

# **City of Carlsbad Habitat Management Plan Annual Report**

**Reporting Year 14, November 2017–October 2018**

February 2019

City of Carlsbad  
Environmental Management  
1635 Faraday Avenue  
Carlsbad, CA 92008  
Contact: Rosanne Humphrey, HMP Coordinator



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## **Acknowledgments:**

### **Implementing Agreement Signatories:**

U.S. Fish and Wildlife Service

California Department of Fish and Wildlife

### **Preserve Steward:**

Alanna Sullivan – Environmental Science Associates

### **Preserve Managers:**

California Department of Fish and Wildlife

Center for Natural Lands Management

Habitat Restoration Sciences, Inc.

Helix Environmental, Inc.

San Diego Habitat Conservancy

Urban Corps San Diego Habitat Services

### **Other Contributors:**

Agua Hedionda Lagoon Foundation

Batiquitos Lagoon Foundation

Buena Vista Audubon

Preserve Calavera

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## Acronyms and Definitions

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**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 3-year report was prepared as part of the 2016/2017 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 design, construction, maintenance and operation of the California State Highway System and Interstate Highway segments within the state's boundaries.

**City** – City of Carlsbad.

**CDFW** – California Department of Fish and Wildlife (formerly CDFG – California Department of Fish and Game).

**CNDDDB** – California Natural Diversity Database, operated and maintained by CDFW.

**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 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 CDFW 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.

**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.

**HRS** – Habitat Restoration Sciences, Inc. A for-profit native habitat restoration and general engineering firm specializing in installation and long-term maintenance of natural areas.

**IA** – Implementing Agreement. The legal agreement between the City of Carlsbad, CDFW, and USFWS that ensures implementation of the Carlsbad 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.

**IPM** – Integrated Pest Management, a science-based, decision-making process that combines biological, physical and chemical tools in a way that achieves control objectives while minimizing economic, health, and environmental risk.

**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 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 meta-population 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. The goal of the MHCP 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.

**NCC** – Natural Communities Coalition, a non-profit group in Orange County whose main purpose is to coordinate the land management, monitoring, and research across the approximately 38,000-acre Reserve System.

**NCCP** – Natural Community Conservation Planning, a program of CDFW 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 that provides for the setup costs and management/monitoring of a preserve in perpetuity through investment returns. The endowment is designed to increase in value over time 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 IA.

**PAR** – Property Analysis Record, a cost analysis that estimates the management and monitoring costs of a specific preserve in perpetuity, often in the form of an endowment to fund long-term management. A PAR 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 CNLM to develop a master PMP for all city-owned preserves that addresses each preserve individually.

**Preserve** – Land conserved with a conservation easement, restrictive covenant, deed restriction, or transfer of fee-title to the city or CDFW 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, CDFW, CNLM, or private HOAs. Pursuant to state due-diligence legislation that took effect January of 2007, preserve managers must be certified by either the city or CDFW 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.

**RY** – Reporting Year, or from November 1 to October 31.

**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 conservation. It is generally understood by the Wildlife Agencies that losses should be no more than 10 percent 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.

**SDG&E** – San Diego Gas and Electric.

**SDHC** – San Diego Habitat Conservancy, a non-profit organization that provides management and biological monitoring of mitigation and conservation lands in perpetuity. Prior to February of 2009, SDHC was called Helix Community Conservancy.

**SDMMP** – San Diego Management and Monitoring Program, a science-based program that provides a coordinated approach to management and biological monitoring of lands in San Diego that have been conserved through various programs, including the Multiple Species Conservation Program, the MHCP, the TransNet Environmental Mitigation Program, and various other conservation and mitigation efforts.

**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.

**T&C** – Terms and Conditions.

**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 was a habitat management company that owned and managed several preserves in Carlsbad until declaring bankruptcy in 2005. Their properties were unmanaged until CDFW 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 EMP is a component of TransNet that funds habitat-related environmental mitigation activities required to implement projects identified in SANDAG’s Regional Transportation Plan, including a funding allocation for habitat acquisition, management, and monitoring activities as needed to help implement the Multiple Species Conservation Program and the MHCP.

**UC** – Urban Corps Habitat Services, a non-profit organization that provides management and biological monitoring of mitigation and conservation lands in perpetuity.

**USACE** – U.S. Army Corps of Engineers.

**USFWS** – U.S. Fish and Wildlife Service.

**Wildlife Agencies** – Term used collectively for CDFW and USFWS.

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# Executive Summary

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This is the fourteenth annual Habitat Management Plan (HMP) summary report, covering the period of November 1, 2017 to October 31, 2018. This report summarizes the preserve status, implementation activities, and preserve gains and losses that have occurred during the current reporting period. Highlights of the HMP activities are summarized below.

## **Current Status of Preserves**

The existing preserves continued to be managed, monitored, and/or maintained during the reporting period. Established private and city-owned Hardline Preserves were managed and monitored in accordance with their approved Preserve Management Plans; California Department of Fish and Wildlife (CDFW) preserves were managed subject to available funding and resources; and pre-existing natural open space areas were maintained according to their respective Open Space Easements and/or Covenants, Conditions, and Restrictions, if applicable. Descriptions of the different categories of preserves are contained in Section 1.3.

## **Lake Calavera Mitigation Parcel**

During the reporting period, there were no debits from the mitigation parcel. To date, cumulative debits and adjustments for wetland mitigation sites are 94.9 acres, leaving a total of 111.2 acres (credits) remaining.

## **Gnatcatcher Core Area Conservation Obligation**

The city has conserved 294.67 acres of the 307.60-acre Gnatcatcher Core Area conservation requirement and continued to explore opportunities to conserve the remaining 12.93 acres during the reporting period.

## **Land Acquisitions**

There were no land acquisitions inside of the HMP Planning Area during the reporting period. However, a net of 6.0 acres not previously targeted for the HMP was added to the preserve system in association with the Poinsettia 61 Project.

## **Habitat Gains and Losses**

On July 25, 2018, a total of 43.8 acres of habitat was gained and 26.3 acres were lost in association with the Poinsettia 61 Project.

### **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 Multiple Habitat Conservation Program (MHCP) or HMP, it is generally understood by the Wildlife Agencies that losses should be no more than 10 percent greater than gains (C. Beck, CDFW, pers. comm. 2007). This policy was developed for Natural Community Conservation Planning (NCCP) plans to ensure that development does not greatly outpace land preservation. Since inception of the HMP program, 1,567 acres have been lost and 6,187 acres have been gained within Carlsbad. 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 allowing any habitat impacts (habitat loss) to occur.

### **Regulatory Compliance**

The city is in compliance with the terms and conditions of the Implementing Agreement (IA), NCCP take authorization/permit, and federal Endangered Species Act (ESA) Section 10(a)(1)(B) take authorization/permit, and HMP zone-specific standards, as summarized in Tables 4 through 7 in the body of the report.

### **Preserve Management and Monitoring**

Key management and monitoring activities in HMP preserves conducted this year included invasive species monitoring and control, installation and maintenance of fences and signage, rare plant counts and habitat assessments, vegetation mapping, sensitive bird species surveys, wildlife movement monitoring, post-fire habitat assessment, and public outreach activities.

### **Patrolling and Enforcement**

On May 15, 2018, the City Council voted to permanently continue the Police Department Ranger Program to provide enhanced security and protection of the city’s open space. Two full-time rangers patrol the preserves, trails, lagoons, beaches, and parks. Rangers have the power to issue citations, although they also focus on providing information and education. In addition, the Environmental Management division continues to coordinate with preserve managers, Carlsbad Parks and Recreation Department, CDFW, and the Carlsbad and Oceanside Police Departments on a multi-pronged approach to enforcement within the preserve system using education, deterrence, and patrolling.

## **Financial Summary**

In-Lieu Mitigation Fee Program. A total of \$98,687 of in-lieu mitigation fees was collected, and there were no expenditures during the reporting period. As of October 31, 2018, the account had a negative balance of \$313,819. This shortfall will be reimbursed with future in-lieu mitigation fees.

Preserve Management Endowments. During the reporting period, a total of \$709,499 was used by the Center for Natural Lands Management (CNLM), San Diego Habitat Conservancy (SDHC), Habitat Restoration Sciences (HRS), San Diego Urban Corps Habitat Services (UC), for management and monitoring activities on 26 preserves (in this instance, the 13 conserved parcels owned by the city are counted as a single preserve). Endowment and remaining initial funds for these properties (not including the city-owned preserves) totaled \$16,057 as of October 31, 2018.

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# 1.0 Plan Administration

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## 1.1 Introduction

The purpose of this document is to provide an update on the status of the HMP preserve system and implementation activities that have occurred during the current reporting period (November 1, 2017–October 31, 2018). The information in this report will be used in compliance monitoring to determine whether the HMP is being properly implemented pursuant to relevant regulations and permit conditions. Annual tracking and reporting of the HMP preserve system’s gains, losses, management, and monitoring is required by Sections 12.1 and 12.2 of the 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 annual report covers year 14 of the 50-year HMP implementation permits.

## 1.2 HMP Compliance Monitoring and Effectiveness Monitoring

### 1.2.1 HMP Conservation Goals

To evaluate the city’s compliance with the HMP and the effectiveness of the MHCP/HMP program 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 ESA-related mitigation and HMP implementation.

### **1.2.2 Compliance Monitoring**

Compliance monitoring, also known as implementation or regulatory monitoring, is required pursuant to the city's HMP IA (permit) with the Wildlife Agencies (CDFW and U.S. Fish and Wildlife Service (USFWS), collectively) to ensure that the city is performing the conservation and implementation actions described in the IA. Compliance monitoring tracks whether the city is doing what it agreed to do from a regulatory perspective, 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, ecological, or validation monitoring, determines the effectiveness of the conservation program. Effectiveness monitoring evaluates how well the preserve assembly 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 CDFW 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 (upwards of ten) years before trends in species populations and habitat conditions are detectable. Species and habitat monitoring, and monitoring to evaluate the effectiveness of management to reduce threats is conducted by the preserve managers. The city, Preserve Steward, preserve managers, and Wildlife Agencies are currently working together to implement a functional citywide monitoring program that will help answer questions about the status of species populations and wildlife movement. In addition, the city is coordinating with the San Diego Management and Monitoring Program (SDMMP), which is developing regional and preserve-level monitoring and management strategic plans and protocols for use throughout San Diego County.

## **1.3 Current Status of Preserves**

This section contains: (1) a description of the different categories of preserves within the HMP preserve system, (2) an accounting of the mitigation credits at the city's Lake Calavera Mitigation Parcel, (3) the status of the city's Gnatcatcher Core Area conservation obligation, and (4) a summary of the in-lieu mitigation fee program.

### **1.3.1 Categories of HMP Preserves**

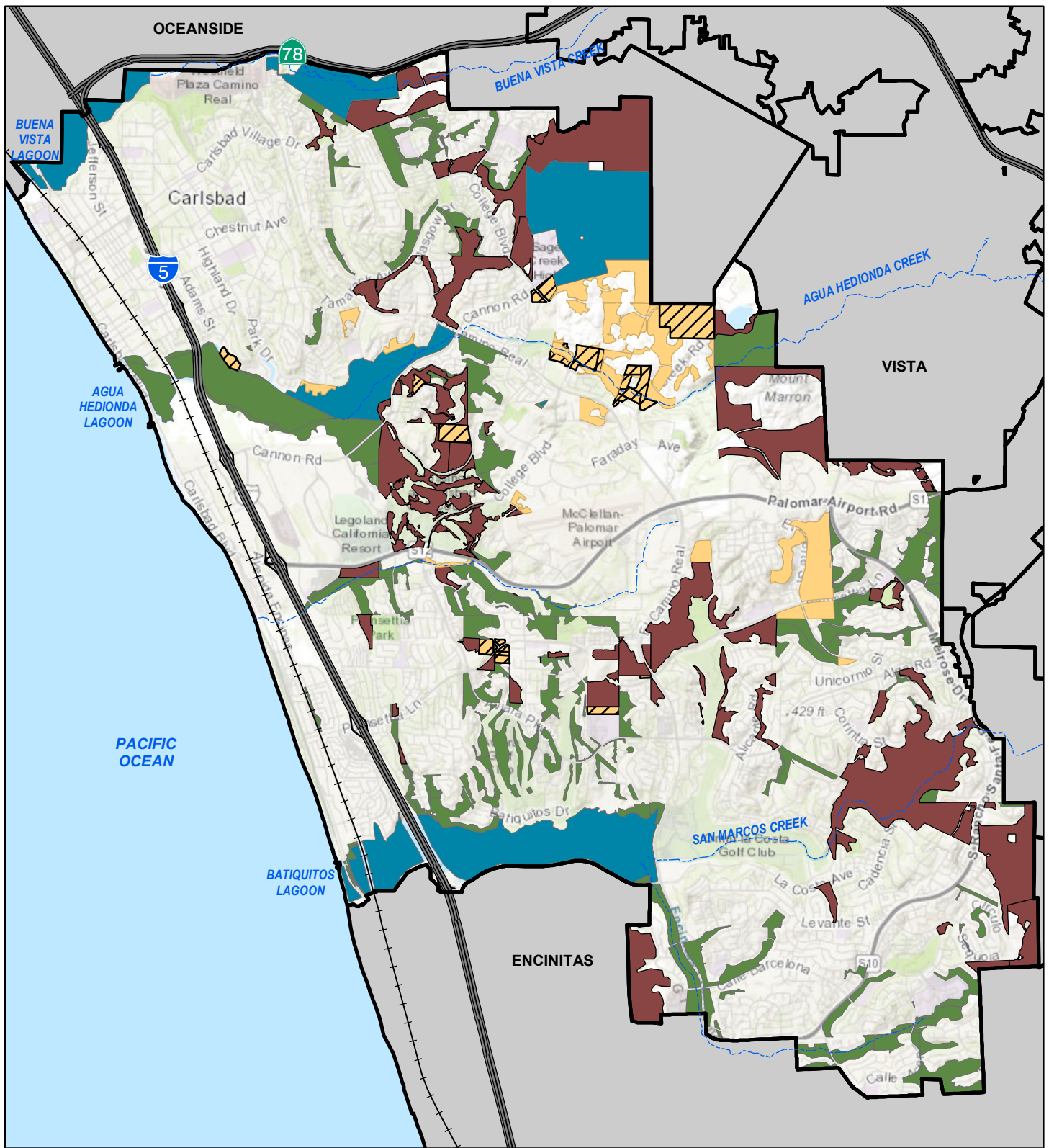
Lands within the HMP preserve system can be grouped into four categories: (1) established private and city-owned Hardline Preserves; (2) CDFW Ecological Reserves; (3) pre-existing natural open space preserves; and (4) future preserves (Proposed Hardline Preserves and Standards Areas). These categories of preserve lands are distinguished by the level of management, ownership, and/or status as described below and shown in Figure 1.

#### Established Private and City-Owned Hardline Preserves

These Hardline Preserves were established during or after the adoption of the HMP. They have approved Preserve Management Plans implemented by preserve managers and are funded through non-wasting endowments or, in the case of the city-owned preserves, through annual budget appropriations. The city requires annual reports for all of these preserves. The underlying property owners for these preserves are a preserve management entity, home owners' association (HOA), or the city. Except for the city-owned properties, all of these Hardline Preserves are protected by a recorded conservation easement. Examples of these preserves include Rancho La Costa, Carlsbad Oaks North, Lake Calavera and the Crossings Golf Course, among others.

#### California Department of Fish and Wildlife Ecological Reserves

These Hardline Preserves were established prior to or subsequent to the adoption of the HMP and are all owned by the State of California. According to the HMP IA, the level of management and monitoring of the CDFW preserves is based upon the available state funding and resources. Except for the Buena Vista Creek Ecological Reserve, there are currently no finalized long-term management plans for the CDFW Ecological Reserves in Carlsbad. Management is guided by draft plans, which have not been submitted to the city. CDFW obtains State Wildlife Grant funding annually for management and monitoring activities on CDFW's preserves. Management accounts have been established for Carlsbad Highlands Ecological Reserve and Agua Hedionda Lagoon Ecological Reserve. The Batiquitos Lagoon Ecological Reserve is managed and monitored by CDFW and funded through a mitigation account established by the Port of Los Angeles and held by CDFW. The Buena Vista Creek Ecological Reserve is managed by CNLM, a non-profit management entity, through a contract and funded by a non-wasting endowment held by CNLM. The city receives some CDFW monitoring data for the lagoon preserves and a CNLM-prepared annual report for the Buena Vista Creek Ecological Reserve.



**Legend**

- Established Private and City-owned Preserve
- California Department of Fish and Wildlife Ecological Reserve
- Pre-existing Natural Open Space Preserve
- Future Preserve Proposed Hardline
- Future Preserve Standards Area



### Pre-Existing Natural Open Space Preserves

These Hardline Preserves predated the adoption of the HMP and are composed of natural open space areas within subdivisions or master plan communities (owned by the respective HOA), the University of California's Dawson-Los Monos Reserve, and areas owned by Cabrillo Power, San Diego Gas and Electric (SDG&E), and the San Dieguito Union High School District. The lands were included in the HMP because of their biological resources and ecological value. There are no Preserve Management Plans or active management and monitoring associated with these preserves, and maintenance of the property is the responsibility of the property owner. Generally, management consists of trash pickup and fence maintenance. The HMP envisioned that future management and monitoring of these lands would be financed through a regional funding source. All of the preserves owned by HOAs are protected by an Open Space Easement. The Dawson-Los Monos Reserve is owned by the Regents of University of California and has no open space or conservation easement protection. Examples of the HOA-owned preserves include Calavera Hills Phase I, Aviara, and Arroyo La Costa.

### Future Preserves (Proposed Hardline Preserves and Standards Areas)

These preserves are identified in the HMP and are associated with developable lands but have yet to begin management and monitoring. As a condition of approval for any development on the property, the developer is obligated to establish the preserve by gaining approval of a Preserve Management Plan, contracting with a management entity, depositing a non-wasting endowment or other secure financing mechanism, and recording a conservation easement. An Equivalency Finding, approved by the city and Wildlife Agencies, is required for any alterations to the Proposed Hardline Preserve boundary, and the final preserve design for Standards Areas must be approved by the city and Wildlife Agencies through a Consistency Finding. Examples of these future preserves include Mandana and Kato.

#### **1.3.2 Lake Calavera Mitigation Parcel**

The city-owned Lake Calavera Mitigation Parcel, also known as the Lake Calavera Preserve, provides mitigation as needed for upland habitat impacts related to city construction projects. 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, and maritime succulent scrub. No credits can be sold to outside entities.

There is a discrepancy between the acreage of available credit shown in the HMP (Section D.3.B) and IA (Section 10.7), with the former indicating 266.1 available acres and the latter showing 206.1 available acres. For the first 5 years of HMP implementation, from 2004 to 2009, the Wildlife Agencies and city used the 266.1-acre credit amount contained in the HMP. In reporting year 6 (November 2009 to October 2010), the city revised the initial credit amount to 256.0 acres to reflect the actual calculated acreage of the Lake Calavera property based on updated mapping.

The Wildlife Agencies and city have since agreed to use the more conservative amount of 206.1 acres stated in the IA.

In addition to the use of the Lake Calavera Mitigation Parcel for upland mitigation credits, the city also uses the property for mitigation through active habitat creation, restoration, and/or enhancement of disturbed areas within the preserve, in coordination with the Wildlife Agencies (Figure 2). Once an area has been mapped and identified as mitigation for a city project, it is no longer eligible for future mitigation credits, and the acreage of the mitigation site is debited from the available balance. During the reporting period, there were no debits. Cumulative debits and adjustments for wetland mitigation sites to date are 94.9 acres, leaving a total of 111.2 acres (credits) remaining (see Table 1).

**Table 1. Mitigation Acreage at Lake Calavera Mitigation Parcel RY 14 (2017–2018)**

<b>Credits and Debits</b>	<b>Acres<sup>1</sup></b>
<b><i>INITIAL CREDITS</i></b>	<b><i>206.1</i></b>
Total acres available as of November 1, 2017	<b>111.2</b>
Year 14 Deductions (Nov. 2017–Oct. 2018)	0.0
Total acres available as of October 31, 2018	<b>111.2</b>

<sup>1</sup> Rounded to the nearest tenth of an acre.

### **1.3.3 Gnatcatcher Core Area Preservation Obligation Acreage**

As of the final approval of the HMP in 2004, 214.52 acres of the 307.67-acre Gnatcatcher Core Area preservation obligation had been met through project-related mitigation in the Core Area and additional onsite restoration within the HMP Plan Area. The remaining obligation consisted of acquisition of 43.02 acres of occupied coastal sage scrub habitat and reimbursement for 50.13 acres of land that was acquired by a private developer in anticipation of the HMP Core Area requirements. The history of the Gnatcatcher Core Area, including how the previous obligations were met, is detailed in earlier annual reports.

No Core Area credits were added during the reporting period. To date, the city has conserved 294.67 acres of the 307.67-acre Gnatcatcher Core Area conservation requirement and continued to explore opportunities to conserve the remaining 12.93 acres during the reporting period. Table 2 shows the current status of Core Area conservation credits.

**Table 2. Status of Carlsbad HMP Gnatcatcher Core Area Obligation through RY 14 (2017–2018)**

<b>Core Area Components</b>	<b>Component Acreage</b>	<b>Total Acreage</b>
<b>TOTAL CORE AREA CONSERVATION REQUIREMENT</b>	<b>Current</b>	<b>307.6</b>
1. Acquisition by the City	0.00	80.2
2. Project-Related Mitigation	0.00	150.3
3. Onsite Conservation Restoration Credits	0.00	64.2
<b>Total Core Area Conservation</b>		<b>294.7</b>
<b>REMAINING CORE AREA CONSERVATION REQUIREMENT</b>		<b>12.9</b>

### **1.3.4 In-Lieu Mitigation Fee Program**

Under certain circumstances, project impacts to non-sensitive upland habitats that occur outside of the HMP preserve may be mitigated through a fee rather than onsite or offsite conservation. These funds can only be used to offset the cost of Gnatcatcher Core Area conservation. A total of \$98,686.89 of in-lieu mitigation fees was collected during the reporting period, and nothing was expended during the reporting period. A detailed accounting of the in-lieu mitigation fees and expenditures is given in Section 3.1.2.

## **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: (1) the HMP preserve is being assembled as anticipated; (2) the habitat conservation goals of the HMP are being achieved; and (3) habitat conserved is in rough step with development. Habittrak is a GIS database 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**

Habittrak, a CDFW-maintained database, 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 that is outside of the city limits). Some of the habitat types used in the standard Habittrak table outputs are more specific than those used in HMP Table 8. To make it easier to compare the Habittrak tables with the HMP table for compliance monitoring, Table 3 below lists acres of target

conservation and compares habitat categories in HMP Table 8 to categories used in Habittrak. Note that the GIS data layers used for this analysis included the more detailed habitat categories.

**Table 3. HMP Target Conservation of Habitats  
(Comparison of Habitat Categories in HMP and Habittrak)**

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

<sup>1</sup> Rounded to the nearest acre.

<sup>2</sup> Note that the target acreage includes 100 percent of all Standards Area parcels. However, a portion of these parcels are expected to be developed; therefore, the final total will be slightly less than the target value.



## 1.4.2 Land Acquisitions

There were no land acquisitions inside of the HMP planning area during the reporting period.

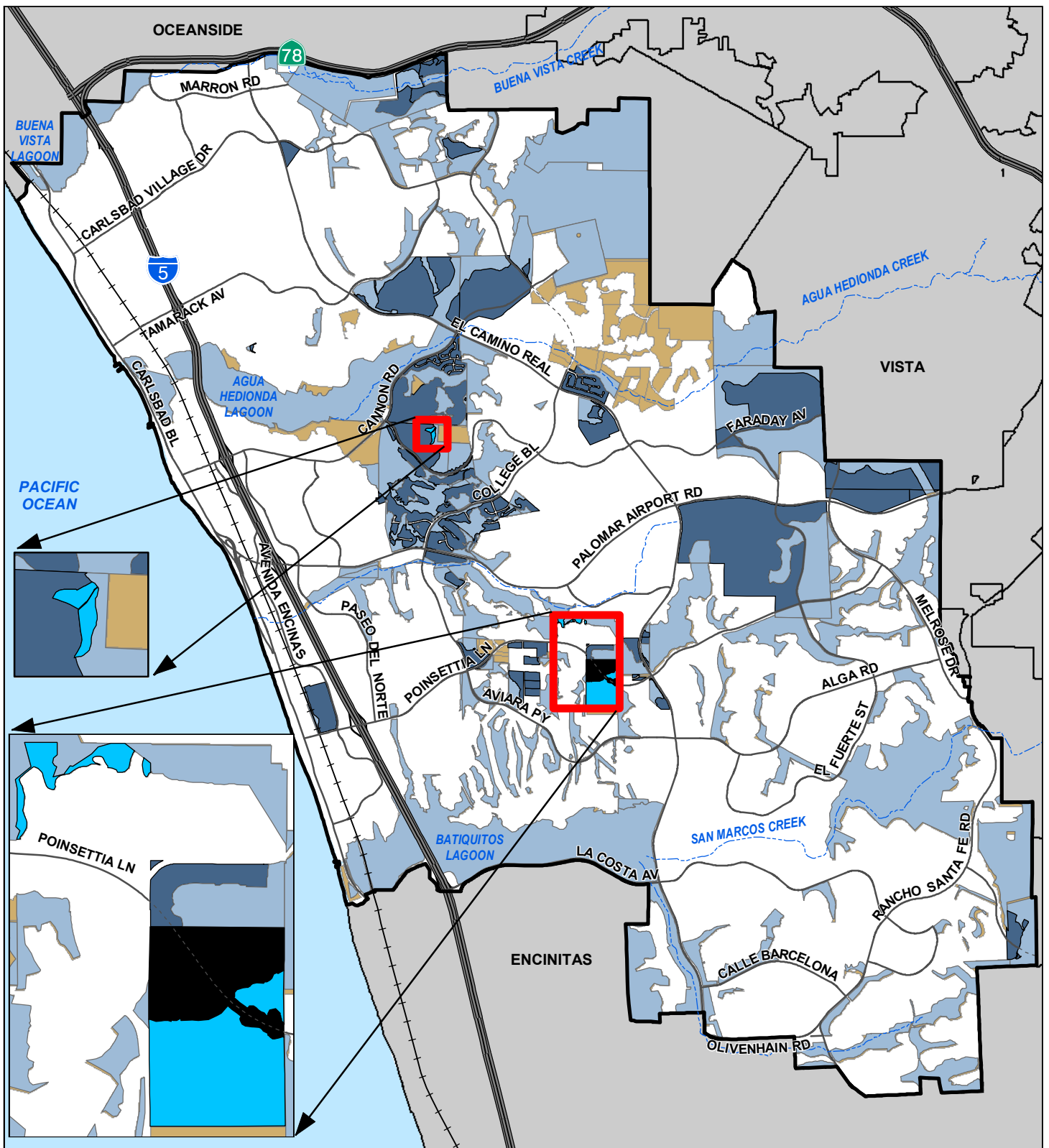
## 1.4.3 Habitat Gains and Losses

During RY 14 (2017–2018) a total of 43.8 acres of habitat was gained and 26.3 acres were lost. This gain/loss occurred on July 25, 2018, and was associated with the Poinsettia 61 project, which consists of a residential development and completion of a missing segment of Poinsettia Lane west of El Camino Real. Project impacts and onsite mitigation were approved on Standards Area properties identified in the HMP as Maldonado, Namikas, Sudduth, and Kevane. Additional offsite mitigation was approved by the city on city-owned properties Aviara Park and Veteran’s Park to offset impacts from Poinsettia Lane. The offsite mitigation consisted of restoration and preservation of southern maritime chaparral and coastal sage scrub.

The project resulted in a net increase of 6.0 acres to the HMP preserve by adding offsite mitigation areas that were not previously targeted for the HMP. A portion of this (3.1 acres of land on Veteran’s Park) was developable parkland that was converted to HMP. The loss of this parkland will be offset through the conversion of the old Buena Vista Reservoir site into a new passive park. Habitat gains and losses to date are shown in Figure 2, and the current condition of the HMP preserve system is shown in Figure 3.

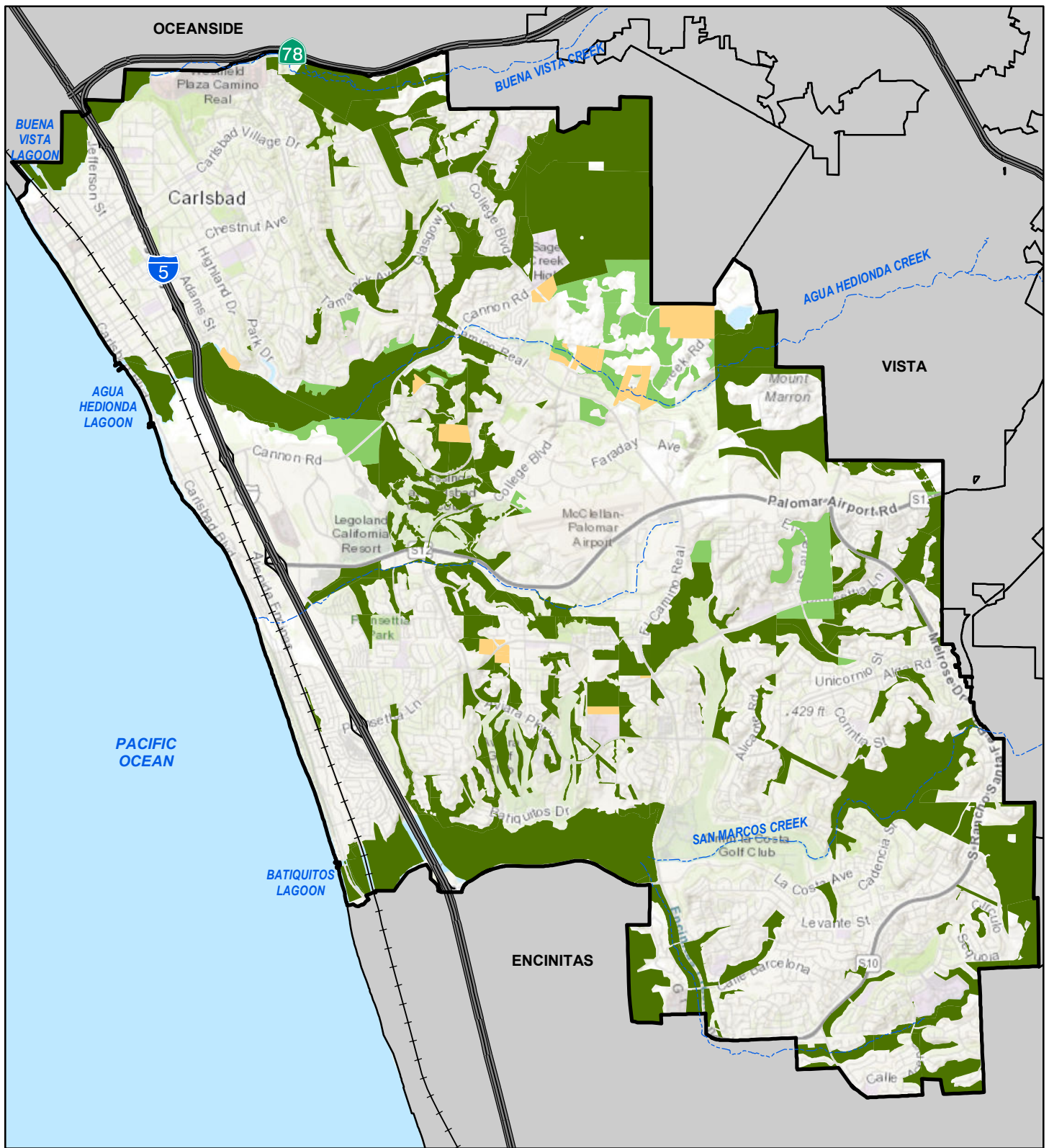
## 1.4.4 Rough Step Preserve Assembly

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 percent of habitat losses (Christine Beck, CDFW, pers. comm. 2007). This policy was developed for NCCP plans to ensure that development does not greatly outpace land preservation. To date, 6,187 acres have been gained and 1,567 acres have been lost in Carlsbad since inception of the HMP. 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 an agreement with an approved preserve manager. Some projects that were approved prior to final HMP approval were issued grading permits before all these elements were put in place. The city continues to work toward ensuring permanent management for these properties. Habitat impacted *outside* of the HMP focused planning area is mitigated



- |   |  |
|---|--|
|  Habitat Gains Prior to Year 14   |  Habitat Gains for Year 14  |
|  Habitat Losses Prior to Year 14  |  Habitat Losses for Year 14 |
|  HMP Area with No Gains or Losses |  |





**Legend**

- Existing Hardline
- Proposed Hardline
- Standards Area



through an in-lieu mitigation fee, except for impacts that occur within the Coastal Zone (see Coastal Zone Standards, HMP pages D114-D121).

## **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 are 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 Amendments**

Amendments processed during the reporting period are described below. See HMP Section E-3 and IA Section 20.1 for a description of Minor Amendment types and the HMP amendment process.

1. **Consistency Finding.** No Consistency Findings were processed during the reporting period.
2. **Equivalency Finding.** No Equivalency Findings were processed during the reporting period.
3. **Other Minor Amendments (pursuant to Section 20.1 of the IA).** No other minor amendments were processed during the reporting period.

### **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 4 through 6. 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.

### **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 8). 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 is consistent with the HMP.

Upon commencement of the HMP, there was a total of 189.3 acres of coastal sage scrub within Standards Areas throughout the HMP. Zone-wide standards require at least 67 percent (126.8 acres) of the coastal sage scrub to be conserved. To date, 83.7 acres have been conserved (44.2 percent) and 27.9 acres have been lost (14.7 percent). Therefore, the city must conserve at least 43.1 more acres of the remaining 77.7 acres of coastal sage scrub within the Standards Areas. Table 7 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 4. Summary of City Compliance with HMP Implementing Agreement Requirements through RY 14 (2017–2018)**

IA Section <sup>1</sup>	Obligation	City Compliance
10.10	<p><b>Duty to Enforce:</b> To enforce the terms of the Take Authorization, HMP, and IA and ensure HMP lands are conserved in perpetuity.</p>	<ul style="list-style-type: none"> <li>▪ 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.</li> <li>▪ On March 14, 2006, the city passed the Habitat Preservation and Management Requirements Ordinance (Carlsbad Municipal Code Section 21.210), which includes a section on enforcement (Section 21.210.19) for violations of the HMP.</li> <li>▪ The city council approved the permanent continuation of the ranger program in December 5, 2017, which includes two full-time rangers patrol preserves, lagoons, beaches, and parks and they have the authority to issue citations for any violations to posted regulations. Complaints made by citizens regarding possible violations of the HMP within preserves are investigated on a case-by-case basis.</li> </ul>
11.1	<p><b>Preserve System:</b> To ensure the establishment and management in perpetuity of a 6,757-acre preserve system.</p>	<ul style="list-style-type: none"> <li>▪ The city has currently gained 6,187 acres of habitat within the HMP planning area and 294.67 acres of habitat within the MHCP Gnatcatcher Core Area (96% of the overall target acreage).</li> </ul>
11.2	<p><b>Project Mitigation Measures:</b> To require additional mitigation measures to mitigate impacts to covered species in all future development projects.</p>	<ul style="list-style-type: none"> <li>▪ 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.</li> </ul>
11.3	<p><b>Regulatory Implementation:</b></p> <ul style="list-style-type: none"> <li>A. Urgency Ordinance – interim HMP enforcement</li> <li>B. Amend Open Space and Conservation Element of General Plan to incorporate HMP</li> <li>C. Amend Open Space Ordinance to incorporate Conserved Habitat Areas</li> <li>D. Amend Municipal Code to incorporate Standards Area compliance</li> <li>E. Amend General Plan to identify HMP as priority use for open space lands</li> <li>F. Wetlands Protection Program</li> </ul>	<ul style="list-style-type: none"> <li>A. The Emergency Ordinance was approved by the City Council in November 9, 2004.</li> <li>B. Revisions to the policy statements regarding the HMP were approved by the City Council in July 2005.</li> <li>C. Revisions were made to Carlsbad Municipal Code Chapter 21.33 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.</li> <li>D. A new chapter (Section 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. The section was approved by the City Council in March 2006. The new chapter will be included in the implementation plan portion of the Local Coastal Program update, currently under way.</li> <li>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). This revision was approved by the City Council in July 2005, and carried through into the updated General Plan (2015).</li> <li>F. New subsections (Section 21.210.040 D.5 and Section 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). These new subsections were approved by the City Council in March 2006. The sections will be included in the implementation plan portion of the Local Coastal Program update, currently under way. Compliance is enforced on a project-by-project basis during environmental review and in conjunction with other wetland permitting agencies such as the Coastal Commission, CDFW, and USACE.</li> </ul>

IA Section	Obligation	City Compliance
11.4	<b>Additional Implementation Measures:</b> To implement measures included in MHCP.	<ul style="list-style-type: none"> <li>▪ The MHCP, HMP, and Open Space Management Plan (OSMP) conservation measures are currently being implemented during the approval process for all development projects and preserve management activities.</li> </ul>
11.5	<b>Regional Conservation:</b> 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.	<ul style="list-style-type: none"> <li>▪ The city has met 294.67 acres of its coastal sage scrub conservation obligation through acquisition (80.22 acres), project mitigation (150.26 acres), and habitat enhancement credit (64.19 acres).</li> <li>▪ The city reimbursed Lennar (developer) for the 50.13 acres that were purchased up-front (see above) on April 26, 2011.</li> <li>▪ The city entered into an agreement on July 26, 2011, with the Wildlife Agencies and Conservation Fund to acquire 30.09 acres of conservation credit over 4 years. The city made the final payment on October 22, 2014.</li> <li>▪ The Core Area properties are protected under a conservation easement, and are being monitored and managed by the CNLM.</li> </ul>
11.6	<b>Cooperative Regional Implementation:</b> To participate in MHCP Elected Officials Committee.	<ul style="list-style-type: none"> <li>▪ To date, the city 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.</li> </ul>
12.1 12.2 12.4 12.5	<b>Monitoring and Reporting:</b> 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; to provide the Wildlife Agencies with additional reports if necessary for compliance monitoring; and to certify all reports.	<ul style="list-style-type: none"> <li>▪ Habitat gains and losses are being tracked through Habittrak. Rough step preserve assembly is built into the city's permitting process.</li> <li>▪ Currently, the city is working with the Preserve Steward, preserve managers, city GIS staff, and SDMMMP to determine the best approach to collect and manage monitoring data.</li> <li>▪ 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.</li> <li>▪ Annual public HMP workshops are held every year to give participants an opportunity to learn about current HMP preserve assembly, management, and monitoring, and to ask questions and provide comments.</li> <li>▪ Annual HMP status reports are submitted to Wildlife Agencies each year. The public also has an opportunity to view these reports prior to the annual meeting and provide comments.</li> </ul>
12.3	<b>Preserve Management and Monitoring Plan:</b> To prepare a preserve management and monitoring plan that will detail recommendations in HMP Section F.	<ul style="list-style-type: none"> <li>▪ The 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.</li> </ul>

IA Section	Obligation	City Compliance
13.0	<p><b>Adaptive Management:</b> 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.</p>	<ul style="list-style-type: none"> <li>▪ 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 and annual reporting.</li> <li>▪ The city is coordinating with the regional adaptive management and monitoring efforts through the San Diego Management and Monitoring Program.</li> <li>▪ The city has developed Guidelines for Preserve Management (TAIC 2009), which include monitoring and management priorities and a monitoring report checklist (Appendix C).</li> </ul>
14.0	<p><b>Funding:</b></p> <p>14.1 MCHP Core Area Participation</p> <p>14.2 Preserve Management and Monitoring Plan</p> <p>14.3 Management of city-owned public lands</p> <p>14.4 Management of private lands in HMP area</p> <p>14.5 Management of Existing Hardline areas</p> <p>14.6 Program Administration</p> <p>14.7 Habitat In-Lieu Mitigation Fees</p>	<p>14.1 The city has met 294.67 acres of its 307.6-acre coastal sage scrub conservation obligation. The city must cause conservation of an additional 12.93 acres; this obligation will be funded through <i>in-lieu</i> mitigation fees.</p> <p>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 CDFW.</p> <p>14.3 City-owned preserves are currently being actively managed and monitored by CNLM.</p> <p>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.</p> <p>14.5 Hardline preserves in existence before final HMP approval are owned and managed by several other entities, including the CDFW, private HOAs, University of California, SDG&amp;E, Cabrillo Power, and San Dieguito Union High School District.</p> <p>14.6 The HMP program is overseen by Rosanne Humphrey (City of Carlsbad Environmental Management Division). In addition, the city has contracted with Environmental Science Associates to serve as the city’s Preserve Steward, who coordinates management throughout the HMP Preserve and monitors HMP compliance and management effectiveness.</p> <p>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.</p>

<sup>1</sup> IA – Implementing Agreement



**Table 5. Summary of City Compliance with Terms and Conditions  
of CDFW Permit through RY 14 (2017–2018)**

CDFW NCCP Permit Terms and Conditions (T&C)	Description of City Compliance
<p>Section 6.1 Conditions A through F are the same as those stated in A through F of the Implementing Agreement (IA), Section 11.3 (See Table 12). They are summarized below.</p> <p>A. Urgency Ordinance – interim HMP enforcement.</p> <p>B. Amend Open Space and Conservation Element of General Plan to incorporate HMP.</p> <p>C. Amend Open Space Ordinance to incorporate Conserved Habitat Areas.</p> <p>D. Amend Municipal Code to incorporate Standards Area compliance.</p> <p>E. Amend General Plan to identify HMP as priority use for open space lands.</p> <p>F. Wetlands Protection Program.</p>	See Table 5, IA Section 11.3.
<p>G. This permit is subject to compliance with the MHCP Volumes I–III, HMP, including Addenda 1 and 2, and the IA.</p>	All project approvals within the city are subject to these requirements as a condition of approval.
<p>H. Coverage for thread-leaved brodiaea (<i>Brodiaea filifolia</i>) and approval of the Fox-Miller Project. The conditions are as described in the USFWS 10(a) Permit Condition 7 (Table 12).</p>	See Table 7, USFWS 10(a) Permit Condition 7 for a description of compliance.
<p>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.</p> <p>MHCP Volume II includes the following policies and conditions:</p> <ul style="list-style-type: none"> <li>• Standard Best Management Practices (Appendix B)</li> <li>• General Outline for Revegetation Plans (Appendix C)</li> <li>• Narrow Endemic Species and Critical Population Policies (Appendix D)</li> <li>• Conditions for Estuarine Species (Appendix E)</li> <li>• CEQA requirements for quantifying and mitigating impacts</li> </ul>	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 city's Guidelines for Biological Studies.

**Table 6. Summary of City Compliance with the Terms and Conditions  
of USFWS Permit through RY 14 (2017–2018)**

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>1. All sections of Title 50 Code of Federal Regulations (CFR) 13, 17.22, and 17.32 are conditions of this permit.</p>	Appropriate language has been integrated into the HMP and IA; therefore, compliance with these documents ensures compliance with Title 50 CFR sections.
<p>2. The permittee is subject to compliance with the MHCP, HMP, and IA.</p>	The city complies with all regulations as described in Tables 5 and 6.
<p>3. The amount and form of take are authorized as described below. Referenced tables are from Attachment 2 of the T&amp;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.</p>	See next page.

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>3. <i>continued</i></p> <p><u>Table 1. (a) No take authorized for the following species:</u></p> <p><i>Chorizanthe orcuttiana</i> – Orcutt’s spineflower  <i>Dudleya blochmaniae</i> ssp. <i>blochmaniae</i> – Blochman’s dudleya  <i>Euphorbia misera</i> – Cliff spurge  <i>Hazardia orcuttii</i> – Orcutt’s hazardia  <i>Quercus dumosa</i> – Nuttall’s scrub oak  <i>Pelecanus occidentalis californicus</i> – California brown pelican  <i>Falco peregrinus</i> – American peregrine falcon  <i>Rallus longirostris levipes</i> – Light-footed Ridgway’s rail  <i>Sterna antillarum browni</i> – California least tern  <i>Charadrius alexandrinus nivosus</i> – Western snowy plover  <i>Sterna elegans</i> – Elegant tern</p> <p><u>Table 1. (b) Take authorization is or will be (upon listing) granted for:</u></p> <p><b>Listed species:</b>  <i>Empidonax traillii extimus</i> – Southwestern willow flycatcher  <i>Vireo bellii pusillus</i> – Least Bell’s vireo  <i>Polioptila californica californica</i> – Coastal California gnatcatcher</p> <p><b>Not yet listed:</b>  <i>Panoquina errans</i> – Salt marsh skipper  <i>Euphyes vestris harbisoni</i> – Harbison’s dun skipper  <i>Plegadis chihi</i> – White-faced ibis  <i>Accipiter cooperii</i> – Cooper’s hawk  <i>Pandion haliaetus</i> – Osprey  <i>Icteria virens</i> – Yellow-breasted chat  <i>Aimophila ruficeps canescens</i> – So. California rufous-crowned sparrow  <i>Passerculus sandwichensis beldingi</i> – Belding’s savannah sparrow  <i>P.s. rostratus</i> – Large-billed savannah sparrow  <i>Aspodoscelis hyperythrus beldingi</i> – Orange-throated whiptail</p> <p><u>Table 2. Take authorization contingent upon other MHCP subarea plans being permitted for the following species:</u></p> <p><i>Acanthomintha ilicifolia</i> – San Diego thornmint  <i>Ambrosia pumila</i> – San Diego ambrosia  <i>Ceanothus verrucosus</i> – Wart-stemmed ceanothus  <i>Dudleya viscida</i> – Sticky dudleya  <i>Ferocactus viridescens</i> – San Diego barrel cactus  <i>Quercus engelmannii</i> – Engelmann oak</p> <p><u>Table 3. (a) Take authorization contingent upon adequate funding and legal access to manage and monitor the following species:</u></p> <p><i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i> – Del Mar manzanita  <i>Baccharis vanessae</i> – Encinitas baccharis  <i>Brodiaea filifolia</i> – Thread-leaved brodiaea  <i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i> – Summer-holly  <i>Corethrogyne filaginifolia</i> var. <i>linifolia</i> – Del Mar sand aster  <i>Pinus torreyana</i> ssp. <i>torreyana</i> – Torrey pine</p>	<p><u>Table 1 (a).</u> No take of these species has been authorized by the city.</p> <p><u>Table 1 (b).</u> The city issued an incidental take permit for the coastal California gnatcatcher on July 19, 2018, in association with the Poinsettia 61 Project.</p> <p><u>Table 2.</u> No other MHCP subarea plans have been permitted, and thus take authorization for these species has not been granted by the city.</p> <p><u>Table 3 (a).</u> 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.</p>

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>Table 3. (b) Take is contingent upon (a), described above, <i>and</i> the city receiving <u>legal control over</u> the vernal pools adjacent to the Poinsettia Train Station.</p> <p><i>Eryngium aristulatum</i> var. <i>parishii</i> – San Diego button-celery  <i>Myosurus minimus</i> ssp. <i>apus</i> – Little mouse-tail  <i>Navarretia fossalis</i> – Spreading navarretia  <i>Orcuttia californica</i> – California Orcutt grass  <i>Streptocephalus woottoni</i> – Riverside fairy shrimp  <i>Branchinecta sandiegonensis</i> – San Diego fairy shrimp</p> <p>Table 3. (b) Take is contingent upon (a) and (b), described above, and upon <u>other</u> MHCP subarea plans being permitted.</p> <p><i>Iva hayesiana</i> – San Diego marsh-elder</p>	<p>Table 3 (b). The city received legal control over the vernal pools by accepting the Coastal Commission’s Irrevocable Offer to Dedicate a Conservation Easement in 2015. Take for vernal pool species has not been requested.</p> <p>No other take authorizations have been requested.</p>
<p>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.</p> <p><i>Sterna antillarum browni</i> – California least tern  <i>Empidonax traillii extimus</i> – Southwestern willow flycatcher  <i>Vireo bellii pusillus</i> – Least Bell’s vireo  <i>Passerculus sandwichensis beldingi</i> – Belding’s savannah sparrow</p>	<p>The Special Purpose Permit has been in effect during the current reporting period. No take of these species has been granted.</p>
<p>5. The Permittee shall not allow clearing and grubbing in known or potentially occupied California gnatcatcher habitat between February 15 and August 31.</p>	<p>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.</p>
<p>6. Specific standards (described in the T&amp;C) must be met if the city proceeds with any of the following plans:</p> <p>(a) Cannon Road Reach 4  (b) Extension of Melrose Drive through the Shelley Property  (c) Marron Road through Buena Vista Creek Ecological Reserve</p>	<p>None of these projects have been proposed at this time.</p>
<p>7. To receive coverage for thread-leaved brodiaea, the city must demonstrate that:</p> <p>(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.  (d) If all conditions are met, the Fox-Miller project can be permitted under the HMP through the HMP amendment process.</p>	<p>(a) The NE standards have been met.  (b) The boundary was expanded to meet MHCP standards.  (c) The Wildlife Agencies approved the Fox-Miller project. Mitigation requirements have not been completed. Interim management is conducted by Helix via annual contract with the landowner. Long-term management will be provided by SDHC upon mitigation signoff.  (d) Brodiaea coverage was granted by the Wildlife Agencies through a minor amendment December 2, 2005.</p>

**Table 6. Summary of City Compliance with Terms and Conditions of USFWS Permit through RY 14 (2017–2018) *continued***

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>8. To minimize impacts to the California gnatcatcher, rufous-crowned sparrow, and orange-throated whiptail, the city must:</p> <p>(a) Maintain and/or widen the habitat corridor between the city and Oceanside as much as feasible.</p> <p>(b) If the driving range adjacent to the Kelly/Bartman property is proposed for a different use, the city will ensure that an onsite corridor is established on the driving range property.</p>	<p>(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 CDFW in 2010.</p> <p>(b) No other uses for this property have been proposed at this time.</p>
<p>9. As part of the project review process, a qualified biologist shall survey for all species with immediate and conditional coverage.</p>	<p>The city has included this as a condition of approval for all new projects.</p>
<p>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.</p>	<p>The city regularly communicates with the USFWS on regulatory issues, and contacts the appropriate personnel immediately upon learning of any potential problems.</p>
<p>11. The city will notify the USFWS within one working day of finding any dead, injured, or sick threatened/endangered species.</p>	<p>No such individuals have been reported to or observed by the city.</p>
<p>12. All monitoring and reporting for this permit shall be in compliance with the MHCP (Vol. I and III) and the IA (Section 12).</p>	<p>See IA Section 12 discussion in Table 10 above for compliance information.</p>
<p>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.</p>	<p>A copy of this permit is on file with the city and is available to any interested parties.</p>

**Table 7. Compliance with Zone-Wide Standards through RY 14 (2017–2018)**

Zone	Zone-Specific Standard	Current Status
All Zones	<p>A minimum of 67% of coastal sage scrub and 75% of the gnatcatchers shall be conserved overall within the Standards Areas.</p>	<p>Baseline acres of coastal sage scrub habitat within Standards Areas: 189.3. Coastal sage scrub gains = 83.7 acres (44.2%). Coastal sage scrub loss = 27.9 acres (14.7%). An additional 43.1 acres must be conserved to meet 67% conservation in the Standards Areas (126.8 acres). 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.</p>
Zone 1	<p>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.</p>	<p>Vacant lots on the north shore of Agua Hedionda Lagoon: no projects have been finalized for these parcels. In-fill parcel (Aura Circle): property changed to a Proposed Hardline preserve during Coastal Commission processing of the HMP. A tentative map conserving the Proposed Hardline preserve was approved; however, no grading permit has been issued.</p>

<b>Zone</b>	<b>Zone-Specific Standard</b>	<b>Current Status</b>
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.	Kelly-Bartman property (Summit): Existing Hardline preserve approved with 50% conservation, including an open space corridor from the southeast to the northern site boundary. Spyglass property: has been developed and grassland impacts were mitigated at a 2:1 ratio through restoration at Carlsbad Highlands Mitigation Bank.
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: tentative map 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.	Robertson Ranch encompasses the entirety of Zone 14. Due to agricultural activities, very little coastal sage scrub existed in the southern portion of the zone. The Existing Hardline Preserve, as approved by the Wildlife Agencies in 2005, 2007, and 2012, preserves 70% of the coastal sage scrub throughout the zone.
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 and Rancho Milagro occur within Core Area 5 in the southern portion of Zone 15. No net loss of coastal sage scrub has occurred.
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, North Coast Calvary Chapel, and Muroya. All three 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.	Projects: Poinsettia Place, Manzanita Partners, and Poinsettia 61 Preserves provide east-west connectivity from El Camino Real to the Local Facilities Management Zone 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.

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## 2.0 Preserve Management and Monitoring

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The Wildlife Agencies have issued permits to jurisdictions and participating landowners for implementation of regional conservation plans throughout California, such as the HMP, which address the development, conservation, and land management activities of conserved lands. One of the primary commitments made by NCCP/HCP permittees is to maintain the long-term habitat value of the preserve system and its ability to support viable populations of covered species. Control of non-native invasive plant species is essential to maintain the long-term habitat value of the preserve system.

On December 5, 2017, Carlsbad’s City Council passed a resolution to adopt an update to the city’s Integrated Pest Management (IPM) Plan with a phased implementation on all *city-owned or operated* public properties (including open space preserves) and rights of way. As defined by the California Department of Pesticide Regulation, IPM is a science-based, decision-making process that combines biological, physical, and chemical tools in a way that achieves control objectives while minimizing economic, health, and environmental risk (NCC 2018a). The core strategy of the original IPM has always been to focus on the prevention and suppression of pests with the least impact on human health, the environment, and non-target organisms. In addition, all pesticide license holders in the state of California must go through extensive training to reduce impacts to the environment and deploy pesticides (including herbicides) in safe manner. The update to the IPM places a stronger emphasis on *documenting* the strategy of using the least toxic methods of weed control before moving on to more toxic methods.

Similar restrictions on the use of herbicides on regional conservation plan lands in Orange County prompted the Natural Communities Coalition (NCC) to develop a strategy that is consistent with local policies while enabling the permittees to meet their NCCP/HCP management obligations (NCC 2018a, 2018b). These Best Management Practices provide guidance to land managers when choosing the approach that represents the lowest risk but greatest effectiveness for each pest management project. These practices and protocols were developed based on the results of documented field trials and long-term land management experience in both the Orange County NCCP/HCP preserves and other wildlife areas.

Some of NCC’s key findings are as follows: (1) “Effective” invasive species control was identified by NCC as complete eradication. Even 80 percent control is an unacceptable level in most habitat areas, because this would still allow the continued spread of invasive species over time, resulting in habitat degradation, which is inconsistent with the requirements of the HCP/NCCP permit; (2) mechanical removal works well for shallow-rooted species; however, deep rooted species are much more difficult to control by mechanical means; (3) the disadvantage of using digging up the

root ball is that it tends to disturb the soil, which stimulates the germination of additional weeds that have been dormant in the seed bank; (4) small seedlings of certain species can be controlled with organic herbicides; however, larger seedlings and perennial species readily grow back because the organics only kill the above-ground biomass; (5) organic herbicides often require significantly higher concentrations than systemic herbicides (NCC used a 5–9 percent concentration of Suppress); and (6) both mechanical and organic herbicides require significantly more treatments, resulting in significantly higher costs. For example, many species must be treated every 4 to 6 weeks during the growing season for as many as 7 years. Prioritization and careful selection of methods based on site-specific conditions and species being treated is critical.

## **2.1 Preserve-Specific Management and Monitoring**

A variety of management and monitoring activities were conducted throughout the HMP preserve system during FY 14 (2017–2018), as summarized below. Figure 4 shows the land owner and/or management entity responsible for management of each preserve area. Appendix A provides a more detailed site-specific list of activities performed by the preserve managers as well as other groups, such as the Batiqitos Lagoon Foundation and Preserve Calavera, which also provide an important land stewardship service through public outreach, habitat restoration, fundraising, etc. The results of monitoring studies will be given in the next HMP Triennial Monitoring Report.

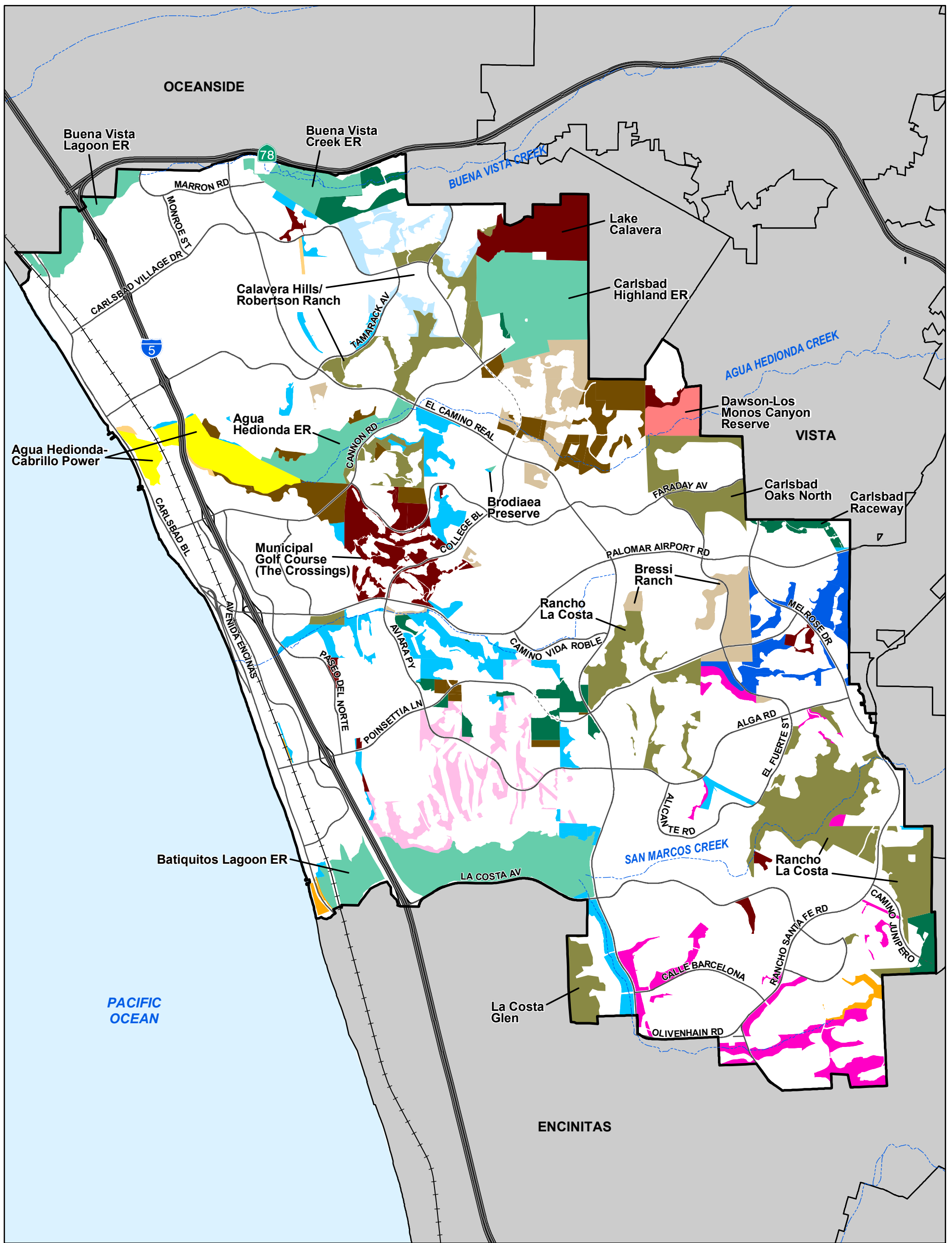
### **2.1.1 City-Owned Preserves**

All city-owned HMP preserves have been actively managed by CNLM since December 2008. The city preserves consist of 13 properties scattered throughout Carlsbad totaling 600.4 acres (Figure 4). 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/outreach, participation in volunteer events, and coordination with police and fire departments on enforcement issues. In addition, pursuant to the IPM update, CNLM has been testing a variety of invasive species control methods instead of non-organic chemicals, including mechanical methods and organic herbicides, to determine effectiveness against target weed species, level of toxicity, level of effort, and cost. So far, results of their field trials have been consistent with those of the NCC. In addition, use of Scythe, a fatty acid-based herbicide, caused nausea and significant skin irritation to the applicator at times during application. CNLM is now using Avenger, a citrus oil-based herbicide, which should eliminate these potential side effects.

### **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 preserves in this category are





**City of Carlsbad**

- City Preserves\*
  - Batiquitos Drive
  - Carlsbad Village Dr
  - Carrillo Ranch
  - Crossings Golf Course
  - Faraday
  - La Costa Canyon Park
  - La Costa/Romeria
  - Lagoon Lane
  - Lake Calavera
  - Los Monos
  - Macario Canyon
  - Poinsettia Park
  - Veteran's Park

**Other Public/Semi-Public**

- Cabrillo Power
- San Diego Gas & Electric
- Other Public Agencies
  - North County Transit District
  - San Dieguito Union School District
  - State of California

**Wildlife Agencies**

- California Department of Fish and Wildlife
  - Agua Hedionda ER
  - Buena Vista Creek ER
  - Carlsbad Highlands ER
  - Batiquitos Lagoon ER
  - Buena Vista Lagoon ER
  - Brodiaea Preserve

**Conservation Management Entity**

- Center for Natural Lands Management
  - Carlsbad Oaks North
  - Encinas Creek
  - La Costa Glen
  - Calavera Hills II/Robertson Ranch
  - Kelly Ranch
  - Rancho La Costa
- Other Management Entity
  - Habitat Restoration Sciences (HRS)
  - Helix Environmental
  - San Diego Habitat Conservancy
  - San Diego Urban Corps Habitat Services

**University of California Reserve System**

- Dawson-Los Monos Canyon Reserve

**Private**

- Aviara HOAs
  - Calavera Hills HOAs
  - La Costa HOAs
  - Rancho Carrillo Master HOA
  - Other HOAs and Private Open Space
- Other**
- Pending
  - Future Preserves
    - Undeveloped Standards Area
    - Other Future Preserve
- \* Managed by Center for Natural Lands Management (CNLM)



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managed by CNLM, CDFW, SDHC, UC, HRS, and Helix Environmental. 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. A more detailed account of these activities is available in the preserve-specific annual reports, which are available from the preserve managers upon request. During the reporting year, long-term management was initiated for one preserve. SDHC began managing the Laurel Tree Lane Preserve, which is located along Encinas Creek just north of Emerald Pointe.

### **2.1.3 Pre-Existing Natural Open Space Preserves**

Pre-existing natural open space preserves (i.e., areas that were already conserved at the time the HMP was approved) continue to 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 San Dieguito Union High School District. Pre-existing natural open space preserves are managed at a basic stewardship level, which generally consists of fence maintenance and trash removal.

## **2.2 Citywide Monitoring and Management**

### **2.2.1 Wildlife Movement**

During the reporting period, wildlife movement monitoring focused on camera stations at selected pinchpoints to inform adaptive management, incidental observation of mule deer (*Odocoileus hemionus fuliginatus*) sign, and collection of genetic material for a regional deer study. This work was conducted mostly by CNLM, but was also supplemented with work by other land managers and volunteers. The regional deer study was led by the U.S. Geological Survey and focused on movement of deer between Carlsbad and Escondido by analyzing DNA samples (fresh scat) to evaluate gene flow, deer movement, and habitat connectivity.

In addition, on August 30, 2018, the city initiated a pilot study, in coordination with Environmental Science Associates and two seasoned volunteers, to evaluate roadkill at a busy intersection (Cannon Drive and El Camino). This intersection is adjacent to the Agua Hedionda Ecological Reserve, Robertson Ranch Preserve, and undeveloped habitat along Agua Hedionda Creek and small tributary. Movement of coyotes, bobcats, raccoons, and other small to medium-sized mammals have been documented crossing under the bridges in this location. The purpose of the study is to determine whether any of these animals are also traveling over the road and getting hit by cars. The proposed duration of the study is 1 year.

### **2.2.2 Poinsettia Fire**

Long-term drought and extreme Santa Ana conditions helped pave the way for the Poinsettia Fire, which burned over 300 acres in Carlsbad in May 2014, most of which was within the HMP boundary. The city, Preserve Steward, and land managers have been working together over the last four years to monitor the recovery of native habitat within the burned areas of the preserve system using a protocol developed in 2014. A total of 26 transects were established within coastal sage scrub, southern maritime chaparral, southern mixed chaparral, vernal pools, and oak woodland to evaluate cover and density of native and non-native species. Land managers use this information to inform land management decisions. The final (fifth) year of monitoring will occur in the spring of 2019. A final report summarizing monitoring results will be included in next year's HMP annual report.

### **2.2.3 Shot Hole Borers**

The non-native polyphagous shot hole borer (*Euwallacia* sp.; PSHB) and Kurushio shot hole borer (*Euwallacia* sp.; KSHB) are relatively new invaders into southern California. First identified in ornamental and commercial avocado trees in 2003 (PSHB) and 2014 (KSHB), it was soon realized that the beetles were also killing numerous native tree species and decimating native riparian habitat (UCCE 2018). These species now occur throughout southern California and are spreading rapidly. Unlike most insect pests, which specialize on one or a small number of tree species, PSHB and KSHB have the ability to attack and kill hundreds of tree species, including the most common native riparian tree species. To feed their larvae, the beetles introduce a fungus (*Fusarium* sp.) into extensive galleys that they bore into trees. As a countermeasure to the spread of the fungus throughout the tissues of the tree, the tree shuts down flow through the xylem, which often results in branch dieback or the tree's death. The beetle/fungus complex can spread rapidly and decimate riparian habitat in as little as six months, depending on the site conditions. More often, it causes branch and tree dieback, with some trees surviving and/or resprouting.

The city has asked all land managers to regularly inspect their riparian habitat throughout the year and report any suspected infestations to the Eskalen Lab at the University of California. To date, the shot hole borer has been confirmed at The Crossings Preserve, Agua Hedionda Ecological Reserve, Robertson Ranch Preserve, Encinas Creek Preserve, and is suspected at Quarry Creek. Preserve managers coordinate closely with the city and wildlife agencies to determine the appropriate management strategy based on site conditions and the best available science. A significant amount of research is being done to determine the most effective methods for prevention, treatment, management, and monitoring. City staff and land managers regularly attend seminars and workshops to stay informed of the most recent findings.

#### 2.2.4 Gold-Spotted Oaks Borer

The gold-spotted oak borer (*Agrilus auroguttatus*; GSOB), first recognized as a significant pest in San Diego County in 2008, is an invasive beetle contributing to the ongoing oak tree mortality occurring throughout the county, sometimes devastating local oak populations (Coleman 2008). Isolated infestations have also been reported from Orange, Riverside, and Los Angeles Counties. Locally, the borer attacks coast live oak (*Quercus agrifolia*), California black oak (*Q. kelloggii*), canyon live oak (*Q. chrysolepsis*), and, on rare occasions, Engelmann oak (*Q. engelmannii*). GSOB larvae live and feed beneath the tree bark, damaging the xylem and phloem, which conduct water and nutrients within the tree (CISR 2014). GSOB also harms the cambium, which is responsible for radial growth of the tree. An infested tree is likely to die within three years.

This species has not yet been recorded in Carlsbad; however, early monitoring of oak trees by land managers throughout the city will help in efforts to monitor and manage the pest. Oak symptoms include crown thinning and dieback, bark staining on the main stem, bark injury from woodpecker foraging, and D-shaped emergence holes on the main stem and larger branches of the tree. These symptoms can mimic those of several other pests and diseases that affect oak trees, especially in stressful conditions such as long-term drought or after a fire.

#### 2.2.5 Newly Emerging Invasive Plant Species

Invasive plant species are one of the greatest threats to the preserve system. They can quickly spread out of control, choking out native plants and significantly degrading habitat quality for native wildlife. In general, the most problematic species are identified by the California Invasive Species Council as moderate or high risk. However, the city also targets species known by the scientific community to be locally invasive. The city works closely with the SDMMMP, weed scientists, and land managers to learn about newly emerging species, prioritization, and effective control methods. Two of the highest priority species in Carlsbad, described below, have been identified by SDMMMP as very high regional priority (CBI et al. 2012):

- Ward's weed (*Carrichtera annua*) – prioritized for eradication. Ward's weed is an annual herb in the mustard family that can produce 30,000 seeds per square meter (Dixon 2012). Seeds on dried-up plants or in the soil bank can remain viable for years and spread easily via wind or animal vectors (the seeds have bristly hairs that easily stick to feathers and fur). An accidental introduction of this species to Australia in the 1990s resulted in its spread throughout the southern and central portions of the country (Cooke et al. 2003). The only known populations in the United States are located on the Rancho La Costa and Bressi Ranch Preserves in Carlsbad and Camp Pendleton.
- Purple false brome (*Brachypodium distachyon*) – prioritized for directed management to protect narrow endemic plant populations. Purple false brome is an annual grass with very high seed production. This species forms dense mats that displace all or most other

species and may alter certain ecosystem processes. In Carlsbad, purple false brome threatens some populations of San Diego thornmint (*Acanthomintha ilicifolia*).

## **2.2.6 Climate Change**

Climate change is expected to put significant stress on the preserve system. By the end of the century, the average annual temperatures could increase by as much as 7 to 9 degrees F, resulting in more frequent, longer-lasting, and hotter heat waves; increased drought duration and intensity; and greater variability in precipitation, leading to less frequent but more intense storms, changes in timing of precipitation, less percolation, and more runoff, flooding, erosion and sedimentation (Jennings et al. 2018). Some species may not be able to tolerate these changes. Land managers are being asked to consider climate change when reevaluating their goals, objectives, and management methods and prioritization during the 5-year update of preserve-specific management plans. Piloting this effort is the Batiquitos Lagoon Resiliency Plan, which is currently being developed by the Batiquitos Lagoon Foundation, city, CDFW, and the Climate Science Alliance to research the potential effects of climate change on the lagoon and develop ways to prevent or mitigate harm to the species and habitats.

## **2.3 Other Citywide Activities**

### **2.3.1 Patrolling and Enforcement**

Enforcement within conserved open space involves a combination of education, deterrence, and punitive actions. The goal of enforcement is to reduce, prevent, or ideally eliminate human impacts to native flora and fauna, habitats, and ecological preserves from unauthorized human activities. There have been no reports of threatened or endangered plant populations being impacted or vernal pools being damaged by human activity. The majority of people accessing the preserves do so using authorized trails. However, serious impacts can occur with only a few individuals; therefore, frequent education and outreach, access control efforts, and patrolling are needed on an ongoing basis. Below is a summary of the reported enforcement activities on HMP preserves.

On May 15, 2018, the City Council voted to permanently continue the Police Department Ranger Program to provide enhanced security and protection of the city's trails, parks, and protected open space areas. Table 8 summarizes the type of contacts that were made by the rangers based on data available during the preparation of the HMP annual report.

**Table 8. Summary of City Ranger Contacts August–November 2018**

<b>Month</b>	<b>Educational</b>	<b>Verbal</b>	<b>Written</b>	<b>Citation</b>	<b>Crime</b>	<b>Other</b>	<b>Total</b>
Aug 2018	425	125	22	30	0	0	602
Sept 2018	247	32	8	9	0	3	299
Oct 2018	406	21	9	5	2	5	448
Nov 2018	245	49	5	1	0	4	304
<b>Total</b>	<b>1,323</b>	<b>227</b>	<b>44</b>	<b>45</b>	<b>2</b>	<b>12</b>	<b>1,653</b>

City rangers do not have citation authority on lands owned by CDFW. CDFW Law Enforcement promotes compliance with state laws and regulations on the ecological reserves in Carlsbad. A state *ecological reserve* is a specific type of conserved land that is established as part of a statewide program for protection of rare, threatened, or endangered species and habitats. Allowable visitor uses are subject to the California Code of Regulations (CCR) title 14, sections 550 and 550.5. Site-specific regulations are included in sections 630(a) and (b). Site-specific visitor use is determined by the Fish and Game Commission and must be compatible with the purposes of the property. Enforcement of CDFW lands is conducted by wardens who investigate habitat destruction, pollution incidents, and illegal commercialization of wildlife. Wardens also serve the public through general law enforcement, mutual aid, and homeland security. In the city, the land manager and CDFW enforcement officers conduct patrols of the Agua Hedionda Lagoon Ecological Reserve, Batiqitos Lagoon Ecological Reserve, Buena Vista Lagoon Ecological Reserve, Buena Vista Creek Ecological Reserve, and Carlsbad Highlands Ecological Reserve.

Actively managed preserves were patrolled by CNLM, SDHC, and UC on a weekly to quarterly basis. During patrols, land managers monitored trails, easements, and unauthorized access; cleaned up homeless encampments; maintained fencing and signage; repaired areas disturbed by unauthorized trails; interacted with the public and HOAs; and removed graffiti. Preserve-specific details are given in Appendix A. The city assisted with these efforts through the graffiti removal program, park rangers, Homeless Outreach Team, and Code Enforcement staff.

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## 3.0 Financial Summary

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### 3.1 City Funding in Support of HMP

The city uses funding to support implementation of the HMP in two ways: (1) permanent funding allocated specifically for HMP coordination and management of city lands, and (2) existing resources, including administrative staff and staff from the Environmental Management Division, Planning Division, Parks and Recreation Department, and Police Department.

#### 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: (1) oversight of the HMP Preserve and (2) direct, active management of 600.4 acres of preserve land owned by the city.

To fulfill the first responsibility, the city dedicates a senior-level coordinator and provides other administrative support for HMP coordination. The city also contracted with a biological consulting firm to serve as the city's Preserve Steward, coordinating management throughout the HMP preserve and monitoring HMP compliance and management effectiveness. This reporting period, the city provided \$95,000 in the annual budget to fund the contract 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. CNLM conducts regular biological monitoring and habitat management throughout the city's preserves, including maintenance fences and signage, closure of unauthorized trails, regular patrols, invasive species removal, and public outreach.

#### 3.1.2 In-Lieu Habitat Mitigation Fees

As described in Section 1.3.5, 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 unoccupied coastal sage scrub, coastal sage/chaparral mix, and chaparral (except southern maritime chaparral) (Group C); non-native grassland (Group E); and disturbed lands, eucalyptus, or agricultural lands (Group F).

The purpose of these fees is to fund the city's obligation to acquire, protect, and manage the Gnatcatcher Core Area. As noted in Section 1.3.3, the city conserved 30.1 acres of the Perkins Property between 2011 and 2014. The cost of this conservation exceeded the available In-Lieu Mitigation Fee funds, requiring an advance from the General Fund. In-lieu fees will continue to be

collected for habitat impacts, as appropriate, and will be used to reimburse the General Fund and to purchase the remaining required Core Area acreage.

As shown in Table 9, mitigation fees totaling \$98,686.89 were collected during the current reporting period. Note that the \$96,315.07 reported last year as being contributed by the city was an error (the funds should have gone to a different account). As of the end of the reporting period, the shortfall in the In-Lieu Mitigation Fee account was reduced to \$313,819.39.

**Table 9. In-Lieu Mitigation Fee Account Activity in RY 14 (2017–2018)**

Date	Description	Habitat Impacted	Total
<b>11/01/17</b>	<b>Beginning Fund Total</b>		<b>\$(316,191.21)</b>
<b>Fees Collected 11/01/17 – 10/31/18</b>			
11/1/2017	Polzin residence	0.15 ac. Group E; 0.2 Group F	\$3,095.60
11/16/2017	Highland	7.5 Group F	\$24,596.88
2/15/2018	Rancho Paradiso	0.06 Group F	\$191.70
2/27/2018	Sheridan Place residence	0.16 Group F	\$521.44
2/27/2018	Yada Farm	3.7 Group F	\$12,058.30
2/28/2018	Kirgis Tentative Map	0.84 Group F	\$2,737.56
4/11/2018	Poinsettia 61	15.71 Group F	\$51,198.89
7/11/2018	Viola residence	1.08 Group F	\$3,519.72
9/10/2018	Lot 213 La Costa Ave	0.24 Group F	\$766.80
<b>Total Fees Collected 11/01/17 – 10/31/18</b>			<b>\$98,686.89</b>
11/1/2017	error correction <sup>1</sup>	N/A	-\$96,315.07
<b>Funds Expended for Core Area Conservation 11/01/17 – 10/31/18</b>			
None			\$0.00
<b>Total Funds Expended 11/01/17 – 10/31/18</b>			<b>\$0.00</b>
<b>10/31/18</b>	<b>Account Balance</b>		<b>\$(313,819.39)<sup>2</sup></b>

<sup>1</sup> Erroneously entered into the HMP Fee account last year

<sup>2</sup> This balance does not reflect interest earned.

### 3.2 Status of Preserve Management Endowments

The endowment activity and status for preserves funded through endowments are given in Table 10. This includes all preserves managed by CNLM, SDHC, UC, and HRS. CDFW’s Carlsbad Highlands Ecological Reserve and Agua Hedionda Lagoon Ecological Reserve are funded through State Wildlife Grant funding. The Batiquitos Lagoon Ecological Reserve is funded through a mitigation account established by the Port of Los Angeles and held by CDFW.

**Table 10. Endowment Status for HMP Preserves in RY 14 (2017–2018)**

Preserve Name	Managing Entity <sup>1</sup>	Inception Date	Original Endowment	Inflation Adj. Original Endowment <sup>2</sup>	RY 17-18 Budget	RY 17-18 Expend.	Total Funds as of 10/31/18 <sup>3</sup>
Buena Vista Creek Ecological Reserve	CNLM <sup>3</sup>	April 2007	\$776,644	\$955,751	\$40,912	\$39,921	\$1,351,700
Calavera Hills II/Robertson Ranch	CNLM <sup>3</sup>	June 2006	\$1,834,813	\$2,292,514	\$97,196	\$96,918	\$3,375,185
Carlsbad Oaks North	CNLM <sup>3</sup>	March 2006	\$1,020,311	\$1,278,403	\$54,724	\$52,099	\$1,746,001
Carlsbad Raceway	SDHC <sup>5</sup>	April 2014	Annual payments	Annual payments	\$24,813	\$18,678	\$6,135
Cassia Professional Offices	CNLM <sup>3</sup>	January 2007	\$100,844	\$127,148	\$5,442	\$5,269	\$178,524
City-owned Preserves	CNLM <sup>3</sup>	2009	Annual contract	Annual contract	Not reported	\$164,000	N/A
City Ventures Preserve	UC	March 2013	\$378,757	\$411,482	\$17,472	\$17,472	\$414,485
Emerald Pointe	SDHC	August 2008	\$194,068	\$249,321	\$11,950	\$7,811	\$246,936
Encinas Creek	CNLM <sup>3</sup>	May 2007	\$427,004	\$504,958	\$21,615	\$22,124	\$754,719
Kelly Ranch	CNLM <sup>3</sup>	March 2002	\$296,125	\$438,272	\$16,676	\$16,401	\$617,026
La Costa Collection/City Ventures	UC	July 2005	\$378,756	\$490,183	\$17,471	\$17,471	\$439,405
La Costa Glen	CNLM <sup>3</sup>	January 2013	\$624,800	\$703,596	\$30,118	\$29,065	\$1,072,655
La Costa Villages	CNLM <sup>3</sup>	February 2002	\$1,364,400	\$2,004,984	\$91,745	\$92,468	\$2,499,958
Laurel Tree Lane Preserve	SDHC	December 2017	\$365,092	\$447,101	\$29,365	\$11,790	\$433,380
Manzanita Partners	HRS	October 2012	\$51,000	\$55,657	\$1,600	\$1,600	\$56,798
Morning Ridge	Dudek	April 2005	\$436,456	\$5,671,791	\$12,000	\$17,471	\$293,367
Muroya	SDHC	October 2015	\$314,867	\$341,808	\$15,325	\$15,070	\$357,551
Nelson	CNLM <sup>3</sup>	June 2001	\$72,180	\$99,879	\$4,750	\$4,386	\$126,514
New Crest Preserve	UC	May 2015	\$91,393	\$97,189	\$3,846	\$3,846	\$93,495
Paseo Del Norte	UC	August 2016	\$100,009	\$104,755	\$5,438	\$5,438	\$111,403
Poinsettia Place	UC	July 2011	\$167,935	\$187,977	\$7,501	\$7,501	\$178,253
Quarry Creek	SDHC	June 2015	\$806,496	\$860,512	\$35,647	\$25,963	\$838,772
Sage Creek	SDHC	April 2016	\$275,404	\$290,193	\$11,704	\$13,521	\$360,873
Southern	UC	November 2013	\$428,747	\$465,200	\$18,222	\$18,222	\$504,214
<b>Total 2017-2018</b>			<b>\$10,506,101</b>	<b>\$18,078,674</b>	<b>\$575,532</b>	<b>\$704,505</b>	<b>\$16,057,349</b>

<sup>1</sup> CNLM = Center for Natural Lands Management, SDHC = San Diego Habitat Conservancy, HRS = Habitat Restoration Sciences, UC = Urban Corps Habitat Services.

<sup>2</sup> Adjusted for inflation to the current dollar value as of 2018 based on Bureau of Labor Statistics Consumer Price Index.

<sup>3</sup> Note that for properties managed by CNLM and UC, the values of Total Funds are calculated as of 09/30/18 rather than 10/31/18 because that is the end of their fiscal year.

<sup>4</sup> This total does not include the unreported information.

<sup>5</sup> This preserve is funded through annual allocations from the HOA rather than an endowment. Inception date refers to when long-term management began. Funding increases annually to account for inflation.

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# **Appendix A**

## **Summary of Management and Monitoring Activities within HMP Management Units**

**November 1, 2017 - October 31, 2018**

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## Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018

Preserve Area	Management Entity	Management and Monitoring Activities
<b>Agua Hedionda Lagoon area</b>	<b>Agua Hedionda Lagoon Foundation</b>	<ul style="list-style-type: none"> <li>▪ Continued Environmental Stewardship School field trips for all of the Carlsbad Unified School District, and many other north county elementary schools</li> <li>▪ Organized free public education events including: Sea Creatures of the Night, Native American Gathering Night, and Astronomy Night</li> <li>▪ Used a student-created bio survey application for community monitoring of flora/fauna species</li> <li>▪ Conducted weekly inspections to monitor trails and easements</li> <li>▪ Worked with the City of Carlsbad’s Trail Rangers program for better enforcement and hiker awareness</li> <li>▪ Worked with the City and the California Coastal Commission to ensure public safety on 3.1 miles of public access easements</li> <li>▪ Hosted 545 volunteers through trail maintenance events, and the Agua Hedionda Lagoon Discovery Center</li> <li>▪ Monitored of 132 acres of open space in the Coastal Zone</li> <li>▪ Removed and monitored invasive plant species along trails and preserved areas</li> <li>▪ Installed preventative measures for coastal bluff erosion</li> <li>▪ Hosted weekly community bird walks and guided hikes around the lagoon</li> <li>▪ Worked with the California Department of Fish and Wildlife (CDFW) Coastal Program and the San Elijo Lagoon Conservancy to address infestations of Algerian sea lavender (<i>Limonium ramosissimum</i>) in the preserve</li> </ul>
<b>Agua Hedionda Lagoon Ecological Reserve</b>	<b>Preserve Manager: CDFW</b>	<ul style="list-style-type: none"> <li>▪ Treated invasive Algerian sea lavender (<i>Limonium ramosissimum</i>) and continued solarization study with Agua Hedionda Lagoon Foundation</li> <li>▪ Removed invasive plants within reserve</li> <li>▪ Conducted weekly inspections to monitor trails and easements</li> <li>▪ Trimmed hazardous trees along property boundary</li> <li>▪ Maintained boundary fencing and signage</li> <li>▪ Conducted western snowy plover (<i>Charadrius alexandrinus nivosus</i>) winter window surveys and light-footed Ridgway’s rail (<i>Rallus longirostris levipes</i>) breeding surveys</li> </ul>
<b>Arroyo La Costa area</b>	<b>HOAs</b>	Property-level management

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
<p align="center"><b>Batiquitos Lagoon area</b></p>	<p align="center"><b>Batiquitos Lagoon Foundation</b></p>	<ul style="list-style-type: none"> <li>▪ Managed Weed-Whacking/Trail Maintenance program for community, colleges, high schools, elementary schools, scouting organizations, corporations and other groups, which takes place twice a month. During this last reporting period, approximately 508 volunteers performed nearly 1,200 hours of work for this task</li> <li>▪ Held thirteenth annual Kayak Batiquitos Lagoon Clean-Up two-day event in which over 1,400 pounds of trash were removed from the lagoon</li> <li>▪ Began using California Conservation Corps on five existing and at least two expected restoration grants</li> <li>▪ Conducted monthly bird counts</li> <li>▪ Conducted educational public walks and talks</li> <li>▪ Hosted many visitors (over 21,500) at the Nature Center with dedicated children’s area, monthly talks, educational exhibits, and a large deck for bird watching</li> <li>▪ Hosted City of Carlsbad Arts Council Club Pelican art and environmental education program</li> <li>▪ Continued to work with Climate Kids and Climate Science Alliance on hosting workshops in North County and participating in events such as King Tide presentations</li> <li>▪ Hosted numerous high school and college interns, as well as Eagle Scout projects</li> <li>▪ Operated educational nature center, open to the public. Over 2,160 volunteer host hours were provided during this reporting period</li> <li>▪ Continued work to acquire approximately 11 acres of additional property adjacent to the ecological reserve</li> <li>▪ Awarded multiple grants that included: Nature Center improvements, education and public outreach program support and restoration and trail maintenance; wildlife movement research; invasive plant removal and restoration in the Aviara Cove area adjacent to the North Shore Trail; and invasive plant removal and restoration in and adjacent to the San Pacifico Community.</li> <li>▪ Held the first scientific workshop associated with Batiquitos Lagoon Resiliency Plan (BLRP), focusing on climate change impacts and the development of adaptation strategy for the BLER.</li> </ul>
<p align="center"><b>Batiquitos Lagoon Ecological Reserve</b></p>	<p align="center"><b>Preserve Manager: CDFW</b></p>	<ul style="list-style-type: none"> <li>▪ Performed habitat management and breeding season surveys for California least tern, western snowy plover breeding season and wintering window surveys, and Ridgway’s rail breeding surveys</li> <li>▪ Maintained nesting sites</li> <li>▪ Released 15 Ridgway’s rails from breeding program</li> <li>▪ Conducted Nuttall’s acmispom (<i>Acmispom prostratus</i>) monitoring following San Diego Management and Monitoring Program’s (SDMMP) inspect and manage protocol</li> <li>▪ Controlled invasive plant species within the preserve</li> <li>▪ Cleaned up 2 homeless encampments</li> <li>▪ Conducted weekly inspections to monitor trails and easements</li> <li>▪ Worked with the city on La Costa Ave Storm Drain improvement project</li> <li>▪ Completed <i>Caulerpa taxifolia</i> survey in all three basins</li> <li>▪ Conducted surveys of sand deposits and lagoon shoreline</li> <li>▪ Removed hazard trees along north shore trail</li> <li>▪ Maintained boundary fencing and signage</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
Buena Vista Creek area	Preserve Calavera	<ul style="list-style-type: none"> <li>▪ Supported planning for public trails</li> <li>▪ Continued work with Coastkeeper to conduct bi-monthly water quality and stream condition evaluations of Buena Vista Creek</li> <li>▪ Continued several Citizen Scientist projects</li> <li>▪ Supported implementation and continuation of Ranger program</li> </ul>
Buena Vista Creek Ecological Reserve	Landowner: CDFW Preserve Manager: CNLM	<ul style="list-style-type: none"> <li>▪ Completed 5 years of thread-leaved brodiaea (<i>Brodiaea filifolia</i>) population monitoring and life-history analysis</li> <li>▪ Conducted least Bell's vireo (<i>Vireo bellii pusillus</i>) monitoring and detected 10–12 male vireos</li> <li>▪ Treated and removed non-native plant species within the riparian areas (castor bean) and in upland areas (fennel [<i>Foeniculum vulgare</i>] and black mustard [<i>Brassica nigra</i>])</li> <li>▪ Mowed fuel zones in May 2018</li> <li>▪ Conducted weekly patrols (trespass is common but no major issues)</li> <li>▪ Updated kiosk materials quarterly</li> <li>▪ Routinely maintained gates and fences and picked up trash as needed</li> <li>▪ Completed annual work plan and annual report and revised Management Plan</li> </ul>
Buena Vista Lagoon Ecological Reserve	Preserve Manager: CDFW	<ul style="list-style-type: none"> <li>▪ Performed western snowy plover wintering window surveys and Ridgway's rail breeding surveys</li> <li>▪ Provided lagoon access and staging area for County vector control grant program</li> <li>▪ Controlled invasive plant species within the preserve</li> <li>▪ Cleaned up 8 homeless encampments</li> <li>▪ Removed 20 feral cat feeding stations</li> <li>▪ Conduct trail maintenance activities</li> <li>▪ Performed fire fuel reduction along north shore</li> <li>▪ Conducted weekly inspections to monitor trails and easements</li> <li>▪ Installed new gate and maintained boundary fencing &amp; signage</li> <li>▪ Worked with Buena Vista Audubon Society to remove dilapidated shed along trail</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
Buena Vista Lagoon/Watershed	Buena Vista Audubon Society	<ul style="list-style-type: none"> <li>▪ Conducted monthly bird counts, birding walks, and classes</li> <li>▪ Conducted school tours and preschool story-time</li> <li>▪ Conducted native plant club, outreach, and gardening</li> </ul>
	Preserve Calavera	<ul style="list-style-type: none"> <li>▪ Partnered with Buena Vista Audubon Society to hold sixth Endangered Species Day event</li> <li>▪ Supported community education on native plants, wildlife, and preserve management issues at various fairs and outreach events</li> <li>▪ Continued several Citizen Scientist projects including roadkill monitoring, water quality testing, grunion reporting, King tides event</li> <li>▪ Supported implementation and continuation of Ranger program</li> </ul>
Calavera Area	Preserve Calavera	<ul style="list-style-type: none"> <li>▪ Initiated enhanced monitoring of Carlsbad Highlands Ecological Reserve wildlife impacts</li> <li>▪ Continued monitoring of wildlife movement corridors and pinchpoints</li> <li>▪ Held public education hike on native plants</li> <li>▪ Partnered with the city on several trail building and clean-up projects</li> <li>▪ Continued bi-monthly volunteer work sessions as part of Village H restoration</li> <li>▪ Served as trail co-captain—stocking kiosks, picking up dog feces, and monitoring trail conditions</li> <li>▪ Supported community education on native plants, wildlife, and preserve management issues at various fairs and outreach events</li> <li>▪ Continued several Citizen Scientist projects</li> <li>▪ Supported implementation and continuation of Ranger program</li> </ul>
Calavera Hills Phase II/Robertson Ranch	Preserve Manager: CNLM	<ul style="list-style-type: none"> <li>▪ Monitored wildlife movement via camera trap in College Boulevard tunnel</li> <li>▪ Maintained Village H restoration and designated new restoration area within Village H</li> <li>▪ Completed conservation easement compliance report</li> <li>▪ Completed 5 years of thread-leaved brodiaea population monitoring and life-history analysis</li> <li>▪ Completed 10th year of coastal sage scrub monitoring (shrub cover remains stable)</li> <li>▪ Partnered with U.S Geological Survey (USGS) to conduct southern mule deer (<i>Odocoileus hemionus</i>) genetic study (no scat found)</li> <li>▪ Repaired minor fence breaks/issues</li> <li>▪ Treated and removed non-native plant species (eucalyptus (<i>Eucalyptus</i> spp.), pampas grass (<i>Cortaderia jubata</i>), and black mustard)</li> <li>▪ Completed annual work plan and annual report and revised Management Plan</li> <li>▪ Performed weekly patrols, site enforcement, and trash pickup</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
Carlsbad Highlands Ecological Reserve	Preserve Manager: CDFW	<ul style="list-style-type: none"> <li>▪ Obtained aerial imagery of property</li> <li>▪ Conducted protocol-level coastal California gnatcatcher surveys</li> <li>▪ Removed unauthorized signage</li> <li>▪ Removed 23 unsafe trail features and conducted trail maintenance</li> <li>▪ Performed habitat restoration on 2 acres</li> <li>▪ Conducted weekly inspections to monitor trails and easements</li> <li>▪ Conducted fire fuel reduction along property boundary</li> <li>▪ Controlled invasive plant species within the preserve</li> <li>▪ Maintained boundary fencing &amp; signage (Replaced 161 signs)</li> <li>▪ Engaged in Public Education efforts concerning allowed activities</li> </ul>
Carlsbad Oaks North Preserve	Preserve Manager: CNLM	<ul style="list-style-type: none"> <li>▪ Mapped sensitive wildlife</li> <li>▪ Completed 10th year of coastal sage scrub monitoring (shrub cover remains stable)</li> <li>▪ Completed 5 years of thread-leaved brodiaea population monitoring and life-history analysis</li> <li>▪ Assessed Blochman’s dudleya (<i>Dudleya blochmaniae</i> spp. <i>blochmaniae</i>) index plots</li> <li>▪ Censused San Diego thornmint (<i>Acanthomintha ilicifolia</i>) population, visited all potential locations for future San Diego thornmint, and assessed habitat conditions (3 suitable locations)</li> <li>▪ Maintained planting area adjacent to the El Fuerte trail</li> <li>▪ Removed non-natives, including pampas grass and fountain grass (<i>Pennisetum setaceum</i>) within the preserve</li> <li>▪ Removed over 2,500 invasive crayfish (<i>Procambarus clarkia</i>) from interior pond to improve conditions for potential reintroduction of western pond turtle (<i>Emys pallida</i>)</li> <li>▪ Conducted CE compliance monitoring and reporting on County parcel</li> <li>▪ Completed annual work plan and annual report and drafted portions of habitat management plan</li> <li>▪ Documented wildlife movement through Faraday undercrossing; motion-sensing camera, and collected southern mule deer scat for USGS genetic study</li> <li>▪ Performed presence/absence monitoring for Argentine ant (<i>Linepithema humile</i>) in conjunction with coastal sage scrub monitoring</li> <li>▪ Patrolled weekly, cleaned up trash, and performed site enforcement</li> <li>▪ Updated kiosk materials twice a year</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
<b>Carlsbad Raceway Preserve</b>	<b>San Diego Habitat Conservancy</b>	<ul style="list-style-type: none"> <li>▪ Conducted quarterly property inspections to assess the condition of the preserve, removed trash, flagged non-native plants, and report homeless encampments and abandoned cars</li> <li>▪ Documented quarterly inspection, including observations and activities using quarterly log reports</li> <li>▪ Installed a chain with lock at access road along southern boundary to prevent public access</li> <li>▪ Examined trees for invasive shot hole borer (<i>Euwallacea</i> spp.) and other signs of disease</li> <li>▪ Confirmed lock/chain installation along southern boundary access road, removed trash from abandoned encampment in northern central portion and underpasses, and removed car from Melrose Drive underpass</li> <li>▪ Continued monitoring for San Diego thornmint (observed 9 individuals)</li> <li>▪ Collected southern mule deer scat for USGS genetic study</li> <li>▪ Assessed vernal pool on preserve</li> <li>▪ Removed non-native plant species (pampas grass, fountain grass, fennel, natal grass (<i>Melinis repens</i>), black mustard, and sweet clover (<i>Melilotus officinalis</i>))</li> <li>▪ Provided public outreach and education in the form of an annual newsletter</li> <li>▪ Coordinated a volunteer trash pick-up with prAna</li> </ul>
<b>City of Carlsbad Preserves</b>	<b>Preserve Manager: CNLM</b>	<ul style="list-style-type: none"> <li>▪ Performed habitat assessments and counts of thread-leaved brodiaea</li> <li>▪ Monitored for coastal California gnatcatcher nests at The Crossings Golf Course</li> <li>▪ Conducted coast live oak tree (<i>Quercus agrifolia</i>) assessments</li> <li>▪ Trapped brown-headed cowbird (<i>Molothrus ater</i>) at The Crossings Golf Course</li> <li>▪ Assessed habitat for invasive shot-hole borer and signs of Fusarium (<i>Fusarium</i> sp.) dieback and gold-spotted oak borer (<i>Agrilus coxalis</i>)</li> <li>▪ Treated or removed non-native species considered to be zero or moderate-tolerance plants</li> <li>▪ Cleaned brow ditches at The Crossings Golf Course and La Costa Romeria</li> <li>▪ Conducted routine patrols to protect the preserve, maintained fences, and provided information to visitors</li> <li>▪ Participated in volunteer events organized by the City</li> <li>▪ Maintained and frequently updated kiosk with new materials</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
<b>City Ventures Preserve</b>	<b>Preserve Manager: San Diego Urban Corps Habitat Services (SDUCHS)</b>	<ul style="list-style-type: none"> <li>▪ Removed trash along El Camino Real</li> <li>▪ Conducted photo documentation at established photo points</li> <li>▪ Conducted biannual site monitoring to inspect signs, map non-native plants and trash for subsequent removal</li> <li>▪ Removed creeping myoporum (<i>Myoporum parvifolium</i>) from western preserve boundary</li> <li>▪ Conducted general biological monitoring</li> <li>▪ Observed coastal California gnatcatcher incidentally within preserve</li> <li>▪ Mapped sensitive plant species Del Mar sand aster (<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>)</li> <li>▪ Removed non-natives such as crown daisy (<i>Glebionis coronaria</i>), crystalline iceplant (<i>Mesembryanthemum crystallinum</i>), fire apple (<i>Aptenia cordifolia</i>), pine (<i>Pinus</i> sp.), and ice plant (<i>Carpobrotus edulis</i>) to prepare revegetation area</li> <li>▪ Planted lemonade berry (<i>Rhus integrifolia</i>) and prickly pear cactus (<i>Opuntia littoralis</i>) and hand-seeded additional native plant seed mix to prepared revegetation area</li> </ul>
<b>Dawson-Los Monos Canyon Reserve</b>	<b>Preserve Manager: UCSD</b>	<ul style="list-style-type: none"> <li>▪ Basic stewardship-level management</li> <li>▪ Educational programs and scientific research</li> </ul>
<b>Emerald Pointe Preserve</b>	<b>Preserve Manager: San Diego Habitat Conservancy</b>	<ul style="list-style-type: none"> <li>▪ Performed quarterly inspections to document habitat composition and needs, remove trash, and flag non-native plants</li> <li>▪ Replaced four locks on gates along eastern perimeter fencing</li> <li>▪ Determined vegetation mapping data from 2009 was still accurate for the area</li> <li>▪ Performed non-native plant flagging, mapping, and removal (primarily fennel)</li> <li>▪ Monitored San Diego thornmint population and mapped additional locations of Palmer's grapplinghook (<i>Harpagonella palmeri</i>)</li> </ul>
<b>Encinas Creek/North County Habitat Bank Preserve</b>	<b>Preserve Manager: CNLM</b>	<ul style="list-style-type: none"> <li>▪ Performed surveys for least Bell's vireo and coastal California gnatcatcher</li> <li>▪ Performed wildlife camera surveys to determine presence and use of the preserve by large mammals and human trespass</li> <li>▪ Monitored and detected Kuroshio shot-hole borer and Fusarium fungus outbreak in trees within the western half of site</li> <li>▪ Mapped sensitive species</li> <li>▪ Controlled and removed non-native plant species (pampas grass, Mexican fan palm [<i>Washingtonia robusta</i>], and black mustard)</li> <li>▪ Continued habitat restoration in the southeastern area of the property</li> <li>▪ Conducted biweekly patrols, site enforcement, and trash pickup</li> <li>▪ Composed budgets, annual reports, and annual work plans</li> <li>▪ Repaired fencing at western extent of site</li> <li>▪ Performed revisions to the Habitat Management Plan</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
Kelly Ranch Preserve	Preserve Manager: CNLM	<ul style="list-style-type: none"> <li>▪ Noted and mapped sensitive plants and animals when observed</li> <li>▪ Counted Orcutt’s hazardia (<i>Hazardia orcuttii</i>), Del Mar manzanita (<i>Arctostaphylos glandulosa</i> spp. <i>crassifolia</i>), California desert thorn (<i>Lycium californicum</i>), and cliff spurge (<i>Euphorbia misera</i>) populations</li> <li>▪ Removed or treated non-native plant species (pampas grass, natal grass, tumbleweed, and tree tobacco [<i>Nicotiana glauca</i>])</li> <li>▪ Performed regular patrol, site enforcement, and trash removal</li> <li>▪ Conducted annual conservation easement compliance visit</li> <li>▪ Contacted neighbors and Home Owner’s Association (HOA) regarding issues of concern</li> <li>▪ Completed annual work plan, annual report, and revised management plan</li> </ul>
La Costa Collections Preserve	Preserve Manager: San Diego Urban Corps Habitat Services	<ul style="list-style-type: none"> <li>▪ Removed trash along El Camino Real</li> <li>▪ Conducted photo documentation at established photo points</li> <li>▪ Conducted biannual site monitoring to inspect signs, map non-native plants and trash for subsequent removal</li> <li>▪ Removed creeping myoporum from western preserve boundary</li> <li>▪ Conducted general biological monitoring</li> <li>▪ Mapped sensitive plant species Del Mar sand aster</li> <li>▪ Removed non-natives such as crown daisy, crystalline ice plant, fire apple, pine, and ice plant to prepare revegetation area</li> <li>▪ Planted lemonade berry and prickly pear cactus and hand-seeded additional native plant seed mix to prepared revegetation area</li> </ul>
La Costa Glen Preserve	Preserve Manager: CNLM	<ul style="list-style-type: none"> <li>▪ Conducted weekly patrols to deter homeless encampments from being established</li> <li>▪ Counted seaside calandrinia (<i>Cistanthe maritima</i>), wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>), and Orcutt’s spineflower (<i>Chorizanthe orcuttiana</i>) populations</li> <li>▪ Performed wildlife movement monitoring and management using motion sensing cameras</li> <li>▪ Cut and treated thousands of individuals of veldt grass (<i>Erhardta calycina</i>)</li> <li>▪ Treated pampas grass, fountain grass, tree tobacco, and fennel</li> <li>▪ Removed trash from preserve and adjacent wildlife tunnels; similarly, vagrant populations were deterred and removed repeatedly from the tunnel</li> <li>▪ Completed annual work plan and annual report</li> <li>▪ Mapped all sensitive flora and fauna encountered</li> </ul>
Laurel Tree Lane Preserve	Preserve Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> <li>▪ Conducted initial site inspection, baseline documentation, and sign installation</li> <li>▪ Commenced with quarterly monitoring to document changes in habitat composition, map and treat/remove non-native plant species (high-priority species: Sahara mustard [<i>Brassica tournefortii</i>], castor bean, pampas grass), looked for signs of trespass and assessed need for remedial measures</li> <li>▪ Observed and reported active encampment at east end of Preserve to City’s Police Department and security officer for neighboring 24 Hour Fitness corporate office</li> <li>▪ Removed materials from long abandoned encampment</li> </ul>



**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
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Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> <li>▪ Observed potential sign of invasive shot-hole borer, collected and submitted samples to Eskalen Lab; will install traps for invasive shot hole borer</li> <li>▪ Reported broken trail fencing and graffiti to City of Carlsbad</li> <li>▪ Will install second monitoring camera in eastern section of Preserve and monitor wildlife cameras at least every one to two weeks</li> <li>▪ Provided annual newsletter to property manager for neighboring 24 Hour Fitness corporate office for electronic distribution to tenants, landowner, and maintenance contractor</li> <li>▪ Met with property manager and maintenance contractor to discuss restrictions placed on the Preserve and maintenance of bioswales</li> </ul>
<b>Los Monos area</b>	<b>Preserve Calavera</b>	<ul style="list-style-type: none"> <li>▪ Supported clean-up along Agua Hedionda Creek</li> <li>▪ Continued several Citizen Scientist projects</li> <li>▪ Supported implementation and continuation of Ranger program</li> </ul>
<b>Manzanita Partners Preserve</b>	<b>Preserve Manager: Habitat Restoration Sciences</b>	<ul style="list-style-type: none"> <li>▪ Patrolled and conducted site enforcement on a regular basis</li> <li>▪ Inspected signs and fencing along the SDG&amp;E road at eastern edge of preserve</li> <li>▪ Removed non-native plant species and removed trash</li> <li>▪ Noted all animal species observed and mapped locations of any sensitive species</li> <li>▪ Conducted vernal pool post-fire recovery transects per CNLM methods and oak tree post-fire recovery</li> <li>▪ Conducted survey for potential invasive shot hole borer</li> <li>▪ Reported and described data collected and management actions taken on the preserve to the City</li> </ul>
<b>Morning Ridge Preserve</b>	<b>Preserve Manager: Dudek</b>	<ul style="list-style-type: none"> <li>▪ Conducted qualitative biological monitoring: note non-native invasive plant species cover, trash and debris accumulation, and other changes in the habitat composition</li> <li>▪ Performed transect monitoring for post-fire habitat recovery</li> <li>▪ Conducted focused rare plant surveys</li> <li>▪ Conducted coastal California gnatcatcher presence/absence surveys</li> <li>▪ Provided guidance to Green Valley Landscape. Landscape crew removed trash and debris, treated and removed invasive species, installed additional erosion control (silt fencing, sand bags, etc.), and controlled rodent problems through trapping</li> </ul>
<b>Muroya Preserve</b>	<b>Preserve Manager: San Diego Habitat Conservancy</b>	<ul style="list-style-type: none"> <li>▪ Conducted quarterly monitoring, mapped invasives, removed trash, assessed need for remedial measures; provided quarterly log</li> <li>▪ Coordinated volunteer event with neighboring property to remove queen palm (<i>Syagrus romanzoffiana</i>) fronds and map and remove tree tobacco</li> <li>▪ Mapped irrigation lines and assessed restoration areas</li> <li>▪ Treated and removed tree tobacco</li> <li>▪ Surveyed trees for invasive shot hole borer</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
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<b>Preserve Area</b>	<b>Management Entity</b>	<b>Management and Monitoring Activities</b>
<b>New Crest Preserve</b>	<b>Preserve Manager: Urban Corps of San Diego County</b>	<ul style="list-style-type: none"> <li>▪ Conducted annual biological monitoring (identified and mapped wart-stemmed ceanothus just off-site)</li> <li>▪ Established photo points and conducted photo documentation</li> <li>▪ Removed trash from southwest fence line</li> <li>▪ Removed non-native plant species, primarily black mustard and crown daisy</li> <li>▪ Completed annual report, annual work plan, and budget</li> </ul>
<b>North Coast Calvary Chapel Preserve</b>	<b>Helix Environmental (interim management)</b>	<ul style="list-style-type: none"> <li>▪ Treated non-native invasive species, including black mustard, Russian thistle (<i>Salsola tragus</i>), and pampas grass</li> <li>▪ Updated vegetation mapping</li> <li>▪ Conducted monthly monitoring visits to check on biological resources; inspected fencing gates, signs and lighting; monitored for unauthorized access; monitored for erosion</li> <li>▪ Performed wart-stemmed ceanothus inventory</li> <li>▪ Noted presence of coastal California gnatcatcher</li> </ul>
<b>Paseo del Norte Preserve</b>	<b>Preserve Manager: San Diego Urban Corps Habitat Services</b>	<ul style="list-style-type: none"> <li>▪ Performed quarterly biological monitoring</li> <li>▪ Established photo points and conducted photo documentation</li> <li>▪ Patrolled the preserve; removed trash</li> <li>▪ Removed 4 cubic yards of ice plant and pulled and stockpiled approximately 5,000-ft<sup>2</sup> of ice plant to dry</li> <li>▪ Conducted sensitive plant species monitoring on southwestern spiny rush and San Diego marsh elder</li> <li>▪ Monitored erosion within the revegetation area</li> <li>▪ Completed annual report, annual work plan and budget</li> </ul>
<b>Poinsettia Place Preserve</b>	<b>Preserve Manager: San Diego Urban Corps Habitat Services</b>	<ul style="list-style-type: none"> <li>▪ Performed annual biological monitoring and post-fire monitoring</li> <li>▪ Conducted general quarterly monitoring to survey for signs of trespass, breaks in the fence, and non-native plant invasions</li> <li>▪ Replaced vandalized sign along eastern boundary</li> <li>▪ Observed coastal California gnatcatcher incidentally within the preserve</li> <li>▪ Removed non-native crown daisy along the trail in the middle portion of the site and creeping myoporium from western preserve boundary</li> <li>▪ Mapped and removed trash and non-native plant species on-site</li> </ul>
<b>Poinsettia/Aviara area</b>	<b>Aviara Master HOA</b>	Property-level management
	<b>Other HOAs</b>	Property-level management

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
*continued*

Preserve Area	Management Entity	Management and Monitoring Activities
<b>Quarry Creek Preserve</b>	<b>Preserve Manager: San Diego Habitat Conservancy</b>	<ul style="list-style-type: none"> <li>▪ Established additional photo points</li> <li>▪ Installed, maintained, and repaired permanent preserve signs</li> <li>▪ Removed targeted invasive plants such as fennel, black mustard, and pampas grass</li> <li>▪ Performed monthly inspections and log reports to record wildlife, flag non-natives for removal, and report and remove homeless encampments and associated trash</li> <li>▪ Hosted two trash removal events</li> <li>▪ Monitored for signs and symptoms of invasive shot hole borer</li> <li>▪ Conducted presence/absence surveys for coastal California gnatcatcher, least Bell’s vireo (protocol-level), white-tailed kite (<i>Elanus leucurus</i>), yellow warbler (<i>Setophaga petechia</i>), yellow-breasted chat (<i>Icteria virens</i>), and brown-headed cowbird</li> <li>▪ Performed outreach and education: attended one meeting with HOA and provided annual brochure to homeowners</li> <li>▪ Completed annual report and updated management plan</li> </ul>
<b>Rancho La Costa Preserve</b>	<b>Preserve Manager: CNLM</b>	<ul style="list-style-type: none"> <li>▪ Completed 5-year monitoring and life-history analysis of thread-leaf brodiaea</li> <li>▪ Completed 10th year of coastal sage scrub monitoring</li> <li>▪ Assessed Argentine ants’ presence/absence within coastal sage scrub monitoring plots</li> <li>▪ Conducted focused surveys for sensitive plants: San Diego thornmint, Orcutt’s brodiaea, and Orcutt’s hazardia</li> <li>▪ Assessed habitat conditions of the San Diego thornmint</li> <li>▪ Collected southern mule deer scat for USGS genetic study and tracked wildlife movement and recreational activity using motion sensing cameras</li> <li>▪ Conducted post-fire monitoring using established transects and oak tree assessments at Poinsettia Fire burn areas. These areas were also frequently managed for invasive plant species</li> <li>▪ Treated and removed hundreds of non-native plant species including Eucalyptus, perennial veldt grass, onionweed (<i>Asphodelis fistulosus</i>), ward’s weed (<i>Carrichtera annua</i>), fountain grass and pampas grass</li> <li>▪ Began planning native grassland restoration in collaboration with Preserve Calavera and neighbors</li> <li>▪ Conducted patrols multiple times weekly</li> <li>▪ Maintained kiosk information</li> <li>▪ Presented at California State University San Marcos (CSUSM) three times on CNLM work to encourage participation in habitat management and restoration activities</li> <li>▪ Hosted three volunteer days with CSUSM Environmental Club to plant native cacti and coastal sage scrub species</li> <li>▪ Installed bike fix station at viewpoint with San Diego Mountain Biking Association (SDMBA) volunteers</li> <li>▪ Improved trails using staff and SDMBA and REI volunteers</li> <li>▪ Completed annual work plan, annual report, and conservation easement compliance monitoring and reporting</li> <li>▪ Installed or maintained fences, gates, and signs</li> <li>▪ Maintained fuel breaks as required by the City of Carlsbad Fire Department regulation</li> </ul>

**Summary of HMP Management and Monitoring Activities, Nov 2017 – Oct 2018**  
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Preserve Area	Management Entity	Management and Monitoring Activities
<b>Sage Creek High School Preserve</b>	<b>Preserve Manager: San Diego Habitat Conservancy</b>	<ul style="list-style-type: none"> <li>▪ Performed monthly patrols and associated reports to observe and document the biodiversity of the site and substantial changes in the habitat composition, remove trash, remove and/or map non-native plant species, look for signs of trespass, and assess the need for remedial measures</li> <li>▪ Finalized vegetation mapping</li> <li>▪ Treated and removed non-natives, primarily black mustard, castor bean, fennel, and Russian thistle</li> </ul>
<b>Southern Preserve</b>	<b>Preserve Manager: San Diego Urban Corps Habitat Services</b>	<ul style="list-style-type: none"> <li>▪ Monitored fence installation along the trail</li> <li>▪ Performed annual biological monitoring to assess biological resources and document the locations of sensitive plants: California adolphia (<i>Adolphia californica</i>), San Diego goldenstar (<i>Bloomeria clevelandii</i>), and ashy spike-moss (<i>Selaginella cinerascens</i>)</li> <li>▪ Removed non-native species, mostly artichoke thistle (<i>Cynara cardunculus</i>) and fennel; and weed-whacked areas of high thatch on Lot 12</li> <li>▪ Conducted site monitoring and enforcement from at least once a month, and patrolled for unauthorized use of closed trails and off-leash dogs</li> <li>▪ Documented coastal California gnatcatcher incidentally within preserve</li> <li>▪ Participated in wildlife movement study to note signs of southern mule deer</li> </ul>
<b>Throughout the HMP Preserve system</b>	<b>City Parks and Recreation Department</b>	<ul style="list-style-type: none"> <li>▪ Conducted trail clean up and maintenance biyearly via volunteers</li> <li>▪ Hosted quarterly trail volunteer meetings</li> <li>▪ Hosted public outreach events such as National Trails Day and National Public Lands Day</li> </ul>