernal pools must meet both of the following conditions: (1) the basin is at least partially vegetated during the normal growing season or is unvegetated due to heavy clay or hardpan soils that do not support plant growth or due to degradation by anthropogenic activities; and (2) the basin contains at least one vernal pool obligate species (i.e., species which occur primarily in vernal pools; see Table 7-3).

Table 7-3. Vernal Pool Indicator Species

Vernal Pool Obligate Species (species restricted to vernal pools)		
Animals	Eryngium aristulatum ssp. parishii	Phalaris lemmonii
Branchinecta sandiegonensis	Isoetes howellii	Pilularia americana
	Isoetes orcuttii	Plagiobothrys acanthocarpus
Plants	Juncus uncialis	Plagiobothrys bracteatus
Agrostis tandilensis [non-native]	Mimulus latidens	Plagiobothrys leptocladus
Alopecuris saccatus (= A. howllii)	Myosurus minimus var. apus	Plabiobothrys undulates
Crassula solieri	Myosurus minimus var. filiformis	Pogogyne abramsii
Downingia concolor	Navarretia fossalis	Pogogyne nudiscula
Downingia cuspidata	Navarretia prostrata	Psilocarphus brevissimus
Epilobium pygmaeum (=Boisduvalia glabella)	Orcuttia californica	Psilocarphus tenellus
Vernal Pool Associate Species (species often found in vernal pools but also occurring in other wetland habitats)		
Animals	Juncus phaeocephalus	Mimulus guttatus
Streptocephalus wootonii	Lasthenia glabrata (ssp. coulteri and glabrata)	Montia fontana
	Lepidium latipes	Muilla clevelandii (= Bloomeria c.)
Plants	Lepidium nitidum	Nama stenocarpum
Blennosperma nanum	Lilaea scilloides	Phalaris lemmonii
Brodiaea filifolia	Limnanthes gracilis ssp. parishii	Phalaris paradoxa [non-native]
Brodiaea orcuttii	Lythrum hyssopifolium [non-native]	Plagiobothrys stipitatus
Callitriche marginata (=C. longipedunculata)	Eleocharis acicularis	Plantago elongata (= P. bigelovii)
Centunculus minimus (=Anagallis minima)	Eleocharis macrostachya	Polygonum polygaloides ssp. polygaloides
Chamomilla occidentalis (Matricaria o.)	Frankenia salina [alkali playas]	Polypogon interruptus [non-native]
Crassula aquatica (=Tillaea a.)	Gnaphalium paulustre	Polypogon monspeliensis [non-native]
Cressa truxillensis	Grindelia camporum var. camporum	Potamogeton pusillus
Crypsis schoenoides [non-native]	Hesperevax caulescens	Ranunculus bonariensis var. trisepalus (= R. alveolatus)
Crypsis vaginiflora [non-native]	Hordeum depressum	Sagina decumbens ssp. occidentalis
Deschampsia danthonioides	Hordeum intercedens	Sibara virginica
Echinodorus berteroi	Juncus bufonius	Spergularia macrotheca var. leucantha
Elatine brachysperma	Juncus kelloggii	Stachys ajugoides
Elatine californica	Malvella leprosa	Trifolium variegatum
Elatine rubella	Mimulus guttatus	Veronica peregrina ssp. xalipensis

The above list is adapted from Bauder (1993), U.S. Army Corps of Engineers (1997), and Keeler-Wolf *et al*. (1998) for species occurring in vernal pools within San Diego County. Additions and interpretations were made by County staff biologists (T. Oberbauer and J. Buegge) in 2007.

Surveys. Any project being permitted by the County and likely to impact a vernal pool must be assessed by a qualified biologist to give factual evidence to support or contradict the presence of vernal pools. Surveys must follow the County's biological survey guidelines and assess potential for vernal pools to exist in areas where they are likely to occur. If general site assessments produce convincing evidence that site conditions will not support vernal pools based on soils, topography, species observed, and/or hydrology, then no further surveys will be required. If general site assessments indicate the possibility of vernal pools, then biological surveys must be performed at the appropriate time of year and according to current County standards to determine the presence of vernal pools according to the definition presented above. Surveys for listed species should be performed in accordance with USFWS protocols that apply. In addition, vernal pools should be mapped and the area of the vernal pool basin and watershed measured. If mitigation is going to occur, the vernal pools on the mitigation site should be surveyed during the same season to ensure consistency of measurements.

Exceptions. Impacts to low quality vernal pools may be allowed using the criteria outlined below, subject to RPO and federal and state wetland permitting. Vernal pool quality must be thoroughly analyzed in the project's biological technical report, based upon the best available scientific information and reviewed by the County staff biologists. Not all low-quality factors are required to make a low quality determination; alternatively, the presence of any significant (in amount or degree) factor may preclude a determination of low quality. The following guidelines shall be used to determine whether vernal pools are low quality.

- Low diversity and numbers of native flora and fauna present.
- High relative abundance of exotic plant (>50% relative cover) or animal species (large, persistent populations).
- No endangered or rare vernal pool species, as identified in the following list: *Brodiaea orcuttii+, Downingia cuspidata,Eryngium aristulatum ssp. parishii, Myosurus minimus var. apus, Navarettia fossalis, Orcuttia californica, Pogogyne abramsii,Pogogyne nudiuscula, Streptocephalus woottonii**

  +When within vernal pool basins and watersheds.
  * When within vernal pools.

- Water quality compromised by existing uses or pollutants within vernal pool watershed.
- Historic basins not distinguishable.
- Water holding capacity is compromised by altered topography, soil composition, irrevocably damaged hardpan or clay substrate, or altered vernal pool watershed.
- Few basins with a cumulatively small amount of habitat (basin surface area) relative to other nearby vernal pool complexes.
- Basins isolated from areas of native pollinators (i.e., intact surrounding native uplands).

Impacts to low quality vernal pools may be allowed if an alternative achieves a superior biological result. The exception would only be granted if it is determined that impacts to lower quality biological resources are acceptable in exchange for the mitigation offered to not only offset the loss of the resources, but to also appreciably increase the overall long-term function

and value of the type of resources being impacted. Projects impacting low quality vernal pools may qualify for a wetland exemption if it meets all of the following requirements:

- The wetland resources being impacted by the proposed project are of low biological quality,
- The proposed project and mitigation result in a biologically superior net gain in overall functions and values for the type of wetland resource being impacted, and
- The Wildlife Agencies have concurred that the alternative is indeed biologically superior.

Restoration. Vernal pool restoration or enhancement will require the applicant to prepare a vernal pool restoration plan (similar to a revegetation plan) to the County. The goal of these efforts should be to replace the functions and values of impacted vernal pools with equivalent or higher-quality vernal pools. Impacts and restoration efforts will be measured based on the area (i.e., square footage) of the vernal pool basin, as measured at the waters edge during maximum water holding capacity in the wet season. All restoration efforts must demonstrate a replacement of equivalent or greater functions and values to the vernal pools impacted. Vernal pools on the impact site and mitigation site should be surveyed during the same season to ensure consistency of measurements.

Mitigation for vernal pools must occur in areas capable of supporting vernal pools, as indicated by presence (extant or historical) of vernal pools on-site or nearby. Enhancement of degraded vernal pools may also be used as mitigation if they are either: (1) low quality vernal pools as indicated by the criteria above; or (2) expanded in terms of vernal pool basin area. Creation of vernal pools – constructing vernal pools where they did not historically occur – should not be considered a valid mitigation measure since these have a low long-term sustainability.

Restoration or enhancement of vernal pools must increase the functions and values of extant vernal pools by providing one or more of the following measures.

- Remove non-native plants from vernal pool basin and watershed.
- Remove or control pollutant sources in the vernal pool basin and/or watershed.
- Restore natural topography and hydrology in a vernal pool basin and/or watershed.
- Re-introduce vernal pool species to pools where they are lacking (see notes below).

Salvage Material. Vernal pools that are impacted must also be evaluated for their ability to contribute biological material to vernal pool mitigation sites. If biological surveys of a site reveal that vernal pool indicator species (Table 7-3) are present, the value of salvaging propagules must be evaluated by a qualified biologist. If rare species are present, then propagules must be collected and deposited at an appropriate site. Salvaged material must be carefully collected, inspected to assure purity (i.e., correct species and absence of non-target species, especially weeds), documented, and stored by a biologist with demonstrated abilities in vernal pool restoration. Receptor sites for propagules should be evaluated to determine if introduction of a species or genetic race of a species would be compatible with that of a vernal pool basin.

Introduction of soil containing fairy shrimp cysts should only occur from vernal pools within the same geographic area that has similar hydrological and physical characteristics to the receiver pools to maximize long-term survival of transplanted species. This will ensure that the genetic integrity of the meta-population is maintained (Bohanak 2005).

Other Permits. This Plan only addresses County permits and Incidental Take permits for listed species. Wetland or water quality permits may be required from other agencies, such as the USACE and RWCQB, for impacts to seasonal wetlands including vernal pools. The County will work with these agencies to potentially streamline permitting from these agencies as well. Currently, the USACE generally takes jurisdiction of seasonal wetlands if they are connected to other "waters of the United States" and does not generally take jurisdiction over isolated wetlands. The RWQCB can take jurisdiction over isolated waters and require conformance to their regulations before issuing a permit allowing impacts to these wetlands.

7.3.3. Downtown Ramona Vernal Pools

Given the sensitive nature of vernal pools and the associated endangered species that reside within this habitat, a balance needs to be attained between growth and habitat protection within downtown Ramona. Working towards this goal, the County obtained a $75,000 grant from the U.S. Environmental Protection Agency Wetlands Protection Development Program. These funds were used to hire a consultant to develop maps and profiles, and to propose protection plans for vernal pools in Ramona. The goal of the Ramona vernal pool study (TAIC and EDAW, 2005) was to identify which vernal pools have reasonable prospects for long-term viability and those which are susceptible to uncontrollable external disturbances. Vernal pools susceptible to disturbances would then be considered for appropriate mitigation in exchange for impact/development of the area. The results from the study provided a rank of all the vernal pools in the Ramona area based on current knowledge of biological resources, surrounding land uses, and proximity to other vernal pools. Special criteria apply to vernal pool impacts in the downtown Ramona area (Figure 7-2), which are described below. These criteria apply only in the downtown Ramona area and recommendations are based on data collected for this area as a result of the special existing circumstances.

Ramona Vernal Pools. In Ramona, vernal pools are associated with clay soils and water normally remains pooled for at least 10 days after significant rain events (i.e., those depositing at least one inch of precipitation on previously moist soil); for swale systems, pools normally hold water for at least 10 days after surface flows cease. The dominant water source for vernal pools is direct precipitation falling during the winter months, which then dissipates mostly through evaporation during spring and summer. Historically, the majority of Ramona vernal pools occurred on Placentia soils. These are now represented mainly by remaining pools in the downtown area and about 20 pools south of Ramona Airport. Many of the Placentia-soil vernal pools were historically associated with mima mound topography (alternating hummocks and depressions), as seen in historical aerial photographs. However, the majority of the vernal pools that have been preserved in Ramona occur in swale-type areas or on different soil types, such as Fallbrook- or Bonsall-series sandy loams.

Downtown Ramona Pools. Currently, vernal pools in downtown Ramona are found mostly in isolated locations across the landscape. Many of the remaining pools are found in vacant lots or backyards. It is estimated that of the 50 to 70 vernal pools remaining in the downtown area, 40 to 50 would require some type of off-site mitigation for development to occur.

Downtown Conservation Strategy. To adequately address the conservation needs of sensitive vernal pool species in downtown Ramona (not including impacts to vernal pools on lands outside the land use jurisdiction of the County), a mitigation bank will be established to adequately protect and restore a representative and viable sample of this habitat type. To conserve the genetic diversity of Ramona vernal pools the following factors have been considered: basin topography, accessibility to pollinators, and soil type. Representation of different types of basins (e.g., deep and shallow, large, and small) is important to assure adequate conservation of the sensitive species found in these pools since different basin types support varied assemblages of species. Accessibility to pollinators is also important to assure the continued survival of vernal pool plant species by assuring adequate gene flow and seed set. It is also vital to preserve an adequate number of pools on representative soil types. The mitigation bank will total 20-30 acres and have vernal pools distributed throughout. The mitigation bank will require more detailed planning for restoration of vernal pool habitat but should initially meet the following minimum characteristics:

- Located in the vicinity of downtown Ramona (within approximately 0.5 miles of the area shown in Figure 7-2);
- Currently or historically supported vernal pools;
- Soils are predominantly of the Placentia type; and
- The total area of the undeveloped portion of any one site should be at least eight acres (this can include off-site areas that can be assured to remain in open space).

Other desirable characteristics of the mitigation bank, contingent upon availability of such land from willing sellers, are as follows:

- Currently or historically exhibited mima mound topography;
- Total area of the natural, contiguous land on the site is 20 acres or more, or can be restored to this condition (if one conservation site can be found to meet this criterion and the minimum requirements above, it will be sufficient to meet all vernal pool mitigation needs for downtown Ramona);
- Currently contain vernal pools supporting vernal pool indicator species; and
- Does not have above or below ground utilities (and/or easements) over the core portion of the site.

The intent is that this mitigation bank will serve to offset impacts to vernal pools in the downtown Ramona area, providing equivalent or greater functions and values. These actions will enhance vernal pool conservation in the downtown Ramona area where vernal pools are quickly degrading without protection and natural resource management. The mitigation bank will also provide mitigation needs under CEQA for projects in the downtown Ramona area.

Mitigation Bank. Once a mitigation bank has been established, properties in the downtown Ramona area (Figure 7-2) will be eligible to purchase credits to mitigate their impacts to vernal pools and obtain incidental take permits through the County. Vernal pool impacts outside this area (i.e., within other cities or communities outside Ramona and rural lands in the Ramona grasslands area) are not eligible to obtain incidental take permits by purchasing credits within this mitigation bank unless the bank exceeds the criteria set forth above and is approved by the Wildlife Agencies. A complete mitigation bank plan must meet the bank establishment requirements in effect at that time and must include, at a minimum, a thorough restoration and management plan, a long-term funding mechanism, and a description of mitigation credits available.

There are no mitigation ratios prescribed to vernal pools under the downtown conservation strategy. Instead mitigation requirements will be spread out equitably among project proponents impacting vernal pools. To avoid an inequitable division of mitigation requirements, a detailed inventory should be performed for all known vernal pools to determine the number of pools and area of each vernal pool basin (in square feet). This information is available in a database for most vernal pools in Ramona as a result of the Ramona Vernal Pool Study (County of San Diego 2005); however, there are several areas where the status of vernal pools is unknown. Based on current data most of the vernal pools in downtown Ramona, with a few exceptions, are very small (under 500 square feet). The majority of larger vernal pools occur in the grasslands west of the downtown area. An analysis of existing available data suggest that a mitigation ratio of approximately 2:1, based on basin area, would be sufficient to mitigate all of the anticipated impacts to vernal pools in the downtown area and create a vernal pool preserve as described above. The guidelines on salvage material (Section 7.3.2) for impacted vernal pools must also be followed for downtown Ramona.

Potential Mitigation Bank Sites. There are several sites that could fulfill the requirements for this conservation strategy. The vacant lots north of Highway 67 on either side of Kalbaugh Street (currently surrounding the small commercial center) could provide a fragmented eight-acre site and currently supports vernal pools containing San Diego fairy shrimp. The vacant lots north of Highway 67 along 16th Street could provide a nearly continuous site of approximately eight acres; however, this site is currently crossed by several utility lines (including a major water line) and easements and 1.4 acres are isolated from the rest of the site by 16th Street. Preservation of these downtown properties may be possible but faces several serious obstacles, including high land prices, low relative habitat values, high management costs, and considerable community opposition. The vacant land north of Ramona High School and Olive Pierce Middle School is approximately 41 acres and supports 20 vernal pools; however, this land is owned by the Ramona Unified School District and is not subject to the land use jurisdiction of the County. This site currently meets or exceeds all of the criteria above. Other vacant sites known to be comprised of Placentia soils that are near the stated minimum size are located in north Ramona along Olive Street, north of Sonora Way, and in south Ramona near Highway 67 and Rancho Maria Lane. These last two areas are presently used for agriculture. None of these sites are known to have present or historical occurrences of vernal pools.

Special Circumstances. Special considerations can be made in circumstance where pools have been significantly altered or where areas support listed species but do not qualify as vernal pools.

Some vernal pools in downtown Ramona have clearly been enlarged by artificial damming of swales, sometimes occurring off-site. In such circumstances, the basin area requiring mitigation may be reduced based on scientific information supporting these findings. In other cases, pools may have been drained by artificial drainage structures or filled by sediment or debris. In these cases, an increase in the basin area may be warranted to reflect the historical extent of the vernal pool basin. In either of these cases, the intent is to be fair to all property owners and require mitigation for naturally occurring vernal pools.

Pools within dirt roadways, in roadside ditches, or created by artificial damming of swales, may not meet all the criteria in the vernal pool definition, yet may still contain listed species such as San Diego fairy shrimp (*Branchinecta sandigonensis*). Although this is not considered a vernal pool, impacts to listed species must still be addressed. In order to obtain an incidental take permit for impacts to fairy shrimp, the project proponent may mitigate at 1:1 in the mitigation bank set up for downtown Ramona vernal pool impacts, in addition to salvaging material.

7.4. Species-Specific Conservation

The primary focus of this habitat-based Plan is to address biological impacts and mitigation from the perspective of natural communities. However, a number of species require individual conservation measures because they have unique conservation needs that are not adequately met by habitat-based conservation.

7.4.1. Narrow Endemic Policy

A number of "narrow endemic" species (Table 7-4) require specific avoidance and mitigation measures due to their rarity, limited distributions, specific habitat requirements, or a combination of these. The Narrow Endemic Policy requires maximal avoidance for all narrow endemic species as described below. Depending on a particular species' rarity and distribution this policy is applied variably. For example, for very rare species with limited distribution it may be applied to any occurrences in the Plan area. Species that are more common would only have this policy applied for populations found within the PAMA.

Impacts to applicable populations shall be avoided to the maximum extent practicable while maintaining some economic or productive use of the property, as determined by the County and supported by adequate facts. Where complete avoidance is infeasible, encroachment may be authorized depending upon the sensitivity of the individual species and the size of the population except that encroachment shall not exceed 20% of the population.

Translocation/Relocation. Due to the lack of scientific support regarding the success of rare species translocations/relocations, translocation or relocation will not generally be required under the narrow endemic policy. However, this does not preclude the salvage of narrow endemics and their subsequent translocation.

Preserve Design Considerations. Avoided populations (or portions of populations) must include adequate habitat surrounding populations of these species (generally at least 100 feet

from the edge of a plant population and 300 feet around active bird nests) to minimize edge effects from new development, allow for natural expansion and contraction of populations, and provide for the persistence of pollinators and other essential ecological functions. If avoidance is required for a population located outside of the PAMA, that conserved population will be managed as part of the preserve system.

Populations Outside Project Boundaries. Where a population of one of these species extends outside of the project boundaries (i.e., off-site), impact calculations may be adjusted if the project proponent can assure the preservation of a portion of the off-site population. The intent of this policy is to preserve populations of these species, which often occupy areas under multiple ownerships. However, since a project only controls land within its boundaries the 20% impact allowance has been applied to on-site populations in order to limit regulations to the area under direct control of a project proponent and to ensure that all future projects are able to address cumulative impacts to these species. In this way, a project cannot impact 20% of a population, thereby foreclosing potential development opportunities of neighboring properties, without the consent of these neighboring landowners. If a project proponent chooses to pursue conservation of a portion of population off-site, this conservation will be taken into account when calculating the 20% impact. For example, if a population consisted of 10 individuals on-site and the project proponent preserved 10 individuals of that population off-site, this would increase the maximum allowed impact from two to four individuals on-site. However, ultimately no more than 20% of any one population may be impacted.

Table 7-4. Species Subject to the Narrow Endemic Policy

	Common Name	Scientific Name	Limiting Factors	Metric[1]	Where Applied
	PLANTS				
1	San Diego thornmint	*Acanthomintha ilicifolia*	Soil	Occupied area	Plan Area
2	Spineshrub	*Adolphia californica*	Soil	Number of clusters	In PAMA
3	San Diego ambrosia	*Ambrosia pumila*	Restricted Distribution	Occupied area	Plan Area
4	Del Mar Manzanita	*Arctostaphylos glandulosa* ssp. *crassifolia*	Restricted Distribution	Number of individuals	Plan Area
5	Rainbow manzanita	*Arctostaphylos rainbowensis*	Soil and Restricted Distribution	Number of individuals	In PAMA
6	Coulter's Saltbrush	*Atriplex coulteri*	Soil	Number of individuals	Plan Area
7	Parish brittlescale	*Atriplex parishii* var. *parishii*	Soil	Number of individuals	Plan Area
8	Encinitas Baccharis	*Baccharis vanessae*	Restricted Distribution	Number of individuals	Plan Area
9	San Diego goldenstar	*Bloomeria clevelandii*	Soil	Occupied area	In PAMA
10	Thread-leaf brodiaea	*Brodiaea filifolia*	Soil	Occupied area	Plan Area
11	Orcutt's brodiaea	*Brodiaea orcuttii*	Restricted Distribution	Occupied area	In PAMA

	Common Name	Scientific Name	Limiting Factors	Metric[1]	Where Applied
12	Southern tarplant	*Centromadia parryi* ssp. *australis*	Soil	Occupied area	In PAMA
13	Orcutt's Spineflower	*Chorizanthe orcuttiana*	Restricted Distribution	Occupied area	Plan Area
14	Short-leaf dudleya	*Dudleya blochmaniae* ssp. *brevifolia*	Restricted Distribution	Occupied area	Plan Area
15	Chaparral beargrass	*Nolina cismontana*	Soil	Number of clusters	In PAMA
16	Gander's butterweed	*Packera ganderi*	Soil	Number of individuals	In PAMA
17	Nuttall's scrub oak	*Quercus dumosa*	Restricted Distribution	Number of individuals	In PAMA
18	Parry's tetracoccus	*Tetracoccus dioicus*	Soil	Number of individuals	In PAMA
	ANIMALS				
19	Tricolored blackbird	*Agelaius tricolor*	Restricted Distribution	Number of breeding pairs	In PAMA
20	Burrowing owl	*Athene cunicularia hypugaea*	Restricted Distribution	Number of breeding pairs	Plan Area
21	San Diego fairy shrimp	*Branchinecta sandiegoensis*	Vernal Pools	Occupied area	Plan Area[2]
22	Cactus wren	*Campylorhynchus brunneicapillus*	Nesting plant	Cactus patch area	Plan Area
23	Southwestern pond turtle	*Clemmys marmorata pallida*	Restricted Distribution	Number of individuals	Plan Area
24	Stephens' kangaroo rat	*Dipodomys stephensi*	Restricted Distribution	Number of individuals	Plan Area
25	Quino checkerspot butterfly	*Euphydryas editha quino*	Host plant	Occupied area of host plant	Plan Area
26	Harbison's dun skipper	*Euphys vestris harbisoni*	Host plant	Occupied area of host plant	In PAMA
27	Hermes copper	*Lycaena hermes*	Host plant	Occupied area of host plant	Plan Area
28	Riverside fairy shrimp	*Streptocephalus woottoni*	Vernal Pools	Occupied area	Plan Area[2]

Notes:

[1] This column represents the suggested metric for calculating impacts to species populations. For example, 20% encroachment of a San Diego thorn-mint population would be calculated based upon the area occupied by the population whereas 20% encroachment of a Del Mar manzanita population would be calculated based upon the number of individuals present.

[2] This does policy does not apply to the Downtown Ramona vernal pool area as shown in Figure 7.2 and discussed in section 7.3.3.

Exceptions. There may be cases where strict compliance with the Narrow Endemic Policy is not feasible or where higher priority conservation objectives could be achieved if impacts are allowed. Examples may include:

- Small populations where any encroachment would exceed 20%;
- Small populations where any encroachment would compromise the integrity of the remainder of the population;
- Populations that are already threatened by existing conditions such that the population is not currently viable; or
- Physically constrained sites where the only developable area is where the population is located.

In the above situations, acquisition of the property should be considered if the applicant is a willing seller. Otherwise, the applicant can request an exception to this policy from the County. The request must include an analysis (included in the project's environmental document) that should be based on information provided in the Conservation Analysis (Volume II) and any new scientific information available on the species. This request must meet all the following criteria, as substantiated by facts.

1. Complete avoidance of the population or occurrence is infeasible.
2. The proposed exception is the minimum exception necessary to accommodate development.
3. The exemption does not preclude the County's ability to meet its conservation objectives for the affected species. (This should include a description of the impact to the species relative to its distribution and abundance.)
4. In-kind mitigation can be achieved by preserving at least three times the amount of the species or occupied habitat as was impacted, which will result in a viable population.

After the County has reviewed and approved this request, the County will submit the proposal to the Wildlife Agencies for their concurrence. The Wildlife Agencies must concur in order to allow the exemption.

7.4.2. Fully Protected Species

Impacts to fully protected species (Table 7-5) must be avoided. Lethal take for these species will not be authorized under this Plan.

Table 7-5. California Fully Protected Species in Plan Area

SPECIES COMMON NAME	SCIENTIFIC NAME	In Plan Area
BIRDS		
American peregrine falcon	*Falco peregrinus anatum*	No nesting. Only migratory.
Brown pelican (=California brown pelican)	*Pelecanus occidentalis (=P. o. occidentalis)*	No nesting. Only migratory.
California least tern	*Sterna albifrons browni (=Sterna antillarum browni)*	Nesting
Golden eagle	*Aquila chrysaetos*	Nesting
Light-footed clapper rail	*Rallus longirostris levipes*	Nesting
California condor	*Gymnogyps califonianus*	No recent records
Greater sandhill crane	*Grus candadensis tabida*	Nesting
White-tailed kite	*Elanus leucurus*	Nesting

7.4.3. Other Sensitive Species

Sensitive plant populations. Sensitive plant populations must be avoided to the maximum extent practicable within the PAMA. These include covered plant species and County sensitive plants from Group A or B (County of San Diego Sensitive Species List; Appendix H). Habitat-based mitigation is generally sufficient for mitigation of impacts to County sensitive plants from Group C or D (County of San Diego Sensitive Species List; Appendix H).

Covered sensitive animal species. Covered animal species (Table 6-2) must be avoided the maximum extent practicable within the PAMA. Where impacts are unavoidable, species-specific minimization or mitigation measures are required. Several animal species, when present, require species-specific mitigation measures such as breeding season avoidance and/or species-specific mitigation off site (BMO §86.517(d). These measures are required due to the particular needs of these animal species that would not be adequately mitigated through habitat-based mitigation alone.

7.5. Exceptions and Exemptions

7.5.1. Certificates of Inclusion *(Section under development)*

To receive coverage for the activities listed as exceptions and exemptions in this section, property owners will need to obtain a certificate of inclusion. The process for obtaining this certificate is as follows: *under development*. Upon obtaining the certificate of inclusion, take coverage will be conveyed.

7.5.2. Agricultural Polices

Agricultural lands such as farms, ranches and orchards, while often having relatively low value for native species, can serve as habitat, corridors, or buffer zones for endangered, threatened, or otherwise sensitive species. An important County goal is for this Plan is to streamline the regulatory environment for agricultural landowners while conserving habitat. This section addresses strategies for the conservation of important biological values on agricultural lands.

Plan goals relevant to agricultural lands are listed below.

- Maintain existing habitat and agriculture within the PAMA
- Recognize that existing agriculture may have some habitat value that can contribute to regional conservation by: (1) maintaining existing agriculture in and surrounding important natural lands to provide a buffer from urban edge effects to core and linkage areas and (2) maintaining existing agricultural lands in areas where they can provide important habitat elements for key sensitive species (e.g., Stephens' kangaroo rat, arroyo toad, burrowing owl)
- Gain coverage for take of covered species as a result of legally operating agricultural operations in the Plan area.
- Reduce regulatory burdens on legally operating agricultural uses in the Plan area.
- Maintain flexibility of crop types within the Plan area to ensure economic viability of agricultural operations.

The agricultural policies of this Plan recognize the value of agriculture to the County, but are primarily designed to provide protection for sensitive wildlife in the area. In designing this Plan, it was the County's intent to recognize the intrinsic value of agriculture to wildlife and work with the agricultural industry as a whole. Agricultural lands that are likely to provide arroyo toad habitat are depicted in Figure 3-3 as those lands with "moderate" value, while natural lands have "very high" or "high" values.

This Plan is intended to give certain assurances and legal protection to participants by permitting the Incidental Take of covered endangered and threatened species. Agricultural lands can be granted ongoing Incidental Take of covered endangered and threatened species through this program by complying with existing County regulations and following Best Management Practices (BMP) outlined in Table 7-6. This Take Authorization is important for farmers and ranchers because normal farming activities such as grazing and tilling can result in Incidental Take. Incidental take resulting from pesticide or herbicide use will not be covered.

This Plan also allows the establishment or expansion of agricultural operations into areas with lower value habitat values with fewer regulations than currently exist, while maintaining the existing level of requirements for establishment or expansion of agriculture in areas more important to wildlife. The agricultural policies of the Plan are designed to complement other programs that benefit agriculture such as the San Diego County Farming Program and the Williamson Act.

7.5.3. Agricultural Lands Outside the PAMA

Best Management Practices. Existing legal agricultural operations located outside of the PAMA will receive Take Authorization for all Covered Species for their ongoing current

operations, including changing crop types and agricultural land uses, provided they follow the applicable BMPs (Table 7-6)

Expansion of Agriculture. There is an interest for agricultural operations to expand onto vacant lands in the Plan area. An obstacle to this expansion has been the cost of mitigating for loss of natural habitat lands under existing regulations. Current regulations require discretionary projects, such as agriculture-related grading and clearing permits, to mitigate for habitat losses. This Plan will assist agricultural expansion by allowing habitat losses in some areas without requiring mitigation according to the following policy.

Agriculture Expansion Policy. Outside of the PAMA, the clearing of natural habitat for establishment of agricultural operations will not require mitigation for habitat loss if an agricultural conservation easement is dedicated over the site being cleared and if there is no clearing of Tier I habitats or impacts to narrow endemic species. A minimum of 3000 acres of Tier II and Tier III vegetation communities outside PAMA will be exempted from mitigation requirements under this Plan. At the time that acreage has been reached, additional mitigation waivers can be granted based on the "rough step" (Section 5.4.3) conservation of habitat types. For vegetation communities where cumulative conservation has outpaced the anticipated cumulative impacts by more than 10% (according to most recent annual report), an equivalent acreage (in excess of the 10% over rough step) of that vegetation community is eligible for agricultural exemptions; see formula below.

ACRES EXEMPT = (ACRES CONSERVED) – (1.1 * ROUGH STEP PROPORTION * ACRES IMPACTED)

For example, the rough step proportion for chaparral conservation to impact is 2.1847:1. If 20,000 acres have been conserved and only 5,000 acres impacted, this would represent 7,984 acres of chaparral eligible for exemptions. These additional exemptions must not preclude the attainment of the biological goals of this Plan. The establishment or expansion of agricultural operations on land that is not natural habitat (i.e. developed or disturbed lands) does not require mitigation under this Plan. Other requirements, such as CEQA may still apply.

Biological surveys for Tier I habitats and narrow endemics must first be performed to assess areas that may need to be avoided in order to allow Take Authorization for Covered Species and to assure compliance with wetland regulations. If suitable habitat is present for any of the following species, clearing must take place when impacts can be minimized as specified in the BMO (§86.519): Coastal cactus wren, Burrowing owl, California gnatcatcher, Least Bell's vireo, Southwestern willow flycatcher, and Arroyo toad.

Easements. Land cleared pursuant to this expansion policy must record an agricultural conservation easement at the time of clearing. An agricultural conservation easement is a restriction that landowners voluntarily place on their property that limits the use of that property to agricultural uses (Section 5.3.6). The easement is tied to the property and remains in place in perpetuity, even if the property ownership changes. This Plan does not intend to restrict the type of agricultural operation within the easement, as long as it meets the definition of agriculture.

Should the property owner wish to vacate the agricultural conservation easement a predefined requirement to preserve habitat within the PAMA will need to be met prior to vacating the

easement. This exit strategy shall be a condition of the easement and determined at the time of dedication of the easement to preserve the equivalent acreage of natural habitat as the area cleared under the exemption. If a landowner converting their natural habitat to agricultural operations outside the PAMA does not wish to place an agricultural conservation easement, they may mitigate for the loss of habitat according to the BMO.

Development. Existing agricultural operations located outside of the PAMA that are converting to non-agricultural land uses (such as residential development) must address current CEQA regulations and County ordinances.

7.5.4. Agricultural Lands Inside the PAMA

Best Management Practices. Existing legal agricultural operations located inside of the PAMA will receive Take Authorization for all Covered Species for their ongoing current operations, including changing crop types and agricultural land uses, provided they follow the applicable BMPs (Table 7-6).

Expansion of Agriculture. Inside the PAMA, the clearing of natural habitat for establishment of agricultural operations will require mitigation for habitat loss in accordance with the BMO. The establishment or expansion of agricultural operations onto land that is not natural habitat (i.e. agriculture, developed or disturbed lands) does not require mitigation under this Plan.

Development. Existing agricultural operations located inside the PAMA that are converting to non-agricultural land uses (such as residential development) through the discretionary land use process must consider the value of the agricultural land to wildlife. While agricultural lands may provide substantial wildlife value that requires avoidance in order to meet preserve design standards in the BMO. Agricultural uses, however, would continue to be allowed provided that applicable BMPs (Table 7-6) are followed.

Additionally, if the agricultural land being converted provides habitat for the Arroyo toad, then the loss of this species habitat must be mitigated in accordance with the BMO(§86.519(c)). Note that in implementing these requirements, it may be appropriate to count preservation of agricultural lands as one part of the required mitigation and restoration of Arroyo toad habitat on former agricultural lands as another part of the mitigation requirement. This would be appropriate if such restoration would result in a net increase in habitat value for the arroyo toad as supported by adequate facts.

7.5.5. Policies Related to Grazed Lands

Grazed lands are a unique category of agriculture because grazing can occur on natural lands as well as on cultivated land. For the purposes of this Plan, a differentiation has been made based on whether the land is irrigated. Non-irrigated grazing lands are most often mapped as grasslands (Holland Code 42000 series), although, other vegetation types may apply. Permanent impacts to these natural communities require mitigation consistent with Section 7.2.1. Irrigated grazing lands, or pastures, have been mapped as agricultural lands (Holland Code 18000 series) and

would not require habitat-based mitigation (Section 7.2.1). This differentiation is not intended to overlook these agricultural uses or the role of grazing on non-irrigated pastures, but is an indication of the higher relative habitat value on non-irrigated grazing lands compared to other types of agriculture.

Existing grazed lands are eligible to receive the same benefits of other agricultural lands by following the BMPs (Table 7-6) and applicable County ordinances. Special attention must be given to BMPs specific to the Stephens' kangaroo rat.

Table 7-6. Agricultural Best Management Practices

Agricultural Activities	
Weed Control	• Utilize Integrated Pest Management principles for decision making with regard to pest management. Including, but not limited to: • Use targeted herbicides rather than broad-spectrum herbicides. • Herbicide application must follow current County, State and Federal laws. Label instructions must be followed. Commercial applicators must have an appropriate license.
Pest Control (rodents, insects)	• Utilize Integrated Pest Management principles for decision making with regard to pest management. Including, but not limited to: • Use targeted pesticides rather than broad-spectrum pesticides. • Follow the guidelines for insecticide use described in "Protecting Endangered Species: Interim Measures for Use of Insecticides in San Diego County" (USEPA, 1998). This bulletin describes specific restrictions on the use of insecticides by geographic areas. • Pesticide application must follow current County, State and Federal laws. Label instructions must be followed and pesticides must be registered for agricultural use. Commercial applicators must have an appropriate license. • Avoid use of pesticides in areas occupied with Stephen's kangaroo rat or burrowing owls.
Specific Activities within Suitable Upland Habitat for Arroyo Toad Suitable upland habitat generally includes friable soils within one kilometer (0.6 miles) of occupied or suitable stream segments where movement is not obstructed by major roads or steep barriers. Known stream segments used as breeding sites include DeLuz Creek, Santa Margarita River, San Luis Rey River, lower Keys Creek, Guejito Creek, and Santa Maria Creek.	
Cultivation of Active Agricultural Areas	• Limit activities to daylight hours (between sunrise and sunset).
Vehicle Traffic	• Establish dirt roads and drive rows and limit vehicle traffic to these, rather than rotating routes traveled by vehicles.
Erosion Control	• When installing sand or silt fences, leave or cut openings every 30 to 50 feet to allow small animals to move between streams and surrounding areas. An exception to this is near busy roads or other potential kill zones – sand or silt fences are useful in these areas to

	block Arroyo toad movement into these areas. • When possible, use plant material (e.g., straw wattles) to control erosion instead of sand or silt fences.
Pest Control	• Utilize Integrated Pest Management principles for decision making with regard to pest management, including, but not limited to: o In orchards/groves, limit application of chemical pesticides to specific areas rather than applying broadly. For example, snail pesticides should be applied on or around the trunk of trees. o Apply traps or baits only in active gopher holes. Do not apply these treatments to old or inactive holes as these are utilized by Arroyo toads during the day.
Weed Control	• Utilize Integrated Pest Management principles for decision making with regard to pest management, including, but not limited to: o Avoid use of herbicides. o Use targeted herbicides rather than broad-spectrum herbicides. o In citrus groves, control weeds by mowing rather than tilling or broadcasting herbicides. Herbicide use should be preserved for permanent noxious weeds and applied directly to the plants. o Herbicide application must follow current County, State and Federal laws. Label instructions must be followed. Commercial applicators must have an appropriate license.
Activities on Sandy Stream Benches	• Do not disturb sandy stream benches in areas listed above. These soft, sandy areas adjacent to Arroyo toad breeding pools are important for the survival of this species.
Changing agricultural land uses	• Where changing agricultural land uses to more intensive types of uses (e.g., groves to shade houses), in consultation with a qualified biologist the following options may be required to qualify for Incidental Take of Arroyo toad. o Leave a 100-foot strip of uncultivated land adjacent to streams or rivers named above and install barriers (such as silt fences) immediately adjacent to intensive use areas to prevent Arroyo toads from moving into these areas. o Exclusionary or directional fencing to prevent the dispersal onto intensively used areas and direct toads toward areas of potential aestivation habitat. This should be done in consultation with a qualified biologist. o Relocation of toads on site by a qualified biologist. This may be preceded by wetting down the site to stimulate emergence of toads. o Revegetation of streamside habitat or fallowing of streamside

	farmland to improve habitat for foraging and aestivation. o Seasonal avoidance of certain activities. For example, conduct harvesting or planting activities when Arroyo toads are likely to be breeding in streams. o Treat stormwater runoff from fields to reduce pesticides and fertilizers, prior to it flowing into streams or rivers occupied by Arroyo toads. o Space shade houses or greenhouse in such a manner that allows for wildlife movement between buildings.
Specific Activities within Suitable Habitat for Stephens' Kangaroo Rat Suitable upland habitat generally includes sparse scrub habitat or grasslands. Populations are known in the Ramona Valley and on grassland mesas on Rancho	
Grazing	• Maintain appropriate stocking levels so as not to denude grasslands of all vegetation.
Rodent control	• Utilize Integrated Pest Management principles for decision making with regard to pest management. Including, but not limited to: • Use targeted pesticides rather than broad-spectrum pesticides. • Use of rodenticides is prohibited around known populations of Stephens' kangaroo rat. • Pesticide application must follow current County, State and Federal laws. Label instructions must be followed and pesticides must be registered for agricultural use. Specifically, poisons designed to kill rats are usually not for use in areas away from the immediate surroundings of a home. Commercial applicators must have an appropriate license.

7.5.6. Fire Prevention and Safety

The existing Memorandum of Understanding (MOU; USFWS 1997) between the Wildlife Agencies and Fire Agencies authorizes incidental take for the following federally listed endangered and threatened species: arroyo toad, costal California gnatcatcher, and Stephen's kangaroo rat. Take is also authorized for species listed as threatened endangered or candidate under Chapter 1.5 of Division 3 of the Fish and Game Code. This Plan will compliment or replace the existing MOU in order to expand Take Authorization to all Covered Species within the Plan area.

This take authorization will be limited to the activities described in the MOU. All new developments processed by the County require adequate fire management zones within the development footprint. Impacts to habitat associated with these zones require mitigation. Thinning or clearing of combustible vegetation must meet the requirements of County Ordinances to achieve reasonable protection of homes from wildland fires. The current Combustible Vegetation and Other Flammable Materials Ordinance (SDCRO § 68.400) and Grading Ordinance (SDCRO § 87.200) should be consulted for more specific requirements.

The amount of clearing or thinning of combustible vegetation allowed under the Incidental Take authorizations of this Plan apply to new and existing permitted, human-occupied structures. The amount of clearing is determined by the location of the parcel relative to PAMA. All clearing activities should conform to the BMP listed in Table 7-7.

- Two acres of clearing is allowed for the following building types: (1) Buildings permitted before the adoption of this Plan can maintain current areas cleared for fire safety or clear up to two acres around the existing home for fire safety purposes and (2) Buildings permitted after the adoption of this Plan can clear two acres around a new home for fire safety purposes, provided the clearing does not interfere with the assembly of the preserve system.

Exemptions. Clearing over the acreage outline above may be required in some special circumstances. Exceptions shall not be granted to accommodate additional clearing for unnecessary improvements such as accessory structures, recreational areas, gardening or landscaping, or in order to place a structure in a particular location on the property when another option is feasible. In such cases, mitigation would be required for clearing in excess of the allowable acreage. Special circumstances where additional clearing would be allowed include:

- Properties with large roadway frontage that require clearing;
- Properties with existing (prior to Plan adoption) clearing that meets or exceeds allowances above, but where additional clearing is required to achieve safety requirements;
- Additional clearing is required by the Fire Agency having jurisdiction; or
- Other circumstances where safety needs on existing homes require additional clearance, beyond the typical 100 feet from homes.

Table 7-7. Best Management Practices for Fuel Management.

Fire Safety – Fuel Management This includes activities also referred to as brush clearing, fire clearing, or weed abatement. The purpose must be to reduce risks from wildland fires to habitable structures.	
Fuel Management in Areas with Natural, Woody Vegetation (around homes and commercial buildings)	• Remove or thin natural vegetation using hand tools (including hand-held power tools such as chainsaws and weed whips). Do not use motorized vehicles for clearing. • Limit fuel management to within limits established by the BMO and the Fire Agencies MOU (generally 100 feet of dwellings or commercial buildings and within 30 feet of driveways; also refer to Section 7.5.6). • Leave roots of shrubs intact to prevent soil erosion. • Do not remove single specimen trees such as oaks unless they pose a fire danger to the dwelling. • Dispose of cut vegetation properly by removing it from the site, leaving it in place (chipped or crushed) as mulch, or composting. Do not dispose of cut vegetation in stream courses as decaying vegetation can harm water quality and create fire hazards. • Avoid fuel management activities during the bird breeding season (February 15 to August 20) in coastal sage scrub vegetation.

Fuel Management in Areas with Non-woody Vegetation (around homes and commercial buildings)	• Remove or thin grassy areas in ways that minimize soil and root disturbance such as mowing, raking, or cutting. Only use heavy equipment when necessary, such as when the Fire Agency having jurisdiction requires disking of the area. • Limit fuel management to within limits established by the BMO and the Fire Agencies MOU (generally 100 feet of dwellings or commercial buildings and within 30 feet of driveways; also refer to Section 7.5.6). • Do not remove single specimen trees such as oaks unless they pose a fire danger to the dwelling. • Dispose of cut vegetation properly by removing it from the site, leaving it in place as mulch, or composting. Do not dispose of cut vegetation in stream courses as decaying vegetation can harm water quality.
Fuel Management Along Roadsides and Trails	• Avoid fuel management activities during the bird breeding season (February 15 to August 20), in coastal sage scrub vegetation, as it is likely to be occupied by California gnatcatchers. • Use of heavy machinery is allowed in these areas to maintain low growth of vegetation within 10 feet (sometimes up to 30 feet) of roadways. This is also important to protect natural areas from roadside ignition sources. • Leave roots intact to prevent soil erosion. • Dispose of cut vegetation properly by removing it from the site, leaving it in place (chipped or crushed) as mulch, or composting. Do not dispose of cut vegetation in stream courses as decaying vegetation can harm water quality and create fire hazards. • Trimming or removal of trees is allowed to maintain roadway safety (e.g., emergency vehicle access, eliminating falling hazards, eliminating barriers to visibility).
Fuel Management in or around Streams and Other Wetlands	• Within wetland areas, avoid activities as these are sensitive habitat areas important for wildlife and water quality. Remove only woody material that is definitely dead, and only if this poses a fire danger to the dwelling using hand tools (including hand-held power tools such as chainsaws and weed whips). Do not use motorized vehicles for clearing. • Avoid fuel management activities near streams during the bird breeding season (April 25 to August 10). If raptors are present, avoid fuel management activities near streams during breeding season (January 1 to September 15) • Do not remove live vegetation within stream courses or other wetlands, without first consulting the County Department of Planning & Land Use. • If a landowner suspects the occurrence of rare, threatened, or endangered species on their property in areas subject to fuel

	modification, CDFG and USFWS must be notified at least 10 days prior to performing fuel modification activities.

7.5.7. General Exceptions

In certain cases, a project may be found to be so constrained by the site-specific physical conditions, that it infeasible for the project to meet all the goals and criteria or other requirements in the Plan. In such cases, after all other design options have been pursued, an exception to the full requirements of this Plan may be considered according to the BMO. The exception shall be the minimum necessary to afford relief and accommodate development. An exception to the Plan requires the concurrence of the Wildlife Agencies.

7.6. Wildlife Crossings of Roadways

Wildlife crossing structures across roadways must be considered where significant regional wildlife corridors exist. Wildlife crossings structures should be placed within the area of road construction or modification where natural landscape and habitat is conducive to crossing installation and directional wildlife movement into and through the preserve network. Drainage structures may be used as undercrossings if properly designed. In such circumstances, drainage facilities and stream crossings should be designed to encourage wildlife movement where appropriate.

Table 7-8 provides guidance for structural improvements recommended to minimize wildlife impacts by facilitating safe passage for various forms of wildlife across roadways.

Undercrossings should be supported by directional fencing and natural vegetative cover at either end to encourage use of undercrossings and minimize roadkill. Natural lighting within undercrossings may also be useful to allow vegetative cover and prevent a cave-like environment; however, this should be considered on a case by case basis and may not be appropriate in all situations.

Applicability. These requirements apply only to:

- Discretionary projects within the PAMA where road improvements or construction are required as part of the project; and
- County-initiated projects that involve sections of roadways listed in Table 7-9 that will involve improvements that have the potential to further impede wildlife movement.

Procedures. In order to determine what type of wildlife crossing, if any, is required as part of a project the following procedures must be followed. For County-initiated projects refer to Table 7-9 and Figure 2-6; proceed to step 3, if the road is included in Figure 2-6. For all other projects, start with step 1.

1. Determine whether the project will affect land within the PAMA or the viability of the reserve network. If so, proceed to the next step. If not, wildlife crossings may be necessary as roadway safety measures, but are not required by this Plan.

2. The goal of this step is to ensure connectivity for preserve function. To do so, determine if significant wildlife movement is likely in the area of construction. These include areas with documented wildlife movement, areas mapped as linkages in the Planning Segments map (Figure 7-1), or areas with other convincing evidence is present that a significant number of wildlife species or individuals move through this area. At the point in time when a decision must be made the best available scientific data to make the decision. If significant wildlife movement is absent, these requirements do not apply.
3. Conduct a wildlife movement study. This can be done by roadkill surveys, trapping, tracking, or a combination of these. Existing data from the immediate area can also be used to identify wildlife movement corridors. Identify areas of key wildlife movement (i.e., areas utilized by several wildlife species or areas where key sensitive species move in large numbers).
4. Identify locations and structures necessary to accommodate wildlife movement. Use the guidelines in Table 7-8 or other current studies on wildlife movement to determine the suitable structures in the locations identified by the studies above.
5. Design the project incorporating these structures into roadway designs, but only to the extent that they can be reasonably incorporated based on engineering constraints. Projects not incorporating wildlife crossings to the full extent recommended must include findings as to why incorporating such measures was infeasible. If such structures will compromise roadway safety, lesser measures can be incorporated. Also, if incorporating such structures would require an unreasonably disproportionate mitigation measure, lesser measures can be incorporated. For example, incorporating new undercrossings for minor improvements such as re-sealing roads, adding curbs or sidewalks, or other measures that would not normally involve replacement of crossing structures, would not require reconstruction of culverts or bridges. However, road widening or new construction must consider such improvements.

Table 7-8. Minimization Measures to Facilitate Wildlife Movement across Roadways

Wildlife Documented to Cross Roadway	Minimization Measures
General animal crossings	-A wildlife crossing can refer to an underpass, overpass, ecoducts, green bridge, viaduct, culvert, barrier, or escape structure. -In order to retain the most functional ecosystems, crossing structures' should be high, wide, and open (Ruediger, 2002). -Install speed bumps on roads and wildlife crossing signs to slow cars and prohibit street lighting to facilitate use of the crossing (Bond, 2003). -Plant and maintain vegetative cover (shrubs and low cover) near the entrance-exits of the crossing structures, without visually or physically blocking the entries (Bond, 2003). -If necessary, install appropriate fencing (at least six feet in height) to funnel animals towards the crossing structures (Bond, 2003).

	-Wide underpasses allow animals to have a broad viewing area making many individuals feel less vulnerable (Arizona Game and Fish Department, 2006). - Wildlife crossings should be perpendicular to the road to reduce the length of the crossing and to improve visibility, animals should be able to see the other side of the crossing (US 93 Design Discussion, 2000). In longer underpasses, depending on the target species, skylights may not be necessary. However, it is recommended that all long underpasses be installed in a straight line to maximize the amount of light (Boubee et al., 1999). -Separate passage locations should be identified for wildlife crossings and pedestrian, bicycle, and equestrian crossing to minimize user conflicts between human and species (EPA, 2007).
Amphibians and reptiles (toads, lizards, snakes, turtles, salamanders, etc.)	-Install smooth vertical retaining walls near waterways and in appropriate upland areas to prevent movement of animals onto the roadway and direct crossings to culverts or other appropriate safe passages under the road. Walls should be approximately 3 ½ feet high with a 6-inch lip at the top.
Anadromous fish (pacific lamprey and steelhead trout)	-Avoid installing structures in stream channels that would impede the upstream movement of these species. -Where opportunities exist consider removing structural barriers.
Small mammals (mice, voles, rabbits, skunks, raccoons, American badger, etc.)	-Keep undercrossings (culverts, bridges, etc.) as natural as possible. Where possible, retain natural surfaces, avoid use of rip-rap, and minimize fences and signage.
Smaller carnivores (coyotes, bobcats, foxes)	-Culverts should be at least 36 inches wide, but 6 x 6 foot box culverts are preferable for these species. -Directional fencing may be necessary in order to direct these animals toward crossing structures and prevent roadkill. Fencing may need to extend underground to prevent animals from digging under.
Large mammals (deer and mountain lions)	-Keep undercrossings (culverts, bridges, etc.) as natural as possible. Where possible, retain natural surfaces, avoid use of rip-rap, and minimize fences and signage. Retain vegetation on either side of the crossing where possible. -Keep undercrossings as open as possible by maximizing height and width and by locating the crossing where there are naturally gentle grades. For deer, undercrossings should be at least 10 feet high. An openness index (height x width / length) of at least 2.0 should be maintained. -Directional fencing should be installed in areas likely to be traveled by these animals in order to minimize crossings over the roadway. Fencing should be a minimum of 8 feet high (10 feet for mountain lions), depending on surrounding slopes, to be effective at blocking large mammal movement.

Table 7-9. Important Wildlife Crossings on County-Maintained Roads

Road name	Segment	Crossing ty+E28
CAMINO DEL REY	San Luis Rey River	Stream
CAMINO DEL REY	Moosa Canyon	Stream
COLE GRADE RD	San Luis Rey River	Stream
COOL VALLEY RD	Keys Creek	Stream
Country Club Dr [extension]	Escondido Creek	Stream
COUSER CANYON RD	San Luis Rey River	Stream
DE LUZ MURRIETA RD	DeLuz Creek tributary - western crossing	Stream
DE LUZ MURRIETA RD	DeLuz Creek tributary - eastern crossing	Stream
DEL DIOS HWY	By Del Dios Highlands Open Space	Overland
DULIN RD	San Luis Rey River	Stream
DULIN RD	Keys Creek	Stream
DYE RD	Near Southern Oak Rd	Overland
EL CAMINO DEL NORTE	Escondido Creek	Stream
ELFIN FOREST RD	Near Elfin Forest Lane	Overland
GOPHER CANYON RD	Gopher Canyon tributary, near junction with Little Gopher Canyon Rd.	Stream
GOPHER CANYON RD	Gopher Canyon, where stream flows off of golf course	Stream
LAS POSAS RD [extension]	entire section through PAMA	Overland
LILAC RD	Keys Creek	Stream
MISSION RD	Border of Olive Hill site (South of Olive Hill Rd in PAMA)	Overland
MTN MEADOW RD	East of Champagne Blvd in PAMA	Overland
OLD CASTLE RD	Moosa Canyon	Stream
OLD CASTLE RD	East of Old Hwy 395 in PAMA	Overland
OLD HIGHWAY 395	Moosa Canyon	Stream
OLD RIVER RD	Gopher Canyon	Stream
PALA RD	San Luis Rey River tributary along Gird Rd	Stream
PARADISE MOUNTAIN RD	East of N Lake Wohlford Road, south of tribal lands	Overland
RANCHO SANTA FE RD	Escondido Creek	Stream
RANGELAND RD	Santa Maria Creek	Stream
S OLD HWY 395	San Luis Rey River	Stream
SANDIA CREEK DR	Santa Margarita River crossing	Stream
TURNER HEIGHTS RD	North of Daley Ranch in PAMA	Overland/Stream
TWIN OAKS VALLEY RD	Segment between Merriam and San Marcos Mts. open space	Overland
VALLEY CENTER RD	Potrero Creek	Stream
VALLEY CENTER RD	west of Escondido Creek	Overland
VALLEY CENTER RD	Keys Creek	Stream
VALLEY CENTER RD	Moosa Canyon	Stream
WILDCAT CANYON RD	San Vicente Creek	Stream

[1] Crossing types refer to the terrain where wildlife are likely to cross the road segment. Stream crossings are where roads cross streams that wildlife move through or along. Overland crossings are where wildlife follow upland topographical features across road segments.

7.7. County Projects

All future public projects initiated by the County (except emergency projects) must comply with the BMO (Appendix A). County projects within preserved lands that disturb natural habitat or Covered Species will conform to the requirements of this Plan and the FRMP (Appendix G). Activities undertaken by the County or its agents necessary in responding to emergencies are exempt from the CEQA (section 15359 of CEQA Guidelines), as defined therein. The Wildlife Agencies will be sent a damage report if any impacts to natural habitats or Covered Species if are expected.

7.7.1. Vector Control Projects

The following is a list of Covered Activities undertaken by the County Department of Environmental Health – Vector Control, which are performed in natural areas in order to prevent disease transmission to humans. Some of these activities have a potential to harm native populations. These activities are listed here with the measures that will be taken to minimize or avoid impacts to native species (Table 7-10).

Vector Control Projects (VCP). The VCP protects the public from vector-borne disease and mosquito nuisance while protecting the environment, through a coordinated set of activities collectively known as the Integrated Pest Management Program. For all vectors, public education is the primary control strategy. Next the VCP determines the abundance of vectors and the risk of vector-borne disease or discomfort through evaluation of public service requests, field and laboratory surveillance activities.

Testing and control of mosquitoes in wetlands –If mosquito populations exceed or are anticipated to exceed the public threshold of tolerance, VCP staff will employ the most efficient, effective and environmentally sensitive means of source control. Where feasible, physical control activities such as water management are instituted to reduce vector production. When these approaches are not effective or are otherwise inappropriate, biological control using naturally occurring bacteria within environmentally friendly larvicides is used in the specific location. Preserve managers and vector control staff will cross-train one another regarding the management of wetlands and mosquito population control. Vector control staff will receive training from preserve managers or other qualified resource managers in identification of sensitive resources and actions to minimize impacts. Vector control staff will also educate preserve managers regarding vector control issues and how to minimize environmental and public health impacts (Table 7-10).

Rodent-borne disease surveillance – Ground squirrels are routinely tested at high elevation campgrounds in the local mountains where plague is found. The squirrels are trapped, blood samples are taken, fleas are collected and the squirrels are released unharmed. Wild mice are trapped and tested for Hanta virus in the rural interface of county. The mice are trapped, blood samples are taken and the mice are released unharmed. Staffs are trained adequately to identify all rodents and will release any species of kangaroo rat without further testing or handling. Broadcast poisoning of ground squirrels and other rodents is not practiced in natural areas.

Mosquito fish (*Gambusia* spp.) – These fish, used to control mosquito larvae, will not be released into natural waterways. Instructions not to release these fish into natural waterways will accompany any distribution of these fish to the public.

Table 7-10. Best Management Practices for Man-Made Wetlands

Man-Made Wetlands Wetland Areas Created Solely by Man-Made Structures (culverts, ditches, road crossings, or agricultural ponds)	
Draining artificial ponds and basins	• All precautionary measures possible must be taken to prevent erosion at the discharge site. • Water released must be free of pollutants, including suspended sediment, before draining. Water should be released into permeable surfaces, not directly into wetlands (streams, creeks, marshes, etc.).
Vegetation Removal	• Removal of woody vegetation must take place outside of the typical migratory bird breeding season (April 25 to August 10). If raptors are present, minimize removal activities during the breeding season (January 1 to September 15).
Vector Control	• Pesticides must be certified for use in wetlands. • A qualified biologist must be consulted prior to applying pesticides in or near vernal pools.

7.7.2. County Pest Control

Certain outbreaks of pests that endanger agricultural crops require drastic measures to control these pests. These may include quarantine of certain agricultural areas and treatment of these areas by the County, or treatment required by the County. To minimize potential harm to native species, the County will ensure that the pesticides are applied properly to minimize damage to non-target species.

The County also engages in activities to control invasive, non-native plants. These activities often take place on disturbed sites, but may also occur in natural areas. To minimize potential harm to native species, the County will ensure that the herbicides are applied properly to minimize damage to non-target species. When applying herbicides in natural areas, applicators must first consult with the preserve manager. If consultation indicates a potential for sensitive plants, conduct a records/field search prior to spraying to identify sensitive plants that may be present in the treatment area. The treatment methods will be customized to avoid or minimize damage to non-target species. Treatment of invasive, non-native species on preserves will be conducted according to the FRMP (Appendix H). Measures to avoid impacting sensitive wetland species will also be incorporated into all County pest control activities (e.g., conducting mosquito eradication in a manner that avoids impacts to light-footed clapper rail during breeding season).

7.7.3. Existing County Facilities

The operation, maintenance and repair of existing facilities or the replacement or reconstruction of existing facilities are considered covered activities under this Plan and require no further review (CEQA Section 15301, 15302). However, some of these activities may still require separate state and federal review and permitting (e.g., 404, 1600 permits). Examples of such activities include, but are not limited to:

- Maintenance, repair, or minor alteration of designated trails, trailheads, staging areas, and other trail-related facilities;
- Maintenance of roadways and associated structures;
- Fuel management within 30 feet of roadways and 100 feet of structures for cause;
- Desiltation of sedimentation basins;
- Excavation of soil from established borrow pits; and
- Maintenance of storm drains and flood control facilities, including culverts in accordance with Regional General Permit 53.

Expansion of existing facilities may have impacts to habitat requiring additional CEQA review. When this occurs, the project must also comply with the BMO as described above. However, in many cases the existing location of a facility or structure imposes considerable constraints as to how expansion can occur; therefore, it may not be possible to meet all applicable criteria. For example, the expansion of an existing roadway near a stream course may not be able to provide a standard wetland buffer due to the fact that the existing road is constrained from expansion on the upland side; therefore, it must be expanded toward the stream course. In such cases, minimization measures must be employed to the maximum extent practicable to reduce impacts to the wetland. In addition, compensatory mitigation for impacts to natural communities may be required. Examples of expansion or improvement of existing facilities include, but are not limited to:

- Widening of roads, sidewalks, gutters, curbs, and guard rails;
- Undergrounding utilities;
- Fuel management beyond 30 feet of roadways and 100 feet of structures when required for public safety; and
- Replacing culverts with larger sized culverts.

Mitigation will include the following minimization measures:

- Impacts to occur outside of the breeding season;
- Revegetation with native vegetation if practicable; and
- Avoid use of invasive plant species in landscaping.

The following existing County owned and operated facilities are important to attain the County's mission to provide residents with superior services that respond to their needs and enhance their quality of life. Many of these facilities are active-use, developed facilities that are not expected to contribute to the conservation goals of this Plan. However, there are natural habitat lands at some of these facilities. Under this Plan, the County will be granted Incidental Take Authorization for existing or specified uses as described below. Expansion of these uses or future development on these sites will be allowed by conforming to the BMO. Some future planned expansions are listed below for information purposes, but this does not grant Incidental Take unless it is specifically stated.

A. Airports

(1) Fallbrook Airport

The Fallbrook Airport is on the eastern border of Camp Pendleton and is 289 acres landing size. This site is outside the PAMA and the majority of the property is developed, disturbed habitat or agriculture. There are approximately 13 acres of coastal sage scrub on the east end of the property but there are no proposed expansions onto this area. There is also a small patch (2 acres) of non-native grassland on the west side of the property where future expansions are planned. Future plans for expansions of development include: paving aircraft parking areas on the western border of the property on disturbed land and some non-native grassland; and expansion of the runway by approximately 240 feet to the south over disturbed habitat.

(2) McClellan-Palomar Airport

The McClellan-Palomar Airport is located in the City of Carlsbad just north of Palomar Airport Road and is comprised of two properties separated by El Camino Real. The western property is 241 acres and the eastern property is 211 acres. In order to maintain its function as a regional airport and respond to future aircraft needs and FAA regulations, there are several airport expansion projects currently being planned that will affect natural lands on both properties described above. Planned future impacts, for which Incidental Take is to be granted, are described in more detail in Appendix E along with a map and summary of the anticipated impact and preserve areas.

(3) Ramona Airport

The Ramona Airport is currently a general aviation airport with a single 5,000-foot paved runway, several flight schools and other aviation-related businesses, hangars, parking areas, a California Department of Forestry air attack fire fighting base, and an abandoned drag strip south of the existing runway. Some of the undeveloped portions of the property are leased to private entities for horse and cattle grazing and to the Ramona Municipal Water District for effluent spray fields. Adjacent land uses include open range and rural residential development. Natural habitats occurring on the property mainly include non-native grasslands, native grasslands, and vernal pools. This site is entirely within the PAMA and its facility maintenance is sensitive to these surrounding habitat lands.

The Ramona Airport Improvement Project was completed in 2002, which involved the extension of the runway, grading of several areas around the runway, and erecting several buildings. The project was originally analyzed in the Ramona Airport Improvement Project, Final Draft Environmental Impact Report/Environmental Assessment (EIR/EA) (Federal Aviation Administration, 1998a) and in the associated Biological Opinion (1-6-98-F-833.3-R3) and supplements. Habitat Management Plans were prepared for vernal pool habitats (Federal Aviation Administration, 2003) and management of Stephens' kangaroo rat (Federal Aviation Administration, 2000). Management of these habitats will continue under these management plans which cover the airport property and mitigation land associated with the Ramona Airport Improvement Project. In order to maintain its function as a reliever airport, respond to future aviation demand, and comply with FAA grant assurances, future aviation-related projects may occur at Ramona Airport. County-initiated development projects which require the addition of aviation facilities and services and which may require the expansion of the existing airport footprint will, to the maximum extent practicable, avoid impacts to sensitive biological resources on site in accordance with the BMO.

B. Landfills

Existing uses on landfills will continue to be allowed and are covered by this Plan. For the landfills listed below these activities include:

- regular vehicular and pedestrian traffic and occasional heavy equipment use on developed or disturbed areas;
- maintenance of the methane recovery system and installation of additional groundwater monitoring devices,;
- extraction and landfill gas control wells and sampling of landfill gas;
- groundwater monitoring and groundwater extraction wells; and
- maintenance of existing and installation of additional stormwater pollution prevention BMPs in undeveloped areas.

Existing uses within the undeveloped, natural areas of the site include vehicular, equestrian, bicycle, and pedestrian traffic along existing dirt roads and trails and yearly fire suppression mowing along existing roadways and from the property line to 100 feet within the perimeter of the landfill property. These uses are anticipated to continue into the future and are covered by this Plan. Landfill closure plans should be consistent with the goals of this Plan.

(1) Bonsall Landfill

The Bonsall Landfill is located just south of Gopher Canyon Road, west of Interstate 15 near the community of Bonsall. The site consists of 123 acres and is a closed landfill. As with all closed landfill sites, maintenance of this facility is of critical importance for public safety. This involves periodic erosion prevention and repair measures, including grading, as well as repair of settled areas. Portions of this site are within the PAMA where natural vegetation consists of mostly coastal sage scrub and southern mixed chaparral. The natural areas are not expected to be

disturbed by normal maintenance of this facility; however, future uses may impact these areas as allowed for in the BMO.

(2) Fallbrook Burn Site

The Fallbrook Burn Site is located north of Stone Post Way in a partially developed, rural, residential area in Fallbrook. The site consists of two parcels totaling approximately 10 acres and is entirely outside of the PAMA. The burn site consists of developed and disturbed lands, but the majority of the parcel is riparian forest. As with all burn sites, maintenance of this facility for public safety is of critical importance. This site will capped with 3 feet of clean cover soil and revegetated by approximately 2010. The County will perform periodic maintenance to repair erosion and refresh stormwater BMPs.

(3) Ramona Landfill Buffer Parcels

The Ramona Landfill is located along Pamo Road, north of the community of Ramona. The landfill is currently active but is not owned or operated by the County. The parcels owned by the County are those surrounding the active landfill site and total 109 acres. These parcels are mostly within PAMA and mainly consist of chaparral and coast live oak woodland as well as some developed and disturbed habitat. These natural areas are not expected to be disturbed by normal maintenance of the adjacent landfill; however, future uses may impact these areas as allowed for in the BMO. These parcels may also be sold in the future and any development proposals would need to conform to the guidelines set forth in this Plan.

(4) San Marcos Landfill

The San Marcos landfill is located within the jurisdiction of the City of San Marcos. It is comprised of an inactive landfill site, accessory buildings and staging areas, several developed parcels east of the landfill, and undeveloped buffer parcels to the north, east and south of the landfill. Pursuant to an agreement with the City of San Marcos, the inactive landfill area was revegetated with plants indicative of coastal sage scrub and southern mixed chaparral. Therefore, there is a high likelihood of the California gnatcatcher being attracted to the revegetated landfill site given the close proximity of occupied habitat. There is also a need for the inactive landfill to be maintained in such a way to protect human health and safety, and the environment (surface water, groundwater, and air quality) as required by local, state and federal regulations by maintaining an appropriate cover over the waste in the landfill. Therefore, Incidental Take will be granted through this Plan according to the conditions detailed in Appendix E.

(5) Valley Center Landfill

The Valley Center Landfill is located north of Turner Lake and Betsworth Road in Valley Center. The site consists of 41 acres, approximately 16 acres of which is developed as dirt roads and a closed landfill. As with all closed landfill sites, maintenance of this facility for public safety is of critical importance. This involves periodic erosion prevention and repair measures,

including grading, as well as repair of areas of settling. This site is outside the PAMA and natural habitats consist mostly of southern mixed chaparral and southern willow scrub.

C. Open Space Parks

County-owned lands proposed to be incorporated in the North County preserve system are listed in Chapter 2 and shown in Figures 2-5 as preserve lands. These areas are managed for natural and cultural resources and for appropriate recreation. Existing uses in each Park (as mentioned in Chapter 2) are permitted for incidental take consistent with the FRMP (Appendix G).

7.8. Summary of Covered Activities

The following is a list of activities covered under this Plan.

- Existing legal operations on public and private lands.
- Construction and maintenance of County roads, including Circulation Element roads (Figure 2-6).
- Maintenance of existing, County-maintained facilities (Section 7.7.3).
- Construction, maintenance, and management of trails and facilities constructed in preserves in accordance with the FRMP (Appendix G).
- Construction and maintenance of trails outside of preserves in accordance with the County Trails Program (Section 4.4.2)
- Construction and maintenance of the California Coastal Trail (Section 4.4.2).
- Activities undertaken to control disease vectors in the interest of public health, pursuant to BMPs listed in Table 7-10.
- Activities undertaken by the County to control invasive, non-native species (Section 7.7.4).
- Routine fire safety, vector control, and agriculture activities provided they follow applicable BMPs (Section 7.5.5).
- Activities undertaken for habitat management done in accordance with the FRMP (Appendix G) or subsequent Area Specific Management Directives. This includes adaptive management and prescribed responses to changed circumstances.
- Biological monitoring undertaken in accordance with this Plan. Survey protocols may require further review by the Wildlife Agencies as the monitoring plan is developed.
- Private or public development projects conforming to the BMO (Appendix A); exceptions require further review.
- Hardline development projects (Appendix E). Although footprints have been approved, further review may be required to approve off-site impacts or off-site mitigation where not specifically identified in this Plan.

7.9. Project Review

The County will implement this Plan's conservation policies through the standard project review and approval process. This process applies to all private and public projects for which the County has jurisdictional land use authority. The general development review and approval process will be completed by a County project manager. This process will be initiated upon receipt of an application for a project within the Plan area. The review process includes the following steps:

1. Confirm that the project is within the Plan area (Figure 2-1);
2. Review any applicable exemptions;
3. Review findings of conformance to design criteria (Section 7.2) for projects in PAMA;
4. Review conformance to habitat-based (Sections 7.2.1 and 7.3) and species-based (Sections 7.4) mitigation requirements for impacts not avoided; and
5. Review conformance to any applicable species-specific mitigation measures such as breeding season avoidance.

8. LEGAL RESPONSIBILITIES AND ADMINISTRATIVE PROCEDURES

8.1. Federal and State Requirements and Legal Authority

This Plan addresses requirements for obtaining Take Authorizations under two California and federal environmental laws. As such, this plan is a Habitat Conservation Plan (HCP) pursuant to section 10(a)(1)(B) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 et seq.), and an NCCP subregional plan pursuant to the NCCPA.

8.1.1. Federal

The USFWS has the legal authority to enter into an Implementing Agreement pursuant to the ESA, Fish and Wildlife Coordination Act (16 U.S.C. § § 661-666(c))), and Fish and Wildlife Act of 1956 (16 U.S.C. § § 742(f) et seq.). Section 10(a)(1)(B) of the ESA (16 U.S.C. § 1539(a)(1)(B)), expressly authorizes the USFWS to issue a section 10(a) permit to allow the incidental take of species listed as threatened or endangered under the ESA. The legislative history of section 10(a)(1)(B) clearly indicates that Congress also intended that the USFWS would approve HCPs that protect unlisted species as if they were listed under the ESA, thereby providing section 10(a)(1)(B) assurances for such unlisted species (H.R. Rep. No. 97-835, 97th Cong., 2d Sess. 30-31, 1982. Conference Report on 1982 Amendments to the ESA).

The Secretary of the Interior's August 11, 1994, "Habitat Conservation Plan Assurances Policy" sets forth the USFWS plans to implement the intent of Congress regarding both listed and unlisted species. This policy was amended and superseded by the "No Surprises" Rule, which became a Final Rule for federal purposes on March 25, 1998. It provides that, as long as the HCP is being properly implemented, the federal government will not require additional lands or money from the permittee in the event of unforeseen Changed Circumstances and additional measures to mitigate reasonably unforeseeable Changed Circumstances will be limited to those Changed Circumstances specifically identified in the HCP and only to the extent of the mitigation specified.

8.1.2. State

California law under section 2800 et seq. of the California Fish and Game Code establishes the NCCPA "to provide for regional protection and perpetuation of natural wildlife diversity while allowing compatible land use and appropriate development and growth." With regard to the NCCPA, this Plan has been recognized as an Ongoing Multi-Species Plan, pursuant to the Enrollment Agreement signed by the County on November 18, 2008. The NCCPA calls for the preparation of plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time. The NCCPA goes beyond project mitigation and calls for conservation of covered species that will reduce the need for listing species under the CESA, enhance species conditions, and restore and manage resources for ecological integrity on a broad scale.

In 1993, the CDFG and California Resources Agency prepared "Southern California Coastal Sage Scrub NCCP Process Guidelines" that, except as provided in section 2830 of the California Fish and Game Code, were superseded by the NCCPA of 2002 (Cal. Fish & Game Code § 2800 et seq.). Based on the definition established by the guidelines and the precedent established through acceptance of subregional plans prepared by local general purpose agencies, this Plan meets the characteristics that define an NCCP and distinguish it from other types of conservation planning efforts.

In addition, the California Coastal Act was enacted in 1976 and sets policies for development in the Coastal Zone. Preserved lands in the Plan area that are within the Coastal Zone include the San Elijo Lagoon Ecological Preserve and Magdalena Ecke Open Space Preserve. Other lands within the Coastal Zone include the San Dieguito Park, Quail Botanical Garden, Encinitas landfill (a closed facility), and a limited amount of private land in Rancho Santa Fe (mainly near San Dieguito Park). The Coastal Act policies require, in part, protection of marine and land resources. In particular, the Coastal Act requires protection of wetlands; riparian and stream corridors; tidal areas; environmentally sensitive habitat areas; and locally significant, sensitive, rare, threatened, and endangered plant and animal species. Coastal Act policies also ensure public access, maintain productive agriculture, direct new housing and other development to urbanized areas with adequate service, protect scenic beauty of the coast, and regulate coastal energy and industrial facilities. Although the Plan has been prepared to provide protection of habitat for endangered and threatened species (as well as species that could become endangered in the future), it is not intended to override the requirements of the Coastal Act. Each development project in the Coastal Zone must be evaluated at the project level for conformance with requirements of the Coastal Act, including the acquisition of individual Coastal Development Permits from the California Coastal Commission.

8.1.3. Compliance with Mandatory Requirements

This document, together with its associated NEPA/CEQA document, is intended to meet the mandatory requirements of an HCP, as listed below and was prepared in accordance with the federal HCP Handbook Addendum ("Five Point Policy"). This plan was also prepared in full compliance with all applicable standards and guidelines of the NCCPA, including the NCCP Process Guidelines (November 1993) for the southern California coastal sage scrub NCCP region. The mandatory elements of an HCP are listed in Table 8-1 and 8-2, along with the location in which they are addressed in this Plan. The mandatory elements of the NCCPA are listed in Table 8-3.

Table 8-1. Mandatory Elements of an HCP.

Element	Location of Information
Impacts likely to result from the proposed taking of one or more listed plant and animal species	NEPA/CEQA document Conservation Analysis (Vol. II)
Measures the applicant will undertake to monitor, minimize, and mitigate such impacts	Chapters 7, 8, and 9 FRMP (Appendix G) Conservation Analysis (Vol. II)
Funding that will be made available to undertake such measures	Chapter 5
Procedures to deal with changed and unforeseen circumstances	Chapter 8 FRMP (Appendix G)
Alternative actions the applicant considered that would not result in take, and the reasons why such alternatives are not being used	NEPA/CEQA document
Additional measures the USFWS may require as necessary or appropriate for purposes of the Plan	FRMP (Appendix G)

Table 8-2. Elements Addressed Under the Five-Point Policy.

Policy	Location of Information
1. Defined biological goals and objectives	Section 3.2.1 Conservation Analysis (Vol. II)
2. An adaptive management strategy	Chapter 9 FRMP (Appendix G)
3. Compliance and effectiveness monitoring	Sections 8.3, 9.2, and 9.3
4. An established permit duration	50 years (Appendix D – Draft Implementing Agreement)
5. Opportunities for public participation	Section 3.2.5

Table 8-3. Mandatory Elements of an NCCP

Elements	Location of Information
Natural communities and ecosystem approach. Goal of functional ecosystems and ecological processes so species survive over time.	Chapters 3, 5, 9 FRMP (Appendix G) Conservation Analysis (Vol. II)
Demonstrate the principles of conservation biology. Conservation strategy - conservation measures, compatible uses, schedule for implementation, measurable goals.	Chapters 3, 6, 9 FRMP (Appendix G)
Independent scientific input	Chapter 3 Appendix C
Public participation process	Section 3.2.5
Monitoring - compliance, biological performance. Adaptive management	Chapter 9 FRMP (Appendix G; under development)
Funding assurances	Chapter 5
Assurances provided by participants in implementing agreements. Affirmative obligation to create preserve regardless of development/mitigation rate	Appendix D

8.2. Implementation Policies

Successful implementation of this Plan requires coordinated actions among the County, other Take Authorization holders, Wildlife Agencies, and public and private sectors. This section documents policies and assurances essential to this cooperative process. This Plan will be implemented through application of local land use authority, including endangered species permitting, as authorized by state and federal agencies.

8.2.1. Take Authorizations for Covered Species

The Wildlife Agencies will issue long-term (50-year) Take Authorizations for Covered Species Subject to Incidental Take to the County of San Diego in conjunction with the signing of the Implementing Agreement for this Plan. Federal Take Authorization is granted only for listed animal species through the section 10(a) process of the ESA, while Take Authorization for the California gnatcatcher is granted through section 4(d) of the ESA, in accordance with the Special Rule concerning take of the threatened California gnatcatcher (58 FR 65088). This Plan meets the standards regarding coastal sage scrub for the NCCP program in southern California required by the CDFG and USFWS (50 C.F.R. § 17.32(b)(2)). HCPs approved by the USFWS also routinely address listed and unlisted species (protecting them as though they were listed). The

state authorizes Incidental Take through the NCCPA for both listed and unlisted species provided that those resources are adequately conserved by this Plan. Species that are not listed as threatened or endangered when the Implementing Agreement is signed, but are listed in the future, will be amended into the federal Take Authorization at the time of listing, as described in Section 8.6.4. Both listed and unlisted species considered to be adequately conserved by the combination of actions contained in the Plan are referred to as "Covered Species." Covered Species for which take may also be authorized are referred to as "Covered Species Subject to Incidental Take."

Receiving federal and state Take Authorization for Covered Species allows the County to receive certain assurances from the Wildlife Agencies through the Implementing Agreement. Among other benefits, completion and approval of this Plan eliminates the 5% limit on the interim take of coastal sage scrub, coastal bluff scrub, maritime succulent scrub, and coastal sage/chaparral scrub in the Plan area under Special Rule 4(d) as a part of the NCCP implementing agreement.

The benefits of Take Authorizations held by the County can be shared with individuals or projects within the Plan area or amendment areas, once a Plan amendment is approved by the Wildlife Agencies and County. Applicants for projects subject to approval by the County, consistent with the provisions of this Plan and Take Authorizations, become "Third-Party Participants" to the County's Take Authorization. Applicants thereby receive assurances that their obligations for take of Covered Species will not be altered once development approvals are granted by the County and mitigation is assured. Unauthorized activities are not eligible for Third Party Participant status.

8.2.2. Federal and State Participation

The benefits of species protection and habitat conservation under this Plan accrue to the United States, the State of California, and the County. Consequently, the federal and state governments will participate in the implementation of this program by managing federal and state lands to conserve flora and fauna, meeting land stewardship responsibilities, and assisting in the acquisition and maintenance of natural communities for integration into the preserve.

The Wildlife Agencies will undertake the following actions, as partners in preparation and implementation of this Plan.

- Assist the County in preparing this Plan and Implementing Agreement and issue Take Authorizations for Covered Species based on these documents.
- Contribute to preserve assembly by managing identified federal and state lands and acquiring lands as described in Section 5.1
- Monitor biological resources on federal and state land in the preserve.
- Monitor implementation of this Plan.
- Meet annually with the County to discuss its progress in implementing the Plan.
- Ensure that consultations and permit actions, including those required under section 404 of the Clean Water Act; sections 7 and 10(a) of the ESA; and sections 2081 and 2835 of the California Fish and Game Code are coordinated and consistent with the Plan and completed expeditiously.

- Provide technical assistance on Plan implementation issues.
- Expeditiously review proposed Plan amendments or preserve boundary adjustments (Section 8.6).
- Expeditiously determine conservation measures needed and responsibilities for newly listed species and species proposed for listing that are not on the Covered Species list.
- Include, within annual budget proposals, funding to carry out federal and state obligations for Plan implementation.
- Continue to support financial incentives for conservation programs, such as grant programs, tax incentives, and bond measures.
- Assist local jurisdictions, agencies, and other organizations in the continuing development of regional funding sources, such as TransNET and similar measures.
- Assist local jurisdictions, agencies, and other organizations in developing and implementing NCCP-focused public education and outreach programs.
- Work with private non-profit organizations to fund educational activities on public land managed for natural resources.
- Appropriately manage, maintain, and enhance habitat lands under their control.

Federal and state governments may acquire habitat lands for this Plan using a variety of methods, including:

- Direct purchase from willing sellers/landowners using appropriated funds;
- Cooperative federal/state programs for conservation of endangered or threatened species;
- Land exchanges, including the bundling of lands for sale or exchange;
- Grants and matching funds; and
- Tax credits.

8.2.3. Acquisition Requirements

The County receives credit toward its acquisition goal for lands acquired on or before March 22, 2000, the date planning was initiated for this Plan. Habitat purchases prior to that time are considered baseline. This date was established by a letter received from the Wildlife Agencies dated July 7, 2003.

The County of San Diego is committed to purchasing 20,000 acres and providing stewardship, adaptive management, and monitoring for these lands. Multi-agency acquisitions are anticipated based on experience in the South County MSCP.

8.2.4. Critical Habitat Designation

USFWS acknowledges that the Plan provides a comprehensive, habitat-based approach to the protection of Covered Species and their habitats within the Plan area by focusing on the lands and aquatic resource areas essential for the long-term conservation of the Covered Species and

by providing for appropriate management for those lands. This approach is consistent with the overall purposes of ESA to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved. ESA regulations specify that the criteria to be used in designating critical habitat include "those physical and biological features that are essential to the conservation of a given species and that may require special management considerations or protection." (50 CFR Section 424.12(b)).

This Plan and the Permits are intended to provide for the protection and management of those physical and biological features essential to the conservation of the Covered Species in the Plan area in a manner consistent with ESA and with USFWS regulations concerning the designation of Critical Habitat including specifying actions addressing "recovery". USFWS, therefore, intends to exclude habitat within the Plan area from any future critical habitat designation or revision of an existing critical habitat designation for a Covered Species to the extent allowable by law, following public review and comment, and subject to compliance with governing ESA law and regulations, so long as the Plan is being properly implemented. If for any reason Critical Habitat for a Covered Species is designated within the boundaries of the Plan area, then pursuant to the No Surprises Rule, no measures to the extent proscribed or restricted in the rule, in addition to those provided for under the Conservation Strategy, and the Permits, shall be required of a Permittee in any future FESA Section 7 consultation evaluating the impacts of a Covered Activity on said critical habitat. Additionally, to the extent consistent with other agency priorities, and staffing and funding constraints, USFWS intends to reassess and revise the boundaries of existing designated Critical Habitat and any proposed Critical Habitat of a Covered Species within the boundaries of the Plan area consistent with the acknowledgement set forth in this section.

8.2.5. Implementing Agreement

The County will enter into an Implementing Agreement with the Wildlife Agencies following an action by the County Board of Supervisors. The duration of the agreement will be 50 years and is renewable, if required. It identifies responsibilities for implementing the Plan, binds the parties to their respective obligations, and specifies remedies should any party fail to perform its obligations. A draft of the Implementing Agreement is provided in Appendix D.

8.3. Compliance Monitoring

This Plan must be monitored over time to determine if implementation measures are achieving goals and objectives of the Plan. Two tracking processes will be undertaken: habitat conservation and impacts; and biological monitoring. Results of these efforts will be discussed at annual coordination meetings and in annual public reports.

8.3.1. Tracking of Conservation and Impacts

The County will be responsible for the annual accounting of the acreage, type, and location of vegetation communities conserved and impacted by permitted land uses and other activities within the Plan area. Records will be maintained in the HabiTrak GIS database. HabiTrak was

developed for reporting purposes and is being used for NCCP subareas throughout the state. The County will use the HabiTrak system as the primary accounting process to ensure that habitat conservation proceeds in "rough step" proportion to habitat loss from development. The County will also provide recent acquisition and easement information to the SANDAG conserved lands database. Species location and monitoring data will be tracked in the County's SANBIOS database. Information on impacts and monitoring results will also be quantified in the annual report.

The loss of habitat will be accounted for when the project accrues the benefits of the Take Authorization. For conserved lands, the conservation of habitat and selected Covered Species will be accounted for when habitat is permanently conserved (i.e., date of recordation of title transfer, recordation conservation easement, or execution/recordation of any other instrument that confers Third Party Participant status to a project or property). The accounting information for conserved acres will also identify the protection mechanism, owner, agency, or person responsible for conservation and management and any other relevant information.

8.3.2. Biological Monitoring

Whereas habitat tracking is a relatively simple accounting of acres taken or conserved, biological monitoring involves a variety of more complex and interrelated questions concerning the condition and function of the conserved ecosystem and how well the Plan is meeting its biological goals. The biological monitoring component of implementation will assess the status of compliance with conditions for coverage identified in the County's Take Authorizations for Covered Species. As such, biological monitoring is an essential component of the adaptive management program to ensure continued viability of Covered Species and habitat. It requires coordinated collection of field data at multiple locations and scales and assimilation of those data for use by preserve managers and others. Section 9.3 of this document outlines primary goals for biological monitoring at multiple scales, along with the FRMP (Appendix G).

8.3.3. Annual Public Reporting

An annual public report will be prepared and distributed that will demonstrate compliance with the terms and conditions of the Plan, Implementing Agreement, and Take Authorization. Annual public workshops will also be held by the County to inform interested citizens on the progress of preserve assembly, monitoring, and attainment of conservation goals. Any Plan amendments or administrative corrections will also be reported. Management and monitoring efforts will be summarized in annual reports along with a forecast of major future management and monitoring activities for the next two-year period. Additionally, biological monitoring data will be made available to the Wildlife Agencies at least annually regarding habitats and species monitored Annual Implementation Coordination Meetings.

Project Review. Once the Implementing Agreement is signed, the County will generally not need to consult with the Wildlife Agencies during the normal project review and approval process. The Wildlife Agencies' oversight role is exercised through the normal CEQA process and through review of the County's annual report. The Wildlife Agencies may, upon receipt of a

CEQA notice for a project, request a voluntary coordination meeting within 30 days. Likewise, the County may request agency involvement in a project where coordination would help address key issues or streamline the permitting process. The primary exception to this general procedure is for a project that requires an amendment to the Plan. Otherwise, the County will follow the project review and approval process described in Section 7.9. The County will maintain a list and map of all Take Authorizations it grants under the Plan as described in Section 8.3.1. All project approvals issued over the course of a year may be discussed at the required annual meeting.

Annual Meeting. An annual meeting will be held between the County and Wildlife Agencies to review and coordinate Plan implementation. Progress toward achieving conservation requirements will be reviewed, habitat management issues will be discussed, and project approvals issued by the County over the course of the year will be reviewed. If the Wildlife Agencies determine that the Plan is not being implemented as required, the Wildlife Agencies and the County will take actions specified in the Plan and Implementing Agreement to remedy the situation. These actions may include additional management activities, modification of the project compliance process, or redirection of acquisition funds, provided they are consistent with the Implementing Agreement.

8.4. Assurances for Unforeseen Circumstances

In accordance with the "No Surprises" Rule (63 Fed. Reg. 8859, as codified in 50 C.F.R. § § 17.3, 17.22(b) and 17.32(b)), it is acknowledged that the purpose of the Plan is to provide for the conservation of Covered Species and mitigation, minimization, compensatory measures and management required for Incidental Take of the Covered Species through otherwise lawful and permitted activities in the Plan area. Accordingly, as described below and except as otherwise required by law and/or provided under the terms of the Plan and except for Unforeseen Circumstances, no further mitigation or compensation shall be required by the USFWS to address impacts of covered activities by the County or Third Party Participants granted Take Authorization pursuant to the ESA.

The "No Surprises" Rule (50 C.F.R. § § 17.22(b)(5)(iii) and 17.32(b)(5)(iii)) provides, in part:

> In negotiating unforeseen circumstances, the Director of USFWS will not require the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water, or other natural resources beyond the level otherwise agreed upon for the species covered by the conservation plan without the consent of the permittee.
>
> If additional conservation and mitigation measures are deemed necessary to respond to unforeseen circumstances, the Director of USFWS may require additional measures of the permittee where the conservation plan is being properly implemented, but only if such measures are limited to modifications within conserved habitat areas, if any, or to the conservation plan's operating conservation program for the affected species, and maintain the original terms of the conservation plan to the maximum extent possible. Additional conservation and mitigation measures will not involve the commitment of additional land, water or financial compensation or additional restrictions on the use of land, water or other natural resources otherwise available for development or use under the original terms of the conservation plan without the consent of the permittee.

8.4.1. Reconciliation of the "No Surprises" Rule, Unforeseen Circumstances, and Adaptive Management

In the event that Unforeseen Circumstances adversely affect any of the Covered Species during the life of the Plan, neither the County nor Third Party Participants would be required without their consent to provide additional financial compensation, land, or restrictions on land beyond those required by the Plan when a section 10(a)(1)(B) Take Authorization is issued (except as provided for under Changed Circumstances, described in Section 8.5).

This Plan's adaptive management program (Appendix G) allows certain changes to occur throughout the life of the Plan. Therefore, it is necessary to clarify what aspects of the conservation program are subject to the "No Surprises" Rule. The USFWS may not require additional mitigation due to Unforeseen Circumstances without the consent of the County or Third Party Participants.

The Adaptive Management Program presented in the FRMP allows this Plan to be revised as new information on the life history or ecology of Covered Species is gained through continuing research and/or as data regarding the effectiveness of mitigation measures (as gained through the monitoring programs) is generated. As a result, revisions may be made to several of the Plan's conservation components, including technical aspects of mitigation land management and enhancement, implementation of Incidental Take minimization measures, and monitoring of Covered Species.

Pursuant to the "No Surprises" Rule, the County and the USFWS agree that the following Plan components are not subject to modification as a result of this Plan's Adaptive Management Provisions without the consent of the County, except for those projects that constitute an action authorized, funded, or carried out by a state or federal agency (i.e., have federal involvement) exempt from such assurances:

- Estimates of conservation of private land as described in Section 5.1and the preserve design elements described in Section 3.2.
- The wetland conservation policy (Section 7.3), Narrow Endemic Policy (Section 7.4.1), vegetation mapping, survey and boundary adjustment guidelines, and policies included in Section 8.6 of this document.
- Permitted activities in preserves described in Chapter 9 and the FRMP (Appendix G).
- Plan funding as described in Chapter 5 of this document.
- Any other change not currently described in this Plan that would significantly increase the Plan's costs or interests in land of the County or landowner in the Plan area.
- Additional compensation measures shall not be imposed on Third Party Participants granted Take Authorization where the County has already granted final project approvals, unless such additional conservation measures are agreed to by the Third Party Participants granted Take Authorization.

8.5. Changed Circumstances

Changed circumstances are defined under the federal "No Surprises" Rule as "changes in circumstances affecting a species or geographic area covered by a conservation plan that can reasonably be anticipated by plan developers and the USFWS and that can be planned for." Changed Circumstances potentially affecting the preserve are defined as future events for which it is reasonably foreseeable that such an event may occur during the life of this Plan and that such an event may negatively affect the Covered Species and/or their associated habitat within the preserve. Changed Circumstances addressed by the Plan include the following events: repetitive fire, flood, drought, invasion by exotic species, future listing of species, tribal annexations, major diseases, and climate change.

Pursuant to the "No Surprises" Rule (50 C.F.R. § 17.22(b)(5)(ii)), the USFWS may not require (1) any conservation or mitigation measures in addition to those provided under Section 8.5 in response to a Changed Circumstance or (2) additional conservation or mitigation measures for any Changed Circumstance not identified in Section 8.5 without the consent of the County, provided the County is properly implementing the Plan. As recognized in the "No Surprises" Rule (50 C.F.R. § § 17.22(b)(6) and 17.32(b)(6)), the USFWS, federal agency, state agency, local agency, or private entity may take additional actions at their own expense to protect or conserve a Covered Species within the Plan area.

Relationship to Adaptive Management. Preventative measures and responses to Changed Circumstances are generally addressed through the adaptive management element of this Plan. The adaptive management program requires monitoring of species and habitat conditions, with a management response to observed threats. In anticipating and reacting to Changed Circumstances, adaptive management allows for revisions to the operating conservation program, thereby enhancing future strategies for the conservation of species and their habitat. Changed Circumstances allow specific triggers and management actions to be applied to foreseeable threats. The ability to carry out the preventative measures and adaptive management actions for Changed Circumstances, described below, is included in the adaptive management funding calculations for this Plan.

Combined Events. Although these events are addressed in this section separately, it is recognized that several are interrelated, such as drought and repetitive fire. It is anticipated that some of these threats may occur concurrently. Such a combination may constitute an Unforeseen Circumstance. For example, if in one year a tribe annexes 5,000 acres of coastal sage scrub and a repeat fire occurs in the main remaining segment of coastal sage scrub after five years of drought, this would constitute an Unforeseen Circumstance, even though none of these events would individually. Such combined events cannot be predefined as Unforeseen Circumstances. It will be incumbent upon the County to submit a justification to the Wildlife Agencies that such combined Changed Circumstances constitute an Unforeseen Circumstance.

8.5.1. Repetitive Fire

For the purpose of defining Changed Circumstances, repetitive fire is defined as fire occurring in the same location as a previous fire three times in a 10-year period and causing repeat damage

within preserves to 10 – 100 acres of riparian habitat and/or 200 – 1000 acres of coastal sage scrub. Repeat fire on more than any of the maximum amounts above, would constitute an Unforeseen Circumstance. The USFWS has indicated that for coastal sage scrub and riparian habitat, repeat fires within the same footprint within 10 years of the original burn can adversely hamper natural regrowth and interrupt the ability of the habitat to rejuvenate. Diffendorfer et al. (2007) cite several sources that indicate fire cycles of one to three years within coastal sage scrub can increase the presence of exotic weeds and lead to conversion to grassland. Ten years after a fire, habitat types prevalent in the preserve areas are expected to be fully re-established and capable of natural regeneration.

Risk Assessment. Fire is an important natural disturbance within the Plan area that promotes vegetation and wildlife diversity, releases nutrients, and eliminates heavy fuel accumulations that can lead to catastrophic burns. Because fire is a natural feature in the Plan area, under normal circumstances natural regrowth of habitat is expected. However, certain repetitive fires within the same location of the preserve may adversely affect the Covered Species due to degradation of natural habitat(s) to those dominated by invasive or non-native weeds. This is generally a greater concern for coastal sage scrub habitats, which regenerate mainly by seed. Many other chaparral habitat types regenerate by resprouting and therefore are not as prone to this shift in species dominance. However, there are instances in which coastal sage scrub has remained, despite frequent fires, such as the southwest slope of Otay Mountain and Camp Pendleton. Coastal sage scrub on fine-textured soils may be more susceptible to invasion by non-native weeds than costal sage scrub on other soil types.

The CAL FIRE fire perimeter database was analyzed for this Plan for all fires overlapping the Plan area. This database contains fire perimeters, acreages, dates, and other attributes for fires in San Diego County starting in 1910. Note that in the following discussion the term "burned" actually means that land was within a fire perimeter; however, not all land within fire perimeters actually burned. Most fires were a few hundred acres (65% were less than 1,000 acres, 80 percent were less than 3,000 acres, and 95 percent were less than 17,000 acres.) The average fire size is 4,500 ± 1,148 acres (numbers are reported with standard error) and the median fire size was 410 acres. Since 1910, when records begin, to 2007 there have been four fires with perimeters containing over 50,000 acres. The largest fires in this area have been the Cedar Fire (271,000 acres in 2003), Paradise Fire (56,500 acres in 2003), and Witch Creek Fire (162,000 acres in 2007). In an analysis of CALFIRE fire perimeter data for this Plan area and records from 1910 to 2006, the mean number of acres burned annually within the Plan area was 8,850 acres (± 1,381 standard error).

In the coastal sage scrub communities of the Plan area, the average amount of land burned annually is 971 ± 184 acres. Riparian vegetation does not lend itself to this type of analysis due to the inherently high variability of burn intensity for riparian vegetation within fire perimeters.

Fire return intervals, based on a non-random sample of eight points distributed throughout the Plan area with repeat fire histories, ranged from one year to 54 years. Average return intervals for all eight points was 28.4 ± 4.9 years (standard error; n=14) and with a median of 28.5 years. Data analyzed for the entire county indicates that 73% of chaparral, 59% of coastal sage scrub, and 71% of grasslands burns every 30 years or less (based on cumulative acreages of burned areas for each vegetation community). However, several locations within the Plan area, such as

the San Marcos and Merriam Mountains, have no recorded fires, which would increase the average return interval if they were factored in.

Based on their natural history, most vegetation communities will be fairly resilient and recover, if not benefit, from fires. In addition, the lower fuel loading after fires creates a less conducive environment for repeat burns for at least 10 years in most chaparral and woodland vegetation communities. Coastal sage scrub and riparian habitats are exceptions, however, and may require additional adaptive management after repeat fires, as non-native invasive weeds may have a competitive advantage following repeat fires in these areas. Most areas of coastal sage scrub occur in smaller patches, with the largest patch in the PAMA consisting of approximately 2,500 acres (in the Elfin Forest area). Riparian habitats generally occur in linear segments and, therefore, do not make up a significant percentage of the landscape (3.5% of the Plan area). The wetter conditions in riparian corridors render the vegetation more resistant to burning, as well. Repeat fires over about 10 acres, especially where vegetation is heavily burned, are unusual and incidents that burn over 100 acres would be an extremely rare event based on fire history data.

As the entire preserve goal is approximately 107,000 acres of natural habitat, a fire burning a significant portion of the preserve would be unusual since only 5% of the fires in this area have been over 17,000 acres and an average of 8,850 acres have burned annually. Furthermore, this would most likely happen with multiple fire incidents, since most of the habitat blocks within the PAMA are less than 17,000 acres. The largest blocks of natural habitat are located near DeLuz (approximately 11,000 acres not including the Cleveland National Forest), Mount Olympus (10,000 acres), and Guejito Creek-Hellhole Canyon-Lake Wohlford area (28,000 acres).

Preventative Measures. The County's General Plan Safety Element sets forth preventative measures that must be followed to reduce the likelihood of harm from repetitive fire within the Plan area. These measures include implementation of building codes, performance standards, and long-range fire safety planning. Policies in the General Plan call for procedures to address fire safety within the urban-wildland interface, goals to maintain fire reporting and response times, and goals to maintain sources and flows of water for emergency fire suppression.

Preventative measures to reduce the likelihood of and harm from a single fire in the preserve are included in the adaptive management provisions in the FRMP. In addition, such measures will be more specifically identified in the Area-Specific Management Directives, which will include a comprehensive strategy for reducing risks of negative effects wildfire, including preventative actions and planning for fire suppression activities in advance.

Proximity of Fire Services to Preserve Areas. The Plan area ranges from urban to backcountry; thus, the risk of fire ignition, size, and intensity varies widely, as does fire suppression response time. Within the Plan area, the overall average travel time to fire incidents is generally under five minutes in more urban areas and between 10 to 20 minutes in rural areas.

Brush Abatement Program. To further reduce the risk of fire, the County has instituted a special weed abatement and brush management program focused particularly on the interface between urban areas and wildlands. This program, through local fire agencies, generally requires clearance of flammable vegetation within 100 feet of single family dwellings located adjacent to wildlands.

Planned Responses. Within 30 days of the repetitive fire incident, County staff biologists and/or preserve manager(s) will make a preliminary assessment of the effects of the repetitive fire within the preserve areas. Based on the extent and severity of fire damage, as determined by County staff biologists and/or preserve manager(s) with concurrence of the Wildlife Agencies, the County will develop and implement specific adaptive management tasks in accordance with the FRMP and/or Area-Specific Management Directives. County staff biologists and/or preserve manager(s) shall address monitoring of natural regrowth within the damaged area for a period of up to two years, implement measures to minimize the invasion by exotic species, potential for excessive soil erosion, and/or increased potential for habitat type conversion. As data are gathered, adaptive management actions will be initiated and modified as needed to reduce potential threats and their adverse impacts.

8.5.2. Flood

For the purpose of defining Changed Circumstances, flood is defined as any flood event occurring within preserves above the 75-year level, up to and including 100-year levels, as classified by the Federal Emergency Management Agency (FEMA) and determined by the County Department of Public Works. In the Plan area, floodplains are identified and associated with the Santa Margarita, San Luis Rey, and San Dieguito Rivers, along with Escondido Creek.

Risk Assessment. FEMA provides local jurisdictions, such as the County, with maps identifying areas that may be affected or inundated by flood. A 100-year flood, as defined by FEMA, produces a magnitude of inundation that has a one percent chance of occurring in any given year. The 100-year flood has a 39% chance of occurring in any 50-year period and is, therefore, reasonably foreseeable during the life of the Incidental Take permit. However, flooding is a natural event and is not anticipated to cause sufficiently severe damage that would prevent natural regeneration within the preserve.

County land use policies accommodate floods up to and including a 100-year flood and require drainage facilities to manage flows into tributary streams at approximate natural flow levels. This enables floodplains to function in their overall natural capacity and permits unobstructed water flow through natural riparian courses during flood events.

Preventative Measures. Preventative measures that reduce the likelihood of harm from flooding in preserve areas are included in the adaptive management provisions in the FRMP. County land use policies ensure that land use regulations and public improvements accommodate flood events that approximate the rate, magnitude, and duration of natural flood flows. In addition, the County also maintains flood control structures associated with public roads which serve to lessen flood damages when properly maintained.

Planned Responses. Within 30 days of the flood incident, County staff biologists and/or preserve manager(s) will make a preliminary assessment of the effects of the damage caused by the flood within the preserve areas. Depending on the extent and severity of flood damage, as determined by the County staff biologists and/or preserve manager(s) with concurrence of the Wildlife Agencies, the County will develop an appropriate adaptive management response to

flood damage, as needed in accordance with the FRMP or Area-Specific Management Directives.

Should the extent and severity of flood damage indicate a need for monitoring, County staff biologists and/or preserve manager(s) will develop and implement a monitoring program in accordance with the FRMP or Area-Specific Management Directives for a period of up to two years, to monitor natural regrowth and recovery in the damaged area. One or both of the following adaptive management activities will be incorporated into the modified management program: removal of sediment and/or debris from County-maintained conveyances, including nearby roadways; Control of non-native weeds and invasive species on preserves with techniques proven to be effective and safe for the species present.

8.5.3. Drought

For the purpose of defining Changed Circumstances, drought is defined as climatic drought of 5 to 10 years in length, as declared by the California State Department of Water Resources and/or the San Diego County Water Authority. Longer periods of drought are considered unforeseen circumstances.

Risk Assessment. Drought is a weather phenomenon that is beyond direct local control. Drought is not uncommon in southern California and is a phenomenon to which local natural habitats and species are adapted. Rainfall data over the past 150 years for the County indicate that drought periods of two to three years are fairly common, droughts lasting up to five years are not uncommon, and 10 year droughts occasionally occur. Drought occurs slowly over a multi-year period, differing from catastrophic events such as fire or flood, which occur rapidly and afford little time for disaster response preparation. Drought conditions may adversely affect Covered Species and conserved vegetation communities, particularly if the species and/or habitats are unable to adapt to changes as they occur.

Preventative Measures. This Plan does not contain measures to prevent drought. To encourage adaptation, dispersal, and re-establishment of species lost in other areas due to drought, floods, and fires, the proposed preserve system will provide connectivity between core habitat areas.

Planned Responses. Depending upon the extent and severity of the drought, and as determined by County staff biologists and/or preserve manager(s) with concurrence of the Wildlife Agencies, the County will develop a specific adaptive management action plan in accordance with the FRMP and/or Area-Specific Management Directives to address the effect of drought on Covered Species and/or habitat areas. Management activities may include: controlling non-native weeds and other invasive species through techniques proven to be effective and safe for the species present; temporary irrigation of narrow endemic plant populations, where feasible.

8.5.4. Invasion of Exotic Species

For the purpose of defining Changed Circumstances, invasion of exotic species is defined as an introduction of an invasive species within a preserve that has either: (a) not previously been

known to occur in County and has been noxious elsewhere; or (b) is a particularly noxious variety of non-native species that is resistant to typical control measures.

Risk Assessment. Although invasive, exotic, or pest species of plants and/or animals may currently exist within the areas identified for inclusion in the preserve (PAMA and hardline preserve areas), they are expected to be controlled through the adaptive management process. An unexpected and/or sudden increase in new invasive species may create the potential for a significant adverse affect on one or more of the Covered Species. Opportunities for introductions of invasive species could occur as urban development expands in areas surrounding the preserve. Additionally, the occurrence of a catastrophic event, including the other identified Changed Circumstances defined herein, may precipitate the establishment of novel invasive species.

Preventative Measures. The County Department of Agriculture, Weights and Measures is responsible for the control and eradiation of invasive exotic species, including introduction of new pests through agricultural operations. The Agricultural Extension Office (a branch of the University of California) actively works with the County on invasive species control measures, as well. Under normal circumstances, through the implementation of adaptive management programs (as described in the FRMP and/or Area-Specific Management Directives) for individual preserve areas, invasive species will be discovered prior to becoming a threat to Covered Species. When invasive species are discovered, the FRMP and/or Area-Specific Management Directives require actions designed to reduce and/or eliminate such species.

Planned Responses. Responses to manage invasion by exotic species are incorporated into the FRMP and will be included in the Area-Specific Management Directives developed for individual preserve areas. If an unanticipated invasion by exotic species occurs as a result of another Changed Circumstance identified in this section, the County staff biologists and/or preserve manager(s) shall notify the Wildlife Agencies of this Changed Circumstance. The County staff biologists and/or preserve manager(s) shall assess the damage caused by the unanticipated invasion by exotic species and initiate the following actions:

- Map invasive species and note its abundance at each location;
- Recommend actions to address the threat(s) resulting from the unanticipated invasion by invasive species (such actions may involve efforts to improve habitat conditions);
- Implement responses prescribed in the FRMP or Area-Specific Management Directives; and
- Monitor the response of species/habitats to the action(s) taken.

If the influx of invasive species involves a species included on the California Invasive Plant Council (CalIPC) “List A” or state or federal “noxious” weeds, within 30 days of such notice to the Wildlife Agencies, County staff biologists and/or preserve manager(s) will assess and implement changes to adaptive management actions that may be necessary to control the invasive species. If the influx of invasive species involves a species listed on the CalIPC “Red Alert” list, County staff biologists and/or preserve manager(s) will also notify other relevant agencies as recommended by CalIPC. Within 30 days of obtaining responses from the agencies contacted, recommendations of the agencies will be used by the County, with concurrence of the Wildlife Agencies, to determine appropriate modifications adaptive management procedures in the affected portion of the Plan area.

8.5.5. Future Listings of Non-covered Species

Risk Assessment. The County recognizes, as noted in the USFWS discussion of the "Habitat Conservation Plan Assurances ('No Surprises') Rule" (63 F.R. 8859; February 23, 1998), that the future listing of a species whose conservation was not provided for in the Plan to a level sufficient enough to allow it to be include as a Covered Species Subject to Incidental Take can be viewed as a Changed Circumstance. In the event that a species which is not a Covered Species pursuant to this Plan is listed by the USFWS subsequent to the issuance of Incidental Take permits pursuant to this Plan, such listing will be considered a Changed Circumstance.

Preventative Measures. Proper implementation of this Plan, and other regional HCP/NCCP plans, constitute preventative measures for future listings.

Planned Responses. In the event of a listing of a non-covered species, the County and Wildlife Agencies will jointly identify measures that the County could follow to avoid take, jeopardy, and/or adverse modification of any designated critical habitat within the Plan area, until and unless the County's chooses to amend its permit to include coverage for the newly-listed species as a Covered Species or the Wildlife Agencies notify the County that such measures are no longer required to avoid jeopardy, take, or adverse modification of designated critical habitat of the newly listed species. Among other interim measures, the County will not issue any permit for land development, grading, and/or clearing, which have the potential to directly or indirectly cause take, jeopardy, and/or adverse modification of the species or habitat. Therefore, prior to the County's issuance of any permit for land development, clearing, and/or grubbing, applicants must obtain independent Incidental Take authority for any listed, non-covered species through appropriate federal and/or state permit processes. The process for adding a species to the list of Covered Species is described in Section 8.6.4.

8.5.6. Major Diseases

For the purpose of defining Changed Circumstances, major diseases are limited to a 20 to 50% decline in a population of a Covered Species due to the West Nile Virus.

Risk Assessment. There has been an increased prevalence and detection of exotic diseases that may affect native plants and wildlife. However, West Nile Virus is the only disease that could foreseeably affect Covered Species. West Nile Virus has been detected in bird species found in the County including: American crow, Western scrub-jay, American kestrel, Barred owl, Red-shouldered hawk, Red-tailed hawk, Cooper's hawk, Sharp-shinned hawk, sparrows, House finch, and Merlin (County of San Diego, 2007). Although many of these detections were in the southwestern part of the County, there are documented cases in the Plan area as well. Other diseases were considered but either posed unknown level of threat (e.g., Avian influenza) or were thought to be unlikely to affect natural populations (e.g., sudden oak death).

Preventative Measures. For major diseases, the best course of action is to focus on preventative measures. Besides monitoring disease vectors, one of the best ways to prevent major diseases from catastrophically effecting native species is to ensure that adequate populations of each species are maintained throughout their natural range. In the event of a

deadly outbreak of disease, this decreases the probability of regional extirpation or extinction. Since the Plan is designed to capture adequate spatial and numerical representation of Covered Species populations, implementation of this Plan is a key preventative measure.

The County Department of Environmental Health's Vector Control Program monitors and combats the spread of West Nile Virus and other diseases throughout the County. This program aims to educate the public about these diseases and prevention, with an emphasis on eliminating potential resources for pests that may carry diseases (rodents, flies, and mosquitoes) around human dwellings.

The County Department of Agriculture, Weights and Measures (which includes a plant pathologist, entomologist, and veterinarian) also monitors disease outbreaks in plants and animals. Therefore, the County has the ability to detect West Nile Virus (and other diseases) and respond appropriately.

Planned Responses. Disease detection will be part of the biological monitoring program for this Plan. Monitoring for disease will intensify if:

- Declines in populations are detected and disease is the suspected cause;
- Dead or diseased plants and animals are detected (for Covered Species or their prey or host plants); or
- Outbreaks have occurred in nearby populations.

The Wildlife Agencies will be consulted prior to collecting samples from live animals. Otherwise, prudent measures will be taken to avoid harming populations from which samples are taken. No more than 10 samples per year are anticipated to be analyzed as part of biological monitoring for this Plan.

If a disease is identified in a wild population of one of the Covered Species, their prey, or host plants, the Wildlife Agencies will be informed. The County will work with the Wildlife Agencies and other applicable agencies to identify an appropriate response.

8.5.7. Tribal Annexations

For the purpose of defining Changed Circumstances, tribal annexations refers to the bringing into trust lands larger than 100 acres within the PAMA (cumulatively) that are currently owned by tribes (as of 2008). The purchase of land by tribes does not, in itself, constitute a Changed Circumstance.

Risk Assessment. With the advent of Indian Gaming laws, many tribes in the County have purchased lands that may expand reservation boundaries. Lands owned by a tribe that are not held in trust are still subject to County ordinances and jurisdiction. Tribes may bring lands into trust through an act of Congress, or with approval from the Bureau of Indian Affairs. Once lands are brought into trust, they are no longer subject to County ordinances or jurisdiction. As a result, if land is held in trust, the County would not have the ability to apply the BMO to potential new

development on such lands, nor would it have the ability to acquire, preserve, manage, or monitor such lands. Therefore, these lands would effectively become excluded from this Plan. This would necessitate an adjustment to the Plan's conservation targets. In Table 8-4 a list of all lands currently owned by the tribe s that could potentially be placed in Trust is presented.

Table 8-4. Non-trust Tribal Land Holdings

OWNER	IN PAMA	OUT OF PAMA
PALA BAND OF MISSION INDIANS	2712.02	206.86
RINCON BAND OF LUISENO MISSION INDIANS	524.12	0.29
SAN PASQUAL BAND OF DIEGUENO INDIANS OF CALIFORNIA	514.60	41.75
RINCON SAN LUISENO BAND OF MISSION INDIANS	82.62	
PAUMA YUIMA INDIAN RESERVATION	80.38	3.42
BARONA BAND OF MISSION INDIANS	62.52	292.94
PALA BAND OF LUISENO MISSION INDIANS OF THE PALA RESERVATIONCALIF	48.59	0.00
SAN PASQUAL BAND OF MISSION INDIANS	33.68	2.64
PAUMA BAND OF LUISENO MISSION INDIANS	7.98	14.68
PAUMA BAND OF LUISENO MISSION INDIANS OF THE PAUMA&YUMA RESERVATION	7.77	35.88
PAUMA BAND OF LUISENO MISSION INDIANS OF THE PAUMA&YUIMA RESERVATION	3.07	7.84
PAUMA BAND OF LUSENO MISSION INDIANS		7.61
SAN PASQUAL BAND OF MISSION INDIANS		31.26
TOTAL	4077.36	645.17

The total acreage currently within the PAMA held by the tribal entities represents 2.5% of the land within the PAMA. Even is all this land were to be placed in Trust, a functional preserve system could still be achievable.

Preventative Measures. The County will continue to track tribal land acquisitions and annexations. In addition, the County will approach tribes about buying non-trust tribal properties located within the PAMA.

Planned Responses. Lands brought into trust by tribes, unless otherwise negotiated to remain in open space, will be evaluated to see if the annexation requires a reassessment of habitat and species goals, as well as acquisition requirements. The new goals and acquisition requirements will be reported in that year's annual public report (Section 8.3.3).

To reassess goals for species and habitats, the original Plan analysis and vegetation maps will be used to determine what conservation assumptions were made for the annexed land. This acreage (i.e., acreage assumed to be conserved according to the conservation analysis) will then be subtracted from the conservation target for each natural community. The same process will be used to address species-specific conservation goals, using the original Plan analysis map and species database. Ultimately these actions may result in a need to change PAMA to target or other habitat for conservation to offset the loss.

8.5.8. Climate Change

Risk Assessment. There is scientific consensus that alteration of the atmosphere is causing changes in climate, including increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising sea levels. In California, it is anticipated that there will be warmer temperatures (Cayan et al. 2006), greater extremes in weather, and larger variation between wet and dry years (Franco 2005) but precipitation patterns are more difficult to project (Lenihan et al. 2006). Higher nighttime temperatures are predicted, perhaps altering days of frost, daily temperature extremes, and distribution of some species (IPCC 2007). Some of the most dramatic potential climate change impacts include increased frequency and severity of extreme events, such as heat waves, wildfires, and flooding (Lenihan et al. 2006, IPCC 2007). To accommodate shifts in distribution, species will need a range of large core habitat areas connected by landscape-level linkages (Franco 2005). Those species with specific habitat requirements, with a limited ability to relocate or that are surrounded by development (leaving few relocation options), are most at risk (NPS 2006).

These changes could alter the structure, composition, and productivity of natural communities (Lenihan et al. 2006). Impacts from climate change (i.e., invasive species, fire, drought, flooding) could have a compounding effect, intensifying the severity of each impact (Cayan et al. 2006). Managing the effects of climate change will be challenging as impacts occur simultaneously (Lenihan et al. 2006).

Although the extent and nature of impacts from climate change within the Plan area are unknown, most climatic models suggest that there will be changes in vegetation patterns and increases in wildfire size and frequency (Franco 2005). Drier scenarios may result in more frequent fires affecting large areas, while wetter scenarios may result in fires of greater intensity, as wet conditions generate more biomass (Franco 2005). Changes in fire frequency are expected to contribute to an increase in the expanse of grasslands, largely at the expense of woodland and shrubland ecosystems (Lenihan et al. 2006) and coastal sage scrub may be reduced (Franco 2005). Growth rates of non-native species, insect pests, and pathogens are likely to increase with elevated temperatures and ranges may expand (e.g., pink bollworm) (Cayan et al. 2006). As non-native species tend to be disturbance tolerant, they may colonize altered sites preventing redistribution of native species (Cayan et al. 2006). Climate change may also increase infectious disease spread by mosquitoes, ticks, fleas, and rodents (Cayan et al. 2006).

Preventative Measures. Adaptative management is needed to respond to impacts of climate change, as there will be variations in occurrence and magnitude and since some species may not adapt effectively (Franco 2005). Potential impacts of climate change are discussed individually by topic (i.e., flood, fire, invasive species, and disease) in this section, along with planned adaptive management responses. As it becomes available, additional data may be use to respond to effects of climate change. This will help maintain preserve areas, minimize catastrophic disturbance, and preserve functional ecosystems. Impacts of climate change will also be accommodated through the preserve design and PAMA. Linkages and corridors will be maintained between major core habitat areas to allow for range shifts and migration of species. The PAMA also represents a variety of elevations, soil types, slopes, climate regimes, and habitats. In addition, there will be monitoring of Covered Species, particularly those vulnerable to effects of climate change. Therefore, through preserve design, PAMA, adaptive management,

and monitoring, effects of climate change may be addressed and proper Plan implementation ensured.

Planned Responses. If shifts in breeding seasons are documented through monitoring program or other scientific studies, the breeding season avoidance period may also be adjusted to coincide with the breeding season of those species as appropriate.

8.6. Plan Amendment and Update

Amendments to the Plan are not anticipated on a regular basis. However, certain events may require amending the Plan, such as accommodating major changes in conservation levels, preserve design, or large annexations of land out of the County's jurisdiction. When the County confirms a plan amendment is warranted, it will notify the Wildlife Agencies. CEQA and NEPA documentation must be prepared, at the appropriate level of analysis, for any change that triggers the amendment process. The document(s) must address project impacts, impacts on Plan implementation, and any effects on Take Authorizations held by the County. Amendments consistent with Sections 8.6.1, 8.6.2, 8.6.3, and 8.6.4 below can be administratively amended, relying on the environmental analysis prepared for this Plan, and the Incidental Take Permit can be amended as appropriate. Changes to the Plan not consistent with the procedures or limits outlined in the sections below, will need to process a special amendment and prepare the appropriate environmental analysis.

If a section 7 or 10(a) consultation is undertaken between a property owner and the USFWS outside the structure of the Plan, the result of these consultations should be documented using the same process described above, but would not be cause for an amendment.

Examples of actions requiring an amendment to the Plan include:

- A large annexation of land that requires Take Authorization(s) for development (see also Section 8.6.1);
- Removal of lands from conservation or reconfiguration of project plans that result in a decrease in amount or quality of habitat conserved (some can be addressed by a Preserve Design Adjustment described in Section 8.6.2);
- Addition of land to the Plan area originally excluded at the time of approval and, therefore, not covered by Take Authorizations (see Section 8.6.3 for special districts).
- Addition of species to the List of Covered Species Subject to Incidental Take (see Section 8.6.4); and/or

8.6.1. Transfer of Take Authorization & Annexation

Take Authorization may be transferred to other jurisdictions for impacts to habitat on annexed land, provided that these impacts are consistent with this Plan. Transfer of Take Authorization should be part of Annexation Agreements negotiated through the annexation process overseen by the Local Agency Formation Commission (LAFCO). If the conservation goals cannot be met or

found equivalent (as per Section 8.6.2), the Plan must be amended as described in Section 8.6, including CEQA and NEPA requirements.

Some annexations may have occurred during the creation of this Plan whereby land originally included in the Plan is now part of an adjacent jurisdiction. Lands annexed prior to the adoption of this Plan are not subject to the above requirements, so long as they were addressed in the HCP/NCCP Plan prepared by the jurisdiction to which they were annexed. Any administrative adjustment of the Plan boundaries will be described at the annual interagency meeting. If annexed lands were not addressed in another jurisdiction's HCP/NCCP Plan, then the annexation procedures should be followed.

Annexations by tribal governments are addressed under Changed Circumstances (Section 8.5). Lands annexed for military bases (i.e., expansion of military base boundaries through acquisitions) will be removed from the Plan area as an administrative adjustment, with conservation goals adjusted, accordingly. It is assumed that an integrated resource management plan for such a military base will adequately address conservation needs and be addressed through federal environmental review.

Annexations by Other Jurisdictions. Future annexations of land by adjacent jurisdictions must be consistent with Plan requirements, including the project review and approval process (see Section 7.9) if development is proposed in the annexed area. Conservation goals must not be compromised by development proposed in annexed areas. For all annexations to or from the unincorporated area the following steps must be taken.

- Notify the Wildlife Agencies in writing of all annexation proposals affecting the Plan area.
- Submit to the County and Wildlife Agencies, in the appropriate GIS format, proposals to adjust HCP/NCCP Plan boundaries used for compliance monitoring (see Section 8.3.1).
- Submit findings that impacts proposed are consistent with the overall conservation goals and objectives and preserve design strategy of this Plan.
- If no approved HCP/NCCP Plan exists for the jurisdiction to which the land is being annexed, the annexing jurisdiction must assure conformance to this Plan to the County and Wildlife Agencies.
- If an approved HCP/NCCP Plan exists for the jurisdiction to which the area is being annexed, the existing, approved plan must be modified through the boundary adjustment or amendment process and the monitoring and management portion for that HCP/NCCP must be modified to assure that development project design is consistent with overall conservation goals and preserve design strategy of this Plan.

8.6.2. Preserve Design Adjustments

Flexibility in adjusting the PAMA boundaries may be desirable when it would further preserve design goals or if significant biological resources are found outside the PAMA. Property owners can request that the PAMA boundaries be adjusted to include additional areas (if those areas support or contribute to the long-term survival of sensitive species or constitute part of an important regional habitat linkage or corridor) or to remove areas that are not important to the

preserve system based on new information. Property owners may also benefit by receiving on-site mitigation credit, instead of seeking off-site mitigation.

Adjustments to the approved boundaries of the PAMA and hardlined projects may be desirable under some circumstances that do not require a Plan amendment. Such adjustments may be necessary when new biological information is obtained through site-specific studies, unforeseen opportunities or constraints are identified during project design, or a landowner requests the PAMA boundaries to be adjusted on his or her property.

The County may request in writing that the Wildlife Agencies modify the boundaries of the PAMA. Such a request will, at a minimum, include:

- Information, both in spatial and tabular form, on the modification, including vegetation communities by acre and location of Covered Species;
- An analysis of how the modification will affect the ability to meet conservation goals for the Plan;
- Impacts to Covered Species, both positive and negative, from the modification; and
- Analysis of the feasibility of providing management for proposed additions of land into the PAMA.

In determining whether the modifications to the PAMA map are appropriate, the Wildlife Agencies shall use the information submitted with the request to determine if it is consistent with the goals and objectives of this Plan.

Such adjustments to the PAMA or hardline project boundaries can be made without amending the Plan if the adjustment will result in the same or higher biological value to the preserve system. The determination of functionally equivalent biological value of the proposed change is made by the County and must have written concurrence of the Wildlife Agencies. Comparison of biological value will examine all the following factors.

- Effects on conserved habitats - exchange maintains or improves the amount, configuration, and quality of conserved habitats
- Effects on Covered Species - exchange maintains or increases conservation of Covered Species
- Effects on habitat linkages and function of preserve areas - exchange results in similar or improved habitat connectivity, wildlife corridor function, management efficiency, and protection of biological resources
- Effects to species of concern not on the Covered Species list - exchange does not significantly increase the likelihood that an uncovered species will meet the criteria for listing under either the ESA or CESA

Most adjustments to the boundaries will be in areas immediately adjacent to identified PAMA or preserve areas. Any agreed upon modification of boundaries should be reported to adjacent jurisdictions if the modification could affect their preserve system's structure or function.

Minor Adjustments. Certain minor adjustments to project boundaries can be performed by the County as administrative adjustments and reported in the annual public report. Wildlife Agencies will have 30 days from the issuance of notice to respond to the County's action. If no response is received, the Wildlife agency concurrence requirement will be voided. Examples include any of the following circumstances.

- Changes to PAMA boundaries of 10 acres or less, where the there is an equivalent exchange of habitats in terms of acreage and quality.
    - For example, 8 acres of chaparral are removed from PAMA and another 8 acres is added to PAMA; both are part of large, unfragmented blocks of habitat; both areas are on slopes of greater than 20%; and both areas are on granitic soils.
- Removal of land from PAMA that is developed, but was incorrectly mapped on the vegetation map used for analysis (Figure 2-4). Only lands on the edge of the PAMA qualify, since excluding lands within cores and linkages could compromise the preserve system by allowing additional clearing or development without review under the BMO.
- Changes to hardline project boundaries (Appendix E) that results in a net gain in conservation or a change of less than 10 total acres, where there is an equivalent exchange of habitats in terms of acreage and quality, and does not further narrow regional wildlife corridors or cause greater impacts to sensitive species.

8.6.3. Participation by Special Districts

Although not subject to this Plan, special districts within the Plan area can utilize this Plan in their application for an Incidental Take permit through a consultation with USFWS and/or CDFG, as appropriate. This can be accomplished by demonstrating substantial conformance to the Plan by complying with the BMO (Appendix A), permit conditions, and the Implementing Agreement (Appendix D), as applicable.

8.6.4. Process for Adding Species to Covered Species List

If a species not on the Covered Species list is proposed for listing pursuant to the ESA or CESA, the Wildlife Agencies will determine whether additional conservation measures, beyond those prescribed by the Plan, are necessary to adequately protect the species. If no additional measures are necessary and coverage is requested, the Wildlife Agencies will process an amendment to the permit subject to CEQA and NEPA review and ESA requirements.

If the Plan's conservation measures will not adequately protect the species, the Wildlife Agencies will identify specific areas where the Plan is inadequate based on the best available scientific information and work with the participants to identify and jointly implement the steps necessary for coverage, which may include the following measures:

- Management practices and enhancement opportunities within the preserve (provided these measures do not adversely affect any other Covered Species) and

- Habitat acquisition through the reallocation of federal, state, and regional funds identified for Plan implementation (provided such reallocation does not adversely affect any Covered Species).

If these options are not adequate to meet the species' conservation requirements, the Wildlife Agencies will determine additional measures necessary to add the species to the Covered Species list, with preference given to conservation means that do not require additional costs, mitigation, or dedication of land.

9. PRESERVE MANAGEMENT AND MONITORING

The natural habitat expected to be conserved in this Plan area will make an important contribution to the conservation of Southern California's diverse and valuable ecosystems. The preserve system will also enhance the quality of life for residents in the region by providing recreational and educational opportunities while conserving the region's unique biodiversity and maintaining sensitive resources. To succeed in these goals, this Plan requires active management and land use restrictions in preserves that respond to the interface between developed lands and open space. Adaptive management measures and good land use planning will minimize impacts to individuals or populations of Covered Species from development abutting the preserve. A process for adaptively managing and monitoring the habitats and species in the preserve, described in the FRMP (Appendix G), will improve the effectiveness of detailed Area-Specific Management Directives that will be prepared for individual preserve areas.

Existing legal land uses within the preserve system may continue, and existing ownerships are expected to be maintained unless lands are otherwise obtained by public entities through purchase from willing sellers, dedication, or donation. On private lands that become part of the preserve system, public access will be allowed only on properties where access has been granted by the owner through an appropriate easement or on property that has been voluntarily dedicated in fee title to a public agency. The County will review new public facilities for consistency with the Plan to maximize public safety and minimize management concerns and biological or cultural resource impacts.

The FRMP addresses which land uses will be allowed within preserves; ensures that permitted uses are compatible with Plan objectives; and requires that direct and indirect impacts to sensitive habitat and Covered Species are reduced or eliminated by activity restrictions, project design, and management practices. Additionally, Incidental Take associated with activities that are consistent with the FRMP is permitted through this Plan.

9.1. Framework Resource Management Plan (FRMP)

The County has prepared the FRMP (Appendix G), which provides general direction for all preserve management and biological monitoring within the preserve system. The County also will develop Area-Specific Management Directives in accordance with the FRMP to address management and monitoring issues at the site-specific level.

Land stewardship, adaptive management and biological monitoring adaptive management (collectively referred to as resource management) will occur throughout this Plan preserve system. Both the FRMP and Area-Specific Management Directives address (or will address) the following resource management issues.

LANDOWNER RESPONSIBILITIES (STEWARDSHIP)	
Public access control	Fire safety
Fencing and gates	Erosion control
Access road maintenance	Hydrological management
Trail maintenance	Landscaping
Signage and lighting	Trash and litter removal
Noise	Public education (for stewardship)
Invasive Plant Removal	Biological Inventories

PUBLIC AGENCY RESPONSIBILITIES (ADAPTIVE MANAGEMENT AND BIOLOGICAL MONITORING)	
Habitat restoration	Archeological & cultural resources
Herbicide use	Species re-introductions
Predator control	Removal of invasive species
Fire regime	Public education (for adaptive management)
Landslides	
Habitat monitoring	Species monitoring
Scientific studies	Wildlife corridor monitoring

9.1.1. Area-Specific Management Directives

The County will be responsible for overseeing the development and implementation of Area-Specific Management Directives on preserves. These directives will guide ongoing resource management on preserves. Area-Specific Management Directives will be developed by applying the guidelines in the FRMP to information gained during baseline surveys of species distribution and management needs. The triggers that will initiate the development or revision of an Area-Specific Management Directive are described in the FRMP.

9.1.2. Land Management

Open space areas established prior to adoption of the Plan will require resource management pursuant to the Plan if they are inside the PAMA. Open space preserved after the Plan is adopted will be subject to resource management according to the specifications in the FRMP. Resource management will not be required on lands in the PAMA which have not been formally preserved.

As mentioned above, management consists of several basic components: land stewardship, adaptive management, and biological monitoring. The division of responsibilities for each of these basic components will vary from property to property, but is expected to follow the structure outlined below. In general, land stewardship is expected to be the responsibility of the landowner (public or private) while adaptive management and biological monitoring are the responsibility of public entities.

Private landowners may transfer conserved lands to a public or non-profit agency if mutually agreed upon by both parties. This is voluntary for both parties and neither shall be compelled to dedicate or accept land. Before transferring land, private landowners would generally be expected to perform initial stewardship tasks (e.g., hazardous waste removal, fencing, signage) and provide funding for the necessary anticipated stewardship activities on the conserved land. The County will accept lands within the PAMA provided that the transfer is in fee title and that an adequate endowment has been created for ongoing stewardship responsibilities.

9.2. Landowner Responsibilities

Land stewardship is the most basic level of management and is the responsibility of the landowner (public or private). If a regional funding source is available to fund stewardship of privately dedicated lands, these parties would be absolved from funding stewardship. The County will be responsible for oversight of land stewardship activities where it approves or has approved projects conditioned with this requirement. The County will use existing enforcement procedures if land stewardship is not being performed as described on privately owned lands.

Public agencies will be responsible for funding stewardship of lands currently owned by them or purchased by them in the future. If a regional funding source is available to fund stewardship of public lands, these parties would be absolved from perpetual funding of stewardship on these lands.

As part of initial land management tasks landowners will be required to conduct a biological inventory of the property. In most cases this will be conducted as part of the development review process. This report will identify the location of sensitive species as well as a summary any invasive plant species found on the property that are included on the California Invasive Plant Council (CalIPC) "List A", state or federal "noxious" weeds lists, or the CalIPC "Red Alert" list. Removal of these invasive plant species will generally be required as part of initial stewardship activities, subject to a case by case review.

9.3. Public Agency Responsibilities

Management actions targeted to specifically enhance or protect biological resources will generally be the responsibility of public agencies participating in this Plan. However, it will often be the case that private lands dedicated for preservation will have, as conditions of project approval, requirements to restore or enhance habitats within the preserve. This will remain the responsibility of the project proponent until such time as the County or other public agency determines that the requirement has been met. After such time, the responsibility for ongoing adaptive management will be the responsibility of the County.

9.3.1. Biological Monitoring & Adaptive Management

The NCCP process and conservation guidelines require regular monitoring of Covered Species populations and their habitats. This Plan preserve must be monitored to assess the status and trends of resources within preserves. Biological monitoring will help evaluate whether the

preserve is meeting the Plan's conservation targets for Covered Species and their habitats, identify threats to Covered Species and their habitat, and help identify management needs. The FRMP outlines the issues to be addressed by the long-term monitoring program. In addition, Area-Specific Management Directives will be prepared for individual preserves and will fully address resource management.

There are three major spatial scales of interest for monitoring in this Plan: (1) ecoregion, (2) subregion, and (3) preserve area. Biological resources will be monitored across all of the spatial scales; however, the objectives and implementation responsibilities of the monitoring efforts are scale-dependent. The scales of monitoring and respective objectives are described below.

NCCP Ecoregion. The southern California coastal sage scrub (CSS) NCCP ecoregion includes portions of five counties (Los Angeles, San Bernardino, Riverside, Orange, and San Diego) that support coastal sage scrub habitat. The objective of NCCP ecoregion monitoring is to assess indicators of ecosystem conditions for which responses can be measured and used to assess trends at this regional scale using standardized methodologies at established locations. The ecoregion monitoring program will, at a minimum, involve the aggregation of monitoring results from across NCCP subregions to provide a comprehensive view of the NCCP region. To meet its objective, the ecoregion monitoring program should have two basic components: (1) identify indicators for assessing the health and integrity of the ecoregion, and (2) provide a framework for integrating and evaluating results of subregional monitoring programs. Monitoring at the ecoregion scale is coordinated by the Wildlife Agencies, with assistance from jurisdictions, non-profits, academics, and other entities (e.g., U.S. Geological Survey).

Subregions. Subregions within the NCCP CSS ecoregion are defined principally by political boundaries and encompass scales at which individual planning efforts are conducted. Subregions outside of the NCCP CSS ecoregion include the South County MSCP subarea, North San Diego County MHCP, San Diego MSCP, Coastal and Central Orange County NCCP, Southern Orange County NCCP, Western Riverside County MSHCP, Palos Verdes NCCP, and Western San Bernardino County NCCP (not currently active). This Plan has established specific conservation goals and strategies to ensure the persistence or expansion of Covered Species, including key landscape or habitat attributes or ecosystem processes deemed necessary for long-term regional persistence. Implementing actions to achieve the conservation goals and strategies by the County are the basis for issuance of Take Authorizations under this plan. These implementing actions include resource management of the preserve. The FRMP has been structured to allow the Wildlife Agencies and County to (1) evaluate compliance with Plan conservation requirements (i.e., compliance monitoring) and (2) assess Covered Species population trends and additional key factors associated with species-specific conservation goals and strategies within this Plan preserve system. The County will generally be responsible for coordinating monitoring within the subregion.

Preserves. The finest spatial scale of the NCCP CSS ecoregion planning area is the individual preserves. These preserves vary with respect to ownership and resource management responsibility. The County is responsible for ensuring management and monitoring of individual preserves and the attainment of conservation goals. 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. Preserve managers must monitor the status and trends of Covered Species (in accordance with the FRMP) 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, Area-Specific Management Directives 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.

Information gained through monitoring will inform management decisions. An adaptive management program will provide corrective actions where monitoring shows that (1) resources are threatened by land uses in and adjacent to the preserve, (2) current management activities are not adequate or effective, or (3) enforcement difficulties are identified. Potential adaptive management actions are discussed in the FRMP. Results of biological monitoring will also be discussed with science advisors and other technical experts on preserve management when issues or questions arise.

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11. DEFINITIONS

Adaptive Management – A decision process that promotes flexible decision making, which can be adjusted in the face of uncertainties as outcomes from management actions and other events are better understood. Careful monitoring of these outcomes advances scientific understanding and allows for the adjustment of policies and/or operations as part of an interactive learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity.

Agriculture – Routine and ongoing commercial operations associated with farm, grove, dairy, or other agricultural business, including: (1) cultivation and tillage of soil; crop rotation; fallowing for agricultural purposes; production, cultivation, growing, replanting, and harvesting of any agricultural commodity including viticulture, vermiculture, apiculture, or horticulture; (2) raising of livestock, fur bearing animals, fish, or poultry and dairying; (3) any practices performed by a farmer on a farm incidental to or in conjunction with those farming or grove operations, including the preparation for market, delivery to storage or to market, or delivery to carriers for transportation to market; and (4) ordinary pasture maintenance and renovation consistent with rangeland management and soil disturbance activities. All such activities must be consistent with the economics of commercial agricultural operations and other similar agricultural activities. The final determination of a qualifying use shall be made by the Director.

California Environmental Quality Act – California Public Resources Code 21000 21177 et seq., including all regulations promulgated pursuant to that Act.

California Endangered Species Act – California Fish and Game Code section 2050 et seq., including all regulations promulgated pursuant to that Act. CESA prohibits CDFG from authorizing any Incidental Take of a state-listed threatened or endangered species if that take would jeopardize the continued existence of the species; all impacts to state-listed species must be fully mitigated.

Changed Circumstances – Changes affecting a species or geographic area covered by the Plan that can reasonably be anticipated and planned for by Plan developers and the USFWS.

Clearing – The removal of natural vegetation by any means, including brushing and grubbing.

Conserve – To protect land for its natural resource values.

Corridor – A specific route that is used for movement and migration of species. A corridor may be different from a linkage because it represents a smaller or narrower avenue for movement.

Covered Activities – Land uses, land and public infrastructure development, and conservation activities identified in this Plan and subject to the County of San Diego's jurisdiction and control that may result in Incidental Take of Covered Species during the term of this Plan and for which Incidental Take coverage is requested under the Take Authorizations.

Covered Projects – Those projects involving development within this Plan Plan area which receive Take Authorization directly through this Plan.

Covered Species – Those species within the Plan that will be adequately conserved through implementation of the Plan; these are listed in Table 6-2. Assurances are granted for all of these species. Incidental take or loss of Covered Species Subject to Incidental Take is allowed, provided that the provisions of the Plan are implemented.

Developed Land – Land that has been constructed upon or otherwise covered with a permanent or semi-permanent unnatural surface shall be considered developed (Holland 12000). Regardless of substrate, areas covered by a large amount of debris or other materials may also be considered developed (i.e., car recycling plant, quarry, etc.).

Development – The uses to which land shall be put, including construction of buildings and structures and all alterations of the land incidental thereto, excluding agricultural operations.

Director – The County's Director of Planning and Land Use, Director of Public Works, or Director of Agriculture/Weights & Measures depending upon the permit being issued.

Disturbed Land – Land which has been significantly modified by previous legally authorized human activity, but continues to retain a soil substrate shall be considered disturbed land (Holland Code 11300). This shall include areas that have been graded, repeatedly cleared for fuel management purposes, and/or experienced recurring use resulting in compacted soils and minimal potential for natural revegetation (i.e., dirt parking lots, incised trails, etc.).

Edge Effects – Indirect impacts to a preserve area caused by development adjacent to the preserve area. Indirect impacts can be temporary and/or permanent, such as: drainage, invasive species, lighting, brush management, trails, contour grading and construction/operational noise.

Emergency – An event or situation that poses considerable risk to human health and safety. This includes, but is not strictly limited to, loss of human life, property damage, or air and water contamination threatening human health and safety.

Endangered Species – A species listed as endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA).

Endangered Species Act – The federal Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 et seq.), including all regulations promulgated pursuant to that Act.

Floodplain – An area of land that would be inundated by a flood with a probability of occurring once in 100 years. These areas are identified in the "County of San Diego Floodplain Maps" approved by the Board of Supervisors.

Fully Protected Species – Those species listed in Sections 3511 (Fully Protected Birds), 4700 (Fully Protected Mammals), 5050 (Fully Protected Reptiles and Amphibians), and 5515 (Fully Protected Fish) of the California Fish and Game Code that may not be taken or possessed at any time and for which no licenses or permits may be issued for their Take except for collecting

these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Grading - Any excavating or filling or combination thereof, including the land in its excavated or filled condition according to the County's Grading Ordinance.

Grubbing – The removal of natural vegetation by any means, including removal of the root system.

Hardline project – A project included in this Plan, or amended thereunto, for which specific development (Take-Authorized) and preserve boundaries, as well as conditions for Take Authorization, have been included and analyzed under this Plan. See also "Take Authorized Area."

HCP/NCCP Plan – A Habitat Conservation Plan (HCP) approved pursuant to 16 U.S.C. section 1539(a)(2)(A) and the plan developed in accordance with the Natural Community Conservation Planning Act, California Fish and Game Code section 2800 et seq., also referred to as an NCCP.

Implementing Agreement – The legal agreement between the County of San Diego and Wildlife Agencies that ensures implementation of this Plan; binds each of the parties to perform the obligations, responsibilities, and tasks assigned; and provides remedies and recourse should any of the parties fail to perform as required.

Incidental Take Permit – The permit granting take of listed species provided such take is incidental to and not the purpose of the carrying out of an otherwise lawful activity. For purposes of the section 10(a)(1)(B) permit, Incidental Take refers solely to species other than plant species.

Indian Country - Lands defined in 18 U.S.C. section 1151, which includes all land located within the exterior boundaries of a federally recognized reservation.

In-kind Mitigation – Mitigation with the same species or vegetation community classification as the area being impacted.

Linkage – An area of land which supports or contributes to the long-term movement of wildlife and genetic exchange by providing live-in habitat that connects to other habitat areas, including agricultural lands that contribute to wildlife movement.

Listed Non-covered Species – A species listed as threatened or endangered under the ESA or CESA for which neither a section 10 (a)(1)(B) permit under the ESA nor a section 2835 permit under the CESA has been granted pursuant to this Plan.

Migratory Bird Treaty Act – The federal Migratory Bird Treaty Act (16 U.S.C. § 701 et seq.), including all regulations promulgated pursuant to that Act.

Multiple Habitat Conservation Program – An HCP/NCCP plan for the incorporated areas in northern San Diego County and coordinated by SANDAG.

MSCP Subregional Plan – The Multiple Species Conservation Program Plan, a comprehensive habitat conservation program dated August 1998, which addresses multiple species habitat needs and the preservation of native vegetation for a 900-square mile area in southwestern San Diego County.

Narrow Endemic Species – Species in the Plan area that are highly restricted by their habitat affinities, geographic range, soil types, host plants, or other ecological factors, excluding those occurring in wetlands. These species require species-specific avoidance measures.

Native Vegetation – Vegetation composed of plants that naturally occur in the San Diego region and were not introduced directly or indirectly by humans. Native vegetation may be found in, but is not limited to, marshes, native grasslands, coastal/inland sage scrub, chaparral, woodlands, forests, and other vegetation communities.

Natural Vegetation – Vegetation communities included in Tiers I, II, and III on the List of San Diego County Vegetation Communities and Tier Levels (Attachment D of the BMO). Non-Native grassland shall be included under this definition because it is a naturalized community that provides habitat for a number of native and sensitive species of plants and animals.

Natural Community Conservation Planning (NCCP) Act – The California Natural Community Conservation Planning Act, California Fish and Game Code Section 2800 et. seq. Amendments to the NCCPA enacted effective January 1, 2003 (Chapter 4, § § 1 and 2 of California statutes 2002 (S.B. 107)) expressly provide that this Plan (originally planned as part of the San Diego Multiple Habitat Conservation Plan) will be solely governed in accordance with the NCCPA as it read on December 31, 2001, and not by the other substantive provisions of S.B. 107; however, the County is voluntarily complying with the NCCPA as amended in 2003.

NCCP Permit– Any permit issued by CDFG under the NCCPA to permit the Take of a species listed as threatened or endangered under CESA, species that is a candidate for such a listing, or non-listed species whose conservation and management is provided in an approved NCCP, with the exception that an NCCP permit may not authorize the Take of five fully protected birds listed in the California Fish and Game Code section 3511 (golden eagle, American peregrine falcon, bald eagle, California brown pelican, and California least tern) or the mountain lion, specially protected by the California Fish and Game Code section 4800.

NCCP Plan – A plan developed in accordance with the NCCPA that provides for comprehensive management and conservation of multiple wildlife species and identifies and provides for regional or area-wide protection and perpetuation of natural wildlife diversity while allowing compatible and appropriate development and growth.

Non-native Grassland – Land which supports non-native grassland (Holland 42200) as generally indicated by the presence of *Avena*, *Bromus*, *Erodium*, *Brassica*, and other annual species. Land shall also be identified as non-native grassland when site conditions are such that annual grassland species are sparse, but the habitat cannot be identified as developed, disturbed, or agriculture based on the County definitions above or any other native/non-native habitat listed by Oberbauer (2005).

MSCP – This refers to the Multiple Species Conservation Program. The program is the ongoing, coordinated effort to implement this Plan within a specified geographic region.

Pathways – Non-motorized transportation facilities located within a parkway or road right-of-way. A riding and hiking trail located in the road right-of-way is considered a pathway. Pathways are intended to serve both circulation and recreation, ranging from a separated, soft-surface, single track adjacent to a rural road to a widened, decomposed-granite shoulder intended for biking, hiking, and equestrian use.

Plan – This Plan including all volumes and appendices. This refers to the document itself, which prescribes the necessary future actions to be carried out as part of the program. "Plan" is capitalized when referring to this Plan, as opposed to other plans.

Plan area – The affected area of this Plan under the County's land use authority. This excludes all tribal lands (i.e., Indian Country), military lands, and lands that are part of the Multiple Habitat Conservation Program. This area also excludes lands that are generally independent of the County's regulatory authority (i.e., Forest Service lands and special district lands) even though these lands are included in the geographic limits of Plan area.

Population – An interbreeding group of individuals of the same species. The geographical limits of a population should be delineated as most appropriate for that species depending on its mobility, method of reproduction, and known distribution. Portions of a population shall generally be determined based on the number of individuals; however, area may be appropriate for some species.

Pre-Approved Mitigation Area (PAMA) – Lands within the boundaries of the Pre-approved Mitigation Area shown on Figure 2-1 of this Plan. Conservation efforts will be focused within the PAMA during the implementation of this Plan.

Preserve – (n.) A discrete area of conserved land, which is owned and/or managed by one entity.

Preserve System – (n.) The overall system of permanently conserved lands within the Plan area.

Rare Species – A species that exists in such small numbers throughout all or a significant portion of its range that it may become endangered or threatened, as defined by CESA or ESA, if factors affecting its survival worsen.

Regional General Permit 53 - Regional General Permit (RGP) 53 is a blanket permit that the County negotiated with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Regional Water Quality Control Board and State Water Resources Control Board, and California Department of Fish and Game which allows for flood control maintenance activities at 1,090 facilities countywide. The facilities include flood control channels, culverts, and road side drainage ditches. Without proper maintenance, the functioning capacity of these facilities deteriorates from siltation and the growth of vegetation, reducing hydrologic flow and causing flooding.

Section 10(a)(1)(B) Permit – A permit issued by the USFWS under section 10(a)(1)(B) of the ESA (16 U.S.C. § 1539(a)(1)(B)) to allow the Incidental Take of Species Adequately Conserved

and/or Covered Species, to the extent Take of such species is otherwise prohibited under section 9 of the ESA. The Take of listed plant species is not prohibited under the ESA or authorized under a section 10(a)(1)(B) permit. However, plant species adequately conserved by this Plan Plan are listed in the 10(a)(1)(B) permit in recognition of the conservation measures and benefits provided for them under the Plan and receive assurances pursuant to the USFWS "No Surprises" Rule.

Section 1600 – Section 1600 of the California Fish and Game Code, which regulates alterations to permanent or intermittent stream courses.

Section 2835 – Section 2835 of the California Fish and Game Code, which allows the Take of identified species whose conservation and management is provided for through a NCCP approved by the CDFG.

Section 4(d) Special Rule – The regulation concerning the California gnatcatcher published by the USFWS on December 10, 1993 (58 Fed. Reg. 65088) and codified at 50 C.F.R. section 17.41(b) pursuant to the ESA which describes one particular set of conditions under which the Incidental Take of the California gnatcatcher in the course of certain land use activities is lawful.

Section 404 – Section 404(b)(1) of the federal Clean Water Act (33 U.S.C. § 1344), which regulates discharge of dredged and fill material into the waters of the United States, including wetlands.

Section 7 – Section 7(a)(2) of the ESA (16 U.S.C. § 1536 (a)(2)) which requires that any federal agency that permits, licenses, funds, or otherwise authorizes activities that may affect species listed under the ESA consult with the USFWS to ensure that its actions will not jeopardize the continued existence of any listed species or adversely modify the designated critical habitat of a listed species.

Sensitive Plant Species – Those plants which meet the following criteria as determined by the County and maintained in its list of sensitive plant species. Species are ranked according to the following criteria:

- Group A - Plants that are rare, threatened, or endangered in California and elsewhere;
- Group B - Plants that are rare, threatened, or endangered in California but more common elsewhere;
- Group C - Plants which may be quite rare, but need more information to determine their true rarity status; and
- Group D - Plants of limited distribution that are uncommon, but not presently rare or endangered.

Sensitive Species – Species which meet any of the following criteria: (1) those species that are included on generally accepted and documented lists of plants and animals of endangered, threatened, candidate, or of special concern by the federal government or State of California; (2) narrow endemic species or sensitive plant species (as defined herein); or (3) those species that meet the definition of "rare or endangered species" under section 15380 of the CEQA Guidelines.

Significant Population – A group or groups of sensitive species, wherever located, the loss of which would substantially reduce the likelihood of the survival and recovery of the species in San Diego County as defined in the Plan's species specific goals and objectives.

Steep Slope Lands – All lands having a slope with natural gradient of 25% or greater and a minimum rise of 50 feet, unless said land has been substantially disturbed by previous legal grading. The minimum rise shall be measured vertically from the toe of slope to the top of slope within the project boundary.

Suitable habitat - An area that meets the habitat needs of a species and is likely to be utilized by that species at some point within a 5-year period. If an area appears to contain the appropriate elements for a species and is within dispersal distance of known populations and without substantial barriers, it should be considered suitable unless demonstrated otherwise through appropriate and adequate field surveys.

Take – Refers to the meaning provided by the ESA and the California Fish and Game Code, including relevant regulations and case law. Under the ESA, "take" is defined as to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. § 1532(19)) and "harm" has been further defined to "include any act which actually kills or injures fish or wildlife" including "significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife (40 Fed. Reg. 44412 and 46 Fed. Reg. 54748).

Take Authorization – Permit authority granted through a section 10(a)(1)(B) permit pursuant to the ESA and/or a section 2835 permit granted pursuant to the NCCPA.

Take Authorized Area – Areas designated on Figure 2-1 which were included or amended into this Plan and analyzed as part of the Plan. The Wildlife Agencies have granted Take for these areas in accordance to the terms and conditions of this Plan.

Third Party Participants – Any landowner or other public or private entity that obtains Take Authorization through the County's Take Authorization.

Threatened Species – A species listed as "threatened" under the ESA or CESA that is likely to become endangered in the foreseeable future.

Trail – Soft-surface facilities for single or multiple uses by pedestrians, equestrians, and mountain bicyclists. Trails are typically away from vehicular roads and are primarily recreational in nature, but can also serve as an alternative mode of transportation.

Unforeseen Circumstances – Changes in circumstances affecting a species or geographic area covered by the Plan that could not reasonably have been anticipated by Plan developers or the USFWS at the time of the Plan's negotiation and development, which result in a substantial and adverse change in the status of the Covered Species.

Urban Area – An area consisting of one or more dwelling units per acre.

Vernal Pool – A seasonally flooded depression that supports a distinctive living community adapted to extreme variability in hydrologic conditions (seasonally very dry and very wet conditions). In order to be considered a vernal pool both of the following conditions must be met: (1) the basin is at least partially vegetated during the normal growing season or is unvegetated due to heavy clay or hardpan soils that do not support plant growth; and (2) the basin contains at least one vernal pool obligate species (i.e., species which occur primarily in vernal pools; see Table 7-3).

Viable – Capable of maintaining normal ecosystem functions over the long term (at least 50 years) that sustain a full suite of native or naturalized species without intensive direct human intervention.

Watershed – All land surface area that drains toward a body of water, including vernal pools.

Wetland – Lands having one or more of the following attributes are wetlands: (1) At least periodically, the land supports a predominance of hydrophytes (plants whose habitat is water or very wet places); (2) the substratum is predominantly undrained hydric soil; or (3) it is an ephemeral or perennial stream and substratum is predominantly non-soil in which waters from a tributary drainage area of 100 acres or larger flow. Notwithstanding the criteria above, the following shall not be considered wetlands: (a) lands which have attribute(s) specified above solely due to man-made structures (i.e., culverts, ditches, road crossings, or agricultural ponds), provided that the Director of Planning and Land Use determines that they (i) have negligible biological function or value as wetlands; (ii) are small and geographically isolated from other wetland systems; (iii) are not vernal pools; and (iv) do not have substantial or locally important populations of wetland dependent sensitive species; or (b) lands that have been degraded by past legal land disturbance activities to the point that they meet the following criteria, as determined by the Director of Planning and Land Use, (i) have negligible biological function or value as wetlands even if restored to the maximum extent feasible; and (ii) do not have substantial or locally important populations of wetland dependant sensitive species.

Wetland Obligate Species – Species which depend upon open water or wetland vegetation communities within the Plan area for their survival.

Wildlife Agencies – The United States Fish and Wildlife Service and the California Department of Fish and Game.

12. ACKNOWLEDGEMENTS

The following individuals and organizations have been instrumental in developing this Plan.

Participant	Organization	Role
Thomas Oberbauer Robert Asher Claudia Anzures Trish Boaz Jeremy Buegge Christine Carta Mindy Fogg Maeve Hanley Dahvia Lynch Nelson Olivas Sabrina Ozturk Brenda Samuelson Annette Shin Casey Trumbo Jared Underwood Adam Wagschal	County of San Diego	Coordinated the planning process by holding stakeholder meetings, assumed primary responsibility for development of figures and text of the Plan, and coordinated with other agencies. The County of San Diego provided partial funding for this planning effort.
Susan Wynn Michelle Moreno ___(solicitor)	U.S. Fish and Wildlife Service (USFWS)	Reviewed maps and policies for conformance to the federal Endangered Species Act policies and validity of biological principles. US Fish and Wildlife Service also provided funding for this effort.
William Tippets David Mayer Nancy Frost Heather Schmalbach Randy Rodriguez	California Department of Fish and Game (CDFG)	Reviewed maps and policies for conformance to the California Endangered Species Act policies and validity of biological principles.
Reed Noss	University of Central Florida Department of Biology	Independent Science Advisors. Provided independent, scientific advice about the conservation design process and plan development.
Paul Beier	Northern Arizona University School of Forestry	
David Faulkner	Forensic Entomology Services	
Robert Fisher	U.S. Geological Survey Western Ecological Research Center	
Brian Foster	Avian Research Associates Zoological Society of San Diego	
Thomas Griggs	California State University, Chico	
Patrick Kelly	California State University, Fresno	
Jeff Opdycke	Zoological Society of San Diego	
Trish Smith	The Nature Conservancy	
Peter Stine	U.S. Forest Service	
Michael O'Connell	Irvine Ranch Land Preserve Trust	
Patrick Atchison Scott Fleury Greg Nichols Mike Howard Mike Anguiano	Ogden, AMEC, and Technology Associates International Corporation (TAIC)	Lead development of the conservation approach, preserve design, and conservation analysis. Provided technical assistance in creating maps, writing text, analyzing conservation coverage, and formulating conservation policies.

Participant	Organization	Role
Wayne Spencer	Conservation Biology Institute (CBI)	Provided technical assistance in analyzing conservation coverage and designing the preserve layout.
Christina Schaefer	EDAW, Inc.	Provided technical assistance in collecting and compiling data on Ramona vernal pools, and writing conservation guidelines for that segment of the Plan.
Mark Ebbin Sean Skaggs	Ebbin, Moser, & Skaggs	Provided legal advice on conservation strategies. Coordinated HCP developed by the Rincon Tribe with this Plan.
Kristeen Penrod Sedra Shapiro	San Diego State University	Provided data and analyses on conservation strategies in the area of Camp Pendleton and the Santa Margarita Ecological Preserve.
Kenneth Quigley	Department of the Marine Corps, Camp Pendleton	Provided information on the conservation goals of Camp Pendleton outside of its boundaries.
Dan Silver Michael Beck Michael Fitts	Endangered Habitats League	Provided input on the goals and objectives of the local environmental community.
David Hogan	Center for Biological Diversity	Provided input on the goals and objectives of the local environmental community.
Karen Messer	Buena Vista Audubon Society	Provided input on the goals and objectives of the local environmental community.
Mary Clarke	Sierra Club	Provided input on the goals and objectives of the local environmental community.
Ann Van Leer	The Nature Conservancy	Provided input on the goals and objectives of the local environmental community.
Craig Benedetto Jim Whalen Rikki Schroeder	Alliance for Habitat Conservation	Provided input on the local goals and objectives of the building industry in relation to endangered species and biological resource conservation.
Matthew Adams Scott Maloy	Building Industry Association	Provided input on the local goals and objectives of the building industry in relation to endangered species and biological resource conservation.
Wallace Tucker Karen Tucker	Fallbrook Land Conservancy	Provided information about lands conserved by their organization.
Eric Larson	Farm Bureau	Provided advice on policies regarding agricultural operations.
Eric Anderson	Anderson Seed Company	Provided advice on policies regarding agricultural operations.
Julia Freedgood Mike Nelson John Miller Jennifer Dempsey Ed Thompson	American Farmland Trust	Provided advice on policies regarding agricultural operations.
San Dieguito Bonsall Rainbow Valley Center Ramona Hidden Meadows Pala Pauma Twin Oaks	Community Planning and Sponsor Groups	Provided input on general concepts for this Plan from a community perspective.