City of Carlsbad Habitat Management Plan
DRAFT Annual Report

Year 6, Nov. 2009 – October 2010

February 16, 2011

Prepared for:

City of Carlsbad
Property and Environmental Management
1635 Faraday Avenue
Carlsbad, CA 92008
Contact: Mike Grim, Senior Planner

Prepared by:

Technology Associates (TAIC)
9089 Clairemont Mesa Blvd., Suite 200
San Diego, CA 92123
Contact: Rosanne Humphrey, Preserve Steward

Approved by:

I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, the information submitted is a true, and accurate representation of the information currently available.

_____

City of Carlsbad [Title] Date

This page intentionally left blank

Table of Contents

Contents **Page**

ACRONYMS AND DEFINITIONS ..... **iv**

EXECUTIVE SUMMARY **1**

1.0 IMPLEMENTATION AND PLAN ADMINISTRATION **1**

1.1 INTRODUCTION 1

1.2 HMP COMPLIANCE MONITORING AND EFFECTIVENESS MONITORING 1

1.2.1 HMP Conservation Goals *1*
1.2.2 Compliance Monitoring *2*
1.2.3 Effectiveness Monitoring *2*

1.3 CURRENT STATUS OF PRESERVES 3

1.3.1 Ecological Reserves *3*
1.3.2 Privately Owned Pre-Existing Preserves *5*
1.3.3 City-Owned Preserves *6*
1.3.4 Project-Related Preserves *7*
1.3.5 Lake Calavera Mitigation Parcel *9*
1.3.7 Carlsbad's Gnatcatcher Core Area Obligation *9*

1.4 HABITAT GAINS AND LOSSES 10

1.4.1 Target Acreage *10*
1.4.2 Land Acquisitions *11*
1.4.3 Habitat Gains and Losses *12*
1.4.4 Rough-Step Preserve Assembly *12*

1.5 REGULATORY COMPLIANCE 15

1.5.1 HMP-related Permits and Amendments *15*
1.5.2 City Compliance with Terms and Conditions of Take Authorization *16*
1.5.3 City Compliance with HMP Zone-Wide Standards *23*

1.6 OTHER IMPLEMENTATION ACTIVITIES 25

1.6.1 Guidelines and Policies *25*
1.6.2 Public Outreach *25*
1.6.3 Preserve Enhancement *25*

2.0 MANAGEMENT AND MONITORING **27**

2.1 KEY MANAGEMENT ACTIVITIES 27

2.1.1 City-Owned Preserves *27*
2.1.2 Other Actively Managed Preserves *27*
2.1.3 Pre-HMP Preserves *28*

2.2 MONITORING 28

2.2.1 Species and Habitat Monitoring *28*
2.2.2 Wildlife Movement *29*

2.3 ISSUES OF CONCERN 31
2.3.1 Public Access/Use *32*
2.3.2 Active Preserve Management *33*
2.3.3 Sensitive Resources *34*
2.3.4 Exotic, Invasive Plant and Animal Species *35*
2.3.5 Wildlife Movement *39*
2.4 ENFORCEMENT 40
3.0 FINANCIAL SUMMARY 43
3.1 CITY FUNDING IN SUPPORT OF HMP 43
3.1.1 HMP Implementation *43*
3.1.2 In-lieu Habitat Mitigation Fees *44*
3.1.3 Other City Funding that Benefited the HMP Preserve *45*
3.2 STATUS OF PRESERVE MANAGEMENT ENDOWMENTS 45
4.0 REFERENCES 47

APPENDIX A: Habitrak Reports Years 1- 6
APPENDIX B: Management and Monitoring Summary by Management Unit

List of Figures

Contents **Page**

Figure 1. Current Preserve Ownership/Management 4
Figure 2. Project Gains/Losses by Report Year 13
Figure 3. Wildlife Movement Monitoring Survey Locations 30
Figure 4. Riparian Invasive Species Mapped by the Carlsbad Watershed Network 38

List of Tables

Contents **Page**

Table 1. Current Status of Ecological Reserves within the HMP Preserve 5
Table 2. Pre-Existing (Pre-HMP) Preserves 5
Table 3. City-Owned Preserves and Mitigation Parcel 6
Table 4. Project-Related Preserves 8
Table 5. Mitigation Acreage Provided at Lake Calavera Mitigation Parcel 9
Table 6. HMP Target Conservation of Habitats 11
Table 7. Summary of Cumulative Habitat Gains and Losses 14
Table 8. HMP Permits in Process during Year 6 15
Table 9. Summary of City Compliance with HMP Requirements 17

Table 10. Summary of City Compliance with Terms and Conditions 20
Table 11. Summary of City Compliance with the Terms and Conditions 20
Table 12. Compliance with Zone-Wide Standards through Year 5 24
Table 13. Biological Monitoring Conducted in Year 6 (2009-2010) 28
Table 14. *In-lieu* Mitigation Fee Account Activity..... 44
Table 15. Endowment Status for HMP Preserves..... 46

Acronyms and Definitions

Annual Reports – Preserve-specific annual reports, which summarize management and monitoring activities, threats, and monitoring results, are due in November of every year. Pre-HMP preserves are generally not required to prepare annual reports unless stipulated in previously negotiated agreements with the City and/or Wildlife Agencies. HMP-wide annual reports (e.g., the current report) are due to the Wildlife Agencies in December of every year. HMP annual reports summarize gains and losses in the HMP preserve system, current status of individual preserves and species, management and monitoring activities, and a financial summary. Every third year, the HMP annual report includes an analysis of species monitoring data. The latest three-year report was prepared as part of the 2007/2008 HMP annual report.

ASMD – Area Specific Management Directive.

BLF – Batiquitos Lagoon Foundation

California Gnatcatcher Core Area – An area identified in the MHCP that is considered critical to the recovery of the coastal California gnatcatcher. Approximately 500 acres of core habitat must be conserved by the MHCP jurisdictions as a condition of coverage for gnatcatcher. Although the core area is located outside of the City of Carlsbad, the City is responsible for 307.6 acres of conservation.

Caltrans – California Department of Transportation. Caltrans is responsible for the design, construction, maintenance, and operation of the California State Highway System and Interstate Highway segments within the state's boundaries.

City – City of Carlsbad.

CDFG – California Department of Fish and Game.

CNDDB – California Natural Diversity Database, operated and maintained by CDFG.

CNLM – Center for Natural Lands Management, a non-profit organization that provides management and biological monitoring of mitigation and conservation lands in perpetuity.

Compliance Monitoring – Monitoring to determine if the HMP is being properly implemented pursuant to the Implementing Agreement (IA) and state and federal take authorizations/permits.

Conservation Easement (as defined in California Civil Code Section 815.1) – Any limitation in a deed, will, or other instrument in the form of an easement, restriction, covenant, or condition, which is or has been executed by or on behalf of the owner of the land subject to such easement and is binding upon successive owners of such land, and the purpose of which is to retain land predominantly in its natural, scenic, historical, agricultural, forested, or open-space condition.

Critical Location – An area that must be substantially conserved for a particular sensitive species to be adequately conserved by the MHCP. Critical locations often coincide with major populations of the same sensitive species, but not all major populations are considered critical.

Edge Effects – Impacts to natural open space resulting from adjacent, contrasting environments, such as developed or disturbed land. When an edge is created, the natural ecosystem is affected for some distance in from the edge.

Effectiveness Monitoring – Monitoring habitat and species to determine if the HMP is protecting sensitive biological resources as planned and if any adaptive management is needed.

EMP – SANDAG's TransNet Environmental Mitigation Program, a funding allocation category for the costs to mitigate habitat impacts for regional transportation projects. Funding grants from this program may be used for habitat acquisition, management, and monitoring activities as needed to help implement the Multiple Habitat Conservation Program (MHCP).

ESA – Endangered Species Act.

Existing Hardline Preserve Areas – Natural habitat open space areas, such as Ecological Reserves and Dawson-Los Monos Reserve that were preserved prior to final approval of the HMP or areas that were previously Proposed Hardline Areas or Standards Areas that have secured preservation, long-term management and monitoring, and a non-wasting endowment to fund activities in perpetuity.

FPA – Focused Planning Area.

GIS – Geographic Information System.

Habitrak – A GIS-based tool that was developed and is maintained by CDFG for habitat accounting. The tool calculates the acreage, type, and location of vegetation communities that are gained (conserved), or lost (impacted) from the HMP planning area.

HCC – Helix Community Conservancy, a non-profit organization that provides management and biological monitoring of mitigation and conservation lands in perpetuity. Update: HCC changed its name to the San Diego Habitat Conservancy in February of 2009.

HCP – Habitat Conservation Plan, a planning document required as part of an application for an incidental take permit from the USFWS that describes the anticipated effects of the proposed taking; how those impacts will be minimized, or mitigated; and how the HCP is to be funded.

HMP – Habitat Management Plan; serves as the MHCP Subarea Plan for the City of Carlsbad.

HOA – Home Owners' Association

IA – Implementing Agreement. The legal agreement between the City of Carlsbad, CDFG and USFWS that ensures implementation of the Carlsbad Habitat Management Plan (HMP), binds each of the parties to perform the obligations, responsibilities, and tasks assigned, and provides remedies and recourse should any of the parties fail to perform.

Landowner – The legal entity that owns the land in fee-title. The landowner has the ultimate responsibility to ensure that preserve management is secured prior to habitat impacts. Often, the management responsibility is contracted to a third party.

LFMZ – Local Facility Management Zone, one of 25 Growth Management Plan sub-areas of the City of Carlsbad used for planning and financing infrastructure improvements and other city services and facilities concurrent with development.

Major Population – A population of sensitive species considered sufficiently large to be self-sustaining with a minimum of active or intensive management intervention (especially for plants) or that at least supports enough breeding individuals to contribute reliably to the overall metapopulation stability of the species (especially for animals). Also includes smaller populations that are considered important to long-term species survival.

Management Unit – Groupings of adjacent or nearby preserve parcels that have similar management needs.

MHCP – Multiple Habitat Conservation Program – a subregional conservation plan prepared and administered by SANDAG that encompasses the cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista. Its goal is to conserve approximately 19,000 acres of habitat and contribute toward the regional

habitat preserve system for the protection of more than 80 rare, threatened, or endangered species.

NCCP – Natural Community Conservation Planning Program – a program of CDFG that takes a broad-based ecosystem approach to planning for the protection and perpetuation of biological diversity throughout the State. The MHCP is a sub-regional component of the statewide NCCP..

Non-wasting Endowment – An endowment with sufficient principal such that, through investment returns, it will provide for the set up costs and management/monitoring of a preserve in perpetuity. Furthermore, the endowment is designed to increase in value over time in order for the generated revenues to increase, and thus keep pace with inflation. Pre-HMP preserves generally did not require endowments to fund management, unless specified in a previously negotiated agreement with the City and/or Wildlife Agencies.

OSMP – Open Space Management Plan, which serves as the Preserve Management and Monitoring Plan referenced in Section 12.3 of the Implementing Agreement.

PAR – Property Analysis Record, a cost analysis conducted to estimate the management and monitoring costs of a specific preserve in perpetuity. It is based on industry accepted parameters, allows an objective cost/benefit analysis for each line item, and adjusts for inflation.

PMP – Area-specific Preserve Management Plan, the permanent management plan developed for a particular preserve within the Preserve System. The City has contracted Center for Natural Lands Management to develop a master PMP for all City-owned preserves which addresses each preserve individually.

Preserve – Land conserved with a conservation easement, restrictive covenant, deed restriction or transfer of fee title to the City or California Department of Fish and Game that is being managed to HMP and MHCP standards. (Note: lands already set aside for preservation through an open space easement prior to HMP adoption have limited management activities until a regional funding source is available).

Preserve Manager – The entity responsible for monitoring and managing the preserve. The majority of preserve lands are owned/managed by the City, CDFG, CNLM, or private Homeowner's Associations (HOAs). Pursuant to State due-diligence legislation that took effect January of 2007, preserve managers must be certified by either the City or CDFG before they can begin managing lands in the City.

Priority Species – Sensitive species that have site-specific permit conditions requiring populations to be tracked individually using GIS.

Proposed Hardline Preserve Areas – Areas identified in the HMP as natural habitat open space that were proposed for permanent conservation and perpetual management during the design phase of development projects but not completed prior to final approval of the HMP.

Rough Step Assembly - A policy that requires development (losses) occur in "rough step" with land conservation (gains) during preserve assembly to ensure that development does not greatly outpace land preservation. It is generally understood by the Wildlife Agencies that losses should be no more than 10% greater than gains.

SANDAG – San Diego Association of Governments. SANDAG is the San Diego region's primary public planning, transportation, transit construction, and research agency, providing the public forum for regional policy decisions about growth, transportation planning and transit construction, environmental management, housing, open space, energy, public safety, and binational topics.

Standards Areas – Areas that were included in the MHCP Focused Planning Area (i.e., considered high priority for inclusion into the Preserve System), but for which projects had not been proposed prior to the City's HMP approval. Because potential protected habitat areas had not been delineated, a set of zone-specific conservation standards were established as a condition of future project approval.

TAIC – Technology Associates International Corporation – a private for-profit company with expertise in biological monitoring and habitat assessment on contract with the City of Carlsbad to perform the role of Preserve Steward created and required through the OSMP .

Take – As defined in the federal Endangered Species Act; to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture, or collect a listed species or attempt to do so, including impacts to the habitats upon which these listed species depend.

TET – The Environmental Trust. TET is a habitat management company that owned and managed several preserves in Carlsbad until declaring bankruptcy in 2005. Their properties were unmanaged until CDFG acquired title and management responsibility in early 2010.

TransNet - the San Diego County half-cent sales tax for transportation improvements first approved by voters in 1988 and extended in 2004. The Environmental Mitigation

Program is a component of TransNet that will fund habitat related environmental mitigation activities required to implement projects identified in the Regional Transportation Plan, including a funding allocation for habitat acquisition, management, and monitoring activities as needed to help implement the Multiple Species Conservation Program (MSCP) and the Multiple Habitat Conservation Program (MHCP).

USACOE – U.S. Army Corps of Engineers

USFWS – U.S. Fish and Wildlife Service.

Wildlife Agencies – Term used collectively for the California Department of Fish and Game and U.S. Fish and Wildlife Service.

This page intentionally left blank

Executive Summary

This is the sixth annual HMP summary report, covering the period of November 1, 2009 to October 31, 2010. This report summarizes the preserve status, implementation activities, and preserve gains and losses that have occurred during the current reporting period. Highlights of HMP activities are summarized below.

Current Status of Preserves

Individual preserves are under different levels of management pursuant to the HMP and pre-HMP management agreements (see Tables 1-4). The California Department of Fish and Game (CDFG) currently owns and manages five Ecological Reserves (to which recently acquired properties have been added this year) and the Brodiaea Preserve, an isolated one-acre preserve; CNLM manages an additional CDFG Ecological Reserve (Buena Vista Creek Ecological Reserve), 13 City-owned preserves, and seven pre-existing or project-related preserves; and San Diego Habitat Conservancy manages Emerald Pointe Preserve. Several other preserves (e.g., Carlsbad Raceway, Pacifica Palomar, and Fox Miller) consist of restored habitat and will be under long-term management when the restoration success criteria have been met. The majority of the remaining preserves are monitored at the property level (i.e., trash pick-up and fence maintenance) due to pre-HMP management agreements and are generally maintained by HOAs. Pursuant to a pre-HMP Biological Opinion from USFWS, Bressi Ranch is required to have active management; however this has not yet occurred.

City Mitigation Parcel (Lake Calavera Preserve)

A total of 0.5 acre was debited during the reporting period; cumulative debits to date are 82.8 acres. A total of 173.2 acres (debits) remain.

Carlsbad Gnatcatcher Core Area Obligation

Communication between the City and representatives of Core Area property continued through the reporting period**.**

Land Acquisitions

There were no land acquisitions during the current reporting period; however, CDFG received title to the preserve lands that were previously owned by TET.

Habitat Gains and Losses

There were no habitat gains or losses inside or outside of the preserve system during the current reporting period.

Rough Step Preserve Assembly

The rough step policy states that during preserve assembly, development (losses) must occur in "rough step" with land conservation (gains). Although a precise definition of "rough step" was not included in the MHCP or HMP, it is generally understood by the Wildlife Agencies that losses should be no more than 10% greater than gains (C. Beck, pers. comm. 2007). This policy was developed for NCCP plans to ensure that development does not greatly outpace land preservation. To date, 1,486.58 acres have been lost in Carlsbad since inception of the HMP, and therefore, no less than 1,337.92 acres (1,486.58 - 148.66) must be preserved. **A cumulative total of 5,588.90 acres have been gained in the preserve system, which greatly exceeds the minimum required by the rough step policy.** The rough step policy will continue to be followed for all new development projects (e.g., in Standards Areas) because the City requires that native habitat be conserved (impact mitigation/habitat gain) prior to issuing a grading permit (habitat impact/habitat loss).

Regulatory Compliance

The City is in compliance with the terms and conditions of the Implementing Agreement, NCCP take authorization/permit, and federal ESA section 10(a)(1)(B) take authorization/permit, and HMP zone-specific standards, as summarized in Tables 9 – 12 in the body of the report.

Other Implementation Activities

Other implementation activities undertaken by the City and conducted this year included the completion of the Guidelines for Riparian and Wetlands Buffers, various public outreach activities such as volunteer programs to enhance habitat and trails, and continued restoration activities on Lake Calavera, including 120-day installation sign-off and the initiation of a long-term maintenance contract with Habitat Restoration Sciences (HRS).

Management and Monitoring

Key management and monitoring activities in HMP preserves conducted this year included invasive species removal, installation and maintenance of fences and signage, vegetation mapping, sensitive species surveys (including a coordinated citywide gnatcatcher survey), and public outreach activities.

Areas of Focus

The major areas of focus for the HMP preserve system and HMP implementation continues to be unauthorized access/use, conservation of sensitive resources, wildlife movement,

control of invasive species, and ensuring appropriate levels of management for all preserves. Therefore, implementation during the next reporting period will focus on the following: fencing plan and master trail plan for Lake Calavera, public outreach, oak monitoring, a citywide wildlife movement study, monitoring for high alert invasive species, and preserve inspection program for currently unmanaged preserves.

Enforcement

The Property and Environmental Management Department continues to coordinate with CNLM, Carlsbad Parks and Recreation Department, CDFG, and the Carlsbad and Oceanside Police Departments on a multi-pronged approach to enforcement within the preserve system. In addition, the City has had discussions with SANDAG's Environmental Mitigation Program regarding additional enforcement resources through their County-wide pilot enforcement program.

Financial Summary

- *In-lieu* Mitigation Fee Program. A total of $30,657.73 of *in-lieu* mitigation fees were collected during the reporting period. As of October 31, 2010, the total amount of money in the fund was $ 1,111,479.50.
- Preserve Management Endowments. During the reporting period, a total of $194,465 was used by CNLM, SDHC and Helix Environmental for management and monitoring activities on nine preserves. Endowment funds for these properties totaled $6,329,341 as of October 31, 2010. Information for preserves managed by other entities, such as CDFG and University of California, was unavailable or incomplete and is therefore not reported.

This page intentionally left blank

1.0 Implementation and Plan Administration

1.1 Introduction

The purpose of this document is to provide an update on the current status of the Habitat Management Plan (HMP) preserve system, including the current status of individual preserves; a summary of habitat gains and losses for the current reporting period (November 1, 2009 – October 31, 2010); a summary of HMP-related permits, amendments, and other implementation activities; a discussion of HMP compliance; a summary of management activities and issues; and a summary of HMP-related funding and expenditures. This information will be used in compliance monitoring to determine if the HMP is being properly implemented pursuant to relevant regulations and permit conditions. Annual tracking and reporting of the HMP Preserve's gains, losses, management, and monitoring is required by Sections 12.1 and 12.2 of the Implementing Agreement (IA), dated November 12, 2004; the Federal Fish and Wildlife 10(a)(1)(B) Permit No. TE022606-0, dated November 12, 2004; and the NCCP Permit No. 2835-2004-001-05, dated November 15, 2004. This fifth annual report covers year six of the 50-year HMP implementation permits.

1.2 HMP Compliance Monitoring and Effectiveness Monitoring

1.2.1 HMP Conservation Goals

In order to evaluate the City's *compliance* with the HMP, and the *effectiveness* of the MHCP/HMP with respect to natural resources protection, it is necessary to understand the underlying goals of the plan, which are summarized below (See HMP p. A-2 for a complete list):

- Conserve the full range of vegetation community types, with a focus on sensitive habitat types.
- Conserve populations of narrow endemic species and other covered species.
- Conserve sufficient habitat, functional biological cores, wildlife movement corridors, and habitat linkages, including linkages that connect coastal California gnatcatcher (*Polioptila californica californica*) populations and movement corridors for large mammals, to support covered species in perpetuity.
- Apply a "no net loss" policy to wetlands, riparian habitats, and oak woodlands.

- Implement appropriate land use measures to ensure the protection of preserve lands in perpetuity.
- Meet conservation goals stated above while accommodating orderly growth and development in the City.
- Coordinate and monitor protection and management of conserved lands within the preserve system.
- Minimize costs of Endangered Species Act (ESA)-related mitigation and HMP implementation.

1.2.2 Compliance Monitoring

Compliance monitoring, also known as implementation monitoring, is required to ensure that the City is performing the conservation and implementation actions described in the Implementing Agreement. Compliance monitoring tracks whether the City is doing what it agreed to do, such as conserving particular species locations and acres of habitat, monitoring the condition of the habitat and species, and performing required management actions (MHCP Vol I). The Preserve Steward assists the City by conducting compliance monitoring and reporting for agency review. Habitat tracking results are provided in Section 1.4; regulatory compliance is discussed in Section 1.5; and management and monitoring activities are summarized in Section 2.0.

1.2.3 Effectiveness Monitoring

Effectiveness monitoring, also known as biological monitoring, evaluates how well the conservation and management actions are achieving the biological goals stated in the MHCP and HMP within the City and across the MHCP planning area as a whole. The preserve-level monitoring program is used to evaluate the effectiveness of management actions at specific preserve areas (MHCP Vol. III). At the subregional (MHCP-wide) level, effectiveness monitoring involves assessing status and trends in populations of covered species, and assessing how well the conservation strategy is working to maintain natural ecological processes (MHCP Vol. III). The City is responsible for biological monitoring on City-owned properties and for reporting monitoring results from other properties within the HMP. The Wildlife Agencies are responsible for monitoring on their own properties (i.e., reserves owned by CDFG or lands within Batiquitos Lagoon owned by the California State Lands Commission) and for conducting subregional monitoring and analysis.

Monitoring the effectiveness of the MHCP and HMP is more challenging than compliance monitoring because the biological goals are broad and it may take many (five to ten) years before trends in species populations and habitat conditions are detectable. Species and habitat monitoring is conducted by the Preserve Managers. The City, Preserve Steward, Preserve Managers, and Wildlife Agencies are currently working together to develop a functional City-wide monitoring program that will help answer questions about population trends and wildlife movement. In addition, the City is coordinating with the San Diego Management and Monitoring Program, which is developing regional and preserve-level monitoring and management protocols for use throughout San Diego County.

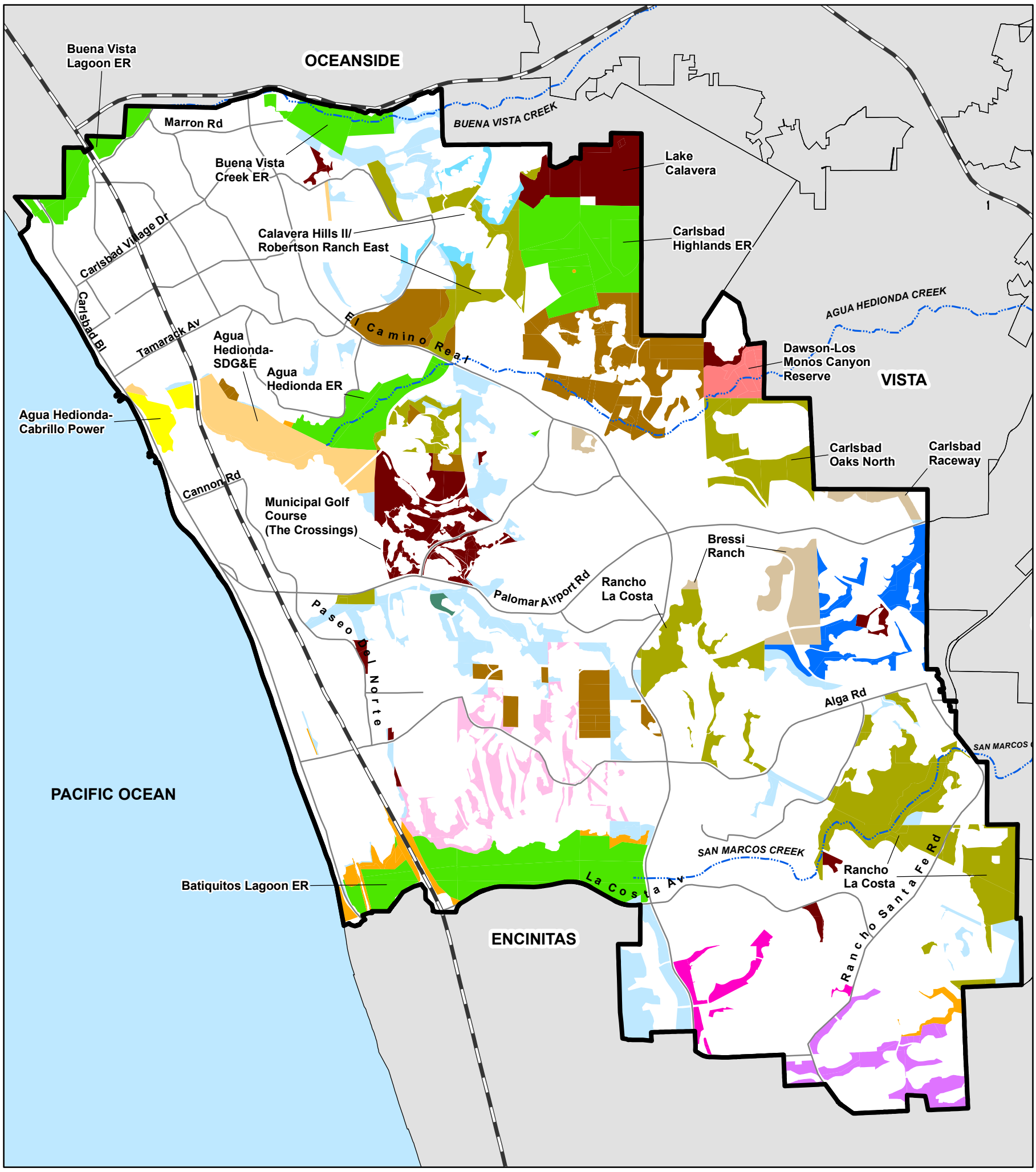
1.3 Current Status of Preserves

The current status of individual preserves within the HMP Preserve is given in Sections 1.3.1 – 1.3.4, including the primary preserve management entity, underlying landowner, overall acreage, and status of conservation easement, endowment, preserve management plan, and annual reports, where applicable. Preserve locations are shown in Figure 1. In the sections below, the preserves have been grouped according to management status and type of ownership. Section 1.3.5 summarizes mitigation parcel activity, and is followed by a status summary of the Gnatcatcher Core Area obligation (Section 1.3.6).

1.3.1 Ecological Reserves

Table 1 includes five Ecological Reserves that are owned by CDFG. Ecological Reserves in existence prior to HMP adoption (shown as Existing Hardline Preserves in the HMP) are managed by CDFG to HMP standards to the extent that funding and resources are available. Management of these preserves (except for Buena Vista Creek Ecological Reserve) is funded through annual state budget appropriations for CDFG. Buena Vista Creek Ecological Reserve, which was acquired after HMP approval, is managed by CNLM whose activities are funded by an endowment provided by the National Fish and Wildlife Foundation with contributions from Preserve Calavera.

The Wildlife Conservation Board (WCB) approved CDFG's request to assume ownership and management responsibilities of five TET properties in December 2008 and the quitclaim deeds were finalized in January of 2010. Most of these properties (Summit, Calavera Heights Mitigation Parcel, and Batiquitos Lagoon Parcel) were incorporated



Legend

City of Carlsbad

City Preserves*
- Batiquitos Drive
- Carlsbad Village
- Carrillo Ranch
- La Costa Canyon Park
- La Costa/Romero
- Lagoon Lane
- Lake Calavera
- Los Monos
- Macario Canyon
- Municipal Golf Course
- Poinsettia Park
- Research Center
- Veteran's Memorial Park

Other Public/Semi-Public

Cabrillo Power

San Diego Gas and Electric

Other Public Agencies
- Caltrans
- Carlsbad Municipal Water District
- North San Diego County Transit
- San Dieguito Union High School
- State of California

Wildlife Agencies

California Department of Fish and Game
- Agua Hedionda Lagoon Ecological Reserve (ER)
- Batiquitos Lagoon ER
- Buena Vista Creek ER*
- Buena Vista Lagoon ER
- Carlsbad Highlands ER
- Brodiaea Preserve

Non-Profit Management Entity

Center for Natural Lands Management (CNLM)
- Calavera Hills Phase II
- Carlsbad Oaks North
- Encinitas Wetlands
- Kelly Ranch
- North County Habitat Bank
- Rancho La Costa
- Robertson Ranch East Village
- Robertson Ranch West

San Diego Habitat Conservancy
- Emerald Pointe Estates

University of California Reserve System

University of California Reserve System
- Dawson-Los Monos Canyon Reserve

Private

Aviara HOAs

Calavera Hills HOAs

Encinitas Creek HOAs

La Costa Valley HOA

Rancho Carrillo Master HOA

Other HOAs and Private Open Space

Other Entities

Pending or by Annual Contract
- Bressi Ranch
- Carlsbad Raceway
- Fox Miller Brodiaea Site

Unmanaged Properties
- Undeveloped Standards Area
- Other Unmanaged Properties

*Managed by Center for Natural Lands Management (CNLM)

Basemap Legend

City of Carlsbad

Jurisdictional Boundary

Freeway

Major Road

River

N

Feet

0 4,750

Technology Associates International Corporation

City of Carlsbad
Current Preserve Ownership/Management

Figure 1

Document: Management of HMP Preserves_11x17.mxd

Date: Nov 12, 2010

into adjacent, existing Ecological Reserves. The remaining parcel (Brodiaea Preserve) is a 1-acre, isolated preserve (Table 2).

Table 1. Current Status of Ecological Reserves within the HMP Preserve

Preserve / Project Name	Acres	PM[1]	PMP[1]	Annual Reports
Agua Hedionda Lagoon Ecological Reserve	195	CDFG	None	None
Batiquitos Lagoon Ecological Reserve[2]	623	CDFG	1999	None
Buena Vista Creek Ecological Reserve[2]	134	CNLM	Draft 2008[3]	2007-2010
Buena Vista Lagoon Ecological Reserve	151	CDFG	None	None
Carlsbad Highlands Ecological Reserve[2]	474	CDFG	None	None

[1] Abbreviations: PM – Preserve Manager; PMP – Preserve Management Plan; CDFG = California Department of Fish and Game; CNLM = Center for Natural Lands Management.
[2] The acreage of this Reserve has increased because a property previously owned by TET was added to it this year.
[3] A draft Preserve Management Plan was submitted to the Wildlife Agencies by CNLM in May of 2008, and is still under review.

3.2 Privately Owned Pre-Existing Preserves

Privately-owned pre-existing HMP preserves (shown as Existing Hardline Preserves in the HMP) include areas in or near Agua Hedionda Lagoon that are owned by Cabrillo Power and SDG&E, UCSD-owned Dawson-Los Monos Reserve, as well as HOA natural open space lands that were in existence prior to the planning for the HMP (Table 2). The HMP requires that these lands be managed according to pre-existing levels of management (i.e., management agreements in place prior to HMP approval).

Table 2. Pre-Existing (Pre-HMP) Preserves

Preserve	Acres	Land Owner[1]	PM[1]
Agua Hedionda –Cabrillo Power	73.2	Cabrillo Power	Cabrillo Power
Agua Hedionda –SDG&E	280.2	SDG&E	SDG&E
Aviara Conservation Area	269.6	Multiple HOAs	Multiple HOAs
Brodiaea Preserve	1	CDFG	CDFG
Calavera Hills Phase I	120	HOA	HOA
Dawson-Los Monos Reserve[2]	106	UCSD	UCSD
Encinitas Creek HOAs[3]	185.5	Multiple HOAs	Multiple HOAs
Encinitas Wetlands	19	CNLM	CNLM
La Costa Valley HOA (Arroyo La Costa)	82.1	HOA	HOA

Table 2. Pre-Existing (Pre-HMP) Preserves continued

Preserve	Acres	Land Owner[1]	PM[1]
Manzanita	30.7	Manzanita Partners LLC	Manzanita Partners LLC
Other HOAs and private open space	330	Multiple	Multiple
Palomar Forum	1.43	Palomar Forum Owner's Association	None
Poinsettia Lanes Vernal Pools[3]	2.3	NCTD	NCTD
Rancho Carrillo Conservation Area	204	Continental Residential Inc.	HOA

[1] Abbreviations: CDFG = California Department of Fish and Game; HOA = Home Owners Association; PM – Preserve Manager; NCTD = North County Transit District; SDG&E = San Diego Gas and Electric; UCSD = University of California, San Diego.
[2] Located partially in City of Vista.
[3] Identified as part of the Special Resource Area 3 in the HMP (page D-7).

1.3.3 City-Owned Preserves

Table 3 lists City-owned preserves (also depicted graphically in Figure 1), for which ongoing management is funded through the City's annual budget appropriation process. All City preserves are actively managed by CNLM.

Table 3. City-Owned Preserves and Mitigation Parcel

Preserve / Project Name	Acres	PMP[1]	Annual Reports
Batiquitos Drive	2.7	2008; includes all City properties in a single document	2009-2010; includes all City properties in a single report
Carlsbad Village	12.7		
Carrillo Ranch	16.6		
La Costa Canyon Park	8.9		
La Costa /Romero	13.0		
Lagoon Lane	2.7		
Lake Calavera Mitigation Parcel	256		
Los Monos	20.5		
Macario Canyon	33.2		
Municipal Golf Course	198.2		
Poinsettia Park	12.4		
Research Center	2.6		
Veterans Park	21.1		
Total Acres	**600.6**		

[1] PMP = Preserve Management Plan; Preserve Management Plan and annual reports are available at http://www.carlsbadca.gov/services/environmental/hmp/docs/Pages/default.aspx

1.3.4 Project-Related Preserves

Table 4 shows all project-related preserves. Projects that mitigated impacts through an *in-lieu* mitigation fee rather than land preservation are not included in this table.

It is useful to understand all of the steps involved in land conservation (i.e., management to HMP standards), because it can take several years after a project is approved to finalize protection and management of a project-related preserve. As a condition of final project approval, all of the following steps must be taken by the landowner or developer before a grading permit will be issued by the City:

- Preparation of a Property Analysis Record (PAR), or equivalent cost analysis, to assess the initial start up costs and costs of management and monitoring of the preserve in perpetuity (must be approved by the City and Wildlife Agencies).
- Preparation of an area-specific Preserve Management Plan (PMP) to ensure adequate management and monitoring of biological resources in perpetuity (must be approved by the City and Wildlife Agencies).
- Establishment of a non-wasting endowment to provide funds for preserve management in perpetuity.
- Establishment of a Conservation Easement (as defined by California Civil Code Section 815.3) on the preserve.
- Procurement of a Preserve Manager for the preserve whose qualifications are consistent with Wildlife Agency guidelines, and approved by the City.

Table 4. Project-Related Preserves

Preserve / Project Name	Acres	Grading Permit	PAR[1]	Endwmt[1]	CE[1]	Land Owner	PM[1]	PMP[1]	Annual Reports	Comments[1]
Bressi Ranch	154	01/03	None	None	None	Lennar	None	Jul-05	None	
Calavera Hills Phase II	133	2002	2006	May-06	May-06	Calavera Hills HOA	CNLM	2002	2006-2010	
Cantarini/Holly Springs	115	None	None	None	None	Benteq/Bentley-Monarch	None	Draft 2008	None	Project not currently active.
Carlsbad Oaks North	221	11/12/04	2006	Jun-06	Nov-05	CNLM, County	CNLM	2006	2005-2010	
Carlsbad Raceway	43	12/01/04	None	None	Sep-08	H.G. Fenton	Restoration: Helix	None	None	Permanent management, endowment, etc. will be established when restoration is signed off by WA.
Emerald Pointe Estates	9.4	3/21/06	Feb-06	12/12/06	Feb-06	Saddleview LLC	SDHC	In PAR	2010	Management/monitoring requirements stated in PAR.
Encinas Creek (Pacifica Palomar, Biltmore)	8	8/23/05	Nov-07	Dec-07	May-08	Ascent Biltmore Clsbad LLC	Restoration: Merkel	Dec-06	None	Under 5 yr restoration program with Merkel. SDHC to start permanent management Aug-2012.
Kelly Ranch HCA	57.8	6/18/2003	2002	Feb-02	Feb-02	multiple	CNLM	2002	2002-2010	
N. Coast Calvary Chapel	16.0	6/30/06	9/5/07	6/21/06	In-progress	N. Coast Calvary Chapel	Helix	2005	2010	Preserve management by annual contract
N. County Habitat Bank	18.7	N/A[1]	5/24/07	5/07/07	Jan-08	CNLM	CNLM	2006	2008-2010	Pre-existing; no grading permit required.
Palomar Pointe/Hieatt	6.5	2/03/05	2004	None	None	Larry Jet; Lanikai Mgmt Group	None	2005	None	Offsite mitigation (8.7 acres) at Whelan Ranch, 16.8 ac creation. Financial guarantee: Mgmt is contracted out and paid annually by landowner (L. Jett).
Rancho La Costa (La Costa Villages)	1,026	3/31/04	2001	2002 and 2003	2002	CNLM	CNLM	2006	2002-2010	Includes the CAGN Core Area parcels outside of the City limits.
Robertson Ranch East	72	1/16/07	Feb-07	2/6/07*	2/6/07	Calavera Hills II LLC	CNLM	2006	2010	*CNLM merged funds with Calavera Hills Phase II for cost savings since client uses CNLM for both projects.
Special Resource Area 1: Fox Miller Brodiaea site	16.3	12/28/05	None	None	June 2009	HG. Fenton	Helix	Dec-05	2008-2009	Relocation, restored and non-restored areas managed by Helix (by annual contract). *SDHC will manage property when 5-yr restoration is complete.
Terraces at Sunny Creek	43.2	4/26/00	N/A	N/A	N/A	Rancho Milagro LLC	N/A	N/A	N/A	Pre-HMP project outside HMP; mitigation w/in HMP; endowment, etc., not required.
Water's End[2]	3.3	5/15/02	N/A	N/A (see comments)	1994	HOA	HOA	N/A	N/A	Outside of the HMP; therefore HMP requirements do not apply. Mitigation fee of $100,000 paid by developer for long-term management, held by City.

[1] Abbreviations: CE – Conservation Easement; Endwmt – endowment; N/A – Not applicable; NCTD – North County Transit District; None – this item has not been completed; PAR – Property Analysis Record; Pending – this item is currently under negotiation, but has not been completed; PM – Preserve Manager; PMP – Preserve Management Plan; SDHC – San Diego Habitat Conservancy (formerly Helix Community Conservancy); WA – Wildlife Agencies.

[2] Water's End is not in the HMP. However, it is protected open space adjacent to the Poinsettia Lanes Vernal Pools (vernal pool watershed). Five years of restoration monitoring was completed in 2008, and the HOA took over preserve management.

1.3.5 Lake Calavera Mitigation Parcel

The City-owned Lake Calavera Municipal Mitigation Parcel (Lake Calavera Preserve) provides mitigation as needed for City project-related impacts. Credits are deducted on an acre-for-acre basis, regardless of the type of habitat being impacted, except for impacts to gnatcatcher-occupied coastal sage scrub, southern maritime chaparral, maritime succulent scrub, and wetlands. No credits can be sold to outside entities. Table 5 shows total debits to date. A total of 0.5 acre from three City projects was debited from the Lake Calavera mitigation parcel during the current reporting period.

Table 5. Mitigation Acreage Provided at Lake Calavera Mitigation Parcel

Credits and Debits	Acres[1]
INITIAL CREDITS	***256.0***
Total Debits as of October 31, 2010	**82.3**
Year 6 Project-Related Deductions (Nov 2009 – Oct 2010)	
1. Romeria Street Channel Improvements	0.2
2. La Costa Avenue Slope Repair	0.2
3. Lake Calavera Trails Master Plan	0.1
Subtotal Year 6 debits	***0.5***
Total Debits	**82.8**
TOTAL ACRES AVAILABLE AS OF OCTOBER 31, 2010	**173.2**

[1] Rounded to the nearest tenth of an acre.

1.3.7 Carlsbad's Gnatcatcher Core Area Obligation

Acreage

As of the final approval of the HMP in 2004, 264.5 acres of the 307.6-acre Gnatcatcher Core Area preservation obligation had been met. The current status of the Core Area obligation has not changed. The remaining obligation consists of (1) acquisition of 43.0 acres of occupied coastal sage scrub habitat, and (2) the reimbursement of 50.1 acres of land that was acquired by a developer in anticipation of the HMP Core Area requirements. This property is now in the control of Lennar Corporation. The history of the Gnatcatcher Core Area, including how the above obligations were met, is detailed in previous annual reports.

During the current reporting period, the City continued its efforts to transact the reimbursement and secure the preservation of 50.1 acres, through negotiations with

Lennar Corporation. *In-lieu* mitigation fees will be used to purchase the remaining 43.0 acres after all reimbursement obligations have been met. Lands within the County Gnatcatcher Core Area, including the 50.1 acres owned by Lennar Corporation described above, are currently being managed by CNLM as part of the Rancho La Costa Open Space Preserve.

***In-lieu* Habitat Mitigation Fee Program.**

Under certain conditions, project impacts that occur outside of the HMP preserve area may be mitigated through a fee, rather than onsite land conservation. A total of $30,657.73 of *in-lieu* mitigation fees were collected during the reporting period. As of October 31, 2010, the total amount of money in the fund was $1,111,479.50. A detailed accounting of these fees is given in Section 3 (Financial Summary).

1.4 Habitat Gains and Losses

Pursuant to the HMP and IA, the City is required to provide an annual accounting of the amounts and locations of habitat lost and conserved over time due to public and private development projects and land acquisition. This information will be used to demonstrate to the Wildlife Agencies that (a) the HMP Preserve is being assembled as anticipated; (b) the habitat conservation goals of the HMP are being achieved;, and (c) habitat preservation is occurring in rough step with any loss from development,. Habitrak is a software tool that was designed to satisfy these tracking and reporting requirements by providing standard tracking protocols and reporting output. It uses standard baseline spatial databases (e.g., vegetation, preserve boundaries, and parcel boundaries) and development project footprints to prepare standardized tables and maps for annual reporting.

1.4.1 Target Acreage

Habitrak is used by the City to calculate the number of acres added to the HMP Preserve every year (although it does not calculate gains within the Gnatcatcher Core Area which is outside of the City limits). Some of the habitat types used in the standard Habitrak table outputs are more specific than those used in HMP Table 8. To make it easier to compare the Habitrak tables with the HMP table for compliance monitoring, Table 6 below lists acres of target conservation and compares habitat categories in HMP Table 8 to categories used in Habitrak. Note that the GIS data layers used for this analysis included the more detailed habitat categories.

Table 6. HMP Target Conservation of Habitats
(Comparison of Habitat Categories in HMP and Habitrak)

HMP Table 8		Habitrak	
Habitat Type	**Target Acres**	**Habitat type**	**Target Acres**
Coastal sage scrub	2,139	Maritime succulent scrub	29
		Coastal sage scrub	2,003
		Coastal sage-chaparral scrub	107
		Subtotal	*2,139*
Chaparral	676	Chaparral	676
Southern maritime chaparral	342	Southern maritime chaparral	342
Oak woodland	24	Coast live oak	20
		Other oak woodland	4
		Subtotal	*24*
Riparian	494	Riparian forest	82
		Riparian woodland	17
		Riparian scrub	395
		Subtotal	*494*
Marsh	1,252	Southern coastal salt marsh	143
		Alkali marsh	9
		Freshwater marsh	165
		Freshwater	53
		Estuarine	789
		Disturbed wetland	93
		Subtotal	*1,252*
Grassland	707	Grassland	707
Eucalyptus woodland	99	Eucalyptus woodland	99
Disturbed lands	745	Agriculture	185
		Disturbed Land	244
		Developed	316
		Subtotal	*745*
Total Target Conservation within Carlsbad	**6,478**	**Total Target Conservation within Carlsbad**	**6,478**
Carlsbad's Gnatcatcher Core Area Contribution	308[1]	Not tracked in Habitrak	N/A
Total HMP Target Conservation	**6,786**		

[1] Rounded to the nearest acre.

1.4.2 Land Acquisitions

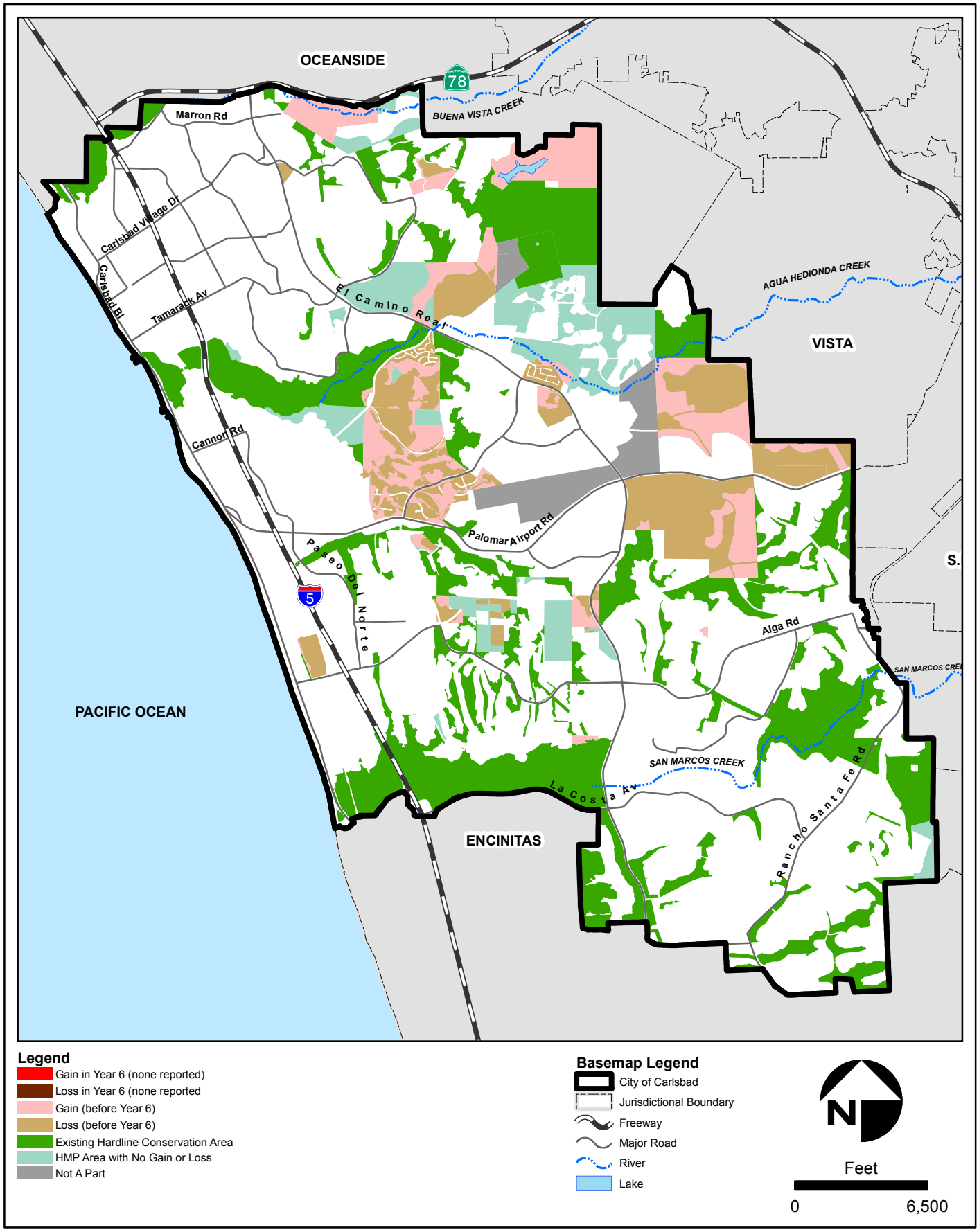
No natural open space land acquisitions were made inside or outside of the HMP this year.

1.4.3 Habitat Gains and Losses

There were no habitat gains or losses during the current reporting period. To date, cumulative habitat gains and losses inside the Preserve are 5,821 acres and 169 acres, respectively (Table 7; Figure 2). This represents 90% (5,821/6,478 acres) of the target acreage for the HMP Preserve, not counting the Gnatcatcher Core Area. Appendix A summarizes cumulative habitat gains and losses to date. Note that Proposed Hardline areas, as shown in HMP Figure 28, were pre-negotiated areas of mitigation (preserved open space) for proposed projects.

1.4.4 Rough-Step Preserve Assembly

As stated in the IA (12.1 Record Keeping) "Habitat conservation under the HMP must proceed concurrently and in rough step with development." Although 'rough step' has not been defined in the HMP or MHCP, the general standard adopted by the Wildlife Agencies is that acres of habitat gain must be within approximately 10% of habitat losses (Christine Beck, CDFG, pers comm. 2007). This policy was developed for NCCP plans to ensure that development does not greatly outpace land preservation. To date, 1,486.58 acres have been lost in Carlsbad since inception of the HMP, and therefore, no less than 1,337.92 acres (1,486.58 - 148.66) must be preserved. A cumulative total of 5,820.90 acres have been gained in the preserve system, which greatly exceeds the minimum required by the rough step policy. The rough step policy will continue to be followed for all new development projects (e.g., in Standards Areas) because the City requires that native habitat be conserved (impact mitigation/habitat gain) prior to issuing a grading permit (project impact/habitat loss) pursuant to the mitigation ratios described in the HMP. Measures required to be in place prior to permit issuance include: management cost analysis, non-wasting endowment for perpetual management, conservation easement, preserve management plan, and a contract with an approved preserve manager. Some projects that were approved prior to final HMP approval were issued grading permits before all of these elements were put in place. The City continues to work towards ensuring permanent management for these properties, either in concert with Wildlife Agency sign-off of project mitigation sites or assisting USACOE and USFWS in enforcing the provisions of the project Biological Opinion. Habitat impacted *outside* of the HMP is mitigated through an *in-lieu* mitigation fee.



Technology Associates International Corporation

City of Carlsbad
Project Gains and Losses By Reporting Year

Figure 2

File: T:\projects\carlsbad_ps\plots\figures\10AnnualReport\Habitrak Gain Loss Year 6.mxd

Date: Nov 14, 2010

Table 7. Summary of Habitat Losses and Gains

Year 6

Plan: MHCP West San Diego County

Date Range: 11/1/2009 - 10/31/2010

Project Gain Status: Gain

Project Loss Status: Loss

City of Carlsbad

		Acres Inside the Habitat Preserve Planning Area					Acres Outside the Habitat Preserve				Total Acres			
		Habitat Loss		Habitat Gain			Habitat Loss		Habitat Gain		Habitat Loss		Habitat Gain	
Habitat Type	**Target Cons.**	**Current Period**	**Cummulative**	**Current Period**	**Cummulative**	**Cons. to Date %**	**Current Period**	**Cummulative**	**Current Period**	**Cummulative**	**Current Period**	**Cummulative**	**Current Period**	**Cummulative**
Southern Coastal Bluff Scrub	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maritime Succulent Scrub	29	0.0	1.6	0.0	25.5	88.0 %	0.0	0.0	0.0	5.5	0.0	1.6	0.0	31.1
Coastal Sage Scrub	2,003	0.0	11.4	0.0	1,610.5	80.4 %	0.0	159.7	0.0	5.5	0.0	171.1	0.0	1,616.0
Chaparral	676	0.0	0.5	0.0	605.1	89.5 %	0.0	65.7	0.0	0.0	0.0	66.2	0.0	605.2
Southern Maritime Chaparral	342	0.0	0.0	0.0	331.7	97.0 %	0.0	16.2	0.0	1.5	0.0	16.2	0.0	333.1
Coastal Sage-Chaparral Scrub	107	0.0	0.0	0.0	112.4	105.1 %	0.0	153.5	0.0	0.0	0.0	153.5	0.0	112.4
Grassland	707	0.0	21.8	0.0	635.8	89.9 %	0.0	218.8	0.0	1.5	0.0	240.6	0.0	637.3
Southern Coastal Salt Marsh	143	0.0	0.0	0.0	127.8	89.4 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	127.8
Alkali Marsh	9	0.0	0.0	0.0	0.0	0.0 %	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0
Freshwater Marsh	165	0.0	0.0	0.0	138.1	83.7 %	0.0	0.9	0.0	0.3	0.0	0.9	0.0	138.3
Riparian Forest	82	0.0	0.9	0.0	62.8	76.6 %	0.0	1.3	0.0	0.4	0.0	2.2	0.0	63.3
Riparian Woodland	17	0.0	1.3	0.0	11.7	68.6 %	0.0	0.0	0.0	0.0	0.0	1.3	0.0	11.7
Riparian Scrub	395	0.0	0.1	0.0	369.7	93.6 %	0.0	9.8	0.0	0.6	0.0	9.8	0.0	370.2
Englemann Oak Woodland	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coast Live Oak	20	0.0	0.0	0.0	7.7	38.3 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7
Other Oak Woodland	4	0.0	0.0	0.0	4.8	120.5 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8
Freshwater	53	0.0	0.0	0.0	51.2	96.6 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.2
Estuarine	789	0.0	0.0	0.0	776.5	98.4 %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	776.5
Disturbed Wetland	93	0.0	0.0	0.0	88.6	95.3 %	0.0	11.7	0.0	0.0	0.0	11.7	0.0	88.6
Natural Floodchannel	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Beach	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Saltpan/Mudflats	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agriculture	185	0.0	117.0	0.0	222.0	120.0 %	0.0	462.2	0.0	3.2	0.0	579.2	0.0	225.2
Eucalyptus Woodland	99	0.0	1.3	0.0	94.9	95.9 %	0.0	0.5	0.0	0.0	0.0	1.8	0.0	94.9
Disturbed Land	244	0.0	0.0	0.0	237.1	97.2 %	0.0	174.9	0.0	4.5	0.0	174.9	0.0	241.6
Urban/Developed	0	0.0	13.0	0.0	307.0		0.0	42.3	0.0	0.9	0.0	55.4	0.0	307.9
Southern Foredunes	0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Agency Total:		**0.0**	**169.1**	**0.0**	**5,820.9**		**0.0**	**1,317.5**	**0.0**	**23.9**	**0.0**	**1,486.6**	**0.0**	**5,844.8**

1.5 Regulatory Compliance

To ensure regulatory compliance, the City is implementing the HMP (1) through the project review process for new development projects; (2) by issuing HMP permits when impacts to habitat or covered species is involved; (3) by issuing incidental take permits when take of a listed species is involved; and (4) by ensuring consistency with the terms and conditions of the IA, and State NCCP and Federal Fish and Wildlife permits.

1.5.1 HMP-related Permits and Amendments

During the current reporting period, eight HMP permits for private and public development projects were approved by the City, and one was considered complete but not yet approved, as shown in Table 8. Table 8 also includes a status update for HMP permits that were initiated prior to the reporting period, but are still pending. No incidental take permits were issued this year.

Table 8. HMP Permits in Process during Year 6

HMP Permit No.	Project Name	Date	Status
HMP 07002	Muroya Subdivision	04/07/2010	Approved
HMP 07005	Villagio – Kelly Ranch	05/14/2007	Pending
HMP 07006	S. Coast Materials Quarry	07/31/2007	Incomplete
HMP 09001	Rancho Milagro	01/16/2009	Pending
HMP 09002	Dos Colinas	02/02/2009	Pending
HMP 09003	Romeria Street Channel Improvement	12/07/2009	Approved
HMP 09005	Lake Calavera Trails Master Plan	01/25/2010	Approved
HMP 09008	Sukup SFD	11/16/2009	Approved
HMP 09009	Padilla Residence	12/28/2009	Approved
HMP 09010	El Fuerte View	10/06/2010	Approved
HMP 0903A	Romeria Street Channel Improvement	05/04/2010	Approved
HMP 10001	La Costa Avenue Slope Repair	08/30/2010	Approved
HMP 10002	Poinsettia Place	07/21/2010	Complete
HMP 10003	Agua Hedionda Sewer Lift Station	07/08/2010	Pending

Three Minor Amendments were processed during the reporting period as described below. See HMP Section E-3 and Implementing Agreement Section 20.1 for a description of Minor Amendment types and the HMP amendment process.

1. **Minor Amendment to correct a minor mapping error.** Approved by the Wildlife Agencies on August 13, 2010 and by the Planning Commission on September 1, 2010, pending City Council approval of the CEQA documents.

2. **Consistency Finding.** Muroya Subdivision, which is within a Standards Area, was processed as a Consistency Finding in Zone 20, received Wildlife Agency concurrence in February 2010, and was approved by City Council on June 22, 2010 (HMP Permit 07002).

3. **Equivalency Finding.** The Quarry Creek Equivalency Finding (associated with the Oceanside approved Reclamation Plan and corresponding EIR) was approved by the Wildlife Agencies on October 13, 2010. The revised boundary resulted in a net gain of 2.57 acres. Because this is a reclamation project, and not a development project, the boundary is still considered Proposed Hardline. If and when the area is developed and long-term management is secured, the open space boundary will become Existing Hardline.

1.5.2 City Compliance with Terms and Conditions of Take Authorization

To satisfy the terms and conditions of the state and federal take authorization, the City is required to fulfill the obligations outlined in Sections 10 – 14 of the IA, the Conditions of the State NCCP Permit, and Terms and Conditions of the Federal ESA Section 10(a)(1)(B) Incidental Take Authorization/Permit. Implementation tasks associated with these regulations are completed or ongoing, and are described in Tables 9-12. In cases where a particular condition is worded the same in more than one document, a reference is made to a previous table in which compliance is described, to avoid redundancy.

Table 9. Summary of City Compliance with HMP Requirements Outlined in the Implementing Agreement (IA)

IA Section	Obligation	City Compliance
10.10	**Duty to Enforce:** To enforce the terms of the Take Authorization, HMP, and IA and ensure HMP lands are conserved in perpetuity.	▪ The City requires compliance with the HMP as a condition of approval for new development projects, which includes conservation in perpetuity, a non-wasting endowment, and a management agreement with a preserve manager. ▪ On March 14, 2006 the City passed the Habitat Preservation and Management Requirements Ordinance (Carlsbad Municipal Code § 21.210), which includes a section on enforcement (§21.210.19) for violations of the HMP. ▪ The City is developing a coordinated multi-departmental trail enforcement program (Section 2.1.6) and continues to work with local preserve managers for enforcement activities. ▪ Complaints made by citizens regarding possible violations of the HMP within preserves are investigated on a case by case basis.
11.1	**Preserve System:** To ensure the establishment and management in perpetuity of a 6,757-acre Preserve System.	▪ The City has currently gained 5,821 acres of habitat within the HMP planning area (90% of target acreage). See Section 1.4.3 for more details.
11.2	**Project Mitigation Measures:** To require additional mitigation measures to mitigate impacts to covered species in all future development projects.	▪ As a condition of approval for new development projects, the City requires that all potential impacts to HMP covered species be avoided, minimized, and/or mitigated.
11.3	**Regulatory Implementation:** A. Urgency Ordinance – interim HMP enforcement B. Amend Open Space and Conservation Element of General Plan to incorporate HMP C. Amend Open Space Ordinance to incorporate Conserved Habitat Areas D. Amend Municipal Code to incorporate Standards Area compliance E. Amend General Plan to identify HMP as priority use for open space lands F. Wetlands Protection Program	A. The Emergency Ordinance was approved by the City Council November 9, 2004. B. Revisions to the policy statements regarding the HMP were approved by the City Council in July, 2005. C. Revisions were made to Carlsbad Municipal Code § 21.53.230 and approved by the City Council in March, 2006. Conserved Habitat Areas were included as undevelopable open space lands preserved exclusively and in perpetuity for conservation purposes consistent with the HMP. Submitted to California Coastal Commission on April 3, 2006 – application is under review. D. A new chapter (§ 21.210) was added to the Zoning Ordinance to address habitat preservation and management requirements. Section 21.210.040 B. specifically addresses Standards Area compliance. Approved by the City Council in March 2006. Submitted to California Coastal Commission on April 3, 2006 – application is under review. E. The General Plan was revised to make conservation of habitat a priority use for the 15% of otherwise developable land which the Growth Management Plan already requires to be set aside for open space purposes (the City defines five categories of open space). Approved by the City Council July 2005. F. New subsections (§21.210.040 D.5 and §21.210.070 A.5) were added to the Municipal Code to address the protection of wetland habitat. The ordinance states that wetlands impacts will be avoided, minimized, or mitigated (in that order). Approved by the City Council in March 2006. Submitted to California Coastal Commission on April 3, 2006 – application is under review. Compliance is enforced on a project-by-project basis during environmental review and in conjunction with other wetland permitting agencies such as California Coastal Commission, CDFG and USACOE.

Table 9. Summary of City Compliance with HMP Requirements *continued*

IA Section	Obligation	City Compliance
11.4	**Additional Implementation Measures:** To implement measures included in MHCP.	▪ The MHCP, HMP, and OSMP conservation measures are currently being implemented during the approval process for all development projects and preserve management activities. ▪ See Section 1.6 for details about additional implementation measures.
11.5	**Regional Conservation:** To effectuate the conservation of 307.6 acres of land within the MHCP Gnatcatcher Core Area, and convey the property to a qualified preserve manager.	▪ The City has met 264.39 acres of its coastal sage scrub conservation obligation through up-front acquisition (50.13 acres), project mitigation (150.26 acres), and habitat enhancement credit (64 acres). ▪ The City must reimburse Lennar (developer) for the 50.13 acres that were purchased up-front (see above), and acquire an additional 43.02 acres. ▪ A non-wasting endowment was established prior to final HMP approval to provide for management of the land in perpetuity. ▪ The Core Area properties are protected under a Conservation Easement, and are being monitored and managed by the Center for Natural Lands Management (CNLM).
11.6	**Cooperative Regional Implementation:** To participate in MHCP Elected Officials Committee.	▪ To date, Carlsbad is the only MHCP jurisdiction with an approved subarea plan, so this is not applicable at this time; however, the City participates in meetings to discuss MHCP-wide issues with other MHCP jurisdictions and SANDAG as needed.
12.1 **12.2** **12.4** **12.5**	**Monitoring and Reporting:** To track habitat gains and losses within the HMP area (which should occur in rough step with one another); to maintain its database of biological resources; to submit an annual report by December 1 of each year; to hold a public meeting to discuss HMP implementation; and to provide the Wildlife Agencies with additional reports if necessary for compliance monitoring; and to certify all reports.	▪ Habitat gains and losses are being tracked through Habitrak. Rough step preserve assembly is built into the City's permitting process (See Section 1.4.4 for details.) ▪ Currently the City is working with the Preserve Steward, preserve managers, City GIS staff, and the regional monitoring coordinator for San Diego County to determine the best approach to develop and manage monitoring data. ▪ Protocols and standards will be developed with regard to baseline surveys and monitoring (survey methods and data format), entry and attributing of GIS data, and data management. ▪ Annual public HMP workshops are held every year to give participants an opportunity to learn about current HMP preserve assembly, management, and monitoring, to join a field trip to learn about the preserve lands, and to ask questions and provide comments. ▪ Annual HMP status reports are submitted to Wildlife Agencies in December of each year. The public also has an opportunity to view these reports prior to the annual meeting.

Table 9. Summary of City Compliance with HMP Requirements *continued*

IA Section	Obligation	City Compliance
12.3	**Preserve Management and Monitoring Plan:** To prepare a preserve management and monitoring plan that will detail recommendations in HMP Section F.	The Open Space Management Plan (OSMP) is the Preserve Management and Monitoring Plan described in IA Section 12.3, and the subarea framework management plan described in MHCP Vol. III, Section 1.2. The first complete draft was finalized in May 2004. The document was completed in September 2004 and accepted by the Carlsbad City Council in December 2005. Currently the OSMP is being reviewed by the California Coastal Commission as part of the HMP Local Coastal Program Implementation Plan; the City is implementing OSMP policies Citywide.
13.0	**Adaptive Management:** To ensure that adaptive management actions do not result in less mitigation than provided for the HMP Covered Species under the original terms of the HMP, unless approved by the Wildlife Agencies.	▪ The City complies with this policy by having ongoing discussions with preserve managers on management activities and by requiring adaptive management within all actively managed preserves. ▪ The City is coordinating with the regional adaptive management and monitoring program in San Diego County. ▪ Carlsbad has developed a compliance checklist for the preserve managers; the checklist includes a section on adaptive management activities (pilot study design, methods, results, etc.).
14.0	**Funding:** 14.1 MCHP Core Area Participation 14.2 Preserve Management and Monitoring Plan 14.3 Management of City-owned public lands 14.4 Management of private lands in HMP area 14.5 Management of Existing Hardline areas 14.6 Program Administration 14.7 Habitat *In-lieu*-Mitigation Fees	14.1 The City has met 264.39 acres of its 307.6-acre coastal sage scrub conservation obligation. The City must acquire an additional 43.02 acres, and reimburse Lennar (developer) for the 50.13 acres that were purchased up-front. Reimbursement and acquisition (in that order) will be paid for by *in-lieu* mitigation fees. 14.2 The Preserve Management and Monitoring Plan (known as the Open Space Management Plan or OSMP) was completed in September 2004 using City funds and a Local Assistance Grant from CDFG. 14.3 City-owned preserves are currently being actively managed and monitored by CNLM. 14.4 The City requires all private development projects within the HMP to fully fund perpetual management of associated preserve land prior to issuing a grading permit. 14.5 Hardline preserves in existence before final HMP approval are owned and managed by several other entities, including the CDFG and private HOAs. 14.6 The HMP program is being overseen by Michael Grim (City Property and Environmental Management). In addition, the City has contracted with Technology Associates (TAIC) to serve as the City's Preserve Steward, who coordinates management throughout the HMP Preserve, and monitors HMP compliance and management effectiveness. 14.7 The City has implemented an *in-lieu*-mitigation fee program for new development that will fund the City's remaining Gnatcatcher Core Area obligations.

Table 10. Summary of City Compliance with Terms and Conditions of the NCCP Take Authorization/Permit

NCCP Permit Terms and Conditions (T&C)	Description of City Compliance
Section 6.1 Conditions A through F are the same as those stated in A through F of the IA, Section 11.3 (See Table 12). They are summarized below. A. Urgency Ordinance –interim HMP enforcement. B. Amend OSC Element of General Plan to incorporate HMP. C. Amend Open Space Ordinance to incorporate Conserved Habitat Areas. D. Amend Municipal Code to incorporate Standards Area compliance. E. Amend General Plan to identify HMP as priority use for open space lands. F. Wetlands Protection Program.	See Table 9, IA Section 11.3.
G. This permit is subject to compliance with the MHCP Volumes I-III, HMP, including Addenda 1 and 2, and the IA.	All project approval within the City is subject to these requirements as a condition of approval.
H. Coverage for thread-leaved brodiaea and approval of the Fox-Miller Project. The conditions are as described in the USFWS 10(a) Permit Condition 7 (Table 12).	See Table 11, USFWS 10(a) Permit Condition 7 for a description of compliance.
I. All monitoring and reporting must comply with MHCP Vol. I and III, and IA Section 12. Annual reports are due no later than December 1 of each year. MHCP Volume II includes the following policies and conditions: • Standard Best Management Practices (Appendix B) • General Outline for Revegetation Plans (Appendix C) • Narrow Endemic Species and Critical Population Policies (Appendix D) • Conditions for Estuarine Species (Appendix E) • CEQA requirements for quantifying and mitigating impacts	See description for Condition G. MHCP Vol. II policies and conditions are reviewed during regular HMP compliance review for all new projects within Carlsbad. In addition, these policies have been integrated and/or referenced in the Guidelines for Biological Studies.

Table 11. Summary of City Compliance with the Terms and Conditions of the Federal ESA Section 10(a)(1)(B) Take Authorization/Permit

FESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
1. All sections of Title 50 Code of Federal Regulations (CFR) 13, 17.22, and 17.32 are conditions of this permit.	Appropriate language has been integrated into the HMP and IA; therefore, compliance with these documents ensures compliance with Title CFR sections.
2. The permittee is subject to compliance with the MHCP, HMP, and IA.	The City complies with all regulations as described in Tables 10 and 11.
3. The amount and form of take are authorized as described below. Referenced tables are from Attachment 2 of the T&C, and are the same as List 1-3 Species in HMP Section C. Coverage for species in HMP Tables 2 and 3 below require the City to submit in writing a request for coverage, including documentation showing compliance.	See next page.

Table 11. Summary of City Compliance with Terms and Conditions of Federal ESA Section 10(a)(1)(B) Take Authorization/Permit *continued*

FESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
3. *continued*	
Table 1. (a) No take authorized for the following species: *Chorizanthe orcuttiana* – Orcutt's spineflower *Dudleya blochmaniae* ssp. *blochmaniae* – Blochman's dudleya *Euphorbia misera* – Cliff spurge *Hazardia orcuttii* – Orcutt's hazardia *Quercus dumosa* – Nuttall's scrub oak *Pelecanus occidentalis californicus* – California brown pelican *Falco peregrinus* – American peregrine falcon *Rallus longirostris levipes* - Light-footed clapper rail *Sterna antillarum browni* – California least tern *Charadrius alexandrinus nivosus* – Western snowy plover *Sterna elegans* – Elegant tern	Table 1 (a). No take of these species has been authorized by the City.
Table 1. (b) Take authorization is or will be (upon listing) granted for: **Listed species:** *Empidonax traillii extimus* – Southwestern willow flycatcher *Vireo bellii pusillus* – Least Bell's vireo *Polioptila californica californica* – Coastal California gnatcatcher **Not yet listed:** *Panoquina errans* – Salt marsh skipper *Euphyes vestris harbisoni* – Harbison's dun skipper *Plegadis chihi* – White-faced ibis *Accipiter cooperi* – Cooper's hawk *Pandion haliaetus* - Osprey *Icteria virens* – Yellow-breasted chat *Aimophila ruficeps canescens* – So. California rufous-crowned sparrow *Passerculus sandwichensis beldingii* – Belding's savannah sparrow *P.s. rostratus* – Large-billed savannah sparrow *Cnemidophorus hyperythrus beldingi* – Orange-throated whiptail	Table 1 (b). The city did not authorize take for any of these species during the current reporting period.
Table 2. Take authorization contingent upon other MHCP subarea plans being permitted for the following species: *Acanthomintha ilicifolia* – San Diego thornmint *Ambrosia pumila* – San Diego ambrosia *Ceanothus verrucosus* – Wart-stemmed ceanothus *Dudleya viscida* – Sticky dudleya *Ferocactus viridescens* – San Diego barrel cactus *Quercus engelmannii* – Engelmann oak	Table 2. No other MHCP subarea plans have been permitted, and therefore no take of these species has been granted by the City.
Table 3. (a) Take authorization contingent upon adequate funding and legal access to manage and monitor the following species: *Arctostaphylos glandulosa* ssp. *crassifolia* – Del Mar manzanita *Baccharis vanessae* – Encinitas baccharis *Brodiaea filifolia* – Thread-leaved brodiaea *Comarostaphylis diversifolia* ssp. *diversifolia* – Summer-holly *Corethrogyne filaginifolia* var. *linifolia* – Del Mar sand aster *Pinus torreyana* ssp. *torreyana* – Torrey pine	Table 3. Take authorization for thread-leaved brodiaea was granted by the Wildlife Agencies to the City on December 2, 2005 based upon the management required for Fox-Miller property. Take of this species was not granted during the reporting period. No take of any other species from this list has been granted by the City.

Table 11. Summary of City Compliance with Terms and Conditions of Federal ESA Section 10(a) Take Authorization/Permit *continued*

FESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
Table 3. (b) Take is contingent upon (a), described above, *and* the City receiving legal control over the vernal pools adjacent to the Poinsettia Train Station. *Eryngium aristulatum* var. *parishii* – San Diego button-celery *Myosurus minimus* ssp. *apus* – Little mousetail *Navarretia fossalis* – Spreading navarretia *Orcuttia californica* – California Orcutt grass *Streptocephalus woottoni* - Riverside fairy shrimp *Branchinecta sandiegonensis* - San Diego fairy shrimp Table 3. (b) Take is contingent upon (a) and (b), described above, and upon other MHCP subarea plans being permitted. *Iva hayesiana* – San Diego marsh-elder	The City has not taken legal control of the Poinsettia Lane Vernal Pools and has not requested take for vernal pool species. No other take authorizations have been requested.
4. The FESA Section 10(a) constitutes a Special Purpose Permit for the take of HMP covered species which are listed as threatened or endangered under the FESA, and which are also protected by the Migratory Bird Treaty Act of 1918, as amended. The Special Purpose Permit will be valid for three years after effective date and may be renewed as long as 10(a) permit conditions are being met. *Sterna antillarum browni* - California least tern *Empidonax traillii extimus* - Southwestern willow flycatcher *Vireo bellii pusillus* - Least Bell's vireo *Passerculus sandwichensis beldingi* - Belding's savannah sparrow	The Special Purpose Permit has been in effect during the current reporting period. No take of these species has been granted.
5. The Permittee shall not allow clearing and grubbing in known or potentially occupied California gnatcatcher habitat between February 15 and August 31.	This requirement is included in Municipal Code 21.210.040 and HMP Table 9. Compliance is a condition of approval for every new development project.
6. Specific standards (described in the T&C) must be met if the City proceeds with any of the following plans: (a) Cannon Road Reach 4 (b) Extension of Melrose Drive through the Shelley Property (c) Marron Road through Buena Vista Creek Ecological Reserve	None of these projects have been proposed at this time.
7. To receive coverage for thread-leaved brodiaea, the City must demonstrate that: (a) The Fox-Miller project meets the narrow endemic standards for this critical location and major population of this species; (b) The proposed hardline shown in Addendum 2 (2003) of the HMP is not permitted (it does not meet the MHCP standards); (c) The Wildlife Agencies must concur with the Fox-Miller project proposal, and the conserved area must be managed and monitored to MHCP standards in perpetuity; and (d) If all conditions are met, the Fox-Miller project can be permitted under the HMP through the HMP amendment process	(a) The boundary for the brodiaea population has been established. (b) The boundary was expanded. (c) The Wildlife Agencies have approved the Fox-Miller project. The restoration and non-restoration areas are currently under management and monitoring by Helix via annual contract with the landowner. Long term management of the property will be provided by SDHC when the 5-year restoration areas are signed off by the Wildlife Agencies. (d) Brodiaea coverage was granted by the Wildlife Agencies through a minor amendment December 2, 2005.

Table 11. Summary of City Compliance with Terms and Conditions of Federal ESA Section 10(a) Take Authorization/Permit *continued*

FESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
8. To minimize impacts to the California gnatcatcher, rufous-crowned sparrow, and orange-throated whiptail the City must: (a) Maintain and/or widen the habitat corridor between the City and Oceanside as much as feasible, and (b) If the driving range adjacent to the Kelly/Bartman property is proposed for a different use, the City will ensure that an on-site corridor is established on the driving range property.	(a) The corridor on the NE boundary of Carlsbad is conserved. Along the northern boundary, the Buena Vista Creek ER was acquired in 2007, resulting in 100% conservation, and the Summit (Kelly-Bartman) property was acquired by CDFG during the reporting period. (b) No other uses for this property have been proposed at this time.
9. As part of the project review process, a qualified biologist shall survey for all species with immediate and conditional coverage.	The City has included this as a condition of approval for all new projects.
10. The City will contact the USFWS Carlsbad Office immediately regarding any violations or potential violations of the FESA or the Migratory Bird Treaty Act.	The City regularly communicates with the USFWS on regulatory issues, and contacts the appropriate personnel immediately upon learning of any potential problems.
11. The City will notify the USFWS within one working day of finding any dead, injured, or sick threatened/endangered species.	No such individuals have been reported to or observed by the City.
12. All monitoring and reporting for this permit shall be in compliance with the MHCP (Vol. I and III) and the IA (Section 12).	See IA Section 12 discussion in Table 10 above for compliance information.
13. A copy of this permit must be on file with the City, its authorized agents, and third parties under the jurisdiction and direct control of the City.	A copy of this permit is on file with the City and is available to any interested parties.

1.5.3 City Compliance with HMP Zone-Wide Standards

The City is also required to ensure that all projects within Standards Areas comply with the zone-specific standards outlined in HMP Section D (Table 12). All projects that occur within a Standards Area are processed as a Consistency Finding. During this process, projects must demonstrate compliance with the standards before they receive concurrence from the Wildlife Agencies and are approved by the City ; therefore, all approved development within Standards Areas are consistent with the HMP. A total of 182.6 acres of coastal sage scrub occurs within Standards Areas throughout the HMP. To date, 11.4 acres have been lost (6.2%), and 49.4 acres have been conserved (27.0%). Zone-wide standards require at least 67% (122.3 acres) of the coastal sage scrub to be conserved. Therefore, the City must conserve at least 72.0 more acres of coastal sage scrub within the Standards Areas at build-out. Table 12 summarizes property-specific and linkage-related standards and current status. Refer to HMP Section D pp. D-73 through D-82 for additional zone-specific standards.

Table 12. Compliance with Zone-Wide Standards through Year 5

Zone	Zone-Specific Standard	Current Status
All Zones	A minimum of 67% of coastal sage scrub and 75% of the gnatcatchers shall be conserved overall within the Standards Areas.	Total coastal sage scrub habitat within Standards Areas: 182.6 acres. Coastal sage scrub loss = 11.4 acres (6.2%). Coastal sage scrub gains = 49.4 acres (27.0%). An additional 72.0 acres must be conserved to meet 67% conservation in the Standards Areas. Occupied gnatcatcher habitat is mitigated at 2:1, therefore there will be no net loss of gnatcatcher habitat within Standards Areas. The 75% standard is applied to every project individually.
Zone 1	Preserve at least 50% of coastal sage scrub and avoid areas occupied by gnatcatchers. Applies to several vacant lots on north shore of Agua Hedionda Lagoon and a larger, vacant in-fill lot SW of El Camino Real and Kelly Drive.	Vacant lots on north shore of Agua Hedionda: no projects have been finalized for these parcels. In-fill parcel: Aura Circle property was changed to a Proposed Hardline preserve in the HMP mapping during Coastal Comm. Processing; however, the HMP text was not corrected.
Zone 2	1. Kelly/Bartman property: 50% of this property shall be conserved and must form a continuous corridor from the SE corner of the property to the northern edge. 2. Spyglass property: grasslands impacted on this property shall have offsite mitigation at 2:1 ratio.	The Kelly-Bartman property, aka the Summit, is an Existing Hardline preserve that was approved with 50% conservation including an open space corridor, from the SE to the northern site boundary. The Spyglass property has been developed and grassland impacts were mitigated at a 2:1 ratio through restoration at Carlsbad Highlands Mitigation Bank. This project was compliant with all other standards.
Zone 8	1. Kirgis property: a maximum of 25% can be developed. 2. Callaghan property: a maximum of 50% can be developed. No impacts to narrow endemic species on either property.	Kirgis property: the property was approved with 75% percent conservation; however, no grading permit has been issued. Callaghan property: no tentative map has been approved for this property.
Zone 14	Areas of upland habitat outside Linkage B may be taken in exchange for restoration and enhancement inside of the linkage as long as the result is conservation of at least 67% coastal sage scrub and associated gnatcatcher populations within southern portions of the zone.	Projects: Robertson Ranch East was approved by the City and Wildlife Agencies in 2007. Out of a total of 197.3 acres of coastal sage scrub in Zone 14, 11.3 acres (5.7%) has been impacted. A total of 154.0 acres (78%) of the coastal sage scrub has already been conserved.
Zone 15	Maintain and enhance habitat linkages across Linkage C and adjoining Cores 3 and 5. Areas of upland habitat outside Linkage C may be taken in exchange for restoration and enhancement inside of the linkage as long as there is a no net loss of coastal sage scrub and associated gnatcatcher populations within southern portions of the zone.	Terraces at Sunny Creek occurs within Core Area 5 in the southern portion of Zone 15. No net loss of coastal sage scrub has occurred. No other projects have final City/Wildlife Agency approval.
Zone 20	Create continuous habitat through Linkage F between Core Areas 4 and 6. No net loss of coastal sage scrub or maritime succulent scrub within standards areas of the zone.	Projects: Emerald Pointe and North Coast Calvary Chapel. Both projects were processed through a Consistency Finding and approved by the City and Wildlife Agencies. No net loss of coastal sage scrub or maritime succulent scrub occurred.
Zone 21	Ensure habitat connectivity and wildlife movement east-west across the zone.	The Manzanita project was a Proposed Hardline preserve area in the HMP, and it was approved by the City and Wildlife Agencies. It provides east-west connectivity from El Camino Real to the project boundary.
Zone 25	At least 75% of the Sherman property must be conserved.	As of March 2007, 100% of the Sherman property (Buena Vista Creek Ecological Reserve) has been conserved.

1.6 Other Implementation Activities

1.6.1 Guidelines and Policies

In support of the HMP, the City and Preserve Steward have worked together to develop a series of guidelines that will clarify HMP-related policies and regulations for staff, private developers, consultants, and the general public. These documents do not create additional policies or requirements; rather, they are intended to assist users in understanding and fulfilling HMP requirements. The Guidelines for Riparian and Wetlands Buffers was completed during the current reporting period. This document and other guidelines are available online at:
http://www.carlsbadca.gov/services/environmental/hmp/docs/Pages/default.aspx.

1.6.2 Public Outreach

Public outreach activities conducted during the current year include the following:

- Conducted HMP annual public workshop and guided field trip at the Agua Hedionda Discovery Center on May 8, 2010.
- Conducted a native plant workshop for trail volunteers, Parks and Recreation Staff, and the public on May 8, 2010. The purpose of the workshop was to learn to identify native and invasive non-native species that might be encountered in the preserve system and minimize potential disturbances to sensitive species during trail maintenance activities.
- Created new HMP newsletter in the winter (Jan/Feb) of 2010. Sent newsletter via email to extensive mailing list and posted it on the HMP website.
- Public outreach was conducted in and around Lake Calavera Preserve as part of a grant awarded to the City by the SANDAG TransNet Environmental Mitigation Program (EMP), including educational materials, direct mailing to adjacent neighbors, installation of bilingual boundary signs and trail directional signs, and volunteer events to repair trails, pick up trash and plant native vegetation.

1.6.3 Preserve Enhancement

Restoration of six acres of coastal sage scrub habitat occurred at Lake Calavera Preserve in January of 2010 by Habitat West. Five acres were funded by the EMP grant mentioned above and one acre was funded by the City as mitigation for impacts for the

Lake Calavera Trails Master Plan. All six acres were decompacted and seeded using the imprinting method, and the one acre mitigation site was also planted with container plants. Steady and consistent rains resulted in a showy display of native annuals in the spring of 2010. At the end of the 120-day installation maintenance period, the site was inspected by the City and, after all zero-tolerant invasive species were removed, the maintenance period was considered successful and approved by the City. In June of 2010 HRS was contracted to conduct the long-term restoration monitoring and maintenance of the site. See *http://www.carlsbadca.gov/services/environmental/hmp/docs/Documents/public-outreach/newsletters/vol.2-no.1-2010-Feb.pdf* for photos and more detailed information about the restoration process.

2.0 Management and Monitoring

2.1 Key Management Activities

2.1.1 City-Owned Preserves

All City-owned preserves have been actively managed by CNLM since December, 2008. The City preserves consist of 13 properties scattered throughout Carlsbad totaling 600.6 acres (Figure 1). Management activities this year included evaluation, assessment, and treatment of medium and zero tolerance invasive non-native plant species, enforcement patrols, installation of signs and kiosks, public education, participation in volunteer events, and coordination with police and fire departments on enforcement issues. Monitoring included surveys for sensitive plants, birds and avian communities on each property, and focused species surveys for Blochman's Dudleya (*Dudleya blochmaniae*).

2.1.2 Other Actively Managed Preserves

Areas conserved since approval of the HMP are actively managed and monitored as required by the HMP and MHCP (Level 3, as defined in the MHCP). The majority of preserves in this category are managed by CNLM and CDFG. Currently, the only other preserve manager for actively managed preserves is San Diego Habitat Conservancy, which manages the Emerald Pointe Estates Preserve. Ongoing management and monitoring activities on preserves throughout the HMP consist of invasive species removal, patrolling, vegetation mapping, species and habitat monitoring, installation and maintenance of fences, signs, and kiosks, and public outreach. These activities are summarized in Appendix B. A more detailed preserve-specific account of these activities is available in the annual reports submitted by Preserve Managers, which can be downloaded from the following link:
http://www.carlsbadca.gov/services/environmental/hmp/docs/Pages/default.aspx.

In addition to the official Preserve Manager, local organizations and volunteer groups often contribute significantly to preserve management, biological monitoring, and public outreach. As such, Appendix B also highlights activities conducted by these organizations (based on available information).

2.1.3 Pre-HMP Preserves

Pre-HMP preserves (i.e., areas that were already conserved at the time the HMP was approved) will be managed according to pre-existing management funding and arrangements. The majority of these preserves are managed by various HOAs. Other landowners responsible for management include University of California San Diego (Natural Reserve System), SDG&E, Cabrillo Power and North County Transit District (NCTD). Pre-HMP preserves are managed at a property maintenance level, which generally consists of fence maintenance and trash removal.

2.2 Monitoring

2.2.1 Species and Habitat Monitoring

A variety of biological surveys were conducted throughout the preserve system during the reporting period (Table 13). In addition, incidental observations of sensitive plants and wildlife were recorded by CNLM on properties it manages. An analysis of the results will be discussed in next year's three-year monitoring summary report.

Table 13. Biological Monitoring Conducted in Year 6 (2009-2010)

Preserve	Surveys Conducted
Agua Hedionda Ecological Reserve	Focused species surveys (and nests, nestlings, predators, etc.) for Belding's savannah sparrow and clapper rails; focused-species surveys for California gnatcatcher
Batiquitos Lagoon Ecological Reserve	Focused species surveys (and nests, nestlings, predators, etc.) for Belding's savannah sparrow, clapper rails, least terns, and snowy plover; focused-species surveys for California gnatcatcher
Buena Vista Creek Ecological Reserve	Plant inventory; rare plant surveys; focused-species surveys for thread-leaved brodiaea, California gnatcatcher, and least Bell's vireo
Buena Vista Lagoon Ecological Reserve	Focused species surveys (and nests, nestlings, predators, etc.) for Belding's savannah sparrow and clapper rails
Calavera Hills/ Robertson Ranch	Rare plant surveys; habitat assessment for San Diego thornmint; focused-species surveys for California gnatcatcher, thread-leaved, brodiaea and thornmint
Carlsbad Highlands Ecological Reserve	Focused-species surveys for California gnatcatcher; preliminary baseline oak assessment (looking for signs of gold-spotted oak borer)
Carlsbad Oaks North	Vegetative cover assessment of thornmint and thread-leaved brodiaea populations; coastal sage scrub vegetation study plot monitoring ; initiated coast live oak study.
City Preserves	Vegetation mapping; habitat monitoring; CSS monitoring; oak baseline assessment; rare plant surveys; focused-species surveys for least Bell's vireo, California gnatcatcher, southwestern willow flycatcher, and Blochman's dudleya; Preliminary baseline oak assessment (looking for signs of gold-spotted oak borer) on Carrillo Ranch
Emerald Pointe	Monitoring survey for thornmint; quarterly general condition monitoring; invasive species mapping.
Kelly Ranch	Focused-species surveys for California gnatcatcher; Orcutt's hazardia transplant studies; Del Mar manzanita collection and subspecies identification

Table 13. Biological Monitoring Conducted in Year 6 (2009-2010) *continued*

Preserve	Surveys Conducted
North County Calvary Chapel	General condition monitoring; focused species surveys for gnatcatchers and wart-stemmed ceanothus.
North County Habitat Bank/Encinas Creek	Focused-species surveys for California gnatcatcher and least Bell's vireo; monitoring vireo nesting, presence of predators and presence of cowbirds; wildlife movement
Rancho La Costa	Wildlife corridor tracking; focused species surveys for gnatcatcher, thornmint, and Orcutt's hazardia; long-term thread-leaved brodiaea monitoring; habitat assessments for thornmint; coastal sage scrub vegetation study plot monitoring; vegetation mapping (the Greens)
Dawson-Los Monos	Preliminary baseline oak assessment (looking for signs of gold-spotted oak borer)
Aviara MHOA[1]	Focused-species surveys for California gnatcatcher

[1] Selected HMP preserve areas within Aviara Master Home Owners Association lands

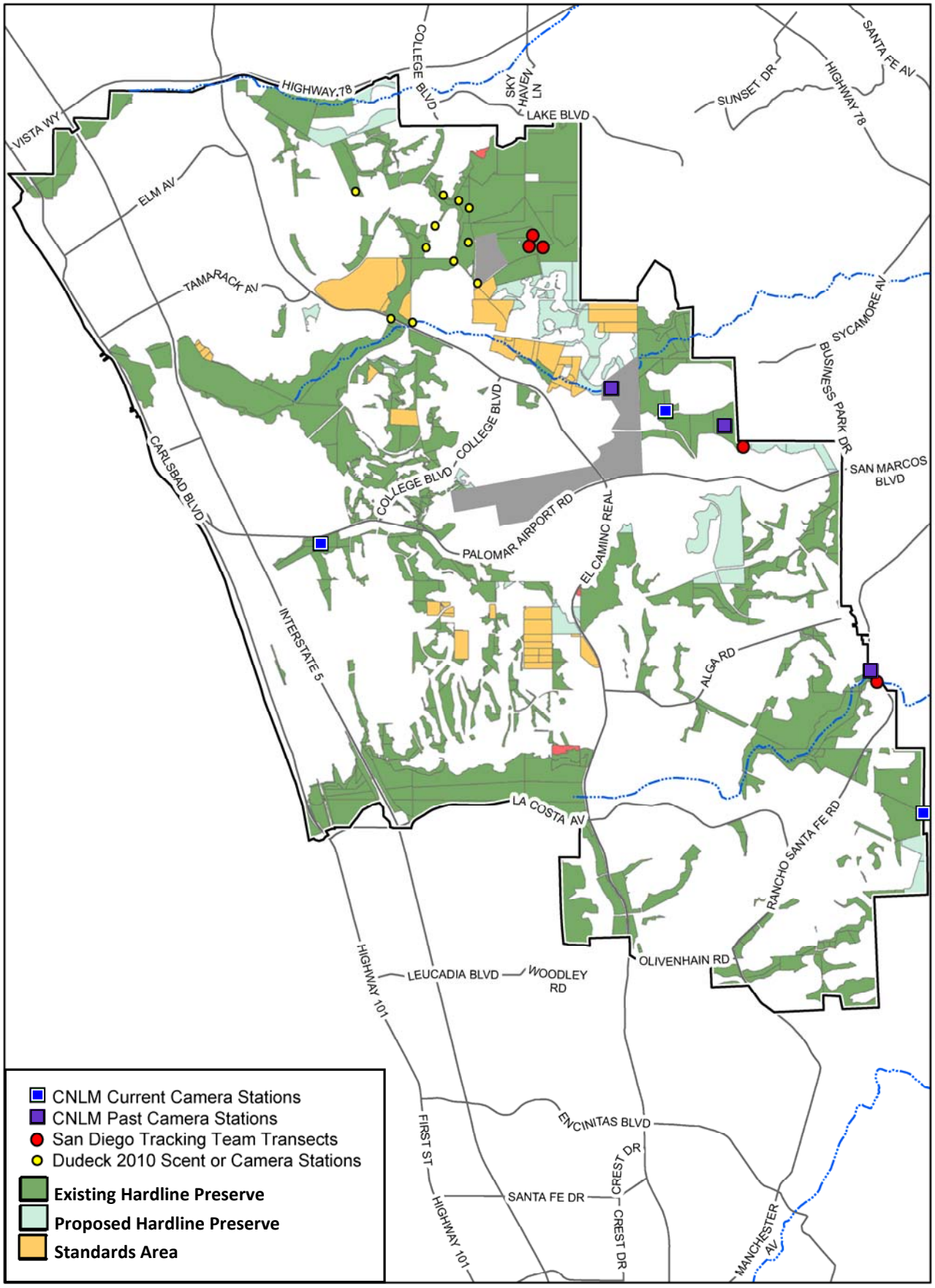
2.2.2 Wildlife Movement

During the reporting period, CNLM continued its ongoing wildlife corridor studies on two of the larger preserves: Rancho La Costa and Carlsbad Oaks North. The goal of the study is to understand trends in wildlife movement at "pinch point" locations and movement corridor locations in their preserves. More specifically, CNLM is attempting to answer the following questions:

- What mammalian predators are using the corridor areas?
- What is the frequency and temporal variation of mammalian predator use of these corridors?
- How does the mammalian predator use of these areas change over time?
- What are the characteristics of each wildlife movement area and how might affect movement?

In addition to one sample monitoring location noted in the MHCP Volume III at Rancho Santa Fe Road, CNLM has identified additional monitoring locations within the North County Habitat Bank-Encinas Creek Preserve, Rancho La Costa Preserve, Carlsbad Oaks North Preserve and Gnatcatcher Core Area just east of the City limits (Figure 3). Monitoring methods included the use of digital remote-sensing cameras to identify movement of mammals such as coyote, bobcat, mule deer, and rabbit.

Other wildlife movement studies included quarterly tracking conducted by the San Diego Tracking Team (SDTT) and a limited winter study conducted by Dudek (Dudek 2010). Figure 3 shows approximate monitoring locations. SDTT surveys were conducted quarterly by identifying tracks and scat in specific locations along permanent transects.



NORTH

Figure 3

Wildlife Movement Monitoring Survey Locations

In general, transects established by SDTT are approximately one mile long and 30 feet wide and are located along existing roads and trails. The purpose of these surveys is to detect (a) presence/absence of target mammal species, (b) substantial changes in wildlife movement patterns, and (c) the use of different habitats by target species.

The Dudek study was conducted in the vicinity of a new high school that will be built at the corner of College Boulevard and Cannon Road. Data were collected during a three-week period in January and February of 2010 to identify the wildlife species that are using the area for movement during that time of year and to determine potential impacts to winter-time wildlife movement from existing and proposed land use. Methods included track surveys, motion-sensitive camera stations, and road-kill surveys.

City of Carlsbad staff, Preserve Steward, TAIC staff and CNLM staff (working group), will be developing a city-wide wildlife movement study proposal during the upcoming year. As part of this process, the working group with coordinate with the newly formed San Diego Management and Monitoring Program (SDMMP) to propose Carlsbad-specific monitoring goals and objectives and standardized methods for tracking wildlife movement (see Section 2.3.5 below). The study proposal will be submitted to CDFG for review and potential funding through a Local Assistance Grant. Provided funding can be secured and the study proposal is found consistent with the efforts of the SDMMP, this study and the results and data analysis of wildlife movement surveys discussed above will be reported in next year's three-year monitoring summary report within the context of city-wide wildlife movement.

2.3 Areas of Focus

This section describes the current issues in maintaining a healthy preserve system in Carlsbad. Each issue is followed by a list of actions that are being taken or will be taken to solve these problems. Due to limited resources, these management actions will not occur all at once, but will be phased in as feasible. In addition, many of the issues facing the preserve system will be ongoing and therefore, many of the corrective actions will also be ongoing (i.e., these are not discrete tasks that can be completed in a specific period of time). For example, in a heavily urbanized and fragmented preserve system such as the HMP preserve, edge effects such as invasive species and unauthorized use will be an ever-present element requiring annual maintenance.

2.3.1 Public Access/Use

As the City continues to grow towards build-out condition, the urban preserves will experience more pressure from authorized and unauthorized public use. In addition to the loss of undeveloped land, lands that have become protected natural open space are now under active management, which by necessity has resulted in fencing and land use restrictions to protect sensitive plants and wildlife. Historically, many undeveloped lands in Carlsbad, including both protected and unprotected lands in public and private ownership, have been used by local residents for fishing, hiking, bike riding, off-road vehicle use and equestrian use for many decades. Although these uses were not necessarily permitted, there was no active management or enforcement and, therefore, many users felt (and still feel today) that unrestricted use on undeveloped land is a right.

Today there are many more recreational users on less natural open space lands. For example, approximately 107,000 people currently live in the City of Carlsbad (City of Carlsbad 2010), up from approximately 15,000 in 1970, which is a seven-fold increase over the last 30 years (http://www.city-data.com). Land development (resulting in the loss of agricultural land or natural vegetation) has also shown a rapid increase. Although land use data are not available for the same time frame as above (1970 – 2010), a similar pattern emerges between 1997 and 2008, when approximately 2,676 acres of land was developed – a 21 percent increase over 11 years. Much of this land was privately owned (and therefore closed to the public); however, the increase in population and reduction in recreational open space opportunities illustrate why there is currently so much recreational pressure on existing preserves.

Management Actions

- *Public outreach program* – public outreach is currently, and will continue to be, a priority for the HMP.
    - The goals are to educate the public about (a) how native habitat and species are directly and indirectly impacted by recreational use and landscaping practices, (b) the importance of conservation, and (c) how users and preserve managers can work together to protect natural open space.
    - The HMP program is working with other City programs and departments, such as the Department of Parks & Recreation, the storm water outreach program, Planning Department, and Public Relations, to incorporate the above messages into currently existing programs.

- Certain materials and programs are being targeted to users of the most active areas, such as the Calavera area preserves.

- *Access control fencing and signing* – Actively managed preserves have been fenced and signed. The perimeter of Calavera area preserves (Lake Calavera and Carlsbad Highlands Ecological Reserve) will be fenced in early 2011.
- *Trail planning* – the Parks & Recreation Department is working closely with the HMP program and preserve managers to develop and implement trail plans, which will direct users on to approved trails and away from sensitive habitat. Implementation includes directional signage, trail maps, post and rail fencing, and public outreach to inform users of these activities.
- *Enforcement* – The HMP program will continue to coordinate with preserve managers, Carlsbad Police Department, Department of Parks & Recreation, and relevant non-profit groups to coordinate enforcement activities.
    - A request for patrolling assistance from SANDAG's Transnet Environmental Mitigation Program enforcement program has been prepared and will be submitted in the next reporting period. The request is focused on CDFG ranger patrols in and around the Lake Calavera area immediately after perimeter fence installation to maximize the benefit of the access control program.
    - The City expanded its contract with Able Security in April 2010 to include patrolling the high-use preserve at Lake Calavera. Able Security performs patrols of the area at up to three times per week at random intervals during the day and evening and, over the reporting period, they engaged the public on issues such as dogs off leash, dumping, vandalism, and construction of bike jumps. These patrols will continue through the next reporting period.
    - CNLM has three enforcement patrol personnel working on their preserves: one full time ranger during the weekdays and two part-time rangers on weekends. According to the CNLM rangers, this reporting period was relatively calm and they engaged the public on issues such as dogs off leash, trespass, and unwanted trail and bike jump construction. These rangers will continue their efforts through the next reporting period.

2.3.2 Active Preserve Management

Tables 1 – 4 show the current management status of the preserves in Carlsbad. A number of preserves may be unmanaged or maintained with property-level management (fencing, trash pick-up, etc.). In many cases, property-level management is

sufficient; however, areas with high priority sensitive species or habitats may need more active management than is currently available.

Management Actions

- *Target preserves with minimal management* - The following preserves have been.
    - Bressi – Although required by the project-related USFWS Biological Opinion, MHCP-level management has yet to be established. The City will continue working with the USFWS and USACOE to secure perpetual management.
    - Properties that are currently under restoration maintenance (e.g., Carlsbad Raceway, Fox Miller, and Pacifica Palomar) with limited activities outside of the restoration areas.
    - Poinsettia vernal pool complex (protected under Conservation Easement to CDFG) and the associated watershed area – funding is in place however a preserve manager has not been secured.
- *Implement preserve inspection program* – A site inspection program for all currently unmanaged preserves (i.e. those pre-HMP existing open space areas that are under stewardship of HOAs) is being developed and will begin in the spring of 2011. Inspections will note condition of fencing and signage, signs of erosion, trash, invasive species, sensitive resources, etc. Based on the site inspections, specific management actions will be identified and prioritized. The landowner will be notified about issues for which it is responsible (such as trash, debris, encampments or other nuisances). For issues outside of the landowner's responsibility, the issues will be identified as areas to be targeted for grant funding or potential volunteer projects.

2.3.3 Sensitive Resources

Sensitive species and habitats on actively managed properties have been mapped and are being monitored and managed. However, the current condition of these resources on other preserves (i.e., those with only property-level management) is unknown or out of date.

Management Actions

- *Determine current status of target resources* - The target sensitive species below have been identified as high priority for a status assessment, which will be conducted during the preserve inspection program when feasible (see above). Note that access permission may be an issue on some properties.

- Vernal pool species (target properties: Poinsettia Lane, Hieatt, and Manzanita preserves)
- Encinitas baccharis (*Baccharis vanessae*): reported in the MHCP from the Green Valley HOA area, but the current status is unknown.
- San Diego thornmint (*Acanthomintha ilicifolia*) – critical populations in the southern portion of the City (Green Valley, La Costa Valley, and Ranch at Carlsbad HOAs), Ponderosa Country HOA, and the Brodiaea Preserve.
- Thread-leaved brodiaea (*Brodiaea filifolia*) – critical populations in the Brodiaea Preserve, Carlsbad Highlands Ecological Reserve, and Rancho Carrillo Master Association.
- Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*) – critical populations in the Green Valley, La Costa Valley and Santa Fe Trails HOAs in the south, and Poinsettia Heights HOA, Viadana HOA and Manzanita Partners Preserve in the central portion of the City. Also, collect samples to confirm taxonomic identity.

- *Coordinate with CDFG and CNPS Rare Plants Program* who are actively visiting sites of rare plants throughout the county to determine current status of the populations in Carlsbad and species as a whole.
- *Identify problem areas and solutions*. These areas could be identified as a potential work site for volunteers or grant funding. Note that there may be Issues with access and liability for volunteers.

2.3.4 Exotic, Invasive Plant and Animal Species

Invasive species control will be an ongoing management issue that will likely always be a major component of preserve management activities in Carlsbad. The objectives for the upcoming year are to (a) identify and prioritize invasive species problems on HOA lands in areas that threaten sensitive species, and (b) focus on emerging threats that have the potential for devastating impacts unless identified and controlled early.

Invasive Species Watch List (monitor closely and control immediately).

a. Perennial pepper grass *(Lepidium latifolium)* – found in several locations along Buena Vista Creek. May originate on the Summit property; CDFG, who has just taken over management of this property, has been alerted. Note that this is one of the most difficult upland weeds to control (M. Kelly, pers. comm.).

b. Ward's weed (*Carrichtera annua*) – new to California as of 2007. CNLM has found it in two locations in Carlsbad. Prior to its identification in Carlsbad, it was only known from one location in the US: Santa Cruz County in 1979. The population had died out. Now it has also been found at Camp Pendelton. Very aggressive, invasive species. Efforts to eradicate it in Australia have not been successful. It was likely spread by contaminated construction equipment.

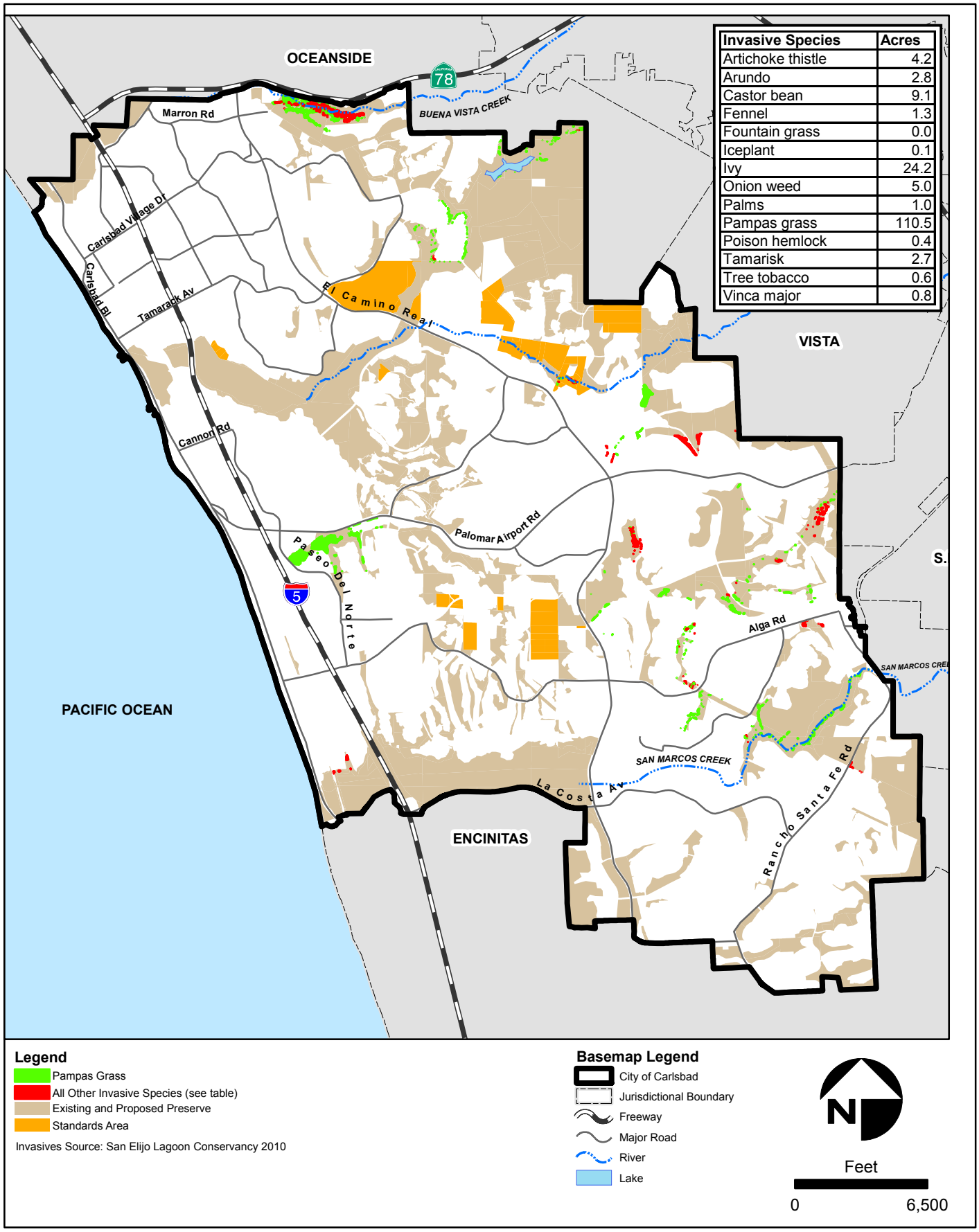
c. Onionweed (*Asphodelus fistulosus*) - Onionweed is a short-lived perennial, herbaceous plant in the lily family that was likely introduced into California as an ornamental. In coastal southern California it is not common, but where it is present, it can be a very invasive and difficult to control weed. Reducing seed production by onionweed is important in reducing the spread of this weed because unlike many other members of the lily family, onionweed does not produce tubers or corms, but reproduces by seed. Onionweed has proven to be very hard to kill and is slowly spreading along the southern coast of California. Herbicide treatment trials by CNLM, HRS, and Carl Bell (Regional Advisor for Invasive Plants, University of California Cooperative Extension) are being conducted to determine the most effective control measures (CNLM 2009).

d. Gold-spotted oak borer (GSOB, *Agrilus coxalis*) – GSOB is an aggressive woodborer species that was discovered in San Diego County in 2008. The beetle is new to California but has long been present in its native territory in Arizona, Mexico, and Guatemala. GSOB has the potential to devastate oak populations in California, including those in Carlsbad. The most susceptible species in San Diego County is the live oak (*Quercus agrifolia*). Engelmann oak (*Quercus engelmannii*), a sensitive species that does not occur in Carlsbad, does not appear to be susceptible.

e. Other species. As mentioned in last year's report, other invasive species of concern are smilo grass (*Piptatherum miliaceum*), natal grass (*Melinis repens*), purple false brome (*Brachypodium distachyon*), perennial veldt grass (*Ehrharta* spp.), purple fountain grass (*Pennisetum setaceum*), pampas grass (*Cortaderia* spp.), giant reed (*Arundo donax*), Saharan mustard (*Brassica tournefortii*), stinkwort (*Dittrichia graveolens*), and a specific type of algae (*Caulerpa taxifolia*). Oak fungus, which was mentioned in last year's report, is also a potential threat. There is not currently enough information is available to determine if this is a problem Carlsbad (efforts to contact experts in the area have not been successful).

Management Actions

- *Coordination with preserve managers* – several meetings have been conducted with preserve managers in the City to alert one another to potential invasive species threats and to share information, including research data.
- *Preserve-specific eradication programs* – Invasive species control is conducted on a preserve-by-preserve basis. This activity is always one of the core management activities conducted by preserve managers on each actively managed preserve. Preserve-specific details (species and quantities removed) can be obtained from species-specific annual reports. These reports can be downloaded here: *http://www.carlsbadca.gov/services/environmental/hmp/docs/Pages/AnnualReports.aspx*.
- *Volunteer invasive species removal programs* – CNLM, City Parks and Recreation Department, and Preserve Calavera have hosted numerous volunteer events to remove invasive species on preserve lands throughout the City, and will continue to do so.
- *Regional invasive species removal programs* – Over the last several years, Carlsbad Watershed Network has conducted invasive species mapping (see Figure 4) and removal on riparian habitats throughout the watershed, including on Carlsbad preserves.
- *Oak monitoring program* – a City-wide oak monitoring program will be initiated in the coming year.
    - An initial assessment of oaks in Carlsbad by Tom Coleman (USDA Forest Service, Forest Health Protection) to determine if GSOB is present in Carlsbad (currently there is no evidence of this pest).
    - The Preserve Steward will coordinate with the HMP preserve managers to implement a City-wide baseline oak disease survey using the USDA Southern California Oak Resource Assessment survey form (http://groups.ucanr.org/GSOB/files/82682.pdf). This form was developed as part of a Citizen Science program and therefore, surveys can be conducted by anyone.
    - A wealth of information can be obtained from the following website: http://groups.ucanr.org/GSOB/index.cfm.



Invasive Species	Acres
Artichoke thistle	4.2
Arundo	2.8
Castor bean	9.1
Fennel	1.3
Fountain grass	0.0
Iceplant	0.1
Ivy	24.2
Onion weed	5.0
Palms	1.0
Pampas grass	110.5
Poison hemlock	0.4
Tamarisk	2.7
Tree tobacco	0.6
Vinca major	0.8

Legend

- Pampas Grass
- All Other Invasive Species (see table)
- Existing and Proposed Preserve
- Standards Area

Invasives Source: San Elijo Lagoon Conservancy 2010

Basemap Legend

- City of Carlsbad
- Jurisdictional Boundary
- Freeway
- Major Road
- River
- Lake

N

Feet

0 6,500

Technology Associates International Corporation

City of Carlsbad Invasive Species

Figure 4

File: T:\projects\carlsbad_ps\plots\figures\10AnnualReport\Invasive Species.mxd

Date: Dec 14, 2010

- The City is keeping up to date on the most current GSOB research. A summary of research projects can be obtained from the following document: http://www.fs.fed.us/r5/spf/fhp/gsob/Cleveland%20NF%20GSOB%20Update%20and%20activities%20(2-17-10).pdf.

- *Preserve inspection program* – the preserve inspection program will be used to identify problems with invasive species on preserves that are not actively managed.
- *HMP-specific invasive species list*. The City is developing a new invasive species list and ranking system that will have a more local focus than other available invasive species lists. The following sources are being reviewed: California Invasive Plant Council Invasive Plant Inventory, American Society of Landscape Architects San Diego County Invasive Ornamental Plant Guide, CNLM zero tolerance invasive species list and knowledge by local invasive species experts.
- *Public outreach* – outreach activities to educate the public about invasive species are ongoing; examples include informational brochures, an annual invasive species identification workshop, and presentations to volunteer groups.

2.3.5 Wildlife Movement

One of the goals of the HMP is to "maintain functional wildlife corridors and habitat linkages within the City and to the region, including linkages that connect gnatcatcher populations and movement corridors for large mammals." Core and linkage planning areas (areas with the highest priority for preservation) were developed as part of the HMP to guide development away from these high priority areas. The Regional Monitoring and Management Program will be analyzing movement of gnatcatchers across the region. An analysis has not been conducted to assess City-wide wildlife movement for mammals.

The key questions for the Carlsbad HMP are: Are wildlife corridors and habitat linkages in Carlsbad functional for medium to large mammals? If not, where are the problems and how can they be improved? In order to answer these questions, the City is in the process of developing a wildlife movement assessment over the next year, which will include the following tasks:

a. *Choose target species* for the wildlife movement assessment

b. *Assess the following landscape characteristics* using GIS data: topography, land cover, slope, hydrology, preserve status, roads (type, traffic volume, and location), location of culverts, size of core habitat areas, edge to area ratio and distance from urban edge.

c. *Conduct GIS analysis* to identify most likely movement corridors, and potential pinch points or other barriers to movement at a local (city-wide) and regional scale.

d. *Rank and prioritize linkages, and develop a study design* to ground truth the results of the GIS analysis (i.e., does the data support the results from the GIS analysis?)

e. *Conduct on-the-ground monitoring* at selected locations

f. *Enlist the help* of preserve managers, community groups, San Diego tracking team, etc. to assist with the implement of the monitoring program.

g. *Identify problems, possible solutions, and potential funding sources* and develop long-term management strategy.

2.4 Enforcement

The City continues to coordinate and cooperate with local preserve managers and the Carlsbad and Oceanside Police Departments in enforcing the rules and regulations within HMP preserves. These efforts also include public outreach (as described in Section 1.6.2 above) and fencing and signage. As stated in Section 2.3.1 above, the City also expanded its contract with Able Security to augment patrolling at the Lake Calavera Preserve. Due in large part to the efforts of City and preserve management staff and contractors, compliant and non-invasive public use of the preserve areas has increased and, as a result, the number of new trails and incidents has decreased.

More specifically, CNLM staff (both rangers and preserve managers) patrolled their privately owned and City owned preserves on a regular basis, sometimes during management activities and sometimes during directed patrolling efforts. Patrols were concentrated during the latter part of the week and weekends. CNLM employed part-time Rangers who added additional patrols on weekends. The rangers devote from 12 to 16 hours per week at the Lake Calavera preserve alone. During their patrolling efforts, CNLM staff spent a considerable amount of time picking up trash, fixing signs, gates and fences, and blocking off and patrolling trails that are not part of the designated trail system. ”Hot spots” (areas with particularly high levels of unauthorized activities) included Lake Calavera, Box Canyon, and Calavera Hills/Robertson Ranch. According to their preserve-specific annual reports, the stepped up patrolling effort over the last three years and outreach to the mountain biking community has significantly

reduced the amount of unauthorized activity and trail building within Lake Calavera and other CNLM-managed preserves.

Significant events reported during the last year included the following:

- In November 2009, illegal dumping of artificial limestone bricks occurred on the Kelly Ranch preserve in an area that has historically experienced dumping prior to establishment of the preserve. The material was removed and a "No Trespassing" sign was installed at the access point to the preserve. No construction debris dumping has occurred in the area since that time.

- In the winter of 2009, CNLM and Vallecitos Water District reached agreement on the mitigation for an unauthorized clearing of approximately 0.5 acres of southern willow scrub habitat within the Encinas Creek preserve. The mitigation will take the form of habitat enhancement of existing southern willow scrub habitat at a ratio of approximately 5:1 and the area of impact has regrown.
- In mid-Spring, a privately-owned truck accessed the La Costa/Romeria preserve and became stuck in mud. The individual was cited by the Carlsbad Police Department for trespassing and forced to remove the vehicle. No damage to native vegetation occurred as a result of the incident or vehicle removal.
- In the summer of 2010, approximately 0.025 acres of mulefat scrub and wild radish was removed within a Carlsbad Municipal Water District easement to access and repair a water leak. The area was also within the Robertson Ranch Preserve Conservation Easement managed by CNLM. The Water District alerted CNLM of the activity and removed the preserve perimeter fencing. The incident was reported to the Wildlife Agencies and the City HMP staff. As of the end of this reporting period, a plan for mitigating the vegetation removal and addressing long term easement maintenance is under discussion with the Wildlife Agencies and City staff.

With regard to CDFG preserves, the CDFG wardens patrol the coastal areas primarily looking for unauthorized fishing or hunting activity, but also conduct occasional sweeps in the western and central basins for unauthorized use, including horseback riders, ATVers, and bikers. The Carlsbad Police Department also assisted in the winter by patrolling the trails at Batiquitos Lagoon (located on Aviara Master Homeowners Association property directly adjacent to CDFG's Batiquitos Lagoon Ecological Reserve).

Volunteers with the Batiquitos Lagoon Foundation provided information (including preserve rules) to trail users and visitors to the nature center. In addition, signs and kiosks are located at trail entrances and around the least tern nesting sites and other sensitive areas that are off-limits to the public. One constraint in effective enforcement on CDFG lands is the current restriction on access for local law enforcement personnel. During the reporting period, the City continued to work with CDFG to secure a General Enforcement Agreement or its equivalent that would allow Carlsbad Police Department personnel to enter CDFG preserves and enforce regulations; however no such agreement has been obtained.

3.0 Financial Summary

3.1 City Funding in Support of HMP

The City uses two sources of funding to support implementation of the HMP: (1) permanent funding that has been allocated specifically for management of City lands and HMP coordination, and (2) existing resources, including administrative staff and staff from the Property and Environmental Management Department, the Planning Division of the Community Development and Economic Department, and the Parks and Recreation Department. The following sections describe these funding sources and how they are being used.

3.1.1 HMP Implementation

The majority of the City's ongoing costs to support HMP implementation are activities required by the HMP or the IA. Two of the City's main responsibilities are:

- Oversight of the HMP Preserve, and
- Direct, active management of 600.6 acres of preserve land owned by the City.

To fulfill the first responsibility, the City dedicated a senior-level staff planner and provides other administrative support for HMP coordination. The City also contracted with TAIC to serve as the City's Preserve Steward, coordinating management throughout the HMP Preserve, and monitoring HMP compliance and management effectiveness. The annual cost of program administration was estimated to be approximately $79,750 in 2004 dollars (IA, page 24), which equals approximately $92,221 in 2010 dollars (U.S. Department of Labor Consumer Price Index). The City provides $125,000 in the annual budget to fund the contract with TAIC for Preserve Steward costs.

The second responsibility is being accomplished through the City's contract with CNLM, a non-profit preserve management company for the management of City-owned HMP preserves. The annual management costs for City preserves from November 2009 through August 2010 was $177,188.63. Installation and maintenance of fencing will be provided by the City; therefore, the cost for fencing is not included in the annual maintenance costs.

3.1.2 *In-lieu* Habitat Mitigation Fees

As described in Section 1.3.7, *in-lieu* habitat mitigation fees are collected from developers for project-related impacts to certain types of native habitat outside of the preserve. These habitats include all habitat types in Groups E and F (non-native grassland, disturbed lands, eucalyptus, and agricultural lands) and some habitat types in Group D (unoccupied coastal sage scrub, coastal sage/chaparral mix, and chaparral, except southern maritime chaparral). These fees will be used to fulfill the City's obligation to acquire, protect, and manage the Gnatcatcher Core Area. As shown in Table 13, seven mitigation fees (totaling $30,657.73) have been paid during the current reporting period and $23,749.46 in interest has accrued, bringing the account total to $1,111,479.50. No withdrawals have been made from this account to reimburse or acquire acreage in the Core Area.

Table 14. *In-lieu* Mitigation Fee Account Activity during Current Reporting Period Nov. 2009 – October 2010

Date	Description	Habitat Impacted	Total
11/01/09	**Beginning Fund Total**		$1,057,072.42
	Fees Paid		
12/29/09	Padilla Residence	1.00 acres of non-native grasslands	$13,640.00
1/04/10	Eucalyptus Subdivision	0.40 acres of non-native grasslands; 0.10 acres of disturbed lands	$410.95
2/24/10	Energy Efficiency	0.19 of non-native grasslands; 0.26 acres of disturbed lands	$7,120.34
3/1/10	Eucalyptus Subdivision	1.15 acres of disturbed lands	$2,980.04
3/23/10	Krause Residence	0.27 acres of disturbed lands	$693.63
4/8/10	Shepro Residence	0.58 acres of disturbed lands	$1,582.82
9/20/10	Ponto Hotel	1.55 acres of disturbed lands	$4,229.95
	Interest Earned		$23,749.46
10/31/09	**Account Balance**		$1,111,479.50

3.1.3 Other City Funding that Benefited the HMP Preserve

The City used $$65,779.00 in TransNet EMP grant funds to conduct habitat restoration, access control, and public outreach within Calavera Hills area preserves, including Lake Calavera Preserve, Carlsbad Highlands Ecological Reserve, and the Calavera Heights Mitigation Parcel. The City provided $65,996.50 in matching funds for this effort through staff time and Preserve Steward time, which was spent on habitat restoration, public outreach, coordination with stakeholders, and project management.

Additionally, the Agricultural Conversion Mitigation Fee Program provided grants for habitat enhancement and land acquisition. The Batiquitos Lagoon Foundation was issued $59,754 of the $98,572 awarded last year for wetland restoration, trail planning and building, invasive species removal on the former Mitsuuchi Property. Additionally, the Buena Vista Audubon Society was awarded $50,000 for the Buena Vista Creek Watershed Management Information System, a GIS mapping and document storage system.

3.2 Status of Preserve Management Endowments

The endowment activity and status for preserves funded through endowments are given in Table 14. This includes all preserves managed by CNLM and SDHC, Buena Vista Creek Ecological Reserve, and Batiquitos Lagoon Ecological Reserve (other ecological reserves owned and managed by CDFG are funded through annual appropriations of regular CDFG funds). Totals are only given for CNLM-managed properties because complete information has not been received for the other preserves. During this last year, the U.S. economy experienced a severe recession, and endowment funds were greatly impacted. However, with careful planning, cost cutting, and a slight economic recovery during the latter part of the year, the endowment accounts remained largely intact overall.

Table 15. Endowment Status for HMP Preserves

Site Name	Preserve Manager[1]	Inception Date	Original Endowmt	Inflation Adj. Original Endmt as of 9/30/10[2]	FY09-10 Budget	FY09-10 Expend.	Endowmt 9/30/10	Initial & Capital 9/30/10	Total Funds as of 09/30/10
Buena Vista Creek Ecological Reserve	CNLM	4/2007	$776,644	$806,044	$27,275	$26,537	$768,302	$59,499	$827,801
Calavera Hills II/Robertson Ranch E[3]	CNLM	6/2006	$1,650,293	$1,744,966	$58,416	$52,688	$1,776,405	$38,448	$1,814,853
Carlsbad Oaks North	CNLM	3/2006	$1,020,311	$1,078,156	$32,332	$29,543	$1,051,261	$0	$1,051,261
Emerald Pointe	SDHC	12/2006	$194,068	$210,278	$8,733	$8,732	$189,014	$0	$189,014
Kelly Ranch	CNLM	3/2002	$296,125	$369,622	$11,040	$10,024	$360,313	$0	$360,313
La Costa Villages	CNLM	2/2002	$1,364,400	$1,690,828	$50,108	$48,130	$1,589,390	$0	$1,589,390
Nelson Parcel	CNLM	6/2001	$72,180	$84,234	$2,325	$2,272	$77,567	$0	$77,567
N. County Cavalry Chapel	Helix	6/2006	159,756.00	$173,315.45	unknown	$4,068	$154,146	$0	$154,146
N. County Habitat Bank/Encinas Ck	CNLM	5/2008	$427,004	$425,862	$16,817	$12,471	$406,604	$47,406	$454,010
TOTAL			***$5,960,781***	***$6,590,666***		***$194,465***	***$6,373,002***	***$145,353***	***$6,518,335***

[1] CNLM = Center for Natural Lands Management, SDHC = San Diego Habitat Conservancy.

[2] Adjusted for inflation to the current dollar value as of 9/30/10 based on Bureau of Labor Statistics Consumer Price Index.

[3] CNLM merged funds for these two projects to provide a cost savings for Robertson Ranch East Village

4.0 References

Beck, Christine. 2007. Personal communication. Biologist. California Department of Fish and Game, San Diego, California.

California Department of Fish and Game (CDFG). 2007. Natural Community Conservation Planning.

Camilli, K. 2009. Goldspotted Oak Borer *Agrilus coxalis* Waterhouse. Tree Notes, No. 31, March 2009, California Department of Forestry and Fire Protection.

Center for Natural Lands Management (CNLM). 2009. Rancho La Costa Habitat Conservation Area Annual Report October 2008 to September 2009. Submitted to the City of Carlsbad November 2009.

DiTomaso, J. 2009. *Cortaderia selloana* in: Invasive Plants of California's Wildland. California Invasive Plant Council. Viewed online on 12/07/09 at http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=35&surveynumber=182.php.

Howald, A. 2009. *Lepidium latifolium* in Invasive Plants of California's Wildland. California Invasive Plant Council. Viewed online on 12/07/09 at

Kelly, M. 2010. Personal communication. Invasive species removal expert. Kelly and Associates, San Diego, California.

Lovich, J. 2009. *Pennisetum setaceum* in Invasive Plants of California's Wildland. California Invasive Plant Council. Viewed online on 12/07/09 at http://www.cal-ipc.org/ip/management/ipcw/pages/detailreport.cfm@usernumber=66&surveynumber=182.php.

Markovchick-Nicholls, L., H. M. Reagan, D. H. Deutschman, A. Widyanata, B. Martin, L. Noreke, and T. A. Hunt. 2008. Relationships between Human Disturbance and Wildlife Land Use in Urban Habitat Fragments. Conservation Biology 22 (1): 99-109.

Multiple Habitat Conservation Program (MHCP). 2003. Final MHCP Plan. Volumes I-III. Prepared for the Cities of Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista, March 2003.

Preston, Kris. 2009. Nature Reserve of Orange County. Personal communication, December, 2009.

Spiegelberg, Markus. 2009. Preserve Area Manager, Center for Natural Lands Management. Personal communication, November 2009.

U.S. Fish and Wildlife Service (USFWS). 2005. Habitat Conservation Plans: Section 10A of the Endangered Species Act. U.S. Fish and Wildlife Service, Endangered Species Program, Arlington, Virginia.

Vinje, Jessie, and Patrick McConnell. 2009. Preserve Managers, Center for Natural Lands Management, personal communication, December 2009.

Vinje, J. 2007. Ward's weed (*Carrichtera annua*) *in* Weed Alerts! J. DiTomaso, University of California. Viewed online on 12/07/09 at http://www.cal-ipc.org/ip/management/alerts/pdf/07weedalerts.pdf.

Appendix A

Habitrak Report Years 1 - 6

Summary of Project Gains

MHCP West San Diego County

Baseline - Year 6

From 11/1/1899 To 10/31/2010

City of Carlsbad

Project Tracking #	Project Name	Location	Applicant	APN	Date Cons.	Status	Mgmt Resp.	Conservation Type	Mit. Bank Credits Used	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
001-002	Aviara Pointe		Aviara		10/29/2004	Gain	Other	In-Lieu Fees	0.00	0.00	0.00	0.00
001-043	Black Rail Ridge		Black Rail Ridge		5/18/2004	Gain	Other	In-Lieu Fees	0.00	0.00	0.00	0.00
001-003	Bressi Ranch		Bressi Ranch		1/24/2003	Gain	Unknown	Easement	0.00	0.00	153.75	153.75
001-029	Buena Vista Creek Ecological Reserve		Buena Vista Creek Ecological Reserve		3/31/2007	Gain	Non-Profit	Acquisition	0.00	0.04	133.18	133.22
001-004	Calavera Heights Village K		Calavera Heights		1/2/2002	Gain	Non-Profit	Easement	0.00	0.01	33.34	33.35
003-002	Calavera Hills Village R		Calavera Hills		6/1/2006	Gain	Non-Profit	Easement	0.00	3.35	0.00	3.35
002-052	Carlsbad Highlands Ecological Reserve		Carlsbad Highlands Ecological Reserve		5/22/2002	Gain	State	Acquisition	0.00	0.00	101.60	101.60
001-006	Carlsbad Municipal Golf Course		Carlsbad Municipal Golf Course		12/31/2008	Gain	Non-Profit	Easement	0.00	0.09	207.02	207.12
001-007	Carlsbad Oaks North		Carlsbad Oaks North		11/12/2004	Gain	Non-Profit	Acquisition	0.00	0.01	221.27	221.28
001-008	Carlsbad Raceway		Carlsbad Raceway		12/1/2004	Gain	Unknown	Easement	0.00	0.00	43.29	43.30
002-049	Cassia Professional Offices		Cassia Professional Offices		6/30/2006	Gain	Non-Profit	Easement	0.00	1.17	0.00	1.17
001-019	Emerald Point Estates		Emerald Point		3/21/2006	Gain	Non-Profit	Easement	0.00	0.01	9.41	9.43
001-000	Existing Hardline Conservation Area		Existing		1/1/1901	Gain	Local	Easement	0.00	1.10	4,380.66	4,381.77
001-009	Fox-Miller		Fox-Miller		12/28/2005	Gain	Local	Easement	0.00	0.00	16.33	16.33
001-010	Hieatt		Hieatt		2/3/2005	Gain	Unknown	Easement	0.00	0.01	6.50	6.51
001-011	Kelly Ranch		Kelly Ranch		6/18/2003	Gain	Non-Profit	Easement	0.00	0.00	57.77	57.77
002-046	Lake Calavera Mitigation Parcel		Lake Calavera Mitigation Parcel		12/31/2008	Gain	Non-Profit	Easement	0.00	0.00	250.90	250.91
002-044	Macario Canyon		City of Carlsbad		12/31/2008	Gain	Non-Profit	Easement	0.00	0.00	21.35	21.35
001-012	Manzanita		Manzanita		9/26/2003	Gain	Unknown	Easement	0.00	0.00	30.73	30.73
002-051	Mitsuuchi		Batiquitos Lagoon Foundation		7/10/2008	Gain	Non-Profit	Acquisition	0.00	8.97	0.00	8.97
001-013	North Coast Calvary Chapel		North Coast Calvary Chapel		11/17/2004	Gain	Unknown	Easement	0.00	0.02	10.69	10.71

City of Carlsbad

Project Tracking #	Project Name	Location	Applicant	APN	Date Cons.	Status	Mgmt Resp.	Conservation Type	Mit. Bank Credits Used	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
002-048	Palomar Forum		Palomar Forum		6/25/2004	Gain	Unknown	Easement	0.00	0.01	1.42	1.43
001-028	Robertson Ranch - East		Robertson Ranch - East		1/16/2007	Gain	Non-Profit	Easement	0.00	0.02	71.64	71.66
003-003	Robertson Ranch - West		Robertson Ranch - West		1/16/2007	Gain	Non-Profit	Easement	0.00	1.15	35.47	36.62
001-017	Spyglass		Spyglass		7/3/2001	Gain	Unknown	Easement	0.00	0.00	0.00	0.00
001-040	Steiner Property		Steiner Property		1/5/2000	Gain	Other	In-Lieu Fees	0.00	0.00	0.00	0.00
001-041	Tabata 2001		Tabata		1/17/2001	Gain	Other	In-Lieu Fees	0.00	0.00	0.00	0.00
001-042	Tabata 2004		Tabata		9/1/2004	Gain	Unknown	Easement	0.00	0.00	0.42	0.42
001-018	Terraces at Sunny Creek		Terraces at Sunny Creek		4/26/2000	Gain	Unknown	Easement	0.00	1.18	15.29	16.47
002-045	Veterans Park		City of Carlsbad		12/31/2008	Gain	Non-Profit	Easement	0.00	0.00	18.95	18.95
003-001	Villages of La Costa West		Villages of La Costa West		1/16/2007	Gain	Non-Profit	Easement	0.00	3.37	0.00	3.37
002-047	Waters End		Waters End HOA		5/15/2002	Gain	Private	Easement	0.00	3.36	0.00	3.36
001-020	Yamamato		Yamamato		4/17/2006	Gain	Other	In-Lieu Fees	0.00	0.00	0.00	0.00
Total for Agency: City of Carlsbad									**0.00**	**23.90**	**5,821.00**	**5,844.90**

Summary of Project Losses

MHCP West San Diego County

Baseline - Year 6

From 11/1/1899 To 10/31/2010

City of Carlsbad

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
001-002	Aviara Pointe		Aviara		10/29/2004	Loss	0		0.00	4.53	4.53
001-043	Black Rail Ridge		Black Rail Ridge		5/18/2004	Loss	0		0.00	3.16	3.16
001-003	Bressi Ranch		Bressi Ranch		1/24/2003	Loss	0		419.22	0.00	419.22
001-004	Calavera Heights Village K		Calavera Heights		1/2/2002	Loss	0		16.16	0.00	16.16
002-052	Carlsbad Highlands Ecological Reserve		Carlsbad Highlands Ecological Reserve		5/22/2002	Loss	0		0.00	0.00	0.00
001-006	Carlsbad Municipal Golf Course		Carlsbad Municipal Golf Course		12/6/2004	Loss	0		188.12	0.02	188.15
001-007	Carlsbad Oaks North		Carlsbad Oaks North		11/12/2004	Loss	0		195.44	0.00	195.45
001-008	Carlsbad Raceway		Carlsbad Raceway		12/1/2004	Loss	0		92.61	0.00	92.61
002-049	Cassia Professional Offices		Cassia Professional Offices		6/30/2006	Loss	0		1.51	0.00	1.51
001-019	Emerald Point Estates		Emerald Point		3/21/2006	Loss	0		0.07	6.42	6.49
001-000	Existing Baseline Loss		Existing		1/1/1901	Loss	0		0.00	0.00	0.00
001-009	Fox-Miller		Fox-Miller		12/28/2005	Loss	0		35.62	0.00	35.62
001-010	Hieatt		Hieatt		2/3/2005	Loss	0		7.11	0.00	7.11
001-011	Kelly Ranch		Kelly Ranch		6/18/2003	Loss	0		133.85	0.61	134.46
002-046	Lake Calavera Mitigation Parcel		City of Carlsbad		12/31/2008	Loss	0		0.00	0.00	0.00
002-044	Macario Canyon		City of Carlsbad		12/31/2008	Loss	0		0.00	0.00	0.00
001-012	Manzanita		Manzanita		9/26/2003	Loss	0		12.67	0.00	12.67
001-013	North Coast Calvary Chapel		North Coast Calvary Chapel		11/17/2004	Loss	0		14.56	0.00	14.56
002-048	Palomar Forum		Palomar Forum		6/25/2004	Loss	0		64.08	0.00	64.08
001-014	Redeemer		Redeemer		10/29/2002	Loss	0		9.67	0.00	9.67
001-028	Robertson Ranch - East		Robertson Ranch - East		1/16/2007	Loss	0		0.00	125.95	125.96
001-029	Sherman		Sherman		3/31/2007	Loss	0		0.00	0.00	0.00
001-017	Spyglass		Spyglass		7/3/2001	Loss	0		0.00	10.61	10.62
001-040	Steiner Property		Steiner Property		1/5/2000	Loss	0		0.00	1.84	1.84
001-041	Tabata 2001		Tabata		1/17/2001	Loss	0		0.00	5.60	5.60
001-042	Tabata 2004		Tabata		9/1/2004	Loss	0		0.00	4.48	4.48

City of Carlsbad

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
001-018	Terraces at Sunny Creek		Terraces at Sunny Creek		4/26/2000	Loss	0		31.46	0.88	32.34
002-045	Veterans Park		City of Carlsbad		12/31/2008	Loss	0		54.92	0.00	54.92
002-047	Waters End		Waters End HOA		5/15/2002	Loss	0		40.43	0.00	40.43
001-020	Yamamato		Yamamato		4/17/2006	Loss	0		0.00	4.92	4.92
Total for Agency: City of Carlsbad									**1,317.52**	**169.06**	**1,486.58**

Appendix B

Summary of Management and Monitoring Activities within HMP Management Units

Nov 2009-Oct 2010

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Agua Hedionda	**CDFG**	**<u>Agua Hedionda Lagoon Ecological Reserve</u>** ▪ Focused species surveys and surveys for nests, nestlings, predators, etc. for Belding's savannah sparrow and clapper rails ▪ Conducted focused species surveys for California gnatcatcher
	AH Lagoon Foundation	**<u>Agua Hedionda Lagoon</u>** The Discovery Center hosts community outreach events, provides educational exhibits and a native plant garden, and runs a children's educational program to promote conservation and raise awareness of water issues. In addition the AHLF conducts monitoring to sustain the recent eradication of *Caulerpa taxifolia.* **Activity Highlights** ▪ Academy for Environmental Stewardship program ▪ Seasonal festivals and special events ▪ Trail maintenance ▪ Native plant garden ▪ Discovery Center programs, exhibits, and docent program
Arroyo La Costa	**HOAs**	Property-level management
Batiquitos Lagoon	**CDFG**	**<u>Batiquitos Lagoon Ecological Reserve</u>** ▪ Focused species surveys and surveys for nests, nestlings, predators, etc. for Belding's savannah sparrow, clapper rails, least terns and snowy plovers. ▪ Conducted focused species surveys for California gnatcatcher
	Batiquitos Lagoon Foundation	**<u>Batiquitos Lagoon</u>** The Batiquitos Lagoon Foundation is dedicated to the preservation, enhancement, and protection of Batiquitos Lagoon. The BLF provides educational programs for children and adults, runs a nature center, and is involved with projects to monitor and maintain the lagoon. **Activity Highlights** ▪ Docent-led walks for the general public, school children, and private adult or family groups. ▪ Routine trail maintenance and trash pick-up activities ▪ Club Pelican – kid's summer camp ▪ Lagoon factsheets on nature and history of the lagoon ▪ Annual Christmas Bird Count

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Bressi/Carrillo		Information unavailable
Buena Vista Creek	**CNLM (owned by CDFG)**	**<u>Buena Vista Creek Ecological Reserve</u>** ▪ Replaced and/or repaired vandalized fencing and signage where necessary ▪ Trash removed from former encampments and other localities by Center personnel and volunteers ▪ Coordinated with the Carlsbad Watershed Network on treatment of invasive riparian plants and subsequent habitat enhancement ▪ Conducted invasive species removal, including treatment of six species in riparian areas, various species in restoration areas, two acres of fennel in upland areas, mowed 10 acres of mustards and other invasive species along southern boundary, ▪ Mapped dense infestations of fireweed groundsel and other invasives; submitted voucher specimen (groundsel) to SDNHM herbarium ▪ Draft restoration plan for Supplemental Environmental Project (SEP) was prepared ▪ Conducted general plant survey; searched for sensitive plant species ▪ Discovered two new localities of thread-leaved brodiaea ▪ Censused the thread-leaved brodiaea location, ▪ Incidentally noted several animal sightings while carrying out other tasks ▪ Conducted surveys for coastal California gnatcatchers and least Bell's vireo ▪ Held several public outreach events ▪ Patrolled regularly; removed two itinerants on two separate occasions ▪ Fuel zones were cleared or thinned as prescribed ▪ Developed an annual work plan for the upcoming management year
	Preserve Calavera	**<u>Buena Vista Creek Ecological Reserve</u>** **Activity Highlights** ▪ Completed second year of 1.8 acre restoration site at BVCER logging over 1500 volunteer hours. ▪ Continued work with DFG and CNLM toward a plan for next phase of restoration of BVCER using the $ 395 k SEP funds from RWQCB ▪ Coordinated community involvement in the amended Reclamation Plan resulting in improvements to the creek corridor and buffers ▪ Coordinated water quality and stream condition evaluations of Buena Vista Creek(links to data included in BVCER Restoration report) ▪ Worked with the city of Oceanside to resolve issues with old sewer line in the creek
Buena Vista Lagoon	**CDFG**	**<u>Buena Vista Lagoon Ecological Reserve</u>** ▪ Conducted surveys for light-footed clapper rail and Belding's savannah sparrow
	BV Lagoon Foundation	**<u>Buena Vista Lagoon</u>** Manages volunteer programs to conduct trail repairs, trash pickup, weed removal, and to install interpretive signs, trail markers, and trail barriers. Prepare public outreach and educational materials. Raise funds through grants and local donations. Currently assisting with the Buena Vista Lagoon Restoration Project.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Buena Vista Lagoon *continued*	BV Audubon Society	**<u>Buena Vista Lagoon</u>** BVAS has held monthly programs and weekly field trips and bird counts throughout the period under review to promote awareness of birds and their habitat requirements in coastal North County, and especially in and around the Buena Vista Lagoon and its watershed. BVAS, with volunteer assistance, runs the Nature Center. Currently assisting with the Buena Vista Lagoon Restoration Project. **Activity Highlights** ▪ Volunteer program to maintain trails, remove invasive species, and remove trash ▪ Annual BVAS Oceanside Birdathon, Birding Workshop, and Open House – May ▪ Monthly bird counts ▪ Christmas Bird Count ▪ Host numerous birding field trips ▪ Childrens' Summer Camp and other children's activities - nature walks, crafts and games ▪ Classes such as Basic Birding at Buena Vista Lagoon Landing ▪ Prepare position papers and review policy documents relevant to lagoon conservation ▪ Native Plant Club ▪ Nature Center
	Preserve Calavera	**<u>Buena Vista Lagoon</u>** **Activity Highlights** ▪ Partnered with BVAS in managing first phases of a Watershed Management Plan for the Buena Vista Watershed.
Calavera	**CNLM**	**<u>Calavera Hills Phase II/Robertson Ranch East</u>** **Activity Highlights** ▪ Reptiles, birds, and mammals observed on-site while conducting patrols, maintenance, or other monitoring tasks ▪ Censured and mapped populations of vegetative thread-leaved brodiaea (*Brodiaea filifolia*) at Village H ▪ Assessed habitat for the San Diego thornmint (*Acanthomintha ilicifolia*) using standard methods. ▪ Performed second year of CSS monitoring at several locations in the HCA ▪ Ant monitoring study performed at Village K ▪ Second native grasslands vegetation assessment performed at Village H ▪ Removed invasive, non-native plant species including: 150 pampas grass (*Cortaderia selloana*) individuals, multiple stands of giant reed (*Arrundo donax*), multiple stands of perennial pepperweed (*Lepidium latifolium*), a stand of fountain grass (*Pennisetum setaceum*), black mustard (*Brassica nigra*) individuals, Bermuda buttercup (*Oxalis pes-caprae*) individuals, and two acacias (*Acacia cyclops*). ▪ Mowed crown daisy (*Chrysanthemum coronarium*) in Village H ▪ Planted hundreds of native plants at Village R and maintained the site. ▪ Removed and treated weeds (mechanical and chemical) in Village X parcel, adjacent to and surrounding thread-leaved brodiaea

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Calavera *continued*	**CNLM *continued***	populations ▪ Corresponded with HOA's and landscapers to limit irrigation runoff into the HCA and control weeds inside their property ▪ Re-routed an ephemeral stream in Village X to limit damage to clay soils and thread-leaved brodiaea populations. ▪ Installed signage and blocked off unwanted trespass in Village U Installed approximately 600 feet of fencing along the trail at Village H ▪ Performed regular patrol, site enforcement and trash pickup to protect the HCA ▪ Prepared CE compliance documentation and report for Calavera Hills and Robertson Ranch parcels ▪ Hundreds of native plants installed
	CDFG	**<u>Carlsbad Highlands Ecological Reserve</u>** ▪ Focused-species surveys for California gnatcatcher; preliminary baseline oak assessment (signs of gold-spotted oak borer)
	Preserve Calavera	**<u>Calavera area</u>** **Activity Highlights** ▪ Continued quarterly wildlife tracking surveys ▪ Held wildlife appreciation event on coyotes at local HOA meeting ▪ Offered to sponsor an interpretive sign through the City of Carlsbad program ▪ Supported the city on several trail building and clean-up projects ▪ Supported a wildlife movement study paid for by the CBUSD - see report submitted separately ▪ Coordinated a presentation on the value of teaching gardens/native plant use for the CBUSD ▪ Coordinated with CBUSD and Palomar College for the preservation of the wood for a heritage oak tree to be presrrved for use on the new high school site ▪ Coordinated meetings and site visits to focus on wildlife movement corridor issues and attempt to improve connectivity
Faraday	**CNLM**	**<u>Kelly Ranch</u>** **Activity Highlights** ▪ Continued quarterly wildlife tracking surveys ▪ Held wildlife appreciation event- "Coyote Speaks" ▪ Initiated process for sponsoring of interpretive signs; reviewed and commented on public outreach materials and helped with distribution ▪ Funded graduate student project for testing of Lake Calavera ▪ Prepared report for DFG documenting numerous illegal mountain biking trails established during the last year in Calavera Highlands ▪ Participated in stakeholder process toward preparation of Master Trails Plan for the Lake Calavera area. ▪ Partnered with the city on several trail building and clean-up projects as part of National Public Lands Day ▪ Provided public education hikes ▪ Updated plant list

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Los Monos	CNLM	**<u>Carlsbad Oaks North</u>** **Activity Highlights** ▪ Blocked sections of the illegally constructed "flightline" trails with vegetation. ▪ Installed barbless barbed wire installed along the path on the aster side of the HCA. ▪ Installed updated signage ▪ Documented a coyote using the Faraday Avenue undercrossing (with wildlife cameras). ▪ Observed three pair coastal California gnatcatcher (*Polioptila californica californica*). ▪ Assessed vegetative cover within the San Diego thornmint (*Acanthomintha ilicifolia*) population ▪ Assessed the vegetative cover within the largest thread-leaved brodiaea (*Brodiaea filifolia*) population ▪ Mapped and censused one previously unknown population of thread-leaved brodiaea, and censused six previously known locations including on location that has not been found since 2000. ▪ Mapped rare plants. ▪ Monitored previously established CSS study plots. ▪ Conducted a coast live oak (*Quercus agrifolia*) study. ▪ Fortified the base of a previously impacted thread-leaved brodiaea population with sandbags to stop erosion. ▪ Chemically treated or removed several populations of weeds throughout the HCA, including pampas grass (*Cortaderia selloana*), Canary Island date palm (*Phoenix canariensis*), artichoke thistle (*Cynara cardunculus*), iceplant (*Carpobrotus edulis*), onion weed (*Asphodelus fistulosus*), African fountain grass (*Pennisetum sataceaum*), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), saltcedar (*Tamarix ramosissima*), and Mediterranean canary grass (*Phalaris canariensis*). ▪ Led a publicly announced nature hike through the HCA ▪ Patrolled the HCA regularly, picking up trash, removing weeds, and looking for other potential problems ▪ Conducted a CE compliance visit and report to ensure the values of the HCA are preserved in perpetuity
	UCSD	**Activity Highlights** Restoration Ecology: Conduct stream bank restoration. Fire Ecology: Old-growth and postburn chaparral monitored since a 1982 fire. Field Courses: Site visits by university courses in ecology, human biology, and natural history; facilities are expanding to enhance teaching use. Public outreach: The San Diego Natural History Museum collects plant specimens.
Poinsettia/Aviara	Aviara Master HOA	Property-level management
	Other HOAs	Property-level management

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Poinsettia/Aviara *continued*	**Emerald Pointe**	**<u>Emerald Pointe</u>** **Activity Highlights** ▪ Performed quarterly inspections and assessments of the Emerald Pointe Preserve ▪ Created quarterly log reports. ▪ Conducted exotic plant removal and weeding including the removal of multiple individuals of fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*) and pampas grass (*Cortaderia* sp.). ▪ Noted the encroachment (but not rooting or establishment) of Japanese honeysuckle (*Lonicera japonica*) planted as ornamental landscaping in bordering development. ▪ Removed trash and replaced vandalized and damaged signs following quarterly inspections. ▪ Mapped and flagged non-native and invasive species for removal. ▪ Collaborated with management of nearby developments (Laurel Tree Apartments) to attempt to reduce trespass and vandalism on the Preserve. ▪ Surveyed the known populations of San Diego thornmint (*Acanthomintha ilicifolia*). ▪ Documented a sensitive species previously not recorded in the area, Palmer's grappling hook (*Harpagonella palmeri*). Although not covered by the Carlsbad HMP, the presence of the species will be documented during future quarterly patrols.
	CNLM	**<u>North County Habitat Bank/Encinas Creek</u>** **Activity Highlights** ▪ Treated non-natives with herbicide including tamarisk (*Tamarix* sp.), ice plant (*Carpobrotus edulis*), fennel (*Foeniculum vulgare*) and pampas grass (*Cortaderia* spp.). ▪ Performed surveys for California gnatcatcher (*Polioptila californica)* and least Bell's vireo (*Vireo bellii pusillus*). ▪ Performed camera surveys to determine presence and use of the Preserve by large mammals. ▪ Conducted regular patrols, site enforcement, and trash pickup ▪ Produced and provided annual reports, work plants, budges and endowment status to the City of Carlsbad and the Wildlife Agencies.
Villages of La Costa	**CNLM**	**<u>Rancho La Costa</u>** **Activity Highlights** ▪ Completed wildlife corridor tracking at three locations within the HCA ▪ Conducted focused surveys for California gnatcatcher (*Polioptila californica californica*) ▪ Conducted focused surveys for San Diego thornmint, and Orcutt's hazardia ▪ Continued the long-term thread-leaf brodiaea (*Brodiaea filifolia*) research project. ▪ Documented multiple new sensitive plant occurrences. ▪ Assessed San Diego thornmint habitat conditions ▪ Established the San Diego Thornmint Working Group in conjunction with CDFG and USFWS.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Villages of La Costa ***continued***	**CNLM** ***continued***	▪ Coastal sage scrub long term vegetation monitoring plots established and data collected ▪ Mapped vegetation communities at the Greens parcels. ▪ Non-native plant species controlled or removed: including onion weed (*Asphodelus fistulosus*), perennial pepper weed (*Lepidium latifolium*), pampas grass (*Cortaderia* spp.), palm trees (*Phoenix canariensis, Washingtonia filifera*), castor bean (*Ricinis communis*), fennel (*Foeniculum vulgare*), artichoke thistle (*Cynara cardunculus*), eucalyptus trees (*Eucalyptus* spp.), Ward's weed (*Carrichtera annua*), perennial veldt grass (*Ehrharta calycina*), Sahara mustard (Brassica tournefortii), and non-native, annual grasses ▪ Collaborated with the Carlsbad Watershed Network to have invasive species treated from several locations in the HCA. ▪ Continued monitoring and maintenance activities at the Huff and Hubbard Slope restoration sites. ▪ Utilized funds received through the TransNet Environmental Mitigation Program (EMP) from the San Diego Association of Governments (SANDAG) to control several invasive species throughout the HCA. ▪ Utilized compensatory mitigation funds from the Vallecitos Water District (for impacts incurred at another CNLM owned HCA) to enhance wetland vegetation on the Greens parcel. ▪ Improved existing trail system (staff and volunteers). ▪ Installed fence and signs in many locations throughout the HCA ▪ CE compliance monitoring was conducted and all required documentation was prepared ▪ Mowed and maintained fuel breaks as required by the City of Carlsbad Fire Department ▪ Commenced update of the Habitat Management Plan. ▪ Deterred unwanted trespass, picked up trash, dealt with itinerant encampments CNLM spent considerable time and resources d completing these tasks as well as educating the public ▪ Completed three Eagle Scout projects and initiated two others ▪ Patrolled and enforced compliance issues at Box Canyon and other areas in the HCA (one-full time ranger and two part-time rangers).
Multiple MUs	**CNLM**	**<u>City of Carlsbad Preserves</u>** **Activity Highlights** ▪ Surveyed most properties for sensitive birds and avian communities. ▪ Surveyed each property (with the exception of Calavera Lake and the Crossings Golf Course) for sensitive plants ▪ Surveyed the Crossings Golf Course for Blochman's dudleya (*Dudleya blochmannii*). ▪ Developed vegetation maps for each property (with the exception of Calavera Lake and the Crossings Golf Course which were previously mapped). ▪ Conducted habitat assessments on all properties ▪ Commenced evaluation and assessments of zero- and moderate-tolerance nonnative plant species present within the properties. ▪ Treated and/or removed zero-tolerance and some moderate-tolerance nonnative invasive plant species. ▪ Conducted regular patrols of the Preserve for the purposes of general land management and public outreach. These activities included enforcement of regulations, trash removal and public outreach at Lake Calavera. ▪ Installed signs and kiosks. ▪ Collaborated with the City on volunteer, public outreach and education events. ▪ Collaborated with the City on Preserve Management and other issues pertaining to management and monitoring issues in Carlsbad.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Agua Hedionda	**CDFG**	**<u>Agua Hedionda Lagoon Ecological Reserve</u>** ▪ Focused species surveys and surveys for nests, nestlings, predators, etc. for Belding's savannah sparrow and clapper rails ▪ Conducted focused species surveys for California gnatcatcher
	AH Lagoon Foundation	**<u>Agua Hedionda Lagoon</u>** The Discovery Center hosts community outreach events, provides educational exhibits and a native plant garden, and runs a children's educational program to promote conservation and raise awareness of water issues. In addition the AHLF conducts monitoring to sustain the recent eradication of *Caulerpa taxifolia.* **Activity Highlights** ▪ Academy for Environmental Stewardship program ▪ Seasonal festivals and special events ▪ Trail maintenance ▪ Native plant garden ▪ Discovery Center programs, exhibits, and docent program
Arroyo La Costa	**HOAs**	Property-level management
Batiquitos Lagoon	**CDFG**	**<u>Batiquitos Lagoon Ecological Reserve</u>** ▪ Focused species surveys and surveys for nests, nestlings, predators, etc. for Belding's savannah sparrow, clapper rails, least terns and snowy plovers. ▪ Conducted focused species surveys for California gnatcatcher
	Batiquitos Lagoon Foundation	**<u>Batiquitos Lagoon</u>** The Batiquitos Lagoon Foundation is dedicated to the preservation, enhancement, and protection of Batiquitos Lagoon. The BLF provides educational programs for children and adults, runs a nature center, and is involved with projects to monitor and maintain the lagoon. **Activity Highlights** ▪ Docent-led walks for the general public, school children, and private adult or family groups. ▪ Routine trail maintenance and trash pick-up activities ▪ Club Pelican – kid's summer camp ▪ Lagoon factsheets on nature and history of the lagoon ▪ Annual Christmas Bird Count

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Bressi/Carrillo		Information unavailable
Buena Vista Creek	**CNLM (owned by CDFG)**	**<u>Buena Vista Creek Ecological Reserve</u>** ▪ Replaced and/or repaired vandalized fencing and signage where necessary ▪ Trash removed from former encampments and other localities by Center personnel and volunteers ▪ Coordinated with the Carlsbad Watershed Network on treatment of invasive riparian plants and subsequent habitat enhancement ▪ Conducted invasive species removal, including treatment of six species in riparian areas, various species in restoration areas, two acres of fennel in upland areas, mowed 10 acres of mustards and other invasive species along southern boundary, ▪ Mapped dense infestations of fireweed groundsel and other invasives; submitted voucher specimen (groundsel) to SDNHM herbarium ▪ Draft restoration plan for Supplemental Environmental Project (SEP) was prepared ▪ Conducted general plant survey; searched for sensitive plant species ▪ Discovered two new localities of thread-leaved brodiaea ▪ Censused the thread-leaved brodiaea location, ▪ Incidentally noted several animal sightings while carrying out other tasks ▪ Conducted surveys for coastal California gnatcatchers and least Bell's vireo ▪ Held several public outreach events ▪ Patrolled regularly; removed two itinerants on two separate occasions ▪ Fuel zones were cleared or thinned as prescribed ▪ Developed an annual work plan for the upcoming management year
	Preserve Calavera	**<u>Buena Vista Creek Ecological Reserve</u>** **Activity Highlights** ▪ Completed second year of 1.8 acre restoration site at BVCER logging over 1500 volunteer hours. ▪ Continued work with DFG and CNLM toward a plan for next phase of restoration of BVCER using the $ 395 k SEP funds from RWQCB ▪ Coordinated community involvement in the amended Reclamation Plan resulting in improvements to the creek corridor and buffers ▪ Coordinated water quality and stream condition evaluations of Buena Vista Creek(links to data included in BVCER Restoration report) ▪ Worked with the city of Oceanside to resolve issues with old sewer line in the creek
Buena Vista Lagoon	**CDFG**	**<u>Buena Vista Lagoon Ecological Reserve</u>** ▪ Conducted surveys for light-footed clapper rail and Belding's savannah sparrow
	BV Lagoon Foundation	**<u>Buena Vista Lagoon</u>** Manages volunteer programs to conduct trail repairs, trash pickup, weed removal, and to install interpretive signs, trail markers, and trail barriers. Prepare public outreach and educational materials. Raise funds through grants and local donations. Currently assisting with the Buena Vista Lagoon Restoration Project.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Buena Vista Lagoon *continued*	BV Audubon Society	**<u>Buena Vista Lagoon</u>** BVAS has held monthly programs and weekly field trips and bird counts throughout the period under review to promote awareness of birds and their habitat requirements in coastal North County, and especially in and around the Buena Vista Lagoon and its watershed. BVAS, with volunteer assistance, runs the Nature Center. Currently assisting with the Buena Vista Lagoon Restoration Project. **Activity Highlights** ▪ Volunteer program to maintain trails, remove invasive species, and remove trash ▪ Annual BVAS Oceanside Birdathon, Birding Workshop, and Open House – May ▪ Monthly bird counts ▪ Christmas Bird Count ▪ Host numerous birding field trips ▪ Childrens' Summer Camp and other children's activities - nature walks, crafts and games ▪ Classes such as Basic Birding at Buena Vista Lagoon Landing ▪ Prepare position papers and review policy documents relevant to lagoon conservation ▪ Native Plant Club ▪ Nature Center
	Preserve Calavera	**<u>Buena Vista Lagoon</u>** **Activity Highlights** ▪ Partnered with BVAS in managing first phases of a Watershed Management Plan for the Buena Vista Watershed.
Calavera	**CNLM**	**<u>Calavera Hills Phase II/Robertson Ranch East</u>** **Activity Highlights** ▪ Reptiles, birds, and mammals observed on-site while conducting patrols, maintenance, or other monitoring tasks ▪ Censured and mapped populations of vegetative thread-leaved brodiaea (*Brodiaea filifolia*) at Village H ▪ Assessed habitat for the San Diego thornmint (*Acanthomintha ilicifolia*) using standard methods. ▪ Performed second year of CSS monitoring at several locations in the HCA ▪ Ant monitoring study performed at Village K ▪ Second native grasslands vegetation assessment performed at Village H ▪ Removed invasive, non-native plant species including: 150 pampas grass (*Cortaderia selloana*) individuals, multiple stands of giant reed (*Arrundo donax*), multiple stands of perennial pepperweed (*Lepidium latifolium*), a stand of fountain grass (*Pennisetum setaceum*), black mustard (*Brassica nigra*) individuals, Bermuda buttercup (*Oxalis pes-caprae*) individuals, and two acacias (*Acacia cyclops*). ▪ Mowed crown daisy (*Chrysanthemum coronarium*) in Village H ▪ Planted hundreds of native plants at Village R and maintained the site. ▪ Removed and treated weeds (mechanical and chemical) in Village X parcel, adjacent to and surrounding thread-leaved brodiaea

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Calavera *continued*	**CNLM *continued***	populations ▪ Corresponded with HOA's and landscapers to limit irrigation runoff into the HCA and control weeds inside their property ▪ Re-routed an ephemeral stream in Village X to limit damage to clay soils and thread-leaved brodiaea populations. ▪ Installed signage and blocked off unwanted trespass in Village U Installed approximately 600 feet of fencing along the trail at Village H ▪ Performed regular patrol, site enforcement and trash pickup to protect the HCA ▪ Prepared CE compliance documentation and report for Calavera Hills and Robertson Ranch parcels ▪ Hundreds of native plants installed
	CDFG	**<u>Carlsbad Highlands Ecological Reserve</u>** ▪ Focused-species surveys for California gnatcatcher; preliminary baseline oak assessment (signs of gold-spotted oak borer)
	Preserve Calavera	**<u>Calavera area</u>** **Activity Highlights** ▪ Continued quarterly wildlife tracking surveys ▪ Held wildlife appreciation event on coyotes at local HOA meeting ▪ Offered to sponsor an interpretive sign through the City of Carlsbad program ▪ Supported the city on several trail building and clean-up projects ▪ Supported a wildlife movement study paid for by the CBUSD - see report submitted separately ▪ Coordinated a presentation on the value of teaching gardens/native plant use for the CBUSD ▪ Coordinated with CBUSD and Palomar College for the preservation of the wood for a heritage oak tree to be presrrved for use on the new high school site ▪ Coordinated meetings and site visits to focus on wildlife movement corridor issues and attempt to improve connectivity
Faraday	**CNLM**	**<u>Kelly Ranch</u>** **Activity Highlights** ▪ Continued quarterly wildlife tracking surveys ▪ Held wildlife appreciation event- "Coyote Speaks" ▪ Initiated process for sponsoring of interpretive signs; reviewed and commented on public outreach materials and helped with distribution ▪ Funded graduate student project for testing of Lake Calavera ▪ Prepared report for DFG documenting numerous illegal mountain biking trails established during the last year in Calavera Highlands ▪ Participated in stakeholder process toward preparation of Master Trails Plan for the Lake Calavera area. ▪ Partnered with the city on several trail building and clean-up projects as part of National Public Lands Day ▪ Provided public education hikes ▪ Updated plant list

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Los Monos	CNLM	**<u>Carlsbad Oaks North</u>** **Activity Highlights** ▪ Blocked sections of the illegally constructed "flightline" trails with vegetation. ▪ Installed barbless barbed wire installed along the path on the aster side of the HCA. ▪ Installed updated signage ▪ Documented a coyote using the Faraday Avenue undercrossing (with wildlife cameras). ▪ Observed three pair coastal California gnatcatcher (*Polioptila californica californica*). ▪ Assessed vegetative cover within the San Diego thornmint (*Acanthomintha ilicifolia*) population ▪ Assessed the vegetative cover within the largest thread-leaved brodiaea (*Brodiaea filifolia*) population ▪ Mapped and censused one previously unknown population of thread-leaved brodiaea, and censused six previously known locations including on location that has not been found since 2000. ▪ Mapped rare plants. ▪ Monitored previously established CSS study plots. ▪ Conducted a coast live oak (*Quercus agrifolia*) study. ▪ Fortified the base of a previously impacted thread-leaved brodiaea population with sandbags to stop erosion. ▪ Chemically treated or removed several populations of weeds throughout the HCA, including pampas grass (*Cortaderia selloana*), Canary Island date palm (*Phoenix canariensis*), artichoke thistle (*Cynara cardunculus*), iceplant (*Carpobrotus edulis*), onion weed (*Asphodelus fistulosus*), African fountain grass (*Pennisetum sataceaum*), black mustard (*Brassica nigra*), poison hemlock (*Conium maculatum*), sweet fennel (*Foeniculum vulgare*), saltcedar (*Tamarix ramosissima*), and Mediterranean canary grass (*Phalaris canariensis*). ▪ Led a publicly announced nature hike through the HCA ▪ Patrolled the HCA regularly, picking up trash, removing weeds, and looking for other potential problems ▪ Conducted a CE compliance visit and report to ensure the values of the HCA are preserved in perpetuity
	UCSD	**Activity Highlights** Restoration Ecology: Conduct stream bank restoration. Fire Ecology: Old-growth and postburn chaparral monitored since a 1982 fire. Field Courses: Site visits by university courses in ecology, human biology, and natural history; facilities are expanding to enhance teaching use. Public outreach: The San Diego Natural History Museum collects plant specimens.
Poinsettia/Aviara	Aviara Master HOA	Property-level management
	Other HOAs	Property-level management

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Poinsettia/Aviara *continued*	**Emerald Pointe**	**<u>Emerald Pointe</u>** **Activity Highlights** ▪ Performed quarterly inspections and assessments of the Emerald Pointe Preserve ▪ Created quarterly log reports. ▪ Conducted exotic plant removal and weeding including the removal of multiple individuals of fennel (*Foeniculum vulgare*), tree tobacco (*Nicotiana glauca*) and pampas grass (*Cortaderia* sp.). ▪ Noted the encroachment (but not rooting or establishment) of Japanese honeysuckle (*Lonicera japonica*) planted as ornamental landscaping in bordering development. ▪ Removed trash and replaced vandalized and damaged signs following quarterly inspections. ▪ Mapped and flagged non-native and invasive species for removal. ▪ Collaborated with management of nearby developments (Laurel Tree Apartments) to attempt to reduce trespass and vandalism on the Preserve. ▪ Surveyed the known populations of San Diego thornmint (*Acanthomintha ilicifolia*). ▪ Documented a sensitive species previously not recorded in the area, Palmer's grappling hook (*Harpagonella palmeri*). Although not covered by the Carlsbad HMP, the presence of the species will be documented during future quarterly patrols.
	CNLM	**<u>North County Habitat Bank/Encinas Creek</u>** **Activity Highlights** ▪ Treated non-natives with herbicide including tamarisk (*Tamarix* sp.), ice plant (*Carpobrotus edulis*), fennel (*Foeniculum vulgare*) and pampas grass (*Cortaderia* spp.). ▪ Performed surveys for California gnatcatcher (*Polioptila californica)* and least Bell's vireo (*Vireo bellii pusillus*). ▪ Performed camera surveys to determine presence and use of the Preserve by large mammals. ▪ Conducted regular patrols, site enforcement, and trash pickup ▪ Produced and provided annual reports, work plants, budges and endowment status to the City of Carlsbad and the Wildlife Agencies.
Villages of La Costa	**CNLM**	**<u>Rancho La Costa</u>** **Activity Highlights** ▪ Completed wildlife corridor tracking at three locations within the HCA ▪ Conducted focused surveys for California gnatcatcher (*Polioptila californica californica*) ▪ Conducted focused surveys for San Diego thornmint, and Orcutt's hazardia ▪ Continued the long-term thread-leaf brodiaea (*Brodiaea filifolia*) research project. ▪ Documented multiple new sensitive plant occurrences. ▪ Assessed San Diego thornmint habitat conditions ▪ Established the San Diego Thornmint Working Group in conjunction with CDFG and USFWS.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Villages of La Costa ***continued***	**CNLM** ***continued***	▪ Coastal sage scrub long term vegetation monitoring plots established and data collected ▪ Mapped vegetation communities at the Greens parcels. ▪ Non-native plant species controlled or removed: including onion weed (*Asphodelus fistulosus*), perennial pepper weed (*Lepidium latifolium*), pampas grass (*Cortaderia* spp.), palm trees (*Phoenix canariensis, Washingtonia filifera*), castor bean (*Ricinis communis*), fennel (*Foeniculum vulgare*), artichoke thistle (*Cynara cardunculus*), eucalyptus trees (*Eucalyptus* spp.), Ward's weed (*Carrichtera annua*), perennial veldt grass (*Ehrharta calycina*), Sahara mustard (Brassica tournefortii), and non-native, annual grasses ▪ Collaborated with the Carlsbad Watershed Network to have invasive species treated from several locations in the HCA. ▪ Continued monitoring and maintenance activities at the Huff and Hubbard Slope restoration sites. ▪ Utilized funds received through the TransNet Environmental Mitigation Program (EMP) from the San Diego Association of Governments (SANDAG) to control several invasive species throughout the HCA. ▪ Utilized compensatory mitigation funds from the Vallecitos Water District (for impacts incurred at another CNLM owned HCA) to enhance wetland vegetation on the Greens parcel. ▪ Improved existing trail system (staff and volunteers). ▪ Installed fence and signs in many locations throughout the HCA ▪ CE compliance monitoring was conducted and all required documentation was prepared ▪ Mowed and maintained fuel breaks as required by the City of Carlsbad Fire Department ▪ Commenced update of the Habitat Management Plan. ▪ Deterred unwanted trespass, picked up trash, dealt with itinerant encampments CNLM spent considerable time and resources d completing these tasks as well as educating the public ▪ Completed three Eagle Scout projects and initiated two others ▪ Patrolled and enforced compliance issues at Box Canyon and other areas in the HCA (one-full time ranger and two part-time rangers).
Multiple MUs	**CNLM**	**<u>City of Carlsbad Preserves</u>** **Activity Highlights** ▪ Surveyed most properties for sensitive birds and avian communities. ▪ Surveyed each property (with the exception of Calavera Lake and the Crossings Golf Course) for sensitive plants ▪ Surveyed the Crossings Golf Course for Blochman's dudleya (*Dudleya blochmannii*). ▪ Developed vegetation maps for each property (with the exception of Calavera Lake and the Crossings Golf Course which were previously mapped). ▪ Conducted habitat assessments on all properties ▪ Commenced evaluation and assessments of zero- and moderate-tolerance nonnative plant species present within the properties. ▪ Treated and/or removed zero-tolerance and some moderate-tolerance nonnative invasive plant species. ▪ Conducted regular patrols of the Preserve for the purposes of general land management and public outreach. These activities included enforcement of regulations, trash removal and public outreach at Lake Calavera. ▪ Installed signs and kiosks. ▪ Collaborated with the City on volunteer, public outreach and education events. ▪ Collaborated with the City on Preserve Management and other issues pertaining to management and monitoring issues in Carlsbad.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Multiple MUs *continued*	Carlsbad Watershed Network	**Activity Highlights** • Watershed Stewards Training • North County Stormwater Management Programs • UCSD Case Study of Mitigation Sites • Invasive species removal • Agua Hedionda Watershed Management Plan
	Preserve Calavera	**Activity Highlights** ▪ Held community education events on native plants including hikes led by CNLM, CNPS and UC Dawson-Los Monos reserve botanists. ▪ Held a follow-up community education opportunity on alternatives for fire safety clearing at the wildland/urban interface
	City Parks and Recreation Department	The Citywide Trails Program manages and monitors trail improvements, construction and maintenance activities in some of Carlsbad's open spaces that are part of the HMP, and conducts public outreach. **Activity Highlights:** ▪ Citywide Trail Volunteer Program - Oversee volunteers that work on a monthly basis to improve and construct trails by picking up litter, installing trail signage, repairing erosion, and removing weeds from the trails. Quarterly Trail Volunteer Meetings are held which are open to the public. A schedule is provided on the City's Website ▪ National Public Lands Day Clean-Up ▪ Trail School Native Plant Seminar ▪ Lake Calavera Trails Master Plan - The Plan formally identifies authorized and unauthorized trails, provides trail and interpretive signage, and includes a fencing plan.

[1] Primary management entities (Preserve Managers) are in bold. CDFG – California Department of Fish and Game. CNLM – Center for Lands Management. CWN – Carlsbad Watershed Network. "Other" – HOAs (other than Aviara HOA) and private open space; generally these were preserved prior to HMP approval.

Summary of HMP Management and Monitoring Activities, Nov 2009 – Oct 2010 *continued*

Management Unit (MU)	Management Entity[1]	Management and Monitoring Activities
Multiple MUs *continued*	Carlsbad Watershed Network	**Activity Highlights** • Watershed Stewards Training • North County Stormwater Management Programs • UCSD Case Study of Mitigation Sites • Invasive species removal • Agua Hedionda Watershed Management Plan
	Preserve Calavera	**Activity Highlights** ▪ Held community education events on native plants including hikes led by CNLM, CNPS and UC Dawson-Los Monos reserve botanists. ▪ Held a follow-up community education opportunity on alternatives for fire safety clearing at the wildland/urban interface
	City Parks and Recreation Department	The Citywide Trails Program manages and monitors trail improvements, construction and maintenance activities in some of Carlsbad's open spaces that are part of the HMP, and conducts public outreach. **Activity Highlights:** ▪ Citywide Trail Volunteer Program - Oversee volunteers that work on a monthly basis to improve and construct trails by picking up litter, installing trail signage, repairing erosion, and removing weeds from the trails. Quarterly Trail Volunteer Meetings are held which are open to the public. A schedule is provided on the City's Website ▪ National Public Lands Day Clean-Up ▪ Trail School Native Plant Seminar ▪ Lake Calavera Trails Master Plan - The Plan formally identifies authorized and unauthorized trails, provides trail and interpretive signage, and includes a fencing plan.

[1] Primary management entities (Preserve Managers) are in bold. CDFG – California Department of Fish and Game. CNLM – Center for Lands Management. CWN – Carlsbad Watershed Network. "Other" – HOAs (other than Aviara HOA) and private open space; generally these were preserved prior to HMP approval.