

City of Carlsbad Habitat Management Plan Annual Report

Reporting Year 17, November 2020–October 2021

December, 2021



Environmental Management

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Acronyms and Definitions

Annual Reports – Preserve-specific annual reports, which summarize management and monitoring activities, threats, and monitoring results, are due in November of every year. Pre-HMP preserves are generally not required to prepare annual reports unless stipulated in previously negotiated agreements with the city and/or Wildlife Agencies. HMP-wide annual reports (e.g., the current report) are due to the Wildlife Agencies in December of every year. HMP annual reports summarize gains and losses in the HMP preserve system, current status of individual preserves and species, management and monitoring activities, and a financial summary. Every third year, the HMP annual report includes an analysis of species monitoring data. The latest 3-year report was prepared as part of the 2016/2017 HMP annual report.

ASMD – Area Specific Management Directive

BLF – Batiquitos Lagoon Foundation

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 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

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.

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

HMP Hardline– an HMP Hardline is a preserve that has been set aside for permanent conservation and is protected by a conservation easement, which runs permanently with the land. Hardline properties cannot be developed.

HOA – Homeowners’ 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

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). A Major Population 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. The MHCP serves as an umbrella framework to guide the preparation of city-specific plans such as the Carlsbad Habitat Management Plan.

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 Implementing Agreement

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% 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

Covering the period from November 1, 2020 to October 31, 2021, this seventeenth annual Habitat Management Plan (HMP) 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, a total of 1.3 acres was debited from the mitigation parcel for city projects. To date, cumulative debits and adjustments for wetland mitigation sites are 94.9 acres, leaving a total of 109.9 acres (credits) remaining.

Gnatcatcher Core Area Conservation Obligation

As documented in a letter from the USFWS and CDFW dated December 19, 2019, the city has fulfilled its Gnatcatcher Core Area obligation in full.

Land Acquisitions

During the reporting period, there were no acquisitions of open space lands.

Habitat Gains and Losses

During the reporting period, there were no habitat gains or losses in the HMP preserve system.

HMP Minor Amendments: During the reporting period, there were no HMP Minor Amendments.

Preserve Management and Monitoring

Ongoing 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, and public outreach activities, which are summarized in Appendix B.

Financial Summary

Habitat Mitigation Fee Program: Mitigation fees totaling \$56,852.24 were collected during the current reporting period. The city has fulfilled its Core Area Credit obligation in full. However, the purchase of some credits exceeded the available Habitat Mitigation Fee funds, requiring an advance from the General Fund, resulting in a negative fund balance. The current balance of the Habitat Mitigation Fee Fund is -\$1,187,163.401. In-lieu fees will continue to be collected for habitat impacts, and will be used to reimburse the General Fund.

Preserve Management Endowments: During the reporting period, a total of \$924,123 was spent by the land managers on management and monitoring activities on 28 preserves or preserve complexes (more than one parcel) that comprise 2,776 acres (does not include most Ecological Reserves owned by California Department of Fish and Wildlife). Endowments for endowment-funded properties totaled \$22,671,313.

1.0 Plan Administration

1.1 Introduction

The Habitat Management Plan (HMP) is a citywide conservation plan that describes how the city will comply with state and federal environmental laws while remaining consistent with the city's General Plan and Growth Management Plan. The HMP was developed in coordination with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife (collectively, the Wildlife Agencies) as part of a regional planning effort under the North County Multiple Habitat Conservation Program (MHCP). Annual tracking and reporting of habitat gains, losses, management, and monitoring is required by Sections 12.1 and 12.2 of the Implementing Agreement (Nov. 12, 2004); the Federal Fish and Wildlife 10(a)(1)(B) Permit No. TE022606-0 (Nov. 12, 2004); and the NCCP Permit No. 2835-2004-001-05 (Nov. 15, 2004). This annual report covers year 17 of the 50-year HMP permit period.

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 Endangered Species Act related mitigation and HMP implementation.

1.2.2 Compliance Monitoring

Compliance monitoring is required by the HMP-related permits and Implementing Agreement to ensure that 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 working with the preserve managers to ensure coordinated management across the city. Habitat tracking results are provided in Section 1.4; regulatory compliance is discussed in Section 1.5 and Appendix A; and management and monitoring activities are summarized in Section 2.0 and Appendix B, and the Triennial Monitoring Report is included in Appendix C.

1.2.3 Effectiveness Monitoring

Effectiveness monitoring, also known as biological, ecological, or validation monitoring, determines the effectiveness of the conservation program by evaluating if the preserve assembly and management actions are achieving the HMP/MHCP goals within the city and across the MHCP planning area. The preserve-level monitoring program is used to evaluate the effectiveness of management at specific preserve areas (MHCP Vol. III). At the subregional (MHCP-wide) level, effectiveness monitoring evaluates the 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).

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 years or decades before trends in species populations and habitat conditions are detectable. Species and habitat monitoring, and monitoring to evaluate the effectiveness of management are being conducted on individual preserves as well as the regional landscape level. This work is being done through a partnership with the city, preserve steward, preserve managers, Wildlife Agencies and San Diego Management and Monitoring Program, which has developed regional and site-specific monitoring and management strategic plans and protocols for conserved lands across 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) the status of the HMP Mitigation Fee Fund.

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

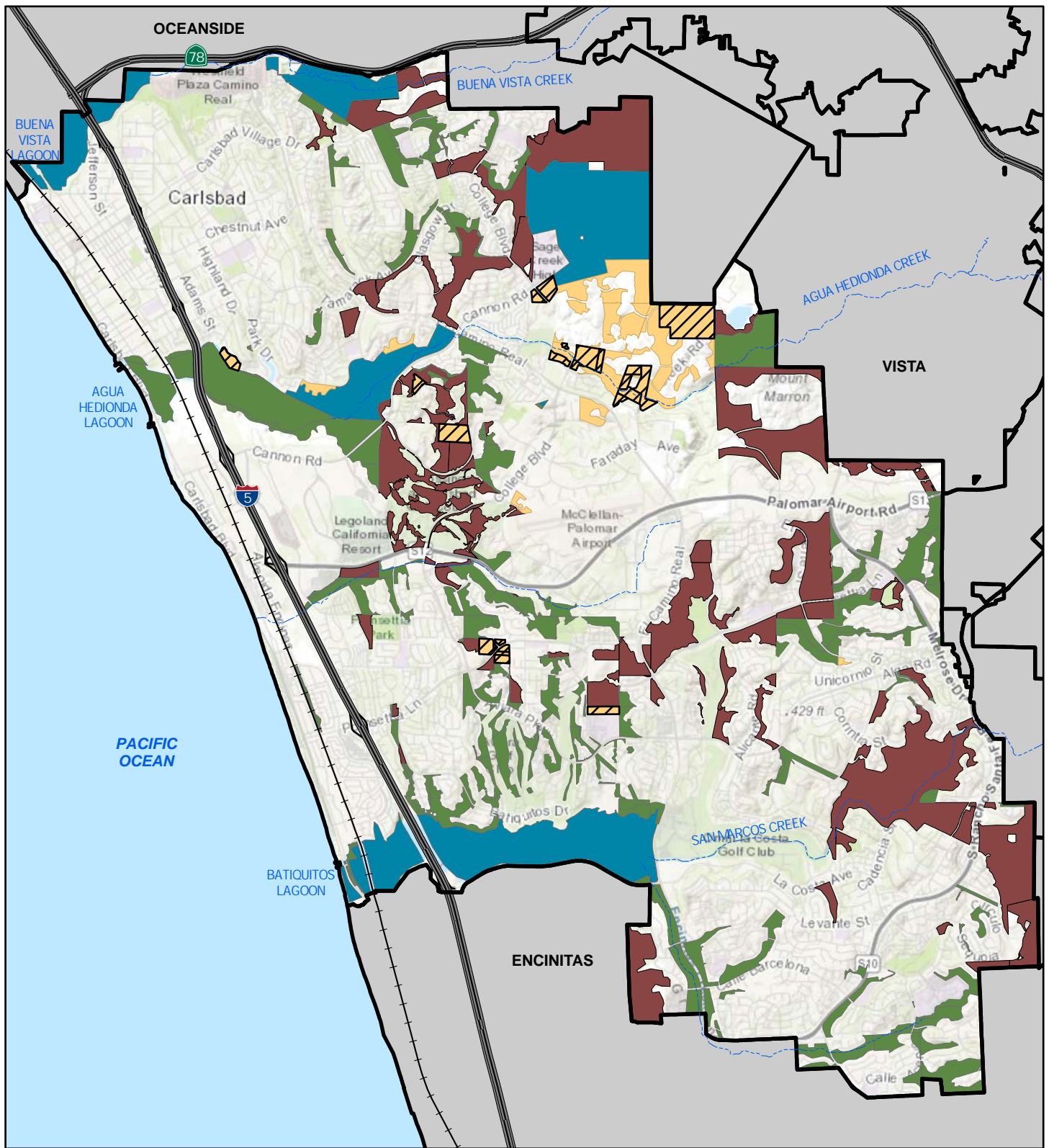
These Hardline Preserves were established during or after the adoption of the HMP. They have approved preserve management plans implemented by preserve managers and are funded through non-wasting endowments or, in the case of the city-owned preserves, through annual budget appropriations. The city requires site specific annual reports for these preserves. The property owners for these preserves are a preserve management entity, homeowners association (HOA), or the city. Except for the city-owned properties, these Hardline Preserves are protected by recorded conservation easements. 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 Implementing Agreement, 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 Center for Natural Lands Management (CNLM), a non-profit land 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.

Pre-Existing Natural Open Space Preserves

These Hardline Preserves predate 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



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



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. 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 preparing a preserve management plan approved by the city and Wildlife Agencies, contracting with a qualified land manager, funding a non-wasting endowment or other secure financing mechanism, and recording a conservation easement. An HMP Minor Amendment - 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 an HMP Minor Amendment - 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.

The HMP (Section D.3.B) states that there are 266.1 available acres on Lake Calavera Preserve and the Implementing Agreement (Section 10.7) states that there are 206.1 acres. The Wildlife Agencies and city have agreed to use the more conservative 206.1 acres stated in the Implementing Agreement for tracking purposes.

In addition to the use of the Lake Calavera Mitigation Parcel for upland mitigation credits, the city also uses the property for wetland mitigation through active habitat creation, restoration, and/or enhancement of disturbed areas within the preserve, in coordination with the Wildlife Agencies and wetland permitting agencies. 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, 1.3 acres of mitigation credit was debited for the El Camino Real Widening Cassia to Camino Vida Roble Project (CIP

6072). Cumulative upland debits and adjustments for wetland mitigation sites to date are 96.2 acres, leaving a total of 109.9 acres of mitigation credits remaining (see Table 1).

Table 1. Mitigation Acreage at Lake Calavera Mitigation Parcel RY 17 (2020–2021)

Credits and Debits	Acres¹
Initial Credits	206.1
Total acres available as of November 1, 2020	111.2
Year 17 Deductions (Nov. 2020–Oct. 2021)	1.3
Total acres available as of October 31, 2021	109.9

¹ Rounded to the nearest tenth of an acre.

1.3.3 Gnatcatcher Core Area Preservation Obligation Acreage

When the HMP was being developed, the Wildlife Agencies determined there was not enough coastal sage scrub habitat in the city to conserve the coastal California gnatcatcher. Because of this limitation, the city was required to preserve an additional 307.6 acres of coastal sage scrub in the Gnatcatcher Core Area, a large block of high quality habitat southeast of the city, which is regionally important for the long-term survival of the species.

As documented in a letter from the USFWS and CDFW dated December 19, 2019, the city has fulfilled its Gnatcatcher Core Area obligation in full. HMP habitat mitigation fees will continue to be collected to offset the associated costs incurred by the city (see Section 3.1.2 for more details).

1.4 Habitat Gains and Losses

Pursuant to the HMP and Implementing Agreement, 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. HabiTrak 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

Some of the habitat types used in the standard HabiTrak table outputs are more specific than

those used in HMP Table 8. To make it easier to compare the 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 HabiTrak. Note that the GIS data layers used for this analysis included the more detailed habitat categories.

**Table 2. HMP Target Conservation of Habitats
(Comparison of Habitat Categories in HMP and Habittrak)**

HMP Table 8		Habittrak	
Habitat Type	Target Acres ¹	Habitat type	Target Acres ¹
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>
Total Target Conservation within Carlsbad	6,478²	Total Target Conservation within Carlsbad	6,478²
Carlsbad's Gnatcatcher Core Area Contribution	308	Not tracked in Habittrak	N/A
Total HMP Target Conservation	6,786²		

¹ Rounded to the nearest acre.

² Note that the target acreage includes 100% 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

During the reporting period no open space properties were acquired by the city.

1.4.3 Habitat Gains and Losses

During the reporting period there were no HMP habitat gains or losses associated with development. Since the adoption of the HMP, 6,195 acres have been gained and 1,760 acres have been lost. Figure 2 shows the status of the preserve system.

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 Implementing Agreement, and State NCCP and Federal Fish and Wildlife permits.

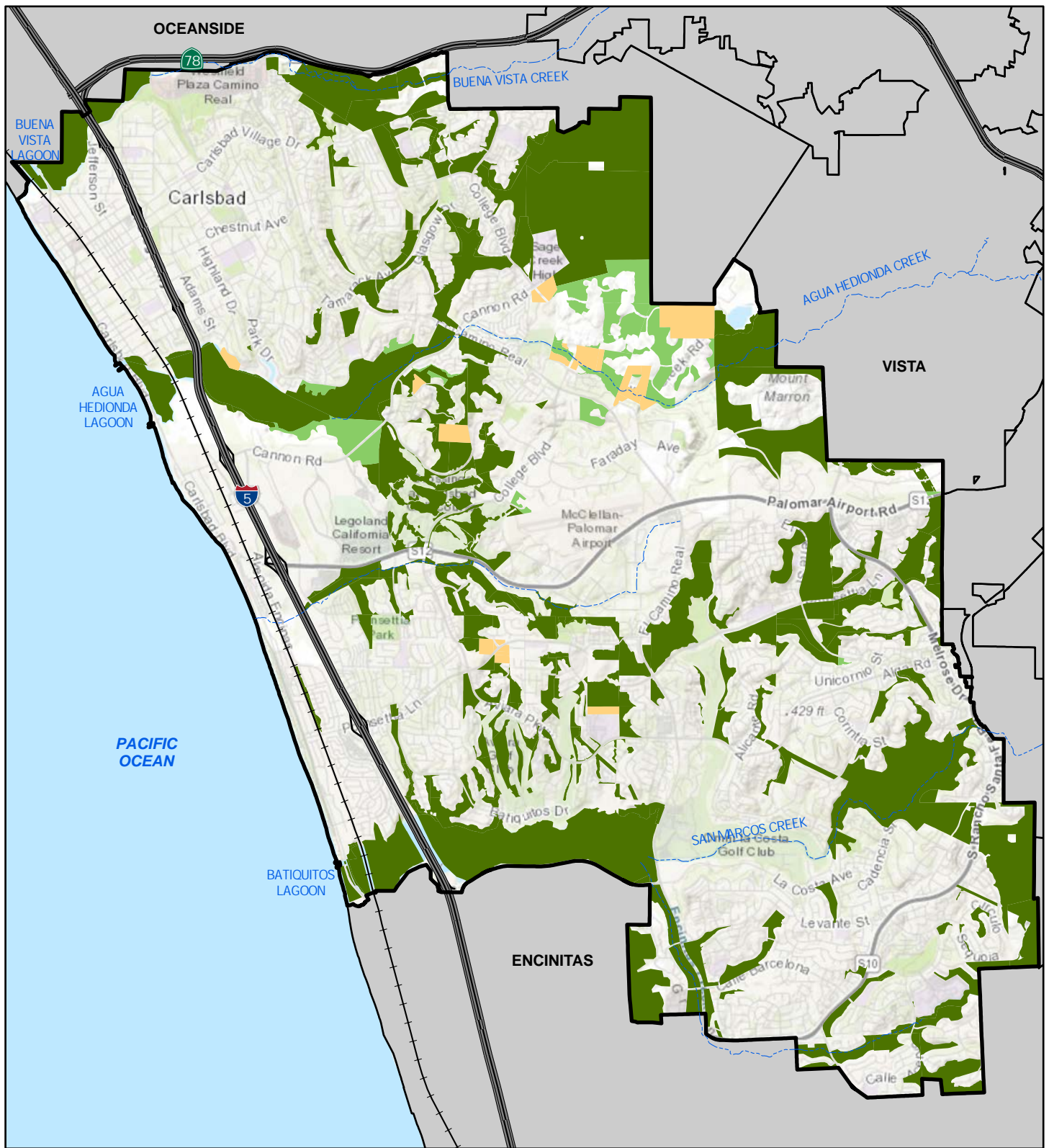
1.5.1 HMP Amendments

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

1. **Consistency Finding:** During the reporting period, no minor amendments were processed through a Consistency Finding.
2. **Equivalency Finding:** During the reporting period, no minor amendments were processed through an Equivalency Finding.
3. **Other Minor Amendments (pursuant to Section 20.1 of the Implementing Agreement):**
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 Implementing Agreement, 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 Appendix A.



Legend

- Existing Hardline
- Proposed Hardline
- Standards Area



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 with 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. Appendix A summarizes property-specific and linkage-related standards and current status. Refer to HMP Section D pages D-73 through D-82 for additional zone-specific standards.

2.0 Biological Management and Monitoring

The Wildlife Agencies have issued permits to jurisdictions and participating landowners for implementation of regional conservation plans like the HMP throughout California to address the development, conservation, and land management activities of conserved lands. One of the primary commitments made by permittees is to maintain the long-term habitat value of the preserve system and its ability to support viable populations of covered species. This section highlights some of the monitoring and management activities conducted by the HMP Division that took place during the reporting period and summarizes the Triennial Long-term Monitoring Report (included in its entirety in Appendix C). Appendix B includes a preserve-by-preserve summary of activities conducted by preserve managers and environmental organizations.

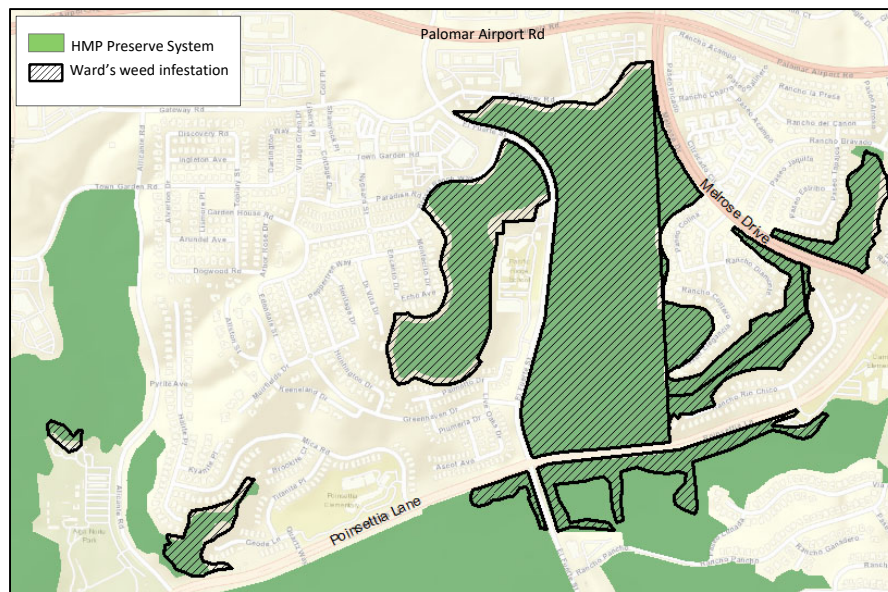
2.1 Invasive Species Early Detection and Rapid Response

Invasive non-native plants and animals are some of the biggest threats to the HMP preserve system and most costly to manage. In partnership with land managers, regional groups and agencies, the HMP Division uses the early detection and rapid response (EDRR) strategy to catch new infestations early when they are smaller and less costly to eradicate or control. This section discusses some of the key invasive species currently under surveillance.

2.1.1 Ward's Weed Eradication Program

Ward's weed (*Carrichtera annua*), a small annual in the mustard family, was first discovered in Carlsbad in 2007, which was one of the only two extant locations in North America (the other was Camp Pendleton). Now it has spread to approximately 200 acres of habitat within the HMP preserves (see map below). Approximately 98% of the known locations in the United States occur in Carlsbad. The remaining locations are small isolated populations in San Diego County. This species is a prolific seed producer, may spread rapidly as a dense mat, and creates flashy fuel after drying up in the summer, creating a wildfire risk.

On Oct. 8, 2019, Carlsbad City Council approved a program to eradicate Ward's weed because of the threat to native habitats, protected plant and animal species, and recreational and agricultural areas in Carlsbad. Phase 1 of the program, consisting of intensive treatment using pre-emergent herbicide Gallery throughout the infested area, was initiated in November 2019 and completed in February 2021. A single treatment has been shown to be effective at suppressing seed germination for at least two years. Phase 2, which consists of surveillance and spot treatment as necessary, was initiated in June, 2021. To date, the Ward's weed treatment has been highly successful at stopping new plants from sprouting, except in a few areas that are irrigated or areas where herbicide was not used. Phase 2 is expected to continue for at least two more years.



2.1.2 Other High Priority Invasive Species Surveillance

Land managers continued ongoing surveillance and adaptive management for the invasive shot hole borer (*Euwallacia* spp.), gold-spotted oak borer (*Agrilus auroguttatus*), and the Italian white snail (*Theba pisana*), among others. The two borer species are relatively new invaders to Southern California and are known to cause significant damage to native riparian trees in a short period of time. The invasive shot hole borer has been confirmed from at least four preserves in Carlsbad and there are unconfirmed signs at several other locations. Although the gold-spotted oak borer has not been confirmed in Carlsbad, it has been confirmed in Oak Riparian Park in Oceanside, which is adjacent to Lake Calavera Preserve. Because knowledge of these species is evolving rapidly, the city and land managers coordinate regularly with the Eskalen Lab at the University of California Cooperative Extension to ensure that the adaptive management responses are based on the best available science.

The Italian white snail has been in San Diego County for about 100 years. In the early 1900s, it caused significant damage to agricultural plants in San Diego but was thought to be eliminated after an intensive eradication program in the 1920s (Martin and Wilen 2018). The snails reappeared in San Diego County a few times since then but didn't show the explosive growth of the early 1990s until recently. In recent years, several locations of explosive growth of the Italian white snail have been identified in Carlsbad. In one location in the Bressi Ranch area, ornamental tree trunks were 100% covered with the snails, which are known to climb up onto vegetation during the hot summer months to avoid ground-level heat. Although it is unknown if the snails can significantly damage native plants, the snail is now considered to be a high alert species by the University of California Department of Agriculture and Natural Resources because of its

explosive growth in San Diego County. Currently, the city and land managers are not aware of effective management for this species. After scraping and crushing the snails from the trees in Bressi Ranch, the snails reappeared the following year in the same density. It is notable that the Italian white snail in Carlsbad is often observed in the same location as Ward's weed, which also originated in the Mediterranean region.

2.2 Long-term Biological Monitoring

Long-term biological monitoring is required by the HMP, and results are reported every three years. Site-specific monitoring is conducted by the preserve managers on actively managed preserves, which accounts for approximately 70% of the HMP preserve system. Vegetation monitoring is accomplished by mapping every five years to evaluate changes in the boundaries of vegetation types over time. CNLM also conducts more detailed studies to evaluate the structure, composition and species richness of coastal sage scrub habitat using permanent sampling plots established evenly across the landscape in Carlsbad.

Focused species surveys are required for a subset of the sensitive species that occur in Carlsbad (MHCP 2003, Vol. III). For discussion purposes, these species are organized into the following functional groups (species that share similar life history characteristics):

- **Upland Plants:** San Diego thornmint (*Acanthomintha ilicifolia*), Thread-leaved brodiaea (*Brodiaea filifolia*), Del Mar Mesa sand aster (*Corethrogyne filaginifolia* var. *linifolia*), Del Mar manzanita (*Arctostaphylos glandulosa* ssp. *crassifolia*), Encinitas baccharis (*Baccharis vanessae*), and Orcutt's hazardia (*Hazardia orcuttii*).
- **Vernal Pool Species:** California Orcutt grass (*Orcuttia californica*), little mousetail (*Myosurus minimus* ssp. *apus*), San Diego button celery (*Eryngium aristulatum* var. *parishii*), spreading navarretia (*Navarretia fossalis*), Riverside fairy shrimp (*Streptocephalus woottoni*), and San Diego fairy shrimp (*Branchinecta sandiegonensis*).
- **Lagoon/Coastal Bird Species:** Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), California least tern (*Sterna antillarum browni*), Ridgeway Rail (*Rallus longirostris levipes*), and western snowy plover (*Charadrius alexandrinus nivosus*).
- **Riparian Bird Species:** least Bell's vireo (*Vireo bellii pusillus*), and southwestern willow flycatcher (*Empidonax traillii extimus*).
- **Upland Bird Species:** coastal California gnatcatcher (*Polioptila californica californica*).

See the most recent triennial monitoring report for the latest collated results and discussion of current status, threats and management

<https://www.carlsbadca.gov/home/showpublisheddocument/6414/637578176614470000>.

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3.0 Financial Summary

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 Implementing Agreement. Two of the city's main responsibilities are: (1) oversight of the HMP Preserve and (2) direct, active management of 629 acres of preserve land owned by the city.

To fulfill the first responsibility, the city dedicates a senior-level coordinator and provides other staff support for HMP implementation. The city also contracted with a biological consulting firm to serve as the city's preserve steward, coordinating management throughout the HMP preserve and evaluating 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.

In addition, although not funded through the HMP Program, the city has two permanent full time rangers who patrol open space areas, including parks, trails, and habitat preserves. The ranger program is administered by the Police Department, which allows the rangers to have citation authority and close contact with the Homeless Outreach Team and police officers, which are often needed to deal with issues such as encampments and other unauthorized access.

3.1.2 Habitat Mitigation Fees

As described in Section 1.3.5, habitat mitigation fees are collected from developers for project-related impacts to certain types of native habitat and deposited into the Habitat Mitigation Fee Fund. Impacted habitats that require a fee include unoccupied coastal sage scrub, coastal sage/chaparral mix, and chaparral (except southern maritime chaparral) (Group C); occupied coastal sage scrub (Group D); non-native grassland (Group E); and disturbed lands, eucalyptus, or agricultural lands (Group F). The purpose of the habitat mitigation fee program is to fund the city's obligation to acquire, protect, and manage lands in the Gnatcatcher Core Area.

As shown in Table 4, mitigation fees totaling \$56,852.24 were collected during the current reporting period. The current balance of the Habitat Mitigation Fee Fund is -\$1,187,163.401. Since the adoption of the HMP, the city has taken advantage of opportunities to purchase Core Area credits when they become available. As of February 20, 2020, the city has fulfilled its Core Area Credit obligation in full. However, on several occasions, the cost of credits exceeded the available Habitat Mitigation Fee funds, requiring an advance from the General Fund and resulting in a negative fund balance. In-lieu fees will continue to be collected for habitat impacts, as appropriate, and will be used to reimburse the General Fund.

Table 3. Habitat Mitigation Fee Fund Activity in RY 16 (2020–2021)

Date	Description	Habitat Impacted	Total
11/01/20	Beginning Fund Total		-\$1,244,015.64
Fees Collected			
11/09/20	Patel Residence	0.17 acre Group F (Ag, Disturbed, Eucalyptus)	\$597.72
01/20/21	Terra Bella	0.17 acre Group F (Ag, Disturbed, Eucalyptus)	\$386.76
06/22/21	Gibson Residence	0.40 acre Group F (Ag, Disturbed, Eucalyptus)	\$1,406.40
07/13/21	Marja Acres	14.80 acres Group F (Ag, Disturbed, Eucalyptus)	\$52,036.80
07/28/21	Eucalyptus Lane	1.16 acres Group F (Ag, Disturbed, Eucalyptus)	\$905.96
10/06/21	3460 Roosevelt SFD	0.80 acre Group F (Ag, Disturbed, Eucalyptus)	\$281.28
10/15/21	Canham Residence	0.36 acre Group F (Ag, Disturbed, Eucalyptus)	\$1,237.32
Total Fees Collected			\$56,852.24
10/31/21	Account Balance		-\$1,187,163.40¹

¹ Does not include interest earned

3.2 Status of Preserve Management Endowments

The endowment activity and status for preserves funded through endowments are given in Table 5. During the reporting period, a total of \$924,123 was spent by the land managers on management and monitoring activities on 28 preserves or preserve complexes (more than one parcel) that comprise 2,776 acres. Endowments for endowment-funded properties totaled \$22,671,313. Fifteen preserves (629 acres) managed by the city are funded through annual budget appropriations. Four additional preserves (1,378 acres) managed by California Department of Fish and Wildlife, are funded by other means, including: 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 4. Endowment Status for HMP Preserves in RY 15 (2020–2021)

Preserve Name	Acres	Land Manager	Inception Date	Original Endowment	Inflation-Adjusted Endowment	RY 20-21 Budget	RY 20-21 Expend.	Total Funds as of 9/30/21 ¹
Bressi Ranch Preserve	173	SDHC	July 2020	\$994,610	\$1,052,993	\$49,596	\$29,075	\$1,036,193
Buena Vista Creek Ecol. Rsv.	143	CNLM	April 2007	\$776,644	\$1,041,961	\$63,903	\$68,667	\$1,853,600
Calavera Hills II/Rob. Ranch	241	CNLM	June 2006	\$1,834,813	\$2,499,302	\$115,150	\$115,150	\$4,652,715
Carlsbad Oaks North	220	CNLM	March 2006	\$1,020,311	\$1,041,961	\$63,903	\$68,667	\$2,419,084
Carlsbad Raceway	43	SDHC	April 2014	N/A ²	N/A ²	\$27,022	\$14,264	N/A ²
Cassia Professional Offices	0.6	CNLM	Jan. 2007	\$104,600	\$138,617	\$6,364	\$6,364	\$247,119
City-owned Preserves	629	City/CNLM	2005	N/A ²	N/A ²	\$212,000	\$212,000	N/A ²
Daybreak Church	4	SDHC	Apr. 2017	\$172,368	\$193,364	\$11,059	\$2,388	\$227,070
Emerald Pointe	10	SDHC	Aug. 2008	\$194,948	\$264,966	\$13,196	\$11,811	\$294,531
Encinas Creek	18	CNLM	May 2007	\$427,004	\$550,506	\$25,400	\$25,400	\$1,048,324
Fox Miller	21	Helix ³	Nov. 2005	N/A ^{2,3}	N/A ^{2,3}	\$43,300	\$40,204	N/A ²
Kelly Ranch	70	CNLM	March 2002	\$296,125	\$477,804	\$19,689	\$19,689	\$861,653
La Costa Collection	8	UC	July 2005	\$378,756	\$464,213	\$18,337	\$18,337	\$521,630
La Costa Glen	108	CNLM	Jan. 2013	\$624,800	\$767,062	\$35,401	\$35,401	\$1,479,285
La Costa Villages	831	CNLM	Feb. 2002	\$1,364,400	\$2,185,838	\$109,494	\$109,494	\$3,388,295
Laurel Tree Lane Preserve	7	SDHC	Dec. 2017	\$365,092	\$406,242	\$24,147	\$20,222	\$482,386
Manzanita Partners	33	HRS	Oct. 2012	\$51,000	\$61,281	\$1,600	\$1,600	\$62,471
Morning Ridge	19	UC	Oct. 2021	\$280,000	\$280,000	\$0	\$0	\$286,000
Muroya	10	SDHC	Oct. 2015	\$314,867	\$371,439	\$15,939	\$12,712	\$426,473
New Crest Preserve	0.04	UC	May 2015	\$91,393	\$106,298	\$4,146	\$4,146	\$426,473
North Coast Calvary Chapel	13	Helix	Sept 2001	N/A ²	N/A ²	\$14,050	\$6,554	N/A ²
Paseo Del Norte	1	UC	Aug. 2016	\$100,009	\$114,850	\$8,659	\$8,659	\$146,737
Poinsettia Place	12	UC	July 2011	\$167,935	\$203,903	\$7,893	\$7,893	\$223,054
Poinsettia Station Vernal Pools	5	City	Mar 2018	\$181,904	\$189,685	\$8,000 ⁴	\$8,140 ⁴	\$239,505
Quarry Creek	92	SDHC	June 2015	\$806,496	\$860,904	\$36,508	\$37,977	\$967,577
Sage Creek	6	SDHC	April 2016	\$275,404	\$315,748	\$12,384	\$10,771	\$526,300
Sonata	3	SDHC	January 2016	\$398,396	\$467,394	\$6813	\$6,341	\$526,300
Southern	55	UC	Nov. 2013	\$428,747	\$498,199	\$22,197	\$22,197	\$636,405
TOTAL	2,776			\$11,455,673	\$14,554,530	\$1,048,154	\$924,123	\$22,671,313

¹ Total funds are reported as of 10/31/20 for HRS, Urban Corps, and Helix

² Long-term management is funded through an annual contract rather than an endowment

³ Fox Miller is considered to be under interim management, as project mitigation requirements have not been met

⁴ Additional as-needed funds are provided by the city until 2024 to allow the endowment account to grow

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4.0 References

City of Carlsbad. 2004. Habitat Management Plan for Natural Communities in the City of Carlsbad.

Martin, T. and C. Wilen. 2018. Italian white snail becoming and invasive pest (again). University of California Cooperative Extension.

<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=27411>.

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

U.S. Department of Labor Consumer Price Index. 2021, December. CPI Inflation Calculator. Retrieved from <https://data.bls.gov/cgi-bin/cpicalc.pl>

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Appendix A

**City Compliance with Terms and Conditions of Take
Authorization and Zone-Wide Standards**

November 1, 2020 - October 31, 2021

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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 1 through 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 4 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 1. Summary of City Compliance with HMP Implementing Agreement Requirements through RY 17 (2020–2021)

IA Section ¹	Obligation	City Compliance
10.10	<p>Duty to Enforce: 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"> ▪ The city requires compliance with the HMP as a condition of approval for new development projects, which includes conservation in perpetuity, a non-wasting endowment, and a management agreement with a preserve manager. ▪ On March 14, 2006, the city passed the Habitat Preservation and Management Requirements Ordinance (Carlsbad Municipal Code Section 21.210), which includes a section on enforcement (Section 21.210.19) for violations of the HMP. ▪ 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.
11.1	<p>Preserve System: To ensure the establishment and management in perpetuity of a 6,757-acre preserve system.</p>	<ul style="list-style-type: none"> ▪ The city has currently gained 6,189 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).
11.2	<p>Project Mitigation Measures: To require additional mitigation measures to mitigate impacts to covered species in all future development projects.</p>	<ul style="list-style-type: none"> ▪ As a condition of approval for new development projects, the city requires that all potential impacts to HMP-covered species be avoided, minimized, and/or mitigated.
11.3	<p>Regulatory Implementation:</p> <ul style="list-style-type: none"> A. Urgency Ordinance – interim HMP enforcement B. Amend Open Space and Conservation Element of General Plan to incorporate HMP C. Amend Open Space Ordinance to incorporate Conserved Habitat Areas D. Amend Municipal Code to incorporate Standards Area compliance E. Amend General Plan to identify HMP as priority use for open space lands F. Wetlands Protection Program 	<ul style="list-style-type: none"> A. The Emergency Ordinance was approved by the City Council in November 9, 2004. B. Revisions to the policy statements regarding the HMP were approved by the City Council in July 2005. C. Revisions were made to Carlsbad Municipal Code 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. 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. 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). 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.

IA Section	Obligation	City Compliance
11.4	Additional Implementation Measures: To implement measures included in MHCP.	<ul style="list-style-type: none"> ▪ 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.
11.5	Regional Conservation: To effectuate the conservation of 307.6 acres of land within the MHCP Gnatcatcher Core Area, and convey the property to a qualified preserve manager.	<ul style="list-style-type: none"> ▪ 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). ▪ The city reimbursed Lennar (developer) for the 50.13 acres that were purchased up-front (see above) on April 26, 2011. ▪ 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. ▪ The Core Area properties are protected under a conservation easement, and are being monitored and managed by the CNLM.
11.6	Cooperative Regional Implementation: To participate in MHCP Elected Officials Committee.	<ul style="list-style-type: none"> ▪ 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.
12.1 12.2 12.4 12.5	Monitoring and Reporting: To track habitat gains and losses within the HMP area (which should occur in rough step with one another); to maintain its database of biological resources; to submit an annual report by December 1 of each year; to hold a public meeting to discuss HMP implementation; to provide the Wildlife Agencies with additional reports if necessary for compliance monitoring; and to certify all reports.	<ul style="list-style-type: none"> ▪ Habitat gains and losses are being tracked through Habittrak. Rough step preserve assembly is built into the city's permitting process. ▪ 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. ▪ Protocols and standards have been developed with regard to baseline surveys and monitoring (survey methods and data format), entry and attributing of GIS data, and data management. ▪ Annual public HMP workshops are held every year to give participants an opportunity to learn about current HMP preserve assembly, management, and monitoring, and to ask questions and provide comments. ▪ 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.
12.3	Preserve Management and Monitoring Plan: To prepare a preserve management and monitoring plan that will detail recommendations in HMP Section F.	<ul style="list-style-type: none"> ▪ 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.

IA Section	Obligation	City Compliance
13.0	<p>Adaptive Management: To ensure that adaptive management actions do not result in less mitigation than provided for the HMP Covered Species under the original terms of the HMP, unless approved by the Wildlife Agencies.</p>	<ul style="list-style-type: none"> ▪ 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. ▪ The city is coordinating with the regional adaptive management and monitoring efforts through the San Diego Management and Monitoring Program. ▪ The city has developed Guidelines for Preserve Management (TAIC 2009), which include monitoring and management priorities and a monitoring report checklist (Appendix C).
14.0	<p>Funding:</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 habitat 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&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 a habitat mitigation fee program for new development that will fund the city's remaining Gnatcatcher Core Area obligations.</p>

¹ IA – Implementing Agreement

**Table 2. Summary of City Compliance with Terms and Conditions
of CDFW Permit through RY 17 (2020–2021)**

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>	<p>See Table 5, IA Section 11.3.</p>
<p>G. This permit is subject to compliance with the MHCP Volumes I–III, HMP, including Addenda 1 and 2, and the IA.</p>	<p>All project approvals within the city are subject to these requirements as a condition of approval.</p>
<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>	<p>See Table 7, USFWS 10(a) Permit Condition 7 for a description of compliance.</p>
<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"> • Standard Best Management Practices (Appendix B) • General Outline for Revegetation Plans (Appendix C) • Narrow Endemic Species and Critical Population Policies (Appendix D) • Conditions for Estuarine Species (Appendix E) • CEQA requirements for quantifying and mitigating impacts 	<p>See description for Condition G.</p> <p>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.</p>

Table 3. Summary of City Compliance with the Terms and Conditions of USFWS Permit through RY 17 (2020–2021)

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
1. All sections of Title 50 Code of Federal Regulations (CFR) 13, 17.22, and 17.32 are conditions of this permit.	Appropriate language has been integrated into the HMP and IA; therefore, compliance with these documents ensures compliance with Title 50 CFR sections.
2. The permittee is subject to compliance with the MHCP, HMP, and IA.	The city complies with all regulations as described in Tables 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&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> <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>Listed species: <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><u>Table 1 (a).</u> No take of these species has been authorized by the city.</p> <p><u>Table 1 (b).</u> No Incidental Take Permits have been issued by the city for these species.</p>

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>Not yet listed: <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</u> being permitted for the following species: <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</u> access to manage and monitor the following species: <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 (b).</u> No Incidental Take Permits have been issued by the city for these species.</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 <u>receiving 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 mousetail <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. 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&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>

Federal ESA 10(a) Permit Terms and Conditions (T&C)	Description of City Compliance
<p>7. To receive coverage for thread-leaved brodiaea, the city must demonstrate that:</p> <ul style="list-style-type: none"> (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. 	<ul style="list-style-type: none"> (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>8. To minimize impacts to the California gnatcatcher, rufous-crowned sparrow, and orange-throated whiptail, the city must:</p> <ul style="list-style-type: none"> (a) Maintain and/or widen the habitat corridor between the city and Oceanside as much as feasible. (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. 	<ul style="list-style-type: none"> (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. (b) No other uses for this property have been proposed at this time.
<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 4. Compliance with Zone-Wide Standards through RY 17 (2020–2021)

Zone	Zone-Specific Standard	Current Status
All Zones	A minimum of 67% of coastal sage scrub and 75% of the gnatcatchers shall be conserved overall within the Standards Areas.	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.
Zone 1	Preserve at least 50% of coastal sage scrub and avoid areas occupied by gnatcatchers. Applies to several vacant lots on north shore of Agua Hedionda Lagoon and a larger, vacant in-fill lot SW of El Camino Real and Kelly Drive.	Vacant lots on 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.
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.

Appendix B
Summary of Management and Monitoring
Activities within HMP Management Units
November 1, 2020–October 31, 2021

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Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021

Preserve Area	Organization	Management and Monitoring Activities
<p>Agua Hedionda Lagoon area</p>	<p>Agua Hedionda Lagoon Foundation</p>	<ul style="list-style-type: none"> ▪ Conducted bi-weekly inspections to monitor trails and easements. ▪ Worked with the City of Carlsbad’s Trail Rangers program for better enforcement and hiker awareness. ▪ Worked with the city and the California Coastal Commission to ensure public safety on 3.1 miles of public access easements. ▪ Hosted approximately 1,200 volunteers through trail maintenance events and the Agua Hedionda Lagoon Discovery Center Events. ▪ Monitored 132 acres of open space in the Coastal Zone. ▪ Removed and monitored invasive non-native plant species along trails and preserved areas. ▪ Installed preventative measures for coastal bluff erosion. ▪ Hosted monthly community bird walks and guided hikes around the lagoon. ▪ Worked with the United States Fish and Wildlife Service (USFWS) Coastal Program to address infestations of Algerian sea lavender (<i>Limonium ramosissimum</i>) in the California Department of Fish & Wildlife’s (CDFW) preserve and lay tarping to eradicate the species through solarization. ▪ Released 42 monarch butterflies (<i>Danaus plexippus</i>) that were established in pollinator garden. ▪ Welcomed back onsite Environmental Stewardship school field trips for the first time since Covid-19 in September of 2021. Current student projects are 3,744 students with a goal of 5,000. This includes all of Carlsbad Unified School District 3rd and 7th graders, and 5 surrounding districts, as well as approximately 13 private, charter, and homeschool groups. ▪ Organized Free Public Virtual Education events including World Water Day, amongst others. ▪ Attended Science Days & School Outreaches totaling approximately 6 schools. ▪ Helped approximately 150 Boy & Girl Scouts earn badges. ▪ Educated 300 students through our Discovery Camps and After School Enrichment. ▪ Educated 30 students daily through our Preschool Playdates Program. ▪ Removed 99 bags of trash and 32 bags of invasive non-native species from the lagoon during our annual Lagoona Kahuna Team Challenge Event, for corporate companies locally. ▪ 40,000 visitors walked through our doors or around our perimeter during the height of the pandemic. ▪ Published 22 episodes of our podcast, Nature All Around Me, which began in August of 2020. ▪ Partnered with The Raptor Institute and brought 4 native raptor species onsite as an educational exhibit expansion at the Discovery Center ~ Raptor Ridge on Cannon Road. ▪ Provided 11 outreach groups with concentrated educational opportunities on Raptor Species native to San Diego using our ambassadors: Western Screech Owl, Peregrine Falcon, American Kestrel, and Great Horned Owl. ▪ Trained 6 new interns in the field of wildlife care to learn, care, and educate the public on native raptors in the area.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
	Preserve Calavera	<ul style="list-style-type: none"> ▪ Conducted bi-monthly water quality and stream condition evaluations at three locations in sub-watershed.
<p align="center">Agua Hedionda Lagoon Ecological Reserve</p>	<p align="center">Land Manager: California Department of Fish and Wildlife</p>	<ul style="list-style-type: none"> ▪ Treated invasive Algerian sea lavender and expanded solarization study with Agua Hedionda Lagoon Foundation to include Northern section of Ecological Reserve. ▪ Continued Restoration efforts at Park Drive Restoration site (1.25 acres). ▪ Continued invasive stinkwort (<i>Dittrichia graveolens</i>) removal program at Park Drive Restoration site. ▪ Maintained boundary trail along Park Drive to connect to Kelly Trail. ▪ Removed invasive non-native plants within Reserve. ▪ Conducted weekly inspections to monitor trails and easements. ▪ Conducted western snowy plover (<i>Charadrius nivosus nivosus</i>) winter window surveys and light-footed Ridgway's rail (<i>Rallus longirostris levipes</i>) breeding surveys. ▪ Maintained boundary fencing and signage.
<p align="center">Batiquitos Lagoon area</p>	<p align="center">Batiquitos Lagoon Foundation</p>	<ul style="list-style-type: none"> ▪ Completed biomass removal at the Rookery. Biomass reduction is nearing completion. ▪ Conducted restoration work, including site prep (watering and weed control, as needed) and revegetation of native plants at the Rookery (160 containers; 2.09 acres), East Trail (E2) (removed thistle, planted 1,635 containers; 13.28 acres), and Cholla Point (removed tamarisk, palms, and ornamental plants; 18.2 acres) sites. ▪ Completed irrigation to restoration sites. The water pipe and connection for the East Trail area and the Dune area were installed and water access is available at all restoration sites. ▪ Managed and maintained irrigation to restoration sites to ensure continuous irrigation for restored vegetation. Installed water pipes and connections for the East Trail area and the Dune area. ▪ Engaged 112 community members, including San Diego Gas and Electric (SDGE) employees and families, the Mayor of Carlsbad, the SDGE Environmental Sustainability Team, Jefferson Middle School, Spectrum Plastics, and Surfrider in stewardship activities, including the removal of biomass and invasive non-native species (e.g., date palms and eucalyptus), the planting of 100 trees (50 willows and 50 cottonwoods) donated to the project by SDGE, the replacement of trail fencing, and trail maintenance. ▪ Installed 15 temporary informative and advisory signs at restoration sites and trailheads. Outreach about restoration and maintenance impacts on trail closures through newsletter, websites, bulletins, and community engagement. ▪ Installed replacement MPA signs at the west trailhead. ▪ Performed survival monitoring of restored area at the Rookery. Expected mortality: ~20%; current results within range. ▪ Performed survival monitoring of restored area at E2. ▪ Mapped salt marsh vegetation at edge of water to document how salt marsh species are expanding at the Dunes. ▪ Removed non-native clover at the Dunes. ▪ Propagated native species to be planted in late winter and early spring at the Dunes. ▪ Installed signage at Cholla Point to prevent further erosion.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Batiquitos Watershed	Preserve Calavera	<ul style="list-style-type: none"> ▪ Continued bi-monthly water quality and stream condition evaluation at three locations in the sub-watershed. ▪ Continued volunteer work sessions restoring coastal sage scrub and native grasslands at La Costa Canyon.
Batiquitos Lagoon Ecological Reserve	Land Manager: California Department of Fish and Wildlife	<ul style="list-style-type: none"> ▪ Performed habitat management and breeding season surveys for California least tern (<i>Sterna antillarum browni</i>), western snowy plover breeding season and wintering window surveys, and light-footed Ridgway's rail breeding surveys. ▪ Maintained nesting sites. ▪ Released 9 light-footed Ridgway's rails in coordination with Living Coast Discovery Center & Seaworld. ▪ Continued assisting with the Movement Ecology and Survival of Light-footed Ridgeway's Rail Project with the University of Idaho & USGS. ▪ Conducted Nuttall's acmispon (<i>Acmispon prostratus</i>) monitoring following San Diego Management and Monitoring Program's (SDMMP) inspect and manage (IMG) protocol. ▪ Controlled invasive non-native plant species within the preserve. ▪ Conducted weekly inspections to monitor trails and easements. ▪ Maintained boundary fencing and signage.
Bressi Ranch Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted initial site inspection and met with HOA landscaper to determine visibility of traffic signs along El Fuerte, discuss vegetation trimming, and map trash and non-natives for removal. ▪ Conducted baseline vegetation and sensitive species mapping – detected coastal California gnatcatcher (CAGN; <i>Poliophtila californica californica</i>), Cooper's hawk (<i>Accipiter cooperii</i>), orange-throated whiptail (<i>Aspidoscelis hyperythrus</i>), monarch butterfly, oak titmouse (<i>Baeolophus inornatus</i>), yellow warbler (<i>Setophaga petechial</i>), and California adolphia (<i>Adolphia californica</i>). ▪ Established seven photo points within the Preserve. ▪ Conducted bi-monthly site patrols to observe and document biodiversity on site and substantial changes in habitat composition, remove trash, remove and/or map invasive non-native plant species for removal, look for trespass (e.g., bike jumps), and assess the need for remedial measures. ▪ Conducted hand-weeding of invasive non-native plant species within the preserve; focus on Ward's weed (<i>Carrichtera annua</i>). ▪ Provided newsletter to HOA and attended HOA meeting. ▪ Noted trespassing, met with HOA to discuss proposed fence location for central parcel, met with contractor and inspected fence installation. ▪ Conducted evening site patrol to check for light pollution and met with HOA to look at area of concern with coyotes.
Buena Vista Creek Ecological Reserve	Landowner: California Department of Fish and Wildlife	<ul style="list-style-type: none"> ▪ Monitored thread-leaved brodiaea (TLB; <i>Brodiaea filifolia</i>) index plots – TLB abundance and flowering is mostly correlated with rainfall. ▪ Conducted shot-hole borer (<i>Euwallacea</i> spp.) monitoring – none detected. ▪ Conducted least Bell's vireo (LBVI; <i>Vireo bellii pusillus</i>) monitoring – 5 male LBVI detected.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
	<p align="center">Land Manager: Center for Natural Lands Management</p>	<ul style="list-style-type: none"> ▪ Conducted sensitive species monitoring. ▪ Treated/removed invasive non-native species, with a focus on fennel (<i>Foeniculum vulgare</i>), black mustard (<i>Brassica nigra</i>), castor bean (<i>Ricinus communis</i>), and pampas grass (<i>Cortaderis selloana</i>). ▪ Mowed fuel zones in May 2021. ▪ Conducted weekly patrols. Trespass is common, but no major issues to report. ▪ Updated kiosk materials quarterly. ▪ Routinely maintained gates and fences. Picked up trash as necessary. ▪ Completed annual stewardship plan, budget, and report.
<p align="center">Buena Vista Lagoon Ecological Reserve</p>	<p align="center">Land Manager: California Department of Fish and Wildlife</p>	<ul style="list-style-type: none"> ▪ Performed western snowy plover wintering window surveys and light-footed Ridgway’s rail breeding surveys. ▪ Controlled invasive non-native plant species within the preserve. ▪ Cleaned up 5 homeless encampments. ▪ Removed 23 feral cat feeding stations. ▪ Conducted trail maintenance activities. ▪ Performed fire fuel reduction along north shore. ▪ Conducted weekly inspections to monitor trails and easements.
<p align="center">Buena Vista Lagoon/Watershed</p>	<p align="center">Preserve Calavera</p>	<ul style="list-style-type: none"> ▪ Continued bi-monthly water quality and stream condition evaluations at three locations in sub-watershed. ▪ Continued monitoring and action to reduce edge effects at El Salto falls and in Buena Vista Creek Ecological Reserve. ▪ Supported trash cleanup events held by San Diego Habitat Conservancy and I Love a Clean San Diego.
<p align="center">Calavera Area</p>	<p align="center">Preserve Calavera</p>	<ul style="list-style-type: none"> ▪ Continued monitoring of wildlife movement corridors and pinchpoints. ▪ Collected native milkweed seeds for San Diego Pollinator Alliance. ▪ Supported wildlife movement and biological surveys at Village H. ▪ Continued participation in the city’s Trails Volunteer Program.
<p align="center">Calavera Hills Phase II/Robertson Ranch</p>	<p align="center">Land Manager: Center for Natural Lands Management</p>	<ul style="list-style-type: none"> ▪ Completed coastal sage scrub monitoring – cover of native and exotic forbs/grasses was low, consistent with little rainfall; native shrub cover declined slightly. ▪ Monitored thread-leaved brodiaea index plots – TLB abundance and flowering is mostly correlated with rainfall. ▪ Conducted grassland transects – highest native grass cover and fob ever recorded. ▪ Conducted surveys for San Diego coast horned lizard (<i>Phrynosoma coronatum blainvillii</i>) – none detected. ▪ Mounted a wildlife camera in the College Avenue wildlife tunnel primarily to document reptiles – none detected. ▪ Repaired minor fence breaks or issues – no major maintenance was required. ▪ Treated/removed non-native invasive plant species (eucalyptus [<i>Eucalyptus</i> spp.], pampas grass, and black mustard). ▪ Maintained the old Village H restoration area. Installed 2,000 plantings and spread seed at the new Village H restoration area. ▪ Conducted weekly patrols – no major issues to report.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
		<ul style="list-style-type: none"> ▪ Updated information kiosks regularly. ▪ Completed the annual stewardship plan and budget, annual report, and Conservation Easement (CE) compliance report.
<p>Carlsbad Highlands Ecological Reserve</p>	<p>Land Manager: California Department of Fish and Wildlife</p>	<ul style="list-style-type: none"> ▪ Removed graffiti from Department signage. ▪ Removed 11 unsafe trail features and conducted trail maintenance. ▪ Continued habitat restoration on 2 acres. ▪ Conducted weekly inspections to monitor trails and easements. ▪ Conducted fire fuel reduction along property boundary. ▪ Coordinated on a narrowleaf milkweed (<i>Asclepias fascicularis</i>) seed collection project to improve monarch butterfly habitat with USGS. ▪ Controlled invasive non-native plant species within the preserve. ▪ Maintained boundary fencing & signage. ▪ Engaged in Public Education efforts concerning allowed activities.
<p>Carlsbad Oaks North Preserve</p>	<p>Land Manager: Center for Natural Lands Management</p>	<ul style="list-style-type: none"> ▪ Conducted sensitive plant species monitoring for San Diego thornmint (<i>Acanthomintha ilicifolia</i>), Blochman’s dudleya (<i>Dudleya blochmaniae</i>), and thread-leaved brodiaea – San Diego thornmint counts were the lowest recorded in extant occurrence; lowest count of Blochman’s dudleya with no flowering individuals; and TLB vegetation counts were highest recorded with no flowering individuals. ▪ Completed coastal sage scrub monitoring – cover of native and exotic forbs/grasses was low, consistent with little rainfall; native shrub cover declined slightly. ▪ Conducted coast live oak (<i>Quercus agrifolia</i>) mapping via drone aerial imagery in July 2021. ▪ Conducted animal movement analysis – generally consistent movement through the eastern tunnel was observed; observations in the western tunnel commenced in late summer 2021. ▪ Removed hundreds of invasive non-native species (pampas grass, stinkwort, fountain grass [<i>Pennisetum setaceum</i>], and stinknet [<i>Oncosiphon piluliform</i>]) using manual, chemical, and mechanical methods. ▪ Maintained plants and removed invasive species with Nature Collective. ▪ Maintained lemonadeberry (<i>Rhus integrifolia</i>) planted in 2020 and removed invasive species at the impact area. ▪ Initiated restoration planning at area impacted by illegal grading around Oakmont development. ▪ Removed invasive non-native species and performed plant counts/assessments within the San Diego thornmint extant population. ▪ Maintained San Diego thornmint out-seeding areas free of invasive non-native species, assessed habitat and counted plants. Added new outseed areas at EFTN and EFTS. ▪ Monitored biannual TLB index plots. ▪ Conducted regular patrols. Coordinated with City rangers and HOT team to remove persistent itinerant at tunnel.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
		<ul style="list-style-type: none"> ▪ Performed outreach with new companies occupying the building to talk about HCA and illegal trails behind the new development. ▪ Completed the annual stewardship plan and budget, annual report, and CE compliance monitoring and reporting.
Carlsbad Raceway Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted quarterly site patrols to observe and document the biodiversity of the site and substantial changes in habitat composition, remove trash, remove and/or map invasive non-native plant species for removal, look for signs of trespass, and assess the need for remedial measures. ▪ Conducted presence/absence surveys for Cooper’s hawk and yellow-breasted chat (<i>Icteria virens</i>) during each patrol. ▪ HELIX conducted invasive removal efforts within the wetland areas, focusing on pampas grass, fennel, artichoke thistle (<i>Cynara cardunculus</i>), black mustard, stinkwort, and sweet clover (<i>Melilotus</i> spp.). ▪ Conducted photo documentation. ▪ Collected soil samples near the San Diego thornmint population and installed solarization plots in 3 potential transplant locations. ▪ Conducted SDMMP IMG survey for San Diego thornmint. ▪ Performed minor hand weeding of tocalote (<i>Centaurea melitensis</i>) near San Diego thornmint area. ▪ Removed two bags of trash from undercrossings. ▪ Conducted maintenance event and removed solarization plots. ▪ Installed three traps for shot-hole borer. ▪ Reinstalled a sign and post. ▪ Provided newsletter to HOA and worked with several interns.
City of Carlsbad Preserves	Land Manager: Center for Natural Lands Management	<ul style="list-style-type: none"> ▪ Conducted sensitive plant assessments – a total of 14 TLB were observed (less than the 64 observed in 2020). ▪ Conducted relevé surveys on multiple open space locations – vegetation appears healthy. ▪ Conducted invasive pest monitoring – shot-hole borer issues at the Crossings Golf Course seem to be contained and no gold-spotted oak borer (<i>Agrilus coxalis</i>) were observed in oak woodlands. ▪ Controlled many non-native invasive species at various sites. ▪ Cleaned brow ditches at Carlsbad Village Drive and Crossings Golf Course. Implemented erosion control measures at Crossings Golf Course, Batiquitos Drive, La Costa Romeria, and Lake Calavera. ▪ Performed brown-headed cowbird (<i>Molothrus ater</i>) trapping at the Crossing Golf Course using two separate traps – numerous adult cowbirds captured. ▪ Conducted patrols regularly with no major issues. Graffiti increased at Lake Calavera and was painted over. Ranger continues to interact with and educate patrons.
Daybreak Community Church Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted initial site inspection and met with HELIX biologist to compare condition of the Preserve with assumptions of the PAR and PMP. ▪ Conducted site visit to inspect general site conditions and met with Daybreak Church volunteer monitor. ▪ Noted presence of invasive non-native plants (castor bean and tree tobacco [<i>Nicotiana glauca</i>]).

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Emerald Pointe Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted quarterly patrols to locate blooming San Diego thornmint for seed collection, monitor erosion control measures, survey for illegal activities such as trespassing or dumping, remove trash, and remove and/or map invasive non-native plants. ▪ Established photo point locations. ▪ Conducted SDMMP IMG survey for San Diego thornmint. ▪ Provided newsletter to HOA. ▪ Installed erosion control fencing, including trenching, burying fence 6–8 inches, and straw waddles in critical areas. ▪ Applied cryptogram for assessment after next rain season. ▪ Met with Stacy Anderson to collect San Diego thornmint seed. ▪ Conducted surveys for Baja California oatgrass (<i>Sphenopholis interrupta</i> ssp. <i>californica</i>) at the request of San Diego Natural History Museum, but only observed Wiggins’ cryptantha (<i>Cryptantha wigginsii</i>).
Encinas Creek/North County Habitat Bank Preserve	Land Manager: Center for Natural Lands Management	<ul style="list-style-type: none"> ▪ Conducted LBVI and CAGN surveys – none were detected. ▪ Conducted wildlife movement monitoring – bobcat (<i>Lynx rufus</i>) and coyote (<i>Canis latrans</i>) were observed. ▪ Conducted invasive shot-hole borer and <i>Fusarium</i> fungus monitoring – onsite habitat regrowth is good. ▪ Mapped sensitive species observations. ▪ Removed invasive non-native species (pampas grass, tropaeolum [<i>Tropaeolum majus</i>] within willow habitat. ▪ Conducted restoration activities, including non-native species control. ▪ Conducted bi-weekly to monthly patrols – trespass and illegal camping were detected. ▪ Completed the annual stewardship and work plan report. Started revising the Habitat Management Plan.
Fox-Miller Preserve	Helix Environmental Inc. (interim management)	<ul style="list-style-type: none"> ▪ Treated non-native broad-leaf and grass species, primarily black mustard, bristly ox-tongue (<i>Helminthotheca echioides</i>), and wild lettuce (<i>Lactuca serriola</i>). ▪ Conducted maintenance and trash removal four times in 2020/2021 FY. ▪ Conducted assessments of habitat conditions. ▪ Inspected signage and fencing. ▪ Checked for presence of sensitive wildlife species (CAGN, LBVI, and Cooper’s hawk). ▪ Recorded all plant and animal species observed during monitoring visits. ▪ Conducted a health assessment of the TLB population within the translocation plot and the remainder of the grassland. ▪ Inspected the owl box – no use detected due to presence of beehive inside box.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Kelly Ranch Preserve	Land Manager: Center for Natural Lands Management	<ul style="list-style-type: none"> ▪ Conducted Orcutt’s hazardia (<i>Hazardia orcuttii</i>) monitoring – a total of 109 Orcutt’s hazardia were found (87 adults, 22 juveniles, and 0 seedlings). ▪ Postponed clay lens assessment due to lack of rainfall, budget, and staff attrition. ▪ Conducted sensitive species monitoring. ▪ Treated invasive non-native plants (pampas grass, natal grass [<i>Melinis repens</i>], Russian thistle [<i>Salsola tragus</i>], and tree tobacco). ▪ Planted cliff spurge (<i>Euphorbia misera</i>) that were propagated from plant cuttings collected on-site. ▪ Conducted easement compliance monitoring – other than erosion problems resulting from high April precipitation, no issues. ▪ Conducted patrols at least once a month. Littering is common near viewpoint, but no other issues observed. ▪ Contacted neighbors and the HOA regarding issues of concern. ▪ Completed the annual stewardship plan and budget, annual report, and CE compliance report.
La Costa Collections Preserve/City Ventures	Land Manager: Urban Corps of San Diego County	<ul style="list-style-type: none"> ▪ Conducted general biological monitoring to monitor sensitive species and habitat condition, identify invasive non-native species, and conduct photo monitoring. ▪ Conducted CAGN protocol surveys. ▪ Conducted Nuttall’s scrub oak (<i>Quercus dumosa</i>) monitoring: mapped general distribution and assessed condition and degree of disturbance to habitat. ▪ Conducted Del Mar sand aster (<i>Corethrogyne filaginifolia</i> var. <i>linifolia</i>) monitoring: delineated population boundaries, counted/estimated population, and assessed condition and degree of disturbance to habitat. ▪ Performed general site monitoring: monitored and removed trash/debris, reported any human encroachment, and inspected signs/fencing. ▪ Removed non-native plants during seven visits, primarily creeping myoporum (<i>Myoporum parviflorum</i>), crown daisy (<i>Glebionis coronaria</i>), crystalline ice plant (<i>Mesembryanthemum crystallinum</i>), and castor bean. ▪ Completed annual report.
La Costa Glen Preserve	Land Manager: Center for Natural Lands Management	<ul style="list-style-type: none"> ▪ Conducted seaside calandrinia (<i>Cistanthe maritima</i>) surveys – 0 plants discovered. ▪ Conducted Orcutt’s spineflower (<i>Chorizanthe orcuttiana</i>) surveys – 0 plants discovered. ▪ Cancelled CAGN surveys due to staff attrition and prioritization of other issues, such as illegal grading and bike jumps. ▪ Did not deploy wildlife camera this year due to ongoing activity of unhoused individuals in the tunnel. ▪ Observed general plant and animals – no new species observed. ▪ Did not tag sensitive plant species due to allocation of staff time and resources dedicated to addressing illegal issues that occurred on the HCA. ▪ Removed thousands of invasive non-native plants, primarily perennial veldt grass (<i>Erhardta calycina</i>), as well as hundreds of Sahara mustard (<i>Brassica tournefortii</i>) plants.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
		<ul style="list-style-type: none"> ▪ Performed patrols and observed limited issues other than an uptick of homeless activity. ▪ Removed trash from transient encampments as encountered. ▪ Completed the annual stewardship plan and budget and annual report.
Laurel Tree Lane Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted quarterly patrols to assess and address shot-hole borer/<i>Fusarium</i> treatments and any substantial changes in the habitat composition of the preserve, remove trash, remove and/or map invasive non-native plant species, look for signs of trespass, and assess any need for remedial measures. ▪ Established photo points. ▪ Provided newsletter to the property manager for the neighboring 24-Hour Fitness corporate office. ▪ Contacted property manager of 24-Hour Fitness for input and assistance to trim vegetation that was overhanging trails and sidewalk adjacent to Preserve. Provided nesting bird surveys for vegetation trimming activities. ▪ HELIX performed weed removal via hand, mechanical, and herbicide, and removed trash. ▪ Met with County staff regarding shot-hole borer infestation and assisted with marking trees for testing and potential removal. ▪ Lost Sage applied herbicide using backpack sprayers to treat poison hemlock (<i>Conium maculatum</i>), thistles, mustards, and oxalis. ▪ Patrolled and hand-weeded mustards with volunteers. ▪ Met with contractor for shot-hole borer planning and took additional samples to determine if trees were infected. ▪ Conducted general site visit, adjusted signs, and mapped invasives for treatment and checked for shot-hole borer in new areas.
Manzanita Partners Preserve	Land Manager: Habitat Restoration Sciences	<ul style="list-style-type: none"> ▪ Inspected and replaced signs as needed. ▪ Inspected and repaired or replaced fencing as needed. ▪ Patrolled and conducted site enforcement on a regular basis. ▪ Removed non-native plant species. ▪ Provided support for tasks provided by the Nature Collective and Preserve Steward staff as appropriate and included data provided by other organizations. ▪ Removed trash. ▪ Noted all animal species observed and mapped locations of any sensitive species. ▪ Reported and described data collected and management actions taken on the preserve to the City.
Morning Ridge Preserve	Land Manager: Urban Corps of San Diego County	<ul style="list-style-type: none"> ▪ No information available (management transitioned in 2021).

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Muroya Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted quarterly patrols to observe and document the biodiversity of the site and substantial changes in the habitat composition, remove trash, remove and/or map invasive non-native plant species, look for signs of trespass, and assess the need for remedial measures. ▪ Conducted vegetation mapping and surveyed for Nuttall’s scrub oak and other sensitive species. ▪ Conducted invasive non-native species removal, focusing on poison hemlock, Italian thistle (<i>Carduus pycnocephalus</i>), black mustard, and castor bean. Removed an ornamental ivy from a coast live oak (<i>Quercus agrifolia</i>) tree. ▪ Conducted maintenance to change lock on main gate and photo documentation. ▪ Provided a newsletter to the HOA and attended the HOA meeting.
New Crest Preserve	Land Manager: Urban Corps of San Diego County	<p>Conducted general site monitoring to monitor sensitive species and habitat condition, identify invasive non-native species, conduct photo monitoring, monitor and remove trash, erosion, human encroachment, and check on and repair signs/fencing.</p> <ul style="list-style-type: none"> ▪ Removed invasive non-native plant species, primarily tree tobacco and black mustard. ▪ Completed annual report.
North Coast Calvary Chapel Preserve	Helix Environmental (interim management)	<ul style="list-style-type: none"> ▪ Conducted an inventory of wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>) in May 2021. ▪ Conducted regular monitoring visits to inspect sensitive habitats, hydrology, erosion, exotic plant species, exotic animal species, as well as fencing, gates, signs, and lighting. ▪ Conducted non-native plant species control and trash removal. Targeted black mustard, Russian thistle, tree tobacco, and non-native grasses. ▪ Monitored the bare area along the eastern boundary of the northern parcel that was seeded in 2019. Seed did not establish and supplemental seeding is recommended. ▪ Conducted an assessment of wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>). All 14 individuals were observed in previously documented locations. ▪ Observed CAGN at three locations within the preserve.
Paseo del Norte Preserve	Land Manager: Urban Corps of San Diego County	<ul style="list-style-type: none"> ▪ Performed quarterly site visits to monitor sensitive species and habitat condition, identify invasive non-native species, conduct photo monitoring, monitor and remove trash, erosion, human encroachment, and check on and repair signs/fencing. ▪ Updated vegetation mapping and sensitive species locations. ▪ Removed invasive non-native plant material, primarily pampas grass seed heads. ▪ Completed annual report.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
<p>Poinsettia Place Preserve</p>	<p>Land Manager: Urban Corps of San Diego County</p>	<ul style="list-style-type: none"> ▪ Performed annual biological monitoring to monitor rare plant populations and habitat condition, identify invasive non-native species, and conduct photo-documentation. ▪ Conducted Nuttall’s scrub oak monitoring: mapped general distribution and assessed condition and degree of disturbance to habitat. ▪ Conducted wart-stemmed ceanothus monitoring: mapped general distribution and assessed condition and degree of disturbance to habitat. ▪ Conducted summer holly (<i>Comarostaphylis diversifolia</i> ssp. <i>diversifolia</i>) monitoring: mapped general distribution and assessed condition and degree of disturbance to habitat. ▪ Conducted Del Mar manzanita (<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>) monitoring: mapping general distribution, identify non-native species and disturbance attributes, measure relative abundance, and assess condition and degree of disturbance to habitat. ▪ Conducted quarterly general site monitoring to monitor and remove trash/debris, report human encroachment, check on and repair signs/fencing, and monitoring compliance with the Restrictive Covenant. ▪ Removed non-native plant material, acacia and mustard. ▪ Removed trash during two site visits. ▪ Installed three signs and painted over graffiti. ▪ Poinsettia 61 residential development installed new 3-strand barbless wire fencing on t-posts along the entire southern boundary. ▪ Completed annual report.
<p>Poinsettia Station Vernal Pools</p>	<p>Land Manager: City of Carlsbad (Dudek/HRS)</p>	<ul style="list-style-type: none"> ▪ Assessed the SANDAG potholing sites. ▪ Conducted vernal pool indicator plant surveys. ▪ Assessed vernal pool sensitive species populations. ▪ Assessed non-native plant populations for management. ▪ Conducted weed control of vernal pool areas around the northern population of spreading navarretia (<i>Navarretia fossalis</i>).

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Quarry Creek Preserve	<p>Land Manager: San Diego Habitat Conservancy</p>	<ul style="list-style-type: none"> ▪ Conducted monthly patrols to document biodiversity of the site, changes in habitat composition, remove trash, check signage, monitor invasive plant species, and assess the need for remedial measures. ▪ Coordinated hand off of mitigation areas, hosted volunteer cleanups to remove encampments and associated trash, performed maintenance, and conducted vegetation mapping. ▪ Reported multiple instances of trespassing and active encampments to City of Carlsbad Police Department, City of Oceanside Police Department, and City of Oceanside Code Enforcement. Removed encampments and associated trash, confronted and asked trespassers to leave, removed graffiti. ▪ Deconstructed the illegal dirt jumps; however, the dirt jumps and trails were reestablished. ▪ Reinstalled signs and posts at a deeper depth to deter vandalism. ▪ Coordinated with offsite HOA and Carlsbad Police Department on trespassers. ▪ Installed a wrought-iron fence and gate in response to persistent trespassing; gate remains intact but damage to the chain link and wrought-iron fence has been noted. Continued coordination with CDFW and offsite property manager to install additional barriers or fencing. ▪ HELIX conducted invasive non-native plant removal, focusing on castor bean, Mexican fan palm, tree of heaven (<i>Ailanthus altissima</i>), and tree tobacco. ▪ Conducted vegetation mapping and photo documentation. ▪ Installed ant traps along Buena Vista Creek in areas where Argentine ants were observed. Checked and refilled ant bait stations. ▪ Hand-pulled stinkwort from southern creek slope. ▪ Mapped LBVI and CAGN near El Salto Falls bridge. ▪ Met with Cornerstone staff to inspect fennel treatment area. ▪ Conducted general presence/absence surveys for CAGN, LBVI, white-tailed kite (<i>Elanus leucurus</i>), yellow warbler, and yellow-breasted chat. ▪ Provided brochure to HOA and attended HOA meeting. ▪ Reviewed and updated PMP to include increased trespassing issues.
Rancho La Costa Preserve	<p>Land Manager: Center for Natural Lands Management</p>	<ul style="list-style-type: none"> ▪ Completed coastal sage scrub monitoring – cover of native and exotic forbs/grasses was low, consistent with little rainfall; native shrub cover declined slightly. ▪ Conducted San Diego thornmint monitoring – populations were low due to lack of rain. ▪ Conducted San Diego thornmint out-seeding – populations were low due to lack of rain. ▪ Conducted Orcutt’s brodiaea (<i>Brodiaea orcuttii</i>) monitoring – recorded 169 flowering individuals. ▪ Conducted Orcutt’s hazardia monitoring – no new individuals observed and population remained stable. ▪ Conducted TLB monitoring – populations were low due to lack of rain. ▪ Conducted wildlife movement monitoring – detected mountain lion (<i>Puma concolor</i>), southern mule deer (<i>Odocoileus hemionus fuliginatus</i>), coyote, bobcat, and other animals at key movement pinch points.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021 *continued*

Preserve Area	Organization	Management and Monitoring Activities
		<ul style="list-style-type: none"> ▪ Harmony Grove Partners Association observed and noted flora and fauna. ▪ Removed hundreds of invasive non-native species, including pampas grass, fennel, and fountain grass, using chemical and mechanical methods. ▪ Killed thousands of fountain grass in the Luchia parcel. ▪ Continued to treat the perennial veldt grass infestation at the La Costa Greens burn area. ▪ Continued treatment of hundreds of onionweed individuals at the La Costa Greens location and one hundred at the Wilern/Meadowlark site. ▪ Contracted ACS to cut and treat thousands of fennel plants around La Costa Greens. CNLM staff used hedgers to control hundreds of plants in flower around La Costa Greens and along trails. ▪ Contracted ACS to treat hundreds of perennial pepperweed (<i>Lepidium latifolium</i>) plants in San Marcos Creek drainage along Alicante, as well as a new infestation found in the Quarry. Removed a few individuals from brownditch at south edge of burn area. ▪ Completed 12th year of program for Ward’s weed (<i>Carrichtera annua</i>) eradication, continuing to control the species using native shrub-tolerant pre-emergent herbicide Gallery. ▪ Maintained CSS demonstration garden, removed hundreds of fennel, and improved grassland adjacent to Gibraltar Street in collaboration with Preserve Calavera. ▪ Controlled onionweed by hand pulling when encountered. Treated/cut fountaingrass, melinis grass (<i>Melinis repens</i>), and tree tobacco with herbicide by CNLM staff. ▪ Planted 100 California sagebrush (<i>Artemisia californica</i>) with students from CSUSM. Continued partnership with Nature Collective to maintain plants and water. ▪ Conducted patrols multiple times weekly – dog use in Copper Creek decreased. ▪ Increased coordination and collaboration with law enforcement since COVID-19 increase in overall and illegal HCA use. Completed trespass authorization with San Diego Sheriff (at San Marcos) to cite individuals at quarry. Worked with City of Carlsbad Rangers to issue warning citations at Box Canyon. ▪ Eagle Scout installed fencing to block off illegal trails on Horned Lizard trail. ▪ Implemented monthly Gibraltar Street CSS and grassland restoration project with Preserve Calavera, maintained demonstration garden, commenced sheet mulching soil improvement project, and removed hundreds of fennel plants. ▪ Hosted one volunteer trail work day in collaboration with SDMBA to improve trail sustainability and reduce erosion around bridges in Copper Creek. ▪ Provided guidance for and worked with team of local trail stewards to maintain erosive areas of concern primarily on Switchbacks trails, as well as outreach to public. ▪ Completed the annual stewardship plan and budget and annual report. ▪ Completed reporting for Harmony Grove Partners Association portion of Copper Creek.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Sage Creek High School Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Conducted quarterly patrols to document biodiversity of the site, changes in habitat composition, remove trash, remove/map invasive plant species, look for signs of trespass, and assess the need for remedial measures. ▪ Cut down large castor bean plants and applied herbicide to black mustard, castor bean, fennel, Russian thistle, oxalis, and artichoke thistle. Minor weed abatement to tree tobacco. ▪ Conducted photo documentation. ▪ Met with contractor, volunteer, and Connie Winterstein about restoring hillside. ▪ Cleaned old irrigation from Site A. ▪ Proposed volunteer day for weeding of newly sprouted castor bean. ▪ Monitored areas that were seeded in previous years, but no sign of native plants detected. ▪ Met with Gabriel Peñafior of CDFW and Andrew Keller of Lost Sage Restoration Ecology LLC to discuss co-writing a grant proposal to address invasive plants and convert non-native grassland areas to coastal sage scrub habitat to benefit CAGN.
Sonata Preserve	Land Manager: San Diego Habitat Conservancy	<ul style="list-style-type: none"> ▪ Terramar Retail Centers (TRC) conducted extensive weeding events at request of SDHC and the City of Carlsbad. ▪ Conducted initial site inspection. ▪ Developed Weed Management Plan.
Southern Preserve	Land Manager: Urban Corps of San Diego County	<ul style="list-style-type: none"> ▪ Performed biannual biological monitoring to assess condition of non-native grassland and Diegan coastal sage scrub habitats, identify invasive non-native species, document sensitive species observations, and conduct photo monitoring. ▪ Monitored sensitive plant populations (San Diego goldenstar [<i>Bloomeria clevelandii</i>] and California adolphia). ▪ Performed monthly site patrols to monitor and remove trash, report any OHC activity, check on and repair signs/fencing, and enforce rules such as staying on designated trails and keeping dogs on a leash. ▪ Conducted quarterly monitoring of wildlife movement. ▪ Removed non-native plant material, primarily artichoke thistle and fennel. ▪ Coordinated with HOA on quarterly basis. ▪ HOA filed an insurance claim with the driver of the vehicle that skidded through the fencing along Corte Claro to repair the broken fence and revegetate the slope where the path of the vehicle sheared off some vegetation. ▪ Performed fuel modification activities along the southeastern preserve boundary. ▪ Completed annual report.
Multiple areas	Preserve Calavera	<ul style="list-style-type: none"> ▪ Monitored status of four nominations for Heritage Tree designation from prior year. ▪ Supported community education on native plants, wildlife, and preserve management issues at various fairs and outreach events. ▪ Continued several Citizen Scientist projects, including roadkill monitoring, water quality testing, grunion reporting, and King tide events.

Summary of HMP Management and Monitoring Activities, Nov 2020–Oct 2021
continued

Preserve Area	Organization	Management and Monitoring Activities
Throughout the HMP Preserve system	City Parks and Recreation Department	<ul style="list-style-type: none"> ▪ Conducted trail clean up and maintenance – Maintenance staff monitored and maintained trails through the year. Due to COVID-19, volunteer events were cancelled in the first half of the year. Events resumed on a monthly basis in September 2021. ▪ Hosted quarterly trail volunteer meetings – Due to COVID-19, volunteer quarterly meetings were limited to only one, held in September, to orient volunteers to the social distancing procedures. ▪ Hosted one public outreach event, Public Lands Day.