

City of Carlsbad Habitat Management Plan Annual Report

Reporting Year 20, November 2023–October 2024

February, 2025



Environmental Sustainability

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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.

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 – Environmental Science Associates, Preserve Steward for the City of Carlsbad

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.

FESA – Federal Endangered Species Act

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, an HCP and NCCP 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.

IMG - Rare Plant Inspect and Manage Monitoring Program

Implementing Agreement – The legal agreement between the City of Carlsbad, CDFW, and USFWS that ensures implementation of the Carlsbad HMP by binding each party 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. Standards Area requirements are specific to the LFMZ in which the property resides.

Major Population – As defined by the MHCP, 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.

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.

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 management and monitoring of a preserve in perpetuity through investment returns. The endowment is designed to increase in value over time through increasing generated revenues, and thus keeping 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 and requires an objective cost/benefit analysis for each line item and adjusts for inflation.

PMP – Site-specific preserve management plan, which outlines the long-term management requirements for a specific preserve. 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, non-profit professional land management companies, 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, 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.

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 (MSCP), MHCP, 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.

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.

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

USFWS – U.S. Fish and Wildlife Service

Wildlife Agencies – Term used collectively for CDFW and USFWS

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Executive Summary

The twentieth annual Habitat Management Plan (HMP) report covers the period from November 1, 2023 to October 31, 2024, and summarizes the preserve status, implementation activities, and preserve gains and losses that have occurred within the City of Carlsbad (city) during the current reporting period. Highlights of 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 (PMPs); 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 presented in Section 1.3.

Lake Calavera Mitigation Parcel

During the reporting period, zero acres of mitigation credit were debited from the mitigation parcel for city projects. To date, cumulative debits and adjustments for wetland mitigation sites are 113.9 acres, leaving a total of 92.2 acres (credits) remaining.

Gnatcatcher Core Area Conservation Requirement

As documented in a letter from the U.S. Fish and Wildlife Service (USFWS) and CDFW, dated December 19, 2019, the city has fulfilled the HMP Gnatcatcher Core Area requirement in full. The city will continue collecting HMP Mitigation Fees to pay back the General Fund (final credits were purchased with General Funds in excess of available funds in the Fee Program at the time of purchase).

Land Acquisitions

No acquisitions of open space lands were made during the reporting period.

Habitat Gains and Losses

A total of 16.5 acres were gained and 5.4 acres were lost in association with the Ocean View Point Project during the reporting period. Since the adoption of the HMP, approximately 6,224 acres of habitat have been gained and approximately 1,812 acres have been lost.

HMP Minor Amendments

No HMP Minor Amendments were processed during the reporting period.

Preserve Management and Monitoring

Ongoing management and monitoring activities in HMP preserves conducted this year included invasive non-native 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 for each preserve area in Appendix B.

Additionally, this year's HMP annual report highlights the following HMP activities:

- a. Site Inspection Program. The Preserve Steward (Environmental Science Associates [ESA]) continued site inspections within unmanaged preserves to identify threats and opportunities. During this reporting period, four preserves were inspected, for a total of 240.1 acres.
- b. Adaptive Management Pilot Projects. Based on the results of the city's Site Inspection Program, the city identified three areas to initiate management as part of pilot adaptive management program. During the reporting period, management consisted of targeted invasive non-native species treatment and removal within occurrences of San Diego thornmint (*Acanthomintha ilicifolia*) and thread-leaved brodiaea (*Brodiaea filifolia*) on Rancho Carrillo Master Association Preserve, and within a native/non-native grassland area on The Ranch Preserve. In addition, funding was secured for vernal pool enhancement on the Manzanita Partners Preserve, which will be initiated next year.
- c. Trail Monitoring. The Preserve Steward initiated a trail monitoring pilot project on two sections of trail at the Lake Calavera Preserve. During the reporting period, the trail monitoring protocol was developed, monitoring locations were established, and quarterly monitoring was initiated.
- d. Ward's Weed Phase 2. Phase 2 of the Ward's weed control program continued during the reporting year, including surveillance and spot treatment throughout the infested area.
- e. Village H Dog Waste Monitoring. The Village H dog waste monitoring and removal continued quarterly during the reporting period.

Financial Summary

Habitat Mitigation Fee Program: Mitigation fees totaling \$7,807.30 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 -\$1,109,864.48. 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 \$1,001,229 was spent by the land managers on management and monitoring activities on 29 preserves that comprise 2,848 acres (does not include most Ecological Reserves owned by CDFW or unmanaged preserves). Endowments for endowment-funded properties totaled \$25,542,286.

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1.0 Plan Administration

1.1 Introduction

The Habitat Management Plan (HMP) is a citywide conservation plan that describes how the City of Carlsbad (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 (USFWS) and California Department of Fish and Wildlife (CDFW) (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 20 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 throughout the preserve system are summarized in Section 2.0 and **Appendix B**.

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 assesses 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 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 on 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 (SDMMP), 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, and (3) the status of the Gnatcatcher Core Area requirement.

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

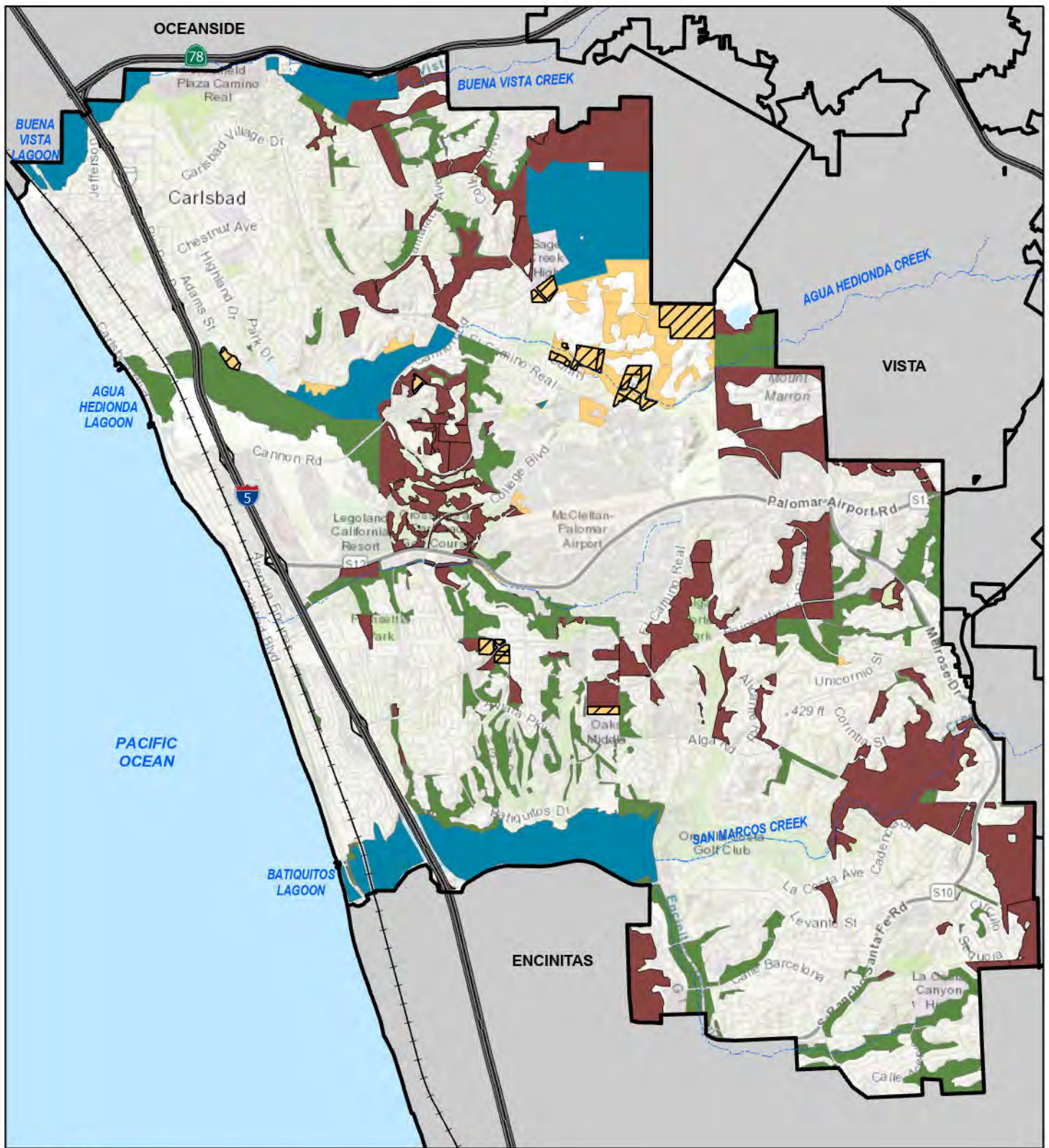
These Hardline Preserves were established during or after the adoption of the HMP. They have approved preserve management plans implemented by preserve managers and are funded through non-wasting endowments or, in the case of the city-owned preserves, through annual budget appropriations. The city requires site-specific annual reports for these preserves. The property owners for these preserves are either a preserve management entity, homeowners' association (HOA), or the city. Except for some 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.

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 and managed by the State of California. According to the HMP Implementing Agreement, the level of management and monitoring of the CDFW preserves is based upon 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 Preserves

Pre-existing preserves, which predate the HMP, include conserved habitat 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 preserve system because of their onsite biological resources and ecological value. Generally, these preserves do not have preserve management plans, active management, or biological monitoring. "Stewardship"-level maintenance of the property is the responsibility of



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



the property owner. Generally, “stewardship” maintenance consists of trash pickup and access control, such as trespass issues and fence maintenance. The HMP envisioned that future management and monitoring of these lands would be financed through a regional funding source; however, that funding source has not materialized. The preserves owned by HOAs are protected by an Open Space Easement recorded on the Final Map for the associated development. 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 Master Association, and Arroyo La Costa.

Future Preserves (Proposed Hardline and Standards Areas)

In Carlsbad, most HMP preserves are established as part of the development process. Future preserves (target conservation areas) are identified in the HMP as Proposed Hardline and Proposed Standards Areas. Development projects have not yet occurred on these lands; therefore, preserves have not been formally established. As a condition of approval for any future development on the property, the developer will be obligated to establish the preserve by preparing a preserve management plan approved by the city and Wildlife Agencies, identifying a qualified land manager, funding long-term management through a non-wasting endowment or other secure financing mechanism, and recording a conservation easement to protect the preserve from future development. Examples of these future preserves include Mandana and Kato Properties.

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 acres available on Lake Calavera Preserve; however, 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 using Lake Calavera Mitigation Parcel for upland mitigation credits, the city, in coordination with the Wildlife Agencies and wetland permitting agencies, has used the property for wetland mitigation through active habitat creation, restoration, and/or enhancement of disturbed wetland areas within the preserve. 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 this reporting period, no credits

were deducted from the mitigation parcel for city projects. Cumulative upland debits and adjustments for wetland mitigation sites to date are 113.89 acres, leaving a total of 92.21 acres of mitigation (credits remaining (**Table 1**)).

Table 1. Mitigation Acreage at Lake Calavera Mitigation Parcel RY 20 (2023–2024)

Credits and Debits	Acres
Initial Credits	206.10
Total acres of credit available as of November 1, 2023	92.21
Year 20 Deductions (Nov. 2023–Oct. 2024) <i>None</i>	<i>0.00</i>
Total acres of credit available as of October 31, 2024	92.21

1.3.3 Gnatcatcher Core Area Conservation Requirement

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 that is regionally important for the long-term survival of the species.

As documented in a letter from USFWS and CDFW dated December 19, 2019, the city has fulfilled the HMP Gnatcatcher Core Area requirement 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 geographic information systems (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 facilitate compliance monitoring of habitat conservation, **Table 2** compares target conservation acreages for habitat categories in HMP Table 8 to habitat categories used in HabiTrak. Note that the GIS data layers used for this analysis includes more detailed habitat categories.

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

HMP Table 8		HabiTrak	
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
Gnatcatcher Core Area Requirement	308	Not tracked in HabiTrak	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

No open space properties were acquired by the city during this reporting period.

1.4.3 Habitat Gains and Losses

A total of 16.5 acres were gained and 5.4 acres were lost during this reporting period. Since the adoption of the HMP, approximately 6,224 acres of habitat have been gained and approximately 1,812 acres have been lost. **Figure 2** shows the current status of the preserve system. **Figure 3** shows this year's habitat gains and losses, which are described below.

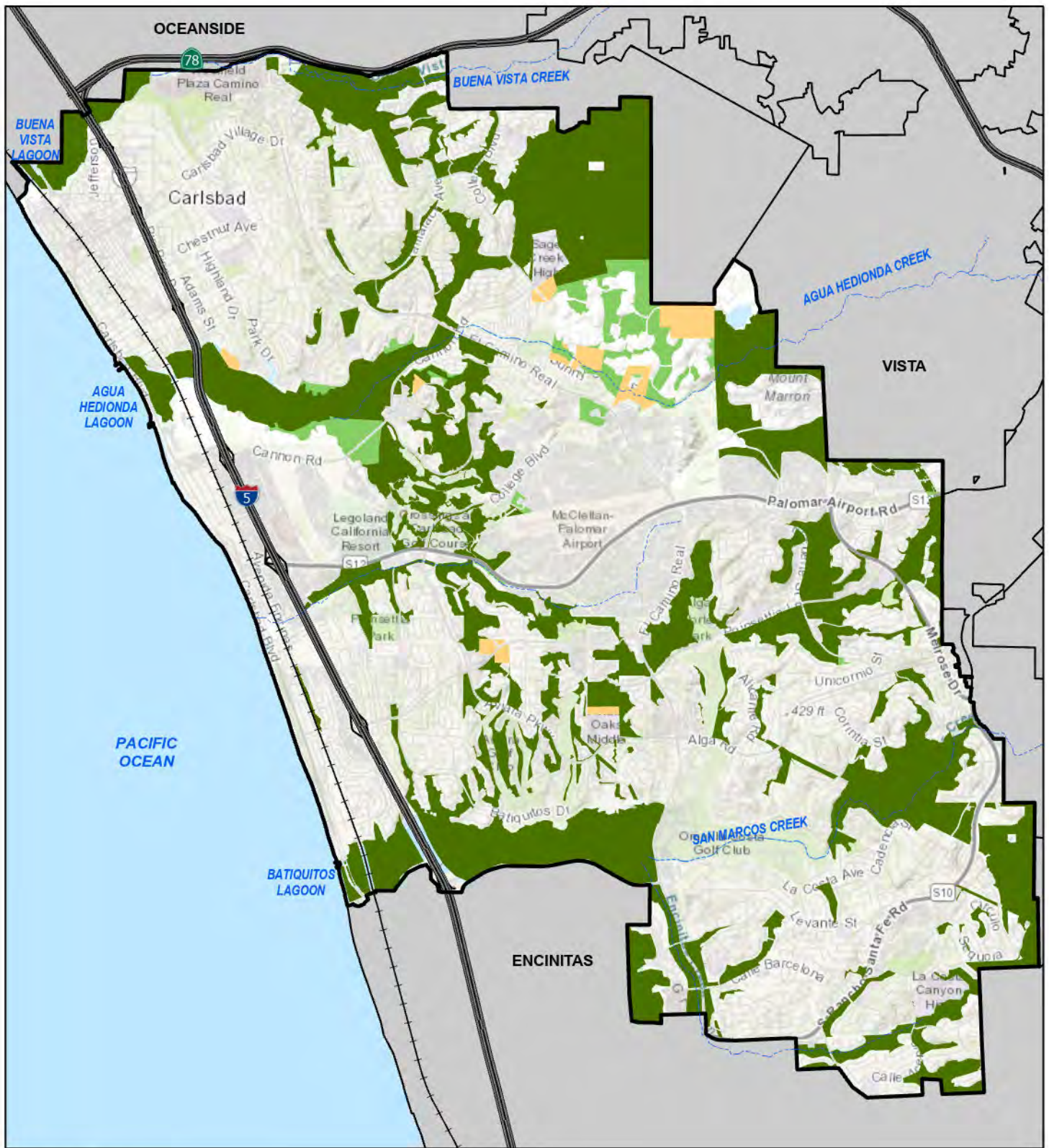
Ocean View Point. The Ocean View Point Project is located on the property known as "Kirgis" in the HMP, and was originally designated as a Standards Area. This property is located at the end of Twain Avenue (east of the Faraday Avenue/Cannon Road intersection) and is adjacent to the Veterans Park/Macario Canyon Preserve on the west and south, and Kelly Ranch Preserve on the north. Residential and commercial development is present to the east and north of the property. The newly established 16.5-acre Ocean View Point Preserve (= habitat gains) consists of approximately 10.4 acres of coastal sage scrub and 5.8 acres of southern maritime chaparral. Approximately 0.25 acres of disturbed land cover will be restored to coastal sage scrub. Project impacts (=habitat losses) consisted of 4.13 acres of coastal sage scrub and 0.64 acre of disturbed or developed land cover. The coastal sage scrub impacts are being mitigated at a 2:1 ratio onsite and on two offsite locations, resulting in a net gain of coastal sage scrub overall. The habitat gains and losses are considered final as of May 30, 2024 when all requirements were met by the applicant (agency approved preserve management plan, recorded conservation easement, approval of mitigation plan, and establishment of endowment to fund long-term management).

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 Section 10(a)(1)(B) permits.

1.5.1 HMP Amendments

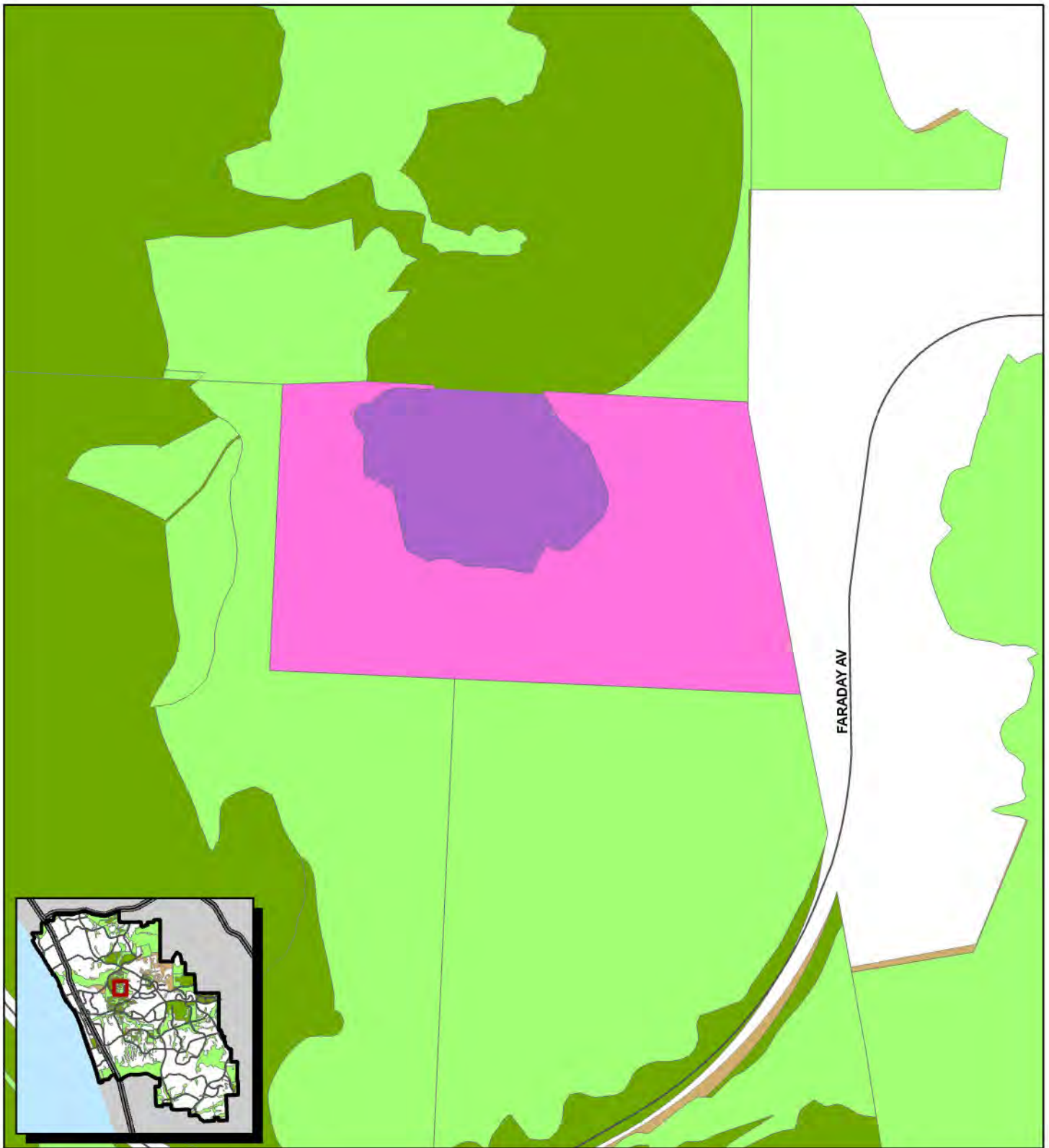
Amendments processed during the reporting period are described below. See HMP Section E-3 and Implementing Agreement Section 20.1 for a description of Minor Amendment types and the HMP amendment process.



Legend

- Existing Hardline
- Proposed Hardline
- Standards Area





- Habitat Gains Prior to Year 20
- Habitat Losses Prior to Year 20
- HMP Area with No Gains or Losses

- Habitat Gains for Year 20
- Habitat Losses for Year 20



1. **Consistency Finding:** No minor amendments were processed through a Consistency Finding during this reporting period.
2. **Equivalency Finding:** No minor amendments were processed through an Equivalency Finding during this 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 to 14 of the Implementing Agreement, the Conditions of the State NCCP Permit, and Terms and Conditions of the Federal Endangered Species Act (FESA) 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.

1.5.3 City Compliance with HMP Local Facilities Management Zone (LFMZ) Standards

The city is also required to ensure that all projects within Standards Areas comply with the Local Facility Management Zone (LFMZ) standards outlined in HMP Section D. 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.

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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 in the preserve system and its ability to support viable populations of covered species over time. This section highlights some of the citywide monitoring and management activities coordinated by the HMP Division that took place during the reporting period.

2.1 Ongoing Preserve Management

Ongoing preserve management includes long-term biological monitoring, invasive non-native species removal, fence and sign repair, erosion control, trash removal, access control, site patrols, habitat restoration, rare plant population enhancement, and public outreach and education. The purpose of these activities is to protect the city's diverse species and habitats, facilitate wildlife movement, and enhance the ecological integrity of the preserve system in the long term. The city is responsible for management on city-owned preserves, and for overseeing the management of other preserves, which is conducted by various land managers. Preserve-level monitoring and management is reported in preserve-specific annual reports submitted by the land managers to the city every year. These activities are summarized by preserve in **Appendix B**.

2.2 Site Inspection Program

The Site Inspection Program was initiated by the city and ESA in 2021. The purpose of the program is to periodically visit unmanaged preserves to evaluate the overall condition of the preserve and identify threats, high priority resources, and potential management opportunities. During this reporting period, ESA conducted inspections on the following preserves: Avocet, Gemstone, Aviara Master Association, and Aviara Premier Collection. To date, ESA biologists conducted site inspections for 13 unmanaged preserves totaling approximately 708 acres. Invasive non-native plant species are the most common threat, although unauthorized access and trash were also identified as a high threat in some areas. Several opportunities were identified, including targeted invasive non-native plant species removal, enhancement/restoration, and thatch removal, which would improve habitat for a variety of endangered plant species and reduce fire fuel load. These results were used to initiate a pilot adaptive management project as described in Section 2.3.1.

2.3 Adaptive Management Program

The adaptive management program includes monitoring or management activities not included in the standard preserve-specific requirements. These activities are performed or coordinated by

the city as needed, depending on current priorities and resources. There is no regular funding source for these activities; therefore, priorities and funding are evaluated several times per year to determine which actions can be taken. Activities may be conducted at a citywide scale, such as monitoring for gnatcatchers or wildlife movement; for specific events, such as post-fire monitoring; or for specific resources, such as targeted management for a specific habitat, species, or location. Current ongoing adaptive management activities are described below.

2.3.1 Pilot Adaptive Management Projects

Based on the results of the Site Inspection Program, the city chose three target resources on two unmanaged preserves to implement enhancement, as described below. In addition, funding became available this reporting period to add a third resource/location for enhancement. The purpose of the current projects is to apply focused weed abatement to enhance the health and long-term survival of high priority plant populations and rare habitats. These management targets were selected based on the following priorities: rarest species and vegetation communities, highly vulnerable plant populations, populations that are high priority both locally (HMP) and regionally (SDMMP), populations included in the regional rare plant monitoring program, support of the program by the homeowners association (HOA) landowner, preserve with current right-of-entry authorization, and feasible location (relatively easy to access). Year 2 of the program, initiated in the spring of 2024, is being coordinated by the Preserve Steward (ESA) and implemented by ESA and Black Sage Environmental, Inc. Activities performed during this reporting period are summarized below. The city hopes to continue this management for at least three more years, dependent on funding availability.

1. Rancho Carrillo Master Association Preserve is located in the eastern portion of the city, in the vicinity of Melrose Drive and Poinsettia Lane. Two target species occur on this preserve — San Diego thornmint (*Acanthomintha ilicifolia*) and thread-leaved brodiaea (*Brodiaea filifolia*), both of which are state endangered and federally threatened. Both species occurrences are being monitored through the regional Rare Plant Inspect and Manage (IMG) program. Invasive non-native plant species were identified as one of the greatest threats to the persistence of these occurrences. Therefore, focused invasive non-native plant species removal was performed within defined areas. It is expected that subsequent monitoring will show an improvement in the growth and vigor of these sensitive plants.

The San Diego thornmint management area encompassed the entire (very small) population of San Diego thornmint, for a total of approximately 0.03 acre. Weed abatement consisted of hand-clipping invasive non-native plants due to the overall small size and vegetative status of all plants in the management area and the possible presence of rare Baja California oatgrass (*Sphenopholis interrupta* ssp. *californica*). This work was conducted in the April 2024. The thread-leaved brodiaea management area encompassed the maximum perimeter of the thread-leaved brodiaea

population mapped by the SDMMP Inspect and Manage Program (IMG) (7.81 acres). Management consisted of cutting target invasive non-native plant species, such as artichoke thistle (*Cynara cardunculus*) and fennel (*Foeniculum vulgare*), with tri-blades and then treating the remaining stumps. This work was conducted in May of 2024.

2. The Ranch Preserve is located in the southeastern corner of the city. A patch of native grassland was selected as the target habitat for focused management because this is one of the most imperiled vegetation communities in California. It has been estimated that native grasslands in California have been reduced by 99% (California Native Grassland Association). Native grasslands are able to remove and store vast amounts of atmospheric carbon, provide soil stability, capture and filter water, prevent erosion and flooding, and support a high biodiversity, including soil microbes, plants, invertebrates and vertebrates. The greatest threat to the native grassland habitat in this location is invasive non-native artichoke thistle and other invasive non-native species, such as fennel, shortpod mustard (*Hirschfeldia incana*), and black mustard (*Brassica nigra*).

Management during this reporting period consisted of cutting target invasive non-native plant species with tri-blades and then treating the remaining stumps within a management area of 0.94 acre. This management effort was coordinated with the monitoring and management activities performed by RECON Environmental, Inc. (RECON). Although not full HMP-level management (the preserve was established prior to the HMP), RECON is being contracted by the HOA to perform quarterly monitoring and implement minor habitat enhancement, such as weed control. During this reporting period, RECON performed weed maintenance targeting invasive non-native artichoke thistle within a management area of 2.47 acres in March 2024.

3. The Manzanita Partners Preserve, managed by Dudek, is located on both sides of El Camino Real, just north of Poinsettia Lane. This preserve was established prior to adoption of the HMP, and therefore, the funding for management is minimal. One of the key resources on this preserve is a restored vernal pool complex on a 5.6-acre parcel on the east side of El Camino Real. Vernal pools are one of the most sensitive habitat types in Southern California. Due to the minimal funding available, it has been difficult keeping up with the weeds within this habitat area. The Habitat Management Division secured \$6,000 to enhance the vernal pools through weed abatement activities. This effort will be initiated next year and reported on during the next reporting period.

2.3.2 Trail Monitoring – Pilot Project

During the reporting period, the Preserve Steward (ESA) initiated a trail monitoring pilot project in Lake Calavera Preserve. Two sections of the Serpentine Trail were repaired (ruts removed, trail narrowed, drainage points added) by different contractors. The purpose of the trail monitoring is

to identify changes over time (erosion, trail widening, etc.) and to compare the two sections of trail to see if one section was more resilient to stressors (foot and bike traffic, heavy rains, etc.) than the other. During the reporting period, the trail monitoring protocol was developed by ESA and approved by the city, monitoring points were established, and quarterly monitoring was initiated.

2.3.3 Ward's Weed Surveillance and Control Program

Ward's weed (*Carrichtera annua*), a small annual in the mustard family native to the Mediterranean and southwest Asia, was first discovered in Carlsbad in 2007, which was one of only two known locations in North America at that time (the other was Camp Pendleton). Since the initial observation in Carlsbad, this invasive non-native species has been found in approximately 200 acres of habitat within the HMP preserves, mostly in the Bressi Ranch area. Approximately 98% of the known locations in the United States occur in Carlsbad. The remaining locations, which were found as part of an Early Detection and Rapid Response monitoring effort by the County of San Diego Department of Agriculture Weights and Measures, are small, isolated occurrences 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, increasing wildfire risk.

On October 8, 2019, the city initiated an eradication program, in partnership with a variety of stakeholders, including County of San Diego, Dendra Inc., ACS Habitat Management, and CNLM. The initial Phase 1, which consisted of two years of intensive treatment and surveying new areas, was successful in significantly reducing this species across the infested area. Phase 2 consists of ongoing surveillance and spot treatment to control the spread. Because Ward's weed is so widespread in the Bressi Ranch area, and occurs on some irrigated edges next to habitat and steep inaccessible slopes, it may not be possible to fully eradicate this species in Carlsbad. However, continued surveillance and treatment should keep it from spreading further. Phase 2 is expected to continue next year.

2.3.4 Village H South Dog Waste Monitoring

The Village H South property is located southwest of the intersection of Carlsbad Village Drive and Tamarack Avenue. The city took ownership of the property in 2019. The property includes two small HMP Hardline areas on the southern end, an undeveloped open space area on the northern end adjacent to Carlsbad Village Drive, and a public trail. On behalf of the city, ESA and Preserve Calavera continued implementing dog waste monitoring during this reporting period. The quarterly monitoring program consists of collecting and disposing of dog waste and collecting GIS coordinates to track dog waste that is not picked up by dog owners over time. Locations of coyote scat and dog toys are also collected (dog toys indicate the presence of off leash dogs and off trail activity). Details of this study can be found in previous HMP Annual Reports and the results are

available on an [interactive online map](#) prepared by ESA. To date, the amount of dog waste left on the ground appears to have stabilized; many dog owners continue to leave waste on the ground, despite the presence of dog bags and trash cans along the trail.

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3.0 Financial Summary

3.1 City Funding in Support of the 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 Sustainability Department, 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 System and (2) direct, active management of 681 acres of preserve land owned by the city.

To fulfill the first responsibility, the city dedicates a senior-level coordinator in the Habitat Management Division and provides other staff support for HMP implementation. The city also contracts with a biological consulting firm (ESA) to serve as the city's Preserve Steward to coordinate management throughout the HMP preserve and evaluate management effectiveness. This reporting period, the city provided \$97,623 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 of fences and signage, closure of unauthorized trails, regular patrols, invasive non-native species removal, and public outreach.

Although not funded through the HMP Program, the city also 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, allowing rangers to have citation authority and direct contact with the Homeless Outreach Team and police officers, which are often needed to coordinate on issues such as encampments and other unauthorized access.

3.1.2 Habitat Mitigation Fees

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 3**, mitigation fees totaling \$7,807.30 were collected during the current reporting period. The current balance of the Habitat Mitigation Fee Fund is -\$1,109,864.48. Since the adoption of the HMP, the city has taken advantage of opportunities to purchase Core Area credits when they become available. As of December 19, 2019, 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 20 (2023–2024)

Date	Description	Habitat Impacted	Total
11/01/23		Beginning Fund Total	-\$1,117,671.78
Fees Collected			
10/02/2023 ¹	FPC Residential	2.02 acres Group F (Ag, Disturbed, Eucalyptus)	\$7,807.30
Total Fees Collected			\$7,807.30
10/31/24	Account Balance		-\$1,109,864.48²

¹ Although this date is prior to the current reporting period, this item was not included in the Fund statement last year, and is therefore being reporting this year.

² 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 4**, and preserve locations are shown in **Figure 4**. During the reporting period, a total of \$1,001,229 was expended by land managers on management and monitoring activities across 29 preserves that comprise 2,848 acres. Endowments for endowment-funded properties totaled \$25,542,286. Seventeen preserves (681 acres) are owned by the city and funded through annual budget appropriations. Four preserves are managed by CDFW (1,378 acres), and funded by other means: Buena Vista Lagoon, Carlsbad Highlands, and Agua Hedionda Lagoon Ecological Reserves are funded through State Wildlife Grant funding (these are not included in Table 4), and the Batiqitos 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 Year 20 (2023–2024)

Preserve Name	Acres	Land Manager	Inception Date	Original Endowment	Inflation-Adjusted Endowment	2023-24 Budget	2023-24 Expend.	Total Funds as of 9/30/24 ¹
Bressi Ranch Preserve	173	SDHC	July 2020	\$994,610	\$1,811,917	\$39,755	\$31,861	\$1,107,422
Buena Vista Creek Ecol. Rsv.	143	CNLM	April 2007	\$776,644	\$1,191,418	\$55,743	\$55,743	\$2,065,895
Calavera Hills II/Rob. Ranch	241	CNLM	June 2006	\$1,854,936	\$2,857,798	\$134,297	\$134,297	\$5,227,365
Carlsbad Oaks North	220	CNLM	March 2006	\$1,020,311	\$1,593,630	\$74,460	\$74,460	\$2,693,456
Carlsbad Raceway ²	43	SDHC	April 2014	N/A ²	Annual payments	\$30,396	\$21,402	\$8,994
Cassia Professional Offices	0.6	CNLM	Jan. 2007	\$100,844	\$158,499	\$7,420	\$7,929	\$275,397
City-owned Preserves ²	681	City/CNLM	2005	N/A ²	Annual contract	\$263,057	\$177,878	N/A
Daybreak Church	4	SDHC	Apr. 2017	\$153,885	\$198,109	\$8,203	\$5,921	\$233,044
Emerald Pointe	10	SDHC	Aug. 2008	\$194,948	\$304,107	\$16,551	\$18,772	\$393,973
Encinas Creek	18	CNLM	May 2007	\$427,004	\$629,470	\$31,297	\$31,297	\$1,176,194
Fox Miller ³	21	Helix	Nov. 2005	N/A ³	Annual payments	\$53,818	\$41,033	\$12,784
Kelly Ranch	70	CNLM	March 2002	\$296,125	\$546,340	\$22,995	\$22,995	\$971,547
La Costa Collection	8	UC	July 2005	\$378,756	\$529,186	\$20,821	\$20,821	\$524,391
La Costa Glen	108	CNLM	Jan. 2013	\$624,800	\$877,088	\$41,145	\$41,145	\$1,673,767
La Costa Villages	831	CNLM	Feb. 2002	\$1,364,400	\$2,499,371	\$127,262	\$127,262	\$3,688,011
Laurel Tree Lane Preserve	7	SDHC	Dec. 2017	\$365,092	\$466,200	\$26,118	\$20,490	\$485,506
Manzanita Partners	33	HRS	Oct. 2012	\$51,000	\$61,281	\$1,600	\$1,600	\$43,123
Morning Ridge	19	UC	Oct. 2021	\$280,000	\$330,586	\$0	\$0	\$322,024
Muroya	10	SDHC	Oct. 2015	\$314,867	\$426,261	\$17,930	\$14,752	\$428,793
New Crest Preserve	0.04	UC	May 2015	\$91,393	\$121,176	\$4,736	\$4,736	\$119,250
North Coast Calvary Chapel ²	13	Helix	May 2007	\$159,756	\$242,507.62	\$18,950	\$21,004	\$213,016
Ocean View Point ⁴	16.5	SDHC	May 2024	\$769,628	\$769,628	N/A ⁴	N/A ⁴	\$769,628
Paseo Del Norte	1	UC	Aug. 2016	\$100,009	\$130,925	\$5,859	\$5,859	\$147,551
Poinsettia Place	12	UC	July 2011	\$167,935	\$234,373	\$8,985	\$8,985	\$226,270
Poinsettia Station Vernal PIs ⁵	8	City (Dudek/HRS)	Mar 2018	\$181,904	\$229,828	\$10,316	\$10,316	\$270,491
Quarry Creek	92	SDHC	June 2015	\$806,496	\$987,967	\$41,066	\$31,253	\$894,276
Sage Creek	6	SDHC	April 2016	\$275,404	\$362,350	\$15,582	\$19,026	\$416,271
Sonata	3	SDHC	January 2016	\$398,396	\$529,358	\$31,389.33	\$24,988	\$514,054
Southern	55	UC	Nov. 2013	\$428,747	\$567,929	\$25,404	\$25,404	\$639,793
TOTAL	2,848			\$121,366,575	\$18,657,303	\$1,135,155	\$1,001,229	\$25,542,286

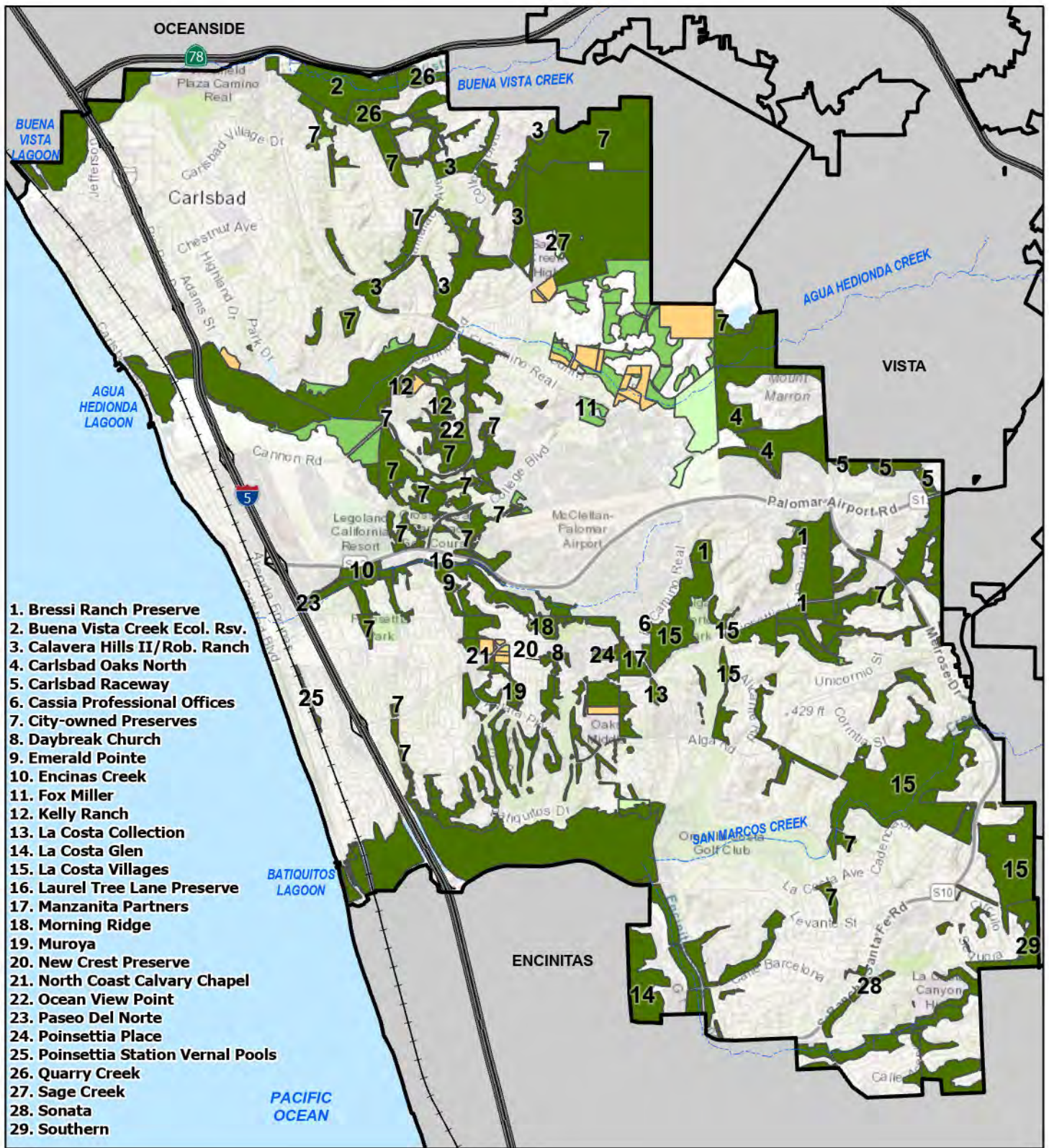
¹ Total funds are reported as of 10/31/24 for HRS, Urban Corps, and Helix.

² Long-term management is funded through an annual contract rather than an endowment. City preserves are funded through the General Fund.

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

⁴ Ocean View Point will undergo interim management from 2024 – 2029 during construction and restoration. Long-term management will be ongoing thereafter.

⁵ Additional as-needed funds are provided by the city for more intensive start up management to allow the endowment account to grow.



1. Bressi Ranch Preserve
2. Buena Vista Creek Ecol. Rsv.
3. Calavera Hills II/Rob. Ranch
4. Carlsbad Oaks North
5. Carlsbad Raceway
6. Cassia Professional Offices
7. City-owned Preserves
8. Daybreak Church
9. Emerald Pointe
10. Encinas Creek
11. Fox Miller
12. Kelly Ranch
13. La Costa Collection
14. La Costa Glen
15. La Costa Villages
16. Laurel Tree Lane Preserve
17. Manzanita Partners
18. Morning Ridge
19. Muroya
20. New Crest Preserve
21. North Coast Calvary Chapel
22. Ocean View Point
23. Paseo Del Norte
24. Poinsettia Place
25. Poinsettia Station Vernal Pools
26. Quarry Creek
27. Sage Creek
28. Sonata
29. Southern

Legend

- Existing Hardline
- Outside-Conserved
- Proposed Hardline
- Standards Area



4.0 References

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

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.

Appendix A

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

November 1, 2023 - October 31, 2024

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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 7). 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 (using the baseline vegetation map) have been conserved (44.2 percent) . However, current mapping by land managers shows that 144.1 acres of coastal sage scrub (76.1%) have actually been conserved within Standards Areas, which likely reflects more accurate mapping, and/or project-related habitat restoration. The city will continue applying HMP requirements for the remaining undeveloped Standards Areas. Table 4 below 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 20 (2023–2024)

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 6,224 acres of habitat within the HMP planning area (96% of the required target of 6,478 acres), and 308 acres of habitat within the MHCP Gnatcatcher Core Area (100% of the overall target acreage). Overall, the city has met 96% of the overall target of 6,757 acres.
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 fully met the 307.6-acre obligation within the MHCP Core Area acres of its coastal sage scrub conservation obligation through acquisition (93.15 acres), project mitigation (150.26 acres), and habitat enhancement credit (64.19 acres). ▪ <u>Acquisitions consist of the following:</u> <ul style="list-style-type: none"> ▪ The city reimbursed Lennar (developer) for the 50.13 acres that were purchased up-front (see above) on April 26, 2011 (Alemir Property). ▪ 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 (Perkins Property). ▪ The city entered into an agreement with the Wildlife Agencies and Center for Natural Lands Management on March 6, 2020 City Council authorized payment (Luchia Property). ▪ The Core Area properties are protected under a conservation easement, and are being monitored and managed by the CNLM. ▪ A letter from the Wildlife Agencies dated December 19, 2019 documents that the city has fulfilled the Gnatcatcher Core Area obligation in full.
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. ▪ The city continues to work 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.

IA Section	Obligation	City Compliance
12.3	<p>Preserve Management and Monitoring Plan: To prepare a preserve management and monitoring plan that will detail recommendations in HMP Section F.</p>	<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.
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 100% of its 307.6-acre coastal sage scrub conservation obligation as of 2019 (see 11.5 above).</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 the City’s Habitat Management Division (Environmental Sustainability Department). In addition, the city has contracted with a qualified biological consultant 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 is implementing a habitat mitigation fee program for new development that will pay back the General Fund, which was used to pay for 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 20 (2023–2024)**

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> <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. 	<p>See Table 5, IA Section 11.3.</p>
<ul style="list-style-type: none"> G. This permit is subject to compliance with the MHCP Volumes I–III, HMP, including Addenda 1 and 2, and the IA. 	<p>All project approvals within the city are subject to these requirements as a condition of approval.</p>
<ul style="list-style-type: none"> H. Coverage for thread-leaved brodiaea (<i>Brodiaea filifolia</i>) and approval of the Fox-Miller Project. The conditions are as described in the USFWS 10(a) Permit Condition 7 (Table 12). 	<p>See Table 7, USFWS 10(a) Permit Condition 7 for a description of compliance.</p>
<ul style="list-style-type: none"> 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>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 20 (2023–2024)

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><u>Table 3. (b) Take is contingent upon (a), described above, and the city 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><u>Table 3. (b) Take is contingent upon (a) and (b), described above, and upon 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 was granted by the Wildlife Agencies on February 20, 2019. 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 20 (2023–2024)

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 within all Standards Areas at inception of HMP: 189.3. Currently, a total of 83.7 acres of coastal sage scrub (44.2%) from the original baseline vegetation map have been conserved. Updated mapping by land managers shows that there is actually a total of 144.1 acres of coastal sage scrub conserved within Standards Areas (76.1%). 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. The City purchased this property in 2020 and added the developable area to the HMP hardline. The entire 15.1-acre preserve is now under long-term management.
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: Restrictive Covenant recorded 8/28/2023 with 75% percent conservation (Ocean View Point Project); 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.	Due to agricultural activities, very little coastal sage scrub existed in this 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. The Robertson Ranch projects restored approximately 49 acres of coastal sage scrub.
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 within HMP Preserves November 1, 2023 – October 31, 2024

**TABLE B-1
SUMMARY OF HMP MANAGEMENT AND MONITORING ACTIVITIES, NOV 2023–OCT 2024**

Preserve Area	Management Entity	Management and Monitoring Activities
Agua Hedionda Lagoon area	Agua Hedionda Lagoon Foundation	<ul style="list-style-type: none"> • Conducted weekly inspections to monitor trails and easements. • Worked with the City of Carlsbad’s Trail Captains program for better enforcement and hiker awareness. • Hosted community presentation at Agua Hedionda Lagoon Foundation Discovery Campus to educate the public about the City of Carlsbad Trail Captains program. • Worked with the City and the California Coastal Commission to ensure public safety on 3.5 miles of public access easements. • Hosted approximately 1,500 volunteers through trail maintenance events and Agua Hedionda Lagoon Foundation/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 including 93 homemade recycled oyster shell wattles. • Planted 232 native plants to improve habitat. • Hosted 12 Monthly Community Trail and Lagoon Clean up events including education and outreach. • Worked with the United States Fish and Wildlife Service Coastal Program to address infestations of invasive non-native Algerian sea lavender (<i>Limonium ramosissimum</i>) in the California Department of Fish & Wildlife’s preserve and laid tarping to eradicate the species through solarization. • Removed 4,270 pounds of trash and invasive non-native species from the lagoon during the annual Lagoona Kahuna Team Challenge Event, for corporate companies locally. • Removed 2.6 pounds of fishing line from lagoon.
	Preserve Calavera	<ul style="list-style-type: none"> • Conducted bi-monthly water quality evaluations on surface waters at three locations in sub-watershed including eDNA and microfibers.
Agua Hedionda Lagoon Ecological Reserve	California Department of Fish and Wildlife	<ul style="list-style-type: none"> • Treated invasive Algerian sea lavender and continued solarization project with Agua Hedionda Lagoon Foundation. • Continued restoration efforts at Park Drive Restoration site (1.25 acres). • Continued 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. • Maintained boundary fencing and signage.
Batiqitos Lagoon area	Batiqitos Lagoon Foundation	<ul style="list-style-type: none"> • Removed black mustard (<i>Brassica nigra</i>), wild radish (<i>Raphanus sativus</i>), eucalyptus (<i>Eucalyptus</i> spp.) east of the Nature Center. • Removed invasive non-native ice plant (<i>Carpobrotus edulis</i>) and sea lavender east and west of the Nature Center. • Planted native plants west of the Nature Center, near the Gabbiano entrance, at the Kumeyaay trailhead, and at the East trailhead. • Widened trail east of Golf Course trailhead.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> Planted native plants at the west side of the loop in State side habitat. Removed eucalyptus, tamarisk (<i>Tamarix</i> spp.), fennel (<i>Foeniculum vulgare</i>), and Canary Island date palms (<i>Phoenix canariensis</i>) in State side habitat.
Batiqitos Watershed	Preserve Calavera	<ul style="list-style-type: none"> Continued bi-monthly water quality evaluations on surface waters at three locations in the sub-watershed. Continued volunteer work sessions restoring coastal sage scrub and native grasslands at La Costa Canyon. Ongoing support for Cal Nat native planting project in Homeowners Association area.
Batiqitos Lagoon Ecological Reserve	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>) and breeding season and wintering window surveys for western snowy plover (<i>Charadrius alexandrinus nivosus</i>). Maintained nesting sites. Conducted Nuttall's acmispon (<i>Acmispon prostratus</i>) monitoring following San Diego Management and Monitoring Program's inspect and manage 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	San Diego Habitat Conservancy	<ul style="list-style-type: none"> Conducted bi-monthly general 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. Results of bi-monthly patrols and supplemental site visits documented in log of site conditions. Conducted invasive species removal 11 times. Focused on removing tamarisk, pampas grass (<i>Cortaderia</i> spp.), black mustard, tocalote (<i>Centaurea melintensis</i>), artichoke thistle (<i>Cynara cardunculus</i>), fennel, and stinkwort. Hand removal of Ward's weed (<i>Carrichtera annua</i>) was conducted in February and April and provided mapped locations of larger populations to ACS Habitat Management for removal. Assessed and documented sensitive species with a focus on rare plants in April, June, and August. Documented coastal California gnatcatcher (<i>Polioptila californica californica</i>), Cooper's hawk (<i>Accipiter cooperii</i>), least Bell's vireo (<i>Vireo bellii pusillus</i>), yellow-breasted chat (<i>Icteria virens</i>), and Monarch butterfly (<i>Danaus plexippus</i>) individuals, and surveyed Nuttall's scrub oak (<i>Quercus dumosa</i>) and summer holly (<i>Comarostaphylis diversifolia</i>). No locations for summer holly were detected. Took photographs at seven established photo points throughout the preserve to allow for monitoring of visual changes in the habitat quality and quantity over time. Provided Homeowners Association newsletter in July and presented at Homeowners Association meeting that month. Maintained conversations with the Homeowners Association to remind them about the need to remove Ward's weed and fennel, particularly in the landscaping near Lot 19. Led interns from University of California San Diego, San Diego State University, Reed College, Mira Costa College, and High Tech High School, as well as several volunteers, on San Diego Habitat Conservancy patrol visits to remove invasive non-native plants and trash, clean graffiti, and inspect the general health of the habitat. Coordinated installation of a gate with the permission of the Homeowners Association in the south portion of Lot 19. Documented trespassing in Lot 19. Attended quarterly Preserve Managers' meetings with the city for coordination with other neighboring managers, as well as the City's annual Habitat Management Plan workshop.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> Inspected the Preserve for conservation easement compliance concurrently during management site visits. No unresolved issues remained and no easement violations were noted nor reported to the landowner.
Buena Vista Creek Ecological Reserve	Landowner: California Department of Fish and Wildlife Preserve Manager: Center for Natural Lands Management	<ul style="list-style-type: none"> Conducted bat monitoring; five species detected, of which one is a species of special concern. Conducted invasive shot-hole borer (<i>Euwallacea spp.</i>) monitoring; none detected. Conducted sensitive species monitoring and management and mapped observations. Treated/removed invasive non-native species, primarily fennel, black mustard, castor bean (<i>Ricinus communis</i>), and pampas grass. Continued to enhance two-acre upland areas near the south side of the reserve. Mowed fuel zones. Contacted the California Department of Fish & Wildlife to contact neighbor and send a cease-and-desist letter after this neighbor attempted to mow down weeds in the fuel zone with an excavator. Conducted weekly patrols. Asked transient individuals to vacate the preserve and cleared abandoned camps. Updated kiosk materials quarterly. Picked up trash during patrols and other management activities. Completed annual stewardship plan, budget, and report. Continued database management.
Buena Vista Lagoon Ecological Reserve	California Department of Fish and Wildlife	<ul style="list-style-type: none"> Performed western snowy plover wintering window surveys. Cut and removed 9,224 square-feet of cattails (<i>Typha latifolia</i>) to improve Light-footed Ridgway's rail (<i>Rallus obsoletus levipes</i>) habitat. Controlled invasive non-native plant species within the reserve. Cleaned up four unauthorized encampments. Removed 15 feral cat feeding stations. Conducted trail maintenance activities. Performed fire fuel reduction along north shore. Conducted weekly inspections to monitor trails and easements.
Buena Vista Lagoon/Watershed	Preserve Calavera	<ul style="list-style-type: none"> Continued bi-monthly water quality evaluations on surface waters at four locations in sub-watershed including eDNA and microfibers. Continued monitoring and action to reduce edge effects at El Salto falls and in Buena Vista Creek Ecological Reserve. Sponsored trash cleanup events with San Diego Habitat Conservancy and I Love a Clean San Diego.
Calavera Area	Preserve Calavera	<ul style="list-style-type: none"> Continued participation in the City's Trails Volunteer Program. Continued wildlife movement and biological surveys (poop study) at south Village H. Conducted bat education at Lake Calavera Dam.
Calavera Hills Phase II/Robertson Ranch	Center for Natural Lands Management	<ul style="list-style-type: none"> Conducted coastal sage scrub monitoring – cover of native and exotic forbs/grasses was highest in recorded history, consistent with heavy rainfall. Conducted surveys for San Diego coast horned lizard (<i>Phrynosoma coronatum blainvillii</i>) – none detected.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Conducted assessment for non-native Argentine ants (<i>Linepithema humile</i>)– species is present throughout, with denser presence near the urban edge. • Assessed threats from invasive shot-hole borer. • Documented and mapped sensitive or notable wildlife species. • Mounted a wildlife camera in the College Avenue wildlife tunnel primarily to document reptiles – none detected. • Treated/removed invasive non-native plant species, including stinkwort, pampas grass, black mustard, fennel, purple false brome (<i>Brachypodium distachyon</i>), tree tobacco (<i>Nicotiana glauca</i>), tamarisk, Canary Island date palm, artichoke thistle, eucalyptus, castor bean, and cocklebur (<i>Xanthium</i> sp.). • Received sign-off on PA23c uplands and wetlands restoration areas, PA1, 23A and 23B restoration areas. • Raked and removed eucalyptus leaves and treated various weeds within Village H North Restoration-Southern Portion. • Installed approximately 100 native grasses at Village H North restoration area. • Prepared new restoration area at Robertson Ranch West for plant installation. • In response to a significant bike jump area detection in Roberston Ranch West, installed 15 cactus cuttings to deter further trespass. • Conducted weekly patrols. • Contacted the City of Carlsbad Police Department and the District Attorney’s Office for the County of San Diego regarding an attempted break-in to the Calavera Shed by two juvenile individuals. • Updated information within kiosks regularly. • Repaired minor fence breaks or issues – no major maintenance was required. • Replaced/repared three signs. • Picked up trash as observed. • Finalized Conservation Easement compliance visit. No violations reported to the landowner. • Completed the annual stewardship plan, budget, and annual report.
<p>Carlsbad Highlands Ecological Reserve</p>	<p>California Department of Fish and Wildlife</p>	<ul style="list-style-type: none"> • Removed graffiti from California Department of Fish and Wildlife signage. • Removed seven unsafe trail features and conducted trail maintenance. • Continued habitat restoration on two acres. • Conducted weekly inspections to monitor trails and easements. • Conducted fire fuel reduction along property boundary. • Continued efforts on a narrowleaf milkweed (<i>Asclepias fascicularis</i>) seed collection project to improve Monarch butterfly habitat with the United States Geological Survey. • Controlled invasive non-native plant species within the reserve. • Maintained boundary fencing & signage. • Engaged in public education efforts concerning allowed and prohibited activities within the reserve.
<p>Carlsbad Oaks North Preserve</p>	<p>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>) and Blochman’s dudleya (<i>Dudleya blochmaniae</i>) – San Diego thornmint counts below average in extant occurrence; Blochman’s dudleya was documented with flowering individuals within the extent, but not within quadrants.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Conducted habitat assessments for San Diego thornmint and maintained San Diego thornmint out-seeding areas. • Completed coastal sage scrub monitoring – cover of native forbs was the highest in recorded history, consistent with two consecutive years of heavy rainfall. • Regularly assessed and searched for signs of gold-spotted oak borer (<i>Agrilus coxalis</i>) and invasive shot-hole borer. None detected. • Conducted animal movement analysis – consistent movement through the eastern tunnel was observed; observations in the western tunnel were infrequent with some evidence of human trespass. • Documented and mapped sensitive or notable wildlife species. • Installed straw wattles and jute netting and installed plantings to the slope impacted by a car accident in early 2024. • Removed hundreds of invasive non-native species (pampas grass, stinkwort, and black mustard) using manual, chemical, and mechanical methods. • Maintained coastal sage scrub plants and removed invasive non-native species with Nature Collective. • Maintained lemonadeberry (<i>Rhus integrifolia</i>) planted in 2020. • Monitored restoration planning at area impacted by illegal grading around Oakmont development. • Conducted regular patrols and assessed threats and stressors. • Installed and maintained existing fencing and signage behind new development to deter illegal trails. • Worked with City Rangers and the City of Carlsbad Police to address illegal encampments. Worked with Homeless Outreach Team and Urban Corps to remove transients and their leftover belongings. • Updated information kiosks regularly. • Removed trash when encountered. • Conducted a focused Conservation Easement compliance visit and submitted monitoring report – no unresolved issues remained and no easement violations were noted or reported to landowner. • Completed the annual stewardship plan, budget, and annual report.
Carlsbad Raceway Preserve	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. In addition, supplemental visits were performed to monitor maintenance activities under the San Diego Association of Governments Environmental Management Plan grant project. Results of quarterly patrols and supplemental site visits documented in log of site conditions. • Conducted presence/absence surveys for Cooper’s hawk and yellow-breasted chat during each patrol – neither were observed during quarterly patrols. • Visually assessed vernal pool for presence of fairy shrimp (<i>Branchinecta</i> spp.) and vernal pool plant species – neither were observed despite ponding in pool. • Documented ongoing disturbances from unauthorized use of informal trails by hikers and mountain bikers and access. • Documented trespassing, encampments, and graffiti. Reported encampments to the Homeless Outreach Team. • Mapped locations of invasive non-native plants during each quarterly patrol. • Contracted with HELIX Environmental Planning to conduct invasive removal efforts for pampas grass. Performed weed control for stinkwort. • Inspected site for Ward’s weed. No Ward’s weed observed within the Preserve. • Took photographs at ten established photo points.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Installed San Diego thornmint seed over 632 square feet as well as antiherbivore fencing per the San Diego Association of Governments Environmental Management Plan’s San Diego Thornmint Enhancement Project. Seeded population checked weekly by HELIX Environmental Planning and activities included monitoring, watering, and hand removal of weeds within three feet of San Diego thornmint. • Conducted San Diego Management and Monitoring Program’s Inspect and Manage Monitoring Program monitoring for San Diego thornmint – 150 individuals observed from the seeded area. No plants observed in the existing population. • San Diego Management and Monitoring Program conducted Inspect and Manage Monitoring Program monitoring for Baja California oatgrass (<i>Sphenopholis interrupta</i> ssp. <i>californica</i>) – 26 individuals were documented onsite. • Provided Homeowners Association newsletter. • Led interns from University of California San Diego, San Diego State University, Mira Costa College, Reed College, and High Tech High School on visits to assist with quarterly monitoring, hand weeding, and trash removal. • Monitored for signs of pests including invasive shot hole borer and brown-headed cowbird (<i>Molothrus ater</i>). No signs of these pests observed this year. • Attended quarterly Preserve Managers’ meetings with the city for coordination with other neighboring managers, as well as the city’s annual Habitat Management Plan workshop.
City of Carlsbad Preserves	Center for Natural Lands Management	<ul style="list-style-type: none"> • Documented and mapped sensitive species as they were observed during site visits. • Conducted oak woodland crown health and gold-spotted oak borer assessments at Carillo Ranch and Lake Calavera – no exit holes indicating goldspotted oak borer (<i>Agrilus auroguttatus</i>) were observed. • Conducted invasive shot-hole borer and Fusarium dieback assessments at Lagoon Lake, Lake Calavera, Carillo Ranch, Poinsettia Park, and The Crossings – willow woodlands appear to be healthy and past areas of dieback at Poinsettia Park and The Crossings show recovery and regrowth. • Performed thread-leaved brodiaea (<i>Brodiaea filifolia</i>) abundance counts within index plots – 24 individuals observed at index plots near Lake Boulevard but none flowered in late May; 306 individuals observed at the East Loop population, with 23 flowering in May. • Performed brown-headed cowbird trapping at The Crossings – 30 cowbirds trapped. • Repaired wildlife cameras and collected photo observations. • Continued to map additional observations of invasive non-native plants – new observations of stinkwort mapped at The Crossings and Veterans. • Continued to treat zero-tolerance non-native species and expanded treatment to species not treated due to need for experimental treatments. Invasive non-native species included fountain grass (<i>Pennisetum setaceum</i>), natal grass (<i>Melinis repens</i>), castor bean, vinca (<i>Vinca major</i>), poison hemlock (<i>Conium maculatum</i>), stinkwort, artichoke thistle, and sea lavender. • Inspected and maintained brow ditches multiple times within Aura Circle, Carlsbad Village Drive, The Crossings, La Costa Romeria, and Village H South. • Inspected erosion areas within Batiquitos Drive, Carlsbad Village, The Crossings, La Costa Romeria, Lake Calavera, and Village H South. Repaired silt fencing and removed sediment from the sidewalks on Palomar Airport Road and Batiquitos Drive. • Monitored fuel zones and communicated with City staff about timing of fuel zone clearing. • Maintained M1-2 tunnel with regular patrols and vegetation trimming.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Patrolled four to seven times a week at Lake Calavera; biweekly at Aura Circle; weekly at Village H North; monthly at Aviara Park, Carlsbad Village Drive, The Crossings, La Costa Canyon Park, La Costa Romeria, Poinsettia Park, and Veteran’s Park/Macario Canyon; and quarterly at Batiquitos Drive, Carrillo Ranch, Lagoon Lane, Los Monos, and Research Center. • Maintained and replaced existing signs as necessary. • Maintained nine mini kiosks across preserves. • Removed trash as needed. • Patrolled for preserve encroachments and removed bike jumps and small illegal trails from several properties. • Patrolled for trespass. Sign of trespass (graffiti, trash) was cleaned up in the M1-2 tunnel, Lake Calavera, Poinsettia Park, and La Costa Canyon Park. • Attended quarterly City of Carlsbad trails meetings, annual Habitat Management Plan meeting, San Diego Management and Monitoring Program meetings, and regular education and outreach meetings for trail users and concerned citizens. • Assisted City with continually stocking all map boxes at Lake Calavera with trail maps and information brochures. • Assisted with trimming of vegetation along trails at Lake Calavera. • Made some small fence repairs. • Completed the annual report and budget.
Daybreak Community Church Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Conducted four site visits 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 for removal, look for signs of trespass and erosion, check the Preserve signs for damage, and assess the need for remedial measures. Supplemental site visits were performed to check the status of invasive non-native plant species and monitor maintenance activities. Results of annual patrol and supplemental site visits documented in log of site conditions. • Documented coastal California gnatcatcher within the Preserve during two site visits. • Inspected Preserve signs and added sticker to signs with updated San Diego Habitat Conservancy contact information. • Performed 30-meter transect survey in restoration area. • Took photographs at six established photo points. • Mapped locations of invasive non-native plants during each patrol. Manually removed some invasive non-native plant species during patrols. • Contracted with the East County Transitional Living Center to conduct weed control in September to focus on castor bean, pampas grass, tree tobacco, Russian thistle (<i>Salsola tragus</i>), fennel, and stinkwort. Removed invasive non-native species within one-acre area. • Coordinated with the church to control slender myoporium (<i>Myoporium parvifolium</i>) and Pride of Madeira (<i>Echium candicans</i>) individuals within the Preserve that had come from the church’s landscaping area. To date, the church has not been cooperative in assisting in any maintenance. • Coordinated with the church to request notifications of trespassing or disturbances. • Led interns from University of California San Diego and San Diego State University on SDHC patrol visits to remove invasive non-native plants and trash, collect photo documentation, and inspect the general health of the habitat. • Attended quarterly Preserve Managers’ meetings with the city for coordination with other neighboring managers, as well as the city’s annual Habitat Management Plan workshop.

Preserve Area	Management Entity	Management and Monitoring Activities
Emerald Pointe Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Conducted quarterly patrols, surveys, and accompanied field crews for invasive plant removal. Focused on mapping invasive non-native plant species, surveying for sensitive species such as San Diego thornmint, monitoring erosion control measures, surveying for illegal activities such as trespassing or dumping, and removing trash. Results of patrols by keeping a monitoring log of site conditions. • Mapped locations of invasive non-native plants during each patrol. Manually removed some invasive non-native plant species during patrols. • Contracted with the East County Transitional Living Center to conduct weed control in March and April to focus on fennel, prickly lettuce (<i>Lactuca serriola</i>), bristly ox-tongue (<i>Helminthotheca echioides</i>), tocalote, and sow thistle (<i>Sonchus</i> sp.). Invasive non-native species were hand weeded in the vicinity of historical San Diego thornmint habitat prior to seeding the species. Grant funds received from the San Diego Association of Governments Environmental Mitigation Program for the San Diego Thornmint Enhancement Project were used to hand weed, seed, and monitor the onsite population area. • Updated 2009 baseline vegetation mapping to following the Vegetation Classification Manual for Western San Diego County. • Took photographs at established photo points. • Hand seeded a 671-square-foot area with San Diego thornmint seeds. • Conducted rare plant surveys. Approximately 131 San Diego thornmint individuals were observed. <i>Cryptantha</i> sp. was observed but was not identified to the species level. No Palmer’s grappling hook (<i>Harpagonella palmeri</i>) individuals were observed. • Documented coastal California gnatcatcher during site patrols. • Provided Homeowners Association newsletter with outreach information. • Attended quarterly Preserve Managers’ meetings with the city for coordination with other neighboring managers, as well as the city’s annual Habitat Management Plan workshop.
Encinas Creek/North County Habitat Bank Preserve	Center for Natural Lands Management	<ul style="list-style-type: none"> • Updated vegetation mapping. • Conducted wildlife movement monitoring – bobcat (<i>Lynx rufus</i>) and coyote (<i>Canis latrans</i>) were observed. • Conducted invasive shot-hole borer and Fusarium dieback monitoring – recovery continues to progress. • Mapped and documented observations of sensitive species during monitoring and management activities. • Removed invasive non-native species including pampas grass, garden nasturtium (<i>Tropalium majus</i>), and vinca from within the willow understory. Treated three upstart Canary Island date palms, as well as hundreds of mustard plants, bristly ox-tongue, poison hemlock, and vinca. In addition, secondary treatments of tropaeolum and ice plant were performed where regrowth from previous treatments were observed. • Conducted bi-weekly to monthly patrols – trespass and illegal camping were detected. • Cleared out transient encampments and cleaned up as necessary. Coordinated with outside security contractors and the City of Carlsbad Police Department Homeless Outreach Team. • Installed several “No Trespassing” signs along the onsite access road and within the areas of illegal encampments. • Repaired several areas of fencing at the southwestern extent of the Habitat Conservation Area. • Maintained signage at the northern Habitat Conservation Area boundary as well as at illegal trail points. • Cleaned up trash where necessary. • Completed the annual stewardship, budget, and work plan report, and managed database.

Preserve Area	Management Entity	Management and Monitoring Activities
Fox-Miller Preserve	Helix Environmental Inc. <i>(interim management)</i>	<ul style="list-style-type: none"> Chemically and mechanically treated invasive non-native broad-leaf and grass species with a focus on black mustard, bristly ox-tongue, wild lettuce (<i>Lactuca serriola</i>), fennel, scarlet pimpernel (<i>Lysimachia arvensis</i>), sow thistle, and salsify (<i>Tragopogon porrifolius</i>) within the preserve. Removed trash during each maintenance visit. Conducted general monitoring to assess the general condition of habitats; inspect signage and fencing; checked for the presence of following sensitive wildlife species: coastal California gnatcatcher, least Bell's vireo, Cooper's hawk; recorded plant and animal species observed/detected; conducted a health assessment of the thread-leaved brodiaea population within the translocation plot and the remainder of the grassland (42 flowering individuals observed); inspected the owl box; and communicated to maintenance personnel the issues identified during inspection.
Kelly Ranch Preserve	Center for Natural Lands Management	<ul style="list-style-type: none"> Conducted Orcutt's hazardia (<i>Hazardia orcuttii</i>) monitoring and Del Mar manzanita (<i>Arctostaphylos glandulosa</i> ssp. <i>crassifolia</i>) monitoring – a total of 99 Orcutt's hazardia individuals were detected and eight Del Mar manzanita individuals were mapped and assessed. Documented sensitive species observed onsite during biological surveys or other management activities. Treated invasive non-native plants including pampas grass, natal grass, Russian thistle, tree tobacco, stinkwort, Saharan mustard (<i>Brassica tournefortii</i>), and black mustard. Trimmed a eucalyptus tree located within the Habitat Conservation Area in Lot 159 to reduce fuel load. Assessed and summarized threats and stressors. Conducted patrols at least once a month. Littering is common near viewpoint, but no other issues observed. Replaced one sign. Removed trash when necessary. Contacted neighbors and the Homeowners Association regarding issues of concern, including removing and treating invasive non-native vegetation within their fuel zones. Conducted Conservation Easement compliance monitoring – no issues. Completed the annual stewardship plan, budget, and annual report, and managed database.
La Costa Collections Preserve/City Ventures Preserve	Urban Corps of San Diego County	<ul style="list-style-type: none"> Conducted biological monitoring for sensitive species and habitat condition, identified invasive non-native species, and conducted photo monitoring. Recorded incidental observations of coastal California gnatcatcher; a pair was detected. Conducted Nuttall's scrub oak monitoring: mapped general distribution and assessed condition and degree of disturbance to habitat. Fourteen Nuttall's scrub oak have been identified. 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. Total of 565 individuals were counted within the mapped population. Conducted general site monitoring: monitored for trash and/or debris, reported any human encroachment, checked on conditions of signs/fencing. Removed invasive non-native plant species during bi-annual habitat maintenance with focus on tamarisk, pampas grass, and fountain grass. Periodically removed trash and debris. Replaced lock to the gate along the El Camino Real side of the preserve. Completed annual report.

Preserve Area	Management Entity	Management and Monitoring Activities
La Costa Glen Preserve	Center for Natural Lands Management	<ul style="list-style-type: none"> • Monitored coastal sage scrub and southern maritime chaparral communities to document species diversity, habitat structure, and overall vegetative health. • San Diego Monitoring and Management Program performed vegetation monitoring studies. • University of California Riverside conducted Del Mar manzanita genetic sampling to make herbarium voucher specimens to clarify the range and relationships of Del Mar manzanita to other rare manzanitas. • Documented sensitive species observed onsite during biological surveys or management activities – no new sensitive species observed. • Treated tree tobacco and hundreds of black mustard. • Evaluated and summarized threats and stressors. • Performed regular patrols. • Removed trash as encountered. • Maintained signage and installed additional signs around BMX track. • Completed the annual stewardship plan, budget, and annual report, and managed database.
Laurel Tree Lane Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Conducted quarterly patrols and additional site visits to assess and address invasive shot-hole borer/Fusarium treatments and any substantial changes in the habitat composition of the preserve, remove trash, remove and/or map invasive non-native plant species, map sensitive species, look for signs of trespass, and assess any need for remedial measures. Results of quarterly patrols and supplemental site visits documented in log of site conditions. • Conducted visual tree surveys for invasive shot-hole borer presence and symptoms. • Installed five bottle traps during seasonal invasive shot-hole borer activity peaks within portions of riparian habitat containing potential host trees. No evidence of invasive shot-hole borer was noted. • Prepared monitoring logs after each of the six site visits. • Mapped locations of invasive non-native plants and addressed small patches of invasives, where possible. • Contracted with East County Transitional Living Center to conduct invasive non-native removal efforts for pampas grass, Russian thistle, and eucalyptus in a 0.1-acre area. • Took photographs from established photo points. • Mapped locations of sensitive plant and animal species. Documented ten occurrences of San Diego sagewort (<i>Artemisia palmeri</i>). • Provided newsletter to Property Owner's Association manager for the neighboring 24-Hour Fitness corporate office. • Attended quarterly Preserve Managers' meetings with the city for coordination with other neighboring managers, as well as the City's annual Habitat Management Plan workshop.
Manzanita Partners Preserve	Dudek/ 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 invasive 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.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Monitored vernal pools for inundation depending on rain events. • Monitored early detection indicators for invasive shot-hole borer invasion. • Reported and described data collected and management actions taken on the Preserve to the city.
Morning Ridge Preserve	Urban Corps of San Diego County	<ul style="list-style-type: none"> • Conducted brief biological survey, including estimating a total of 81 blooming wart-stemmed ceanothus (<i>Ceanothus verrucosus</i>) individuals, and documenting incidentally observed sensitive wildlife species such as coastal California gnatcatcher and Cooper’s hawk. • Conducted habitat maintenance and removed crown daisy (<i>Glebionis coronaria</i>) and shortpod mustard.
Muroya Preserve	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. Results of quarterly patrols and supplemental site visits documented in log of site conditions. • Mapped locations of newly observed sensitive species, including Coastal California gnatcatcher, Cooper’s hawk, and yellow-breasted chat individuals were documented within the Preserve. No new sensitive plant species were observed this year. • Documented graffiti. No signs of trespass. • Mapped locations of invasive non-native plant species and manually removed some invasives during each patrol. • Contracted with Black Sage Environmental (BSE) and East County Transitional Living Center to conduct maintenance with a focus on shortpod mustard (<i>Hirschfeldia incana</i>), tree tobacco, poison hemlock, and black mustard. • Removed poison hemlock and English ivy (<i>Hedera helix</i>) with volunteers. • Took photos from nine established photo points. • Coordinated with the Homeowners Association to conduct in-person meeting with neighboring residents, but the Homeowners Association requested to delay this meeting until next year (2025) due to Homeowners Association scheduling conflicts. In lieu of meeting, provided newsletter to the Homeowners Association. • Led interns from various academic institutions including University of California San Diego, San Diego State University, Mira Costa College, and High Tech High School, as well as other volunteers on San Diego Habitat Conservancy patrol visits to remove invasive plants and trash and inspect the general health of the habitat. • Reviewed and amended the Preserve Management Plan to include updates to contact information, sensitive species monitoring, and target invasive non-native plant species. Updated Preserve Management Plan provided to the City. • Documented an area of erosion outside of the Preserve which was forming due to a broken sprinkler in the neighboring yard. Coordinated with the Homeowners Association and neighboring resident, and damaged irrigation was subsequently repaired. • Coordinated regional brown-headed cowbird eradication efforts, revegetation, erosion control, and examination of trees for invasive shot-hole borer. No brown-headed cowbird or invasive shot-hole borer were observed. • Attended quarterly preserve managers’ meetings with the City for coordination with other neighboring preserve managers, as well as the annual workshop for the City’s Habitat Management Plan.
New Crest Preserve	Urban Corps of San Diego County	<ul style="list-style-type: none"> • Performed annual biological monitoring to monitor sensitive species and habitat condition, identify invasive non-native species, conduct photo monitoring, monitor for trash, erosion, human encroachment, and inspect signs and fencing. • Documented occurrences of Wart-stemmed ceanothus – four documented onsite, 31 total seedlings on and offsite. • Removed invasive species including artichoke thistle, pampas grass, and castor bean.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Removed trash as necessary. • Completed annual report.
North Coast Calvary Chapel Preserve	Helix Environmental (<i>interim management</i>)	<ul style="list-style-type: none"> • Conducted invasive non-native plant species control for mustard and Russian thistle. Ward's weed documented onsite. • Removed trash. • Documented the condition of the Preserve and recorded a list of observed wildlife species. • Conducted routine monitoring of sensitive habitats, hydrology, erosion, exotic plant species, and exotic animal species and inspected all fencing, gates, signs, and lighting around and/or within the preserve. • Monitored for unauthorized access and entry, public use, or habitat damage and assessed public trail going through the northern portion of the Preserve. • Documented incidental coastal California gnatcatcher observations. • Monitored bare area located along the eastern boundary of the northern parcel and the area was seeded in December 2022; however, seeded species did not establish.
Paseo del Norte Preserve	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, report any human encroachment, and check on and repair signs/fencing. • Contacted U-Haul Moving and Storage of Carlsbad regarding landscape waste from eucalyptus trees that had rolled to the edge of the southeastern Preserve boundary. Have not received responses. • Removed invasive non-native plant species as needed focusing on crown daisy, mustard, and other weeds. • Trimmed vegetation overhanging the sidewalk along Paseo Del Norte. • Removed trash as necessary. • Replaced and installed three new signs along Paseo Del Norte. • Completed annual report.
Poinsettia Place Preserve	Urban Corps of San Diego County	<ul style="list-style-type: none"> • Performed annual biological monitoring to document plant and wildlife species, monitor sensitive species, identify invasive non-native species, and conduct photo-documentation. A new sensitive plant species, western dichondra (<i>Dichondra occidentalis</i>) was mapped. • Incidentally observed coastal California gnatcatchers onsite. • Conducted annual Nuttall's scrub oak monitoring. • Conducted annual wart-stemmed ceanothus monitoring. • Conducted annual summer holly monitoring. • Conducted Del Mar manzanita monitoring and refined species distribution. Forty individuals observed. • Removed invasive non-native plant species including acacia (<i>Acacia</i> sp.), iceplant, pampas grass, castor bean, crown daisy, sea lavender, and mustard. • Removed trash as needed. • Removed old fence posts and wires along the southern boundary of the preserve as newer fencing installed in 2021 now serves to delineate the boundary between the Poinsettia 61 property and the Preserve. • Installed six signs along the southern boundary of the preserve. • Completed annual report.

Preserve Area	Management Entity	Management and Monitoring Activities
Poinsettia Station Vernal Pools	City of Carlsbad (Dudek/Habitat Restoration Sciences)	<ul style="list-style-type: none"> • Conducted vernal pool indicator plant surveys. Sixteen vernal pool indicator plant species observed in 2023 survey, four of which are special status. • Assessed vernal pool sensitive species populations. • Assessed invasive non-native plant populations for management. • Conducted weed control and removal throughout the preserve, with a focus on northern end of preserve.
Quarry Creek Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Conducted monthly patrols, with at least four of the patrols focusing on ecological conditions including biodiversity of the site and changes in habitat composition, removed trash, checked and repaired fencing and signs with damage, and assessed the need for remedial measures. Conducted supplemental site visits to discuss brush management, perform and monitor maintenance activities, check for trespasser activity, and host volunteer cleanups. Results of monthly patrols and supplemental site visits documented in log of site conditions. • Coordinated with Black Sage Environmental to focus on security issues and threats to the habitat such as illegal or unauthorized activities, dumping, vandalism and graffiti, human intrusion, formation of trails, and increases in invasive plant species. BSE performed monthly inspections and focused on intrusion from human activities along Buena Vista Creek. • Mapped locations of invasive non-native plant species and manually removed some invasives during each patrol. • Focused maintenance efforts on security patrols and trash removal. • Contracted with Black Sage Environmental to perform invasive plant and trash removal. Focused invasive removal efforts on black mustard, castor bean, pampas grass, giant reed (<i>Arundo donax</i>), Mexican fan palm (<i>Washingtonia robusta</i>), Cape ivy (<i>Delairea odorata</i>), fennel, poison hemlock, crown daisy, artichoke thistle, scarlet pimpernel, tree tobacco, milk thistle (<i>Silybum marianum</i>), Bermuda buttercup (<i>Oxalis pes-caprae</i>), sow thistle, wild radish, African asparagus fern (<i>Asparagus asparagoides</i>), bristly ox-tongue, white horehound (<i>Marrubium vulgare</i>). • Conducted hand removal of stinkwort with volunteers. • Reported instances of trespassing with the City of Carlsbad Police Department, City of Oceanside Police Department, the City of Oceanside Code Enforcement. • Black Sage Environmental replaced locks on gates in the east portion of the preserve at least eight times. • Repairs were made to wrought iron fencing in the east operation of the Preserve in three areas by Scott's Fence Co. • Followed up with the Homeowners Association multiple times throughout the year to confirm that repairs were made to fences. • Took photographs at fourteen established photo points. • Performed general presence/absence surveys for coastal California gnatcatcher, least Bell's vireo, white-tailed kite (<i>Elanus leucurus</i>), yellow warbler (<i>Setophaga petechia</i>), and yellow-breasted chat. Coastal California gnatcatcher, least Bell's vireo and yellow-breasted chat were observed. • Mapped locations of newly observed sensitive species. No new sensitive plant species were observed this year. • Provided Homeowners Association with brochure and attended Homeowners Association meeting. • Led interns from various academic institutions including University of San Diego, San Diego State University, Mira Costa College, Reed College, California State University San Marcos, and High Tech High School, as well as numerous volunteers on San Diego Habitat Conservancy patrol visits to remove invasive non-native plants and trash, and inspect the general health of the habitat. • Updated Preserve Management Plan to reflect updated contact information and format. • Conducted erosion control.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Coordinated with the San Luis Rey Band of Luiseño Mission Indians regarding implementation of the El Salto Falls Management Plan. • Conducted surveys for animal pest species, such as invasive shot-hole borer, Argentine ants, brown-headed cowbirds. • Partnered with Preserve Calavera to host two volunteer cleanups along Buena Vista Creek. • Began restoration efforts for coastal sage scrub to increase habitat for coastal California gnatcatcher. • Attended quarterly Preserve Managers' meetings with the city for coordination with other neighboring managers, as well as the city's annual Habitat Management Plan workshop. • Inspected for Conservation Easement compliance.
<p>Rancho La Costa Preserve</p>	<p>Center for Natural Lands Management</p>	<ul style="list-style-type: none"> • County of San Diego installed gate off Canyon de Oro Road that limits access to Suerte del Este and the Choumas-Pappas parcel. Installed fencing to close off illegal trails in the wildlife corridor. • Conducted coastal sage scrub community assessments. • Conducted Argentine ant presence/absence surveys. • Conducted wildlife movement monitoring – detected southern mule deer (<i>Odocoileus hemionus fuliginatus</i>) and coyote at key movement pinch points. Added two more cameras and detected more coyote, mule deer, and bobcat paths. • Conducted San Diego thornmint monitoring – two individuals counted. • Assessed/counted Orcutt's harzardia – 139 individuals counted. • Observed and noted flora and fauna in Harmony Grove Partners Association. • Removed thousands of invasive non-native species, including Ward's weed, stinkwort, fennel, and veldt grass (<i>Erhardta calycina</i>) using chemical and mechanical methods. • Monitored and maintained all brow ditches and areas of concern for erosion. • Cleared all five fuel zones. • Monitored and completed reporting for conservation easements—no unresolved issues and no easement violations were noted or reported to the landowner. • Conducted native grassland restoration – maintained coastal sage scrub demonstration garden, removed hundreds of fennel, installed additional 100 grassland plants adjacent to Gibraltar Street in collaboration with Preserve Calavera. • Installed 100 native plants near Copper Creek with volunteers. • Maintained trails – maintained water bars along trails, worked with Eagle Scouts to install new fencing near Copper Creek restoration project, worked with the San Diego Mountain Bike Association on trail maintenance on Denning Road. • Maintained ten kiosks. • Conducted patrols multiple times a week. • Successfully prevented trespassing and associated dangerous and destructive activities in Box Canyon. • Mapped unauthorized trails. • Installed/replaced signage as necessary – fencing and signage added to illegal trails in the Wildlife Corridor. • Continued quarterly volunteer newsletter and monthly "first Friday" volunteer events. • Emptied trash cans and dog waste stations throughout the Habitat Conservation Area with the help of City of Carlsbad Parks and Recreation.

Preserve Area	Management Entity	Management and Monitoring Activities
Sage Creek High School Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Completed annual stewardship plan, budget, and report, and maintained database. • 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. Results of quarterly patrols documented in log of site conditions. • Mapped locations of newly observed sensitive species. • Mapped locations of invasive non-native plant species. • Contracted with East County Transitional Living Center to treat invasives with focus on black mustard, castor bean, fennel, tree tobacco, bristly oxtongue, tocalote, and prickly lettuce. • Took photographs at six established photo points. • Maintained documentation of all coastal California gnatcatcher observed during patrols. • Coordinated with the neighboring school district maintenance director to have San Diego Habitat Conservancy's lock reattached to the access gate. • Attended quarterly Preserve Managers' meetings with the city for coordination with other neighboring managers, as well as the City's annual Habitat Management Plan workshop.
Sonata Preserve	San Diego Habitat Conservancy	<ul style="list-style-type: none"> • Conducted triannual monitoring visits to document native and invasive non-native plant species, thread-leaved brodiaea and Orcutt's brodiaea (<i>Brodiaea orcuttii</i>), wildlife species detected, overall site performance, erosion and sedimentation issues, hydrology and water quality issues, trash, illegal dumping, unauthorized human use, signage and fencing damage, and to identify remedial measures or adaptive management when necessary to maintain the quality of the site's habitat. Results of triannual patrols documented in log of site conditions. • Conducted visual tree surveys for invasive shot-hole borer presence and symptoms. • Installed a bottle trap during seasonal invasive shot-hole borer activity peaks, after which the preserve samples were collected and identified. One invasive shot-hole borer was identified from the sample collected in October 2024. • Removed stickers from vandalized signs along the fence boundary on Camino De Los Caches. • Mapped invasive non-native plants detected onsite including acacia, black mustard, shortpod mustard, bristly oxtongue, milk thistle, tocalote, prickly lettuce, fountain grass, slender myoporum, pampas grass, tamarisk, and Mexican fan palm. Manually removed some invasives during each patrol. • Contracted with Black Sage Environmental and/or East County Transitional Living Center to control invasives within a 1.5-acre area. Focused on areas near native plants, especially thread-leaved brodiaea and Orcutt's brodiaea. • Took photographs at established photo points. • Surveyed the site for thread-leaved brodiaea and Orcutt's brodiaea and performed San Diego Mitigation and Monitoring Program's Inspect and Manage monitoring for thread-leaved brodiaea. No individuals of either species were detected. • Attended quarterly Preserve Managers' meetings with the city for coordination with other neighboring managers. • Inspected for Conservation Easement compliance during monitoring visits. No compliance issues documented.
Southern Preserve	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. • Incidentally observed coastal California gnatcatcher.

Preserve Area	Management Entity	Management and Monitoring Activities
		<ul style="list-style-type: none"> • Monitored sensitive plant populations (San Diego goldenstar [<i>Bloomeria clevelandii</i>] and California adolphia [<i>Adolphia californica</i>]) annually. Approximately 100 California adolphia individuals and 86 San Diego goldenstar individuals were observed. • Monitored wildlife movement through trail camera. • Performed monthly site patrols to check signs and fences and remove trash. • Removed invasive non-native species on a quarterly/as needed basis, primarily artichoke thistle, black mustard, palm trees, stinkwort, pampas grass, and tocalote. • Replaced/repaired signs and fencing as needed. The lock on the gate to the water easement road which is maintained by the Leucadia Water District continues to be cut off. Leucadia Wastewater District is not willing to replace this lock every month. • Coordinated with Homeowners Association at least annually. Discussed fuel modification requirements and protection of sensitive species and habitats within the Preserve with the Homeowners Association. • Completed annual report.
Multiple areas	Preserve Calavera	<ul style="list-style-type: none"> • Supported community education on native plants, wildlife, and preserve management issues at various fairs and outreach events focusing on pollinators. • Continued several Citizen Scientist projects, including water quality testing, grunion reporting, and King tide events. • Increased public awareness of natural areas through California Naturalist certification class. • Continued work on potential land acquisitions.
Throughout the HMP Preserve system	City Parks and Recreation Department	<ul style="list-style-type: none"> • Trail Captains conducted monthly monitoring of their trails using trail reports, in which they documented any trail maintenance needs or concerns along their trails. • Weekly trail maintenance and monitoring was conducted across all the city-managed trails, in accordance with the trail maintenance schedule and emergent needs (such as trail closures due to rain). Trail maintenance included erosion repair, weed abatement, fence repair and installation, graffiti removal, trash removal, water bar installation, and sign installation. • Monthly trail maintenance events were conducted on city-managed trails with volunteers. Trail maintenance events included educational components on the native habitat and environment and how to care for it, as well as group projects on a designated portion of the trail. These events were attended by anywhere from 15 to 50 volunteers. • Frequent trail newsletters were sent out to discuss trail conditions, important safety reminders, and more.

Appendix C

2024 Adaptive Management Report HMP Unmanaged Preserves

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memorandum

date March 6, 2025

to Rosanne Humphrey, City of Carlsbad

cc Jason Allen, Black Sage Environmental, Inc.

from Adrienne Lee, Environmental Science Associates
Mark Doderer, Environmental Science Associates

subject HMP Unmanaged Preserves: 2024 Adaptive Management

Introduction

The City of Carlsbad (city) adopted the Habitat Management Plan (HMP) in November 2004 as a commitment to conserve the full range of native habitats and species throughout the city and maintain functional wildlife corridors through its implementation. Most of the city’s current HMP preserve system (70 percent) is under long-term management through various land managers. The remaining preserves receive minimal or no management and are referred to as “unmanaged preserves” (**Figure 1**; see figures in **Attachment A**). Typically, the unmanaged preserves were (1) established prior to the final adoption of the HMP and were not required to have a funded land manager, or (2) established during the transition period of 2004–2005 that allowed for reduced funding requirements. The city has no obligation to dedicate resources to monitor or manage the unmanaged preserves per the HMP Implementing Agreement. However, with the HMP preserve system almost fully built out, the city began evaluating the status of unmanaged preserves to identify threats and management priorities, and to determine if it would be feasible to implement high-priority adaptive management using available resources. This effort resulted in the development of the site inspection program and pilot adaptive management project by the city and Environmental Science Associates (ESA) (ESA 2023). The status of unmanaged preserves, results of the site inspection program, and results of the first year of the pilot adaptive management project are described in the 2019 and 2023 memorandums prepared by ESA (ESA 2019; ESA 2023a; ESA 2023b). This memorandum summarizes the second year of the pilot adaptive management project.

Resources were available in 2024 to implement Year 2 of the pilot project to conduct and track focused management activities within the two unmanaged preserves, Rancho Carrillo Master Association and The Ranch Preserves, chosen for the management pilot program in Year 1 (Figure 1). Continuing management at both unmanaged preserves will support ongoing monitoring and coordination efforts within the city and the greater San Diego region. The specific management targets in the pilot project were selected based on the following priorities: rarest species and vegetation communities, highly vulnerable plant populations, populations that are high priority both locally (HMP) and regionally, populations that are being actively monitored by the regional long-term Rare Plant Inspect and Manage monitoring program, good relationship with the Homeowners Association (HOA) landowner, preserve with current right-of-entry authorization, and feasible management location (relatively easy to access).

- **Rancho Carrillo Master Association Preserve** was selected because it supports vulnerable populations of two special-status plant species—San Diego thornmint (*Acanthomintha ilicifolia*) and thread-leaved brodiaea (*Brodiaea filifolia*), both of which are state endangered and federally threatened. Permanent monitoring plots were established for both species in 2017 and are monitored on an annual and biennial frequency, respectively, through the regional long-term Rare Plant Inspect and Manage monitoring program by the San Diego Management and Monitoring Program (SDMMP). Based on past monitoring results, invasive non-native plant species were identified as one of the greatest threats to the persistence of these populations; therefore, management through focused invasive non-native plant species removal is critical. It is expected that subsequent monitoring will document a reduction in non-native plant cover and show an improvement in the growth and vigor of these populations.
- **The Ranch Preserve** was selected because it supports a large patch of sensitive native grassland habitat. It has been estimated that native grasslands in California have been reduced by 99 percent (California Native Grasslands Association 2023). Native grasslands are able to remove and store vast amounts of atmospheric carbon, provide soil stability, capture and filter water, prevent erosion and flooding, and support a high biodiversity, including soil microbes, plants, invertebrates, and vertebrates. The target area was identified by ESA and recommended for enhancement as part of the city’s site inspection program. The greatest threat to the native grassland habitat is encroachment of invasive non-native artichoke thistle (*Cynara cardunculus*) and other invasive non-native forb and grass species. An advantage of working in The Ranch Preserve is that the HOA hired RECON Environmental, Inc., (RECON) to conduct quarterly monitoring visits and implement minor habitat enhancement, such as weed control targeting artichoke thistle. The city (through ESA) is partnering with the HOA and RECON to complement each other’s weed abatement efforts.

Methodology and Results

Following Year 1 methodology and recommendations, Year 2 of the management pilot program included inspecting 2023 management areas, developing and submitting a pesticide request form to allow synthetic herbicide use, and implementing management.

Pesticide Application Request Development

As recommended in the Year 1 management memo (ESA 2023b), Black Sage Environmental, Inc. (BSE) prepared a Pesticide Application Request that documented the lack of effectiveness of 2023 manual/mechanical methods and recommended more stringent synthetic chemical methods and/or a combination of mechanical and synthetic chemical methods to achieve the requisite purpose (**Attachment B**). The Pesticide Application Request proposed using synthetic chemical Garlon 4 Ultra =Triclopyr by dabbing directly on the center or newest growth area of artichoke thistle, fennel, and mustard plants within both preserves. For larger plants, cutting to a stump and then treating with Garlon 4 Ultra was proposed. The Pesticide Application Request was approved by the city on April 4, 2024.

Management Implementation

BSE conducted focused management within Rancho Carrillo Master Association and The Ranch Preserves with oversight from ESA restoration biologist Mark Dodero. Mark met BSE on-site to orient staff, identify and discuss avoidance strategies, and provide management recommendations. Management dates, priorities, methods, and acreage are presented in **Table 1**.

TABLE 1
2024 MANAGEMENT SUMMARY

Location	2024 Dates	Species/Habitat Benefited	Management Action	Method	Management Area (acres)
Rancho Carrillo Master Association	April 23	San Diego thornmint	Invasive non-native plant species management	Hand clipping	0.03
Rancho Carrillo Master Association	May 1–3, 6, 21–24, 27–30 June 5	Thread-leaved brodiaea	Invasive non-native plant species management, primarily targeting artichoke thistle Hauling of cut biomass	Mechanical cutting with tri-blades and application of Garlon 4 Ultra = Triclopyr	7.81
The Ranch	May 15 and 31 June 3–4	Native grassland habitat	Invasive non-native plant species management, primarily targeting artichoke thistle Hauling of cut biomass	Mechanical cutting with tri-blades and application of Garlon 4 Ultra = Triclopyr	0.94
Total					8.78

Synthetic chemical herbicide Garlon 4 Ultra =Triclopyr (4%) was applied by a Qualified Applicator licensed by the State of California (Department of Pesticide Regulation Qualified Applicator License #124662). All cut biomass was manually collected (raking when necessary), bagged and bundled, hauled off-site, and properly disposed of at an approved off-site facility.

Electronic field forms supported by mobile data collection applications ArcGIS Field Maps and Survey123 were used during management implementation. The ArcGIS Field Map developed for the site inspection program was used for tracking management areas. Survey123 forms were developed for ESA biologists and BSE staff to document pre-, during, and post-management conditions within management areas. Specific management details by site are provided below. Management forms are provided in **Attachment C**.

Rancho Carrillo Master Association Preserve

Due to the overall small size and vegetative status of all plants in the management area, limited number of invasive non-native plant species, and possible presence of rare Baja California oatgrass, manual removal (e.g., hand-clipping) continued to be prioritized in 2024 as opposed to mechanical (e.g., weed-whipping) for the San Diego thornmint management area. Invasive non-native plant species removed primarily included scarlet pimpernel (*Lysimachia arvensis*), spiny sowthistle (*Sonchus asper*), tocalote (*Centaurea melitensis*), and bristly ox-tongue (*Helminthotheca echioides*). Native plant species including San Diego thornmint, dot-seed plantain (*Plantago erecta*), and bulb species such as smallflower soap plant (*Hooveria parviflora*) and red-skinned onion (*Allium haematochiton*) were carefully avoided. The management area was approximately 0.03-acre (**Figure 2**). This management area encompassed the entire San Diego thornmint population on-site and did not include a buffer due to the proximity and sensitivity of Baja California oatgrass.

Thread-leaved brodiaea management consisted of mechanically cutting target invasive non-native plant species, predominantly artichoke thistle and fennel (*Foeniculum vulgare*) using tri-blades, and then treating the remaining stumps with synthetic herbicide Garlon 4 Ultra =Triclopyr. This method reduced the amount of herbicide that was required to be used and reduced the possibility of herbicide drift onto surrounding native vegetation. Treatment

occurred within the maximum extent of the thread-leaved brodiaea population, for an approximately 7.81-acre management area (Figure 2). Approximately 80 percent of the artichoke thistle within the management area was mechanically cut and treated with herbicide. All cut biomass was raked and hauled out on May 21–24 and 27–30 2024. Additional invasive non-native fennel (*Foeniculum vulgare*) were cut with tri-blades and treated with Garlon 4 Ultra =Triclopyr (4%) on June 5, 2024.

Representative photographs before, during, and after management are provided in **Attachment D**. Pesticide use reporting for the thread-leaved brodiaea management area at Rancho Carrillo Master Association Preserve is provided in **Attachment E**.

The Ranch Preserve

RECON, on behalf of the Ranch HOA, performed weed maintenance on March 19, 2024 targeting newly germinated artichoke thistle in the western portion of the non-native grassland habitat (approximately 2.47 acres) (**Figure 3**). Artichoke thistle plants were treated with a combination of glyphosate (2%) and triclopyr (0.5%) applied directly to foliage. No plants were cut prior to spraying.

Based on coordination with RECON, city management (implemented by BSE and ESA) subsequently treated the remaining artichoke thistle in the eastern portion of the non-native grassland (approximately 0.94 acres) (Figure 3). Artichoke thistle plants were cut with tri-blades and the cut stumps were sprayed with Garlon 4 Ultra =Triclopyr (4%). Approximately 95 percent of the artichoke thistle were mechanically and chemically treated by BSE. All cut biomass was raked and hauled out on May 31 and June 4, 2024.

Representative photographs before, during, and after management are provided in Attachment D. Pesticide use reporting for The Ranch Preserve is provided in Attachment E.

Discussion and Next Steps

Management in 2024 was consistent with the city's IPM Plan and the approved Pesticide Application Request. Manual/mechanical methods were prioritized, and synthetic herbicide was used sparingly in a targeted fashion to improve treatment effectiveness. Many perennial invasive non-native plant species (e.g., artichoke thistle, black mustard, and fennel) require repeat maintenance due to their deep taproots, ability to resprout, and existing seed bank. Because synthetic chemical herbicides are known to be effective and cost-efficient for successful treatment and eradication of these perennial invasive non-native plant species, continued prudent use, in combination with manual/mechanical methods, is recommended for 2025 management efforts around the sensitive species and habitats within Rancho Carrillo Master Association and The Ranch Preserves. Based on the results of 2024 management, the following next steps were identified:

- Coordinate with Jessie Vinje to determine if 2024 management activities were detected during 2024 Rare Plant Inspect and Manage monitoring that occurred post-management.
- Continue the pilot management program in 2025 to implement Year 3 if resources are available.
- Coordinate with RECON on upcoming weed maintenance activities at The Ranch Preserve. It is recommended that continued manual/mechanical removal and synthetic herbicide treatment targeting artichoke thistle, black mustard, and fennel should occur after these invasive non-native plants have produced new vegetative growth and before they go to seed.

- ESA and BSE will continue to implement targeted invasive non-native plant management using manual/mechanical methods and synthetic herbicides, as appropriate, to treat and eradicate threats to sensitive San Diego thornmint, thread-leaved brodiaea, and native grassland habitat. Small invasive non-native plants are recommended to be treated with the appropriate synthetic herbicide. Larger invasive non-native plants may require cutting and then dabbing with the appropriate synthetic herbicide for maximum effectiveness. Any synthetic herbicide use would comply with the approved 2024 Pesticide Application Request and be completed under the supervision of a qualified botanist to avoid any negative effects to sensitive plant species. If mechanical removal is implemented in 2025, all biomass shall be hauled off-site.
- ESA, BSE, and the city will continue to coordinate with regional monitoring entities (i.e., SDMMP and Jessie Vinje) and preserve manager RECON on monitoring and management activities within the Rancho Carrillo Master Association and The Ranch Preserves, respectively, to ensure all entities are informed of activities occurring on the preserves, particularly around rare plant species and sensitive habitats.

Attachments

Attachment A – Figures

Attachment B – Pesticide Application Request

Attachment C – Management Forms

Attachment D – Representative Photographs

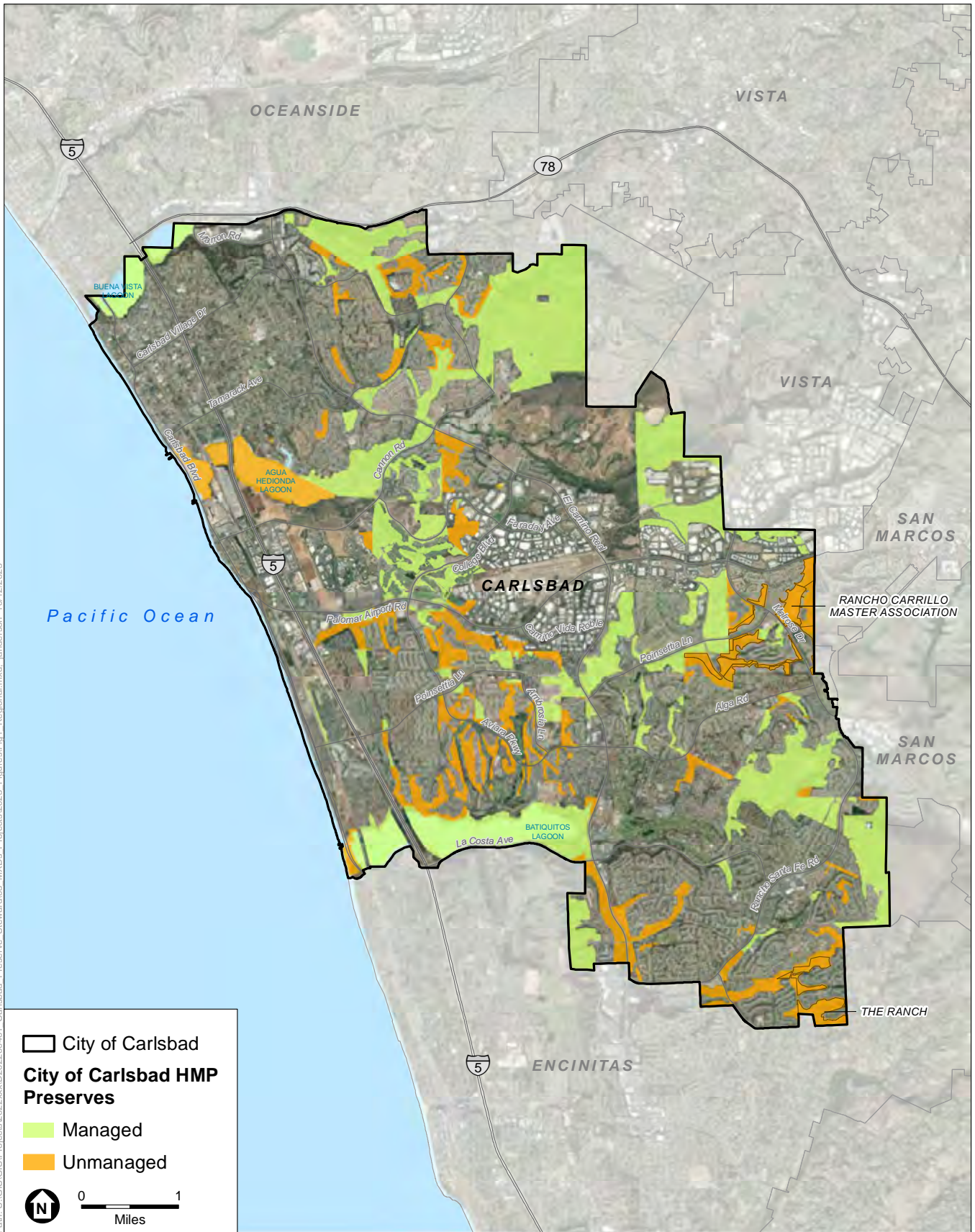
Attachment E – Pesticide Use Reporting

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Attachment A

Figures

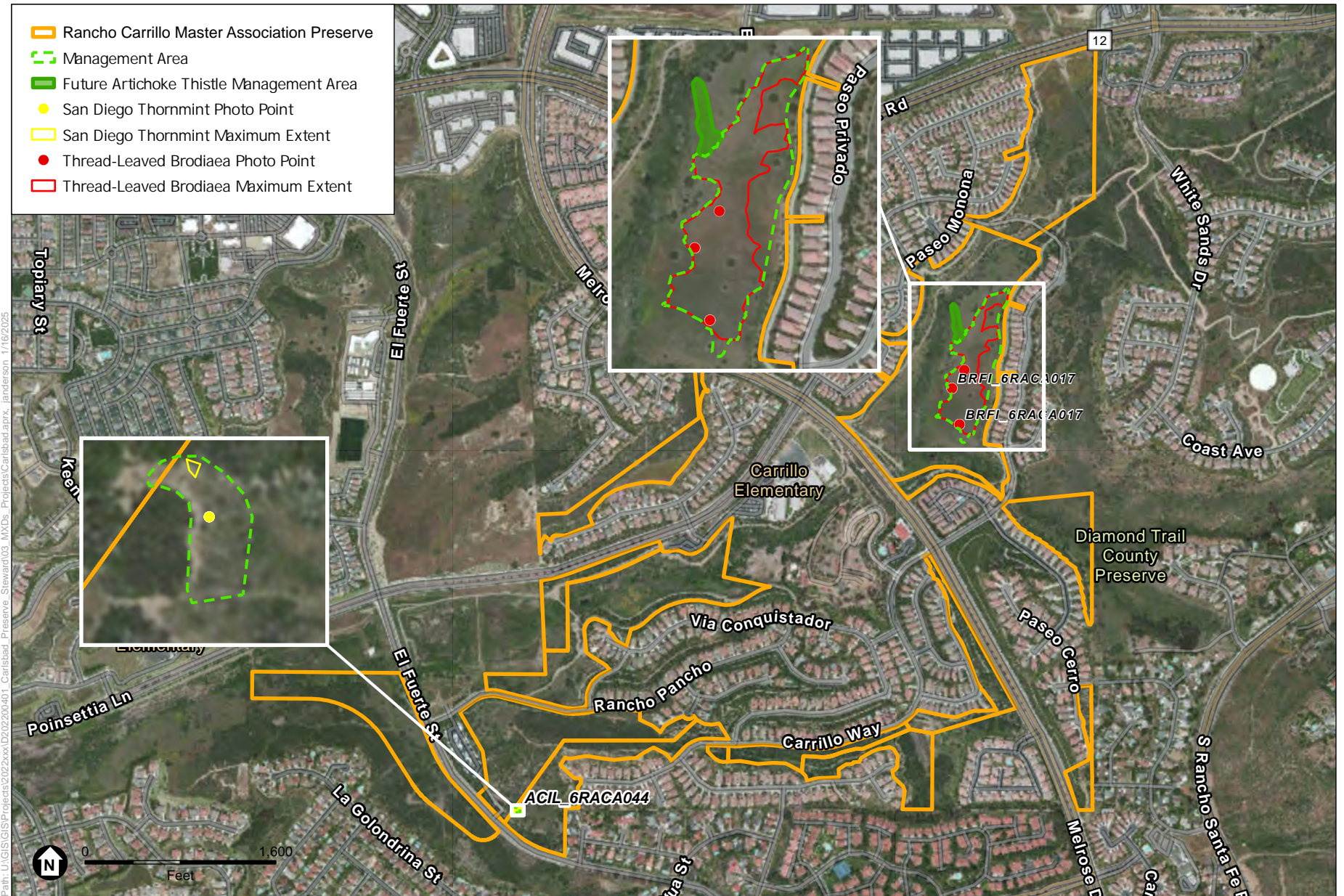


SOURCE: SanGIS, 2022; City of Carlsbad, 2021.

HMP Unmanaged Preserves: 2023 Adaptive Management Memorandum

Figure 1
Managed and Unmanaged Preserves in City of Carlsbad





SOURCE: ESRI, 2024; ESA, 2024.

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Figure 2
Rancho Carrillo Master Association Preserve – 2024 Weed Management



SOURCE: ESRI, 2024; ESA, 2024.

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Figure 3
 The Ranch Preserve – 2024 Artichoke Thistle Management

Attachment B
Pesticide Application Request

Black Sage Environmental, Inc.

PO Box 154004, San Diego, CA 92195 | 619-876-0745 | jallen@blacksageenvironmental.com

March 27, 2024

Rosanne Humphrey
Senior Program Manager
City of Carlsbad
Habitat Management Division
1635 Faraday Ave., Carlsbad, CA 92008

**Subject: Rancho Carrillo Master Association Preserve and The Ranch Preserve
Pesticide Application Requests**

Dear Rosanne Humphrey:

Black Sage Environmental (BSE) is pleased to provide the City of Carlsbad (City) with this Pesticide Application Request for Rancho Carrillo Master Association Preserve and The Ranch Preserve.

Per the City of Carlsbad's Integrated Pest Management Plan (IPM Plan, November 2017), BSE and Environmental Science Associates (ESA) are required to document a progressive process, beginning with hand-removal and mechanical methods and move to more stringent/synthetic products, only once determined that the former were not effective in achieving the requisite purpose.

In accordance with the IPM Plan, documentation and tracking of the products used will be submitted for City auditing and an ongoing evaluation of the effectiveness of different products, costs, and the condition of different project sites.

If use of the synthetic products is approved, adequate site posting will have to occur:

- Post the perimeter of the area to be treated and inside the kiosks, at least 72 hrs. in advance of the application, and remove 24 hrs. after the application
- Posted signs shall indicate applied product, the method of application, the anticipated date of application, and the company applicator's name and phone number.
- All signage must include BSE and ESA logo, be laminated, and would ideally be printed on yellow paper

Anticipated Date/Frequency: BSE staff (Department of Pesticide Regulation Qualified Applicator License #124662) under the supervision of ESA staff are planning to make a pesticide application in **April 2024. Follow up applications will occur in May/June 2024 as needed. The city will be notified at least 7 days prior to each application date.**

Pest/Species Name: Artichoke thistle (*Cynara cardunculus*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*) and short-pod mustard (*Hirschfeldia incana*).

Locations and Name of Sites:

Rancho Carrillo Master Association Preserve (Figure 2).



Figure 2
Rancho Carrillo Master Association Preserve – 2023 Management



The Ranch Preserve (Figure 3).



Figure 3
The Ranch Preserve – 2023 Management



Prevention and/or Non-Chemical Strategies Used:

Rancho Carrillo Master Association Preserve

- **Thread-leaved brodiaea**

Thread-leaved brodiaea management consisted of mechanically cutting target invasive non-native plant species, predominantly artichoke thistle, fennel and mustard, within the maximum extent of the thread-leaved brodiaea population, for an approximately 7.81-acre management area (ESA 2023 Figure 2). Tri-blades were used to cut entire artichoke thistle and fennel individuals to reduce the amount of plant fragments needed to be raked and hauled out. If entire individuals were not feasible to cut and remove due to time and budget constraints, flower and seed heads were cut and removed to reduce reproductive success. Approximately 75 percent of the artichoke thistle within the management area was mechanically treated.

The Ranch Preserve

- **Native grassland habitat**

Native grassland habitat management consisted of weed-whacking invasive non-native grasses using string trimmers within and around the native grassland habitat within the 3.01-acre management area (ESA 2023 Figure 3). As time and budget permitted, large invasive non-native forb species such as artichoke thistle, fennel, short-pod mustard and black mustard were targeted for mechanical removal using tri-blades. Invasive non-native grass biomass was raked, bagged and bundled, and hauled off-site. Invasive forb species individuals that were cut using tri-blades were hauled out in their entirety to reduce the amount of plant fragments needing to be raked and hauled out. Approximately 90 percent of the invasive non-native grasses and mustards and 5 percent of the artichoke thistle was mechanically treated.

Photo Documentation:

Rancho Carrillo Master Association Preserve:



Artichoke thistle prior to mechanical treatment on 3/27/23.



Artichoke thistle after being mechanically cut on 4/26/23.



Artichoke thistle resprouting after mechanical treatment on 6/8/23.

The Ranch Preserve:



Artichoke thistle and non-native grasses prior to mechanical treatment on 6/8/23.



Artichoke thistle and non-native grasses after being mechanically removed on 6/14/23.



Artichoke thistle and non-native grasses resprouting after mechanical treatment on 3/19/24 (photo courtesy of RECON).

Summary of Results: The perennial invasive non-native plant species (e.g., artichoke thistle, fennel, mustard) require repeat maintenance due to their deep taproots and ability to resprout. Management in April, June and July 2023 consisted of only manual and mechanical removal of invasive non-native plant species, and many target invasive non-native plant species were observed resprouting post- maintenance. Organic herbicides are non-systemic and only burn the leaves, but do not kill the plant and roots allowing the plant to resprout and survive. Organic herbicides require multiple treatment visits using high concentrations, which is not recommended for use over a large area as the caustic nature of organic herbicides can change soil chemistry. Additionally, the use of organic herbicides has not been extensively studied around endangered or threatened species and could negatively impact these species. Because manual and mechanical management in 2023 was not effective in eradicating the target invasive non-native species and organic herbicides are not recommended to be used in these management areas, prudent use of synthetic chemical herbicides that systemically work their way through the plant to kill the whole plant and roots is recommended in 2024 to continue management efforts around the sensitive species and habitats within Rancho Carrillo Master Association Preserve and The Ranch Preserve. Experts in the field, Jessie Vinje (SDMMP) and Mark Dodero (ESA), have had extensive work with invasive species control and field trials in habitats with endangered or threatened species and provided these management recommendations.

Proposal Synthetic Herbicide Application:

Thread-leaved brodiaea plots: Herbicide application to above ground biomass of artichoke thistle, fennel and mustard in monitoring plots and as time allows along TLB population edge in Fiscal Year 2024.

- Assume management in April-May.
- The herbicide Garlon 4 Ultra (Triclopyr, EPA code 62719-527; “Caution” Signal Rating Category III) is requested to be used to successfully treat and kill individuals. This would be done at a concentration of 4% on leaves.
- Herbicide application will consist of dabbing the center or newest growth of the smaller artichoke thistle, fennel, and mustard plants to reduce the amount of herbicide used and prevent herbicide drift onto vegetative brodiaea.
- Larger plants may require a cut stump method to cut off the biomass and treat the stump with a higher concentration of herbicide. Cut biomass will be hauled away as needed.

Native grassland habitat: Herbicide application to above ground biomass of artichoke thistle, fennel and mustard in native grassland habitat in Fiscal Year 2024.

- Assume management in April-May.
- The herbicide Garlon 4 Ultra (Triclopyr, EPA code 62719-527; “Caution” Signal Rating Category III) is requested to be used to successfully treat and kill individuals. This would be done at a concentration of 4% on leaves.
- Herbicide application will consist of dabbing the center or newest growth of the smaller artichoke thistle, fennel, and mustard plants to reduce the amount of herbicide used and prevent herbicide drift onto vegetative brodiaea.
- Larger plants may require a cut stump method to cut off the biomass and treat the stump with a higher concentration of herbicide. Cut biomass will be hauled away as needed.

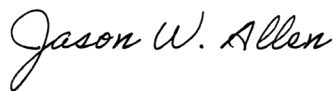
Schedule:

BSE will coordinate work with City of Carlsbad and ESA staff upon approval. The schedule was prepared based on the information available to BSE at the time of this proposal. Should new information be presented or factors outside of BSE’s control affect the project, the schedule may be subject to revision. The city will be notified at least 7 days prior to initiation of any herbicide use.

Tasks	Timeline
Task 1: Rancho Carrillo Preserve and The Ranch Preserve Invasive Plant Treatment and Removal	
<i>Pesticide Application Request Final</i>	One week
<i>Thread-leaved brodiaea Treatment</i>	April/May 2024
<i>Deliverables from above treatment</i>	One month after treatment
<i>Native grassland habitat treatment</i>	April/May 2024
<i>Deliverables from above treatment</i>	One month after treatment

If you have any questions regarding this request, please contact Jason Allen (jallen@blacksageenvironmental.com) at (619) 876-0745.

Sincerely,



Jason W. Allen
President

References

City of Carlsbad. 2017. *Integrated Pest Management Plan*. Parks and Recreation Department and Public Works Department. November 2017.

Environmental Science Associates (ESA). 2023. *HMP Unmanaged Preserves: 2023 Adaptive Management*. December 2023.

Attachment C
Management Forms



Carlsbad Maintenance Form

Rancho Carrillo Master Association

Date/Time: 4/23/24 08:19

Visit Number: 1

Staff: Emmy Johnson, Nick Martin, Will Calvo, Torin Naseyowma

Maintenance Methods: Manual

Maintenance Methods Notes: By hand, needle nose pliers, clippers surrounding thornmint. Minimized soil disturbance.

Target Invasives: Nonnative_Grasses,Sowthistle,Other,BristlyOxTongue

Status/Notes: Handpulled invasives & some native thornmint competitors. Cleared area about 15'x15' around thornmint & less extensive weeding outside the thornmint population. Other invasives: scarlet pimpernel & mustard. Native competitors: monkey flower, plantago

Photos:



Photo Type: Before

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: General

Notes/Caption: Found tiniest thornmint



Photo Type: Before

Notes/Caption: Mark/ESA requested removal of Tarplant, sow thistle and mustard to prevent seeds spreading into thornmint area



Photo Type: Before

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: After

Notes/Caption: Polygon in field maps of area completed



Carlsbad Maintenance Form

Rancho Carrillo Master Association

Date/Time: 5/1/24 15:11

Visit Number: 2

Staff: Emmy Johnson, Luis Salas, Will Calvo, Sander Fogarty, Isaac Martin del Campo, Terence Zegarra

Maintenance Methods: Herbicide, Mechanical

Maintenance Methods Notes: Triblade artichoke thistle Sprayed artichoke thistle stumps after cut with Garlon 4Ultra at 5%

Target Invasives: Artichoke_Thistle, Fennel

Status/Notes: Starting triblading artichoke thistle from the West side moving East. Triblade thistle, rake material out of the way, and spray stump with Garlon 4 Ultra at 5%. See attached photo of area completed. Will let biomass dry out some before hauling offsite.

Photos:



Photo Type: Work in Progress

Notes/Caption: Raking thistle to clear stump for spray



Photo Type: Work in Progress

Notes/Caption: Triblading artichoke thistle



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption: Herbicide applied to stump

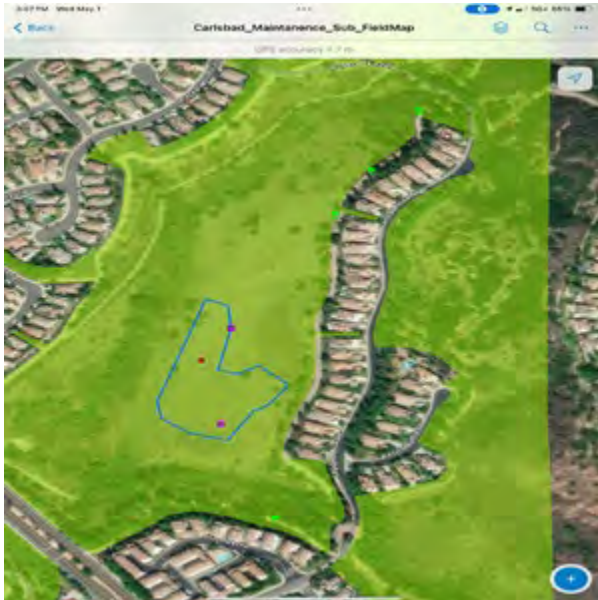


Photo Type: After

Notes/Caption: Area cut, will haul out material in future



Carlsbad Maintenance Form

Rancho Carrillo Master Association

Date/Time: 5/2/24 15:12

Visit Number: 3

Staff: Luis Salas, Emerson Peluso, Will Calvo, Sander Fogarty, Terence Zegarra, Lucas Corbo, Isaac Martin del Campo, Fabian Montes

Maintenance Methods: Mechanical,Herbicide

Maintenance Methods Notes: Triblade artichoke thistle Applied herbicide to cut stumps, Garlon 4 Ultra at 4%

Target Invasives: Artichoke_Thistle

Status/Notes: Starting triblading artichoke thistle from the West side moving East. Triblade thistle, rake material out of the way, and spray stump with Garlon 4 Ultra at 5%. See attached photo of area completed. Will let biomass dry out some before hauling offsite.

Photos:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: After

Notes/Caption:



Carlsbad Maintenance Form

Rancho Carrillo Master Association

Date/Time: 5/3/24 10:15

Visit Number: 4

Staff: Luis Salas, Jarett Jones, Isaac Martin de Campo, Will Calvo, Terence Zegarra

Maintenance Methods: Mechanical,Herbicide

Maintenance Methods Notes: 5/3/24: Used triblades to cut artichoke thistle at base Sprayed artichoke thistle stumps after cut with Garlon 4Ultra at 5%, treated center of smaller artichoke thistles without cutting.

Target Invasives: Artichoke_Thistle

Status/Notes: Need one more day to complete, artichoke larger and more numerous than anticipated. May not have time or budget to continue treating fennel and mustards.

Photos:



Photo Type: Work in Progress

Notes/Caption: Crew raking artichoke thistle biomass to clear stump to be sprayed

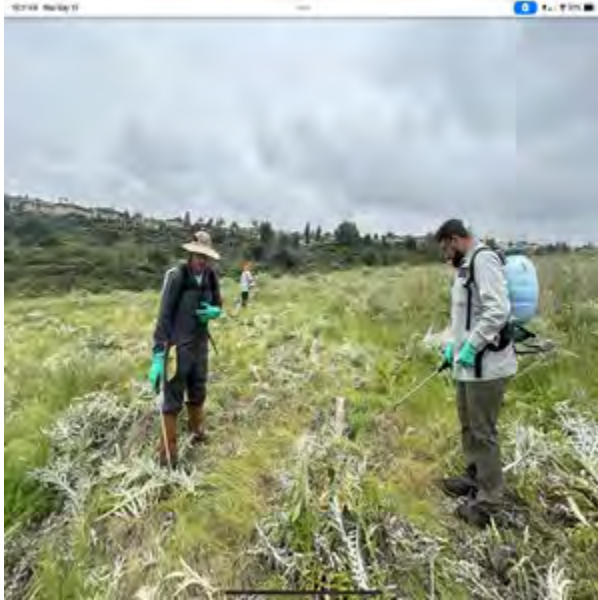


Photo Type: Work in Progress

Notes/Caption: Crew spraying artichoke thistle stumps



Photo Type: Work in Progress

Notes/Caption:

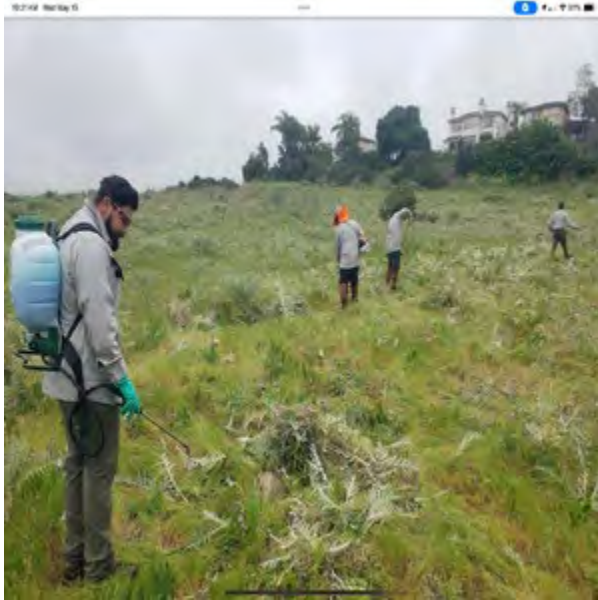


Photo Type: Work in Progress

Notes/Caption: Crew triblading, raking, and spraying artichoke thistle.

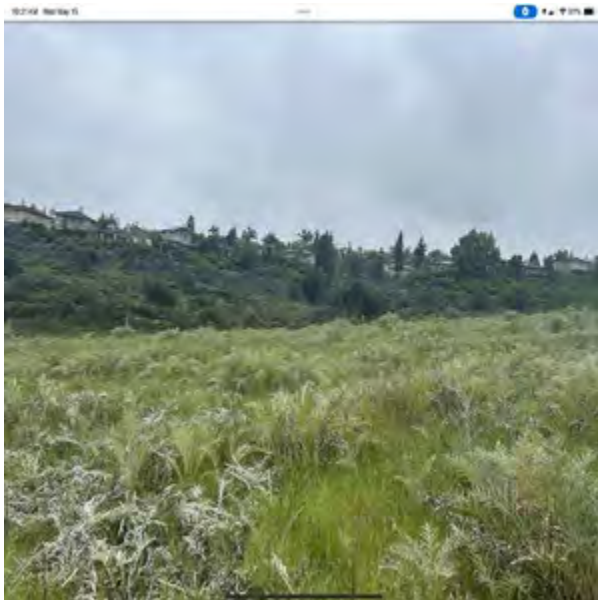


Photo Type: Before

Notes/Caption:

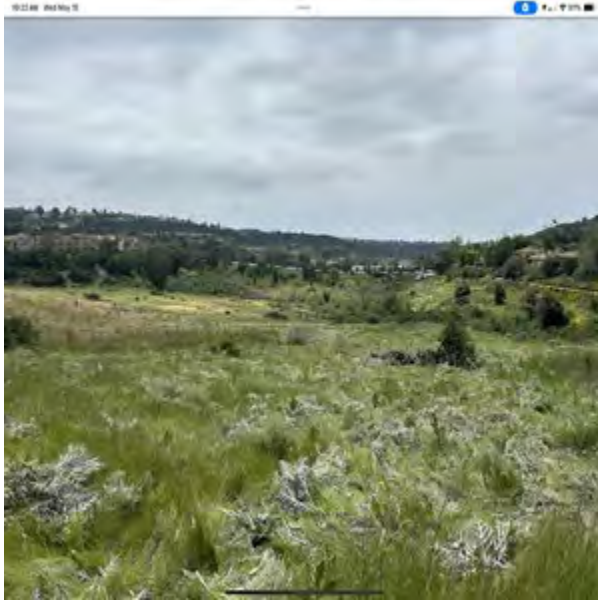


Photo Type: After

Notes/Caption:

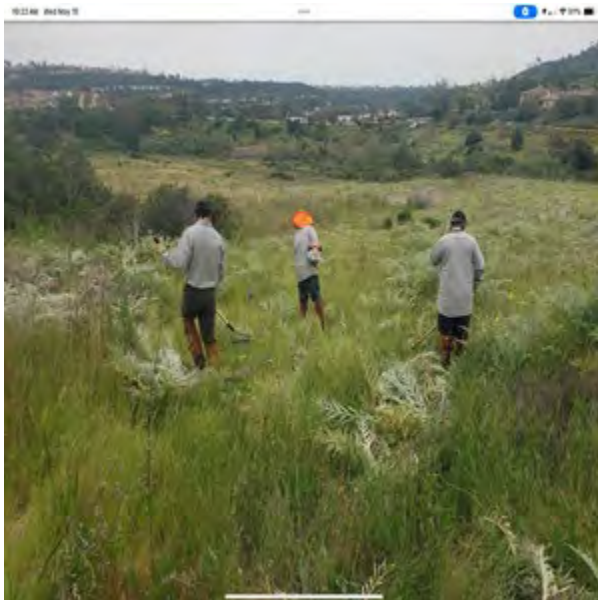


Photo Type: Work in Progress

Notes/Caption:



Carlsbad Maintenance Form

Rancho Carrillo Master Association

Date/Time: May 6, 2024 10:27

Visit Number: 5

Staff: Emerson Peluso, Isaac Martin del Campo, Will Calvo, Fabian Montes

Maintenance Methods: Herbicide, Mechanical

Maintenance Methods Notes: Used triblades to cut artichoke thistles at base. Sprayed artichoke thistle stumps after cut with Garlon 4Ultra at 5%, sprayed smaller artichoke thistles in very center without cutting.

Target Invasives: Artichoke_Thistle

Status/Notes: All large artichoke thistle cut and cut stump treated with herbicide, all smaller artichoke thistles sprayed in center without cutting. Some fennel cut and treated. Could use another day to target fennel and mustards.

Photos:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: Work in Progress

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: General

Notes/Caption: Herbicide treated in center of cut artichoke thistle stump



Carlsbad Maintenance Form

ESA Rancho Carrillo Master Association

Date: June 5, 2024

Staff: Luis, Alonna, Torin, Lucas, Emerson

Maintenance Methods: Herbicide, Mechanical

Maintenance Methods Notes: The crew worked on triblading fennel and treating the stumps with herbicide. Had two crew cutting, two spraying and one raking out cut branches and spotting for any missed plants.

Target Invasives: Fennel

Status/ Notes: Located more mustard and artichoke thistle patches down the Western slope.

Photos:





Before:



After:





Carlsbad Maintenance Form

Carlsbad Ranch

Date/Time: 5/15/24 14:00

Visit Number: 1

Staff: Luis Salas, Alonna Medina, Torin Naseyowma, Sander Fogarty

Maintenance Methods: Mechanical,Herbicide

Maintenance Methods Notes: Tri-blade & Garlon Ultra 4

Target Invasives: Artichoke_Thistle

Status/Notes: Cometed 100% of the worksite

Photos:



Photo Type: Before

Notes/Caption:



Photo Type: After

Notes/Caption:



Photo Type: Before

Notes/Caption:



Photo Type: After

Notes/Caption:



Carlsbad Maintenance Form

Carlsbad Ranch

Date/Time: 6/3/24 14:00

Visit Number: 3

Staff: Alonna Medina, Will, Lucas Corbo, Emerson Peluso

Maintenance Methods: Mechanical,Herbicide

Maintenance Methods Notes: Tri-blade & Garlon Ultra 4

Target Invasives: Fennel (*Foeniculum vulgare*). and Short pod Mustard (*Hirschfeldia incana*)

Status/Notes: Tribladed and sprayed mustard and fennel

Photos:





Attachment D
Representative Photographs



Photo 1: Black Sage Maintenance Crew Hand Weeding Thornmint at Rancho Carrillo (April 23, 2024)



Photo 2: San Diego Thornmint at Rancho Carrillo Closeup View (April 23, 2024)

D:\2022\04\01_00 - City of Carlsbad Preserve Steward\05 Graphics-GIS-Modeling-USE AZURE\Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 1 and 2





Photo 3: San Diego Thornmint Population Area Before Management (April 23, 2024)



Photo 4: San Diego Thornmint Population Area After Management (June 19, 2024)

D:\2022\04\01_00 - City of Carlebad Preserve Steward\05 Graphics-GIS-Modeling-USE AZURE\Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 3 and 4





Photo 5: Black Sage Maintenance Crew Cutting and Treating Artichoke Thistle at Rancho Carrillo (May 1, 2024)



Photo 6: Thread-leaved Brodiaea Flowers at Rancho Carrillo (June 19, 2024)

D:\2022\04\01_00 - City of Carlsbad Preserve Steward\05 Graphics-GIS-Modeling-USE AZURE\Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 5 and 6





Photo 7: Photo Point 3 Rancho Carrillo Brodiaea Site Before Artichoke Treatment (May 1, 2024)



Photo 8: Photo Point 3 Rancho Carrillo Brodiaea Site After Artichoke Treatment (June 19, 2024)

D:20220401.00 - City of Carlebad Preserve Steward/05 Graphics-GIS-Modeling-USE AZURE/Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 7 and 8





Photo 9: Black Sage Maintenance Crew Cutting and Treating Artichoke Thistle (May 15, 2024)



Photo 10: Artichoke Thistle After Cutting and Treatment (May 15, 2024)

D:\2022\04\01_00 - City of Carlebad Preserve Steward\05 Graphics-GIS-Modeling-USE AZURE\Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 9 and 10





Photo 11: Photo Point 3 The Ranch Before Artichoke Treatment (May 15, 2024)



Photo 12: Photo Point 3 The Ranch After Artichoke Treatment (June 19, 2024)

D:\2022\04\01_00 - City of Carlebad Preserve Steward\05 Graphics-GIS-Modeling-USE AZURE\Illustrator

SOURCE: ESA, 2024

HMP Unmanaged Preserves: 2024 Adaptive Management Memorandum

Attachment D
Representative Management Photos 11 and 12



Attachment E
Pesticide Use Reporting

HMP Division Pesticide Use Report

Date of Pesticide Use Request Approval: 4/4/2024	Date of Report Submittal: 2/14/2025
PUR Approved by: Rosanne Humphrey, Habitat Management Program Manager	Report Submitted by: Jason Allen, BSE
Project Location: Rancho Carrillo Master Association Preserve	
Project: HMP Pilot Management Project; invasive non-native species control for state/federally listed plant species, thread leaved brodiaea (<i>Brodiaea filifolia</i>).	

PESTICIDE USE DETAILS

a) **Target Pest:** Artichoke thistle (*Cynara cardunculus*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*) and short-pod mustard (*Hirschfeldia incana*).

b) **Prevention and other non-chemical methods of control used:**

The perennial invasive non-native plant species (e.g., artichoke thistle, fennel, mustard) within the thread-leaved brodiaea population require repeat maintenance due to their deep taproots and ability to resprout. Management in April, June, and July 2023 consisted of only manual and mechanical removal of invasive non-native plant species, and many target invasive non-native plant species were observed resprouting post-maintenance. Therefore, 2024 management for thread-leaved brodiaea consisted of mechanically cutting and treating target invasive non-native plant species, predominantly artichoke thistle, fennel, and mustard, with herbicide (Garlon 4 Ultra = Triclopyr) (4%) within the maximum extent of the thread-leaved brodiaea population, for an approximately 7.81-acre management area (ESA 2024 Figure 2). Tri-blades were used to cut entire artichoke thistle and fennel individuals and the remaining stumps were treated with Garlon 4 Ultra = Triclopyr. Approximately 80 percent of the artichoke thistle within the management area was mechanically cut and treated with herbicide.

c) **Type and quantity of pesticide used:**

Garlon 4 Ultra = Triclopyr (4%) 93.5 ounces

d) **Location of the pesticide application (insert map):**



e) **Date of pesticide application:** 5/1/24, 5/2/24, 5/3/24, 5/6/24, 6/5/24

f) **Name of pesticide applicator:** Black Sage Environmental, Inc.

g) **Application equipment used:**
Backpack sprayers

h) **Summary of results (include photos):**
ESA provided a follow up assessment with photos.

HMP Division Pesticide Use Report

Date of Pesticide Use Request Approval: 4/4/2024	Date of Report Submittal: 2/14/2025
PUR Approved by: Rosanne Humphrey, Habitat Management Program Manager	Report Submitted by: Jason Allen, BSE
Project Location: The Ranch Preserve	
Project: HMP Pilot Management Project; invasive non-native species control for native grassland habitat	

PESTICIDE USE DETAILS

a) **Target Pest:** Artichoke thistle (*Cynara cardunculus*), fennel (*Foeniculum vulgare*), black mustard (*Brassica nigra*) and short-pod mustard (*Hirschfeldia incana*).

b) **Prevention and other non-chemical methods of control used:**

The perennial invasive non-native plant species (e.g., artichoke thistle, fennel, mustard) require repeat maintenance due to their deep taproots and ability to resprout. Management in April, June and July 2023 consisted of only manual and mechanical removal of invasive non-native plant species, and many target invasive non-native plant species were observed resprouting post-maintenance. Therefore, 2024 native grassland habitat management consisted of mechanically cutting and treating target invasive non-native plant species, predominantly artichoke thistle, fennel, and mustard, with herbicide (Garlon 4 Ultra = Triclopyr) (4%) in the eastern portion of the non-native grassland habitat, for an approximately 0.94-acre management area (ESA 2024 Figure 3). Tri-blades were used to cut entire artichoke thistle and fennel individuals and the remaining stumps were treated with Garlon 4 Ultra = Triclopyr. Approximately 95 percent of the artichoke thistle within the management area was mechanically cut and treated with herbicide.

c) **Type and quantity of pesticide used:**

Garlon 4 Ultra = Triclopyr (4%) 14 ounces

d) **Location of the pesticide application (insert map):**



e) **Date of pesticide application:**

5/15/24, 6/3/24

f) **Name of pesticide applicator:**

Black Sage Environmental, Inc.

g) **Application equipment used:**

Backpack sprayers

h) **Summary of results (include photos):**

ESA provided a follow up assessment with photos.