Volume I

# Final MHCP Plan

*Prepared for:*

**Multiple Habitat Conservation Program**

*Administered by:*

SANDAG

**for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista**

**March 2003**

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Solana Beach, and Vista

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Onaka Planning & Economics
The Rick Alexander Company

March 2003

amec

CONSERVATION BIOLOGY INSTITUTE

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## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| ACOE | U.S. Army Corps of Engineers |
| BCLA | biological core and linkage area |
| BLM | U.S. Bureau of Land Management |
| Caltrans | California Department of Transportation |
| CBI | Conservation Biology Institute |
| CDFG | California Department of Fish and Game |
| CEQA | California Environmental Quality Act |
| CESA | California Endangered Species Act |
| CFD | community facilities district |
| CNDDB | California Natural Diversity Database |
| DEFM | Demographic and Economic Forecasting Model |
| EA | Environmental Assessment |
| EDU | equivalent dwelling unit |
| EIR/EIS | Environmental Impact Report/Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| ESA | Endangered Species Act |
| FPA | focused planning area |
| FY | fiscal year |
| GIS | geographic information system |
| HCP | Habitat Conservation Plan |
| HMP | Habitat Management Plan |
| ISTEA | Intermodal Surface Transportation Efficiency Act |
| LCP | Local Coastal Plan |
| LWCF | Land and Water Conservation Fund |
| MHCOSP | Multiple Habitat Conservation and Open Space Program |
| MHCP | Multiple Habitat Conservation Program |
| MSCP | Multiple Species Conservation Program |
| NCCP | Natural Community Conservation Planning |
| NCWF | North County Wildlife Forum |
| NEPA | National Environmental Policy Act |
| PVA | population viability analysis |
| SANDAG | San Diego Association of Governments |
| UC | University of California |
| USFWS | U.S. Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WCB | Wildlife Conservation Board |

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# 1.0 INTRODUCTION

The Multiple Habitat Conservation Program (MHCP) is a comprehensive, multiple jurisdictional planning program designed to develop an ecosystem preserve in northwestern San Diego County. Implementation of the regional preserve system is intended to protect viable populations of key sensitive plant and animal species and their habitats, while accommodating continued economic development and quality of life for residents of the north county region. The MHCP is one of several large multiple jurisdictional habitat planning efforts in San Diego County (Figure 1-1), each of which constitutes a subregional plan under the State of California's Natural Community Conservation Planning (NCCP) Act of 1991.

The current MHCP study area (Figure 1-2) encompasses about 175 square miles (111,908 acres) comprising seven incorporated cities in northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista). These jurisdictions will implement their respective portions of the MHCP plan through citywide "subarea" plans, which describe the specific implementing mechanisms each city will institute for the MHCP. The subarea plans will contribute collectively to the conservation of biological communities and species in the MHCP study area. In turn, the MHCP plan, in concert with other subregional plans, will contribute to continued ecosystem viability in southern coastal California.

The combination of the subregional MHCP plan and city subarea plans will serve 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 NCCP plan under the NCCP Act and the California Endangered Species Act (CESA). The participating jurisdictions will submit these plans to the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Game (CDFG) in support of applications for permits and authorizations to incidentally "take" listed threatened or endangered species or other species of concern. "Take authorizations" thus issued by the wildlife agencies allow for otherwise lawful actions such as development that may incidentally take or harm individuals of a species or its habitat (generally outside of the preserve system) in exchange for conserving the species inside the preserve system. A jurisdiction that is issued a take authorization, referred to as a "take authorization holder," may share the benefits of that authorization by using it to permit public or private projects that comply with the MHCP and the city's subarea plan. The conservation and management responsibilities, assurances of implementation, and corresponding authorizations for all parties will be contained in an implementing agreement between each take authorization holder (city) and the wildlife agencies (USFWS and CDFG).

## 1.1 GOALS

The overall goal of the MHCP is to maintain biodiversity and ecosystem health in the region while maintaining quality of life and economic growth opportunities. More precisely, the MHCP has the following goals:

- *Biological Goals:* maintain the range of natural biological communities and species native to the region, and contribute to regional viability of endangered, threatened, and key sensitive species and their habitats, thereby preventing local extirpation or species extinction.

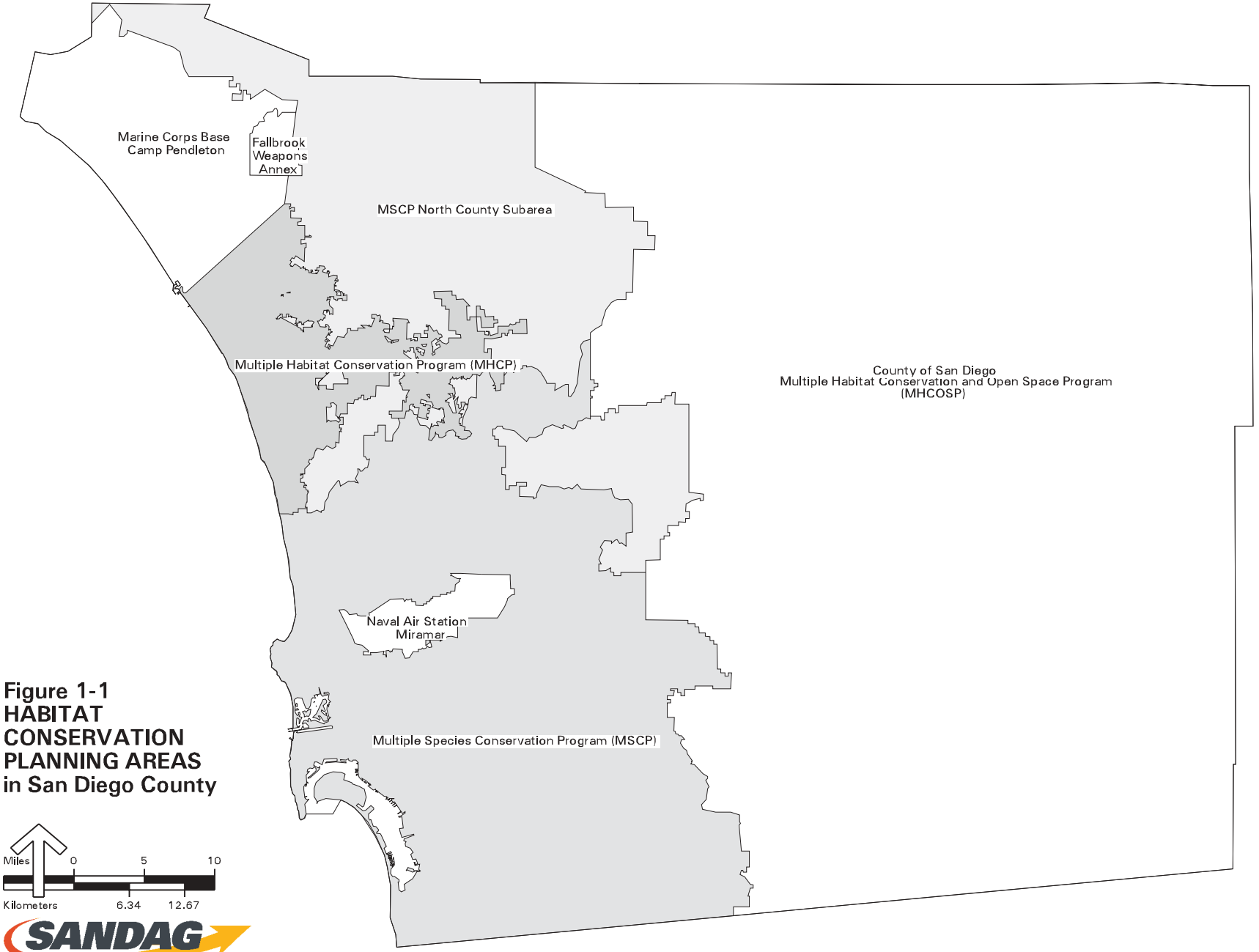



**Figure 1-1**
**HABITAT CONSERVATION PLANNING AREAS in San Diego County**

Miles 0 5 10
Kilometers 6.34 12.67

SANDAG

January 16, 2003

Source: SANDAG's GIS

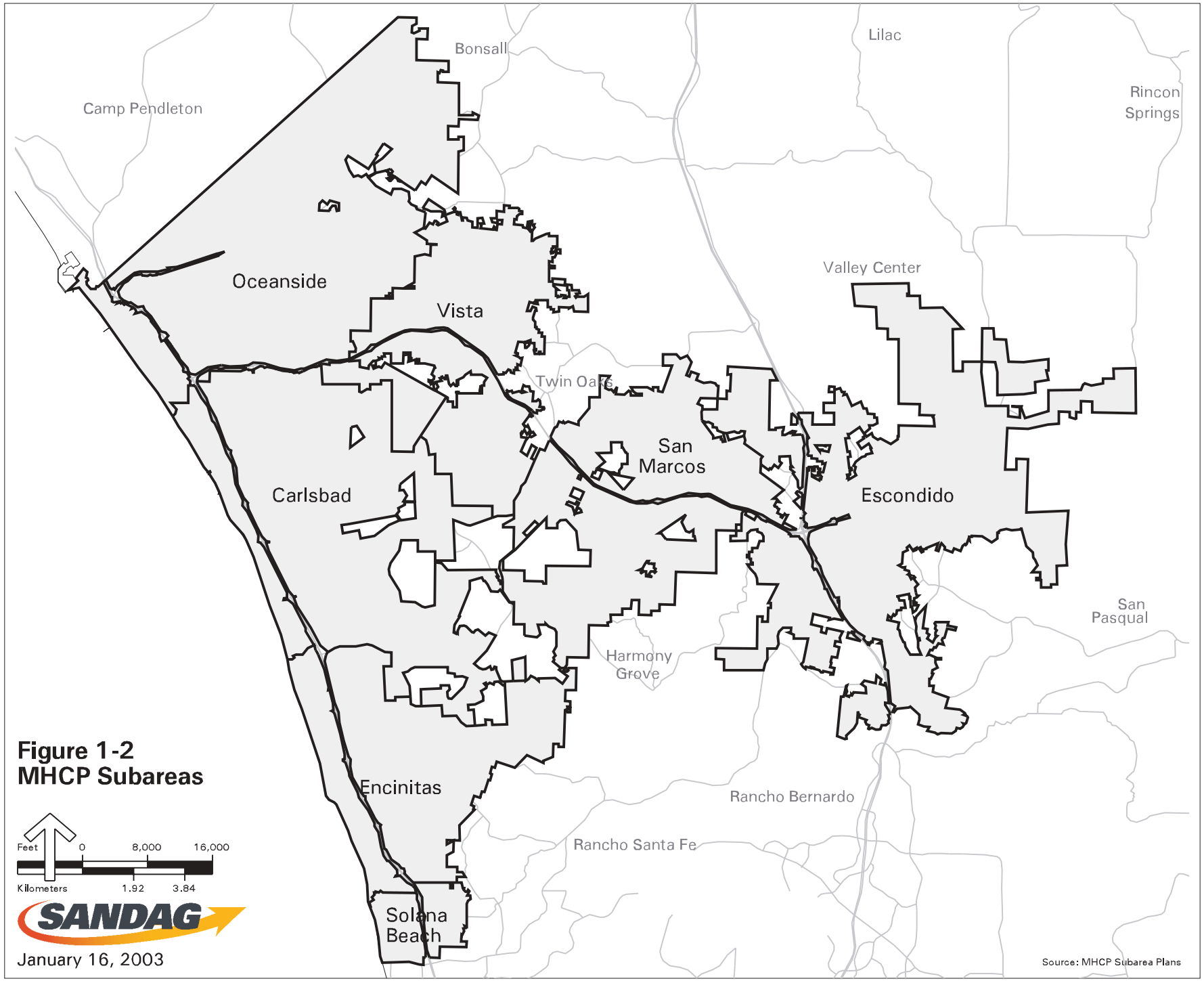



**Figure 1-2**
**MHCP Subareas**

- *Economic Goals:* create greater certainty for economic and urban development by identifying where new development should and should not occur, and encourage investment by establishing a legal and procedural framework that streamlines the permitting process and provides a reliable basis for economic decision making.

- *Social Goals:* protect the quality of life for local residents by maintaining the area's scenic beauty, natural biological diversity, and recreational opportunities.

The planning approach used by the MHCP is intended to replace the existing project-by-project biological mitigation process with comprehensive conservation planning. The current process results in fragmented biological mitigation areas, which by themselves do not contribute adequately to the continued existence of sensitive species or maintenance of natural ecosystem functions. Through a comprehensive conservation program, the MHCP will help resolve problems associated with haphazard and widespread habitat loss and piecemeal mitigation, which have constrained and increased costs for private and public development in northern San Diego County. By identifying priority areas for conservation and other areas for future development, the MHCP will conserve the most biologically valuable areas, while increasing certainty for development outside the preserve area.

Finally, by preserving a network of habitat and open space, the MHCP will contribute to the regional quality of life. When combined with other elements, such as clean air and an efficient transportation system, habitat and open space can help retain and attract new businesses to the region. In this way, the MHCP recognizes open space as an important component of regional infrastructure.

## 1.2 PURPOSE AND NEED

The San Diego region has more rare, threatened, and endangered species than any comparable land area in the United States. On a national and global scale, the region has been identified as a major "hot spot" for biodiversity and species endangerment (Dobson et al. 1997; Myers et al. 2000). San Diego County is also one of the most rapidly growing regions of the country. This combination of high biodiversity, large numbers of rare and unique species, and rapid urbanization has led to intense conflicts between economic growth and biological conservation. In particular, the 1993 listing of the California gnatcatcher (*Polioptila californica californica*) as federally threatened greatly complicated the region's ability to accommodate future growth and development in coastal habitats. The special rule applied to the listing of the gnatcatcher, under Section 4(d) of the ESA, allows some development to continue with the commitment that HCPs would be prepared to comprehensively address the conservation of the gnatcatcher in an ecosystem planning context. Under the 4(d) rule, development during this interim planning period was restricted to removing no more than 5% of all coastal sage scrub habitat in the range of the gnatcatcher.

The traditional project-by-project process for resolving conflicts between species preservation and development is costly and cumbersome. Moreover, this piecemeal process results in the uncoordinated preservation of scattered habitat areas set aside as mitigation for project impacts. These generally small, unconnected habitat areas do not necessarily guarantee the continued viability of species populations or ecosystem functions, which generally depend on large, interconnected habitat areas designed and managed in a coordinated manner. The MHCP plan replaces this piecemeal approach to project approval and mitigation with a coordinated, comprehensive approach based on the basic tenets of biological preserve design. This approach ensures that project mitigations are directed to those areas most critical to maintenance of ecosystem function and species viability. The MHCP targets the highest quality

habitats and critical linkage areas for preservation, while allowing development of less important habitat areas.

Completion of the MHCP and constituent subarea plans will allow the state and federal wildlife agencies to issue citywide take authorizations to the local jurisdictions. Participating cities can then provide take authorizations for public or private projects, so long as the projects comply with subarea and subregional plan guidelines. Hence, this plan can fulfill the current mandatory requirements under the ESA and CESA, as summarized below. In addition, approval of the MHCP plan and constituent subarea plans will replace the current Section 4(d) restrictions on impacts to coastal sage scrub that were imposed with the listing of the gnatcatcher.

### 1.2.1 Federal Requirements

Each subarea plan prepared in compliance with this subregional plan must fulfill the mandatory requirements of an HCP pursuant to Section 10(a)(1)(B) of the ESA, as amended. Section 10(a) allows the issuance of permits for the incidental take of threatened or endangered species and allows the inclusion of unlisted species in the permit (in anticipation of their potential to be listed in the future) so long as conservation actions for these species treat them as if they were listed. To fulfill the requirements of an HCP, each subarea plan must include the following information:

- impacts likely to result from the proposed taking of one or more federally listed wildlife species including any non-listed species proposed for coverage;
- measures the applicant will undertake to monitor, minimize, and mitigate such impacts; the funding that will be made available to undertake such measures; and the procedures to deal with unforeseen circumstances;
- alternative actions the applicant considered that would not result in take, and the reasons why such alternatives are not being used; and
- additional measures the USFWS may require as necessary for purposes of the plan.

In addition, the HCP Handbook Addendum, referred to as the "5-point policy," provides additional guidance and recommendations for the development of HCPs. Under this policy, each subarea plan prepared in compliance with this subregional plan should include the following:

- defined biological goals and objectives;
- an adaptive management strategy;
- compliance and effectiveness monitoring;
- an established permit duration; and
- opportunities for public participation.

### 1.2.2 State Requirements

The State of California can authorize the take of a species listed by the state as rare, threatened, or endangered under Section 2081 of the California Fish and Game Code. The state can also authorize take of listed or unlisted species under Section 2835 of the Code. Requirements of

state management authorizations are similar to those required for a federal HCP. However, the state NCCP Act also requires that all covered species be treated as if they are listed pursuant to the CESA, and that, within the plan area, the plan should demonstrate that it contributes to the recovery of listed species authorized for take. In addition, the impacts of the authorized take must be minimized and fully mitigated, and the plan must ensure adequate funding to implement all required measures, to monitor plan compliance, and to monitor plan effectiveness in meeting its conservation goals and standards.

The CDFG and California Resources Agency prepared NCCP guidelines for the southern California coastal sage scrub region, which were recognized and incorporated by the USFWS for listing the California gnatcatcher as threatened (under the special rule in Section 4(d) of the ESA). This MHCP plan and constituent subarea plans are being prepared pursuant to the NCCP guidelines and meet requirements of the NCCP Act.

## 1.3 OVERVIEW OF PLANNING PROCESS

The MHCP began with the formation of a consortium of local, regional, and special purpose agencies in 1991 whose goal was to exchange information on land planning issues and to coordinate preparation of local conservation plans. This North County Wildlife Forum (NCWF), with the assistance and sponsorship of the San Diego Association of Governments (SANDAG), developed a scope of work to prepare an MHCP plan for an area of approximately 1,029 square miles. This original study area encompassed all of the northwestern portion of San Diego County, including the entirety of nine incorporated cities, portions of the City of San Diego, unincorporated areas in the jurisdiction of the County of San Diego, and Marine Corps Base Camp Pendleton. Since that time, the planning area has been reduced as various jurisdictions have withdrawn from the MHCP to prepare independent plans:

- Military lands, including Marine Corps Base Camp Pendleton, were removed from the planning area in 1994 when the Marine Corps began work on a comprehensive habitat management plan for the Base.

- The City of Poway completed a subarea HCP/NCCP plan in 1995 and hence no longer needed to participate in the MHCP.

- The City of San Diego's Subarea Plan of the Multiple Species Conservation Program (MSCP) was completed in 1997, so lands formerly in an MHCP/MSCP "overlap zone" were removed from the MHCP planning area.

- The City of Del Mar completed a subarea HCP/NCCP in 1996 and hence no longer needed to participate in the MHCP.

- The County of San Diego withdrew from the MHCP in 1995. Portions of the unincorporated county that were formerly in the MHCP study area are currently being planned as a subarea of the MSCP. This north county subarea plan is expected to prescribe how important biological core areas and habitat linkages will connect with those of the MHCP preserve, such as in the area between Carlsbad and the San Dieguito River Valley.

The seven incorporated jurisdictions that remain in the MHCP planning area continued the planning process, in cooperation with adjoining jurisdictions. In 1995, the USFWS and CDFG declared that this reduced seven-city study area comprised a functional subregional planning area under the NCCP Act.

### 1.3.1 Roles of Participants

The MHCP Advisory Committee provides the forum for public discussion and consensus building on issues and proposed policies. The Advisory Committee includes representatives from the seven participating cities, the County and City of San Diego, federal and state wildlife agencies, public facility providers, environmental groups and organizations, property owners, developers, and various citizen and special interest groups (Attachment A lists current Advisory Committee members). The Advisory Committee generally met monthly in a public forum throughout the process and discussed and approved for public review numerous "issue papers" and other documents. The documents and issue papers approved for public review substantially comprise the contents of this Final MHCP. The Advisory Committee also regularly appointed technical subcommittees to resolve particular issues.

SANDAG sponsors the MHCP and provides overall project management. It also administers state and federal planning funds for the program and contributed mapping and economic analyses to the process. SANDAG serves as the lead agency for the MHCP Environmental Impact Report (EIR). Pursuant to an agreement with the north county cities, the SANDAG Board has responsibility to adopt the subregional plan and recommend to the participating cities that they prepare take authorization applications based on their subarea plans and the subregional MHCP plan. The SANDAG Board may also serve as the focal body for planning a subregional funding program.

An ad hoc Committee of Elected Officials has provided policy perspective and advice on evolving plan recommendations since July 1997. Composed of one elected official from each of the seven participating cities, the ad hoc committee has focused on subregional policy issues that affect the cities, including MHCP institutional structure, funding for land acquisition and management, governmental roles and responsibilities for plan implementation, and intergovernmental coordination.

During 1997, the MHCP established a Scientific Review Panel composed of experts on MHCP species, habitats, and associated biological issues (see Section 9 for a list of participants). This body was used on an individual, as-needed basis to provide data and to review and comment on scientific content and interpretation for the MHCP. The panel first provided comments on the MHCP Biological Goals, Standards, and Guidelines, which were finalized based on their comments in 1998 (Ogden 1998). Since then, individuals on the panel have been used as a continuing source of information and guidance during development of biological analyses and management and monitoring recommendations. In addition to the Scientific Review Panel, numerous other scientists with local knowledge concerning biological resources in the MHCP area have been consulted throughout the process. Many of these individuals are also listed in Section 9, although there may be unintended omissions.

### 1.3.2 Preserve Planning Process

Biological, land use, and ownership data were collected for the study area and input into a geographic information system (GIS) at a scale of 1:24,000. Biological resources were prioritized or ranked to increase the effectiveness of conservation efforts and the use of acquisition funds, and a gap analysis was performed to identify existing protection of high priority resources, based on public ownership and planned land use information. A habitat evaluation map was also prepared based on vegetation communities, species locations, elevation, slope, soils, drainages, and other physical parameters (Section 2).

The habitat evaluation map, along with other specific information on biological resources, preserve design criteria, and development constraints, was used to define a biological core and

linkage area (BCLA) map. This map delineates those areas considered biologically valuable for inclusion in the preserve system. Not all portions of the BCLA are critical or are intended for preservation; however, the BCLA defines those portions of the study area that would best contribute to a viable preserve system, and hence the "envelope" within which the ultimate preserve system should be assembled. It also helps illustrate where larger biological core areas can be linked to form an interconnected preserve system.

Using this information, participating cities prepared focused planning areas (FPA), which show expected levels of conservation that could be achieved by applying available regulatory mechanisms to conserve biologically valuable areas (primarily but not exclusively within the BCLA). Creation of the FPAs thus considered not only the biological value of lands, but also economic, legal, and other constraints to preserving these lands. The FPAs and percent conservation estimates were used to analyze the levels of biological conservation expected throughout the MHCP area, and the associated costs for acquiring and managing preserve areas. Results of initial analyses were used to refine FPAs. This iterative process involved the cities and the wildlife agencies, with recommendations and guidance from biologists, economists, and public policy specialists. In some cities, FPAs were also refined through direct negotiation with landowners regarding likely development and open space configurations on their properties.

This Final MHCP Plan, Volume I, provides a framework for city subarea plans. Public review draft subarea plans have been developed by individual jurisdictions, and development of final subarea plans will be required in order for a city to obtain take authorization under the MHCP.

# 2.0 DESCRIPTION OF MHCP STUDY AREA

This section describes the ecological and socioeconomic setting in which the MHCP must accomplish its stated goals. The section briefly summarizes information on the geography, biological resources, land ownership, existing and planned land uses, and historical and forecast human population growth in the study area. These conditions strongly influence opportunities and constraints for implementing a viable subregional preserve system.

## 2.1 SUBREGIONAL SETTING

The MHCP study area encompasses about 175 square miles (111,908 acres) comprising the seven incorporated cities of northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista). Unincorporated portions of the county, including several areas completely surrounded by incorporated cities, are excluded from the study area and will be planned by the County as the North County Subarea of the MSCP. The Pacific Ocean shoreline defines the western border of the study area; Marine Corps Base Camp Pendleton borders the study area on the north; and unincorporated San Diego County borders most of the study area on the east and south.

This area of north coastal San Diego County is known for its natural beauty and mild Mediterranean climate, which make it a popular recreational and tourist destination. The area is largely developed, with approximately 27% consisting of vacant lands that still support natural vegetation communities. Major land uses within the study area include residential, commercial, and industrial development; parks, preserves, and golf courses; and agriculture. Larger areas of undeveloped and naturally vegetated lands adjoin the study area, particularly on unincorporated lands to the east and south, and on Camp Pendleton to the north.

Topography in the study area ranges from flat to hilly, with relatively gentle slopes on the coastal terraces and in broad valleys. Steeper hills, ranging up to about 2,100 feet in elevation, are found in the south-central portion of the study area (eastern Carlsbad and southern San Marcos), and in northern portions of San Marcos and Escondido. Steep canyons associated with predominantly east-west drainages cut through some of the hills and mesas. Four coastal lagoons are more or less evenly distributed along the coast, each representing the terminus of one or more local drainages. One major river, the San Luis Rey, crosses the northern portion of the study area through the City of Oceanside.

## 2.2 SUBAREA PLANNING AREAS

In general, the subarea planning areas comprise the incorporated boundaries of the seven MHCP cities (Figure 1-2). However, the participating cities have in many cases removed from their planning areas lands over which they do not have land use authority. In other cases they have included lands outside their current boundaries that they either own or intend to annex in the near future. Lands omitted from jurisdictional subarea planning areas thus include California Department of Transportation (Caltrans) rights-of-way, some county-owned lands (e.g., Palomar Airport and Guajome Regional Park), and some school district or university lands. Additions to subarea planning areas include water district lands owned by Escondido east of the city's incorporated boundary, and several parcels within the spheres of influence of San Marcos and Encinitas that these cities intend to annex.

As described in Section 5.3, cities can also defer planning on portions of their jurisdiction until later, and then amend their subarea plan to include those areas. Such action generally requires reinvolvement of the wildlife agencies and completion of a National Environmental Policy Act/California Environmental Quality Act (NEPA/CEQA) document for the amendment. The City of San Marcos has chosen to defer conservation planning on some biologically important parcels in the central part of the city due to controversy over the disposition of these lands. The so-called "San Marcos Major Amendment Area" includes several parcels that support diverse vernal pool complexes and critical populations of several narrow endemic MHCP species. The city intends to work with the landowners to plan conservation solutions for these parcels at a later date.

## 2.3 BIOLOGICAL RESOURCES

A comprehensive biological database was developed for the MHCP study area using GIS computer technology. The original database, completed in 1992, has been updated periodically as new information became available. Data layers were created for natural vegetation communities (using a classification system based on Holland 1986), sensitive species locations, vernal pools, topography, soils, animal microhabitats, climate zones, and other pertinent information.

### 2.3.1 Methods

The vegetation community layer was generated using data from a variety of sources, including existing digital (computer) vegetation files and hard copy data from biological documents, EIRs, and other technical reports. Infrared aerial photograph interpretation (at 1:24,000 scale) was used to map areas not previously mapped, and limited field surveys were used for ground truthing. In 1997, the vegetation data layer was systematically updated using 1995 satellite imagery and a change detection algorithm. This method updated the previous database primarily by detecting areas that had been developed (vegetation removed) during intervening years. In addition, new vegetation maps from biological technical reports and EIRs were incorporated, where appropriate, in this systematic update.

A sensitive species data layer was created using the California Natural Diversity Database (CNDDB), review of existing environmental documentation for projects in the study area, review of the scientific literature, personal communications from local biologists, and limited field reconnaissance. This layer has also been updated as new information became available (e.g., results of field surveys for environmental documents). Species locations associated with areas cleared of vegetation since 1992 have been coded in the GIS to indicate that the locations are no longer extant. For some species recorded in multiple years at the same locations, the redundant location points are coded in the GIS to avoid artificially inflated population or location estimates. For some birds, testing for duplicate points is based on approximate species-specific territory radii. Thus, for California gnatcatchers, older points within 200 feet of a newly recorded point are coded as duplicates; for least Bell's vireos (Vireo bellii pusillus) older points within 100 feet of new points are coded as duplicates.

The database was used to generate 1:24,000-scale U.S. Geological Survey (USGS) quadrangle maps depicting vegetation communities, topography, sensitive species locations, vernal pools, and other pertinent base map features (e.g., roads, water bodies, and city boundaries). These maps were reviewed in 1992 by local biologists, the MHCP Advisory Committee, the USFWS, the CDFG, environmental groups, and other interested organizations

and individuals. During February and March 1997, the updated database was again subject to public review by all interested parties. The revised biological quadrangle maps and regional maps of species distributions were reviewed by over 30 individual biologists, city planners, land owners, environmentalists, and other interested parties. Written and mapped information provided by these individuals was reviewed by the USFWS and used to refine and update the MHCP GIS database.

This Final MHCP document is based on database information incorporated up to October 2002, including significant new species location information that was not available for the Public Review Draft. See MHCP Volume II for details.

### 2.3.2 Vegetation Communities

Figure 2-1 depicts the distribution of major vegetation communities remaining in the MHCP study area and vicinity, and Table 2-1 quantifies the acreage of these vegetation communities within the study area. This section briefly summarizes the distribution and quality of vegetation communities as they relate to preserve planning within the MHCP study area.

Approximately 29,962 acres (26.7%) of natural vegetation remain in the 111,908-acre study area. The largest blocks of natural vegetation (greater than 1,000 contiguous acres each) occur in northern Escondido (Daley Ranch) and in the hilly areas of southeastern Carlsbad and southwestern San Marcos. Other relatively large blocks of habitat (at least several hundred contiguous acres each) occur along the northern boundary of Oceanside (adjacent to Camp Pendleton), and in scattered areas in eastern and central Carlsbad, northern San Marcos, and southern Escondido. Otherwise, natural habitats in the MHCP area are highly fragmented and occur primarily in small (less than 200 acres), scattered patches surrounded by development or agriculture. The remnant natural vegetation occurs disproportionately on developmentally constrained lands, such as steep slopes and canyons, and lands at the periphery of incorporated cities.

Approximately 8,656 acres (7.7% of study area) of Diegan coastal sage scrub remain in the study area. Prior to development, coastal sage scrub probably stretched in a nearly unbroken swath across the study area, particularly on coastal terraces and on south- and west-facing slopes. Coastal sage scrub nearer the coast and on lower, gentler slopes tends to be dominated by California sagebrush (*Artemisia californica*). Sage scrub on higher, steeper slopes, especially in more inland locales, tends to be dominated by black or white sages (*Salvia* spp.). Chaparral communities tend to replace coastal sage scrub on still higher and more inland sites, and particularly on mesic (moist) north-facing slopes.

Today, the swath of coastal sage scrub in the western half of the study area has been fragmented by development into a discontinuous band, with the largest remnant blocks in southeastern Carlsbad (La Costa area), central Carlsbad (Macario Canyon/Agua Hedionda area), and northeastern Carlsbad (Lake Calavera/Carlsbad Highlands area). Smaller remnants of coastal sage scrub are scattered across Oceanside to Camp Pendleton, and on steeper slopes and canyons scattered throughout the coastal cities. Outside of the study area, sage scrub stretches in a more continuous band north along the coastal slope on Camp Pendleton, and south to the San Dieguito River Park and Lake Hodges in the MSCP study area. Other significant stands of coastal sage scrub in the study area are found in north Oceanside (near the mouth of the San Luis Rey River and adjacent to Camp Pendleton), north San Marcos

(predominantly black sage-dominated habitat near Twin Oaks Valley), and scattered areas around the outskirts of Escondido.

Two sensitive scrub communities are extremely rare in the MHCP study area: maritime succulent scrub and coastal bluff scrub. Only about 32 acres of maritime succulent scrub remain in the study area, on steep, south-facing slopes near lagoons in Carlsbad. Only about 2 acres of coastal bluff scrub are mapped in the City of Solana Beach.

Chaparral communities, particularly southern mixed chaparral and chamise chaparral, dominate on higher and steeper slopes in southern San Marcos, northeastern Carlsbad, and northern Escondido. In addition, a rare chaparral assemblage–southern maritime chaparral–occurs on slopes and terraces in the coastal Cities of Encinitas and Carlsbad. This sensitive vegetation community is associated with weathered sandstone formations in the coastal fog belt and supports a variety of rare and endemic species.

Grassland habitats in the study area are primarily dominated by annual grasses, although scattered areas of native perennial grasslands remain, often as small inclusions within scrub habitats (these native grasslands are not mapped as distinct from annual grasslands in the MHCP database). Grasslands are scattered throughout the study area, with the largest stands in north Oceanside (along the boundary with Camp Pendleton) and in central Carlsbad. Significant grassland areas are also found in the valleys of Daley Ranch (north Escondido). Grazing, fire, and other disturbances have converted some areas of former scrub into annual nonnative grasslands; conversely, some grassland areas are gradually succeeding back to coastal sage scrub following reductions in disturbance levels (e.g., slopes in Oceanside and Carlsbad). Annual grasslands are important to preserve design in helping to create linkages between other areas of native vegetation. They also provide foraging habitat for raptors and other MHCP animal species and support a number of MHCP plant species.

The study area supports a variety of riparian, marsh, and other wetland communities. However, in general, wetland vegetation has been greatly reduced in extent and altered in quality by development and associated changes in hydrology. The four coastal lagoons support a mixture of saltmarsh and freshwater marsh habitats, along with open water. Riparian forests, woodlands, and scrub communities are found along many of the drainages in the study area, with the most significant stands found associated with Pilgrim Creek, the San Luis Rey River, Guajome Lake, and Loma Alta Creek in Oceanside; Buena Vista Creek upstream from Buena Vista Lagoon along the Oceanside/Carlsbad border; Agua Hedionda Creek and Macario Canyon, upstream from Agua Hedionda Lagoon in Carlsbad; Encinitas Creek near the Carlsbad/Encinitas border; San Marcos Creek and Twin Oaks Valley in San Marcos; Kit Carson Park in Escondido; and Escondido Creek in south Encinitas.

Vernal pools are a highly restricted, unique wetland habitat type in San Diego County. They support high numbers of listed and "narrow endemic species." In the MHCP study area, vernal pools are highly restricted in distribution, with two important concentrations: (1) a narrow linear configuration along a railroad right-of-way in western Carlsbad (the Poinsettia Lane pools) and (2) scattered pools in central, urbanized San Marcos. Both of these areas are considered critical to the conservation of vernal pools and associated MHCP species. A few other vernal pools are scattered in central Carlsbad.

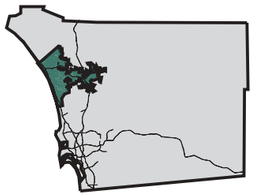
# Figure 2-1
# Vegetation Communities
# MHCP Study Area

- Dunes and Beaches
- Coastal Sage Scrub
- Chaparral
- Southern Maritime Chaparral
- Coastal Sage Scrub/Chaparral Mix
- Grassland
- Riparian/Wetlands
- Oak Woodlands
- Eucalyptus Woodlands

- Agricultural Land
- Disturbed Land
- Developed

- Generalized Subarea Plan Boundary
- MHCP Boundary

SOURCE: 1995 Vegetation Inventory, SANDAG



Feet 0 6,500 13,000

Kilometers 1.56 3.12

SANDAG

January 16, 2003

## Table 2-1

## ACREAGE OF VEGETATION COMMUNITIES WITHIN THE MHCP STUDY AREA AND BIOLOGICAL CORE AND LINKAGE AREA (BCLA)

| Vegetation Community | Total MHCP Study Area (acres) | BCLA (acres) |
|---|---|---|
| Southern coastal bluff scrub | 2 | - |
| Maritime succulent scrub | 32 | 31 |
| Coastal sage scrub | 8,656 | 7,169 |
| Chaparral | 8,324 | 7,730 |
| Southern maritime chaparral | 968 | 904 |
| Coastal sage/chaparral mix | 462 | 439 |
| Grassland | 5,219 | 3,298 |
| Southern coastal salt marsh | 272 | 270 |
| Alkali marsh | 165 | 165 |
| Freshwater marsh | 518 | 442 |
| Riparian forest | 676 | 404 |
| Riparian woodland | 250 | 133 |
| Riparian scrub | 1,739 | 1,191 |
| Engelmann oak woodland | 230 | 207 |
| Coast live oak woodland | 650 | 583 |
| Other oak woodlands | 1 | 1 |
| Freshwater | 444 | 396 |
| Estuarine | 955 | 954 |
| Disturbed wetland | 202 | 87 |
| Natural floodchannel/streambed | 142 | 130 |
| Beach | 48 | 23 |
| Saltpan/Mudflats | 8 | 8 |
| Vernal pools [1] | 22 | 17 |
| ***Subtotal Natural Habitat*** [2] | ***29,962*** | ***24,565*** |
| Agriculture | 10,438 | 1,262 |
| Disturbed | 4,071 | 1,127 |
| Eucalyptus woodland | 648 | 357 |
| ***Subtotal Vacant Land*** [2] | ***15,157*** | ***2,746*** |
| Developed | 66,789 | 677 |
| **Total** [2] | **111,908** | **27,987** |

[1] Vernal pools were mapped as an overlay to other vegetation communities and thus their acreage is not included in this total. The MHCP study area does not include the San Marcos Major Amendment Area.

[2] Numbers may not sum to total as shown due to rounding and because vernal pool acreages are excluded.

Historically, north San Diego County has been a major agricultural area, and significant agricultural fields and orchards remain within the MHCP study area. However, recent decades have seen much of the former agricultural area converted to urban and suburban uses. Sizable agricultural areas remain in northeastern Oceanside, central and eastern Carlsbad, central Encinitas (Ecke Ranch), and around the margins of Escondido. Other small agricultural fields or pastures are scattered throughout the study area. In some places, these fields function as foraging habitat or habitat linkages for a variety of MHCP species. They also help buffer native habitats and species against adverse effects from other land uses, such as edge effects from residential development.

### 2.3.3 MHCP Species

Table 2-2 lists the 77 MHCP species (48 animals and 29 plants) that were evaluated for adequacy of conservation ("coverage") under the MHCP and subarea plans. This list was revised in 1997 to remove species considered highly unlikely to occur within the study area or to be affected by the MHCP plan. The revised list contains species known or likely to occur in the study area that are listed as rare, threatened, or endangered, or species otherwise considered sensitive by the wildlife agencies or environmental groups. The list also includes several more common or widespread species that are useful for evaluating preserve design and ecosystem function, such as mountain lion (*Felis concolor*) and mule deer (*Odocoileus hemionus*).

Volume II of the Final MHCP provides biological information on each of the species, including their conservation status, distribution, habitat requirements, locations of major and critical populations or habitat areas, threats to species survival, and special considerations for preserve design and management. The species accounts also include specific permit conditions and guidelines for preserve management, monitoring, and research needs for each species.

This section briefly describes the status and distribution of the California gnatcatcher and other priority species in the study area. Priority species are those listed as threatened or endangered, or that have been proposed for listing, as well as NCCP "target species" (e.g., the orange-throated whiptail). See Volume II of this document for complete discussion of all 77 MHCP species.

#### California Gnatcatcher

The California gnatcatcher is closely associated with its primary habitat, coastal sage scrub. In particular, gnatcatchers are most abundant in California sagebrush-dominated coastal sage scrub that occurs in the western half of the study area, from southeast Carlsbad to Camp Pendleton. Gnatcatchers are generally less abundant in sage scrub communities in the more inland, higher elevation, or black sage (*Salvia mellifera*)-dominated associations to the east.

Approximately 539 known gnatcatcher locations are mapped in the MHCP database. Given that some areas of suitable habitat have not been surveyed for gnatcatchers, and that gnatcatcher populations vary from year to year (typical densities vary from 4 to 10 pairs per 100 acres of suitable habitat), the total number of gnatcatcher pairs in the study area probably ranges from about 400 to 600 in any given year (see the gnatcatcher species evaluation in Volume II for more details).

## Table 2-2

## MHCP SPECIES EVALUATED FOR COVERAGE

| Scientific Name | Common Name | Status[1] | Habitat[2] |
|---|---|---|---|
| **Plants** | | | |
| *Acanthomintha ilicifolia* | San Diego thorn-mint | FT/CE | G, CSS |
| *Ambrosia pumila* | San Diego ambrosia | FE/ | CSS |
| *Aphanisma blitoides* | Aphanisma | FSC */ | MSS |
| *Arctostaphylos glandulosa* ssp. *crassifolia* | Del Mar manzanita | FE/ | SMC |
| *Baccharis vanessae* | Encinitas baccharis | FT/CE | CHP |
| *Brodiaea filifolia* | Thread-leaved brodiaea | FT/CE | VP, G, seeps, wet meadows |
| *Brodiaea orcuttii* | Orcutt's brodiaea | FSC */ | VP, G, seeps, wet meadows |
| *Ceanothus verrucosus* | Wart-stemmed ceanothus | FSC */ | CHP, SMC |
| *Chorizanthe orcuttiana* | Orcutt's spineflower | FE/CE | SMC |
| *Comarostaphylis diversifolia* ssp. *diversifolia* | Summer holly | FSC */ | CHP |
| *Corethrogyne filaginifolia* var. *linifolia* | Del Mar Mesa sand aster | FSC †/ | CSS, CHP (openings), SMC |
| *Dudleya blochmaniae* ssp. *blochmaniae* | Blochman's dudleya | FSC */ | CBS |
| *Dudleya blochmaniae* ssp. *brevifolia* | Short-leaved dudleya | FSC †/CE | SMC |
| *Dudleya variegata* | Variegated dudleya | FSC */ | CSS |
| *Dudleya viscida* | Sticky dudleya | FSC */ | CSS, CHP |
| *Eryngium aristulatum* var. *parishii* | San Diego button-celery | FE/CE | VP (clay) |
| *Euphorbia misera* | Cliff spurge | None | MSS, CBS |
| *Ferocactus viridescens* | San Diego barrel cactus | FSC */ | CSS, CHP, MSS |
| *Hazardia orcuttii* | Orcutt's hazardia | FSC */CT | CHP |
| *Iva hayesiana* | San Diego marsh-elder | FSC */ | AM, RP |
| *Lotus nuttallianus* | Nuttall's lotus | FSC */ | Coastal strand/dune |
| *Muilla clevelandii* | San Diego goldenstar | FSC */ | G, CHP, CSS (openings) |
| *Myosurus minimus* ssp. *apus* | Little mousetail | FSC */ | VP, AM |
| *Navarretia fossalis* | Spreading navarretia | FT/ | VP |
| *Orcuttia californica* | California Orcutt grass | FE/CE | VP |
| *Pinus torreyana* ssp. *torreyana* | Torrey pine | FSC */ | SMC, Torrey Pine forest |
| *Quercus dumosa* | Nuttall's scrub oak | FSC */ | SMC |
| *Quercus engelmannii* | Engelmann oak | None | CHP, CLOW, G |
| *Tetracoccus dioicus* | Parry's tetracoccus | FSC */ | CHP, CSS |
| **Invertebrates** | | | |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/ | VP |
| *Branchinecta sandiegoensis* | San Diego fairy shrimp | FE/ | VP |
| *Cicindela hirticollis gravida* | Sandy beach tiger beetle | FSC */ | Sandy beaches |
| *Cicindela latesignata obliviosa* | Oblivious tiger beetle | FSC */ | Mudflats |

## Table 2-2 (Continued)

## MHCP SPECIES EVALUATED FOR COVERAGE

| Scientific Name | Common Name | Status[1] | Habitat[2] |
|---|---|---|---|
| **Invertebrates (Continued)** | | | |
| *Coelus globosus* | Globose dune beetle | FSC */ | Coastal dunes |
| *Euphyes vestris harbisoni* | Harbison's dun skipper | FSC */ | RW, RS, OW (rip) |
| *Panoquina errans* | Salt marsh skipper | FSC */ | SM |
| *Lycaena hermes* | Hermes copper | FSC */ | CSS, CHP |
| *Euphydryas editha quino* | Quino checkerspot | FE/ | CSS, VP, G |
| **Amphibians and Reptiles** | | | |
| *Scaphiopus [Spea] hammondii* | Western spadefoot toad | FSC*/CSC | Aquatic, G |
| *Bufo californicus* | Arroyo toad | FE/CSC | CSS, CHP (along streams) |
| *Rana aurora draytonii* | California red-legged frog | FT/CSC | Aquatic, RP |
| *Clemmys marmorata pallida* | Southwestern pond turtle | FSC */CSC | Aquatic, RP |
| *Phrynosoma coronatum blainvillei* | San Diego horned lizard | FSC */CSC | CSS, CHP |
| *Cnemidophorus hyperythrus beldingi* | Orange-throated whiptail | FSC */CSC | CSS, CHP, G |
| **Birds** | | | |
| *Pelecanus occidentalis californicus* | California brown pelican | FE/CE, FP | Open water |
| *Plegadis chihi* | White-faced ibis | FSC */CSC | FWM, estuaries, SM |
| *Circus cyaneus* | Northern harrier | /CSC | G, SM, FWM, AG, open CSS |
| *Accipiter cooperii* | Cooper's hawk | /CSC | RW, OW (breeding) |
| *Pandion haliaetus* | Osprey | /CSC | Open water, wetland |
| *Aquila chrysaetos* | Golden eagle | BEPA/CSC | CSS, CHP, G |
| *Falco peregrinus anatum* | Peregrine falcon | /CE, FP | G, AG fields, cliffs, coastal RP |
| *Rallus longirostris levipes* | Light-footed clapper rail | FE/CE, FP | SM |
| *Charadrius alexandrinus nivosus* | Western snowy plover | FT/CSC | Saltflats, mudflats, sandy beach, dunes |
| *Numenius americanus* | Long-billed curlew | FSC */CSC | SM, mudflats, G, fallow AG |
| *Sterna elegans* | Elegant tern | FSC */CSC | SM, shoreline, estuarine/intertidal |
| *Sterna antillarum browni* | California least tern | FE/CE, FP | Coastal strand, mudflats, saltflats |
| *Athene cunicularia hypugaea* | Burrowing owl | FSC */CSC | G, coastal strand, AG |
| *Empidonax traillii extimus* | Southwestern willow flycatcher | FE/CE | RW |
| *Vireo bellii pusillus* | Least Bell's vireo | FE/CE | RW |
| *Campylorhynchus brunneicapillus cousei* | Coastal cactus wren | FSC */CSC | CSS, cactus patches |
| *Polioptila californica californica* | Coastal California gnatcatcher | FT/CSC | CSS |
| *Sialia mexicana* | Western bluebird | None | OW (edges), G |
| *Icteria virens* | Yellow-breasted chat | /CSC | RW |
| *Aimophila ruficeps canescens* | Rufous-crowned sparrow | FSC */CSC | CSS |
| *Passerculus sandwichensis beldingi* | Belding's savannah sparrow | FSC */CE | SM |

## Table 2-2 (Continued)

## MHCP SPECIES EVALUATED FOR COVERAGE

| Scientific Name | Common Name | Status[1] | Habitat[2] |
|---|---|---|---|
| **Birds (continued)** | | | |
| *Passerculus sandwichensis rostratus* | Large-billed savannah sparrow | FSC */CSC | SM |
| *Amphispiza belli belli* | Bell's sage sparrow | FSC */CSC | CSS, CHP |
| *Ammodramus savannarum* | Grasshopper sparrow | None | G |
| *Agelaius tricolor* | Tricolored blackbird | FSC */CSC | FWM, G, AG |
| **Mammals** | | | |
| *Corynorhinus townsendii pallescens* | Townsend's western big-eared bat | FSC */CSC | Caves, mines, buildings, OW, RW, CHP |
| *Eumops perotis californicus* | California mastiff bat | FSC */CSC | Cliffs, crevices, CHP, G, CSS |
| *Dipodomys stephensi* | Stephens' kangaroo rat | FE/CT | G, sparse CSS |
| *Perognathus longimembris pacificus* | Pacific pocket mouse | FE/CSC | Sparse CSS, G, ruderal |
| *Chaetodipus fallax fallax* | Northwestern San Diego pocket mouse | FSC */CSC | CSS, CHP, G |
| *Lepus californicus bennettii* | San Diego black-tailed jackrabbit | FSC */CSC | CSS, G, CHP |
| *Felis concolor* | Mountain lion | CA protected | CSS, CHP, RW |
| *Odocoileus hemionus fuliginata* | Southern mule deer | CA game species | CHP, CSS, RW |

[1]**Status (Federal/State)**

FE = Federally endangered
PE = Proposed for federal listing as endangered
FT = Federally threatened
PT = Proposed for federal listing as threatened
C = Candidate for federal listing
BEPA = Bald Eagle Protection Act
CE = State endangered
CT = State threatened
FP = State fully protected
CSC = State Species of Special Concern
FSC * = Federal Species of Concern; formerly Category 2 or Category 3 candidate or proposed for federal listing
FSC † = Federal Species of Concern; proposed rule to list as endangered or threatened has been withdrawn
protected = moratorium on hunting
none = no federal or state status

[2]**Habitat (Holland 1986)**

AG = Agriculture
AM = Alkali marsh
CBS = Coastal bluff scrub
CHP = Chaparral
CLOW = Coast live oak woodland
CSS = Coastal sage scrub
FWM = Freshwater marsh
G = Grassland
MSS = Maritime succulent scrub
OW = Oak woodland
RF = Riparian forest
RP = Riparian
RS = Riparian scrub
RW = Riparian woodland
SM = Salt marsh
SMC = Southern maritime chaparral
VP = Vernal pool

The distribution of these birds is highly patchy in the MHCP area, owing to the highly fragmented state of their habitat. Few habitat patches in the study area are large enough and contiguous enough to be considered reliable core breeding areas for gnatcatchers. A core breeding area should contain sufficient high quality habitat (e.g., California sagebrush-dominated sage scrub on gentle slopes) to reliably support at least 25 pairs of gnatcatchers (50 adult birds) each breeding season. This threshold population size is based on theoretical and empirical studies regarding resistance to extinction for subpopulations of breeding songbirds in an interconnected reserve system (e.g., see Laymon and Haltermann 1989; Shaffer 1981). Core habitat should also be contiguous enough that gnatcatchers can freely move about or disperse to all portions of the habitat, and relatively free of internal fragmentation or edge effects from adjoining land uses. The only portion of the study area that clearly meets these requirements is the southeast Carlsbad/southwest San Marcos (La Costa/University Commons) area. This area represents the northwestern terminus of the relatively unbroken swath of sage scrub that reaches north from the San Dieguito River Valley. Relatively large and intact patches of contiguous coastal sage scrub (approximately 1,200 total acres) remain in the La Costa/University Commons area. However, much of the habitat there is approved for take under existing Section 10(a) and 7 agreements with the wildlife agencies, and habitat linkages from this area to gnatcatcher habitats farther north are fragmented by development and agriculture.

Other portions of the study area that may meet some, but not all, criteria for a reliable gnatcatcher breeding core are in central Carlsbad (Macario Canyon/Agua Hedionda Lagoon) and northeastern Carlsbad (Calavera Heights/Carlsbad Highlands). Although these areas may support enough gnatcatchers to qualify as core breeding areas, habitats there are fragmented and are somewhat more disturbed and lower in quality than in southeast Carlsbad. Much of the northeast Carlsbad coastal sage scrub is dominated by black sage and occurs on relatively steep and rocky slopes. Sage scrub in the Macario Canyon area is recovering from past disturbance and supports a fairly high density of gnatcatchers. However, it is more internally fragmented and relatively poorly connected with other habitat areas. Furthermore, it is unclear whether these areas would support enough gnatcatchers to meet the criteria (25 breeding pairs) during all years, given the high degree of fragmentation and potential for adverse edge effects.

Due to the small size of most other coastal sage scrub patches in the study area, and their relative isolation from one another, most coastal sage scrub habitat in the study area is considered "stepping-stone" linkage habitat for gnatcatchers. Many of these patches, particularly in the coastal cities, serve as breeding habitat for relatively small numbers of gnatcatchers each (although cumulatively all patches together support many territories). Given that fledglings are able to disperse from one breeding patch to another, these patches create a series of stepping stones linking together the larger core population areas that occur north and south of the MHCP cities (on Camp Pendleton and in the unincorporated area reaching to the San Dieguito River Valley). Thus, these stepping stones serve a critical function in genetically linking together the regional gnatcatcher "metapopulation" (the interconnected network of populations). Coastal sage scrub habitats farther east, in Escondido and north San Marcos, may be less important to the regional conservation of gnatcatchers, because they support gnatcatchers at lower densities than the coastal cities and do not appear to effectively link together core breeding areas.

**Other High Priority Animals**

The other high priority animal species in the study area are discussed in groups based on frequency of occurrence in the study area and habitat affinities.

Several species have not been recorded in the study area in recent years, although potential habitat exists:

- The Quino checkerspot butterfly (*Euphydryas editha quino*) may be extirpated from the MHCP area, but open vegetation communities that include patches of its host plants (plantain species) likely occur in scattered locations. USFWS survey guidelines do not require surveys for this species within the MHCP area.

- The arroyo southwestern toad (*Bufo microscaphus californicus*) has no known populations within the study area, although recent observations have been made upstream of the study area along the San Luis Rey River, and one recent record outside the FPA in eastern Oceanside. Even if the arroyo toad is confirmed within the study area, its persistence could probably not be ensured given the historic loss of upland habitat adjacent to riparian breeding areas and habitat degradation in breeding habitat.

- The red-legged frog (*Rana aurora draytoni*) is probably extirpated from the county, and deep-water pools surrounded by thick riparian or marsh vegetation are rare within the study area, or support nonnative species that are detrimental to red-legged frog populations (e.g., bullfrog, *Rana catesbeiana*).

- The Pacific little pocket mouse (*Perognathus longimembris pacificus*) was historically found on the coast in Oceanside and possibly Encinitas but is not currently known to occur in the study area. Potential habitat for the species–sparse vegetation on fine sandy soils within about 4 miles of the coast–is scattered throughout the coastal cities. One unverified observation was reported in 1989 in Lux Canyon, Encinitas, but more recent surveys have failed to detect the species there.

- The American peregrine falcon (*Falco peregrinus anatum*) has no nesting locations in the study area, but has been infrequently observed foraging in the area.

Several MHCP species are known from only one or a few restricted locations within the study area:

- The coastal cactus wren (*Campylorhynchus brunneicapillus couesi*) is largely restricted to the San Pasqual Valley area in Escondido, which represents a major and critical population of the species. One additional location is on the north side of Batiquitos Lagoon in Carlsbad.

- The Stephens' kangaroo rat (*Dipodomys stephensi*) has been historically recorded in grasslands and agricultural areas of northern and eastern Oceanside. The MHCP database includes one location point in Guajome

Regional Park that may no longer be extant due to habitat changes (S. J. Montgomery, pers. comm.). However, potential habitat still exists in northern Oceanside, and the species is found on nearby portions of Camp Pendleton and the Fallbrook Naval Weapons Station, from which it could disperse into the study area.

- The Riverside fairy shrimp (*Streptocephalus wootoni*) is known from the Poinsettia Lane vernal pools in Carlsbad, which is considered a critical location for species conservation. This species has not been recorded in the San Marcos vernal pools.

- The San Diego fairy shrimp (*Branchinecta sandiegoensis*) has been recently recorded in the Poinsettia Lane vernal pools and San Marcos vernal pools. These are considered critical locations for the species.

Two priority bird species are associated with riparian habitats in the study area:

- The least Bell's vireo is represented by 181 location points in the MHCP database and has been increasing in population in recent years (USFWS 1998). Major and critical populations of this species are along the San Luis Rey River and Pilgrim Creek in Oceanside.

- There are 6 location points recorded for the southwestern willow flycatcher (*Empidonax traillii extimus*), which is restricted to mature, willow-dominated riparian woodlands and forests. Major and critical habitat areas are listed as the San Luis Rey River near Guajome Lake and Pilgrim Creek near Foss Lake, both in Oceanside.

Several priority bird species are associated with open water, estuarine, and marsh habitats along the coast or in the coastal lagoons:

- The California brown pelican (*Pelecanus occidentalis californicus*) is not known to breed in the county but is a regular post-breeding and winter resident in coastal areas, harbors, and estuaries of the MHCP study area.

- The light-footed clapper rail (*Rallus longirostris levipes*) is found in saltmarsh habitats in all four of the coastal lagoons in the study area, which are considered major and critical locations for conservation.

- The western snowy plover (*Charadrius alexandrinus nivosus*) is known to breed at the mouth of the San Luis Rey River and at Agua Hedionda, Batiquitos, and San Elijo Lagoons, which are considered major and critical locations.

- The California least tern (*Sterna antillarum browni*) breeds regularly at Batiquitos Lagoon and occasionally at other lagoons within the study area. The mouth of the San Luis Rey River and all four lagoons are considered critical locations for the species.

- The Belding's Savannah sparrow (*Passerculus sandwichensis beldingi*) is found in saltmarsh habitats associated with the lagoons and along the San Luis Rey River and Pilgrim Creek. Agua Hedionda, Batiquitos, and San Elijo Lagoons are considered major and critical breeding locations.

The orange-throated whiptail lizard (*Cnemidophorus hyperythrus beldingi*) is widely distributed within the study area, particularly in more open scrub and chaparral habitats. No major or critical locations have been identified.

**High Priority Plants**

The high priority plant species in the MHCP are also all considered narrow endemic species. Narrow endemics are those species considered so restricted in distribution and abundance that substantial loss of their populations or habitat might jeopardize the species' continued existence or recovery. Several MHCP plant species are associated with specific habitat types within the study area. The following four species are either entirely or partially associated with vernal pools:

- Thread-leaved brodiaea (*Brodiaea filifolia*) occurs in heavy clay soils in grasslands within areas of Carlsbad, Oceanside, and central San Marcos. Several of these locations are considered major populations and critical for species conservation.

- San Diego button-celery (*Eryngium aristulatum* var. *parishii*) is known from the Poinsettia Lane vernal pools in Carlsbad, and from the San Marcos vernal pools. Both locations are considered major populations and critical for species conservation.

- Spreading navarretia (*Navarretia fossalis*) is known from the Poinsettia Lane vernal pools in Carlsbad, and from the San Marcos vernal pools. Both locations are considered major populations and critical for species conservation.

- California orcutt grass (*Orcuttia californica*) is known from the Poinsettia Lane vernal pools in Carlsbad. This location is considered a major population and critical for species conservation. This species has not been recorded in the San Marcos vernal pools.

One priority plant species is associated with clay or gabbro-derived soils in the study area:

- San Diego thorn-mint (*Acanthomintha ilicifolia*) can be found in coastal sage scrub, chaparral, or grasslands. Within the study area, major populations of this species occur in Carlsbad (near the junction of El Camino Real and College Boulevard, south of Palomar Airport Road, north of Alga Road, north of Olivenhain, west of San Marcos), Encinitas (Quail Botanical Gardens, Lux Canyon and vicinity), San Marcos associated with the vernal pools, and south Vista. A major population formerly found in northwest Escondido was transplanted to the San Diego Wild Animal Park several years ago.

Three priority plant species are typically associated with southern maritime chaparral in the study area:

- Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*) occurs on sandstone terraces and bluffs in Carlsbad and Encinitas. Major populations of this species in the study area occur in the vicinity of Agua Hedionda and near the Green Valley-Olivenhain area in Carlsbad, in Lux Canyon and its vicinity, the Green

Valley-Olivenhain area, and Oak Crest Park in Encinitas. All of these populations are considered critical for species conservation.

- Encinitas baccharis (*Baccharis vanessae*) occurs in the study area in Carlsbad, Encinitas, and southern Escondido. The population on slopes above Green Valley (Carlsbad, Encinitas) is considered both major and critical for species conservation. Smaller populations in the study area occur near Alga Road to the north (Carlsbad), and in Lux Canyon to the south (Encinitas). The Lux Canyon population is also considered critical for species conservation.

- Orcutt's spineflower (*Chorizanthe orcuttiana*) appears to be restricted to sandstone bluffs where it occurs in association with southern maritime chaparral. The only confirmed, presumably extant locality for this species in the study area is in Oak Crest Park in Encinitas. This small population is considered critical for species conservation. It should be noted that additional, potential habitat for this species occurs within the study area.

At least one MHCP species has not been recorded in the study area, although potential habitat exists and it is known from the vicinity of the study area:

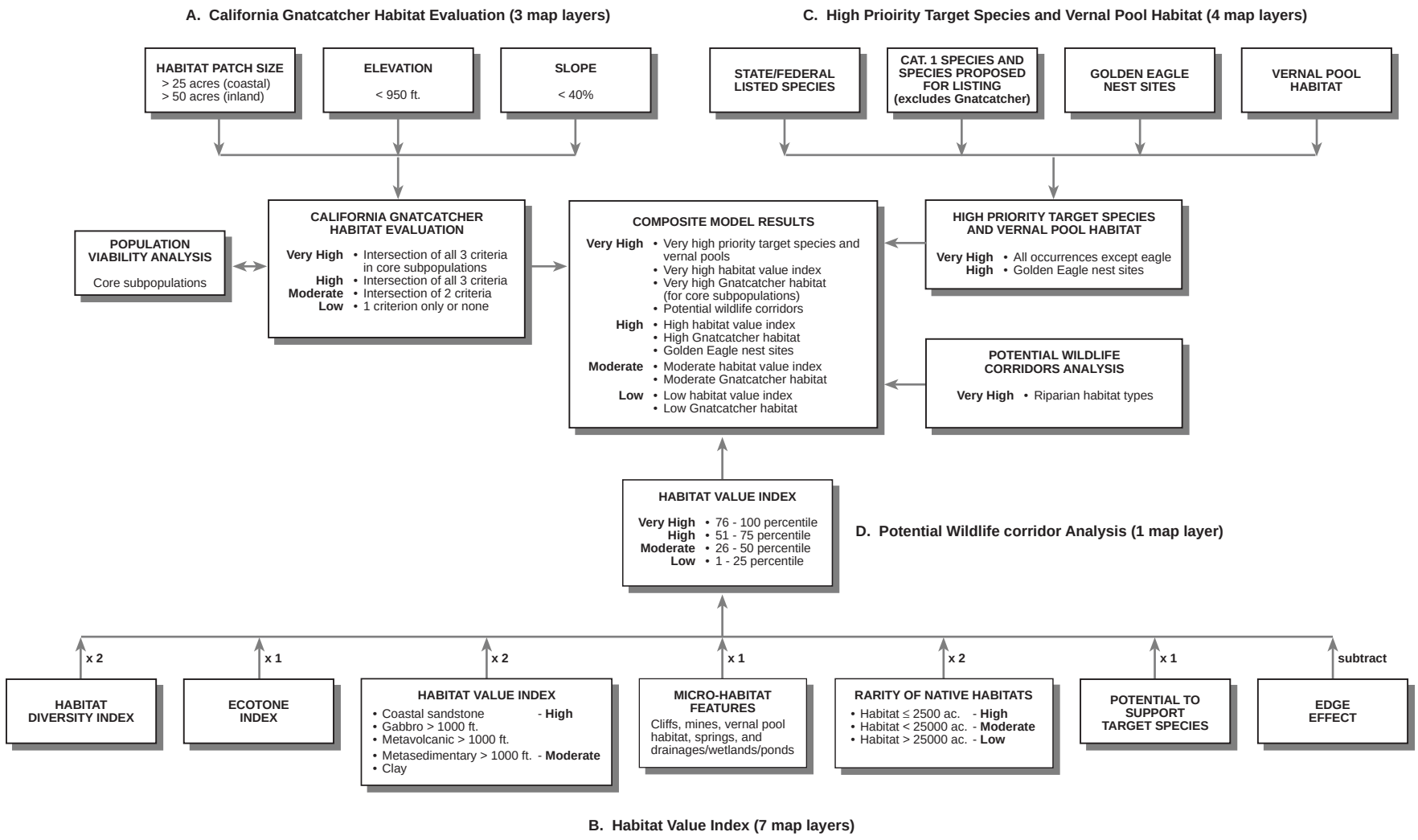
- Short-leaved dudleya (*Dudleya blochmaniae* ssp. *brevifolia*) is restricted to sandstone bluffs in southern maritime chaparral. Within this habitat, this subspecies is further restricted to areas characterized by thin soils, reddish ironstone concretions, and sparse vegetation. The entire known distribution of this species lies between Del Mar and La Jolla. Any individuals detected in the MHCP study area would be considered critical for species conservation.

## 2.4 HABITAT QUALITY EVALUATION

The biological database was used in a GIS-based habitat evaluation model designed to assess and rank the relative biological value of lands within the MHCP study area. The model was used as a tool to help delineate and prioritize lands for inclusion in the preserve system. It is essentially the same model as that applied to the MSCP study area, but with a slightly different set of specific vegetation communities and target species and some modifications to the California gnatcatcher component of the model. See Appendix A of Volume II for details.

### 2.4.1 Methods

In the absence of adequate and systematically collected data for the entire study area, the model uses biological and physical information relating to the potential presence of MHCP species and habitat attributes that foster biodiversity to assess the relative biological value of areas within the subregion. The "composite" habitat evaluation model includes four separate model components: (1) priority California gnatcatcher habitat, (2) a habitat value index, (3) high priority target species and vernal pool habitat, and (4) wildlife corridors. Figure 2-2 presents the model as a flowchart.




**GIS Habitat Evaluation Model for the MHCP Study Area**

FIGURE 2-2

Graphics/Biology/MHCP/GIS Habitat Eval Org.FH8

The parameters of the priority California gnatcatcher habitat model are minimum habitat patch size (25 acres minimum patch size for coastal populations and 50 acres for inland populations), elevational distribution of gnatcatchers (more than 90% of sightings occur below 950 feet), and slope preferences (more than 90% of sightings occur on slopes less than 40%). Note that this model was later refined based on new information, as discussed in Appendix A of Volume II.

The habitat value index model included seven data layers as inputs: soils known to support sensitive plant species, adverse edge effects, micro-habitat features (e.g., presence of cliffs, springs, or ponds), ecotone index, habitat diversity index, rarity of natural habitats, and potential to support MHCP species. These layers were weighted and combined to assign the relative biological value of natural habitat in the MHCP study area, and specifically to identify areas having potential for high biological value.

The high priority MHCP species and vernal pool habitat model included all federally and state-listed species, federal candidate species (former Category 1 species), species proposed for listing, and vernal pool complexes. In addition, historic, current, and potential nesting sites of golden eagles were plotted, because the eagle represents a top carnivore important to preserve design.

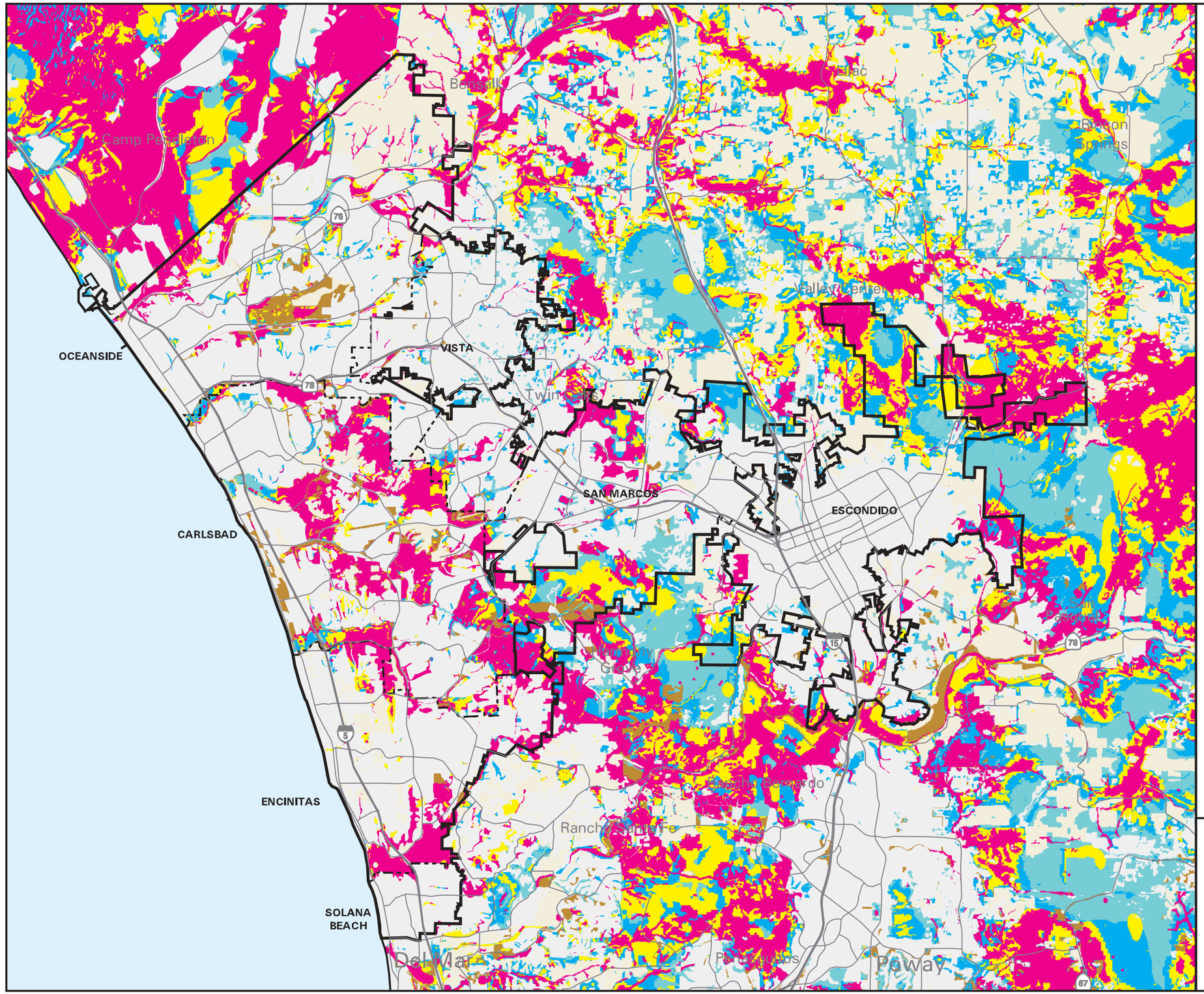
The wildlife corridor model used riparian vegetation communities as a preliminary indicator of potential wildlife corridors. Riparian woodland, riparian forest, oak riparian forest, and riparian scrub were identified as vegetation types most likely to be used as wildlife corridors. It should be noted that this analysis was therefore limited in scope to movement corridors for species that use riparian corridors (e.g., mule deer, mountain lion, and bobcat). As such, this model does not necessarily address the issue of dispersal and movement by other species. The broader issue of habitat linkages, which is not addressed in this model, requires that the core preserve areas first be identified and that species-specific habitat linkage requirements be evaluated.

The composite habitat evaluation model map was updated in 1998 by removing all habitat value from those areas known to have been developed between 1992 and 1997 (based on the 1997 revised vegetation communities map). However, the model was not rerun to account for more subtle changes in input parameters that may have occurred.

### 2.4.2 RESULTS

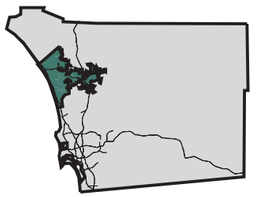
Figure 2-3 illustrates results of the composite habitat evaluation model for the study area. The largest areas of very high and high habitat value are concentrated in a swath extending from southeast Carlsbad, southwest San Marcos, and north Encinitas up to north Carlsbad. Much of this acreage coincides with large blocks of predominantly coastal sage scrub, grasslands, and southern maritime chaparral communities. Other large areas of high value are found along the north boundary of Oceanside (mostly coastal sage scrub and grasslands), portions of north San Marcos (coastal sage scrub), and north Escondido (multiple habitats at Daley Ranch). Smaller areas that rate very high include vernal pool complexes in San Marcos, areas supporting concentrations of MHCP species or rare vegetation communities (e.g., southern maritime chaparral in Encinitas), and riparian corridors and other wetland vegetation. Many of the stepping-stone patches of habitat in Oceanside are also rated as very high in value, reflecting their importance to preserve design in spite of their relatively small size.

# Figure 2-3
# Composite Habitat Value
# MHCP Study Area




- Very High
- High
- Moderate
- Low
- Agriculture
- Disturbed
- Developed
- Generalized Subarea Plan Boundary
- MHCP Boundary

SOURCE: MCHP Habitat Evaluation Model



Feet 0 6,500 13,000

Kilometers 1.56 3.12

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## 2.5 BIOLOGICAL CORE AND LINKAGE AREA

The habitat evaluation model map, along with the MHCP database of target species information, vegetation communities, field survey results, and basic tenets of preserve design, were used to identify a BCLA for the study area. The BCLA is roughly equivalent to a biologically preferred preserve alternative because it identifies all large contiguous areas of habitat, all areas supporting major and critical species populations or habitat areas, and all important functional linkages and movement corridors between them. The BCLA is also a starting point and an analytical tool for designing the preserve system. Conservation of large habitat areas and functional linkages and corridors should be maximized within the final preserve. However, the boundaries of the BCLA are general and require site-specific review during subarea planning for more precise definition.

The BCLA corresponds fairly closely with those areas shown as high and very high on the habitat evaluation map (Figure 2-3); however, it also includes areas of lower value, such as agricultural fields and disturbed habitats, where they may serve as linkages between higher value core areas. Figure 2-4 shows the vegetation communities within the BCLA, and Table 2-1 summarizes acreages of these vegetation communities.

## 2.6 LAND OWNERSHIP

The study area contains about 111,908 acres, of which about 71% is in private ownership. Figure 2-5 presents a breakdown of ownership by public and private entities (SANDAG 2002). Figure 2-6 maps the distribution of these land ownership categories. Of the 19,584 acres that are publicly owned (about 17% of total), the largest proportion (16,843 acres, or 86% of the public ownership) is owned by local jurisdictions. The state government owns 417 acres in the study area, mostly natural habitats at the coastal lagoons. The federal government administers only about 169 acres in the study area.

## 2.7 LAND USE

Figure 2-7 shows a breakdown of the existing and planned land uses within the study area (SANDAG 2002) and Figure 2-8 maps the distribution of existing land uses. Existing land uses in the study area are predominantly residential, road rights-of-way, and other urban uses. About 8% of the area is in agricultural use. Only about 10,814 acres (about 10%) are classified as parks and preserves, which include some active parks not supporting natural habitat. About 23,195 acres (21%) are classified as vacant. The planned land uses include over 53,008 acres of residential (47% of total area) and 16,600 acres of planned open space (15%). The balance of the acreage is planned for other forms of development or agriculture.

A key policy is to maximize inclusion of existing and planned open space and other publicly owned lands in the preserve. The planning approach treated these existing open space areas as building blocks that needed to be substantially added to and linked using a wide array of other conservation planning tools.

Figure 2-9 shows SANDAG's 2020 Regional Transportation Highway Plan. Two key projects in the Highway Plan are the widening and addition of High Occupancy Vehicle (HOV) lanes to Interstate 5 (I-5) north of I-805, and the widening and addition of HOV/managed lanes to I-15 between State Route (SR) 163 and SR 78. Additional projects include the widening of SR 76

between Oceanside and I-15. The Plan also includes numerous interchange improvements as well as the addition of auxiliary lanes where needed.

Figure 2-10 shows SANDAG's 2020 Transit Plan. Major improvements to the coastal rail line will permit Coaster service to be expanded from 18 to 48 one-way trips per day, reducing travel time between Oceanside to Centre City San Diego from 60 minutes to 50 minutes. The Oceanside to Escondido light rail line, a *TransNet* project, will be completed by 2008. In addition, the Plan identifies a series of regional bus corridors and transitways.

## 2.8 HISTORICAL AND FORECAST GROWTH

### 2.8.1 Historical Growth

Between 1990 and 2002, total population in the San Diego region grew by 420,300 persons to 2,918,300, or an average growth of 1.3% per year. Due to a prolonged effect of the 1991 recession, population grew by an average of 0.8% per year from 1990 to 1996. Average annual growth increased to 1.8% per year for the period from 1996 to 2002.

Total housing in the region increased by 116,600 units between 1990 and 2002, to 1,062,870 units. This represents an average housing growth of slightly less than 1% per year, or less than the growth in population. As a result, average household size has increased from 2.69 persons in 1990 to 2.77 persons in 2002.

The seven cities participating in the MHCP grew more rapidly than the region as a whole. Total population of the MHCP cities grew by 23%, or 1.7% per year, between 1990 and 2002, and housing grew by 14%, or 1.1% per year. San Marcos saw the most rapid population growth at an average of 2.9% per year, followed by Oceanside and Vista at 1.9% per year, Carlsbad at 1.8% per year, Escondido at 1.7% per year, and Encinitas and Solana Beach at less than 1% per year.

### 2.8.2 Forecast Growth

SANDAG and local jurisdictions of San Diego County periodically prepare forecasts of regional growth and projected allocations of this growth to cities, unincorporated communities, and other geographic subdivisions. Forecasts include population, housing, employment, land use, and other demographic and economic data. The preliminary 2030 Regionwide Forecast was released in November 2002. According to this forecast, the region's population is projected to grow 38% from 2.8 million in 2000 to 3.9 million in 2030, while the number of housing units is projected to grow 33% from 1.0 million units in 2000 to 1.4 million units in 2030.

Local jurisdictions and SANDAG are currently (through 2004) preparing a regional comprehensive plan (RCP) to integrate land uses, transportation systems, infrastructure needs, and public investment strategies for the San Diego region. The RCP addresses a number of challenges faced by the region, including a serious housing shortage, congested roadways, and continuing sprawl into its rural areas. A key feature of the RCP is emphasis on "smart growth", which would limit urban sprawl and improve existing

# Figure 2-4
# Vegetation Communities Inside the Biological Core and Linkage Area (BCLA) MHCP Study Area

- Dunes and Beaches
- Coastal Sage Scrub
- Chaparral
- Southern Maritime Chaparral
- Coastal Sage Scrub/Chaparral Mix
- Grassland
- Riparian/Wetlands
- Oak Woodlands
- Eucalyptus Woodlands

- Natural Habitats (Outside BCLA)
- Agricultural Land
- Developed/Disturbed Land

- Generalized Subarea Plan Boundary
- MHCP Boundary

SOURCE: 1995 Vegetation Inventory (SANDAG)

Feet 0 6,500 13,000
Kilometers 1.56 3.12

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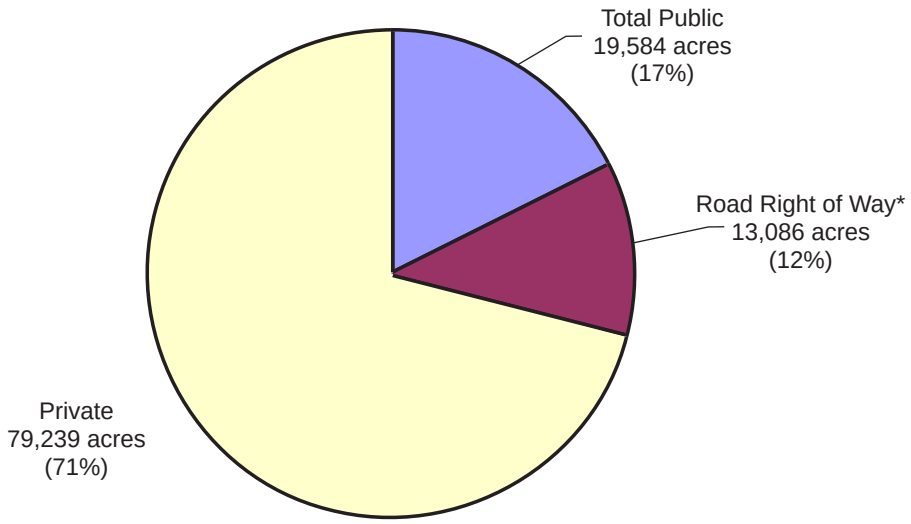
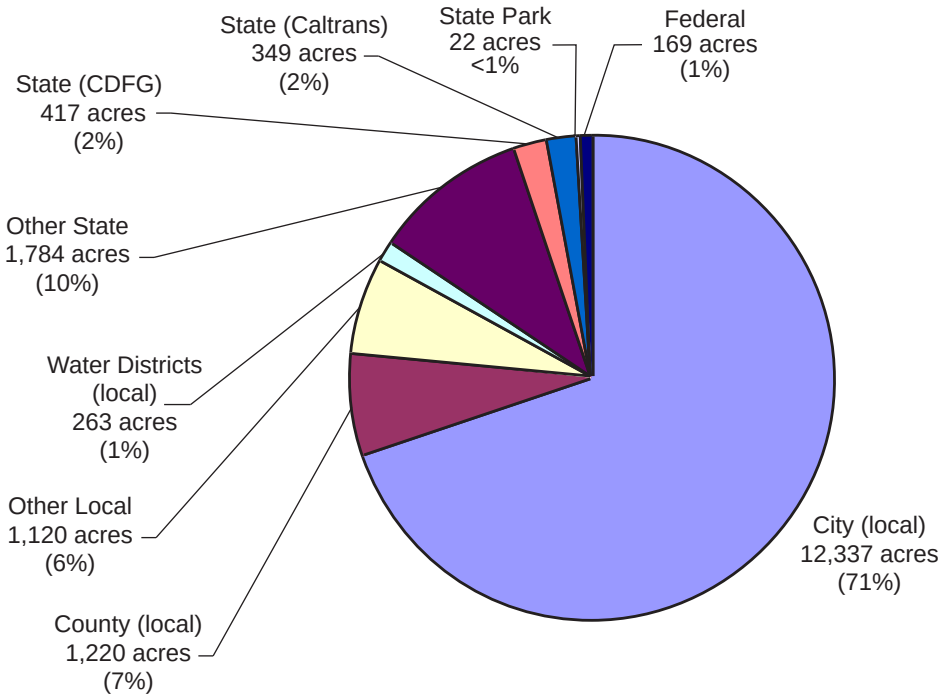
## Public Versus Private Ownership




## Breakdown of Public Ownership




*Both public and private road rights-of-way

Note: Study area total acreages differ between raster-based GIS calculations (vegetation) and vector-based GIS calculations (land use/ownership).

Source: SANDAG Land Layers, 2002

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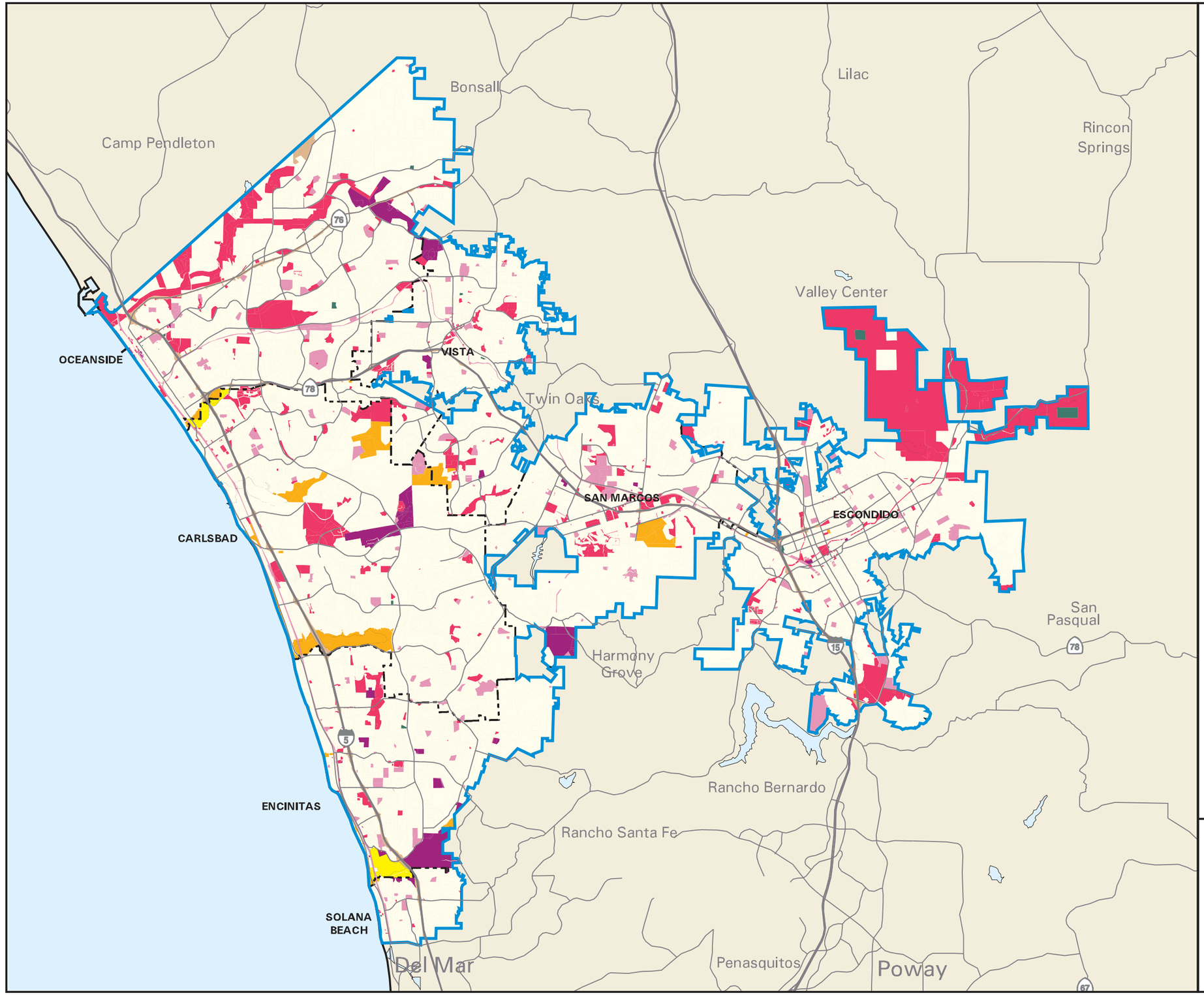
**Public and Private Land Ownership Within the MHCP Study Area**

FIGURE 2-5

Biology/MHCP/Figure 2-5_A.fh8

# Figure 2-6
# Land Ownership
# MHCP Study Area




- City
- County
- Special Disticts
- California Department of Fish and Game
- Caltrans
- Other State Lands
- Federal Lands
- Privately Owned Lands
- Generalized Suabrea Plan Boundary
- MHCP Boundary

SOURCE: SANDAG Land Layers, (2002)

Feet 0 6,500 13,000

Kilometers 1.56 3.12

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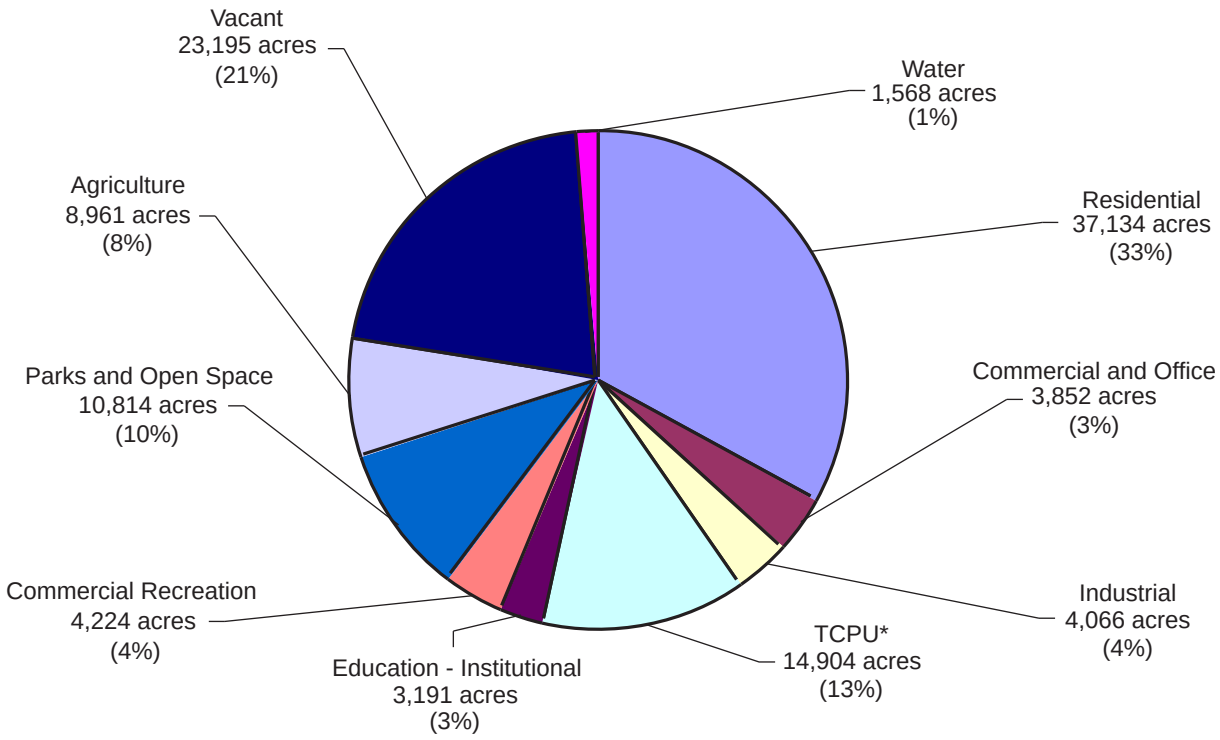
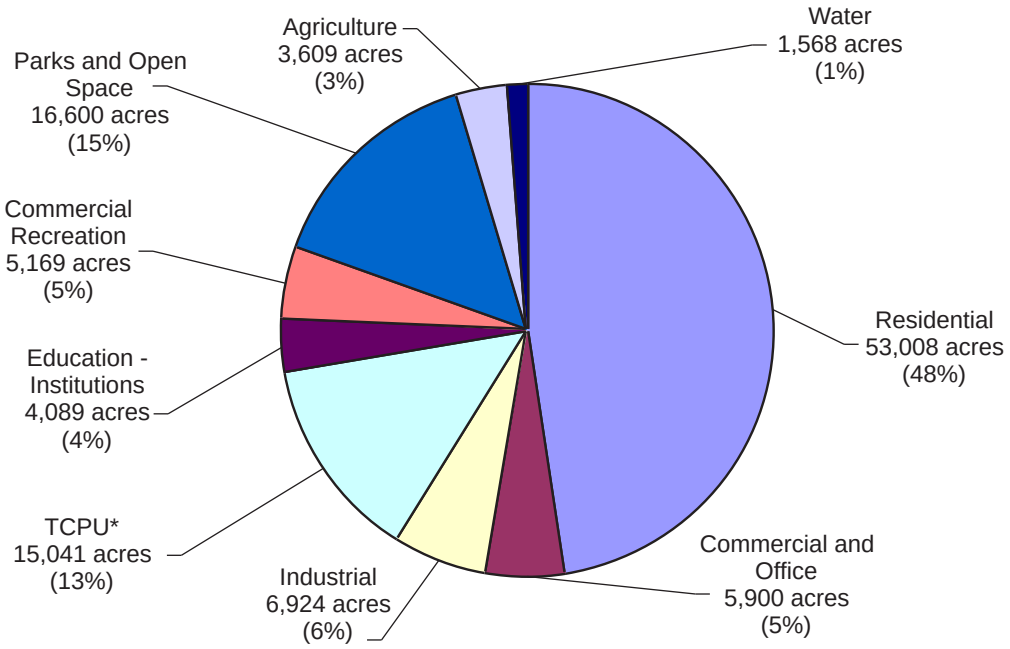
## Existing Land Uses




## Planned Land Uses




*TCPU = Transportation, Communications, and Public Utilities

Note: Study area total acreages differ between raster-based GIS calculations (vegetation) and vector-based GIS calculations (land use/ownership).

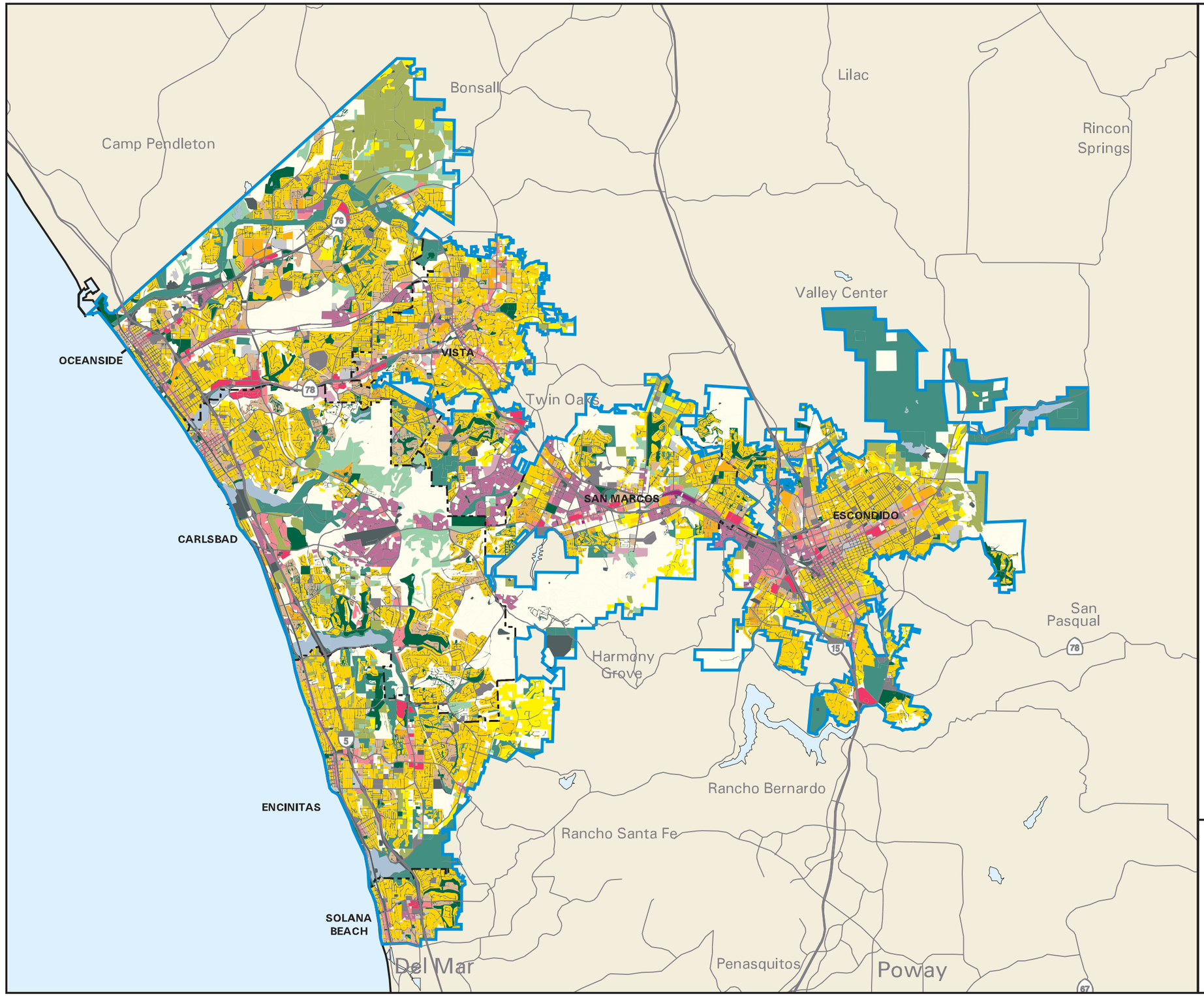
Source: SANDAG Land Layers, 2002

amec

**Existing and Planned Land Uses Within the MHCP Study Area**

FIGURE 2-7

# Figure 2-8
# Existing Land Use
# MHCP Study Area




- Spaced Rural
- Single Family
- Mobile Homes
- Multiple Family
- Shopping Centers
- Commercial and Office
- Heavy Industry
- Light Industry
- Extractive Industry
- Transportation, Communication, Utilities
- Education
- Institutions
- Military
- Commercial Recreation
- Parks
- Intensive Agriculture
- Extensive Agriculture
- Undeveloped
- Generalized Suabrea Plan Boundary
- MHCP Boundary

SOURCE: SANDAG Land Layers, (2002)

Feet 0 6,500 13,000

Kilometers 1.56 3.12

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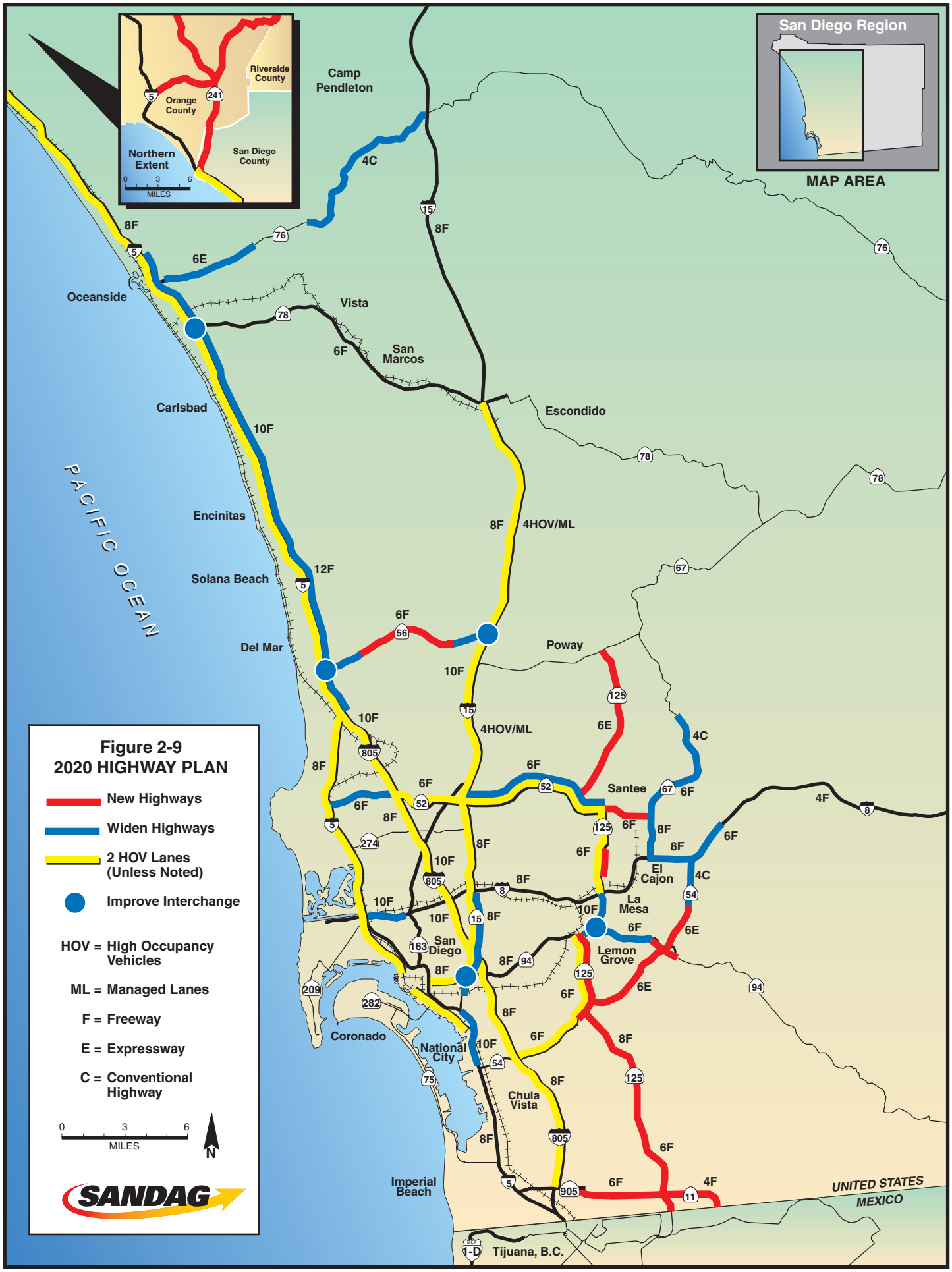
January 16, 2003


Riverside County
Orange County
Northern Extent
San Diego County
0 3 6
MILES
San Diego Region
MAP AREA
Camp Pendleton
Oceanside
Vista
San Marcos
Escondido
Carlsbad
Encinitas
Solana Beach
Del Mar
Poway
Santee
El Cajon
La Mesa
Lemon Grove
San Diego
Coronado
National City
Chula Vista
Imperial Beach
Tijuana, B.C.
PACIFIC OCEAN
UNITED STATES
MEXICO
Figure 2-9
2020 HIGHWAY PLAN
New Highways
Widen Highways
2 HOV Lanes (Unless Noted)
Improve Interchange
HOV = High Occupancy Vehicles
ML = Managed Lanes
F = Freeway
E = Expressway
C = Conventional Highway
0 3 6
MILES
N
SANDAG


San Diego Region
MAP AREA
Camp Pendleton
Oceanside
Vista
San Marcos
Carlsbad
Escondido
Encinitas
Solana Beach
Del Mar
PACIFIC OCEAN
Poway
Santee
El Cajon
La Mesa
Lemon Grove
San Diego
Coronado
National City
Chula Vista
Imperial Beach
Tijuana, B.C.
UNITED STATES
MEXICO
Figure 2-10
2020 TRANSIT PLAN
Existing
New/ Upgraded
Coaster
Light Rail
Transitway
Regional Bus
0 3 6
MILES
N
SANDAG

neighborhoods, directing future development away from rural areas and closer to existing and planned job centers, education and health institutions, and transportation corridors. Focus areas for future development should (1) accommodate higher residential and/or employment densities and (2) be located in one of the following:

- key activity centers that could be connected to other activity centers by transit;
- areas within walking distance of the region's existing or planned light rail stations, commuter rail stations, or major bus corridors; or
- pedestrian-friendly town and village centers.

It may be noted that the goals of the MHCP are consistent with and support the implementation of smart growth by limiting urban sprawl and conserving currently undeveloped areas. Both the MHCP and smart growth will require a careful balance between conservation and development, particularly on vacant land zoned for residential use. In particular, the MHCP needs to be complemented by strategies to increase housing supply in areas that have existing transportation and other infrastructure services.

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# 3.0 CONSERVATION PLANNING

This section describes the planning and analyses that have guided development of the jurisdictions' subarea plans. The subarea plans describe how each city will implement its portion of the subregional MHCP (Section 3.1).

The heart of the conservation planning process is the physical design of the preserve boundaries. MHCP preserve design began with the application of biological and land use guidelines to identify the FPA for each city, within which conservation will be concentrated (Section 3.2). Biological analysis of the FPAs consisted of quantifying the targeted conservation of MHCP habitats and species, relative to the habitats and species locations proposed for development, and evaluating the configuration of the FPAs relative to the species' habitat needs. The results of this analysis, along with an outline for conducting future biological analyses, are summarized in Section 3.3 and fully detailed in Volume II. The following sections describe the covered species lists and take authorizations that will be issued once subarea plans are approved (Section 3.4), the implications for dealing with species that are not covered by the plan (Section 3.5), and the requirements for wetlands permitting (Section 3.6). Sections 3.7 and 3.8 provide guidelines for development planning and biological preserve design.

## 3.1 THE MHCP PLAN AS AN UMBRELLA DOCUMENT

The MHCP plan serves as an umbrella document to guide the preparation of subarea plans by each participating city and does not itself receive any permits. To be approved, subarea plans must be consistent with the conservation and policy guidelines of the MHCP plan.

### 3.1.1 Role of the Subregional Plan

The MHCP subregional plan documents the processes, guidelines, and other features that are common to all subarea plans. The MHCP plan contains the overall conservation strategy for the subregion and documents the conservation actions that collectively will guarantee the protection of species covered by individual subarea plans. The subregional plan also describes the cooperative institutional mechanisms through which participants will coordinate MHCP implementation. The MHCP subregional plan does not authorize the taking of biological resources or otherwise serve as the sole basis for any permits or authorizations.

### 3.1.2 Role of the Subarea Plans

Subarea plans included in the MHCP plan, or prepared subsequent to its completion, describe the specific conservation, management, facility siting, land use, and other actions each city will take to implement the goals, guidelines, and standards of the subregional plan. Subarea plans also describe how the cities will use their existing plan review and approval processes to guarantee implementation of the plans. When MHCP guidelines are followed, each subarea plan would meet the requirements for state and federal permits and authorizations for take of species included on the covered species list. Section 5.1 describes how these plans are consistent with federal and state requirements and legal authority. Subarea plans will be the subject of implementing agreements between the individual cities, the CDFG, and the USFWS. The agreements will convey take authorizations to the individual cities so that they may permit public or private actions based on their approved subarea plans.

Five MHCP cities have prepared subarea plans, which were submitted simultaneously with the Public Review Draft MHCP: Carlsbad, Encinitas, Escondido, Oceanside, and San Marcos.

## 3.2 FOCUSED PLANNING AREAS

The MHCP jurisdictions have worked cooperatively with the wildlife agencies, property owners, environmental groups, and other members of the Advisory Committee to identify FPAs within which some lands will be dedicated for open space and habitat preservation (Figure 3-1). The FPAs are represented by a combination of "hardline" preserves, indicating lands that will be conserved and managed for biological resources, and "softline" planning areas, within which preserve areas will ultimately be delineated based on further data and planning. Each jurisdiction's subarea plan must contain written guidelines for preserve design and planning of development and other land uses in the soft line areas, as well as guidelines for habitat management, mitigation, interim protection during the planning period, and a process for establishing permanent protection of preserved lands.

Several objectives were incorporated into the process of designing the MHCP FPAs:

- Conserve as much of the biologically most important habitat lands remaining in the subregion (BCLA) as possible, in a system that minimizes preserve fragmentation.
- Maximize the inclusion of public lands within the preserve.
- Maximize the inclusion of lands already conserved as open space, where appropriate.
- Maintain individual property rights and economic viability for the subregion.

In addition to the hardline and softline FPA areas, Figure 3-1 illustrates two other important preserve planning considerations: (1) hardline open space areas (and development areas) already designated under existing HCPs or Section 7 agreements and therefore not subject to MHCP preserve planning, and (2) a red circle indicating a general area within which additional conservation of core breeding habitat for California gnatcatchers has been required by the wildlife agencies to ensure long-term viability of the species. The purpose and goals for this "USFWS circle," which includes some lands outside the MHCP cities in the unincorporated county, are described in more detail in Sections 3.3.2 and Section 5.3.9.

The conservation targeted within the FPAs will be achieved by the implementing measures documented in each city's subarea plan. Each plan will demonstrate how conservation in its FPA can be achieved through regulation (avoidance of lands based on land-use policies), minimization of impacts, mitigation, and, after these measures have been exhausted, acquisition of parcels from willing sellers.

Some hardline areas and softline areas not already permitted may change in configuration during consultation with the USFWS and CDFG when the respective City requests a 10(a)1(B) permit and Section 2835 of the NCCP for their subarea plan. Such changes are expected to be minor or result in an improved preserve design and/or increased preserve acreage. If the changes are not minor or do not result in an improved preserve design, subsequent environmental review maybe required pursuant to CEQA Section 21166 and

# Figure 3-1
# Focused Planning Area
# MHCP Study Area

The Focused Planning Area (FPA) depicts boundaries within which preserve areas may be designated by city subarea plans. Some lands within the FPA will be conserved, and others developed. Subarea plans will determine the ultimate preserve boundaries and conservation levels, along with the land use regulations and other measures to assemble the preserve. This map is not intended to regulate land use or to provide site-specific data.

Camp Pendleton
Bonsall
Lilac
Rincon Springs
Valley Center
OCEANSIDE
VISTA
Twin Oaks
SAN MARCOS
ESCONDIDO
CARLSBAD
Harmony Grove
San Pasqual
ENCINITAS
Rancho Bernardo
Rancho Santa Fe
SOLANA BEACH
Del Mar
Penasquitos
Poway

- Hardline Areas (90% to 100% Conservation)
- Softline Areas (Less than 90% Conservation)
- Hardline Preserves on Already Permitted Properties
- Not Part of Subarea Plans
- Major Amendment Areas
- Natural Habitats (Outside FPA)
- Agricultural Land
- Developed/Disturbed Land
- General Area for Core Gnatcatcher Conservation (USFWS Circle)
- County-owned FPA land
- Projects Already Permitted
- Generalized Subarea Plan Boundary
- MHCP Boundary

SOURCE: Local Jurisdictions in MHCP Study Area

Feet 0 6,500 13,000
Kilometers 1.56 3.12

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NEPA Section 1502.9 to process the subarea plan and the implementing agreement in order to issue the incidental take permits.

A revised subarea plan, along with an urgency ordinance and draft implementing agreement will be available for public review. The public will be notified through the City's public hearing notification process and through notification published in the federal register.

## 3.3 CONSERVATION ANALYSIS

This section briefly summarizes the expected levels of conservation and take of biological resources under the MHCP, given the October 2002 FPA and assumptions about how conservation will occur under city subarea plans. The full analysis is included in Volume II. This analysis does not incorporate adjustments to the FPA since October 2002, although the FPA has continued to evolve through policy review and negotiations with the wildlife agencies. Results of the conservation analysis (Volume II), which reflects public comment on the analysis performed for the Public Review Draft MHCP, will be used by the wildlife agencies to evaluate species coverage for the issuance of take authorizations.

### 3.3.1 Methods

The overall process for analyzing the MHCP 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 study area and within each participating city.

3. Evaluate preserve viability for each of the 77 MHCP species, guided in large part by the MHCP Biological Goals, Standards, and Guidelines (Ogden 1998) as updated by information provided in Volume II of this document.

4. Specify management actions that must be implemented to assure adequate conservation.

Updated vegetation maps and species distribution maps were used to calculate levels of conservation and take within the FPA, the BCLA, and the seven-city study area as a whole. Each city provided a map outlining land areas within which some conservation is expected to occur. Each portion of this FPA was labeled with a percent conservation level (FPA%). This FPA% represents the expected *proportion of currently mapped natural vegetation* to ultimately be conserved within that area, or averaged across similar areas throughout the study area. Further assumptions and interpretation were necessary to determine likely levels of conservation for specific habitat types and species and to determine the configuration of preserve areas that will ultimately be protected and managed within them. The assumptions used in calculating conservation levels for vegetation communities, ecological communities, and MHCP species based on the FPA, MHCP policies, subarea plan policies, and other factors are fully described in Volume II and briefly summarized below.

### Conservation of Vegetation Communities

Vegetation communities were grouped into wetland and upland communities due to differences in policies and guidelines that apply. Wetland vegetation communities (coastal salt marsh, alkali marsh, freshwater marsh, estuarine, salt pan/mudflats, riparian forest, riparian woodland, riparian scrub, vernal pool, disturbed wetland, flood channel, freshwater) were calculated as 100% conserved *both inside and outside of FPAs*, based on the MHCP no net loss policy. This calculation assumes 100% conservation of *existing vegetation acreage* as well as 100% conservation of *biological functions and values* as they pertain to MHCP species using these habitats. Upland vegetation communities occurring inside the FPA were generally calculated at the FPA conservation percent in which they occur. Outside of the FPA, upland vegetation communities were calculated as 0% conserved. Although some natural vegetation will remain undeveloped outside the FPA, the conservation level is calculated at 0%, because these areas will not be actively managed as part of the MHCP preserve and their long-term conservation value cannot be assured. Areas of nonhabitat (developed, disturbed, and agricultural areas) were calculated as 0% conserved both inside and outside the FPA. See Appendix F of Volume II for definitions to distinguish annual grasslands from disturbed or agricultural lands.

### Conservation of Ecological Communities

For purposes of analysis, the MHCP animal and plant species were also grouped into ecological communities based on shared habitat requirements or co-occurrence within similar environments, such as those species associated with vernal pools or with riparian habitats (see Volume II for tables and descriptions of the ecological communities and species using each community for one or more life requisites). This community-level analysis was performed to illustrate how conservation and management actions within each ecological community may affect its member species as a group. However, because this analysis overlooks biological differences among the species comprising a community, it is not sufficient by itself to determine effects of MHCP implementation on any particular species. The value of community-level analysis is to illustrate how groups of species may be affected in concert by certain aspects of the preserve design, implementation policies, or management actions.

### Preserve Configuration

The configuration of the preserve system expected to result under MHCP implementation was assessed both quantitatively and qualitatively. Because the BCLA was delineated to capture the best remaining habitat areas, including all the largest remaining blocks of habitat and critical linkages between them, the analysis used the proportion of the BCLA that would be preserved by the FPA as one relevant measure to assess preserve configuration. The analysis also considered some measures of fragmentation and edge effects, including the size distribution of preserve patches and the amount of preserve area greater than 50 meters and 200 meters from a preserve edge. Preserve configuration was also assessed qualitatively, at a landscape scale, by assessing the expected effects of MHCP implementation on wildlife movement between core preserve areas. This analysis looked specifically at linkages between the coastal lagoons and inland habitat areas (generally east-west corridors associated with riparian habitats), as well as north-south linkages to allow wildlife movement between the larger habitat blocks that lie north and south of the study area. Most importantly, preserve configuration was assessed separately for each MHCP species based on its particular space requirements, dispersal abilities, susceptibility to adverse edge effects, and so on. Each species evaluation in Volume II includes a subsection on expected preserve configuration effects on the species' continued viability in the study area.

## Conservation of Species

Numerous calculation rules, models, and guidelines were applied to estimate expected effects of MHCP implementation on species populations or locations in the study area, as detailed in Volume II and summarized briefly here. For most species locations or populations, similar FPA calculation rules were applied as for the vegetation community analysis. However, more stringent rules apply to certain species based on MHCP policies for avoidance and minimization of impacts, as follows:

- *Obligate Wetland Species* (Table 3-1)—These are species for which all life requisites provided in the MHCP area are expected to be within open water or wetland vegetation communities, which are subject to the MHCP no net loss policy (Section 3.6). Consequently, inside the FPA, all MHCP database observation points for obligate wetland species were calculated as 100% conserved. This assumes 100% conservation of the habitat, and active habitat management to ensure no loss of habitat value to support the species. Although wetland habitats outside the FPA are also 100% conserved by the no net loss policy, associated wetland species are calculated as 0% conserved, because active management to ensure habitat value will not be guaranteed outside the FPA.

- *Narrow Endemic Species* (Table 3-2)—These are MHCP species that are highly restricted by their habitat affinities, edaphic (soil) requirements, or other ecological factors, and that may have limited but important populations within the MHCP area, such that substantial loss of these populations or their habitat within the MHCP area might jeopardize the continued existence or recovery of that species. In hardline FPA areas, location points for narrow endemics were calculated as 100% conserved by impact avoidance. In softline areas, narrow endemic points were calculated as 95% conserved by avoidance, minimization, and species-specific mitigation. Outside of the FPA, narrow endemic points were calculated as 80% conserved based on avoidance, minimization, and species-specific mitigation.

- *Other Species*—For species that are not wetland obligates or narrow endemics, all points that fall outside of the FPA were calculated as 0% conserved. All points falling inside hardline FPA areas were calculated as 100% conserved, based on impact avoidance. In softline FPA areas, points were generally calculated as conserved at the FPA percent level for the area the point falls within.

- *California gnatcatcher*—Additional analyses were performed for the California gnatcatcher due to the abundance of data on the species, its wide distribution in the study area, and its high priority as a preserve planning species and conservation target. The purpose of these additional analyses was to better quantify expected levels of conservation and take and the effects of the MHCP preserve on species viability than is possible with the MHCP gnatcatcher point data alone. The point database may be biased in showing more gnatcatcher locations in areas subject to development than in areas already conserved or proposed for conservation by the MHCP, because surveys are generally carried out in areas proposed for development. Consequently, various modeling approaches were used to calculate expected densities and conservation levels in areas that have not been sufficiently surveyed for gnatcatchers (see Volume II for details).

## Table 3-1

## MHCP SPECIES CONSIDERED WETLAND COMMUNITY OBLIGATES FOR PURPOSES OF ANALYSIS

| Scientific Name | Common Name | Habitat |
|---|---|---|
| **Plants** | | |
| *Eryngium aristulatum* var. *parishii* | San Diego button-celery | Vernal pools |
| *Myosurus minimus apus* | Little mousetail | Vernal pools |
| *Navarretia fossalis* | Spreading navarretia | Vernal pools |
| *Orcuttia californica* | California Orcutt grass | Vernal pools |
| **Animals** | | |
| *Streptocephalus woottoni* | Riverside fairy shrimp | Vernal pools |
| *Branchinecta sandiegoensis* | San Diego fairy shrimp | Vernal pools |
| *Panoquina errans* | Saltmarsh skipper | Salt marsh |
| *Clemmys marmorata pallida* | Southwestern pond turtle | Aquatic, riparian |
| *Pelecanus occidentalis californicus* | California brown pelican | Open water |
| *Plegadis chihi* | White-faced ibis | Fresh water marsh, estuaries, salt marsh |
| *Pandion haliaetus* | Osprey | Open water, wetlands |
| *Rallus longirostris levipes* | Light-footed clapper rail | Salt marsh |
| *Sterna elegans* | Elegant tern | Salt marsh, shoreline, estuarine/ intertidal |
| *Empidonax traillii* | Southwestern willow flycatcher | Riparian woodlands |
| *Vireo bellii pusillus* | Least Bell's vireo | Riparian woodlands |
| *Icteria virens* | Yellow-breasted chat | Riparian woodlands |
| *Passerculus sandwichensis beldingi* | Belding's Savannah sparrow | Salt marsh |
| *Passerculus sandwichensis rostratus* | Large-billed Savannah sparrow | Salt marsh |

## Table 3-2

## MHCP NARROW ENDEMIC SPECIES LIST[1,2]

| Scientific Name | Common Name |
|---|---|
| **Plants** | |
| *Acanthomintha ilicifolia* (s) | San Diego thorn-mint |
| *Ambrosia pumila* (g) | San Diego ambrosia |
| *Arctostaphylos glandulosa* spp. *crassifolia* (g) | Del Mar manzanita |
| *Baccharis vanessae* (g) | Encinitas baccharis |
| *Brodiaea filifolia* (s) | Thread-leaved brodiaea |
| *Chorizanthe orcuttiana* (g) | Orcutt's spineflower |
| *Corethrogyne filaginifolia* var. *linifolia* (g) | Del Mar Mesa sand aster |
| *Dudleya blochmaniae* ssp. *brevifolia* (g, s) | Short-leaved dudleya |
| *Dudleya variegata* (s) | Variegated dudleya |
| *Eryngium aristulatum* var. *parishii* (v, s) | San Diego button-celery |
| *Hazardia orcuttii* (g) | Orcutt's hazardia/Orcutt's goldenbush |
| *Lotus nuttallianus* (g) | Nuttall's lotus/Prostrate lotus |
| *Muilla clevelandii* (s) | San Diego goldenstar/Cleveland's goldenstar |
| *Myosurus minimus* spp. *apus* (v, s) | Little mousetail |
| *Navarretia fossalis* (v, s) | Spreading navarretia |
| *Orcuttia californica* (v, s) | California Orcutt grass/Southern Orcutt grass |
| **Animals** | |
| *Streptocephalus woottoni* (v) | Riverside fairy shrimp |
| *Branchinecta sandiegoensis* (v) | San Diego fairy shrimp |
| *Cicindela latesignata obliviosa* (g) | Oblivious tiger beetle |
| *Euphyes vestris harbisoni* | Harbison's dun skipper butterfly |
| *Campylorhynchus brunneicapillus cousei* (g) | Coastal cactus wren |
| *Perognathus longimembris pacificus* (g, s) | Pacific little pocket mouse |

[1] Species on this list are highly restricted by geographical or ecological factors *and* may have important populations within the MHCP area, such that substantial loss of these populations or their habitat within the MHCP area might jeopardize the continued existence or recovery of that species.

[2] Letters in parentheses indicate the nature of the endemism: g = geographic endemic; v = vernal pool endemic; s = edaphic (soil) endemic. Note that some species classified as geographic endemics for purposes of the MHCP study are more widespread in Baja California.

Based on all these assumptions for quantifying levels of conservation and take, the MHCP Biological Goals, Standards, and Guidelines (Ogden 1998), and basic preserve design and conservation biology principles, biologists at AMEC (formerly Ogden) and Conservation Biology Institute (CBI) evaluated the expected effects of the plan on each of the 77 MHCP species. Effects of the plan reflect not only the levels of conservation and take projected for each species or its habitat, but also how preserve configuration, management, and other factors are expected to influence the ability of the MHCP to sustain viable populations.

The following general evaluation steps were followed for each species. This systematic approach to reviewing available information ensures that all species are sufficiently evaluated relative to basic principles of preserve design and conservation biology.

1. Review available data, including the following:

   - *Legal status of the species*—Species status determines the regulatory requirements for each species, although all MHCP species are assessed relative to state and federal take authorization standards as well as the MHCP Biological Goals, Standards, and Guidelines (Ogden 1998).

   - *Accuracy and completeness of the MHCP database*—Where little is known about a species' biology or its distribution and abundance in the study area, extra caution is required in assessing plan effects. An understanding of the accuracy and completeness of the database also helps identify research and monitoring priorities.

   - *Overall distribution of the species*—Species that are widespread or more abundant outside the MHCP study area may not be as strongly affected by the plan as species narrowly restricted to the study area (e.g., narrow endemics). Nevertheless, the goal of the MHCP is to ensure persistence of all species within the seven-city study area. Species that are rare or localized throughout their range may require more intensive management to ensure persistence than more abundant or widespread species.

   - *MHCP distribution of the species*—Species that are extremely rare or localized within the study area may require more intensive management than others to ensure persistence within the study area.

   - *Locations of major or critical populations*—Major and critical populations, as listed in Ogden (1998) and this document, must be substantially conserved to meet the MHCP biological goals and state and federal take authorization standards.

   - *Locations or populations known to occur but not represented in the MHCP database*—Not all species locations are recorded in the database, although all relevant data should be considered in evaluating the preserve system.

   - *Estimates of population decline*—Population declines suggest that active management intervention may be necessary to ensure species viability and recovery in the plan area.

   - *Habitat requirements*—All life requisites for a species (e.g., habitats and microhabitats needed for reproduction, cover, and feeding) must be met within a contiguous area of the preserve, or within areas that can be covered by the normal ranging abilities of individuals of the species.

   - *Threats to the species*—Identified or suspected threats to species viability of recovery should be monitored and countered by management actions.

- *Information from local experts*—Local experts offer a valuable resource for unpublished species and habitat information on species distribution, habitat needs, and management recommendations.

2. Categorize species according to the most appropriate scale for conservation planning and analysis (not necessarily mutually exclusive):

   - *Rangewide*—Broad ranging species or species not likely to occur in study area.

   - *Landscape or habitat based*—Species best conserved by protecting habitat according to preserve design principles (e.g., wetland habitats, grasslands, and vernal pools).

   - *Species-specific management actions*—Conservation requires site- or species-specific population management (e.g., transplantation, reintroduction), protection of particular sites (e.g., nest sites or roosting areas), or other specific actions to control limiting factors (e.g., control of predators, competitors, or parasites).

3. Evaluate level of conservation for each vegetation community based on the FPA and other calculation assumptions listed above.

4. Evaluate level of conservation for ecological communities, based on conservation of the vegetation communities comprising an ecological community (e.g., the coastal scrub ecological community is comprised of coastal sage scrub, maritime succulent scrub, southern coastal bluff scrub, and mixed coastal sage scrub/chaparral vegetation communities). Evaluate levels of conservation and management for animal species reliant on these ecological communities as part of the landscape- and habitat-based analysis.

5. Evaluate level of conservation and management for each species, relative to state and federal take authorization standards and MHCP standards and guidelines (Ogden 1998). For covered species, these levels of conservation and management will be incorporated into the Implementing Agreement. The species justifications included in Volume II of this document present conservation levels in various ways, including whichever of the following measures seem most appropriate for a particular species:

   - acres of preferred habitat conserved and impacted;
   - acres of BCLA conserved and impacted;
   - number and proportion of location points conserved and impacted;
   - number and proportion of major and critical populations conserved and impacted;
   - number and proportion of estimated population carrying capacities; and
   - acres and proportion of modeled habitat values conserved.

6. Compare the amount and configuration of habitat proposed for preservation to species breeding, foraging, and other needs. Determine if critical locations (e.g., habitat linkages) are adequately conserved.

7. Identify specific management or enhancement conditions or other specific measures needed for coverage, including restoration and enhancement of habitats. Identify those actions assumed by the analysis to be implemented or considered conditions for coverage of that species.

8. Identify monitoring requirements for covered species.

9. For species not covered, identify additional information or additional conservation measures needed to provide coverage.

These steps were followed for each of the 77 MHCP species to determine what conditions appear to be necessary for the MHCP and constituent subarea plans to adequately conserve the species and meet state and federal take authorization requirements. However, the final determination of whether a species is adequately conserved, and therefore qualifies for take authorizations, is made by the USFWS and CDFG for each city requesting such authorizations. Each city must ensure via their subarea plan implementing agreement that all necessary conditions are met for the full list of species granted authorizations. For many species, granting of a take authorization to a particular city may be contingent on adequate conservation of that species in one or more other cities, as illustrated in Figure 3-2.

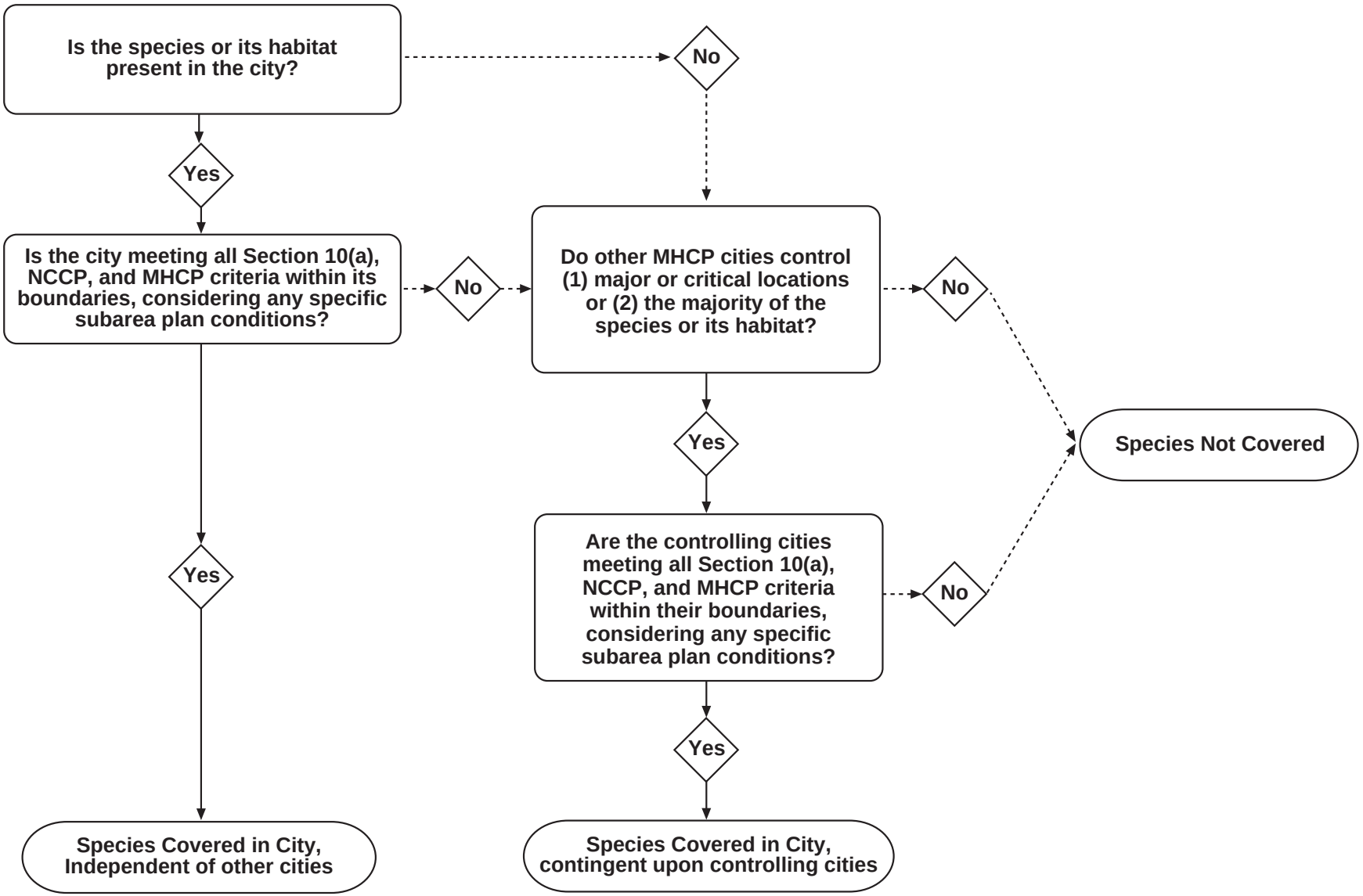
**Population Viability Analysis (PVA) for the California Gnatcatcher**

PVA is a tool for investigating (1) the likelihood of extinction — or conversely, the continued viability — of a species or population, and (2) the relative influence of various factors on these probabilities. PVA models require extensive and detailed data on a species' life history, such as seasonal or annual reproduction and mortality rates, population genetic traits, and dispersal capabilities. PVA models also require data on how these characteristics vary with habitat quality, the age and sex of individuals comprising the population, and other factors. Finally, confidence in model results requires sensitivity analyses of the input parameter values, which help identify those parameters of the model that most influence model results and must therefore be most carefully estimated.

The data required to determine the model parameter values and to perform reliable analyses are available for very few species and are especially lacking for rare and poorly studied species. Due to lack of sufficient data and potential abuses of PVA models, PVA model results are generally not appropriate measures of preserve adequacy. A PVA was conducted for the California gnatcatcher and used as a heuristic tool that assisted in the integration of knowledge of the gnatcatcher biology (e.g., reproductive rates, dispersal, and territory size) with the geographic distribution of habitat in the regional vicinity of the MHCP study area. The PVA was not used to test the ability of the MHCP to ensure the species' persistence within the study area for the reasons stated under "Appropriate Use of PVA" in Appendix A of Volume II. Additional details of the PVA are also provided in Appendix A of Volume II.

### 3.3.2 Results

This section briefly summarizes results of the conservation analysis. Full results are contained in Volume II.




amec

Process for Determining Species Coverage for a City

FIGURE 3-2

Graphics/Biology/MHCP/Figure 3-2.FH8

**Conservation of Vegetation Communities**

Table 3-3 summarizes the level of conservation by vegetation community estimated using the October 2002 FPA. It summarizes total acreages and percentages (relative to total acreage in the study area) by each vegetation community type within the FPA. It also summarizes the acreages and proportion of the BCLA that would be conserved by vegetation community. The BCLA conservation figures represent conservation of the biologically most valuable lands.

Overall conservation of wetland vegetation communities is very high due to the MHCP no net loss policy (Section 3.6). However, only those wetland vegetation communities inside of the FPA are presumed to be managed as part of the preserve system, so habitat values and species conservation in wetlands outside the FPA are not assured.

Overall conservation of upland vegetation communities varies from a low of 16% for beach to a high of 90% for maritime succulent scrub. Conservation of grasslands is generally low, with 32% of total grasslands and 47% of grasslands in the BCLA estimated to be conserved. Conservation of chaparral and woodland communities ranges from 71% to 79% of the total acreage in the study area and from 73% to 85% of the acreage within the BCLA, depending on community type.

FPA conservation of coastal sage scrub is estimated at 62% of the total in the study area, and 69% of the coastal sage scrub in the BCLA. However, other significant contributions to coastal sage scrub conservation are not included in this minimal estimate based on the FPA. Once the following contributions are more carefully estimated and accounted for, coastal sage scrub conservation will be higher than estimated via FPA calculations alone:

- *Restoration*—Approximately 338 acres of expected coastal sage scrub restoration have been identified within the FPA. Provided that these areas are eventually restored to functional coastal sage scrub communities, this will increase the conservation value of the MHCP to coastal sage scrub species, such as the California gnatcatcher.

- *Unincorporated Core Area*—Approximately 400 to 500 acres of additional coastal sage scrub will be conserved by MHCP contributions within the unincorporated area southeast of the MHCP boundary. These represent offsite contributions from already permitted projects within the study area, existing offsite mitigation obligations for projects, or additional acquisitions using state, federal, or regional funding sources.

- *Unquantified Offsite Mitigation or Acquisition*—Some additional coastal sage scrub may be conserved inside the FPA as a result of offsite mitigation for project impacts outside the FPA or additional acquisition using state, federal, or regional funds (see Section 4.1). The amount and location of the offsite mitigation component has not been fully quantified, and may result in increased conservation of habitat inside the FPA in some cities (see Section 4.4.3). Likewise, if additional public funding sources become available, certain sage scrub-dominated areas have been identified by the cities as priorities for acquisition from willing sellers, which would increase overall conservation of this community.

Table 3-4 summarizes the level of conservation expected for coastal scrub vegetation types (including coastal sage scrub, southern coastal bluff scrub, maritime succulent scrub, and mixed coastal sage scrub-chaparral vegetation) once the restoration and

## Table 3-3

## CONSERVATION ACREAGES OF NATURAL VEGETATION COMMUNITIES IN THE MHCP STUDY AREA FOCUSED PLANNING AREA (FPA)

| Vegetation Community | Total Existing in Study Area | Conservation inside FPA | Total Conserved in Study Area | Total Net Conservation inside the BCLA[1] |
|---|---|---|---|---|
| Southern coastal bluff scrub | 2 | 0 | 0 (0%) | 0 (0%) |
| Maritime succulent scrub | 32 | 29 | 29 (90%) | 29 (93%) |
| Coastal sage scrub | 8,656 | 5,334 | 5,334 (62%) | 4,948 (69%) |
| Chaparral | 8,324 | 5,806 | 5,806 (70%) | 5,615 (73%) |
| Southern maritime chaparral | 968 | 748 | 748 (77%) | 717 (79%) |
| Coastal sage/chaparral mix | 462 | 246 | 246 (53%) | 237 (54%) |
| Grassland | 5,219 | 1,687 | 1,687 (32%) | 1,565 (47%) |
| Southern coastal salt marsh | 272 | 251 | 272 (100%) | 270 (100%) |
| Alkali marsh | 165 | 157 | 165 (100%) | 165 (100%) |
| Freshwater marsh | 518 | 428 | 518 (100%) | 442 (100%) |
| Riparian forest | 676 | 533 | 676 (100%) | 404 (100%) |
| Riparian woodland | 250 | 180 | 250 (100%) | 133 (100%) |
| Riparian scrub | 1,739 | 1,283 | 1,739 (100%) | 1,191 (100%) |
| Engelmann oak woodland | 230 | 188 | 188 (82%) | 185 (89%) |
| Coast live oak woodland | 650 | 511 | 511 (79%) | 483 (83%) |
| Other oak woodlands | 1 | 1 | 1 (100%) | 1 (100%) |
| Freshwater | 444 | 401 | 444 (100%) | 396 (100%) |
| Estuarine | 955 | 947 | 955 (100%) | 954 (100%) |
| Disturbed wetland | 202 | 121 | 202 (100%) | 87 (100%) |
| Natural floodchannel/streambed | 142 | 142 | 142 (100%) | 130 (100%) |
| Beach | 48 | 7 | 8 (16%) | 8 (33%) |
| Saltpan/Mudflats | 8 | 7 | 8 (100%) | 8 (100%) |
| Vernal pool[2] | 22 | 9 | 22 (100%) | 17 (100%) |
| **Total** | **29,962** | **19,007** | **19,928 (67%)** | **17,966 (73%)** |

Note: Numbers may not sum to total as shown due to rounding and because vernal pool acreage is excluded.

Source: Vegetation acreage calculations from October 2002 SANDAG GIS calculations.

[1]Acreage and percentage of each vegetation community inside the biological core and linkage area that will be conserved.

[2]Vernal pools were mapped as an overlay to other vegetation communities and thus their acreage is not included in this total. The MHCP study area does not include the San Marcos Major Amendment Area.

## Table 3-4

## CONSERVATION OF COASTAL SCRUB HABITAT INCLUDING RESTORATION AND UNINCORPORATED CORE AREA CONTRIBUTIONS

| City | Coastal Scrub in MHCP[1] | Coastal Scrub Conservation in FPA[2] | | Expected Habitat Restoration[3] | | Additional Habitat Contribution in the Unincorporated Core[4] | |
|---|---|---|---|---|---|---|---|
| | Acres | Acres | % | Acres | %[5] | Acres | % |
| Carlsbad | 2,298 | 1,499 | 65% | *104* | *70%* | -- | -- |
| Encinitas | 943 | 631 | 67% | *0* | *67%* | -- | -- |
| Escondido | 2,304 | 1,576 | 68% | *0* | *68%* | -- | -- |
| Oceanside | 1,348 | 692 | 51% | *164* | *64%* | -- | -- |
| San Marcos[6] | 1,990 | 1,065 | 53% | *70* | *57%* | -- | -- |
| Solana Beach | 13 | 6 | 46% | *0* | *46%* | -- | -- |
| Vista | 255 | 140 | 55% | *0* | *55%* | -- | -- |
| **Total, Low Estimate** | **9,152** | **5,609** | **61%** | ***338*** | ***65%*** | ***400*** | ***66%*** |
| **Total, High Estimate** | | | | | | ***500*** | ***67%*** |

Note: Numbers may not sum to totals as shown, and percentages may not calculate as shown, due to rounding.

[1] Includes coastal sage scrub, southern coastal bluff scrub, maritime succulent scrub, and mixed coastal sage scrub/chaparral vegetation, but does not distinguish habitat quality.

[2] Net conservation in the FPA based on October 2002 FPA maps.

[3] Adds assumed restoration of coastal sage scrub in key locations within the FPA identified by consultants and the cities.

[4] Adds 400 (low estimate) to 500 (high estimate) acres of coastal sage scrub conservation in the unincorporated core area, including conservation contributions from already permitted projects, offsite mitigation obligations, or wildlife agency acquisition contributions. These contributions are not yet apportioned by city.

[5] Assumes 1:1 credit for conversion of annual grasslands or disturbed land to coastal sage scrub within the FPA. Assumes that restored coastal sage scrub eventually will constitute moderate- to high-value coastal sage scrub habitat.

[6] Restoration estimate in San Marcos includes 30 acres on private lands within the southwestern portion of the city plus 40 acres on the San Marcos Landfill that are not the obligation of the city or MHCP. The County of San Diego is obligated to restore 79.3 acres of coastal sage scrub on the landfill. This analysis assumes that approximately 50% of this (about 40 acres) will ultimately meet the biological criteria for gnatcatcher breeding habitat once restored by the County.

unincorporated core contributions are counted. The table does not attempt to account for additional offsite mitigation or acquisition contributions, which cannot be estimated at this time.

**Conservation of Ecological Communities**

Table 3-5 summarizes overall levels of conservation estimated for MHCP ecological communities. Wetland ecological communities, such as the lagoon and marsh community and riparian community, will be highly conserved due to the no net loss policy. Consequently, species comprising those communities should be relatively well conserved by the plan, provided that species-specific or site-specific conservation and management needs are adequately addressed. In contrast, the grassland community is conserved at a relatively low level (32% overall and 47% of grasslands within the BCLA). Consequently, it is more difficult to justify coverage for grassland-dependent species, and more intensive monitoring and species-specific management may be required to ensure persistence of some grassland residents in the study area.

Other upland communities will be conserved at intermediate levels, with chaparral and oak woodland ecological communities conserved at about the 71% and 79% levels, respectively (73% and 85% of these communities within the BCLA). The coastal scrub community will be conserved by the FPA at about the 61% level, including about 68% of the community within the BCLA. As discussed above, some additional conservation, not accounted for in these estimates, will occur for the coastal scrub community via restoration of coastal sage scrub in key locations, conservation of lands in the unincorporated area to the southeast (the "unincorporated core area"), and additional conservation expected through acquisitions and offsite mitigation requirements. These contributions are not yet fully accounted for, but will increase coastal scrub community conservation over the level shown in Table 3-5. Volume II of this document details the effects of these conservation levels and other factors on the resident plant and animal species within each of these ecological communities.

**Preserve Configuration**

Given the existing high degree of habitat fragmentation in the study area, it is not possible to achieve a biologically ideal preserve design consisting of large contiguous blocks of habitat connected by broad, unbroken landscape linkages. However, the MHCP will conserve as contiguous and functional a preserve system as possible given all of the legal, financial, and physical constraints to preserve design. In particular, the MHCP will (1) conserve and manage the majority (cumulatively, approximately 71%) of remaining BCLA; (2) help conserve a large core area contiguous with but outside the study area boundary in a regionally significant location; (3) conserve most east-west movement corridors between upland areas and coastal lagoon systems; (4) conserve a regionally significant north-south stepping stone corridor for bird species, especially the California gnatcatcher; (5) preserve significant landscape linkages between the study area and adjoining jurisdictions; and (6) restore and enhance linkage function in some critical locations. Nevertheless, many of these linkages and other habitat areas will be narrow and subject to severe edge effects. Consequently, active management to control edge effects and ensure ecosystem function will be required to achieve MHCP biological goals.

*Conservation of the BCLA*—Because the BCLA was delineated to capture the best remaining habitat areas, including all the largest remaining blocks of habitat and critical linkages between them, it is a relevant model against which to quantitatively compare the

## Table 3-5

## LEVEL OF CONSERVATION EXPECTED FOR PRIMARY ECOLOGICAL COMMUNITIES OCCURRING IN THE MHCP STUDY AREA

| Ecological Community | Gross Acres in MHCP Study Area | Acres (and % of Gross) Conserved | | | |
|---|---|---|---|---|---|
| | | Inside FPA[6] acres (%) | Outside FPA[7] acres (%) | Inside BCLA[8] acres (%) | Total acres (%) |
| Lagoon and marsh[1] | 2,362 | 2,192 (93%) | 170 (7%) | 2,235 (100%) | 2,362 (100%) |
| Riparian[2] | 2,806 | 2,137 (76%) | 669 (24%) | 1,858 (100%) | 2,806 (100%) |
| Grasslands | 5,219 | 1,687 (32%) | 0 (0%) | 1,565 (47%) | 1,687 (32%) |
| Coastal scrub[3] | 9,152 | 5,609 (61%) | 0 (0%) | 5,214 (68%) | 5,609 (61%) |
| Oak woodland[4] | 881 | 700 (79%) | 0 (0%) | 669 (85%) | 700 (79%) |
| Chaparral[5] | 9,292 | 6,554 (71%) | 0 (0%) | 6,331 (73%) | 6,554 (71%) |
| Vernal pools[9] | 22 | 9 (41%) | 13 (59%) | 17 (100%) | 22 (100%) |
| **Total** | **29,734** | **18,888 (64%)** | **839 (3%)** | **17,635 (72%)** | **19,740 (66%)** |

Note: Numbers may not sum to totals as shown due to rounding.

Source: Aggregation of vegetation acreages from October 2002 SANDAG GIS calculations.

[1] Southern coastal salt marsh, alkali marsh, freshwater marsh, freshwater, estuarine, and saltpan/mudflat.
[2] Riparian forest, riparian woodland, riparian scrub, and natural flood channel/streambed.
[3] Southern coastal bluff scrub, maritime succulent scrub, coastal sage scrub, and coastal sage/chaparral mixed.
[4] Engelmann oak woodland, coast live oak woodland, and other oak woodland.
[5] Chaparral and southern maritime chaparral.
[6] Habitat conserved inside the FPA will be managed for biological value.
[7] Wetland habitat conserved outside the FPA per the no net loss policy will not necessarily be managed for biological value.
[8] Acreage and percentage of each vegetation community inside the biological core and linkage area that will be conserved.
[9] Includes approximately 5 acres of vernal pool habitat mapped in Carlsbad and 17 acres of vernal pool habitat mapped in San Marcos, but excludes approximately 29 acres mapped in the San Marcos Major Amendment Area.

proposed preserve configuration. Overall, the MHCP will conserve about 73% of the natural habitats within the BCLA. This includes 100% of the remaining wetland vegetation communities, along with 69% of the extant coastal sage scrub vegetation community, 73% of chaparral, 47% of grasslands, and 85% of oak woodlands remaining within the BCLA (Table 3-3).

*Core Habitat Areas*—The Volume II species evaluations discuss conservation of core habitat areas, including critical breeding, foraging, or sheltering areas, for each of the 77 MHCP species. In general, the largest remaining blocks of habitat (more than a few hundred acres each) will be substantially conserved, particularly in northeast Escondido (Daley Ranch and Escondido Water District lands), north Oceanside (adjacent to Camp Pendleton), northeast Carlsbad (the Carlsbad Highlands area), and in northern and southwestern San Marcos. In addition, the relatively large blocks of wetland habitats associated with the coastal lagoons are substantially conserved. However, the majority of preserve areas consists of small and edge-effected habitat patches. Only about 4,473 acres of conserved habitat, or about 24% of the total conserved habitat, will lie more than 200 meters from preserve boundaries or habitat edges. In other words, over 75% of the preserve acreage is expected to experience edge effects that can penetrate 200 meters from adjoining areas, such as nonnative predators, exotic ants, and trampling. For edge effects expected to penetrate only 50 meters from edge, about 34% of the preserve area is expected to be affected.

Most large remaining blocks of habitat that will not be substantially conserved are in areas already authorized for take under existing Section 10(a) or Section 7 agreements (e.g., the former Fieldstone HCP lands) or lands holding development agreements with local cities (e.g., San Elijo Ranch, University Commons). On some other large blocks of habitat, the MHCP or subarea plans cannot guarantee conservation due to existing legal development agreements (e.g., Palos Vista Neighborhood 3, formerly known as the Escondido Highlands area, in northwest Escondido).

Few portions of the study area contain sufficiently large and contiguous blocks of coastal sage scrub to qualify as core breeding areas for the California gnatcatcher, and the largest such area (the La Costa area of southeast Carlsbad) is already subject to a Section 10(a) agreement that will decrease and fragment this core habitat. Largely due to this situation, the MHCP will help conserve a core gnatcatcher breeding area outside of the MHCP boundary, in unincorporated San Diego County, south of San Marcos and east of Encinitas and Carlsbad (the red circle on Figure 3-1). Conservation of this offsite core area of 400 to 500 acres of high quality gnatcatcher breeding habitat is expected to contribute to persistence of the gnatcatcher within the MHCP study area by providing a supply of dispersing birds in most years. This should also help maintain the functionality of the regionally important stepping-stone corridor across the study area. Camp Pendleton is expected to continue providing a supply of dispersing birds.

*Landscape Linkages and Movement Corridors*—The adequacy of habitat linkages and movement corridors must be assessed on a species-by-species basis. Most existing landscape linkages that connect the larger preserve blocks, either to each other or to core areas outside of the study area, will be substantially conserved, and some will be enhanced through habitat restoration. However, some important linkages will be further constrained by development outside the FPA, notably in southwest and southeast San Marcos.

East-west linkages, primarily along narrow riparian corridors, will be maintained to most of the coastal lagoons. These linkages are important to maintaining ecological balance in these lagoon and marsh ecosystems by allowing access by larger predators, especially coyotes. These large predators help control populations of smaller predators that otherwise prey heavily on rare birds, mammals, and reptiles, including many MHCP priority species.

North-south connectivity across the study area is currently only functional for birds due to intervening areas of development. The MHCP plan will allow for continued stepping-stone connectivity north-south across the study area for bird species, including the California gnatcatcher. Restoration of coastal sage scrub in some critical stepping-stone areas is expected to improve functionality of this regionally important north-south linkage.

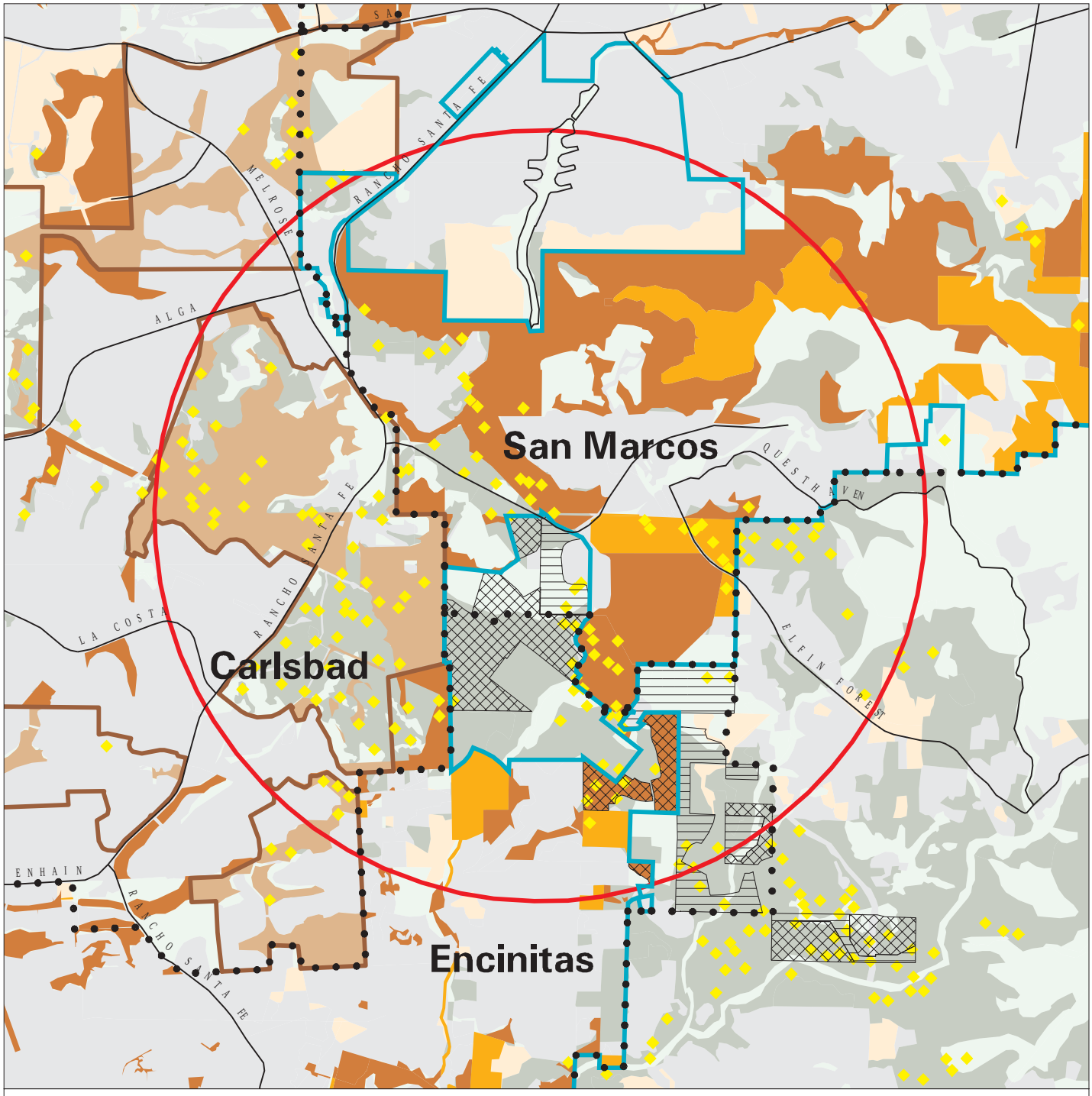
Linkages for small mammals, reptiles, amphibians, and invertebrates are nonexistent between many habitat blocks due to existing roads and urban and agricultural areas. However, some large blocks of habitat inside the study area (e.g., south San Marcos, north Escondido, and north Oceanside) are contiguous with larger blocks beyond the MHCP boundaries. These preserve areas are expected to sustain populations of many MHCP species that will otherwise be lost from more isolated portions of the MHCP preserve system. For example, San Diego horned lizards may be extirpated from interior preserve areas in the coastal cities, but are expected to persist on Daley Ranch, southern San Marcos, and northern Oceanside due to more extensive populations in adjacent habitats, outside of MHCP boundaries.

*Small and Isolated Preserve Areas*—The MHCP preserve system will include a large number of smaller preserve areas that are surrounded by urban lands or otherwise isolated from biological core areas. Many of these tiny preserves are nevertheless critical to coverage of MHCP species, particularly narrow endemic species. For example, vernal pool preserves and their associated watersheds in western Carlsbad and central San Marcos (in the Major Amendment Area) are critical to conserving fairy shrimp species and a number of narrow endemic plant species; and a large number of plant preserves are scattered throughout the coastal cities. Despite their small size, these "postage-stamp" preserves include many of the major and critical populations of priority MHCP species and are expected to sustain these populations so long as they are adequately managed to protect the functionality of their watersheds and to minimize edge effects. Population monitoring and active management intervention will be necessary to sustain many of these species.

**Conservation of an Additional Core Area for California Gnatcatchers**

A preliminary biological analysis conducted in 1997 (Ogden 1997a) concluded that without substantial conservation of unfragmented, core nesting habitat for California gnatcatchers, the MHCP could not ensure the continued viability of the species in the study area. Subsequent analyses, including the current analysis included in Volume II of this document, substantiated that conclusion. The wildlife agencies therefore recommended conserving a large, contiguous, core area of coastal sage scrub to meet the MHCP preserve design objectives. They initially (in 1997) recommended conserving 400 to 500 additional acres of coastal sage scrub, capable of supporting 16 to 23 pairs of gnatcatchers, in the general area illustrated by the red circle on Figure 3-3. This circle (the "USFWS circle") encompasses approximately 5,000 total acres of habitat (over 2,700 acres of coastal sage scrub) within the cities of Carlsbad, San Marcos and Encinitas, as well as in adjacent unincorporated portions of the county.

In January 1998, the MHCP cities opted to conserve the additional 400 to 500 acres of coastal sage scrub primarily within the unincorporated portion of the circle. This




## Figure 3-3
## Gnatcatcher Core Conservation

- Hardline Areas (90% to 100% Conservation)
- Softline Areas (Less than 90% Conservation)
- Hardline Preserves on Already Permitted Properties
- Natural Habitats (Outside FPA)
- Coastal Sage Scrub (Outside FPA)
- Agricultural Land
- Developed/Disturbed Land
- MHCP Conservation
- Other Conservation
- General Area for Core Gnatcatcher Conservation (USFWS Circle)
- Projects Already Permitted
- Sphere of Influence
- MHCP Boundary
- Known Gnatcatcher Locations

SANDAG

February 21, 2003

Feet 0 2,000 4,000

Meters 480 960

Source: MHCP

"unincorporated gnatcatcher core area" encompasses the northwestern half of a large swath of high-quality gnatcatcher habitat that extends southeast from the Villages of La Costa property in southeastern Carlsbad to the Del Dios/Lake Hodges area in the unincorporated county, beyond the USFWS circle. Aside from Camp Pendleton to the north, this swath of sage scrub represents the largest remaining patch of core gnatcatcher breeding habitat in or near the MHCP.

Since 1998, significant progress has been made toward achieving the biological goals for the gnatcatcher core area (Figure 3-3 and Section 4.4.3). Approximately 777 acres of land have been conserved by various entities in the area since 1998 (in addition to lands already included in the FPA at that time) or are planned for conservation by the MHCP. This additional conservation includes about 552 acres mapped as coastal sage scrub, of which about 510 acres are predicted to be high quality gnatcatcher habitat by the habitat evaluation model. The MHCP is directly or indirectly responsible for contributing about 532 acres of this additional core conservation (including existing as well as planned conservation), of which about 414 acres is coastal sage scrub. Other entities (including the County of San Diego and Olivenhain Water District; Figure 3-3) have also conserved lands in the unincorporated core area, further adding to its biological value for gnatcatchers and other species (see Section 4.4.3 for a more detailed accounting of conserved acres and MHCP acquisition priorities in the area).

The overall amount and configuration of lands being conserved in this area achieve the biological goals established for the MHCP gnatcatcher core area. In concert with adjacent conserved areas within Carlsbad and San Marcos, a fairly contiguous block of high-quality coastal sage scrub habitat is being conserved in a location conducive to supplying dispersing gnatcatchers into the MHCP stepping-stone corridor, thereby helping ensure the integrity of this regionally important species linkage. Existing conservation has substantially connected conserved coastal sage scrub on the Villages of La Costa property in eastern Carlsbad to reserve areas in San Marcos at University Commons and near the San Marcos Landfill. It has also established a nearly continuous connection from the MHCP stepping-stone corridor into the more contiguous coastal sage scrub habitats of the Del Dios/Lake Hodges area. The majority of these conserved lands (about 510 acres) is vegetated with coastal sage scrub ranked as high value by the gnatcatcher habitat evaluation model (MHCP Volume II, Appendix A). Although a small proportion of the unincorporated lands conserved by the MHCP are outside the original USFWS circle (Figure 3-3), these properties support highly significant biological resource values, comprise part of the larger core gnatcatcher area that stretches to Lake Hodges, and were determined by the wildlife agencies to contribute to the MHCP conservation requirements for the unincorporated core area.

The number of gnatcatchers currently nesting in the core area is unknown, and will be determined by the MHCP monitoring program. The MHCP database contains 29 gnatcatcher location points within conserved areas of the core, of which 16 are on lands conserved by the MHCP (Figure 3-3). Note that nearly this entire area burned in the 1997 Harmony Grove fire, and coastal sage scrub is gradually recovering via natural succession. This coastal sage scrub is expected to reach peak gnatcatcher breeding habitat value 20 years or more after the fire (Atwood et al. 2002). Thus, although the area may not currently support the required 16 to 23 pairs of gnatcatchers, the area is expected to exceed this requirement in the future.

Future conservation in this area is expected to decrease the amount of reserve edge and continue buffering and improving the contiguity of the core area. Nevertheless, like

nearly all of the MHCP reserve system, this unincorporated core area will be subject to adverse edge effects and will require active management to ensure its continued habitat value.

## 3.4 COVERED SPECIES

Once the wildlife agencies have approved a subarea plan and signed the corresponding implementing agreement, that jurisdiction will receive permits and management authorizations to directly impact or "take" species deemed to be adequately conserved by the plan, if such taking is incidental to otherwise lawful activities. The term "take" means 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."

The implementing agreements will ensure that conservation and mitigation identified in the subarea plans and implementing regulations are implemented, and that the take authorization holders would not be required to commit additional land, land restrictions, or financial compensation, beyond that described in the subarea plan, for the protection of any covered species If, in the future, a covered but unlisted species becomes listed as endangered or threatened by the federal or state governments, the take authorization will become effective concurrent with its listing.

For many species, "take" will be restricted to removal or adverse impacts to the species' habitat, and lethal take of individuals or populations is not expected to be permitted or to occur under the MHCP. For California Fully Protected Species (California brown pelican, American peregrine falcon, light-footed clapper rail, and California least tern) lethal take of individuals is forbidden, and MHCP subarea plans will only allow habitat alteration or disturbance that will not affect breeding individuals. For some very rare and narrow endemic species, no take of individuals, populations, or habitat may be allowed until a certain regional conservation threshold has been achieved in support of species recovery. For example, no take of the narrow endemic, Orcutt's spineflower, will be allowed until at least five distinct, self-sustaining populations are conserved within the species' geographic range.

### 3.4.1 Covered Species Lists

Based on the conservation analysis included as Volume II of this document, the EIS/EIR for the MHCP, the contents of subarea plans and their implementing agreements, and any additional information they deem necessary, the wildlife agencies will prepare lists of species adequately conserved by the MHCP and by each subarea plan. Table 3-6 presents a proposed list of species considered at this time to be adequately conserved by the MHCP, provided that participants meet all conditions listed in this document and in Volume II. Final determination of adequate conservation and therefore "coverage" for MHCP species can only be made by the wildlife agencies following completion of the USFWS' internal Section 7 consultation process. For cities submitting subarea plans, the wildlife agencies will attach the city-specific covered species list to the subarea plan implementing agreement. City-specific covered species determination will rely in part on the decision rules illustrated in Figure 3-2. The requirements and process for amending covered species lists are addressed in Section 5.4.1.

## Table 3-6

## PROPOSED MHCP COVERED SPECIES LIST
## (see Species Conditions in Volume II)

| Scientific Name | Common Name | Status[1] |
|---|---|---|
| **Plants** | | |
| *Acanthomintha ilicifolia* | San Diego thorn-mint | FT/CE |
| *Ambrosia pumila* | San Diego ambrosia | FE/ |
| *Arctostaphylos glandulosa* ssp. *crassifolia* | Del Mar manzanita | FE/ |
| *Baccharis vanessae* | Encinitas baccharis | FT/CE |
| *Ceanothus verrucosus* | Wart-stemmed ceanothus | FSC */ |
| *Chorizanthe orcuttiana* | Orcutt's spineflower | FE/CE |
| *Comarostaphylis diversifolia* ssp. *diversifolia* | Summer-holly | FSC */ |
| *Corethrogyne filaginifolia* var. *linifolia* | Del Mar Mesa sand aster | FSC †/ |
| *Euphorbia misera* | Cliff spurge | None |
| *Ferocactus viridescens* | San Diego barrel cactus | FSC */ |
| *Hazardia orcuttii* | Orcutt's hazardia | FSC */ |
| *Iva hayesiana* | San Diego marsh-elder | FSC */ |
| *Lotus nuttallianus* | Nuttall's lotus | FSC */ |
| *Myosurus minimus* ssp. *apus* | Little mousetail | FSC */ |
| *Navarretia fossalis* | Spreading navarretia | FT/ |
| *Orcuttia californica* | California Orcutt grass | FE/CE |
| *Pinus torreyana* ssp. *torreyana* | Torrey pine | FSC */ |
| *Quercus dumosa* | Nuttall's scrub oak | FSC */ |
| *Quercus engelmannii* | Engelmann oak | None |
| *Tetracoccus dioicus* | Parry's tetracoccus | FSC */ |
| **Invertebrates** | | |
| *Streptocephalus woottoni* | Riverside fairy shrimp | FE/ |
| *Euphyes vestris harbisoni* | Harbison's dun skipper | FSC */ |
| *Panoquina errans* | Salt marsh skipper | FSC */ |
| **Amphibians and Reptiles** | | |
| *Scaphiopus [Spea] hammondii* | Western spadefoot toad | /CSC |
| *Clemmys marmorata pallida* | Southwestern pond turtle | FSC */CSC |
| *Cnemidophorus hyperythrus beldingi* | Orange-throated whiptail | FSC */CSC |
| **Birds** | | |
| *Pelecanus occidentalis californicus* | California brown pelican | FE/CE, FP |
| *Plegadis chihi* | White-faced ibis | FSC */CSC |
| *Accipiter cooperii* | Cooper's hawk | /CSC |
| *Pandion haliaetus* | Osprey | /CSC |
| *Falco peregrinus anatum* | Peregrine falcon | /CE, FP |
| *Rallus longirostris levipes* | Light-footed clapper rail | FE/CE, FP |
| *Charadrius alexandrinus nivosus* | Western snowy plover | FT/CSC |
| *Sterna elegans* | Elegant tern | FSC */CSC |
| *Sterna antillarum browni* | California least tern | FE/CE, FP |
| *Empidonax traillii extimus* | Southwestern willow flycatcher | FE/CE |
| *Campylorhynchus brunneicapillus cousei* | Coastal cactus wren | FSC */CSC |
| *Polioptila californica californica* | Coastal California gnatcatcher | FT/CSC |

## Table 3-6 (Continued)

## PROPOSED MHCP COVERED SPECIES LIST
## (see Species Conditions in Volume II)

| Scientific Name | Common Name | Status[1] |
|---|---|---|
| **Birds (continued)** | | |
| *Sialia mexicana* | Western bluebird | None |
| *Vireo bellii pusillus* | Least bell's vireo | FE/CE |
| *Icteria virens* | Yellow-breasted chat | /CSC |
| *Aimophila ruficeps canescens* | Rufous-crowned sparrow | FSC */CSC |
| *Passerculus sandwichensis beldingi* | Belding's savannah sparrow | FSC */CE |
| *Passerculus sandwichensis rostratus* | Large-billed savannah sparrow | FSC */CSC |
| *Amphispiza belli belli* | Bell's sage sparrow | FSC */CSC |
| **Mammals** | | |
| *Dipodomys stephensi* | Stephens' kangaroo rat | FE/CT |
| *Chaetodipus fallax fallax* | Northwestern San Diego pocket mouse | FSC */CSC |
| *Lepus californicus bennettii* | San Diego black-tailed jackrabbit | FSC */CSC |
| *Felis concolor* | Mountain lion | CA protected |
| *Odocoileus hemionus fuliginata* | Southern mule deer | CA game species |

[1]**Status (Federal/State)**
FE = Federally endangered
PE = Proposed for federal listing as endangered
FT = Federally threatened
PT = Proposed for federal listing as threatened
C = Candidate for federal listing
BEPA = Bald Eagle Protection Act
CE = State endangered
CT = State threatened
FP = State fully protected
CSC = State Species of Special Concern
FSC * = Federal Species of Concern; formerly Category 2 or Category 3 candidate or proposed for federal listing
FSC † = Federal Species of Concern; proposed rule to list as endangered or threatened has been withdrawn
protected = moratorium on hunting
none = no federal or state status

## 3.5 SPECIES NOT COVERED BY THE MHCP

Through the conservation and management actions implemented for the covered species, the MHCP will also benefit many species not on the covered species list.

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 MHCP under separate Section 7 consultations, Section 10 HCPs, and state management authorizations under Section 2081 of the California Fish and Game Code. Alternatively, species can be added to the MHCP covered species list using the federal and state take authorization 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 5.4.1.

At the jurisdiction's discretion, significant impacts to unlisted sensitive species that are not covered may require additional protection or mitigation under CEQA or according to city-specific guidelines.

## 3.6 WETLANDS

Wetland communities (vernal pools, saltpan, salt marsh, alkali marsh, freshwater marsh, riparian forest, riparian woodland, riparian scrub, freshwater, estuarine, marine, disturbed wetlands, and natural flood channel) within the MHCP study area include areas subject to California Fish and Game Code Section 1600 et seq. and Section 404 of the federal Clean Water Act. These 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. Such areas are expected to continue to be regulated by these state and federal statutes. The U.S. Army Corps of Engineers (ACOE) is expected to continue to consult with the USFWS pursuant to Section 7 of the ESA on projects that may affect federally listed species within ACOE jurisdictional wetlands or nonwetland waters of the U.S. The CDFG will work closely with the ACOE, USFWS, and local jurisdictions to ensure that Fish and Game Code Section 1600 et seq. agreements are consistent with (1) the mitigation required for MHCP covered species by Section 404 permits (including ESA Section 7 consultations) and (2) the MHCP plan.

Subarea plans and associated implementing mechanisms will address avoidance, minimization, and mitigation measures for wetland habitats subject to development impacts. Development projects that affect wetland vegetation communities will be required to comply with the following measures and any additional terms included in the local jurisdiction's subarea plan. 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 CFR 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 CDFG pursuant to the CESA, NCCP Act, and CEQA.

### 3.6.1 Wetland Avoidance and Mitigation Criteria

Any project that proposes to directly or indirectly impact wetlands or wetland vegetation communities (whether inside or outside of the FPA) shall fully disclose and analyze such impacts in a CEQA document or in findings prepared under a local MHCP implementing ordinance. The CEQA document or findings document must fully analyze and factually substantiate that impacts to wetlands were avoided and minimized to the maximum extent possible while maintaining some economic or productive use of the property. Feasible alternatives to avoid the impacts shall be described and analyzed, and reasons that these alternatives were not pursued shall be fully described and factually substantiated.

If impacts cannot be avoided, all feasible means of minimizing encroachment into wetlands shall be fully addressed. Road or utility projects that must cross a wetland and that are to be permitted under an MHCP subarea plan will be required to demonstrate that the crossing will occur at the least overall biologically sensitive location and that all feasible minimization measures have been employed. In making this determination, alignment planning must consider whether avoidance of wetland impacts would result in more significant upland impacts. The least overall biologically impactive alternative is that which has the least impact on sensitive biological resources and preserve configuration, considering both wetland and upland impacts together.

Private projects that propose to impact a wetland must demonstrate with adequate facts that the impact is essential to maintaining some economic or productive use of the property and that no feasible alternative would eliminate or minimize the impact or otherwise result in greater biological value. If impacts to wetlands cannot be avoided while retaining economic or productive use of the property, an evaluation of biological functions and values shall be made based on the best available science. This evaluation shall consider rarity of the wetland type (e.g., vernal pools), support of MHCP species, proportion of natural to exotic vegetation, existing levels of habitat disturbance, connectedness or isolation relative to other natural habitats and preserve areas, state of natural groundwater recharge, water quality, and other relevant ecological factors (see US ACOE General Regulatory Policies [33 DFG 320-330] for criteria to be considered in determining wetland functions and values). If the wetlands to be impacted are determined to have low biological value, then they need not be avoided so long as mitigation for the impacts will result in higher biological value than the existing condition. The determination of relative biological value with and without the project shall require USFWS and CDFG written concurrence within 30 days of a receipt of written request for concurrence by the local jurisdiction. If no written reply is received or a written concurrence is received by the city from the wildlife agencies during the CEQA public review process, the mitigation ratio reduction may be approved by the city. If the wetlands to be impacted are of high biological value, then acquisition of the property for conservation purposes shall be pursued as a high priority, but only from willing sellers.

Any unavoidable impacts to wetlands must be mitigated to result in no net loss of wetland vegetation acreage and biological function and value within the MHCP subregion and preferably, but not necessarily, within the same drainage and city (see Section 4.4.2). Subarea plans may apply stricter avoidance standards for wetlands inside the FPA than outside the FPA. However, the no net loss standard must be achieved regardless of location. To achieve the no net loss standard inside of the FPA, mitigation for unavoidable impacts (e.g., wetland habitat creation) should preferably occur inside the FPA (preferably on the project site). Alternatively, mitigation may occur outside of the FPA if such mitigation demonstrably contributes to the MHCP preserve design and biological value. Mitigation for wetland impacts outside the FPA may occur anywhere that furthers biological goals of the MHCP and the subarea plan. In any case, wetland mitigation sites must be added to the MHCP preserve system and managed for biological functions and values, regardless of whether they are located inside or outside of the FPA.

## 3.7 REQUIREMENTS FOR SUBAREA PLANS TO PROTECT BIOLOGICAL RESOURCES

Subarea plans will demonstrate how take authorization holders will achieve consistency with the MHCP plan and its conservation targets in the following ways.

1. *Methods of Meeting Conservation Targets.* Each subarea plan will specify how the take authorization holder will achieve the conservation targets of the MHCP plan and subarea plan. The conservation targets will be achieved through avoidance and minimization of impacts and through preservation, restoration, and enhancement of habitat. Subarea plans will specify how the conservation targets are achieved using combinations of encroachment allowances, zoning, biological mitigation or sensitive land ordinances, acquisition, and other mechanisms.

2. *Avoidance of Impacts and Allowed Encroachment.* Subarea plans and their implementing regulations and ordinances will emphasize avoidance of impacts to biologically sensitive resources (including narrow endemic species and vernal pools) and will identify areas and circumstances where take of covered species and their habitats is authorized. Projects proposing to directly or indirectly impact covered species or their habitats must factually substantiate in a CEQA document or in findings prepared under a local MHCP implementing ordinance that such impacts could not be avoided while allowing for some economic or productive use of the property. Feasible alternatives to avoid the impacts shall be described and analyzed, and reasons that these alternatives were not pursued shall be fully described and supported by adequate facts. If impacts cannot be avoided, all feasible means of minimizing encroachment into sensitive habitats shall be fully addressed. Road or utility projects that are to be permitted under an MHCP subarea plan will be required to demonstrate that crossings of sensitive habitat will occur at the least overall biologically sensitive location and that all feasible minimization measures have been employed. Private projects that propose to impact a sensitive resource must factually substantiate that the impact is essential to maintaining some economic or productive use of the property and that no feasible alternative would eliminate or minimize the impact. If impacts to biologically sensitive lands cannot be avoided while retaining economic or productive use of the property, then acquisition of the property for conservation purposes shall be pursued as a high priority, but only from willing sellers. Mitigation for unavoidable impacts shall occur pursuant to specific mitigation criteria defined in the subarea plan, but shall be at ratios no less than those contained in Table 4-6 (see Section 4.4).

3. *Major Populations*. Certain locations within the MHCP are designated as supporting Major Populations of particular species. *Major Populations* were defined by the MHCP Biological Goals Standards and Guidelines (Ogden 1997a) as those "sufficiently large to be self-sustaining with a minimum of active or intensive management intervention (especially for plants) or that at least support enough breeding individuals to contribute reliably to the overall metapopulation stability of the species (especially for animals)." Pursuant to this definition, some species location points, or clusters of location points, are coded as Major Populations in the MHCP database and mapped on the species distribution maps in MHCP Volume II. Although MHCP policies have not comprehensively established higher conservation standards for Major Population areas relative to other occupied habitat areas (except for *Narrow Endemics*—see below), subarea plans are expected to substantially conserve all Major Population areas. Consequently, the process described in the preceding paragraph (*Avoidance of Impacts and Allowed Encroachment*) must be followed for any project in or adjacent to a Major Population site to document adequate avoidance, minimization, and mitigation actions. In addition, the species-specific permit conditions

listed in MHCP Volume II may reference specific avoidance, minimization, and mitigation standards for selected Major Population areas.

4. *Critical Locations*. Some Major Population areas, along with other areas that are considered essential to reserve design, are designated as *Critical Locations*, which are defined as "areas that must be substantially conserved for that species [or vegetation community] to be considered adequately conserved by the MHCP." Examples of Critical Locations include population sites expected to contribute significant genetic diversity for a species; areas that provide essential nesting, roosting, or wintering sites or structures (especially for birds); essential wildlife movement corridors (especially for large mammals and selected amphibians, reptiles, and birds), or currently unoccupied habitat needed to accommodate population expansion (especially for narrow endemic species whose populations must be increased as a hedge against extinction). The MHCP Critical Location Policy (Appendix D of MHCP Volume II) applies to all locations listed and mapped as critical in MHCP Volume II, or that are found to meet the definition of critical in the future. The policy dictates that subarea plans will require maximum avoidance of impacts, minimization of impacts, and species-specific mitigation measures for unavoidable impacts, regardless of whether the critical location is inside or outside of the FPA. Maximum avoidance and minimization shall be interpreted as avoidance of impacts to the degree practicable while maintaining some economic or productive use of the property, as supported by adequate facts. Mitigation for unavoidable impacts and management practices must be designed to achieve no net loss in viability of critical populations, including no net loss in ecological functions for habitat areas, wildlife movement corridors, and linkages. In no case shall a city permit more than 20% gross cumulative loss of critical populations or occupied habitat acreage (whichever is most appropriate for the species).

5. *Narrow Endemics*. Both inside and outside of the FPA, impacts to narrow endemic populations shall be avoided to the maximum extent practicable while maintaining some economic or productive use of the property, as supported by adequate facts. Inside of FPAs, mitigation for unavoidable impacts and management practices must be designed to achieve no net loss of narrow endemic populations, occupied acreage, or population viability within the FPA. In no case shall a city permit more than 5% loss of narrow endemic populations or occupied acreage within the FPA (whichever measure is biologically most appropriate for the species based on the best available science). Outside of FPAs, subarea plans must require maximum avoidance of impacts to critical and major populations as listed in Table 3-7 and mapped in Volume II, and, in priority order, avoidance, minimization, and mitigation for impacts to any populations. In no case shall a city permit more than 20% loss of narrow endemic locations, population numbers, or occupied acreage within the city (whichever measure is biologically most appropriate for the species). Unavoidable impacts should be mitigated based on species-specific criteria defined in subarea plans. Such mitigation should be designed to minimize adverse effects to species viability and to contribute to subarea plan biological objectives. Any land conserved for mitigation that supports narrow endemic species must be added to the MHCP preserve system and managed for the continued viability of the population. Mitigation for unavoidable impacts must be designed to achieve no net loss of narrow endemic population locations, occupied acreage, or population viability in the MHCP subregion and preferably, but not necessarily, within each subarea. If mitigation is

## Table 3-7

## KNOWN CRITICAL LOCATIONS OF MHCP NARROW ENDEMIC SPECIES BY SUBAREA[1]

| Species | Critical Location | Subarea |
|---|---|---|
| **Plants** | | |
| San Diego thorn mint | El Camino Real/College Blvd.<br>South of Palomar Airport Road<br>North of Alga Road<br>Olivenhain-La Costa<br>San Marcos West | Carlsbad |
| | Olivenhain-La Costa<br>Lux Canyon and vicinity<br>Quail Botanical Gardens | Encinitas |
| | Escondido Northwest | Escondido |
| | San Marcos West | San Marcos |
| | San Marcos West | Vista |
| San Diego ambrosia | Near Mission Ave., east Oceanside | Oceanside |
| Del Mar manzanita | Agua Hedionda<br>Green Valley-Olivenhain | Carlsbad |
| | Green Valley-Olivenhain<br>Lux Canyon<br>Oak Crest Park | Encinitas |
| Encinitas baccharis | Green Valley-Olivenhain | Carlsbad |
| | Green Valley-Olivenhain<br>Lux Canyon | Encinitas |
| | Mt. Israel | Escondido |
| Thread-leaved brodiaea | Calavera Heights<br>Carlsbad Highlands<br>El Camino Real | Carlsbad |
| | East Oceanside | Oceanside |
| | San Marcos | San Marcos |
| Orcutt's spineflower | Oak Crest Park | Encinitas |
| Del Mar Mesa sand aster | No critical locations identified | |
| Short-leaved dudleya | No critical locations identified | |
| Variegated dudleya | No critical locations identified | |
| San Diego button-celery | Poinsettia Lane | Carlsbad |
| | San Marcos | San Marcos |

**Table 3-7 (Continued)**

**KNOWN CRITICAL LOCATIONS OF MHCP NARROW ENDEMIC SPECIES BY SUBAREA[1]**

| Species | Critical Location | Subarea |
|---|---|---|
| **Plants (continued)** | | |
| Orcutt's hazardia | Lux Canyon (Manchester) | Encinitas |
| Nuttall's lotus | Batiquitos Lagoon | Carlsbad |
| | San Elijo Lagoon | Encinitas |
| | San Luis Rey River | Oceanside |
| San Diego goldenstar | San Marcos Creek<br>Encinitas Creek | Carlsbad |
| Little mousetail | Poinsettia Lane | Carlsbad |
| Spreading navarretia | Poinsettia Lane | Carlsbad |
| | San Marcos | San Marcos |
| California Orcutt grass | Poinsettia Lane | Carlsbad |
| **Animals** | | |
| Riverside fairy shrimp | Poinsettia Lane | Carlsbad |
| San Diego fairy shrimp | Poinsettia Lane | Carlsbad |
| | San Marcos | San Marcos |
| Oblivious tiger beetle | Aqua Hedionda Lagoon<br>Batiquitos Lagoon<br>Buena Vista Lagoon | Carlsbad |
| | San Elijo Lagoon | Encinitas |
| | Buena Vista | Oceanside |
| Harbison's dun skipper | Daley Ranch and east Escondido | Escondido |
| Coastal cactus wren | San Pasqual Valley and Lake Hodges, southern Escondido | Escondido |
| Pacific pocket mouse | No critical locations identified | |

[1]This table lists locations defined as critical to conservation of MHCP narrow endemic species based on current information. Any additional populations of narrow endemic species found in the future must be evaluated relative to the MHCP Narrow Endemic and Critical Location policies (MHCP Volume II, Appendix D). Any new populations determined to meet the definition of a critical location must abide by the critical location policy and must be maximally avoided, regardless of location inside or outside of the FPA (MHCP Volume I, Section 3.7).

proposed to occur outside the subarea plan boundary, such that a net loss would result within the subarea, then the selected mitigation alternative must be demonstrated with adequate facts to produce greater benefit to the species than would feasible mitigation alternatives inside the subarea.

Regardless of location, narrow endemic populations listed as "Critical" in Table 3-7 must be totally avoided, and any populations that are later discovered and determined to meet the criteria for a critical population must be maximally avoided while allowing some economic or productive use of property as supported by substantial factual evidence. If impacts to narrow endemics cannot be avoided while retaining economic or productive use of the property, then acquisition of the property for conservation purposes shall be pursued as a high priority, but only from willing sellers.

6. *Wetlands*. The conservation of wetland-dependent species is based on the MHCP policy of no net loss of wetland habitats (see Section 3.6). Subarea plans will also incorporate the no net loss policy. Jurisdictional wetlands are expected to continue to be regulated under the federal Clean Water Act (Section 404) and the California Fish and Game Code Section 1600 et seq.

7. *Mitigation Requirements*

   a. Each jurisdiction will implement the mitigation standards specified in its subarea plan and implementing agreement. Mitigation measures in subarea plans may include avoidance of impacts; preservation, restoration, or enhancement of habitat; or some combination of the above consistent with achieving the goals of the subarea plan.

   b. Because habitat within the BCLA or FPA generally has greater conservation value than habitat occurring in fragmented or isolated patches, subarea plans can incorporate incentives (e.g., reduced mitigation requirements) to encourage conservation within the BCLA or FPA.

   c. Subarea plans require site-specific analysis of biological resources, for projects where agreements do not already exist, to determine appropriate mitigation measures and siting of the project.

   d. Subarea plans may provide flexibility in both the location and type of habitat conserved, if consistent with achieving the subarea plan's conservation goals. This flexibility allows subarea plans to de-emphasize or eliminate, if appropriate, historic "in-kind" mitigation requirements and provides an opportunity to use an "ecosystem-based" mitigation approach.

   e. Mitigation may be required for impacts to uncovered species, to the extent required through CEQA, Coastal Zone Management Act, and other applicable federal and state regulations or local regulations.

   f. Excluding land avoided during the land use process, land acquired for mitigation in excess of the jurisdiction's mitigation requirements may be used for mitigation credits or to establish a conservation bank.

   g. Subarea plans also may use "in lieu" fees to accomplish all or some of the conservation goals of the plan.

   h. Subarea plans will specify the mechanism for permanent protection of lands used for mitigation. These mechanisms include conservation easements; fee title transfer to a

public agency, conservancy, or land trust; or other mechanisms mutually agreed to by the jurisdiction and the wildlife agencies.

i. Subarea plans will provide for consistency in mitigation for public and private projects.

j. Subarea plans will use definitions for grassland vegetation, disturbed land, and agricultural lands that are provided in Appendix F of Volume II when project impacts and mitigation requirements are determined.

## 3.8 BIOLOGICAL PRESERVE DESIGN CHECKLIST

The following checklist should be used as a tool to direct and support the preparation of subarea plans, to ensure that they are consistent with the MHCP plan, and to ensure that the protection of species on the covered species list meets issuance criteria for a Section 10(a)(1)(B) permit and CESA standards and NCCP guidelines for Section 2835 management authorizations. This checklist incorporates the basic tenets for conservation planning identified in the NCCP guidelines. A complete description of the subarea plan process is in Section 5.3.

Subarea plan and habitat management plan preparation and implementation should include the following:

- an analysis of biological data gaps for the subarea;
- detailed fieldwork using generally accepted field and analytical techniques and mapping to fill data gaps;
- refinement of the vegetation and species databases;
- prioritization of biological resources for conservation, using the criteria checklist below;
- gap analysis to identify which of the most important resources in the subarea are currently protected and where there are gaps in protection;
- analysis of existing and planned land uses to evaluate management feasibility and compatibility (Section 6);
- development of a preserve design consistent with the criteria checklist below; and
- ongoing evaluation of preserve management effectiveness.

To be consistent with the MHCP, a subarea plan's conservation strategy must include or address the following checklist:

<u>General Preserve Design</u>

- 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 MHCP Composite Habitat Value map (Figure 2-3) or as identified through subsequent fieldwork.

- Large blocks of unfragmented habitat, following natural topography (ridges and watersheds).

- Large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species.

- Key existing linkage areas between core habitat blocks; restoration or enhancement as necessary to forge connections to other open space lands and to other subareas or habitat patches outside the subarea plan area.

- Configuration that minimizes edge effects between habitat preserves and development and edge-to-preserve-area ratio.

Habitat Criteria

- Total acreages and vegetation communities equivalent or better in conservation value to those conservation targets listed in the MHCP plan (pending complete analyses for subarea plans).

- Representation of sensitive vegetation communities and their geographic subassociations containing priority species in large, functioning ecosystems.

- High quality vernal pools (primarily but not exclusively supporting sensitive species); no net loss of wetland vegetation communities.

- High habitat quality and microhabitats (e.g., soil type, host plant, drainages, rock outcrops) important to sustaining long-term viable populations of individual covered species.

Species Criteria

- For covered species, all species-specific permit conditions included at the beginning of each species evaluation in Volume II.

- Key regional populations of proposed covered species within the subarea, including locations identified as major or critical by the MHCP, Volume II. Coverage for the entire MHCP study area depends on retention and maintenance of adequate populations of these species and their habitats within the subarea and protection of all critical locations.

Management and Biological Monitoring Criteria (see also Sections 6.3 and 6.4)

- Appropriate management within the preserve to minimize edge effects from adjacent land uses.

- Appropriate uses within the preserve that are compatible with and complement the biological function of the area.

- Biological monitoring of habitats and species that reflects priorities as determined in categories listed above.

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# 4.0 ASSEMBLING THE MHCP PRESERVE

The MHCP 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 the responsibility for habitat conservation under the MHCP rests initially with those 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 San Diego region as well as other residents throughout California and the United States. Accordingly, the following groups of beneficiaries should share responsibility for implementing the MHCP:

- Federal and state governments, representing the interests of communities outside the San Diego region. 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 should also mitigate impacts of public projects that they undertake by conserving habitat in the MHCP preserve system.

- Local governments with jurisdiction in the MHCP study 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. Local governments should also mitigate impacts of public projects that they undertake by conserving habitat in the MHCP preserve system.

- Private landowners and developers of projects that require mitigation for impacts to protected species and their habitats. Landowners and developers benefit from the MHCP because it identifies an agreed upon location to site project mitigation, provides guidance on where biological resources may be impacted and where they should be conserved, and establishes a permit authorization process, eliminating 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.

The MHCP preserve will be assembled by conserving (i.e., preserving and managing) habitat in the FPAs, which are specific habitat areas with target levels of conservation. The target levels are expressed as percent of upland habitat that would be protected under the MHCP. (Wetland habitat is assumed to be subject to the no net loss goal.) This section discussses habitat ownership in the FPAs and actions, including onsite conservation, offsite mitigation, and public acquisition, that would assemble habitat areas into a regional preserve.

## 4.1 SUMMARY OF POLICIES AND ACTIONS TO ASSEMBLE THE MHCP PRESERVE

The MHCP preserve will be assembled through a combination of the following methods: conservation of lands already in public ownership; public acquisition of private lands with regional habitat value from willing sellers; and private actions to conserve habitat, in conformance with development regulations and mitigation of impacts. The MHCP Advisory Committee has reviewed the relative contributions of these methods and the equitable distribution of costs among the groups of beneficiaries discussed above and has made the following recommendations regarding preserve assembly:

- Conservation of Existing Public Lands. The MHCP preserve system will incorporate public lands to the greatest extent possible to minimize the need to conserve privately owned habitat.

- Public Acquisition of Private Lands. Privately owned habitat lands may need to be acquired when adequate protection of resources cannot be achieved through development regulation or mitigation of impacts. Where public funds are used to acquire habitat lands for the MHCP preserve, private property rights will be fully respected and upheld, and land will be acquired only from willing sellers at fair market value or upon terms mutually satisfactory to the buyer and seller. Condemnation proceedings will not be used unless specifically requested by a property owner.

- Private and Public Development Participation. Private development exactions that contribute to the preserve system will not be increased beyond what is authorized under existing law. Conservation of habitat as a condition of development approval will occur in accordance with local jurisdictions' land use and environmental regulations, that is, through avoidance or minimization of habitat impacts and compensatory mitigation of unavoidable impacts. A specific policy of the MHCP will be to direct land development to areas outside the FPA in exchange for conservation inside.

### 4.1.1 Sources of Preserve Assembly

Upon completion, it is assumed for this analysis that the MHCP preserve will consist of approximately 19,928 acres of natural habitat located in the boundaries of participating local jurisdictions and 400 to 500 acres of coastal sage scrub capable of supporting 16 to 23 pairs of gnatcatchers in the unincorporated area of San Diego County near the cities of Carlsbad, Encinitas, and San Marcos (Table 4-1 and Figure 4-1). While final conservation in the unincorporated core may vary, depending on the mix of private mitigation and public acquisition, over 600 acres of undeveloped land in the unincorporated core (much of which supports coastal sage scrub habitat) is expected to be conserved (see Section 4.4.3). (*Note: Acreage figures for habitat conservation within the MHCP cities refer to natural habitat, unless otherwise noted. Natural habitat excludes agricultural and disturbed lands. Acreage figures for previous and potential future acquisition refer to total land area. Acres of natural habitat conserved through acquisition are generally less than total acres, though specific figures vary. Acreage figures for the unincorporated core refer to either total or habitat acres. Acquisition estimates are in total acres, and contribution to gnatcatcher habitat is in habitat acres.*)

Under the MHCP, the federal and state governments will contribute to the preserve 1,944 acres of natural habitat lands that they currently administer in the study area. The seven cities comprising the MHCP study area will contribute to the preserve 7,142 acres of habitat lands that they currently own in the study area. Other local agencies own 1,056 acres of habitat. Together, publicly owned habitat lands proposed to be included in the MHCP preserve total 10,143 acres (Table 4-2 and Figure 4-2).

## Table 4-1

## SUMMARY OF PRESERVE ASSEMBLY

| Ownership / Preservation Method | Conserved Habitat in MHCP Cities | Conserved Land in Uninc. Core |
|---|---|---|
| **Federal and State Govenments** | | |
| o Manage and maintain existing federal and state habitat lands located in the FPAs according to MHCP guidelines. | 1,944 | - |
| o Assumed to acquire up to 609 acres in MHCP cities and the unincorporated core[1] through purchase or noncash methods.[2] | 389 | 220 |
| *Total acres conserved by federal and state governments* | **2,334** | **220** |
| **Cities** | | |
| o Manage and maintain currently owned habitat lands located in FPAs according to MHCP guidelines. | 7,142 | - |
| o Acquire up to 738 acres in MHCP cities and the unincorporated core[3] through purchase or by noncash methods.[2] Manage, maintain, and monitor the acquired lands. | 638 | 100 |
| o Ensure conservation of natural habitat on privately owned lands and appropriate mitigation in accordance with local land use regulations and environmental review. | -[4] | - |
| *Total acres conserved by MHCP cities* | **7.781** | **100** |
| **Other Local Agencies**[5] | | |
| o Manage and maintain currently owned habitat lands located in FPAs according to MHCP guidelines. | 1,056 | - |
| *Total acres conserved by other local agencies* | **1.056** | **-** |
| **Private Landowners / Development** | | |
| o Manage and maintain existing private mitigation banks and approved mitigation areas. | 946 | 345 |
| o Manage and maintain future mitigation areas conserved in accordance with MHCP guidelines and local land use policies. | 2,054 | - |
| o Maintain habitat areas as project open space, either by homeowners' associations or under open space easements. | 6,785 | - |
| o Sale of habitat for conservation[6] | (1,028) | - |
| *Total acres conserved by private development* | **8.758** | **345** |
| **Total Acres Conserved in MHCP Cities** | **19.928** | **665** |

Source: Tables 4-2 through 4-9.

Figures, in acres, have been rounded and may not add to totals as shown.

[1] Priority 1 conservation areas; assumed to be acquired by state or federal governments from willing sellers, if the MHCP cities would establish endowment to manage and monitor those lands in perpetuity (see Section 4.1.2).

[2] Public projects will also conserve habitat lands for offsite mitigation, in addition to acquisition solely for conservation purposes.

[3] Priority 2 conservation areas; to be acquired by the MHCP cities if funding is available from a regional funding program or from alternative funding sources (see Section 4.1.2).

[4] MHCP cities will implement local land use policies and environmental guidelines to mitigate impacts of future development through conservation (i.e., preservation and management) of natural habitat.

[5] Lands owned by special districts; also includes selected open space lands owned by the County of San Diego, such as portions of San Elijo Lagoon.

[6] Total of Priority 1 and 2 conservation areas, if acquired.

## Table 4-2

## NATURAL HABITAT IN MHCP CITIES PLANNED OR NOT PLANNED FOR CONSERVATION

| Ownership | Habitat in MHCP Cities[1] | | | | |
|---|---|---|---|---|---|
| | Total Habitat[2] | Conserved On-Site[3] | Potential Acquisition[4] | Total Conserved[5] | Not Conserved[6] |
| Federal / State | 1,984 | 1,944 | 389 | 2,334 | 40 |
| Cities | 8,785 | 7,142 | 638 | 7,781 | 1,642 |
| Other Local Agencies | 1,324 | 1,056 | - | 1,056 | 268 |
| Subtotal Public | 12,093 | 10,143 | 1,028 | 11,170 | 1,950 |
| Private | 17,869 | 9,786 | (1,028) | 8,758 | 8,084 |
| Total MHCP | 29,962 | 19,928 | - | 19,928 | 10,034 |

Source: 2002 MHCP GIS Data.
In acres; figures have been rounded and may not add to totals as shown.

1 Excludes the unincorporated core.

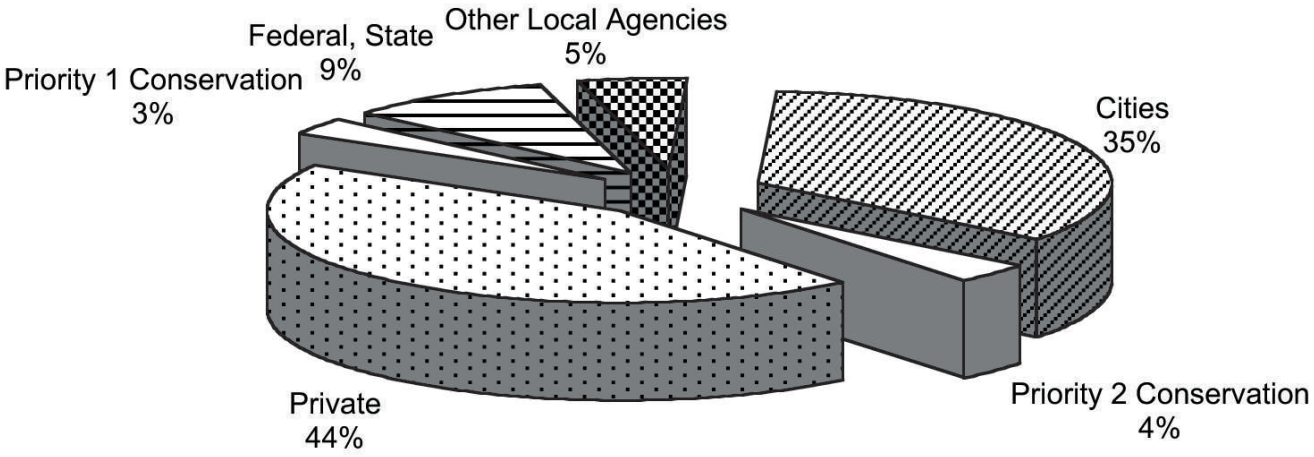
2 Natural habitat in MHCP cities; excludes agricultural, disturbed, and other vacant lands. Only habitat areas in MHCP cities are shown; excludes the unincorporated core.

3 Planned for conservation as shown in the focused planning area (FPA) or as a result of the no net loss goal for wetland and riparian vegetation communities; excludes potential public acquisition. Total for the cities includes the Daley Ranch Conservation Bank, covering approximately 2,842 acres of 3,058-acre Daley Ranch property acquired by Escondido in January 1997.

4 Potential acquisition in MHCP cities only; excludes the unincorporated core. It is assumed that onsite conservation of privately owned habitat is reduced by the amount of public acquisition. However, some acquisition may occur outside of the areas planned for private onsite conservation, and actual acquisition of natural habitat will likely be less than the potential shown in this table.

5 Sum of on-site conservation plus potential acquisition.

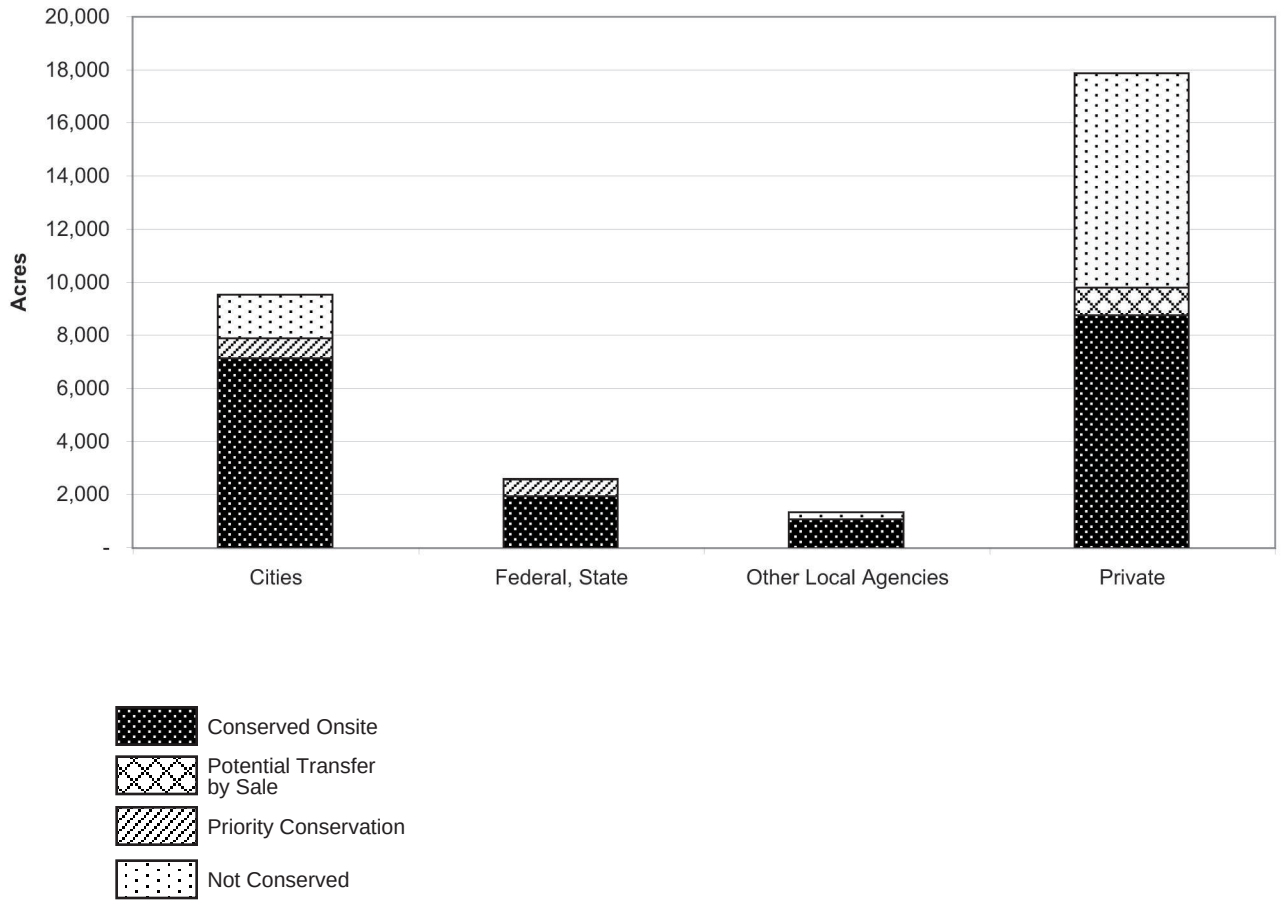
6 Total habitat less conserved (onsite) habitat. Actual loss of habitat to development may be less, due to physical constraints (e.g., steep slopes) that may exist onsite.




**Composition of MHCP Preserve by Ownership**
*Total Conserved Habitat of 19,928 Acres in Cities and 400 to 500 Acres in Unincorporated Core*

FIGURE
4-1

GRAPHICS/Biology/MHCP/Fig 4_1.FH8




**Conservation or Potential Development of Existing Habitat Areas**

**FIGURE 4-2**

GRAPHICS/Biology/MHCP/Fig 4_2.FH8

There are currently 946 acres of natural habitat in privately owned mitigation banks or wildlife agency-approved mitigation areas in the MHCP study area. Through the cities' power to regulate land use, an additional 2,054 acres will be conserved (i.e., preserved and managed in perpetuity) in conjunction with future private development, through impact avoidance or compensatory mitigation for unavoidable impacts. In addition, there are 6,785 acres of natural habitat which are currently or are anticipated to be retained and managed as open space, but which would require new funding to conduct management for biological resources as recommended in this plan. Up to 1,028 acres of open space lands (though fewer acres of natural habitat) may be publicly acquired as part of MHCP implementation. Even without public acquisition, 9,786 acres of natural habitat currently in private ownership would be conserved under this plan (Table 4-2).

Based on preliminary discussions between the wildlife agencies and the MHCP cities, it is assumed in this plan that the state or federal government would purchase up to approximately 609 acres of Priority 1 conservation areas (described below), which support important biological resources, if there are willing sellers and if the cities agree to establish an endowment for habitat management and monitoring. The endowment, or endowments, must be sufficient to manage and monitor Priority 1 conservation areas plus 94 acres in the City of Carlsbad purchased in 2002 by the state Wildlife Conservation Board. In turn, the MHCP cities would acquire up to 738 acres of Priority 2 conservation areas, which also support important biological resources or which are important to the configuration of the MHCP preserve system, if funding is available from a regional funding program or from alternative funding sources.

### 4.1.2 Public Acquisition of Private Habitat Land

Public acquisition of habitat may become key to plan implementation when the goals of resource conservation conflict with the private owner's intended use of the property. This may occur when a large portion of a property must be set aside for habitat use or when habitat conservation that can reasonably be exacted as a condition of development is insufficient to meet biological objectives. As noted above, however, public acquisition would occur only when there is a willing seller. In the MHCP study area, the following types of parcels are identified as priority conservation areas and candidates for public acquisition:

- parcels that comprise essential stepping stones in the linkage across the study area or that are located in important corridors for the movement of California gnatcatchers and other species intended to be covered by the MHCP;
- parcels that are substantially covered with very rare natural habitats representing unique resource value, such as southern maritime chaparral;
- parcels that are substantially covered by narrow endemic species or that support a critical population or habitat of a species proposed for coverage; or
- parcels that contain important vernal pool or riparian habitats.

For the MHCP, local jurisdictions have identified two categories of priority conservation areas:

Priority 1. Areas that are highly constrained by narrow endemic species, major or critical locations of MHCP species, or wildlife corridors. Approximately 609 acres fall in this category, including 389 acres in the MHCP cities and 220 acres in the unincorporated core.

Priority 2. Areas that, if acquired, would significantly improve the biological value or the configuration of the MHCP preserve system and that would also meet other open space

objectives of the cities. Approximately 738 acres fall in this category, including 638 acres in the MHCP cities and up to 100 acres in the unincorporated core, which would provide additional means to achieve conservation goals for this area.

The MHCP cities anticipate that the plan's biological goals for the priority conservation areas can be met through the application of land use policies and regulations. However, acquisition of those lands would avoid any potential conflict between the goals of the MHCP and the goals of private development and would provide the cities with important flexibility in achieving their conservation targets. Thus, Priority 2 conservation areas would be acquired only if funding is available from a regional funding program (described in Section 7) or from an alternative funding source. The cities' general funds are not pledged for this acquisition.

The priority conservation areas and estimated acquisition costs are summarized in Table 4-3. Estimated costs are based on recorded sales of similar, undeveloped vacant land in north San Diego County, together with information on existing general plan land use or zoning and presence of physical constraints, such as steep slopes.

## 4.2 ACTIONS BY FEDERAL AND STATE GOVERNMENTS

### 4.2.1 Existing Federal and State Habitat Lands in the Study Area

Locations of federal- and state-owned habitat lands to be managed for the MHCP are summarized in Table 4-4 and described below.

U.S. Bureau of Land Management (BLM). The BLM administers approximately 125 acres of habitat land in the Escondido subarea — a parcel surrounded by the Daley Ranch property and another parcel east of the city. 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 conserve and permanently maintain and manage habitat on its lands in the county in accordance with local conservation strategies, including the MHCP. The City of Escondido has submitted an application to the BLM to acquire the property in Daley Ranch for conservation purposes under the "protective disposal" policies of the Recreation and Public Purposes Act.

California Department of Fish and Game. CDFG lands include ecological reserves at Buena Vista Lagoon, San Elijo Lagoon, and a part of the former Carlsbad Highlands Conservation Bank. In 2002 CDFG acquired, through the Wildlife Conservation Board, 94 acres of the Holly Springs property in Carlsbad. CDFG also manages mitigation sites established by Caltrans in the Cities of Oceanside and Carlsbad.

University of California (UC). The university administers the Dawson Los Monos Canyon Reserve in Carlsbad and Vista as part of the UC Natural Reserve System. The reserve is managed for habitat use and research.

## Table 4-3

## POTENTIAL PUBLIC ACQUISITION OF HABITAT LANDS AND ESTIMATED COST

| | In MHCP Cities | | In Unincorporated Core | | Total Est. Cost |
|---|---|---|---|---|---|
| Potential Acquisition[1] by: | Acres | Est. Cost ($ M) | Acres | Est. Cost ($ M) | ($ M) |
| **MHCP Cities** | | | | | |
| Priority **2** conservation areas | 638 | 22.3 - 27.4 | 100 [2] | 3.6 - 4.4 | 25.9 - 31.8 |
| Contingency (25%)[3] | | 6.2 | | 1.0 | 7.2 |
| **Total MHCP Cities** | | **28.5 - 33.6** | | **4.6 - 5.4** | **33.1 - 39.0** |
| Average of High and Low Estimates | | | | | **$36.1 M** |
| **Federal / State Governments** | | | | | |
| Priority **1** conservation areas | 389 | 17.4 - 21.3 | 220 | 7.9 - 9.7 | 25.3 - 31.0 |
| Contingency (25%) | | 4.8 | | 2.2 | 7.0 |
| **Total Federal / State** | | **22.2 - 26.1** | | **10.1 - 11.9** | **32.3 - 38.0** |
| Average of High and Low Estimates | | | | | **$35.2 M** |
| **Total Potential Acquisition** | **1,028** acres | | **320** acres | | **$ 71.3 M** |

Source: MHCP Cities; City of Carlsbad's HMP; Onaka Planning & Economics; Douglas Ford and Associates.

Figures have been rounded and may not sum to totals as shown. Low and high estimates of acquisition costs are shown.

[1] MHCP's conservation goals can be met without acquisition of habitat lands (except for acquisition commitments included in the City of Carlsbad's HMP). However, the MHCP plan identifies priority conservation areas, where acquisition would substantially increase the biological value of the preserve system and provide the cities flexibility in meeting the goals of the program. Two priority areas have been identified, as described in the text. The state or federal governments would acquire the Priority 1 areas, and the MHCP cities, the Priority 2 areas, both under certain conditions as described in the text. Actual acquisition may differ from the potential shown in this table, depending on the availability of funding and willing sellers.

[2] Potential acquisition of 100 acres in the unincorporated core could include the remaining acquisition need of the City of Carlsbad's HMP (68.6 acres) and other needs which may occur.

[3] Contingency is calculated at the mid-point of high and low estimates.

**Table 4-4**

**SUMMARY OF CONSERVED HABITAT BY OWNERSHIP IN MHCP CITIES**

| | City | Federal / State | Other Local Agencies | Private | Total |
|---|---|---|---|---|---|
| Carlsbad | 485 | 1,231 | 39 | 2,687 | 4,441 |
| Encinitas | 103 | 284 | 564 | 1,263 | 2,214 |
| Escondido | 4,957 | 126 | 242 | 1,866 | 7,191 |
| Oceanside | 1,145 | 185 | 63 | 1,439 | 2,832 |
| San Marcos | 251 | 2 | 117 | 2,226 | 2,595 |
| Solana Beach | 0 | 7 | 26 | 7 | 41 |
| Vista | 201 | 110 | 5 | 298 | 614 |
| Total MHCP Cities | **7,142** | **1,944** | **1,056** | **9,786** | **19,928** |

Source: 2002 MHCP GIS Data; compiled by Onaka Planning & Economics

Note: Figures, in acres, have been rounded and may not sum to totals as shown. This table summarizes current (2002) ownership of natural habitat lands proposed for conservation, prior to public acquisition.

Other State Agencies. The State Lands Commission owns Batiquitos Lagoon and state beaches in Carlsbad and Encinitas. Batiquitos Lagoon is managed for habitat use and passive recreation. State beaches are active recreation areas.

### 4.2.2 Financial Contributions by Federal and State Governments

The MHCP Advisory Committee adopted the following recommendations concerning financial contributions by federal and state governments toward implementation of the MHCP plan. It is understood that in some cases these actions may not be within the discretionary authority of a government agency and would require federal or state legislative changes.

- The federal government should appropriate funds from the Land and Water Conservation Trust Fund for the conservation purposes for which the fund was originally established and direct such funds to the purchase of habitat lands in support of the preserve system.

- The federal and state governments should appropriate categorical grant funds from currently established and dedicated sources for open space and habitat acquisition. Examples include the California Wildlife Conservation Board, National Fish and Wildlife Challenge Grants, and the California Environmental License Plate Fund.

- The federal and state governments should consider expansion of tax preference programs that encourage below-market sales or donations of private lands for habitat conservation. Examples include reduction of capital gains and income taxes on revenues generated by the sale of habitat lands and allowance of tax credits corresponding to the market value of habitat lands donated for conservation.

- The federal and state governments should appropriate funding for environmental mitigation and habitat conservation as part of infrastructure improvement programs, such as the Transportation Equity Act for the 21st Century (TEA-21).

- The federal government should consider establishment of a habitat acquisition fund from the revenues generated from the sale, lease, or conversion of public agency lands.

- The state government should consider adoption of statewide bond measure(s) for habitat, open space, and park acquisition (e.g., Propositions 12, 40, and 50).

### 4.2.3 Nonfinancial Contributions by Federal and State Governments

The MHCP Advisory Committee also recommended that the federal and state governments should undertake one or more of the following actions in support of MHCP implementation. It is understood that in some cases these actions will require federal or state legislative changes:

- Federal and state agencies should, when possible, work with private nonprofit organizations to fund ecological activities on public land managed for habitat purposes.

- Federal and state agencies should appropriately manage, maintain, and enhance habitat lands under their control.

- Federal and state land management agencies should work together to ensure that land management practices are consistent with habitat management policies of the MHCP.

- Federal and state agencies should consider habitat value and the goals of the MHCP preserve system before undertaking any land exchange, purchase, or sale.

- Federal and state public works projects should mitigate impacts consistent with the purpose of the MHCP preserve system and approved local subarea plans.

- Habitat restoration programs undertaken in response to natural disasters, such as fires or floods, should enhance the preserve system.

### 4.2.4 Habitat Acquisition by Federal and State Governments

Federal and state governments could acquire habitat lands for the MHCP using a variety of methods, including:

- direct purchase from willing sellers/landowners using appropriated funds;

- cooperative federal/state programs for the conservation of endangered or threatened species;

- land exchanges, including bundling lands for sale or exchange;

- grants and matching funds; and

- tax credits, where applicable.

Although there is currently no program in the MHCP study area, such as a national wildlife refuge, to provide a framework for directly appropriating federal funds toward habitat acquisition, the federal government can provide funds to the State of California, for example, through the Cooperative Endangered Species Conservation Fund, to support acquisition. Some state funds may be used to acquire habitat in areas where a conservation program has not yet been adopted; however, adoption of the MHCP plan will enable additional funds to be used.

## 4.3 ACTIONS BY LOCAL GOVERNMENTS

### 4.3.1 Habitat Lands Owned by Local Governments

Local, publicly owned lands proposed to be incorporated in the regional preserve system are also summarized in Table 4-4. They include portions of natural habitat in the following locations:

- Carlsbad
  Lake Calavera and surrounding area
  Macario Canyon and adjacent areas
  Squires Dam and surrounding area
  Agua Hedionda

- Encinitas
  Indian Head Canyon, east of Saxony Road
  San Elijo Lagoon
  Magdalena Ecke Park
  Quail Botanical Gardens
  Oak Crest Park
  ESD Park Site

- Escondido
  Daley Ranch Conservation Bank
  Dixon Lake Recreation Area
  Kit Carson Park
  Area along Valley Center Road, north of Lake Wohlford Road
  Lake Wohlford and surrounding area
  Portions of Jesmond Dene Park, Ryan Park, and MacLeod Park

- Oceanside
  El Corazon de Oceanside
  Whelan Lake and surrounding area
  San Luis Rey River and adjacent areas

- San Marcos
  North San Marcos, east of Agua Hedionda Creek
  South Lake and surrounding area
  San Marcos County Landfill

- Solana Beach
  Southern extension of San Elijo Lagoon Ecological Reserve

- Vista
  Buena Vista Park
  South branch of Agua Hedionda Creek, south of Park Center Drive

### 4.3.2 Funding for Local Public Acquisition

Potential funding sources for local jurisdictions to acquire, restore, and manage habitat lands are described in Section 7. Acquisition to satisfy mitigation obligation for impacts of public or private projects will not be funded through a regional funding program. Habitat lands may be purchased in fee or as less than fee interest, such as a permanent conservation easement recorded in favor of a public agency or qualified nonprofit conservation organization. Private habitat lands that are preserved through development regulations by means of avoidance of impacts may be transferred in fee title to a government or nonprofit agency if the landowner voluntarily dedicates the land. Lands may also be acquired by means of exchanges of local government lands or through a transfer of development rights program.

Following the model of the south San Diego County MSCP, in the event that adequate regional funding is not provided, the wildlife agencies would assess the impact of the funding deficiency

on the scope and validity of the take authorizations. The wildlife agencies and the jurisdictions would meet and confer to develop a strategy to address the funding shortfall and undertake all practicable efforts to maintain the level of coverage afforded by the authorizations under the program until the situation can be remedied.

### 4.3.3 Development Regulations and Mitigation Guidelines

Local jurisdictions have adopted policies, ordinances, and standards to regulate the use of land and conserve public resources, including open space and biological resources. The policies and standards are contained in the jurisdictions' general and community plans, zoning ordinances, local coastal programs, hillside development ordinances, guidelines for environmental review, and other regulations. As described in Section 5, to implement the MHCP the local jurisdictions will review existing policies, standards, and regulations for compatibility with MHCP goals, modify them where appropriate, and adopt new goals and standards.

Local jurisdictions will employ the following or similar methods of implementing the conservation and mitigation guidelines:

- adopting or amending a resource protection ordinance;
- incorporating limitations on encroachment to habitat in zoning or other land use regulations; or
- adopting conservation or mitigation guidelines as council policies or as administrative guidelines, such as CEQA guidelines.

Development regulations and mitigation guidelines will be applied uniformly to both public and private development projects.

## 4.4 MITIGATION GUIDELINES AND RATIOS

### 4.4.1 General Guidelines

To analyze preserve assembly, this plan assumes that local jurisdictions will adopt mitigation guidelines similar to those described below. Individual jurisdictions may adopt different policies and guidelines or may choose not to use mitigation ratios as a method of preserve assembly, if they demonstrate that the alternative policies and guidelines contained in the jurisdictions' subarea plans would achieve equivalent or greater levels of conservation.

For this discussion, "onsite conservation" means the protection of natural habitat located within the boundaries of a public or private project and within the boundaries of an FPA. Onsite conservation is accomplished through avoiding or limiting encroachment to habitat; protecting the habitat by appropriate means, for example, through grant of conservation or open space easement to a public agency or to a conservation organization approved by the wildlife agencies; and managing and monitoring the habitat for biological resources, or establishing an endowment to fund such management and monitoring, in perpetuity by a qualified organization.

"Offsite mitigation" means mitigation for unavoidable impact to sensitive species or habitat, where the impacted habitat is located either inside or outside an FPA and the mitigation area is outside of the project area, but inside an FPA. Offsite mitigation may be accomplished through a set-aside of existing habitat inside the FPA, purchase of mitigation credits in an approved mitigation bank inside the FPA, or enhancement or restoration of habitat areas inside the FPA.

Offsite mitigation also requires management and monitoring for biological resources, or an endowment to fund such management and monitoring, in perpetuity by a qualified organization.

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

1. Avoiding impacts by not taking a proposed action or by modifying the location or characteristics of the action

2. Minimizing impacts by limiting the degree or magnitude of an action

3. Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment

4. Reducing or eliminating the impact over time by preservation and maintenance actions during the life of an action

5. Compensating for the impact by replacing or providing substitute resources or environments

Emphasis given to specific mitigation measures could differ, however, depending on the habitat area impacted and other factors such as size, location, and relationship to the proposed regional preserve system.

Habitat conservation in the FPAs will be achieved primarily through avoidance of impacts to onsite biological resources. Any unavoidable impacts will be minimized, with development sited on the least sensitive habitat areas of a property under consideration. Natural habitat areas that are not impacted will be preserved in perpetuity through a conservation easement or other similar method.

In implementing the MHCP and subarea plans, the jurisdictions' land use policies and mitigation guidelines should confirm the primary role of impact avoidance and onsite conservation of biological resources in the FPAs; applying higher ratios of compensatory mitigation (mitigation ratios) for impacts to vegetation communities inside an FPA (or the BCLA) than outside; and "crediting" the onsite conservation and management of habitat areas inside the FPA (or the BCLA) toward meeting the mitigation obligations of unavoidable impacts.

If requested by a property owner, a jurisdiction could choose to adjust the boundaries of FPAs to include additional areas, if those areas support or contribute to the long-term survival of sensitive species or if they constitute part of an important regional habitat linkage or corridor (see Section 5.3.6). Flexibility to adjust the FPA boundaries may be desirable when it would further preserve design goals or when important biological resources are found outside the FPA. The property owner would benefit by receiving mitigation credit to offset mitigation obligation for impacts to other habitat areas.

**Habitat Groups**

Vegetation communities are combined into habitat groups for purposes of assigning mitigation ratios (Table 4-5). For further discussion of vegetation communities, see Section 2.2.1 and Volume II. Mitigation policies assumed for specific habitat groups are described below.

Group A: Wetland/Riparian. Impacts to these vegetation communities may require review and permit under Section 404 of the federal Clean Water Act and Section 1600 of the state Fish

and Game Code. Consistent with existing federal and state regulations, these communities are subject to the goal of no net loss in acreage, function, and value. It is assumed that the highest priority would be given to impact avoidance and minimization and that replacement of habitat subject to unavoidable impact would occur through restoration or creation of substitute habitat areas, generally of the same kind and in the vicinity of the impacted habitat. Due to difficulties associated with successful habitat creation and to difference in timing between impact and mitigation, replacement habitat will generally be larger in area than the impacted habitat, in order to achieve the no net loss goal.

Group B: Rare Upland. These are important and rare vegetation communities in the MHCP study area. The MHCP goal for these communities is to avoid impact as much as possible and to conserve onsite existing habitat areas. Except for areas that do not have important biological value, such as small and isolated areas, it is assumed that most areas with group B communities would be conserved, whether they are located inside or outside the FPAs.

Group C: Coastal Sage Scrub. Due to the importance of these vegetation communities to MHCP species, including the California gnatcatcher, impact to habitat located in an FPA should be minimized as much as possible. Local jurisdictions may choose to adopt mitigation requirements other than those assumed in this plan for impacts to coastal sage scrub communities located outside the FPAs.

The state NCCP guidelines and the Section 4(d) Special Rule of the ESA pertaining to the California gnatcatcher apply to coastal sage scrub, coastal bluff scrub, maritime succulent scrub, and coastal sage/chaparral scrub. Upon approval and adoption of subarea plans and accompanying implementing agreements by the USFWS, CDFG, and a local jurisdiction, the limitation of interim habitat loss to 5% will no longer apply to that jurisdiction.

Group D: Chaparral. Chaparral vegetation communities, with the exception of southern maritime chaparral, are generally more widespread and abundant than communities included in groups A, B, and C. However, chaparral communities support a variety of species addressed by the MHCP and are important to the overall habitat mosaic and ecosystem function of the preserve system. MHCP goals include minimizing impacts to these communities within the FPAs, which support MHCP species or which form part of wildlife movement corridors or habitat linkages, and compensating for any impacts by conservation elsewhere in the FPAs. City subarea plans may require higher ratios for chaparral impacts outside of an FPA when the habitat area supports MHCP species.

## Table 4-5

## VEGETATION COMMUNITY AND HABITAT GROUP

| Habitat Group | Vegetation Community | | |
|---|---|---|---|
| A. Wetland/Riparian | Coastal salt marsh | Salt pan/mudflats | Vernal pool |
| | Alkali marsh | Riparian forest | Disturbed wetland |
| | Freshwater marsh | Riparian woodland | Flood channel |
| | Estuarine | Riparian scrub | Fresh water |
| B. Rare upland | Beach | Southern marine chaparral | Native grassland |
| | Southern coastal bluff scrub | Engelmann oak woodland | |
| | Maritime succulent scrub | Coast live oak woodland | |
| C. Coastal sage scrub | Coastal sage scrub | Coastal sage/chaparral mix | |
| D. Chaparral | Chaparral (excluding southern maritime chaparral) | | |
| E. Annual grasslands[1] | Annual (nonnative) grassland | | |
| F. Other lands[1] | Disturbed land (including ruderal) | Agricultural land | Eucalyptus |

[1] See Appendix F of Volume II for definitions discriminating between annual grasslands, disturbed land, and agricultural land.

Group E: Annual (Nonnative) Grasslands. Directly and indirectly, annual grasslands are key to conservation of a large number of MHCP species, including a variety of narrow endemic species and the California gnatcatcher. They provide foraging habitat for raptors and provide movement corridors and habitat linkages that are critical to the MHCP preserve configuration. Over time, grasslands may also be succeeded naturally by coastal sage scrub or other native habitats, so they are important to the long-term stability and function of the conserved ecosystem. It is assumed that impacts to annual grasslands that support MHCP species within an FPA or that contribute to a habitat linkage or wildlife corridor will be avoided or minimized as much as possible. Although not traditionally imposed, mitigation for impacts to grasslands both inside and outside the FPAs is required to build a functional, multiple-species preserve system under the NCCP and to meet the conservation goals of grassland-dependent species. Appendix F of Volume II provides definitions to discriminate between annual grasslands, disturbed lands, and agricultural land for mitigation purposes.

Group F: Other Lands. In the past, development and impacts to disturbed and agricultural lands or eucalyptus have not been subject to compensatory mitigation, except for certain species-specific impacts, although disturbed and agricultural lands have historically supported natural habitat and may do so in the future if active uses are discontinued. It may also be necessary to protect portions of group F lands located in the FPAs, in order to meet the preserve design goals of the MHCP plan or the subarea plan. Such a need may arise, for example, when disturbed or agricultural lands comprise important links or corridors for wildlife movement. A local jurisdiction may require mitigation or levy an in-lieu mitigation fee for impacts to this habitat group when such actions are needed to achieve the preserve design goals.

**Mitigation Obligation**

Impacts to Vegetation Communities. Unavoidable impacts to habitat will be mitigated by restoration or conservation of other habitat areas. For impacts to group A (wetland or riparian) communities, mitigation shall consist of restoration or creation of new habitat areas to meet the no net loss goal. It is assumed that restored or new areas would not displace nor convert other natural habitat areas to wetland vegetation, but would replace disturbed or nonhabitat areas. Restored habitat areas are assumed to be in-kind and located in an FPA, generally in the same watershed and in the relative vicinity of the impacted habitat. For additional discussion of wetlands protection, see Section 4.4.2 below.

For impacts to vegetation communities in groups B, C, D, and E, mitigation will consist of permanent conservation of habitat in an FPA. In some cases, habitat creation or restoration may also qualify as mitigation. Assumed ratios of conserved to impacted habitat are described in Table 4-6. For group B communities, restored or conserved habitat will be in-kind. For communities in groups C, D, and E, conserved habitat may be out-of-kind, if the conserved habitat is located in an FPA, or outside an FPA, if it is shown to be a viable addition to the regional preserve system. If the proposed mitigation requires a boundary adjustment, such adjustment will follow the procedure described in Section 5.3.6.

Impacts to Species. In general, as a habitat-based plan, the MHCP does not address mitigation requirements for impacts to individual species. For impacts to certain species, however, the subregional MHCP plan or the local jurisdictions' subarea plans may describe mitigation guidelines in addition to those for impacts to habitats or vegetation

## Table 4-6

## RATIOS OF MITIGATION OBLIGATION TO IMPACTED AREA BY HABITAT GROUP[1]

| Habitat Group | Location of Impacted Habitat | |
|---|---|---|
| | Inside Focused Planning Area[2] | Outside Focused Planning Area |
| Group A. Wetland/Riparian | No net loss (see Table 4-7) | |
| Group B. Rare upland | 3:1 | 2:1 |
| Group C. Coastal sage scrub | 2:1 | 1:1 |
| Group D. Chaparral | 1:1 | 0.5:1 |
| Group E. Annual grasslands | 0.5:1 | 0.5:1 |
| Group F. Other lands | None[3] | None[3] |

[1] These assumptions have been developed for the purpose of analyzing preserve assembly and financing of MHCP implementation. Jurisdictions participating in the MHCP could use different mitigation ratios, if they demonstrate that the methods of preserve assembly proposed in the subarea plan would achieve equivalent or greater levels of conservation than those described in the MHCP plan.

It is also assumed that jurisdictions would independently determine, through the process of reviewing and approving project plans, the appropriate balance of land development and habitat conservation. For purposes of analysis, mitigation ratios for unavoidable impacts as shown in this table are assumed to be applied separately from the determination of onsite conservation through impact avoidance. The mitigation ratios neither require nor limit the avoidance of impacts to biological resources addressed by the MHCP plan.

[2] Primary conservation actions for natural habitat inside a FPA are assumed to be impact avoidance and minimization of unavoidable impacts. Inside a FPA, habitat that is conserved through impact avoidance may be used, subject to the jurisdiction's mitigation guidelines, to satisfy the mitigation obligation associated with habitat impacts of development elsewhere onsite.

[3] A local jurisdiction may require mitigation or levy of an in-lieu mitigation fee for impact to this habitat group if it finds that such actions are necessary to meet the goals of the MHCP or the subarea plan.

communities. Such guidelines are included in the conservation requirements listed for each species in Volume II.

Both inside and outside the FPAs, impacts to narrow endemic species should be avoided as much as possible; that is, it is assumed that existing populations will be conserved and managed onsite. For analysis purposes, the MHCP plan assumes that 100% of location points, population, or acreage with narrow endemic species within hardline FPAs will be conserved, 95% within softline FPAs, and at least 80% outside FPAs. Mitigation for unavoidable impacts could include, in addition to mitigation for vegetation communities noted above, special management or restoration requirements, as specified in a jurisdiction's subarea plan.

If there are impacts to federally or state-listed species that are not covered by the MHCP plan or applicable subarea plan, special mitigation measures would be determined in accordance with applicable ESA, CESA, and wildlife agency policies and regulations.

Relationship of Mitigation Ratios to Onsite Conservation. It is assumed that jurisdictions will independently determine, through the process of reviewing and approving project plans, the appropriate balance of land development and habitat conservation. For purposes of analysis, mitigation ratios for unavoidable impacts as shown in Table 4-6 are assumed to be applied separately from the determination of onsite conservation through impact avoidance. The mitigation ratios by themselves neither require nor limit the avoidance of impacts to biological resources addressed by the MHCP plan.

**Location of Mitigation Site**

Mitigation obligation could be satisfied by permanent conservation of "onsite" or "offsite" habitat, relative to the project site or location of the activity that causes habitat impact.

Onsite Mitigation. As noted above, it is assumed that impact avoidance and conservation of habitat onsite would be credited toward satisfaction of a mitigation obligation, if the habitat is located inside an FPA. No mitigation credit is assumed for onsite conservation of habitat located outside an FPA; however, mitigation credit may be warranted if the conserved habitat supports narrow endemic species or group B communities and if the area is added to the preserve system and managed for biological value.

Since wetland habitat is subject to the no net loss requirement, onsite conservation of this habitat type would not be credited toward mitigation of impacts to upland habitats.

Offsite Mitigation. It is assumed that any mitigation obligation for upland habitat that remains after onsite conservation is credited would be directed to conservation of habitat inside an FPA. Such offsite mitigation may occur through conservation of other habitat lands owned by the project proponent, through the purchase of mitigation credits from an approved conservation bank, or through the purchase and permanent conservation of habitat lands inside an FPA. However, a local jurisdiction may impose conditions or preferences for specific mitigation measures.

In-lieu Mitigation Fee or Conservation Bank. A local jurisdiction may levy in-lieu fees as an optional method of satisfying mitigation obligation for impact to habitat or open space. If adopted, a mitigation fee program should be designed to ensure equity, provide incentives to conserve habitat lands of high biological value, and provide funding for

habitat maintenance and management. Local jurisdictions could also establish conservation banks in conjunction with or separate from a mitigation fee program.

### 4.4.2 Wetlands Protection Program

Each subarea plan must provide protection to wetlands (group A habitat) as a part of the project review and approval process described in Section 3.6.1 and Section 5 and the associated CEQA process. The process should provide for an evaluation of wetland impact avoidance and minimization and should ensure compensatory mitigation through the subarea plan for unavoidable impacts to wetlands, thereby achieving no overall net loss of wetlands.

As part of the CEQA review, development projects on properties supporting wetlands will be required to demonstrate that impacts to wetlands have been avoided to the greatest extent practicable and, where impacts are nonetheless proposed, that such impacts have been minimized. For unavoidable impacts to wetlands, a city will apply wetlands replacement mitigation ratios identified in a table in the subarea plan. Potential wetland mitigation ratios are shown in Table 4-7. The wetlands mitigation ratios should provide a standard for each habitat type but may be adjusted depending on the functions and values of both the impacted wetlands as well as the wetlands mitigation proposed by the project. The city may also consider the types of wetland habitat being impacted and utilized for mitigation in establishing whether these standards have been met.

The wildlife agencies will review the mitigation program as part of a project's CEQA public review process. Projects that document highly degraded habitat value may request a reduced mitigation ratio from those shown in the subarea plan. If a reduced mitigation ratio has been proposed, the wildlife agencies may submit a letter of concurrence or non-concurrence to the city. If a letter of non-concurrence is received by the city from the wildlife agencies during the CEQA public review period, the city will not approve the mitigation ratio reduction. If no written reply is received or a written concurrence is received by the city from the wildlife agencies during the CEQA public review process, the mitigation ratio reduction may be approved by the city.

#### Written Definitions and Conservation Projections

Each subarea plan must incorporate a comprehensive set of wetland definitions for all wetland vegetation/habitat types found in the city. These definitions should be consistent with existing definitions in use by the ACOE, CDFG, and other entities judged appropriate by the city.

Subarea plans must also provide a section analyzing the anticipated result of applying the wetland protection program within the city. Results should include both overall percentage of anticipated protection (including wetlands already protected as a result of prior conservation) and a description of any key wetland areas that will be afforded protection by the program.

#### Compliance with Existing Federal and/or State Wetlands Regulations

In addition to a city's wetlands protection program, wetlands are afforded protection under existing federal and state law and regulatory programs. The federal Clean Water Act, the state Porter-Cologne Water Quality Control Act and the state Fish and Game Code provide protection to wetland habitats and species through federal and state

**Table 4-7**

**REPLACEMENT MITIGATION RATIOS FOR IMPACTS TO WETLAND VEGETATION COMMUNITIES**

| Wetland Vegetation Community | Mitigation Ratio[2] |
|---|---|
| Coastal salt marsh | 4:1 |
| Alkali marsh | 4:1 |
| Estuarine | 4:1 |
| Saltpan / mudflats | 4:1 |
| Oak riparian forest | 3:1 |
| Riparian forest | 3:1 |
| Riparian woodland | 3:1 |
| Riparian scrub | 1:1 to 2:1 |
| Fresh water | 1:1 |
| Freshwater marsh | 1:1 to 2:1 |
| Flood channel | 1:1 to 2:1 |
| Disturbed wetlands | 1:1 to 2:1 |
| Vernal pool | 2:1 to 4:1 |

[1] These communities are subject to the goal of no net loss in acreage, function, and biological value (see Section 3.6.1). The highest priority will be given to impact avoidance and minimization. Replacement of habitat subject to unavoidable impact will occur through restoration or creation of substitute habitat areas, generally of the same kind and in the vicinity of the impacted habitat.

[2] Mitigation ratios applicable in areas subject to review by the California Coastal Commission will be addressed in the cities' respective subarea plans. Such ratios may differ from those noted here.

regulatory permitting and agreements. Where applicable, project proponents must submit an application for and receive federal Section 404 and state Section 1600 permits prior to impacting most wetlands. Applicants must also apply to Regional Water Quality Control Board for waste discharge requirements prior to any discharges, including discharges from land that may affect any waters of the state. Waste discharge requirements must implement basin plans that designate beneficial uses and water quality criteria for water-bodies, including wetlands.

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

Projects that are regulated by federal agencies will continue to be subject to Section 7 consultation under the ESA. Those projects that are subject to a Section 7 consultation will be evaluated to ensure that the project is consistent with the subarea plan and wetlands mitigation program. The level of conservation afforded by the provisions of the subarea plan to species proposed for coverage will have been established through extensive consultation with, and review by, the wildlife agencies. Therefore, projects undergoing Section 7 consultation that are consistent with the provisions of the subarea plan will receive take authorizations for covered species through the take authorization permit issued to the city.

It is further expected that, once a subarea plan incorporating a wetland protection program is approved, the wildlife agencies will acknowledge the definitions and mitigation ratios and advocate their use in all Clean Water Act consultations with the ACOE, and that these definitions and mitigation ratios will be used uniformly in the state Section 1600 permits.

### 4.4.3 Estimated Conservation of Privately Owned Habitat

The FPAs identify target levels of conservation defined as percentages of upland habitat to be conserved. Wetland habitats would be conserved in full, or any impacted wetland habitat would be replaced at a ratio of at least 1:1, so that the preserved area would be at least as large as the original habitat.

Table 4-8 shows by city, acres of privately owned natural habitat in (a) mitigation banks and other existing mitigation areas approved by the wildlife agencies, (b) future mitigation areas for project impacts (much of those are "hardline" areas), and (c) habitat areas located in open spaces owned by homeowners' associations (HOAs) and other areas. HOA open spaces generally have minimal maintenance functions and are usually not managed for the biological resources that may be found onsite. "Other" habitat refers to privately owned habitat without any existing or planned management program. Within the MHCP cities a total of approximately 9,786 acres of privately owned habitat will be

## Table 4-8

## NATURAL HABITAT ON PRIVATE LANDS PLANNED FOR CONSERVATION

| | Mitigation Bank / Area[1] | Future Mitigation Area[2] | Homeowners' Association[3] | Other[4] | Total[5] |
|---|---|---|---|---|---|
| Carlsbad | 198 | 1,209 | 567 | 713 | 2,687 |
| Encinitas | 156 | - | 538 | 569 | 1,263 |
| Escondido | 9 | 237 | 879 | 742 | 1,866 |
| Oceanside | 516 | 170 | 26 | 728 | 1,439 |
| San Marcos | 68 | 438 | 887 | 833 | 2,226 |
| Solana Beach | - | - | - | 7 | 7 |
| Vista | - | - | 12 | 286 | 298 |
| **Subtotal** | **946** | **2,054** | **2,908** | **3,877** | **9,786** |
| Less Potential Acquisition[5] | | | | | (1,028) |
| **Total** | | | | | **8,758** |

Source: 2002 MHCP GIS Data; MHCP cities; data compiled by Onaka Planning & Economics.
Figures, in acres, have been rounded and may not sum to totals as shown.

[1] Includes both mitigation banks, whose credits may be sold to other developers seeking mitigation, and approved mitigation areas, which are established for specific projects. Of the total, mitigation banks comprise 304 acres, and approved mitigation areas, 642 acres. Figures refer to acres of natural habitat only.

[2] Areas identified by the MHCP cities with hardlines (i.e., target conservation of 90% or more), representing future mitigation areas to be established as a condition of approval of development projects.

[3] Areas that have been, or are anticipated to be, preserved and maintained as open space by homeowners' associations, but not necessarily managed for biological value.

[4] All other privately owned habitat lands proposed for inclusion in the MHCP preserve system; these lands lack any existing or planned management or maintenance programs. Acreages shown for this category are calculated as residuals, based on total private habitat areas planned for conservation.

[5] Total of priority conservation areas; see Table 4-2.

conserved, including 946 acres of habitat in existing mitigation banks and areas, 2,054 acres of habitat in future mitigation areas, 2,908 acres in homeowners' associations, and 3,877 acres of other open spaces.

Within the MHCP cities, up to 1,028 acres of privately owned habitat may be acquired by public agencies – 389 acres of Priority 1 and 638 acres of Priority 2 conservation areas. (In addition, up to 320 acres may be acquired in the unincorporated core.) It is assumed in Table 4-8 that public acquisition will reduce the aggregate area of habitat to be conserved in conjunction with private development at the rate of one acre for each acre of acquisition. However, since the priority conservation areas are generally "softline" areas, total acres conserved through both the development process and public acquisition will likely be greater than that shown in the table, as discussed below. For example, public acquisition of a 10-acre parcel with habitat would conserve 10 acres. If the parcel were located in an FPA with target conservation of 50% and were not acquired, 5 acres would be conserved through the process of development review and approval. Thus, acquisition of a 10-acre parcel would reduce the total amount of habitat conserved through the development process by 5 acres, while adding 10 acres to the preserve system.

**Future Offsite Mitigation**

Acres of private habitat conservation shown in Table 4-8 primarily reflect avoidance of impact to onsite habitat. It is not known how much additional conservation would result from offsite mitigation for impacts to habitat from future development in the MHCP cities, for the following reasons.

- Much of the mitigation for impact from future development is already included in the "hardline" areas and some of the HOA and other open spaces. In such a case, there will not be any need for additional offsite mitigation.

- Some "developable" lands may not be developed for reasons other than presence of physical constraints (e.g., lack of access or public services), or a landowner may choose to develop less habitat than would be allowed by the FPA, if the cost of offsite mitigation exceeds the incremental gain in development value.

- A landowner may petition, and the local jurisdiction may agree, to place habitat lands that were previously outside an FPA into an FPA, thereby obtaining credit for onsite conservation and reducing the need for offsite mitigation.

- A local jurisdiction may accept out-of-kind or out-of-group mitigation, where impacts to habitat in one group may be mitigated by conservation of habitat in another group, which would increase credits for onsite mitigation and therefore reduce the need for offsite mitigation.

- A local jurisdiction may choose to levy an in-lieu mitigation fee, similar to that proposed by Carlsbad, which would reduce the need for physical mitigation.

Since there is uncertainty about the amount of offsite mitigation that would occur under the MHCP and since there is a large supply of mitigation bank credits in the MHCP study area, especially at Daley Ranch Conservation Bank, this plan does not rely upon offsite mitigation to meet the acreage goals of the MHCP preserve. Instead, the plan relies primarily upon a combination of existing public lands and mitigation areas, land use regulation, and onsite avoidance to preserve sufficient acres of habitat for the MHCP preserve.

**Conservation of Core California Gnatcatcher Habitat**

Offsite mitigation has an important role in assembling the core gnatcatcher habitat in the unincorporated portions of San Diego County. Much of this mitigation is assured through previous agreements or through the City of Carlsbad's Habitat Management Plan (HMP). The goal of the MHCP plan is to conserve from 400 to 500 acres of core gnatcatcher habitat through a combination of the following actions (Table 4-9):

- Conservation under the City of Carlsbad's HMP — a total of approximately 308 acres of land to be conserved through a combination of offsite mitigation and acquisition. Of the total, 12 acres of conservation occurs in an area of the city previously permitted for development, and 69 acres would be acquired.

- During the last several years, exclusive of parcels acquired under the City of Carlsbad's HMP, approximately 118 acres of habitat land or easements have been purchased for conservation.

- Priority conservation areas, which may be acquired depending on funding availability. Up to 320 acres are candidates for priority conservation.

- Designation of the core gnatcatcher habitat as a recommended site for the offsite mitigation of impacts to coastal sage scrub.

If all priority conservation areas are acquired and added to the areas previously purchased for mitigation, a total of 665 acres (including 520 acres of coastal sage scrub habitat) would be conserved in the unincorporated core. Even if priority conservation areas are not acquired, onsite avoidance and offsite mitigation will likely conserve more than 400 acres of natural habitat in the unincorporated area.

## 4.5 CONSERVATION BANKING

A mitigation or conservation bank is land that is permanently conserved and managed for its natural resource values, with the intent of selling conservation credits to either private or public parties requiring mitigation. 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 MHCP preserve.

Conservation banks may be established by public or private parties. 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. For a private conservation bank, the owner of habitat would voluntarily conserve habitat or purchase habitat lands in anticipation of the future sale of mitigation credits to project proponents requiring offsite mitigation. 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 rather than provision of offsite

## Table 4-9

## ESTIMATED COASTAL SAGE SCRUB CONSERVATION IN THE GNATCATCHER CORE

| | | Total Land Area (acres) | Approximate Area of Coastal Sage Scrub[1] |
|---|---|---|---|
| A. | Conserved or Planned for Conservation by City of Carlsbad Habitat Management Plan | | |
| (1) | Villages of La Costa--Additional Onsite Conservation[2] | 12 | 12 |
| (2) | Parcel 1 | 114 | 81 |
| (3) | Parcel 2 | 113 | 75 |
| (4) | Other (Planned)[3, 4] | 69 | 48 |
| | Subtotal Carlsbad HMP | 308 | 216 |
| B. | Previously Purchased for Conservation[5] | 118 | 114 |
| C. | Priority Conservation Areas (Planned)[4] | 320 | 250[6] |
| | *Subtract Area in City and Potential Duplication*[7] | (81) | (60) |
| | **Total Unincorporated Core--Existing and Planned** | **665** | **520** |
| **Total Gnatcatcher Core** | | | |
| | *Exclude Priority Conservation Areas from Above*[8] | (320) | (250) |
| | *Add:* Areas Previously Conserved by Other Agencies Not Participating in MHCP[9] | 245 | 138 |
| | *Add:* Existing Core Habitat Conserved in the Cities of Carlsbad, Encinitas, and San Marcos[10] | 187 | 144 |
| | **Total Gnatcatcher Core--Existing**[11] | **777** | **552** |

Source: City of Carlsbad's HMP (Draft, 1999); 2002 MHCP GIS Database.

[1] From MHCP GIS database.

[2] Located in a previously permitted area of City of Carlsbad.

[3] Additional conservation described in Carlsbad HMP.

[4] It is assumed that about 70% of the land would support coastal sage scrub.

[5] Excluding lands conserved or planned to be conserved under the Carlsbad HMP, 6 other parcels were purchased and conserved in the unincorporated area near the Cities of Carlsbad and San Marcos, and easements were dedicated for 4 parcels as mitigation for MHCP projects.

[6] If properties located in the sphere-of-influence of the City of Encinitas are annexed to the city prior to development, they would be subject to the city's mitigation guidelines. In such a case, approximately 165 of coastal sage scrub may be conserved onsite, even if priority conservation areas are not acquired.

[7] Exclude onsite conservation in Carlsbad and potential duplication of 69 acres (HMP-Other), assuming that priority conservation areas are acquired first.

[8] Subtract priority conservation areas that are currently planned for conservation.

[9] Unincorporated core gnatcatcher habitat conserved by local agencies not participating in the MHCP.

[10] Add areas conserved in the MHCP cities, in support of the gnacatcher core, including onsite conservation in Carlsbad, areas recently annexed to Encinitas, and mitigation areas in San Marcos.

[11] Excluding areas conserved by others, MHCP directly or indirectly caused 532 acres of land to be conserved in the core, supporting 414 acres of coastal sage scrub.

mitigation lands. The fees collected by jurisdictions could then be paid to the owners of the conservation bank. The cost of offsite mitigation, whether or not a bank is used, will depend on the demand for and supply of mitigation lands.

### 4.5.1 Existing Conservation Banks in the MHCP Study Area

Currently (December 2002), the following conservation banks are active in the MHCP study area: Daley Ranch Conservation Bank in Escondido, Manchester Avenue Conservation Bank in Encinitas, and Whelan Ranch Conservation Bank in Oceanside. Carlsbad Highlands Conservation Bank (operated by Tech-Bilt Corporation) is currently inactive, with conservation credits held in reserve by the bank owner. Caltrans owns and operates a conservation bank in Oceanside and a mitigation site in Carlsbad; however, those credits are for use by Caltrans projects only and cannot be sold to private development projects. In this plan, Caltrans' conservation bank and mitigation site are assumed to be conserved for habitat purposes as part of publicly owned habitat.

Daley Ranch Conservation Bank. This bank was established in January 1997 by an agreement between the City of Escondido (bank owner and operator) and the USFWS and CDFG. There are 2,842 conservation credits in the bank: chaparral and coastal sage scrub (2,252 credits), coast live oak woodland (156 credits), Engelmann oak woodland (84 credits), water-dependent habitat (wetlands; 18 credits), and nonnative grasslands (332 credits). Except for 200 credits transferred to the former owner of the Daley Ranch property, the remaining credits are available for either in-kind or out-of-kind mitigation for public and private development projects within western San Diego County, including the MHCP study area. This "Credit Area" extends from the coast to the inland mountain ranges and from the international border to Riverside County. Escondido is responsible for the management of bank lands, to be financed initially from city funds and later from an endowment to be established with a portion of revenues from the sale of conservation credits.

Manchester Avenue Conservation Bank. This 123-acre bank was established in September 1997 by an agreement among Tech-Bilt Corporation (owner), Center for Natural Lands Management (manager), and the USFWS and CDFG. The bank contains approximately 168 credits – 52 credits for southern maritime chaparral and 116 credits for coastal sage scrub or comparable upland habitats. The Center for Natural Lands Management manages the bank lands, with funds generated by a portion of revenues from the sale of conservation credits. The bank's conservation credits may be used to mitigate impacts to endangered, threatened, or sensitive species and biologically sensitive habitats in western San Diego County, consistent with an approved NCCP, HCP, or subarea plan. Credits may also be used to meet CEQA mitigation requirements.

Whelan Ranch Conservation Bank. This 136-acre bank, owned by the Bank of America and located in north Oceanside, was established in 1997. The operational features of this conservation bank are similar to those of Manchester Avenue Conservation Bank. It has 136 credits that may be used to mitigate impacts to coastal sage scrub and other upland habitats, except that impacts to southern maritime chaparral may not be mitigated at this bank. The Center for Natural Lands Management is responsible for the management of bank lands.

## 4.6 NONFINANCIAL METHODS OF HABITAT ACQUISITION

Privately owned habitat may be acquired for the MHCP 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.

### 4.6.1 Land Exchange

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.

### 4.6.2 Transfer of Development Rights or Credits

A transfer of development rights or credits program involves the transfer of development from a sending site to a receiving site and has been used in California in the Lake Tahoe basin, Santa Monica Mountains, Monterey County, and other areas. Frequently, the challenge in implementing such a program is in locating acceptable receiving sites for added development intensity and in maintaining a market that economically justifies the sale of development rights as an alternative to actual development. A transfer of development rights or credits program can be established by a local jurisdiction, using private lands within the FPAs as sending sites and addressing the development of receiving sites in local land use plans and policies.

### 4.6.3 Private Land Donation

Private owners can donate habitat lands to wildlife agencies, local governments, or qualified nonprofit conservation organizations. Alternative forms of donation include:

- outright gift of fee title;
- 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, while other forms of donation continue specified rights for use of the property by the donor or others and 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. In recent years, several proposals have been made in the California Legislature to provide tax credits for qualified donations of property for conservation purposes.

In July 2000, the Natural Heritage Preservation Tax Credit Act (SB 1647) became law. The new law directs the state Wildlife Conservation Board to implement a program under which property may be contributed to the state or local governments, or non-profit organizations designated by a local government, in order to provide for the protection of wildlife habitats, open space, or agricultural lands. Specified criteria must be met for program eligibility. 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.

### 4.6.4 Additional Methods

Participating jurisdictions, other agencies, and nonprofit organizations could undertake programs to encourage charitable donations for conservation purposes. 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.

# 5.0 POLICIES AND IMPLEMENTATION STRUCTURE

This section describes the implementation policies and structure of the MHCP, which require coordinated actions among the local jurisdictions, the wildlife agencies, and the private sector. Generally, local jurisdictions will implement the MHCP through their normal land use planning and approval process and through management of contributed local public lands, as specified in city subarea plans. Specific implementation measures contained in city subarea plans and implementing agreements may vary somewhat from the subregional guidelines described here, so long as they meet all legal requirements described in this section, as well as all applicable MHCP biological goals and standards.

## 5.1 FEDERAL AND STATE REQUIREMENTS AND LEGAL AUTHORITY

The MHCP subregional plan addresses requirements for obtaining take authorizations under two California and federal environmental laws. As such this plan along with the subarea plans is an HCP pursuant to Section 10(a)(1)(B) of the ESA of 1973, as amended (16 U.S. C. 1531 et seq.), and an NCCP subregional plan pursuant to the California NCCP Act of 1991.

### 5.1.1 Federal Requirements and Legal Authority

The USFWS has the legal authority to enter into subarea plan implementing agreements based on this subregional plan pursuant to the ESA, the Fish and Wildlife Coordination Act (16 U.S.C. Sections 661-666c), and the Fish and Wildlife Act of 1956 (16 U.S.C. Sections 742(f) et seq.). Section 10(a)(1)(B) of the ESA, 16 U.S.C. Section 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, and that in doing so the USFWS would provide 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 USFWS routinely approves HCPs that address both listed and unlisted species.

The Secretary of the Interior's August 11, 1994, "Habitat Conservation Plan Assurances Policy" sets forth how 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 that 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).

### 5.1.2 California Requirements and Legal Authority

California law (Section 2800 et seq. of the California Fish and Game Code) establishes the NCCP program "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 state NCCP Act, the MHCP has been recognized as an Ongoing Multi-Species Plan, pursuant to a March 1993 agreement signed by local agencies and the wildlife agencies, which acknowledges that the program may differ in detail but is consistent with the process described in the non-regulatory NCCP Process Guidelines. The NCCP Act calls for the preparation of subregional and subarea plans that address habitat conservation and management on an ecosystem basis rather than one species or habitat at a time.

The CDFG and California Resources Agency prepared "Southern California Coastal Sage Scrub NCCP Process Guidelines" (November 1993). Based on the definition established by the guidelines, and the precedent established through acceptance of subregional plans prepared by local general purpose agencies, the MHCP meets the requirements as a subregional NCCP.

The California Coastal Act was enacted in 1976 and established policies that guide development in the coastal zone. Portions of Carlsbad, Encinitas, Solana Beach, and Oceanside lie within the Coastal Zone. The coastal policies require provision of public access and protection of marine and land resources (particularly wetlands, rare and endangered habitat areas, environmentally sensitive areas, tide pools, and stream channels). Coastal policies also are designed to maintain productive agriculture, direct new housing and other development to urbanized areas with adequate service, protect scenic beauty of the coastal landscape, and locate needed coastal energy and industrial facilities. Although the MHCP 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. Each coastal city will review their adopted Local Coastal Plan (LCP) and make any necessary revisions to that LCP for consistency with their subarea plan.

### 5.1.3 Compliance with Mandatory Requirements

This document, together with its constituent subarea plans and associated NEPA/CEQA document, is intended to meet the mandatory requirements of an HCP as listed below. These same requirements also apply for a state authorization for take of state-listed species:

| Requirement | Where Addressed |
|---|---|
| 1. Impacts likely to result from the proposed taking of one or more listed wildlife species | NEPA/CEQA document |
| 2. Measures the applicant will undertake to monitor, minimize, and mitigate such impacts | Volumes I through III of MHCP plan; subarea plans |
| 3. Funding that will be made available to undertake such measures | Section 7 of MHCP plan; subarea plans |
| 4. Procedures to deal with changed and unforeseen circumstances | Subarea plan implementing agreements |
| 5. Alternative actions the applicant considered that would not result in take, and the reasons why such alternatives are not being used | NEPA/CEQA document |
| 6. Additional measures the USFWS may require as necessary or appropriate for purposes of the plan | Subarea plan implementing agreements |

This plan was also prepared in full compliance with all applicable standards and guidelines of the NCCP Act, including the NCCP Process Guidelines (November 1993) for the southern California coastal sage scrub NCCP region, and with the federal 5-point policy.

## 5.2 PLAN IMPLEMENTATION POLICIES AND ASSURANCES

The MHCP relies on cooperation between local, state, and federal governments for successful implementation. This section documents policies and assurances between these parties that are essential to this cooperative process. The MHCP will be implemented through application of local land use authority, including endangered species permitting as authorized by state and federal agencies upon approval of subarea plans.

### 5.2.1 Cooperative Implementation Structure

The following assurances regarding the structure and process for implementing the MHCP have been implicit throughout development of this plan and will continue guiding implementation of the plan:

Local Implementation. Local jurisdictions may implement the MHCP directly through locally prepared and adopted subarea plans. These plans will be the subject of individual implementing agreements between each city, the CDFG, and the USFWS.

No New Institutional Structures. The MHCP will not create a new regional regulatory structure or authority for its implementation.

Phased Local Implementation. Revisions to land use plans, regulations, and ordinances to implement and fund the MHCP and subarea plans can be phased, provided that adequate regulations, ordinances, and land use plans are used in the interim to achieve the goals of the MHCP. Grubbing, clearing, and grading ordinances or similar regulations will be used to ensure that habitat is not destroyed prior to local approval of habitat loss. No development moratorium is required during subarea planning and implementation.

Sequential Adoption. Local jurisdictions may prepare subarea plans and execute implementing agreements on separate schedules. Subarea plans are, however, interdependent, because they must form a collective conservation strategy when combined in a subregional plan. For example, the coverage of some species in an individual jurisdiction may depend on conservation actions in another.

### 5.2.2 Take Authorizations for Covered Species

The wildlife agencies will issue long-term (50-year) take authorizations for covered species to cities that implement legally adequate subarea plans pursuant to the MHCP. These authorizations are permits to take listed threatened or endangered species or their habitats, so long as those resources are found to be adequately conserved by the MHCP and subarea plan. Species that are not listed as threatened or endangered at the time the subarea plan implementing agreement is signed, but that are listed in the future, will be amended to the take authorization agreement at the time of listing, as described in Section 5.4. All species, both listed and unlisted, that are considered to be adequately conserved by the combination of actions contained in the MHCP and the subarea plans are called "covered species."

Jurisdictions receiving federal and state take authorizations for covered species receive certain assurances from the wildlife agencies through the implementing agreements described in Section

5.2.3. Among other benefits, completion and approval of a subarea plan eliminates the 5% limit on interim take of coastal sage scrub applied under special rule 4(d) as a part of the NCCP planning agreement.

The benefits of take authorizations held by the cities can be shared with individuals or projects within those cities. Thus, proponents of projects approved by a city, consistent with the provisions of its subarea plan and take authorizations, become "third-party beneficiaries" to those authorizations. Proponents thus receive assurances that their mitigation obligations for covered species will not be altered once development approvals have been granted by the jurisdiction and mitigation has been assured.

### 5.2.3 Implementing Agreements

An implementing agreement is the binding contract signed by a participating local jurisdiction, or other participant, and the wildlife agencies. It identifies responsibilities to implement the subarea plan, binds the parties to their respective obligations, and specifies remedies should any party fail to perform its obligations. The key assurances in the model implementing agreement are summarized here:

Local Land Use. Issuance of take authorizations to participating cities will eliminate most wildlife agency involvement in project-specific review and approval. Cities holding take authorizations thus maintain their local land use planning and approval authority, including the ability to allow take of state and federally listed, covered species. Impacts to wetlands are expected to continue to be regulated through the Clean Water Act, Fish and Game Code Section 1600 et seq., and local regulations.

New Development. Those undertaking land development will be allowed to take covered species incidental to project construction, operation, and maintenance based on the take authorizations, which are extended to the project through the local project permitting process.

Improved Regulatory Process. A primary purpose of the MHCP is to simplify the project approval process by eliminating duplicative regulatory and mitigation processes, including project-by-project take authorizations for each listed species. Upon receiving its take authorization, each city will have land use authority over lands supporting habitat and covered species.

Streamlining Environmental Review. Environmental compliance with CEQA and NEPA will be accomplished through joint environmental documentation for the MHCP and all concurrently submitted subarea plans.

Equitable Allocation of Costs. Each take authorization holder will contribute its fair share to the MHCP preserve, as specified in its subarea plan, through development regulations, mitigation requirements, contributions of public land, and participation in an implementation financing program.

Plan Implementation Monitoring. The MHCP plan and subarea plans include criteria for the wildlife agencies to monitor plan implementation and to ensure that habitat conservation proceeds in step with development.

Private Property Rights. The MHCP and subarea plans are designed to respect private property rights. The acquisition of lands to implement the MHCP will be based on purchases from willing sellers at fair market value.

Phased Implementation and Severability. The wildlife agencies have agreed to phased implementation of the MHCP plan and subarea plans. The take authorizations granted by the wildlife agencies also are severable from those granted to other jurisdictions or entities, protecting each take authorization holder from noncompliance by others. However, coverage of some species in some cities is contingent upon implementation of acceptable subarea plans by other cities (see Figure 3-2).

Critical Habitat. If in the future Critical Habitat is designated for a federally listed, covered species, no additional land, mitigation, restrictions, or compensation will be required of the local jurisdiction, so long as the subarea plan is being implemented in compliance with the take authorization conditions for that species.

Future Listings of Non-covered Species. If a species not on the covered species list is subsequently proposed for listing under the ESA or CESA, the wildlife agencies will identify the conservation measures, if any, that are necessary to adequately protect the species, and will determine whether such conservation measures are beyond those prescribed by the MHCP and subarea plans. If MHCP subarea plans already contain sufficient conservation measures for the species, that species shall be amended to the city's take authorization.

Contributions to Species Recovery. The MHCP and component subarea plans may contribute specifically to the recovery of species proposed for coverage. This is due in part to systematic conservation of key biological areas, cores, and linkages, and to the proactive habitat management actions described in this plan. A description of how MHCP Subarea Plans may contribute to the recovery of each covered species is contained in MHCP Volume II, Section 4.

### 5.2.4 Changed and Unforeseen Circumstances

The "No Surprises" Rule (50 CFR, Part 17, 1998) generally provides that as long as an HCP is being properly implemented, the federal government will not require additional land or money from the permittee. The Final Rule added a description of *Changed and Unforeseen Circumstances*, which defines potential future responsibilities based on whether future impacts to covered species could be reasonably foreseen.

*Changed Circumstances* are those events that may affect a species covered by a subarea plan that can reasonably be anticipated by the city and the wildlife agencies during planning, including reasonably foreseeable flood, fire, or other events. Such occurrences are anticipated by subarea plans and are mitigated for via the ongoing monitoring and adaptive management program. If additional conservation and mitigation measures are deemed necessary to respond to changes in circumstances that are described in the subarea plan, the city will be expected to implement the measures specified in the subarea plan, but only those measures and no other.

*Unforeseen Circumstances* are events affecting a species or geographic area covered by the subarea plan that could not reasonably have been anticipated by the city or the wildlife agencies during planning, and that result in a substantial and adverse change in the status of a species covered by the subarea plan. Unforeseen circumstances include future unanticipated conditions, which are either not defined as changed circumstances, or which exceed the definitions developed for changed circumstances particularly in terms of severity or extent, for example, in the case of flood or fire affecting the preserve system. The wildlife agencies bear the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available and considering certain specific factors. The wildlife agencies will not require the commitment of additional land or financial compensation, or additional restrictions on the use of land, water, or other natural resources, even upon a finding of unforeseen circumstances, unless the city consents. Upon a finding of unforeseen circumstances, the wildlife agencies are limited to modifications within conserved habitat areas or reprioritization of conservation actions in the

subarea plan's conservation program. 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.

Each subarea plan prepared under the MHCP must comprehensively address changed and unforeseen circumstances, including identifying categories of changed circumstances, that are included in the subarea plan, and clear definitions of conditions or events that qualify as changed circumstances. All other conditions or events not defined as changed circumstances are by definition unforeseen.

*Categories and Definitions of Changed Circumstances*. The city and wildlife agencies may jointly determine which categories of changed circumstance should apply to an individual subarea plan. It is anticipated that these categories may vary from city to city based on resources protected by the subarea plan, and the size and composition of the preserve area. In determining categories of changed circumstances the city and wildlife agencies should use the list provided in this section, and determine if any additional category should be evaluated for inclusion based on a special circumstance in an individual city.

In defining a changed circumstance, the city must determine what level of impact within a changed circumstance category is a normal occurrence and what level, intensity, or extent is unforeseen. Where possible, subarea plans should also describe locations where some of these events would likely occur. For example, a changed circumstance flood event could be defined for a particular river valley as a flood "greater than a 50-year event up to and including a 100-year event as defined by Federal Emergency Management Agency (FEMA)." Occurrences "between" these definitions will be identified as changed circumstances and are the responsibility of the city to address through evaluation, monitoring, and potentially adaptive management actions.

It may be necessary for the city to undertake a risk analysis to define a changed circumstance based on the historic extent of past events. This is a particular possibility in defining changed circumstances like fire or flood. It may also prove valuable to analyze preventative measures that have already been undertaken or that would occur as a part of subarea plan implementation, which could limit the severity of future events. In considering appropriate categories of changed circumstances the city and wildlife agencies should evaluate:

- wildfires that impact the preserve system;
- flood events;
- climatic drought;

- increase of invasive species; and
- future listing of a non-covered species.

*Defining Planned Responses in the Event of Changed Circumstances.* The subarea plan must clearly define how the city will respond to changed circumstances should they occur. Responses to changed circumstances will have been identified in the required city preserve management, monitoring, and maintenance plan, and relying on that plan, or an adaptation of its recommendations, will describe the primary response to a changed circumstance. Normally, the annual budget established by a city for preserve monitoring and management will be adequate to provide appropriate responses to changed circumstances. In defining planned responses, the subarea plan should address:

- notification of parties in the event of a changed circumstance;
- an appropriate monitoring program to determine severity of impacts;
- adaptive management actions that could be taken if determined necessary;
- special budgetary requirements or sources;
- joint measures that could be taken by a city and the wildlife agencies to address a changed circumstance; and
- administrative and permit review actions a city could take to reduce impacts of a changed circumstance event.

## 5.3 SUBAREA PLANS

This section describes the requirements of a subarea plan and the process for plan approval and implementation. Subarea plans for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, and San Marcos are submitted for approval concurrent with the MHCP. Vista is expected to submit a subarea plan at a later date. Solana Beach does not expect to require take authorizations and is therefore not expecting to submit a plan.

### 5.3.1 Subarea Plan Approval Process

Issuance of take authorizations is based on successful completion of the MHCP plan, city-prepared subarea plans, implementing agreements, and environmental documentation. Local jurisdictions may submit subarea plans with the MHCP or prepare and submit them in advance of the MHCP, so long as the plans are coordinated and contain complementary conservation and implementation strategies. Subarea plans may also be prepared after submission of the MHCP if they comply with all relevant elements of the MHCP, but they do not benefit from inclusion in the MHCP environmental document.

The MHCP includes a joint EIS/EIR prepared in accordance with CEQA and NEPA. The draft EIS/EIR is available for public review concurrent with the Public Review Draft MHCP plan. Subarea plans submitted with the MHCP document are included in the EIS/EIR, but subarea plans prepared and submitted independent of the MHCP must be accompanied by their own environmental compliance documents.

Table 5-1 describes steps for subarea plan approval and implementation.

## Table 5-1

## APPROVAL AND IMPLEMENTATION PROCESS FOR SUBAREA PLANS

**For participants preparing a subarea plan and opting to participate prior to release of the Draft Joint EIS/EIR:**

Step

1. The draft subarea plan is submitted for inclusion in the MHCP plan and Draft Joint EIS/EIR.
2. An individual implementing agreement is prepared in consultation with the wildlife agencies, including language pertaining to the subarea plan and substantially conforming to the Model Implementing Agreement included in the MHCP. Tentative approval of the draft implementing agreement is obtained from the wildlife agencies.[1]
3. The MHCP plan and Draft Joint EIS/EIR analyzing all submitted subarea plans and covering the entire MHCP study area are completed. SANDAG is the lead agency for the EIR. The USFWS is the lead agency for the EIS. Other participating local jurisdictions, upon their declaration, are responsible agencies for the EIR. SANDAG and the wildlife agencies will circulate the Draft Joint EIS/EIR for a 90-day public review period. For the USFWS, circulation involves announcing its availability and dates of the comment period in the Federal Register and document distribution. After the wildlife agencies and participants respond to comments, the Final Joint EIS/EIR is published for subsequent decision making.
4. The subarea plan and implementing agreement are authorized to be submitted to the wildlife agencies, and the Final EIR is certified by the lead agency. A Notice of Determination is filed.
5. The final subarea plan and implementing agreement are forwarded with a federal permit application and covered species list to the USFWS and CDFG.
6. The USFWS publishes the Notice of Availability of the Record of Decision for the Final EIS and the permit applications in the Federal Register and announces a 30-day review period.
7. After close of the 30-day review period, presuming no legal or technical issues, the USFWS signs the Record of Decision and the respective implementing agreements and issues a Section 10(a)(1)(B) incidental take permit. Concurrently, the CDFG signs the implementing agreement, issues California State Fish and Game Code Section 2835 management authorizations, and files a Notice of Determination.
8. Participants with take authorizations implement the MHCP plan, subarea plans, and implementing agreements incrementally through:
    - incorporation into local general plans and, if necessary, zoning ordinances;
    - interim protection of habitats, if required;
    - local project review and approval process;
    - management of local portion of preserve system and provision of acreage information for preserve development accounting process; and
    - participation in design, formation, and implementation of local habitat acquisition funding program.
9. Wildlife agencies and take authorization holders cooperatively monitor subarea plan implementation through an annual coordination meeting, annual preserve development accounting process, and biological monitoring reports.

**Table 5-1 (Continued)**

**APPROVAL AND IMPLEMENTATION PROCESS FOR SUBAREA PLANS**

| | |
|---|---|
| **For participants preparing a subarea plan and opting to participate <u>following</u> release of the Final EIS/EIR, follow the steps on previous page, except as noted below:** | |
| **At Step 3.** | The USFWS will require the preparation and submittal of an environmental assessment (EA) to address impacts of the proposed subarea plan. The EA will tier off the certified Joint EIS/EIR for the MHCP plan. Subsequent subarea plans could require separate federal environmental documentation if impacts are significant and substantially different from the MHCP Joint EIS/EIR analysis. |
| **At Step 4.** | If a finding is not or cannot be made that the environmental impacts of the subarea plan are consistent with those identified in the certified EIR, an Initial Study leading to a Negative Declaration, Mitigated Negative Declaration, or Supplemental EIR will be required. Any required subsequent environmental analysis may use the certified EIR for information and data. |
| **At Step 6.** | The USFWS will publish a Notice of Availability for a 30-day review of the EA and permit application in the Federal Register. |

[1] Jurisdictions may forward a federal permit application, implementing agreement, and subarea plan to the USFWS and CDFG for publication in the Federal Register with the Draft Joint EIS/EIR, or wait until after the Final EIS/EIR is certified. In either case, the availability of the permit application and associated documents and dates of the comment period must be announced in the Federal Register.

### 5.3.2 Subarea Plan Contents

Subarea plans specify how the take authorization holder will conserve habitat and build the MHCP preserve using, in part, its local land use approval authority. Subarea plans must contain criteria, such as conservation targets, mitigation standards, and encroachment limits, to ensure that habitat preservation proceeds in step with development. The following elements are necessary for a subarea plan to obtain take authorizations from the wildlife agencies:

- description of how the proposed preserve design is consistent with the MHCP plan;
- description and mapping of the subarea and subarea plan's preserve, and demonstration of how the subarea plan's preserve achieves the biological conservation goals of the MHCP;
- proposed covered species list;
- description of how local regulations will implement the MHCP, including an interim and permanent protection strategy and a project mitigation strategy;
- preserve management plan or a schedule for its preparation; and
- commitment to participate in developing a local funding source for MHCP implementation.

Each subarea plan establishes conservation requirements for covered habitat types and species. A fundamental policy intention of the subarea plan is to allow take of small or isolated habitat areas that do not contribute to the subregional conservation strategy, in exchange for mitigation and conservation in areas that do contribute. Implementation of the subarea plan must ultimately result in conservation and management of a minimum, threshold acreage of natural habitat lands. This overall acreage requirement includes an additional requirement for conservation of a minimum number of acres by specific habitat types. This habitat-specific requirement is necessary to ensure meeting coverage conditions for species associated with those habitats. While these requirements establish minimum acreage thresholds for conserved habitats, they do not place a maximum cap on the future taking of habitat lands in the event that natural succession converts non-habitat to habitat over time.

### 5.3.3 Subarea Plan Implementation Actions

Each city will enter into an implementing agreement with the wildlife agencies following an action by the city council adopting the subarea plan and authorizing the agreement. The duration of the agreement will be 50 years and is renewable if required. The implementing agreement will ensure that the subarea plan will be continuously implemented over the next 50 years, and that state and federal take authorizations will be in effect for the same time period. Key assurances for all parties described in the MHCP will be incorporated into the implementing agreement.

Each city will guarantee implementation of the subarea plan through interim and permanent regulatory measures, including codes, ordinances, and policies contained in the General Plan and other city policy documents. A city will develop and schedule action on a General Plan amendment or new city ordinance that will codify any new or modified city policies required to implement the subarea plan. This action will assure consistent implementation of the subarea plan through city policy, private and public project review and approval, and guidelines for operations and management of public lands. Actions to assure local implementation of the subarea plan may vary from city to city, due to differences in local plans, codes, and ordinances. Each city must satisfactorily assure, however, that required implementation actions will be

comprehensively amended into local land use plans in a way that guarantees implementation of subarea plan policies. The city will also provide interim protection for habitat lands addressed in the take authorizations through the process described below.

Local Regulatory Actions

Upon signing of the subarea plan implementing agreement, a city will implement the plan provisions via the following actions:

1. Concurrent with approving the subarea plan, the city will enact an urgency ordinance as permitted by California Government Code Section 65858, to require interim compliance with the plan while permanent regulatory measures are being drafted and approved.

2. The city will amend appropriate elements of the General Plan (e.g., land use, resource management, recreation, and community facilities elements) to incorporate the subarea plan by reference. Open space and land use maps contained in the elements will be amended to show existing and proposed hardline preserve areas as open space. If applicable, existing goals, objectives, or policies contained in the elements may also be amended for consistency with the subarea plan to clarify and strengthen the city's intents for resource protection under the plan.

3. If a city has an LCP, it will be amended by reference to address conserved habitat lands identified in the subarea plan or during plan implementation, as undevelopable open space lands.

4. The city will amend its municipal code by reference to require lands addressed by the subarea plan to comply with applicable subarea plan conservation standards.

5. The city will adopt or amend as required, zoning ordinances, codes, and guidelines, potentially including creation of overlay zones, to be consistent with the general plan. The city will also review and modify other development regulations, as needed, to ensure that approval of private and public development projects is consistent with the subarea plan.

6. The city will comply with all terms and conditions of the subarea plan implementing agreement.

Assurance of Long-Term Biological Integrity

The long-term biological integrity of lands conserved by the subarea plan will be assured as follows:

1. Lands set aside as mitigation for development, whether onsite or offsite, and lands acquired for the preserve system with public funds, will be protected with biological conservation easements or, at the landowner's option, dedicated in fee to the city or another governmental or nonprofit agency, which will take over management responsibilities and liability. Whichever option is selected, the city will require the project proponent to identify a method to pay for management of the property in perpetuity.

2. Public lands (federal, state, and local) committed to conservation will be protected with open space easements, dedications, zoning, general plan designations or other protective measures to ensure that such lands are managed and preserved consistent with the MHCP and the subarea plan in perpetuity.

3. Both private and public facility development will be regulated as described below. Development will be directed toward the least biologically sensitive portion of the site by local ordinance using the hardlined project plans and other standards and criteria established in the subarea 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 the agreements or permit(s) to ensure protection of the sensitive resources remaining on the premises outside of the development area.

Interim Resource Protection

The goal of interim protection is to prevent habitat areas covered by the take authorizations from being lost to clearing, conversion, or development in the time period between signing of the implementing agreement and a city action to adopt the necessary and appropriate amendments to implement the subarea plan. This applies to lands intended to be conserved by the subarea plan as well as lands outside the FPA. Existing city regulations and ordinances, as well as project-specific plans, will provide both interim and permanent protection. Once an implementing agreement is signed, no project requiring discretionary approval by the city will be approved without a determination of conformance with the subarea plan. No grading will be done within the city without a determination of conformance by the appropriate city agency.

The city will act on the urgency ordinance described above to require review of any clearing, brushing, grubbing, or grading of vacant lands, or conversion of nonagricultural lands to active agriculture. If these lands are not directly addressed by the subarea plan, but contain resources covered by the plan, an appropriate permit and level of mitigation consistent with the plan will be required. If such lands are directly addressed in the subarea plan, the plan's requirements must be met as if the city had fully incorporated the subarea plan into the general plan.

Development Review and Approval Process

The city will implement the subarea plan's land conservation policies through the normal project review and approval process, which applies to all private and public projects where the city has jurisdictional land use authority. The same process applies for both hardlined project areas and softlined project areas that are governed by criteria and standards.

- *Hardlined Project Plans* – Subarea plans may incorporate or reference hardlined project plans on specific properties within their jurisdiction. Such hardlined project plans include a map showing where conservation and development will occur on a project site, along with specific project design guidelines that must be met under plan implementation. The city must assure that all subarea plan requirements have been met before granting approvals for project development. Project design guidelines incorporated into the subarea plan must also be considered when developing final detailed plans for hardlined areas. Taken together, these constitute the "Subarea Plan Compliance" step included in Figure 5-1.

- *Softlined Project Plans* – In areas where it is not possible to prepare project level plans prior to approval of the subarea plan, conservation requirements are described as specific standards and criteria for preserve design and project approval. In these areas, the city will assure that the standards and criteria incorporated into the subarea plan are fully satisfied before any project approvals are issued.

### 5.3.4 Subarea Plan Amendments

Subarea plan amendments are not anticipated on any regular basis. However, certain events may require amending a subarea plan, such as accommodating major changes in conservation levels or preserve design, or in the case of large annexations of land. Consultation with the wildlife agencies is required for a plan amendment, and these agencies must be notified as soon as the local jurisdiction confirms that a plan amendment is warranted.

CEQA and NEPA documentation must be prepared for any project that triggers the amendment process. The document(s) must address project impacts, impacts on subarea plan implementation, and any effects on take authorizations held by the city.

Examples of required amendments to a subarea plan include:

1. Removal of lands from conservation, or reconfiguration of project plans resulting in a decrease in the amount or quality of habitat conserved that could not be addressed by a boundary adjustment (See Section 5.3.6).

2. A large annexation of land that requires take authorizations for development, and that is not covered by an existing NCCP subarea plan; or a major variation in design or implementation from an existing NCCP plan.

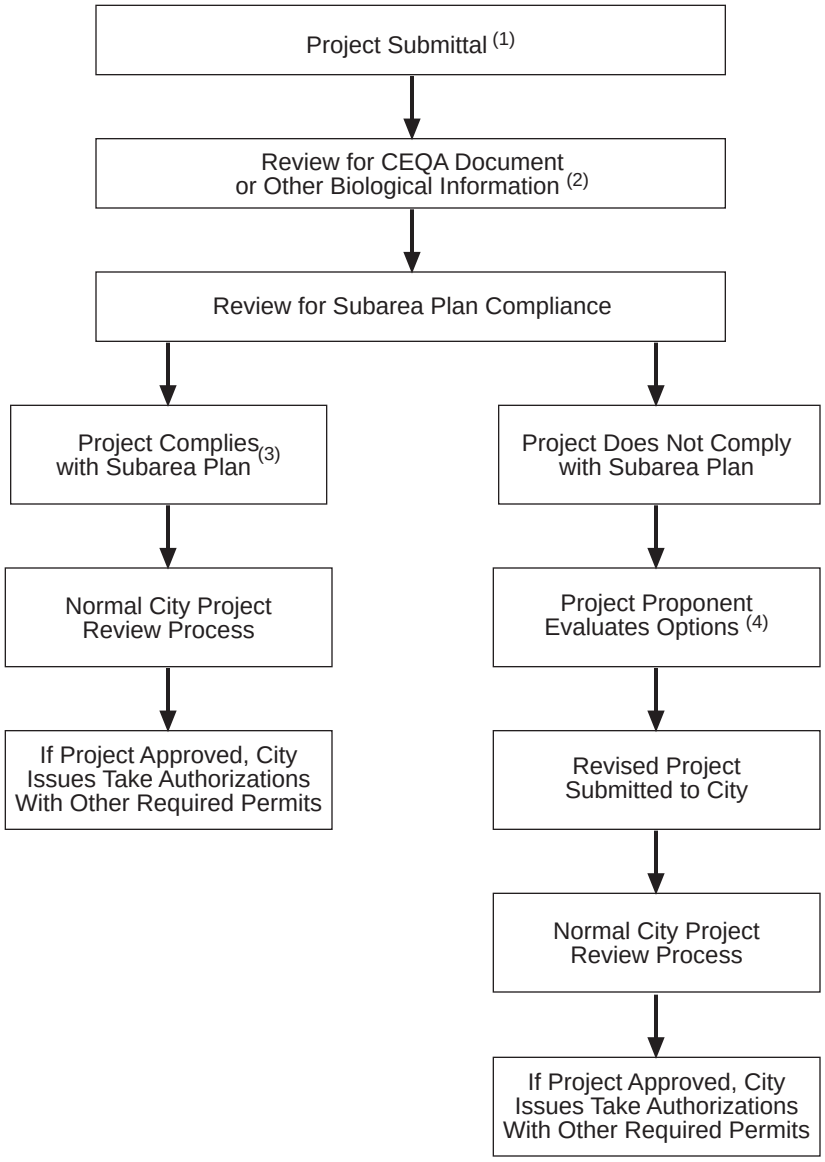
3. Land excluded from a subarea plan at the time of approval, and therefore not covered by take authorizations, that is later planned for development or conservation purposes.

### 5.3.5 Subarea Annexations

Future annexations of land by a city must be consistent with subarea plan requirements, including interim resource protection and conformance with the project review and approval process (see Figure 5-1) if development is proposed in the annexed area. The status of other NCCP plan(s) in areas to be annexed prescribes the city's actions as follows:

1. If no approved county or other subarea plan exists for the area being annexed, the city must assure that any development project design is consistent with the overall conservation directives and preserve design strategy of the subarea plan and the MHCP.

2. If an approved county or other subarea plan exists for the area being annexed, the existing, approved subarea plan applies and may be modified through the boundary




(1) Assumes the project proponent previously attended a "presubmittal" meeting with City staff and is aware of Subarea Plan and other City approval requirements. The City will encourage this action in every case.

(2) CEQA documentation is required for all projects seeking approval through the Subarea Plan. The CEQA document must demonstrate project consistency with Subarea Plan requirements and identify whether a Subarea Plan Amendment or Boundary Adjustment is required. The Wildlife Agencies must be notified of preparation of all CEQA documents for projects that may impact habitats or species addressed by the Subarea Plan.

(3) Project approval may require a Subarea Plan Amendment or Boundary Adjustment.

(4) A project proponent's options can include (1) redesign of the project and/or its mitigation strategy to comply with the Subarea Plan; (2) submission as a Subarea Plan Amendment at the discretion of the City; or (3) application for separate permit(s) directly from the Wildlife Agencies. The City discourages the third option as likely to be inefficient and costly to the project proponent.

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**Project Review and Approval Process**

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adjustment process. This approach also applies to deannexation or reannexation of lands from another incorporated city. The city will also apply the following guidelines to annexations whether or not a county or other subarea plan exists for the area:

- For small annexations of less than 40 acres, or where little habitat is present, the city will require that general subarea conservation and project design guidelines be addressed by any project plan proposed in the annexation area. No consultation with the wildlife agencies is required for this process, and notification will occur through the annual interagency meeting described in Section 5.3.8.

- In the case of annexations of land greater than 40 acres that require take authorizations for development, the wildlife agencies must be consulted. The city and the wildlife agencies will work cooperatively with the county or other entity to assure consistency between the subarea plan, county MSCP, or other applicable conservation standards. If any existing county or other subarea plan will not be modified, or is modified in a way consistent with the boundary adjustment process, the resulting project design will be appended to the subarea plan and no plan amendment is required. If a major variation from a county or other subarea plan is proposed, the subarea plan must be amended following the procedures described in Section 5.3.4, including the CEQA and NEPA requirements.

- The city and county, or other responsible jurisdiction, may agree on which will issue the take authorizations, but the city will be responsible for assuring that any project-level conservation plan is implemented following annexation to the city.

### 5.3.6 Boundary Adjustments and Equivalency

Adjustments to the approved subarea plan preserve boundaries may be desirable under some circumstances that do not require plan amendment. Such adjustments may be necessary, for example, when new biological information is obtained through site-specific studies, when unforeseen design opportunities or constraints are identified during project design, or when a landowner requests that a portion or all of his/her property be included within the preserve boundary.

Such adjustments to preserve boundaries can be made without the need to amend the subarea plan or MHCP if the adjustment will result in the same or higher biological value to the preserve system and the same or greater total conserved acreage of natural habitat. The determination of biological value of the proposed change is made by the local jurisdiction and must have the written concurrence of the wildlife agencies. The comparison of biological value will be based on the following biological factors:

- effects on conserved habitats (i.e., the exchange maintains or improves the amount, configuration, or quality of conserved habitats);

- effects on covered species (i.e., the exchange maintains or increases the conservation of covered species);

- effects on habitat linkages and function of preserve areas (i.e., the exchange results in similar or improved habitat connectivity, wildlife movement corridor function, management efficiency, or protection of biological resources); and

- effects to species of concern not on the covered species list (i.e., the 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 preserve areas. Any agreed upon modification of preserve boundaries should be reported to the entity responsible for regional preserve system accounting, and to adjacent jurisdictions if the modification might affect their portion of the preserve.

In the event that Section 7 or 10(a) consultations are undertaken between a property owner and the USFWS outside the structure of the subarea plan, the result of these consultations should be documented using the same listing and recording process described in Section 5.3.7, but it would not be a cause for amendment.

### 5.3.7 Wildlife Agency Consultation

Once the implementing agreement is signed, the city need not consult with the wildlife agencies during the normal project review and approval process. The wildlife agencies will receive notification of a project through a CEQA Notice of Preparation (or Initial Study in the event of a Negative Declaration), and may request a voluntary consultation within 30 days of their receipt of notice. Likewise, the city is free to request agency involvement in a project where consultation would help address key issues, or might help to streamline the process. These consultation requirements may be varied in individual implementing agreements if mutually agreed to by the city and the wildlife agencies.

The city will maintain a list and map of all take authorizations they grant under the subarea plan. The list and map will be updated at least annually. The list will describe the project, the amount of acres taken or conserved by the project, and the physical location of the tentative map or other record of project approval produced by the city. All project approvals issued over the course of a year must be documented and discussed at the required annual meeting described in Section 5.3.8. The primary exception to this general procedure is if a project requires an amendment to the subarea plan. Otherwise, the city will follow the project review and approval process depicted in Figure 5-1.

### 5.3.8 Annual Implementation Coordination Meetings

An annual meeting will be held between the city and wildlife agencies to review and coordinate subarea plan implementation. It is the city's responsibility to schedule this meeting within 60 days of each anniversary of execution of the implementing agreement. To meet the stipulations of the implementing agreement, the subarea plan must be implemented in a way that issuance of authorizations for taking of species and habitats is roughly proportional with implementation of the conservation strategy in the plan. The annual accounting of habitat acreage within the subarea will include land conserved through land use regulations, acquisitions, and loss of habitat acres. Progress toward achieving conservation requirements will be reviewed, and habitat management issues will be discussed along with a review of project approvals issued by the city over the course of the year. If the wildlife agencies determine that the subarea plan is not being implemented as required, the wildlife agencies and the city will take the actions specified in the subarea 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, so long as they are consistent with the provisions of the implementing agreement.

### 5.3.9 Relationship of Subarea Plan Approval to MHCP Core Conservation

The Biological Analysis (Volume II) concluded that without substantial conservation of at least one core breeding area for California gnatcatchers, the MHCP could not ensure the continued viability of the species in northwestern San Diego County. The wildlife agencies therefore recommend conserving a large, unfragmented core area of coastal sage scrub to meet the MHCP preserve design objectives and to assure species coverage for the MHCP.
Given existing development patterns in the seven cities, there are only two remaining areas where large blocks of high quality coastal sage scrub remain: southeast Carlsbad and southwest San Marcos. The large block of habitat in the city of Carlsbad is already subject to a Section 10a permit resulting from an HCP completed in 1995 (the former Fieldstone HCP). This permit serves to "entitle" the property for endangered species taking purposes. Therefore, this property is not a viable option for the MHCP core area. The large block of habitat located in southwest San Marcos has received entitlements through a development agreement with the city of San Marcos, and thus this property is also not a viable option.

Since there are no other large, contiguous blocks of high quality gnatcatcher breeding habitat in the study area, the seven cities determined that the gnatcatcher core must be secured in the unincorporated area adjacent to the MHCP. The wildlife agencies suggested, and the biological analysis for gnatcatchers confirmed, that the core area be secured generally between southeast Carlsbad and south of San Marcos. The wildlife agencies estimated that approximately 400 to 500 acres of high quality gnatcatcher breeding habitat capable of supporting 16 to 23 pairs of gnatcatchers should be conserved in this target area, in addition to habitat already proposed for conservation in the cities' FPAs. The actual acreage required will be determined by habitat quality, the specific location and configuration of the conserved area, the degree of fragmentation by existing or proposed development within the target area, the number of gnatcatcher territories that could potentially be supported, and other preserve design considerations consistent with the NCCP Conservation Guidelines.

The Cities of Encinitas and San Marcos will include language in their subarea plans that will ensure conservation of lands that are annexed in this area. This conservation level must be consistent with the MHCP mitigation ratio of 2:1 for coastal sage scrub, and may be located either onsite or offsite so long as the conserved land contributes to the core area described above. Also, the City of Carlsbad will include language in their subarea plan that will effectuate the conservation and conveyance of 300 acres of land within the MHCP core area to constitute the full participation of the city in any MHCP land acquisition obligation.

Therefore, the MHCP preserve system will be supplemented by approximately 400 to 500 acres of unincorporated land. An accounting of the conservation of core gnatcatcher habitat is provided in Section 4.4.3.

## 5.4 MHCP AMENDMENT AND UPDATE

The MHCP provides guidance for subarea planning and, while not adopted by the cities, is submitted as part of the take authorization approval package. Policy changes in plan implementation are reflected in the subarea plans and not the subregional MHCP. If changes to the covered species list are necessary, the list will be updated annually by the wildlife agencies and presented to the cities at an annual meeting. Plants or animals will be added to the MHCP covered species list based on whether they are adequately conserved in the region by the MHCP and other subregional plans. Additional subarea plans may be prepared, but this action would not require amending the subregional plan.

### 5.4.1 Process for Adding Species to Covered Species List

If a species that is 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 MHCP and constituent subarea plans, are necessary to adequately protect the species. If no such measures are necessary and coverage is requested, the wildlife agencies will process an amendment to the permit subject to both CEQA and NEPA review and the requirements of the ESA.

If the MHCP conservation measures will not adequately protect the species, the wildlife agencies will work with the participants to identify and jointly implement the steps necessary for coverage. These may include the following measures:

- management practices and enhancement opportunities within the preserve system, provided these measures do not adversely affect any covered species; and

- habitat acquisition through the reallocation of federal, state, and regional funds identified for MHCP 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 the additional measures necessary to add the species to the covered species list, with preference given to conservation means that do not require additional mitigation or dedication of land. Although conservation measures necessary to add the species to the covered species list may be identified when or after the species is proposed for listing, the take authorization holders will not be required to approve or implement these conservation measures until such time as the species is listed.

### 5.4.2 Critical Habitat Designation

Some species may have critical habitat designated under the ESA either before or after approval of MHCP subarea plans. Critical habitat identifies areas, both occupied and unoccupied, that are essential to the conservation of a listed species and that may require special management considerations or protections to support species recovery. The criteria used to designate critical habitat are similar to the criteria used to identify preserve lands in the MHCP and subarea plans.

Once critical habitat for covered species is designated, the USFWS must continue to address specific management recommendations through the Section 10 HCP and Section 7 consultation processes. Cities that have already adopted subarea plans and received incidental take permits from the USFWS should not be affected by existing or proposed designations.

Likewise, cities participating in the MHCP that are in the process of preparing and negotiating subarea plans will continue to work closely with the USFWS to ensure that the subarea plan addresses the same issues considered when designating critical habitat. These plans will reflect permanent conservation of key habitat for all covered species and consequently should preclude the need for any additional designation of critical habitat for those species.

## 5.5 IMPLEMENTATION MONITORING

The MHCP must be monitored over time to determine if the implementation measures are achieving the goals and objectives of the plan. Two tracking processes need to be undertaken:

- Habitat and Species Tracking. GIS accounting of the acreage, type, and location of habitat (vegetation communities) and covered species conserved and destroyed by permitted land uses and other activities, tabulated annually for each subarea and every 3 years for the MHCP as a whole.

- Biological Monitoring. Collection of field data to assess whether permit conditions are being met for number of populations, distribution, and condition. See Section 6.4 for a description of the biological monitoring program, which is more fully described in the MHCP Monitoring and Management Plan.

### 5.5.1 Habitat and Species Tracking

Each city will be responsible for the annual accounting of the acreage, type, and location of vegetation communities and selected covered species conserved and destroyed by permitted land uses and other activities within its subarea. Habitat accounting will also be used to track conservation of vernal pools. Records will be maintained in ledger and digital map (GIS) format. A committee of City of San Diego, County of San Diego, SANDAG, and wildlife agency staff has developed a GIS-based tool for this purpose (HabiTrak) that will be used for habitat accounting by the MHCP cities. Each subarea plan will describe the accounting process to be used to ensure that habitat conservation proceeds in rough proportion with habitat losses to development. This information will be submitted to the wildlife agencies as part of an annual public report to demonstrate compliance with the terms and conditions of the subarea plan, implementing agreement, and take authorization. Annual public workshops will also be held by each city to brief interested citizens on the progress of preserve assembly.

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 (e.g., date of recordation of title transfer, recordation of a conservation easement, or execution/ recordation of any other instrument that confers third-party beneficiary status to the project or property). The accounting information for conserved acres will also identify the protection mechanism, owner, and agency or person responsible for conservation and management, and other related information.

In addition to the annual accounting for each subarea, a consolidated MHCP status report will be prepared annually by the wildlife agencies, with input from the cities. The report will describe the amount of land currently within the preserve, the amount of land added to the preserve in the previous year, and the total expenditures to date.

Additionally, a biological monitoring report will also be prepared every 3 years by the wildlife agencies to present data on the habitats and species monitored (see Section 6.4.1). Also, every 3 years the managers of each preserve area will submit a report to the wildlife agencies that

summarizes management activities, describes management priorities for the next 3-year period, reports on restoration activities, and evaluates funding and the ability to meet resource management goals.

### 5.5.2 Biological Monitoring

Whereas habitat and species tracking is a relatively simple accounting of acres and population locations 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 monitoring will assess the status of compliance with conditions for coverage that will be identified in each individual City's take authorizations. The efficacy of the conditions for coverage will also be determined. Biological monitoring allows preserve managers to assess, for example, trends in species population sizes and distributions, invasions by exotic species, or use of wildlife corridors. As such, biological monitoring is an essential component of the adaptive management program to ensure continued viability of MHCP covered species and habitats. It requires coordinated collection of field data at multiple locations and scales, and assimilation of those data to be useful to preserve managers and others. Section 6.4 of this document outlines primary goals for biological monitoring at multiple scales by the NCCP and MHCP. See also the MHCP Volume III.

## 5.6 FEDERAL AND STATE PARTICIPATION IN MHCP IMPLEMENTATION

The benefits of species protection and habitat conservation under the MHCP accrue to the United States and the State of California generally, as well as to the San Diego region. Consequently, the federal and state governments should participate in the implementation of this program by managing federal and state lands to conserve flora and fauna as part of federal and state agency land stewardship responsibilities and should acquire and maintain privately owned habitat lands for integration into the preserve system.

The wildlife agencies, as partners in implementing the MHCP plan and subarea plans, will therefore undertake the following actions:

- assist local jurisdictions in preparing subarea plans and implementing agreements, 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 4.2;
- assume primary responsibility for evaluating regional and subregional biological monitoring programs, maintain the regional and subregional biological database, and monitor biological resources on federal and state lands in the preserve;
- monitor implementation of subarea plans;
- meet annually with take authorization holders to discuss their progress in implementing their subarea plans;
- 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 California Fish and Game Code Sections 2081, 2090, and 2835, are coordinated and consistent with the MHCP plan and subarea plans;

- work with the committee structure described in Section 5.7 to furnish information and advice on habitat management and biological monitoring;
- provide technical assistance on subarea plan implementation issues;
- review proposed subarea plan amendments or preserve boundary adjustments (Section 5.3.4 and Section 5.3.6);
- determine conservation measures needed and conservation responsibilities for both 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 MHCP implementation;
- assist local jurisdictions, agencies, and other organizations in developing a regional funding source; and
- assist local jurisdictions, agencies, and other organizations in developing and implementing MHCP focused public education and outreach programs.

## 5.7 COOPERATIVE MHCP IMPLEMENTATION STRUCTURE

State and federal approval of the MHCP requires a local structure to assure successful implementation. Implementation is defined as executing coordinated subarea plan policies, managing and monitoring preserve lands consistently across political boundaries, and raising and distributing necessary funds. Responsibility for most MHCP implementation falls to the cities that enter into implementing agreements with the wildlife agencies. The structure described in this section is illustrated in Figure 5-2.

The implementation structure for the MHCP has several goals:

- coordinate implementation of preserve assembly, management, and monitoring among the cities;
- meet the requirements of the ESA, CESA, and the NCCP Act;
- coordinate regional planning and infrastructure development among the MHCP cities;
- coordinate local land use and conservation activities on shared municipal boundaries;
- guarantee local flexibility in MHCP implementation; and
- raise and manage the local funds required for MHCP implementation.

The proposed structure facilitates cooperation among the cities, development of fiscal support for plan implementation, and assures consistent preserve management across jurisdictional boundaries. The structure creates roles and responsibilities for elected officials, staff, and stakeholders, and includes the option of forming a local nonprofit land conservancy to facilitate preserve assembly, monitoring, and management.

### 5.7.1 MHCP Elected Officials Committee

The Elected Officials Committee will be composed of a city council member from each of the participating cities (i.e., Permitees). The Committee must be formed once two or more cities have entered into implementing agreements with the wildlife agencies. During any interim period, when only one MHCP city has completed an implementing agreement, coordination of MHCP implementation will be directly between that city and the wildlife agencies according to the terms of that city's subarea plan and implementing agreement. The Elected Officials Committee can be organized as a subcommittee of the SANDAG Board with individual members selected by each participating city, or the committee can be independent of the SANDAG structure. In any event, the Elected Officials Committee must provide the primary policy direction for the MHCP, ensure that all MHCP preserve management and monitoring responsibilities are fulfilled, and provide opportunities for public access to the decision-making process. The Committee will also serve as the board of directors of an MHCP land conservancy if such an entity is formed.

The MHCP Elected Officials Committee will have, at a minimum, the following responsibilities:

- Develop the financial support required by the cities for subarea plan implementation. This is the single most important responsibility of the Committee and should be the primary focus of its activities. A guaranteed source of funds is required for the major aspects of subarea plan implementation, including land acquisition, habitat monitoring and management, and preserve system maintenance and operation.

- Guarantee the financing and implementation coordination legally necessary to obtain and hold federal and state take authorizations.

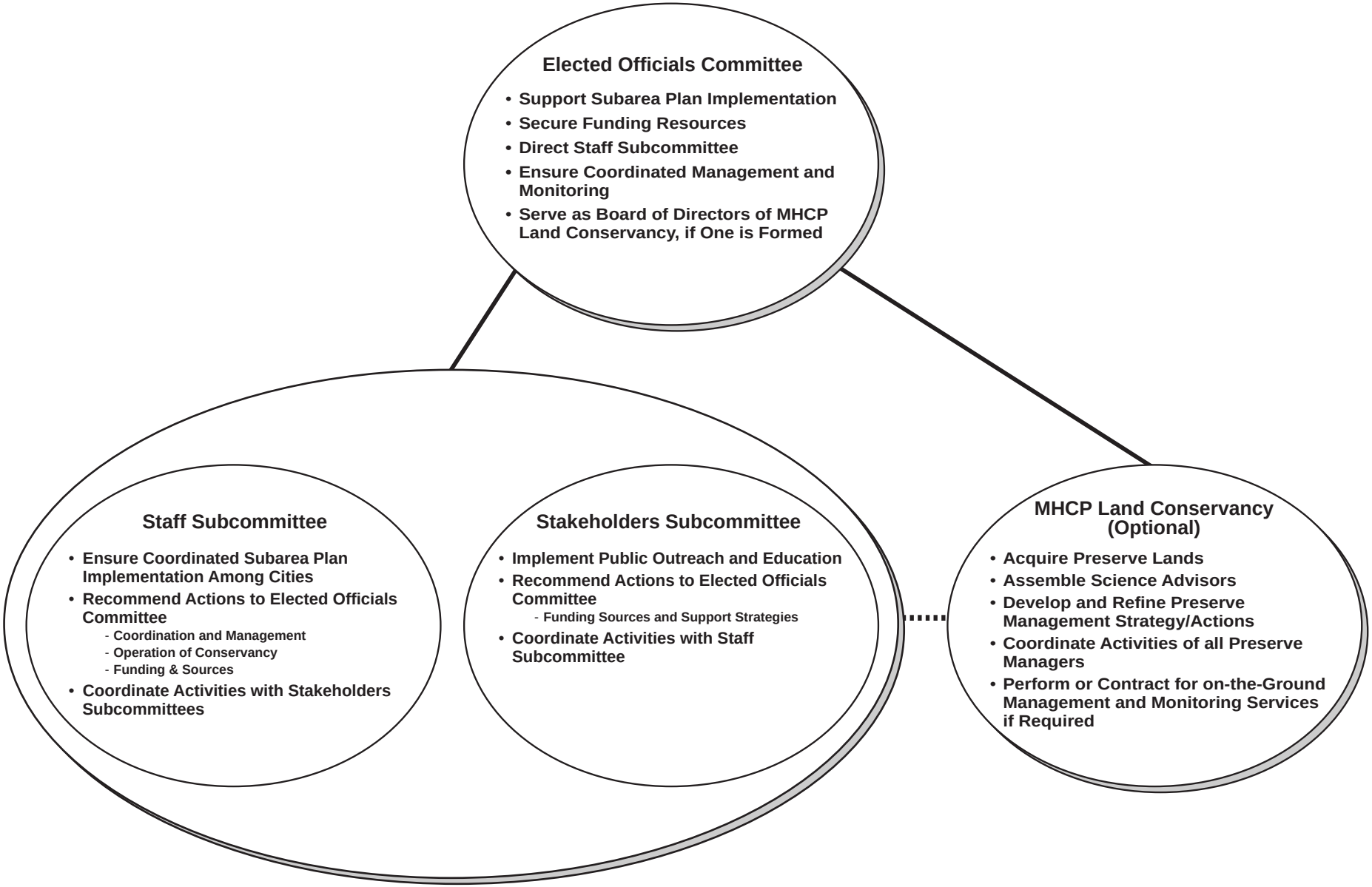
- Sponsor subregional funding efforts required to implement the MHCP and cooperate in development of any proposed regional funding effort.

- Assure the autonomy of participating cities.

- Appoint any required science advisors.

- Serve as the Board of Directors of an MHCP land conservancy if one is formed.

- Assure that participating cities with implementing agreements are fully coordinating their management, monitoring, and maintenance plans through the activities of the MHCP Staff Subcommittee. The Elected Officials

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**MHCP Implementation Structure Primary Responsibilities**

FIGURE 5-2

Graphics/Biology/MHCP/Figure 6-2.FH8

Committee shall develop and sponsor a memorandum of agreement (MOA) or other similar and equally effective process among the cities to assure coordination of MHCP implementation actions.

The MOA is not required before take authorizations are issued. Once two or more cities are holding take authorizations and the Elected Officials Committee has been formed, an MOA describing the cities responsibilities and a process to coordinate implementation including preserve monitoring and management must be developed and signed. The Elected Officials acting through the MOA must ensure that all implementation actions described in Section 5.7.2 occur through the activities of the Staff Subcommittee and/or a land conservancy if one is formed.

### 5.7.2 MHCP Advisory Committee

The MHCP Advisory Committee will be appointed by the Elected Officials Committee with the overall responsibility of providing a forum for coordinating MHCP implementation. The Advisory Committee must undertake implementation actions described in this section and work at the direction of the Elected Officials Committee.

These include developing funding opportunities and providing opportunities for community outreach and involvement. As with the Elected Officials Committee, the MHCP Advisory Committee structure described below must be initiated once two or more cities have entered into implementing agreements with the wildlife agencies.

Membership of the MHCP Advisory Committee will be divided into two subcommittees: the MHCP Staff Subcommittee and the MHCP Stakeholders Subcommittee. The subcommittees have no discretionary powers and are advisory to the MHCP Elected Officials Committee. Each subcommittee will select a chairperson and vice-chairperson from among its membership. They are responsible for scheduling public noticed meetings, developing agendas, and coordinating quarterly meetings where the two subcommittees meet together as a committee of the whole. At these quarterly meetings, the chairpersons (or vice-chairpersons) from the subcommittees serve as co-chairs. These quarterly meetings must also be noticed and open to the public, and, at a minimum, include on the agenda status reports from the Elected Officials Committee and from a land conservancy if one is formed. Each subcommittee may meet separately as required to address MHCP implementation and coordination responsibilities and other issues as they arise.

*MHCP Staff Subcommittee*—The Staff Subcommittee must address land use and public facility planning, local implementation, acquisition and management funding, preserve monitoring, and similar issues that will require coordination of public policies and actions among the cities. Their role is to directly coordinate city implementation actions and issues, and to recommend policy actions to the Elected Officials Committee. Membership of the Staff Subcommittee is limited to the cities that either have entered into, or anticipate entering into implementing agreements. One member of the Staff Subcommittee must serve as a liaison to the MHCP Stakeholders Subcommittee and also serve as a member of that group. The Staff Subcommittee will also have specific responsibilities that could appropriately be transferred to a land conservancy if such an entity is formed to aid MHCP implementation (see Section 5.7.3).

The MHCP Staff Subcommittee will have, at a minimum, the following primary responsibilities:

- coordinate implementation of subarea plans where jurisdictions have common boundaries or issues;

- provide a regularly scheduled opportunity to discuss implementation requirements and needs;
- coordinate cities' actions on preserve management and on maintenance issues;
- assure that required preserve system monitoring, reporting, and management is coordinated among the cities, and that these activities employ the directives and guidelines of the MHCP Biological Monitoring and Management Plan (see Section 5.5);
- develop recommendations on MHCP implementation and coordination for consideration by the Elected Officials Committee;
- coordinate closely with the CDFG and USFWS on MHCP implementation issues;
- coordinate the annual accounting process to determine land conserved and permits issued, and assist in database maintenance;
- cooperate with the Stakeholders Subcommittee to identify MHCP implementation funding opportunities and develop joint recommendations on funding programs and legislation;
- cooperate with the Stakeholders Subcommittee to develop public outreach efforts;
- work closely with the MSCP Implementation Coordinating Committee; and
- coordinate with the County of San Diego on both development and implementation of the North County MSCP Subarea Plan.

The Staff Subcommittee must undertake additional responsibilities at the direction of the Elected Officials Committee if an MHCP land conservancy is not formed. These responsibilities include:

- provide or contract for on-the-ground management activities for portions of the preserve system with one or more managers, if required;
- coordinate the ongoing activities of all preserve managers;
- coordinate implementation of the Biological Management and Monitoring Plan and area-specific directives of the MHCP and subarea plans;
- address the full range of preserve monitoring and management actions required to benefit species and habitats so that permit requirements are met, including, for example, removal of nonnative vegetation, habitat restoration and enhancement, noxious species control, erosion management, fencing, interpretative facilities, and security;
- coordinate closely with the CDFG and USFWS on preserve management and monitoring issues;
- make recommendations for adaptive management practices in response to biological monitoring results;

- provide information on new management techniques that should be incorporated into adaptive management programs, and identify future research needs as they relate to management issues;
- coordinate distribution of preserve management and monitoring reports;
- coordinate with the MSCP Habitat Management Technical Committee; and
- recommend to the Elected Officials Committee, as necessary, the appointment of science advisors.

As a collection of cities, there are potential functions and responsibilities that the Staff Subcommittee could not perform because of limits placed on the actions of public general purpose agencies. These include some responsibilities listed in Section 5.7.3, such as negotiating land acquisitions through such innovative means as packaging of financial resources, installment purchases, land swaps, and non-cash transactions.

If opportunities for preserve land acquisition or other conservation opportunities present themselves in the absence of an MHCP land conservancy, the Staff Subcommittee will contact existing qualified land conservancies to determine if one or more of these can satisfactorily conclude the desired transactions. If a qualified entity exists Staff Subcommittee representatives will make a good faith effort to put the parties together and encourage conclusion of a successful transaction through means available to the city or cities involved.

*MHCP Stakeholders Subcommittee*—The Stakeholders Subcommittee will provide a forum for early and continuous involvement with issues of MHCP implementation, funding, and public outreach. Members of the Stakeholders Subcommittee will be determined through appointment by the Elected Officials Committee. The Elected Officials Committee will develop membership selection criteria that will provide a balance of skills, experience, abilities, geographic representation, and other special interests. Membership will be limited to 20 people.

Initially, the MHCP Staff Subcommittee will be responsible for contacting qualified local groups to determine if they have an interest in serving on the Stakeholders Subcommittee. These contacts will include groups that have been members of the MHCP Advisory Committee (see Attachment A) that are still active. Based on the membership selection criteria established by the Elected Officials Committee, the Staff Subcommittee will present a list of candidate members for the Stakeholders Subcommittee to the Elected Officials Committee at their second scheduled meeting. One member of the Staff Subcommittee must serve as a liaison to the Stakeholders Subcommittee as well as a member of that group. The Elected Officials Committee will review the Stakeholders Subcommittee membership annually and make adjustments to that membership accordingly. The Stakeholders Subcommittee may make recommendations to the Elected Officials Committee to request changes in Subcommittee membership.

The MHCP Stakeholders will have, at a minimum, the following responsibilities:

- provide a forum for involvement of interested parties in MHCP implementation;
- cooperate with the Staff Subcommittee to develop public outreach efforts;
- disseminate public information on MHCP implementation and issues;
- identify funding sources for plan implementation;

- cooperate with the Staff Subcommittee to identify MHCP implementation funding opportunities and develop joint recommendations on funding programs and legislation; and

- develop and implement actions to support funding requests and legislation in cooperation with outside groups established to support and encourage implementation of habitat conservation and NCCP programs.

### 5.7.3 MHCP Land Conservancy

A locally based, nonprofit conservancy could play an important role in facilitating assembly and management of the preserve system. The Elected Officials Committee will evaluate establishment of a land conservancy within one year of the Committee's formation. Clearly a conservancy can offer advantages in a number of key areas of MHCP implementation coordination including funding. A conservancy would also be important if regional funding for MHCP implementation became available. As has been described the cities acting individually or collectively cannot perform certain functions which a conservancy can. If a conservancy is formed actions described in Section 5.7.2 as responsibilities of the Staff Subcommittee in the absence of a conservancy could appropriately be transferred to a conservancy. A Conservancy could acquire habitat lands, finance the purchase of lands, and facilitate coordination among the preserve managers. A land conservancy could also work with a team of science advisors, appointed by its board of directors, with special expertise in the species and habitats of the preserve system. These advisors could be independent, associated with educational institutions or public agencies, members of a nonprofit organization, or employees of biological science firms. A conservancy could also coordinate activities of the habitat managers hired specifically for the job of managing the preserve according to the subarea plan. These managers could be a coalition of city departments, state agencies, and private organizations.

An MHCP land conservancy should consider at a minimum the following responsibilities:

- acquire, assemble, and own land in tax-exempt status;

- shelter the cities from legal liability associated with ownership of habitat lands;

- negotiate land acquisitions through innovative means including packaging of financial resources, installment purchases, land swaps, and non-cash transactions;

- focus the efforts of other conservation organizations and trusts on MHCP needs;

- accept gifts of land donated for conservation in exchange for tax credits;

- structure and enter into agreements for conservation easements, living trusts, and other less-than-fee agreements; and

- develop preserve management recommendations for funding approval by a land conservancy board of directors.

### 5.7.4 MHCP Preserve Manager

There may be a case where land is purchased for the preserve system that cannot be managed by one of the existing land managers, or a city decides to have the lands managed by another entity. In this case, a conservancy if established may choose to hire a preserve manager with

responsibilities as listed below. The preserve manager would coordinate activities with other preserve managers through the land conservancy structure.

- Implement actions required by the habitat management plan for each subarea, including area-specific directives as they are developed.
- Implement additional policies and actions approved by a MHCP land conservancy board of directors.
- Perform all "on-the-ground" management and monitoring actions.

# 6.0 GUIDELINES FOR COMPATIBLE LAND USES, PRESERVE MANAGEMENT, AND MONITORING

As an urban preserve plan for wildlife, the MHCP will enhance the region's quality of life, providing the North County cities with recreational and educational opportunities while conserving the region's unique biodiversity and maintaining populations of sensitive resources. To succeed in these goals, the MHCP requires active management and land use restrictions on conserved lands that respond to the special 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 monitoring of the habitats and species in the preserve, described in the Biological Monitoring and Management Plan (MHCP Volume III), will help to improve the effectiveness of individual management plans. The following sections establish general guidelines for compatible land uses and development within and adjacent to the preserve and provide a framework for consistent and coordinated management and monitoring of the preserve.

Existing legal land uses within and adjacent to the preserve may continue, and existing ownerships will be maintained unless lands are otherwise obtained by public entities through purchase, dedication, or donation. On private lands that become part of the preserve, 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 or nonprofit organization. The jurisdictions will review new public facilities for consistency with the MHCP to maximize public safety and minimize management concerns and biological impacts.

## 6.1 ROLE OF SUBAREA PLANS

Subarea plans provide specific land use, site design, and management guidelines to ensure preserved lands are managed for the long-term conservation of biological resources. Subarea plans address which uses will be allowed within and adjacent to the preserve; ensure that permitted uses are compatible with preserve objectives; and require that direct and indirect impacts to sensitive habitats and covered species be reduced or eliminated by activity restrictions, project design, and management practices. Land uses that have unavoidable direct or indirect substantial impacts to preserve functions are considered incompatible in preserve areas.

Guidelines for land uses, site design, and management actions included in subarea plans should consider the following factors:

- type and location of resources to be protected;
- sensitivity to disturbance of the species to be protected;
- type of vegetation and topography;
- type and intensity of land uses and cumulative impacts of a combination of uses; and
- type and intensity of human activity adjacent to the preserve.

The subarea plans and implementing regulations include specific site design objectives to ensure that development impacts on biological resources in the preserve are appropriately avoided or minimized. Subarea plans also prescribe guidelines to ensure that impacts from development are contained within the development area and do not affect the preserve. Incorporating

appropriate site design measures into projects abutting the preserve will assist in avoiding, minimizing, and mitigating impacts to the preserve from new development.

Where impacts to the preserve from development are unavoidable, specific management measures may be required, especially where individuals or populations of covered species are located in preserve areas adjacent to development. Habitat linkages and corridors that abut development may also require specific management actions and activity restrictions.

Preserve management measures needed to reduce impacts to individuals or populations of covered species from development abutting the preserve will be incorporated into subarea plans and associated management plans as described in Section 6.3.1.

## 6.2 GUIDELINES FOR LAND USES WITHIN AND ADJACENT TO THE PRESERVE

This section assesses general compatibility of land uses with preserve areas and provides suggestions to reduce impacts. Site-specific land use compatibility may differ between individual subarea plans, depending on the factors noted in Section 6.1. In the event of any inconsistencies between the general guidelines in the MHCP plan and specific guidelines or requirements in a subarea plan, the subarea plan shall take precedence.

### 6.2.1 Public Use

A key objective of the MHCP plan is to provide passive recreation and educational opportunities within the preserve, while providing adequate protection for biological resources and ensuring that private property rights are respected. Riding and hiking trails will be allowed within appropriate portions of the preserve to provide passive recreational opportunities for the public. Other passive activities such as photography, bird watching, scientific research, and public education programs are also encouraged. Sailing, swimming, and fishing can also be compatible with biological objectives of the MHCP.

Individual subarea plans and management plans should address allowable uses and their location to ensure protection of biological resources. Trail systems must be clearly defined with appropriate signs and regular maintenance. Existing recreation facilities should be managed to promote the improvement of habitat nearby. Most importantly, the public should be encouraged to assume pride of ownership in the preserve system.

Active recreational uses, such as camping, athletic fields, and other organized sports activities, are incompatible within preserve areas and linkages but may be compatible at the edges of preserves, provided that light, noise, and trash impacts are controlled and do not adversely affect covered species. Off-highway vehicle use is incompatible within the preserve.

### 6.2.2 Agriculture

Agricultural uses are generally compatible with adjacent preserve areas. The MHCP recognizes that agricultural lands can be important to the needs of wildlife, providing linkages between native habitats and providing foraging habitat for raptors. Furthermore, agricultural lands may serve as transition areas between the preserve and intensive development.

An Agricultural Issues Subcommittee of the MHCP Advisory Committee was formed to address the specific needs of the agricultural community with respect to the benefits provided by the MHCP. That subcommittee developed the following provisions.

### Incidental Take Provision for Ongoing Agricultural Activities

At the option of participating jurisdictions, take authorizations may apply to agricultural activities in the MHCP study area on lands outside the FPA that are being actively and legally used for agricultural purposes on the effective date of the appropriate implementing agreement (agricultural activities include crop, animal, and forage production; grazing; and fallowing when used as a necessary production technique). Take authorizations for ongoing agricultural activities become effective for such lands upon the participating jurisdiction's issuance of a "certificate of inclusion," or other similar documentation, to the landowner. This certificate will identify the parcel number, acreage affected, and current landowner and will include a map specifying the location of the parcel.

The CDFG, in cooperation with the Department of Food and Agriculture, agricultural commissioners, and agriculturists, has regulations to authorize voluntary programs for routine and ongoing agricultural activities on farms that encourage habitat for wildlife. The MHCP encourages property owners to consider entering into conservation agreements with the CDFG. These agreements will be considered consistent with the MHCP and subarea plans.

### Safe Harbor Provision

The MHCP plan supports the formation of cooperative Safe Harbor agreements between the wildlife agencies and agriculturists, without requiring the involvement of local jurisdictions. The Safe Harbor policy provides assurances to private landowners, who undertake voluntary conservation actions on their lands, that their future land use activities will not be further restricted by the presence of covered species becoming established on their land as a result of these conservation efforts. Thus, landowners who agree to manage their lands in a manner that attracts endangered or threatened species or expands their presence will be guaranteed that, as a result of their good stewardship, they will not be penalized with additional regulatory requirements for those lands. The policy is intended to create incentives for landowners to engage in land use and management practices that benefit rare and endangered species.

### Agriculture as a Compatible Land Use

As stated above, the MHCP recognizes the importance of some agricultural lands as wildlife habitat and considers agricultural activities to be compatible adjacent to preserve areas. Neither the MHCP nor its subarea plans impose new regulations on existing agricultural activities or attempt to displace existing agriculture. Use of fertilizers and pesticides will continue to be governed by local agricultural commissions, the California Department of Pesticide Regulation, and through the use restrictions placed on the container of the product by the U.S. Department of Agriculture and EPA.

### Voluntary Incorporation of Lands into the Preserve System

Only agricultural lands of biological significance that are set aside as open space by the property owner or are acquired from willing sellers at fair market value will be included in the preserve.

The Agricultural Issues Subcommittee also discussed deferral of mitigation for agricultural impacts to habitat, but no agreement was reached on this issue by the subcommittee members. Thus, conversion of habitat to agricultural production requires appropriate mitigation at the time of impact, similar to any development proposal.

### 6.2.3 Development

Subarea plans identify permitted land uses and their location and design within and adjacent to the preserve. Through the subarea plans and regulations, the participating jurisdictions will ensure that direct and indirect impacts of new development on the preserve will be minimized using good land planning and design principles and preserve management provisions. These issues will be addressed through the existing project review process and CEQA documentation, as required.

The subarea plan and/or implementing regulations will address the following site design objectives: avoidance and minimization of impacts to biological resources within the preserve from new development, and retention of core areas and functional linkages. Potential impacts from new development on biological resources within the preserve that should be considered in the design of any project include:

- authorized and unauthorized access;
- introduced predators;
- nonnative invasive species;
- illumination;
- drain water (point source);
- urban runoff (nonpoint source); and
- noise.

Subarea plans and associated regulations and ordinances should provide incentives to cluster development away from core biological areas and sensitive resources in the preserve. Careful planning of access, building pads, utilities, fencing, brush management, and landscaping can further minimize impacts of new development adjacent to the preserve. The determination of the specific measures necessary to contain impacts from a new development project, and thereby avoid, reduce, or mitigate edge effects on the preserve to less than significant levels, will be the responsibility of the take authorization holder through the applicable project and environmental review process.

New residential, commercial, and industrial uses and landfills are not compatible within the preserve. Lower intensity uses, such as passive recreation and limited utility corridors, may be compatible with certain restrictions. Residential development can promote habitat loss and fragmentation; degrade soil, air, water, and visual quality; promote brood parasitism by increasing cowbird populations; introduce nonnative species; alter the composition of wildlife communities; and increase predation by domestic animals. Commercial development may have fewer indirect impacts, although lighting impacts can be greater. Heavily used roads and rail lines can isolate populations, increase mortality, restrict wildlife movement, interrupt breeding cycles, and affect runoff, among other impacts.

Existing and planned regional public facilities identified in existing general plans, such as utilities and other infrastructure, are expected to be incorporated into subarea plans in a manner that will allow planned preserve areas to function. Such facilities, if subject to the discretionary authority of the take authorization holder, must conform to the appropriate subarea plan with regard to site design criteria and mitigation. The following general guidelines are designed to protect the biological resources in the MHCP preserve area while allowing compatible development for limited uses (as described above) in appropriate areas. More detailed Best Management Practices are described in Appendix B of MHCP Volume II.

- Retain a biologist to review grading plans (e.g., all access routes and staging areas), oversee all aspects of construction monitoring, educate contractors about the biological sensitivities associated with the area, and ensure compliance with mitigation measures.

- Design placement of new development in lower quality or disturbed areas. Avoid areas that have the potential to be used as wildlife movement corridors or habitat linkages.

- Avoid landform alteration of major natural features. Configure development to existing topography to minimize grading and land alteration.

- Restrict heavy equipment and construction activities, including disposal of excess fill, to designated areas.

- Use existing access roads or already disturbed areas to the degree feasible. Where new access is required, all vehicles should use the same route, even if this requires heavy equipment to back out of such areas. Clearly mark all access routes outside of existing roads or construction areas.

- When stockpiling topsoil, it should be placed in disturbed areas without native vegetation, areas to be impacted by project development, or in nonsensitive habitats.

- Locate staging areas in disturbed habitat, to the degree feasible.

- Designate no-fueling zones a minimum distance of 10 meters (33 feet) from all drainages and away from fire-sensitive areas.

- Schedule construction through sensitive areas to minimize potential impacts to biological resources. Construction adjacent to drainages should occur during periods of minimum flow (i.e., summer through the first significant rain of fall) to avoid excessive sedimentation and erosion and to avoid impacts to drainage-dependent species. Construction near riparian areas or other sensitive habitats should also be scheduled to avoid the breeding season (March through September) and potential impacts to breeding bird species.

- Noise impacts are a concern around areas supporting breeding bird habitat. To avoid or minimize noise impacts, limit construction activities during the breeding season (March through September) to those that will not produce significant noise impacts (i.e., noise levels greater than 60 dB $L_{eq}$ [decibels, equivalent sound level] at the edge of the habitat of concern). Conduct preconstruction surveys at potential impact areas between mid-May and mid-June.

- Require setback limitations from sensitive habitat areas, including a minimum setback outside the root protection zone for all trees to be preserved. Require special construction techniques such as concrete pumping to the site and on-grade construction to protect tree roots.

- Design placement of new utility corridors to minimize fragmentation and edge effects.

- Encourage underground utilities and trenchless technology, where possible. Use narrow construction easements, and when possible, use practices such as jacking pipelines under drainages. Require restoration plans and construction monitoring plans for utility corridor construction and repairs approved by the wildlife agencies.

- Encourage greater flexibility in engineering design standards for park roads and maintenance roads through preserve areas. Design these roads to minimize biological impacts while still considering safety standards (e.g., minimize road-bed width, eliminate shoulders on rural roads and maintenance roads, and minimize the number and location of maintenance roads).

- Use bridges, instead of culverts, for all major riparian crossings and regional wildlife movement corridors, and use 3-meter chain-link fencing to direct wildlife movement toward the wildlife underpass. The site of the riparian crossing and its importance as a wildlife corridor should dictate the design. Noise within underpasses should be less than 60 dBA (decibels, A-weighted scale) during the time of day at which the animals use it. Shield corridors from artificial lighting. Use skylight openings within the underpass to allow for vegetative cover within the underpass. Design underpasses or culverts to be at least 30 feet wide by 15 feet high with a maximum 2:1 length-to-width ratio. Avoid co-locating human trails and wildlife movement corridors/crossings.

- Construct noise barriers for short sections of road that may impact wildlife breeding.

- Minimize any materials sidecasting during road construction and maintenance.

- Site traffic controls such as stoplights and stop signs away from sensitive habitat to reduce the concentration of emissions and noise levels.

Future and currently unplanned regional facilities (as of date of take authorization issuance) will avoid preserve areas. Any projects thus constructed cannot compromise overall levels of conservation in the preserve or adversely affect preserve and species goals and must mitigate in accordance with the applicable subarea plan. Mitigation must be directed into the preserve.

### 6.2.4 Mineral Extraction

In the MHCP study area, mining consists primarily of sand, rock, and gravel extraction using open pit and instream mining methods. Mining causes long-term or permanent impacts to the landscape, including the loss of habitat and topsoil; increased dust, noise, and traffic; nonnative species invasion; habitat fragmentation; and changes to the topography. In addition, instream mining may alter, temporarily or permanently, hydrologic regimes and species' habitat.

The MHCP plan does not impose any new regulations on owners or operators of existing mining operations. These owners/operators may obtain management authorizations or permits directly from the wildlife agencies. Alternatively, participating jurisdictions may develop a process to amend previously approved local permits, subject to necessary mitigation and approval from the wildlife agencies, to allow owners/operators to avail themselves of take authorizations and third-party beneficiary status, pursuant to the MHCP.

New or expanded mining operations on lands conserved as part of the preserve are incompatible with MHCP preserve goals for covered species and their habitats. New or expanded rock, sand, and gravel extraction facilities outside of lands conserved as part of the preserve must be designed and mitigated for, consistent with the subarea plan and implementing regulations.

Land associated with abandoned mining operations within the preserve should be assessed for reclamation potential. Lands suitable for reclamation should be restored using native species. If such lands are not suitable for restoration, a compatible second use should be identified, such as trail access points, park headquarters, parking areas, interpretive centers, and research stations.

### 6.2.5 Itinerant Worker Camps

Transients and migrant workers sometimes maintain shelters and living areas illegally within habitat areas. Such living areas have a detrimental effect on native vegetation and wildlife use, including an increase in refuse, poaching of wildlife, increased fires, and raw sewage disposal that can pollute water resources. The volume of refuse generated attracts black rats, which

contribute to the decline of native rodent populations. Although scattered living areas will be difficult to control, villages of transients are incompatible with the preserve areas and linkages and should be removed.

## 6.3 GUIDELINES FOR PRESERVE MANAGEMENT

### 6.3.1 Preparation of Framework Monitoring and Management Plans

Each take authorization holder (city) will prepare a framework monitoring and management plan as a condition of its implementing agreement with the wildlife agencies. The framework monitoring and management plan will provide general direction for all preserve management issues within the subarea plan's boundaries and will reference the subregional MHCP Biological Monitoring and Management Plan (see Volume III). The cities also will develop area-specific management directives in accordance with the framework plan to address monitoring and management issues at the site-specific level. Area-specific management directives will be prepared, as necessary, and coordinated with the wildlife agencies prior to adoption as lands are conserved as part of the preserve.

Management on some of the preserve areas is expected to be minimal, consisting primarily of enforcing land use restrictions, such as offroad vehicle restrictions, no-hunting regulations, and other existing ordinances or regulations. Smaller, more fragmented preserve areas will require more active management to achieve their biological potential as part of the preserve system. The majority of the preserve is currently constrained by adjacent development and disturbed habitat areas. Some of these areas will require active habitat restoration or enhancement to protect or improve their value as habitat linkages and wildlife movement corridors.

#### Framework Monitoring and Management Plans

Framework monitoring and management plans will identify and prioritize the specific species populations and vegetation communities to be managed and will identify monitoring and management activities, specific to individual regions, core areas, or linkages of the jurisdiction, that address specific covered species requirements and the individual city's preserve objectives. Framework management and monitoring plans will establish a process to develop area-specific management directives and describe how adaptive management will be undertaken based on new information on species and ecosystem needs. Existing management plans will be incorporated into the framework plan. Unless otherwise included within the subarea plan, each city will submit to the wildlife agencies for review a draft framework monitoring and management plan within 6 months of issuance of take authorizations. The draft framework plan will be available for public review. The framework plan will be reviewed and approved by the wildlife agencies and finalized by the city within an additional 3 months.

#### Area-Specific Management Directives

Area-specific management directives will be developed and implemented to address species and habitat management needs in a phased manner for individual parcels or project areas, once conserved as part of the preserve, including any species-specific management required as conditions of the take authorizations. The project CEQA document, when necessary, will include these area-specific management directives.

Both framework plans (generally) and area-specific management directives (specifically) will address the following management and monitoring actions, as appropriate:

- fire management
- public access control
- fencing and gates
- ranger patrol
- trail maintenance
- visitor/interpretive services
- volunteer services
- hydrological management
- signs and lighting
- trash and litter removal
- access road maintenance
- domestic animal access control
- enforcement of property and/or homeowner requirements
- removal of invasive species
- nonnative predator control
- species monitoring
- habitat restoration
- management for diverse age classes
- use of herbicides and rodenticides
- biological surveys
- species management conditions

Depending on the size and resources of the preserve unit, an area-specific monitoring and management plan may be a separate document or a brief attachment to the city's subarea plan that includes a map of resources on the preserve property, describes site-specific threats to resources, and identifies site-specific management and monitoring actions to address these threats (see example attachment in Volume III, Appendix B.8). Area-specific monitoring and management plans or directives must be developed and approved by the wildlife agencies for preserve lands no later than 2 years after lands are dedicated to the preserve and implemented immediately upon approval of the management plan.

The preparation and implementation of framework plans and area-specific management directives will be coordinated among subareas to ensure that the overall needs of species and habitats are met on a regional basis. Preserve managers will be required to review and update management plans as necessary. A status report shall be submitted every 3 years to the wildlife agencies. The report will summarize management activities, describe management priorities for the next 3-year period, discuss restoration activities, and evaluate funding and the ability to meet resource management goals.

### 6.3.2 Responsibility for Preserve Management and Biological Monitoring

Each take authorization holder will be responsible (either directly or through agreements with other agencies or organizations) for the management and biological monitoring of the following:

- its own public lands (including those with conservation easements);
- lands obtained as mitigation (where those lands have been dedicated to the jurisdictions or land management agency in fee title or easement); and
- lands within its jurisdiction that have been acquired through the regional funding program.

Likewise, the federal and state agencies will manage and monitor their present land holdings, consistent with the MHCP plan. To ensure uniformity in data gathering and analysis, the wildlife agencies will assume primary responsibility for coordinating the MHCP biological monitoring program, analyzing data, and providing information and technical assistance to take authorization holders (see Section 6.4.1).

### 6.3.3 Preserve Management on Private Lands

Private lands conserved through avoidance in compliance with a jurisdiction's regulations may be transferred in fee title, or easement managed in perpetuity, to a government or nonprofit agency if the landowner voluntarily dedicates the land. Open space areas associated with existing residential developments and governed by homeowners' associations (HOA) will be

maintained according to HOA guidelines. The HOAs will be responsible for controlling trash, fire, and illegal encampments. HOA open space areas may receive active biological monitoring and management pursuant to the MHCP if there is a regional funding source for biological management activities and if there are no legal (i.e., HOA) impediments. New HOA open space conserved after the subarea plan is adopted will be managed and monitored according to the specifications in the subarea plan.

If land is used as mitigation for public or private project impacts, or if private land is purchased with public funds or voluntarily dedicated in fee title, habitat management will be required consistent with the MHCP plan, subarea plan, and habitat management plan.

Private landowners within the preserve who are not third-party beneficiaries of the local jurisdiction's take authorizations will have no additional obligations as a result of the MHCP for management or biological monitoring of their lands. Private landowners who are third-party beneficiaries will be responsible for habitat management of preserve lands they choose to retain in private ownership to the extent required by the jurisdiction's subarea plan and implementing regulations and as specified as conditions of development permits. However, no additional fees will be charged to landowners for biological monitoring.

### 6.3.4 Fire Management

#### Management Issues

Fire management can focus on two potentially different objectives: achievement of biological resources goals, and hazard reduction for humans and their property. Biological resources goals recognize that fire is a natural process in ecosystems. Many vegetation communities in the study area depend on a regular cycle of burning for maintaining a balance of species, seed viability, and reproduction. However, in urbanized portions of San Diego County, the natural fire cycle is affected by human activities, both by increasing fire frequency in some locations and decreasing it in others through fire prevention measures.

Fire management for human safety should continue in a manner that is compatible with conservation of biological resources. Fire management for human hazard reduction involves reducing fuel loads in areas where fire may threaten human safety or property, suppressing fires once they have started, and providing access of fire suppression equipment and personnel.

#### Management Recommendations

The framework management plan should address brush management and whether use of fire is necessary to manage the composition and age structure of vegetation communities. The small size of many MHCP preserve areas will make the use of fire difficult or impractical for biological management. The local fire department should be consulted so that both biological and safety goals are met. Brush management to reduce fuel and protect urban uses will occur where development is adjacent to the preserve. Fire management should be consistent with the recommendations of the Wildland/Urban Interface Task Force.

<u>Fire Management Practices</u>

- Identify potential fuel reduction zones or firebreak locations as well as access routes for fire equipment in the event of wildland fires that pose safety concerns.

- To the degree feasible, site fuel reduction zones, firebreaks, and access routes to avoid sensitive biological resources, preferably at the top or bottom of a slope rather than

across a slope. Use existing firebreaks (e.g., natural ridge lines, roads, fire roads) where available.

- In smaller fragmented preserve areas, manage fuel loads primarily for human safety, using mechanical fuel control measures such as chopping, crushing, disking and chaining, removal, and herbicides. Additional methods of value in smaller areas include mowing, trimming, and hand clearing. In general, chopping and crushing are the recommended methods based on biological and fuel reduction values and safety concerns. Crushing with a device called a "sheep's foot" may be an alternative form of fuel control in some situations.

- In larger preserve areas, such as in northeast and southeast Carlsbad and Daley Ranch in Escondido, manage both for biological resources needs and for safety considerations. Where chaparral or coastal sage scrub stands are more than 20 years old, evaluate the need for prescribed burning, where practical, given safety and cost considerations. Fire management practices should be based primarily on the risks of uncontrolled wild fire in proximity to developed areas.

Where preserve areas are planned adjacent to existing developed areas, the fuel management zone may encroach into the preserve. Where new development is planned, brush management will be incorporated within the development boundaries and will not encroach into the preserve. Subarea plans should identify what entities (e.g., land owner, city, or homeowners' associations) have responsibilities for brush management.

### 6.3.5 Habitat Restoration

#### Management Issues

Restoration is the process of reestablishing or enhancing historic biological functions and values to degraded habitats. Restoration methods range from active revegetation to passive management. Generally, labor-intensive restoration methods involving active revegetation take less time to achieve biological goals but at greater cost than more passive management techniques, such as fencing to limit further disturbance.

Active revegetation and restoration projects rely on techniques that encourage natural regeneration or use intensive horticultural methods such as planting, seeding, transplanting, and salvaging. The source of seeds and plants used for such projects has tremendous genetic implications. Non-local planting stock can introduce novel, undesirable, or maladapted genotypes into the ecosystem. Use of non-local stock may also result in mortality or problems with growth and reproduction. Thus, active restoration programs should use propagules from sources close to the restoration site. Planting stock must also be inspected for invasive pests, such as Argentine and fire ants, and any infested stock must be removed from the vicinity of the reserves and properly treated or disposed.

#### Management Recommendations

Restoration is necessary to enhance linkages and disturbed habitats and should include reintroduction of native species and eradication of nonnative ones. Project-specific mitigation plans should identify where restoration is most needed, and detailed restoration management plans should be prepared, as part of area-specific management directives, according to the following guidelines:

Evaluate Restoration Needs and Feasibility

- Identify and prioritize potentially restorable areas based on subarea conservation objectives, focusing on the need for connectivity, territory size, and the potential to enhance habitats of sensitive species.

- Evaluate potentially restorable areas based on the level of effort and cost needed to restore them as functional habitat. Cost estimates should include implementation and monitoring efforts.

- Assess existing site quality, site access, adjacent land uses, difficulty of achieving restoration goals, and cost of available restoration techniques appropriate to the site conditions.

- Assess the physical factors of the restoration sites, including topography, slope, aspect, elevation, drainage, soils, hydrologic regime, and climatic regime.

- Assess existing biological conditions, past management practices, and sources of disturbance.

- Collect reference data from an adjacent or nearby habitat in good condition to serve as a planning guide and as a subsequent comparison with monitoring data from the restoration site.

Develop a Conceptual Restoration Plan

- Develop a conceptual restoration plan, followed by formal plans and specifications for those areas in which active revegetation methods (installation or maintenance) are proposed. Identify restoration goals and objectives, restoration design criteria, project management and implementation responsibilities, scheduling constraints, planting materials, equipment constraints, evaluation criteria, and remedial measures. Most restoration plans will be a combination of long-term management changes combined with more active revegetation where feasible.

- Develop formal construction documents that address the specific responsibilities and authorities of applicable personnel (e.g., the land manager, contractors, monitors, etc.). Specifications should include all pertinent conditions, coordination requirements, schedules, warranty periods, protected areas, and restricted activities. These plans will be installed by a registered landscape contractor experienced with restoration of native habitats, although volunteer help may be used if correctly supervised.

- Specify seed and plant procurement procedures a year in advance of actual planting. Use propagules only from sources near the restoration site. Do not allow species substitutions unless approved by the project restorationist. Integrate genetic conservation considerations into procurement specifications.

- Require exotic plant control and debris removal prior to restoration planting and during establishment of the plantings. Exotic plant control specifications should describe techniques, target species, safety precautions, and compliance with laws and regulations. Such specifications must be developed by a licensed pest control advisor if chemical controls are recommended.

- Use mycorrhizal fungi, where appropriate. A mutualistic relationship exists between plant roots and mycorrhizae. Certain plant species benefit from increased ability to take

up nutrients and withstand drought when mycorrhizae are present. Site disturbances, especially the removal or disturbance of the topsoil layers, can cause mycorrhizae to die out on a site. Weed invasion can further lower mycorrhizal presence in the soil. Mycorrhizal inoculation of the soil will reintroduce the fungi to sites where it has been lost. Such inoculation can be accomplished through planting inoculated container plants or the introduction of litter, duff, or soil from an infected site. The best source of mycorrhizal fungi is salvaged topsoil taken from an infected site, although the fungi can be killed if the soils are stored improperly. Topsoils may also contain other essential ecosystem components such as humus and soil fauna.

- Specify irrigation necessary to establish restoration plantings. Irrigation operation specifications should also include system maintenance and coverage monitoring. Irrigation of restoration projects differs from conventional landscaping where irrigation is provided indefinitely. In native restoration projects, the goal is to aid plant establishment to the point that the plants become self-sufficient on natural sources of precipitation. Some types of restoration may not need irrigation.

- Delineate site protection measures both during construction and afterward during the establishment period. Protection may include the use of fences, flagging, signs, trails, patrols, and other barriers. Protection of the site often requires management of offsite resources and contaminants, drainage, exotic plant species, vandalism, and trash.

- Establish maintenance standards to ensure restoration success. Intensive maintenance at least once a month during the first 2 years after planting is usually required, and where necessary, should include irrigation, weed control, debris removal, replanting, reseeding, staking, erosion control, fertilization, pest control, and site protection. Maintenance should be conducted until the plants have demonstrated that they can sustain themselves (generally 3 to 5 years) without significant maintenance such as irrigation or weeding.

Develop a Restoration Monitoring Program

- Where any active revegetation is necessary to accomplish restoration goals, provide clearly defined contractor education and construction monitoring programs to ensure proper installation and maintenance and to protect sensitive resources adjacent to the restoration area.

- Establish long-term biological and horticultural monitoring programs following revegetation.

    a. Biological monitoring: Collect field data to assess whether project goals are being met, including species composition, mortality of plantings, cover at different vegetation levels, species distribution and diversity, and wildlife monitoring. Collect similar data from reference sites for comparison.

    b. Horticultural monitoring: Supervise the actions of the maintenance contractor, and recommend remedial actions to ensure proper erosion control, debris removal, weed and pest control, irrigation scheduling and cessation, and protective fencing.

- Specify performance standards by which the restoration will be judged. These are usually developed from a combination of existing reference site data and prior measurements in other restoration endeavors. Design monitoring of restoration sites to supply data to evaluate these standards. Develop remedial measures in advance of project implementation should performance standards not be met.

Existing restoration and monitoring plans would be acceptable provided they meet the objectives and goals of the MHCP. For example, enhancement plans already have been prepared for San Elijo Lagoon and Batiquitos Lagoon. The San Elijo plan provides recommendations and methodology for increasing tidal circulation to the lagoon, restoring tidal salt marsh habitat, stabilizing brackish and freshwater marsh areas, removing exotic species, revegetating degraded habitat areas, and closing unnecessary trails through sensitive habitat areas. Some of these recommendations already have been implemented. The Batiquitos restoration plan has been completed, and a 10-year monitoring plan is underway.

### 6.3.6 Erosion Control

#### Management Issues

Erosion is promoted by the combination of erodible soils, steep slopes, soils with low water-holding capacity, sparse to no vegetation, and hydrologic condition of the soils. Erosion can be aggravated by human disturbance and fire-control activities. Erosion hazards to biological resources include pollution and sedimentation of important water sources and the loss of vegetative cover from landslides.

#### Management Recommendations

Identify and Prioritize Areas for Erosion Control

- Identify areas of moderate to severe erosion within and adjacent to the preserve.
- Determine causes of erosion and current or potential adverse or beneficial effects on habitat within the preserve.
- Rank identified erosion areas according to threats to biological resources. Include an assessment of cost for erosion control measures.

Develop Erosion Control Plans

- As part of area-specific management directives, develop and implement an erosion control plan for high priority erosion control areas. In general, this will include establishing physical features to slow surface flow and dampen initial precipitation impact, and revegetation of eroded surfaces for long-term protection. In steep areas, rock areas, and areas of high storm flow, permanent rock or concrete revetments may be required to stabilize undesirable erosive forces.

Address Slope Stabilization and Surface Drainage

- Prepare contingency native seeding plans for highly erosive areas temporarily disturbed by fire.
- Prohibit bare surface grading for fire control on slopes. Ensure that all techniques implemented for fire control leave (or replace) adequate vegetation cover to prevent surface erosion.
- Ensure that all areas identified for revegetation are adequately stabilized by either a binder or straw cover after planting to minimize surface erosion.
- Ensure that no new surface drainage is directed into the preserve.

### 6.3.7 Landscaping Restrictions

#### Management Issues

Landscaping (i.e., the introduction of native or nonnative plant species around developed areas) is often in direct conflict with biological objectives. Of particular concern are (1) the introduction of nonnative, invasive species that can displace native species in natural communities; (2) horticultural regimes (irrigation, fertilization, pest control, and pruning) that alter site conditions in natural areas, thereby promoting shifts in species composition from a native to a nonnative flora; and (3) genetic contamination from the introduction of native cultivars not collected onsite or in proximity to the site.

#### Management Recommendations

Because preserve lands are designated as biological open space, active landscaping should be absent or minimal. However, where landscaping may be required, or where problems are anticipated in preserve areas due to landscaping in nearby developed areas, the following guidelines should be followed:

Control Exotic Plant Species

- Prohibit the use of nonnative, invasive plant species in landscaping palettes in preserve areas or for new public projects within 200 feet of the preserve. This includes container stock and hydroseeded material.

- Revegetate areas of exotic species removal with species appropriate to the biological goals of the specific preserve area.

Control Exotic Animal Species

- Control the spread of exotic invertebrate pests by inspecting all planting stock before it is delivered to any property in or adjacent to a reserve. Argentine ants and red fire ants are two highly invasive and destructive pests that are known to be transported in container stock. Any container stock to be imported into the FPA, or into any reserve area or property adjacent to a reserve area, will be first inspected by qualified experts to detect Argentine ants, fire ants, and any other invasive pests. No infected stock shall be permitted within 300 feet of natural habitats. Infected stock will be property treated or disposed of by qualified experts based on Best Management Practices.

Monitor Horticultural Regimes

- Control irrigation of landscaping material within 200 feet of the preserve boundary to prevent runoff into the preserve. Irrigation runoff alters conditions in natural areas that are adapted to xeric (dry) conditions, thereby promoting establishment of nonnative plants and displacement of native species. In addition, irrigation runoff can carry pesticides into natural areas, adversely affecting both plants and wildlife.

- Monitor and limit, to the degree feasible, fertilization of ornamental plants on all public areas draining into the preserve, to reduce excess nitrogen runoff to areas of native vegetation. Excess nitrogen is detrimental to plant mycorrhizal growth and fosters exotic weed invasion. Initiate fertilizer management programs that apply the minimal amount of fertilization required for all public horticultural areas adjoining the preserve.

- Limit ornamental pest control activities adjacent to the preserve, to the degree feasible.

Avoid Genetic Contamination

- Avoid genetic contamination of native plant species by prohibiting the introduction of cultivars or native species from different geographic regions. If these introductions are similar enough genetically to native species in the preserve, then cross-breeding or hybridization could occur. All stock introduced into the preserve that has the potential for breeding with native species already present onsite should be propagated from material collected in the vicinity. Special attention should be given to the elimination of native plant landscaping cultivars of coastal sage scrub and chaparral species taken from central or northern California locations, or from islands off the coast of southern California.

### 6.3.8 Recreation and Public Access

#### Management Issues

Public access is appropriate in selected areas of the preserve to allow entry for passive recreational purposes and to promote understanding and appreciation of the natural resources. Excessive or uncontrolled access, however, can result in habitat degradation through trampling and erosion (e.g., along trails) and disruption of breeding and other critical wildlife functions at certain times of the year.

Passive recreational activities (e.g., hiking, bird watching) are anticipated within the preserve and are generally compatible with MHCP conservation goals. In general, passive activities pose a significant threat to biological resources when the level of recreational use becomes too intense or in areas of sensitive resources. Active recreational activities such as picnicking, equestrian use, and mountain biking may also occur in or adjacent to the preserve, if restricted to selected areas. These activities are conditionally compatible with biological objectives of the MHCP.

Because of the relatively small size and fragmented nature of the MHCP preserve system, active recreational uses that require new development, such as access roads, parking lots, service facilities, maintenance buildings, and landscaping, are not appropriate within the preserve. Construction of these facilities can cause further habitat fragmentation and can result in increased traffic, auto emissions, and petrochemical runoff; pesticide and fertilizer runoff; use of invasive nonnative plants in landscaping; use of outdoor lighting; and changes in local drainage patterns. These activities may have adverse impacts to air and water quality as well as wildlife use of the area and should not be sited within the preserve boundaries.

Adverse impacts of offroad vehicle use include reductions in air quality due to automotive exhaust and creation of dust, soil erosion and sedimentation into local waters, noise, and habitat degradation. Disturbance from offroad vehicles can also disrupt breeding activities. For these reasons, offroad vehicle use is not compatible in the preserve.

#### Management Recommendations

Recreational use of the preserve should be consistent with the protection and enhancement of biological resources. Existing recreational facilities should be managed to promote the maintenance of habitat value surrounding these facilities. Anticipated active recreation projects should be accommodated outside the preserve on land not required to meet covered species' habitat needs.

Develop a Recreation Plan or Review Existing Plans for Compliance

- Determine appropriate levels of passive and selected active recreational activities within the preserve, depending on the resources to be protected, season, and successional stage of the vegetation.
- Prohibit recreational activities that require construction of new facilities or roads.
- Develop design standards for new trail construction that address the avoidance of sensitive species, unique habitats, wildlife corridors, erosion control, and access to major features.
- Establish a recreational area patrol to regulate use of the preserve.
- Emphasize the use of "fire-safe" native plants in landscaping along preserve edges. Prohibit the use of invasive exotics, and adopt an exotic plant control plan.
- Require lighting use restrictions consistent with existing city lighting guidelines within 200 feet of the preserve. Direct lighting in adjacent areas away from the preserve.

Specific Recreational Activities

- Passive Uses

  a. Limit or restrict passive uses in critical wildlife areas during the breeding season, as determined appropriate.

  b. Minimize adverse effects of passive recreation, such as trampling vegetation and erosion.

  c. Provide litter control measures, such as closed garbage cans and recycling bins, at access points for the preserve.

- Day Use

  a. Site picnic areas at the edges of the preserve.

  b. Collect garbage frequently and instruct day users not to feed wildlife.

- Equestrian Use

  a. Prohibit horses in riparian areas. Construct trails away from riparian or other sensitive habitat. Provide alternative sources of water, where possible.

  b. Mulch trail surfaces to minimize erosion. Do not use materials for trail mulch that are a source of seed of invasive exotic species. Prohibit use of eucalyptus chips that could suppress native plant growth adjacent to trails.

  c. Limit equestrian use to specified trails that are wider than foot trails (minimum 8 feet wide) to prevent trail edge disturbance and on grades no greater than 25%. If trails become degraded due to heavy use, rotate or limit use during certain seasons to minimize further degradation.

d. Prohibit corrals, arenas, stables, and other associated equestrian facilities within the preserve. Locate staging areas for trailheads adjacent to existing roads and away from sensitive resource areas.

- Mountain Biking

a. Limit mountain bike trails to areas not highly susceptible to erosion and out of wetlands and other sensitive areas.

b. Construct trails wider than foot trails (minimum 6 feet wide) to prevent trail edge disturbance and on grades no greater than 25%.

c. Rotate bike use by closing trails periodically to prevent trail degradation if a problem develops.

d. Construct barriers to restrict access to sensitive areas.

Public Access

- Ensure that public access of the preserve is consistent with the protection and enhancement of biological resources. Monitor existing access areas to ensure that they do not degrade or inhibit biological values, and prioritize future access areas for protection of biological resources.

a. Seasonally restrict access to certain trails if deemed necessary to prevent disturbance of breeding activities.

b. Close unnecessary trails to minimize biological impacts. Abandon and revegetate steep eroding trails.

c. Locate new trails away from sensitive resources or restrict their use so that covered species are not adversely affected.

d. Construct trails to any prominent features or viewpoints that are likely to attract hikers, thereby preventing extensive trampling and compaction.

e. Install water breaks on steep trails to prevent accelerated runoff and erosion.

f. Establish patrols to identify trail maintenance needs, garbage, vandalism, and habitat degradation and to enforce land use restrictions.

### 6.3.9 Fencing, Signs, and Lighting

#### Management Issues

Fencing plays an important role in the use of the landscape by humans, domestic animals, and wildlife. Fencing can restrict grazing and control human access, particularly off-highway vehicles. Fencing can direct wildlife to road undercrossings and prevent road kills. However, fencing also can restrict normal wildlife movement, restrict access to food and water, and guide wildlife onto roads.

Signs educate, provide direction, and promote the sensitive use and enjoyment of natural areas, but they can also inadvertently invite vandalism and other destructive behavior. Signs that

explain the rules of the preserve (campfires, firearms usage, camping, etc.) are most effective at public entrance points. Signs for educational nature trails and on roads near wildlife corridors (to reduce road kills) also should be posted at appropriate locations.

Artificial lighting adversely impacts habitat value of the preserve, particularly for nocturnal species. Therefore, lighting should not be permitted in the preserve except where essential for roadways, facility use, and safety. Along preserve edges, major highway lighting should be limited to low pressure sodium sources directed away from preserve areas.

**Management Recommendations**

Fencing

- Dismantle existing fencing inside the preserve, except where needed to:

  a. Restrict grazing; use of 4-foot-high, 5-strand barbed wire fencing may be needed to restrict livestock from riparian areas.

  b. Limit road kills; fencing should be used to funnel wildlife away from at-grade road crossings and toward undercrossings; fencing at wildlife undercrossings should be 10 feet high.

  c. Protect particularly sensitive species or habitats; use perimeter fencing in linkage areas where preserve widths are narrower and there is greater exposure to adverse effects.

  d. Restrict human access; limit human access to designated trails using natural vegetation, topography, signs, and limited fencing.

  e. Define or use private properties in the preserve at the desire of the owners.

- Design and locate fences within the preserve so they do not impede wildlife movement.

Signs

- Provide educational brochures, interpretive centers, and signs to educate the public about the resources and goals of the MHCP.

- Establish signs for access control and education at the periphery of the preserves that are open to human access. Post signs to prohibit firearms and pets.

- Use signs for educational nature trails.

- Limit the use of signs to attract attention to sensitive species, as such designation may invite disturbance of their habitat.

- Use temporary signs to indicate habitat restoration or erosion control areas.

- Use barriers and informational signs to discourage shortcuts.

- Establish road signs near wildlife corridors to help reduce road kills.

Lighting

- Eliminate lighting in or adjacent to the preserve except where essential for roadway, facility use, and safety and security purposes.

- Use low-pressure sodium illumination sources. Do not use low voltage outdoor or trail lighting, spotlights, or bug lights. Shield light sources adjacent to the preserve so that the lighting is focused downward.

- Avoid excessive lighting in developments adjacent to linkages through appropriate placement and shielding of light sources.

### 6.3.10 Predator and Exotic Species Control

#### Management Issues

Native species are often at a disadvantage after exotic species or nonnative predators are introduced, so special management measures are needed to control exotic species and nonnative predators. Nonnative plant and animal species have few natural predators or other ecological controls on their population sizes, and they thrive under conditions created by humans. These species may aggressively outcompete native species or otherwise harm sensitive species. When top predators are absent, intermediate predators multiply and increase predation on native bird species and their nests. Feral and domestic animals, particularly cats, also prey on small native wildlife species. Agricultural areas, livestock holding areas, and golf courses provide resources for increased populations of parasitic cowbirds, which adversely affect native songbird populations. Litter and food waste from migrant worker camps and picnickers can contribute to an increase in Argentinean ant populations, which outcompete native ants, the primary food resource of San Diego horned lizards.

#### Management Recommendations

Feral and Domestic Animal Control

- Document evidence of feral or domestic animal use in the preserve.

- Establish an education program for homeowners regarding responsible pet ownership. The program should encourage (a) keeping pets indoors, especially at night; (b) having pets neutered or spayed to reduce unwanted reproduction and long-range wanderings; (c) belling of cats to reduce their effectiveness as predators; (d) discouraging release of unwanted pets into the wild; and (e) keeping dogs on leashes when walking them on trails in preserve areas.

- Fence areas between selected areas of the preserve and adjacent housing to keep pets out of particularly sensitive areas.

- Establish a feral animal removal program.

Cowbird Trapping Program

- Document and monitor the extent of cowbird parasitism on target species nests in the preserve.

- If necessary, establish a cowbird trapping program to increase nesting success of target species affected by cowbird parasitism.

Native Predator Control

- Monitor population levels of selected native predators (bobcat, coyote).
- Institute an educational program to explain the role and necessity of large native predators within the ecosystem and the need to protect them from disturbance.
- If key native predator species (coyote, bobcat) are extirpated from the preserve, initiate a program to control mesopredators (gray fox, skunks, raccoon, and opossum).

Exotic Plant Control

- Prioritize areas for exotic species control based on aggressiveness of invasive species and degree of threat to the native vegetation. Refer to Table 6-1 for a partial list of exotic plant species that could threaten native habitats.
- Eradicate species based on biological desirability and feasibility.
- Use an integrated pest management approach, i.e., use the least biologically intrusive control methods, at the most appropriate period of the growth cycle, to achieve the desired goals.
- Consider both mechanical and chemical methods of control. Only herbicides compatible with biological goals should be used. Only licensed pest control advisers are permitted to make specific pest control recommendations.
- Properly dispose of all exotic plant materials that are removed from preserve lands (e.g., in offsite facilities).
- Revegetate exotic weed removal areas with species appropriate to biological goals.

### 6.3.11 Hydrology and Flood Control

#### Management Issues

Native habitats have evolved based, in part, on the distribution and flow characteristics of water. Key water-related issues potentially affecting the preserve include the magnitude, quality, and duration of flows; episodic disturbances; and sediment transport.

The seasonal and annual variations in the flows of many streams and coastal lagoons have changed over the years as a result of flow regulation, discharge of treated effluents, groundwater pumping, channelization, agricultural and urban runoff, mining, and reservoir construction. Urban runoff and treated effluent discharges can contribute toxic substances to surface waters, and channelization can alter sediment transport regimes, which can change certain habitat characteristics and quality.

Episodic disturbance associated with floods, extensive wildfires, or large landslides are characteristic of channels and riparian corridors in coastal watersheds. These events periodically establish new bed conditions and patterns of habitat along drainages. The frequencies and magnitudes of disturbance will often determine the composition and structure of

habitats along drainages, and disturbance is integral for maintenance of high wildlife quality in many habitats.

Sediment transport in drainages can be altered by factors such as mineral extraction operations, upland land uses, control structures, channelization, and habitat alteration.

## Table 6-1

## COMMON INVASIVE EXOTIC PLANT SPECIES

| | | |
|---|---|---|
| *Acacia* spp.<br>Acacia | *Cortaderia selloana*<br>Pampas grass | *Phoenix canariensis*<br>Canary Island palm |
| *Ailanthus altissima*<br>Tree-of-heaven | *Cotoneaster pannosa*<br>Cotoneaster | *Phragmites australis*<br>Common reed |
| *Arundo donax*<br>Giant reed | *Cynara cardunculus*<br>Artichoke thistle | *Pyracantha angustifolia*<br>Pyracantha |
| *Atriplex semibaccata*<br>Australian saltbush | *Cynodon dactylon*<br>Bermuda grass | *Raphanus sativus*<br>Wild radish |
| *Bambusa* spp.<br>Bamboo | *Delairea odorata*<br>German ivy | *Ricinus communis*<br>Castor bean |
| *Brassica* spp.<br>Mustard | *Dipsacus* spp.<br>Teasel | *Robinia pseudoacacia*<br>Black locust |
| *Carduus* spp.<br>Thistle | *Eucalyptus* spp.<br>Gum, eucalyptus | *Salsola tragus*<br>Russian thistle |
| *Carpobrotus chilensis*<br>Iceplant | *Foeniculum vulgare*<br>Fennel | *Schinus molle*<br>California pepper |
| *Carpobrotus edulis*<br>Iceplant | *Hedera helix*<br>English ivy | *Schinus terebinthifolius*<br>Brazilian pepper |
| *Centaurea solstitialis*<br>Yellow starthistle | *Lepidium latifolium*<br>Perennial pepperweed | *Silybum marianum*<br>Milk thistle |
| *Chenopodium* spp.<br>Goosefoot, lambsquarter | *Melilotus* spp.<br>Sweet clover | *Spartium junceum*<br>Spanish broom |
| *Chrysanthemum* spp.<br>Chrysanthemum | *Muehlenbeckia complexa*<br>Mattress vine | *Tamarix* spp.<br>Tamarisk, salt cedar |
| *Cirsium* spp.<br>Thistle | *Myoporum laetum*<br>Myoporum | *Ulex europaeus*<br>Gorse |
| *Conium maculatum*<br>Poison hemlock | *Nicotiana glauca*<br>Tree tobacco | *Vinca major*<br>Periwinkle |
| *Conyza canadensis*<br>Horseweed | *Pennisetum clandestinum*<br>Kikuygrass | *Washingtonia robusta*<br>Fan palm |
| *Cortaderia jubata*<br>Andean pampas grass | *Pennisetum setaceum*<br>Fountain grass | *Xanthium strumarium*<br>Cocklebur |

Also refer to the California Exotic Pest Plant Council's *Exotic Pest Plants of Greatest Ecological Concern in California*. Nonnative grasses in San Diego County are too numerous to list all of them individually.

**Management Recommendations**

Magnitude, Quality, and Duration of Flows

- Maintain existing natural drainages and watersheds and restore or minimize changes to natural hydrological processes.
- Evaluate proposed structures and activities for effects on hydraulics, and implement remedial actions as needed.
- Use Best Management Practices both within and outside the preserve system to maintain water quality. Evaluate the need for water quality control structures (e.g., siltation basins) in the preserve where water quality is poor upstream of the preserve area.

Episodic Disturbances

- Design construction within and adjacent to preserve areas to accommodate large floods and debris flows.
- Design detention basins with earthen berms to allow growth of natural vegetation.

Sediment Transport

- Prohibit mineral extraction operations within and upstream of preserve areas.

### 6.3.12 Species Reintroduction

**Management Issues**

Species reintroduction refers to relocating a sensitive plant or animal species into native habitat within its historic range to enhance species survival. Reintroduction can be costly and is not yet widely conducted or overly successful. Although *in situ* conservation is always more desirable than reintroduction, reintroduction may be the only hope for species on the brink of extinction.

**Management Recommendations**

Reintroductions will require appropriate federal and state permits and should only be conducted at their recommendation. The decision to reintroduce a species depends on a number of species-specific and site-specific factors, and reintroduction requires detailed planning and monitoring. Reintroduction efforts are appropriate if the species is not likely to recover or persist on its own and its biology is known or being researched. The site proposed for reintroduction should be within the historic range of the species, ecologically appropriate, and within the preserve, and threats to its persistence should be removed.

### 6.3.13 Enforcement

**Issues**

Enforcement programs are needed to ensure compliance with land use plans and restrictions, such as zoning, and to ensure that fire management and recreational uses are compatible with preserve goals. This is a critical component of habitat management plans.

**Recommendations**

Access control and other restrictions within the preserve should be strictly enforced. The jurisdictions and preserve managers should work together and with local community groups on a public education program to explain goals and regulations as well as educate the public on the area's resources. The ultimate level of enforcement lies in the implementing agreement with the wildlife agencies, because degradation of resources could result in loss or revocation of federal and state take authorizations.

## 6.4 BIOLOGICAL MONITORING AND ADAPTIVE MANAGEMENT

The NCCP process and conservation guidelines require regular monitoring of covered species populations and their habitats. These surveys should supplement existing project-specific monitoring activities, such as at Batiquitos Lagoon. The MHCP preserve must be monitored to assess the status and trends of resources within the preserve. Biological monitoring will evaluate whether the preserve system is meeting subarea plan conservation targets for covered plant and animal species and their habitats, address specific questions regarding species population status and ecosystem functions, identify threats to covered species and their habitats, and help identify management needs. Monitoring should also identify issues requiring focused research to meet species-specific conservation goals and permitting conditions (see Section 4 of Volume II). The MHCP Biological Monitoring and Management Plan (Volume III) outlines the issues to be addressed by the long-term monitoring program. In addition, area-specific habitat management and monitoring plans must be prepared for individual preserve areas and should fully address preserve-level monitoring and management (see Section 6.3.1).

Information gained through monitoring will inform management decisions. An adaptive management program will provide correcting 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 management actions are discussed in the preceding sections and in Volume III - MHCP Biological Monitoring and Management Plan.

### 6.4.1 Responsibilities and Coordination

A critical factor in the success of the MHCP biological monitoring program will be the coordination of monitoring efforts throughout the MHCP study area to (1) prioritize management and monitoring efforts on a subregional basis, (2) address management problems at a subregional level, (3) incorporate management and monitoring information from preserve-level monitoring into subregional and regional evaluations and decision making, (4) ensure spatial and temporal consistency in data collection and analysis performed across the subregion, (5) allow compilation of data from different sources into comprehensive monitoring reports every 3 years, (6) establish a centralized data storage repository, with data accessible to biological monitors, researchers, and reviewers, and (7) coordinate with monitoring programs in other subregions.

Each city will be responsible for coordinating with other cities in implementing monitoring and management (see Section 5.7). The USFWS and CDFG will provide oversight, including review of surveys, preserve management projects, and approval of results and reports generated by the monitoring program. Each city is responsible for preserve level monitoring and management for its subarea.

### 6.4.2 Levels of Monitoring and Biological Objectives

There are three major spatial scales of interest for monitoring in the South Coast NCCP planning area: (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. Ecoregional monitoring is the responsibility of the wildlife agencies and is currently in the planning phase.

#### NCCP Ecoregion

The South Coast NCCP Ecoregion includes portions of five counties in southern California (Los Angeles, San Bernardino, Riverside, Orange, and San Diego) that support coastal sage scrub habitats. The objective of NCCP ecoregion monitoring is to assess indicators of ecosystem condition 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 primarily the responsibility of the wildlife agencies (i.e., CDFG and USFWS), with assistance from academic and other entities (e.g., U.S. Geological Survey).

#### Subregions

Subregions within the NCCP ecoregion are defined principally by political boundaries and are the scale at which individual multiple species planning efforts are conducted. Subregions of the South Coast NCCP include the North San Diego County MHCP, San Diego MSCP, Coastal and Central Orange County NCCP, North San Diego County MSCP, Southern Orange County NCCP, Western Riverside County MSHCP, Palos Verdes NCCP, and Western San Bernardino County NCCP (not currently active).

Each city must implement actions to ensure that conservation goals are met in its subarea. The MHCP 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 (see Volume II). Implementing actions to achieve the conservation goals or strategies by the MHCP cities is the basis for issuance of take authorizations under the MHCP plan. These implementing actions include monitoring and management of the preserve. The MHCP biological monitoring and management program has been structured to allow the wildlife agencies and take authorization holders to (1) evaluate compliance with MHCP conservation requirements (i.e., "compliance" or "implementation" monitoring) and (2) assess covered species population trends and additional key factors associated with species-specific conservation goals and strategies (i.e., "effects and effectiveness" monitoring) within the subregion and individual subareas.

#### Preserve Areas

The finest spatial scale of the NCCP ecoregion planning area encompasses the preserve areas within subareas or subregions. These individual preserve areas are lands that vary with respect to ownership and management responsibility and are the subject of area-specific management plans.

Each city is responsible for managing individual preserve areas to ensure that conservation goals are met. Monitoring at the preserve area scale is focused on obtaining information for management purposes. Managers must monitor the status and trends of covered species and collect data on key environmental resources within preserve areas to select, prioritize, and measure the effectiveness of management activities. In most instances, the array of threats or stressors of 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 plans must comprehensively address management and monitoring issues for each preserve area. Information collected within the preserve areas will be aggregated for analysis at the subregion and ecoregion scales.

# 7.0 FINANCING OF HABITAT ACQUISITION AND MANAGEMENT

Implementation of the MHCP will require funding for the acquisition, restoration, and management of natural habitat areas; biological monitoring; and administration, legal, and other costs associated with habitat acquisition and management. This section describes the estimated costs of program implementation and alternative sources of funds to pay for those costs.

## 7.1 FINANCING POLICIES AND ISSUES

Through the MHCP Advisory Committee and the ad hoc Committee of Elected Officials, local jurisdictions participating in the MHCP have adopted policies and recommended the use of certain assumptions regarding the financing of plan implementation, as described below.

### 7.1.1 Financing Policies

Habitat Acquisition. It is assumed for analysis that the federal and state governments, collectively, and the local jurisdictions, collectively, will each be responsible for meeting one-half of the habitat acquisition that may be needed for plan implementation. All acquisitions will be from willing sellers, on terms acceptable to both the seller and the buyer.

Habitat Management. Federal, state, and local agencies will manage their respective public lands committed to habitat conservation and other lands that are conserved as mitigation for public projects. Management of mitigation lands that remain in private ownership will be funded by the owners, with the stipulation that management functions be performed by qualified staff or organization, approved by the wildlife agencies. Other privately owned habitat proposed for inclusion in the MHCP preserve, but not currently managed or anticipated to be managed in the future for biological resources, would be managed according to MHCP guidelines, if a regional funding program is established and if access is made available.

Biological Monitoring. Federal, state, and local agencies that own habitat lands in the preserve system will participate in a coordinated biological monitoring program.

Regional Funding Program. It is assumed that the local share of costs to implement the MHCP plan will be funded by a regional funding program, to be established cooperatively by the participating local jurisdictions and submitted to the voters for approval. For purposes of this plan, "regional funding program" may refer to a countywide funding program, established in cooperation with other subregional habitat conservation programs, or to a more limited, subregional funding program, which is established for the MHCP study area only.

The MHCP Advisory Committee also adopted policies regarding the use of a regional funding program to acquire and maintain the MHCP preserve system, as described in Section 7.3.1.

Timing of Voter Approval. It is assumed for analysis that the regional funding program will be in effect for 30 years. Participating jurisdictions will agree to begin a process of establishing such a program within 18 months of federal and state approval of the MHCP plan or the first subarea plan in the MHCP and to place a measure on the ballot within an additional 18 months. This schedule may be adjusted, if the participating jurisdictions demonstrate that their good faith efforts require additional time. Even if the selected funding program does not require voter approval, the jurisdictions have expressed an intention to seek an advisory vote.

Deficiency in Public Funds. Implementing agreements for the MHCP subarea plans should provide for the contingency that either federal/state or local funds may not be sufficient for full implementation of the program. If federal/state funding is not provided as committed, the MHCP plan will be reevaluated with possible adjustments to take authorization coverage and assurances. If adequate local funding is not provided, the wildlife agencies and local jurisdictions will develop a strategy to address the shortfall.

### 7.1.2 Additional Issues

The MHCP Advisory Committee has previously reviewed the following issues related to financing of the MHCP plan implementation.

Conservation of Core California Gnatcatcher Habitat. In addition to habitat areas conserved within the jurisdictional boundaries of the MHCP cities, it is assumed that 400 to 500 acres of coastal sage scrub capable of supporting 16 to 23 pairs of gnatcatchers will be conserved in the unincorporated county area east of Carlsbad and Encinitas and south of San Marcos. This may be accomplished through a combination of methods, such as application of land use policies and regulations, mitigation for public and private projects, acquisition using federal or state funds, and acquisition using a regional funding program.

Long-term Demand for Conservation or Mitigation Credits. A number of conservation banks have been established in San Diego County, including Daley Ranch, Manchester Avenue, and Whelan Ranch conservation banks. Potential demand for conservation credits generated by future development in the study area is discussed in Section 4.4.3.

MHCP Regional Funding Program and Daley Ranch Conservation Bank in Escondido. The City of Escondido acquired the Daley Ranch property and established a conservation bank in 1997. Due to the size and importance of Daley Ranch to the MHCP preserve system, the management of its habitat areas is proposed to be funded by the regional funding program. However, the city will continue to be responsible for funding the management until the regional funding program is adopted.

Prior Commitment of Funds for Habitat Management. Previously approved HCPs or conservation bank agreements contain provisions for the management of protected habitat areas, including commitments of future funding for management activities. This financing plan assumes that these areas will continue to be managed by their owners. However, biological management of the Daley Ranch Conservation Bank in Escondido and San Luis Rey River Flood Control project area are proposed to be financed by a regional funding program, because of the important biological resources in these areas.

Establishing an Endowment to Fund Recurring Costs in Perpetuity. An endowment to fund annual management and administrative costs in perpetuity may be established by setting aside a portion of revenues generated by the regional funding program. An alternative approach is to renew or replace the regional funding program at the end of its initial term. The latter approach will reduce the required annual revenues of the regional funding program.

Coordination of MHCP Financing Plan with the South County MSCP Plan. When the City of San Diego signed an implementing agreement with the federal and state wildlife agencies on July 17, 1997, it initiated a 36-month schedule (which has been extended through commitment of interim funding) for the establishment of a regional financing program for the south county MSCP. Although the MHCP and MSCP are separate programs, there are significant benefits in coordinating the local funding components of the two programs, especially in obtaining voter

approval. Local jurisdictions participating in the MHCP have the option of establishing a regional funding program cooperatively with the south county MSCP jurisdictions.

## 7.2 ESTIMATED COSTS OF PLAN IMPLEMENTATION

### 7.2.1 Habitat Acquisition

As discussed in Section 4.1.2, the MHCP cities identified two categories of priority conservation areas for potential habitat acquisition: (1) to allow the cities flexibility in achieving conservation targets on properties that are constrained by narrow endemic species, major or critical locations of MHCP species, or wildlife movement corridors; and (2) to further the goals of the MHCP while simultaneously meeting other open space objectives of the cities. Based on preliminary discussions, it is assumed in this plan that state or federal government would acquire the Priority 1 areas, totaling approximately 609 acres, if the MHCP cities would establish endowment funds to manage and monitor those lands in perpetuity. The endowment funds must be established at the time of purchase, even if a regional funding program has not been adopted. The MHCP cities would acquire, manage, and monitor the Priority 2 areas, totaling approximately 738 acres, if a regional funding program has been adopted and if funds are available. Interim financing program (see Section 7.4 below) will not include acquisition of Priority 2 conservation areas, though some areas may be acquired without a regional funding program if alternative funds become available.

Estimated cost (in 2002 dollars) to acquire Priority 1 lands is $35.2 million, and that of Priority 2 lands is $36.1 million (Table 4-3). Thus approximately one-half of acquisition cost would be borne by federal and state agencies, and approximately one-half by the local jurisdictions through the regional funding program.

Note on Land Values. Since the location and type of potential acquisition areas differ widely across the study area, a single estimate of value per acre was not developed. Estimates were prepared separately by jurisdiction and for the types of lands that contain important habitats for the MHCP. The study area is largely urbanized. Costs of potential acquisition areas were estimated using prices of recent, comparable sales of vacant land, adjusted for the presence of physical constraints, such as steep slopes or floodplains, and other limitations imposed by land use policies and environmental regulations, such as requirements for offsite mitigation. Generally, unconstrained vacant land in the study area is valued at $2.00 to $5.00 per square foot, depending on location and allowable use; however, presence of physical and planning constraints can substantially reduce the average value of a parcel. Cost may also be reduced by acquiring open space easements on portions of private lands, rather than fee title. Estimates of land value used in this analysis reflect a variety of site-specific conditions that could occur in potential acquisition areas.

### 7.2.2 Habitat Restoration

Habitat quality has been degraded in many locations by past and present land uses and invasive species. A review of habitat quality on potential conservation areas indicated that approximately 338 acres of coastal sage scrub habitat should be enhanced or restored in areas critical to conservation of the California gnatcatcher. This recommendation became a condition for coverage of the gnatcatcher by the MHCP. Depending on site-specific criteria, such efforts can vary from limited enhancement (e.g., weeding and broadcast seeding) to intensive restoration (e.g., site grading, irrigation, planting/seeding, and maintenance and monitoring for up to 5 years). Costs of these efforts range from about $18,000 to $76,000 per acre. Required new funding for coastal sage scrub restoration totals approximately $3.79 million, with

restoration sites located in Carlsbad ($1.33 million), Oceanside ($2.43 million), and San Marcos ($34,000).

### 7.2.3 Habitat Management, Biological Monitoring, and Program Administration

Operation and management required for the MHCP preserve include the following activities.

- habitat management, or field operations, such as trail and fencing maintenance, vegetation control, security, and visitor services;
- biological monitoring, or biological field studies necessary to meet the conditions of wildlife agency permits; and
- program administration required for preserve assembly and coordination, land acquisition, financing, legal, and administrative support.

Habitat Management. At buildout, the MHCP preserve will include over 20,000 acres – 19,928 acres inside the MHCP cities and 400 to 500 acres in the unincorporated gnatcatcher core. (All acreage figures are approximate, based on current GIS data for the MHCP in 2002; see Table 7-1 and Figure 7-1.) Habitat acres to be managed by public agencies and private organizations differ from habitat acres owned by those entities. For example, some local agency lands (such as portions of San Elijo Lagoon) are managed by a state agency, and some state lands are managed by a city. Assuming no new management agreements and prior to any new acquisition, the MHCP cities would be responsible for managing 7,144 acres of conserved habitat lands; federal and state agencies, 2,447 acres; and other local agencies, 1,181 acres. Under the MHCP, 9,156 acres of privately owned habitat lands will be managed for biological resources.

Of these, 946 acres are located in existing private mitigation banks and mitigation areas approved by the wildlife agencies and managed for biological resources; 2,054 acres of future mitigation areas will be managed through private endowments or other mechanism to be required by local jurisdictions as a condition of development approval; 2,908 acres are maintained (or anticipated to be maintained in the future) as open spaces by homeowners associations; and the remainder, 3,248 acres, have no specified management or maintenance programs. When the regional funding program is established, the MHCP cities will seek to manage habitat lands currently maintained by homeowners' associations and other lands that are not actively managed, if appropriate access agreements are obtained from the landowners (see also Section 6.3.3). Subarea plans will identify a process for integrating the HOA lands and other private lands into the MHCP preserve system. When acquired, the MHCP cities would also assume management responsibility for up to 1,028 acres of priority conservation areas in the cities and up to 320 acres in the unincorporated core.

## Table 7-1

## RESPONSIBILITY FOR THE MANAGEMENT OF CONSERVED HABITAT (Acres)

| Agency Responsible for Management of Conserved Habitat Acres at Buildout[1] | Continuation of Existing Funding Commitments | Managed With Private Funds in the Future | Managed With Interim or Permanent Financing | Total |
|---|---|---|---|---|
| Inside MHCP Cities | | | | |
| Federal and State Agencies[2] | 2,353 | – | 94 (I) | 2,447 |
| Cities[3] | 261 | – | 6,883 (I) | 7,144 |
| Other Local Agencies | 1,181 | – | – | 1,181 |
| Private | | | | |
| Mitigation Banks and Areas[4] | 946 | 2,054 | – | 3,000 |
| Homeowners Associations[5] | – | – | 2,908 (P) | 2,908 |
| Other[6] | 7 | – | 3,241 (P) | 3,248 |
| **Total Inside MHCP Cities** | **4,748** | **2,054** | **13,126** | **19,928** |
| Unincorporated Core[7] | 118 | 227 | 320 (P) | 665 |
| **Total Including Unincorporated Core** | **4,866** | **2,281** | **13,446** | **20,593** |

Note: All figures are approximate and subject to change as subarea plans are finalized and as the MHCP is implemented over time. Figures may not add to totals as shown due to rounding.

(I) Habitat areas managed under both interim and permanent financing programs.

(P) Habitat areas managed under permanent financing program. However, if Priority 1 conservation areas are purchased by the state before a regional funding program has been established, they would be managed under the interim financing program.

[1] Management differs from ownership. For example, some local agency lands (such as portions of San Elijo Lagoon) are managed by CDFG, and some state lands are managed by a city.

[2] State agencies manage Buena Vista, Batiquitos, and San Elijo Lagoons and upland habitat areas in northeast Carlsbad. BLM lands are located in Escondido. A property acquired by the state in 2002 may be managed by the city, if Priority 1 areas are acquired by the state.

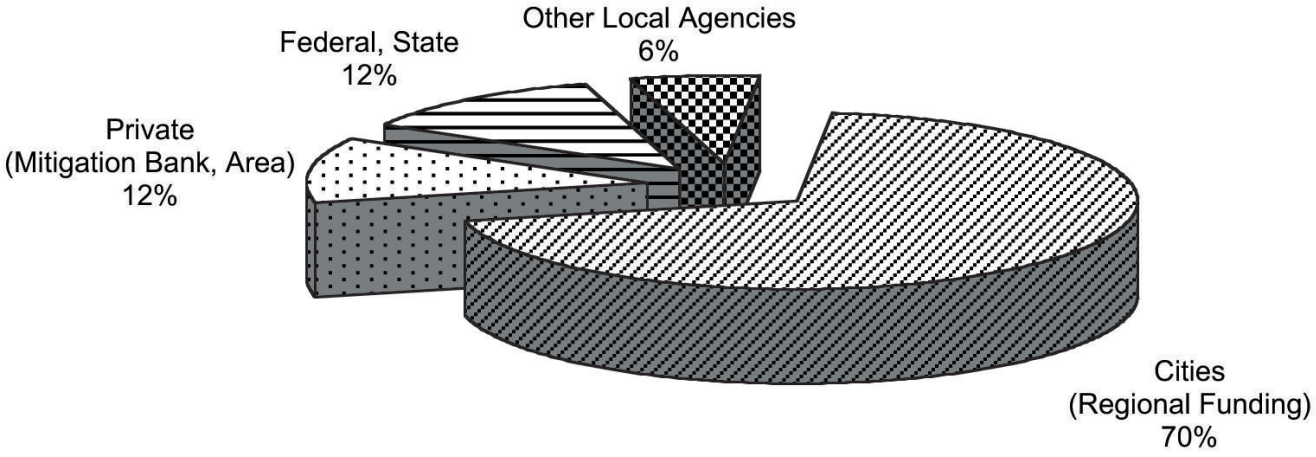
[3] Daley Ranch Conservation Bank and San Luis Rey River Flood Control area (total of approximately 3,518 acres) are proposed to be included among lands managed by the MHCP regional funding program.

[4] Includes both private mitigation banks and mitigation areas that have been approved by the cities or the wildlife agencies and that have commitments for biological management in perpetuity.

[5] Homeowners' association (HOA) open spaces, including those created in the past and anticipated to be created in the future.

[6] Privately owned habitat lands that do not or that are not anticipated to have an active management program.

[7] In the unincorporated core habitat for the California gnatcatcher, 118 acres have been previously purchased and currently managed for mitigation of projects in MHCP cities (including 19 acres of conservation easement on coastal sage scrub habitat purchased for mitigation), and 227 acres have been purchased under the Carlsbad's HMP and are committed to be managed for biological resources. Additional 320 acres represent Priority 1 and 2 conservation areas and may be purchased and managed under the MHCP regional funding program.




**Distribution of MHCP Preserve by Management Responsibility**
*Total Conserved Habitat of 19,928 Acres in Cities and 400 to 500 Acres in Unincorporated Core*

FIGURE
7-1

GRAPHICS/Biology/MHCP/Fig 7_1.FH8

Average management cost can vary widely, depending on the size and shape of contiguous habitat area, habitat type, adjacent uses, and species-specific requirements. Data on annual expenditures were obtained for 12 habitat preserves in San Diego County currently (2002) managed by the Center for Natural Lands Management. The data show a clear correlation of average management cost per acre with preserve size and presence of wetland or riparian habitats. The negative correlation with preserve size is likely due to location – larger preserves are generally located away from urbanized areas – and to the greater significance of edge effects for smaller parcels. In addition, management of a wetland or riparian preserve costs substantially more than that of an upland preserve of comparable size. A regression model fitted to the data indicates that average cost to manage a 100-acre upland habitat area will be around $111 per acre per year, while cost to manage a 500-acre upland habitat area will be around $53 per acre per year. Management of a wetland habitat of comparable size would cost nearly three times as much as an upland habitat.

The regression model was used to estimate average management costs for habitat lands that currently do not have a management program with a focus on biological resources. Representative sizes of preserves and average proportions of wetland or riparian habitats were calculated for habitat lands owned by the cities and by private individuals or organizations. In the case of Daley Ranch, the management budget stipulated in the conservation bank agreement ($80,000 per year in 1997) was updated to 2002 prices and included in the MHCP budget.

Excluding areas that already have dedicated funding sources for management, but including costs to manage and monitor the Priority 1 conservation areas, if they are acquired, additional cost to manage and monitor habitat acres under the MHCP cities' management responsibility is $0.73 million per year (2002 dollars). Management and monitoring of the Priority 1 areas is estimated to cost $89,000 per year. When Priority 2 areas are acquired, management of city-owned habitat lands is estimated to cost $0.84 million per year (Table 7-2).

Among habitat areas under the management responsibility of private organizations, existing mitigation banks and mitigation areas approved by the cities and wildlife agencies will continue to be managed using independent funding sources. These areas generally have a management agreement with a non-profit organization specializing in habitat management, funded by an endowment. The cities have also identified other privately owned habitat areas for which management in perpetuity to protect biological resources will be required as a condition of development approval. Excluding habitat lands with existing or future funding commitments, estimated cost to manage and monitor habitat acres under the management responsibility of private organizations is $0.73 million per year. When costs of biological monitoring activities not included in management costs noted above are added, annual management and monitoring costs total $0.88 million (Table 7-2). Altogether, total cost of habitat management and monitoring at buildout of the preserve system is estimated to be $1.7 million per year.

It is assumed that federal and state governments and other local agencies will manage and monitor habitat lands that they conserve in the MHCP preserve.

Habitat Management Contingency. A contingency budget (provisionally estimated at 15% of annual management and monitoring costs) will be established to meet the needs of adaptive management. The contingency budget may need to be accumulated over time; that is, funds not used during one fiscal year need to be saved and augmented with additional funds in subsequent years. Funding for adaptive management and other special needs will be addressed in the cities' subarea plans and implementing agreements.

Program Administration. Administration of the MHCP, including habitat acquisition and management, could be performed by a single office (such as the MHCP Land Conservancy discussed in Section 5.7), with oversight by the MHCP cities, or separately by the cities.

Administrative costs cover staffing, including a biologist, and budgets for legal, insurance, public information, and office support. Annual cost is estimated to be $200,000 during the interim financing period, and $400,000 under the permanent financing program.

One-time Start-up Cost. The experience of the Center for Natural Lands Management (CNLM) and others indicates that there are one-time costs associated with initiating a management program, such as equipment, fencing, and other improvements. It is assumed for this plan that start-up costs, which may be expended over several years, will total 125% of annual habitat management and monitoring costs, excluding contingency and administration.

Estimated total cost of management, monitoring, and program administration to be funded by the regional funding program is $2.39 million per year, with a start-up cost of $2.2 million (Table 7-2). The start-up cost is calculated as 125% of estimated annual management cost of $1.7 million, excluding contingency and administration. The participating jurisdictions have a reasonable expectation that these estimates of annual and start-up costs will suffice to perform management, monitoring, and administration functions consistent with the MHCP.

### 7.2.4 Endowment to Fund Recurring Costs

To fund annual costs to manage, monitor, and administer the preserve system in perpetuity, an endowment may be established. Assuming net interest revenues of 2.5% per year after inflation, the required endowment in year 2002 dollars is $95.5 million. The endowment may be established, for example, over 30 years by annual deposits into a sinking fund. If nominal interest revenue is 5% (which would indicate that expected inflation rate, as well as net interest rate, is 2.5%), constant annual deposit of $3.01 million would establish the necessary endowment in 30 years. The future, 30th year, value of the endowment, after adjusting for inflation, would be $200 million.

A condition for state or federal government purchase of the Priority 1 conservation areas is that the MHCP cities would establish endowments to manage and monitor those lands and the state's recent acquisition in Carlsbad. Assuming net interest revenue of 2.5% per year, the endowment required for all Priority 1 areas is $5 million in 2002 dollars. Annual deposits of $1.02 million over 5 years, with nominal interest rate of 5%, would accomplish this goal.

## 7.3 OPTIONS FOR REGIONAL OR SUBREGIONAL SOURCES OF FUNDS

### 7.3.1 Policies for Local Revenues and Sources of Funds

It is anticipated that implementation of the MHCP plan could result in substantial benefits to the regional economy by improving the quality of life; establishing a consistent and efficient framework for compliance with federal and state laws protecting rare, threatened, or endangered species and their habitats; and facilitating orderly growth in population, housing, and employment. Such benefits may be realized through increases in building construction, employment, and regional and household income. Accordingly, the following policies should be applied to the use of local revenues for the MHCP:

- The use of local revenues for habitat acquisition and management is an important component of the MHCP implementation and financing plan.

- Local revenues should be used for habitat acquisition and management, because existing development has historically displaced habitat and because existing residents and businesses will benefit from the preserve system.

- The region should commit an appropriate share from local revenues to implement the regional preserve system at the same time that the extent of federal and state participation in the implementation and financing of the MHCP, or assumptions regarding the extent of such participation, is agreed to and described in the MHCP plan. Federal and state participation in the financing of the MHCP should be maximized as much as possible.

- Local revenues should be collected from as broad a base as possible, covering many types and locations of land uses and activities.

- Local revenues should be collected uniformly, if possible, throughout San Diego County. If revenues are collected only in the MHCP subregion, they should be coordinated with the revenue sources used in the other subregional habitat conservation programs (e.g., MSCP). As part of this coordination, the local jurisdictions should establish priorities and strategies for habitat acquisition and management.

- Local jurisdictions should have the option of supplementing the revenues collected in the MHCP subregion with funds from other sources (e.g., mitigation funds) and using such funds to meet the local goals of the MHCP.

- The MHCP financing program should contain flexibility and contingency to meet unforeseen circumstances and should contain options for supplemental revenues.

- One or more sources of ongoing, long-term revenue should be identified to fund the acquisition of habitat lands. Such a revenue should be collected at a uniform rate over the required term or with a limited rate of escalation.

- One or more permanent sources of revenue should be identified to fund the management of habitat lands.

- The Advisory Committee should determine whether any local revenue alternative, which would otherwise not be subject to voter approval (e.g., some types of fee and rate increases), should be made subject to approval by an advisory vote.

### 7.3.2 Notes on Funding Options

The participating local jurisdictions identified potential sources of funds to implement the MHCP as summarized in Table 7-3. These sources may be grouped as follows:

- Taxes. An increase in existing tax may be approved by the voters. Examples include the sales tax and the property tax. The tax increase would be classified as a special tax if the revenues are intended to be used for a special purpose, such as habitat conservation.

## Table 7-2

## ESTIMATES OF ONE-TIME AND ANNUAL COSTS OF MHCP IMPLEMENTATION

| | **Permanent Financing**[1] *(with Regional Funding Program)* | **Interim Financing**[2] *(prior to Regional Funding Program)* |
|---|---|---|
| **One-time Cost of Implementation** | | |
| Habitat Acquisition | $36.1 M | $1.9 M[3] |
| Habitat Restoration | 3.8 M | – |
| Start-up Cost of Habitat Management[4] | 2.2 M | 0.9 M |
| **Total One-time Cost** | **$42.1 M** | **$2.8 M** |
| **Annual Cost at Buildout** | | |
| Management and Monitoring[5] | | |
| Areas Managed by Cities[6] | $0.84 M | $0.73 M |
| Areas Under Control of HOAs and Other Private Entities[7] | 0.88 M | – |
| Habitat Management Contingency[8] | 0.26 M | 0.11 M |
| Program Administration | 0.40 M | 0.20 M |
| **Total Annual Cost** | **$2.39 M** | **$1.04 M** |
| *Endowment at Net Interest Revenue of 2.5%*[9] | *$95.5 M* | *$5.0 M* |
| *Annual Contribution to Endowment* | *$ 3.01 M*[10] | *$1.02 M*[11] |

Note: All costs in millions of 2002 dollars. Figures may not add to totals as shown due to rounding.

[1] Annual cost at buildout, assuming establishment of a regional or subregional funding program.

[2] Annual cost to be funded by MHCP cities prior to establishment of a regional or subregional funding program; funding source to be identified in the implementing agreement. Interim financing costs are included in permanent financing costs; they are not additional costs.

[3] Interim acquisition budget is from Draft Carlsbad Habitat Management Plan (HMP 1999), with inflation adjustment of 10%. Permanent acquisition budget includes the interim budget plus Priority 2 conservation areas that would substantially improve the MHCP preserve system. Priority 1 conservation areas are assumed to be acquired by state or federal governments and are not included in these costs for the MHCP cities.

[4] Estimated to be 125% of annual management and monitoring costs, excluding contingency and administration.

[5] Includes on-site management and biological monitoring.

[6] Areas currently managed by MHCP cities, plus Priority 1 conservation areas, assuming purchase by state or federal government and the cities' acceptance of management responsibility.

[7] Areas maintained by homeowners associations (HOAs) and other privately owned habitat areas without specified management programs. Also includes subregional biological monitoring.

[8] Contingency budget (15%) for adaptive management.

[9] Amount of endowment fund required to fund annual costs is perpetuity, assuming net interest revenue of 2.5% per year, after adjustment for inflation.

[10] Constant annual deposits into an endowment fund over 30 years, assuming 5% interest revenue and inflation adjustment of 2.5% per year.

[11] Similar to Note 10, but over 5 years.

- Assessments. Special assessments may be levied, subject to provisions of Proposition 218. Examples include benefit assessments, landscape and lighting maintenance assessments, and habitat maintenance assessments.

- Fees. A local jurisdiction may levy a development impact fee or in-lieu mitigation fee on new development, subject to provisions of the Mitigation Fee Act.

For each potential source, Table 7-3 provides the following information:

- applicable method of debt financing, which would permit expenditures in advance of revenue collection;
- statutory authority;
- requirement for voter approval; and
- implementing agency (city, county, or special district) and required coordination with other habitat programs.

Revenue Growth over Time. The revenue alternatives differ in terms of potential growth over time. General revenues, such as sales or property taxes, increase relatively quickly, reflecting both growth in new development and price inflation. Parcel or property-based revenues, such as parcel taxes or benefit assessments, grow somewhat more slowly than general revenues. These revenues increase according to growth in the number of parcels, unless a provision for annual escalation in tax rate has been made. Fees may be adjusted for inflation, but generally the revenues reflect the growth of new development, which can vary widely from year to year.

Impacts to Residential and Nonresidential Land Uses. The alternative revenue sources have different fiscal impacts on residential and nonresidential developments. Parcel or property-based taxes or assessments generate the majority of revenues from residential uses. Typical applications, based on benefit, collect from 80% to 85% of total revenues from residential land uses and the remainder from commercial and industrial land uses. Ad valorem property tax revenues reflect the relatively fixed allocation that exists in the assessed value base. In the MHCP study area, assessed values of residential land uses are about 3.6 times those of nonresidential land uses (excluding agriculture and other uses). Sales taxes tend to place the lowest burden on residential land uses, with a significant amount paid by both businesses and visitors to the San Diego region. Fees for habitat purposes are calculated based on acres of impact or sometimes total acres of project. Residential development generally impacts the most area, generating the most revenues in comparison with commercial or industrial development.

The following issues should be considered in selecting a local funding source:

- The use of any assessment, fee, or tax must meet the requirements of Proposition 218 passed by the voters in 1996. In particular, implementing a new funding source generally requires two-thirds voter approval, although some may be approved by a simple majority.

- A funding source, or a combination of sources, must be flexible enough to address different needs associated with habitat acquisition, restoration, management, and/or creation of a permanent endowment to fund ongoing costs of management and administration.

## Table 7-3

## POTENTIAL LOCAL FUNDING SOURCES FOR HABITAT ACQUISITION AND MANAGEMENT

| Funding Source / Financing Mechanism | Statutory Authority | Required Voter Approval | Implementing Agency | Allowed Uses of Revenues | Notes |
|---|---|---|---|---|---|
| Ad Valorem Tax / General Obligation Bond | California Constitution, Art. XIIIA, XVI | 2/3 Majority | City or special district | Habitat acquisition and restoration; not management or monitoring | |
| Mello-Roos Special Tax / Limited Obligation Bond | Mello-Roos Act, Gov. C. 53311 ff. | 2/3 Majority | City, special district, or JPA | Habitat acquisition, restoration, management, monitoring, and administration | |
| Sales Tax / Revenue Bond | Rev. & T. C. 7200 ff.; Gov. C. 50665.1 ff. | 2/3 Majority | County or special district | Habitat acquisition, restoration, management, monitoring, and administration | Countywide program, requires coordination with MSCP and other habitat programs |
| Benefit Assessment / Assessment Bond | AB 2007, Pub. Res. C. 5506.3 ff. | Majority (Prop. 218) | County; regional park and open space district | Primarily for habitat acquisition and restoration; habitat management expenses limited to 20% of annual revenues | Countywide district, requires coordination with MSCP and other habitat programs |
| Habitat Maintenance Assessment / Assessment Bond | SB 445, Gov. C. 50060 ff. | Majority (Prop. 218) | City | Habitat acquisition, restoration, management, monitoring, and administration | |
| Landscaping and Lighting Maintenance Assessment / Assessment Bond | Landscaping and Lighting Act of 1972, Str. & H. C. 22500 ff. | Majority (Prop. 218) | City or special district | Habitat acquisition, restoration, management, monitoring, and administration | |
| Development Impact / In-lieu Mitigation Fee | Mitigation Fee Act, Gov. C. 66000 ff. | No voter approval required | City | Primarily for habitat acquisition and restoration | Primarily pay-as-you-go; limited bonding capacity |

Gov. C. -- Government Code
JPA -- Joint Powers Authority
Pub. Res. C. -- Public Resources Code
Rev. & T. C. -- Revenue and Taxation Code
Str. & H. C. -- Streets and Highways Code

- The program should provide funding for a sustained period (up to 30 years) and allow issuance of bonds.

- Implementation of the program may require state legislation, as in the case of AB 2007, to meet special funding needs or to coordinate actions by multiple jurisdictions.

### 7.3.3 Local Funding Sources

Ad Valorem Property Tax/General Obligation Bond Program. Subject to approval by two-thirds of the voters, local jurisdictions may issue general obligation bonds and increase the ad valorem property tax above the statutory limit of 1% to pay principal and interest. Bond proceeds may be used to acquire habitat lands and undertake restoration or other improvements but cannot be used to purchase equipment or to pay for management. However, general obligation bonds could be combined with other sources, such as habitat maintenance assessment, to fund the MHCP implementation costs.

The ad valorem tax rate must be applied uniformly to all assessed properties. Thus, there is no flexibility to vary taxes according to land use. In 2001, total assessed valuation in San Diego County was $199.9 billion, of which residential properties comprised 75.5%; commercial and industrial properties, 20.8%; and farms, vacant lands, and others, 3.7% (County of San Diego, Property Tax Services, Fiscal Year 2001-2002).

Mello-Roos Special Tax. The 1982 Mello-Roos Community Facilities Act (Government Code, Section 53311 et seq.) enables cities, counties, and special districts to establish community facilities districts (CFDs) and levy special taxes to fund a variety of public services, including open space acquisition and maintenance. A special tax such as a Mello-Roos tax must be levied uniformly on classes of eligible properties or taxpayers, but it cannot be based on property values. It is not necessary for a special tax to be directly related to benefit. Establishment of a CFD and levy of a special tax are both subject to approval by a two-thirds majority.

Sales Tax. State law permits a county to levy additional sales tax at a rate of 0.25% or 0.5%. Special legislation is required to raise the sales tax by 0.125%. Imposition of a sales tax for a special purpose is a "special tax" and must be approved by two-thirds of the voters. Subject to this approval, sales tax increase may be used to fund habitat acquisition, preserve management, monitoring, and establishment of an endowment. Sales taxes are paid by residents, businesses, and visitors. Relative to other payers (e.g., nonresidential development and visitors), residents of the study area would pay less under a sales tax program than under other forms of local financing.

In San Diego County, one option for an MHCP financing program would be an approach based on sales tax revenues either as a separate voter approved measure or in conjunction with the extension of an existing program such as TransNet, a transportation financing program based on ½-cent sales tax, approved by the voters in 1987 and scheduled to expire in April 2008. SANDAG and member jurisdictions are working to reauthorize and continue TransNet after April 2008. Legislation was passed in 2002 that enabled SANDAG to potentially expand the purposes of TransNet beyond transportation and possibly include related improvements in storm water management and habitat conservation. These options, as well as others, will be discussed as part of an overall strategy to the extension of the existing sales tax.

Benefit Assessment. AB 2007 enacted in 1993 (Public Resources Code, Section 5506.3 et seq.) provides that San Diego County can initiate proceedings for the formation of a regional

open space district coterminous with the boundaries of the county. The law allows the regional open space district to levy assessments under the Landscaping and Lighting Act of 1972. Procedures for notification and approval must comply with the requirements of Proposition 218. Both the formation of the district and the levy of special assessments must be approved by a majority of the voters in the district. This approach is modeled after that used by Los Angeles County, where the voters approved "Proposition A" in November 1992 to fund $540 million of park and recreation improvements and open space acquisition.

There are certain restrictions associated with the use of AB 2007. Since this is a funding program for a countywide open space district, the financing needs of the MHCP must be coordinated with those of the other regional habitat conservation programs in the county. The law also stipulates that for 20 years after assessments are first levied, 80% of all assessment proceeds must be used for capital outlay projects, which may include land acquisition. Under the MHCP, however, expenditures for management, monitoring, and program administration will exceed 20% of total annual expenditures.

The law provides that the assessment must be related to benefit, and benefits of open space preservation accrue predominantly to residents. In Los Angeles County, 85% of total assessments are levied on residential properties and 15% on commercial and industrial properties. Similar distribution may be assumed for the MHCP.

Habitat Maintenance Assessment District (SB 445). SB 445 (Government Code, Section 50060 et seq.) provides for the establishment of an assessment district to fund the maintenance of natural habitat for up to 30 years. Any city or county may initiate proceedings for the formation of the assessment district. The law requires that all property owners in the district be given notice of a public hearing. Under Proposition 218, the proposed assessment must be approved by a majority of voters in an election.

The law on habitat maintenance assessment district establishes the principle that a lot or parcel is presumed specifically to benefit from natural habitat, if past or proposed development or use of the lot or parcel has adversely affected or will adversely affect the habitat. Historical impact is thus an accepted basis for determining current benefit from habitat maintenance.

Authorized expenditures by the habitat maintenance assessment district include habitat creation, restoration, enhancement, and maintenance; land acquisition; biological monitoring and evaluation; and related administrative costs. The act also authorizes issuance of bonds to finance the estimated cost of habitat acquisition, creation, restoration, or other improvements. Maximum assessment that may be levied by the district on any lot or parcel is limited in 1994 to $25 and in subsequent years to this amount increased by the California Consumer Price Index. In fiscal year (FY) 2000-01, maximum allowable assessment is $28.20 for one parcel.

Proposition 218. In November 1996, California's voters approved Proposition 218, known as the "Right to Vote on Taxes Act." The proposition requires that all taxes and most charges on property owners be subject to voter approval and limits the use of special assessments and property-related fees, that are imposed as an incident of property ownership, to funding services that provide special benefits to parcels, not general governmental services. To levy assessments for habitat and open space purposes, a special benefit must be identified for each parcel to be assessed.

Proposition 218 establishes a common formation and ratification procedure for all assessment districts. In particular, a new assessment district must be approved by a majority of affected property owners casting a ballot, where each ballot is weighted according to the proportional financial obligation of the property.

Development Impact Fee and In-lieu Mitigation Fee. A development impact fee is an exaction that is imposed as a condition of approval for new development. AB 1600 of 1987 and various court cases (*Nollan* v. *California Coastal Commission; Dolan* v. *City of Tigard*) require (1) that a "nexus" or link must exist between the fee and the purposes for which the fee will be used and (2) that there must be a "rough proportionality" between the fee and the impact that the fee is intended to allay.

An in-lieu mitigation fee presupposes specific guidelines that determine appropriate mitigation for impact to a public resource, such as purchase of land to protect species or habitat. Payment of an in-lieu fee to a local jurisdiction provides an optional method of satisfying the mitigation obligation, where the jurisdiction would use the fee revenues to acquire and manage land.

If nexus and rough proportionality requirements are met, a development impact fee or an in-lieu mitigation fee can be used to acquire and restore habitat lands. A mitigation fee program was adopted by the County of Riverside for the development, preparation, and implementation of an HCP for the Stephens' kangaroo rat, including acquisition and management of habitat reserves. A mitigation fee program adopted by the City of Bakersfield and the County of Kern under the Metropolitan Bakersfield HCP is intended for habitat acquisition, improvement, management endowment, and administration. A mitigation fee program has been approved by the City of Carlsbad, though its implementation is conditioned on the approval of the city's Habitat Management Plan (HMP).

## 7.4 PERMANENT AND INTERIM FINANCING

Implementation of the MHCP and the subarea plans will be financed through continuation of existing funding commitments (for example, mitigation banks and approved mitigation areas) and establishment of a voter-approved, regional funding program (permanent financing program). Prior to establishment of a regional program, individual cities will adopt interim financing programs, to be described in their respective subarea plans and implementing agreements.

Interim financing will support management of habitat lands for which the cities have management responsibility, generally city-owned lands, together with associated start-up, contingency, and administration costs. Interim financing also includes habitat acquisition described in the City of Carlsbad's HMP. If the state or federal government acquires Priority 1 conservation areas and if the local jurisdictions accept the management responsibility, cost to manage and monitor the acquired areas will be paid through interim financing until a regional funding program is adopted.

If all MHCP cities adopt interim financing programs, one-time costs may total $2.8 million and on-going costs, $1.04 million per year (Table 7-2).

## 7.5 FEDERAL AND STATE FUNDING PROGRAMS

It is assumed in this plan that federal and state governments will participate in the acquisition and management of habitat lands as part of the MHCP preserve. It is further assumed that federal and state governments will manage habitat lands that they currently own. The following programs may be used to fund the federal/state share of implementation costs.

### 7.5.1 Federal Programs for Habitat Acquisition and Management

The principal federal funding source for acquiring new recreation lands, including habitat and open space, is the Land and Water Conservation Fund (LWCF), created by the U.S. Congress in 1964 and taking effect in 1965. The LWCF accumulates revenues from federal outdoor recreation user fees, the federal motorboat fuel tax, surplus property sales, and

revenues from oil and gas leases on the outer continental shelf, with the last source accounting for more than 90% of total revenues.

Appropriations are made to four federal agencies—National Park Service, U.S. Forest Service, BLM, and USFWS—primarily for land acquisition but also for assistance to states for recreation planning, facility development, and conservation purposes. Appropriations are authorized up to $900 million per year; however, over the past 20 years, actual appropriations have averaged between $200 million and $300 million. Appropriation for FY 2000 was $465 million, mostly for land acquisition, including $265 million to the four agencies and $198 million for the Lands Legacy Program.

Some of the numerous programs of federal assistance for species and habitat conservation are described below.

State Conservation Grants. This program funded from the LWCF provides grants to states on a 50/50 matching basis to acquire and develop land for public recreation purposes, including open space and wildlife habitat conservation. Although state grants were not funded from FY 1995 to FY 1999, $41 million was appropriated for FY 2000, included partly in appropriations to the four federal agencies and partly in the Lands Legacy Program.

Cooperative Endangered Species Conservation Fund. This fund provides federal assistance to a state through a cooperative agreement under the ESA to develop and implement HCPs, candidate conservation agreements, and other species protection programs, such as animal, plant, and habitat surveys; research; planning; monitoring; management; land acquisition; protection; and public education. States may receive up to 75% of program costs. Federal share could be 90% when two or more states with a common interest in one or more endangered species enter into a joint agreement. Three programs are funded: Recovery Land Acquisition Grants, Habitat Planning Conservation Planning Grants, and HCP Land Acquisition Grants. The last program is particularly relevant to the MHCP once it is adopted, since it provides grants to states to acquire land associated with approved habitat conservation programs (HCPs). Grants for all three programs totaled $104.7 million in FY 2001 and $96.2 million in FY 2002; estimated total for FY 2003 is $91 million.

North American Wetlands Conservation Fund. This fund provides assistance for voluntary partnerships of state and local governments, private landowners, and nonprofit conservation groups to protect and restore important breeding and resting grounds for migratory species and wetland-dependent wildlife. Wetland restoration activities include revegetation, acquiring conservation easements, and establishing water management programs. Total estimated funding for FY 2002 was $79.6 million.

U.S. Fish and Wildlife Service. The USFWS receives annual appropriations for staffing and for the management of the National Wildlife Refuge System, which totals over 92 million acres in over 500 national wildlife refuges. The base budget of the Carlsbad Fish and Wildlife office, which provides assistance to NCCP efforts in southern California, was $3.62 million in fiscal year 1995, $2.77 million in 1996, $3.11 million in 1997, and $3.74 million in 1998. In addition, funding for the operations of Sweetwater Marsh, Seal Beach, and Tijuana Slough National Wildlife Refuges totaled $434,000 in 1995, $518,000 in 1996, and $1.08 million in 1997. The additional $562,000 budget for 1997 includes $400,000 for the operation of the newly acquired San Diego National Wildlife Refuge.

National Fish and Wildlife Foundation Challenge Grants. Grants under this program are administered by the nonprofit National Fish and Wildlife Foundation. Grants are funded by federal appropriations to USFWS and are matched with nonfederal contributions. The National Fish and Wildlife Foundation has raised contributions from individuals, corporations, and

foundations at an average of $2 for every $1 appropriated. Programs funded by the challenge grants include the Wetlands Conservation Program and the Wildlife and Habitat Program, intended for the preservation of biodiversity and the recovery of endangered and threatened species.

Other Federal Programs. Other federal programs for land acquisition include:

- National Coastal Wetlands Conservation Grant Program (USFWS)
- Pittman-Robertson Program (USFWS)
- Partnerships for Wildlife Program (USFWS)
- Transportation Equity Act for the 21st Century (TEA-21; USDOT)

These programs, some of which emphasize protection of wetlands, require applications from state and local governments or other organizations engaged in conservation activities.

### 7.5.2 State Acquisition Programs

Wildlife Conservation Board (WCB). The WCB's mission is to allocate funds for the purchase of land and waters suitable for preservation, protection, and restoration of wildlife habitat; for providing compatible recreational facilities; and for sharing the cost of wetlands enhancement. Statewide funding sources from which the WCB allocates funds for land acquisition include:

- Wildlife Restoration Fund
- Environmental License Plate Fund
- Park and Recreational Facilities Fund (Proposition 18)
- Public Resources Account, Cigarette and Tobacco Products Surtax Fund (Proposition 99)
- Habitat Conservation Fund (California Wildlife Protection Act of 1990)
- Inland Wetlands Conservation Program (Proposition 117)
- Riparian Habitat Conservation Program.

Since 1989, the WCB has approved an average of $30 million per year in land acquisition, of which approximately 60% has been spent in southern California. In the MHCP study area, the WCB has recently (2002) funded acquisition of approximately 94 acres in the northeast section of Carlsbad. The WCB is responsible for allocating a portion of funds under Propositions 12, 40, and 50.

Proposition 12. In March 2000, the voters of California approved Proposition 12, "The Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000." The law authorizes $2.1 billion in bonds, including $525 million for the State Park System; $825 million in local government grants administered by the Department of Parks and Recreation; and $751 million for other state agencies, including the WCB, state conservancies, the CDFG, and others. The law sets aside $100 million to fund the acquisition of real property in conjunction with an NCCP plan approved by the CDFG. While the MHCP does not meet the requirement that the NCCP plan be approved prior to January 1, 1999, an acquisition may also be approved by statute.

Proposition 40. "California Clean Water, Clean Air, Safe Neighborhoods and Coastal Protection Act of 2002," approved by the voters in March 2002, authorizes issuance of bonds totaling $2.6 billion for parks, open space, and preservation of historical and cultural resources. Budget for parks and historical/cultural resources is $1.325 billion, and budget for land, air, and water conservation is $1.275 billion, including $445 million for state conservancies, $300 million for the WCB, and additional sums for conservation corps, urban forestry, agricultural land preservation, and others.

Proposition 50. "Californians for Clean Water and Coastal Protection," approved by the voters in November 2002, authorizes issuance of bonds totaling $3.44 billion to improve water quality, fund the CALFED Bay-Delta Program and other projects, and protect through acquisition coastal wetlands, coastal watersheds, and upland areas adjacent to those areas. The law appropriates $750,000,000 to the WCB for acquisition, protection, and restoration of these areas.

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# ATTACHMENT A

# LIST OF ADVISORY COMMITTEE MEMBERS

# ATTACHMENT A

## MULTIPLE HABITAT CONSERVATION PROGRAM
## LIST OF ADVISORY COMMITTEE MEMBERS

**Chair**

Honorable Colleen O'Harra
Councilmember, City of Oceanside

| | Representatives | Alternates |
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| | Jim Sandoval, Director of Planning & Community Development | Monica Tuchscher |
| 2. | City of Solana Beach: | |
| | Steven Apple, Planning Director | Daryle Mitchell |
| 3. | City of Encinitas: | |
| | Gary Barberio, Senior Planner | J Dichoso |
| 4. | City of Carlsbad: | |
| | Don Rideout, Senior Planner | Michael Holzmiller |
| 5. | City of Oceanside: | |
| | Jerry Hittleman, Senior Planner<br>Diane Van Leggelo, Associate Planner | Mike Blessing, Planning Director |
| 6. | City of Vista: | |
| | John Conley, Principal Planner | John Neu |
| 7. | City of San Marcos: | |
| | Jerry Backoff, Planning Director | David Acuff |
| 8. | City of Poway: | |
| | Jim Nessel, Senior Planner | Jim Lyon |
| 9. | City of Escondido: | |
| | Barbara Redlitz, Principal Planner<br>Mark Cano, Senior Planner | Charles D. Grimm |

| | Representatives | Alternates |
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| 10. | County of San Diego: | |
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| 13. | Department of Fish and Game: | |
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| 17. | Caltrans: | |
| | Bruce April, District Biologist | Chris White |
| 18. | San Dieguito River Joint Powers Authority: | |
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# ATTACHMENT B

# SUPPLEMENTAL DATA ON HABITAT CONSERVATION AND MANAGEMENT

# ATTACHMENT B

# SUPPLEMENTAL DATA ON HABITAT CONSERVATION AND MANAGEMENT

The following tables and figure are included in this attachment:



## Acres of Conserved Habitat

Tables B-1 through B-9 summarize distribution of habitat acres by habitat type, conservation, ownership, and management responsibility for each MHCP city. Raw acreage data were generated by combining GIS data on vegetation communities, conservation plan (focused planning area), land ownership, physical constraints, and parcelization. Data were compiled and then reconciled with vegetation totals inside and outside the focused planning area. Table B-9 shows conserved habitat acres by city (summed over all natural habitat types) and includes estimates of priority conservation areas.

Tables B-1 through B-8 also contain estimates of privately owned habitat lands which may be impacted or lost through development and estimates of on- or offsite mitigation which would be required to compensate for such loss. Actual demand for offsite mitigation, however, is likely to be substantially less than the estimates cited, as discussed in Section 4.4.3 of the plan. A preliminary, site-specific review of probable development impacts indicated that actual demand for offsite mitigation may be from one-fourth to three-fourths of the amounts indicated in these tables.

## Management, Monitoring and Administration Costs

The following existing and planned conservation areas require new or additional funding for on-going management, monitoring and administration, as follows:

- City-owned habitat, proposed for inclusion in the MHCP preserve system, but which is not currently managed for biological resources: Generally, these areas are currently maintained as open space. Priority 2 conservation areas are added to this category, assuming that they would be acquired through the regional funding program.

- Priority 1 conservation areas: Costs to manage these areas are estimated separately, since their acquisition is conditioned on the cities' acceptance of management responsibility and establishment of one or more endowments to fund the required management and monitoring.

- Other areas which are proposed to be managed with funds from the regional funding program:

  (a) In Carlsbad, the 94-acre Holly Springs property acquired by the state Wildlife Conservation Board in 2002. Although state-owned, management of this property by the MHCP cities is a condition of the state's acquisition of Priority 1 conservation areas.

  (b) Daley Ranch Conservation Bank. The City of Escondido is currently managing this property. However, due to the size and importance of Daley Ranch to the MHCP preserve system, management and monitoring costs are proposed to be covered in the future by the regional funding program.

  (c) San Luis Rey Flood Control Project Area. The City of Oceanside, ACOE, and USFWS are currently reviewing plans for management activities related to this area. Due to the size and importance of this area to the MHCP preserve system, costs of biological management (as distinct from flood control management) are proposed to be covered in the future by the regional funding program.

- Privately owned habitat lands proposed for inclusion in the MHCP preserve system, but which are not currently, nor are they anticipated in the future to be, managed for biological resources. These include habitat lands owned or maintained by homeowners' associations and other habitat lands which have no current or anticipated maintenance program. It should be noted that although this plan estimates costs to manage privately owned habitat lands, additional issues such as access, liability, and supervision of management activities must be addressed and resolved between the cities and property owners.

Most project-level biological monitoring is included in the estimated average management cost. However, certain subregional (i.e., MHCP study area) or subarea plan level monitoring functions will entail additional costs.

**Model of Management Cost**

Data on management costs were obtained from the Center for Natural Lands Management (CNLM) for 12 habitat preserves in San Diego County maintain. Management costs reported for prior years were updated to 2002 prices by the consumer price index for San Diego.

The following were generated by a multiple regression of the natural logarithm of average cost per acre per year on (a) logarithm of the preserve size in acres and (b) a variable indicating the proportion of the preserve occupied by wetland or riparian vegetation communities:

| | |
|---|---|
| Multiple R | 0.86918 |
| R Square | 0.75547 |
| Adjusted R Square | 0.70113 |
| Standard Error | 0.55709 |
| Observations | 12 |

| | *df* | *SS* | *MS* | *F* | *Significance of F* |
|---|---|---|---|---|---|
| Regression | 2 | 8.62918 | 4.31459 | 13.9026 | 0.001768089 |
| Residual | 9 | 2.79311 | 0.31035 | | |
| Total | 11 | 11.4223 | | | |

| *Dependent Variable: Ln(Cost/Ac.)* | *Coefficients* | *Standard Error* | *t-Statistic* | *P-value* |
|---|---|---|---|---|
| Intercept | 6.85913 | 0.70938 | 9.66915 | 4.7E-06 |
| Ln(Acres) | -0.46587 | 0.12534 | -3.71679 | 0.00479 |
| Pct. Wetland / Riparian | 1.06762 | 0.45881 | 2.32692 | 0.04497 |

Figure B-1 plots the following data:

(1) Shown in solid squares, the size and average management cost per acre for 12 CNLM preserves in San Diego County.

(2) Using the regression equation, graphs of estimated average management cost per acre for a wholly wetland or riparian habitat (upper graph) and a wholly upland habitat (lower graph).

(3) Shown in open squares, representative size and estimated management cost per acre for city-owned habitat, Priority 1 conservation areas, and privately owned habitat that requires funding for additional management for the MHCP cities (excluding Solana Beach) and the unincorporated core.

**Table B-1**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- MHCP TOTAL**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **29,962** | **5,371** | **481** | **1,449** | **4,168** | **4,950** | **2,492** | **5,832** | **1,099** | **4,121** |
| City | 8,785 | 1,610 | 57 | 698 | 400 | 1,225 | 242 | 3,237 | 164 | 1,153 |
| Other local agencies | 1,324 | 441 | 5 | 70 | 163 | 289 | 141 | 48 | 0 | 166 |
| Federal / state | 1,984 | 1,237 | 12 | 42 | 249 | 43 | 56 | 180 | 95 | 71 |
| Private | 17,869 | 2,083 | 407 | 639 | 3,355 | 3,394 | 2,053 | 2,367 | 839 | 2,732 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **19,928** | **5,371** | **391** | **1,094** | **3,366** | **2,214** | **1,880** | **3,926** | **682** | **1,005** |
| City | 7,142 | 1,610 | 25 | 542 | 349 | 895 | 195 | 2,895 | 88 | 543 |
| Other local agencies | 1,056 | 441 | 4 | 58 | 158 | 192 | 115 | 36 | - | 52 |
| Federal / state | 1,944 | 1,237 | 11 | 42 | 249 | 39 | 56 | 162 | 93 | 54 |
| Private | 9,786 | 2,083 | 351 | 452 | 2,611 | 1,087 | 1,514 | 832 | 500 | 356 |
| ***Total by Management*** | **19,928** | **5,371** | **391** | **1,094** | **3,366** | **2,214** | **1,880** | **3,926** | **682** | **1,005** |
| City--Existing program | 3,778 | 614 | 3 | 245 | 42 | 486 | - | 1,943 | 25 | 420 |
| City--Future funding | 3,365 | 1,016 | 26 | 296 | 251 | 422 | 203 | 949 | 64 | 138 |
| Other local agencies | 1,181 | 390 | 4 | 29 | 157 | 146 | 303 | 127 | - | 26 |
| Federal / state | 2,447 | 1,585 | 16 | 71 | 260 | 111 | 56 | 161 | 93 | 92 |
| Private--Mitigation bank | 304 | 3 | 63 | - | 83 | - | 6 | - | 148 | 1 |
| Private--Existing mitigation area | 642 | 283 | 1 | - | 179 | 34 | 32 | 3 | 60 | 50 |
| Private--Future mitigation area | 2,054 | 310 | 40 | 119 | 759 | 196 | 159 | 196 | 177 | 97 |
| Private--Homeowners association | 2,908 | 115 | 136 | 234 | 1,025 | 279 | 830 | 166 | 49 | 75 |
| Private--Other | 3,248 | 1,054 | 103 | 100 | 611 | 540 | 290 | 380 | 65 | 105 |
| **Not Planned for Conservation** | **10,034** | **-** | **90** | **355** | **801** | **2,736** | **612** | **1,906** | **417** | **3,116** |
| City | 1,642 | - | 32 | 156 | 51 | 330 | 47 | 341 | 76 | 610 |
| Other local agencies | 268 | - | 2 | 12 | 6 | 97 | 26 | 12 | - | 113 |
| Federal / state | 40 | - | - | - | - | 3 | - | 18 | 2 | 17 |
| Private | 8,084 | - | 57 | 187 | 744 | 2,307 | 540 | 1,535 | 339 | 2,376 |
| **Private--Potentially Developed** [1] | **7,244** | **-** | **215** | | **2,679** | | **1,805** | | **2,545** | |
| Proposed mitigation ratio [2] | | | Varies | | Varies | | Varies | | Varies | |
| Estimated mitigation obligation [3] | 6,542 | [4] | 519 | | 3,778 | | 973 | | 1,273 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. Ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-2**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- CARLSBAD**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **6,337** | **1,754** | **163** | **253** | **1,200** | **1,066** | **366** | **238** | **408** | **891** |
| City | 861 | 121 | 3 | 23 | 99 | 164 | 83 | 45 | 81 | 241 |
| Other local agencies | 118 | 14 | 0 | 3 | 12 | 16 | 7 | 2 | - | 65 |
| Federal / state | 1,232 | 872 | 12 | 1 | 229 | 2 | 56 | 0 | 58 | 1 |
| Private | 4,127 | 746 | 148 | 226 | 859 | 885 | 219 | 190 | 268 | 585 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **4,441** | **1,753** | **149** | **153** | **1,038** | **432** | **330** | **96** | **293** | **197** |
| City | 485 | 121 | 3 | 6 | 91 | 73 | 72 | 34 | 48 | 38 |
| Other local agencies | 39 | 14 | - | 1 | 12 | 4 | 7 | 1 | - | - |
| Federal / state | 1,231 | 872 | 11 | 1 | 229 | 1 | 56 | 0 | 58 | 1 |
| Private | 2,687 | 746 | 134 | 145 | 706 | 354 | 195 | 60 | 187 | 159 |
| ***Total by Management*** | **4,441** | **1,753** | **149** | **153** | **1,038** | **432** | **330** | **96** | **293** | **197** |
| City--Existing program | 185 | 28 | 3 | 4 | 28 | 56 | - | 8 | 25 | 34 |
| City--Future funding | 398 | 123 | 3 | 1 | 68 | 47 | 79 | 25 | 25 | 26 |
| Other local agencies | 297 | 277 | - | - | 3 | 16 | - | - | - | - |
| Federal / state | 1,264 | 887 | 16 | 2 | 241 | 2 | 56 | 0 | 58 | 1 |
| Private--Mitigation bank | 66 | - | - | - | 22 | - | 6 | 0 | 38 | - |
| Private--Existing mitigation area | 132 | 22 | 0 | - | 72 | 1 | 32 | 3 | 1 | 1 |
| Private--Future mitigation area | 1,209 | 251 | 37 | 111 | 396 | 134 | 69 | 9 | 118 | 84 |
| Private--Homeowners association | 567 | 39 | 67 | 10 | 148 | 112 | 80 | 49 | 17 | 44 |
| Private--Other | 324 | 125 | 22 | 26 | 60 | 63 | 7 | 3 | 11 | 7 |
| **Not Planned for Conservation** | **1,895** | **-** | **14** | **100** | **162** | **633** | **35** | **142** | **114** | **694** |
| City | 375 | - | - | 17 | 8 | 91 | 11 | 11 | 33 | 203 |
| Other local agencies | 79 | - | - | 2 | 1 | 12 | - | 1 | - | 65 |
| Federal / state | - | - | - | - | - | - | - | - | - | - |
| Private | 1,440 | - | 14 | 81 | 153 | 531 | 24 | 130 | 81 | 426 |
| **Private--Potentially Developed** [1] | **1,304** | **-** | **88** | | **607** | | **142** | | **467** | |
| Proposed mitigation ratio [2] | | | 3:1 / 3:1 | | 2:1 / 2:1 | | 1:1 / 1:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 1,853 | [4] | 263 | | 1,214 | | 142 | | 233 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-3**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- ENCINITAS**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **2,758** | **833** | **165** | **400** | **274** | **669** | **99** | **111** | **31** | **176** |
| City | 141 | 37 | 0 | 25 | 4 | 57 | 2 | 1 | 1 | 13 |
| Other local agencies | 600 | 361 | 5 | 52 | 6 | 103 | 5 | 9 | - | 58 |
| Federal / state | 284 | 252 | - | 4 | - | 15 | - | 4 | - | 9 |
| Private | 1,733 | 183 | 160 | 318 | 263 | 494 | 93 | 97 | 30 | 96 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **2,214** | **833** | **140** | **343** | **202** | **429** | **74** | **84** | **18** | **91** |
| City | 103 | 37 | - | 17 | 4 | 37 | 2 | 1 | 1 | 5 |
| Other local agencies | 564 | 361 | 4 | 45 | 4 | 87 | 4 | 7 | - | 52 |
| Federal / state | 284 | 252 | - | 4 | - | 15 | - | 4 | - | 9 |
| Private | 1,263 | 183 | 136 | 276 | 194 | 290 | 68 | 72 | 17 | 25 |
| ***Total by Management*** | **2,214** | **833** | **140** | **343** | **202** | **429** | **74** | **84** | **18** | **91** |
| City--Existing program | - | - | - | - | - | - | - | - | - | - |
| City--Future funding | 87 | 32 | - | 17 | 4 | 26 | 2 | 0 | 1 | 5 |
| Other local agencies | 116 | 43 | 4 | 16 | 4 | 25 | 4 | 7 | - | 14 |
| Federal / state | 754 | 583 | - | 33 | - | 87 | - | 4 | - | 47 |
| Private--Mitigation bank | 109 | - | 63 | - | 45 | 0 | - | - | 1 | 0 |
| Private--Existing mitigation area | 47 | 46 | - | - | - | 1 | - | - | - | - |
| Private--Future mitigation area | - | - | - | - | - | - | - | - | - | - |
| Private--Homeowners association | 538 | 12 | 2 | 223 | 68 | 116 | 49 | 49 | 8 | 10 |
| Private--Other | 563 | 117 | 72 | 53 | 81 | 173 | 19 | 24 | 8 | 15 |
| **Not Planned for Conservation** | **544** | **-** | **25** | **57** | **72** | **240** | **25** | **27** | **13** | **84** |
| City | 38 | - | - | 8 | - | 20 | - | 1 | - | 8 |
| Other local agencies | 36 | - | 2 | 7 | 2 | 16 | 1 | 1 | - | 6 |
| Federal / state | - | - | - | - | - | - | - | - | - | - |
| Private | 470 | - | 24 | 42 | 69 | 204 | 24 | 24 | 13 | 70 |
| **Private--Potentially Developed** [1] | **405** | **-** | **54** | | **238** | | **37** | | **77** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 2:1 / 1:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 402 | [4] | 107 | | 238 | | 18 | | 38 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-4**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- ESCONDIDO**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **9,206** | **741** | **123** | **684** | **1,059** | **1,245** | **926** | **3,831** | **13** | **583** |
| City | 5,564 | 505 | 54 | 602 | 142 | 650 | 149 | 2,999 | 6 | 458 |
| Other local agencies | 270 | 26 | - | - | 113 | 25 | 101 | 4 | 0 | 3 |
| Federal / state | 126 | 1 | - | 36 | - | 12 | - | 76 | - | 0 |
| Private | 3,246 | 209 | 69 | 45 | 805 | 559 | 677 | 752 | 7 | 122 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **7,191** | **741** | **84** | **571** | **914** | **662** | **660** | **3,159** | **6** | **394** |
| City | 4,957 | 505 | 22 | 512 | 121 | 547 | 121 | 2,737 | 5 | 386 |
| Other local agencies | 242 | 26 | - | - | 110 | 4 | 101 | 1 | - | - |
| Federal / state | 126 | 1 | - | 36 | - | 12 | - | 76 | - | - |
| Private | 1,866 | 209 | 61 | 22 | 683 | 98 | 438 | 345 | 1 | 9 |
| ***Total by Management*** | **7,191** | **741** | **84** | **571** | **914** | **662** | **660** | **3,159** | **6** | **394** |
| City--Existing program | 2,946 | 50 | 0 | 239 | 0 | 376 | 0 | 1,926 | 0 | 355 |
| City--Future funding | 1,948 | 455 | 23 | 274 | 59 | 170 | 121 | 810 | 5 | 30 |
| Other local agencies | 551 | 30 | - | - | 119 | 6 | 299 | 97 | - | - |
| Federal / state | 126 | 0 | - | 37 | - | 12 | - | 77 | - | - |
| Private--Mitigation bank | - | - | - | - | - | - | - | - | - | - |
| Private--Existing mitigation area | 9 | 9 | - | - | - | - | - | - | - | 0 |
| Private--Future mitigation area | 237 | 8 | - | 8 | 14 | 26 | 0 | 178 | - | 3 |
| Private--Homeowners association | 879 | 44 | 52 | 0 | 641 | 27 | 105 | 5 | 1 | 4 |
| Private--Other | 495 | 145 | 9 | 14 | 81 | 45 | 134 | 67 | 0 | 1 |
| **Not Planned for Conservation** | **2,015** | **-** | **39** | **113** | **145** | **584** | **267** | **672** | **7** | **189** |
| City | 607 | - | 32 | 90 | 21 | 103 | 28 | 261 | 1 | 72 |
| Other local agencies | 28 | - | - | - | 2 | 20 | - | 3 | - | 3 |
| Federal / state | - | - | - | - | - | - | - | - | - | - |
| Private | 1,379 | - | 8 | 23 | 122 | 461 | 239 | 407 | 6 | 114 |
| **Private--Potentially Developed** [1] | **1,192** | **-** | **27** | | **522** | | **527** | | **117** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 2:1 / 1:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 897 | [4] | 54 | | 522 | | 263 | | 58 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-5**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- OCEANSIDE**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **4,705** | **1,542** | **1** | **46** | **501** | **847** | **17** | **27** | **529** | **1,195** |
| City | 1,446 | 796 | - | 43 | 109 | 176 | - | 15 | 67 | 239 |
| Other local agencies | 95 | 30 | - | 1 | 23 | 35 | - | - | - | 4 |
| Federal / state | 202 | 81 | - | - | 19 | 7 | - | - | 37 | 57 |
| Private | 2,963 | 634 | 1 | 2 | 350 | 628 | 17 | 12 | 425 | 895 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **2,832** | **1,542** | **1** | **7** | **362** | **330** | **10** | **11** | **323** | **247** |
| City | 1,145 | 796 | - | 6 | 91 | 118 | - | 10 | 33 | 91 |
| Other local agencies | 63 | 30 | - | - | 23 | 10 | - | - | - | - |
| Federal / state | 185 | 81 | - | - | 19 | 5 | - | - | 35 | 44 |
| Private | 1,439 | 634 | 1 | 1 | 230 | 196 | 10 | 1 | 254 | 112 |
| ***Total by Management*** | **2,832** | **1,542** | **1** | **7** | **362** | **330** | **10** | **11** | **323** | **247** |
| City--Existing program | 572 | 528 | - | 3 | 0 | 11 | - | - | 0 | 30 |
| City--Future funding | 572 | 278 | - | 4 | 90 | 101 | - | 10 | 32 | 58 |
| Other local agencies | 76 | 29 | - | - | 23 | 12 | - | - | 0 | 12 |
| Federal / state | 186 | 83 | - | - | 19 | 4 | - | - | 35 | 44 |
| Private--Mitigation bank | 129 | 3 | - | - | 16 | - | - | - | 109 | 1 |
| Private--Existing mitigation area | 386 | 206 | 1 | - | 56 | 28 | - | - | 52 | 44 |
| Private--Future mitigation area | 170 | 12 | - | - | 74 | 4 | 10 | 1 | 59 | 10 |
| Private--Homeowners association | 26 | 10 | - | - | 2 | 13 | - | - | - | 0 |
| Private--Other | 715 | 392 | - | - | 82 | 157 | - | - | 36 | 48 |
| **Not Planned for Conservation** | **1,873** | **-** | **-** | **39** | **138** | **517** | **7** | **16** | **206** | **948** |
| City | 300 | - | - | 36 | 18 | 58 | - | 5 | 34 | 149 |
| Other local agencies | 31 | - | - | 1 | - | 25 | - | - | - | 4 |
| Federal / state | 17 | - | - | - | - | 2 | - | - | 2 | 13 |
| Private | 1,525 | - | - | 2 | 120 | 432 | 7 | 11 | 170 | 783 |
| **Private--Potentially Developed** [1] | **1,376** | **-** | **2** | | **492** | | **14** | | **868** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 3:1 / 2:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 1,428 | [4] | 3 | | 984 | | 7 | | 434 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-6**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- SAN MARCOS**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **5,337** | **225** | **18** | **9** | **1,056** | **935** | **1,070** | **1,322** | **79** | **624** |
| City | 426 | 59 | - | 1 | 46 | 127 | 7 | 95 | 6 | 86 |
| Other local agencies | 186 | 7 | - | - | 9 | 99 | 28 | 27 | 0 | 15 |
| Federal / state | 9 | - | - | - | - | - | - | 9 | - | - |
| Private | 4,716 | 159 | 18 | 8 | 1,001 | 708 | 1,035 | 1,191 | 73 | 522 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **2,595** | **225** | **18** | **4** | **793** | **272** | **804** | **389** | **39** | **52** |
| City | 251 | 59 | - | 0 | 42 | 79 | - | 64 | - | 7 |
| Other local agencies | 117 | 7 | - | - | 8 | 77 | 3 | 21 | - | 0 |
| Federal / state | 2 | - | - | - | - | - | - | 2 | - | - |
| Private | 2,226 | 159 | 18 | 4 | 743 | 116 | 800 | 303 | 39 | 45 |
| ***Total by Management*** | **2,595** | **225** | **18** | **4** | **793** | **272** | **804** | **389** | **39** | **52** |
| City--Existing program | 76 | 8 | - | - | 14 | 44 | - | 10 | - | - |
| City--Future funding | 158 | 38 | - | - | 29 | 35 | - | 53 | - | 3 |
| Other local agencies | 109 | 8 | - | - | 7 | 77 | 0 | 18 | - | 0 |
| Federal / state | - | - | - | - | - | - | - | - | - | - |
| Private--Mitigation bank | - | - | - | - | - | - | - | - | - | - |
| Private--Existing mitigation area | 68 | - | - | - | 51 | 5 | - | - | 8 | 4 |
| Private--Future mitigation area | 438 | 39 | 2 | 0 | 276 | 33 | 80 | 8 | - | 0 |
| Private--Homeowners association | 887 | 5 | 15 | 0 | 166 | 11 | 596 | 56 | 23 | 16 |
| Private--Other | 859 | 127 | 1 | 4 | 250 | 69 | 127 | 245 | 8 | 29 |
| **Not Planned for Conservation** | **2,742** | **-** | **-** | **5** | **263** | **663** | **266** | **933** | **40** | **572** |
| City | 176 | - | - | 1 | 4 | 48 | 7 | 31 | 6 | 79 |
| Other local agencies | 69 | - | - | - | 1 | 22 | 25 | 6 | - | 15 |
| Federal / state | 8 | - | - | - | - | - | - | 8 | - | - |
| Private | 2,489 | - | - | 4 | 259 | 593 | 235 | 888 | 34 | 477 |
| **Private--Potentially Developed** [1] | **2,226** | **-** | **4** | | **722** | | **1,005** | | **495** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 2:1 / 1:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 1,480 | [4] | 8 | | 722 | | 503 | | 247 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-7**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- SOLANA BEACH**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **96** | **11** | **5** | **45** | **-** | **11** | **-** | **25** | **-** | **-** |
| City | 2 | - | - | 1 | - | 0 | - | 1 | - | - |
| Other local agencies | 29 | 2 | - | 14 | - | 6 | - | 6 | - | - |
| Federal / state | 7 | 6 | - | - | - | - | - | 1 | - | - |
| Private | 58 | 2 | 5 | 29 | - | 4 | - | 17 | - | - |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **41** | **11** | **-** | **16** | **-** | **6** | **-** | **8** | **-** | **-** |
| City | - | - | - | - | - | - | - | - | - | - |
| Other local agencies | 26 | 2 | - | 13 | - | 6 | - | 6 | - | - |
| Federal / state | 7 | 6 | - | - | - | - | - | 1 | - | - |
| Private | 7 | 2 | - | 3 | - | - | - | 2 | - | - |
| ***Total by Management*** | **41** | **11** | **-** | **16** | **-** | **6** | **-** | **8** | **-** | **-** |
| City--Existing program | - | - | - | - | - | - | - | - | - | - |
| City--Future funding | - | - | - | - | - | - | - | - | - | - |
| Other local agencies | 26 | 2 | - | 13 | - | 6 | - | 6 | - | - |
| Federal / state | 7 | 6 | - | - | - | - | - | 1 | - | - |
| Private--Mitigation bank | - | - | - | - | - | - | - | - | - | - |
| Private--Existing mitigation area | - | - | - | - | - | - | - | - | - | - |
| Private--Future mitigation area | - | - | - | - | - | - | - | - | - | - |
| Private--Homeowners association | - | - | - | - | - | - | - | - | - | - |
| Private--Other | 7 | 2 | - | 3 | - | - | - | 2 | - | - |
| **Not Planned for Conservation** | **56** | **-** | **5** | **29** | **-** | **5** | **-** | **16** | **-** | **-** |
| City | 2 | - | - | 1 | - | - | - | 1 | - | - |
| Other local agencies | 3 | - | - | 1 | - | 1 | - | 1 | - | - |
| Federal / state | - | - | - | - | - | - | - | - | - | - |
| Private | 51 | - | 5 | 26 | - | 4 | - | 15 | - | - |
| **Private--Potentially Developed** [1] | **48** | **-** | **29** | | **4** | | **15** | | **0** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 2:1 / 1:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 69 | [4] | 58 | | 4 | | 7 | | 0 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-8**
**HABITAT TO BE CONSERVED OR POTENTIALLY DEVELOPED -- VISTA**

| **Habitat Acres** by Ownership Or by Management Responsibility | **Total** in SAP | **A**. Wetland Riparian | **B**. Rare Upland | | **C**. Coastal Sage Scrub | | **D**. Chaparral | | **E**. Grassland | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. | Constrained | Not Const. |
| **Total Natural Habitat** | **1,522** | **266** | **6** | **12** | **78** | **177** | **15** | **278** | **40** | **652** |
| City | 345 | 92 | - | 2 | - | 51 | 1 | 80 | 4 | 115 |
| Other local agencies | 26 | 1 | - | - | - | 5 | - | - | - | 20 |
| Federal / state | 125 | 25 | - | - | 0 | 6 | 0 | 89 | - | 5 |
| Private | 1,027 | 148 | 6 | 10 | 78 | 116 | 13 | 108 | 36 | 512 |
| **Conserved Habitat** | | | | | | | | | | |
| ***Total by Ownership*** | **614** | **266** | **-** | **-** | **57** | **84** | **3** | **178** | **3** | **23** |
| City | 201 | 92 | - | - | - | 41 | 0 | 49 | 1 | 17 |
| Other local agencies | 5 | 1 | - | - | - | 4 | - | - | - | 0 |
| Federal / state | 110 | 25 | - | - | 0 | 5 | 0 | 80 | - | 1 |
| Private | 298 | 148 | - | - | 57 | 33 | 3 | 49 | 2 | 6 |
| ***Total by Management*** | **614** | **266** | **-** | **-** | **57** | **84** | **3** | **178** | **3** | **23** |
| City--Existing program | - | - | - | - | - | - | - | - | - | - |
| City--Future funding | 202 | 90 | - | - | - | 42 | 0 | 51 | 1 | 17 |
| Other local agencies | 4 | 1 | - | - | - | 4 | - | - | - | - |
| Federal / state | 111 | 25 | - | - | 0 | 5 | 0 | 80 | - | 1 |
| Private--Mitigation bank | - | - | - | - | - | - | - | - | - | - |
| Private--Existing mitigation area | - | - | - | - | - | - | - | - | - | - |
| Private--Future mitigation area | - | - | - | - | - | - | - | - | - | - |
| Private--Homeowners association | 12 | 4 | - | - | 1 | 0 | - | 7 | 0 | - |
| Private--Other | 285 | 146 | - | - | 56 | 33 | 3 | 40 | 2 | 6 |
| **Not Planned for Conservation** | **909** | **-** | **6** | **12** | **21** | **94** | **11** | **100** | **37** | **628** |
| City | 144 | - | - | 2 | - | 9 | 1 | 31 | 2 | 98 |
| Other local agencies | 21 | - | - | - | - | 1 | - | - | - | 20 |
| Federal / state | 14 | - | - | - | - | 1 | - | 10 | - | 4 |
| Private | 730 | - | 6 | 10 | 21 | 83 | 10 | 60 | 34 | 506 |
| **Private--Potentially Developed** [1] | **694** | **-** | **13** | | **93** | | **65** | | **523** | |
| Proposed mitigation ratio [2] | | | 3:1 / 2:1 | | 2:1 / 1:1 | | 1:1 / 0.5:1 | | 0.5:1 / 0.5:1 | |
| Estimated mitigation obligation [3] | 413 | [4] | 26 | | 93 | | 32 | | 261 | |

Source: MHCP GIS database; MHCP cities; compiled by Onaka Planning & Economics
In acres; figures may not sum to totals as shown due to rounding.
Constrained -- habitat is located on steep slopes, floodplains, or other physically constrained land.

1. All habitat not planned for conservation and located on unconstrained land, plus one-half of habitat on constrained land.
2. First mitigation ratio applies to impacted habitat inside a focused planning area (FPA); second ratio applies to impacted habitat outside a FPA. The ratios vary by city.
3. Based on mitigation ratio for habitat outside a FPA, where most habitat acres not planned for conservation are located.
4. Any impact to wetland / riparian habitat will be mitigated through replacement to achieve no net loss.

**Table B-9**
**MANAGEMENT OF CONSERVED HABITAT IN MHCP STUDY AREA**

| | Total Without CGN Core | Carlsbad | Encinitas | Escondido | Oceanside | San Marcos | Solana Beach | Vista | Unincorp. CGN Core | Total With CGN Core |
|---|---|---|---|---|---|---|---|---|---|---|
| **Natural Habitat--Total** [1] | **29,962** | **6,337** | **2,758** | **9,206** | **4,705** | **5,337** | **96** | **1,522** | **665** | **30,627** |
| Conserved Natural Habitat--Total | **19,928** | **4,441** | **2,214** | **7,191** | **2,832** | **2,595** | **41** | **614** | **665** | **20,593** |
| **Conserved Habitat Managed by Public Agencies--Total** | **11,799** | **2,417** | **1,084** | **5,783** | **1,619** | **545** | **33** | **317** | **320** | **12,119** |
| City--Existing Funding [2] | 3,778 | 185 | - | 2,946 | 572 | 76 | - | - | - | 3,778 |
| City--New Funding [3] | 3,365 | 398 | 87 | 1,948 | 572 | 158 | - | 202 | - | 3,365 |
| Other Local Agencies | 1,181 | 297 | 116 | 551 | 76 | 109 | 26 | 4 | - | 1,181 |
| Federal and State Agencies | 2,447 | 1,264 | 754 | 126 | 186 | - | 7 | 111 | - | 2,447 |
| *Add:* Priority 1 Conservation [4] | 389 | 134 | 50 | 50 | 117 | 39 | - | - | 220 | 609 |
| Priority 2 Conservation [4] | 638 | 140 | 77 | 162 | 97 | 163 | - | - | 100 | 738 |
| **Conserved Habitat Managed Privately--Total** | **8,129** | **2,025** | **1,130** | **1,408** | **1,213** | **2,050** | **7** | **296** | **345** | **8,474** |
| Private Mitigation Bank | 304 | 66 | 109 | - | 129 | - | - | - | - | 304 |
| Other Mitig. Areas--Exist. Funding [5] | 642 | 132 | 47 | 9 | 386 | 68 | - | - | 118 | 760 |
| Other Mitig. Areas--Future Pvt. Funding [6] | 2,054 | 1,209 | - | 237 | 170 | 438 | - | - | 227 | 2,281 |
| Homeowner Assoc. Open Space [7] | 2,908 | 567 | 538 | 879 | 26 | 887 | - | 12 | - | 2,908 |
| Other Private Open Space [8] | 3,248 | 324 | 563 | 495 | 715 | 859 | 7 | 285 | - | 3,248 |
| *Less:* Priority Conservation Areas [9] | (1,028) | (273) | (127) | (212) | (213) | (202) | - | - | - | (1,028) |
| ***Habitat Areas Requiring New Public Funds for Management--Total*** | **13,126** | **1,383** | **1,188** | **6,267** | **1,885** | **1,905** | **-** | **498** | **320** | **13,446** |
| City--New Funding | 3,365 | 398 | 87 | 1,948 | 572 | 158 | - | 202 | - | 3,365 |
| *Add:* Priority 1 Conservation | 389 | 134 | 50 | 50 | 117 | 39 | - | - | 220 | 609 |
| Priority 2 Conservation | 638 | 140 | 77 | 162 | 97 | 163 | - | - | 100 | 738 |
| Total--City Future Funding | **4,393** | **672** | **214** | **2,160** | **785** | **360** | **-** | **202** | **320** | **4,713** |
| City--Other Areas to Be Managed with New Funds [10] | **3,612** | **94** | **-** | **2,946** | **572** | **-** | **-** | **-** | **-** | **3,612** |
| Homeowner Assoc. Open Space | 2,908 | 567 | 538 | 879 | 26 | 887 | - | 12 | - | 2,908 |
| Other Private Open Space | 3,241 | 324 | 563 | 495 | 715 | 859 | - | 285 | - | 3,241 |
| *Less:* Priority Conservation Areas | (1,028) | (273) | (127) | (212) | (213) | (202) | - | - | - | (1,028) |
| Total--Private Future Funding | **5,121** | **618** | **974** | **1,162** | **527** | **1,544** | **-** | **296** | **-** | **5,121** |
| *Proportion of Wetland or Riparian Habitat in Areas Requiring New Public Funds* [11] | | | | | | | | | | |
| City--New Funding | 26% | 28% | 25% | 23% | 49% | 16% | - | 45% | 19% | 28% |
| Priority 1 Conservation | 22% | 57% | 9% | 0% | 5% | 0% | - | - | 5% | 16% |
| City--Other Areas to Be Managed with New Funds | 16% | 3% | - | 2% | 92% | - | - | - | - | 16% |
| Private--Future Funding | 18% | 18% | 12% | 14% | 54% | 8% | - | 50% | - | 18% |

**Table B-9**
**MANAGEMENT OF CONSERVED HABITAT IN MHCP STUDY AREA**

| | Total Without CGN Core | Carlsbad | Encinitas | Escondido | Oceanside | San Marcos | Solana Beach | Vista | Unincorp. CGN Core | Total With CGN Core |
|---|---|---|---|---|---|---|---|---|---|---|

1. Total and conserved habitat acres include California gnatcatcher core habitat in unincorporated County.
2. Mitigation bank (Daley Ranch) and other areas for which management funding has been previously committed; however, see Note 10 below.
3. City-owned habitat lands which are not currently managed for biological value.
4. Priority conservation areas may be publicly acquired if funding is available. The state may acquire Priority 1 areas; MHCP regional funding program would be used to acquire Priority 2 areas.
5. Privately conserved habitat areas which are currently managed for biological value.
6. Privately owned habitat areas which are anticipated to be conserved as mitigation for development impacts. Biological management in perpetuity will be required for development approval.
7. Habitat areas which are dedicated as open space and maintained by homeowner associations, generally for brush management and litter control, but not for biological value.
8. Privately owned habitat areas which are planned for inclusion in the MHCP preserve system, but which are not anticipated to be managed for biological value.
9. If acquired, these lands (except in the unincorporated area) would be removed from acres under private management.
10. Existing funding commitments for two areas, the state's Holly Springs purchase in Carlsbad, Daley Ranch Conservation Bank in Escondido and San Luis Rey Flood Control Project in Oceanside, which have regionally important biological resoureces, are proposed to be superseded by the regional funding program.
11. Average percent of wetland or riparian habitat as a proportion of conserved natural habitat. For Priority 1 conservation areas, average percent of wetland / riparian habitat for all private lands to be conserved in the future (i.e., future mitigation area and private--other, but not HOA lands) is used.

**Figure B-1**
**PLOT OF ANNUAL MANAGEMENT COST PER ACRE BY HABITAT TYPE AND AREA**

[Lines indicate values estimated from log-log regression on existing preserves managed by CNLM. Upper line indicates mean cost per acre for riparian or wetland habitats; lower line indicates values for upland habitats. Filled squares indicate existing preserves; blank squares indicate estimated values used in the MHCP financing analysis.