FINAL

COUNTY OF SAN DIEGO
MULTIPLE SPECIES CONSERVATION PROGRAM

SOUTH COUNTY SUBAREA PLAN
ANNUAL REPORT
YEAR 24

Reporting Period: January 1, 2021 – December 31, 2021

Report Date: May 25, 2022



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ACRONYMS

BLM – Bureau of Land Management

BMO – Biological Mitigation Ordinance

Caltrans – California Department of Transportation

CDFW – California Department of Fish and Wildlife

CEQA – California Environmental Quality Act

CNRA – California Natural Resources Agency

COI – Certificate of Inclusion

County – County of San Diego

County Preserves – County-owned or managed parks or preserves with preserve lands

DBH – Diameter at Breast Height

DGS – County of San Diego Department of General Services

DPR – County of San Diego Department of Parks and Recreation

DPW – County of San Diego Department of Public Works

EHC – Environmental Habitat Conservancy

HabiTrak – Habitat Tracking Reporting, State of California instrument and database

HCP – Habitat Conservation Plan

HOA – Homeowner's Association

IA – Implementing Agreement

JPA – Joint Powers Authority

KSHB – Kuroshio Shot Hole Borer

MD – Management Directive

MHPA – Multiple Habitat Planning Area

MLP – Mitigation Land Policy

MSCP – Multiple Species Conservation Program

MSCP Preserve – Multiple Species Conservation Program Subarea Plan Preserve

NCCP Act– Natural Community Conservation Planning Act

Otay Ranch POM – Otay Ranch Preserve Owner/Manager

PAMA – Pre-Approved Mitigation Area

PDS – County of San Diego Planning & Development Services

PIT – Passive Integrated Transponder

RDM – Residual Dry Matter

RMP – Resource Management Plan

ROE – Right-Of-Entry Permit

RWQCB – Regional Water Quality Control Board

SANDAG – San Diego Association of Governments

SDMMP – San Diego Management and Monitoring Program

SDRC – San Diego River Conservancy

SDRPF – San Diego River Park Foundation

STEAM – Science, Technology, Engineering, Arts, and Math

Subarea Plan – South County Subarea Plan

TMP – Targeted Monitoring Plan (formerly known as Comprehensive Monitoring Plan)

TransNet EMP – Environmental Mitigation Program for regional transportation projects administered by SANDAG

USACE – United States Army Corps of Engineers

USFWS – United States Fish and Wildlife Service

USGS – United States Geological Survey

WCB – Wildlife Conservation Board

Wildlife Agencies – used collectively for the USFWS and CDFW

EXECUTIVE SUMMARY



MULTIPLE SPECIES CONSERVATION PROGRAM SUBAREA PLAN

79,976 acres preserved

81% of MSCP Preserve goal achieved

13,166 acres County-owned, managed or funded

30 County Parks and Preserves







REPORTING YEAR HIGHLIGHTS

123 acre MSCP Preserve increase

46 MSCP covered species monitored or documented in County Preserves

9 Grant-funded management projects

8 MSCP Preserve management partnership projects

10 MSCP Preserve monitoring and research partnerships

This is the 24th annual report for the County of San Diego (County) Multiple Species Conservation Program's (MSCP) South County Subarea Plan (Subarea Plan) adopted by the County Board of Supervisors on October 22, 1997. This report was prepared in conformance with Section 14.2 of the Implementing Agreement (IA) executed between the County, California Department of Fish and Wildlife (CDFW), and the United States Fish and Wildlife Service ([USFWS], collectively referred to as Wildlife Agencies) on March 17, 1998. This report accounts for MSCP Subarea Plan implementation from January 1 through December 31, 2021 and summarizes key accomplishments for the permit term. Topics include the following:

- Preserve assembly
- Covered projects
- Habitat gain and loss
- Species and habitat conservation
- Preserve management
- Preserve monitoring and research
- Financial summary, and
- Program administration.

The MSCP Subarea Plan is critical for quality of life within the unincorporated county because it conserves the region's unique native habitats and wildlife for future generations to enjoy. Residents and visitors alike learn about the vital role of conservation through a multitude of environmental education activities that foster important connections with nature. The MSCP Subarea Plan also protects the diversity of native plants and animals, including threatened and endangered species, works across political boundaries in a regional conservation effort, and protects watersheds and water quality. It ensures compliance with the federal Endangered Species Act and associated Habitat Conservation Plan (HCP) permits, state Endangered Species Act, state Natural Community Conservation Planning (NCCP) Act and associated permits/authorizations; and it accommodates future growth by streamlining building regulations.

Preserve Assembly

The MSCP Subarea Plan Preserve (MSCP Preserve) totals 79,976 acres with 81% of the 98,379-acre conservation target achieved. County-owned, managed, or funded conserved lands in the MSCP Subarea Plan Area totals 13,166 acres[1]. Within the MSCP Preserve, the County owns or manages 30 properties. These lands are managed for the benefit of the MSCP covered species and habitats. During this reporting

[1] All acreage reported for MSCP Preserve Assemblage utilizes GIS acreages, as opposed to Assessor's acreages, as the HabiTrak database only uses GIS acreages. GIS and Assessor's acreages can vary depending on terrain and mapping factors.

period, January 1, 2021 to December 31, 2021, 123 acres were added to the MSCP Preserve. Local, non-profit partners acquired 102 acres. Private land dedication required as a County condition of private development added 2 acres outside the hardline preserve area and 19 acres inside the hardline preserve area (Otay Ranch Preserve Owner/Manager [POM]) to the MSCP Preserve.

The MSCP Subarea Plan has an overall preservation goal of 98,379 acres. The MSCP Preserve is assembled through a combination of baseline conserved areas that existed in 1997, lands preserved as mitigation from development permit projects, and public agency and non-profit conservation partner acquisitions.[2] Preservation is prioritized within areas identified as having habitat with high biological value or within a habitat linkage.[3] These are the Pre-Approved Mitigation Areas (PAMA) and the hardline preserve areas. Hardline preserve areas are lands that will be included in the MSCP Preserve as a result of negotiations between the County, Wildlife Agencies, and landowners.

The MSCP Preserve acreage is equal to the baseline acres plus acres gained within PAMA and hardline preserve areas from private mitigation and public and non-profit conservation partner acquisitions. In general, acquisitions or private mitigation outside PAMA or hardline preserve areas are considered complimentary conservation and do not count towards the MSCP Preserve. However, the Wildlife Agencies have approved complementary County acquisitions outside the 1997 PAMA to be counted in the MSCP Preserve as they contribute to the biological goals of the MSCP. These acres are reported below as habitat gains.

Covered Projects

The County permitted 101 development projects in the reporting period in the MSCP Subarea Plan Area. This included 98 residential projects and three industrial projects. No agricultural exemptions were issued during the reporting period.

Habitat Gains and Losses

There was a total of 201 acres of habitat gains and 288 acres of habitat losses in the reporting period. Preservation within areas identified as having habitat with high biological value, PAMA and the hardline preserve areas, was 123 acres. There was an additional 78 acres of complementary conservation outside these areas. Habitat losses total 55 acres inside PAMA and hardline preserve areas and 233 acres outside these areas.

Cumulatively, the MSCP Preserve is in compliance with the rough step analysis, that habitat gains exceed habitat losses. Rough step compares total gains and losses within and outside of PAMA and hardline preserve areas categorized by total acres and habitat types. The purpose of rough step is to ensure that the conservation of high-quality habitat and development in lower quality habitat occurs in roughly the same amounts at the same time. Habitat located within the PAMA or hardline preserve areas is considered high-quality, while low-quality habitat is outside these areas. Cumulatively, the majority of habitat gains occurred within PAMA and hardline preserve areas, while the majority of habitat losses occurred outside of PAMA and hardline preserve areas. This indicates that the overall conservation goals are being met to

[2] All acquisitions are from willing sellers.

[3] Habitat linkages are corridors that allow plants and animals to move between biological core resource areas (areas of high quality habitat suitable to sustaining MSCP covered species).

create a functional MSCP Preserve as high-quality habitat within PAMA and hardline preserve areas is being conserved and lower quality habitat is being developed.



Wildflowers at Louis A. Stelzer Preserve.

Species and Habitat Conservation

A total of 30 County-owned or managed parks and preserves (County Preserves) contribute to the MSCP Subarea Plan landscape, habitat, and species objectives.[4] They are part of the MSCP Preserve and are managed for the benefit of the MSCP covered species and habitats. MSCP Subarea Plan objectives ensure the persistence of habitat linkages for wildlife movement, critical biological resource areas for MSCP plant and animal habitat, and MSCP plant and animal occurrences in these areas. County Preserves span 11 of 16 biological core resource areas and protect habitat linkages. They contribute to conservation goals of each of the target segments (Lake Hodges, South County, North Metro-Lakeside-Jamul, and South Metro-Lakeside-Jamul). They conserve 17 of 18 target habitats with chaparral and coastal sage scrub being the most widespread in County Preserves. Of the 85 species covered by the MSCP, 53 MSCP covered species are expected within the MSCP Subarea Plan boundaries as originally anticipated in the MSCP Subarea Plan. A total of 46 MSCP covered species are documented in County Preserves located

[4] The Annual Report provides detail on a subset of the County Preserves (the open space lands owned or managed by the County within the MSCP Subarea Plan Area).

within the MSCP Subarea Plan Area. Together with the federal, state, local partners, and private mitigation conservation, the County and its partners contribute to preservation of the unique biological resources present in San Diego County.

Preserve Management

The County Preserves' stewardship and adaptive management ensures biological value and function of natural resources are maintained or enhanced. Stewardship includes actions such as habitat restoration, fire management, environmental education, and invasive, non-native plant and animal control. Adaptive management is using preserve monitoring to inform stewardship. For example, if monitoring finds invasive, non-native plants increasing in extent and negatively impacting MSCP covered species and habitats, stewardship actions would control the invasive, non-native plants. Resource Management Plans (RMPs) govern preserve management for County Preserves. The County has prepared 16 RMPs for County Preserves in the MSCP Subarea Plan Area and is updating existing RMPs for County Preserves that have new additions and preparing new RMPs for newer acquisitions.

Ranger reports on County Preserves documented habitat restoration, access control, fire management, environmental education, and invasive, non-native plant and animal control actions completed to benefit MSCP covered species and habitats.

Grant-funded projects across six County Preserves benefited MSCP covered species, such as coastal cactus wren[5], Belding's orange-throated whiptail, northern harrier, Cooper's hawk, arroyo toad, southwestern pond turtle, and fairy shrimp and included habitat restoration, access control, invasive, non-native plant control, and trail alignment. Nine grants and County General Funds totaling just over $15 million fund this work including four Wildlife Conservation Board (WCB) Proposition 68 grants, one State Coastal Conservancy Proposition 68 grant, two CDFW Proposition 1 grants, one San Diego River Conservancy (SDRC) Proposition 1 grant, and one California Natural Resources Agency (CNRA) Proposition 84 River Parkways grant.

Preserve management partners implemented eight management projects across seven County Preserves to benefit riparian, stream, wetland, coastal sage scrub, and chaparral habitats. Partners were California Department of Transportation (Caltrans), San Diego River Park Foundation (SDRPF), Alter Terra, Project Wildlife, Del Dios Habitat Protection League, San Dieguito River Valley Conservancy, San Diego State University, and CDFW.

Private mitigation lands management was documented for 12 properties and included habitat restoration, access control, fire management, environmental education, and invasive, non-native plant control actions completed to benefit MSCP covered species and habitats.

Environmental education informs the public about the county's natural and cultural resources. In 2021, the County was excited to offer many popular educational programs and over 9,000 guests participated. County Preserve visitors were able to attend in-person ranger-led hikes and programs, Hawktober programs in 14 County parks, Discovery Program events, and other popular environmental education

[5] The MSCP Subarea Plan lists the San Diego cactus wren as an MSCP covered species. At the time of adoption of the MSCP Subarea Plan, the San Diego cactus wren was identified as a sub-species of the coastal cactus wren. This is no longer the case. The San Diego cactus wren is now commonly known as the coastal cactus wren and is an MSCP covered species.

programs and activities. Park-ology, a free, cloud-based education tool designed to teach teens ages 14 to 18 about the parks and recreation industry, was launched in 2021 and additional learning modules will be launched in 2022. County Park staff participated in the San Diego Festival of Science & Engineering by conducting a virtual walk-and-talk tour of Oakoasis Preserve. The County also continued the environmental education programs of the TRACK Trails Program, Story Trails for Green Friday, Nature Explorers Program, and partnering with the San Diego Astronomy Association on several livestream and in-person events.

Preserve Monitoring and Research

MSCP covered species and habitat monitoring is performed on County Preserves, through Targeted Monitoring Plan (TMP) monitoring, baseline inventory surveys which serve as the foundation for the TMP monitoring efforts and RMP development, and research partnerships, and on private mitigation lands. These efforts have monitored or documented 46 MSCP covered species in County Preserves and an additional 4 MSCP covered species on private mitigation lands during previous reporting years.

TMP monitoring was performed for MSCP covered species across ten County Preserves during the reporting period. During the reporting period monitoring efforts surveyed twelve targeted MSCP covered species and documented an additional 13 MSCP covered species during these monitoring efforts. Raptor surveys and annual residual dry matter (RDM) monitoring were conducted within Ramona Grasslands Preserve during the reporting period.

Baseline inventory surveys continued in Spring 2021 for five County Preserves (Skyline Preserve, Peutz Valley Preserve, Iron Mountain Preserve, and additions to Ramona Grasslands Preserve and Lakeside Linkage Preserve). Baseline inventory surveys were completed in 2021 at Iron Mountain Preserve, and additions to Ramona Grasslands Preserve and Lakeside Linkage Preserve. Baseline inventory surveys will be completed Spring 2022 at Skyline and Peutz Valley Preserves. These surveys will guide future TMP monitoring efforts as well as the development of preserve-specific RMPs.

Preserve monitoring and research partnership projects totaled 10 in the reporting year across 22 County Preserves. These projects inform stewardship and adaptive management in County Preserves and the MSCP Preserve. Monitoring and research topics included southwestern pond turtle, mountain lion, invasive shot hole borer, and a variety of other MSCP covered species and habitats. Research occurred on County Preserves through the County's right-of-entry (ROE) permit process. ROEs were requested by federal and state agencies, local universities, museums, and environmental organizations.

Private mitigation lands monitoring detected 26 MSCP covered species across 12 properties, including one MSCP covered species not observed on County Preserves.

Financial Summary

The County Board of Supervisors appropriates funds for land acquisition and management and monitoring of preserve lands throughout the adopted MSCP Subarea Plan Area, draft North County MSCP Plan Area, and proposed East County MSCP Plan Area.

Land acquisition appropriations fund land purchases, land stewardship, and baseline inventory surveys. Since 1998, the County has invested over $49 million which leveraged over $35 million of other funding to acquire 8,256 acres in the MSCP Subarea Plan, including 556 acres owned by County partners. The County has acquired (through acquisitions, management agreements, or leveraged funding) a total of 13,166 acres of preserve lands in the MSCP Subarea Plan (baseline preserve lands plus lands conserved since 1998).

Management and monitoring appropriations fund staff positions, contracting resources, and capital expenses dedicated solely to MSCP monitoring and stewardship activities. MSCP monitoring staff oversee MSCP covered species and habitat monitoring. County Rangers provide operational "boots on the ground" to manage County Preserves. MSCP monitoring activities included biological monitoring in County Preserves via the County's TMP, updating the TMP to include additional County Preserves, and cactus wren habitat restoration projects. MSCP stewardship activities include habitat restoration, access control, fire management, environmental education, and invasive, non-native plant and animal control. Over $15 million of grant funding augments annual appropriations for projects spanning Fiscal Year 2016-2017 thru Fiscal Year 2021-2022.

Management and monitoring on private mitigation lands is funded through mechanisms established during the RMP approval process (i.e., special districts, endowments, or annual fees). The health of these endowments and use of these funds are reported in the RMP annual reports.

Program Administration

The County coordinates implementation of the MSCP Subarea Plan with the Wildlife Agencies.

In 2021, the County was awarded a Fiscal Year 2021 Cooperative Endangered Species Conservation Fund (Section 6 of the Endangered Species Act) Nontraditional Habitat Conservation Planning Assistance Program grant. This funding will support planning and completion of a Regional Butterflies HCP to protect up to five sensitive butterfly species found in the County of San Diego. These species include the federally endangered Quino checkerspot butterfly and Laguna Mountains skipper as well as the federally proposed threatened Hermes copper butterfly and sensitive Harbison's dun skipper. Under recommendation from USFWS, monarch butterfly will also be assessed for inclusion. The Regional Butterflies HCP will replace the County's previous efforts to add the federally endangered Quino checkerspot butterfly to the MSCP Subarea Plan's covered species list.

CHAPTER 1
Introduction



The vegetation communities on Boulder Oaks Preserve (chaparral, coastal sage scrub, grasslands, freshwater marsh, oak riparian forest, oak woodland, and open water) contribute to the MSCP Preserve and assist with successfully meeting MSCP habitat conservation goals.

The Annual Report provides an update on the status of the Multiple Species Conservation Program (MSCP) South County Subarea Plan (Subarea Plan) for the current reporting period (January 1, 2021 to December 31, 2021) and overall progress to date. The MSCP Subarea Plan was adopted by the County of San Diego (County) Board of Supervisors on October 22, 1997 and permits were issued by the California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service ([USFWS], collectively referred to as Wildlife Agencies) on March 17, 1998. The MSCP Subarea Plan is a federal Habitat Conservation Plan (HCP) permit and state Natural Community Conservation Planning (NCCP) Act permit that phases land conservation with regional development for a 50-year permit term within the Subarea. This reporting period marks the 24th year of implementing the MSCP Subarea Plan.

The MSCP Subarea Plan is critical for quality of life within the unincorporated county because it conserves the region's unique native habitats and wildlife for future generations to enjoy. Residents and visitors alike learn about the vital role of conservation through a multitude of environmental education activities that foster important connections with nature. The MSCP Subarea Plan also protects the

diversity of native plants and animals, including threatened and endangered species, works across political boundaries in a regional conservation effort, and protects watersheds and water quality. It ensures compliance with the federal Endangered Species Act and associated HCP permits, state Endangered Species Act, state NCCP Act and associated permits/authorizations; and it accommodates future growth by streamlining building regulations.

The Annual Report is prepared in conformance with Section 14.2 of the Implementing Agreement (IA) executed between the County and the Wildlife Agencies on March 17, 1998. It is organized as follows.

Chapter 2 Preserve Assembly

The MSCP Subarea Plan will assemble a 98,379-acre MSCP Subarea Plan Preserve (MSCP Preserve) for the benefit of rare and endangered plants and animals and their habitats. Chapter 2, *Preserve Assembly,* summarizes land acquisitions and conveyances into the MSCP Preserve in the reporting year and cumulatively. The Baseline Preserve, land already preserved at the time of the MSCP Subarea Plan adoption, is quantified. Conservation lands acquired by Wildlife Agencies, Bureau of Land Management (BLM), non-profit partners, and County are documented for the reporting year and cumulatively. Mitigation lands conserved by private entities and mitigation banks providing mitigation for MSCP covered species are also documented. Together, these lands comprise the MSCP Preserve and provide regional conservation for plants, animals, and their habitats in the unincorporated county.

Chapter 3 Covered Projects

The County permits development under the MSCP Subarea Plan for private and public projects (covered projects). Chapter 3, *Covered Projects,* documents covered projects permitted by the County in the reporting year under the MSCP Subarea Plan. Project reporting includes clearing for single-family residences on small parcels, agricultural exemptions, and building permits.

Chapter 4 Habitat Gains and Losses

Annual tracking of Subarea Plan gains, losses, management, and monitoring is required by Section 14.2 of the IA, and the HCP and NCCP Act permits. Chapter 4, *Habitat Gains and Losses*, documents the cumulative habitat gain from MSCP Preserve assembly and habitat loss from covered projects. All habitat gains and losses are reported annually to CDFW and tracked in a central database called HabiTrak. The HabiTrak reports generated by CDFW are used to track permit compliance and ensure that rough step permit requirements are being met. Rough step requires that habitat gain occurs ahead of or in-step with habitat loss. It also examines the quality and types of habitats gained and lost.

Chapter 5 Species and Habitat Conservation

The County Preserves conserve 46 MSCP covered species and their habitats. County Preserves refers to County-owned and managed parks and preserves that contribute to the MSCP Preserve. The County Preserves are managed for the benefit of the MSCP covered species and habitats. Chapter 5, *Species and Habitat Conservation,* evaluates how the County Preserves meet the MSCP objectives and monitors compliance with landscape-level, habitat-level, and species-level conservation targets identified in the MSCP Subarea Plan. The number of County Preserves and acres preserved is summarized for the

reporting year and cumulatively. The County Preserves' contribution to segment goals, biological resource core areas, and habitat linkages is quantified. Habitats, vegetation communities important to MSCP covered species, conserved in County Preserves are quantified and their contribution to MSCP Subarea Plan targets are assessed. MSCP covered species conserved in County Preserves are documented and their contribution to MSCP Subarea Plan occurrence and habitat conservation are assessed. These analyses evaluate compliance with MSCP Subarea Plan objectives.

Chapter 6 Preserve Management

The County Preserves are managed for the benefit of MSCP covered species. Chapter 6, *Preserve Management,* documents stewardship, management, and education implemented on County Preserves, including Otay Ranch Preserve, and private mitigation lands. Resource Management Plans (RMPs) incorporate baseline inventory surveys and provide management and monitoring directives for MSCP covered species and habitats. Annual work plans direct resources to implement management actions. Habitat restoration, access control, fire management, environmental education, and invasive, non-native plants and animal control actions reported by County rangers and consulting staff are summarized for County Preserves, and MSCP covered species and habitats benefited are identified. These same actions and benefits are summarized for grant-funded management projects, preserve management partnerships, and private mitigation lands.

Chapter 7 Preserve Monitoring and Research

The County Preserves are monitored to determine the effectiveness of habitat conservation and management actions for MSCP covered species and habitats. Chapter 7, *Preserve Monitoring and Research,* summarizes MSCP covered species and habitat monitored or documented. The Targeted Monitoring Plan (TMP) monitors a sub-set of County Preserves and informs adaptive management. TMP results are provided for the target MSCP covered species. Grant-funded monitoring projects, monitoring and research partnerships, and private mitigation lands monitoring descriptions and results are provided. Monitoring results are used to inform updates of RMPs, TMPs, and annual work plans.

Chapter 8 Financial Summary

The County funds acquisition, management, and monitoring of County Preserves. Chapter 8, *Financial Summary*, summarizes County and grant funding used to implement its MSCP Subarea program. Funding sources include the General Fund, Otay Ranch Preserve Community Facilities District 97-2, and grants.

Chapter 9 Program Administration

The County works with regional partners to implement and update the MSCP Subarea Plan. Chapter 9, *Program Administration*, reports key accomplishments, coordination efforts, minor and major amendments, and map updates.

CHAPTER 2

Preserve Assembly



El Capitan Preserve lies within both the South County Subarea and North County MSCP Plan Areas. This Preserve supports MSCP covered species such as Lakeside ceanothus, golden eagle, coastal cactus wren, Blainville's horned lizard, mountain lion, and southern mule deer.

Through December 31, 2021, the MSCP Preserve totals 79,976 acres and 81% of the 98,379-acre conservation target. It is comprised of land owned or managed by the County, Wildlife Agencies, BLM, local partners and non-profits, and private mitigation. In the reporting year, January 1, 2021 to December 31, 2021, 123 acres were added to the MSCP Preserve. This includes 2acres preserved by private mitigation and 19 acres preserved into the Otay Ranch Preserve, a hardline area of the MSCP Subarea Plan. The MSCP Preserve benefits MSCP covered species and habitats.

Acreage reported in Chapters 2, 3, 4, and 5 are GIS acreage as opposed to Assessor's acreage. GIS acreage is utilized in the aforementioned chapters as MSCP Preserve gains and losses are tracked in HabiTrak, the CDFW database, using GIS acreage. For consistency, GIS acreage is used when reporting on acreage for MSCP Preserve assemblage, losses, and how the conserved lands within the MSCP Preserve are successfully meeting MSCP and Subarea Plan goals and objectives. Acreage reported in Chapter 6 is in both Assessor's and GIS acreage. Assessor's acreage is reported in Chapters 6 and 8 as this is the formal unit of measurement the County utilizes internally for real estate acquisitions, accounting, and reporting. The use of GIS acreage vs Assessor's acreage is specified at the beginning of each chapter.

2.1 Preserve Assembly Status

The MSCP Preserve totals 79,976 acres with 81% of the 98,379-acre preservation goal achieved (**Table 1**). The County, Wildlife Agencies, BLM, local and non-profit partners, and private entities own and manage MSCP Preserve lands. The MSCP Preserve is assembled through a combination of baseline preserve lands that existed in 1997, lands preserved as mitigation from development permit projects, and public agency and non-profit conservation partner acquisitions from willing sellers. "Historical Baseline Preserve" is land conserved prior to MSCP Subarea Plan adoption in 1997. It includes County-owned, -managed, or -funded lands (5,466 acres); Wildlife Agencies and BLM lands (32,600 acres); and private mitigation areas (7,755 acres). "Conserved lands since 1998" includes lands preserved by these same entities, plus lands conserved by local and non-profit partners. Preservation is prioritized within areas identified as having habitat with high biological value or as habitat linkages, which include the Pre-Approved Mitigation Area (PAMA) and the hardline preserve areas.[6] MSCP Preserve goals are split between public acquisitions (including local/non-profit partners) and private mitigation with each having a preserve goal.[7]

The MSCP Preserve acreage is baseline acres plus acres gained within PAMA and hardline preserve areas from private mitigation and public and non-profit conservation partner acquisitions. The Wildlife Agencies have approved complementary County acquisitions outside the 1997 PAMA areas to be counted in the MSCP Preserve as they contribute to the biological goals of the MSCP. In general, private mitigation or acquisitions outside PAMA or hardline preserve areas is complimentary conservation and does not count toward the MSCP Preserve.

In addition to the 98,379-acre preservation acreage goal, the MSCP Subarea Plan also requires that the MSCP Preserve function for covered species by conserving specific wildlife corridors and habitat types. The County and the Wildlife Agencies will continue to look at potential gaps within the PAMA and hardline preserve areas to guide future acquisitions and private mitigation opportunities to ensure a functional MSCP Preserve.

[6] Hardline preserve areas are lands that will be included in the MSCP Preserve as a result of negotiations between the County, Wildlife Agencies, and landowners.

[7] Table 1, The *Historical Baseline Preserve* and *Conserved Lands Since 1998* do not add up to the total MSCP Preserve, as a subset of *Historical Baseline* is also potentially counted by some agencies in the *Conserved Lands Since 1998.* Record keeping has evolved during MSCP Subarea Plan implementation. HabiTrak data and approved County complementary acquisitions are used to determine the MSCP Preserve size.

TABLE 1. SUMMARY OF MSCP SUBAREA PLAN PRESERVE ASSEMBLY STATUS

Landowner	MSCP Preserve Goals (acres)	2020 MSCP Preserve Total (acres)	2021 MSCP Preserve Gain (acres)	2021 MSCP Preserve Total (acres)	% Achieved
Historical Baseline Preserve					
County[a]	5,461	5,466	-	5,466	100%
Federal and State	32,600	32,600	-	32,600	100%
Private	7,755	7,755	-	7,755	100%
Total	**45,816**	**45,821**	**-**	**45,821**	**100%**
Conserved Lands Since 1998					
Public and Partner Conservation					
Federal and State		25,101	0	25,101	
County[a]		7,678	0	7,678	
Local/non-profit partners		3,162	102	3,264	
Total	**18,850**	**35,941**	**102**	**36,043**	**191%**
Private Mitigation					
Dedicated Within Hardline	11,563	4,624	19	4,643	
Dedicated Outside Hardline	22,150	2,085	2	2,087	
Total	**33,713**	**6,709**	**21**	**6,730**	**20%**
MSCP Preserve Total[b]					
Total	**98,379**	**79,853**	**123**	**79,976**	**81%**

NOTES:
[a] County acquisitions adjusted to reflect previously reported MSCP Preserve acreage.
[b] Baseline Preserve acres may be included in the "Conserved Lands – Public Acquisitions" total acreage. Therefore, the MSCP Preserve Total acreage is derived from summing Appendix F, *Summary of Habitat Losses and Gains*. "Cumulative Gain" total and the 2016 through 2019 approved additions to the MSCP Preserve that have not been formally designated in HabiTrak.

SOURCES: 2020 Annual Report and 2021 HabiTrak report *Summary of Project Gains* included in Appendix C, *Summary of MSCP Gains*.

2.2 Baseline Preserve

The MSCP Preserve includes baseline preserve land acreage that was conserved prior to MSCP Subarea Plan adoption in 1997. **Table 2** shows the historical breakdown, by landowner, of the 45,821-acre Baseline Preserve.

TABLE 2. MSCP SUBAREA PLAN HISTORICAL BASELINE PRESERVE

Landowner	Acres
County	5,466
Federal and State	32,600
Private	7,755
Total Baseline Preserve	**45,821**

SOURCE: 2016 Annual Report

2.3 Public and Partner Conservation

Public and partner acquisitions owned and managed in the MSCP Preserve total 36,047 acres (**Table 3**). Within the MSCP Subarea Plan boundaries, land owned and/or managed by the Wildlife Agencies, local partners, and the County total 53,371 acres. Section 10.4 of the IA states that the estimated conserved acreages through public acquisition to complete the MSCP Preserve "are approximate since the amount, timing, and location of land conserved through regulations, private mitigation and public acquisition are not exactly known." The MSCP Subarea Plan estimated that 18,850 acres would need to be conserved through public acquisitions to adequately assemble the MSCP Preserve. The MSCP Subarea Plan outlines that the 18,850 acres would be split between 9,425 acres acquired by the County with local funds and 9,425 acres acquired with federal and state funds. Total acquisitions by the federal, state, and County partners, 32,783 acres, exceeds the public acquisition goal of 18,850 acres.

The County and the Wildlife Agencies maintain up-to-date, accurate accounting of their acquisitions and acquisitions completed by partnering agencies. Tracking of public, local government, and non-profit partners' acquisitions is completed using both the CDFW maintained HabiTrak database and its subsequent reports that are found in **Appendices C, E, F, and G**, as well as manual accounting, which can be found in **Appendices A and B**.

The County has made several manual adjustments to HabiTrak accounting from 2016-2019 with approval from the Wildlife Agencies. In 2016, the County and the Wildlife Agencies concluded an accounting of conserved lands from public acquisition. As a result of the audit, 2,479 acres of County acquisitions were added to the MSCP Preserve, with 5 acres allocated to the Baseline MSCP Preserve total and 2,474 acres allocated to the MSCP Preserve total. In 2017, the Wildlife Agencies approved the inclusion of an additional 173 acres[8] in the MSCP Preserve for the County's Dictionary Hill acquisition. In 2018, the Wildlife Agencies approved the inclusion of an additional 97 acres in the MSCP Preserve for County acquisitions (92 acres for Peutz Valley Preserve and 5 acres for a Lakeside Linkage addition). In 2019, the Wildlife Agencies approved the inclusion of an additional 144 acres in the MSCP Preserve for County acquisitions. This includes two acres for Dictionary Hill additions, two acres of Ramona Grassland additions, and 140 acres of Skyline Preserve. In 2020, the County acquired almost 20 acres adjacent to the Ramona Grasslands Preserve that are outside of, but directly adjacent to PAMA and within the MSCP

[8] A total of 177 acres was specified in the letter to the Wildlife Agencies for the inclusion of Dictionary Hill Preserve into the MSCP Preserve. The letter used Assessor's acreage. In HabiTrak, GIS acreage for the same parcels totaled 173 acres. The 173 acres has been used in the manual accounting of County acquisitions added to the MSCP Preserve.

Subarea Plan boundaries. A one-acre addition to Dictionary Hill Preserve, which was approved by the Wildlife Agencies to be included into PAMA but has not yet been updated, was also acquired within the MSCP Subarea Plan. Pending approval of the Wildlife Agencies, these 21 acres may be counted towards the MSCP Preserve at a later date. Data contained in this chapter reflects these manual additions to the MSCP Preserve plus those reported as HabiTrak 2021 habitat gains (**Appendix C**). (HabiTrak is not yet updated to reflect the approved County additions to the MSCP Preserve from 2016 through 2019.)

TABLE 3. MSCP PUBLIC AND PARTNER ACQUISITIONS SINCE 1998

Agency	Funded In MSCP Preserve (acres)	2021 MSCP Preserve Total Owned and Managed (acres)	Complementary Conservation Owned and Managed[a] (acres)	Total in the MSCP Subarea Plan Boundaries Owned and Managed (acres)
Federal				
USFWS	3,012	8,717	3,233	11,905
BLM	1,830	1,830	2,609	4,439
Subtotal	**4,842**	**10,547**	**5,842**	**16,344**
Non-Federal				
State	11,464	14,558	11,557	26,115
County	4,805[b]	7,678[c]	21	6,793[d]
Local Partners	2,606	3,264	900	4,164
Subtotal	**18,875**	**25,500**	**12,478**	**37,027**
Total				
Grand Total	**23,717**	**36,047**	**18,320**	**53,371**

NOTES:
[a] "Complementary Conservation" = "Outside the MSCP Preserve", a HabiTrak designation.
[b] Includes 205 acres that the County has purchased within other jurisdictions (Cities of San Diego and Chula Vista).
[c] Includes 689 acres that the County manages within other jurisdictions (Cities of San Diego and Chula Vista).
[d] Does not include 885 acres that the County manages within other jurisdictions (Cities of San Diego and Chula Vista).

SOURCES: 2020 Annual Report; Appendix B, *Wildlife Agency Tracked Acquisitions;* Appendix A; *County Tracked Acquisitions Since 1998*; Appendix C, *Summary of MSCP Gains*

County Preserve Lands

The County has acquired and/or managed 13,166 acres in the MSCP Subarea Plan Area (**Tables 2** and **3** and **Figure 1**). This includes 5,466 acres of baseline and 7,700 acres of newly acquired conserved lands. In the reporting period, no conserved lands were acquired by the County

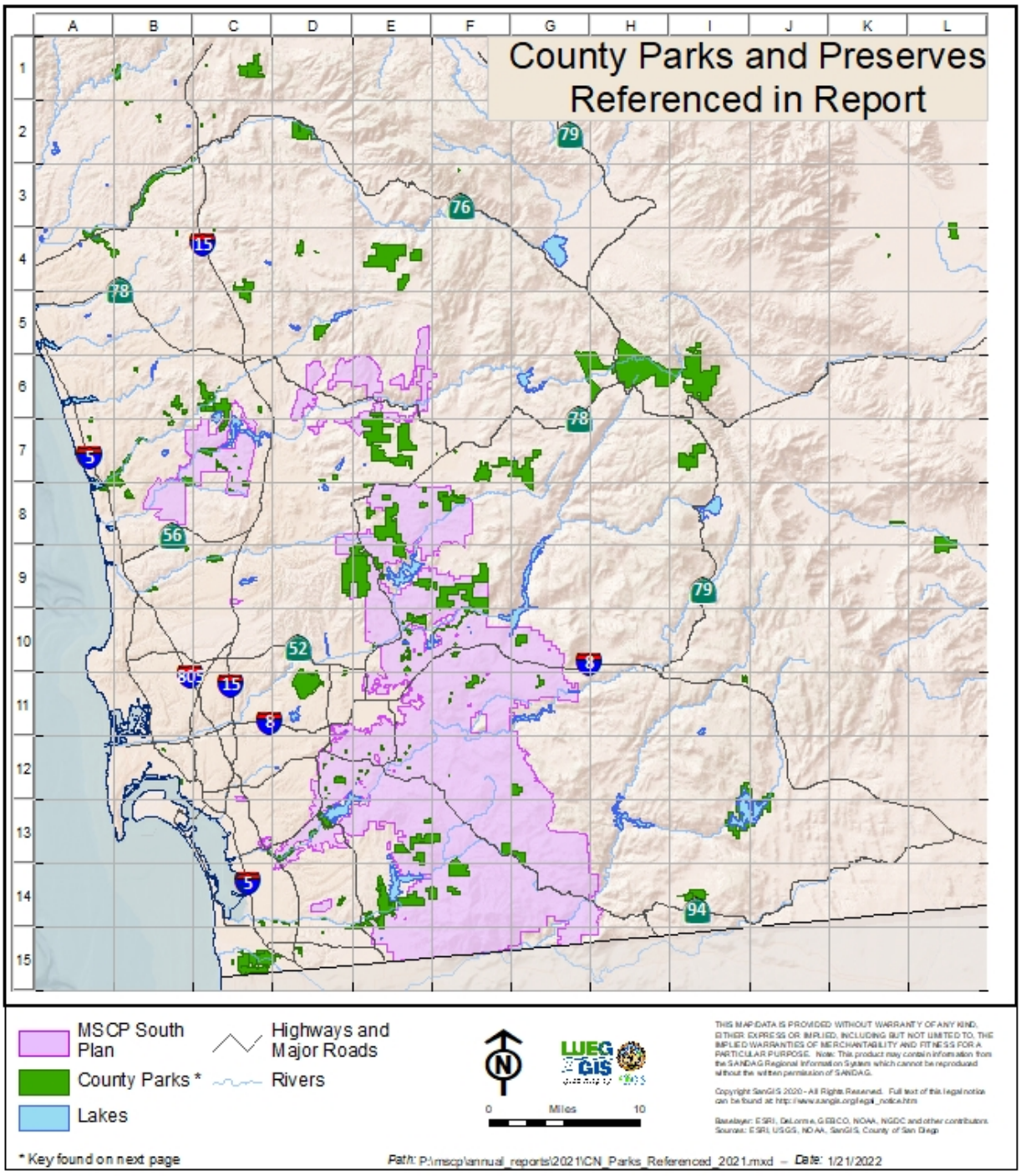


Figure 1. County Parks and Preserves Referenced in Annual Report

Map Key is on the following page

Map Key:

County Parks and Preserves Referenced in Report

MSCP Subarea Plan*

F8	Barnett Ranch Preserve**
E8,9	Boulder Oaks Preserve
C8	Christopher Hill Property
E12	Damon Lane Park
C6, C7	Del Dios Highlands Preserve**
D12	Dictionary Hill Preserve
E8	Dos Picos Park
F9	El Capitan Preserve**
F9, F10	El Monte Park
F10	Flinn Springs Park
D15	Furby-North Property
E8	Holly Oaks County Park
E8	Iron Mountain Preserve
E10	Lakeside Linkage Preserve
F13, G13	Lawrence & Barbara Daley Preserve
B9, C9	Los Peñasquitos Canyon Preserve
E10	Louis A. Stelzer Park
E8	Luelf Pond Preserve
B7, B8	Lusardi Creek Preserve
E9	Oakoasis Preserve
F11	Old Ironsides Park
E14	Otay Lakes Park
D14, E13, E14, F14	Otay Ranch Preserve
C14, D14, E14	Otay Valley Regional Park
G10	Peutz Valley
E6, E7	Ramona Grasslands Preserve**
C7	Santa Fe Valley Preserve
G12	Skyline Preserve
F11	Stoneridge Preserve
D13	Sweetwater Regional Park
DE9	Sycamore Canyon and Goodan Ranch Preserve
C15	Tijuana River Valley Regional Park

Draft North County MSCP

B6	Diamond Trail (TET) Property
B6, C6	Escondido Creek Preserve
C6	Felicita Park
A4	Guajome Park
E4	Hellhole Canyon Preserve
B2	Live Oak Park
F7, G7	Mt. Gower Preserve
A4	Rancho Guajome Adobe Park
B6	Sage Hill Preserve
B8	San Dieguito Park
A7, B7	San Elijo Lagoon Ecological Reserve
B3	San Luis Rey River Park
B1	Santa Margarita Preserve
G5, G6,H5, H6,I6	Santa Ysabel Preserve
F7	Simon Preserve
I6	Volcan Mt. Wilderness Preserve
D2	Wilderness Gardens Preserve
I7	William Heise Park

Future East County MSCP

L8, L9	Agua Caliente Park
I12, I13,J12, J13	Lake Morena Park
F3	Palomar Mountain Park
I11	Pine Valley Park
I14	Potrero Park
K8	Vallecito Park

* Not all parks and preserves listed are counted towards the MSCP Preserve

** Portions of preserves are also in North County MSCP Plan

2.4 Private Mitigation

Private mitigation has conserved 6,730 acres in the MSCP Preserve (**Table 4**). In the reporting year, 21 acres were added to the MSCP Preserve. Private mitigation is estimated to preserve 33,713 acres over the permit term. Private mitigation primarily includes gains acquired through the County's permitting processes. Hardline agreements identified in the MSCP Subarea Plan (Otay Ranch Preserve Owner/Manager [POM]) are found in the "Dedicated Private Hardline" totals. Private mitigation for new developments and other regulations are found in the "Privately Dedicated Lands" totals. An audit of the acreage in the Otay Ranch POM is in process and is anticipated to be completed in 2022 and reflected in the 2022 MSCP Annual Report. County staff are working on reconciling "Privately Dedicated Lands" data. This effort is anticipated to be completed in 2022 and the results are anticipated to be reported in the 2022 MSCP Annual Report.

TABLE 4. MSCP PRIVATE MITIGATION

Mitigation type	MSCP Preserve Goal (acres)	2020 Cumulative (acres)	2021 MSCP Preserve Gains (acres)	2021 MSCP Preserve Total (acres)
Dedicated Private Hardline[a]	11,563	4,624	19	4,643
Privately Dedicated Lands[b]	22,150	2,085	2	2,087
TOTAL	**33,713**	**6,709**	**21**	**6,730**

NOTES:
[a] *Dedicated Private Hardline* are HabiTrak *Acres Inside Habitat Preserve* attributed to Otay Ranch POM.
[b] *Privately Dedicated Lands* are HabiTrak *Acres Inside Habitat Preserve* attributed to Private.

SOURCE: 2020 Annual Report and 2021 HabiTrak Report found in Appendix C, *MSCP Summary of MSCP Gains.*

2.5 Mitigation Banks

Five mitigation banks, Boden Canyon, Old Castle, Rancho San Diego, Singing Hills, and Sweetwater, are established in the unincorporated county. With the Wildlife Agencies' approval, they are used to mitigate impacts to sensitive biological resources resulting from the County Department of Public Works' (DPW) construction, improvement, and maintenance projects. These banks are not used for mitigating private development projects as they were established for DPW projects. Use of credits is determined based on quality of habitat impacted in relation to quality of habitat available and is subject to approval by the United States Army Corps of Engineers (USACE), USFWS, CDFW, and Regional Water Quality Control Board (RWQCB). The status of each of the banks is detailed in **Appendix H** and summarized below.

- **Boden Canyon.** Mitigation bank totals 39.50 acres and includes the seven habitat types of coast live oak woodland, coastal sage scrub, Engelmann oak woodland, mixed chaparral, native grasslands, non-native grasslands, and southern riparian/oak woodland. All credits for four of the seven habitat types have been used. Credits totaling 15.68 acres for mixed chaparral, native grasslands and non-native grasslands remain.

- **Old Castle.** Mitigation bank totals 60.02 acres and includes the four habitat types of coast live oak woodland, coastal sage scrub, mixed chaparral scrub, and southern willow scrub. All credits for coast live oak woodland are used. Credits totaling 14.90 acres remain for the other habitats.

- **Rancho San Diego**. Mitigation bank totals 409.20 acres and includes the seven habitat types of coast live oak woodland, coastal sage scrub, disturbed/ruderal, marsh/riparian scrub/floodplain, mixed chaparral, native grasslands, and southern riparian/oak woodland. Credits totaling 249.07 acres remain.

- **Singing Hills.** Mitigation bank totals 69.70 acres for coastal sage scrub. Credits totaling 69.01 remain.

- **Sweetwater.** Mitigation bank totals 24.33 acres for marsh/riparian scrub/floodplain. Credits totaling 5.19 remain.

Per Section 9.13 of the IA, two types of mitigation banks are allowed in the MSCP Subarea Plan – formal banks approved by the Wildlife Agencies and banks that existed prior to adoption of the IA. Information on approved mitigation banks can be found at www.wildlife.ca.gov/Conservation/Planning/Banking.

2.6 Mitigation Land Policy (I-138)

In November 2020, the County Board of Supervisors reestablish the Board of Supervisors Mitigation Land Policy (MLP) I-138, *Mitigation on County-Owned Land Managed by the County Department of Parks and Recreation (DPR),* which does not replace nor supersede Board of Supervisors Policy I-117, *Mitigation Banking Policy*. Policy I-117 was included as part of the original MSCP approvals and sets the procedures in establishing, using, and managing mitigation banks. MLP I-138 describes the County's program for acquiring land and making it available to mitigate the biological impacts of public and private projects through the sale of mitigation credits. Although MLP I-138 is not a mitigation bank, it authorizes DPR to administer the sale of mitigation credits. MLP I-138 sets forth methods by which the value of the mitigation credits may be determined and requires applicants to pay for the valuation. The

policy also requires an endowment for annual stewardship costs. A Certificate of Mitigation and Purchase Agreement is required for each transaction. The County trades the conveyance of mitigation credits to purchasers and the application of mitigation credits to development projects. County numbers, in **Table 5** and **Appendix A**, accurately show year-to-year manual County updates and subtraction of acres used for MLP credits. There were no MLP sales within the MSCP Subarea Plan boundaries in 2021. **Table 5** also shows revenue generated since adoption in the MSCP Subarea Plan from the sale of mitigation credits in accordance with the MLP. The County considers requests to use MLP I-138 on the preserves listed in **Table 5** according to GIS mapping of the vegetation available on those sites, which are generally acquired with County funds. The County also uses MLP within the other MSCP Plan Areas, but these numbers are not reported in this document.

TABLE 5. MITIGATION LAND POLICY

Project	MSCP Subarea Plan Credits Sold	MSCP Subarea Plan Credit Cost	Endowment	County Preserve	Date
LOSSAN Double Tracking and Mid-Coast Light Rail Project	10	$350,000	$630,644	Tijuana River Valley Regional Park[a]	7/11/2016
San Vicente Road Improvement (SC Portion)	8.04	$254,562	$85,650	Lawrence & Barbara Daley	6/10/2015
Central Avenue Drainage Improvement and Woodside Flood Control	0.37	$14,800	$2,220	Lawrence & Barbara Daley	1/21/2014
Swiss Park Staging Area	1	$23,300	$6,000	Furby-North (East Otay Mesa)	1/17/2013
San Ysidro Freight Yard Improvement Project	1.75	$61,250	$10,500	Tijuana River Valley Regional Park[a]	2/14/2013
Five DPW projects (Tavern Rd., Wing Ave., Woodside Ave., Emery Rd., Jamacha Blvd.)	2.45	$98,000	$14,700	Lawrence & Barbara Daley	10/2/2012
Tuscan Ridge	1.07	$16,050	$4,060	Louis A. Stelzer Park	5/3/2011
Dictionary Hill-Maria Ave.	0.31	$7,225	$1,240	Lakeside Linkage	6/16/2011

Total Credits Sold	Total Income	Total Endowment	Total Income & Endowment
24.99	$825,187	$755,014	$1,580,201

NOTES:

[a] Park is outside of the MSCP Subarea Plan Area but is within the City of San Diego MSCP

SOURCE: DPR

CHAPTER 3
Covered Projects



Iron Mountain Preserve supports diverse vegetation communities including coast live oak woodlands, southern mixed chaparral, and valley needlegrass grasslands.

Section 4.3.4 of the MSCP Subarea Plan discusses clearing and grading permit exemptions for single-family residences and agriculture. The County issues Certificates of Inclusion (COIs) to track exempt acres. The County permitted 101 development projects in the reporting period in the MSCP Subarea Plan Area. This included 98 single-family residential projects and three industrial projects. No agricultural exemptions were issued during the reporting period. Habitat clearing acreages for development projects in 2021 are cumulatively included in **Appendix E**.

Acreage reported in Chapter 3 is in GIS acreage as opposed to Assessor's acreage. GIS acreage is utilized as MSCP Preserve gains and losses are tracked in HabiTrak, the CDFW database, using GIS acreage. For consistency, GIS acreage will be used when reporting on acreage for MSCP Preserve assemblage, losses,

and how the conserved lands within the MSCP Preserve are successfully meeting MSCP and Subarea Plan goals and objectives.

TABLE 6. MSCP COVERED PROJECTS IN REPORTING YEAR

Permit Type	Number of Projects
Discretionary Permit COI	22
Agricultural Exemption COI	0
Building Permit COI	79
TOTAL SINCE 1998	**4,272**

SOURCE: 2021 HabiTrak Report found in Appendix E, *Summary of Project Losses*.

3.1 Clearing for Single-Family Residences

COIs were issued for 22 discretionary permits for single-family residential projects totaling 57 acres in 2021. Private landowners of parcels existing as of January 1, 1997, within the MSCP Subarea Plan boundaries and zoned for single-family residences, can apply for a COI for their property. COIs are issued for clearing or grading of two or five acres depending on whether the parcel is in PAMA or not, and 10 acres if a house existed on the parcel before October 22, 1997, even if the landowners intend to clear less. The MSCP Subarea Plan does not have a limit for how many total acres can be cleared for single-family residences. **Appendix E** includes COIs for discretionary permits issued in 2021 for clearing habitat on parcels 10 acres or smaller.

The following details the grading and clearing exemptions provided in Section 4.3.4.2 of the MSCP Subarea Plan, as implemented by the Biological Mitigation Ordinance (BMO). Parcels which are less than 10 acres, occurring within the MSCP Subarea Plan boundaries that were zoned for single-family dwellings and contained a dwelling unit as of October 22, 1997, are exempt from the clearing regulations. Within PAMA, parcels existing as of January 1, 1997, without a dwelling unit as of October 22, 1997, and are less than 10 acres and zoned for single-family residential uses, are allowed to clear up to two acres provided that clearing and grading of such two-acre portions does not interfere with achieving the goals and criteria of the MSCP Subarea Plan. Grading and clearing on the remaining portion of the parcel must meet the mitigation requirements of the BMO. Outside PAMA, grading and clearing on parcels less than 10 acres, zoned for single-family residential uses as of January 1, 1997, and without a dwelling unit as of October 22, 1997, shall be permitted for clearing on a total of five acres. Clearing the remainder of the parcel shall be subject to the requirements of the MSCP Subarea Plan and BMO.

These exempted acres are tracked and were accounted for within the MSCP Subarea Plan, which was designed and developed with anticipation of these clearing exemptions not interfering with the County's ability to achieve the goals and objectives of the MSCP Subarea Plan.

3.2 Agricultural Exemption

COIs were not issued for agricultural exemptions in 2021. Section 4.3.4.3 of the MSCP Subarea Plan allows up to 3,000 acres of cumulative clearing and grading for agriculture without mitigation

requirements of the MSCP Subarea Plan and the BMO. When clearing and grading of habitat reaches 3,000 acres, all other clearing and grading for agriculture will be subject to the mitigation requirements of the MSCP Subarea Plan and the BMO. Private landowners can apply for a COI for agricultural clearing and grading until the 3,000 acres is reached. COIs issued for agricultural clearing in the Subarea since the MSCP Subarea Plan was approved are listed in **Appendix I**, a cumulative reporting. Since 1998, the County has issued 13 COIs covering 1,224 acres for agricultural clearing or 41% of the 3,000 acres.

3.3 Building Permit COIs

The County issues COIs that allow habitat clearing of the amount needed to construct an approved Building Permit. COIs were issued for 79 Building Permits totaling 133 acres in 2021. Habitat clearing acreages for these projects in 2021 are identified in **Appendix E**.

CHAPTER 4
Habitat Gains and Losses



Dictionary Hill Preserve, which supports multiple MSCP covered species including coast barrel cactus, Belding's orange-throated whiptail, and coastal California gnatcatcher, can be seen at sunrise.

There was a total of 201 acres of habitat gains and 288 acres of habitat losses in the reporting period. This includes 123 acres of habitat gain inside the MSCP Preserve and 78 acres of complementary conservation.[9] Habitat losses total 55 acres inside PAMA and hardline preserve areas and 233 acres outside these areas. Cumulatively, the MSCP Subarea Plan is in compliance with the rough step analysis, which ensures that habitat gains do not exceed habitat losses.[10] From 1998 to 2021, the majority of habitat gains occurred within PAMA and hardline preserve areas, while the majority of habitat loss occurred outside of PAMA and hardline preserve areas. This indicates that the overall conservation goals are being

[9] Appendix C, *Summary of MSCP Gains,* includes HabiTrak Summary of Project Gains, total of "Inside the Preserve" and County complementary acquisitions

[10] Appendix F, *Summary Habitat Losses and Gains,* includes HabiTrak Summary of Project Losses and Gains

met to create a functional MSCP Preserve as high-quality habitat within PAMA and hardline preserve areas is being conserved and lower quality habitat is being developed.

As previously mentioned, acreage reported in Chapter 4 is in GIS acreage as opposed to Assessor's acreage. GIS acreage is utilized as MSCP Preserve gains and losses are tracked in HabiTrak, the CDFW database, using GIS acreage. For consistency, GIS acreage will be used when reporting on acreage for MSCP Preserve assemblage, losses, and how the conserved lands within the MSCP Preserve are successfully meeting MSCP and Subarea Plan goals and objectives.

4.1 Habitat Gains and Losses

Habitat gains of 123 acres and habitat losses of 55 acres occurred within PAMA and hardline preserve areas in the reporting period (**Table 7** and **Appendix F**).[11] Habitat gains were reported within the MSCP Preserve through acquisitions and dedications of mitigation land via the discretionary permit process. Habitat losses were reported from permitted development within PAMA and hardline preserve areas. Mitigation gain and habitat loss were associated with the following types of projects for which approvals were granted and reported in COIs during the reporting period.

- Private projects (tentative maps/tentative parcel maps) with final map approval.
- Projects issued grading permits.
- Building permits exempt from the BMO.
- Lands acquired for preservation.

Habitat Gains

In 2021, conserved land additions within PAMA and hardline preserve areas included private dedications in hardline preserve areas (19 acres) and private dedication in PAMA (2 acres [**Appendix C**]). There were 123 acres of habitat gain within the MSCP Preserve per HabiTrak.

Habitat Loss

Losses in 2021 were 55 acres within PAMA and hardline preserve areas, part of a total of 288 acres impacted by development projects within the MSCP Subarea Plan boundaries (**Table 7** and **Appendix E**).

[11] Appendix C, *Summary of MSCP Gains,* includes HabiTrak Summary of Project Gains, total of "Inside the Preserve" and County complementary acquisitions

TABLE 7. HABITAT GAIN AND LOSS IN REPORTING YEAR

Habitat Gain/Loss	Outside PAMA and Hardline Preserve Areas	Inside PAMA and Hardline Preserve Areas	Total
Habitat Gains			
County	-	-	-
Federal and State	-	-	-
Local/Non-profit partners	15	102	117
Private Mitigation Outside Hardline	63	2	65
Private Mitigation Inside Hardline	-	19	19
Total	78	123	201
Habitat Losses			
Total	233	55	288

SOURCES: 2021 HabiTrak reports found in Appendix C, *Summary of MSCP Gains,* Appendix E, *Summary of MSCP Losses*

4.2 Habitat Tracking Reporting

CDFW maintains the HabiTrak toolset designed to track habitat losses and gains over time due to public and private development projects. HabiTrak reports for 2020 are attached to this reporting for the MSCP Subarea and are as follows.

- **Appendix C**, *Summary of MSCP Gains*, documents new acquisitions in the reporting year. Habitat gains in and outside PAMA and hardline preserve areas, as well as total acreage preserved by acquisition, are tracked. Habitat gains inside PAMA and hardline preserve areas are referred to as *Acres Inside Habitat Preserve*. These habitat gains represent the MSCP Preserve. Habitat gains outside PAMA and hardline preserve areas are referred to as *Acres Outside Habitat Preserve.* These habitat gains represent complimentary conservation.

- **Appendix E**, *Summary of MSCP Losses,* documents habitat losses from covered project impacts by segment in the reporting year. Habitat losses inside and outside PAMA and hardline preserve areas, as well as total acreage lost by project, are tracked. Habitat losses inside PAMA and hardline preserve areas are referred to as *Acres Inside Habitat Preserve*. Habitat losses outside PAMA and hardline preserve areas are referred to as *Acres Outside Habitat Preserve.*

- **Appendix F,** *Summary of Habitat Losses and Gains,* documents both habitat losses and gains for MSCP habitats in the reporting year and cumulatively. Like in the above, habitat gains and losses are tracked inside and outside PAMA and hardline preserve areas and cumulatively.

- **Appendix G,** *Habitat Conservation Accounting Model,* documents compliance with rough step proportionality. It reports on habitat losses and gains within PAMA and hardline preserve areas only for the North and South Metro-Lakeside-Jamul segments. It is within these segments that specific conservation ratios must be met.

Habitat gains and losses differ from those entered in HabiTrak as corrections for County acquisitions counted as *Inside the Preserve* are outstanding or not yet recorded in HabiTrak for reporting years 2016 thru 2019. For example, in 2019, 144 acres of habitat gains should be attributed to the MSCP Preserve rather than outside PAMA and hardline preserve areas for County acquisitions. In other years, accounting for losses due to MLP credits may need adjustment. For these reasons, the cumulative gains and losses of acreage within the MSCP Subarea Plan boundaries in the HabiTrak reports differ from the MSCP Preserve assembly totals reported in previous sections of this report. 2020 County acquisitions located outside of PAMA and hardline preserve areas may be attributed to the MSCP Preserve in future years, with approval from the Wildlife Agencies.

HabiTrak reports a 77,077-acre cumulative gain within PAMA and hardline preserve areas and a loss of 1,536 acres (**Appendix F**). HabiTrak data for the MSCP Subarea Plan does not show the total of 885 acres jointly owned and managed by the County in the cities of San Diego and Chula Vista. The acreage is outside of the MSCP Subarea Plan Area, but included in the County-owned, managed or funded lands in the MSCP Preserve. Manual accounting of County acreages in **Appendix A** also differ from HabiTrak because County numbers accurately show year-to-year manual County updates and subtraction of acres used for MLP credits. The Wildlife Agencies' acquisitions totals are also tracked manually and may differ from HabiTrak. The manual accounting numbers are corrected when errors are noted, and audits are performed. Additionally, through the discretionary permitting process, the California Environmental Quality Act (CEQA) requires the identification of potential impacts. The corresponding loss of habitat resulting from development and habitat conserved through mitigation is tracked. Habitat loss through ministerial projects that do not require a discretionary permit are in this report.

The HabiTrak database and report formats have undergone updates and changes, and the numbers are corrected once inputs are received. As such, a combination of HabiTrak reports and manual accounting of gains and losses within both the MSCP Subarea Plan boundaries and MSCP Preserve is utilized to total MSCP Preserve assemblage by landowner type documented in **Table 1** and **Table 3**.

4.3 Rough Step Analysis

Rough step is the comparison of the total gains and losses within and outside of PAMA and hardline preserve areas in terms of total acres and habitat types. The purpose of rough step is to ensure that the conservation of high-quality habitat and habitat linkages, those lands inside PAMA and hardline preserve areas, occurs roughly in the same amounts at the same time as development outside PAMA and hardline preserve areas. **Table 8** shows the cumulative gains and losses inside and outside of PAMA and hardline preserve areas for each of the four segments within the MSCP Subarea Plan.

The majority of habitat gains for the four segments occurred within PAMA and hardline preserve areas, while the majority of habitat loss occurred outside of PAMA and hardline preserve areas. This numerical comparison indicates that the overall conservation goals are being met to create a functional MSCP Preserve as high-quality habitat within PAMA and hardline preserve areas is being conserved and lower quality habitat is being developed. A visual rough step analysis of the biological core resource areas and habitat linkages are depicted in **Figure 2** and **Figure 3**.

Rough step status can also be determined by comparing gains and losses of vegetation types inside and outside PAMA in the North and South Metro-Lakeside-Jamul segments. (PAMA designations only apply to the North and South Metro-Lakeside-Jamul segments. Lake Hodges and South County are both hardline preserve areas.) **Appendix G** reports on the conservation of each vegetation type within the Metro-Lakeside-Jamul segment, as required by Section 4.4 of the MSCP Subarea Plan and Section 14 of the IA. It should be noted that existing vegetation maps used to develop baseline conditions in HabiTrak are regional in nature and may not be consistent with actual on-the-ground conditions. This data also indicates that conservation is proceeding in rough step with development. The report in **Appendix G** demonstrates the County's compliance with MSCP Subarea Plan Objective 1 "*Acknowledge the no-net-loss-of-wetlands standard to satisfy state and federal wetland goals, policies, and standards."*

TABLE 8. HABITAT GAINS AND LOSSES BY SEGMENT SINCE 1998 PER HABITRAK

	Cumulative (acres)		
Segment	**Outside PAMA and Hardline Preserve Areas**	**Inside PAMA and Hardline Preserve Areas**	**Total**
Habitat Gain			
Lake Hodges	518	2,905	3,423
North Metro-Lakeside-Jamul	6,912	11,015	18,012
South Metro-Lakeside-Jamul	11,824	13,570	25,394
South County	1,772	10,676	12,448
Total	**21,025**	**38,252**	**59,277**
Habitat Losses			
Lake Hodges	2,469	91	2,560
North Metro-Lakeside-Jamul	3,933	690	4,623
South Metro-Lakeside-Jamul	3,338	585	3,923
South County	796	158	954
Total	**10,537**	**1,524**	**12,062**

NOTE: Totals may not add up due to rounding.

SOURCE: 2020 Annual Report plus 2021 HabiTrak reports found in Appendix C, *Summary of MSCP Gains* and Appendix G, *Habitat Conservation Accounting Model*.

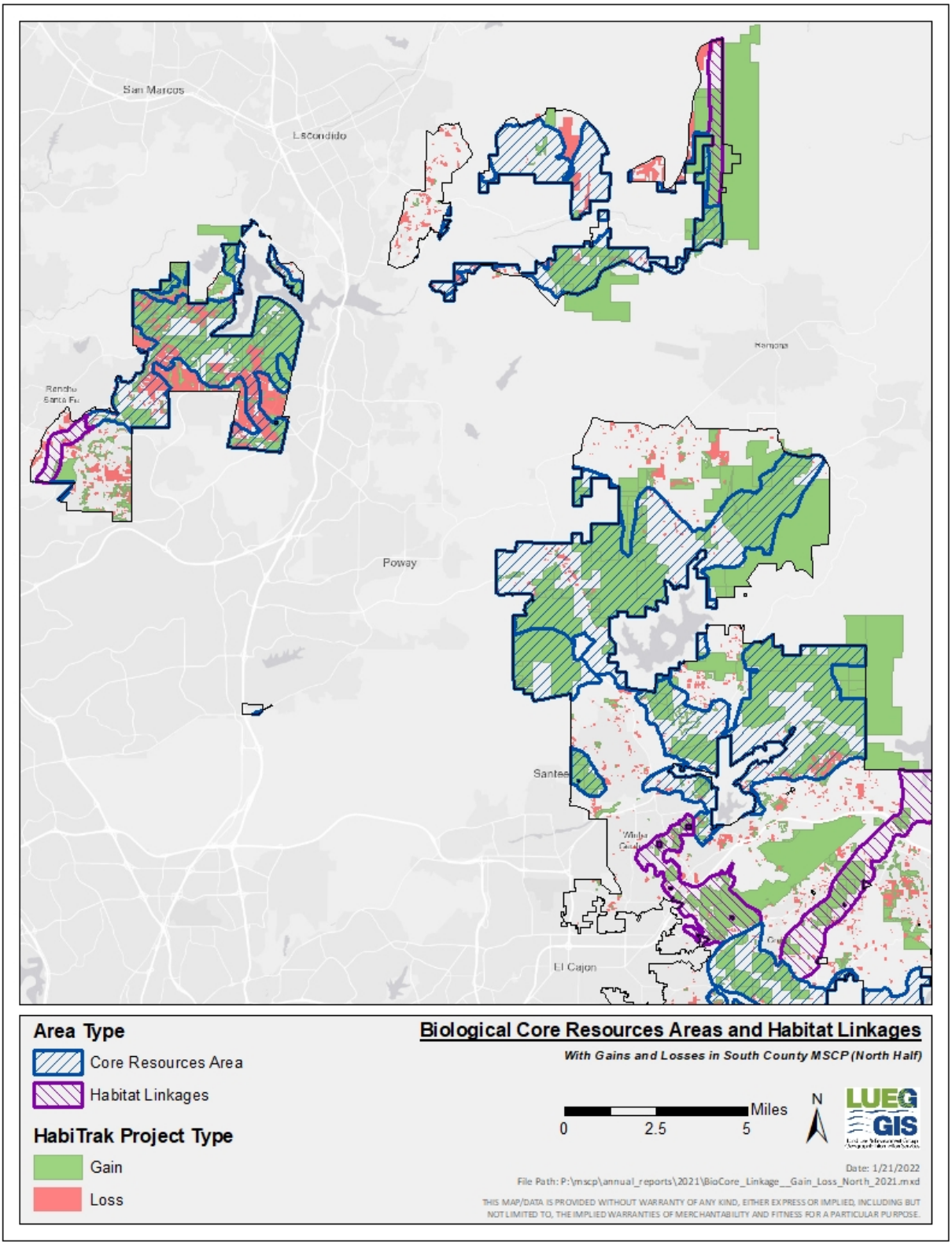


Figure 2. MSCP biological core resource areas and habitat linkages with gains and losses in the north half of the MSCP Subarea Plan Area

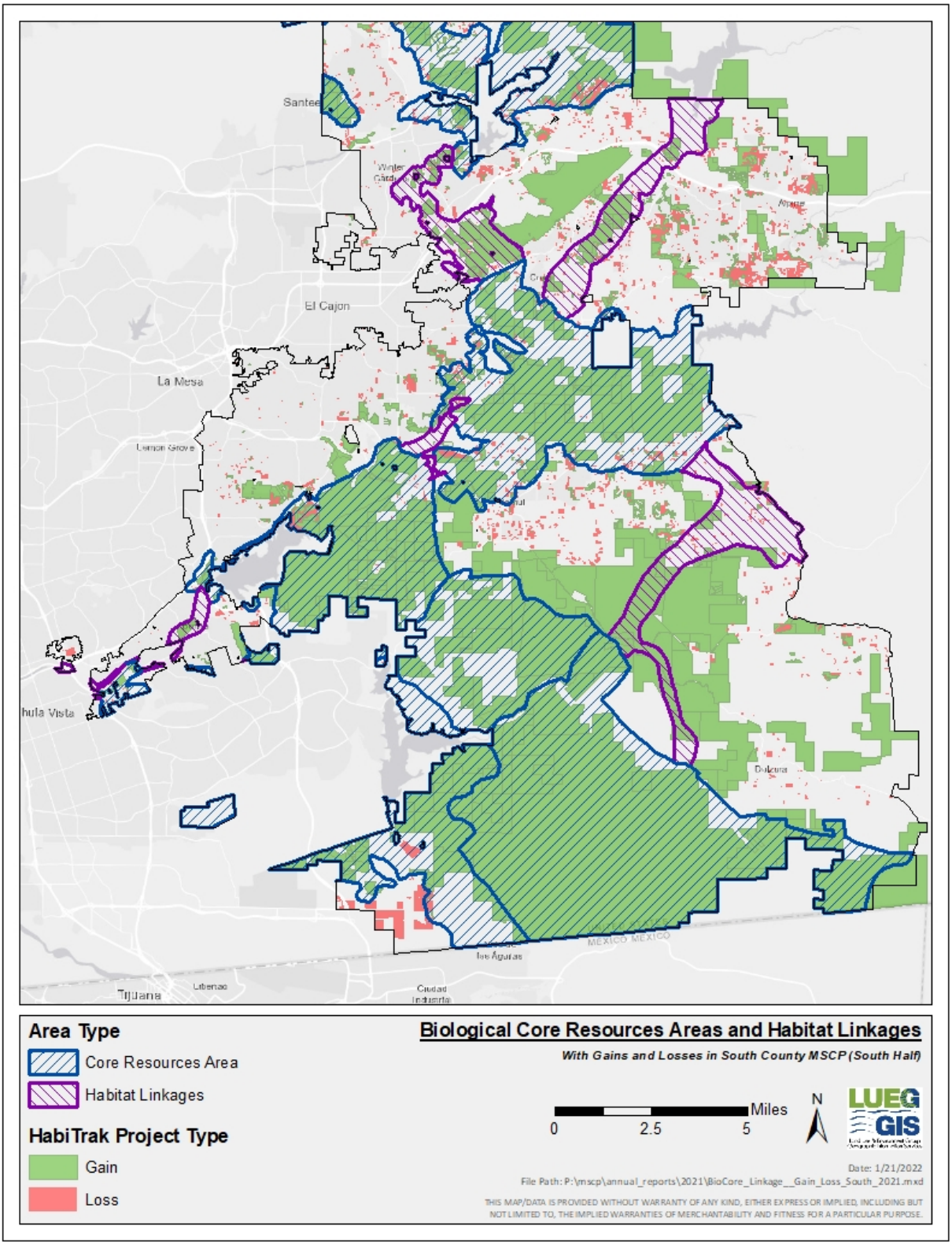


Figure 3. MSCP biological core resource areas and habitat linkages with gains and losses in the south half of the MSCP Subarea Plan Area

CHAPTER 5
Species and Habitat Conservation



Mule deer, an MSCP covered species, can be found on Boulder Oaks Preserve.

This chapter summarizes the contribution of County Preserves to the MSCP Subarea Plan objectives. The MSCP objectives ensure the persistence of habitat linkages for wildlife movement, critical biological resource areas for MSCP covered plant and animal habitat, and MSCP covered plant and animal occurrences in these areas.

The County initiated a *Preserve Functionality Assessment* to evaluate the contribution of County Preserves to the MSCP objectives at the landscape-, habitat-, and species-level. A total of 30 County Preserves currently contribute to MSCP Subarea Plan landscape, habitat, and species objectives. (County Preserves are those depicted and referenced in **Figure 1)**. The MSCP Subarea Plan identifies targets at the landscape-, habitat-, and species-level to quantify contributions to the MSCP objectives and measure success of the MSCP Subarea Plan. At the landscape-level, contributions are measured in acres of biological core resource areas, habitat linkages, and segments conserved. At the habitat-level, contributions are measured in acres of target habitat types conserved. At the species-level, contributions are measured in the MSCP covered species conserved. Section 5.2 through Section 5.5 describes the preliminary results of the first phase of the *Preserve Functionality Assessment*. It is anticipated that the first phase of the *Preserve Functionality Assessment* will be finalized in 2022.

County Preserves span 11 of 16 biological core resource areas and protect habitat linkages. The County Preserves contribute to habitat conservation goals of each of the target segments, which are Lake Hodges,

South County, North Metro-Lakeside-Jamul, and South Metro-Lakeside-Jamul. The County Preserves conserve undeveloped lands that contain all 18 target habitats, with chaparral and coastal sage scrub being the most represented in 23 and 26 of County Preserves, respectively. Of the 85 MSCP covered species, 46 have been documented across 25 of the 30 County Preserves (**Appendix O**). Together with federal, state, local partner, and private mitigation conservation, the County and its partners contribute to preservation of the unique biological resources present in the unincorporated county.

As previously mentioned, acreage reported in Chapter 5 is in GIS acreage as opposed to Assessor's acreage. GIS acreage is utilized as MSCP Preserve gains and losses are tracked in HabiTrak, the CDFW database, using GIS acreage. For consistency, GIS acreage will be used when reporting on acreage for MSCP Preserve assemblage, losses, and how the conserved lands within the MSCP Preserve are successfully meeting MSCP and Subarea Plan goals and objectives.

5.1 MSCP Objectives

The Natural Communities Conservation Planning Conservation Guidelines, the MSCP, and the biological information from the MSCP's Multiple Habitat Planning Area (MHPA) Preserve alternative were used to establish conservation goals and criteria for habitat and individual species for each Segment of the MSCP Subarea Plan. These goals and criteria are based on the needs of the 85 MSCP covered species and an analysis of their habitats in the MSCP study area. Goals and criteria for conservation of biological core resource areas and habitat linkages within the individual segments are discussed in MSCP Subarea Plan Chapters 2, 3, and 4. The anticipated levels of conservation for vegetation types and individual species are included in MSCP Subarea Plan Section 1.2.1 and Section 1.2.2, respectively and the progress that has been made regarding those goals is summarized in **Appendix F**.

The County has made substantial progress toward the achievement of the MSCP Subarea Plan Objectives listed below. For each objective, progress is documented in the referenced chapter or section of the annual report. The County Preserves contribution refers to those parks and preserves owned or managed by the County.

Objective 1: Acknowledge the no-net-loss-of-wetlands standard to satisfy state and federal wetland goals, policies, and standards.

Progress: Acknowledgment of the state and federal goals, policies, and standards of the no-net-loss-of-wetlands is provided in Chapter 4, *Habitat Gains and Losses* and **Appendix F**, *Summary of Habitat Losses and Gains* with almost no impacts to wetlands.

Objective 2: Include measures to maximize the habitat structural diversity of conserved habitat areas, including conservation of unique habitats and habitat features (e.g., soil types, rock outcrops, drainages, and host plants).

Progress: Conservation of habitat diversity and unique habitats is provided in **Appendix F**, *Summary of Habitat Losses and Gains*. Properly managing conserved preserve lands ensures that habitat diversity is sustained. RMP development and implementation is provided in Chapter 6, *Preserve Management.* RMPs provide detailed site-specific physical, biological, and cultural information for County Preserves. These documents serve as a guidance document to manage and preserve the biological and cultural resources

within County Preserves and include guidance for land management/stewardship. They also include a framework for on-site MSCP covered species monitoring and management. The TMP provides detailed specifications for implementation of management and monitoring within County-owned and managed conserved lands. The TMP is an adaptive implementation plan that incorporates the site-specific monitoring strategy included in RMPs, focused goals and objectives for target resources, and detailed monitoring protocols. The TMP is consistent with regional priorities, includes goals, measurable objectives, and detailed protocols using best available science. Species- and habitat-specific monitoring results are provided in Chapter 7, *Preserve Monitoring and Research.* Habitat and species management is informed by the TMP. Management actions are described in Chapter 6, *Preserve Management.*

Objective 3: Provide for the conservation of spatially representative (e.g., coastal versus interior) examples of extensive patches of coastal sage scrub and other habitat types that were ranked as having high and very high biological value by the MSCP habitat evaluation model.

Progress: Habitat protection goals identified in MSCP Subarea Plan Table 1-2 and Table 4-2 are measured in Section 5.4, *Habitat-Level Conservation.* Habitat protection has occurred in all three Subarea Plan segments in extensive patches in the biological core resources areas (Figures 2 and 3). The County Preserves contribution toward the Subarea Plan habitat goals are evenly distributed among all three segments (Table 11).

Objective 4: Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats.

Progress: Protection of the eight critical biological resource areas identified in MSCP Subarea Plan Section 4.2.2 and five habitat linkages identified in MSCP Subarea Plan Section 4.2.3 is documented in Section 5.3, *Landscape-level Conservation.* As of December 31, 2021, the assembled 79,976-acre MSCP Preserve has large blocks of habitat that reduce edge effects and maximize the ratio of surface area to perimeter (Figures 2 and 3).

Objective 5: Provide incentives for development in the least sensitive habitat areas.

Progress: Development is incentivized in the least sensitive habitat areas through the application of Appendix M of the County's BMO, which identifies higher mitigation requirements for projects impacting biological resource core areas and lower mitigation requirements for projects impacting land outside these areas. The use of project mitigation sites within biological core resource areas is also incentivized by further lowering project mitigation requirements. Projects covered by the MSCP and compliant with County's BMO are documented in Chapter 3, *Covered Projects.*

Objective 6: Provide for the conservation of key regional populations of the covered species, and representation of sensitive habitats and their geographic subassociations in biologically functioning units.

Progress: Conservation of target vegetation communities, species habitats, and species occurrences (i.e., compliance monitoring) is documented in Section 5.4, *Habitat-level Conservation* and Section 5.5, *Species-level Conservation.* Status and trends monitoring (i.e., effectiveness monitoring) is documented in Chapter 7, *Preserve Monitoring and Research.*

Objective 7: Conserve large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mule deer, golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near golden eagle nesting sites.

Progress: Protection of the eight critical biological resource areas identified in MSCP Subarea Plan Section 4.2.2 and five habitat linkages identified in MSCP Subarea Plan Section 4.2.3. is documented in Section 5.3, *Landscape-Level Conservation.*

5.2 MSCP Preserve Functionality Assessment

The County initiated an *MSCP Preserve Functionality Assessment* to evaluate the contribution of conserved lands to the MSCP objectives at the landscape-, habitat-, and species-level. This assessment will be a multi-phase effort with the first phase focused on County Preserves that contribute to the assembled MSCP Preserve. As part of a regional effort, and in coordination with conserved land partners, future phases of an MSCP functionality assessment will focus on private mitigation contributions and lands conserved by federal, state, and non-profit partners. The MSCP Subarea Plan identifies measurable objectives at the landscape-, habitat-, and species-level to measure success of the assembled MSCP Subarea Plan Preserve. At the landscape-level, acres of conserved biological core resource areas, habitat linkages, and segments are the measurable objective. At the habitat-level, acres of conserved target habitat types are the quantifiable objective. At the species-level, the number of conserved MSCP covered species are used as the measurable objective. The metrics presented in this chapter are the preliminary results of the contributions of County Preserves. The functionality analysis efforts continued in 2021 and final results of the first phase of the assessment are anticipated to be included in the 2022 MSCP Annual Report. In up-coming years, as part of a regional effort, and in coordination with conserved landowners, additional MSCP Preserve-lands assessment will be completed. It is anticipated that the next MSCP Preserve-lands to be analyzed will be private mitigation lands.

DPR, the Wildlife Agencies, San Diego Management and Monitoring Program (SDMMP), and United States Geological Society (USGS) met prior to the initiation of the *Preserve Functionality Assessment.* The following components of the first phase of the assessment (County Preserves that contribute to the assembled MSCP Preserve) were discussed and are described as follows.

- **County Preserves**. County Preserves enrolled in the MSCP Preserve would be the units of analysis. These are the 30 County Preserves included in this Annual Report and depicted in **Figure 1**.

- **Data**. Data from 1997 to 2020 would be considered in the analysis. Data sources would include GIS data from DPR's TMP, RMPs, inventory surveys, habitat vegetation mapping, and restoration projects. County partner data from the SDMMP, USGS, and Wildlife Agencies would also be included.

- **MSCP Covered Species on County Preserves**. The analysis would determine species-level contributions to MSCP covered species conservation goals. The data would be used to determine which of the 85 MSCP covered species are found on County Preserves. Results would be summarized in a matrix of MSCP covered species, their sensitivity classifications, and whether or

not they were found on the County Preserves. A separate table would identify MSCP covered species by County Preserve.

- **Acreage of conserved and targeted habitat vegetation types on County Preserves**. The analysis would determine habitat-level contributions to MSCP habitat conservation goals. The data would be used to determine the habitat vegetation type acreage on County Preserves compared to the target acreage in Table 1-2 of the MSCP Subarea Plan. Results would be summarized in a matrix of vegetation types, their total acreages within County Preserves, and the relative contribution to the target acreages in Table 1-2 (e.g., percent contribution). The results would be summarized for the County Preserves as a whole and by each County Preserve.

- **Status summary of each MSCP covered species located on County Preserves**. The analysis would determine species-level contributions to MSCP covered species conservation goals. A status summary of each MSCP covered species conserved and their MSCP habitat conservation goals based on Table 3-5 of the MSCP would be provided. This summary would list MSCP covered species with the habitat conservation goals for each species. The amount of habitat conserved for each species on County Preserves would be quantified and percent contribution to the MSCP goal calculated. For those species monitored by the TMP, the number of occurrences and percent contribution to the occurrence targets in Table 1-3 of the MSCP Subarea Plan would be summarized.

- **Summary of threats and monitoring activities on County Preserves for MSCP covered species**. The analysis would inform habitat and species-level management and monitoring actions for MSCP covered species. An analysis of threats to MSCP covered species and DPR monitoring activities that are implemented to ensure the success of the MSCP covered species on County Preserves would be conducted and a summary developed.

- **MSCP Preserve Functionality Report**. This report would summarize landscape-level, habitat-level, and species-level contributions and assess MSCP Preserve function on the County Preserves. A report encompassing the analyses described above would be developed. Recommendations for further analyses and reporting to address MSCP Preserve Functionality would be provided.

Section 5.3 through Section 5.5 provides preliminary results and assessments of the first phase of the Preserve Functionality Analysis, which analyzed the County's Preserves within the MSCP Preserve.

5.3 Landscape-Level Conservation

A landscape-level conservation analysis was conducted to determine the County's contributions to MSCP Subarea Plan Objective 4 "*Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats*" and Objective 7 "*Conserve large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mule deer, golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near golden eagle nesting sites.*" The results presented in this section are the preliminary results of a *Preserve Functionality Assessment*. As the County continued to conduct the

Preserve Functionality Assessment throughout 2021, final results are anticipated to be presented in the 2022 MSCP Annual Report.

The preliminary analysis was prepared using GIS-calculated acres. To complete this analysis, the County Preserves layer was overlaid with the MSCP Subarea Plan segments, biological core resource areas, and habitat linkages[12] to quantify the landscape level conservation contribution of the 30 County Preserves. All the parks and preserves included in the analysis were County Preserves; however, portions of the park or preserve may have been excluded from the MSCP Preserve due to existing use (e.g., campground, sports fields).

Based on this preliminary analysis, the County Preserves contribute to MSCP Subarea Plan landscape, habitat, and species objectives by spanning 11 biological core resource areas, 634 acres of habitat linkages, and seven segments. **Table 9** summarizes landscape-level conservation for County Preserves.

Biological core resource areas. The MSCP Plan identifies 16 biological core resource areas in Table 2-2. Biological core resource areas generally support a high concentration of sensitive biological resources which, if lost or fragmented, could not be replaced or mitigated elsewhere. Eight of these biological core resource areas are identified as critical in the MSCP Subarea Plan Section 4.2.2. County Preserves contribute to the protection of 11 of the 16 biological core resource areas and six of the eight identified as critical. Future phases of the *Preserve Functionality Analysis* assess all conserved lands within the MSCP Preserve and it is anticipated that conserved lands will be located within all biological core resource areas in Table 2-2.

Habitat linkages. The MSCP Plan identifies 24 linkages between biological core resource areas in Table 2-2. Habitat linkages have characteristics that allow plants and animals to move between the biological core resource areas. Five of these linkages are targeted for acquisition in the North and South Metro-Lakeside-Jamul segments as identified in MSCP Subarea Plan Section 4.2.3. County Preserves protect linkages in the following segments: North and South Metro-Lakeside-Jamul, City of San Diego Northern Area, South County, City of Chula Vista, and City of San Diego Southern Area. Future phases of the *Preserve Functionality Analysis* will assess all conserved lands within the MSCP Preserve and it is anticipated that conserved lands will be located within the 24 linkages identified in Table 2-2.

Segments. The MSCP Subarea Plan identifies four segments within which the MSCP Preserve will be assembled. County Preserves span these four segments, plus three additional segments in other Subarea Plan Areas. Within the MSCP Subarea Plan Area, County Preserves contribute 1-77% of the segment goals.[13] Future phases of the *Preserve Functionality Analysis* will assess all conserved lands within the MSCP Preserve and it is anticipated that the assembled MSCP Preserve will meet all segment objectives.

The County Preserves contribute to MSCP Subarea Plan Objective 4 "*Create significant blocks of habitat to reduce edge effects and maximize the ratio of surface area to the perimeter of conserved habitats*" and Objective 7 "*Conserve large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mule deer, golden eagle, and predators as appropriate. Special emphasis will be*

[12] The biological core resource areas and habitat linkages are those identified in Figure 2-2 of the *Final Multiple Species Conservation Program* (MSCP Plan [1998]).

[13] The segment goals are for all MSCP Preserve acquisitions—County, federal, state, non-profit partners, private mitigation.

placed on conserving adequate foraging habitat near golden eagle nesting sites." The County Preserves conserved in each segment are summarized below and detailed in **Table 9**. Only the acreage within the MSCP Subarea Plan Area's boundaries are reported in **Table 9** as four County Preserves span both the South County and draft North County MSCP Plan Areas.

TABLE 9. LANDSCAPE-LEVEL CONSERVATION IN COUNTY PRESERVES

County Preserve	Area within MSCP Subarea Plan Area (acres)	Segment Name	Segment acres	Biological Core Resource Area Habitat Linkage	Core Area acres	Linkage acres
Barnett Ranch Preserve	668[a]	North Metro-Lakeside-Jamul	668	Central Poway/San Vicente Reservoir	275	-
Boulder Oaks Preserve	2,022	North Metro-Lakeside-Jamul	2,022	Central Poway/San Vicente Reservoir	1,420	-
Damon Lane Park	29	South Metro-Lakeside-Jamul	29	-	-	-
Del Dios Highlands Preserve	269[a]	North Metro-Lakeside-Jamul	269	Hodges Reservoir/San Pasqual Valley	167	-
Dictionary Hill Preserve	177	South Metro-Lakeside-Jamul	177	-	-	-
El Capitan Preserve	2,325[a]	North Metro-Lakeside-Jamul	2,325	Lake Jennings/Wildcat Canyon	2,313	-
El Monte Park	117	North Metro-Lakeside-Jamul	117	Lake Jennings/Wildcat Canyon	117	-
Flinn Springs Park	73	South Metro-Lakeside-Jamul	73	-	-	-
Furby-North Property	79	City of San Diego Southern Area	79	Vernal Pools, Otay Mesa	65	-
Holly Oaks Preserve	42	North Metro-Lakeside-Jamul	42	-	-	-
Iron Mountain Preserve	162	North Metro-Lakeside-Jamul	162	Central Poway/San Vicente Reservoir	162	-
Lakeside Linkage Preserve	209	North Metro-Lakeside-Jamul	209	Lake Jennings/Wildcat Canyon I-8 at Lakeside Linkage	11	188
Lawrence & Barbara	581	South Metro-Lakeside-Jamul	581	Otay Mountain/Jamul Mountains to	-	<1

TABLE 9. LANDSCAPE-LEVEL CONSERVATION IN COUNTY PRESERVES

County Preserve	Area within MSCP Subarea Plan Area (acres)	Segment Name	Segment acres	Biological Core Resource Area Habitat Linkage	Core Area acres	Linkage acres
Daley Preserve				Sequan Peak Linkage		
Los Peñasquitos Canyon Preserve	266	City of San Diego Northern Area	266	Los Peñasquitos Lagoon/Del Mar Mesa Los Peñasquitos Creek west of Poway Linkage	243	14
Louis A. Stelzer Park	368	North Metro-Lakeside-Jamul	368	Lake Jennings/Wildcat Canyon	368	-
Luelf Pond Preserve	87	North Metro-Lakeside-Jamul	87	-	-	-
Lusardi Creek Preserve	226	Lake Hodges	226	Hodges Reservoir/San Pasqual Valley	226	-
Oakoasis Preserve	442	Lake Hodges	442	Central Poway/San Vicente Reservoir	26	-
Old Ironsides Park	4	South Metro-Lakeside-Jamul	4	Dehesa to El Capitan Reservoir Linkage	-	2
Otay Lakes Park	87	South County	87	Otay Lakes/Otay Mesa/Otay River Valley	87	-
Otay Ranch Preserve	4,707	City of Chula Vista South County	1.113 3,594	Jamul Mountains Otay Lakes/Otay Mesa/Otay River Valley Otay Mountain/Marron Valley	1,294 2,135 1,252	-
Otay Valley Regional Park	432	South County City of Chula Vista City of San Diego Southern Area	209 125 99	Otay Lakes/Otay Mesa/Otay River Valley Otay River west of I-805 Linkage	339	41
Peutz Valley Preserve	255	North Metro-Lakeside-Jamul	255	Dehesa to El Capitan Reservoir Linkage	-	7
Ramona Grasslands Preserve	558[a]	North Metro-Lakeside-Jamul	558	Hodges Reservoir/San Pasqual Valley	558	-
Santa Fe Valley Preserve	298	Lake Hodges	298	Hodges Reservoir/San Pasqual Valley	286	-

TABLE 9. LANDSCAPE-LEVEL CONSERVATION IN COUNTY PRESERVES

County Preserve	Area within MSCP Subarea Plan Area (acres)	Segment Name	Segment acres	Biological Core Resource Area Habitat Linkage	Core Area acres	Linkage acres
Skyline Preserve	261	South Metro-Lakeside-Jamul	261	Otay Mountain/Jamul Mountains to Sequan Peak Linkage	-	122
Stoneridge Preserve	247	South Metro-Lakeside-Jamul	247	Dehesa to El Capitan Reservoir Linkage	-	241
Sweetwater Regional Park	490	South County South Metro-Lakeside-Jamul City of Chula Vista National City Sweetwater Authority	425 15 6 42 2	Sweetwater Reservoir/San Miguel Mountain Otay Lakes/Otay Mesa/Otay River Valley	105 124	154
Sycamore Canyon and Goodan Ranch Preserve	2,931	North Metro-Lakeside-Jamul City of San Diego Northern Area	2,928 3	Central Poway/San Vicente Reservoir Mission Trails/Kearny Mesa/East Elliot/Santee	1,464 1,467	-
Tijuana River Valley Regional Park	1,609	City of San Diego Southern Area	1,609	Tijuana Estuary/River Valley	1,045	-

[a] Barnett Ranch Preserve, El Capitan Preserve, Del Dios Highlands Preserve, and Ramona Grasslands Preserve are located within both the South County and draft North County MSCP Plan Areas. Acreages reported in this table reflect only the portions of the preserves within the MSCP Subarea Plan Area.

SOURCE: County, LUEG-GIS



A pond at Barnett Ranch Preserve allows wildlife access to water year-round.

5.4 Habitat-Level Conservation

A habitat-level conservation analysis was conducted to determine the County's contributions to MSCP Subarea Plan Objective 3 "*Provide for the conservation of spatially representative (e.g., coastal versus interior) examples of extensive patches of coastal sage scrub and other habitat types that were ranked as having high and very high biological value by the MSCP habitat evaluation model*" and Objective 6 "*Provide for the conservation of key regional populations of the covered species, and representation of sensitive habitats and their geographic subassociations in biologically functioning units*." The results presented in this section are the preliminary results of the *MSCP Preserve Functionality Assessment*. Final results of the first phase of the assessment are anticipated to be completed in 2021 and reported in the 2022 MSCP Annual Report.

The preliminary analysis was prepared by the County using GIS-calculated acres. To complete this analysis, the County Preserves layer was overlaid with the vegetation layer to estimate the acres of MSCP target habitats in the County Preserves cumulatively, by segment (i.e., Lake Hodges, South County, and Metro-Lakeside-Jamul), and by sub-segment for Metro-Lakeside-Jamul (i.e., North and South).

Based on this analysis, County Preserves conserve 17 of 18 target habitats within the MSCP Subarea Plan**.** Each County Preserve contains two to 15 habitat types. The most prevalent habitats conserved in County Preserves are chaparral (7,347 acres) and coastal sage scrub (3,480 acres). For these habitat types, County Preserves contribute 56% and 27%, respectively, to the MSCP Preserve goals. **Table 10** details

County Preserves' contribution to MSCP Preserve-wide habitat conservation goals. The acres of habitat conserved in each County Preserve is summarized in **Appendix J**.

County Preserves conserve habitat in all segments, with 14 of 16 target habitats conserved in the Lake Hodges segment, 12 of 17 target habitats conserved in South County, and 13 of 14 target habitats conserved in the Metro-Lakeside-Jamul Segment. Depending on the vegetation community, County Preserves account for 1-77% of the habitat conservation goals identified in MSCP Subarea Plan Table 1-2. The largest contributions to the overall goals are to oak woodland (27%), grassland (23%), and coastal sage scrub/chaparral (21%). County Preserves' contribution is provided in **Table 11** and summarized as follows.

- **Lake Hodges.** Fourteen target habitats are conserved in the Lake Hodges segment. The largest contributions are for riparian scrub (45%), riparian forest (43%), and freshwater marsh (32%).

- **South County.** Twelve target habitats are conserved in the South County segment. The largest contributions are for coastal sage scrub/chaparral (77%), grassland (21%), and oak woodland (17%).

- **Metro-Lakeside-Jamul.** Thirteen target habitats are conserved in the Metro-Lakeside-Jamul segment. The largest contributions are for riparian woodland (67%), chaparral (39%), and oak woodland (29%).

The MSCP Subarea Plan establishes additional habitat conservation goals for 13 habitats in the north and south sub-segments of the Metro-Lakeside-Jamul segment in MSCP Subarea Plan Table 4-2. County Preserves conserve 13 of 13 target habitat types in the North sub-segment and 10 of 12 in the South sub-segment. County Preserves' contributions are provided in **Table 12** and summarized as follows.

- **North Metro-Lakeside-Jamul.** Twelve target habitats are conserved in North Metro-Lakeside-Jamul. The largest contributions are for grassland (67%), riparian woodland (67%), and chaparral (56%).

- **South Metro-Lakeside-Jamul.** Nine target habitats are conserved in South Metro-Lakeside-Jamul. The largest contributions are for eucalyptus woodland (36%), riparian forest (30%), and oak riparian forest (9%).

TABLE 10. HABITAT CONSERVATION IN COUNTY PRESERVES

Vegetation Community	Cumulative within MSCP Subarea Plan Area (acres)	% of Total
Coastal Sage Scrub	3,480	27%
Maritime Succulent Scrub	93	0%
Chaparral	7,347	56%
Southern Maritime Chaparral	-	-
Coastal Sage Scrub/Chaparral	156	1%
Grassland	695	5%
Freshwater Marsh	41	0%
Oak Riparian Forest	216	2%
Riparian Forest	69	1%
Riparian Woodland	4	0%
Riparian Scrub	74	1%
Oak Woodland	548	4%
Tecate Cypress Forest	160	1%
Eucalyptus Woodland	11	0%
Open Water	9	0%
Disturbed Wetland	6	0%
Flood Channel	3	0%
Other Habitat	-	0%
Bog and Marsh	13	0%
Shallow Bays	-	0%
Disturbed Land	115	1%
Agriculture	172	1%
Urban/Developed	172	1%

NOTES: Vegetation Communities listed are those identified in MSCP Subarea Plan Table 1-2. *Habitat Protection Goals for the San Diego County Subarea.*

SOURCE: County, LUEG-GIS

TABLE 11. HABITAT CONSERVATION GOALS ACHIEVED IN COUNTY PRESERVES FOR ALL SEGMENTS

	Goals (acres)				In County Preserves within MSCP Subarea Plan Area (acres)				Contribution to Goals (%)			
	Segments			Total	Segments			Total	Segments			Total
Vegetation Community	**LH**	**SC**	**MLJ**	**Goal**	**LH**	**SC**	**MLJ**		**LH**	**SC**	**MLJ**	
Coastal Sage Scrub	2,591	23,037	18,626	44,254	308	2,351	2,802	5,461	12%	10%	15%	12%
Maritime Succulent Scrub	0	158	0	158	-	1	-	1	-	1%	-	1%
Chaparral	1,391	19,874	18,619	39,884	76	683	7,273	8,032	5%	3%	39%	20%
Southern Maritime Chaparral	5	0	0	5	-	-	-	0	0%	-	-	0%
Coastal Sage Scrub/Chaparral	20	153	1,152	1,325	3	118	153	274	15%	77%	13%	21%
Grassland	305	1,658	1,603	3,566	40	343	445	828	13%	21%	28%	23%
Freshwater Marsh	50	173	15	238	16	13	<1	29	32%	8%	6%	12%
Oak Riparian Forest	7	141	2,045	2,194	<1	6	216	222	0%	4%	11%	10%
Riparian Forest	21	243	84	348	9	-	12	21	43%	-	14%	6%
Riparian Woodland	6	8	6	20	-	-	4	4	0%	-	67%	20%
Riparian Scrub	38	424	298	760	17	3	1	21	45%	1%	0%	3%
Oak Woodland	21	284	1,901	2,206	1	49	542	592	5%	17%	29%	27%
Tecate Cypress Forest	0	5,589	0	5,589	-	160	-	160	-	3%	-	3%
Eucalyptus Woodland	61	17	41	120	6	<1	5	11	10%	0%	12%	9%
Open Water	19	6	124	149	4	-	2	6	21%	-	2%	4%
Disturbed Wetland	4	34	52	90	1	-	-	1	25%	-	-	1%
Flood Channel	15	132	197	344	3	-	-	3	20%	-	-	1%
Other Habitat	16	2	0	18	39	24	273	335	>100%	>100%	>100%	>100%

NOTES: Contributions to City of Chula Vista and City of San Diego MSCP Subarea Plan segment goals are not provided. For this reason, the sum of the segments does not equal the County Preserve acreage. Habitat protection goals are from MSCP Subarea Plan Table 1-2, *Habitat Protection Goals for the San Diego County Subarea.*

SOURCE: County, LUEG-GIS

TABLE 12. HABITAT CONSERVATION GOALS ACHIEVED IN COUNTY PRESERVES FOR METRO-LAKESIDE-JAMUL SEGMENT

	Metro-Lakeside-Jamul Goals (acres)		Conserved in County Preserves within MSCP Subarea Plan Area (acres)		Contribution to Goals (%)	
Vegetation Community	**North**	**South**	**North**	**South**	**North**	**South**
Coastal Sage Scrub	9,525	9,101	2,085	717	22%	8%
Maritime Succulent Scrub	-	-	-	-	-	-
Chaparral	12,134	6,285	6,775	498	56%	8%
Southern Maritime Chaparral	-	-	-	-	-	-
Coastal Sage Scrub/Chaparral	454	698	136	17	30%	2%
Grassland	633	971	422	23	67%	2%
Freshwater Marsh	2	13	<1	-	5%	
Oak Riparian Forest	1,121	923	137	79	12%	9%
Riparian Forest	51	33	2	10	4%	30%
Riparian Woodland	6	-	4	-	67%	
Riparian Scrub	236	63	1	<1	0%	0%
Oak Woodland	1,036	862	533	10	51%	1%
Tecate Cypress Forest	-	-	-	-	-	-
Eucalyptus Woodland	27	14	<1	5	2%	36%
Open Water	90	34	2	-	2%	-
Disturbed Wetland	-	52	-	-	-	-
Flood Channel	34	163	-	-	-	-
Other Habitat	-	-	234	39	-	-
Total	25,353	19,411	10,332	1,399	41%	7%

NOTES: Metro-Lakeside-Jamul Goals are from MSCP Subarea Plan Table 4-2.

SOURCE: County, LUEG-GIS



Golden eagles, an MSCP covered species, can be found on six different County Preserves in the MSCP Subarea Plan.

5.5 Species-Level Conservation

A species-level conservation analysis was conducted to determine the County's contribution to MSCP Subarea Plan Objective 6, "*Provide for the conservation of key regional populations of the covered species, and representation of sensitive habitats and their geographic subassociations in biologically functioning units*" and Objective 7 "*Conserve large interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mule deer, golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near golden eagle nesting sites*." The results presented in this section are the preliminary results of a *Preserve Functionality Assessment*. Final results of the first phase of the *Preserve Functionality Assessment* are anticipated to be presented in the 2022 MSCP Annual Report.

To complete this analysis, MSCP covered species occurrence data for occurrences documented from 1998 to 2020 was consolidated. GIS data sources were SanBIOS, California Natural Diversity Database, SDMMP's MSP Species Master Occurrence Matrix databases, USFWS Regss locations of sensitive species sightings database, and USFWS sensitive species (polygons). The County Preserves layer was overlaid with this data to determine MSCP covered species within the County Preserves. RMPs and baseline reports for County Preserves were reviewed for additional MSCP covered species that may have

been missing from the GIS data. If GIS data or document review indicated an MSCP covered species was present in a County Preserve, it was determined to be documented in a County Preserve. The results were provided by MSCP covered species and by County Preserve and are summarized in **Appendix J**.

The County Preserves have documented occurrences for 46 MSCP covered species, including 24 MSCP covered plant, two MSCP covered invertebrate, two MSCP covered reptile, 16 MSCP covered bird, and two MSCP covered mammal species. Of the 30 County Preserves evaluated, 23 have documented MSCP covered species. The MSCP covered species found on County Preserves, as well as their general conservation status, can be found in **Appendix O**.

Some MSCP covered species are widespread across the County Preserves and occurrences are protected in several different locations. This allows for the protection of key regional populations in different geographical areas, supporting MSCP Subarea Plan Objective 6, "*Provide for the conservation of key regional populations of the covered species, and representation of sensitive habitats and their geographic subassociations in biologically functioning units*." The most widespread MSCP covered plant species are the coast barrel cactus and San Diego goldenstar (each documented in five County Preserves) and variegated dudleya (documented in six County Preserves). Blainville's horned lizard is documented in 16 County Preserves and Belding's orange-throated whiptail is documented in 15 County Preserves. The most widespread bird species are the southern California rufous-crowned sparrow (documented in 16 County Preserves), coastal California gnatcatcher (documented in 15 County Preserves), and Cooper's hawk, (documented in 13 County Preserves). The most widespread mammal is southern mule deer, documented in 14 County Preserves.

Other MSCP covered species are documented only in a single County Preserve. This includes Del Mar manzanita in Lusardi Creek Preserve, Otay manzanita in Otay Ranch Preserve, Otay mesa mint in Otay Ranch Preserve, San Diego thornmint in Sycamore Canyon and Goodan Ranch Preserve, ferruginous hawk and white-faced ibis in Del Dios Highlands Preserve, and Swainson's hawk in Barnett Ranch Preserve.

County Preserves conserve large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mountain lion, southern mule deer, and golden eagle. Mountain lions are documented in six County Preserves (Barnett Ranch Preserve, Boulder Oaks Preserve, Del Dios Highlands Preserve, El Capitan Preserve, Otay Ranch Preserve, and Sycamore Canyon and Goodan Ranch Preserve). Southern mule deer are documented in 14 County Preserves (Barnett Ranch Preserve, Boulder Oaks Preserve, Del Dios Highlands Preserve, El Capitan Preserve, El Monte Park, Lakeside Linkage Preserve, Lawrence and Barbara Daley Preserve, Louis A. Stelzer Preserve, Lusardi Creek Preserve, Oakoasis Preserve, Otay Ranch Preserve, Ramona Grasslands Preserve, Stoneridge Preserve, and Sycamore Canyon and Goodan Ranch Preserve). Golden eagles are documented in six County Preserves (Barnett Ranch Preserve, Del Dios Highlands Preserve, El Capitan Preserve, Otay Ranch Preserve, Ramona Grasslands Preserve, and Sycamore Canyon and Goodan Ranch Preserve). Conservation of habitat for these species contributes to MSCP Subarea Plan Objective 7, "*Conserve large, interconnected blocks of habitat that contribute to the preservation of wide-ranging species such as mule deer, golden eagle, and predators as appropriate. Special emphasis will be placed on conserving adequate foraging habitat near golden eagle nesting sites*."

CHAPTER 6
Preserve Management



County Rangers control invasive, non-native plants at Oakoasis Preserve to benefit MSCP covered species and habitats.

Preserve management within the MSCP Subarea is an important element of the MSCP Preserve success and the overall success of the MSCP Subarea Plan. The overall management goal of the MSCP Subarea Plan is to ensure that the biological value and function of natural resources are maintained or improved over time, where land is preserved as part of the MSCP through acquisition, regulation (the discretionary permit process), mitigation or other means. In conformance with IA Section 10.9, *Preserve Management*, and Section 10.10, *Preserve Management Program*, the County is responsible for managing the land it owns or acquires as well as ensuring that other private mitigation lands dedicated to the County within the MSCP Preserve are managed consistent with the MSCP Subarea Plan. This chapter summarizes the stewardship activities in County Preserves and private mitigation areas.

6.1 County Resource Management Plans

The County has a coordinated stewardship, monitoring, and adaptive management program to ensure proper management and protection of sensitive species and habitat on County Preserves. The RMPs provide a framework for long-term stewardship/management and monitoring actions required to protect biological resources on County Preserves. RMPs document biological and cultural resources on-site and provide guidance on management and preservation of the resources within County Preserves in accordance with Management Directives (MDs) pursuant to the requirements of the MSCP Subarea Plan Framework Management Plan (County 2001) and Table 3-5 of the MSCP Plan. To develop County Preserve-specific RMPs, the County conducts baseline inventory surveys that document the biological and cultural resources on the property. The County prepares RMPs for County Preserves larger than 300 acres or under 300 acres for County Preserves with unique habitat or species values. Their preparation is prioritized annually across all three MSCP Plan areas. The County has prepared or is in the process of preparing 20 RMPs in the MSCP Subarea Plan Area (**Table 13**). RMPs are updated as needed, such as when additional baseline inventory surveys are completed or there are additions to existing County Preserves. Land stewardship/management actions are generally implemented by ranger staff. RMP updates are in progress for Barnett Ranch, Boulder Oaks, and Lusardi Creek Preserves, and Tijuana River Valley Regional Park, all of which are located within the MSCP Subarea Plan boundaries. Management completed in the reporting year is summarized in Section 6.2 and **Appendix K**.

The County also conducts targeted monitoring on County Preserves to ensure species are thriving, to identify threats and stressors, and to identify appropriate adaptive management activities to further support biological and cultural resources. The monitoring is guided by the County's TMP. The TMP ensures consistency with the preserve-specific RMPs. RMPs include a framework for general stewardship management activities (including public access) and are incorporated into the TMP by reference. The TMP is an adaptive implementation plan that includes focused goals and objectives for target MSCP covered species and habitats and detailed monitoring protocols. As part of the County's monitoring program, baseline inventory surveys are conducted on newly acquired properties that are part of the County Preserve. The baseline inventory surveys are used to identify the appropriate monitoring for each property, consistent with the TMP. The TMP and monitoring results are provided in Chapter 7, *Preserve Monitoring and Research.* Adaptive management actions informed by TMP monitoring are included in Section 6.2, *Preserve Management of County Lands*.

In the reporting year, the County continued baseline inventory surveys for several MSCP Subarea Plan County Preserves. Surveys were completed in 2021 for Iron Mountain, and additions to Lakeside Linkage, Ramona Grasslands, and Sycamore Canyon and Goodan Ranch Preserves. Baseline inventory surveys were conducted in 2021 and will be completed for Skyline and Peutz Valley Preserves in 2022.

TABLE 13. RESOURCE MANAGEMENT PLANS FOR COUNTY PRESERVES

County Preserve	Baseline inventory surveys Completed	RMP Completed	RMP Revisions
1. Barnett Ranch Preserve	2001-2003, 2018	2004	In Progress
Holly Oaks Preserve[a]	2018	In Progress	
Luelf Pond Preserve[a]	2018	In Progress	
2. Boulder Oaks Preserve	2007, 2013	2008	In Progress
3. Del Dios Highlands Preserve[b]	2008-2011	2011	
4. Dictionary Hill Preserve	2020	In Progress	
5. El Capitan Preserve	2008	2009	
6. El Monte Park	2008	2009	
7. Furby-North Property	2011	2012	
8. Iron Mountain Preserve	In Progress		
9. Lakeside Linkage Preserve	2008, In Progress	2010	
10. Lawrence and Barbara Daley Preserve	2009-2010	2011	
11. Lusardi Creek Preserve	2008, 2018	2009	In Progress
12. Otay Ranch Preserve	1989-1991	2002	2018
13. Oakoasis Preserve	2008	2009	
14. Peutz Valley Preserve	In Progress		
15. Ramona Grasslands Preserve[b]	2009, In Progress	2013	In Progress
16. Louis A. Stelzer Park	2008	2009	
17. Skyline Preserve	In Progress		
18. Stoneridge Preserve	2012	2013	
19. Sycamore Canyon and Goodan Ranch Preserve	2008, 2016, In Progress	2013	
20. Tijuana River Valley Regional Park	2018	2007	In Progress

NOTES:
[a] Barnett Ranch, Holly Oaks, and Luelf Pond Preserves will be managed under a single RMP as Holly Oaks and Luelf Pond Preserves are part of Barnett Ranch Preserve.
[b] Ramona Grasslands and Del Dios Highlands Preserves span the MSCP Subarea Plan Area and draft North County MSCP Plan Area. They are included here because they are managed as a single unit.

SOURCE: County of San Diego Department of Parks and Recreation

6.2 Preserve Management of County Preserves

Preserve management benefits the 46 MSCP covered species found across County Preserves. Stewardship and adaptive management activities performed in 2021 on County Preserves guided by TMP, annual work plans, and RMPs are described below and summarized in **Appendix K**. For each park or preserve, its size (first in Assessor's acreage and then in GIS acreage), and MSCP segment are provided. Assessor's and GIS acreages are both reported as the County acquires all real estate transactions in Assessor's acreage,

while HabiTrak, the tracking database used to track MSCP Preserve assemblage, only utilizes GIS acreage. The two acreages can differentiate as Assessor's records of the legal acreage of parcels are plotted on paper and then converted into GIS. For these reasons, acreage in the following section will be reported as Assessor's acreage and GIS acreage for each park or preserve.

All parks and preserves discussed in this section are located with the MSCP Subarea Plan Area or are located in a partnering MSCP Subarea Plan Area and are counted towards the County's MSCP Preserve assemblage. All County Preserves that are owned or managed by DPR within the MSCP Subarea Plan are discussed in the following section of the report to record the management actions implemented to ensure that the preserve lands within the MSCP Subarea Plan are successfully managed and the MSCP habitats and covered species thrive. It will be noted if a property is not counted towards the MSCP Preserve. County Preserves spanning multiple MSCP Plan areas or ownerships are acknowledged. MSCP covered species, other sensitive species, and habitats benefited by preserve management activities are identified. The following categories are used to link management actions to TMPs, annual work plans, and RMPs.

- **Habitat restoration and management** actions are habitat or species-specific. These actions are guided by the documents outlining adaptive management strategies such as the preserve-specific RMPs and annual work plans as well as by survey information resulting from the implementation of the TMP, baseline surveys, research partner surveys, and other environmental surveys performed on County Preserves. As a standard management practice, dead or dying trees in the County Preserves are replaced with habitat appropriate native tree species that include coast live oak, Engelmann oak, sycamore, cottonwood, and arroyo willow, among other species. Replacement of dead or dying trees benefits MSCP covered species by providing habitat for nesting birds and cover for foraging amphibians. Cause of death of the trees on County Preserves is most commonly attributed to drought conditions, old age or disease. Native shrub species commonly used in restoration projects include native cacti, lemonade berry, laurel sumac, monkey flower, and Mexican elderberry. However, specific tree and shrub species will not be listed for every County Preserve in this section.

- **Invasive, non-native plant and animal control** implements MD A.3. *Reduce, control, or where feasible eradicate invasive, non-native fauna known to be detrimental to native species and/or the local ecosystem*, MD B.2. *Reduce, control, or eradicate non-native flora known to be detrimental to native species and local ecosystem*, and B.3. *Manage and minimize the expansion of invasive, non-native flora within the Preserve*, and corresponding sub-directives. Invasive, non-native plant species treatment and removal is also conducted on County Preserves and the targeted plant species may not be specified but would most likely include mustard and non-native annual grasses, among other species.

- **Access control** implements MD C.1. *Limit types of public uses to those appropriate for the Preserve*, C.2. *Manage public access in sensitive biological and cultural resource areas within the Preserve*, C.5. *Install and maintain fencing and gates within the Preserve,* C.6. *Properly maintain access roads, staging areas and trails for user safety, to protect natural and cultural resources, and to provide high-quality user experiences*, C.7. *Install, and maintain appropriate signage to effectively communicate important information to Preserve visitors*, D.1. *Maintain a safe and healthy environment for Preserve users*, and D.2. *Publicize and enforce regulations regarding littering/dumping*, and corresponding sub-directives. The mission of the County is to enhance the quality of life in San Diego County by providing exceptional parks and recreation experiences and preserving significant natural resources. Activities that address unauthorized access or implement access control measures to protect sensitive resources are described under this heading.

- **Fire management** implements MD B.4. *Provide for fire management activities that are sensitive to natural and cultural resources* and corresponding sub-directives.

- **Environmental education** implements MD C.3. *Provide interpretive and educational materials* and corresponding sub-directives.



Planting coast live oaks and Engelmann oaks at Barnett Ranch Preserve.

Barnett Ranch Preserve

Preserve Total Acreage: 708 Assessor's acres, 745 GIS acres
MSCP Subarea Plan: 690 Assessor's acres, 668 GIS acres
Segment: Metro-Lakeside-Jamul
Draft North County MSCP: 18 Assessor's acres, 77 GIS acres

Management benefits the 10 MSCP covered species known to occur on or utilizing the Preserve, which are Belding's orange-throated whiptail, Blainville's horned lizard, Cooper's hawk, tricolored blackbird, golden eagle, southern California rufous-crowned sparrow, Swainson's hawk, western bluebird, southern mule deer, and mountain lion. Management actions included the following.

- **Habitat restoration and management**. Native tree and shrub planting remains a top priority at the Preserve. A total of 13 coast live oaks, 46 Engelmann oaks, and five cottonwood trees were planted by County Park Rangers. Several native plant shrub species were also planted, including ten toyon, California broom, and white sage plants. Maintenance included trucking in water to establish the new plants at each restoration site.

- **Invasive, non-native plant control**. Invasive, non-native plant removal efforts included hand-pulling, string trimmers, and herbicide across six acres. Target species included goats head, Russian thistle, mustard, and milk thistle.

- **Access control**. County Park Rangers installed two new sensitive habitat and trail signs along the trails to prevent unauthorized trail use and illegal dumping of trash. One solar gate was also repaired at the Preserve. Daily patrols to stop trash dumping and littering within the staging area continued.

- **Fire management**. County Park Rangers maintained an existing three-acre firebreak, close to residential property, using mowers and string trimmers along Deviney Road.

- **Environmental education**. County Park Rangers hosted multiple discovery tables and docent tours, which attracted 97 visitors.



County Park Ranger hosted multiple discovery booths at Barnett Ranch Preserve.

Boulder Oaks Preserve

Preserve Total Acreage: 1,964 Assessor's acres, 2,022 GIS acres
MSCP Subarea Plan: 1,964 Assessor's acres, 2,022 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the 12 MSCP covered species known to occur on the Preserve, which are felt-leaved monardella, Lakeside ceanothus, Orcutt's brodiaea, San Miguel savory, Blainville's horned lizard,

Belding's orange-throated whiptail, coastal California gnatcatcher, Cooper's hawk, southern California rufous-crowned sparrow, western bluebird, mountain lion, and southern mule deer. Management actions included the following.

- **Habitat restoration and management.** County Park Rangers planted 17 coast live oak trees and 66 Engelmann oak trees. Six dead trees were removed from the Preserve. Several native shrub plant species were also planted, including six Indian mallow, five California fuchsia, and four white sage plants. County Park Rangers also removed the cattle from the Preserve to allow the Preserve to be in a "Rest Period."

- **Invasive, non-native plant control.** Invasive, non-native plant species removal efforts included hand-pulling and intermittent herbicide application across 15 acres. Target species included black mustard, dyer's rocket, and milk thistle. This threat abatement allows for higher-quality habitats in the Preserve for all the MSCP covered species.

- **Access control**. Two new no trespassing signs were installed to prevent unauthorized access. Approximately 200 feet of ranch fencing was repaired. Game cameras were installed throughout the Preserve to monitor wildlife and unauthorized access. These cameras are monitored on a regular basis and County Park Rangers have addressed trespassers and achieved compliance through education.

- **Fire management**. County Park Rangers maintained existing firebreak along the entry road and on-site structures.

- **Environmental education**. The Preserve was closed to the public.

Damon Lane Park

Park Total Acreage: 29 Assessor's acres, 29 GIS acres
MSCP Subarea Plan: 29 acres
Segment: Metro-Lakeside-Jamul

Management benefits the MSCP habitat known to occur on the Park, which are coastal sage scrub, grasslands, and riparian forest. Management actions include the following.

- **Habitat restoration and management**. County Park Rangers planted four coast live oak trees and removed five Eucalyptus trees that were potentially hazardous to the Park's neighbors. In addition, native shrub species were planted, including five white sage, black sage, and sumac plants.

- **Invasive, non-native plant control.** Invasive, non-native plant species removal efforts included hand-pulling and cutting across two acres. Target species included castor bean and fan palms.

- **Access control**. Two new signs restricting off-road vehicles and off-leash dogs were installed. One chain link fence was repaired to prevent unauthorized access.

- **Fire management**. County Park Rangers maintained an existing firebreak via mowing and string trimmers. The areas maintained were in the northeast and southwest corners of the Park. The firebreak is adjacent to neighboring habitable structures located within 100 feet of the Park's boundaries.

Del Dios Highlands Preserve

Preserve Total Acreage: 774 Assessor's acres, 782 GIS acres
MSCP Subarea Plan: 269 Assessor's acres, 269 GIS acres
Segment: Metro-Lakeside-Jamul
Draft North County MSCP: 505 Assessor's acres, 513 GIS acres

Management benefits the 15 MSCP covered species known to occur on or utilizing the Preserve, which are Encinitas baccharis, wart-stemmed ceanothus, Belding's orange-throated whiptail, Blainville's coast horned lizard, coastal California gnatcatcher, Cooper's hawk, golden eagle, northern harrier, peregrine falcon, southern California rufous-crowned sparrow, ferruginous hawk, white-faced ibis, western bluebird, mountain lion, and southern mule deer. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 17 trees including coast live oak.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included string trimmers and hand-pulling across one acre. Target species included ox tongue, black mustard, and castor bean.

- **Fire management**. County Park Rangers maintained an existing firebreak along San Diego Gas and Electric power pole trail using string trimmers and hedgers.

Dictionary Hill Preserve

Preserve Total Acreage: 180 Assessor's acres, 177 GIS acres
MSCP Subarea Plan: 180 Assessor's acres, 177 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the eight MSCP covered species known to occur on the Preserve, which are San Diego barrel cactus, San Diego goldenstar, variegated dudleya, Blainville's horned lizard, Belding's orange-throated whiptail, coastal California gnatcatcher, Cooper's hawk, and southern California rufous-crowned sparrow. Management actions included the following.

- **Habitat restoration and management**. California coastal gnatcatcher, Quino checkerspot and monarch butterfly habitat restoration commenced in 2021 with the start of a WCB Proposition 68 grant funded project. This project will last 3 years and will help restore and enhance 4 acres of habitat on the Preserve. More information regarding this project can be found in *Section 6.3 Grant Funded Management Projects*.

- **Invasive, non-native plant control**. Invasive, non-native plant species control methods included the use of string trimmers and hand tools to treat approximately 19 acres. Target species included black mustard, savannah mustard, pampas grass and fennel.

- **Access control**. County Park Rangers installed five new signs to prevent unauthorized access, off-road vehicles, littering, and off-leash dogs.

- **Fire management**. County Park Rangers performed maintenance of the existing firebreak using string trimmers. The firebreak is located where neighboring habitable structures are located within 100 feet of the Preserve's boundaries.

- **Environmental education**. A hike, led by a County Park Ranger, was attended by a total of eight visitors who learned about the native plant and animal species that can be found on the Preserve.



Dos Picos Park visitors learned about the region's native wildlife during an educational Park event.

Dos Picos Park

Park Total Acreage: 79 Assessor's acres
MSCP Subarea Plan (not counted towards the MSCP Preserve): 79 Assessor's acres
Segment: Metro-Lakeside-Jamul

Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted five trees, including Engelmann and coast live oak. Two agave and ten sage plants of various species were also planted.

County Park Rangers removed eight trees that were either dead or damaged during a storm and potentially hazardous to the Preserve's visitors. Two new owl boxes were also installed to encourage barn owl habitation.

- **Invasive, non-native plant control**. Invasive, non-native plant species treatment and removal efforts included the use of string trimmers, mowing, and hand-pulling application across approximately 15 acres. Non-native mustard was the targeted species.

- **Access control**. County Park Rangers have continued to educate visitors in order to prevent off-trail activity, wildfires, and to protect wildlife within the Park. County Park Rangers addressed the illegal use of motorized vehicles via increased patrols. Two new directional signs were installed and one chain gate and fence was repaired.

- **Fire management**. County Park Rangers maintained a firebreak along the Park's eastern service road using string trimmers and mowers.

- **Environmental education**. County Park Rangers held multiple educational activities, including animal showing/presentations and guided hikes to approximately 700 Park visitors.



Fallen tree from 2021 rainstorm was quickly removed at Dos Picos Park.

El Capitan Preserve

Preserve Total Acreage: 2,759 Assessor's acres, 2,324 GIS acres
MSCP Subarea Plan: 2,759 Assessor's acres, 2,324 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the 11 MSCP covered species known to occur on the Preserve, which are felt-leaved monardella, Lakeside ceanothus[14], Belding's orange-throated whiptail, Blainville's coast horned lizard, Cooper's hawk, golden eagle, southern California rufous-crowned sparrow, coastal cactus wren, western bluebird, mountain lion, and southern mule deer. Management actions included the following.

- **Habitat restoration and management**. Erosion control measures continued along approximately 5.8 miles of the El Capitan Preserve Trail. Erosion and sediment control traps were cleaned out to ensure they were functioning at maximum efficiency and protecting surrounding habitat. Erosion control measures were implemented along the entrance road to minimize erosion potential and ensure that native habitat was not impacted. Extensive graffiti on large boulders was also removed.

- **Access control**. County Park Rangers have continued to educate visitors to prevent off-trail activity and littering. Thirty laminated paper signs were posted to discourage littering and approximately 40 feet of concrete wall was restored to prevent unauthorized entry. Approximately 6 miles of trail maintenance was performed by County Park staff.

- **Fire management**. County Park Rangers maintained approximately four miles existing firebreak using string trimmers and mowers.

- **Environmental education**. County Park Rangers guided "Warrior Hikes" held on Memorial Day and Veteran's Day. A total of 140 Park visitors attended. During busy days, County Park Rangers increased their presence to increase outreach efforts to help educate visitors about how to properly prepare for the Preserve's difficult trails and maximize their hiking experience.

El Monte Park

Park Total Acreage: 120 Assessor's acres, 117 GIS acres
MSCP Subarea Plan: 120 Assessor's acres, 117 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the three MSCP covered species known to occur on the Preserve, which are southern California rufous-crowned sparrow, western bluebird, and southern mule deer. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 63 trees, including Engelmann oak, coast live oak, crepe myrtle, and incense cedar. A total of 16 non-native, dead, or dangerous trees that posed a risk to public safety were removed from the Park, including coast live oak, ashwood, tamarisk, carob, and liquid amber trees. County Park Rangers also planted 50 shrub and forb species,

[14] Lakeside ceanothus is listed as Lakeside-lilac in the 1998 MSCP covered species list. It is now commonly referred to as Lakeside ceanothus.

including California broom, foothill penstemon, San Diego sunflower, California mountain lilac, and Cleveland, black, and white sages.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included hand-pulling, mowing, and herbicide application, and chainsaw use across approximately 13 acres. Target species included tree tobacco, goats head, eucalyptus, and tamarisk.

- **Access control**. Six new informational signs were installed. A total of 50 feet of new split rail fence was also installed in the Park. Additional patrols were established within the Park to prevent unauthorized access, which included the use of unauthorized trails and graffiti.

- **Fuel maintenance**. County Park Rangers maintained a firebreak on the south side of the Park and around facility structures.

- **Environmental education**. County Park Rangers held a variety of interpretive programs, including Hawk Talks and early morning birding for more than 1,000 Park visitors.

Flinn Springs Park

Park Total Acreage: 80 Assessor's acres, 73 GIS acres
MSCP Subarea Plan: 80 Assessor's acres, 73 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the MSCP covered habitats known to occur on the Park, which are chaparral, coastal sage scrub/chaparral, and oak riparian forest. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 295 trees, including Engelmann oak, coast live oak, and cottonwood. Two dead coast live oaks were removed. County Park Rangers also planted native shrub species across 30 acres, including toyon, sugar bush, and lemonade berry.

- **Invasive, non-native plant control**. Invasive, non-native plant species control efforts included hand-pulling, digging, string trimmers, and herbicide application for Mexican fan palm, castor bean, arundo, and mustard species across the Park. The Park is adjacent to Crestridge Ecological Preserve, owned by CDFW, so treatment of invasive, non-native plant species on the Park benefitted movement of animals through both properties, as well as benefitting native plant species.

- **Access control**. Nine new signs were installed to prevent off-trail activity. Erosion control measures were implemented on authorized trails and surrounding hillsides to minimize erosion potential and protect surrounding native habitat.

- **Fuel maintenance**. County Park Rangers maintained an existing firebreak along the western and southern boundary of the Park using string trimmers.

- **Environmental education**. County Park Rangers held multiple educational outreach events, including nature hikes, as well as nature interpretation/tree planting. Approximately 400 Park visitors participated in these events. New partnerships with afterschool programs in underserved communities of San Diego County have been successful.



A County Park Ranger led interpretive hike educated Flinn Springs Park visitors about the region's native plant and animal species.

Furby-North Property

Property Total Acreage: 83 Assessor's acres, 79 GIS acres
City of San Diego MHPA: 83 Assessor's acres, 79 GIS acres

Management benefits the 10 MSCP covered species known to occur on the Property, which are coast (San Diego barrel) cactus, Otay tarplant, snake cholla, Belding's orange-throated whiptail, Blainville's coast horned lizard, coastal cactus wren,[15] coastal California gnatcatcher, least Bell's vireo, northern harrier, and southern California rufous-crowned sparrow. Management actions included the following.

- **Access control**. County Park Rangers patrolled weekly, added new enforcement signs, repaired existing enforcement signs, and added large boulders to block unauthorized vehicles.

- **Fuel maintenance**. County Park Rangers maintained an existing firebreak using string trimmers.

[15] The MSCP Subarea Plan lists the San Diego cactus wren as an MSCP covered species. At the time of adoption of the MSCP Subarea Plan, the San Diego cactus wren was identified as a sub-species of the coastal cactus wren. This is no longer the case. The San Diego cactus wren is now commonly known as the coastal cactus wren and is an MSCP covered species.

Holly Oaks Preserve

Preserve Total Acreage: 40 Assessor's acres, 42 GIS acres
MSCP Subarea Plan: 40 Assessor's acres, 42 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the four MSCP covered species known to occur in the Park, which are Cooper's hawk, Swainson's hawk, tri-colored blackbird, and western bluebird. Management actions included the following.

- **Invasive, non-native plant control**. Invasive, non-native plant species control efforts included hand-pulling across approximately eight acres. Target species included black mustard and goat-head.

- **Access control**. Approximately 100 feet of three rail ranch fences were repaired to ensure that Preserve visitors remained on the authorized trail. Unleashed dogs were a recurring issue in the Preserve. County Park Rangers contacted individuals and gained voluntary compliance in addition to installing signage as a deterrence for dogs off-leash.

- **Fuel maintenance**. County Park Rangers maintained an existing firebreak along the access roads and staging area.





Goatshead, or puncture vine, is a non-native, invasive plant species that was removed by County Park Rangers on Holly Oaks Preserve.

Iron Mountain Preserve

Preserve Total Acreage: 160 Assessor's acres, 162 GIS acres
MSCP Subarea Plan: 160 Assessor's acres, 162 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the seven MSCP covered species known to occur on the Preserve, which are heart-leaved pitcher sage, Belding's orange-throated whiptail, Blainville's horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, mountain lion, and southern mule deer. MSCP covered habitats known to occur in the Preserve, which include chaparral, also benefit from management. Management actions included the following.

- **Invasive, non-native plant control**. Invasive, non-native plant species control efforts included hand-pulling and herbicide application for black mustard.

- **Access control**. Park Rangers patrolled and did not observe any signs of unauthorized access or activities.

Lakeside Linkage Preserve

Preserve Total Acreage: 210 Assessor's acres, 209 GIS acres
MSCP Subarea Plan: 210 Assessor's acres, GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the eight MSCP covered species known to occur on the Preserve, which are Belding's orange-throated whiptail, Blainville's horned lizard, coastal cactus wren, coastal California gnatcatcher, Cooper's hawk, southern California rufous-crowned sparrow, western bluebird, and southern mule deer. Other species and habitats targeted by management actions are Hermes copper butterfly and Diegan coastal sage scrub. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers removed 18 trees that were potentially hazardous to the Preserve's visitors, dead, or were non-native species. The *Lakeside Linkage Preserve Cactus Wren and Hermes Copper Butterfly Habitat Restoration* project, implemented in 2019, continued in 2021 with implementation activities to restore and enhance two acres of coastal cactus wren habitat and two acres of Hermes copper butterfly habitat. The project is funded by a WCB 2019 Proposition 68 grant. In 2021, maintenance activities of the project included invasive, non-native plant species control efforts to ensure invasive non-native plant cover across the properties was 10% or lower. Maintenance activities will continue into 2022 to ensure the successful restoration and enhancement of habitat for coastal cactus wren and Hermes copper butterfly. More information regarding this project can be found in *Section 6.3 Grant Funded Management Projects*.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included hand-pulling, mowing, and intermittent herbicide usage across approximately 0.5 acres. Target species included castor bean and thistle.

- **Access control**. County Park Rangers installed two new restriction signs to prevent unauthorized vehicle activity. Littering has been noted in the Preserve debris and debris from illegal trash dumping was removed.

- **Fire management**. County Park Rangers maintained existing firebreaks within the Preserve. The firebreaks are located where neighboring habitable structures are located within 100 feet of the Preserve's boundaries.

- **Environmental education**. County Park Rangers held an educational outreach event on native pollinator species which was attended by 25 people.

Lawrence and Barbara Daley Preserve

Preserve Total Acreage: 604 Assessor's acres, 581 GIS acres
MSCP Subarea Plan: 604 Assessor's acres, 581 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the eight MSCP covered species known to occur on the Preserve, which are Palmer's goldenbush, Blainville's horned lizard, Belding's orange-throated whiptail, Cooper's hawk northern harrier, southern California rufous-crowned sparrow, western bluebird, and southern mule deer. Additional species and habitats benefited are nesting habitat for great horned owl. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 80 coast live oak trees. County Park Rangers removed three potentially hazardous Sycamore trees.

- **Invasive, non-native plant and insect control**. Invasive, non-native plant species efforts included hand-pulling and mowers across approximately four acres. The target invasive, non-native species was black mustard.

- **Access control**. County Park Rangers installed two new signs to prevent unauthorized trail activity and regularly patrolled the Preserve to ensure there was no unauthorized access.

- **Fire management**. County Park Rangers maintained an existing firebreak along the perimeter.

Los Peñasquitos Canyon Preserve

Preserve Total Acreage: 277 Assessor's acres, 266 GIS acres
City of San Diego MHPA: 277 Assessor's acres, 266 GIS acres

Management benefits the four MSCP covered species known to occur on the Preserve, which are San Diego goldenstar, Orcutt's brodiaea, San Diego button-celery, and least Bell's vireo. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 54 trees, including coast live and Engelmann oak, California sycamore, cottonwood, and arroyo willow. Native shrub species were also planted and included lemonade berry, laurel sumac, and toyon. County Park Rangers removed seven trees that were dead or potentially hazardous to Preserve visitors.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included mowers and hand tools across approximately 31 acres. Target species included black mustard, common fennel, Russian thistle, and stinkwort.

- **Access control**. County Park Rangers installed signage and continued to patrol the Preserve to prevent littering and minimize unauthorized access to Los Peñasquitos Creek. County Park Rangers also cleaned up trash from homeless encampments. Trails damaged by winter storms were also repaired and rebuilt.

- **Fire management**. County Park Rangers maintained an existing firebreak on the south rim of the canyon.

Louis A. Stelzer Park

Park Total Acreage: 373 Assessor's acres, 368 GIS acres
MSCP Subarea Plan: 373 Assessor's acres, 368 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the eight MSCP covered species known to occur on the Park, which are Lakeside ceanothus, San Diego goldenstar, Belding's orange-throated whiptail, Blainville's horned lizard, northern harrier, southern California rufous-crowned sparrow, coastal California gnatcatcher, and southern mule deer. Management actions included the following.

- **Habitat restoration and management**. County Park Ranger planted four trees, including coast live and Engelmann oaks. County Park Rangers removed one dead tree that was potentially hazardous to Preserve visitors.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included hand-pulling, intermittent herbicide usage, and string trimmers across approximately four acres. Target species included black mustard.

- **Access control**. County Park Rangers replaced ten signs restricting unauthorized access into the Park during closed hours and to prevent illegal trash dumping. Erosion control measures were implemented along areas of trails that were being impacted to minimize potential of erosion.

- **Fire management**. County Park Rangers maintained an existing firebreak along the Park's perimeter.

- **Environmental education**. One Discovery Program hike was held at the Park with 210 attendees.

Luelf Pond Preserve

Preserve Total Acreage: 87 Assessor's acres, 87 GIS acres
MSCP Subarea Plan: 87 Assessor's acres, 87 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the six MSCP covered species known to occur on or utilizing the Preserve, which are Blainville's horned lizard, Cooper's hawk, golden eagle, western bluebird, southern mule deer, and mountain lion. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers removed one tree that was potentially hazardous to the Preserve's visitors.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included shoveling, hand-pulling, and using string trimmers across approximately one acre. Target species included tree tobacco and black mustard.

- **Fire management**. County Park Rangers maintained an existing firebreak along Duck Pond Lane.

Lusardi Creek Preserve

Preserve Total Acreage: 224 Assessor's acres, 226 GIS acres
MSCP Subarea Plan: 224 Assessor's acres, 226 GIS acres
Segment: Lake Hodges

Management benefits the 11 MSCP covered species known to occur on the Preserve, which are coast barrel cactus, Del Mar manzanita, variegated dudleya, Belding's orange-throated whiptail, Blainville's horned lizard, coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, northern harrier, southern California rufous-crowned sparrow, and southern mule deer. Management actions included the following.

- **Access control**. County Park Rangers repaired two signs restricting off-road activity and illegal trash dumping. Unauthorized access was noted at Rio Vista Gate, so County Park Rangers installed boulders to deter off-road activity. Trash heaps were identified and removed near Artesian Gate.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included using string trimmers across approximately four acres. Target species included giant reed and black mustard.

- **Fire management**. County Park Rangers maintained existing firebreaks in the Preserve.

Oakoasis Preserve

Preserve Total Acreage: 436 Assessor's acres, 442 GIS acres
MSCP Subarea Plan: 436 Assessor's acres, 442 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the six MSCP covered species known to occur on the Preserve, which are Lakeside ceanothus, Blainville's horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, western bluebird, and southern mule deer. Management actions included the following.

- **Habitat restoration and management**. As part of on-going efforts to maintain habitat and augment the oak tree population in the Preserve, 14 trees were planted, including coast live oak and Engelmann oak trees.

- **Invasive, non-native plant control**. Invasive, non-native plant species control included the use of hand-pulling, hand tools, string trimmers, and herbicide across approximately six acres. Target species included stinkwort, black mustard, and poison oak.

- **Access control**. County Park Rangers continued to patrol the Preserve multiple times a day to prevent illegal trash dumping and unauthorized parking along the entrance road. Habitat restoration signs were also installed at trail entrances to inform Park visitors of the importance of staying on authorized trails.

- **Fire management**. County Park Rangers maintained existing firebreaks using string trimmers around County Park Ranger residences and volunteer pads.

- **Environmental education**. Environmental education programs included a virtual star party led by San Diego Astronomy Association for 480 visitors.



Educational signs are often used at County Preserves to inform visitors of actions taken at habitat restoration areas.

Old Ironsides County Park

Park Total Acreage: 4 Assessor's acres, 4 GIS acres
MSCP Subarea Plan: 4 Assessor's acres, 4 GIS acres
Segment: Metro-Lakeside-Jamul and PAMA

Management benefits the MSCP covered habitat known to occur in the Park, which is oak riparian forest. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted seven trees, including coast live. County Park Rangers removed five trees that were dead or potentially hazardous to Park's visitors.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included the use of hand tools and hand-pulling across two acres. Target species included fan palm and castor bean.
- **Access control**. County Park Rangers installed two signs to help prevent unauthorized access.
- **Fire management**. County Park Rangers maintained existing firebreaks using string trimmers.

Otay Lakes Park

Park Total Acreage: 79 Assessor's acres, 87 GIS acres
MSCP Subarea Plan: 79 Assessor's acres, 87 GIS acres
Segment: South County

Management benefits the two MSCP covered species known to occur on the Park, which are variegated dudleya and Otay mesa mint. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 10 trees, including coast live and Engelmann oaks.
- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included the use of hand tools and hand-pulling across approximately 18 acres. Target species included black mustard and Russian thistle.
- **Fire management**. County Park Rangers maintained existing firebreaks using string trimmers.
- **Environmental education**. Environmental outreach efforts included five County Park Ranger-led nature hikes, which were attended by 82 participants.

Otay Ranch Preserve (Otay Ranch POM)

Preserve Total Acreage: 3,973 Assessor's acres, 4,707 GIS acres
MSCP Subarea Plan: 3,973 Assessor's acres, 4,707 GIS acres
Segment: City of Chula Vista and South County

The County and City of Chula Vista work jointly as the Otay Ranch POM and are responsible for implementing the Otay Ranch Phase 2 Resource Management Plan Update (RMP; RECON 2018) management and monitoring strategies within the 4,370-acre Otay Ranch Preserve. The management and monitoring of the Otay Ranch Preserve is funded through the collection of assessments from Community Facility District 97-2, administered by the City of Chula Vista. In 2021, preserve monitoring and operations/maintenance tasks were implemented by the Preserve Steward/Biologist (RECON Environmental Inc.) in consultation with the Otay Ranch POM. Regular coordination meetings occurred during 2021 to track progress of MSCP management and monitoring. Habitat maintenance activities were performed to control weeds and enhance habitat for sensitive species, including coastal cactus wren, Otay tarplant habitat, and vernal pools. All work summarized in this report is detailed in the 2021 Annual Report for the Otay Ranch Preserve and can be found in **Appendix N**.

Management benefits the 32 MSCP covered species known to occur on the Preserve, which include 17 plant, two invertebrate, two reptile, nine bird, and two mammal species. The MSCP covered species on the Preserve are Otay manzanita, San Diego golden star, Orcutt's brodiaea, Dunn's mariposa lily, San Miguel savory, snake cholla, Otay tarplant, variegated dudleya, Palmer's goldenbush, San Diego button-celery, coast barrel cactus, Tecate cypress, heart-leafed pitcher sage, Gander's pitcher sage, felt-leaved monardella, willowy monardella, spreading navarretia, Otay mesa mint, San Diego fairy shrimp, Thorne's hairstreak butterfly, Belding's orange-throated whiptail, Blainville's horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, golden eagle, burrowing owl, coastal cactus wren, northern harrier, peregrine falcon, coastal California gnatcatcher, least Bell's vireo, mountain lion, and southern mule deer. Habitats, such as maritime succulent scrub, freshwater marsh, and coastal sage scrub were enhanced. Management actions included the following.

- **Habitat restoration and management.** Regularly scheduled site visits were conducted to document access issues, sensitive species, newly detected species, invasive plants, and the overall health of the sites.

- **Invasive, non-native plant control and habitat enhancement.** The invasive, non-native plant species treated were short-pod mustard, tocalote, stinkwort, oats, hyssop loosestrife, annual beard grass, and Boccone's sand-spurrey. In addition, shrubs were selectively thinned and removed from existing coast cholla patches to increase available coastal cactus wren habitat. The primary shrub removed via hand tools and trimmers during shrub thinning activities was lemonade berry.

- **Access control.** Access management efforts included the installation of signage and fences to prevent illegal access and block unauthorized trails, as well as coordinating with United States Border Patrol and adjacent land managers. Fencing at Jamul Mountains, Dulzura, Salt Creek, and Western Wolf Canyon parcels were installed and/or repaired several times on a nearly-weekly basis after they were vandalized by trespassers. Signs were installed and replaced at Jamul Mountains, Salt Creek, and San Ysidro parcels.

Additional management and monitoring efforts conducted on Otay Ranch Preserve are reported in the 2021 Otay Ranch Preserve Annual Report (**Appendix N**).

Otay Valley Regional Park

Park Total Acreage: 442 Assessor's acres, 432 GIS acres
MSCP Subarea Plan: 442 Assessor's acres, 432 GIS acres
Segment: South County

Management benefits the seven MSCP covered species known to occur on the Preserve, which are Otay tarplant, Orcutt's bird's beak, variegated dudleya, San Diego button-celery, coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo. Habitats, such as maritime succulent scrub, freshwater marsh, and coastal sage scrub were enhanced by removing non-native plant species. Management actions included the following.

- **Invasive, non-native plant control**. Invasive, non-native plant removal efforts included hand pulling and using string trimmers across approximately six acres. Target species included chrysanthemums and black mustard.

- **Access control**. County Park Rangers installed 15 "no off-roading" signs and increased weekly patrols to prevent unauthorized use of motorized vehicles.

- **Environmental education**. Environmental outreach efforts included a County Park Ranger-led nature hike, which was attended by 15 participants.

Additional management and monitoring efforts conducted by the City of San Diego are reported in the City of San Diego MSCP Annual Report.[16]

Peutz Valley Preserve

Park Total Acreage: 240 Assessor's acres, 255 GIS acres
MSCP Subarea Plan: 240 Assessor's acres, 255 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the seven MSCP covered species known to occur on the Preserve, which are Belding's orange throated whiptail, Blainville's horned lizard, American peregrine falcon, southern California rufous-crowned sparrow, western bluebird, southern mule deer, and mountain lion. Management also benefits the habitat found on the Preserve including southern riparian woodland, coastal sage scrub-chaparral transition, and southern mixed chaparral. Management actions, performed by the SDRPF and County Park Rangers, included the following.

- **Invasive, non-native plant control**. Invasive, non-native plants were documented and mapped as part of the baseline inventory surveys. These surveys will guide SDRPF and County Park Rangers' efforts to treat the invasive, non-native plant species on the Preserve in the next reporting period.

- **Access control**. Patrols on the Preserve documented no unauthorized access on the Preserve.

Ramona Grasslands Preserve

Preserve Total Acreage: 3,639 Assessor's acres, 3,635 GIS acres
MSCP Subarea Plan: 804 Assessor's acres, 558 GIS acres
Segment: Metro-Lakeside-Jamul
Draft North County MSCP: 2,835 Assessor's acres, 3,077 GIS acres

Management benefits the four MSCP covered species known to occur on the MSCP Subarea Plan Area portion of the Preserve, which are Belding's orange-throated whiptail, Blainville's horned lizard, golden eagle, and southern mule deer. Within the draft North County MSCP Plan area on the Preserve, several MSCP Subarea Plan covered species can be found and include Engelmann oak, San Diego thornmint, spreading navarretia, San Diego fairy shrimp, arroyo toad, southwestern pond turtle, western spadefoot toad, western burrowing owl, grasshopper sparrow, tri-colored blackbird, Cooper's hawk, Canada goose,

[16] City of San Diego MSCP Annual Reports can be accessed here: https://www.sandiego.gov/planning/programs/mscp/docsmaps/annualreport

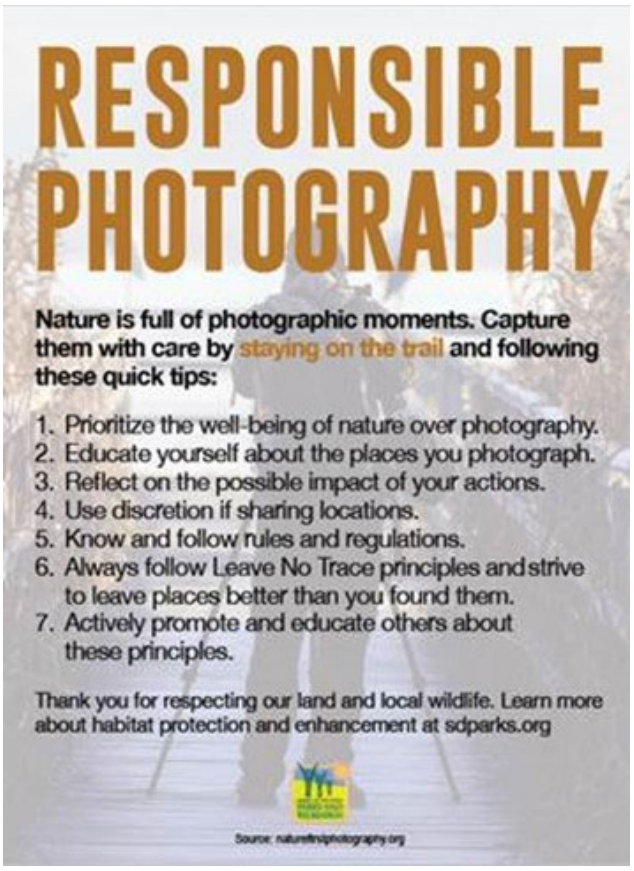
ferruginous hawk, northern harrier, peregrine falcon, long-billed curlew, white-faced ibis, western bluebird, coastal California gnatcatcher, southern mule deer, pallid bat, and Townsend's big-eared bat. Other species and habitats targeted by management actions are Diegan coastal sage scrub, riparian, non-native grassland, and Stephens' kangaroo rat. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers removed one dead coast live oak tree that was potentially hazardous to the Preserve's visitors. The existing grazing lease reduces invasive, non-native plant cover and ensures that suitable habitat is available to sensitive species, including the Stephens' kangaroo rat.

- **Invasive, non-native plant control**. County Park Rangers coordinated with the County of San Diego Department of Agriculture, Weights and Measures to strategically treat and remove milk thistle, artichoke, and tamarisk. County Park Rangers' invasive, non-native plant species removal efforts included hand-pulling, shoveling, and intermittent herbicide usage across approximately 17 acres. Target species included tree tobacco, tamarisk, Russian thistle, milk thistle, and artichoke thistle. Herbicides were not used within vernal pool basins or within 10 feet of basin margins.

- **Access control**. A total of 20 new signs were installed to prevent illegal parking and unauthorized trail use. County Park Rangers installed two metal gates and repaired 150 feet of wooden fence to help protect the Preserve's natural resources and prevent unauthorized vehicle activity. Additional game cameras were installed and maintained to better monitor unauthorized activity. The County created and implemented a "Responsible Photography" campaign at the Preserve to help encourage photographers and groups to stay on existing trails. This campaign included educational signs at trail heads to outline how to practice responsible photography and why it is important to stay on trails. In addition, maps of authorized trails for optimal photography opportunities were posted at the trailheads. County Park Rangers also increased patrols within the Preserve to help photographers locate ideal spots on the trail for conducting photography sessions (which were being used for holiday cards, graduation announcements, etc.).

  As a measure to protect the golden eagles nesting adjacent to the Preserve, a seasonal trail allows restricted access only during the non-breeding season (August through November). This trail is closed during the rest of the year. Trail use is also restricted to 50 users per day, 2 days a week and a permit is required to access the trail. However, on average, 27 trail users attended per day the trail was open. A total of 619 hikers, 98 equestrians, and 32 mountain bikers accessed the trail, with a total user increase of 54 individuals compared to 2020. Users must watch an online video that provides educational outreach regarding the nearby golden eagle nest and other sensitive species and take a survey prior to receiving the permit. The golden eagle pair nested and a single golden eaglet successfully fledged in early 2021.





A "Responsible Photography" campaign, including educational signs, maps, and increased County Park Ranger patrols, was implemented at Ramona Grasslands Preserve to encourage Preserve visitors to remain on authorized trails while taking the perfect photo.

- **Fire management**. County Park Rangers maintained existing firebreaks along the Preserve's border with adjacent residences and approximately 1.5 miles of firebreak along roads within the Highland Hills community.

- **Environmental education**. Environmental outreach efforts included County Park Rangers staffing nature touch table events, one trails discovery event, one interactive hawk event, and one story trails event. Discovery tables were manned by County Park Rangers every Saturday and Sunday, between August 15 and November 15, 2021, at the Old Survey Road 97 trailhead. These Discovery Tables were visited by almost 750 visitors. Hawktober is DPR's month-long celebration (held in October) of the region's raptors. An outdoor Hawktober workshop was held that allowed visitors to meet a ferruginous hawk, great horned owl, and American kestrel. Visitors also learned about raptor's life history characteristics (where they live, what they eat, and how they hunt). Almost 1,200 visitors were reached by the County Park Ranger's environmental outreach efforts at the Preserve.



Ramona Grassland Preserve visitors met local raptors, including hawks and owls, at a Hawktober workshop and learned of their importance in the ecosystem and to the Preserve.

Skyline Preserve

Preserve Total Acreage: 267 Assessor's acres, 261 GIS acres
MSCP Subarea Plan: 267 Assessor's acres, 261 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits MSCP covered species currently known to occur on the Preserve, which are Belding's orange-throated whiptail, Blainville's coast horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, northern harrier, and golden eagle. Other species and habitats targeted by management actions are Diegan coastal sage scrub, southern mixed chaparral, chamise chaparral, and Engelmann oak woodland. Management actions, performed by the Environmental Habitat Conservancy (EHC) and County Park Rangers, included the following.

- **Invasive, non-native plant control**. Invasive, non-native plants were documented and mapped as part of the baseline inventory surveys. These surveys will guide EHC and County Park Rangers' efforts to treat the invasive, non-native plant species on the Preserve in the next reporting periods.

- **Access control**. County Park Rangers installed a gate to access the Preserve from the adjacent private property to the west of the Preserve. This gate, with legal access through the private property, is the main access point for the Preserve.

- **Fire management**. EHC maintained an existing fire break along the Preserve's boundary where habitable structures on adjacent properties were within 100 ft of the Preserve.

Stoneridge Preserve

Preserve Total Acreage: 245 Assessor's acres, 245 GIS acres
MSCP Subarea Plan: 245 Assessor's acres, 245 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the seven MSCP covered species known to occur on the Preserve, which are Belding's orange-throated whiptail, Blainville's coast horned lizard, coastal California gnatcatcher, Cooper's hawk, southern California rufous-crowned sparrow, western bluebird, and southern mule deer. Other species and habitats targeted by management actions are Diegan coastal sage scrub and southern mixed chaparral. Management actions included the following.

- **Habitat restoration and management**. Regular patrolling of the Preserve by County Park staff ensured that any illegal trash dump sites were quickly cleaned up and native habitat was not impacted.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included the use of string trimmers and hand-pulling across approximately one acre. Target species included black mustard, ice plant, non-native grasses, and Russian thistle.

- **Access control**. County Park Rangers replaced three signs restricting illegal trash dumping and placed rocks at entry points to prevent off-road activity.

- **Fire management**. County Park Rangers maintained an existing firebreak using string trimmers around facility structures on Kelley Drive.

Sweetwater Regional Park

Park Total Acreage: 489 Assessor's acres, 490 GIS acres
MSCP Subarea Plan: 489 Assessor's acres, 490 GIS acres
Segment: South County

Management benefits the three MSCP covered species known to occur on the Park, which are coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo. Other species and habitats targeted by management actions are riparian and aquatic. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 17 trees, including coast live oak. County Park Rangers removed three dead trees that were potentially hazardous to the Park's visitors. At Morrison Pond, within the Sweetwater Regional Park, the County was awarded a WCB Proposition 68 grant in 2020 to restore over three acres of coastal sage scrub habitat for coastal California gnatcatcher and coastal cactus wren as well as 19 acres of riparian and adjacent upland habitat around the pond. The restoration of riparian habitat will enhance existing nesting habitat for least Bell's vireo. More information regarding this project can be found in *Section 6.3 Grant Funded Management Projects*.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included the use of hand tools and hand-pulling across approximately one acre. Target species included bristly oxtongue, tree tobacco, and castor bean.

- **Access control**. County Park Rangers increased patrols in order to prevent vandalism, theft, dumping, and unauthorized camping and parking. County Park Rangers placed rocks at entry points to prevent off-road activity.

- **Fire management**. County Park Rangers maintained an existing firebreak using mowers and hand tools.

- **Environmental education**. Environmental outreach efforts included County Park Rangers leading two nature hikes and a nature bingo event, which were attended by 44 visitors.

Sycamore Canyon and Goodan Ranch Preserve

Preserve Total Acreage: 2,847 Assessor's acres, 2,931 GIS acres
MSCP Subarea Plan: 2,847 Assessor's acres, 2,931 GIS acres
Segment: Metro-Lakeside-Jamul

Management benefits the 15 MSCP covered species known to occur on the Preserve, which are San Diego thorn-mint, San Diego goldenstar, variegated dudleya, willowy monardella, Belding's orange-throated whiptail, Blainville's horned lizard, burrowing owl, coastal California gnatcatcher, Cooper's hawk, golden eagle, northern harrier, southern California rufous-crowned sparrow, western bluebird, mountain lion, and southern mule deer. Other habitats targeted by management actions are southern coast live oak riparian forest, coast live oak woodland, and southern mixed chaparral. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 270 trees, including coast live oak, Engelmann oak, and California sycamore. County Park Rangers also planted 275 shrubs, including toyon, lemonade berry, laurel sumac, sugar bush, and white sage. County Park Rangers removed eight trees that were non-native species. In areas where unauthorized trails appeared, once the unauthorized trails were closed, fencing (including T-posts and wire, concrete, and lodgepole fencing) and "Sensitive Habitat" signs were installed to prevent unauthorized trail usage as well as inform Preserve visitors of the impacts that unauthorized trails have in native and sensitive habitats. Regular patrolling of the park by County Park staff ensured that any illegal trash dump sites were quickly cleaned up and native habitat was not impacted.

  The *Sycamore Canyon and Goodan Ranch Preserve Targeted Non-Native Plant Treatment* project was funded by a SDRC Proposition 1 grant and will enhance 32 acres of riparian habitat along Sycamore Canyon Creek through implementation of invasive, non-native plant control methods. In 2021, the grant term was extended to June 2022 to utilize all grant funds. Riparian habitat along Sycamore Canyon Creek, which has been impacted by mature eucalyptus trees, stands of tamarisk, and pampas grass among other invasive, non-native plants, supports several MSCP covered species including Belding's orange-throated whiptail, northern harrier, and Cooper's hawk. In 2021, invasive species were treated and removed. More information regarding this project can be found in *Section 6.3 Grant Funded Management Projects*.

- **Species specific management**. Western spadefoot toadlets (California Species of Special Concern and County of San Diego Group II species) were observed along Martha's Grove Trail and Cardiac Hill Trail, in 2020. As part of the County's adaptive management strategies, in 2020, informational signs were created and installed and informational flyers were developed to increase educational outreach for Preserve visitors. The signs and flyers included information about western spadefoot, where they were found on the Preserve, and included information on how to protect the species. In addition to raising awareness of the western spadefoot on the Preserve, adaptive management strategies included preparing to install silt fencing in future years along trails where spadefoot toadlets are observed. Any adults or toadlets that are found near or on trails will be moved, by qualified biologists, to the non-trail side of the fencing in order to protect western spadefoot individuals. The County has coordinated with CDFW on all planned measures to protect the species. If toads or toadlets were observed along any trails in 2021, DPR had biological consultants on stand-by to monitor and relocate toads or toadlets outside of the trails while silt fencing was installed.

- **Invasive, non-native plant control**. Invasive, non-native plant species removal efforts included intermittent herbicide usage, hand-pulling, and the use of string trimmers across approximately fifteen acres. Target species included pampas grass, black mustard, and artichoke thistle.

- **Access control**. County Park Rangers installed 25 new boundary signs in order to prevent unauthorized trail usage. Unauthorized trails were closed with a variety of new or repaired wire fences, boulders, and heavy brush. County Park Rangers increased patrols to prevent illegal trash dumping and unauthorized access. Illegal use of unauthorized trails by mountain bikers was noted in Clark Canyon. Preventative actions included increasing patrols, engaging with trail users, installing signs, installing fences, and brushing in unauthorized trails. At trail access points, metal and wood stepovers prevent unauthorized vehicle and motorized activity on the trails and protect native habitat and species. Stormwater control measures were maintained along service roads to ensure that the surrounding habitats were not impacted and erosion potential was minimized. Erosion control measures were implemented on any trails impacted by erosion and to ensure that the surrounding habitat was successfully maintained. County Park Rangers also worked with volunteer groups,

including the San Diego Mountain Bike Association, to ensure that authorized trails were maintained and erosion potential was minimized.

- **Fire management**. County Park Rangers maintained existing firebreaks using string trimmers and hand-pulling along the SR-67 roadways, around the staging area parking lot, and the Preserve's Visitor Center.

- **Environmental education**. Environmental outreach efforts included County Park Rangers leading nature hikes, nature tables, composting classes, and night hikes. A total of 225 visitors attended these events and talks for Preserve visitors about the native plants and animals. Educational signage was installed, including interpretive panels in high user areas and signs and flyers in kiosks, to inform Preserve visitors of potential impacts unauthorized trails have on sensitive resources as well as about the Preserve's native plants and animals.

Tijuana River Valley Regional Park

Park Total Acreage: 1,592 Assessor's acres, 1,609 GIS acres
City of San Diego MHPA: 1,592 Assessor's acres, 1,609 GIS acres

Management benefits the 16 MSCP covered species known to occur on the Preserve, which are coast barrel cactus, Orcutt's bird's-beak, Torrey pine (planted), wart-stemmed ceanothus[17], Belding's orange-throated whiptail, Blainville's horned lizard, coastal cactus wren, coastal California gnatcatcher, Cooper's hawk, least Bell's vireo, light-footed Ridgway's rail, northern harrier, southern California rufous-crowned sparrow, southwestern willow flycatcher, American peregrine falcon, and tricolored blackbird. Riparian habitat was also targeted by management actions. Management actions included the following.

- **Habitat restoration and management**. County Park Rangers planted 375 trees and shrubs, including cottonwood and western sycamores, and laurel sumac. Regular patrolling of the park by County Park staff ensured that any illegal trash dump sites were quickly cleaned up and native habitat was not impacted. As part of a grant from CDFW, the County drafted a Habitat Restoration Plan for the entire Tijuana River Valley Regional Park. This restoration plan will provide a comprehensive and contiguous strategy for habitat restoration within this Preserve. As part of this project, the County conducted protocol surveys for several MSCP-covered species in this Park in 2021 including California Gnatcatcher, Least Bell's Vireo, and Southwestern Flycatcher, among others. More information regarding this project can be found in *Section 6.3 Grant Funded Management Projects*.

- **Invasive, non-native plant and insect control**. Invasive, non-native plant species removal efforts included hand-pulling, string trimmers, and other hand tools across approximately 143 acres. Target species included Russian thistle, castor bean, tree tobacco, hottentot-fig, crown daisy, nasturtiums, and non-native grasses in the *Poaceae* family.

- **Access control**. County Park Rangers installed 125 new informational/directional signs to encourage Park visitors to stay on the designated trails, identify sensitive habitat, and deter illegal trash dumping. Approximately 1,600 feet of fencing and five gates were installed throughout the Park to deter unauthorized access. Erosion control measures were implemented on trails where erosion was found to occur. Daily patrolling of the Park ensured that any illegal trash dump sites were quickly

[17] The common name for this species has changed from wart-stem-lilac to wart-stemmed ceanothus.

cleaned up and native habitat was not impacted. Several "No Dumping" signs were also installed throughout the Park.

- **Fire management**. County Park staff maintained an existing firebreak using string trimmers, herbicide application, and chainsaws.

- **Environmental education**. Environmental outreach efforts included County Park Rangers leading nature hikes, nature tables, and Hawktober – an educational event about hawk species in the San Diego region. A total of 229 visitors attended these events.

Comprehensive Tree Program

The County has always had a commitment to planting trees on County Preserves and this was formalized in 2016 with the Comprehensive Tree Program. Dead or dying trees, along with trees that pose potential risks to County Preserve visitors, are removed and replaced. The replacement ratio is three new trees replace each tree that is removed. Native tree species are used in the preserve lands, while non-native, non-invasive trees may be planted near park facilities and active recreation areas to increase resilience, diversity and beauty. Since 2016, over 26,000 trees have been installed on County properties. Over 3,800 trees were planted in 2021.The Tree Plotter Inventory[18] web application augments the efforts of the Comprehensive Tree Program. Started in April 2021, this web-based program will ultimately result in a full inventory of all new and existing trees on every County Preserve and can be accessed by the public. Each tree will have a GPS location, its species, health ranking, and other characteristics including diameter at breast height (DBH), as well as photos of each tree through time. Reports can be generated by tree or County Preserve and can also show the ecosystem benefits of the trees. This application will assist in understanding when adaptive management strategies are needed to ensure that the trees are thriving. In 2021, part of the Tree Plotter Inventory efforts included mapping all 1,056 of the existing and new trees at Dos Picos Park, in addition to mapping trees at other County Preserves.

6.3 Grant Funded Management Projects

The County implemented nine grant funded management projects across six County Preserves in the reporting year. These projects benefitted nine MSCP covered species, which are coastal California gnatcatcher, least Bell's vireo, coastal cactus wren, orange-throated whiptail, northern harrier, Cooper's hawk, arroyo toad, southwestern pond turtle, and fairy shrimp, and included habitat restoration, access control, invasive, non-native plant control, and trail alignment. Grant-funded projects occurred at Dictionary Hill Preserve, Lakeside Linkage Preserve, Sycamore Canyon and Goodan Ranch Preserve, Ramona Grasslands Preserve, Tijuana River Valley Regional Park, and East Otay Trail. Grant funding totaled over $15 million and was provided by nine grants and County General Funds. Grant funds were from four WCB Proposition 68 grants, one State Coastal Conservancy Proposition 68 grant, two CDFW Proposition 1 grants, one SDRC Proposition 1 grant, and one California Natural Resources Agency (CNRA) Proposition 84 River Parkways grant.

The County actively seeks grants to supplement stewardship activities in additional to those funded through County general fund. These activities meet the MSCP Subarea Plan's fourth Specific Objective to

[18] Tree Plotter Inventory can be found at https://pg-cloud.com/sdc/

"implement a program for the conservation and management of habitats of federal and state endangered, threatened, or rare species," as well as the MSCP Subarea Plan's Biological Goal (Section 1.2.1) to help conserve both diversity and functionality of the southwestern county ecosystem through preservation and adaptive management. In 2021, the County applied for 12 grants, which included proposals for restoration of habitats within preserves, and were awarded nine of the grants.

Dictionary Hill Preserve Coastal California Gnatcatcher Habitat Restoration Project

Funding Source: WCB Proposition 68 Grant and County funding
Funding Amount: $551,535 (Prop 68 funds $527,000 and County funds $24,560)
Project Timeline: June 2021 – March 2024
Target Species or Habitat: Coastal California gnatcatcher, coastal cactus wren, Quino checkerspot butterfly, Monarch butterfly, and coastal sage scrub habitat
Management Action: Invasive plant treatment and native plant establishment

The *Dictionary Hill Preserve Coastal California Gnatcatcher Habitat Restoration Project* will restore and enhance habitat on Dictionary Hill Preserve to benefit coastal California gnatcatcher and other coastal sage scrub dependent species. This project was approved for funding at the May 2021 WCB hearing for the full project amount of $551,535. Dictionary Hill Preserve is located within a stepping-stone linkage for coastal California gnatcatcher, providing suitable habitat patches between established breeding areas in proximity to the Preserve and between Core Resource Areas, and supports up to four territories. Starting in Winter 2021, the project initiated a three-year program for the treatment of large stands of invasive non-native plants identified throughout the Preserve to benefit the on-site coastal sage scrub and sensitive species that occur in this vegetation community, including MSCP covered San Diego goldenstar, variegated dudleya, San Diego barrel cactus, Southern California rufous-crowned sparrow, Belding's orange-throated whiptail, and Cooper's hawk. The project will install 1,750 coastal sage scrub species over four acres of disturbed coastal sage scrub to expand existing nesting and foraging habitat for coastal California gnatcatcher, install 25 pounds of Quino checkerspot butterfly host plant/nectar species seed mix, install 25 pounds of Monarch butterfly host plant/nectar species seed mix, and install 175 pounds of coastal sage scrub seed mix. Restoration areas have been chosen and in 2022 implementation of the restoration and enhancement work will begin. Following installation of the coastal sage scrub species, Quino checkerspot butterfly seed mix, and Monarch butterfly seed mix, as well as initial removal of invasive non-native plant species, monitoring and maintenance activities will continue to ensure successful installation of native plants and eradication of invasive, non-native plant species.

Sweetwater Regional Park Morrison Pond Restoration and Enhancement

Funding Source: WCB Proposition 68 Grant and County funding
Funding Amount: $509,110 (WCB Prop 68 funds $397,185 and County funds $111,925)
Project Timeline: November 2021 – March 2025
Target Species or Habitat: Vegetation surrounding riparian wetland and adjacent upland habitats
Management Action: Invasive plant treatment and native plant establishment

The *Sweetwater Regional Park Morrison Pond Restoration and Enhancement* project within Sweetwater Regional Park will restore 3.45 acres of coastal sage scrub habitat for coastal California gnatcatcher and coastal cactus wren. In addition, the project will enhance riparian and adjacent upland habitat around Morison Pond within the 19.29-acre project area. The 3-year habitat restoration project will also benefit least Bell's vireo. Funding for the project is provided by a WCB 2020 Proposition 68 grant awarded in November 2020 and with County matching funds. The project's objectives are: (1) initiate a 3-year invasive, non-native plant control program throughout the 19.29 acres to enhance the existing habitat and benefit sensitive and listed species, including least Bell's vireo; (2) plant native trees provided by the County Tree Program; (3) install 3,450 coastal sage scrub species over approximately 3.45 acres to expand nesting and foraging habitat for coastal California gnatcatcher and coastal cactus wren; and (4) install 135 pounds of coastal sage scrub seed mix over approximately 3.45 acres to expand nesting and foraging habitat for coastal California gnatcatcher and coastal cactus wren. In 2021, the Restoration and Enhancement Plan was developed with implementation to being in 2022. Following installation of the coastal sage scrub species and initial removal of invasive non-native plant species, monitoring and maintenance activities will continue to ensure successful installation of native plants and eradication of invasive, non-native plant species.

Smuggler's Gulch Improvements Project

Funding Source: State Coastal Conservancy Proposition 68 Grant ($10,000,000) and County funding ($323,000)
Funding Amount: $10,323,000
Project Timeline: January 2021 – March 2023
Target Species or Habitat: Riparian Wetland and adjacent upland habitats
Management Action: Habitat Enhancement

The *Smuggler's Gulch Improvements Project* is a Capital Improvements Project that originated from the County's *Tijuana River Valley Needs and Opportunities Assessment* completed in March 2020. The County secured a $10M grant on May 27, 2021 to implement the *Smuggler's Gulch Improvements Project,* which will capture additional trash and sediment where Smuggler's Gulch enters the United States to avoid these materials from moving downstream where they can impact important riparian habitat in the main Tijuana River channel. This project includes design, environmental review, and construction of a sedimentation basin, trash capture devices, and culvert improvements at Smuggler's Gulch and surrounding areas. As part of this project, the County conducted protocol surveys for several MSCP-covered species in 2021 including California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher. The County also conducted a habitat assessment of the area to identify and map habitat types to ensure maximum avoidance to native habitat. Once implemented, this project has the potential to

protect native habitat downstream by capturing trash upstream. The County will complete design, apply for and obtain environmental permits, and begin construction of this project in 2022.

Tijuana River Valley Invasive Species Removal and Restoration Plan

Funding Source: CDFW Proposition 1 Grant
Funding Amount: $520,167
Project Timeline: July 2020 – June 2023
Target Species or Habitat: Riparian Wetland and adjacent upland habitats
Management Action: Planning for habitat restoration

The *Tijuana River Valley Invasive Species Removal and Restoration Plan* project will complete the planning and permitting steps necessary for the future implementation of a large-scale habitat restoration project which will target invasive and non-native plants within the Tijuana River Valley Regional Park. This project is funded through a CDFW Proposition 1 grant totaling $520,167 which was awarded to the County in March 2020. The project will complete a Habitat Restoration Plan, obtain necessary regulatory permits, and obtain environmental clearance pursuant to the CEQA so that the project will be "shovel-ready" for implementation as the next phase. The Habitat Restoration Plan will analyze the entirety of the Tijuana River Valley Regional Park which encompasses approximately 1,800 acres of the Tijuana River Valley. Existing information will be supplemented by technical studies conducted during the project to inform implementation priorities and effective restoration methods in the Habitat Restoration Plan for future implementation. The overall project goal is to remove and treat invasive, non-native plants within the Tijuana River Valley Regional Park and restore targeted areas with native vegetation. This will enhance the ecological function of the Tijuana River Valley and provide habitat for the sensitive species that occur in this region, including several MSCP covered species such as least Bell's vireo, California gnatcatcher, and Ridgway's rail. The project was initiated in Fall 2020. Protocol surveys for target species were conducted in 2021 and the Habitat Restoration Plan was drafted. These surveys included several MSCP-covered species including California gnatcatcher, least Bell's vireo, and southwestern willow flycatcher. The County also worked toward conducting environmental review under the CEQA. The County will apply for environmental permits, complete environmental analysis, and finalize the Habitat Restoration Plan in 2022.

Lakeside Linkage Preserve – Cactus Wren and Hermes Copper Butterfly Habitat Restoration

Funding Source: WCB Proposition 68 Grant
Funding Amount: $423,000
Project Timeline: March 2019 – March 2022
Target Species or Habitat: Coastal cactus wren and Hermes copper butterfly
Management Action: Invasive, non-native plant control and habitat restoration and enhancement

The *Lakeside Linkage Preserve – Cactus Wren and Hermes Copper Butterfly Habitat Restoration* project will restore and enhance two acres of coastal cactus wren habitat and two acres of Hermes copper butterfly habitat in Lakeside Linkage Preserve over a three-year period. The project is funded by a WCB 2019 Proposition 68 grant of $423,000 awarded to the County in March 2019. There are three project

objectives: (1) initiate a 3-year invasive, non-native plant control program throughout the Preserve to enhance the existing coastal sage scrub habitat and benefit sensitive species; (2) install 500 cholla cactus to expand nesting and foraging habitat for coastal cactus wren; and (3) install 500 spiny redberry and 500 California buckwheat plants to supplement the existing populations and expand potential habitat for Hermes copper butterfly. In 2021, intensive weed control efforts continued which has reduced invasive non-native plant cover across the properties to approximately 10% or lower.

The spiny redberry installed in November 2020 were doing well through spring, summer, and fall 2021, but during winter 2021 monitoring it was observed that approximately 80 percent of the installed spiny redberry had died. Although many of these individuals showed signs of growth during previous quarters, mortality appears to be a result of small individuals not becoming fully established. Other mortality factors may include the topography and soils, which appears to have some clay component, holding too much water after rain events and rotting the roots of establishing container stock. Naturally occurring spiny redberry within the western and southwestern properties are mostly located on moderately steeper slopes with more well-draining soils than those planted within the Hermes habitat restoration area. However, the spiny redberry that remain alive are healthy and growing. A total of 32 spiny redberry were observed within the four plots during the December 2021 site visit. A patch of approximately 10 healthy spiny redberry occurs in the western portion of the central plot; these individuals were larger at the time of initial planting during Year 1, which is likely a factor in their success. Although spiny redberry is a slow growing species, new growth was observed on the remaining plants. Furthermore, surviving spiny redberry plants will be able to spread seed once they have reached maturity and will continue to spread and expand the population in the long term. Spiny redberry typically takes more than five years to reach maturity and flower. California buckwheat and San Diego sunflower installed between December 2019 and November 2020 appear healthy and survival was estimated at greater than 90 percent.

The 500 coastal cholla that were planted in early December 2019 in the central property all remained alive and have increased in size. Monitoring and maintenance activities will continue into Spring 2022 to ensure successful installation of native plants and eradication of weeds.

Sycamore Canyon and Goodan Ranch Preserve Targeted Invasive Non-Native Plant Treatment Project

Funding Source: SDRC Proposition 1 Grant
Funding Amount: $203,000
Project Timeline: November 2019 – June 2022
Target Species or Habitat: Riparian habitat
Management Action: Invasive, non-native plant control

The *Sycamore Canyon and Goodan Ranch Preserve Targeted Invasive Non-Native Plant Treatment Project* will enhance 32 acres of riparian habitat along Sycamore Canyon Creek through implementation of invasive, non-native plant control over a 2.5-year period. In 2021, the grant term was extended to June 2022 to utilize grant funds. The project is funded by a SDRC Proposition 1 grant of $203,000 awarded to the County in 2019. This project funds the treatment and removal of a variety of invasive, non-native plants within Sycamore Canyon and Goodan Ranch Preserve. Approximately 32 acres of primarily riparian habitat along Sycamore Canyon Creek has been targeted for this project, which includes mature

eucalyptus trees, stands of tamarisk, and pampas grass among other invasive, non-native plants. Treatment and removal of these plants is expected to enhance the quality of the riparian habitat in the Preserve which supports several MSCP covered species including Belding's orange-throated whiptail, northern harrier, and Cooper's hawk. In 2021, invasive species were treated and removed in the two Treatment Areas, rain gauges and soil moisture probes were monitored and photographs taken quarterly at designated photo points. Monitoring and herbicide treatments will continue into 2022.

Tijuana River Valley Regional Park Brown Property Fill Removal/Restoration

Funding Source: CDFW Proposition 1 Grant
Funding Amount: $1,328,000
Project Timeline: June 2018 – December 2022
Target Species or Habitat: Least Bell's vireo
Management Action: Habitat restoration

The *Tijuana River Valley Regional Park Brown Property Fill Removal/Restoration* project will prepare the restoration site and complete planning for a restoration project for least Bell's vireo in the Tijuana River Valley Regional Park over a nearly 3-year time period. The project is funded by a CDFW Proposition 1 grant of $1,328,000 awarded to the County in 2017. Restoration site preparation includes removal of illegally placed fill dirt on and adjacent to just under four acres of the Brown property in the Park. Restoration planning will be for the future restoration of the main Tijuana River channel hydrology, which was disrupted by the placement of this fill dirt, and includes technical studies, design, and environmental review and documentation. The County worked with regulatory agencies and stakeholders to revise this project in 2021. The revised project is a habitat restoration plan of the Brown Property and is currently in a draft phase. While the existing CDFW grant cannot be used for implementation of this restoration plan, the County actively sought grant and alternative funding opportunities for restoration throughout the year. While unsuccessful in obtaining funding in 2021, the County plans to continue seeking such opportunities to ultimately realize the varied benefits that can be gained from the implementation of this project. These benefits include restoration of disturbed land into native habitat for least Bell's vireo and other native wildlife.

Tijuana River Valley Regional Park Invasive Removal, Restoration and Interpretive Signage

Funding Source: CNRA Proposition 84 River Parkways Grant
Funding Amount: $492,920
Project Timeline: October 2016 – March 2022
Target Species or Habitat: Least Bell's vireo
Management Action: Invasive, non-native plant control and habitat restoration

The *Tijuana River Valley Regional Park Invasive Removal, Restoration and Interpretive Signage* project will restore and enhance least Bell's vireo habitat at Tijuana River Valley Regional Park. The project is funded by a CNRA's Proposition 84 River Parkways grant for $492,920 awarded to the County in 2016. The funding supplements ongoing habitat restoration activities in the Tijuana River Valley Regional Park. The project removed invasive, non-native plants, particularly tamarisk, and restored treated areas by

planting native plant species across two acres. In 2020, DPR was granted an extension of the project performance period to March 2022 to ensure successful establishment of native plants and eradication of invasive, non-native plants from the restoration area. During plant establishment visits, crews spot-treat or remove by hand any germinating non-native seedlings they encounter within the restoration site. Non-native plants are hand-pulled where growing adjacent to native plants. Watering will continue while dry weather is prevalent but may be temporarily discontinued if rainy weather resumes. If additional trees are available from the County's tree committee, they will be installed in open areas where either tamarisk trees were removed or open areas where non-native plants have been treated/removed. This project provides new habitat for several species within the Park including least Bell's vireo, an MSCP covered species.

East Otay Trail Alignment Study

Funding Source: WCB Proposition 68 Grant ($450,000), County funding ($150,000), and local agency match ($50,000)
Funding Amount: $650,000
Project Timeline: March 2021 – March 2023
Target Species or Habitat: Upland habitat surrounding trails
Management Action: Habitat Management

The *East Otay Trail Alignment Study* project will complete an environmental Impact Report for the comprehensive planning document which identifies 13 new trail alignments totaling approximately 80.5 linear miles of hiking, biking, riding, and wheelchair accessible pathways and trails near and around the ecologically rich Otay Lakes Area. The project is a result of a multi-agency effort to identify a coordinated and sustainable trail system in southern San Diego County. As part of this project, the County conducted protocol surveys for Quino checkerspot butterfly and fairy shrimp in 2021. Two observations of Quino checkerspot butterfly were made within the survey area. In addition, larval host plant species, dot seed plantain, rigid bird's beak, and purple Chinese houses were documented within the project site, occurring in several scattered locations throughout the project. Wet season fairy shrimp surveys began towards the end of 2021 and results will be included in the next reporting period. The project will provide a comprehensive trail network while maintaining ecological diversity and preserving quality habitat in the Otay Ranch Preserve.

6.4 Preserve Management Partnerships

Eight County partners implemented eight management projects across seven County Preserves to benefit riparian, stream, wetland, coastal sage scrub, and chaparral habitats. Natural resources restoration activities, including invasive, non-native plant species treatment, active habitat restoration, monitoring for invasive animals, and release of rehabilitated wildlife were implemented in Barnett Ranch Preserve, Boulder Oaks Preserve, Del Dios Highlands Preserve, Dos Picos Park, El Capitan Preserve, El Monte Park, Sycamore Canyon/Goodan Ranch Preserve, Lakeside Linkage Preserve, Lawrence and Barbara Daley Preserve, Los Peñasquitos Preserve, Louis A. Stelzer Park, Luelf Pond Preserve, Lusardi Creek Preserve, Oakoasis Preserve, Otay Ranch Preserve, Ramona Grasslands Preserve, Old Ironsides Park, Otay Lakes Park, Otay Ranch Preserve, Otay Valley Regional Park, and Tijuana River Valley Regional Park. Partners were California Department of Transportation (Caltrans), SDRPF, Alter Terra, Project

Wildlife, Del Dios Habitat Protection League, San Dieguito River Valley Conservancy, San Diego State University, and CDFW.

The regular management, monitoring, and invasive, non-native species removal activities performed by County Rangers, staff, and contractors is augmented by other organizations and projects at various Parks and Preserves, including those detailed below. Through the Right-Of-Entry (ROE) permit process, DPR assists with the habitat restoration and enhancement projects proposed by outside government agencies, municipalities, and environmental organizations that benefit the County's preserve lands. These projects not only support the County's management activities, but they also provide another source of stewardship to support the success of native and sensitive plant and animal species in County Preserves. For the individual projects detailed below, only County Preserves are mentioned, but many of the habitat management projects extend well outside of the County Preserves in the MSCP Subarea Plan.

Johnson Canyon Habitat Restoration

Lead Agency: Caltrans
Project Timeline: January 2017 – December 2021
Target Species or Habitat: Riparian and coastal sage scrub habitat
Management Action: Habitat restoration and invasive, non-native plant control
County Preserve: Otay Valley Regional Park

The *Johnson Canyon Habitat Restoration* project will restore and enhance riparian habitat in Otay Valley Regional Park over a five-year period as mitigation for improvements to SR-125. In 2017, Caltrans began a multi-year project restoring a 9.33-acre site in and adjacent to the creek bed within Johnson Canyon, which drains an ephemeral tributary of the Otay River. The project site spans Otay Valley Regional Park (1.41 acres) and a Caltrans property (7.92 acres). Project actions include invasive, non-native plant control, irrigation installation, and native plant establishment via active restoration. Caltrans subcontractors performed retreatments of invasive, non-native plants and native plant establishment monitoring, which will continue through 2022.

Wetland Restoration Phase 2

Lead Agency: Caltrans
Project Timeline: December 2016 – December 2022
Target Species or Habitat: Wetland habitat
Management Action: Habitat restoration and invasive, non-native plant control
County Preserve: Tijuana River Valley Regional Park

The *Wetland Restoration Phase 2* project will restore 10 acres of wetlands in Tijuana River Valley Regional Park over a six-year period. Caltrans began *Phase 2* in December 2016. This project is a continuation of *Phase 1* of the restoration activity, which began in 2013, and involved mitigation associated with the Mid Coast Transit Project. Project elements include invasive, non-native plant control, debris/trash removal, native wetland plantings, and temporary irrigation for supplemental watering. Following the completion of the active restoration, a minimum of five years is dedicated to monitoring in order to ensure mitigation efforts have been successful. Restoration of wetland habitat benefits the MSCP

covered species found within the park including least Bell's vireo, northern harrier, and Cooper's hawk. Monitoring of the restoration site is ongoing and will continue through 2022.

Invasive Non-native Plant Removal/El Capitan Preserve

Lead Agency: SDRPF
Project Timeline: April 2017 – April 2021
Target Species or Habitat: Coastal sage scrub
Management Action: Invasive, non-native plant control
County Preserve: El Capitan Preserve

The *Invasive Non-native Plant Removal/El Capitan Preserve* project removed invasive, non-native plants on El Capitan Preserve and adjacent property over a five-year period. In 2017, the SDRPF began a multi-year project which focuses on the treatment and removal of non-native invasive species on their property south of the El Capitan Preserve boundary. The SDRPF utilizes the El Capitan Preserve Trail to access the project site for land management and vegetation and wildlife monitoring activities. This project included the removal of invasive fountain grass and other noted invasive, non-native plants within a 0.25-mile buffer along the length of the trail within the Preserve to prevent spread into the SDRPF project area. Removal of invasive, non-native plants on adjacent SDRPF property minimizes the spread of these plants onto the Preserve. This project helps maintain the ecological health of the target habitats as well as benefitting Lakeside ceanothus and felt-leaved monardella, two MSCP covered species documented in the project area.

Smuggler's Gulch Transportable Floating Trash Booms

Lead Agency: Alter Terra, a project of Earth Island Institute
Project Timeline: January 2017 – January 2021
Target Species or Habitat: Riparian and stream habitat
Management Action: Habitat restoration
County Preserve: Tijuana River Valley Regional Park

The *Smuggler's Gulch Transportable Floating Trash Booms* project removes trash from the Smuggler's Gulch drainage channel before it enters the Tijuana River to benefit stream and riparian habitat in the Tijuana River Valley Regional Park over a four-year period. In 2017, Alter Terra, a project of Earth Island Institute, began planning the installation of a floating trash removal system. The first phase of this project included pre-construction activities including planning and design, which were completed from 2017-2019. The implementation phase of this project began in December 2019 with the construction and installation of the trash booms at the channel. The trash removal system is comprised of two sets of trash booms constructed of repurposed plastic. The booms were placed in the Smuggler's Gulch drainage channel to capture trash crossing the US-Mexico border. The trash booms remain deployed during the wet season and are regularly monitored and cleared with assistance from the Urban Corps, which partners with *Live Well San Diego*. The trash booms were checked and cleaned of debris at least once every two weeks and after every significant rain event measuring 0.5 inches or more of measurable precipitation. Trash booms remained active during Spring 2021 and were removed during the dry season. Trash booms are redeployed before each wet season except for a few weeks out of each season to facilitate DPR's channel maintenance work. Through these habitat enhancement efforts, this project benefits several

MSCP covered species occurring in the Park, including coastal California gnatcatcher, least Bell's vireo, and northern harrier.



Alter Terra's floating trash booms implemented at the Smuggler's Gulch drainage channel capture trash flowing across the U.S-Mexico border during a rain event.

Rehabilitated Wildlife Release

Lead Agency: Project Wildlife- Ramona
Project Timeline: July 2017 – July 2022
Target Species or Habitat: Rehabilitated wildlife
County Parks and Preserves within MSCP Subarea Plan Area: Barnett Ranch Preserve, Boulder Oaks Preserve, Del Dios Highlands Preserve, Dos Picos Park, El Capitan Preserve, El Monte Park, Sycamore Canyon/Goodan Ranch Preserve, Lakeside Linkage Preserve, Los Peñasquitos Preserve, Louis A. Stelzer Park, Luelf Pond Preserve, Lusardi Creek Preserve, Oakoasis Preserve, Otay Ranch Preserve, Ramona Grasslands Preserve, Old Ironsides Park, Otay Valley Regional Park, and Tijuana River Valley Regional Park
County Parks and Preserve Outside MSCP Subarea Plan Area: Hellhole Canyon Preserve, Mt. Gower Preserve, San Elijo Lagoon Ecological Reserve, Santa Margarita Preserve, Santa Maria Creek Park, Santa Ysabel Preserve, Simon Preserve, Volcan Mountain Wilderness Preserve, Potrero Park, William Heise Park, and Wilderness Gardens Preserve

The *Rehabilitated Wildlife Release* project enhances native wildlife populations across County parks and preserves. The Fund for Animals Wildlife Center obtained a ROE permit in 2017 to release rehabilitated wildlife back to their native habitat within multiple County parks and preserves. Rehabilitated animals include raccoons, coyotes, foxes, bats, bobcats, and opossums. These species are already present in the local ecosystem and do not impede the conservation of MSCP covered species within County Preserves.

San Dieguito Watershed Invasive Non-native Plant Control Program

Lead Agency: Del Dios Habitat Protection League
Project Timeline: October 2020 – January 2021
Target Species or Habitat: Coastal sage scrub and chaparral habitat
Management Action: Invasive, non-native plant control
County Preserves: Del Dios Highlands Preserve

The *San Dieguito Watershed Invasive Non-native Plant Control Program* removes invasive, non-native plants from coastal sage scrub and chaparral habitat in Del Dios Highlands Preserve. As part of a larger watershed restoration project spearheaded by the San Dieguito River Park Joint Powers Authority (JPA), the Del Dios Habitat Protection League obtained a ROE permit in October 2020 to control invasive, non-native plants. Target plants for removal and treatment include eucalyptus, castor bean, pepper tree, date palms, tamarisk, mustard, and pampas grass (among other invasive grasses). All non-woody invasive, non-native plants are treated with an approved herbicide by a licensed applicator. Smaller trees are treated using the "drill and kill" method, whereby holes are drilled into the trunks and then filled with herbicide, which kills the tree but leaves it standing. Larger trees are cut down, removed from the preserve, and stumps are treated with herbicide to prevent regrowth. The goals of this project are to enhance and promote the growth of coastal sage scrub and chaparral plant communities which dominate the Preserve and support MSCP covered species such as Belding's orange-throated whiptail, Cooper's hawk, and coastal California gnatcatcher. Following the current ROE permit's expiration, a long-term agreement will be executed to continue the project for approximately 10 years.

San Dieguito Watershed Invasive Non-native Plant Control Program

Lead Agency: San Dieguito River Valley Conservancy
Project Timeline: September 2019 – March 2021
Target Species or Habitat: Riparian habitat
Management Action: Invasive, non-native plant control
County Preserve: Lusardi Creek Preserve

The *San Dieguito Watershed Invasive Non-native Plant Control Program* removes invasive, non-native plants from riparian habitat in Lusardi Creek Preserve. As a partner of the San Dieguito River Park JPA, the San Dieguito River Valley Conservancy also obtained a ROE permit to implement a portion of this project within the Lusardi Creek Preserve. Approximately three acres of the creek have been targeted for this project due to an abundance of arundo within the watershed. The project began with the initial removal of arundo above ground biomass within the project area. All arundo canes are chipped on-site and follow best management practices to prevent the further spread of this invasive species. Following the initial biomass removal, re-sprouts are treated approximately once per month to maximize the efficacy of the treatments. In 2020, the use of wildlife cameras was added to the project scope to monitor how

wildlife respond to and utilize the enhanced area. Monitoring and retreatments of the project area continued in 2021 and an amendment to the ROE permit was issued to extend the monitoring and maintenance period to March 2021 to account for time lost during the COVID-19 pandemic and the state Stay-at-Home Executive Order. This project will improve the ecological function of this important riparian habitat and support the MSCP covered species least Bell's vireo.

Feral Pig Eradication and Control Project

Lead Agency: San Diego State University and CDFW
Project Timeline: November 2020 – November 2022
Target Species or Habitat: Feral pigs
Management Action: Monitoring
County Parks and Preserves Within the MSCP Subarea Plan Area: Boulder Oaks Preserve and Ramona Grasslands Preserve
County Parks and Preserve Outside the MSCP Subarea Plan Area: Santa Ysabel Preserve, William Heise Park, Lake Morena Park, Volcan Mountain Wilderness Preserve, Mt. Gower Preserve, Hellhole Canyon Preserve

The *Feral Pig Eradication and Control Project* encompasses a multi-agency effort involving the County, City of San Diego, CDFW, USFWS, United States Forest Service, BLM, United States Department of Agriculture-Wildlife Services, California Department of Parks and Recreation, Vista Irrigation District, and Helix Water District to eradicate and prevent future occurrences of feral pigs in San Diego County. Feral pigs are a non-native species in San Diego County and are the result of escaped domestic stock, introduced European wild boar, or a hybrid of both and are considered an invasive species in California. Feral pigs pose a serious threat to native ecosystems due to their foraging behavior called rooting, which involves physically disturbing soils and uprooting plants to search for food which can destroy stands of native vegetation. In 2015, the implementation phase of the project was initiated, and eradication efforts began. Active trapping and removal efforts ended in Summer 2020. In Fall 2020, CDFW in partnership with San Diego State University obtained a ROE to initiate the monitoring phase of the project to determine the success of eradication efforts. Wildlife cameras and visual surveys are utilized to monitor for feral pig occurrences in places where they have previously been known to occur. Since the monitoring phase was initiated, no feral pigs have been sighted on County property. Monitoring will continue into 2022.

6.5 Private Mitigation Lands Management



Open space conserved in the MSCP Subarea Plan Area boundaries benefits many MSCP covered species and habitat types, such as the Cooper's hawk.

Private RMPs are required as a condition of development entitlements when biological resources are impacted by the proposed development project and the acreage of required mitigation exceeds 50 acres, on- or off-site. Private RMPs may also be required when open space less than 50 acres is proposed if a particularly sensitive resource is present that would benefit from active management and/or monitoring.

Private RMPs are approved by Planning & Development Services (PDS) and require submission of annual monitoring reports that focus on the resource attributes of that specific site and detail the monitoring and habitat management activities conducted within the previous year. Annual reports also document any issues and the overall health of the Preserve, which allows the County to assess the biological integrity of the open space habitats protected by each Private RMP. Controlling and managing public access through fencing, signage, and patrolling is another component of the Private RMPs. Management and monitoring on private mitigation lands is funded through mechanisms established during the Private RMP approval process (i.e., special districts, endowments, or annual fees). The health of these endowments and use of these funds are reported in the RMP annual reports.

Private RMP annual reports are publicly available online through the PDS Document Library[19] using the associated Record ID. **Appendix L** provides a general overview of the 17 Private RMPs located within the MSCP Subarea Plan including a description of the habitat conservation area, required surveys, and

[19] The PDS Document Library can be accessed at: https://www.sandiegocounty.gov/content/sdc/pds/doclibrary.html

monitoring/maintenance status for each Private RMP. The following section is a summary of the RMP annual reports received in the 2020-2021 reporting period.

2021 Annual Report Private RMP Review

Twelve of the 17 (71%) Private RMPs submitted reports for the 2020-2021 reporting period. The five non-compliant Private RMPs include: Bernardo Lakes, Maranatha Chapel, Artesian Trail, McCrink Ranch, and El Apajo preserves. Each report was reviewed by County Staff to evaluate compliance with the requirements of the RMP. Review letters were sent to all 12 responsible habitat managers and/or property owners that submitted reports. Review letters notified managers of the need, if any, to address specific management topics. Common areas for improvement in future reports include addressing financial status, monitoring results, and complying with the general provisions of the approved RMP. The Wildlife Agencies are routinely copied on correspondence from the County to the land managers regarding annual monitoring reports wherein greater detail of the report review results can be obtained. Stewardship and management activities on private mitigation lands are described below and summarized in **Appendix M**.

Bernardo Lakes Preserve

Record ID: PDS2008-3914-98-001
MSCP Subarea Plan: 111 acres
Segment: Lake Hodges

Once the RMP is implemented, management could benefit the five MSCP covered species historically known to occur on or utilizing the preserve, which are Orcutt's brodiaea, San Diego barrel cactus, coastal California gnatcatcher, southern California rufous-crowned sparrow, and southern mule deer. No annual report summarizing management actions was submitted this reporting year. A summary of the County steps taken in 2021 towards bringing this RMP into compliance is provided in the next section.

4S Ranch Ralphs Preserve

Record ID: PDS2008-3914-99-001
MSCP Subarea Plan: 1,065 acres
Segment: Lake Hodges

Management benefits the six MSCP covered species known to occur on or utilizing the preserve, which are southern California rufous-crowned sparrow, thread-leafed brodiaea, variegated dudleya, Belding's orange-throated whiptail, northern harrier, and coastal California gnatcatcher. Management actions included the following.

- **Invasive, non-native plant control.** Removal efforts included hand pulling of artichoke thistle covering less than 0.75 acres.

- **Access control.** Resource Managers patrolled weekly and implemented minimal road repairs. No disturbances occurred.

4S Ranch Specific Plan Preserve

Record ID: PDS2012-3914-99-002-02
MSCP Subarea Plan: 547 acres
Segment: Lake Hodges

Management benefits the six MSCP covered species known to occur on or utilizing the preserve, which are southern California rufous-crowned sparrow, thread-leafed brodiaea, variegated dudleya, Belding's orange-throated whiptail, northern harrier, and coastal California gnatcatcher. Management actions included the following.

- **Invasive, non-native plant control.** Efforts included treatment and removal of non-native grasses, artichoke thistle, salt cedar, and Spanish sunflower.

- **Access control.** Resource Managers monitored for illegal off-road vehicle and trail access issues. No issues were observed. Regular trash removal and removal of landscape debris occurred.

Golem Preserve

Record ID: PDS2008-3914-99-003
MSCP Subarea Plan: 154 acres
Segment: Lake Hodges

Management benefits the five MSCP covered species known to occur on or utilizing the preserve, which are wart-stemmed ceanothus, Del Mar manzanita, coastal California gnatcatcher, California rufous-crowned sparrow, and mountain lion. Management actions included the following.

- **Habitat restoration.** Resource Managers installed 250 California sage, 100 broom baccharis, and 100 black sage, and implemented comprehensive weed control, and general maintenance in the Upland Restoration Site. Sticky dudleya seed was collected to be grown in the San Diego River Park nursery and will be re-installed the following year.

- **Invasive, non-native plant control.** Removal efforts included ongoing weed control of 1.1 acres at the restoration sites. An additional one-acre site adjacent to the newly planted area was treated with herbicide with follow up hand pulling of weeds. Six palm trees and 80 eucalyptus (including three large re-grown adult trees) were also treated with herbicide.

- **Access control.** Resource Managers patrolled almost daily, and 42 shifts were recorded by volunteers who are trained and in unform. Plants and rock mulch were installed near the main entry point to block access to coastal California gnatcatcher habitat and graffiti was removed from signs.

- **Environmental education.** Outreach occurred directly with people using the trail system and by way of electronic newsletters.

Starwood (Crosby) Preserve

Record ID: PDS2008-3914-99-004
MSCP Subarea Plan: 170 acres
Segment: Lake Hodges

Management benefits the 13 MSCP covered species known to occur on or utilizing the preserve, which are San Diego mesa mint, San Diego button celery, Orcutt's brodiaea, San Diego ambrosia, Del Mar manzanita, San Diego barrel cactus, wart-stemmed ceanothus, San Diego fairy shrimp, Belding's orange-throated whiptail, coastal California gnatcatcher, Cooper's hawk, northern harrier, and southern California rufous-crowned sparrow. Management actions included the following.

- **Invasive, non-native plant control**. Removal efforts included ongoing weed control to avoid perennial invasive plants as well as spot herbicide treatment to reduce plant outbreaks.

- **Invasive, wildlife control**. Efforts included surveying for brown-headed cowbird and American bullfrog. American bullfrog egg removal also took place.

- **Access control.** Resource Managers reported two incidents to the Homeowner's Association (HOA) and requested that they remind residents to stay on established, legal trails.

- **Fire Management.** Resource Managers conducted brush management in coordination with the San Diego County Fire Marshall to maintain a "defensible space" around structures. Removal efforts included clearing weeds with hand tools and trimming larger vegetation, such as shrubs and trees, back away from homes and flammable structures.

- **Environmental education**. The Crosby Open Space website was regularly updated to provide community members with access to news and information about the Preserve. Rincon teamed with the San Dieguito River Valley Conservancy and the Wildlife Society to guide citizen scientists around the various areas Rincon manages.

Woodridge Preserve

Record ID: PDS2008-3914-99-005
MSCP Subarea Plan: 54.2 acres
Segment: North Metro-Lakeside-Jamul

Management benefits the three MSCP covered species known to occur on or utilizing the preserve, which are coastal California gnatcatcher, southern California rufous-crowned sparrow, and Belding's orange-throated whiptail. Management actions included the following.

- **Habitat restoration**. Resource Managers planted 500 cacti to develop coastal cactus wren habitat and maintained the previous years' plantings.

- **Invasive, non-native plant control.** Removal efforts included treatment and hand pulling of approximately 100 brittlebush, 250 stinkwort, several salt cedar, and hundreds of black mustard.

- **Fire Management.** Fuel zones were thinned or cleared to help protect the surrounding community.

- **Access control.** Resource Managers conducted weekly to bi-weekly patrols to prevent vandalism and illegal activities. Minimal trash was found and picked up during patrols and other management

activities. Fences and gates are in good working order and no maintenance was required. Illegal trails were blocked, raked over, and covered with vegetation.

- **Environmental education.** Kiosks were updated quarterly with new materials.

Blossom Valley Preserve

Record ID: PDS2008-3914-01-001
MSCP Subarea Plan: 285.9 acres
Segment: North Metro-Lakeside-Jamul

Management benefits the seven MSCP covered species known to occur on or utilizing the preserve, which are southern California rufous-crowned sparrow, southern mule deer, San Diego horned lizard, Belding's orange-throated whiptail, bald eagle, mountain lion, and northern harrier. Management actions included the following.

- **Invasive, non-native plant control.** Removal efforts included hand pulling and herbicide treatment of 50 fountain grass plants and hand pulling of 50 Natal grass.

- **Access control.** Resource Managers conducted weekly to biweekly patrols. Minimal trash was found and picked up during patrols and other management activities. All fences and gates are in good working order and no maintenance was required.

- **Environmental education.** Efforts included providing educational outreach to trail users as they were encountered on trails.

McCrink Ranch Preserve

Record ID: PDS2008-3914-02-001
MSCP Subarea Plan: 269.9 acres
Segment: Lake Hodges

Once the RMP is implemented, management could benefit the six MSCP covered species historically known to occur on or utilizing the preserve, which are San Diego barrel cactus, sticky dudleya, coastal California gnatcatcher, southwestern pond turtle, southern California rufous-crowned sparrow, and Cooper's hawk. No annual report summarizing management actions was submitted this reporting year. A summary of the County steps taken in 2021 towards bringing this RMP into compliance is provided in the next section.

Maranatha Chapel Preserve

Record ID: PDS2008-3914-02-003
MSCP Subarea Plan: 87 acres
Segment: Lake Hodges

Once the RMP is implemented, management could benefit the five MSCP covered species historically known to occur on or utilizing the preserve, which are wart-stemmed lilac, coastal California gnatcatcher, Cooper's hawk, northern harrier, and southern mule deer. No annual report summarizing management actions was submitted this reporting year. A summary of the County steps taken in 2021 towards bringing this RMP into compliance is provided in the next section.

El Apajo Preserve

Record ID: PDS2008-3914-03-002
MSCP Subarea Plan: 25.6 acres
Segment: North Metro-Lakeside-Jamul

Once the RMP is implemented, management could benefit the two MSCP covered species historically known to occur on or utilizing the preserve, which are San Diego horned lizard and northern harrier. No annual report summarizing management actions was submitted this reporting year. A summary of the County steps taken in 2021 towards bringing this RMP into compliance is provided in the next section.

Greenhills Ranch Preserve

Record ID: PDS2010-3914-05-004
MSCP Subarea Plan: 38.9 acres
Segment: North Metro-Lakeside-Jamul

Management benefits the four MSCP covered species known to occur on or utilizing the preserve, which are San Diego cactus wren, coastal California gnatcatcher, southern California rufous-crowned sparrow, and southern mule deer. Management actions included the following.

- **Invasive, non-native plant control.** Removal efforts included weed whacking and chemical treatments of five acres. Targeted species, including mustard and tocolote, were removed.

- **Access control.** Resource Managers conducted quarterly patrols and seven maintenance visits. Minimal trash was found and picked up during regular maintenance and monitoring visits.

- **Environmental education.** Resource Managers regularly communicated with the HOA to report visits and activities.

Artesian Trail Preserve

Record ID: PDS2009-3914-06-005
MSCP Subarea Plan: 3.2 acres
Segment: Lake Hodges

Once the RMP is implemented, management could benefit the one MSCP covered species historically known to occur on or utilizing the preserve, thread-leaf brodiaea. No annual report summarizing management actions was submitted this reporting year. A summary of the County steps taken in 2021 towards bringing this RMP into compliance is provided in the next section.

East Otay Mesa Preserve

Record ID: PDS2014-RMPM-10-003
MSCP Subarea Plan: 92.23 acres
Segment: South County

Management benefits the six MSCP covered species known to occur on or utilizing the preserve, which are San Diego barrel cactus, coastal California gnatcatcher, southern California rufous-crowned sparrow, northern harrier, California horned lark, and southern mule deer. Management actions included the following.

- **Invasive, non-native plant control.** Removal efforts included hand removal of pampas grass, fennel, and artichoke thistle.

- **Access control.** Resource Managers replaced fencing between the adjacent auto yard and preserve. A new lock was placed at the main gate to the property. Minimal trash was found and removed during site inspections.

- **Environmental education.** The Resource Manager communicated with the adjacent property manager regarding fence repairs.

Lonestar Preserve

Record ID: PDS2012-3914-11-002
MSCP Subarea Plan: 62.16 acres
Segment: South County

Management benefits the one MSCP covered species known to occur on or utilizing the preserve, Otay tarplant. Management actions included the following.

- **Invasive, non-native plant control.** Efforts included mowing of 6.5 acres of non-native grassland to improve habitat for burrowing owls and the Otay tarplant.

- **Access control.** Resource Managers repaired 20 linear feet of fencing. SDGE installed another heavy gate at the road intersection to prevent off-road vehicle trespass. Trash was picked up inside and outside the preserve, mostly along the fencing next to the road.

- **Environmental education**. Resource Managers coordinated with San Diego Zoo Institute for Conservation Research and Caltrans to site the berms and mounds that will be installed with grant funding from the Jewish Teen Foundation. Additionally, HELIX, Inc. was contracted to find soil and install the berms and mounds. The resource Manager also attended the San Diego County Burrowing Owl meeting.

Sloane Canyon Preserve

Record ID: PDS2015-RMPM-12-002
MSCP Subarea Plan: 39.18 acres
Segment: South Metro-Lakeside-Jamul

Management benefits the one MSCP covered species known to occur on or utilizing the preserve, Belding's orange-throated whiptail. Management actions included the following.

- **Invasive, non-native plant control.** Minimal amounts of non-native vegetation were found to occur within the open space. Resource Managers observed small patches of arundo upstream outside the open space and will coordinate removal options should it become necessary.

- **Access control.** Resource Managers conducted biannual patrols. Fences and gates are in adequate condition and no trash removal was needed.

- **Environmental education.** The Resource Manager communicated with neighboring property owner who was implementing brush management on their property to make sure they were aware of the sensitive nature of the preserve.

High Meadow Ranch (Trevi Hills) Preserve

Record ID: PDS2015-RMPM-12-003
MSCP Subarea Plan: 358 acres
Segment: North Metro-Lakeside-Jamul

Management benefits the nine MSCP covered species known to occur on or utilizing the preserve, which are Lakeside ceanothus, coastal California Gnatcatcher, northern harrier, golden eagle, southern California rufous-crowned Sparrow, San Diego horned lizard, Belding's orange-throated whiptail, southern mule deer, and Cooper's hawk. Management actions included the following.

- **Invasive, non-native plant control.** Removal efforts included re-treatment of 30 tamarisks using "drill and kill" methodology.

- **Access control.** Resource Managers maintained fencing and signs along the Preserve boundary. Trash and debris were minimal, and no problem areas were observed.

Otay Crossings Commerce Park Preserve

Record ID: PDS2016-RMP-16-004
MSCP Subarea Plan: 24.3 acres
Segment: South County

Management benefits the seven MSCP covered species known to occur on or utilizing the preserve, which are Otay tarplant, San Diego barrel cactus, variegated dudleya, San Diego fairy shrimp, Riverside fairy shrimp, burrowing owl, and northern harrier. Management actions included the following.

- **Invasive, non-native plant control**: Removal efforts included treatment of fennel, black mustard, tocalote, tamarisk, and Russian thistle. Hand weeding occurred in the Quino checkerspot butterfly areas focused on slender leaved ice plant and Australian saltbush. Weed whacking also occurred around the newly installed brush piles. Management will also include removing invasives around vernal pools.

- **Access control.** Resource Managers conducted monthly patrols. Minimal trash was found and picked up as necessary. Off road vehicle tire marks were observed on preserve and the Resource Managers coordinated with border control to discuss alternate routes and limiting access to the preserve unless necessary.

Non-Compliant Private RMP Reporting

Five of the 17 (29%) RMPs did not submit annual reports for the 2020-2021 reporting period. These five non-compliant RMPs include Bernardo Lakes, McCrink Ranch, Maranatha Chapel, El Apajo, and Artesian Trail Preserves. The County corresponded with three RMP responsible parties and is still evaluating paths forward for two of the more complicated RMP compliance cases. Below summarizes the County steps taken in 2021 towards bringing these RMPs into compliance and their current status.

Bernardo Lakes Preserve (PDS2008-3914-98-001) – County Staff corresponded with the HOA's Community Managers regarding the RMP implementation components (i.e., Resource Manager) that need to be installed to comply with the terms of the Open Space Maintenance Agreement between the HOA and County. County Staff is actively working with the HOA Community Manager to select a new Resource Manger that meets the qualifications in the County's RMP guidelines. Next steps will include County review and approval of an updated Property Analysis Record that identifies the RMP implementation costs. The final step will be the execution of an updated Open Space Maintenance Agreement between the HOA, new Resource Manager, and County. The Open Space Maintenance Agreement will ensure that the RMP is implemented by the new Resource Manager and funded by the HOA in perpetuity. This effort will continue into 2022 and a status update will be provided in the 2022 MSCP Annual Report.

McCrink Ranch Preserve (PDS2008-3914-02-001) – County Staff corresponded with the developer and their consultants regarding the RMP implementation components that need to be installed to satisfy the conditions of approval for TM 5069 (i.e., Resource Manager, funding mechanism, and Open Space Maintenance Agreement). County Staff is actively working with the developer and their consultants to select a Resource Manger that meets the qualifications in the County's RMP guidelines. Next steps will include County review and approval of an updated Property Analysis Record that identifies the RMP implementation costs. The final steps will include establishment of a funding mechanism and the execution of an Open Space Maintenance Agreement between the developer, Resource Manager, and County. The Open Space Maintenance Agreement will ensure that the RMP is implemented by the Resource Manager and funded by the developer in perpetuity. This effort will continue into 2022 and a status update will be provided in the 2022 MSCP Annual Report.

Maranatha Chapel Preserve (PDS2008-3914-02-003) – County Staff corresponded with Maranatha Chapel and their consultants regarding the RMP implementation components that need to be installed to satisfy the mitigation identified for Major Use Permit P00-020 in Environmental Review Number 95-8-21 (i.e., Resource Manager, funding mechanism, Open Space Maintenance Agreement, and Open Space Easement). County Staff is actively working with Maranatha Chapel to select a Resource Manager that meets the qualifications in the County's RMP guidelines. Next steps will include County review and approval of an updated Property Analysis Record that identifies the RMP implementation costs. The final steps will include establishment of a funding mechanism and the execution of an Open Space Maintenance Agreement between Maranatha Chapel, Resource Manager, and the County. The Open Space Maintenance Agreement will ensure that the RMP is implemented by the Resource Manager and funded by Maranatha Chapel in perpetuity.

The mitigation identified in Environmental Review Number 95-8-21 also requires the granting of an Open Space Easement over the entire RMP area. An Open Space Easement was recorded over the southern portion in 2019. The County is actively working with Maranatha Chapel to record an Open Space Easement over the remaining northern portion. The Open Space Easement will ensure the protection of sensitive biological resources and prohibit the use of the property for any purpose other than conservation. This effort will continue into 2022 and a status update will be provided in the 2022 MSCP Annual Report.

El Apajo Preserve (PDS2008-3914-03-002) & Artesian Trail Preserve (PDS2009-3914-06-005) – The County continues to evaluate options to achieve compliance, including additional correspondence and meeting requests with responsible reporting entities and individuals, reliance on the easement and/or management agreement to remedy non-compliance, coordination with County Counsel, and, if necessary, involvement of the PDS Code Compliance division.

6.6 Education and Outreach

One of DPR's key missions is educating the public about the County's biological and cultural resources. Rangers and volunteers are trained to lead environmental education programs and provide multiple interpretive services to the public. Presentations are available to people of all ages at schools, parks, campgrounds, interpretive centers, camps, scout groups, and churches. In 2021, DPR was excited to offer many popular educational programs again and over 9,000 guests participated in these programs. Highlights for 2021 include the following:

Hawktober continued to be one of DPR's most popular educational programs. In 2021, County Park Rangers visited 14 County parks and interacted with approximately 900 guests. This program offers attendees the chance to learn about the importance of raptors in our ecosystem and the unique adaptations that make them such capable predators. Hawktober events also served as a training opportunity for apprentice raptor handlers which should enhance the program in 2022.



Animal ambassadors, even the creepy crawly ones, are a popular way for County Park Rangers to educate visitors about the native animals found in San Diego County.

Park-ology[20] is a free, cloud-based education tool designed to teach teens, ages 14 to 18, about the parks and recreation industry. The content is split into three learning modules – Play, Nature, and People – to provide a diverse and comprehensive look at key topics and concepts while unveiling a number of science, technology, engineering, arts, and math (STEAM) related career paths that students can learn more about as they plan their academic and professional futures. Text is balanced with videos, games, and fun facts to keep students engaged and entertained. The first learning module – Play – was launched in 2021 and explores the evolution of recreation at the local, national, and international levels. Students are introduced to concepts like play theory and the benefits of responsible park use. The two other learning modules – Nature and People – will be launched in 2022.

Discovery Program assists educators and elementary school students with exploring the wealth of nature at local parks and in their own backyards, at no cost to the participants. The curriculum correlates with Next Generation Science Standards and includes the subjects of plants and photosynthesis, astronomy, birds, Native Americans, geology, insects, and general ecology. The hands-on courses include a County Park Ranger visit to the school, activities for classroom use, a field trip and County Park Ranger-led hikes, and post-field trip activities for classroom and home use. The program is found in eight parks throughout the County, including Guajome Regional Park, Felicita County Park, San Dieguito County Park, Los Peñasquitos Canyon County Preserve, Louis A. Stelzer County Park, El Monte County Park, Flinn Springs County Park, and Otay Lakes County Park. Five of these County properties are located within the MSCP Subarea Plan boundary. In 2021, the Discovery Program hosted approximately 800 students from various schools in San Diego County.

Story Trails for Green Friday is a partnership between County Parks and County Libraries to encourage reading in public spaces the day after Thanksgiving – historically the busiest shopping day of the year. Story Trails encourage families to spend quality time outside by displaying pages of children's books along popular hiking trails. 2021 marked the second year of this family-friendly program, with eight trails at parks across the County, and books in both English and Spanish. This event will continue in 2022, with new books and Story Trail locations.

TRACK Trails Program helps children explore the beauty of nature as part of the national Kids in Parks campaign. It features kiosks at trailheads with brochures detailing fun and adventurous aspects of the hikes offered. Children earn prizes by visiting the TRACK Trails website and tracking their adventures in their online nature journals. Seven DPR parks currently participate in the TRACK Trails program: Guajome Regional Park, Felicita Park, San Dieguito Park, San Elijo Park, Lake Morena Park, and the Lakeside Community Center. In 2021, 119 individuals registered 239 adventures on County TRACK Trails, which was an increase from the previous year.

Astronomy Programs: DPR continued the partnership with the San Diego Astronomy Association on several livestream events at Oakoasis County Preserve, and in-person Star Party events at multiple parks. These events continue to be popular with earthlings of all sizes and help to increase the public awareness and enjoyment of astronomy and the physical sciences.

[20] Parkology can be found at https://www.sdparks.org/content/sdparks/en/news-events/news-stories/park-ology.html.

San Diego Festival of Science & Engineering is committed to providing experiential STEAM activities to diverse populations. It is a comprehensive community event that works to inspire the curious young minds in our community to become tomorrow's STEAM leaders. County Park Rangers participated in this festival by conducting a virtual walk-and-talk tour of Oakoasis Preserve as part of the kick-off celebration and fielding questions from students about the types of native plants and animals that exist in our region.

Nature Explorers Program is a five-year plan for increasing local awareness of resources and recreational opportunities through strategic intervention. Program curriculum is designed to inform and inspire San Diegans through awareness of environmental issues. Program excursions leverage County-owned areas and community partners, such as local representatives from the BLM, to provide participants access to green space through safe and responsible recreation. The first stage, Junior Explorers, positions the County in partnership with local schools to increase environmental sensitivity by connecting school age children with their neighborhood parks. The second stage is the Nature Explorers group, which includes comprehensive pre- and post-trip evaluation of on-site learning to increase environmental literacy among teen participants. As teens continue to engage with the program, the program provides opportunities for participants to progress into leadership roles that exemplify stewardship among their peers.

Additional education and outreach activities include the following.

- Display center interpretation
- Daily interpretation at County Preserves' nature centers, museums, and kiosks
- MSCP and environmental presentations to community groups and service boards
- County Ranger-led nature talks, slide shows, walks, and hikes
- Community service projects which include on-going tree care and watering
- Stormwater and watershed education
- Leave No Trace Program

Social media is also a powerful tool that DPR utilizes to inform San Diego county residents and visitors of what is occurring on DPR's preserve lands. Facebook, Twitter, Instagram, the DPR website, YouTube, Pinterest, and an e-blast distribution are all used to ensure that current preserve conditions, educational opportunities, and other information regarding County Preserves are just a quick click away. DPR's social media reach includes the following.

- DPR has a total of 12 Facebook pages, which cumulatively have 65,000 followers
- The main DPR Facebook page has 22,500 followers and is ranked fourth against other counties in California

- DPR's Twitter feed has 12,000 followers and is ranked second only to San Francisco's twitter feed that covers both the city and county
- DPR's Instagram account started in January 2020 is growing its 5,700 followers
- Five DPR Instagram pages cumulatively have 11,500 followers
- DPR's YouTube channel has had over 155,000 views and 535 subscribers
- DPR's Pinterest page has over 1,900 followers
- DPR has an E-blast distribution list of 22,500 subscribers
- DPR website receives over 60,000 visits every month



Social media is a powerful tool the County utilizes to inform San Diego County residents and visitors of what is occurring on County Preserves.

CHAPTER 7
Preserve Monitoring and Research



Orcutt's bird's-beak, an MSCP covered species, at Tijuana River Valley Regional Park (left photo) and Lakeside ceanothus, an MSCP covered species, at Louis A. Stelzer County Park (right photo)

Preserve monitoring within the MSCP Subarea Plan Area assesses the success of the MSCP Subarea Plan. In conformance with IA Section 14.5, *Biological Monitoring*, the County is responsible for monitoring the land it owns or acquires as well as ensuring that other private mitigation lands dedicated to the County within the MSCP Preserve are monitored consistent with the MSCP Subarea Plan. This chapter summarizes the monitoring activities in County Preserves and private mitigation areas.

MSCP monitoring on County Preserves, including TMP monitoring, baseline inventory surveys, research partnerships, and private mitigation lands monitoring occurred in 2021. County monitoring efforts also include the monitoring of sensitive species during and after park improvement projects. The 2021 monitoring results of park improvement projects are included in Section 7.1, *Preserve Biological Monitoring of County Lands*. Monitoring efforts, in 2021, by County partners can be found in Section 7.3, *Preserve Monitoring and Research Partnerships*. MSCP monitoring surveys resulted in the monitoring or documentation of 46 MSCP covered species and one MSCP covered habitat in County Preserves and an additional four MSCP covered species on private mitigation lands (**Table 14**).

TABLE 14. MSCP COVERED SPECIES OR HABITATS DOCUMENTED BY PROGRAM

MSCP Covered Species and Habitats	Monitoring Program				
	TMP	ROE	Otay Ranch POM	Private Mitigation	Inventory Surveys
Plants					
1. Del Mar manzanita				✓	✓
2. Dunn's mariposa lily			✓		✓
3. Encinitas baccharis	✓				✓
4. Felt-leaf monardella			✓		✓
5. Gander's pitcher sage			✓		
6. Lakeside ceanothus	✓			✓	✓
7. Orcutt's bird's beak	✓	✓			✓
8. Orcutt's brodiaea		✓	✓	✓	✓
9. Otay manzanita			✓		✓
10. Otay mesa mint – source CNDDB					
11. Otay tarplant	✓	✓	✓	✓	✓
12. Palmer's goldenbush			✓		✓
13. San Diego ambrosia				✓	
14. San Diego barrel cactus	✓[a]		✓	✓	✓
15. San Diego button celery			✓	✓	✓
16. San Diego goldenstar		✓	✓		✓
17. San Diego thornmint	✓	✓			✓
18. San Diego mesa mint			✓	✓	
19. San Miguel savory	✓		✓		✓
20. Snake cholla	✓[a]		✓	✓	✓
21. Spreading (prostrate) navarretia			✓		✓
22. Sticky dudleya				✓	
23. Tecate cypress			✓		
24. Torrey pine					✓
25. Variegated dudleya	✓		✓	✓	✓
26. Wart-stemmed ceanothus	✓[a]			✓	✓
27. Willowy monardella	✓	✓	✓		✓
Birds					
28. American peregrine falcon	✓[a]		✓	✓	✓
29. Bald eagle	✓[b]			✓	
30. Burrowing owl	✓		✓	✓	✓

TABLE 14. MSCP COVERED SPECIES OR HABITATS DOCUMENTED BY PROGRAM

MSCP Covered Species and Habitats	Monitoring Program				
	TMP	ROE	Otay Ranch POM	Private Mitigation	Inventory Surveys
31. Coastal (San Diego) cactus wren	✓	✓	✓		✓
32. Coastal California gnatcatcher	✓[a]	✓	✓	✓	✓
33. Cooper's hawk	✓[a]		✓	✓	✓
34. Ferruginous hawk	✓[a]			✓	✓
35. Golden eagle	✓	✓	✓	✓	✓
36. least Bell's vireo	✓	✓	✓	✓	✓
37. Light-footed Ridgway's rail					✓
38. Northern harrier	✓	✓	✓	✓	✓
39. Southern California rufous-crowned sparrow	✓[a]		✓	✓	✓
40. Southwestern willow flycatcher		✓			✓
41. Swainson's hawk					✓
42. Tricolored blackbird	✓			✓	✓
43. Western bluebird	✓[a]			✓	✓
44. White-faced ibis	✓[a]				✓
Reptiles					
45. Belding's orange-throated whiptail			✓	✓	✓
46. Blainville's horned lizard		✓	✓		✓
Mammals					
47. Mountain Lion		✓	✓		✓
48. Southern mule deer	✓[a]		✓	✓	✓
Invertebrates					
49. San Diego fairy shrimp	✓[b]		✓		
50. Thorne's hairstreak butterfly			✓		
Habitats					
51. Vernal pool/alkali playa	✓				✓

NOTES:

[a] These species were incidental observations during TMP monitoring surveys

[b] This species was observed on the draft North County MSCP portion of a County Preserve and is presumed to utilize the South County MSCP areas of the same preserve.

SOURCES:

DPR ROE database

Environmental Science Associates. 2022. *Targeted Monitoring Plan Resource-Specific Monitoring 2021 Annual Report*. Prepared for Department of Parks and Recreation County of San Diego. May.

PDS Private Mitigation RMP Annual Reports. 2021.

SanBios GIS data

7.1 Preserve Biological Monitoring of County Lands

The MSCP monitoring program on County Preserves includes baseline inventory surveys, TMP monitoring, park improvement special status species monitoring, and other resource-specific monitoring. Baseline inventory surveys and TMP monitoring were started in Spring 2021. During the reporting period, baseline inventory surveys continued from 2020 at five County Preserves. Baseline surveys at three of the County Preserves were completed and two will be continued into Spring 2022. TMP monitoring was also performed at fifteen County Preserves to monitor MSCP covered species and habitats. Annual residual dry matter (RDM) monitoring was performed on Ramona Grasslands Preserve.

Baseline inventory surveys identify and map existing biological resources within a property. They are used to develop or update preserve-specific RMPs. In addition to informing management activities for individual areas, these surveys provide baseline status of MSCP covered species for future monitoring efforts.

The TMP consists of a combination of surveillance-type monitoring (e.g., ongoing assessments of threats and habitat conditions, and presence/absence surveys to confirm presence of targeted species), baseline condition assessments to determine population-specific threats and conditions, and monitoring to assess the response of a particular species to specific management treatments. Rare plant monitoring follows the most current Management and Monitoring Strategic Plan Rare Plant Monitoring Protocol prepared by the SDMMP, and additional monitoring protocols stated in the TMP. Habitats and species included in the TMP are listed in **Table 15**. Monitoring frequency is provided in **Table 16**.

The TMP goal to collect high-quality data to inform trends in occurrences and populations, evaluate the current habitat conditions, assess threats, and provide adaptive management recommendations to ensure that the conservation goals of the MSCP are being met. The TMP prioritizes preserve level monitoring to allocate funding where it is most needed. It includes focused management and monitoring goals and objectives for target resources and detailed monitoring protocols (Environmental Science Associates and ICF 2015). The County utilizes the TMP to implement the biological goals and objectives discussed in MSCP Subarea Plan Section 6.4.1 and Section 14.5.

The TMP was revised in 2021 to incorporate 10 new preserves (5 MSCP Subarea Plan County Preserves and 5 draft North County MSCP County Preserves). The TMP update includes seven additional species. The five Subarea Plan County Preserves included in the TMP update are Barnett Ranch Preserve, Furby-North Preserve, Tijuana River Valley Regional Park, Lawrence and Barbara Daley Preserve, and Stoneridge Preserve.[21] All MSCP County Preserves with RMPs are now included in the TMP monitoring efforts. In 2019, the TMP monitoring results from 2015-2019 were reviewed to determine lessons learned and further refine priorities, goals, objectives, and monitoring methods. The proposed revisions were integrated into the TMP update in 2021. In 2021, the Wildlife Agencies were included in the review process of updating TMP. The updated TMP is planned to be finalized in 2022.

[21] Hellhole Canyon, Mt. Olympus, Santa Margarita, Simon, and Wilderness Gardens are also included in the TMP update and area located in the draft North County MSCP Plan Area.

TABLE 15. TARGETED MONITORING PLAN SPECIES AND HABITATS BY LOCATION

Common Name [a]	Boulder Oaks	Lakeside Linkage	El Capitan	El Monte	Stelzer	Oakoasis	Sycamore Canyon and Goodan Ranch	Ramona Grasslands [b]	Del Dios Highlands [b]	Lusardi Creek	Barnett Ranch	Tijuana River Valley Regional Park	Furby-North
San Diego thornmint			✓				✓						
Otay tarplant													✓
Orcutt's bird's-beak												✓	
Encinitas baccharis									✓				
Lakeside ceanothus	✓		✓		✓	✓							
Variegated dudleya							✓			✓			
Willowy monardella							✓						
Spreading (Prostrate) navarretia								✓					
San Miguel savory	✓												
San Diego fairy shrimp								✓ [b]					
Arroyo toad								✓					
Tricolored blackbird								✓[b]	✓[b]				
Golden eagle			✓					✓	✓		✓		
Burrowing owl								✓[b]					
Northern harrier												✓	
Coastal (San Diego) Cactus wren		✓											
Bald Eagle								✓ [b]			✓		
Least Bell's vireo												✓	

Common Name [a]	Boulder Oaks	Lakeside Linkage	El Capitan	El Monte	Stelzer	Oakoasis	Sycamore Canyon and Goodan Ranch	Ramona Grasslands [b]	Del Dios Highlands [b]	Lusardi Creek	Barnett Ranch	Tijuana River Valley Regional Park	Furby-North
Vernal Pool / Alkali Playa Habitat	✓							✓ [b]					

NOTES:

[a] Stephens' Kangaroo Rat (*Dipodomys stephensi*), Harbison's dun skipper (*Euphyes vestris harbisoni*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*) are monitored as part of the TMP. These species are excluded here because they are not covered species under the MSCP Subarea Plan.

[b] Portions of the Ramona Grasslands and Del Dios Highlands Preserves are located within the draft North County MSCP. This species was observed in the draft North County MSCP portion of the Preserves and is presumed to utilize South County MSCP areas of the Preserves.

SOURCES:

Environmental Science Associates and ICF. 2015. *Comprehensive Monitoring Plan.* Prepared for Department of Parks and Recreation County of San Diego. July.

Environmental Science Associates and ICF. 2019. *Targeted Monitoring Plan.* Prepared for Department of Parks and Recreation County of San Diego. July.

TABLE 16. TARGETED MONITORING PLAN SPECIES AND HABITATS MONITORING FREQUENCY

Species or Habitat[a]	Monitoring Frequency[b]	Monitored in Reporting Year
San Diego thornmint	Population quantified and threats assessed annually for 5 years	Yes
Otay tarplant	Population quantified and threats assessed annually for 5 years	Yes
Orcutt's bird's-beak	Population quantified and threats assessed annually for 5 years	Yes
Encinitas baccharis	Population quantified and threats assessed every 2 years	Yes
Lakeside ceanothus	Photo-documentation and threats assessed every 5 years	Yes
Variegated dudleya	Population quantified and threats assessed annually	Yes
Willowy monardella	Population quantified and threats assessed annually for 5 years	Yes
San Miguel savory	Population quantified and threats assessed annually for 5 years	Yes
Arroyo toad	Population and habitat quantified, and threats assessed annually for 5 years	Yes
	RDM monitoring annually	Yes
Tricolored blackbird	Presence/absence surveys and habitat and threats assessment annually for 5 years	No
Golden eagle	Foraging study monthly for 3 years	Yes
Burrowing owl	Presence/absence surveys, and habitat and threats assessment annually	No[c]
	RDM monitoring annually	Yes[d]
Coastal (San Diego) cactus wren	Avian point counts monthly during breeding season, annually for 10 years	No
	Qualitative habitat and threat assessment and photo monitoring monthly during breeding season, annually for 5 years	No
Northern harrier	Foraging assessment baseline	Yes
	Nest monitoring annually for 5 years	Yes
	Threats assessment annually for 5 years	Yes
Bald eagle	Foraging study monthly for 3 years	Yes
Least Bell's vireo	Presence/absence and nest monitoring surveys annually for 5 years	Yes
	Monitor shot hole borer annually or based on DPR Emergent Tree Pests Plan recommendation	No
	Monitor habitat recovery (Tijuana River Valley Regional Park only), annually or based on DPR Emergent Tree Pests Plan recommendation	No
	Brown-headed cowbird trapping, as needed (March 15 – June 1)	No
Vernal pool / alkali playa habitat	Quantitative vegetation and wet season fairy shrimp monitoring every 3-5 years	No
	Qualitative monitoring early and late season, annually for 5 years	Yes
	RDM monitoring annually	Yes
	Dry season fairy shrimp monitoring every 10 years	No

Species or Habitat[a]	Monitoring Frequency[b]	Monitored in Reporting Year
	Spreading (Prostrate) navarretia (*Navarretia fossalis*) monitored as part of qualitative monitoring	Yes
	San Diego fairy shrimp (*Branchinecta sandiegonensis*) monitored as part of qualitative monitoring	Yes

NOTES:
[a] Stephens' Kangaroo Rat (*Dipodomys stephensi*), Harbison's dun skipper (*Euphyes vestris harbisoni*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsendii*) are monitored as part of the TMP. These species are excluded here because they are not covered species under the MSCP Subarea Plan.
[b] Indicated monitoring frequency is after the baseline is established for the species or habitat.
[c] Habitat assessment performed at Hellhole Canyon Preserve, in draft North County MSCP.
[d] RDM monitoring only occurring at Ramona Grasslands Preserve, in draft North County MSCP

SOURCE:
Environmental Science Associates and ICF. 2015. *Comprehensive Monitoring Plan.* Prepared for Department of Parks and Recreation County of San Diego. July.

Baseline Inventory Surveys

Baseline inventory surveys are conducted on County Preserves to establish what biological and cultural resources are on site. These surveys allow for the development of preserve-specific RMPs with adaptive management strategies to ensure the sustainable management and monitoring of the sensitive resources, as well as the RMPs' Vegetation Management Plans, Grazing Management Plans, and Public Access Plans. Baseline biodiversity resources surveys include vegetation communities mapping, rare and sensitive plant species, invasive and non-native plant species, avian, herpetological, butterfly, bat, small mammal, medium mammal, and large mammal surveys. Biodiversity surveys take place over the course of one calendar year to maximize the potential to observe any late season flowering plant species or migratory animal species on the preserve land.

Baseline biological resources surveys were started in Spring 2020 for Peutz Valley Preserve, Skyline Preserve, Iron Mountain Preserve, and additions to Lakeside Linkage Preserve and Ramona Grasslands Preserve. Peutz Valley Preserve, 240 acres, and a 75-acre addition to Lakeside Linkage Preserve, were acquired in 2018. The 267-acre Skyline Preserve, which is managed by the EHC, was acquired in 2019 as was the 160-acre Iron Mountain Preserve. Also acquired in 2019 was a 123-acre addition to Ramona Grasslands Preserve. In Spring 2021, baseline inventory surveys for the five County Preserves continued. Baseline inventory surveys were completed in 2021 at Iron Mountain Preserve, and the additions to Ramona Grasslands and Lakeside Linkage Preserves. Baseline inventory surveys will continue into Spring 2022 for Skyline and Peutz Valley Preserves.

During baseline surveys at Dictionary Hill Preserve in 2019, the Quino checkerspot butterfly host plant was observed but the host plant's distribution was not mapped. In 2020, the area inhabited by the Quino checkerspot butterfly host plant was fully mapped within the Preserve to inform the County of this sensitive species' habitat and guide subsequent habitat enhancement projects. The baseline surveys also revealed that up to four territories of coastal California gnatcatcher were located on the Preserve. The data from the Dictionary Hill Preserve baseline surveys guided the County's habitat restoration efforts and the

County applied for a grant to enhance and expand the existing Quino checkerspot butterfly host plant extent as well as to restore and enhance approximately four acres of coastal sage scrub habitat, which provides nesting and foraging habitat for the coastal California gnatcatcher. Additional work was approved to expand and enhance monarch butterfly habitat, as well. The County was awarded the WCB Proposition 68 grant, supplemented by County matching funds, and work commenced in summer of 2021 with the development of a habitat restoration plant. The implementation of the habitat restoration plan will begin in 2022 and the project will be finalized in 2024. The WCB grant is also discussed in Section 6.3, *Grant Funded Projects*.

Targeted Monitoring Plan

Twelve MSCP covered species and one habitat were monitored across 10 County Preserves as part of the TMP monitoring efforts in the reporting year (**Table 17**). Two new plant populations were monitored. Three of six plant populations increased including variegated dudleya population increased at Sycamore Canyon and Goodan Ranch Preserve and Lakeside ceanothus at four County Preserves. One of six plant populations remained the same. Monitoring followed the methods and key considerations as outlined in the TMP (Environmental Science Associates and ICF 2015) for each species and habitat type. An additional 13 MSCP covered species were incidentally observed during TMP monitoring (**Table 18**).

The TMP includes management objectives for target species and habitats. For example, for all TMP MSCP covered plant species, management objectives include maintaining invasive, non-native plant cover to less than 20% cover (Environmental Science Associates and ICF 2015). Monitoring completed in the previous reporting years includes an assessment of management needs for the following year. Vegetation mapping and habitat assessments, including invasive non-native plant species mapping, were conducted on three Subarea Plan County Preserves in 2021 including Furby-North, Lawrence and Barbara Daley, and Stoneridge Preserves. Implementation of management actions is documented in Chapter 6, *Preserve Management.*

TABLE 17. TARGETED MONITORING PLAN SPECIES MONITORED IN PREVIOUS REPORTING YEARS: YEAR-TO-YEAR COMPARISON

Species	Location/Measurements	2015	2016	2017	2018	2019	2021
San Diego thornmint	Sycamore Canyon and Goodan Ranch Population estimate, individuals		20,000-30,000	777,300	5,525	27,200	12,990
Orcutt's bird's-beak	Tijuana River Valley Regional Park Population estimate, individuals						123
Otay tarplant	Furby-North Population estimate, individuals						1
Lakeside ceanothus	Boulder Oaks Population estimate, individuals	600					1,100
	El Capitan Population estimate, individuals	400					450
	Louis A. Stelzer Population estimate, individuals	135					428
	Oakoasis Population estimate, individuals	225					573
Encinitas baccharis	Del Dios Highlands Population estimate, individuals	250		344		350	350
San Miguel savory	Boulder Oaks Population estimate, individuals		184	145	145	99	127
Variegated dudleya	Lusardi Creek Population estimate, individuals		199	199	199	33	0
	Sycamore Canyon and Goodan Ranch Population Estimate, individuals		11	60		30	1,275
Willowy monardella	Sycamore Canyon and Goodan Ranch Population estimate, individuals	441	238	284	283	364	305

Species	Location/Measurements	2015	2016	2017	2018	2019	2021
Golden eagle	Ramona Grasslands Species Observed	yes	yes			yes	yes
	Off-site Species Nesting	no	yes			yes	yes
	Barnett Ranch Species Observed						yes
Tricolored blackbird	Ramona Grasslands Species Observed			yes	yes	yes	No monitoring
	Species Nesting			no	no	no	No monitoring
Burrowing owl	Ramona Grasslands Species Observed		yes[b]		no	no	No monitoring
	Species Nesting		no		no	no	No monitoring
Coastal (San Diego) cactus wren	Lakeside Linkage Species Observed				yes	yes	No monitoring
	Species Nesting				no	yes	No monitoring
Bald eagle	Ramona Grasslands Species Observed	yes	yes			yes	yes
	Species Nesting	yes	yes[c]			yes[c]	no
Northern harrier	Tijuana River Valley Regional Park Species Observed						yes
	Species Nesting						yes
Least Bell's vireo	Tijuana River Valley Regional Park Species Observed						yes
	Species Nesting						yes

Species	Location/Measurements	2015	2016	2017	2018	2019	2021
Arroyo toad	Ramona Grasslands						
	# of occupied reaches		9	9	6	7	0 reaches occupied 2 juvenile ARTO detected in upland area
Vernal pool/alkali playa	Ramona Grasslands						
	# of pools supporting at least one USACE indicator species		15		11	17	15
	# of pools supporting spreading (prostrate) navarretia		0		0	0	0
	# of pools supporting San Diego fairy shrimp		14		0	7	0

NOTES:

[a] Stephens' Kangaroo Rat (*Dipodomys stephensi*) is monitored as part of the Target Monitoring Plan. It is excluded here because it is not a covered species under the MSCP Subarea Plan.

[b] One burrowing owl was reported by DPR staff. None were observed during surveys.

[c] Bald eagle nest territory is located on Ramona Grasslands Preserve within the NC MSCP portion of the Preserve. Successful nesting was documented 2014-2016. Nesting was documented but not successful in 2019 and 2021.

SOURCES:

ICF International. 2017. *CMP Resource-Specific Monitoring 2016 Annual Report*. November. Prepared for: County of San Diego Department of Parks and Recreation.

ICF International. 2018. *CMP Resource-Specific Monitoring 2017 Annual Report*. January. Prepared for: County of San Diego Department of Parks and Recreation.

ICF. 2018. *Targeted Monitoring Plan Resource-Specific Monitoring 2018 Annual Report*. October. Prepared for: County of San Diego Department of Parks and Recreation.

Environmental Science Associates. 2022. *Targeted Monitoring Plan Resource-Specific Monitoring 2021 Annual Report*. Prepared for Department of Parks and Recreation County of San Diego. May.

Environmental Science Associates. 2021. *Ramona Grasslands Preserve 2020-21 Raptor Surveys Summary Report for the County of San Diego Department of Parks and Recreation*. Prepared for Department of Parks and Recreation San Diego County. November.

Environmental Science Associates. 2021b. *Barnett Ranch Preserve 2020-21 Raptor Surveys Summary Report for the County of San Diego Department of Parks and Recreation*. Prepared for Department of Parks and Recreation San Diego County. October.

TABLE 18. INCIDENTAL OBSERVATIONS OF OTHER MSCP COVERED SPECIES DURING TMP SURVEYS IN REPORTING YEAR

Species	Del Dios Highlands	Lusardi Creek	Ramona Grasslands	Sycamore Canyon and Goodan Ranch	Tijuana River Valley Regional Park	Furby-North	Louis A. Stelzer
1. Wart-stemmed ceanothus	✓						
2. San Diego barrel cactus		✓			✓	✓	
3. Snake cholla						✓	
4. Cooper's hawk				✓			
5. Canada goose			✓				
6. Ferruginous hawk			✓				
7. Northern harrier			✓				
8. Peregrine falcon			✓				
9. Long-billed curlew			✓				
10. White-faced ibis			✓				
11. Western bluebird			✓				
12. California gnatcatcher	✓		✓		✓		✓
13. Southern mule deer			✓	✓			

SOURCE:
Environmental Science Associates. 2022. *Targeted Monitoring Plan Resource-Specific Monitoring 2021 Annual Report*. Prepared for Department of Parks and Recreation County of San Diego. May.

Environmental Science Associates. 2021. *Ramona Grasslands Preserve 2020-21 Raptor Surveys Summary Report for the County of San Diego Department of Parks and Recreation*. Prepared for Department of Parks and Recreation San Diego County. November.

Environmental Science Associates. 2021b. *Barnett Ranch Preserve 2020-21 Raptor Surveys Summary Report for the County of San Diego Department of Parks and Recreation*. Prepared for Department of Parks and Recreation San Diego County. October.

San Diego Thornmint

Monitoring Location: Sycamore Canyon and Goodan Ranch Preserve
Plot Establishment Dates: April 22, May 4-5, 2016 (10 plots); and May 4, 2017 (added 1 plot)
Reporting Year Monitoring Dates: April 29-30 and May 5-7, 2021
Number of Permanent Monitoring Plots: 11
Reporting Year Population Estimate: 12,990 plants

The San Diego thornmint population estimate was 12,990 individuals at Sycamore Canyon and Goodan Ranch in 2021. Additional special-status plant species, such as small-flowered bindweed and Palmer's grappling hook, were also observed within ten of the monitoring plots. Across all 11 monitoring plots, San Diego thornmint habitat contained invasive, non-native plants, particularly purple false brome and tocalote. The annual population fluctuates based on rainfall. High rainfall years result in a smaller population size due to increased competition from invasive, non-native plants (Preston 2019). Population estimates range between a low of 5,525 in 2018 to a high of 777,300 individuals in 2017 (**Table 17**).

Monitoring results indicate the importance of invasive, non-native plant control for this species. Eight of the 11 plots would benefit from invasive, non-native plant control (ESA 2019d). The TMP recommends overall invasive, non-native plant cover be kept to less than 20% and cover of purple false brome be kept to less than 10% (Environmental Science Associates and ICF 2015). Non-native plant cover of plots 1, 2, 4, 5, 7, 8, 9, and 11 were recorded at 11.0%, 15.2%, 56.4%, 32.6%, 55.8%, 11.4%, 12.2%, and 64.8%, respectively. The remaining plots were under 10% total non-native plant cover. Purple false brome comprised the majority of the non-native plant cover across plots 4, 5, 7, and 11. The second most prevalent non-native plant species was tocalote. The invasive, non-native plant removal protocol within the TMP, which includes hand-clipping, hand-pulling, and herbicide use, should be followed (ESA 2019d). A Weed Management Plan addressing treatment of invasive non-native plants adjacent to the San Diego thornmint monitoring plots was prepared in 2018. The Weed Management Plan will be implemented to address treatment of invasive, non-native plants associated with the San Diego thornmint monitoring plots.



San Diego Thornmint is a Targeted Monitoring Plan species found in Sycamore Canyon and Goodan Ranch Preserve.

Orcutt's bird's-beak

Monitoring Location: Tijuana River Valley Regional Park
Plot Establishment Dates: June 29, 2016 and June 5, 2017
Reporting Year Monitoring Dates: June 1, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 123 plants

The Orcutt's bird's beak population estimate was 123 individuals at Tijuana River Valley Regional Park in 2021. Additional special-status plant species, such as western ponysfoot, San Diego barrel cactus, ashy spikemoss, and least Bell's vireo, were also observed within the monitoring plots.

Monitoring results indicate the importance of invasive, non-native plant control for this species. The Orcutt's bird's-beak habitat contained invasive non-native grasses and herbs, particularly foxtail brome, Saharan mustard, and shortpod mustard. Management recommendations for 2021 include the control of invasive grasses and forbs, protecting soils, and controlling off-trail use. Application of vertical mulch was recommended to protect soils and deter off-trail use within and adjacent to suitable habitat for Orcutt's bird's-beak.

Otay tarplant

Monitoring Location: Furby-North Preserve
Plot Establishment Dates: June 29, 2016
Reporting Year Monitoring Dates: May 28, 2021
Number of Permanent Monitoring Plots: 1
Reporting Year Population Estimate: 1 plant

The Otay tarplant population estimate was 1 individual at Furby-North Preserve in 2021. No additional special-status species were observed within the monitoring plot. Based on incidental reporting across the San Diego region, Otay tarplant numbers in 2021 were low – likely due to drought conditions. Specifically, for the Furby-North Property population, high thatch cover and invasive non-native plant cover likely contributed to a further reduced Otay tarplant population size. The Otay tarplant habitat contained invasive non-native grasses and herbs, particularly soft brome, red brome, Italian rye grass (*Festuca perennis*), and crown daisy. Routine management within an approximately 0.41-acre management area occurred on August 3 and 5, 2021. Thatch and invasive non-native grasses within and adjacent to the Otay tarplant population were removed to reduce invasive grass and forb to 20 percent absolute cover.

Lakeside ceanothus

Monitoring Location: Boulder Oaks Preserve
Plot Establishment Dates: August 4, 2015
Reporting Year Monitoring Dates: May 10-11, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 1,100 plants

The Lakeside ceanothus population estimate was 1,100 individuals at Boulder Oaks Preserve in 2021. While the estimated population size of Lakeside ceanothus at Boulder Oaks County Preserve is higher than what was estimated in 2015, dead Lakeside ceanothus plants were observed within both monitoring plots. It is likely that these individuals died from old age or possibly drought conditions, as no herbivory or apparent damage was observed on the plants. No additional special-status plant species were observed.

Monitoring results indicate the importance of invasive, non-native plant control for this species**.** Across both monitoring plots, Lakeside ceanothus habitat contained limited invasive non-native grasses and herbs, particularly crimson fountain grass. The invasive non-native plant cover for both monitoring plots is below 20 percent, but it is recommended that invasive non-native plant control be implemented by a qualified restoration specialist, specifically for crimson fountain grass.

Monitoring Location: El Capitan Preserve
Plot Establishment Dates: August 6, 2015
Reporting Year Monitoring Dates: May 12 and May 14, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 450 plants

The Lakeside ceanothus population in El Capitan County Preserve in 2021 is estimated to be approximately 450 plants. Within both monitoring plots, 50 to 75 percent of all Lakeside ceanothus plants observed were noted as dead. It is likely that these individuals died from old age or possibly drought

conditions, as no herbivory or apparent damage was observed on the plants. One special-status plant species was observed within one monitoring plot, Engelmann oak.

Monitoring results indicate the importance of invasive, non-native plant control for this species**.** Across both monitoring plots, Lakeside ceanothus habitat contained limited invasive non-native grasses and herbs, particularly crimson fountain grass. The invasive non-native plant cover for both monitoring plots is below 20 percent, but it is recommended that invasive non-native plant control be implemented by a qualified restoration specialist, specifically for crimson fountain grass.

Monitoring Location: Oakoasis Preserve
Plot Establishment Dates: August 6, 2015
Reporting Year Monitoring Dates: May 18-19, 2021
Number of Permanent Monitoring Plots: 1
Reporting Year Population Estimate: 573 plants

The Lakeside ceanothus population in Oakoasis Preserve in 2021 is estimated to be approximately 573 plants. No special-status plant species were observed within the monitoring plot. Monitoring results indicate the importance of invasive, non-native plant control for this species**.** Within the monitoring plot, Lakeside ceanothus habitat contained invasive non-native grasses and herbs, particularly natal grass. The invasive non-native plant cover within the monitoring plot is below 20 percent, but it is recommended that invasive non-native plant control be implemented by a qualified restoration specialist, specifically for natal grass and crimson fountain grass.

Monitoring Location: Louis A. Stelzer Park
Plot Establishment Dates: July 31, 2015
Reporting Year Monitoring Dates: May 21, 2021
Number of Permanent Monitoring Plots: 1
Reporting Year Population Estimate: 428 plants

The Lakeside ceanothus population within Louis A. Stelzer County Park in 2021 is estimated to be approximately 428 plants. One special-status species was observed within the monitoring plot, coastal California gnatcatcher. Monitoring results indicate the importance of invasive, non-native plant control for this species**.** Within the monitoring plot, Lakeside ceanothus habitat contained invasive non-native grasses and herbs, particularly soft brome, stork's bill, and annual fescue. The invasive non-native plant cover within the monitoring plot is below 20 percent, but it is recommended that invasive non-native plant control be implemented by a qualified restoration specialist, specifically for soft brome, stork’s bill, and annual fescue.

Encinitas Baccharis

Monitoring Location: Del Dios Highlands Preserve
Plot Establishment Dates: July 24 and 30, 2015
Reporting Year Monitoring Dates: August 22, 2019
Number of Permanent Monitoring Plots: 3
Reporting Year Population Estimate: 350 plants

The Encinitas baccharis population estimate was 350 individuals at Del Dios Highlands in 2021. One additional special-status plant species, wart-stemmed ceanothus, was also observed within all three of the monitoring plots. Only one monitoring plot contained non-native grasses and herbs, including compact brome (ESA 2019d). The population appears to be relatively stable and is exhibiting natural recruitment. Population estimates range between a 250 to 520 individuals from 2015 to 2021 (**Table 17**). In 2020, Mediterranean bugs were observed on approximately 10-20% of all Encinitas baccharis individuals. In 2021, the Mediterranean bugs were not observed on Encinitas baccharis individuals. Erosion that could potentially impact this population was addressed in early 2022 and will be detailed in the 2022 MSCP Annual Report.

San Miguel Savory

Monitoring Location: Boulder Oaks Preserve
Plot Establishment Dates: April 6 and 16, 2016
Reporting Year Monitoring Dates: April 28, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 127 plants

The San Miguel savory population estimate was 127 individuals at Boulder Oaks Preserve in 2021. One additional special-status plant, southern mountain misery, was also observed. Across both monitoring plots, San Miguel savory habitat contained invasive grasses, particularly perennial veldtgrass and annual fescue [ESA 2019d]). This species typically occurs in low numbers in the unincorporated county and how the microhabitat requirements restrict sub-population sizes is unclear (Reiser 2001). Population estimates range between a 184 to 99 individuals from 2016 to 2021 (**Table 17**).

Routine management of the San Miguel savory occurrence areas occurred in 2021 around each monitoring plot, for an approximate combined management area of three acres. Management included treatment of invasive non-native plants around individual plants (hand pulling) and outside of the buffer area, but within the management area, with herbicide. Although non-native plant cover is currently very low, the area should continue to be monitored for invasive, non-native plants that could threaten this population of San Miguel savory. In addition, because vegetation within the San Miguel savory occurrences is very thick and on steep slopes, care should be taken when performing monitoring to not trample the San Miguel savory plants, and to avoid other native plants to the extent possible (ESA 2022).

Variegated Dudleya

Monitoring Location: Lusardi Creek Preserve
Plot Establishment Dates: April 27, 2016
Reporting Year Monitoring Dates: May 4, 2019
Number of Permanent Monitoring Plots: 1
Reporting Year Population Estimate: 0 plants

The variegated dudleya population estimate was 0 individuals at Lusardi Creek in 2019. An additional MSCP plant species, San Diego barrel cactus, was observed within the monitoring plot. Within the monitoring plot, variegated dudleya habitat contained invasive grasses, particularly purple false brome and foxtail brome. The sharp decline in the number of individuals is attributed to herbivory and the timing of surveys. Signs of herbivory were observed on a wide range of native and non-native plants, suggesting a high level of herbivory. The surveys are timed during the flowering period when vegetative and non-flowering individuals would not be visible (ESA 2022). Population estimates range between a 199 to 0 individuals from 2016 to 2021 (**Table 17**).

Monitoring results indicate invasive, non-native plant and animal treatments and access control are necessary to enhance the variegated dudleya population. Invasive non-native plant species within the management area were treated. Invasive non-native plants within 18 inches of historical locations of individual variegated dudleya were carefully pulled by hand. Invasive non-native plants outside of the buffer area, but within the management area, were trimmed with a mechanical weed trimmer to 1-2 inches from the ground. The removed thatch was raked and properly disposed of off-site. Herbivory fencing was installed in 2021 around the variegated dudleya monitoring plot.

Monitoring Location: Sycamore Canyon and Goodan Ranch
Plot Establishment Dates: June 23, 2017 and April 14, 2021
Reporting Year Monitoring Dates: April 9 and April 14, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 1,275 individuals

The entire population of variegated dudleya within the Preserve is estimated to be 1,275 individual plants (ESA 2019d). The population is highly variable with estimates ranging from a low of 11 in 2016 to a high of 1,275 in 2021 (**Table 17**). Additional special-status species observed within the two monitoring plots included San Diego thornmint, small-flowered bindweed, Palmer's grappling hook, Douglas' silverpuffs, coastal California gnatcatcher, and turkey vulture. Across all monitoring plots, variegated dudleya habitat contained invasive non-native grasses and herbs, particularly purple false brome.

Monitoring results indicate invasive, non-native plant control is necessary to enhance the population of variegated dudleya. Control of purple false brome would benefit the species (ESA 2022). A Weed Management Plan addressing treatment of invasive, non-native plants adjacent to the San Diego thornmint monitoring plots was prepared in 2018. The Weed Management Plan will be implemented to address treatment of invasive, non-native plants associated with the San Diego thornmint monitoring plots where variegated dudleya occurs.

Willowy Monardella

Monitoring Location: Sycamore Canyon and Goodan Ranch
Plot Establishment Dates: July 7, 2015, June 22, 2016 and June 9, 2021
Reporting Year Monitoring Dates: June 9 and June 22, 2021
Number of Permanent Monitoring Plots: 2
Reporting Year Population Estimate: 305

The willowy monardella population estimate was 305 individuals at Sycamore Canyon and Goodan Ranch Preserve in 2021. A third permanent monitoring plot was added in 2021 in a newly acquired southern parcel in the Preserve. No additional special-status plant species were observed within the three monitoring plots. Across all monitoring plots, willowy monardella habitat contained invasive non-native grasses and herbs, particularly oat grasses, purple false brome, and brome grasses (ESA 2022). Population variability may be attributed to how surveyors count clumps of plants rather than annual fluctuations in population size (ESA 2022). The population estimates range from a low of 238 in 2016 to a high of 441 in 2017 (**Table 17**).

Arroyo Toad

Monitoring Location: Ramona Grasslands Preserve
Stream Reaches: USGS-established monitoring reaches along Santa Maria Creek
Assessment: Visual surveys for life stages and threat and habitat assessment
Reporting Year Monitoring Dates: April 27-30 and June 23, 2021

In 2021, no arroyo toad clutches, juveniles or adults were observed within Santa Maria Creek during the initial habitat assessment; however, two juvenile arroyo toads were observed in the adjacent upland area along Reach A28 (downstream), during the follow-up survey conducted in June 2021. Occupied reaches vary from a low of 6 in 2018 and highs of 9 in 2016 and 2017 (**Table 17**).

Habitat suitable to support arroyo toad calling and breeding (i.e., shallow pooling and adjacent unshaded banks) observed along Santa Maria Creek in the past (i.e., 2019 monitoring) was limited during the 2021 surveys. Much of the creek that previously supported shallow pooling and adjacent, unvegetated calling banks, was now either dry or supported low flows and/or isolated pooling, that was dominated by either emergent vegetation or floating algae. Based on the conditions observed in April, it is conceivable that flows may have been slightly higher earlier in the year (i.e., March), which may have resulted in a truncated breeding season for the arroyo toad. However, since older larvae (~ 25-35mm) and/or metamorphs were not observed during the survey, it is more likely that breeding activities did not take place this year in response to the regional drought conditions. The two juvenile arroyo toads were likely the result the previous year's breeding activities.

One invasive, non-native plant, salt-cedar, occurred at low densities throughout Santa Maria Creek. Additionally, giant reed, also a Cal-IPC High species, was mapped in 2018 in an inaccessible portion of Santa Maria Creek and is assumed to be present in the northern on-site reaches of the creek. Three exotic predators were also noted during surveys: red-eared slider, red-swamp crayfish, and bullfrog. One red-eared slider was observed in an isolated pool, in the southwest portion of the Preserve; numerous red-swamp crayfish were observed throughout wetted portions of the creek, primarily in the northwest portion

of the Preserve; and numerous American bullfrogs were observed, primarily within isolated pools, within the southwest portion of the Preserve (ESA 2022).

Ongoing rangeland management practices that keep cattle out of Santa Maria Creek during the arroyo toad breeding season will be maintained.

Northern Harrier

Monitoring Location: Tijuana River Valley Regional Park
Habitat surveyed: Suitable foraging and nesting habitat
Assessment: Visual surveys and habitat and threat assessment
Reporting Year Monitoring Dates: April 7, May 21, June 29, and July 19, 2021
Reporting Year Species Observed: Yes
Reporting Year Species Nesting: Yes (2 nesting territories fledged)

In 2021, three territories (Territories #1, #2, and #3) were confirmed within the Tijuana River Valley Regional Park. Territory #1 located north of the newly constructed campground; Territory #2 located northeast of the Hollister Street/Monument Road intersection; and Territory #3 located west of the Bird & Butterfly Garden. Territory #1 fledged, and the nest site was in proximity to a public trail and known historic nest location. The Territory #2 and Territory #3 nest sites were not located. Territory #2 was assumed to have failed given the presence of individual/pair sightings and lack of fledglings observed. Territory #3 was determined to have fledged because a fledgling was seen during the June survey.

Up to two other territories (Territories #4 and #5) could potential occur in the park but were not confirmed. Territory #4 is potentially located north of the newly constructed campground and Territory #5 is potentially located east of the Tijuana River Valley Sports Complex. Territory #4 is a potential territory adjacent to Territory #1. This was determined based on an observed territorial dispute between two adult females during the May survey. While no nesting was confirmed in Territory #5, an individual male and female were seen on separate occasions throughout the 2021 nesting surveys in the area. Territory #5 would be the northernmost territory. It is adjacent to a historic nest location and the abandoned agricultural field which was used extensively for foraging. Individuals were foraging in this field during every 2021 nesting survey.

Threats to nesting territories were determined in 2021 to include nest disturbance and nest predation may diminish the success of the species over time, without effective management. Installing a trail counter on the trail in the vicinity of the Territory #1 nest site to track trail use may provide a trail use baseline and inform if seasonal trail closure is warranted to prevent nest disturbance. Regularly maintaining trash cans and removing trash around the park campground may prevent attraction of nest predators. Trash removal is especially important during the nesting season due to the proximity of the campground to Territory #1.

Least Bell's vireo

Monitoring Location: Tijuana River Valley Regional Park
Habitat surveyed: Suitable foraging and nesting habitat
Assessment: Visual surveys and habitat and threat assessment
Reporting Year Monitoring Dates: April 12, 13, 15, 16, and 19; May 3, 5, 6, and 7; June 7-11; and July 12-15, 2021
Reporting Year Species Observed: Yes
Reporting Year Species Nesting: Yes

In 2021, monitoring included determining the status of breeding least Bell's vireo populations and habitat conditions and threats to inform management needs in Tijuana River Valley Regional Park. The survey area encompassed a portion of the Tijuana River and adjacent upland areas, recreational trails, and access roads. The overall survey area included southern riparian woodland (262 acres), non-native riparian (184 acres), mulefat scrub (178 acres), southern willow scrub (175 acres), and southern cottonwood willow riparian forest (5 acres), for a total of 804 acres. All 804 acres were initially targeted to be surveyed, though inaccessible areas were not surveyed. Therefore, a total of 668 acres were ultimately surveyed.

Least Bell's vireo was detected commonly on all survey passes. The results of the modified protocol-level least Bell's vireo surveys conducted within the accessible portions of the study area (668 total accessible acres) contain least Bell's vireo habitat that was occupied by approximately 178 least Bell's vireo territories, including at least 101 pairs and 77 single males (a large portion of which were likely paired). Several least Bell's vireo nests were documented incidentally during the surveys. Brown-headed cowbirds were detected within the survey area. Brown-headed cowbirds were not observed in large numbers or concentrations, likely reflective of years of ongoing cowbird trapping efforts in and around the Tijuana River Valley Regional Park.

Threats to nesting territories were determined in 2021 to include invasive non-native plant species, off-trail use, nest parasitism by brown-headed cowbird, and nest predation. Mature stands of salt-cedar were observed along trails and adjacent to riparian habitats throughout the property and interrupting the continuity of willow dominated least Bell's vireo habitat. Extensive dense stands of arundo were observed in western-most portions of the park and adjacent to the Monument Road bridge in non-native dominated vegetation. Similar to salt-cedar, arundo can quickly become established along the river and outcompete native plant species. Castor bean is found throughout the native and non-native riparian areas along the Tijuana River. Very large individuals were observed on the edges of mature southern cottonwood-willow woodlands and large patches were observed adjacent to Monument Road bridge and was associated with other invasive species dominating the area. Crystalline ice plant occurs in large patches in several areas of the park, adjacent to riparian habitats and outcompeting many native species for water. Additionally, the accumulation of released salts can slow the growth or establishment of native species. Within the riparian zone floodplain and associated upland vegetation, crown daisy, mustards (shortpod mustard, wild radish), and thistles (Italian thistle and bull thistle) dominate, leaving little area for natives to become established. Displacement of native vegetation can negatively impact least Bell's vireo prey availability and nesting habitat. In 2021, a Habitat Restoration Plan for the park began to be drafted that addresses non-native plant treatment in the park.

Park staff will continue to close unauthorized and abandoned trails to help reduce off trail use. Brown-headed cowbird control will not occur immediately since the birds were not found in high numbers on-site. Removal of trash and maintaining trash cans will continue to occur by park staff; therefore, reducing potential of nest predation.

Vernal Pool/Alkali Playa

Monitoring Location: Ramona Grasslands Preserve
Habitat surveyed: subset of 20 vernal pools
Assessment: Qualitative surveys in wet and dry season and habitat and threat assessment
Reporting Year Monitoring Dates: March 4 and May 11, 2021
Reporting Year Habitat Function: 17 of 20 pools

Rainfall in 2021 was below average, with 7.41 inches of rain reported by Ramona Airport during the hydrologic period of July 1, 2020 to June 30, 2021 (TWC 2021). The largest storm events occurred in December 2020, January and March 2021 and accounted for 6.26 inches of rain.

Overall, the pools observed as part of the qualitative monitoring effort appear to reflect evidence of dry climate conditions. It is assumed that lower than average rainfall combined with high temperatures harmed overall pool inundation as well as the duration of pool inundation. This is evidenced in the low presence and diversity of USACE vernal pool faunal indicator species globally.

During the May survey visit, 7 of the 20 pools monitored were found to have received sufficient rainfall to yield measurable ponding. Of the seven pools with measurable ponding, one pool was observed to support faunal indicator species. Six USACE vernal pool indicator species (faunal and floral) previously detected during the 2018-2019 survey season (which received higher than average rainfall) were notably absent during this qualitative monitoring effort: starwart, San Diego fairy shrimp, flowering quillwort, hairy water clover, California waterwort, and toothed downingia. Nevertheless, it is assumed that the low presence of faunal indicator species is not indicative of the overall functionality of the vernal pools. In fact, despite the dry climate conditions, floral indicator species were observed at 15 of the 20 pools monitored (one less pool than was observed during the 2018-2019 survey season). Additionally, coastal plantain, a USACE vernal pool floral indicator species, which had not been previously recorded, was observed at pools p14 and c20. Of the 15 pools observed to support at least one USACE indicator species, aquatic pygmyweed, wavy-stemmed popcorn flower, and woolly marbles were the most abundant indicator species observed. Aquatic pygmyweed was observed only during the March survey period during moist pool conditions, while wavy-stemmed popcorn flower and woolly marbles were observed during the March and May survey periods.

An abundance of grass poly and Italian rye grass was observed in the surveyed vernal pools. Grass poly was identified in 16 of the 20 surveyed pools, while Italian fescue was observed in 15 of 20 pools. Algal growth was largely absent from the pools; however, this is also likely due to lower-than-average rainfall and lack of overall moisture.

Invasive, non-native plant management was performed on July 7-8, July 12-13, and July 19-20, 2021, after the ground was completely dry and native plants had generally senesced. Invasive non-native plant

management was performed at the 16 vernal pools recommended for treatment based on 2021 qualitative survey results.

Vegetation Community Mapping and Habitat Assessments

Vegetation mapping and habitat assessments were conducted on three County Preserves in 2021 including Furby-North, Lawrence and Barbara Daley, and Stoneridge Preserves. The goal of vegetation community mapping and habitat assessment is to perform regular surveillance monitoring to ensure the integrity of the preserve system and inform adaptive management decisions based on habitat condition assessments and invasive non-native plant species mapping.

Vegetation community mapping on Furby-North Preserve determined a 30% increase in scrub habitat between 2011 and 2021. Treatment of on-site invasive non-native plant species, including crown daisy and black mustard, is likely increasing the overall scrub cover of the preserve. The highest quality habitat is provided by maritime succulent scrub throughout the preserve. Vegetation mapping on Stoneridge Preserve determined that the vegetation community is successfully recovering after the 2003 Cedar Fire between 2012 and 2021. Vegetation community mapping on Lawrence and Barbara Daley Preserve determined an increase in acreage of forest habitat as existing trees matured from when they were observed in 2010 compared to 2021 survey results.

Otay Ranch Preserve Monitoring

Otay Ranch Preserve is jointly owned by the County and City of Chula Vista (Otay Ranch POM) and is counted towards the assembled MSCP Preserve as dedicated private hardline mitigation. Monitoring of MSCP covered species and habitats ensures that the covered species are thriving and that any potential threats can be quickly addressed. The 2021 monitoring tasks were conducted in support of the Phase 1 and Phase 2 RMPs (County of San Diego 1993 and RECON 2018).

In 2021, monitoring efforts focused on surveys for rare plant species, Quino checkerspot butterfly, coastal cactus wren, coastal California gnatcatcher, Thorne's hairstreak butterfly, and vegetation community mapping. Vernal pool plant seed collection and redistribution was also conducted. Tree health surveys were conducted to document the effects of the invasive Kuroshio shot hole borer (KSHB) within riparian habitat on multiple parcels of the Preserve. Gold-spotted oak borer monitoring was also conducted. Baseline surveys were also performed at several parcels on the Preserve. Golden eagle camera monitoring and wet season fairy shrimp surveys were also conducted in 2021. Additionally, monitoring efforts included site visits to the various Otay Ranch parcels to document access issues, sensitive species, any newly detected species, weeds, and the overall health of the sites. Site-specific monitoring took place from January 1 to December 31, 2021 and included site visits to cover all property that is currently included as part of the 4,370-acre Otay Ranch Preserve. Regular coordination meetings between the Preserve Steward/Biologist and Otay Ranch POM occurred during 2021 to track progress of management and monitoring activities. All 2021 management and monitoring activities are included in the 2021 Annual Report for Otay Ranch Preserve (**Appendix N**).

Species Specific Adaptive Management Monitoring

Monitoring of special-status species not included in the TMP or supplemental to the TMP monitoring is also a component of the County's monitoring program. The information gathered during these surveys provides guidance on a species-specific level as to when, if any, adaptive management strategies need to be implemented on County Preserves. Species specific monitoring occurred in 2021 as described below.

Raptor Foraging Study at Ramona Grasslands Preserve

Raptor use and foraging behavior is monitored at the Ramona Grasslands Preserve to understand bald eagle, golden eagle, and raptor abundance and distribution; to inform adaptive management and public use; and to evaluate potential threats. The study includes monitoring the year-to-year status of the off-site golden eagle territory adjacent to the preserve. Study methodology includes raptor point count field surveys and golden eagle nest monitoring.

Fifteen raptor species were detected at both the northeast and southwest survey areas during the 2020-2021 raptor point count surveys. Five of the 15 raptors were MSCP covered species, which are golden eagle, bald eagle, American peregrine falcon, northern harrier, and Cooper's hawk. Red-tailed hawk, red-shouldered hawk, ferruginous hawk, sharp-shinned hawk, prairie falcon, merlin, American kestrel, and osprey were also observed. Raptor species richness was highest during the fall season. Raptor species richness was also higher in the southwest survey area than the northeast survey area throughout the fall, winter, and spring seasons (ESA 2021).

A golden eagle individual or pair with a juvenile in tow was observed on four surveys during the 2020-2021 survey period within the Preserve. It is assumed the family group was from the Bandy Canyon territory. Typically, the juvenile would follow the adults around within the northeast survey area, perching on the rocky outcrops, eucalyptus trees, and wooden/steel electrical poles. While the family group was seen together and observed flying to Bandy Canyon on two occasions, other golden eagle use within the Preserve is unknown without distinguishing markers or features. However, three subadult golden eagles were observed at one time during the spring season when the resident golden eagles were not observed; one of the subadults was likely the fledged juvenile from 2020 (ESA 2021).

Bald eagles were detected in each season but were not detected during each survey within the Preserve. Another newly established adult pair of bald eagles began occupying the Preserve in October 2020. This is the third year where the resident pair had a "turnover" in the individuals present in the territory. One of the individuals was an adult bird with no tags/distinguishing markers and the second individual was a subadult with a "black eyeliner" appearance. Without distinguishing markers or features, it is unknown if the untagged adult bald eagle was the same individual from the 2018-2020 survey periods or if it was a different individual (ESA 2021).

Golden eagles and other raptors nested in or adjacent to the Preserve. The golden eagle nest site in Bandy Canyon (off-site) was occupied and successfully fledged one chick (determined through observation of one large, mostly feathered-out chick) in 2021. One bald eagle pair was observed attempting to nest on the Preserve in the same nest tree as in previous years. The adult pair did incubate eggs but appeared to

have failed (for unknown reasons) during this nesting phase. One red-tailed hawk nest, one American kestrel, and one Cooper's hawk nest were also observed (ESA 2021).



A golden eagle, an MSCP covered species, flying over Ramona Grasslands Preserve.

Raptor Foraging Study at Barnett Ranch Preserve

Raptor use and foraging behavior was monitored at the Barnett Ranch Preserve to understand eagle and raptor foraging behavior and inform adaptive management. Study methodology included raptor point count field surveys and raptor nest monitoring surveys. An established golden eagle territory is adjacent to the Preserve on CDFW–owned Cañada de San Vicente Ecological Reserve.

Fifteen raptor species were detected at both the west and east survey areas during the 2020-2021 raptor point count surveys. Six of the 15 raptors were MSCP covered species, which are golden eagle, bald eagle, American peregrine falcon, Swainson's hawk, northern harrier, Cooper's hawk. White-tailed kite, osprey, red-tailed hawk, red-shouldered hawk, ferruginous hawk, sharp-shinned hawk, prairie falcon, merlin, and American kestrel were also observed. Raptor species richness was highest during the fall season. Raptor species richness was also higher in the east survey area than the west survey area throughout the survey year (ESA 2021b).

Golden eagles were detected in each season but were not detected during each survey within the Preserve. While the Preserve is not currently being used regularly by golden eagles, the open, disturbed vegetated area to the northwest of the west survey point, with a high concentration of California ground squirrel, and adjacent to the dairy operation to the northwest of the Preserve, may be an important foraging area. The area was used by a family group (two adults, one juvenile) during one observation, with adult individuals detected during the spring and summer seasons. Foraging was only observed once on the Preserve by a juvenile individual during the month of August 2020. No nesting/breeding was observed on-site due to lack of breeding behavior and suitable nesting habitat.

Bald eagles were detected during the fall and winter seasons within the Preserve for a total of three observations. Both fall observations were of two individual bald eagles flying high over the Preserve. It was likely the same two individuals, given that they were traveling the same direction (north to south) and were likely heading to San Vicente Reservoir. The third and last observation was of a subadult bald eagle detected during the winter season and was likely moving through the area, considering the lack of any further observations. The Preserve currently does not contain any foraging or nesting habitat for bald eagles.

White-tailed kite forage on the Preserve year-round and nesting/breeding occurs either on or adjacent to the Preserve due to the presence of juveniles and suitable nesting habitat. One red-tailed hawk nest was observed in an oak tree located in the western portion of the Preserve. This nest successfully fledged young.

Residual Dry Matter Monitoring at Ramona Grasslands Preserve

Ramona Grasslands Preserve is divided into 12 management units, 10 of which are grazed. The grazing program enhances rare plant and wildlife populations and reduces invasive, non-native plants. To measure success, species and habitat-specific RDM targets were established. RDM is the amount of dry grass remaining after the growing season and grazing. Typically, a lower RDM is desirable to prevent the build-up of thatch (e.g., dried grass) and to allow for greater visibility for native wildlife (e.g., shorter grass length). Target RDM values vary depending on the target plant or animal species management and range from 300 – 2,100 lbs./acre.

RDM monitoring was performed in October 2021. Monitoring results were a low of 1,267 to a high of 3,711 lbs./acre (ESA 2021c). Monitoring results indicate that the Preserve could support a potential increase in the number of cows grazing on-site as eight of 10 of the grazed management units were under-grazed and two met RDM targets. Most management units were above their target RDM values in 2021. These results were likely influenced by the rainstorm event in early October 2021 that initiated vegetative growth. Due to the extreme fluctuations in rainfall in recent years (e.g., drought conditions in 2018, above-average rainfall in 2019 and below-average to average rainfall in 2020) driving substantial variability in vegetative cover from year to year, it is recommended that grazing be assessed in February of each year based on seasonal rainfall patterns. This would give a better estimate of how much biomass is likely to persist that year, and grazing can be adjusted accordingly by either increasing or decreasing heads of cattle or grazing frequency.

RDM monitoring identified areas that would benefit from invasive, non-native plant control. Invasive non-native plant species treatment and removal should continue with a focus on tamarisk in management units 1A and 3B and artichoke thistle in management unit 3A. Tamarisk removal by hand is recommended, as the plants are within a stream connected to Santa Maria Creek where herbicide use should be limited due to the presence of arroyo toad.



Grazing on Ramona Grasslands Preserve is a management tool used to control invasive, non-native plant species, reduce fire fuel loads, and enhance rare plant and animal species populations.

Park Improvement MSCP Covered Species Monitoring

Monitoring of MSCP covered species during park improvement projects are a critical component to minimize impacts to MSCP covered species. These monitoring efforts are a priority for the County.

Habitat Restoration and Enhancement of Habitat at Sweetwater Trails Phase III

The Sweetwater Trails Phase III Project, within the Sweetwater Summit Regional Park, improved the existing trail and included on-site wetland restoration and enhancement efforts at 30 locations. The project's habitat restoration and enhancement efforts were part of the RWQCB 401 Water Quality Certification, USACE 404 permit, and CDFW 1602 Streambed Alteration Agreement. Habitat restoration and enhancement efforts were completed in March 2017. A total of 0.3 acres riparian habitat were restored, while an additional 0.24 acres of riparian habitat were enhanced within the project's 30 locations. The three-year maintenance and monitoring period, required per the permits, was completed in March 2021. However, due to the COVID-19 pandemic and the state Stay-at-Home Executive Order, a final site visit with the water resource agencies to receive approval that the success criteria for the permits had been met wasn't possible. Due to the delay of the final site visit and success criteria certification,

DPR completed additional maintenance and monitoring of the restoration and enhancement sites in 2021. These additional efforts included a qualitative and quantitative assessment of the vegetation as part of the annual report sent to the water resource agencies and documented the success of the restoration and enhancement sites. The native species doing particularly well included mule fat, Hooker's evening primrose, and goldenbush. It was also observed that native plants not installed as part of restoration or enhancement efforts were growing within the project areas, indicating that natural recruitment from adjacent habitat or a pre-existing seed bank was occurring. The final site visit with the water resource agencies is anticipated to be completed in 2022.

Heritage County Park Nesting Bird Surveys

During the week of April 26, 2021, the County conducted nesting bird surveys prior to the trimming of trees in Heritage County Park. The trees were trimmed for safety reasons. Three surveys were conducted searching for active nests in the vicinity of where the trees were to be trimmed. No nests or nesting behavior was observed during the three surveys and DPR ensured there were no impacts from tree trimming to any nesting bird species.

Ildica County Park Nesting Bird Surveys

During the week of July 1, 2021, the County conducted nesting bird surveys prior to construction activities. During the nesting bird surveys a killdeer nest was discovered and a buffer around the nest was established. The killdeer successfully completed their nesting and fledgling activities prior to construction commencing. As the nest was no longer in use, the buffer was removed. No active nests were observed on-site prior to construction.

Louis A. Stelzer County Park Nesting Bird Surveys

During the week of March 29, 2021, the County conducted nesting bird surveys prior to the trimming of trees in Louis A. Stelzer County Park. The trees were trimmed for safety reasons. Three surveys were conducted searching for active nests in the vicinity of where the trees were to be trimmed. No nests or nesting behavior was observed during the three surveys and DPR ensured there were no impacts from tree trimming to any nesting bird species.

I-805 to Heritage Trails Project Surveys

The I-805 to Heritage Trails is a proposed County project in the Otay Valley Regional Park which includes a 3.5 mile loop trail from the I-805 freeway to Heritage Road. The project will ultimately connect to the larger existing Otay Valley Regional Park trail network to the west and the proposed network to the east. In 2021, the County conducted protocol surveys for Ridgeway's rail, least Bell's vireo, coastal California gnatcatcher, and Quino checkerspot butterfly. These protocol surveys were completed as well as a habitat assessment in preparation for a Biology Report for the proposed trails in an effort to maximize avoidance of sensitive habitat and species. In 2022, the County will continue environmental analysis and design for this project.

Tijuana River Valley Campground Project Surveys

In 2020, the County detected a northern harrier nest and several least Bell's vireo nests during construction of the Tijuana River Valley Campground Project. As a direct result, the County initiated regular nesting bird surveys in 2021 in anticipation of potential nesting. While no nests or nesting behavior was observed before the completion of the construction project in Spring 2021, surveys of the campground along with a buffered area were conducted on a weekly basis until April 9th, 2021.

Greg Cox Bike Park Project Training, Surveys, and Monitoring

On January 18th, 2021, the County conducted the initial pre-construction nesting bird survey. While no active nests or nesting behavior was observed, the County continued monitoring the construction site regularly and conducted additional nesting bird surveys, as needed, throughout the duration of the project. The County also conducted an environmental awareness training for all personnel working on the project. This training included information regarding sensitive resources and MSCP-covered species with a potential to occur within and/or adjacent to the project site. In addition, the County conducted ambient noise monitoring before construction began and during construction within the breeding season to minimize noise-related impacts. The project completed construction in April 2021.

7.2 Grant Funded Monitoring Projects

There were no grant-funded monitoring projects in the reporting year.

7.3 Preserve Monitoring and Research Partnerships

Research occurred on County Preserves through the County's ROE permit process (**Table 19**). ROEs were requested by federal and state agencies, local universities, museums, and environmental organizations. In the past, the County has not charged for ROEs. Due to the extensive review ROEs require to ensure compliance with the MSCP and County rules, a fee to recover a portion of the processing cost may be implemented in the future. In 2021, these studies focused on species such as southwestern pond turtle, mountain lion, KSHB, and other species inside and outside of the MSCP Subarea Plan Area. Only those studies that include properties within the MSCP Subarea Plan are summarized below. Reports and research findings obtained through the ROE permit process are shared with the County to further supplement monitoring efforts and to inform management recommendations.

TABLE 19. PRESERVE MONITORING AND RESEARCH PARTNERSHIPS PROJECTS, MONITORING TARGETS, AND LOCATIONS IN REPORTING YEAR

Project Name	Project Lead	Monitoring/ Research Target	County Preserves Within MSCP Subarea Plan Area	County Parks and Preserves Outside MSCP Subarea Plan Area
1. Kuroshio Shot Hole Borer Recovery Monitoring	Southwest Wetlands Interpretive Association	KSHB	• Tijuana River Valley Regional Park	
2. Native Plant Seed Bank	San Diego Zoo	Rare, native plants	• Boulder Oaks Preserve • Del Dios Highlands Preserve • El Capitan Preserve • Sycamore Canyon and Goodan Ranch Preserve • Louis A. Stelzer Preserve • Oakoasis Preserve • Ramona Grasslands Preserve	• Santa Margarita Preserve • Volcan Mountain Wilderness Preserve • Wilderness Gardens Preserve • William Heise Park • Simon Preserve
3. Mountain Lion Ecology Research	CDFW and University of California Davis	Mountain Lion	• Boulder Oaks Preserve • Sycamore Canyon and Goodan Ranch Preserve	• Volcan Mountain Wilderness Preserve • Santa Ysabel Preserve • Hellhole Canyon Preserve
4. Regional Arroyo Toad Monitoring	USGS	Arroyo Toad	• Ramona Grasslands Preserve	• Hellhole Canyon Preserve • Lake Morena Park • San Luis Rey River Park • Santa Margarita Preserve • Santa Ysabel Preserve • Wilderness Gardens Preserve
5. Southwestern Pond Turtle Monitoring in Aquatic Habitats	USGS	Southwestern Pond Turtle	• Lusardi Creek Preserve	• Wilderness Gardens Preserve

Project Name	Project Lead	Monitoring/ Research Target	County Preserves Within MSCP Subarea Plan Area	County Parks and Preserves Outside MSCP Subarea Plan Area
6. Sensitive Avian Species Demography Monitoring	USGS	Coastal California gnatcatcher, least Bell's vireo, coastal cactus wren, and southwestern willow flycatcher	• Cactus Park • Damon Lane Park • El Capitan Preserve • El Monte Park • Furby-North Preserve • Lakeside Linkage Preserve • Lawrence and Barbara Daley Preserve • Louis A. Stelzer Preserve • Lusardi Creek Preserve • Otay Lakes Park • Otay Ranch Preserve • Otay Valley Regional Park • Ramona Grasslands Preserve • Santa Fe Valley Preserve • Stoneridge Preserve • Sweetwater Regional Park • Sycamore Canyon and Goodan Ranch Preserve • Tijuana River Valley Regional Park	• Blue Sky Ranch Ecological Reserve • Diamond Trail • Guajome Regional Park • Historic Flume Trail • Lakeside Sports Park • Mission Trails Regional park • San Luis Rey River Park • Santa Margarita Preserve

Project Name	Project Lead	Monitoring/ Research Target	County Preserves Within MSCP Subarea Plan Area	County Parks and Preserves Outside MSCP Subarea Plan Area
7. Biocontrol of Shot Hole Borer	University of California Davis	Polyphagous Shot Hole Borer and KSHB Beetles	• Tijuana River Valley Regional Park • Flinn Springs Park • Louis A. Stelzer Preserve • Otay Valley Regional Park • Sycamore Canyon and Goodan Ranch Preserve • Lusardi Creek Preserve	• San Elijo Lagoon Ecological Reserve • Live Oak Park • San Luis Rey River Park • Guajome Park • Wilderness Gardens Preserve • Rancho Guajome Adobe Park • Felicita Park • Live Oak Park • San Dieguito Park
8. Rare Seed Collection	Center for Plant Conservation	various	• Tijuana River Valley Regional Park	
9. Field Herpetology Course and Research	San Diego State University	Small mammals, reptiles, and amphibians	• Tijuana River Valley Regional Park • Sycamore Canyon and Goodan Ranch Preserve • El Monte Park • El Capitan Preserve	
10. Pacific Pocket Mouse and Argentine Ant Surveys	USGS	Pacific pocket mouse and Argentine ant	• Tijuana River Valley Regional Park	

Project Name	Project Lead	Monitoring/ Research Target	County Preserves Within MSCP Subarea Plan Area	County Parks and Preserves Outside MSCP Subarea Plan Area
11. Rare Plant Surveys	Conservation Biology Institute	Parish's brittlescale, San Diego goldenstar, Orcutt's brodiaea, Otay tarplant, Orcutt's bird's-beak, Blochman's dudleya, and aphanisma	• Tijuana River Valley Regional Park • Furby-North Preserve • Otay River Valley Regional Park • Louis A. Stelzer Regional Park • Ramona Grasslands Preserve • Boulder Oaks Preserve	• San Elijo Lagoon Ecological Reserve • Simon Preserve • Mt. Olympus Preserve • Escondido Creek Preserve
12. Burrowing Owl Monitoring	San Diego Zoo Wildlife Alliance	Burrowing Owl	• Ramona Grasslands Preserve	
13. Golden Eagle	USGS	Golden Eagle	• Ramona Grasslands Preserve	

Source: County of San Diego Department of Parks and Recreation

Kuroshio Shot Hole Borer Recovery Monitoring

Project Lead: Southwest Wetlands Interpretive Association
Project Timeline: December 2020 – December 2021
Target Species or Habitat: Oak and riparian woodlands
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park

The *Kuroshio Shot Hole Borer Recovery Monitoring* project represents the continuation of work initiated by Dr. John Boland in 2015 to monitor the recovery of riparian woodlands in the Tijuana River Valley following the invasion of the KSHB. Eleven vegetation transects first established by Dr. Boland are regularly surveyed to document growth and changes of native vegetation which had been previously impacted by the KSHB. Percent cover of each species is recorded as well as other tree characteristics which can be identified by observation. Reinfestation by the invasive shot hole borer will also be documented. Southwest Wetlands Interpretive Association will also obtain hemispherical photography and satellite-based imagery to accurately calculate canopy cover and monitor long-term changes in cover over time. Monitoring and mapping continued into 2021.

Native Plant Seed Bank

Project Lead: Zoological Society of San Diego, dba San Diego Zoo Global
Project Timeline: May 2021 – December 2022
Target Species or Habitat: Rare, native plants

County Preserves within MSCP Subarea Plan Area: Boulder Oaks Preserve, Del Dios Highlands Preserve, El Capitan Preserve, Sycamore Canyon and Goodan Ranch Preserve, Louis A. Stelzer Park, Oakoasis Preserve, Ramona Grasslands Preserve,
County Preserves Outside MSCP Subarea Plan Area: Santa Margarita Preserve, Santa Ysabel Preserve, Volcan Mountain Wilderness Preserve, Wilderness Gardens Preserve, William Heise Park

The *Native Plant Seed Bank* project is spearheaded by the San Diego Zoo with a goal to conserve San Diego County's rare, threatened, and endangered plants as recognized by the California Native Plant Society's rare plant inventory. The San Diego Zoo is a regional partner in the California Plant Rescue project which is a statewide effort to conserve the most at-risk plant species in California. Surveys are conducted within 13 County parks and preserves to locate sensitive plant species. Once identified, San Diego Zoo staff collect an herbarium voucher, if available, and will monitor the population until it senesces. After senescence, ripe seeds are collected from the documented populations for long term seed banking. Collected seeds are processed, counted, and weighed prior to storage and 40% of the collection is sent to the USDA-ARS National Laboratory for Genetic Resources Preservation in Fort Collins, Colorado for backup storage. Seeds are tested for viability and herbarium vouchers are deposited at the San Diego Natural History Museum. Seed banks are maintained for long term conservation and to provide sufficient plant material for the establishment of new populations or to augment existing populations in southern California. MSCP covered species which have been conserved by the Native Plant Seed Bank include Orcutt's brodiaea, Lakeside lilac, and felt-leaf monardella, among others.

Mountain Lion Ecology Research

Project Lead: CDFW and University of California Davis
Project Timeline: March 2020 – March 2021
Target Species or Habitat: Mountain lion
County Preserves within MSCP Subarea Plan Area: Boulder Oaks Preserve and Sycamore Canyon/Goodan Ranch Preserve
County Preserves Outside MSCP Subarea Plan Area: Volcan Mountain Wilderness Preserve, Santa Ysabel Preserve, Hellhole Canyon Preserve

The *Mountain Lion Ecology Research* project was initiated by CDFW with support from University of California Davis in 2020 and seeks to obtain a better understanding of mountain lion populations in southern California. To achieve this goal, up to 12 mountain lions will be captured and fitted with radio collars within San Diego and Riverside counties to study mountain lion movements and ecology using a combination of GPS collars, GIS spatial modeling, kill/cache site analysis, and genetic analysis. Location data collected will be used to track movements of mountain lions across public and private lands in order to derive a minimum count of mountain lions in a localized area. Wildlife cameras are placed in areas where mountain lions may utilize and are monitored to determine regular mountain lion presence in an area. If regular sightings are confirmed via the wildlife cameras, baited traps are set in the area and are monitored constantly. If a mountain lion is successfully trapped, staff fit the individual with a radio collar and collect genetic information for further analysis. Scat surveys are also conducted to obtain additional genetic information. This effort will assist CDFW in designing a spatial and statistical model to develop regional population estimates for a statewide mountain lion population count. Location and genetic data will also be used to quantify mountain lion density and dispersal, which is critical to understanding how mountain lions utilize their territories, and to measure the success of current conservation strategies. In

2020, CDFW was successful in radio collaring 12 mountain lions in San Diego and Riverside counties but continued with monitoring and surveying efforts in 2021.

Regional Arroyo Toad Monitoring

Project Lead: USGS
Project Timeline: July 2020 – December 2021
Target Species or Habitat: Arroyo toad
County Preserves within MSCP Subarea Plan Area: Ramona Grasslands Preserve
County Preserves Outside MSCP Subarea Plan Area: Hellhole Canyon Preserve, Lake Morena Park, San Luis Rey River Park, Santa Margarita Preserve, Santa Ysabel Preserve, Wilderness Gardens Preserve

The *Regional Arroyo Toad Monitoring* project was initiated in 2020 for the purpose of implementing a regional monitoring program for the MSCP covered arroyo toad as part of the SDMMP. Surveys are conducted across seven County parks and preserves in areas where arroyo toads are known to occur and areas of potential habitat. Surveys are conducted through visual observations aided by dip netting to positively identify arroyo toad tadpoles in aquatic habitats. Genetic information obtained through toe clippings is also collected for genetic analysis. Genetic analysis is done to compare current findings with past data to determine the degree of genetic variation within and between arroyo toad populations in San Diego, which could identify potential population bottlenecks or connectivity issues. Results of the surveys will be used to estimate the distribution and status of the arroyo toad, determine threats and habitat covariates, and to identify future management actions. Data will also be used to determine source populations which can be used to reestablish arroyo toads in previously occupied areas within conserved lands. The monitoring effort is ongoing and will continue through 2021.

Southwestern Pond Turtle Monitoring in Aquatic Habitats

Project Lead: USGS
Project Timeline: November 2020 – November 2021
Target Species or Habitat: Southwestern pond turtle
County Preserves within MSCP Subarea Plan Area: Lusardi Creek Preserve
County Preserves Outside MSCP Subarea Plan Area: Wilderness Gardens Preserve

The *Southwestern Pond Turtle Monitoring in Aquatic Habitats* project was initiated in 2020 to study the current status and demography of the southwestern pond turtle in San Diego County as part of the SDMMP. USGS collects pond turtle data by setting baited hoop traps in aquatic areas which are checked daily while set. Successfully captured turtles will be weighed, measured, photographed, and marked with a passive integrated transponder (PIT) tag for long term monitoring. USGS also collects tail tissue samples for further genetic analysis. Visual surveys are conducted to assess habitat conditions and to document presence of native and non-native aquatic species. Trapping surveys are utilized for marking/recapturing previously marked individuals to assess growth and to contribute to demography monitoring. Genetic analysis will help determine the degree of genetic variation within and between pond turtle populations to identify possible genetic bottlenecks or barriers. Information will also be used to determine source populations which can be used to reestablish pond turtles in previously occupied areas as a potential recovery strategy. Southwestern pond turtle is an MSCP-covered species, and the results of this study could help identify future management strategies for this species.

Sensitive Avian Species Demography Monitoring

Project Lead: USGS
Project Timeline: March 2020 – March 2021
Target Species or Habitat: Coastal California gnatcatcher, least Bell's vireo, coastal cactus wren, southwestern willow flycatcher
County Preserves within MSCP Subarea Plan Area: Cactus Park, Damon Lane Park, El Capitan Preserve, El Monte Park, Furby-North Preserve, Lakeside Linkage Preserve, Lawrence and Barbara Daley Preserve, Louis A. Stelzer Park, Lusardi Creek Preserve, Otay Lakes Park, Otay Ranch Preserve, Otay Valley Regional Park, Ramona Grasslands Preserve, Santa Fe Valley Preserve, Stoneridge Preserve, Sweetwater Regional Park, Sycamore Canyon and Goodan Ranch Preserve, Tijuana River Valley Regional Park
County Preserves Outside MSCP Subarea Plan Area: Blue Sky Ranch Ecological Reserve, Diamond Trail, Guajome Regional Park, Historic Flume Trail, Lakeside Sports Park, Mission Trails Regional Park, San Luis Rey River Park, Santa Margarita Preserve

The *Sensitive Species Demography Monitoring* project encompasses a long-term regional monitoring effort spearheaded by USGS to monitor populations of four sensitive and MSCP covered species: coastal California gnatcatcher, least Bell's vireo, coastal cactus wren, and southwestern willow flycatcher. Surveys for the monitoring program are conducted to collect data on the distribution, abundance, and demography of these four species to assess the progress of local populations towards recovery. For coastal California gnatcatcher and coastal cactus wren, three surveys are conducted each year to ascertain presence of the species within areas of suitable habitat. For least Bell's vireo and southwestern willow flycatcher, surveys are conducted twice a year to determine presence. Visual observations with the aid of song playbacks are utilized and if presence is confirmed, the number, banding status, age (adult or juvenile), and breeding status of all sighted birds will be recorded. For coastal California gnatcatcher, a habitat assessment for coastal sage scrub is conducted to quantify the cover, structure, and composition of coastal sage scrub vegetation which the species depends on. For least Bell's vireo and southwestern willow flycatcher, vegetation surveys are also conducted to identify evidence of the invasive shot hole borer which may be contributing to recent population declines. The results of this study will help determine the status of regional populations for these four sensitive species which will help guide future management actions. Monitoring efforts are ongoing and will continue through 2021.

Biocontrol of Shot Hole Borers

Project Lead: University of California Davis
Project Timeline: July 2016 – July 2021
Target Species or Habitat: Invasive shot hole borers
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park, Flinn Springs Park, Louis A. Stelzer Park, Otay Valley Regional Park, Sycamore Canyon and Goodan Ranch Preserve, Lusardi Creek Preserve
County Parks and Preserves Outside MSCP Subarea Plan Area: San Elijo Lagoon Ecological Reserve, Live Oak Park, San Luis Rey River Park, Guajome Regional Park, Wilderness Gardens Preserve, Rancho Guajome Adobe Park

The *Biocontrol of Shot Hole Borers* project studies the effectiveness of biocontrol's for treating and potentially stopping the spread of invasive fungal pathogen, *fusarium* sp., and shot hole borers. In July

2016, Dr. Akif Eskalen (formerly with the University of California Riverside) began a five-year research project to study local biocontrol options and develop a phylogenetically informed risk model for incidence and spread of *Fusarium* sp. and their insect vectors, polyphagous shot hole borer and KSHB, throughout southern California. University of California Davis biologists are monitoring pest and disease establishment and distribution in addition to determining whether trunk injections of systemic pesticides can be effectively deployed within critical reproductive hosts to protect highly valued trees from infestations. In 2017, the study area was expanded to include Flinn Springs Park, Louis A. Stelzer Park, Otay Valley Regional Park, Sycamore Canyon and Goodan Ranch Preserve, Lusardi Creek Preserve, and San Dieguito Park. The results of this study will help inform management actions for addressing the spread of *fusarium* sp. and shot hole borers which have impacted several areas in the County.



Coast live oak trees are vulnerable to invasive shot hole borers in San Diego County.

Rare Seed Collection

Project Lead: Center for Plant Conservation
Project Timeline: July 2021 – October 2022
Target Species or Habitat: Wetland
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park

The Center for Plant Conservation or CPC received a grant from the Institute for Museum and Library Services to aid in preserving seed collections and rare plant species. The focus of this project is to assess plant species for viability and health over a period of fifteen years. At the end of the grant life cycle, seeds

are to be collected once more to assess the health of local plant populations, specifically the health of local Baja California birdbush.

Field Herpetology Course and Research

Project Lead: San Diego State University
Project Timeline: March 2019 – December 2022
Target Species or Habitat: Various
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park, Sycamore Canyon and Goodan Ranch Preserve, El Monte Park, El Capitan Preserve

The *Field Herpetology Course and Research* project teaches students techniques for field study of amphibians and reptiles in four MSCP Subarea Plan preserves for a three-year period. Dr. Rulon Clark, a biology professor at San Diego State University, began teaching a new advanced ecology course in field herpetology with a focus on teaching future field biologists the proper techniques on how to locate, capture, handle, and collect basic data from non-threatened reptiles and amphibians. As part of this course, students are also documenting photographs of identified species for contribution to the citizen scientist database, iNaturalist. Tissue samples collected through this course will contribute to the professor's long-term efforts to collect ecological data on occurrence, abundance, and genetic connectivity of local reptiles in San Diego County. Field visits for this purpose were granted at four County Preserves and, if course scheduling permits, this program will continue through 2022.

Pacific Pocket Mouse and Argentine Ant Surveys

Project Lead: USGS
Project Timeline: February 2020 – February 2021
Target Species or Habitat: Pacific pocket mouse and Argentine ant
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park

The *Pacific Pocket Mouse and Argentine Ant Surveys* project involves a multi-species surveying project which includes baiting and collecting invasive Argentine ants and non-invasive presence surveys for the federally listed Pacific pocket mouse. USGS sets baited tracking tubes within open sandy areas of the park where Pacific pocket mouse may occur. Slightly saturated felt ink pads are located on either end of the tracking tube so that when a Pacific pocket mouse or other small animal enters the tracking tube, tracks are left inside while the individual obtains bait. Tracking tubes are then collected and analyzed to positively identify animal tracks. Index cards set with bait and pitfall traps are used to collect Argentine ant specimens. The results of this study will help USGS ascertain site conditions in the park as well as occurrence of Pacific pocket mouse, which will potentially help inform the development of reintroduction plans for this species.

Rare Plant Surveys

Project Lead: Conservation Biology Institute
Project Timeline: April 28 – October 1, 2021
Target Species or Habitat: Parish's brittlescale, San Diego goldenstar, Orcutt's brodiaea, Otay tarplant, Orcutt's bird's-beak, Blochman's dudleya, and aphanisma
County Preserves within MSCP Subarea Plan Area: Tijuana River Valley Regional Park, Furby-North Preserve, Otay River Valley Regional Park, Louis A. Stelzer Regional Park, Boulder Oaks Preserve, and Ramona Grasslands Preserve

The *Rare Plant Survey* project involves performing surveys and monitoring (Inspect and Manage) of rare plants included in the SDMMP's Management and Monitoring Strategic Plan for Western San Diego County. DPR uses the monitoring data and threats analysis to manage the on-site populations.

Burrowing Owl Monitoring

Project Lead: San Diego Zoo Wildlife Alliance
Project Timeline: June 7, 2021 – December 31, 2022
Target Species or Habitat: Burrowing owl
County Preserves within MSCP Subarea Plan Area: Ramona Grasslands Preserve

The *Burrowing Owl Monitoring* project involves performing monitoring of movements and nesting of burrowing owls (owls translocated onto adjacent San Diego Habitat Conservancy [SDHC] mitigation bank parcel in early 2021), their offspring, and extant wild burrowing owls. It is likely that burrowing owls translocated onto the adjacent SDHC mitigation bank parcel will disperse into surrounding areas including Ramona Grasslands Preserve. If foraging and/or nesting burrowing owls are observed on Ramona Grasslands Preserve, then the DPR can manage and monitor the owls.

Golden Eagle Monitoring

Project Lead: USGS
Project Timeline: June 7, 2021 – December 31, 2022
Target Species or Habitat: Golden eagle
County Preserves within MSCP Subarea Plan Area: Ramona Grasslands Preserve

The *Golden Eagle Monitoring* project involves performing a telemetry study of golden eagle movement and habitat use in San Diego County, including baiting and trapping. Because of a lack of clarity about the status of golden eagles in coastal southern California, the USGS, in collaboration with local, State, and other Federal agencies, began a multi-year occupancy, biotelemetry, and genetics sampling program of golden eagles to address questions regarding habitat use, movement behavior, territory and nest occupancy, genetic population structure, and impacts on eagles. Once captured, eagles will be fitted with a GPS-GSM telemetry unit for tracking. This will yield data that will provide valuable information on eagle movement and habitat use in the preserve and adjacent lands. If golden eagles are captured at the preserve and fitted with a telemetry unit, then the DPR will receive the movement data and perform adaptive management of on-site foraging habitat if necessary.

7.4 Private Mitigation Lands Monitoring

MSCP monitoring of Private Preserves is achieved through RMP annual monitoring reports that focus on the resource attributes of that specific site and detail the monitoring and habitat management activities conducted within the previous year. Annual reports document any issues and the overall health of the Preserve, which allows the County to assess the biological integrity of the open space habitats protected by each RMP. Annual reports are publicly available online through the PDS Document Library[22] using the associated Record ID. **Appendix L** provides a general overview of the 17 RMPs located within the MSCP Subarea Plan including a description of the habitat conservation area, required surveys, and monitoring/maintenance status for each RMP.

An accounting of RMP annual report submissions revealed that in 2021, 12 of the 17 (71%) RMPs submitted reports for the 2020-2021 reporting period. **Table 20** summarizes the MSCP covered species documented in the 2020-2021 annual RMP monitoring reports.

[22] The PDS Document Library can be accessed at: https://www.sandiegocounty.gov/content/sdc/pds/doclibrary.html

TABLE 20. MSCP COVERED SPECIES DOCUMENTED ON PRIVATE MITIGATION LANDS IN REPORTING YEAR

Private Mitigation Area

Common Name	Bernardo Lakes	4S Ranch Ralphs	4S Ranch Specific Plan	Golem	Starwood (Crosby)	Woodridge	Blossom Valley	McCrink Ranch	Maranatha Chapel	El Apajo	Greenhills Ranch	Artesian Trail	East Otay Mesa	Lonestar	Sloane Canyon	High Meadow Ranch (Trevi Hills)	Otay Crossings Commerce Park
Plants																	
Del Mar manzanita					✓												
Encinitas baccharis			✓														
Lakeside ceanothus																✓	
San Diego goldenstar			✓														
San Diego barrel cactus			✓														✓
San Diego ambrosia					✓												
Sticky dudleya				✓													
Three-leaf brodiaea			✓														
Variegated dudleya			✓														
Reptiles																	
Belding's orange-throated whiptail						✓	✓				✓						
Coast (SD) horned lizard						✓	✓										
Invertebrates																	
San Diego fairy shrimp					✓												
Throne's hairstreak butterfly					✓												
Birds																	
Bald eagle											✓						
Burrowing owl																	✓
Coastal California gnatcatcher			✓	✓	✓	✓					✓		✓	✓			✓
California rufous-crowned sparrow			✓										✓				

Private Mitigation Area

Common Name	Bernardo Lakes	4S Ranch Ralphs	4S Ranch Specific Plan	Golem	Starwood (Crosby)	Woodridge	Blossom Valley	McCrink Ranch	Maranatha Chapel	El Apajo	Greenhills Ranch	Artesian Trail	East Otay Mesa	Lonestar	Sloane Canyon	High Meadow Ranch (Trevi Hills)	Otay Crossings Commerce Park
Coastal (San Diego) cactus wren						✓											
Cooper's hawk					✓	✓					✓						
Least Bell's vireo				✓													
Northern harrier													✓	✓			✓
Western bluebird					✓						✓						✓
Mammals																	
Mountain lion							✓						✓				
Southern mule deer							✓										

CHAPTER 8
Financial Summary



Sweetwater Regional Park is home to MSCP covered species including coastal cactus wren, coastal California gnatcatcher, and least Bell's vireo.

The County is responsible for funding acquisition, management, and monitoring of lands within the MSCP Subarea Plan. The costs associated with these activities may be funded through local and regional sources. The County primarily uses General Fund monies to acquire land or leverage funding to acquire additional preserve lands. Additionally, the County Board of Supervisors annually appropriates funding for ongoing management and monitoring efforts. Management and monitoring efforts for conveyed lands in the Otay Ranch Preserve, which are jointly owned and managed by the County and the City of Chula Vista, are funded through Community Facilities District 97-2 administered by the City of Chula Vista. Lastly, the County has sought additional funding through various grant programs such as those offered through the San Diego Association of Governments (SANDAG) *TransNet* EMP.

8.1 County Contribution

The Board of Supervisors allocates funding for ongoing management and monitoring efforts on 44,200 acres within the MSCP Subarea, draft North County MSCP, and proposed East County MSCP Plan Areas, approximately 25,460 acres of which were acquired since the MSCP Subarea Plan was adopted. Acreage discussed in this section is reported as Assessor's acreage and not GIS acreage to provide consistency of reporting acreage across all three MSCP Plan Areas. The acreage of preserve lands within the three MSCP Plan Areas include approximately:

- 8,300 acres acquired, managed, or funded within the MSCP Subarea Plan Area since 1998.
- 7,530 acres acquired and managed in the draft North County MSCP Plan Area since 2001.
- 9,630 acres acquired and managed in the proposed East County MSCP Plan Areas since 2001.
- Of the original, baseline 19,000 acres of preserve lands owned and managed by the County across the three MSCP Plan Areas prior to the MSCP Subarea Plan adoption, approximately 5,500 acres is in the MSCP Subarea Plan Area.

The cost for MSCP management and maintenance are intertwined in the DPR operating budget. The County is working to track expenses to reflect on-going funding on County preserve lands.

As in years past, in Fiscal Year 2021-2022, the County Board of Supervisors appropriated $7.5 million for acquisition of preserve lands throughout the adopted South County Subarea, draft North County MSCP, and proposed East County MSCP Plan Areas. In this reporting period, approximately $11.2 million was spent to successfully manage and maintain the County's MSCP preserve lands across the three MSCP Plan Areas. Approximately 110 full time staff as well as additional part-time staff and almost 1,600 volunteers implemented management and monitoring activities on County Preserves in 2021. Stewardship activities include those tasks detailed in Chapter 6, *Preserve Management.* MSCP monitoring activities included those tasks detailed in Chapter 7, *Preserve Monitoring and Research.*

Since 1998, the County has invested over $49 million which leveraged over $35 million of other funding to acquire 8,256 acres in the MSCP Subarea Plan, including 556 acres owned by County partners. Also, during the reporting period, 34 acres were acquired in the draft North County MSCP Plan Area for approximately $500,000 and 2,132 acres were acquired in the proposed East County Plan Area for $7.7 million. Grant funding of $1.3 million contributed to the large acquisition in the proposed East County Plan Area.

In addition to the 44,200 acres of County-owned preserve lands, the County and the City of Chula Vista jointly own and manage Otay Ranch Preserve.

8.2 Otay Ranch Preserve Community Facility District 97-2

Community Facility District 97-2 funds, administered by the City of Chula Vista, are used for managing and monitoring the Otay Ranch Preserve. The approved budget for FY2021-2022 was $669,500 for preserve monitoring, operations, and maintenance. Preserve monitoring includes scheduled surveys for various species by parcel, focused rare plant surveys, baseline surveys for newly acquired properties, updating vegetation mapping, land stewardship, meetings and on-going coordination, and reporting. Operations and maintenance include access control and invasive species treatment activities.

8.3 *TransNet* Funding

SANDAG is a regional transportation agency responsible for administering *TransNet* EMP funds collected as a local half-cent sales tax for transportation improvements. The vote to extend the *TransNet* tax in 2004 included $850 million to fund land acquisition, land management, and species monitoring of mitigation lands for local and regional transportation projects. As of June 2018, the $850 million *TransNe*t EMP has supported the acquisition of 40 properties throughout the region, totaling

more than 8,780 acres.[23] As of May 2015, SANDAG had expended more than $21 million to manage and monitor the regional habitat Preserve system[24]. The County has received almost $2 million of management and monitoring *TransNet* EMP funds from 2006 through 2021.

[23] http://www.keepsandiegomoving.com/EMP-Group/EMP-acquisitions.aspx

[24] http://www.keepsandiegomoving.com/EMP-Group/EMP-management-monitoring.aspx

CHAPTER 9
Program Administration



An overlook at Oakoasis Preserve.

9.1 MSCP Coordination Efforts

MSCP Subarea Plan IA Section 14.0 requires coordination with the Wildlife Agencies. Coordination meetings are scheduled regularly between the County and the Wildlife Agencies. Coordination also occurs regularly with regional technical groups, other jurisdictions, stakeholders, and the public. The County continues to actively participate in regularly scheduled MSCP group meetings including the SANDAG *TransNet* EMP Working Group, SDMMP Working Group, MSCP Annual Workshop, Quarterly Acquisitions coordination meetings, South County Land Managers Working Group, San Dieguito River Park JPA, SDRC, the Tijuana River Valley Recovery Team, the Tijuana River Water Quality Improvement Plan Working Group, the Tijuana River National Estuarine Research Reserve

Advisory Council, the Mission Trails Regional Park Task Force, the Otay Ranch POM Executive/Policy Committees and Joint Staff, the Otay Valley Regional Park Executive/Policy Committees and Joint Staff, the Otay Valley Regional Park citizens advisory committee, California HCP Coalition, National HCP Coalition, Santa Ana to Palomar Linkage Alliance, County of San Diego Sustainability Task Force, and the United States Border Management Task Force Group. The various MSCP group meetings consist of members from USFWS, CDFW, BLM, local/governmental participating agencies, private stakeholders, and members of the general public. The primary objectives of these meetings are to discuss land acquisitions, management, monitoring methodologies, conservation techniques, and regional coordination. These meetings provide meaningful educational information and create public awareness regarding the importance of habitat conservation and how it adds to quality of life.

MSCP Subarea Plan implementation also requires coordination among County departments. Regularly scheduled internal meetings regarding MSCP topics are held to facilitate and ensure consistency in implementing the MSCP Subarea Plan. The DPR, PDS, DPW, and Department of General Services (DGS) MSCP staff meet regularly to discuss issues and exchange ideas.

9.2 MSCP Subarea Plan Updates

The following discussion summarizes work completed on the proposed amendments and projects processed with Wildlife Agency staff concurrence during this reporting period.

Quino Checkerspot Butterfly Amendment

In 2021, the County was awarded a Fiscal Year 2021 Cooperative Endangered Species Conservation Fund (Section 6 of the Endangered Species Act) Nontraditional Habitat Conservation Planning Assistance Program Grant. This funding will support planning and completion of a Regional Butterflies HCP to protect up to five sensitive butterfly species found in the County of San Diego. These species include the federally endangered Quino checkerspot butterfly and Laguna Mountains skipper as well as the federally threatened Hermes copper butterfly and sensitive Harbison's dun skipper. Under recommendation from USFWS, monarch butterfly will also be assessed for inclusion. The Regional Butterflies HCP will replace the County's previous efforts to add the federally endangered Quino checkerspot butterfly to the MSCP Subarea Plan's covered species list. As such, the Quino checkerspot butterfly Amendment section will be removed from future MSCP Subarea Plan annual reports. Updates on the County's Regional Butterflies HCP project can be found on the County's PDS Conservation Programs website: https://www.sandiegocounty.gov/content/sdc/pds/mscp.html.

MSCP Amendments

In 2021, there were no Minor, Major, or Subarea amendments to the MSCP Subarea Plan. The County finalizes amendments upon concurrence from the Wildlife Agencies and when amendment conditions are satisfied.

MSCP Map Update

In 2021, there were no MSCP map updates. The maps associated with the MSCP Subarea Plan were originally adopted by the County Board of Supervisors on October 22, 1997. The maps have been updated through the years to reflect changes in designations for Major and/or Minor Amendment areas to either "take authorized" or "preserve" designations.

CHAPTER 10
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APPENDIX A

County Tracked Acquisitions Since 1998

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Acquisition Year Area and Property Name	Acres Acquired						Cost		Funding	
	Owned By Local/Non Profits	Preserve / Hardline Owned By County	MHPA & Chula Vista	Total Counted Toward MSCP Preserve	Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)	Total Acreage of Acquisition	Land Cost	County Funds	Non County Funds	Funding Source
1998										
Tijuana River Valley, Arietta			39	39		39	$ 478,000		$ 478,000	State
Tijuana River Valley, Calmat Option I			164	164		164	$ 1,225,272		$ 1,225,272	State, City of San Diego
Tijuana River Valley, West/Dymott			40	40		40	$ 410,000		$ 410,000	State
1999										
Tijuana River Valley, Calmat Option Final			28	28		28	$ 208,837		$ 208,837	State
Lakeside, Arabo		9		9		9	$ 160,000	$ 80,000	$ 80,000	County, State, Federal
Lakeside, Ham		48		48		48	$ 800,000	$ 400,000	$ 400,000	County, State, Federal
Lakeside, HJMD		33		33		33	$ 490,000	$ 245,000	$ 245,000	County, State, Federal
Lakeside, Yunis		13		13		13	$ 270,000	$ 135,000	$ 135,000	County, State, Federal
Lusardi Creek, Rancho Vista		98		98		98	$ 1,845,500	$ 922,750	$ 922,750	County, State, Federal
2000										
Lusardi Creek, Santa Fe Views		97		97		97	$ 1,976,000	$ 988,000	$ 988,000	County, State
Hollenbeck Canyon, L&B Daley Pres, Ph I		290		290		290	$ 1,000,000	$ 1,000,000		County

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
Hollenbeck Canyon, L&B Daley Pres, Ph II		291		291		291	$ 1,000,000	$ 1,000,000		County
Lakeside, United Brokers		8		8		8	$ 153,000	$ 76,500	$ 76,500	County, State
Tijuana River Valley, Piper/Shelton			142	142		142	$ 1,752,750	$ 500,000	$ 1,252,750	County, State
Wright's Field, Alpine School District	41	0		41		41	$ 425,000	$ 175,000	$ 250,000	County, State, Federal
Wright's Field, Union Bank	40	0		40		40	$ 356,633	$ 148,196	$ 208,437	County, State
2001										
Lakeside, Pavel		11		11		11	$ 200,000	$ 100,000	$ 100,000	County, State
Otay River Valley Park, Malcolm			1	1		1	$ 46,000		$ 46,000	County, Developer
Otay River Valley Park, O Brien			8	8		8	$ 205,500	$ 102,776	$ 102,724	Developer negotiated by County
2002										
Lakeside, Shuler		59		59		59	$ 425,000		$ 425,000	State, Federal
Tijuana River Valley, Hanson			74	74		74	$ 1,387,500	$ 1,387,500		County
Tijuana River Valley, Skibbe			10	10		10	$ 485,000		$ 485,000	State, City (Federal)
Wright's Field, Findel Ranch	29			29		29	$ 500,000	$ 500,000		County
Iron Mountain, Ramona Serena/ Barnett Ranch		665		665		665	$ 4,440,000	$ 2,440,000	$ 2,000,000	County, State, Federal

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
2003										
Otay River Valley Park, Hirlinger-Baker		0	8	8		8	$ 95,000	$ 95,000		State, Federal
Iron Mountain, Berkeley Hering		59		59		59	$ 457,200	$ 62,200	$ 395,000	County, State, Federal
Iron Mountain, Boulder Oaks		1,271		1,271		1,271	$ 4,410,000	$ 1,102,500	$ 3,307,500	County, State, Federal
Iron Mountain, Reams Thomsen		46		46		46	$ 180,000		$ 180,000	County, State, Federal
Sycamore Canyon Preserve (I-122)		28		28		28				County, I-122
East Otay Mesa, Furby North			79	79		79	$ 1,296,600	$ 1,296,600		County
Otay River Valley Park, Munson Otay			19	19		19	$ 13,300		$ 13,300	State
Tijuana River Valley, Horwin			21	21		21	$ 365,000		$ 365,000	State
Tijuana River Valley, Nelson Sloan			73	73		73	$ 699,782		$ 699,782	State
Wright's Field, Apollo 120 acres	120			120		120	$ 1,800,000	$ 800,000	$ 1,000,000	County, State
2004										
Escondido Creek, Polo (110 acs, but 4 acs in NC)		106		106		106	$ 1,700,000	$ 1,374,000	$ 326,000	County, I-122 (8 acs), State
Sycamore Canyon Preserve (I-122)		63		63		63				County, I-122

Acquisition Year Area and Property Name	Acres Acquired						Cost		Funding	
	Owned By Local/Non Profits	Preserve / Hardline Owned By County	MHPA & Chula Vista	Total Counted Toward MSCP Preserve	Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)	Total Acreage of Acquisition	Land Cost	County Funds	Non County Funds	Funding Source
Otay River Valley Park, Georgiana Smith		89		89		89	$ 2,611,000		$ 2,611,000	State
Otay River Valley Park, Greg Smith		98		98		98	$ 3,243,000		$ 3,243,000	State
2005										
Stoneridge (fka Harbison), Bahde Donation		20		20		20				County acquired donation (interdept) post MSCP creation
Otay River Valley Park, Grindle		8		8		8	$ 138,000	$ 46,800	$ 91,200	County, State
Otay River Valley Park, Kimball		13		13		13	$ 196,000		$ 196,000	State
Otay River Valley Park, Lanzetta			6	6		6	$ 125,000		$ 125,000	State
Tijuana River Valley, Dairy Mart Ponds			60	60		60				County had managed for State, State formalized by transfer
2006										
Otay River Valley Park, Sandoval (1 & 2)			13	13		13	$ 700,000		$ 700,000	State
Otay River Valley Park, Otay Land Company			114	114		114	$ 1,490,000		$ 1,490,000	State

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
Pitchford (MLJ at Stelzer)		3		3		3	$ 75,000	$ 75,000		County
Sheriff's East Mesa Buffer		9		9		9	$ 45,000	$ 45,000		County
2007										
Greenfield Transfer Mitig 17 acs	17			17		17	$1	$1		Olivenhain Wtr Mitigation Mgt
2008										
Del Dios Highlands (Greer)		10		10		10	$ 675,000	$ 675,000		County
Sycamore Canyon/Goodan Ranch (Armstrong)		20		20		20	$ 160,000	$ 160,000		County
Ramona Grasslands (Gildred Portion in SC MSCP)		463		463		463	$ 3,630,000	$ 412,500	$ 3,217,500	County, State, Federal
2009										
Christopherhill TET dedication - Dedication was 69 acres in 2009 with all but 5 acs baseline then; Now 5 acs approved as Preserve										County accepted in bankruptcy settlement
2010										
Del Dios Highlands (Helix-Lambron)		153		153		153	$ 4,000,000	$ 1,400,000	$ 2,600,000	County, Federal
Sycamore Canyon southern additions		150		150		150	$ 1,310,000	$ 1,310,000		County

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
Lakeside Hansen Pond (Endangered Habitats Conservancy) Conservancy)	141			141		141	$ 4,000,000	$ 1,000,000	$ 3,000,000	County, State, EHC
2011										
Stoneridge Preserve - Worley		227		227		227	$ 2,650,000	$ 2,650,000		County
Sycamore Canyon/Goodan Ranch		112		112		112	$ 2,820,000	$ 2,620,000	$ 200,000	County, State
Mit Land Policy Deduction-Stelzer, Lakeside Linkage		-1		-1		-1				
2012										
San Diego River Foundation El Capitan	158			158		158	$ 205,000	$ 200,000	$ 5,000	County, Non Profit
Boulder Oaks -Salvation Army		748		748		748	$ 6,555,000	$ 6,555,000		County
Mit Lnd Policy Deduction - L B Daley		-2		-2		-2				
2013										
Oakoasis-Sophisticated Investments		37		37		37	$ 72,000	$72,000		County
Sycamore Canyon/Goodan Ranch (South-Barratt American)		18		18		18	$ 180,000	$ 180,000		County
Otay River Valley Park, Reed/Paintball City MHPA	8			8		8	$ 262,500	$ 262,500		General Fund

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
Lusardi Creek, Fingal		31		31		31	$ 1,360,000	$ 1,160,000	$ 200,000	County, State
Mit Lnd Policy Deduction - Tijuana River Valley			-3	-3		-3				
2014										
Stoneridge Preserve (tax default)		1		1		1	$ 9,563	$ 9,563		County
Mit Lnd Policy Deduction - L B Daley Daley		0		-0.37		-0.37				
2015										
Flinn Springs MSCP		33		33		33	$ 400,000	$ 400,000		County
Sycamore Canyon/Goodan		100		100		100	$ 810,000	$ 610,000	$ 200,000	County, State
Sycamore Canyon/Goodan		40		40		40	$ 541,000	$ 541,000		County
Mit Lnd Policy Deduction - L B Daley		-8		-8		-8				
2016										
S. Vicente Connection (Navarro)		23		23		23	$ 224,000	$ 224,000		County
Mit Lnd Policy Deduction - Tijuana River Valley			-10	-10		-10				
2017										
S. Vicente Connection (Moore-Moffet)		69		69		69	$ 627,670	$ 627,670		County
Dictionary Hill		173		173		173	$ 5,467,000	$ 5,467,000		County

	Acres Acquired						Cost		Funding	
Acquisition Year **Area and Property Name**	**Owned By Local/Non Profits**	**Preserve / Hardline Owned By County**	**MHPA & Chula Vista**	**Total Counted Toward MSCP Preserve**	**Total Outside of MSCP Preserve (Not Counted Towards MSCP Preserve)**	**Total Acreage of Acquisition**	**Land Cost**	**County Funds**	**Non County Funds**	**Funding Source**
2018										
S. Vicente (Uridel)		19		19		19	$ 223,000	$111,500	$ 111,500	County/State
Lakeside Linkage (Centex)		75		75		75	$ 2,250,000	$ 2,250,000		County
Peutz Valley Preserve (Helix Lnd)		255		255		255	$ 1,651,000	$ 1,451,000	$ 200,000	County/State
2019										
Ramona Grasslands (Carroll)		121		121		121	$ 950,000	$ 950,000		County
Skyline Preserve		262		262		262	$ 1,068,000	$ 602,080	$ 465,920	County/SANDAG
Sycamore Goodan (Miera)		20		20		20	$ 220,000	$ 220,000		County
Iron Mountain Preserve		162		162		162	$ 1,280,000	$ 1,080,000	$ 200,000	County/State
Dictionary Hill (North)		1		1		1	$ 40,000	$ 40,000		County
Dictionary Hill (Inholding)		1		1		1	$ 30,000	$ 30,000		County
2020										
Sycamore Goodan (Miera II)		10		10		10	$ 110,000	$ 110,000		County
Sycamore Goodan (Miera III)		30		30		30	$ 330,000	$ 330,000		County
Ramona Grasslands (Trussells)		5		5	20	25	$ 950,000	$ 950,000		County
Dictionary Hill (Ouidiani)		0		0	1	1	$ 40,000	$ 40,000		County
Total	**556**	**6,793**	**885**	**8,234**	**21**	**8,355**	**$ 84,384,608**	**$ 49,202,636**	**$ 35,181,972**	

APPENDIX B

Wildlife Agency Tracked Acquisitions

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TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
10	FDIC (Rancho San Diego)	1167	1144	0	0	0%	$0	0	0	0%	$0	$0	$0	1996	None
10a	FDIC (Rancho San Diego)	475	468	0	0	0%	$0	0	0	0%	$0	$0	$0	1996	None
10b	FDIC (Rancho San Diego)	28	28	0	0	0%	$0	0	0	0%	$0	$0	$0	1996	None
10c	FDIC (Rancho San Diego)	129	129	0	0	0%	$0	0	0	0%	$0	$0	$0	1996	None
10d	FDIC (Rancho San Diego)	26	0	0	0	0%	$0	0	0	0%	$0	$0	$0	1996	None
240	National Fish and Wildlife Foundation (Smith "V parcel")	278	278	0	0	0%	$0	0	0	0%	$0	$0	$0	1997	None
101	Emerald Properties Corp (N. San Miguel)	500	499	217	216	43%	$1,300	283	283	57%	$1,700	$850	$3,000	1997	Prop 117 and LWCF
101a	Emerald Properties Corp (N. San Miguel)	1188	1176	0	0	0%	$0	0	0	0%	$0	$0	$0	1997	None
200	TPL (Las Montanas I)	276	112	0	0	0%	$0	276	112	100%	$1,800	$0	$1,800	1998	LWCF

TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
222	Singing Hills (Duncan)	79	76	0	0	0%	$0	0	0	0%	$0	$0	$0	1998	None
137	Hamel (I)	45	2	0	0	0%	$0	45	2	100%	$211	$0	$211	1998	LWCF
237a	Mozaffarian	10	10	0	0	0%	$0	10	10	100%	$40	$0	$40	1998	LWCF
237b	Mozaffarian	5	5	0	0	0%	$0	0	0	0%	$0	$0	$0	1998	LWCF
92	Doenges, Robert S. & William S.	87	85	0	0	0%	$0	87	85	100%	$446	$0	$446	1998	LWCF
199	Liker	8	8	0	0	0%	$0	8	8	100%	$150	$0	$150	1998	LWCF
200a	TPL (Las Montanas II)	661	279	0	0	0%	$0	661	279	100%	$1,500	$0	$1,500	1998	LWCF
200b	TPL (McGinty Ranch I)	582	582	0	0	0%	$0	582	582	100%	$1,675	$0	$1,675	1999	LWCF
137a	Hamel (II)	79	0	0	0	0%	$0	79	0	100%	$319	$0	$319	1999	LWCF
1	Department of Treasury (Gomez)	88	26	0	0	0%	$0	0	0	0%	$0	$0	$0	1999	None
200c	TPL (McGinty Ranch II)	112	112	0	0	0%	$0	0	0	0%	$0	$0	$0	1999	None
89	Desert Pacific Council/Boy Scouts	83	0	0	0	0%	$0	83	0	100%	$393	$0	$393	1999	LWCF
23	Beitmann	5	5	0	0	0%	$0	5	5	100%	$28	$0	$28	1999	LWCF
86	DeGuzman	37	0	0	0	0%	$0	37	0	100%	$180	$0	$180	1999	LWCF

TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
84	DeGuzman	34	0	0	0	0%	$0	34	0	100%	$153	$0	$153	1999	LWCF
85	DeGuzman	41	0	0	0	0%	$0	41	0	100%	$180	$0	$180	1999	LWCF
132	Grant, Kenneth Carlton	14	10	0	0	0%	$0	14	10	100%	$140	$0	$140	2000	LWCF
164	Immenschuh	641	640	0	0	0%	$0	641	640	100%	$1,760	$0	$1,760	2000	LWCF
288	Rice	253	0	0	0	0%	$0	253	0	100%	$1,140	$0	$1,140	2000	LWCF
288a	Rice	1	0	0	0	0%	$0	1	0	100%	$3	$0	$3	2000	LWCF
200f	TPL (Shinohara I)	85	78	0	0	0%	$0	85	78	100%	$2,700	$0	$2,700	2001	LWCF
288b	Rice	286	6	0	0	0%	$0	286	6	100%	$1,332	$0	$1,332	2001	LWCF
15	Clarke	38	38	0	0	0%	$0	38	38	100%	$170	$0	$170	2001	LWCF
200g	TPL (Shinohara II)	40	34	0	0	0%	$0	40	34	100%	$1,381	$0	$1,381	2002	LWCF
12	Sampo	69	18	0	0	0%	$0	69	18	100%	$280	$0	$280	2002	LWCF
14	Mills	19	19	0	0	0%	$0	19	19	100%	$115	$0	$115	2002	LWCF
200h	TPL (Shinohara III)	369	368	0	0	0%	$0	369	368	100%	$4,540	$0	$4,540	2004	LWCF
16	Baker Trust	19	0	0	0	0%	$0	19	0	100%	$100	$0	$100	2004	LWCF
16a	Baker Trust	1	1	0	0	0%	$0	1	1	100%	$5	$0	$5	2004	LWCF
13	Asistoisdmr Holdings	37	0	0	0	0%	$0	37	0	100%	$260	$0	$260	2004	LWCF
315	Chula Vista 186 LLC	185	0	0	0	0%	$0	185	0	100%	$1,302	$0	$1,302	2004	LWCF

TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
180	King	5	0	0	0	0%	$0	5	0	100%	$175	$0	$175	2005	LWCF
295	Roberts	10	0	0	0	0%	$0	10	0	100%	$225	$0	$225	2005	LWCF
230	Mitchell	3	0	0	0	0%	$0	3	0	100%	$250	$0	$250	2005	LWCF
3a	County of San Diego	22	22	0	0	0%	$0	0	0	0%	$0	$0	$0	2005	None
296	Robinson	10	0	0	0	0%	$0	10	0	100%	$55	$0	$55	2005	LWCF
175	Kelly, etal	5	0	0	0	0%	$0	5	0	100%	$205	$0	$205	2006	LWCF
103h	TET	53	0	0	0	0%	$0	53	0	100%	$225	$0	$225	2006	LWCF
363	Brown	41	41	0	0	0%	$0	41	41	100%	$50	$0	$50	2007	LWCF
396	Wilhite	41	41	0	0	0%	$0	41	41	100%	$480	$0	$480	2007	LWCF
297	Catholic Diocese	27	0	0	0	0%	$0	27	0	100%	$150	$0	$150	2009	LWCF
103a	TET	338	338	0	0	0%	$0	0	0	0%	$0	$0	$0	2009	None
357	Jones	20	0	0	0	0%	$0	20	0	100%	$230	$0	$230	2010	LWCF
272	TET	261	260	0	0	0%	$0	0	0	0%	$0	$0	$0	2010	None
176	Kennerly	10	0	0	0	0%	$0	10	0	100%	$80	$0	$80	2011	LWCF
302	Salerno	10	0	0	0	0%	$0	10	0	100%	$80	$0	$80	2011	LWCF
251	Nauman	2	0	0	0	0%	$0	2	0	100%	$78	$0	$78	2011	LWCF
319	Sevel	1	0	0	0	0%	$0	1	0	100%	$33	$0	$33	2011	LWCF
104	Evans	2	1	0	0	0%	$0	2	1	100%	$87	$0	$87	2011	LWCF
411	Lauss	2	0	0	0	0%	$0	2	0	100%	$52	$0	$52	2011	LWCF
266	Peppard	10	0	0	0	0%	$0	0	0	0%	$0	$0	$250	2012	Other

TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
71	The Nature Conservancy	1858	1309	0	0	0%	$0	0	0	0%	$0	$0	$0	2012	None
127	Cuevas	10	0	0	0	0%	$0	10	0	100%	$235	$0	$235	2012	LWCF
102b	Trimark	167	167	0	0	0%	$0	0	0	0%	$0	$0	$0	2013	None
149	Heuschele	6	0	0	0	0%	$0	6	0	100%	$35	$0	$35	2013	LWCF
194	Lee	6	0	0	0	0%	$0	0	0	0%	$0	$0	$0	2013	None
388a	Bella Lago	10	10	0	0	0%	$0	0	0	100%	$0	$0	$0	2014	None
326	Bols	41	9	0	0	0%	$0	0	0	0%	$0	$0	$220	2014	Other
238	Spring Valley Ranch	43	0	0	0	0%	$0	43	0	100%	$435	$0	$435	2015	LWCF
503	Pio Pico	82	0	0	0	0%	$0	0	0	0%	$0	$0	$0	2016	None
98	Beaver Hollow	120	0	0	0	0%	$0	120	0	100%	$975	$0	$975	2016	LWCF
367	Trachtenberg	4	0	0	0	0%	$0	4	0	100%	$70	$0	$70	2016	LWCF
290	Riedman	41	0	0	0	0%	$0	41	0	100%	$285	$0	$285	2016	LWCF
312	TNC Schooler	4	4	0	0	0%	$0	4	4	100%	$45	$0	$45	2016	LWCF
2a	CALTRANS (River Splinter)	21	20	0	0	0%	$0	0	0	0%	$0	$185	$0	2017	None
2	CALTRANS (Go-Cart)	2	1	0	0	0%	$0	0	0	0%	$0	$375	$0	2017	None
327	Sickles	10	1	0	0	0%	$0	10	1	100%	$235	$0	$235	2017	LWCF
114	North	1	0	0	0	0%	$0	1.00	0	100%	$7	$0	$7	2017	LWCF

TABLE B-1. WILDLIFE AGENCY TRACKED ACQUISITIONS– U.S. FISH AND WILDLIFE SERVICE

USFWS Acquisitions[a]				State of California Funded				Federal Government Funded							
Track No	Property Name	Total Acres	Total Acres in MSCP MHPA	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP MHPA	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
2e	CALTRANS (Millar Ranch Rd)	19	0	0	0	0%	$0	0	0	0%	$0	$190	$0	2018	None
192	Alshadhir	19	8	0	0	0%	$0	19	8	100%	$188	$0	$188	2018	LWCF
55	Chow	22	3	0	0	0%	$0	22	3	100%	$155	$0	$155	2018	LWCF
2b	CALTRANS (Bonita Meadows)	107	6	0	0	0%	$0	0	0	0%	$0	$1,140	$0	2018	None
2c	CALTRANS (Bonita Meadows)	127	119	0	0	0%	$0	0	0	0%	$0	$1,140	$0	2018	None
2d	CALTRANS (94/54 Corridor)	52	1	0	0	0%	$0	0	0	0%	$0	$510	$0	2018	None
505, 505a	Journey Partners	58	47	0	0	0%	$0	55	44	100%	$1,730	$0	$1,730	2019	LWCF
249	Offutt	1	0	0	0	0%	$0	1	1	100%	$10	$0	$10	2019	TSDF
Otay-Sweet-water	TNC Lyons Valley Partners	121	72	0	0	0%	$0	121	72	100%	650	$0	$650	2020	LWCF
	Total	**11,905**	**8,717**	**217**	**216**		**$1,300**	**4,989**	**2,796**		**$31,511**	**$4,390**	**$32,631**		

[a] All acquisitions are part of the San Diego National Wildlife Refuge. USFWS is the land manager and fee title owner of all acquisitions in table.

TABLE B-2. WILDLIFE AGENCY TRACKED ACQUISITIONS – BUREAU OF LAND MANAGEMENT

CaseNum	Property Name	Total Acres	Agency's Prorated Acres Purchased	Acres in MHPA only	Prorated acres in MHPA only	Acres in MHPA Amendment Area	Prorated acres in MHPA Amendment Area	Acres in MSCP MHPA (both)	Prorated Acres in MSCP MHPA (both)	Agency % Contribution	Agency's Cost (000s)	Total Cost of Property (000s)	Fund Authority	Year Acquired
CACA037104	**Helix/Lambron**	381	381	381	381	0	0	381	381	100%	$1,090.0	$1,090.0	LWCF	1997
CACA039258	**TPL (Sycamore Canyon)**	354	354	167	167	23	23	190	190	100%	$750.0	$750.0	LWCF	1998
CACA040203	**Anderson**	126	126	1	1	0	0	1	1	100%	$250.0	$250.0	LWCF	2000
CACA040237	**TPL (Rancho Jamul)**	1,093	1093	253	253	7	7	260	260	100%	$2,000.0	$2,000.0	LWCF	1999
CACA040314	**TET (Marron Valley)**	332	332	332	332	0	0	332	332	100%	$1,021.0	$1,021.0	LWCF	1999
CACA041430	**Anderson/Hendron**	31	31	0	0	0	0	0	0	100%	$60.0	$60.0	LWCF	2000
CACA041516	**TET**	33	33	33	33	0	0	33	33	100%	$80.0	$80.0	LWCF	2000
CACA042687	**TPL (Clark Ranch)**	947	947	4	4	0	0	4	4	100%	$3,867.0	$3,867.0	LWCF	2001
CACA043168	**Fetters**	162	162	0	0	162	162	162	162	100%	$325.1	$325.1	LWCF	2002
CACA044234	**Cain**	461	461	23	23	437	437	461	461	100%	$1,320.0	$1,320.0	LWCF	2002
CACA045193	**Brailsford/Keller**	42	42	1	1	0	0	1	1	100%	$140.0	$140.0	LWCF	2004
CACA045308	**Klein**	118	118	1	1	0	0	1	1	100%	$470.0	$470.0	LWCF	2004
CACA046156	**TPL**	359	359	4	4	0	0	4	4	100%	$1,436.0	$1,436.0	LWCF	2004
CACA050366	**TET (O'Neal Cnyn) Donation**	167	0	0	0	167	0	167	0	0.00%	$0.0	$0.0	None	2009
		4,606	**4,439**	**1,200**	**1,200**	**796**	**629**	**1,997**	**1,830**		**$12,809.1**	**$12,809.1**		

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
Boden Canyon Ecological Reserve															
821737	Boden Canyon (Phase I)	572	506	524	463	92%	$2,172	0	0	0%	$0	$442	$2,372	1998	Prop 117
821826	Boden Canyon (Expansion #1)	604	548	558	506	92%	$2,180	0	0	0%	$0	$430	$2,360	1999	Prop 117
821858	Boden Canyon (Expansion #2)	67	64	67	64	100%	$210	0	0	0%	$0	$105	$210	1999	Prop 117
Canada de San Vicente															
822300	Monte Vista Ranch (Iron Mountain, Expansion #3)	392	390	0	0	0%	$0	0	0	0%	$0	$0	$0	2008	Mitigation
822399	Monte Vista Ranch	4,026	1,558	2,453	949	61%	$9,700	1,573	609	39%	$6,221	$0	$15,921	2009	Prop 12 and Section 6
822506	Monte Vista Ranch (Iron Mountain, Expansion #4)	314	11	0	0	0%	$0	314	11	100 %	$2,100	$300	$2,100	2010	Section 6
822883	Bonfils	266	9	93	3	35%	$158	173	6	65%	$293	$0	$450	2014	Prop 117 and Section 6
Crestridge Ecological Reserve															
821774	Crestridge	2,372	1,958	857	707	36%	$3,506	0	0	0%	$0	$1,889	$3,506	1999	Prop 117
821964	Crestridge Expansion #1	256	256	0	0	0%	$0	0	0	0%	$0	$0	$2,258	2002	Mitigation

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
822003	Rancho Montana Unit Pilgrim Mitigation Bank (CALTRANS)	125	125	0	0	0%	$0	0	0	0%	$0	$0	$0	2002	N/A
Hollenbeck Canyon Wildlife Area															
821913	Hollenbeck Canyon (Expansion #1 - Original CDFG Segment)	3241	945	3,170	925	98%	$10,997	0	0	0%	$0	$0	$11,240	2001	General Fund & Prop12
822132	Hollenbeck Canyon (Expansion #2 - Honey Springs Ranch)	2012	82	2,012	82	100%	$7,420	0	0	0%	$0	$0	$7,420	2004	Prop 12
822257	Hollenbeck Canyon (Expansion #3)	304	0	50	0	17%	$205	254	0	83%	$1,031	$0	$1,235	2006	Prop 12 and Section 6
822632	Hollenbeck Canyon Wildlife Area, Expansion #4	577	34	178	10	31%	$693	393	23	68%	$1,532	$87	$2,250	2011	Prop 40 and Section 6
822907	Hollenbeck Canyon Wildlife Area, Expansion #5	381	79	88	18	23%	$361	0	0	0%	$0	$0	$1,564	2015	Prop 117
822908	Hollenbeck Canyon Wildlife Area, Expansion #6	187	166	66	58	35%	$253	121	108	65%	$467	$0	$720	2016	Prop 117

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
12-2016 rptd "pending"; 12-2017 rptd 822915	Hollenbeck Canyon Wildlife Area, Expansion #7 HabiTrak 17-123	27	0	10	0	35%	$84	18	0	65%	$156	$0	$240	2016	Prop 117
HabiTrak 17-124; Hist# 822923	Hollenbeck Canyon Wildlife Area APNs 59710009, 59710011, 59710012 11/7/2016	113													
Lake Hodges Ecological Reserve															
821996	Pilgrim Mitigation Parcels (CALTRANS)	19	19	0	0	0%	$0	0	0	0%	$0	$0	$0	2002	N/A
McGinty Mountain Ecological Reserve															
821486	McGinty Mountain Expansion #2 - Willow Glen	200	200	110	110	55%	$357	0	0	0%	$0	$583	$647	1996	Prop 70
HabiTrak 20-012	McGinty Mountain APN 51909104	86	86											2020	

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
Otay Mountain Ecological Reserve															
821509	Otay Mt North	211	211	211	211	100%	$2,880	0	0	0%	$0	$0	$2,880	1996	Prop 117 and Prop 70
822061	Otay Village 15	1,037	1,037	392	392	38%	$7,376	436	436	42%	$8,200	$0	$19,500	2004	Prop 12 and Section 6
Rancho Jamul Ecological Reserve															
821560	Rancho Jamul (Phase 1)	2,268	1,532	627	423	28%	$1,050	1,641	1,108	72%	$2,750	$0	$3,800	1997	Prop 117 and Section 6
821809	Rancho Jamul (Expansion #1)	1,398	986	466	329	33%	$800	932	657	67%	$1,600	$800	$2,400	1998	Natural Resources Infrastructure Fund and Prop 117
821962	Rancho Jamul ER (Expansion #2 - HQ)	40	4	40	4	100%	$2,000	0	0	0%	$0	$0	$2,000	2001	Prop 12
822037	Rancho Jamul Proctor Valley Unit (Villages 14 and 16)[b]	1,463	811	421	233	29%	$6,475	1,042	577	71%	$16,025	$0	$22,500	2003	Prop 12 and Section 6
	Expansion 4	3	1	0	0	0%	$0	0	0	0%	$0	$0	$0	2018	Mitigation

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
822074	Rancho Jamul Expansion #3 (CalMat Quarry)	551	551	551	551	100%	$6,450	0	0	$0	$0	$0	$6,450	2004	Prop 12
San Vicente Highlands															
821881	Iron Mountain Wildlife Area - Boys & Girls Club	240	240	0	0	0%	$0	0	0	$0	$0	$803	$0	2000	N/A
		1,181	1,181	1,181	1,181	100%	$3,800	0	0	$0	$0	$0	$3,800	2000	Prop 12
	Briles	7	7	7	7	100%	$115	0	0	$0	$0	$0	$115	2018	Prop 117
822584	Environmental Trust Bankruptcy (San Vicente)	0	0	0	0	0%	$0	0	0	$0	$0	$2,160	$0	2009	Mitigation
Sycuan Peak Ecological Reserve															
821488	Sycuan Peak (Expansion #1)	122	122	122	122	100%	$413	0	0	$0	$0	$0	$413	1996	EEMP
821554	Sycuan Peak (Expansion #2)	297	297	78	78	26%	$250	0	0	$0	$0	$0	$950	1997	Prop 117, ISTEA, EEMP
821740	Sycuan Peak (Expansion #3)	253	252	253	252	100%	$700	0	0	$0	$0	$123	$700	1998	Prop 70 and Prop 117
822292	Sycuan Peak (Expansion #4)	601	177	150	44	25%	$367	451	132	75%	$1,100	$0	$1,467	2006	Prop 12 and Section 6
822900	Sycuan Peak (Expansion #5)	76	69	27	24	35%	$53	49	45	65%	$97	$0	$150	2015	Prop 117

TABLE B-3. WILDLIFE AGENCY TRACKED ACQUISITIONS– CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE

CDFW Acquisitions in County Subarea Since 1998[a]				State of California Funded				Federal Government Funded							
Parcel History #	Parcel Name	Total Acres	Total Acres in MSCP	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Prorated Acres Purchased	Prorated Acres in MSCP	% Contribution	Cost (000s)	Total Donated Value (000s)	Total Property Cost (000s)	Year	Funding Source
822909	Sycuan Peak (Expansion #6)	2	2	1	1	35%	$11	1	1	65%	$19	$0	$30	2016	Prop 117
822914	Sycuan Peak (Expansion #7) HabiTrak 17-121	10	0	4	0	35%	$11	7	0	65%	$21	$0	$32	2016	Prop 117
17-122; Hist# 822920	Sycuan Peak Ecological Reserve APN 52109008 10/25/2016	40													
HabiTrak 20-013	Sycuan Peak Ecological Reserve APNs 52101005, 52108004	172	42											2020	
		26,115	**14,558**	**14,766**	**7,750**		**$71,044**	**7,406**	**3,714**		**$41,613**	**$7,723**	**$121,680**		

NOTES:
[a] All acquisitions are owned in fee title and managed by California Department of Fish and Wildlife unless otherwise noted.
[b] U.S. Fish and Wildlife Service is the land manager

APPENDIX C

Summary of MSCP Gains

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Summary of Project Gains

MSCP South San Diego County

From 1/1/2021 To 12/31/2021

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date Cons.	Status	Mgmt Resp.	Conservation Type	Mit. Bank Credits Used	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-001	BonitaGlen Project		County Of San Diego Parks	598-080-05	12/16/2021	Gain	Local	Acquisition	0.00	0.00	1.13	1.13
21-017	BP_BROOKS		BROOKS	396-202-05	12/29/2021	Gain	Private	Easement	0.00	0.27	0.00	0.27
21-013	BP_ESPARZA		ESPARZA	269-162-15	12/29/2021	Gain	Private	Easement	0.00	0.10	0.00	0.10
21-008	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-05	12/29/2021	Gain	Private	Easement	0.00	0.15	0.00	0.15
21-015	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-12	12/29/2021	Gain	Private	Easement	0.00	0.11	0.00	0.11
21-012	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-21	12/29/2021	Gain	Private	Easement	0.00	0.02	0.00	0.02
21-011	BP_JACKSON		JACKSON	396-191-10	12/29/2021	Gain	Private	Acquisition	0.00	0.16	0.00	0.16
21-009	BP_JENSEN		JENSEN	396-220-18	12/29/2021	Gain	Private	Easement	0.00	0.00	1.85	1.85
21-014	BP_MERAM		MERAM	515-101-26	12/29/2021	Gain	Private	Easement	0.00	0.67	0.00	0.67
21-010	BP_ROHN		ROHN	269-202-43	12/29/2021	Gain	Private	Easement	0.00	0.11	0.00	0.11
21-016	BP_ZHU		ZHU	269-151-15	12/29/2021	Gain	Private	Easement	0.00	0.10	0.00	0.10
21-106	COI-SITTO		SITTO	502-022-67	12/30/2021	Gain	Private	Easement	0.00	0.40	0.00	0.40
21-021	OS_ESMT DOC#2021-0328130		DOC#2021-0328130	520-060-18	12/29/2021	Gain	Private	Easement	0.00	34.54	0.00	34.54
21-165	OS_ESMT MCLEAN		MCLEAN	329-120-58	12/30/2021	Gain	Private	Easement	0.00	0.57	0.00	0.57
21-019	OS_ESMT NEW RANCH LAND CO LLC		NEW RANCH LAND CO LLC	580-220-08	12/29/2021	Gain	Private	Easement	0.00	3.78	0.00	3.78
21-020	OS_ESMT ROUGH ACRES FOUNDATION		ROUGH ACRES FOUNDATION	599-221-05	12/29/2021	Gain	Private	Easement	0.00	21.21	0.00	21.21
21-018	OS_ESMT SRINGERI		SRINGERI VIDYA BHARATI FOUNDATION INC U S A	241-080-47	12/29/2021	Gain	Private	Easement	0.00	0.74	0.00	0.74
21-166	OS_ESMT_SDCWA		SAN DIEGO COUNTY WATER AUTHORITY	329-120-54	12/30/2021	Gain	Local	Easement	0.00	0.08	0.00	0.08
21-002	Otay POM Sunwood		San Diego County	646-030-35	12/16/2021	Gain	Local	Acquisition	0.00	0.00	18.03	18.03
21-003	SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY		SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY	272-170-16	12/29/2021	Gain	Non-Profit	Acquisition	0.00	10.69	30.85	41.54

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County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date Cons.	Status	Mgmt Resp.	Conservation Type	Mit. Bank Credits Used	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-007	SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY		SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY	272-170-15	12/29/2021	Gain	Non-Profit	Acquisition	0.00	0.05	61.95	62.00
21-005	SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY		SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY	272-170-07	12/29/2021	Gain	Non-Profit	Acquisition	0.00	0.75	0.05	0.80
21-006	SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY		SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY	272-170-10	12/29/2021	Gain	Non-Profit	Acquisition	0.00	2.04	8.73	10.77
21-004	SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY		SAN DIEGUITO RIVER VALLEY LAND CONSERVANCY	272-170-09	12/29/2021	Gain	Non-Profit	Acquisition	0.00	1.84	0.00	1.84
Total for Agency: County of San Diego									**0.00**	**78.39**	**122.58**	**200.97**

APPENDIX D

MSCP Acquisitions by County of San Diego and Local Non-Profit Partners in Reporting Year

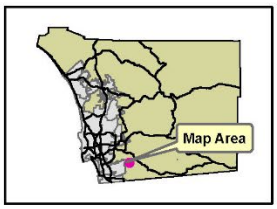
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County of San Diego
Otay POM Bonita Glen Project



Acquisition Name:	Otay POM Bonita Glen Project
Owner:	County of San Diego
Management Agency:	Local
GIS Acres:	1.127
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-001
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	1.125
Southern Mixed Chaparral	0.002



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Hardline Preserve
- South Plan Boundary

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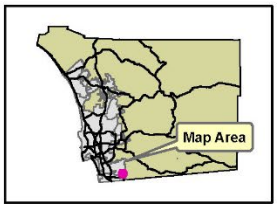
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County of San Diego
Otay POM Sunwood



Acquisition Name:	Otay POM Sunwood
Owner:	County of San Diego
Management Agency:	Local
GIS Acres:	18.09
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-002
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	18.09



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Hardline Preserve
- South Plan Boundary

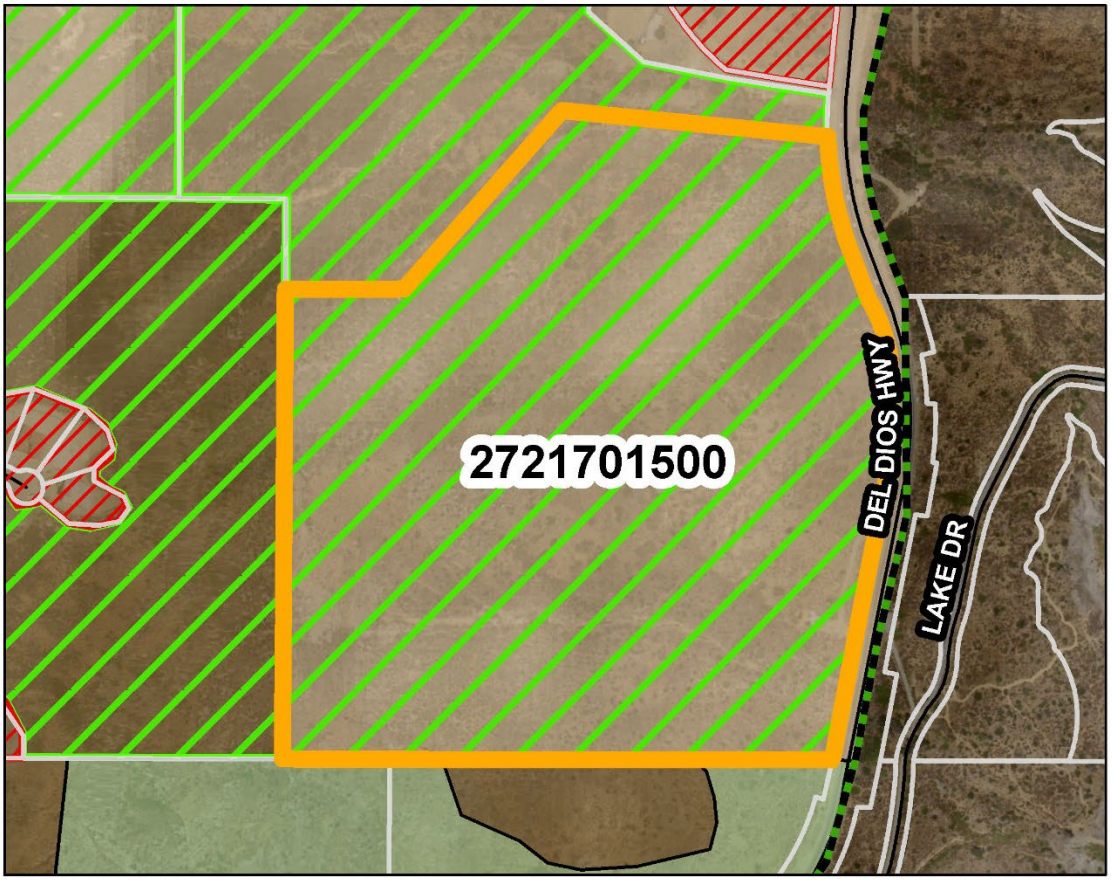
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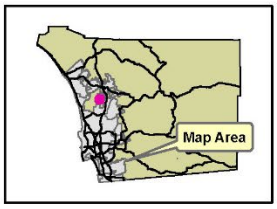
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County of San Diego
San Dieguito River Valley Conservancy



Acquisition Name:	San Dieguito River Valley Conservancy
Owner:	San Dieguito River Valley Conservancy
Management Agency:	Local
GIS Acres:	61.97
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-007
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	45.73
Chaparral	7.89
Southern Mixed Chaparral	8.35



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- Road
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Pre-Approved Mitigation Area
- Hardline Preserve
- Take Authorized Area
- South Plan Boundary

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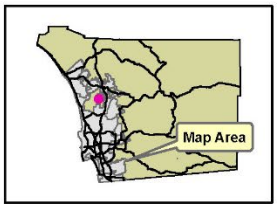
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County of San Diego
San Dieguito River Valley Conservancy



Acquisition Name:	San Dieguito River Valley Conservancy
Owner:	San Dieguito River Valley Conservancy
Management Agency:	Local
GIS Acres:	10.77
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-006
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	0.306
Urban/Developed	0.222
Southern Mixed Chaparral	10.24



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Pre-Approved Mitigation Area
- Take Authorized Area
- Unincorporated Land in Metro-Lakeside-Jamul Segment
- South Plan Boundary

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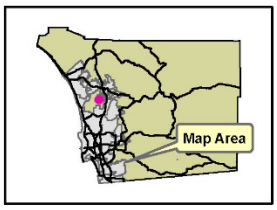
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County of San Diego
San Dieguito River Valley Conservancy



Acquisition Name:	San Dieguito River Valley Conservancy
Owner:	San Dieguito River Valley Conservancy
Management Agency:	Local
GIS Acres:	1.84
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-004
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	0.70
Southern Mixed Chaparral	1.14



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Pre-Approved Mitigation Area
- Take Authorized Area
- Unincorporated Land in Metro-Lakeside-Jamul Segment
- South Plan Boundary

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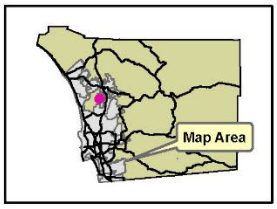
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County of San Diego
San Dieguito River Valley Conservancy



Acquisition Name:	San Dieguito River Valley Conservancy
Owner:	San Dieguito River Valley Conservancy
Management Agency:	Local
GIS Acres:	41.54
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-003
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Diegan Coastal Sage Scrub	14.53
Urban/Developed	0.61
Southern Mixed Chaparral	26.41



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- Road
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Pre-Approved Mitigation Area
- Take Authorized Area
- Unincorporated Land in Metro-Lakeside-Jamul Segment
- South Plan Boundary

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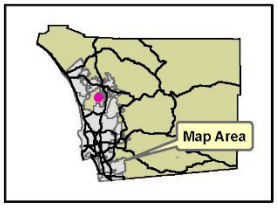
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County of San Diego
San Dieguito River Valley Conservancy



Acquisition Name:	San Dieguito River Valley Conservancy
Owner:	San Dieguito River Valley Conservancy
Management Agency:	Local
GIS Acres:	0.80
Habitrak Acres:	TBD
Acquisition Date:	TBD
Habitrak Tracking Number:	21-005
MSCP Segment:	South County Segment

MSCP Vegetation Type	Acres
Urban/Developed	0.22
Southern Mixed Chaparral	0.58



Legend

- Acquisition
- County Preserve Prior to Acquisition
- Parcel Boundaries
- MSCP Gain
- MSCP Loss

MSCP (South County) Designation

- Pre-Approved Mitigation Area
- Take Authorized Area
- Unincorporated Land in Metro-Lakeside-Jamul Segment
- South Plan Boundary

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APPENDIX E

Summary of MSCP Losses

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Summary of Project Losses

MSCP South San Diego County

From 1/1/2021 To 12/31/2021

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-022	BP HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-05	12/29/2021	Loss	0	Multi-Family Residential	0.89	0.00	0.89
21-024	BP SRIRAMAGIRI		SRIRAMAGIRI	267-441-04	12/29/2021	Loss	0	Single-Family Residential	0.01	0.00	0.01
21-038	BP_278-391-02-00		278-391-02-00 FAMILY TRUST	278-391-07	12/29/2021	Loss	0	Single-Family Residential	0.18	0.00	0.18
21-088	BP_ALMIROL		ALMIROL	570-230-46	12/30/2021	Loss	0	Single-Family Residential	0.04	0.00	0.04
21-69	BP_BAKER		BAKER	402-170-20	12/30/2021	Loss	0	Single-Family Residential	0.96	0.00	0.96
21-059	BP_BONEY		BONEY	520-060-1800	12/30/2021	Loss	0	Rural Residential	13.33	0.00	13.33
21-032	BP_BRENIS		BRENIS	510-090-05	12/29/2021	Loss	0	Single-Family Residential	0.22	0.00	0.22
21-095	BP_BROOKS		BROOKS	396-202-05	12/30/2021	Loss	0	Single-Family Residential	0.52	0.00	0.52
21-039	BP_BUFFINI		BUFFINI	269-080-24	12/29/2021	Loss	0	Rural Residential	0.34	0.00	0.34
21-044	BP_CAMPBELL		CAMPBELL	404-043-01	12/30/2021	Loss	0	Single-Family Residential	0.36	0.00	0.36
21-086	BP_CLANCY		CLANCY		12/30/2021	Loss	0	Single-Family Residential	0.51	0.00	0.51
21-035	BP_CLARK		CLARK	276-071-42	12/29/2021	Loss	0	Single-Family Residential	0.30	0.26	0.56
21-075	BP_CORTEZ		CORTEZ	519-220-67	12/30/2021	Loss	0	Single-Family Residential	0.67	0.00	0.67
21-027	BP_COURTNEY		COURTNEY	389-061-03	12/29/2021	Loss	0	Single-Family Residential	0.74	0.00	0.74
21-037	BP_COX		COX	393-090-30	12/29/2021	Loss	0	Rural Residential	1.50	0.00	1.50
21-063	BP_DAVIS		DAVIS	278-382-14	12/30/2021	Loss	0	Single-Family Residential	1.40	0.00	1.40
21-040	BP_DIXON		DIXON	283-032-56	12/29/2021	Loss	0	Rural Residential	0.01	0.00	0.01
21-047	BP_DUSENBERRY		DUSENBERRY	377-011-20	12/30/2021	Loss	0	Single-Family Residential	0.83	0.00	0.83
21-067	BP_FROST		FROST	393-151-13	12/30/2021	Loss	0	Single-Family Residential	0.01	0.00	0.01
21-057	BP_GARCIA		GARCIA	392-180-45	12/30/2021	Loss	0	Single-Family Residential	0.00	0.95	0.95

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-031	BP_HAHN		HAHN	519-191-10	12/29/2021	Loss	0	Multi-Family Residential	0.44	0.00	0.44
21-168	BP_HARMAN		HARMAN	596-151-02	12/30/2021	Loss	0	Single-Family Residential	1.20	0.00	1.20
21-048	BP_HARVEST		HARVEST	646-240-81	12/30/2021	Loss	0	Industrial	26.91	0.00	26.91
21-096	BP_HELBIG		HELBIG	512-180-14	12/30/2021	Loss	0	Single-Family Residential	0.36	0.00	0.36
21-097	BP_HERALD		HERALD	393-200-07	12/30/2021	Loss	0	Single-Family Residential	0.84	0.00	0.84
21-045	BP_HERBER		HERBER	596-211-27	12/30/2021	Loss	0	Rural Residential	0.00	0.11	0.11
21-041	BP_HERMANSON		HERMANSON	600-030-28	12/29/2021	Loss	0	Single-Family Residential	0.19	0.00	0.19
21-078	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-061-01	12/30/2021	Loss	0	Multi-Family Residential	1.05	0.00	1.05
21-056	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-31	12/30/2021	Loss	0	Single-Family Residential	0.88	0.00	0.88
21-070	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-062-12	12/30/2021	Loss	0	Multi-Family Residential	0.96	0.00	0.96
21-092	BP_HIGH MEADOW RANCH L P		HIGH MEADOW RANCH L P	389-092-06	12/30/2021	Loss	0	Multi-Family Residential	0.00	0.32	0.32
21-089	BP_HIX		HIX	596-071-66	12/30/2021	Loss	0	Single-Family Residential	1.27	0.00	1.27
21-049	BP_HOWARD		HOWARD	393-100-22	12/30/2021	Loss	0	Single-Family Residential	1.48	0.00	1.48
21-033	BP_JENSEN		JENSEN	396-220-18	12/29/2021	Loss	0	Single-Family Residential	0.75	0.00	0.75
21-090	BP_KOONS		KOONS	520-330-07	12/30/2021	Loss	0	Single-Family Residential	0.02	0.00	0.02
21-042	BP_LEWIS		LEWIS	579-372-20	12/29/2021	Loss	0	Single-Family Residential	0.10	0.00	0.10
21-167	BP_LIM		LIM	324-010-62	12/30/2021	Loss	0	Single-Family Residential	0.00	1.97	1.97
21-054	BP_LOZANO		LOZANO	597-090-18	12/30/2021	Loss	0	Multi-Family Residential	1.63	0.00	1.63
21-084	BP_LYONS		LYONS	503-046-03	12/30/2021	Loss	0	Single-Family Residential	0.14	0.00	0.14
21-098	BP_MALUEG		MALUEG	398-150-35	12/30/2021	Loss	0	Single-Family Residential	0.21	0.00	0.21
21-026	BP_MASON		MASON	401-202-16	12/29/2021	Loss	0	Single-Family Residential	0.00	0.11	0.11
21-064	BP_MERAM		MERAM	515-101-26	12/30/2021	Loss	0	Single-Family Residential	0.07	0.00	0.07
21-074	BP_MESA		MESA	599-100-11	12/30/2021	Loss	0	Single-Family Residential	0.00	0.18	0.18

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-068	BP_MIA		MIA	276-010-04	12/30/2021	Loss	0	Single-Family Residential	4.68	29.94	34.62
21-072	BP_MORRIN		MORRIN	402-050-22	12/30/2021	Loss	0	Single-Family Residential	0.05	0.00	0.05
21-025	BP_MOSER		MOSER	267-441-11	12/29/2021	Loss	0	Single-Family Residential	0.01	0.00	0.01
21-091	BP_MURRAY		MURRAY	396-220-26	12/30/2021	Loss	0	Single-Family Residential	0.00	0.11	0.11
21-052	BP_NASBY		NASBY	599-101-27	12/30/2021	Loss	0	Single-Family Residential	0.00	1.10	1.10
21-081	BP_OLDHAM		OLDHAM	585-113-18	12/30/2021	Loss	0	Single-Family Residential	0.81	0.00	0.81
21-077	BP_OTAY ENRICO INDUSTRIAL		OTAY	648-040-14	12/30/2021	Loss	0	Industrial	18.70	0.00	18.70
21-050	BP_OTAY WATER DISTRICT		OTAY WATER DISTRICT	502-240-09	12/30/2021	Loss	0	Industrial	0.16	0.00	0.16
21-051	BP_PHILLIPS		PHILLIPS	399-300-07	12/30/2021	Loss	0	Single-Family Residential	0.00	0.35	0.35
21-053	BP_PROLA		PROLA	278-270-59	12/30/2021	Loss	0	Single-Family Residential	0.94	0.00	0.94
21-079	BP_RADECIC		RADECIC	267-441-05	12/30/2021	Loss	0	Single-Family Residential	0.00	0.00	0.00
21-073	BP_RAMIREZ		RAMIREZ	519-094-53	12/30/2021	Loss	0	Single-Family Residential	0.27	0.00	0.27
21-030	BP_ROBBINS		ROBBINS	402-220-26	12/29/2021	Loss	0	Single-Family Residential	0.00	0.58	0.58
21-034	BP_ROHN		ROHN	269-202-43	12/29/2021	Loss	0	Single-Family Residential	0.27	0.00	0.27
21083	BP_ROKS		ROKS	403-521-11	12/30/2021	Loss	0	Single-Family Residential	0.09	0.00	0.09
21-061	BP_RYAN		RYAN	578-082-22	12/30/2021	Loss	0	Single-Family Residential	0.54	0.00	0.54
21-028	BP_SAGE		SAGE	599-080-12	12/29/2021	Loss	0	Single-Family Residential	0.15	0.00	0.15
21-094	BP_SALEM		SALEM	515-162-34	12/30/2021	Loss	0	Single-Family Residential	0.00	0.25	0.25
21-046	BP_SANTINI		SANTINI	396-030-03	12/30/2021	Loss	0	Single-Family Residential	0.21	0.00	0.21
21-087	BP_SCHILLER		SCHILLER		12/30/2021	Loss	0	Single-Family Residential	0.00	0.02	0.02
21-036	BP_SCHWEITZER		SCHWEITZER	584-510-10	12/29/2021	Loss	0	Single-Family Residential	0.29	0.00	0.29
21-043	BP_SKY		SKY	493-400-94	12/30/2021	Loss	0	Single-Family Residential	1.48	0.00	1.48

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-062	BP_SMITH		SMITH	600-131-06	12/30/2021	Loss	0	Single-Family Residential	0.73	0.00	0.73
21-085	BP_SNIVELY		SNIVELY	596-152-59	12/30/2021	Loss	0	Single-Family Residential	0.25	0.00	0.25
21-093	BP_SPENCER		SPENCER	403-110-27	12/30/2021	Loss	0	Single-Family Residential	0.07	0.00	0.07
21-065	BP_STEVENS		STEVENS	649-060-09	12/30/2021	Loss	0	Single-Family Residential	0.44	0.00	0.44
21-071	BP_STOWERS		STOWERS	393-200-09	12/30/2021	Loss	0	Single-Family Residential	0.12	0.00	0.12
21-082	BP_TATA		TATA	267-146-04	12/30/2021	Loss	0	Single-Family Residential	3.17	0.00	3.17
21-066	BP_THOMAS		THOMAS	396-030-27	12/30/2021	Loss	0	Single-Family Residential	0.80	0.00	0.80
21-076	BP_VASQUEZ		VASQUEZ	596-140-34	12/30/2021	Loss	0	Single-Family Residential	0.45	0.00	0.45
21-058	BP_VIDOVICH		VIDOVICH	391-061-1000	12/30/2021	Loss	0	Single-Family Residential	0.00	0.02	0.02
21-023	BP_VOTH		VOTH NATHAN&CHARITY N W	513-072-03	12/29/2021	Loss	0	Single-Family Residential	0.03	0.18	0.22
21-029	BP_WHITE		WHITE	241-190-26	12/29/2021	Loss	0	Single-Family Residential	0.16	0.00	0.16
21-055	BP_ZDANOWSKI		ZDANOWSKI	267-171-50	12/30/2021	Loss	0	Single-Family Residential	0.00	0.00	0.00
21-080	BP_ZHU		ZHU	269-151-15	12/30/2021	Loss	0	Single-Family Residential	0.08	0.00	0.08
21-103	COI ABRAHAM		ABRAHAM	514-240-65	12/30/2021	Loss	0	Single-Family Residential	1.01	0.00	1.01
21-101	COI BOTHA		BOTHA	596-061-26	12/30/2021	Loss	0	Single-Family Residential	0.41	1.68	2.09
21-100	COI CARL		CARL	599-020-08	12/30/2021	Loss	0	Single-Family Residential	4.88	0.00	4.88
21-119	COI EMBLY		EMBLY	237-160-06	12/30/2021	Loss	0	Single-Family Residential	3.17	0.00	3.17
21-114	COI FLOOD		FLOOD	283-101-20	12/30/2021	Loss	0	Single-Family Residential	3.60	0.00	3.60
21-115	COI GIBSON		GIBSON	272-170-17	12/30/2021	Loss	0	Single-Family Residential	0.21	8.84	9.05
21-104	COI HAMASAED		HAMASAED	513-073-42	12/30/2021	Loss	0	Single-Family Residential	0.00	0.37	0.37
21-112	COI JENTZSCH		JENTZSCH	393-120-09	12/30/2021	Loss	0	Single-Family Residential	2.70	0.00	2.70
21-120	COI KERBER		KERBER	237-100-28	12/30/2021	Loss	0	Single-Family Residential	1.02	0.00	1.02

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-102	COI KRUSE		KRUSE	522-042-29	12/30/2021	Loss	0	Single-Family Residential	2.31	0.00	2.31
21-107	COI MCLEAN		MCLEAN	404-410-10	12/30/2021	Loss	0	Single-Family Residential	1.85	0.00	1.85
21-111	COI PARADISE		PARADISE	404-012-33	12/30/2021	Loss	0	Single-Family Residential	4.75	0.00	4.75
21-109	COI PARADISE		PARADISE	404-013-41	12/30/2021	Loss	0	Single-Family Residential	1.82	0.00	1.82
21-108	COI PARADISE		PARADISE	404-013-90	12/30/2021	Loss	0	Single-Family Residential	0.02	0.00	0.02
21-110	COI PARADISE		PARADISE	404-013-40	12/30/2021	Loss	0	Single-Family Residential	1.28	0.00	1.28
21-117	COI PARISI		PARISI	241-170-13	12/30/2021	Loss	0	Single-Family Residential	0.59	0.00	0.59
21-121	COI SHIELDS		SHIELDS	329-120-55	12/30/2021	Loss	0	Single-Family Residential	3.93	0.00	3.93
21-105	COI SHOREES		SHOREES	513-073-41	12/30/2021	Loss	0	Single-Family Residential	0.00	0.45	0.45
21-116	COI SWANSSON		SWANSSON	269-162-20	12/30/2021	Loss	0	Single-Family Residential	0.87	0.00	0.87
21-118	COI WHITFORD		WHITFORD	239-160-65	12/30/2021	Loss	0	Single-Family Residential	4.38	0.00	4.38
21-099	COI YALDO		YALDO	513-120-46	12/30/2021	Loss	0	Single-Family Residential	3.63	0.00	3.63
21-165	COI-SHIELDS		SHIELDS	329-120-61	12/30/2021	Loss	0	Single-Family Residential	2.02	0.00	2.02
21-060	PAPAS		PAPAS	600-030-21	12/30/2021	Loss	0	Single-Family Residential	0.13	0.00	0.13
21-161	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-13	12/30/2021	Loss	0	Single-Family Residential	1.71	0.00	1.71
21-154	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-05	12/30/2021	Loss	0	Single-Family Residential	1.10	0.00	1.10
21-160	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-12	12/30/2021	Loss	0	Single-Family Residential	1.53	0.00	1.53
21-153	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-04	12/30/2021	Loss	0	Single-Family Residential	1.16	0.00	1.16
21-159	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-11	12/30/2021	Loss	0	Single-Family Residential	1.17	0.00	1.17
21-149	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-06	12/30/2021	Loss	0	Single-Family Residential	0.94	0.00	0.94
21-155	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-07	12/30/2021	Loss	0	Single-Family Residential	1.63	0.00	1.63
21-156	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-08	12/30/2021	Loss	0	Single-Family Residential	1.38	0.00	1.38

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-152	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-03	12/30/2021	Loss	0	Single-Family Residential	2.54	0.00	2.54
21-157	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-09	12/30/2021	Loss	0	Single-Family Residential	0.94	0.00	0.94
21-158	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-10	12/30/2021	Loss	0	Single-Family Residential	1.12	0.00	1.12
21-150	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-01	12/30/2021	Loss	0	Single-Family Residential	1.51	0.00	1.51
21-151	TM 16450		C R P/P D C PIPER OTAY OWNER LLC	646-241-02	12/30/2021	Loss	0	Single-Family Residential	1.47	0.00	1.47
21-141	TM 16456		SHEA HOMES INC	498-154-09	12/30/2021	Loss	0	Single-Family Residential	0.98	0.00	0.98
21-128	TM 16456		SHEA HOMES INC	498-155-09	12/30/2021	Loss	0	Single-Family Residential	0.54	0.00	0.54
21-138	TM 16456		SHEA HOMES INC	498-154-02	12/30/2021	Loss	0	Single-Family Residential	0.51	0.00	0.51
21-133	TM 16456		SHEA HOMES INC	498-154-08	12/30/2021	Loss	0	Single-Family Residential	0.54	0.00	0.54
21-140	TM 16456		SHEA HOMES INC	498-154-10	12/30/2021	Loss	0	Single-Family Residential	0.05	0.00	0.05
21-137	TM 16456		SHEA HOMES INC	498-154-03	12/30/2021	Loss	0	Single-Family Residential	0.52	0.00	0.52
21-131	TM 16456		SHEA HOMES INC	498-155-02	12/30/2021	Loss	0	Single-Family Residential	0.48	0.00	0.48
21-129	TM 16456		SHEA HOMES INC	498-155-08	12/30/2021	Loss	0	Single-Family Residential	0.04	0.00	0.04
21-125	TM 16456		SHEA HOMES INC	498-154-11	12/30/2021	Loss	0	Single-Family Residential	0.02	0.00	0.02
21-130	TM 16456		SHEA HOMES INC	498-155-03	12/30/2021	Loss	0	Single-Family Residential	0.41	0.00	0.41
21-124	TM 16456		SHEA HOMES INC	498-154-12	12/30/2021	Loss	0	Single-Family Residential	0.72	0.00	0.72
21-142	TM 16456		SHEA HOMES INC	498-155-19	12/30/2021	Loss	0	Single-Family Residential	0.97	0.00	0.97
21-126	TM 16456		SHEA HOMES INC	498-155-11	12/30/2021	Loss	0	Single-Family Residential	0.52	0.00	0.52
21-136	TM 16456		SHEA HOMES INC	498-154-04	12/30/2021	Loss	0	Single-Family Residential	0.51	0.00	0.51
21-139	TM 16456		SHEA HOMES INC	498-154-01	12/30/2021	Loss	0	Single-Family Residential	0.56	0.00	0.56
21-135	TM 16456		SHEA HOMES INC	498-154-05	12/30/2021	Loss	0	Single-Family Residential	0.49	0.00	0.49
21-122	TM 16456		SHEA HOMES INC	498-154-14	12/30/2021	Loss	0	Single-Family Residential	0.54	0.00	0.54

County of San Diego

Project Tracking #	Project Name	Location	Applicant	APN	Date of Loss	Status	CEQA Doc.	Activity Type	Acres Outside Habitat Preserve	Acres Inside Habitat Preserve	Total Acres
21-145	TM 16456		SHEA HOMES INC	498-154-07	12/30/2021	Loss	0	Single-Family Residential	0.52	0.00	0.52
21-146	TM 16456		TM 16456		12/30/2021	Loss	0	Single-Family Residential	0.01	0.00	0.01
21-127	TM 16456		SHEA HOMES INC	498-155-10	12/30/2021	Loss	0	Single-Family Residential	0.54	0.00	0.54
21-143	TM 16456		SHEA HOMES INC	498-155-18	12/30/2021	Loss	0	Single-Family Residential	1.16	0.00	1.16
21-132	TM 16456		SHEA HOMES INC	498-155-01	12/30/2021	Loss	0	Single-Family Residential	0.48	0.00	0.48
21-148	TM 16456		TM 16456		12/30/2021	Loss	0	Single-Family Residential	0.12	0.00	0.12
21-144	TM 16456		SHEA HOMES INC	498-155-17	12/30/2021	Loss	0	Single-Family Residential	0.51	0.00	0.51
21-134	TM 16456		SHEA HOMES INC	498-154-06	12/30/2021	Loss	0	Single-Family Residential	0.53	0.00	0.53
21-147	TM 16456		TM 16456		12/30/2021	Loss	0	Single-Family Residential	0.18	0.00	0.18
21-123	TM 16456		SHEA HOMES INC	498-154-13	12/30/2021	Loss	0	Single-Family Residential	0.51	0.00	0.51
21-163	TM 16474		TOR INVESTMENTS L P	395-220-11	12/30/2021	Loss	0	Single-Family Residential	5.16	0.00	5.16
21-162	TPM 21866		NEW RANCH LAND CO LLC	580-220-08	12/30/2021	Loss	0	Single-Family Residential	56.03	7.41	63.43
Total for Agency: County of San Diego									**233.20**	**55.22**	**288.41**

APPENDIX F

Summary of Habitat Losses and Gains

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Summary of Habitat Losses and Gains

Plan: MSCP South San Diego County
Date Range: 1/1/2021 - 12/31/2021

Project Gain Status: Gain
Project Loss Status: Loss

County of San Diego

		Acres Inside the Habitat Preserve Planning Area					Acres Outside the Habitat Preserve				Total Acres			
		Habitat Loss		Habitat Gain			Habitat Loss		Habitat Gain		Habitat Loss		Habitat Gain	
Habitat Type	Target Cons.	Current Period	Cummulative	Current Period	Cummulative	Cons. to Date %	Current Period	Cummulative	Current Period	Cummulative	Current Period	Cummulative	Current Period	Cummulative
Beach	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Saltpan	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Foredunes	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Southern Coastal Bluff Scrub	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Coastal Sage Scrub	42,873	27.38	758.96	81.39	30,141.49	70.30 %	19.95	1,425.98	1.36	8,039.19	47.33	2,184.94	82.76	38,180.68
Maritime Succulent Scrub	6	0.00	0.00	0.00	3.89	64.77 %	0.00	0.00	0.00	8.23	0.00	0.00	0.00	12.12
Chaparral	39,871	0.68	309.20	41.19	34,342.97	86.14 %	40.48	2,948.90	51.82	9,986.77	41.16	3,258.10	93.00	44,329.74
Southern Maritime Chaparral	5	0.00	1.95	0.00	5.82	116.31 %	0.00	11.36	0.00	22.66	0.00	13.31	0.00	28.47
Coastal Sage-Chaparral Scrub	1,325	0.00	12.40	0.00	1,008.94	76.15 %	0.05	138.81	0.00	1,115.49	0.05	151.21	0.00	2,124.43
Grassland	3,171	8.14	69.44	0.00	1,955.61	61.67 %	57.83	1,263.15	6.98	954.38	65.97	1,332.59	6.98	2,909.99
Southern Coastal Salt Marsh	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Freshwater Marsh	233	0.00	0.10	0.00	143.25	61.48 %	0.00	4.46	0.00	59.74	0.00	4.56	0.00	202.99
Riparian Forest	348	0.00	0.45	0.00	311.73	89.58 %	0.00	2.88	0.00	76.32	0.00	3.33	0.00	388.05
Oak Riparian Forest	2,192	0.00	34.35	0.00	1,012.33	46.18 %	0.38	50.01	0.00	476.56	0.38	84.36	0.00	1,488.89
Riparian Woodland	20	0.00	0.00	0.00	10.88	54.39 %	0.00	0.00	0.00	6.45	0.00	0.00	0.00	17.33
Riparian Scrub	383	0.00	7.57	0.00	121.93	31.83 %	0.55	15.43	2.90	69.05	0.55	23.00	2.90	190.98
Oak Woodland	2,211	0.34	50.97	0.00	1,144.52	51.76 %	4.08	166.94	12.10	517.51	4.42	217.91	12.10	1,662.03
Torrey Pine Forest	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tecate Cypress Forest	5,589	0.00	0.00	0.00	5,601.41	100.22 %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5,601.41
Eucalyptus Woodland	105	0.00	9.03	0.00	44.49	42.37 %	0.95	415.54	0.20	68.22	0.95	424.57	0.20	112.71
Open Water	149	0.00	0.50	0.00	38.93	26.13 %	0.00	6.24	0.00	37.42	0.00	6.74	0.00	76.36
Disturbed Wetland	90	0.00	1.99	0.00	78.99	87.77 %	0.00	16.25	0.00	26.00	0.00	18.24	0.00	104.99
Natural Floodchannel	225	0.00	0.00	0.00	30.76	13.67 %	0.00	0.00	0.00	4.83	0.00	0.00	0.00	35.59
Shallow Bays	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pacific Ocean/Deep Bay	0	0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Disturbed Land	0	1.17	116.39	0.00	455.67		6.88	732.05	0.41	372.19	8.04	848.44	0.41	827.85
Agriculture	0	17.51	119.49	0.00	549.62		95.25	1,619.55	0.70	2,336.18	112.76	1,739.04	0.70	2,885.81
Urban/Developed	0	0.00	42.77	0.00	73.39		6.79	2,141.94	1.92	600.09	6.79	2,184.71	1.92	673.49
Agency Total:		**55.22**	**1,535.58**	**122.58**	**77,076.62**		**233.20**	**10,959.48**	**78.39**	**24,777.29**	**288.41**	**12,495.06**	**200.97**	**101,853.91**

Note: The Agriculture and Urban/Developed category is included to account for all land included within a project and habitat preserve planning area.

Saturday, April 30, 2022 8:59 PM Report generated by the California Department of Fish and Wildlife Page 1 of 1

APPENDIX G

Habitat Conservation Accounting Model

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Habitat Conservation Accounting Model

MSCP South San Diego County

From 1/1/2021 To 12/31/2021

Project Gain Status: Gain

Project Loss Status: Loss

County of San Diego	Total Subarea Habitat Preserve	Conservation Target	Estimated Take	Conservation Ratio	Cumulative Conservation Inside Habitat Preserve	Max. Allowable Impacts for the Current Period	Actual Loss Inside Habitat Preserve for Current Period	+ or - Max. Allowable Impacts
Beach	0	0	0	0.00	0.00	0.00	0.00	n/a
Saltpan	0	0	0	0.00	0.00	0.00	0.00	n/a
Southern Foredunes	0	0	0	0.00	0.00	0.00	0.00	n/a
Southern Coastal Bluff Scrub	0	0	0	0.00	0.00	0.00	0.00	n/a
Coastal Sage Scrub	23,569	18,717	4,852	3.86	12,542.76	3,411.51	41.36	-
Maritime Succulent Scrub	0	0	0	0.00	0.00	0.00	0.00	n/a
Chaparral	22,179	18,662	3,517	5.31	14,271.12	2,772.25	38.25	-
Southern Maritime Chaparral	0	0	0	0.00	0.00	0.00	0.00	n/a
Coastal Sage-Chaparral Scrub	1,366	1,152	214	5.38	824.29	159.21	0.05	-
Grassland	2,145	1,741	404	4.31	1,085.05	267.01	8.33	-
Southern Coastal Salt Marsh	0	0	0	0.00	0.00	0.00	0.00	n/a
Freshwater Marsh	15	15	0	0.00	6.75	0.00	0.00	n/a
Riparian Forest	84	84	0	0.00	86.09	0.00	0.00	n/a
Oak Riparian Forest	2,044	2,043	1	2,043.00	939.19	0.51	0.38	-
Riparian Woodland	6	6	0	0.00	4.24	0.00	0.00	n/a
Riparian Scrub	298	298	0	0.00	55.10	0.00	0.55	+
Oak Woodland	2,355	1,912	443	4.32	1,029.11	258.89	4.42	-
Torrey Pine Forest	0	0	0	0.00	0.00	0.00	0.00	n/a
Tecate Cypress Forest	0	0	0	0.00	0.00	0.00	0.00	n/a
Eucalyptus Woodland	53	41	12	3.42	13.33	4.71	0.95	-
Open Water	124	124	0	0.00	18.39	0.00	0.00	n/a
Disturbed Wetland	52	52	0	0.00	47.10	0.00	0.00	n/a
Natural Floodchannel	197	197	0	0.00	12.81	0.00	0.00	n/a
Shallow Bays	0	0	0	0.00	0.00	0.00	0.00	n/a
Pacific Ocean/Deep Bay	0	0	0	0.00	0.00	0.00	0.00	n/a
Disturbed Land	1,259	0	1,259	0.00	253.70	0.00	7.96	+
Agriculture	1,608	0	1,608	0.00	485.77	0.00	48.91	+

County of San Diego	Total Subarea Habitat Preserve	Conservation Target	Estimated Take	Conservation Ratio	Cumulative Conservation Inside Habitat Preserve	Max. Allowable Impacts for the Current Period	Actual Loss Inside Habitat Preserve for Current Period	+ or - Max. Allowable Impacts
Urban/Developed	0	0	0	0.00	29.99	0.00	6.59	+
Total Acres for Agency: County of San Diego					**31,704.78**		**157.76**	

Note: The Agriculture and Urban/Developed category is included to account for all land included within a project and habitat preserve planning area.

This report only pertains to the Metro-Lakeside-Jamul segment of the County 's subarea plan. It includes gains that occur within the Preapproved Mitigation Area (PAMA) while counting all losses within the entire segment.

APPENDIX H

Mitigation Bank Status

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	Coast Live Oak Woodland	Coastal Sage Scrub	Disturbed/ Ruderal	Engelmann Oak Woodland	Marsh/ Riparian Scrub/Floodplain	Mixed Chaparral	Native Grasslands	Non-Native Grasslands	Southern Willow Scrub	Southern Riparian/ Oak Woodland	Totals
Boden Canyon											
Total	0.8	10.2	0	2.5	0	14.9	0.1	1	0	10	39.5
Used	0.8	10.2	0	2.5	0	0	0	0.32	0	10	23.82
Remaining	0	0	0	0	0	14.9	0.1	0.68	0	0	**15.68**
Old Castle											
Total	0.62	41.2	0	0	0	17.95	0	0	0.25	0	60.02
Used	0.62	40.856	0	0	0	3.53	0	0	0.11	0	45.116
Remaining	0	0.344	0	0	0	14.42	0	0	0.14	0	**14.904**
Rancho San Diego											
Total	4.8	226.2	80.3	0	2.4	19.6	3.4	0	0	72.5	409.2
Used	2.85	126.2597	6.215	0	0.34	7.63	0.51	0	0	16.7	160.5047
Remaining	1.95	99.9403	74.085	0	2.06	11.97	2.89	0	0	55.8	**248.6953**
Singing Hills											
Total	0	69.7	0	0	0	0	0	0	0	0	69.7
Used	0	0.695	0	0	0	0	0	0	0	0	0.695
Remaining	0	69.005	0	0	0	0	0	0	0	0	**69.005**
Sweetwater											
Total	0	0	0	0	24.33	0	0	0	0	0	24.33
Used	0	0	0	0	19.14	0	0	0	0	0	19.14
Remaining	0	0	0	0	5.19	0	0	0	0	0	**5.19**
Total Remaining	**1.95**	**169.2893**	**74.085**	**0**	**7.25**	**41.29**	**2.99**	**0.68**	**0.14**	**55.8**	**353.4743**

APPENDIX I

COIs Issued for Agricultural Clearing

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	Date Issued	APN	Permit Number	Site Name	Acres
1	12/11/00	399-020-17	AE301	Gibson	28.60
2	03/16/01	513-080-23	AE01-005	Boney	2.00
3	01/14/04	285-030-10	AD03-051	Royden	9.86
4	01/14/04	327-011-03	AD03-051	Royden	42.72
5	08/09/04	375-171-03	AD 04-048	Shank	1.00
6	08/09/04	375-171-04	AD 04-048	Shank	1.00
7	3/31/2011	Portions of 389-091-05, -06, -25	None	High Meadow Ranch	6.55
8	8/10/2011	240-270-58, 242-010-71, -72, 242-030-37, -38, 242-031-03, 242-080-01, -07, 243-110-01, -04, 243-150-05, 244-020-04	AD 11-017	Rancho Guejito	763.00
9	10/13/2011	242-070-07	AD 09-058	Rockwood Ranch	29.30
10	2/12/2015	242-070-07	None	Rancho Guejito	13.77
11	7/2/2015	243-020-05, -07, -10, 243-030-02, 243-070-01,-08	PDS2015-LDGRMN-20025	Vineyard Ranch	35.9
12	12/3/2015	242-010-71, -73, 242-030-38, 242-070-09, -12, -13, -14, 242-270-57	PDS2015-LDGRMJ-30016	Rancho Guejito	279.1
13	1/14/2016	585-113-22	PDS2015-AD-15-013	Nencini	10.9
	Total				**1,223.7**

APPENDIX J

Species and Habitat Conservation in County Preserves

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TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Barnett Ranch County Preserve	**665**
Agriculture	112
Chaparral	310
Coastal Sage Scrub	95
Eucalyptus Woodland	<1
Grassland	143
Oak Woodland	5
Urban/Developed	1
Boulder Oaks County Preserve	**2,019**
Agriculture	1
Chaparral	1,575
Coastal Sage Scrub	104
Disturbed Land	15
Grassland	101
Oak Riparian Forest	24
Oak Woodland	187
Open Water	2
Urban/Developed	11
Cactus County Park	**62**
Agriculture	<1
Coastal Sage Scrub	38
Open Water	<1
Riparian Scrub	<1
Urban/Developed	22
Damon Lane County Park	**30**
Agriculture	<1
Coastal Sage Scrub	9
Eucalyptus Woodland	5
Grassland	1
Riparian Forest	10
Urban/Developed	5
Del Dios Highlands County Preserve	**269**
Chaparral	235
Coastal Sage Scrub	21
Disturbed Land	<1
Oak Woodland	5

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Urban/Developed	9
Dictionary Hill Preserve	**176**
Chaparral	23
Coastal Sage Scrub	147
Disturbed Land	2
Riparian Scrub	<1
Urban/Developed	4
Dos Picos County Park	**78**
Agriculture	1
Chaparral	29
Coastal Sage Scrub	2
Oak Woodland	24
Urban/Developed	21
El Capitan County Preserve	**2,377**
Chaparral	1,799
Coastal Sage Scrub	274
Coastal Sage-Chaparral Scrub	107
Disturbed Land	<1
Oak Riparian Forest	30
Oak Woodland	163
Urban/Developed	3
El Monte County Park	**87**
Chaparral	<1
Coastal Sage Scrub	30
Oak Riparian Forest	18
Oak Woodland	16
Riparian Scrub	1
Urban/Developed	22
Flinn Springs County Park	**73**
Chaparral	44
Coastal Sage-Chaparral Scrub	9
Disturbed Land	5
Oak Riparian Forest	12
Urban/Developed	4
Furby-North	**79**
Coastal Sage Scrub	44

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Disturbed Land	30
Grassland	4
Urban/Developed	1
Goodan Ranch/Sycamore Canyon County Preserve	**2,733**
Agriculture	30
Chaparral	1,712
Coastal Sage Scrub	690
Coastal Sage-Chaparral Scrub	25
Disturbed Land	2
Grassland	154
Oak Riparian Forest	35
Oak Woodland	80
Riparian Scrub	<1
Riparian Woodland	4
Urban/Developed	2
Iron Mountain Preserve	**162**
Chaparral	162
Oak Woodland	1
Lakeside Linkage Preserve	**209**
Coastal Sage Scrub	188
Disturbed Land	1
Grassland	<1
Urban/Developed	20
Lawrence & Barbara Daley Preserve	**581**
Agriculture	<1
Chaparral	124
Coastal Sage Scrub	391
Coastal Sage-Chaparral Scrub	<1
Disturbed Land	5
Grassland	12
Oak Riparian Forest	49
Urban/Developed	<1
Lindo Lake County Park	**55**
Eucalyptus Woodland	10
Freshwater Marsh	2
Open Water	19

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Urban/Developed	23
Los Peñasquitos Canyon County Preserve	**199**
Chaparral	72
Coastal Sage Scrub	6
Disturbed Land	14
Disturbed Wetland	1
Freshwater Marsh	3
Grassland	51
Riparian Scrub	2
Riparian Woodland	40
Urban/Developed	11
Louis A. Stelzer County Park	**369**
Chaparral	6
Coastal Sage Scrub	328
Grassland	15
Oak Riparian Forest	19
Urban/Developed	<1
Luelf Pond County Preserve	**87**
Chaparral	60
Oak Woodland	27
Urban/Developed	<1
Lusardi Creek County Preserve	**226**
Chaparral	30
Coastal Sage Scrub	138
Coastal Sage-Chaparral Scrub	3
Disturbed Land	12
Disturbed Wetland	1
Eucalyptus Woodland	1
Freshwater Marsh	2
Grassland	25
Natural Floodchannel/Streambed	1
Riparian Forest	3
Riparian Scrub	6
Urban/Developed	3
Oakoasis County Preserve	**391**
Chaparral	338

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Grassland	8
Oak Woodland	43
Urban/Developed	3
Old Ironsides County Park	4
Oak Riparian Forest	3
Urban/Developed	1
Otay Lakes County Park	**10**
Coastal Sage Scrub	10
Shallow Bays	<1
Otay Ranch POM	**3,964**
Agriculture	14
Chaparral	615
Coastal Sage Scrub	2,486
Coastal Sage-Chaparral Scrub	118
Disturbed Land	<1
Eucalyptus Woodland	10
Freshwater Marsh	10
Grassland	231
Maritime Succulent Scrub	83
Natural Floodchannel/Streambed	122
Oak Riparian Forest	6
Oak Woodland	20
Riparian Scrub	41
Tecate Cypress Forest	160
Urban/Developed	48
Otay Valley Regional Park	**433**
Agriculture	58
Coastal Sage Scrub	268
Disturbed Land	1
Eucalyptus Woodland	<1
Freshwater Marsh	3
Grassland	45
Maritime Succulent Scrub	10
Riparian Forest	2
Riparian Scrub	18
Urban/Developed	27

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Peutz Valley	**255**
Chaparral	235
Coastal Sage Scrub	11
Coastal Sage-Chaparral Scrub	4
Oak Riparian Forest	4
Urban/Developed	1
Ramona Grasslands County Preserve	**533**
Agriculture	<1
Chaparral	292
Coastal Sage Scrub	227
Grassland	1
Oak Riparian Forest	6
Oak Woodland	1
Riparian Forest	2
Urban/Developed	2
San Vicente	**117**
Coastal Sage Scrub	114
Oak Riparian Forest	<1
Oak Woodland	4
Santa Fe Valley Preserve	**299**
Agriculture	18
Chaparral	47
Coastal Sage Scrub	170
Disturbed Land	2
Disturbed Wetland	<1
Eucalyptus Woodland	4
Freshwater Marsh	14
Grassland	15
Natural Floodchannel/Streambed	2
Oak Riparian Forest	<1
Oak Woodland	1
Open Water	4
Riparian Forest	6
Riparian Scrub	11
Urban/Developed	4

TABLE J-1. HABITAT CONSERVATION WITHIN SUBAREA SEGMENTS IN COUNTY PRESERVES

Preserve/Habitat Types	Acres
Skyline Preserve	**262**
Chaparral	240
Coastal Sage Scrub	15
Oak Woodland	7
Stoneridge Preserve	**247**
Chaparral	67
Coastal Sage Scrub	155
Coastal Sage-Chaparral Scrub	7
Oak Riparian Forest	15
Oak Woodland	3
Urban/Developed	<1
Sweetwater Regional Park	**186**
Grassland	148
Urban/Developed	37
Tijuana River Valley Regional Park	**1,779**
Agriculture	641
Bog and Marsh	13
Coastal Sage Scrub	257
Disturbed Land	21
Disturbed Wetland	11
Eucalyptus Woodland	<1
Freshwater Marsh	1
Grassland	11
Open Water	105
Riparian Scrub	549
Urban/Developed	168

SOURCE: County of San Diego, LUEG-GIS

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Plants			
Aphanisma			
California Orcutt grass			
Coast (San Diego) barrel cactus *5 County Preserves*	✓	✓	• Dictionary Hill Preserve[a] • Furby-North Property • Lusardi Creek Preserve • Otay Ranch Preserve • Tijuana River Valley Regional Park
Coast wallflower			
Coastal (Shaw's) agave			
Coastal Dunes Milkvetch			
Dehesa beargrass			
Del Mar manzanita *1 County Preserve*	✓		• Lusardi Creek Preserve
Del Mar Mesa sandaster			
Dunn's mariposa lily *1 County Preserve*	✓		• Otay Ranch Preserve
Encinitas Baccharis *1 County Preserve*	✓		• Del Dios Highlands Preserve
Felt-leaved monardella *3 County Preserves*	✓		• Boulder Oaks Preserve • El Capitan Preserve • Otay Ranch Preserve
Fire (Dense) redgrass			
Gander's butterweed			
Gander's pitcher sage *1 County Preserve*	✓		• Otay Ranch Preserve
Heart-leaf pitcher sage			
Lakeside ceanothus *4 County Preserves*	✓		• Boulder Oaks Preserve • El Capitan Preserve • Louis A. Stelzer Park • Oakoasis Preserve
Nevin's barberry			
Orcutt's bird's beak *2 County Preserves*	✓		• Otay Valley Regional Park • Tijuana River Valley Regional Park

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Orcutt's brodiaea *4 County Preserves*	✓		• Boulder Oaks Preserve • Los Peñasquitos Canyon Preserve • Otay Ranch Preserve • Santa Fe Valley Preserve
Otay manzanita *1 County Preserve*	✓		• Otay Ranch Preserve
Otay mesa mint *2 County Preserves*	✓		• Otay Lakes County Park • Otay Ranch Preserve
Otay tarplant *3 County Preserves*	✓		• Furby-North Property • Otay Ranch Preserve • Otay Valley Regional Park
Palmer's goldenbush (Palmer's ericameria) *2 County Preserves*	✓		• Lawrence and Barbara Daley Preserve • Otay Ranch Preserve
Parry's tetracoccus			
Prostrate/Nuttall's lotus			
Purple (Narrow-leaved) nightshade			
Salt marsh bird's beak			
San Diego ambrosia			
San Diego button-celery *3 County Preserves*	✓		• Louis A. Stelzer Park • Otay Ranch Preserve • Otay Valley Regional Park
San Diego goldenstar *5 County Preserves*	✓		• Dictionary Hill Preserve • Los Peñasquitos Canyon Preserve • Louis A. Stelzer Park • Otay Ranch Preserve • Sycamore Canyon and Goodan Ranch Preserve
San Diego mesa mint			
San Diego thorn-mint *1 County Preserve*	✓		• Sycamore Canyon and Goodan Ranch Preserve
San Miguel savory *2 County Preserves*	✓		• Boulder Oaks Preserve • Otay Ranch Preserve
Short-leaf dudleya			
Slender-pod jewelflower (California mustard)			
Small-leaved rose			

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Snake cholla *2 County Preserves*	✓	✓	• Furby-North Property[a] • Otay Ranch Preserve
Spreading (Prostrate) navarretia *1 County Preserve*	✓		• Otay Ranch Preserve
Sticky dudleya			
Tecate cypress *1 County Preserve*	✓		• Otay Ranch Preserve
Thread-leaf brodiaea			
Torrey pine *1 County Preserve*		✓	• Tijuana River Valley Regional Park[a] (planted)
Variegated dudleya *6 County Preserves*	✓		• Dictionary Hill Preserve • Lusardi Creek Preserve • Otay Lakes Regional Park • Otay Ranch Preserve • Otay Valley Regional Park • Sycamore Canyon / Goodan Ranch Preserve
Wart-stemmed ceanothus *2 County Preserves*	✓		• Del Dios Highlands Preserve • Tijuana River Valley Regional Park
Willowy monardella *2 County Preserves*	✓		• Otay Ranch Preserve • Sycamore Canyon and Goodan Ranch Preserve
Invertebrates			
Riverside fairy shrimp			
San Diego fairy shrimp *1 County Preserve*	✓		• Otay Ranch Preserve
Thorne's hairstreak butterfly *1 County Preserve*	✓		• Otay Ranch Preserve
Wandering skipper			

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Amphibians and Reptiles			
Arroyo toad			
Belding's orange-throated whiptail *15 County Preserves*	✓	✓	• Barnett Ranch Preserve • Boulder Oaks Preserve[a] • Del Dios Highlands Preserve[a] • Dictionary Hill Preserve[a] • El Capitan Preserve • Furby-North Property • Lakeside Linkage Preserve • Lawrence and Barbara Daley Preserve • Louis A Stelzer Park[a] • Lusardi Creek Preserve • Otay Ranch Preserve • Ramona Grasslands Preserve • Stoneridge Preserve • Sycamore Canyon and Goodan Ranch Preserve • Tijuana River Valley Preserve
California red-legged frog			
Blainville's (Coast, San Diego) horned lizard *16 County Preserve*	✓	✓	• Barnett Ranch Preserve • Boulder Oaks Preserve [a] • Del Dios Highlands Preserve [a] • Dictionary Hill Preserve • El Capitan Preserve [a] • Furby-North Property[a] • Lakeside Linkage Preserve • Lawrence and Barbara Daley Preserve • Louis A. Stelzer Park • Lusardi Creek Preserve • Oakoasis Preserve [a] • Otay Ranch Preserve • Ramona Grasslands Preserve • Stoneridge Preserve • Sycamore Canyon and Goodan Ranch Preserve • Tijuana River Valley Preserve [a]
Southwestern pond turtle			

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Birds			
Bald eagle			
Belding's savannah sparrow			
Burrowing owl *2 County Preserves*	✓	✓	• Otay Ranch Preserve • Sycamore Canyon and Goodan Ranch Preserve[a]
California brown pelican			
California least tern			
Canada goose			
Coastal (San Diego) Cactus wren *7 County Preserves*	✓	✓	• El Capitan Preserve[a] • Furby-North Property • Lakeside Linkage Preserve • Otay Ranch Preserve • Otay Valley Regional Park • Sweetwater Regional Park • Tijuana River Valley Regional Park
Coastal California gnatcatcher *15 County Preserves*	✓		• Boulder Oaks Preserve • Del Dios Highlands Preserve • Dictionary Hill Preserve • Furby-North Property • Lakeside Linkage Preserve • Louis A. Stelzer Park • Lusardi Creek Preserve • Otay Lakes Regional Park • Otay Ranch Preserve • Otay Valley Regional Park • Santa Fe Valley Preserve • Stoneridge Preserve • Sweetwater Regional Park • Sycamore Canyon and Goodan Ranch Preserve • Tijuana River Valley Regional Park

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Cooper's hawk *13 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Boulder Oaks Preserve[a] • Del Dios Highlands Preserve • Dictionary Hill Preserve[a] • El Capitan Preserve[a] • Lakeside Linkage Preserve[a] • Lawrence and Barbara Daley Preserve[a] • Lusardi Creek Preserve • Oakoasis Preserve[a] • Otay Ranch Preserve • Stoneridge Preserve • Sycamore Canyon and Goodan Ranch Preserve[a] • Tijuana River Valley Regional Park
Elegant tern			
Ferruginous hawk *1 County Preserve*		✓	• Del Dios Highlands Preserve[a]
Golden eagle *6 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Del Dios Highlands Preserve • El Capitan Preserve • Otay Ranch Preserve • Ramona Grasslands Preserve • Sycamore Canyon and Goodan Ranch Preserve[a]
Large-billed savannah sparrow			
Least Bell's vireo *8 County Preserves*	✓		• Furby-North Property • Los Peñasquitos Canyon Preserve • Lusardi Creek Preserve • Otay Lakes Regional Park • Otay Ranch Preserve • Otay Valley Regional Park • Sweetwater Regional Park • Tijuana River Valley Regional Park
Light-footed Ridgway's rail *1 County Park*	✓		• Tijuana River Valley Regional Park
Long-billed curlew			
Mountain plover			

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Northern harrier *8 County Preserves*	✓	✓	• Del Dios Highlands Preserve • Furby-North Property[a] • Lawrence and Barbara Daley Preserve[a] • Louis A. Stelzer Preserve • Lusardi Creek Preserve[a] • Otay Ranch Preserve • Sycamore Canyon and Goodan Ranch Preserve[a] • Tijuana River Valley Regional Park
Peregrine falcon *3 County Preserves*	✓	✓	• Del Dios Highlands • Otay Ranch Preserve • Tijuana River Valley[a]
Reddish egret			
Southern California rufous-crowned sparrow *16 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Boulder Oaks Preserve[a] • Del Dios Highlands Preserve[a] • Dictionary Hill Preserve[a] • El Capitan Preserve[a] • El Monte Park[a] • Furby-North Preserve[a] • Lakeside Linkage Preserve[a] • Lawrence and Barbara Daley Preserve[a] • Louis A. Stelzer Park[a] • Lusardi Creek Preserve[a] • Oakoasis Preserve[a] • Otay Ranch Preserve • Stoneridge Preserve[a] • Sycamore Canyon amd Goodan Ranch Preserve[a] Tijuana River Valley Regional Park[a]
Southwestern willow flycatcher *1 County Preserve*	✓		• Tijuana River Valley Regional Park
Swainson's hawk *1 County Preserve*		✓	• Barnett Ranch Preserve[a]
Tricolored blackbird *2 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Tijuana River Valley Regional Park

TABLE J- 2. MSCP COVERED SPECIES DOCUMENTED IN COUNTY PRESERVES

MSCP Covered Species	Documented in County Preserves		County Preserve or Park
	GIS source	Other Source	
Western bluebird *10 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Boulder Oaks Preserve[a] • Del Dios Highlands Preserve[a] • El Capitan Preserve[a] • El Monte Park[a] • Lakeside Linkage Preserve[a] • Lawrence and Barbara Daley Preserve • Oakoasis Preserve[a] • Stoneridge Preserve • Sycamore Canyon and Goodan Ranch Preserve
Western snowy plover			•
White-faced ibis *1 County Preserve*		✓	• Del Dios Highlands Preserve[a]
Mammals			
American badger			
Mountain lion *6 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Boulder Oaks Preserve[a] • Del Dios Highlands Preserve • El Capitan Preserve • Otay Ranch Preserve • Sycamore Canyon and Goodan Ranch Preserve[a]
Southern mule deer *14 County Preserves*	✓	✓	• Barnett Ranch Preserve[a] • Boulder Oaks Preserve • Del Dios Highlands Preserve • El Capitan Preserve • El Monte Park[a] • Lakeside Linkage Preserve[a] • Lawrence and Barbara Daley Preserve[a] • Louis A. Stelzer Preserve • Lusardi Creek Preserve • Oakoasis Preserve • Otay Ranch Preserve[a] • Ramona Grasslands Preserve[a] • Stoneridge Preserve • Sycamore Canyon and Goodan Ranch Preserve

NOTES:

[a] Species documented in County Preserve in a report rather than in GIS. Reports are referenced in the sources below.

SOURCES:

AECOM. 2019. Baseline Biodiversity Survey Report for the Holly Oaks County Park, Luelf Pond Preserve, and Barnett Ranch Preserve Properties County of San Diego Department of Parks and Recreation. Prepared for Department of Parks and Recreation County of San Diego. June.

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U.S. Fish and Wildlife Service. 2020. Regss Locations of Sensitive Species Sightings database. Occurrences points documenting species sightings from 1998 to present included for MSCP species occurrences.

U.S. Fish and Wildlife Service. 2020. Sensitive Species (polygons). Occurrence polygons documenting species sightings from 1998 to present included for MSCP species occurrences.

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
Barnett Ranch County Preserve	*10 MSCP covered species*
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Cooper's hawk[a]
	Golden eagle[a]
	Southern California rufous-crowned sparrow[a]
	Swainson's hawk[a]
	Tricolored blackbird[a]
	Western bluebird[a]
Mammals	Mountain lion[a]
	Southern mule deer[a]
Boulder Oaks County Preserve	*12 MSCP covered species*
Plants	Felt-leaved monardella
	Lakeside ceanothus
	Orcutt's brodiaea
	San Miguel savory
Reptiles	Belding's orange-throated whiptail[a]
	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Coastal California gnatcatcher
	Cooper's hawk[a]
	Southern California rufous-crowned sparrow[a]
	Western bluebird[a]
Mammals	Mountain lion
	Southern mule deer
Del Dios Highlands County Preserve	*15 MSCP covered species*
Plants	Encinitas baccharis
	Wart-stemmed ceanothus
Reptiles	Belding's orange-throated whiptail[a]
	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Coastal California gnatcatcher
	Cooper's hawk
	Golden eagle
	Northern harrier
	Peregrine falcon
	Southern California rufous-crowned sparrow[a]
	Ferruginous hawk[a]

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
	White-faced Ibis[a]
	Western bluebird
Mammals	Mountain lion
	Southern mule deer
Dictionary Hill County Preserve	*8 MSCP covered species*
Plants	Coast (San Diego) barrel cactus[a]
	San Diego goldenstar
	Variegated dudleya
Reptiles	Blainville's (Coast, San Diego) horned lizard
	Belding's orange-throated whiptail[a]
Birds	Coastal California gnatcatcher
	Cooper's Hawk[a]
	Southern California Rufous-crowned sparrow[a]
El Capitan County Preserve	*11 MSCP covered species*
Plants	Felt-leaved monardella
	Lakeside ceanothus
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Coastal (San Diego) cactus wren
	Cooper's hawk[a]
	Golden eagle
	Southern California rufous-crowned sparrow[a]
	Western bluebird[a]
Mammals	Mountain lion
	Southern mule deer
El Monte County Park	*3 MSCP covered species*
Birds	Southern California rufous-crowned sparrow[a]
	Western bluebird[a]
Mammals	Southern mule deer[a]
Furby-North Property	*10 MSCP covered species*
Plants	Coast (San Diego) barrel cactus
	Otay tarplant
	Snake cholla[a]
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Coastal (San Diego) cactus wren

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
	Coastal California gnatcatcher
	Least Bell's vireo
	Northern harrier[a]
	Southern California rufous-crowned sparrow[a]
Lakeside Linkage County Preserve	*8 MSCP Covered Species*
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Coastal cactus wren
	Coastal (San Diego) California gnatcatcher
	Cooper's hawk[a]
	Southern California rufous-crowned sparrow[a]
	Western bluebird[a]
Mammals	Southern mule deer[a]
Lawrence and Barbara Daley County Preserve	*8 MSCP covered species*
Plants	Palmer's goldenbush
Reptiles	Blainville's (Coast, San Diego) horned lizard
	Belding's orange-throated whiptail
Birds	Cooper's hawk
	Northern harrier
	Southern California rufous-crowned sparrow[a]
	Western bluebird
Mammals	Southern mule deer[a]
Los Peñasquitos Canyon County Preserve	*4 MSCP covered species*
Plants	Orcutt's brodiaea
	San Diego button-celery
	San Diego goldenstar
Birds	Least Bell's vireo
Louis A. Stelzer County Park	*8 MSCP covered species*
Plants	Lakeside ceanothus
	San Diego goldenstar
Reptiles	Belding's orange-throated whiptail[a]
	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Coastal California gnatcatcher
	Northern harrier[a]
	Southern California rufous-crowned sparrow[a]
Mammals	Southern mule deer

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
Lusardi Creek County Preserve	*11 MSCP covered species*
Plants	Coast (San Diego) barrel cactus
	Del Mar manzanita
	Variegated dudleya
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Coastal California gnatcatcher
	Cooper's hawk
	Least Bell's vireo
	Northern harrier
	Southern California rufous-crowned sparrow
Mammals	Southern mule deer[a]
Oakoasis County Preserve	*6 MSCP covered species*
Plants	Lakeside ceanothus
Reptiles	Blainville's (Coast, San Diego) horned lizard[a]
Birds	Cooper's hawk[a]
	Southern California rufous-crowned sparrow[a]
	Western bluebird[a]
Mammals	Southern mule deer
Otay Lakes County Park	*2 MSCP covered species*
Plants	Otay mesa mint
	Variegated dudleya
Otay Lakes Regional Park	*2 MSCP covered species*
Birds	Costal California gnatcatcher
	Least Bell's vireo
Otay Ranch Preserve	*32 MSCP covered species*
Plants	Coast (San Diego) barrel cactus
	Dunn's mariposa lily
	Felt-leaf monardella
	Gander's pitcher sage
	Orcutt's brodiaea
	Otay manzanita
	Otay mesa mint
	Otay tarplant
	Palmer's goldenbush
	San Diego button-celery

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
	San Diego goldenstar
	San Miguel savory
	Snake cholla
	Spreading (prostrate) navarretia
	Tecate cypress
Invertebrates	San Diego fairy shrimp
	Thorne's hairstreak butterfly
	Variegated dudleya
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
	Willowy monardella
Birds	Burrowing owl
	Coastal (San Diego) cactus wren
	Coastal California gnatcatcher
	Cooper's hawk
	Golden eagle
	Least Bell's vireo
	Northern harrier
	Peregrine falcon
	Southern California rufous-crowned sparrow
Mammals	Mountain lion
	Southern mule deer
Otay Valley Regional Park	*7 MSCP covered species*
Plants	San Diego button-celery
	Orcutt's bird's beak
	Otay tarplant
	Variegated dudleya
Birds	Coastal (San Diego) cactus wren
	Coastal California gnatcatcher
	Least Bell's vireo
Ramona Grasslands County Preserve	*4 MSCP covered species*
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Golden eagle
Mammals	Southern mule deer

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
Santa Fe Valley Preserve	*2 MSCP covered species*
Plants	Orcutt's brodiaea
Birds	Coastal California gnatcatcher
Stoneridge County Preserve	*7 MSCP covered species*
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Coastal California gnatcatcher
	Cooper's hawk
	Southern California rufous-crowned sparrow
	Western bluebird
Mammals	Southern mule deer
Sweetwater Regional Park	*3 MSCP covered species*
Birds	Coastal (San Diego) cactus wren
	Coastal California gnatcatcher
	Least Bell's vireo
Sycamore Canyon and Goodan Ranch County Preserve	*15 MSCP covered species*
Plants	San Diego goldenstar
	San Diego thornmint
	Variegated dudleya
	Willowy monardella
Reptiles	Belding's orange-throated whiptail
	Blainville's (Coast, San Diego) horned lizard
Birds	Burrowing owl[a]
	Coastal California gnatcatcher
	Cooper's hawk[a]
	Golden eagle[a]
	Northern harrier[a]
	Southern California rufous-crowned sparrow[a]
	Western bluebird
Mammals	Mountain lion[a]
	Southern mule deer
Tijuana River Valley Regional Park	*16 MSCP covered species*
Plants	Coast (San Diego) barrel cactus
	Orcutt's bird's-beak
	Torrey pine[a] (planted)
	Wart-stemmed ceanothus

TABLE J- 3. MSCP COVERED SPECIES DOCUMENTED BY COUNTY PRESERVE

County Preserves	MSCP Covered Species Documented
Reptiles	Belding's orange-throated whiptail
	Blainville's horned lizard[a]
Birds	Coastal (San Diego) cactus wren
	Coastal California gnatcatcher
	Cooper's hawk
	Least Bell's vireo
	Light-footed Ridgway's rail
	Northern harrier
	Peregrine falcon
	Southern California rufous-crowned sparrow[a]
	Southwestern willow flycatcher
	Tricolored blackbird

NOTES:

[a] Species documented in County Preserve in a report rather than in GIS. Reports are referenced in the sources below.

SOURCES:

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County of San Diego Department of Parks and Recreation. 2009. Oakoasis Preserve Resource Management Plan. June.

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U.S. Fish and Wildlife Service. 2020. Sensitive Species (polygons). Occurrence polygons documenting species sightings from 1998 to present included for MSCP species occurrences.

APPENDIX K

Stewardship and Adaptive Management in County Parks and Preserves in Reporting Year

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Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Barnett Ranch Preserve	Open	59 trees planted • coast live oak • Engelmann oak Planted toyon, California broom, and white sage plants.		6 acres • goats head • Russian thistle • mustard • milk thistle	• 2 new sensitive habitat/trail signs installed. Daily patrols to prevent dumping and littering and keep dogs on leash. 1 solar gate was also repaired.	Firebreak maintained	3 programs 97 visitors
Boulder Oaks Preserve	Closed	83 trees planted • coast live oak • Engelmann oak Planted 6 Indian mallow, 5 California fuchsia, and 4 white sage plants.	6 trees removed	15 acres • black mustard • Dyer's rocket • milk thistle	• 2 new no trespassing signs installed. 200 feet of ranch fencing repaired. • Game cameras installed throughout Preserve.	Firebreak maintained along 2-mile access road	
Damon Lane Park	Open	4 coast live oak trees planted • coast live oak • Engelmann oak Planted 5 white sage, black sage, and sumac plants.	5 trees removed	2 acres • castor bean • fan palms	• 2 new no off-roading and off-leash dog signs were installed. • 1 chain link fence was repaired to prevent unauthorized access.	Firebreak maintained	
Del Dios Highlands Preserve	Open	17 trees planted • coast live oak		1 acre • black mustard • castor bean • ox tongue		Firebreak maintained along SDGE trail	
Dictionary Hill Preserve	Open			19 acres • black mustard • savannah mustard • fennel • pampas grass	• 5 new signs for regulations installed	Firebreak maintained	1 ranger-led hikes Attended by 8 visitors

Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Dos Picos Park	Open	5 trees planted • Engelmann oak • coast live oak • Lebanon cedar 10 sage plants and 2 agaves planted. Owl boxes installed to encourage habitation	8 trees removed	15 acres • black mustard	• 2 park directional signs • 1 chain gate and fence repaired	Firebreak maintained	Several live animal presentations And talks to approximately 700 visitors
El Capitan Preserve	Open	Trail maintenance to prevent sediment traps and erosion along 5.8 miles of trail			• Installed new signage to discourage littering and prevent unauthorized entry. • 40 feet of concrete wall restored.	Firebreak maintained	County Park Rangers guided “warrior hikes” on Memorial Day and Veteran’s Day. 140 visitors attended.
El Monte Park	Open	63 trees planted • Engelmann oak • coast live oak • incense cedar 50 shrubs planted	16 dead trees were removed	13 acres • black mustard • tamarisk • goats head • tree tobacco • eucalyptus	• 6 new informational signs installed • 50 feet of new rail installed • Patrols increased to prevent unauthorized trails use and graffiti	Firebreak around ranger office, garage and ranger residence maintained	Several programs 1,000 visitors
Flinn Springs Park	Open	295 trees planted • coast live oak • Engelmann oak • Cottonwood	2 dead trees removed	• papyrus • arrundo cane • Mexican fan palm • star thistle • castor bean	9 new signs installed to deter off-trail activity. Erosion control measures implemented for trail rehabilitation	Firebreak maintained	Multiple programs 400 visitors

Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Furby-North Property	Closed			8 acres of invasive control • black mustard • goatshead	• 100 feet of new fencing repaired • New enforcement signs installed	Firebreak maintained	
Holly Oaks County Park	Open			8 acres • black mustard • goats head	• Repaired 100 feet of fencing	Firebreak maintained	
Iron Mountain Preserve	Closed			Black mustard removal efforts over 1 acre	• No signs of illegal activities observed during patrols		
Lakeside Linkage Preserve	Open	55 trees planted	18 dead or non-native trees removed	0.5 acre • purple thistle • castor bean	• 2 new restriction signs installed • Removed illegal trash dumping materials	Firebreak maintained	1 program with 25 attendees
Lawrence and Barbara Daley Preserve	Closed	60 trees planted • coast live oak	3 trees removed	4 acres • black mustard	• 2 new restriction signs installed	Firebreak maintained	
Los Penasquitos Canyon Preserve	Open	54 trees planted • coast live oak • California sycamore • coast live oak • cottonwood • arroyo willow	7 trees removed	31 acres • black mustard • castor bean • fennel • Russian thistle • stinkwort	• 1 new restriction sign installed and 1 sign to deter habitation and littering • Trails damaged by winter storms were repaired • Removed trash and litter from former homeless encampments	Firebreak maintained	

Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Louis A. Stelzer Park	Open		1 dead tree removed	4 acres • castor bean • black mustard • poison oak	• 10 restriction signs were replaced • Erosion control measures implemented for trails • Patrol increased to prevent illegal access and dumping	Firebreak maintained	1 program 210 visitors
Luelf Pond Preserve	Open		1 tree removed	1 acre • tree tobacco • black mustard	• 8 new plant identification signs installed	Firebreak maintained	
Lusardi Creek Preserve	Open			4 acres • giant reed • black mustard	• 2 new signs forbidding off-road activity installed • Boulders installed at entrances to deter vehicular access • Illegal trash dumping removed	Firebreak maintained	
Oakoasis Preserve	Open			6 acres • stinkwort • black mustard • poison oak	• Patrols increased to prevent trash dumping and unauthorized parking • Habitat restoration signs installed to prevent unauthorized access	Maintained firebreaks around ranger residence and volunteer pads	1 program 480 visitors
Old Ironsides County Park	Open	7 trees planted • coast live oak	5 trees removed	2 acres • fan palm • castor bean	• 2 restriction signs added		
Otay Lakes County Park	Open	10 trees planted • coast live oak		15 acres • black mustard • Russian thistle		Firebreak maintained	5 hikes 82 visitors

Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Otay Valley Regional Park	Open			6 acres • Russian thistle • black mustard • chrysanthemums	• 15 new no off-roading signs installed • Patrols increased to prevent illegal use of motorized vehicles		1 nature hike 15 visitors
Ramona Grasslands Preserve	Open		1 dead tree removed	17 acres • tree tobacco • tamarisk • Russian thistle • milk thistle • artichoke thistle	• 20 new no parking, trail, boundary signs installed • 150 feet of wooden fence replaced • Installed two metal gates • Game cameras posted and maintained	Firebreak maintained	4 events 1,192 visitors
Stoneridge Preserve	Closed		1 tree removed	1 acre • black mustard • Russian thistle • Ice plant	• 3 signs installed forbidding trash dumping • Rocks placed at entrances to deter off-road activity	Firebreak maintained along Kelley Drive	
Sweetwater Regional Park	Open	17 trees planted • coast live oak		1 acre • bristly oxtongue • tree tobacco • black mustard • castor bean	• Rocks at entry points to prevent off-road activity	Firebreak maintained	2 programs 44 visitors

Preserve	Status	Habitat Restoration	Hazardous or Non-Native Tree Removal	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Sycamore Canyon/ Goodan Ranch Preserve	Open	270 trees planted • Engelmann oak • coast live oak • California sycamore 275 shrubs planted, including sugar bush, laurel sumac, lemonade berry, and white sage	8 trees removed	15 acres • pampas grass • black mustard • artichoke thistle	• 25 new signs installed to prevent off-road activity • Patrol increased to prevent illegal access and dumping	Firebreak maintained	4 programs 225 visitors
Tijuana River Valley Regional Park	Open	357 trees planted • laurel sumac • cottonwood • western sycamore		143 acres • Russian thistle • castor bean • tree tobacco • hottentot-fig • nasturtium • crown daisy • grasses (*Poaceae*)	• 125 new informational and directional signs installed to prevent off-trail activity • 1,600 feet of fencing and 5 gates installed to prevent unauthorized access • Daily patrols to prevent illegal access and dumping	Firebreak maintained	5 programs 229 visitors

APPENDIX L

Private Mitigation Land Monitoring and Maintenance in Reporting Year

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	RMP Number	RMP Name	RMP Date	Habitat Manager	Annual Report Due	Surveys[1]	Project Status	Monitoring / Maintenance Status
1	PDS2008-3914-98-001	Bernardo Lakes	Feb-1998	None	Dec	Sensitive Species (annually)	Built-out	Former TET property. The County provided a PAR for the HOA Board to review. Discussions with the HOA will continue in 2022.
APNs: 678-070-30, -31, 678-420-26, -27, 678-421-01, 678-422-01, -02, -04, 678-430-25, 678-432-01, 678-070-35 **Habitat Conservation Area Description:** A total of 111.8 acres of open space is dedicated with 71.8 acres of the 111.8 previously conveyed. The open space is located west of the current western termini of Rancho Bernardo Road, immediately north of Artesian Road and wets of Four Gee Road. The property consists mostly of coastal sage scrub with some freshwater marsh, southern willow scrub, and non-native grassland.								
2	PDS2008-3914-99-001	4S Ranch, Ralphs Family Preserve	Sep-1999	Joaquin Meza	Aug	Report new invasive plants population	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 678-031-02, -03, -04, -05, -06, -07, -08, -09, Portions of 678-031-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20 **Habitat Conservation Area Description:** Approximately 1,065 acres immediately south of Lake Hodges, including coastal sage scrub, southern mixed chaparral, native and non-native grassland								
3	PDS2012-3914-99-002-02	4S Ranch, Specific Plan Preserve	Sep-1999	Habitat Restoration Sciences	Sep	Report new invasive plants populations	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: *Lusardi Creek Portion* (south) 312-284-01, 312-285-01, 312-150-04; *North* 678-050-49, 678-030-08, 678-050-51 **Habitat Conservation Area Description:** A total of approximately 547 acres of open space is located on this property. 312 acres are located in the northern portion of the project, adjacent to the Ralph's Family Reserve, and 230 acres is located in the southerly portion of the site within La Jolla Valley, surrounding the Lusardi Creek riparian corridor								
4	PDS2008-3914-99-003	Golem, East Gorge	Jan-2000	San Dieguito River Valley Joint Powers Authority	Dec	CAGN (twice annually)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs 678-020-02, -03, 678-021-02, -03, 265-320-03 **Habitat Conservation Area Description** 154 acres of open space was set aside to preserve California adolphia, southwestern spiny rush, San Diego marsh elder, Del Mar manzanita, wart-stemmed ceanothus, California gnatcatcher, southern California rufous-crowned sparrow, coastal western whiptail, and mountain lion.								
5	PDS2008-3914-99-004	Starwood, Santa Fe Valley	Jun-2004	Rincon Consultants	Mar	Sensitive Species (annually)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.

	RMP Number	RMP Name	RMP Date	Habitat Manager	Annual Report Due	Surveys[1]	Project Status	Monitoring / Maintenance Status
APNs: *Open Space I* 265-320-18, -22, -30, 265-291-21, -23, -25, -26, -27, 265-290-41, -43, 267-050-42, -44, -46, 267-190-01, 267-132-18, 267-050-57, 267-132-11, 267-051-05, 30, Portion of 267-190-02, *Open Space II* Portions of 267-190-32, 267-290-35, 267-180-72, 267-191-01, -02, -11 **Habitat Conservation Area Description:** The open space is equivalent to approximately 170 acres, located in the north-central San Diego County, along the San Dieguito River corridor south of Del Dios Highway at Bing Crosby Boulevard. 14 sensitive plant species and 12 sensitive wildlife species were observed onsite: California adolphia, San Diego mesa mint, San Diego button celery, spreading navarretia, Orcutt's brodiaea, San Diego ambrosia, Del Mar manzanita, Nuttall's scrub oak, San Diego barrel cactus, San Diego marsh elder, San Diego sagewort, southwestern spiny rush, summer holly, wart-stemmed ceanothus, San Diego fairy shrimp, orange-throated whiptail, Bell's sage sparrow, California horned lark, California gnatcatcher, Cooper's hawk, great blue heron, loggerhead shrike, northern harrier, southern California rufous-crowned sparrow, white-tailed kite, and San Diego black-tailed jackrabbit.							
6	PDS2008-3914-99-005	Woodridge	Updated-2016	Center For Natural Lands Management	Dec	CSS (2 out of 5 years) CAGN (2 out of 5 years) Delicate Clarkia (1 out of 5 years)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 395-151-69, -70, 395-432-23, -24, -30, -31 **Habitat Conservation Area Description:** Located south of Pino Drive and west of Lakeview Drive in Lakeside, about 1/2 mile west of Lake Jennings. The site has approximately 55 acres of Diegan coastal sage scrub and native grasslands, and a small patch of eucalyptus woodland, and supports the federally-listed threatened coastal California gnatcatcher. The Center for Natural Lands Management received title to the property in the December of 1999 at which time the Woodridge habitat conservation areas management commenced. The County of San Diego holds an Open Space Easement on the conservation area.							
7	PDS2008-3914-01-001	Blossom Valley	Updated-2012	Center for Natural Lands Management	Dec	DCSS and SMC (1 out of 5 years) Oak Tree for GSOB (annually) CAGN (2 out of 5 years) Rush-like Bristleweed and Englemann Oak (1 out of 5 years)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 390-061-03, -04 **Habitat Conservation Area Description:** The 286-acre habitat conservation area was dedicated in fee to the Center for Natural Lands Management in July 2009 as off-site mitigation for the Blossom Valley Estates development. The site is located in Blossom Valley, about 2 miles east of Lake Jennings. The site supports Diegan coastal sage scrub, southern mixed chaparral, and coast live oak woodland that all burned completely during the Cedar Fire in 2003. The site's terrain is very steep and rugged.								
8	PDS2008-3914-02-001	McCrink Ranch, Santa Fe Valley	Jan-2003	None	Jan	Sensitive Species (annually)	Partially built- out	The County provided a PAR for the developer to review. Discussions with the developer will continue in 2022.
APNs: 265-320-25, 267-060-48, -49 **Habitat Conservation Area Description:** This 270-acre preserve area is located in west-central San Diego County, approximately 5 miles east of Interstate 5 and 3 miles west of Interstate 15, south of Del Dios Highway. The site primarily supports coastal sage scrub and southern mixed chaparral.								

	RMP Number	RMP Name	RMP Date	Habitat Manager	Annual Report Due	Surveys[1]	Project Status	Monitoring / Maintenance Status
9	PDS2008-3914-02-003	Maranatha Chapel	Oct-2002	None	Dec	CAGN (every two years) Rare Plant (every two years)	Built-out	The County is drafting a PAR for the Maranatha Chapel to review. Discussions with the Maranatha Chapel will continue in 2022.
APN: 267-060-37, Portion of 267-060-38 **Habitat Conservation Area Description:** The preserve is located at the western terminus of Rancho Bernardo Road, between Artesian Road and Del Dios Highway. Approximately 82 acres of open space is located in two sections (Open Space 1 North and Open Space 1 South). Nearly half of the property is Diegan coastal sage scrub habitat , with the remaining habitat as non-native grassland, chaparral, oak woodland, freshwater marsh , eucalyptus woodland, disturbed (roads), and developed land.								
10	PDS2008-3914-03-002	El Apajo	Jun-2003	None	Dec	Avian and Amphibian (annually) Floral Inventory (every 5 years)	Built-out	Discussions with County Counsel regarding enforcement options will continue in 2022.
APN: 268-360-15 **Habitat Conservation Area Description** This 25.6-acre open space area was conserved for annual grassland and wetlands. It is located within the San Dieguito River Valley along Via de Santa Fe Road northwest of its junction with El Apajo Road.								
11	PDS2010-3914-05-004	Greenhills Ranch	Sep-2006	Habitat Restoration Sciences	Jan	CAGN (every 2 years) San Diego Cactus Wren (every 2 years)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APN: 395-452-01 **Habitat Conservation Area Description:** The 44.04-acre open space is located south of Lake Jennings Road and west of Interstate 8. Observed on the property were California gnatcatcher, southern California rufous-crowned sparrow, silvery legless lizard, Coronado skink, western spadefoot, black-tailed jackrabbit, mule deer, turkey vulture, Bewick's wren, San Diego sunflower, prostrate spineflower, and ashy spike-moss.								
12	PDS2009-3914-06-005	Artesian Trail	Apr-2007	San Dieguito River Park Conservancy	Sep	Thread-leaf Brodiaea (annually)	Built-out	Discussions with County Counsel regarding enforcement options will continue in 2022.
APNs: 267-142-33, -34, -35, -36 **Habitat Conservation Area Description:** The project dedicated approximately 3.2 acres of land into open space in response to a four-lot subdivision. The site is located in the Community of Rancho Santa Fe, four miles west of Interstate 15, south of Artesian Road. The property preserves approximately 2.6 acres of non-native grassland and 0.-6-acre of coastal sage scrub. Observed on the property were approximately 688 federally threatened thread-leaf brodiaea (*Brodiaea filifolia*), and approximately 155 California adolphia (*Adolphia californica*).								

	RMP Number	RMP Name	RMP Date	Habitat Manager	Annual Report Due	Surveys[1]	Project Status	Monitoring / Maintenance Status
13	PDS2012-3914-11-002	Lonestar	Dec-2011	San Diego Habitat Conservancy	Jan	Sensitive Plant Species (every 5 years) CAGN (2 out of every 5 years) Fairy Shrimp (2 out of every 5 years)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs:646-030-21-00, 646-070-36-00, 646-070-37-00 **Habitat Conservation Area Description:** Non-native grassland and CSS in East Otay Mesa. The Preserve provides habitat for several sensitive animal species, including the California gnatcatcher, Coronado skink burrowing owl, and white-tailed kite.								
14	PDS2014-RMPM-10-003	East Otay Mesa	Feb-2012	Open Space Management, Inc.	Jan	CAGN (every 3 years) Burrowing Owl and Raptor (annually) QCB (every 3 years) Sensitive Plant (every 3 years)	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 648-050-20, 648-011-06, Portions 648-040-31, 648-040-55, 648-040-57 92 acres located on the west and east sides of Alta Road north of Calzada de la Fuente in East Otay Mesa. Habitats are coastal sage scrub, chaparral, and non-native grassland. Supports burrowing owls, barrel cactus, Matilija poppy, and San Diego sunflower.								
15	PDS2015-RMPM-12-002	Sloane Canyon	Nov-2013	Open Space Management, Inc.	Feb	Plant and Animal Spec*ies (every 3 years)*	Built-out	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APN: 521-080-11 **Habitat Conservation Area Description:** The Sloane Canyon open space comprises 39.3 acres on Sloane Canyon Road in Jamul. It includes 4.72 acres of riparian woodland, 6.0 acres of Diegan coastal sage scrub, 9.71 acres of Diegan coastal sage scrub/chaparral, 17.2 acres of southern mixed chaparral, and 1.67 acres of disturbed habitat.								
16	PDS2015-RMPM-12-003	Trevi Hills	Feb-2013	Open Space Management, Inc.	Feb	Lakeside Ceanothus (every 5 years)	In process	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 389-071-17, 389-101-01, -02, -03, 389-072-03, 389-102-01, -02, 389-020-12 **Habitat Conservation Area Description:** The Trevi Hills/ High Meadow Ranch open space comprises approximately 350 acres off Muth Valley Road and High Meadow Road. The open space provides for the long-term conservation of intact southern mixed chaparral habitat and the Lakeside ceanothus or Lakeside wild lilac (*Ceanothus cyaneus*).								

	RMP Number	RMP Name	RMP Date	Habitat Manager	Annual Report Due	Surveys[1]	Project Status	Monitoring / Maintenance Status
17	PDS2016-RMP-16-004	Otay Crossings Commerce Park	Aug-2017	San Diego Habitat Conservancy	Jan	Burrowing Owl (annually) QCB (every 3 years) Fairy Shrimp (2 out of every 5 years) Sensitive Plant (varies)	In process	2020-2021 report was submitted and reviewed by county staff, no major concerns.
APNs: 648-071-15, 648-080-31, 648-080-32 **Habitat Conservation Area Description:** The Otay Crossing Commerce Park on-site biological open space is comprised of 24.3 acres. It includes 0.03 acres of wetland, 6.8 acres of coastal sage scrub, 16.2 acres of non-native grassland, and 1.2 acres of disturbed habitat.								

NOTES:

[1] Subject to change due to RMP updates and/or adaptive management

APN – Assessor Parcel Number
CAGN – coastal California gnatcatcher
CSS – Coastal Sage Scrub
DCSS – Diegan Coastal Sage Scrub
GSOB – gold-spotted oak borer
HOA – Homeowners Association
HM – habitat manager
QCB – Quino checkerspot butterfly
RMP – Resource Management Plan
SMC – Southern Maritime Chaparral
TET – The Environmental Trust, Inc.

SOURCE:
County of San Diego Department of Planning and Development Services

APPENDIX M

Stewardship and Management on Private Mitigation Lands

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Preserve	Status	Habitat Restoration	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Bernardo Lakes	Non-reporting					
4S Ranch Ralphs	Reporting		Less than 1/2 acres • Artichoke thistle	• Weekly patrolling • Minimal road repairs		
4S Ranch Specific Plan	Reporting		• Salt cedar • Fennel • Spanish sunflower	• Regular trash removal • Removal of landscape debris • Monitoring of illegal off-road vehicle and trail access		
Golem	Reporting	450 container plants • California sage • Broom baccharis • Black sage	2.1 acres • 6 palms • 80 eucalyptus	• Almost daily patrols • 42 volunteer patrol shifts • Graffiti removal • Plants and rocks to block illegal to CAGN habitat		• Outreach with trail users • Electronic newsletter
Starwood (Crosby)	Reporting		• Perennial Weed • American Bullfrog • Brown-headed cowbird	• Coordination with HOA to prevent unauthorized trail and area use	• Defensible space maintained	• Guided hike • Regular website updates

Preserve	Status	Habitat Restoration	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Woodridge	Reporting	• 500 cacti	• 100 brittlebush • 250 stinkwort • Salt cedar • 100 black mustard	• Weekly to bi-weekly patrols to prevent vandalism and illegal activities • Illegal trails repaired and blocked • Minimal trash removed	• Fuel zones maintained	• Kiosks updated quarterly
Blossom Valley	Reporting		• 50 fountain grass plants • 50 Natal grass	• Weekly to bi-weekly patrols • Minimal trash removed		• Outreach with trail users
McCrink Ranch	Non-Reporting					
Maranatha Chapel	Non-reporting					
El Apajo	Non-reporting					
Greenhills Ranch	Reporting		5 acres • Mustard • Tecolote	• Quarterly patrols • 7 maintenance visits • Minimal trash removed		• Coordination with HOA

Preserve	Status	Habitat Restoration	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Artesian Trail	Non-reporting					
Lonestar	Reporting		• 6.5 acres mowed	• 20 ft linear of fencing • Gate installed to prevent off-road vehicle trespass • Trash removed along fencing near road		• Coordination with San Diego Zoo Institute for Conservation Research (ICR) and Caltrans • Attended San Diego County Burrowing Owl meeting
East Otay Mesa	Reporting		• Pampas grass • Fennel • Artichoke thistle	• Fence repaired • Minimal trash removed • Replaced lock		• Communication with adjacent property owner regarding fence repairs
Sloane Canyon	Reporting		• Monitoring of invasives	• Biannual patrols		• Communication with adjacent property owner regarding brush clearing limits
High Meadow Ranch (Trevi Hills)	Reporting		• 30 tamarisks	• Patrolled and maintained fencing and signs		

Preserve	Status	Habitat Restoration	Invasive Species Control	Access Control, Trail and Infrastructure Installation and Maintenance	Fire Management	Environmental Education
Otay Crossings Commerce Park	Reporting		• Fennel • Black mustard • Tocalote • Tamarisk • Russian thistle • Iceplant • Australian saltbush	• Monthly patrols • Minimal trash removed • Coordination with Border Patrol to limit preserve access		

APPENDIX N

Annual Report for the Otay Ranch Preserve, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch

January 1 – December 31, 2021

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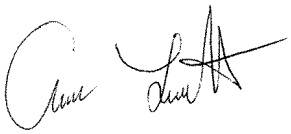
Annual Report for the Otay Ranch Preserve, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch
January 1–December 31, 2021

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Acronyms and Abbreviations

ATV	all-terrain vehicle
Cal-IPC	California Invasive Plant Council
CACW	coastal cactus wren
CAGN	coastal California gnatcatcher
CDFW	California Department of Fish and Wildlife
CFD	Community Facilities District
City	City of Chula Vista
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
County	County of San Diego
DPR	Department of Parks and Recreation
FY	Fiscal Year
GPS	global positioning system
GSOB	gold-spotted oak borer
HDS	Harbison dun skipper
IMG	Inspect and Manage
KSHB	Kuroshio shot hole borer
MSP	Monitoring Strategic Plan
MSCP	Multiple Species Conservation Program
POM	Preserve Owner/Manager (City and County)
Preserve	Otay Ranch Preserve
PSB	Preserve Steward/Biologist (RECON)
QCB	Quino checkerspot butterfly
RMP	Otay Ranch Preserve Phase 1 & Phase 2 Resource Management Plans
SANDAG	San Diego Association of Governments
SDG&E	San Diego Gas & Electric
SDMMP	San Diego Management and Monitoring Program
SR-125	State Route 125
SUV	sports utility vehicle
USCBP	U.S. Customs and Border Protection
USDC	U.S. Department of Commerce
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1.0 Introduction

The purpose of the 2021 annual report is to provide a summary of monitoring and management tasks performed on conveyed lands under Preserve Owner/Manager (POM) management in calendar year 2021 using funds generated by Community Facilities District (CFD) 97-2. This annual report also includes a summary of monitoring and management tasks performed within the Johnson Canyon Otay Tarplant Preserve using funds generated by the CFD 11M and Piper Ranch parcels funded through the property owner. Monitoring and management tasks were based on the priorities identified in the Otay Ranch Phase 2 Resource Management Plan Update (RMP; RECON 2018).

The Otay Ranch Preserve (Preserve) is located in southwestern San Diego County and is composed of three major parcels: Otay River parcel, Proctor Valley parcel, and San Ysidro Mountains parcel (County of San Diego [County] 1993). The Preserve boundaries include lands within the city of Chula Vista (City) and the county of San Diego. Through December 31, 2021, lands that have been conveyed to the Preserve total 4,370.078 acres, including the property owner funded 11.9-acre Piper Ranch parcels (Table 1). Table 2 provides the assessor's parcel number and acreage for the Johnson Canyon Otay Tarplant Preserve parcel that is part of Rolling Hills Ranch Preserve. Figures 1 through 3 show the locations of conveyed land.

The Preserve is a hard-line preserve that has been designed and is managed specifically for protection and enhancement of the multiple species present. The Preserve also serves to connect large areas of open space through a series of wildlife corridors, including connections between regional open space areas west and east of Otay Reservoir and north to San Miguel Mountain. The Preserve is managed by the Preserve Owner/Manager (City and County; POM). Preserve monitoring and operations/maintenance tasks were implemented by the Preserve Steward/Biologist (PSB; RECON) in consultation with the POM.

The purpose of this annual report is to document access issues, new site disturbances, previously undetected plant and wildlife species, sensitive species, and management tasks performed between January 1, 2021 and December 31, 2021.

Table 1 Conveyed Preserve Parcels, Assessor's Parcel Numbers, and Acreages as of December 2021		
Parcel(s)	Assessor's Parcel Number	Acreage
Dulzura	598-160-17, 598-170-18, 647-050-06, 647-060-03, 647-060-05[a]	801.018
Salt Creek	643-070-08, 643-070-16[b], 644-080-09, 644-080-11, 644-080-15, 644-090-04	784.500
San Ysidro	647-130-03, 647-140-01	517.422
Proctor Valley Extension	598-090-01, 598-030-01, 598-080-05	399.700
Proctor Valley	598-080-06[c]	275.286
Ridge	598-140-04, 598-140-05	270.000
Jamul Mountains	598-070-08, 598-070-10[d]	258.132
McMillin	647-100-08, 647-100-10	230.280
Millenia	646-020-14, 646-030-20	189.200
Little Cedar Canyon	647-110-03, 647-120-03[e]	160.000
Northern Salt Creek	643-070-14	148.597
Northern San Ysidro	647-090-07[f]	118.500
Proctor Valley (North)	597-150-16[g]	82.381
Proctor Valley (South)	598-020-05	40.000
Western Wolf Canyon	644-313-13, 644-313-14[h], 644-313-65, 644-313-66, 644-340-25	32.340
Wolf Canyon[j]	644-313-11	29.322
Johnson Canyon (East)	646-030-34[i]	21.500
Piper Ranch[1]	646-030-27, 646-030-33	11.9
TOTAL		**4,370.078**

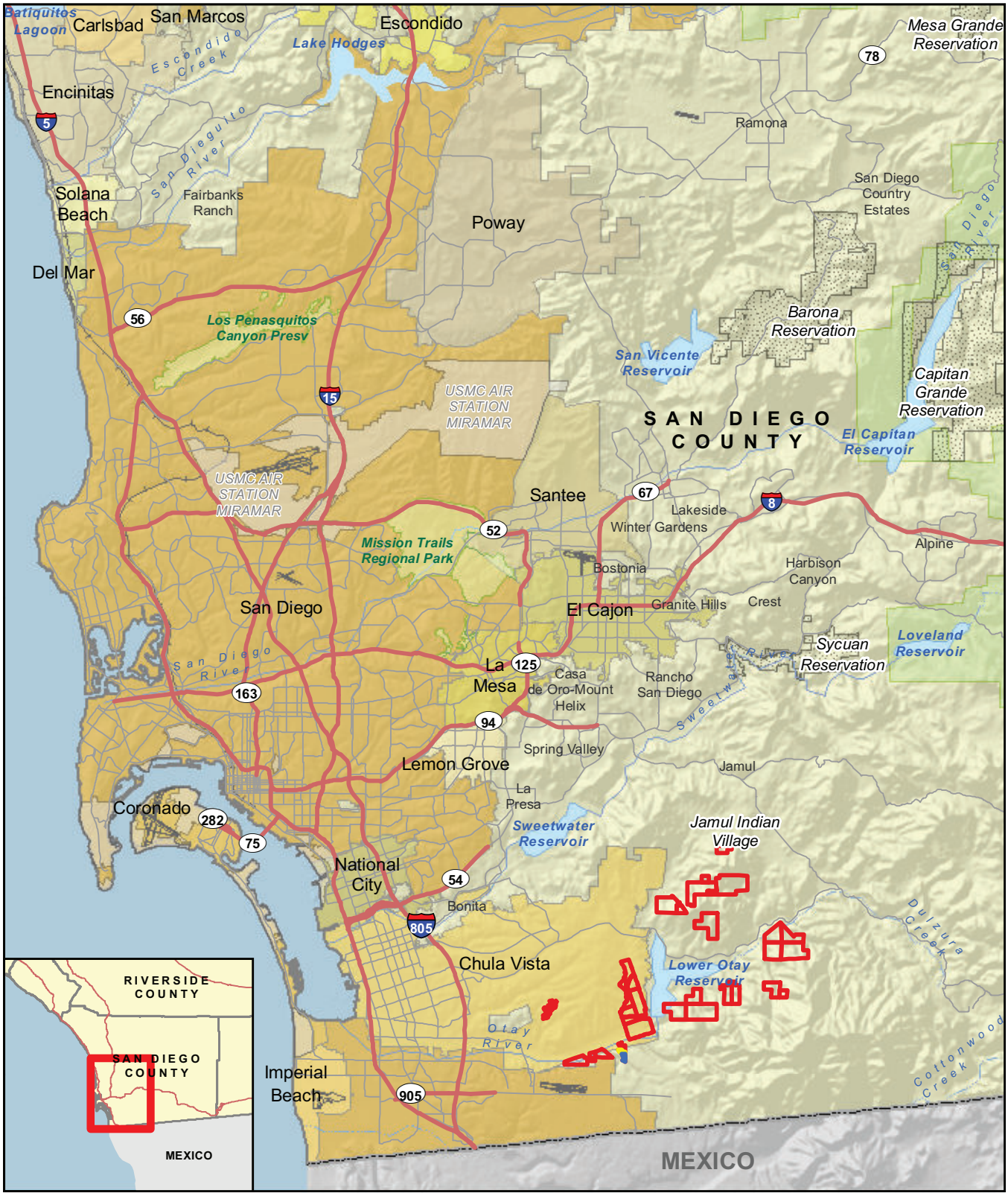
NOTE: Parcel acreages are based on grant deeds provided by the City of Chula Vista. The deed acreages may differ slightly from the acreages calculated using geographic information system due to minor discrepancies in the parcel boundaries.

[a]Previous APNs 598-160-14, 598-170-04, 647-050-04, 647-060-01
[b]Previous APN 643-070-10
[c]Previous APN 598-08-002
[d]Previous APNs 598-070-05, 598-070-06
[e]Previous APNs 647-110-01, 647-120-01
[f]Previous APN 647-090-04
[g]Previous APN 597-150-06
[h]Previous APN 644-313-12
[i]Previous APN 646-030-31
[J]The current APN is provided along with the original grant deed acreage from APN 644-313-07.
[1]Management and monitoring during 2021 was funded through the property owner. A separate CFD will be established in the future.

Table 2 Rolling Hills Ranch Preserve – Johnson Canyon Otay Tarplant Preserve Parcel Conveyed Preserve Parcel, Assessor's Parcel Number, and Acreage		
Parcel(s)	Assessor's Parcel Number	Acreage
Johnson Canyon Otay Tarplant Preserve[1]	646-030-32	10.01
TOTAL		**10.01**

NOTE: Parcel acreage is based on the grant deed provided by the City of Chula Vista. The deed acreage may differ slightly from the acreage calculated using geographic information system due to minor discrepancies in the parcel boundaries.

[1]Funded by CFD 11M. Management and monitoring activities performed in accordance with the Otay Ranch Resource Management Plan (Helix 2003).



Conveyed Land Under POM Management / Funded by CFD 92-7

Property Owner Funded / Maintained by CFD 92-7: Piper Ranch

Funded by CFD 11M / Maintained by CFD 92-7: Johnson Canyon Otay Tarplant Preserve

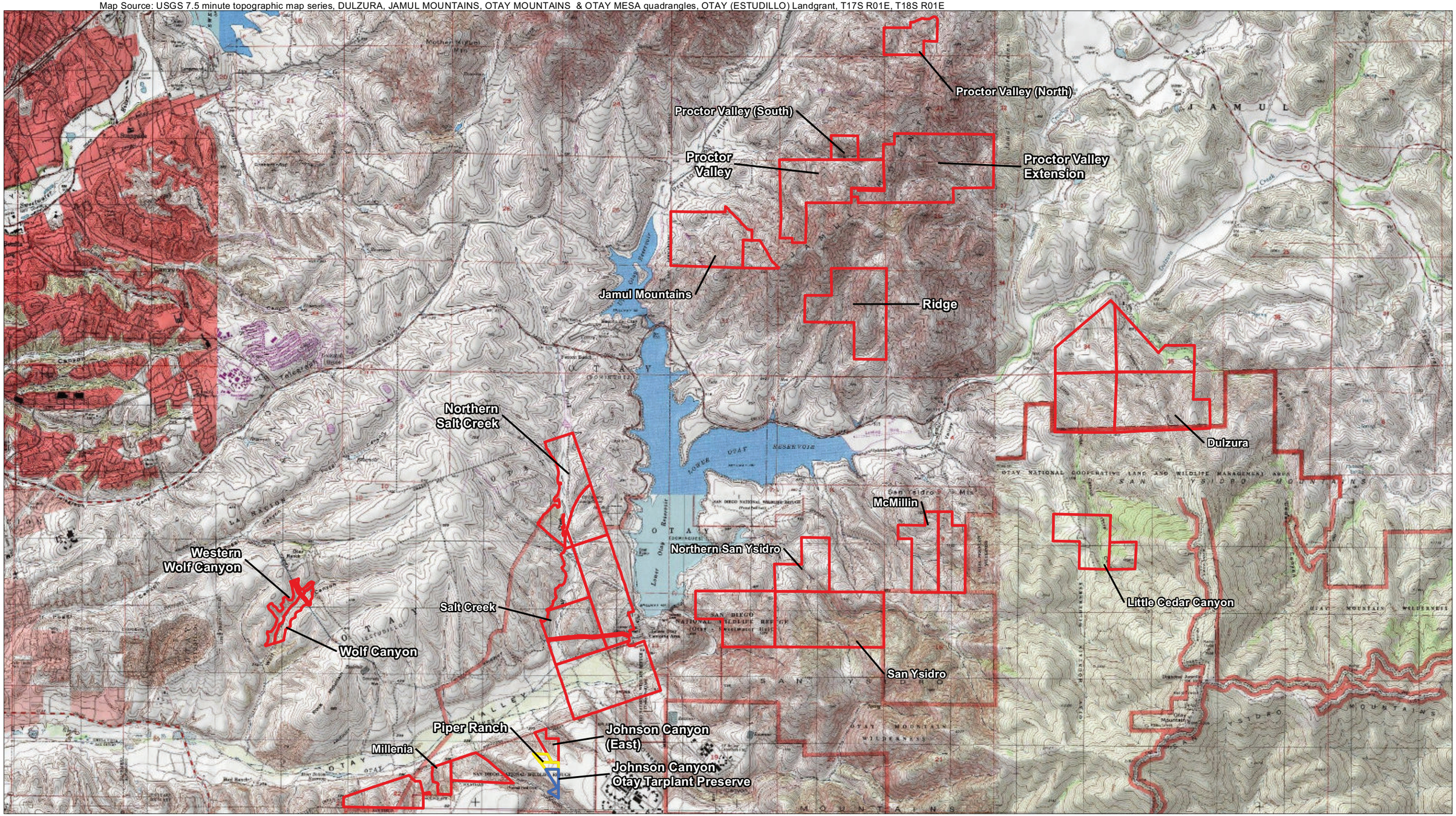
FIGURE 1

Regional Location of Otay Ranch Preserve, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch

RECON

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Map Source: USGS 7.5 minute topographic map series, DULZURA, JAMUL MOUNTAINS, OTAY MOUNTAINS & OTAY MESA quadrangles, OTAY (ESTUDILLO) Landgrant, T17S R01E, T18S R01E



Conveyed Land Under POM Management / Funded by CFD 92-7

Property Owner Funded / Maintained by CFD 92-7: Piper Ranch

Funded by CFD 11M / Maintained by CFD 92-7: Johnson Canyon Otay Tarplant Preserve

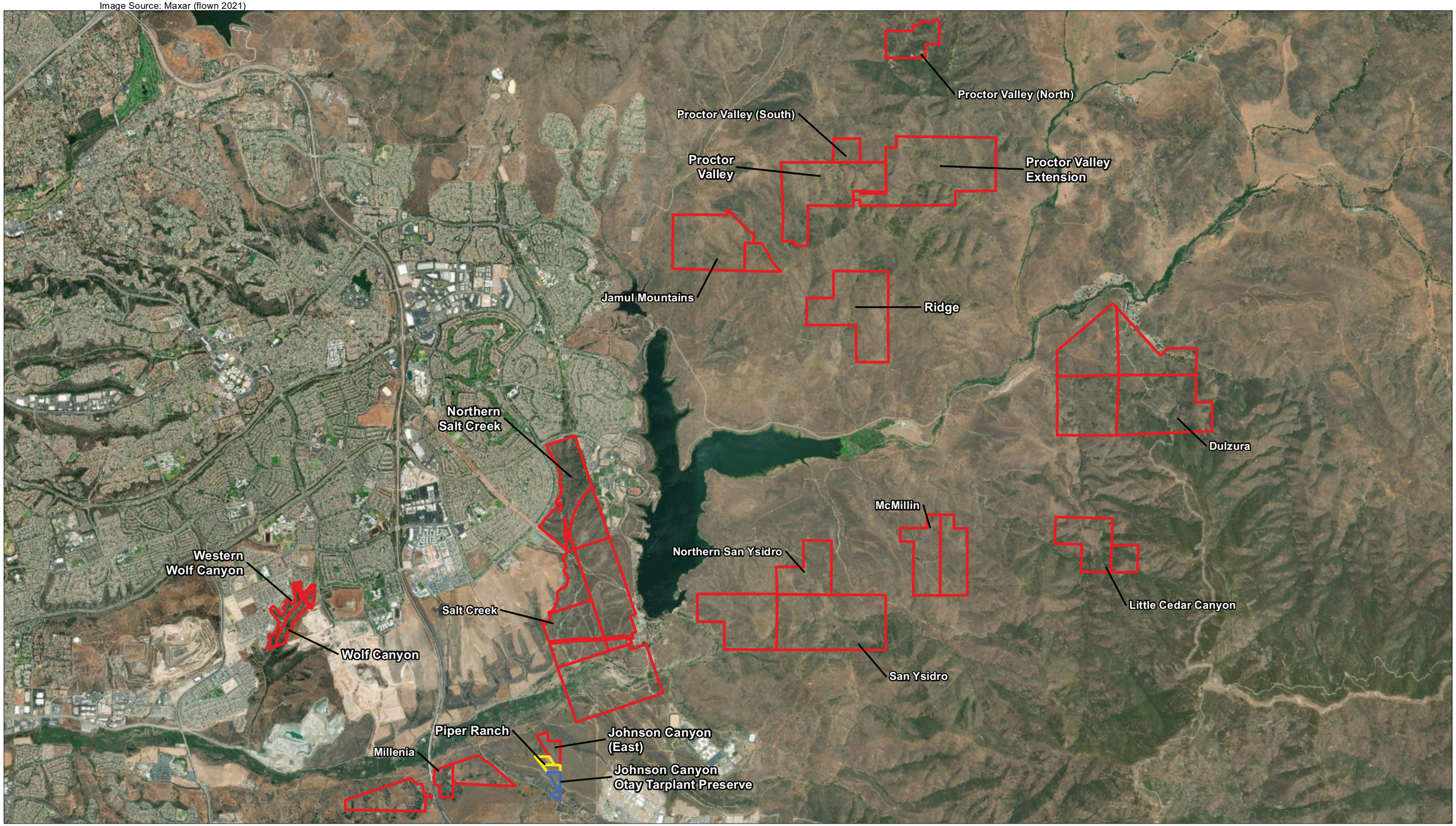
RECON

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FIGURE 2

Otay Ranch Preserve, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch Location on USGS Map

Image Source: Maxar (flown 2021)



Conveyed Land Under POM Management / Funded by CFD 92-7

Property Owner Funded / Maintained by CFD 92-7: Piper Ranch

Funded by CFD 11M / Maintained by CFD 92-7: Johnson Canyon Otay Tarplant Preserve

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FIGURE 3

Otay Ranch Preserve, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch on Aerial Photograph

2.0 Preserve Monitoring

This chapter describes Preserve monitoring tasks that occurred between January 1 and December 31, 2021. These Preserve monitoring tasks were proposed in the Fiscal Year (FY) 2020–21 and FY 2021–22 annual work plans (RECON 2020 and 2021a). The headings used within this annual report match the associated task numbers in the FY 2020–21 and FY 2021–22 annual work plans. Attachment 1 includes Figures 4 through 53. Attachment 2 includes Photographs 1 through 30.

The following Preserve monitoring tasks were conducted in support of the Otay Ranch Preserve Phase 1 and Phase 2 RMPs (County of San Diego 1993 and RECON 2018): focused rare plant surveys, vegetation mapping, photographic monitoring, coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*; CACW) surveys, coastal California gnatcatcher (*Polioptila californica californica*; CAGN) surveys, Thorne's hairstreak butterfly (*Callophrys thornei*) surveys, vernal pool plant seed collection and redistribution, Harbison dun skipper (*Euphyes vestris harbisoni*; HDS) surveys, Kuroshio shot hole borer (*Euwallacea* sp.; KSHB) tree health surveys, gold-spotted oak borer (*Agrilus auroguttatus*) monitoring, baseline survey, and golden eagle (*Aquila chrysaetos*) camera surveys. The Preserve monitoring tasks also included land stewardship consisting of site visits, meetings and coordination, and reporting.

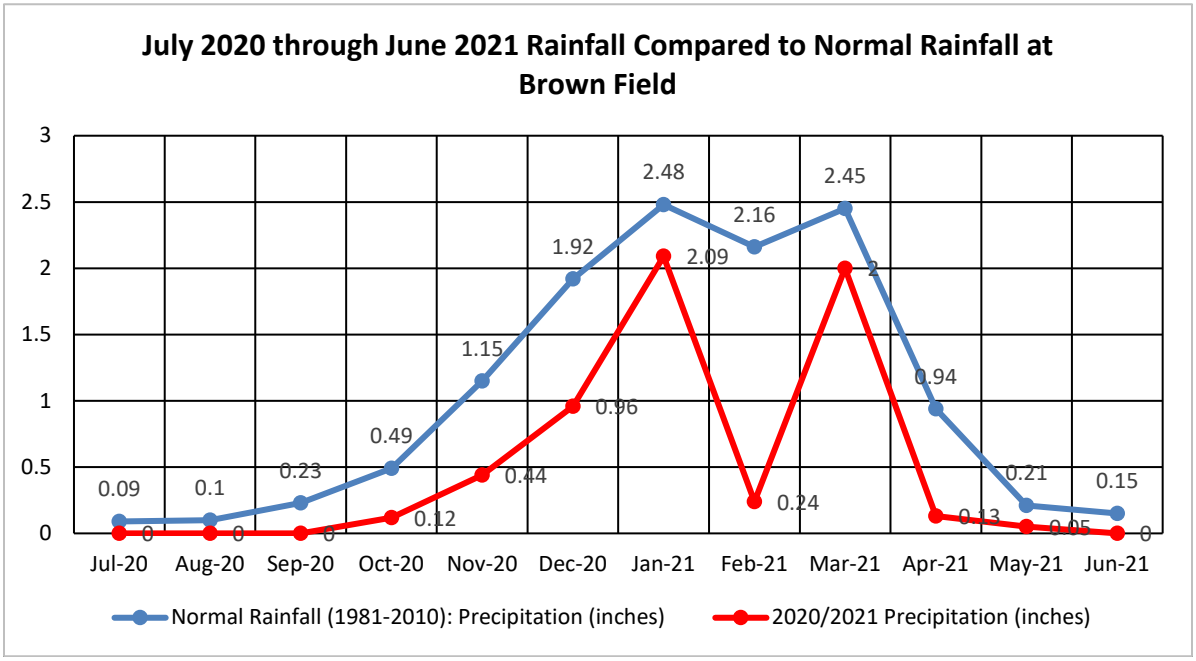
2021 Weather Summary

The total rainfall for the 2020-2021 season was below normal by 6.34 inches. Between July 1, 2020 and June 30, 2021, rainfall at Brown Field (the closest reporting station) was 6.03 inches (Table 3 and Graph 1; U.S. Department of Commerce [USDC] 2021a and 2021b). At Brown Field, normal rainfall during this time period is approximately 12.37 inches based on rainfall data collected between 1981 and 2010 (USDC 2021b). The entire rainy season (October 2020 through April 2021) was below normal with a rainfall deficit of approximately 5.61 inches. The below average rain events throughout the rainy season resulted in limited germination of annual species.

Temperatures were above normal during most months between June 2020 and July 2021 (Table 4; Graph 2). Only March 2021 had below normal temperatures (see Table 4 and Graph 2). The overall below average rainfall and above-average temperatures led to a poor growing season during the spring of 2021.

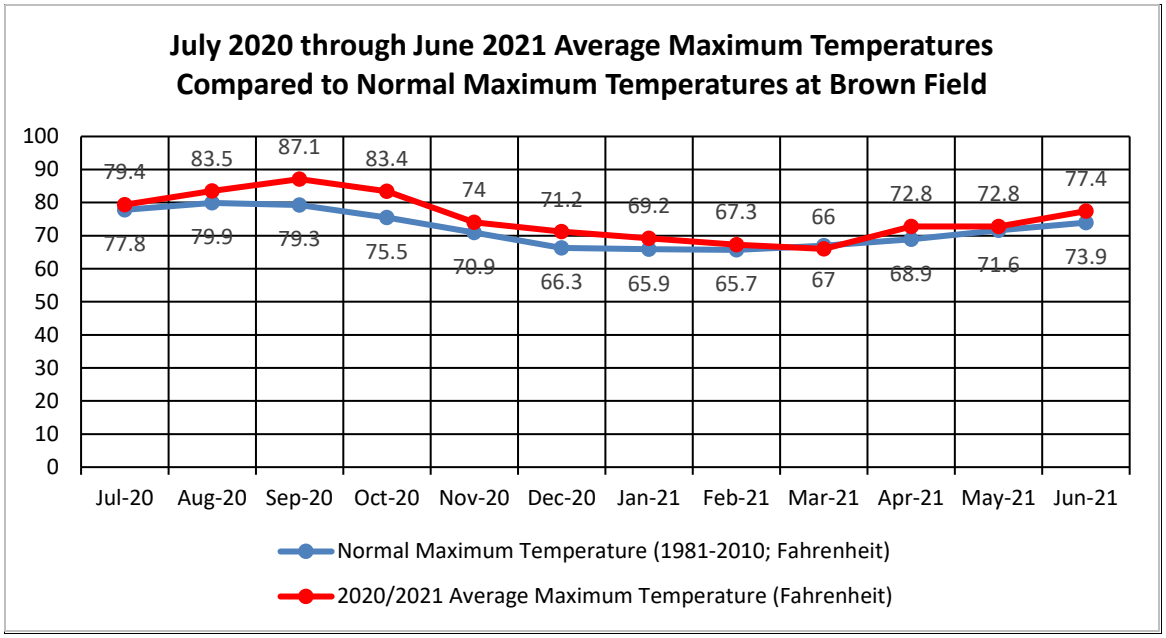
Table 3 July 2020 through June 2021 Rainfall Compared to Normal Rainfall			
Month	Precipitation (inches)[1]	Normal Rainfall: Precipitation (inches)[2]	Difference (inches)
2020			
July	0.00	0.09	–0.09
August	0.00	0.10	–0.10
September	0.00	0.23	–0.23
October	0.12	0.49	–0.37
November	0.44	1.15	–0.71
December	0.96	1.92	–0.96
Total	**1.52**	**3.98**	**-2.46**
2021			
January	2.09	2.48	–0.39
February	0.24	2.16	–1.92
March	2.00	2.45	–0.45
April	0.13	0.94	–0.81
May	0.05	0.21	–0.16
June	0.00	0.15	–0.15
Total	**4.51**	**8.39**	**–3.88**
Grand Total	**6.03**	**12.37**	**–6.34**

[1]SOURCE: USDC 2021a.
[2]SOURCE: USDC 2021b.



GRAPH 1
July 2020 through June 2021 Rainfall Compared to Normal Rainfall at Brown Field

Table 4 July 2020 through June 2021 Average Maximum Temperatures Compared to Normal Maximum Temperatures			
Month	Average Maximum Temperature (Fahrenheit)[1]	Normal Maximum Temperature (Fahrenheit)[2]	Difference (Fahrenheit)
2020			
July	79.4	77.8	+1.6
August	83.5	79.9	+3.6
September	87.1	79.3	+7.8
October	83.4	75.5	+7.9
November	74.3	70.9	+3.4
December	71.4	66.3	+5.1
2021			
January	69.2	65.9	+3.3
February	67.2	65.7	+1.5
March	66.0	67.0	–1.0
April	72.8	68.9	+3.9
May	72.8	71.6	+1.2
June	77.4	73.9	+3.5
[1]SOURCE: USDC 2021a. [2]SOURCE: USDC 2021b.			



GRAPH 2
July 2020 through June 2021 Average Maximum Temperatures
Compared to Normal Maximum Temperatures at Brown Field

Task 1: Surveys

Surveys conducted between January 1, 2021 and December 31, 2021 are discussed in the subtask sections below. The results of the coastal California gnatcatcher surveys are summarized in Section 4, Subtask 4a (FY 2021-22).

Subtask 1a. (FY 2020-21): Focused Rare Plant Surveys

Rare plant surveys focusing on annual and herbaceous and conspicuous perennial species were conducted in spring 2021. The results of the rare plant surveys are shown in Attachment 1: Figures 4 through 11. Rare plant survey dates are included in Table 5. Table 6 lists the focused rare plant survey locations and focal plant types. Decreases in the number of annual and herbaceous perennial individuals observed in 2021 were likely due to drought conditions.

Table 5
Focused Rare Plant Surveys
Dates and Locations

Date	Location (Parcels)
3/3/2021	Salt Creek
3/4/2021	Salt Creek
3/5/2021	Millenia, Salt Creek
3/8/2021	San Ysidro
3/15/2021	Salt Creek
3/16/2021	San Ysidro
3/23/2021	Dulzura*
3/29/2021	Ridge, Jamul Mountains*
3/30/2021	San Ysidro
4/06/2021	San Ysidro*
4/07/2021	San Ysidro
4/19/2021	Jamul Mountains*, Dulzura*
4/21/2021	San Ysidro
4/22/2021	Salt Creek*
4/23/2021	Ridge
5/04/2021	San Ysidro*
5/17/2021	Salt Creek
5/20/2021	Northern Salt Creek*, Salt Creek
5/21/2021	Ridge
5/25/2021	Millenia*
5/26/2021	Wolf Canyon*, Western Wolf Canyon*
6/01/2021	San Ysidro
6/03/2021	Proctor Valley (North)
6/04/2021	San Ysidro, Northern San Ysidro*
6/07/2021	San Ysidro
*MSP IMG monitoring location.	

Table 6 Focused Rare Plant Survey Locations and Focal Plant Type	
Parcel(s)	Rare Plant Survey Focus – Plant Type
Salt Creek	conspicuous perennial species; annual and herbaceous perennial species
San Ysidro	conspicuous perennial species; annual and herbaceous perennial species
Millenia	annual and herbaceous perennial species
Proctor Valley (North)	annual and herbaceous perennial species
Ridge	annual and herbaceous perennial species
Western Wolf Canyon	annual and herbaceous perennial species
Wolf Canyon	annual and herbaceous perennial species

The surveys focused on Priority Group 1 species. Priority Groups 2 through 4 species were monitored incidentally as budget allowed and are discussed under Section 2.0, Subtask 2a. A description of the criteria that were used to define each priority group can be found in the RMP (RECON 2018). The California Native Plant Society's (CNPS) Botanical Survey Guidelines were used as a guide for focused rare plant surveys (CNPS 2001). Rare plant occurrences were recorded in a California Natural Diversity Database (CNDDB) data dictionary created by the PSB. Information collected in the data dictionary included species name, number of individuals, site quality, and additional comments. For species that are highly vulnerable to threats, such as variegated dudleya (*Dudleya variegata*), the top three threats were recorded for each metapopulation. In the field, surveyors revisited previously mapped locations as well as walked meandering transects to visually search for sensitive plants. Surveys occurred in spring when annual and herbaceous perennial species were most visible. Table 7 shows the results of the focused rare plant surveys. Representative photos are shown in Attachment 2: Photographs 1 through 5. Additional sensitive species that were observed are included in Attachment 1: Figures 4 through 11 and are discussed under Section 2.0, Subtask 2a.

Table 7 Focused Rare Plant Survey Results			
Parcel(s)	Priority Group	Species	Number of Individuals
Millenia	1	variegated dudleya	1
		San Diego button-celery (*Eryngium aristulatum* var. *parishii*)	177
Proctor Valley (North)	1	Dunn's mariposa lily (*Calochortus dunnii*)	1
Ridge	1	San Diego goldenstar (*Bloomeria clevelandii*)	935
		variegated dudleya	3
	2	San Diego barrel cactus	4
	3	San Diego marsh-elder	589
		purple stemodia	5
Salt Creek	1	snake cholla (*Cylindropuntia californica* var. *californica*)	234
		variegated dudleya	1,578
San Ysidro	1	San Diego goldenstar	27,841
		Dunn's mariposa lily	7
		variegated dudleya	1,323
		Gander's pitcher sage (*Lepechinia ganderi*)	384

Surveys also included rare plant monitoring in accordance with the Monitoring Strategic Plan (MSP) using the Inspect and Manage (IMG) protocol for species identified by MSP IMG group as priority species (Attachment 1: Figures 4, 5, 6, 9, 10, and 11). Two new MSP monitoring location were established at Millenia. The 2021 MSP IMG survey results are shown in Table 8.

Table 8
2021 Management Strategic Plan Inspect and Manage Rare Plant Survey Results

Common Name	Scientific Name	Parcel(s)	Estimated Number of Individuals	MSP IMG
San Diego goldenstar	*Bloomeria clevelandii*	SY	3,870	BLCL_3SYPA029_1
San Diego goldenstar	*Bloomeria clevelandii*	JM	106,000	BLCL_3PRVA027_2
San Diego goldenstar	*Bloomeria clevelandii*	DLZ	3,000,000	BLCL_3DUPA002_2
San Diego goldenstar	*Bloomeria clevelandii*	SC	469	BLCL_3ORVA026_1
Orcutt's brodiaea	*Brodiaea orcuttii*	NSY	11	BROR_3SYPA008_1
Otay tarplant	*Deinandra conjugens*	NSC	217	DECO13_3SCPA016_1
Otay tarplant	*Deinandra conjugens*	WWC & WC	46	DECO13_3ORVA018_1
Otay tarplant	*Deinandra conjugens*	MLLN	20	-*
Otay tarplant	*Deinandra conjugens*	MLLN	2	-*
Jennifer's monardella	*Monardella stoneana*	SY & NSY	4	MOST_3NSYP004_1 & MOST_3NSYP004_2

DLZ = Dulzura
JM = Jamul
MLLN = Millenia
NSC = Northern Salt Creek
NSY = Northern San Ysidro
SC = Salt Creek
SY = San Ysidro
WWC = Western Wolf Canyon
*No occurrence ID as of January 2022. Established IMG occurrence in 2021.

Subtask 1b. (FY 2020-21): Quino Checkerspot Butterfly (*Euphydras editha quino*; QCB) Surveys

The PSB conducted QCB habitat assessments at Millenia and Proctor Valley (South) on February 22, 2021. Zero to very few host plants [i.e., dot-seed plantain (*Plantago erecta*)] were observed within the Parcels. On February 24, 2021, the U.S. Fish and Wildlife Service (USFWS), the PSB, and the POM agreed to postpone QCB surveys to the following year (FY 2021-22) due to the below average rainfall and lack of observed host plants during the habitat assessments.

Subtask 1c. (FY 2020-21): Vegetation Mapping

The vegetation maps prepared in 2011 within the Dulzura, Jamul Mountains, Little Cedar Canyon, McMillin, and Northern San Ysidro parcels was updated in spring 2021 (Attachment 1: Figures 12 and 16). The *Vegetation Classification Manual for Western San Diego County (*Sproul et al. 2011), which is consistent with the National Vegetation Classification System, was used to map vegetation. Aerial photography and the 2011 vegetation mapping were examined prior to field work to determine

potential vegetation alliances, after which the figure was ground-truthed to verify and refine the vegetation mapping. Vegetation mapping survey dates are included in Table 9. A crosswalk to the Holland (1986) classification system as modified by Oberbauer et al. (2008) has been prepared and is included in Tables 10 through 14 to compare San Diego Association of Governments (SANDAG) vegetation communities to the City Multiple Species Conservation Program (MSCP) habitat tiers. Tables 15 through 19 compare 2021 results with 2011 results.

Table 9
Vegetation Mapping Survey Dates and Locations

Date	Location (Parcels)
4/09/2021	Dulzura
4/14/2021	Dulzura
4/16/2021	Dulzura
4/20/2021	McMillin
4/30/2021	Little Cedar Canyon
5/05/2021	Dulzura
5/06/2021	Little Cedar Canyon
5/07/2021	McMillin
5/13/2021	Northern San Ysidro
5/19/2021	Jamul Mountains
5/20/2021	Jamul Mountains
5/26/2021	Northern San Ysidro
6/14/2021	Dulzura
6/17/2021	Dulzura
6/23/2021	Little Cedar Canyon
6/24/2021	Little Cedar Canyon

Table 10
Vegetation Communities within the Dulzura Parcels: Holland and San Diego Association of Governments Crosswalk

Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Native Grassland (42100)	*Nassella pulchra* Association	1.75	I	I
Engelmann Oak Woodland (71180)	*Quercus engelmannii-Quercus agrifolia/ Toxicodendron diversilobum*/Grass Association	12.14		

Table 10 Vegetation Communities within the Dulzura Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Open Coast Live Oak Woodland (71161)	*Quercus agrifolia/Toxicodendron diversilobum/*Grass Association	10.96		
	Quercus agrifolia/Quercus (berberidifolia, xacutidens) Association	6.03		
Coastal Scrub (32000)	*Rhamnus crocea* Provisional Alliance	0.65	II	II
Diegan Coastal Sage Scrub (32500)	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	130.11		
	Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum Association	153.57		
	Salvia apiana–Artemisia californica Association	41.55		
	Eriogonum fasciculatum Association	8.91		
Diegan Coastal Sage Scrub: Coastal form (32510)	*Artemisia californica* Association	3.67		
Coastal Sage-Chaparral Transition (37G00)	*Adenostoma fasciculatum (Eriogonum fasciculatum-Artemisia californica-Salvia mellifera)* Association	65.47		
Chamise Chaparral (37200)	*Adenostoma fasciculatum* Alliance	14.76	III	III
Southern Mixed Chaparral (37120)	*Adenostoma fasciculatum-Xylococcus bicolor* Association	57.28		
	Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus Association	175.97		
	Adenostoma fasciculatum-Xylococcus bicolor-Quercus (berberidifolia, xacutidens) Association*	42.63		
	Ceaothus tomentosus Association	10.57		
Mafic Southern Mixed Chaparral (37122)	*Arctostaphylos glandulosa-Adenostoma fasciculatum-Chamaebatia australis* Association	7.42		
Scrub Oak Chaparral (37900)	*Quercus (berberidifolia, xacutidens)* Association	11.29		
Non-native Grassland (42200)	*Avena* (*barbata, fatua*) Semi-natural Stands	13.60		
	Bromus diandrus Semi-natural Stand Type	1.60		
	Bromus rubens Semi-natural Stand Type	2.49		
Southern Interior Cypress Forest (83230)	*Callitropsis forbesii* Provisional Association	16.01	I	N/A

Table 10 Vegetation Communities within the Dulzura Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Riparian Scrubs (63000)	*Ambrosia monogyra* Provisional Association	1.96	I	N/A[1]
N/A (Unvegetated)	N/A (Unvegetated)	8.67	N/A	N/A
Urban/Developed (12000)	N/A (Urban/Developed)	0.71		
GRAND TOTAL		799.76		

MSCP = Multiple Species Conservation Program; N/A = Not Applicable

*Although the crosswalk states this vegetation community falls under southern maritime chaparral, the site conditions would be considered southern mixed chaparral.

[1]Wetlands are considered a sensitive resource by the City's MSCP Subarea Plan but do not have a tier, as they are addressed separately from upland habitats.

NOTE: The grand total is the parcel acreage based on the acreages calculated using Geographic Information System (GIS). The deed acreage provided by the City may differ slightly from the acreages calculated using GIS due to minor discrepancies in the parcel boundaries.

Table 11 Vegetation Communities within the Jamul Mountains Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Native Grassland (42100)	*Nassella pulchra* Association	2.04	I	I
Diegan Coastal Sage Scrub (32500)	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	173.47	II	II
	Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum Association	50.71		
	Salvia apiana-Artemisia californica Association	28.98		
Southern Mixed Chaparral (37120)	*Adenostoma fasciculatum-Xylococcus bicolor-Quercus (berberidifolia, xacutidens)* Association*	2.08	III	III
Non-native Grassland (42200)	Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands	2.95		
N/A (Unvegetated)	N/A (Unvegetated)	1.56	N/A	N/A
GRAND TOTAL		261.80		

MSCP = Multiple Species Conservation Program; N/A = Not Applicable

*Although the crosswalk states this vegetation community falls under southern maritime chaparral, the site conditions would be considered southern mixed chaparral.

NOTE: The grand total is the parcel acreage based on the acreages calculated using Geographic Information System (GIS). The deed acreage provided by the City may differ slightly from the acreages calculated using GIS due to minor discrepancies in the parcel boundaries.

Table 12 Vegetation Communities within the Little Cedar Canyon Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Open Coast Live Oak Woodland (71161)	*Quercus agrifolia* Alliance	0.70	I	I
Coastal Scrub (32000)	*Rhamnus crocea* Provisional Alliance	0.61	II	II
	Malosma laurina-Lotus scoparius Association	2.20		
Diegan Coastal Sage Scrub (32500)	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	24.52		
	Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum Association	11.83		
Chamise Chaparral (37200)	*Adenostoma fasciculatum* Alliance	23.62	III	III
Southern Mixed Chaparral (37120)	*Adenostoma fasciculatum-Ceanothus tomentosus* Association	6.32		
	Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus Association	4.84		
	Ceaothus tomentosus Association	7.74		
Mafic Southern Mixed Chaparral (37122)	*Adenostoma fasciculatum-Xylococcus bicolor-Pickeringia montana* Association	0.79		
	Arctostaphylos glandulosa-Adenostoma fasciculatum-Chamaebatia australis Association	8.91		
Scrub Oak Chaparral (37900)	*Quercus (berberidifolia, xacutidens)* Association	5.94		
Southern Interior Cypress Forest (83230)	*Callitropsis forbesii* Provisional Association	69.89	I	N/A
N/A (Unvegetated)	N/A (Unvegetated)	1.24	N/A	N/A
GRAND TOTAL		169.14		

MSCP = Multiple Species Conservation Program; N/A = Not Applicable
NOTE: The grand total is the parcel acreage based on the acreages calculated using Geographic Information System (GIS). The deed acreage provided by the City may differ slightly from the acreages calculated using GIS due to minor discrepancies in the parcel boundaries.

Table 13 Vegetation Communities within the McMillin Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Coastal Scrub (32000)	*Malosma laurina-Lotus scoparius* Association	10.85	II	II
	Rhamnus crocea Provisional Alliance	1.78		
Diegan Coastal Sage Scrub (32500)	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	114.68		
	Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum Association	82.93		
	Salvia apiana–Artemisia californica Association	0.74		
Coastal Sage-Chaparral Transition (37G00)	*Adenostoma fasciculatum (Eriogonum fasciculatum-Artemisia californica-Salvia mellifera)* Association	2.65		
Chamise Chaparral (37200)	*Adenostoma fasciculatum* Alliance	4.63	III	III
Southern Mixed Chaparral (37120)	*Adenostoma fasciculatum-Xylococcus bicolor* Association	3.00		
	Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus Association	0.78		
	Adenostoma fasciculatum-Xylococcus bicolor-Quercus (berberidifolia, xacutidens) Association*	3.87		
	Ceaothus tomentosus Association	0.96		
Non-native Grassland (42200)	*Bromus diandrus* Semi-natural Stand Type	0.28		
Mule Fat Scrub (63310)	*Baccharis salicifolia* Association	0.12	I	N/A[1]
Alkali Seep (45320)	*Iva hayesiana* Special Stands	0.11		
Coastal and Valley Freshwater Marsh (52410)	*Schoenoplectus californicus* Association	1.00		
N/A (Unvegetated)	N/A (Unvegetated)	1.62	N/A	N/A
GRAND TOTAL		230.00		

MSCP = Multiple Species Conservation Program; N/A = Not Applicable

*Although the crosswalk states this vegetation community falls under southern maritime chaparral, the site conditions would be considered southern mixed chaparral.

[1]Wetlands are considered a sensitive resource by the City's MSCP Subarea Plan but do not have a tier, as they are addressed separately from upland habitats.

Table 14 Vegetation Communities within the Northern San Ysidro Parcels: Holland and San Diego Association of Governments Crosswalk				
Holland	San Diego Association of Governments	Acres	County of San Diego MSCP Subarea Plan Tier	City of Chula Vista MSCP Subarea Plan Tier
Native Grassland (42100)	*Nassella pulchra* Association	0.79	I	I
Diegan Coastal Sage Scrub (32500)	*Artemisia californica–Eriogonum fasciculatum–Malosma laurina* Association	40.01	II	II
	Bahiopsis laciniata–Artemisia californica–Eriogonum fasciculatum Association	20.75		
Coastal Sage-Chaparral Transition (37G00)	*Adenostoma fasciculatum (Eriogonum fasciculatum-Artemisia californica-Salvia mellifera) Association*	3.56		
Southern Mixed Chaparral (37120)	*Adenostoma fasciculatum-Xylococcus bicolor* Association	36.28	III	III
Chamise Chaparral (37200)	*Adenostoma fasciculatum* Alliance	14.85		
	Adenostoma fasciculatum-Lotus scoparius Association	6.00		
Mule Fat Scrub (63310)	*Baccharis salicifolia* Association	0.94	I	N/A[1]
N/A (Unvegetated)	N/A (Unvegetated)	0.71	N/A	N/A
GRAND TOTAL		123.88		

NOTE: The grand total is the parcel acreage based on the acreages calculated using Geographic Information System (GIS). The deed acreage provided by the City may differ slightly from the acreages calculated using GIS due to minor discrepancies in the parcel boundaries.
MSCP = Multiple Species Conservation Program; N/A = Not Applicable
[1]Wetlands are considered a sensitive resource by the City's MSCP Subarea Plan but do not have a tier, as they are addressed separately from upland habitats.

Table 15 2021 Vegetation Mapping Results for the Dulzura Parcels: 2021 Compared to Past Results				
Vegetation Community/Land Cover Type (From Table 10)	Vegetation Community/Land Cover Type (From RECON 2012a)	2021 Acreage	2011 Acreage	Difference
Native Grassland	Valley Needlegrass Grassland	1.75	2	-0.25
Engelmann Oak Woodland	-	12.14	-	+12.14
Open Coast Live Oak Woodland	Open Coast Live Oak Woodland	16.99	23	-6.01
Coastal Scrub, Diegan Coastal Sage Scrub, Diegan Coastal Sage Scrub: Coastal Form	Diegan Coastal Sage Scrub	338.46	440	-101.54
Coastal Sage-Chapparal Transition	Coastal Sage-Chapparal Transition	65.47	10	+55.47
Chamise Chapparal	Chamise Chapparal	14.76	15	-0.24
Southern Mixed Chapparal; Mafic Southern Mixed Chaparral	Southern Mixed Chapparal; Mafic Southern Mixed Chaparral	293.87	270	+23.87
Scrub Oak Chaparral	-	11.29	-	+11.29
Non-native Grassland	Non-native Grassland	17.69	4	+13.69
Southern Interior Cypress Forest	Southern Interior Cypress Forest	16.01	31	-14.99
Riparian Scrub	Southern Riparian Scrub	1.96	5	-3.04
N/A (Unvegetated)	-	8.67	-	+8.67
Urban/Developed	Urban/Developed	0.71	1	-0.29
-	Freshwater Seep	-	<1	-<1

Table 16 2021 Vegetation Mapping Results for the Jamul Parcels: 2021 Compared to Past Results				
Vegetation Community/Land Cover Type (From Table 11)	Vegetation Community/Land Cover Type (From RECON 2012b)	2021 Acreage	2011 Acreage	Difference
Native Grassland	Valley Needlegrass Grassland	2.04	>1	+2.04
Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub	253.16	253	+0.16
Southern Mixed Chaparral	-	2.08	-	+2.08
Non-native Grassland	Non-native Grassland	2.95	3	-0.05
-	Coastal Sage-Chaparral Transition	-	1	-1
-	Freshwater Marsh	-	<1	-<1
N/A (Unvegetated)	-	1.56	-	+1.56

Table 17 2021 Vegetation Mapping Results for the Little Cedar Canyon Parcels: 2021 Compared to Past Results				
Vegetation Community/Land Cover Type (From Table 12)	Vegetation Community/Land Cover Type (From RECON 2012c)	2021 Acreage	2011 Acreage	Difference
Open Coast Live Oak Woodland	Open Coast Live Oak Woodland	0.7	1	-0.3
Coastal Scrub, Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub	39.16	31	+8.16
Chamise Chaparral	-	23.62	-	+23.62
Southern Mixed Chaparral, Mafic Southern Mixed Chaparral	Southern Mixed Chaparral	28.6	52	-23.4
Scrub Oak Chaparral	-	5.94	-	+5.94
Southern Interior Cypress Forest	Southern Interior Cypress Forest	69.89	63	+6.89
N/A (Unvegetated)	-	1.24	-	+1.24
-	Coastal-Sage Chaparral Transition	-	12	-12
-	Southern Riparian Scrub	-	1	-1

Table 18 2021 Vegetation Mapping Results for the McMillin Parcels: 2021 Compared to Past Results				
Vegetation Community/Land Cover Type (From Table 13)	Vegetation Community/Land Cover Type (From RECON 2012c)	2021 Acreage	2011 Acreage	Difference
Coastal Scrub, Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub	210.98	209	+1.98
Coastal Sage-Chaparral Transition	-	2.65	-	+2.65
Chamise Chaparral	Chamise Chaparral	4.63	4	+0.63
Southern Mixed Chaparral	Southern Mixed Chaparral	8.61	16	-7.39
Non-native Grassland	-	0.28	-	+0.28
Mule Fat Scrub	-	0.12	-	+0.12
Alkali Seep	-	0.11	-	+0.11
Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	1	1	0
N/A (Unvegetated)	-	1.62	-	+1.62
-	Southern Riparian Scrub	-	<1	

Table 19 2021 Vegetation Mapping Results for the North San Ysidro Parcels: 2021 Compared to Past Results				
Vegetation Community/Land Cover Type (From Table 14)	Vegetation Community/Land Cover Type (From RECON 2012c)	2021 Acreage	2011 Acreage	Difference
Native Grassland	Native Grassland	0.79	<1	+0.79
Diegan Coastal Sage Scrub	Diegan Coastal Sage Scrub	60.76	45	+15.76
Coastal Sage-Chaparral Transition	Coastal Sage-Chaparral Transition	3.56	18	-14.44
Southern Mixed Chaparral	Southern Mixed Chaparral	36.28	11	+25.28
Chamise Chaparral	Chamise Chaparral	20.85	40	-19.15
Mule Fat Scrub	-	0.94	-	+0.94
N/A (Unvegetated)	-	0.71	-	+0.71
-	Southern Riparian Scrub	-	3	-3
-	Wildflower Field	-	<1	-<1

Subtask 1d. (FY 2020-21): Photographic Monitoring

In 2012, 15 photo monitoring points were established at the Dulzura, Jamul Mountains, Little Cedar Canyon, McMillin, and Northern San Ysidro parcels (Attachment 1: Figures 17 through 19; RECON 2013). In 2021, the photo monitoring locations were revisited using a hand-held global positioning system (GPS) device and repeat photo monitoring occurred. Photos at the monitoring locations were collected so that changes in native vegetation and weed cover could be detected over time. Photographic monitoring dates are included in Table 20. Representative repeat photographs are shown in Attachment 2: Photographs 6 through 10.

Table 20 Photographic Monitoring Dates and Locations	
Date	Location (Parcels)
4/09/2021	Dulzura
4/14/2021	Dulzura
4/20/2021	McMillin
4/30/2021	Little Cedar Canyon
5/06/2021	Little Cedar Canyon
5/07/2021	McMillin
5/13/2021	Northern San Ysidro
5/19/2021	Jamul Mountains
5/20/2021	Jamul Mountains
6/09/2021	Dulzura
6/23/2021	Little Cedar Canyon

Subtask 1e. (FY 2020-21): Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*; CACW) Surveys

Focused surveys were conducted to detect occupancy by coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis;* CACW) in suitable habitat at the Salt Creek and Millenia parcels in 2021. In 2021, the survey effort was made in conjunction with the regional wide CACW surveys being conducted by U.S. Geological Survey (USGS). In order to avoid duplicating survey efforts, the PSB only surveyed areas within Salt Creek that were not included in the USGS surveys. In addition, USGS conducted CACW surveys at Western Wolf Canyon in 2021 and the PSB did not. Photo monitoring locations that had been established in 2010 at the Salt Creek parcels and 2015 at the Millenia parcels were revisited. Representative photographs are shown in Attachment 2: Photographs 11 through 16. The results of the CACW surveys conducted by the PSB are discussed below. The results of the USGS CACW surveys will be included in their forthcoming 2021 annual report.

Salt Creek Parcels

The PSB conducted focused surveys for CACW as well as repeat photographic monitoring on March 9 and April 6, 2021 within the Salt Creek parcels. The 2021 cactus wren survey areas at Salt Creek consisted of two new areas not surveyed in previous years and all past survey areas were managed by USGS.

The PSB surveyed two south-facing slopes, dominated by coast cholla (*Cylindropuntia prolifera*), near the center of the Salt Creek parcels and identified the locations of CACW individuals, CACW nests, and collected data as to the pair status, extent of use area observed, size and height of cholla patch the nest was in, height of nest from the ground, and any ancillary nest information, as available. During the survey effort, additional bird and nest observations were made just outside of the western survey area; therefore, 0.02 acre was added to the survey area. The primary goal of these surveys was to gain information about the locations of nests and birds, size of use areas, and whether this species is still successfully breeding within the Preserve. The results for 2021 are shown in Attachment 1: Figure 20 and displayed below in Table 21. Attachment 2: Photographs 11 through 13 show representative habitat and a CACW nest observed at the Salt Creek parcels. Figure 20 also shows incidental detections of coastal cactus wren at the Salt Creek parcels. These incidental detections are from multiple dates and the number of detections is not the number of pairs or individuals present within the parcels.

Table 21
2021 Coastal Cactus Wren Results for the Salt Creek Parcels

Number of Families	Number of Pairs	Number of Individuals	Number of Nests
0	1	0	5

In addition to the focused surveys, the average coast cholla height within 20.4 acres of previously planted areas was recorded. In general, coast cholla height was observed to be on average 2-3 feet tall and up to 4 feet tall within the coast cholla height survey area.

In addition to monitoring for CACW, the PSB revisited the 19 CACW photographic monitoring point locations that had been established in 2013 as part of the Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program (SANDAG Grant Number 5001970; Attachment 1: Figure 20). Prominent features had been mindfully placed in each photo to make relocating the exact location easier in future years. The prominent features were chosen so that changes to the landscape (i.e., fire or weed encroachment) would minimize change to the visibility of the feature. The purpose of the photo monitoring points is to detect changes in habitat quality (i.e., weed invasion, shrub encroachment, or coast cholla growth) over time.

Millenia Parcels

The PSB conducted focused surveys for CACW as well as repeat photographic monitoring on March 2 and April 8, 2021 within the Millenia parcels. A pair of CACW was detected within the eastern half of the parcels within a designated survey area and also within an adjacent area currently being treated for weeds by the PSB to benefit CACW. As a result, this survey area was increased by 0.61 acre to include the additional area being used by CACW (Attachment 1: Figure 21). Attachment 2: Photographs 14 and 15 show a CACW nest observed and representative habitat at the Millenia parcels. Additionally, an individual CACW was incidentally observed within a south-facing slope, dominated by coast cholla, along the northern perimeter of the eastern parcels during a coastal California gnatcatcher survey. Therefore, this 0.53-acre slope was added to the survey areas (see Attachment 1: Figure 21). Two individuals were incidentally observed within the western half of the parcels in 2021 during a coastal California gnatcatcher survey and a general site visit (Attachment 1: Figure 21; Attachment 2: Photograph 16). Additional incidental detections are shown on Figure 21. A comparison of results between 2015, 2018, and 2021 is shown in Table 22. The PSB also revisited the 18 CACW photographic monitoring point locations that were established within the Millenia parcels in 2015 (Attachment 1: Figure 21).

Table 22
2021 Coastal Cactus Wren Results for the Millenia Parcels Compared to Past Results

Year Observed	Number of Families	Number of Pairs	Number of Individuals	Number of Nests
2021	0	1	0	1
2018*	0	1	0	0
2015	0	0	0	0

*Data include incidental sightings.

Subtask 1f. (FY 2020-21): Coastal California Gnatcatcher (*Polioptila californica californica*; CAGN) Surveys

CAGN surveys were conducted on approximately 986.9 acres of suitable habitat within the Salt Creek, San Ysidro, Millenia, Proctor Valley (South), Western Wolf Canyon, and Ridge parcels (Attachment 1: Figures 22 through 27). The CAGN survey methods followed those described in the USFWS protocol (USFWS 1997), which require three survey visits per parcel set. CAGN survey dates and locations are shown in Tables 23a through 23f. Survey acreage is shown in Table 24.

Table 23a 2021 Coastal California Gnatcatcher Protocol Survey Effort and Conditions – Salt Creek Parcels						
Date	Subarea	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
2/19/2021	1	1	B. Parker, E. Procsal	7:00 a.m.; 46º F, 0-2 mph; 0% cc	12:00 p.m.; 75ºF; 0-2 mph; 5% cc	8.6
3/5/2021	1	2	B. Parker, A. Smisek[2]	7:00 a.m.; 40ºF; 0-2 mph; 0% cc	12:00 p.m.; 76ºF; 2-5 mph; 0% cc	8.6
3/22/2021	1	3	B. Parker, A. Smisek[2]	7:00 a.m.; 47º F, 0-2 mph; 0% cc	12:00 p.m.; 71º F, 1-4 mph; 0% cc	8.6
2/16/2021	2	1	E. Procsal, J. Woll[2]	7:00 A.M.; 54ºF; 0-1 mph; 100% cc, misting	12:00 p.m.; 64ºF; 2-3 mph; 55% cc	8.3
3/5/2021	2	2	E. Procsal, J. Woll[2]	6:40 a.m.; 45º F, 0-2 mph; 0% cc	12:00 p.m.; 77º F, 2-5 mph; 0% cc	7.7
3/18/2021	2	3	E. Procsal, J. Woll[2]	6:50 a.m.; 42º F, 2-5 mph; 80% cc	12:00 p.m.; 61º F, 1-4 mph; 0% cc	8.0
3/9/2021	3	1	B. Parker, K. Israel[2]	7:00 a.m.; 50º F, 0-1 mph; 50% cc	12:00 a.m.; 59º F, 4-6 mph; 85% cc	6.3
3/23/2021	3	2	B. Parker, J. Sundberg[2]	7:00 a.m.; 55ºF; 0-2 mph; 100% cc, misting	12:00 p.m.; 60ºF; 0-2 mph; 60% cc	6.3
4/19/2021	3	3	B. Parker, J. Woll[2]	7:00 a.m.; 58º F, 0-2 mph; 0% cc	12:00 p.m.; 85º F, 2-4 mph; 0% cc	6.3
2/18/2021	4a	1	W. Loeffler, A. Smisek[2]	6:35 a.m.; 40.2ºF; 2-4 mph; 0% cc	12:00 p.m.; 79ºF; 1-3 mph; 0% cc	5.9
3/23/2021	4a	2	W. Loeffler, J. Woll[2]	7:30 a.m.; 52º F, 1-3 mph; 95% cc	12:00 p.m.; 58º F, 1-5 mph, gusts to 8; 80% cc	7.1
4/5/2021	4a	3	W. Loeffler, A. Smisek[2]	6:30 a.m.; 54ºF; 0-2 mph; 100% cc	12:00 p.m.; 74ºF; 3-6 mph; 5% cc	5.8
2/25/2021	4b & 6a	1	W. Loeffler, A. Smisek[2]	6:45 a.m.; 48º F, 0-1 mph; 0% cc	12:00 p.m.; 82º F, 3-6 mph; 0% cc	6.0
3/15/2021	4b & 6a	2	W. Loeffler, K. Israel[2]	7:00 a.m.; 54º F, 0-1 mph; 95% cc	11:40 a.m.; 55º F, 5-10 mph; 100% cc	6.8
4/9/2021	4b & 6a	3	W. Loeffler, K. Israel[2]	7:25 a.m.; 56º F, 0-2 mph; 100% cc	12:00 p.m.; 71º F, 4-10 mph; 5% cc	6.9
3/9/2021	5	1	A. Fromer, J. Sundberg[2]	7:00 a.m.; 51º F, 0-2 mph; 60% cc	12:00 p.m.; 61º F, 5-8 mph; 75% cc	9.0
3/23/2021	5	2	A. Fromer, A. Smisek[2]	7:00 a.m.; 53º F, 2-5 mph; 60% cc	12:00 p.m.; 68º F, 4-7 mph; 75% cc	9.0
4/6/2021	5	3	A. Fromer, K. Israel[2]	7:10 a.m.; 52º F, 0-2 mph; <5% cc	12:00 p.m.; 75º F, 1-5 mph gusts of 8; 15% cc	9.3
3/9/2021	6b	1	W. Loeffler, J. Woll[2]	7:00 a.m.; 52º F, 0-1 mph; <40% cc	11:50 a.m.; 61º F, 3-7 mph; 60% cc	6.0

Table 23a
2021 Coastal California Gnatcatcher
Protocol Survey Effort and Conditions – Salt Creek Parcels

Date	Subarea	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
3/24/2021	6b	2	W. Loeffler, J. Sundberg[2]	7:30 a.m.; 45° F, 0-1 mph; 0% cc	12:00 p.m.; 69° F, 1-5 mph; 0% cc	6.5
4/7/2021	6b	3	W. Loeffler, C. Chappaz[2]	7:30 a.m.; 51° F, 0-1 mph; 0% cc	11:45 p.m.; 71° F, 3-5 mph; 0% cc	6.9

[1]Times are in Daylight Savings Time; °F = degrees Fahrenheit; mph = miles per hour; % = percent
[2]Under supervision.

Table 23b
2021 Coastal California Gnatcatcher
Protocol Survey Effort and Conditions – San Ysidro Parcels

Date	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
3/2/2021	1	B. Parker, J. Sundberg[2]	7:00 a.m.; 53°F; 0-1 mph; 20% cc	12:00 a.m.; 71°F; 2-5 mph; 0% cc	8.9
4/16/2021	2	B. Parker, A. Smisek[2]	7:30 a.m.; 53° F, 0-3 mph; 80% cc	12:00 p.m.; 75° F, 1-3 mph; 1% cc	9.9
5/25/2021	3	B. Parker. J. Woll[2]	7:20 a.m.; 68° F, 0-1 mph; 5% cc	12:00 p.m.; 86° F, 2-4 mph; 15% cc	9.5

[1]Times are in Daylight Savings Time; °F = degrees Fahrenheit; mph = miles per hour; % = percent
[2]Under supervision.

Table 23c
2021 Coastal California Gnatcatcher
Protocol Survey Effort and Conditions – Millenia Parcels

Date	Subarea	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
2/26/2021	East of State Route 125	1	K. Valenti, J. Sundberg[2]	7:25 a.m.; 50°F; 0-1 mph; <5% cc	11:55 a.m.; 79°F; 1-4 mph; 0% cc	2.6
4/1/2021	East of State Route 125	2	K. Valenti, C. Chappaz[2]	7:45 a.m.; 73°F; 6-8 mph; 15% cc	11:00 p.m.; 95°F; 0-6 mph; <5% cc	3.8
4/9/2021	East of State Route 125	3	K. Valenti, J. Woll[2]	7:20 a.m.; 56°F; 0-1 mph; 100% cc	10:50 a.m.; 78°F; 2-4 mph; 0% cc	3.5
2/24/2021	West of State Route 125	1	E. Procsal, A. Smisek[2]	7:30 a.m.; 49°F; 0-1 mph; 0% cc	12:00 p.m.; 80°F; 2-5 mph; 0% cc	2.2
3/30/2021	West of State Route 125	2	K. Valenti, J. Woll[2]	7:30 a.m.; 58°F; 0-2 mph; 95% cc	11:00 a.m.; 72°F; 1-4 mph; 0% cc	2.8
4/8/2021	West of State Route 125	3	B. Parker, C. Chappaz[2]	7:30 a.m.; 59°F; 0 mph; 15% cc	12:00 p.m.; 73°F; 0 mph; 0% cc	2.2

[1]Times are in Daylight Savings Time; °F = degrees Fahrenheit; mph = miles per hour; % = percent
[2]Under supervision

Table 23d 2021 Coastal California Gnatcatcher Protocol Survey Effort and Conditions – Proctor Valley (South) Parcels					
Date	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
2/18/2021	1	A. Fromer, J. Sundberg[2]	8:15 a.m.; 58° F, 2-6 mph; 0% cc	11:30 a.m.; 66° F, 1-3 mph; 0% cc	4.5
2/25/2021	2	A. Fromer, J. Woll[2]	8:05 a.m.; 61° F, 8-10 mph gust 12; 0% cc	11:05 a.m.; 68° F, 6-10 mph gust 15; 0% cc	4.9
3/15/2021	3	A. Fromer, J. Woll[2]	8:00 a.m.; 45° F, 1-3 mph; 75% cc	11:00 a.m.; 53° F, 0-2 mph; 50% cc	4.9
[1]Times are in Daylight Savings Time; °F = degrees Fahrenheit; mph = miles per hour; % = percent [2]Under supervision					

Table 23e 2021 Coastal California Gnatcatcher Protocol Survey Effort and Conditions – Western Wolf Canyon Parcels					
Date	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
3/17/2021	1	W. Loeffler, K. Israel[2]	7:30 a.m.; 34° F, 0-1 mph; 5% cc	11:00 a.m.; 58° F, 0-3 mph; 5% cc	4.6
3/31/2021	2	W. Loeffler, K. Israel[2]	7:20 a.m.; 51° F, 0-1 mph; 0% cc	11:15 a.m.; 85° F, 2-8 mph; 0% cc	4.1
4/23/2021	3	W. Loeffler, A. Smisek[2]	7:20 a.m.; 56° F, 1-3 mph; 99% cc	11:00 a.m.; 61° F, 2-4 mph; 100% cc	4.4
[1]Times are in Daylight Savings Time; °F = degrees Fahrenheit; mph = miles per hour; % = percent [2]Under supervision					

Table 23f 2021 Coastal California Gnatcatcher Protocol Survey Effort and Conditions –Ridge Parcels						
Date	Subarea	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
2/18/2021	2 1a	1	E. Procsal, A. Smisek[2]	7:00 a.m.; 59° F, 0-2 mph; <1% cc 11:05 a.m.; 78° F, 0-2 mph; <1% cc	10:30 a.m.; 78° F, 0-2 mph; <1% cc 12:00 p.m.; 78° F, 0-4 mph; <1% cc	15.1 5.9
3/19/2021	1a 2	2	K. Valenti, J. Woll[2]	7:50 a.m.; 57° F, 0-1; 0% cc 9:30 a.m.; 62° F, 0-1; 0% cc	8:50 a.m.; 62° F, 0-1 mph; 0% cc 12:00 p.m.; 76° F, 6-10 mph; 0% cc	5.4 21.1

Table 23f 2021 Coastal California Gnatcatcher Protocol Survey Effort and Conditions –Ridge Parcels						
Date	Subarea	Survey #	Surveyor(s)	Beginning Conditions[1]	Ending Conditions[1]	Acres per Hour/ Team
4/20/2021	1a	3	E. Procsal, J. Woll[2]	7:25 a.m.; 53º F, 0-1 mph; 100% cc	8:25 a.m.; 62º F, 0-1 mph; 60% cc	5.4
	2			9:00 a.m.; 62º F, 0-1 mph; <1% cc	12:00 p.m.; 78º F, 2-4 mph gust 8; 0% cc	17.6
2/23/2021	1b	1	A. Fromer, J. Woll[2]	6:30 a.m.; 61º F, 0-1 mph; 55% cc	12:00 p.m.; 66º F, 3-6 mph; <5% cc	13.9
3/2/2021	1b	2	A. Fromer, A. Smisek[2]	6:30 a.m.; 49º F, 0-2 mph; 5% cc	12:00 p.m.; 71º F, 2-6 mph gust 9; 0% cc	13.9
4/30/2021	1b	3	A. Fromer, J. Woll[2]	6:50 a.m.; 66º F, 0-1 mph; 0% cc	12:00 p.m.; 88º F, 2-5 mph; 0% cc	14.8
[1]Times are in Daylight Savings Time; ºF = degrees Fahrenheit; mph = miles per hour; % = percent [2]Under supervision						

Table 24 Parcel Name and Acreage for CAGN Survey Visits	
Parcel Name	Survey Area Acreage
Salt Creek	522.29*
San Ysidro	88.74
Millenia	44.16
Proctor Valley (South)	29.32
Western Wolf Canyon	32.39
Ridge	270.0
*Revised acreages of 2021 CAGN survey areas after suitable habitat areas were adjusted.	

Subtask 1g. (FY 2020-21): Thorne's Hairstreak Butterfly (*Callophrys thornei*) Surveys

Focused surveys to detect the presence of Thorne's hairstreak were conducted at the San Ysidro, Little Cedar Canyon, Dulzura, and Salt Creek parcels in areas where the host plant Tecate cypress (*Hesperocyparis forbesii*) occurs. Thorne's hairstreak, an MSCP-covered species, is only known from the San Ysidro Mountains and has been recognized as a unique and imperiled species for almost 30 years, when it was first described in 1983 (Brown 1983). Tecate cypress is Thorne's hairstreak's only known host plant. This species is bivoltine (two flight periods), with one flight period in March and a smaller emergence in June. Increased fire frequency has put Thorne's hairstreak at risk associated with a decrease in populations of the host plant, Tecate cypress.

Focused surveys were conducted for Thorne's hairstreak for the first time within the Preserve in 2016. The same parcels were revisited in the 2021 surveys. Biological consultants hired by SANDAG have

previously conducted surveys in the Otay Mountain area outside of the Preserve. The PSB conducted focused surveys to detect presence/absence in March and June 2021 under appropriate weather conditions. Since Thorne's hairstreak was not observed or was observed in low numbers in March, a second focused survey was conducted in June at each parcel. The number of Thorne's hairstreak individuals observed was recorded. Representative stands of Tecate cypress were photographed during the surveys. Thorne's hairstreak survey dates, personnel, weather conditions, and observation results are shown in Table 25. The survey results are shown in Attachment 1: Figures 28 through 30 and Attachment 2: Photographs 17 and 18. In addition to the survey results in Table 25, Figures 28 through 30 show incidental observations of one individual on June 1, 2021 at San Ysidro; two individuals on June 22, 2021 within Little Cedar Canyon; and five individuals on June 28, 2021 at Dulzura. In addition, seven individuals were observed on June 22, 2021, directly adjacent to Little Cedar Canyon parcels.

Table 25
Thorne's Hairstreak Survey Dates, Personnel, Times, and Conditions for the
Otay Ranch Preserve–San Ysidro, Little Cedar Canyon, Dulzura, and Salt Creek Parcels

Date	Parcel(s)	Personnel	Time	Weather Conditions	Thorne's Hairstreak Observations
03/16/2021	San Ysidro	J. Sundberg A. Smisek	15:20-17:30	Start: 58°F air temperature 40% cloud cover 2-5 mph winds End: 56°F air temperature 50% cloud cover 2-6 mph winds	0
03/18/2021	Dulzura	J. Sundberg G. Scheid	10:00-16:00	Start: 55°F air temperature 10% cloud cover 0–2 mph winds End: 68°F air temperature 0% cloud cover 0-4 mph winds	0
03/19/2021	Little Cedar Canyon	J. Sundberg J. Mercado	10:30-16:05	Start: 63°F air temperature 0% cloud cover 0–3 mph winds End: 69°F air temperature 0% cloud cover 0-3 mph winds	0; 1 observed directly adjacent to the parcels
03/19/2021	Salt Creek	M. Dodero	13:30-14:40	Start: 75°F air temperature 0% cloud cover 3–5 mph winds End: 74°F air temperature 0% cloud cover 3-5 mph winds	0
03/22/2021	Dulzura	J. Sundberg A. Fromer	NA	NA	0
03/24/2021	Dulzura	A. Smisek A. Fromer	11:20-16:00	Start: 64°F air temperature 0% cloud cover 0–2 mph winds End: 70°F air temperature 2% cloud cover 0-2 mph winds	0

Table 25
Thorne's Hairstreak Survey Dates, Personnel, Times, and Conditions for the
Otay Ranch Preserve–San Ysidro, Little Cedar Canyon, Dulzura, and Salt Creek Parcels

Date	Parcel(s)	Personnel	Time	Weather Conditions	Thorne's Hairstreak Observations
03/24/2021	Salt Creek	Mark Dodero	11:15-12:30	Start: 64°F air temperature 0% cloud cover 0–3 mph winds End: 70°F air temperature 0% cloud cover 0-3 mph winds	0
03/30/2021	Little Cedar Canyon	J. Sundberg J. Mercado	10:00-15:00	Start: 62°F air temperature 0% cloud cover 0–2 mph winds End: 71°F air temperature 0% cloud cover 1-3 mph winds	6
03/31/2021	Salt Creek	M. Dodero	10:15-12:15	Start: 80°F air temperature 0% cloud cover 0–4 mph winds End: 87°F air temperature 0% cloud cover 2-5 mph winds	0
6/03/2021	Salt Creek	M. Dodero	09:15-10:30	Start: 68°F air temperature 0% cloud cover 0-2 mph winds End: 71°F air temperature 0% cloud cover 0-3 mph winds	0
06/08/2021	Dulzura	K. Valenti A. Fromer	10:45-15:20	Start: 71°F air temperature 0% cloud cover 1–3 mph winds End: 74°F air temperature 60% cloud cover 1-3 mph winds	4
06/09/2021	Dulzura	J. Sundberg K. Valenti	10:30-13:30	Start: 74°F air temperature 35% cloud cover 1–3 mph winds End: 77°F air temperature 40% cloud cover 1-4 mph winds	7
06/11/2021	Salt Creek	M. Dodero	10:15-12:00	Start: 71°F air temperature 0% cloud cover 0-1 mph winds End: 76°F air temperature 0% cloud cover 2-4 mph winds	0
06/11/2021	Dulzura	J. Sundberg K. Valenti	10:15-14:30	Start: 80°F air temperature 0% cloud cover 1-6 mph winds End: 88°F air temperature 0% cloud cover 2-6 mph winds	7

Table 25
Thorne's Hairstreak Survey Dates, Personnel, Times, and Conditions for the
Otay Ranch Preserve–San Ysidro, Little Cedar Canyon, Dulzura, and Salt Creek Parcels

Date	Parcel(s)	Personnel	Time	Weather Conditions	Thorne's Hairstreak Observations
06/14/2021	Dulzura	J. Sundberg J. Mercado	09:40-12:30	Start: 81°F air temperature 0% cloud cover 0-2 mph winds End: 86°F air temperature 0% cloud cover 2-6 mph winds	0
06/16/2021	San Ysidro	J. Sundberg V. Tang	09:50-15:35	Start: 76°F air temperature 70% cloud cover 0-3 mph winds End: 84°F air temperature 40% cloud cover 0-2 mph winds	12; 3 observed directly adjacent to the parcels
06/22/2021	Little Cedar Canyon	A. Smisek B. Parker	09:30-14:45	Start: 76°F air temperature 80% cloud cover 1-2 mph winds End: 82°F air temperature 100% cloud cover 0-1 mph winds	2
06/29/2021	Little Cedar Canyon	K. Valenti J. Woll	09:55-14:50	Start: 73°F air temperature 20% cloud cover 1-4 mph winds End: 77°F air temperature 80% cloud cover 1-3 mph winds	9
06/30/2021	Little Cedar Canyon	J. Woll A. Fromer	09:35-14:10	Start: 78°F air temperature <10% cloud cover 0 mph winds End: 84°F air temperature <5% cloud cover 2-5 mph winds	12; 3 observed directly adjacent to the parcels

°F = degrees Fahrenheit, % = percent, mph = miles per hour, NA = Not Available

Subtask 1h. (FY 2020-21): Vernal Pool Plant Seed Collection and Redistribution

On June 30, the PSB collected vernal pool seed from Otay mesa mint (*Pogogyne nudiuscula*) within the Cal Terraces Vernal Pool Site which is on City of San Diego property. The seed will be redistributed within the 30 vernal pools established through grading in 2015 within the Salt Creek parcels. Seed was collected from City of San Diego property following the terms listed in the authorized Right of Entry Permit (effective April 17, 2019 through April 1, 2022). Attachment 2: Photograph 19 shows Otay mesa mint growing within the Salt Creek parcels.

Subtask 1i. (FY 2020-21): Harbison Dun Skipper (*Euphyes vestris harbisoni*) Surveys

Focused surveys to detect the presence of HDS were conducted in suitable habitat with San Diego sedge (*Carex spissa*) at the Northern San Ysidro, Little Cedar Canyon, and Dulzura parcels. San Diego sedge is HDS's only known host plant. The adult flight period for this species is mid-May to mid-July.

Prior to 2021, focused surveys had not been conducted for HDS within the Northern San Ysidro, Little Cedar Canyon, and Dulzura parcels. A focused survey was conducted to detect presence/absence in mid-May under appropriate weather conditions at each parcel. Since HDS was not observed or was observed in low numbers in May, a second focused survey was conducted in June at each parcel. The number of HDS individuals observed and observation locations were recorded. San Diego sedge individuals were also recorded during the surveys. The survey results are shown in Attachment 1: Figures 31 through 33 and Attachment 2: Photographs 18, 20, and 21. Survey dates, personnel, weather conditions, and HDS observation results are shown in Table 26. In addition to the survey results in Table 26, Figure 32 shows incidental observations at Little Cedar Canyon of 2 individuals on June 22, 2021 and 4 individuals on June 29, 2021. Three individuals were also incidentally observed on June 30, 2021, just outside Little Cedar Canyon parcels.

Table 26
Harbison Dun Skipper Survey Dates, Personnel, Times, Conditions, and Results for the Otay Ranch Preserve–Dulzura, Little Cedar Canyon, and North San Ysidro Parcels

Date	Parcel(s)	Personnel	Time	Weather Conditions	Harbison Dun Skipper Observations
05/10/2021	Dulzura	J. Sundberg K. Valenti	10:00-15:30	Start: 65°F air temperature 90% cloud cover 0-2 mph winds End: 72°F air temperature 10% cloud cover 2-7 mph winds	0
5/11/2021	Dulzura	J. Sundberg A. Smisek	NA	NA	0
05/13/2021	Little Cedar Canyon	K. Valenti A. Smisek	10:00-14:30	Start: 71°F air temperature 0% cloud cover 1–4 mph winds End: 79°F air temperature 0% cloud cover 1-4 mph winds	0
05/25/2021	North San Ysidro	A. Smisek A. Fromer	10:00-13:00	Start: 78°F air temperature 15% cloud cover 2-5 mph winds End: 84°F air temperature 10% cloud cover 2-6 mph winds	1
06/21/2021	Dulzura	K. Valenti V. Tang	09:08-14:45	Start: 70°F air temperature 0% cloud cover 0-1 mph winds End: 92°F air temperature 0% cloud cover 1-4 mph winds	1

Table 26
Harbison Dun Skipper Survey Dates, Personnel, Times, Conditions, and Results for the Otay Ranch Preserve–Dulzura, Little Cedar Canyon, and North San Ysidro Parcels

Date	Parcel(s)	Personnel	Time	Weather Conditions	Harbison Dun Skipper Observations
06/22/2021	Little Cedar Canyon	J. Sundberg A. Fromer	09:40-14:45	Start: 76°F air temperature 80% cloud cover 1-2 mph winds End: 82°F air temperature 100% cloud cover 0-1 mph winds	6 adults, 2 larvae, and 6 adults directly adjacent to the parcels
06/25/2021	North San Ysidro	K. Valenti V. Tang	09:30-11:30	Start: 73°F air temperature 0% cloud cover 1-2 mph winds End: 87°F air temperature 0% cloud cover 1-3 mph winds	1
06/28/2021	Dulzura	J. Sundberg K. Valenti	10:10-14:50	Start: 82°F air temperature 0% cloud cover 1–3 mph winds End: 82°F air temperature 0% cloud cover 1-4 mph winds	6

°F = degrees Fahrenheit, % = percent, mph = miles per hour, NA = Not Available

Subtask 1j. (FY 2020-21): Kuroshio Shot Hole Borer (*Euwallacea* sp.; KSHB) Tree Health Surveys

Tree health surveys were conducted to document the effects of KSHB within riparian vegetation at the Northern Salt Creek, Salt Creek, and Wolf Canyon parcels on May 24 and 28, 2021. Surveys were conducted at the end of spring as any lack of vigor would be obvious in the tree crown, and signs of the KSHB would be fresh and easier to see. Seven photo monitoring points were established in riparian areas with willow stands within Salt Creek and Northern Salt Creek Parcels. Attachment 2: Photographs 22 and 23 show representative riparian photo monitoring locations. Tree health surveys consisted of a visual inspection of all willow trees for signs of KSHB and Fusarium Dieback such as KSHB entry/exit holes, frass, bark staining, sugary exudate, gumming, and branch die back. Any trees with visible signs of KSHB infestation and/or potential Fusarium Dieback were mapped with a GPS unit. Samples were collected and sent to Dr. Akif Eskalen's lab at the University of California, Davis on June 1, 2021. The PSB corresponded with Dr. Eskalen after the samples were sent and he confirmed that the samples were lost in transit and were never received. The PSB will resample in 2022 and the results will be presented in the 2022 annual report. The 2021 field observation results of the KSHB tree health surveys are included in Table 27. Attachment 1: Figure 34 shows 2018 results and 2021 survey sampling areas.

Table 27 2021 Tree Health Survey Field Observation Results			
Parcel(s)	Location	Number of Trees with Potential KSHB[1]	Survey Area (acres)
Salt Creek and Northern Salt Creek	Salt Creek drainage	6 willows	53.6
Salt Creek	Otay River	2 willows	31.62
Wolf Canyon	Unnamed drainage	1 willow	4.3
[1]Trees with potential signs of Kuroshio Shot Hole Borer (KSHB) infestation and Fusarium Dieback. Additional sampling is required to determine if these trees are infested with KSHB.			

Subtask 1k. (FY 2020-21): Gold-spotted Oak Borer (*Agrilus auroguttatus*; GSOB) Monitoring

GSOB monitoring was conducted once within the oak woodland at the Dulzura parcels. A field visit to visually inspect trees for GSOB sign was conducted by RECON licensed arborist J.R. Sundberg on June 18, 2021. No signs of GSOB were observed. The GSOB monitoring location is shown on Attachment 1: Figure 35.

Subtask 1l. (FY 2020-21): Baseline Surveys

During spring 2021, the PSB conducted surveys to gather baseline biological information at the Proctor Valley Extension parcels, Johnson Canyon Otay Tarplant Preserve, and Piper Ranch parcels. The surveys consisted of vegetation mapping, general plant and wildlife surveys, and photographic monitoring. Sensitive species were observed incidentally, and suitable habitat for sensitive wildlife species was evaluated. Dates and locations of surveys conducted are shown on Table 28.

Table 28 Baseline Surveys Dates and Locations	
Date	Location (Parcels)
4/01/2021	Proctor Valley Extension
4/05/2021	Proctor Valley Extension
4/07/2021	Proctor Valley Extension
4/08/2021	Proctor Valley Extension
4/13/2021	Proctor Valley Extension
4/15/2021	Johnson Canyon Otay Tarplant
5/06/2021	Proctor Valley Extension
5/07/2021	Piper Ranch
6/23/2021	Proctor Valley Extension

The Piper Ranch baseline survey report was submitted to the POM on July 30, 2021. The Proctor Valley Extension and Johnson Canyon Otay Tarplant Preserve baseline survey reports were submitted to the POM on September 15, 2021. The following summarized results are from the baseline surveys:

Johnson Canyon Otay Tarplant

- 5 photographic monitoring points were established.
- 5 unique types of vegetation stands were identified.
- 42 plant species were observed, 27 native and 15 non-native.
- 6 sensitive plant species were observed.
- 10 non-native plant species ranked by Cal-IPC were observed.
- 7 invertebrate species were observed.
- 1 reptile species was observed.
- 20 bird species were observed.
- 4 mammal species was observed.
    - 1 sensitive mammal species was observed.

Piper Ranch

- 6 photographic monitoring points were established.
- 4 unique types of vegetation stands were identified.
- 32 plant species were observed, 15 native and 17 non-native.
- 4 sensitive plant species were observed.
- 10 non-native plant species ranked by Cal-IPC were observed.
- 3 invertebrate species were observed.
- 3 bird species were observed.
- 2 mammal species was observed.
    - 2 sensitive mammal species were observed.

Proctor Valley Extension

- 15 photographic monitoring points were established.
- 15 unique types of vegetation stands were identified.
- 118 plant species were observed, 99 native and 19 non-native.
- 5 sensitive plant species were observed.
- 13 non-native plant species ranked by Cal-IPC were observed.
- 11 invertebrate species were observed.
- 6 reptile species were observed.
    - 2 sensitive reptile species were observed.
- 28 bird species were observed.
    - 2 sensitive bird species were observed.
- 6 mammal species was observed.
    - 2 sensitive mammal species were observed.

Subtask 1a. (FY 2021-22): Vernal Pool Plant Seed Collection and Redistribution

On September 30, the PSB collected vernal pool plant seed from San Diego button-celery (*Eryngium aristulatum* var. *parishii*) within Millenia parcels.

On October 22 and 28, the PSB dispersed seed from Texas bergia (*Bergia texana*), toothed downingia, smooth boisduvalia (*Epilobium campestre*), San Diego button-celery, California Orcutt grass (*Orcuttia californica*), and Otay mesa mint into select pools that were previously established in the mesa top in the southern area of Salt Creek parcels (Attachment 1: Figure 36).

Subtask 1l. (FY 2021-22): Golden Eagle Camera Surveys

The golden eagle camera surveys were initiated in 2021 to document golden eagle usage within the Preserve, as well as eagle responses to disturbance. The data will be used to assist USGS with their regional data collection and long-term raptor management plan preparation. The data will be reviewed for golden eagle presence, behavior, ID tags, age, prey items, and human presence.

On October 21, the PSB met with Kristine Preston (USGS), Robert Fisher (USGS), Jeff Tracey (USGS), Cheryl Goddard (City of Chula Vista), Crystal Benham (County of San Diego), Jennifer Price (County of San Diego), Anna Prowant (County of San Diego), Beth Procsal (RECON), Mark Dodero (RECON), and Anna Leavitt (RECON) to discuss the golden eagle camera surveys. On November 2, the PSB met with James Molden (USGS) via phone to discuss the upcoming surveys. On December 14, the PSB met with Carlton Rochester (USGS) to discuss the method for transferring photos from RECON to USGS. Photos were uploaded to an FTP site for USGS on December 15. Golden eagle camera survey dates, locations, and tasks are included in Table 29. In 2021, wildlife monitoring cameras were placed on the Dulzura and Proctor Valley (North) parcels. No suitable locations were found on the Little Cedar Canyon parcels during the scouting visit. Attachment 2: Photograph 24 demonstrates the camera setup. All cameras will be monitored monthly (up through June 2022) to check on placement angles, check for theft, and to replace SIM cards and batteries.

Table 29
Golden Eagle Camera Survey
Dates, Locations, and Tasks

Date	Location (Parcels)	Task
11/17/2021	McMillin, Ridge	Scouting for camera locations
11/23/2021	Little Cedar Canyon	Scouting for camera locations
12/01/2021	Dulzura	Scouting for camera locations
12/06/2021	Proctor Valley (North)	Scouting for camera locations
12/07/2021	Dulzura	Camera installation
12/15/2021	Proctor Valley (North)	Camera installation
12/17/2021	Dulzura	Camera check #1

Subtask 1n. (FY 2021-22): Wet Season Fairy Shrimp Surveys

Wet season fairy shrimp surveys did not commence at Piper Ranch in 2021, as no ponding was observed following rain events in December 2021. The parcels will continue to be checked for ponding following substantial rain events (at least 0.5 inch) during the rainy season of 2021-22.

Task 2: Land Stewardship

Subtask 2a. (FY 2020-21 and FY 2021-22): Site Visits

Regularly scheduled site visits were conducted January 1 through December 31, 2021 to document access issues, sensitive species, newly detected species, weeds, and the overall health of the sites. Site visit dates and locations are shown in Table 30.

Table 30
Site Visit Dates and Locations

Date	Location (Parcels)
1/6/2021	Millenia, Jamul Mountains*, Proctor Valley, Proctor Valley (South), Wolf Canyon, Western Wolf Canyon
1/12/2021	Ridge
1/13/2021	Proctor Valley (North), Northern Salt Creek, Salt Creek
1/14/2021	Dulzura
1/18/2021	Northern San Ysidro, San Ysidro, Little Cedar Canyon*, Jamul Mountains*
1/20/2021	Millenia
1/28/2021	Dulzura, McMillin, Johnson Canyon (East)
1/27/2021	Northern Salt Creek, Salt Creek
2/2/2021	Jamul Mountains*
2/3/2021	Millenia
2/8/2021	Wolf Canyon, Western Wolf Canyon
2/10/2021	Northern Salt Creek, Salt Creek
2/11/2021	Dulzura
2/16/2021	Salt Creek
2/17/2021	Millenia
2/18/2021	Jamul Mountains
2/19/2021	Northern San Ysidro, San Ysidro
2/24/2021	Northern Salt Creek, Salt Creek
2/25/2021	Jamul Mountains*, Dulzura
2/26/2021	Millenia
3/2/2021	Jamul Mountains
3/8/2021	Wolf Canyon, Western Wolf Canyon
3/11/2021	Dulzura
3/15/2021	Northern Salt Creek, Salt Creek
3/16/2021	Jamul Mountains
3/17/2021	Millenia
3/19/2021	Northern San Ysidro, San Ysidro
3/26/2021	Dulzura
3/29/2021	Jamul Mountains, Northern Salt Creek, Salt Creek
3/31/2021	Millenia (west of SR-125)
4/05/2021	Proctor Valley, Proctor Valley (South)
4/07/2021	Wolf Canyon, Western Wolf Canyon
4/08/2021	Dulzura
4/12/2021	Northern Salt Creek, Salt Creek

Table 30 Site Visit Dates and Locations	
Date	Location (Parcels)
4/13/2021	Millenia (east of SR-125)
4/14/2021	Millenia (west of SR-125), Jamul Mountains
4/15/2021	Johnson Canyon (East)
4/16/2021	Jamul Mountains
4/19/2021	Jamul Mountains, Northern San Ysidro, San Ysidro
4/20/2021	McMillin
4/22/2021	Dulzura
4/23/2021	Ridge
4/26/2021	Northern Salt Creek, Salt Creek
4/28/2021	Proctor Valley (North), Jamul Mountains, Millenia
4/30/2021	Little Cedar Canyon
5/06/2021	Dulzura
5/07/2021	Jamul Mountains, Wolf Canyon, Western Wolf Canyon, Piper Ranch
5/11/2021	Northern Salt Creek, Salt Creek
5/12/2021	Millenia
5/13/2021	Jamul Mountains
5/19/2021	Northern San Ysidro, San Ysidro
5/21/2021	Dulzura
5/24/2021	Northern Salt Creek, Salt Creek
5/26/2021	Millenia
5/27/2021	Jamul Mountains
6/03/2021	Dulzura, Piper Ranch
6/04/2021	Wolf Canyon, Western Wolf Canyon
6/07/2021	Northern Salt Creek, Salt Creek
6/09/2021	Millenia
6/11/2021	Piper Ranch
6/14/2021	Jamul Mountains
6/15/2021	Salt Creek, Northern Salt Creek
6/16/2021	Northern San Ysidro, San Ysidro
6/18/2021	Dulzura
6/22/2021	Jamul Mountains, Northern Salt Creek, Salt Creek
6/23/2021	Millenia
7/14/2021	Northern Salt Creek, Salt Creek
7/15/2021	Millenia, Western Wolf Canyon, Wolf Canyon
7/16/2021	Dulzura
7/19/2021	Northern San Ysidro, San Ysidro
7/21/2021	McMillin, Proctor Valley (North)
7/23/2021	Jamul Mountains
7/26/2021	Little Cedar Canyon, Ridge
7/27/2021	Dulzura, Proctor Valley, Proctor Valley Extension, Proctor Valley (South)
7/28/2021	Northern Salt Creek, Salt Creek
7/29/2021	Salt Creek, Johnson Canyon (East), Millenia
8/02/2021	Jamul Mountains
8/10/2021	Jamul Mountains

Table 30 Site Visit Dates and Locations	
Date	Location (Parcels)
8/11/2021	Salt Creek, Northern Salt Creek
8/12/2021	Wolf Canyon, Western Wolf Canyon
8/13/2021	Dulzura
8/16/2021	Northern San Ysidro, San Ysidro
8/17/2021	Jamul Mountains
8/24/2021	Dulzura
8/25/2021	Salt Creek, Northern Salt Creek
8/26/2021	Millenia
8/27/2021	Northern San Ysidro
8/27/2021	Dulzura
8/31/2021	Jamul Mountains
9/8/2021	Millenia, Salt Creek, Northern Salt Creek
9/10/2021	Dulzura
9/15/2021	Jamul Mountain, Wolf Canyon, Western Wolf Canyon
9/21/2021	Northern San Ysidro, San Ysidro
9/22/2021	Salt Creek, Northern Salt Creek
9/23/2021	Millenia
9/24/2021	Dulzura
9/30/2021	Jamul Mountains
10/6/2021	Salt Creek, Northern Salt Creek
10/7/2021	Millenia, Dulzura
10/11/2021	Proctor Valley North
10/12/2021	Jamul Mountains, Ridge
10/13/2021	Wolf Canyon, Western Wolf Canyon, Northern San Ysidro, San Ysidro
10/20/2021	Salt Creek, Northern Salt Creek
10/21/2021	Millenia, Little Cedar Canyon, McMillin
10/22/2021	Dulzura
10/28/2021	Jamul Mountains
10/29/2021	Proctor Valley (South), Proctor Valley Extension, Proctor Valley
11/02/2021	Johnson Canyon Otay Tarplant Preserve, Piper Ranch, Johnson Canyon (East)
11/03/2021	Salt Creek, Northern Salt Creek
11/04/2021	Millenia
11/05/2021	Dulzura
11/10/2021	Jamul Mountains, Wolf Canyon, Western Wolf Canyon, Northern San Ysdiro, San Ysidro
11/17/2021	Salt Creek, Northern Salt Creek
11/18/2021	Millenia
11/19/2021	Dulzura
11/24/2021	Jamul Mountains
12/01/2021	Salt Creek, Northern Salt Creek
12/03/2021	Millenia
12/06/2021	Dulzura, Northern San Ysidro
12/08/2021	Dulzura, Jamul Mountains, San Ysidro
12/16/2021	Millenia, Salt Creek, Northern Salt Creek
12/17/2021	Wolf Canyon, Western Wolf Canyon, Dulzura, Piper Ranch

Table 30 Site Visit Dates and Locations	
Date	Location (Parcels)
12/21/2021	Jamul Mountains
12/26/2021	Piper Ranch
12/29/2021	Northern Salt Creek
*Occurred in conjunction with access control	

Noteworthy events documented from site visits are described below for each parcel set.

Dulzura Parcels

Attachment 1: Figure 37 shows noteworthy data collected in 2021. Attachment 1: Figure 11 includes incidental rare plant observations.

- On January 14, it was noted that a new all-terrain vehicle (ATV) route had been established around an existing fence that occurs outside of the western border of the parcel. The location was mapped. The new ATV route is a threat to QCB and the associated habitat.
- On February 25, truck and ATV unauthorized roads were mapped at the northwestern border of the parcel. The unauthorized roads are a threat to QCB and the associated habitat.
- On March 11, the fence was observed to be cut at the east end of the parcel by the gate at Thousand Trails Pio Pico RV Resort and Campground.
- On June 18, locations for future proposed sign installation were mapped. Locations where previously installed signs were missing were mapped.
- On July 16 and 27, multiple access issues and proposed fence maintenance were documented and recorded with a GPS device.
- On August 13:
    - The PSB found one of the tube steel gates unsecured. The gate was missing a U.S. Customs and Border Protection (USCBP) lock to allow gate to be secured.
    - The PSB mapped vehicle tire tracks on USFWS property that led into the preserve west of the parcel boundary.
- On August 24, the PSB mapped the location of two options for proposed fence installation and a cattle gate on the California Department of Fish and Wildlife (CDFW)/New Thousand Trail property boundary northeast of the Dulzura parcels. This task was discussed with Tracie Nelson (CDFW) at a previous meeting.

- On September 10:
    - The PSB mapped new unauthorized ATV trails on USFWS property that end before the western parcel boundary and noted additional use of a previously mapped ATV trail within the same area.
- On November 5:
    - The PSB mapped where fencing needed to be repaired off-site on USFWS property. Vehicle tracks were observed in sensitive habitat in USFWS property leading into the Dulzura parcels.
- On December 8:
    - The PSB mapped proposed locations for a sign to be placed and where a fence was in need of repair to discourage unauthorized vehicle use.
- One golden eagle observation was made. Golden eagle is a Priority Group 1 species.
- One least Bell's vireo (*Vireo bellii pusillus*) detection was made. Least Bell's vireo is a Priority Group 1 species.
- One northern harrier (*Circus hudsonius*) detection was made. Northern harrier is a Priority Group 1 species.
- One southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) detection was made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- Three southern mule deer (*Odocoileus hemionus fuliginata*) detections were made. Southern mule deer is a Priority Group 2 species.
- Two red diamond rattlesnakes (*Crotalus ruber*) observations were made. Red diamond rattlesnake is a Priority Group 3 species.
- Two San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) observations were made. San Diego black-tailed jackrabbit is a Priority Group 3 species.
- Two two-striped gartersnake (*Thamnophis hammondii*) observations were made. Two-striped gartersnake is a Priority Group 3 species.
- One pampas grass (*Cortaderia selloana*) observation was made. Pampas grass is a California Invasive Plant Council (Cal-IPC) rated High species. Non-native weed species ranked as 'high' have severe ecological impacts, moderate to high rates of dispersal and establishment, and are widely distributed (Cal-IPC 2021).
- Thirty variegated dudleya (Priority Group 1) individuals were mapped (see Figure 11).
- One hundred and fifteen Tecate cypress (Priority Group 2) trees were mapped (see Figure 11).

- Seventy delicate clarkia (*Clarkia delicata*; Priority Group 3) individuals were mapped (see Figure 11).

- Two summer holly (*Comarostaphylis diversifolia* ssp. *diversifolia*; Priority Group 3) individuals were mapped (see Figure 11).

- Ten western dichondra (*Dichondra occidentalis*; Priority Group 4) individuals were mapped (see Figure 11).

Jamul Mountains Parcels

Attachment 1: Figure 38 shows noteworthy data collected in 2021.

- On January 6, all four strands of the fence were observed to be cut at the illegal Horseshoe Mountain trailhead on City of San Diego property. The Preserve and City signs at the trailhead were observed to be in place and undamaged. The cholla was noted to be in the same condition as previously reported, uprooted and pushed to either side of the illegal trail. It was noted that the preserve sign on the southwest trail crossing into the preserve requires replacement. It was noted that hikers appear to have gone around the end of the fence north of Otay Lakes Road. Three hikers and one mountain biker was observed on the illegal trail during the site visit. Fence repair occurred concurrent with the site visit.

- On January 18, the usual access issues and high level of trespass was noted. Hikers, mountain bikers, and dog walkers were all observed. Sign replacement and fence repair occurred concurrent with the site visit.

- On February 2, one strand of the fence was open at the illegal Horseshoe Mountain trailhead on City of San Diego property. The strand was repaired with the existing wire. Dead branches were used to cover the trailhead at the fence line and where the trail merges with a larger trail. At least eight people were noted on the illegal trail during the site visit.

- On February 18, one strand of the fence was observed to require repair at the illegal Horseshoe Mountain trailhead on City of San Diego property. The Preserve and City signs at the trailhead were observed to be in place and undamaged. The cholla was noted to be in the same condition as previously reported, uprooted and pushed to either side of the illegal trail. The Preserve sign on the southwest trail crossing into the Preserve was intact. No trespass was observed on the illegal trail where cholla was planted that meets the southwest corner of the parcel. Trespass (hikers and mountain bikers) was observed along the northwestern trail. The Preserve sign was noted to be missing where the trail crosses into the Preserve at the northwest border and fencing and t-posts that previously blocked the illegal trail on City of San Diego property were pushed off to the side. One strand of fencing north of Otay Lakes Road was pushed back into place during the site visit.

- On February 25, recent fence repair was cut, and t-post replacement was removed across the northwestern trail on City of San Diego property. Sign installation and fence repair occurred concurrent with the site visit. A hiker and mountain biker were noted to trespass

during fence repair activities. The biologist discussed the access issue with one City of San Diego Ranger that was on-site.

- On March 2, a 20-foot-long section of fence was open, and t-posts were removed just south of the recent fence repair and sign installation location, at the northwestern illegal trailhead that meets the illegal Horseshoe Mountain trail on City of San Diego Property. Little use was observed at the southwest trailhead. A three-foot section of the fence was open and the cut wire was loosely closed without proper tools. Fencing north of Otay Lakes Road was intact. All signs were intact. Four hikers were observed on the illegal Horseshoe Mountain trail within the Parcel.

- On March 16, additional use of the recently cut fence section at the northwestern illegal trailhead was observed. Additionally, a five-foot-long section of fence was observed to be cut north of Otay Lakes Road. One hiker was observed on the illegal Horseshoe Mountain trail within the Parcel.

- On April 16, the camera data since April 14 in the morning showed one instance of vandalism to the fence which occurred in the late evening by a female hiker with two unleashed dogs. More than 38 trespassers were observed. Forty-eight additional users may have also trespassed (couldn't be determined through camera footage). Twenty-seven users did not show interest in trespassing.

- On April 19, the camera data collected between April 16 and April 18 showed two instances of fence vandalism by a solo cyclist who spread the fence and a pair of cyclist that removed a section of fence. Approximately 150 trespassers were observed in the camera data. The majority of the trespassers were cyclists and up to one quarter of the trespassers were hikers. There were more hikers on the weekend than on weekdays.

- On April 28, a cardboard sign was observed near the trail camera. It had been installed by the public and warned hikers of the trail camera. The sign was removed by the PSB.

- On May 7, a new cardboard sign was observed near the trail camera warning hikers of the trail camera. The sign was removed by the PSB.

- On May 13 and 27 and June 14 and 22, the PSB documented off-site location of City of San Diego property where the fence was in need of repair.

- On May 27, the PSB noted that the trail camera had been moved to face up away from the trail and brightly-colored pipe cleaners with a sign warning hikers of the camera had been placed again. The PSB removed the sign and fixed the trail camera.

- On June 14, the PSB mapped locations where the off-site fence needed to be repaired due to vandalism.

- On June 22, the PSB observed that the recently replaced fence had not been damaged. Vandals did remove a 10-linear-foot section of fence south of the primary access issue. The PSB commented that this area now looks like it is actively being used. Additionally, the access

area in the southern portion of the parcel, where cholla was previously planted, looks like it is being used. The fencing was still intact, but it had been spread out for people to go through. All other repaired fencing was still intact and there hadn't been any additional damage. The camera still had a battery charge since the PSB replaced the batteries the week priori during the crew work, and it seemed like the photo frequency was correct. All signs were still intact. There were four hikers, five unleashed dogs, and one cyclist observed.

- On July 23, on City of San Diego property near the northwest corner of the parcels, the PSB observed:
    - Many footprints and bike tracks indicating heavy use at the rusted metal gate near where the trail camera was installed.
    - Handwritten cardboard signs were observed tied to the fence, the recently installed City of San Diego sign, and by the trail camera. The signs informed the public that there was a hidden trail camera. All the signs were removed by the PSB.
    - The trail camera had possibly been moved to the side causing the field of view to not focus on where the public was illegally crossing through fencing.
    - Approximately 75 linear feet of wire was removed from the fence near where the trail camera was installed.
- On July 23, additional minor fence damage was observed on City of San Diego property between the northwest and southwest corners of the Jamul Mountains parcels.
- On August 2:
    - The PSB relocated the trail camera to the trail intersection in the southwest corner within the parcels.
    - Off-site fence repair locations were mapped.
- On August 10, the PSB noted that a rock pile had been placed near the new trail camera location. The rock pile may have been placed with the intention to indicate where the camera was located for the public.
- On August 31, additional minor fence damage was observed on City of San Diego property between the northwest and southwest corners of the Jamul Mountains parcels.
- On September 15:
    - The PSB noted that the trail camera was stolen.
    - A rock circle was observed 150 feet off-site south of the parcels, along the illegal Horseshoe Mountain Trail.

- On September 30 and October 12, no new access issues were observed. Trespassing was observed at a similar frequency.
- On November 24:
    - The PSB mapped locations where the fence was in need of repair on the off-site City of San Diego property that is part of the illegal Horseshoe Mountain Trail.
- On December 8:
    - The PSB recorded notes and photographed an illegal mountain bike trail south of the Jamul Mountains parcels that leads onto the site.
- One golden eagle observation was made. Golden eagle is a Priority Group 1 species.
- Two northern harrier detections were made. Northern harrier is a Priority Group 1 species.
- Three Blainville's [=coast] horned lizard (*Phrynosoma blainvillii*) observations were made. Blainville's horned lizard is a Priority Group 2 species.
- Two southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- Two white-tailed kite (*Elanus leucurus*) observations were made. White-tailed kite is a Priority Group 4 species.

Johnson Canyon (East) Parcels

Attachment 1: Figure 39 shows noteworthy data collected in 2021.

- On January 28, although new fence was placed blocking access from Harvest Road to San Diego Gas & Electric (SDG&E) property, off-roaders were observed still accessing the area.
- On November 2, recent ATV tracks were mapped in sensitive habitat. The trail was observed to be used once and shrubs were crushed.
- Two northern harrier detections were made. Northern harrier is a Priority Group 1 species.

Johnson Canyon Otay Tarplant Preserve

Attachment 1: Figure 39 shows noteworthy data collected in 2021.

- On November 2, an unauthorized ATV trail was mapped within the parcels. The trail was observed to be used once and shrubs were crushed.
- One San Diego desert woodrat (*Neotoma lepida intermedia*) detection was made. San Diego desert woodrat is a Priority Group 4 species.

- Eleven San Diego barrel cactus individuals were mapped. San Diego barrel cactus is a Priority Group 2 species.

- One decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) individual was mapped. Decumbent goldenbush is a Priority Group 3 species.

- One graceful tarplant (*Holocarpha virgata* ssp. *elongata*) individual was mapped. Graceful tarplant is a Priority Group 4 species.

- Ten Palmer's grapplinghook (*Harpagonella palmeri*) individuals were observed. Palmer's grapplinghook is a Priority Group 4 species.

- One San Diego viguiera (*Bahiopsis laciniata*) individual was mapped. San Diego viguiera is a Priority Group 4 species.

- One ashy spike-moss (*Selaginella cinerascens*) location was observed. Ashy spike-moss is a Priority Group 3 species.

- Twenty-five dot-seed plantain individuals were observed. Dot-seed plantain is a host plant for QCB.

- One-hundred adobe popcornflower (*Plagiobothrys acanthocarpus*) individuals were observed. Adobe popcornflower is a vernal pool indicator species.

Little Cedar Canyon Parcels

Attachment 1: Figure 40 shows noteworthy data collected in 2021.

- On January 18, it was noted that the vehicle road leading to the parcels was rocky and rutted but drivable, although heavy rain events may worsen road conditions. A cut in the barbed wire fence along the northern portion of the road that leads to the parcels was mapped. Limited mountain biking activity and recent migrant trash were detected within the parcels. No new trails were observed off the main road. Small patches of San Diego sedge, host plant for Harbison dun's skipper, was mapped in the canyon in the southwest corner of the parcels. Additional sensitive and invasive plants were incidentally mapped. Sign installation/replacement occurred concurrent with the site visit.

- On April 30, recent motorcycle tracks were observed and mapped within sensitive habitat. Native and non-native grasses had been uprooted. The PSB fixed a preserve sign that had fallen to the ground.

- On June 24, the PSB observed truck tracks within sparse coastal sage scrub and chaparral habitat. The truck tracks were recent and in a previously undisturbed area.

- On July 26, the PSB noted:
    - A new ATV trail was observed off the main dirt road in the northern area of parcels. The ATV trail runs parallel with previously recorded vehicle tracks and merges with the previously mapped vehicle tracks. The tracks are located east of the main north/south dirt road along the northern edge of the sparse coastal sage scrub that overlooks Little Cedar Canyon drainage.
- On October 21:
    - The PSB noted that recent motor bike tracks were present in the unauthorized trail in the northwest corner of the parcels.
    - The PSB mapped proposed sign locations to deter unauthorized vehicle use.
- Two Blainville's horned lizard observations were made. Blainville's horned lizard is a Priority Group 2 species.
- One Cooper's hawk (*Accipiter cooperii*) detection was made. Cooper's hawk is a Priority Group 2 species.
- One red diamond rattlesnake observation was made. Red diamond rattlesnake is a Priority Group 3 species.
- One San Diegan tiger whiptail (*Aspidoscelis tigris stejnegeri*) observation was made. San Diegan tiger whiptail is a Priority Group 3 species.
- Nineteen San Diego marsh-elder (*Iva hayesiana*) individuals were mapped. San Diego marsh-elder is a Priority Group 3 species.
- One pampas grass observation was made. Pampas grass is a Cal-IPC rated High species. Non-native weed species ranked as 'high' have severe ecological impacts, moderate to high rates of dispersal and establishment, and are widely distributed (Cal-IPC 2021).

McMillin Parcels

Attachment 1: Figure 40 shows noteworthy data collected in 2021.

- On January 28, it was noted that the road in the northern section of the parcels was accessible by vehicle. No new access issues were observed. An existing ATV trail was mapped where new erosional ruts along the trail were observed. Fire containment lines were confirmed to occur outside of the northwestern parcel boundary.
- On July 21, the PSB was noted:
    - The main north/south dirt road was drivable due to the road having recently been graded to extinguish an off-site fire.

  - Previously installed fences were intact.
  - Vehicle tracks from a truck or sports utility vehicle (SUV) were observed on a previously recorded ATV trail. The vehicle tracks were observed along a portion of the trail where they ended, and the trail continued with ATV tracks.

- On October 21, ATV tracks were mapped through sensitive habitat.
- One Coastal California gnatcatcher detection was made. Coastal California gnatcatcher is a Priority Group 1 species.
- Three golden eagle observations were made. Golden eagle is a Priority Group 1 species.
- Two least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
- One Cooper's rein orchid (*Piperia cooperi*) individual was observed. Cooper's rein orchid is a Priority Group 4 species.
- One-thousand golden-ray pentachaeta (*Pentachaeta aurea* ssp. *aurea*) individuals were observed. Golden-ray pentachaeta is a Priority Group 4 species.
- Ten western dichondra individuals were mapped. Western dichondra is a Priority Group 4 species.
- Fifty spiny redberry (*Rhamnus crocea*) individuals were mapped. Spiny redberry is the host plant for Hermes copper butterfly (*Lycaena hermes*).

Millenia Parcels

Attachment 1: Figure 39 shows noteworthy data collected in 2021. Attachment 1: Figure 6 includes incidental rare plant observations.

- On February 26, two unauthorized access trails were mapped. Coastal sage scrub shrubs had been crushed by past unauthorized truck use. The trail was noted to be used once likely several months to a year ago. Another motor bike trail was observed to be recently used. On April 28, the PSB visited the location where stinknet had been mapped in a previous year. No stinknet plants were observed.
- On October 21, the PSB noted that weeds had germinated on-site.
- On November 18, the PSB mapped locations where fencing needed to be repaired.
- Two least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
- Four northern harrier detections were made. Northern harrier is a Priority Group 1 species.
- One southern California rufous-crowned sparrow detection was made. Southern California rufous-crowned sparrow is a Priority Group 2 species.

- Two Cooper's hawk detections were made. Cooper's hawk is a Priority Group 2 species.
- One grasshopper sparrow (*Ammodramus savannarum*) detection was made. Grasshopper sparrow is a Priority Group 3 species.
- Three California horned lark (*Eremophila alpestris actia*) observations were made. California horned lark is a Priority Group 4 species.
- Two San Diego barrel cactus observations were made (see Figure 6). San Diego barrel cactus is a Priority Group 2 species.
- Six western sea-purslane (*Sesuvium verrucosum*) observations were made. Western sea-purslane is a noteworthy common plant.

Northern Salt Creek Parcels

Attachment 1: Figure 41 shows noteworthy data collected in 2021. Attachment 1: Figure 4 includes incidental rare plant observations.

- On January 27, it was noted that mountain bikers were using the trail east of Salt Creek.
- On June 15, the PSB checked for potential motorcycle use at the request of the POM. The PSB determined that bicycles were accessing the site from the northern unauthorized trail. It was determined that motorcycles could also be accessing the preserve from the mapped location.
- On July 28, the PSB noted the following:
    - Vehicle tracks from either a truck or SUV were observed leading from Olympic Parkway to the main dirt road in the parcels.
    - Vehicle tire tracks within coastal sage scrub habitat were mapped at multiple locations with a GPS device.
    - 47 stinkwort individuals were removed by hand.
- On September 8, the PSB mapped locations where ATV tire tracks were observed.
- On December 29, the PSB noted the fence off Hunte Parkway was cut and laying on the ground and the gate was unlocked and left open.
- One Belding's orange-throated whiptail (*Aspidoscelis hyperythra beldingi*) observation was made. Belding's orange-throated whiptail is a Priority Group 2 species.
- Fifty fennel (*Foeniculum vulgare*) individuals were mapped. Fennel is a Cal-IPC rated Moderate species. Non-native weed species ranked as 'moderate' have substantial, but generally not severe, ecological impacts; moderate to high rates of dispersal and establishment; and limited- to wide-spread distribution. In general, successful establishment

of weed species ranked as 'moderate' is dependent upon ecological disturbance (Cal-IPC 2021). These individuals were treated in 2021 and are discussed under Section 3.0, Subtask 6a.

- Seven south coast saltscale (*Atriplex pacifica*; Priority Group 3) individuals were mapped (see Figure 4).

- Forty graceful tarplant (Priority Group 4) individuals were mapped (see Figure 4).

Northern San Ysidro Parcel

Attachment 1: Figure 42 shows noteworthy data collected in 2021. Attachment 1: Figure 5 includes incidental rare plant observations.

- On March 19, road erosion was mapped east of the parcel.

- On May 4, an unauthorized motor bike trail that had recently been established was observed and mapped.

- On June 16, the lower portion of the central canyon was qualitatively monitored for stinkwort. None was observed.

- On June 25, two people on mountain bikes were observed off-site on the road just north of the parcels. It is highly likely that they had been on the road within the parcel boundaries at Northern San Ysidro and San Ysidro.

- On July 19, the PSB noted that the east/west dirt road that leads to the Northern San Ysidro parcels had been recently graded making accessing the parcels much easier.

- On August 27, the PSB mapped a proposed fence location to block motorcycles from entering into the preserve from the main road east of the parcel.

- On September 21, The PSB observed an increase in foot traffic along the main drainage, as evidence by footprints and trash.

- On October 13, the PSB mapped the length of the motorbike trail that runs through the parcel from the main road east of the parcel. The trail runs through high-quality QCB occupied habitat.

- On December 6, the PSB mapped potential fence installation locations to protect QCB occupied habitat.

- Two Coastal California gnatcatcher detections were made. Coastal California gnatcatcher is a Priority Group 1 species.

- Seven least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.

- One Tecate cypress (Priority Group 2) tree was mapped (see Figure 5).

- Seven purple stemodia (*Stemodia durantifolia*; Priority Group 3) individuals were mapped (see Figure 5).

Piper Ranch Parcels

Attachment 1: Figure 39 shows noteworthy data collected in 2021.

- On November 2, an unauthorized ATV trail was mapped within the parcels. The trail was observed to be used once and shrubs were crushed.
- On December 17 and 26, a site visit was conducted to search for ponding following significant rain events.
- One southern mule deer detection was made. Southern mule deer is a Priority Group 2 species.
- One San Diego black-tailed jackrabbit observation was made. San Diego black-tailed jackrabbit is a Priority Group 3 species.
- Twenty-four San Diego barrel cactus observations were made. San Diego barrel cactus is a Priority Group 2 species.
- Six decumbent goldenbush observations were made. Decumbent goldenbush is a Priority Group 3 species.
- Forty San Diego bur-sage (*Ambrosia chenopodiifolia*; Priority Group 3) individuals were mapped.

Proctor Valley Extension Parcels

Attachment 1: Figure 43 shows noteworthy data collected in 2021.

- On April 7 and 13, an active cattle trail was observed and mapped within sensitive habitat.
- On April 13, a truck trail that showed no signs of recent use was observed and mapped.
- On July 27, recent vehicle tracks from a truck or SUV were recorded with a GPS device.
- Two Blainville's horned lizard observations were made. Blainville's horned lizard is a Priority Group 2 species.
- Thirty-six southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- Two southern mule deer detections were made. Southern mule deer is a Priority Group 2 species.

- Two red diamond rattlesnake observations were made. Red diamond rattlesnake is a Priority Group 3 species.
- Two San Diego black-tailed jackrabbit observations were made. San Diego black-tailed jackrabbit is a Priority Group 3 species.
- Two yellow-breasted chat (*Icteria virens*) detections were made. Yellow-breasted chat is a Priority Group 3 species.
- Two decument goldenbush individuals were mapped. Decumbent goldenbush is a Priority Group 3 species.
- One ashy spike-moss location was mapped. Ashy-spike moss is a Priority Group 4 species.
- Twenty-nine San Diego Needle grass (*Stipa diegoensis*) individuals were mapped. San Diego needle grass is a Priority Group 4 species.
- Two southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*) individuals were mapped. Southwestern spin rush is a Priority Group 4 species.
- Approximately 1,200 dot-seed plantain individuals were mapped. Dot-seed plantain is a host plant for QCB.
- Ten purple owl's-clover (*Castilleja exserta* ssp. *exerta*) individuals were mapped. Purple owl's clover is a host plant for QCB.
- Six-hundred twenty-five spiny redberry individuals were mapped. Spiny redberry is the host plant for Hermes copper butterfly.
- Forty common goldfields (*Lasthenia gracilis*) individuals were mapped. Common goldfields is a nectar plant for QCB.
- Three-hundred forty farinose ground pink individuals were mapped. Farinose ground pink is a nectar plant for QCB.
- Approximately 100 Ripgut grass (*Bromus diandrus*) individuals were mapped. Ripgut grass is a Cal-IPC rated Moderate.

Proctor Valley Parcels

Attachment 1: Figure 43 shows noteworthy data collected in 2021.

- On January 6, it was noted that the existing ATV trail starting near the powerline tower does not appear to have been used recently. One mountain biker was observed during the site visit on the existing narrow trail following the drainage in the northeastern portion of the parcel.
- Two least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.

- One two-striped gartersnake observation was made. Two-striped gartersnake is a Priority Group 3 species.

Proctor Valley (North) Parcel

Attachment 1: Figure 44 shows noteworthy data collected in 2021.

- On January 13, it was noted that the trail within the parcel is overgrown and no unauthorized access was apparent.
- On April 28, evidence of unauthorized trail building was observed. Vegetation had recently been cleared, rocks had recently been moved, and soil was disturbed. The rocks were lined up along the edge of the trail to increase the visibility of the route. The unauthorized trail was estimated to be about 3 feet wide. It was also noted that shrubs had been trimmed along the old foot trail that the PSB uses to access the site.
- On May 20, the PSB mapped the location of the unauthorized trail discovered on April 28 between the eastern Proctor Valley (North) preserve boundary and the off-site ridge trail.
- On June 3, a recently cut unauthorized trail was observed and mapped in the western side of Proctor Valley (North).
- On July 21, the PSB:
    - Mapped additional areas where a trail had recently been created with hand tools.
    - Noted the recently installed signs were intact.
    - Noted the cut shrubs that had recently been placed within the unauthorized trail were still in place. There were no signs that the branches had been trampled or that the trail is being actively used.
    - Decommissioned the far northwest trail in portions that had previously been mapped.
- On October 11, the PSB found and removed two geocaches along the illegally cut trail within the western portion of the parcel. A variety of websites and apps were examined to determine if additional geocaches are mapped in the Preserve.

Proctor Valley (South) Parcel

Attachment 1: Figure 43 shows noteworthy data collected in 2021.

- On January 6, the existing trail on the top of the ridge was noted to be infrequently used. Truck and mountain bike tracks were observed on the road.
- On April 5, the PSB checked the old cattle pond for western spadefoot. The pond was dry and no spadefoot were observed.

- Ten southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- Ten California wood-sorrel (*Oxalis californica*) individuals were mapped. California wood-sorrel is a nectar plant for QCB.
- Approximately 170 cryptantha (*Cryptantha* sp.) individuals were mapped. Cryptantha is a nectar plant for QCB.

Ridge Parcels

Attachment 1: Figure 45 shows noteworthy data collected in 2021.

- On January 12, it was noted that the main off-site gate was not secured. The road was in the same condition as previously reported, drivable, but incised with deep ruts. It was noted that the existing unauthorized road that ends within the parcel was infrequently used. Truck tracks were observed on the road.
- On April 23, it was noted that the old road that runs from approximately north to south in the center of the parcels had been driven on recently by a vehicle. It did not appear to be used frequently.
- On July 26, the PSB mapped one location where a vehicle had driven and turned around within the parcels.
- Six QCB observations were made. QCB is a Priority Group 1 species.
- One golden eagle observation was made. Golden eagle is a Priority Group 1 species.
- Six northern harrier detections were made. Northern harrier is a Priority Group 1 species.
- Two Blainville's horned lizard observations were made. Blainville's horned lizard is a Priority Group 2 species.
- Twenty-five southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- One American bullfrog (*Lithobates catesbeiana*) detection was made. American bullfrog is an invasive wildlife species.
- Approximately 2,200 dot-seed plantain individuals were mapped. Dot-seed plantain is a host plant for QCB.
- Ten stinkwort individuals were mapped. Stinkwort is a Cal-IPC rated Moderate/Alert species.

Salt Creek Parcels

Attachment 1: Figure 41 shows noteworthy data collected in 2021. Attachment 1: Figure 4 includes incidental rare plant observations.

- On January 13, incidental observations of sensitive wildlife were mapped.
- On January 27, hikers and bikers were observed to be using the utility access roads.
- On February 10, it was noted that fencing was cut north of the red gate, just west of Wueste Road.
- On February 16, one unauthorized ATV trail was mapped.
- On April 22, it was noted that the off-site gate near the southeast corner of the parcels was unhinged at two hinges.
- On May 11, the PSB documented areas where fencing was in need of repair.
- On May 17, recent two-track ATV tracks were observed and mapped within sensitive habitat.
- On June 15, the PSB checked for possible illegal motorbike access issues. Two possible locations where motorbikes could access the parcels were recorded.
- On July 14, the PSB noted:
    - An area where an ATV had driven through coastal sage scrub habitat.
    - The southeast off-site gate needed to be repaired. It was not attached to it hinges.
- On July 28, the PSB:
    - Mapped multiple locations with vehicle tracks in coastal sage scrub habitat.
    - Removed 18 individual stinkwort plants by hand.
- On July 29, the PSB:
    - Mapped potential gate locations to restrict access into the parcels.
    - Placed the southeast off-site gate back on the hinges and secured the bolts. The gate opened freely after the repair.
- On August 11:
    - The PSB observed ATV tire tracks heading north of the red gate along an old dirt road that has been decommissioned. The location was mapped.

  - The PSB mapped proposed fence repair locations.

- On September 8, the PSB mapped:
  - A location where ATV tire tracks were observed.
  - Locations where fencing was in need of repair.
- On October 29, the PSB mapped a proposed fence installation area to protect a future coast cholla planting area.
- On November 8, the PSB mapped the potential location for a Gate to Remain Locked sign to be installed.
- Six least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
- Fourteen northern harrier detections were made. Northern harrier is a Priority Group 1 species.
- Forty-one southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- One Cooper's hawk detection was made. Cooper's hawk is a Priority Group 2 species.
- One red diamond rattlesnake observation was made. Red diamond rattlesnake is a Priority Group 3 species.
- Eighteen San Diego black-tailed jackrabbit observations were made. San Diego black-tailed jackrabbit is a Priority Group 3 species.
- One San Diego desert woodrat detection was made. San Diego desert woodrat is a Priority Group 4 species.
- Two white-tailed kite observations were made. White-tailed kite is a Priority Group 4 species.
- Nine-hundred thirty-six coast cholla individuals were mapped. Coast cholla is a nesting plant for coastal cactus wren.
- Thirty smooth boisduvalia (*Epilobium campestre*) individuals were mapped. Smooth boisduvalia is a USACE National Wetland Plant Obligate species (USACE 2020).
- Thirty Texas bergia (*Bergia texana*) individuals were mapped. Texas bergia is a vernal pool indicator species (USACE 1997).
- Twenty toothed downingia individuals were mapped. Toothed downingia is a vernal pool indicator species (USACE 1997).

- Five spiny redberry (*Rhamnsus crocea*) individuals were mapped. Spiny redberry is the host plant for Hermes copper butterfly.
- Approximately 9,600 dot-seed plantain individuals were mapped. Dot-seed plantain is a host plant for QCB.
- Approximately 150 farinose ground pink (*Linanthus dianthiflorus*) individuals were mapped. Farinose ground pink is a nectar plant for QCB.
- Approximately 13,050 common goldfields individuals were mapped. Common goldfields is a nectar plant for QCB.
- Approximately 70 San Diego button-celery (Priority Group 1) individuals were mapped (see Figure 4).
- Forty California Orcutt grass (Priority Group 1) individuals were mapped (see Figure 4).
- Approximately 572 Otay mesa mint (Priority Group 1) individuals were mapped (see Figure 4).
- Fourteen south coast saltscale (Priority Group 3) individuals were mapped (see Figure 4).
- Approximately 60 Palmer's grapplinghook (Priority Group 4) individuals were mapped (see Figure 4).

San Ysidro Parcels

Attachment 1: Figure 42 shows noteworthy data collected in 2021. Attachment 1: Figure 5 includes incidental rare plant observations.

- On March 19, road erosion was mapped within and outside the northeast corner of the parcel.
- On May 4, a migrant trail approximately 3 feet wide was observed and mapped.
- On June 4, four motorcycles were observed driving on the dirt road that runs from north to south approximately in the center of the parcels.
- On June 16, the lower portion of the central canyon was qualitatively monitored for stinkwort. None was observed.
- On June 25, two mountain bikers were observed using the same dirt road mentioned previously.
- On July 19, the PSB noted that the east/west dirt road that leads to the San Ysidro parcels had been recently graded making accessing the parcels much easier.
- On September 21, the PSB observed an increase in foot traffic along the main drainage, as evidence by footprints and trash.

- On October 13:
    - The PSB mapped migrant trails visible on the slopes and a large amount of migrant trash in the drainage.
    - It was noted that the main yellow gate off Otay Lakes Road was open when arrived and open again when returned.
- Two QCB observations were made. QCB is a Priority Group 1 species.
- Three least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
- Two northern harrier detections were made. Northern harrier is a Priority Group 1 species.
- One Blainville's horned lizard observations were made. Blainville's horned lizard is a Priority Group 2 species.
- Four southern California rufous-crowned sparrow detections were made. Southern California rufous-crowned sparrow is a Priority Group 2 species.
- One red diamond rattlesnake observation was made. Red diamond rattlesnake is a Priority Group 3 species.
- Six summer holly (Priority Group 3) individuals were mapped (see Figure 5).
- Approximately 96 purple stemodia (Priority Group 3) individuals were mapped (see Figure 5).

Wolf Canyon and Western Wolf Canyon Parcels

Attachment 1: Figure 46 shows noteworthy data collected in 2021. Attachment 1: Figure 9 includes incidental rare plant observations.

- On January 6, incidental sensitive wildlife observations were recorded.
- On August 12, the PSB documented the City of Chula Vista combination lock was missing for the gate leading to Wolf Canyon and Western Wolf Canyon.
- On September 15, the PSB documented that a new City of Chula Vista combination lock was added to the gate leading to Wolf Canyon and Western Wolf Canyon.
- At Western Wolf Canyon:
    - Five coastal cactus wren detections were made. Coastal cactus wren is a Priority Group 1 species.
    - Four least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
    - One Cooper's hawk detection was made. Cooper's hawk is a Priority Group 2 species.

  - One yellow-breasted chat detections were made. Yellow-breasted chat is a Priority Group 3 species.
  - Two south coast saltscale (Priority Group 3) individuals were mapped (see Figure 9).

- At Wolf Canyon:
  - One northern harrier detection was made. Northern harrier is a Priority Group 1 species.
  - Two least Bell's vireo detections were made. Least Bell's vireo is a Priority Group 1 species.
  - Four brown-headed cowbird (*Molothrus ater*) detections were made. Brown-headed cowbird parasitizes nests such as least Bell's vireo.
  - One yellow-breasted chat detections were made. Yellow-breasted chat is a Priority Group 3 species.
  - One San Diego black-tailed jackrabbit observation was made. San Diego black-tailed jackrabbit is a Priority Group 3 species.
  - One variegated dudleya (Priority Group 1) individual was mapped (see Figure 9).

Task 3: Meetings and Coordination

The PSB attended various land manager meetings and workshops through December 31, 2021. Meeting topics and dates are described in detail below.

Subtask 3a. (FY 2020-21): SDMMP Meetings

The PSB attended monthly San Diego Management and Monitoring Program (SDMMP) meetings to assure consistency with regional conservation efforts and plans. An SDMMP meeting was not held in November. Table 31 provides a list of the meetings attended.

Table 31 San Diego Management and Monitoring Program Meetings: January 1, 2021 through December 31, 2021			
Meeting Date	Presenter	Topic	Meeting Note Submittal Date
1/27/2021	Winston Vickers – UC Davis	Update on the UCD Southern California Mountain Lion Project as well as Results of Recent Research Elsewhere in the State	2/2/2021
2/24/2021	Various	Grazing Monitoring Plan for Rancho Jamul Ecological Reserve and Hollenbeck Canyon Wildlife Area.	3/3/2021
3/24/2021	Kim Smith – SANDAG	Lagoon Restoration in San Diego County, overview of TransNet funded lagoon restoration projects, with an emphasis on San Dieguito Lagoon	03/31/2021
	Doug Gibson and Tim Stillinger – Nature Collective	San Elijo Lagoon Long-term monitoring plan	
	Tito Marchant – Nature Collective	Cardiff Living Shorelines project	
4/28/2021	Krista West – SDSU/UCSB	Using satellite image data to locate and quantify herbaceous vegetation in Southern California shrubland ecoregions	5/5/2021
	Mark Berninger – City of San Diego	The City of San Diego's Digital Data Collection	
5/26/2021	Robert Fisher and Team – USGS	Outcomes from Golden Eagle Research in Southern California and Northern Baja California	5/28/2021
6/23/2021	Breahna Gillespie – UC Davis / SDSU	Fog Duration and Amount Impacts Hydrological Balance in a Montane Chaparral Community	6/23/2021
	Kris Taniguchi-Quan – Southern California Coastal Water Research Project [SCCWRP]	Evaluating Vulnerability of Streams to Hydrologic Alteration Across San Diego Region	
7/28/2021	Dr. Barbara Kus – USGS	Distribution and Demography of Coastal Cactus Wrens in southern San Diego County	7/28/2021
8/25/2021	Bruce Markman – UC Davis, San Diego River Park Foundation	*Arundo donax* supervised classification analysis and post-treatment regrowth: Using GIS and remote sensing as tools for invasive species management	8/25/2021
	Dan Marschalek – University of Central Missouri	San Diego Insect Conservation Update: Hermes Copper, Harbison's Dun Skipper, Pollinators	

Table 31 San Diego Management and Monitoring Program Meetings: January 1, 2021 through December 31, 2021			
Meeting Date	Presenter	Topic	Meeting Note Submittal Date
9/22/2021	Chandra Richards – University of California, Agriculture and Natural Resources	*Strengthening SALC: the Sustainable Agricultural Lands Conservation Program*	9/22/2021
	Mike Connolly Miskwish, Ted Griswold, Johnny Elliott – Kumeyaay Diegueno Land Conservancy	*A Kumeyaay Approach to Conservation*	
10/27/2021	Akif Eskalen – University of California Davis Shannon Lynch – University of California Santa Cruz	Management and Monitoring of Invasive Shot Hole Borer in San Diego County: An update	10/28/2021
12/08/2021	Various	Various	12/10/2021

Subtask 3b. (FY 2020-21): Land Manager Meetings

Additional meetings were attended by the PSB to coordinate with other agencies and land managers. The following includes a list of meetings attended by the PSB:

- On March 17, the PSB attended the quarterly Otay Mesa – Access Control Coordination meeting held by the POM with several different agency attendees.
- On May 11, the PSB attended the Interagency/Tri-county Working Group meeting.
- On August 10, the PSB attended an MSP meeting. Jonathan Dunn (AECOM) presented on the Discovery of a New Plant/Pathogen Relationship in San Diego County. Jason Giessow (Dendra, Inc.) presented on the San Diego Regional Invasive Plant Early Detection and Rapid Response (EDRR) Program: Work Update and a Few Plants to be on the Look Out For. Meeting notes were submitted to the POM on August 10.
- On August 18, the PSB attended the quarterly Otay Mesa – Access Control Coordination meeting.
- On November 5, the PSB responded to Robert Fisher (USGS) and James Gannon's (BLM) request for coastal California gnatcatcher data in the Dulzura area.
- On November 16, the PSB attended the quarterly Otay Mesa – Access Control Coordination/Update on the Otay River Restoration Project meeting.

- On November 17, the PSB prepared a PowerPoint presentation and presented at the MSCP annual workshop.

- On November 29, the PSB responded to an email from Sarah Mccutcheon (SDMMP) regarding the potential for *Leptosillia pistaciae* to be causing lemonadeberry die-off at the Salt Creek parcels.

- On November 30, the PSB provided Suellen Lynn (USGS) with the 2021 spatial data for incidental observations of coastal cactus wren in Wolf Canyon.

- On December 6, the PSB attended a meeting with Courtney Casey (SWCA) and Lindsay Teunis (SWCA) to discuss western spadefoot and native grasses within the Salt Creek parcels.

- On December 15, the PSB shared the 2021 spatial data and photos for Harbison dun skipper with Dr. Dan Marschalek (University of Central Missouri).

Subtask 3c. (FY 2020-21): Meeting Notes

Meeting notes were submitted to the POM for SDMMP events described under Subtask 3a. Meeting note submittal dates are listed in Table 31.

Subtask 3d. (FY 2020-21): POM

The POM and PSB coordinated Preserve monitoring and management tasks via phone, email, and meetings. Coordination included:

- The PSB updated sections pertaining to the Preserve and submitted photographs for inclusion in the County of San Diego MSCP 2020 annual report. The PSB submitted sections and photographs to the County on January 22 and 25.

- The PSB met with POM Cheryl Goddard on January 29 to discuss the FY 2020-2021 and FY 2021-2022 budgets.

- The PSB attended a meeting with Harris & Associates, POM Cheryl Goddard, and USFWS on February 10, regarding the Otay Pipeline Project that runs through Salt Creek parcels.

- The PSB prepared for and attended a meeting with the POM on March 12 to review the outline that was submitted for the Strategic Plan and discuss the Operational Plan and Fire Management Plan.

- The PSB coordinated with the County of San Diego POM to finalize the work plan for the first two years of Preserve management at the Piper Ranch parcels.

- The PSB coordinated with the POM regarding fence and sign vandalism on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels, northern harrier surveys on the preserve, and discussed illegal trail creation at the Proctor Valley (North) parcels.

- On July 14, the PSB met with the City of Chula Vista to discuss the FY 2021-22 work plan.
- On August 26, the PSB met with Cheryl Goddard to discuss the strategic plan, operational plan, and fire management plan outlines and deadlines. Ms. Goddard approved a deadline extension of December 31, 2021 for all three reports.
- On September 9, the PSB sent Cheryl Goddard an email to communicate that a lock was missing on the gate off La Media Road to access Wolf Canyon.
- On October 12, the PSB prepared and sent Cheryl Goddard an email detailing Jamul Mountains access control effort during FY 2020-21.
- On November 8, the PSB responded to the POM's request for clarification on parcel boundaries.
- On November 17 and 18, the PSB coordinated with the POM and the City of San Diego regarding where to collect coastal cholla within the Salt Creek parcels.
- The PSB attended a meeting with the POM on December 2 to discuss possible grant opportunities.
- On December 7, the PSB met with the POM to discuss potential coastal cholla planting areas at the Salt Creek parcels.
- On December 10, the PSB provided the POM with shape files of the preserve boundary, as requested.
- On December 13, the PSB provided the POM with photos and site visit notes regarding an off-site unauthorized mountain bike trail south of the Jamul Mountains parcels.

Task 4: Reporting

The following section describes reports that were submitted to the POM in support of the FY 2020–21 and FY 2021–22 annual work plans.

Subtask 4a. (FY 2020-21) and Subtask 4b (FY 2021-22): Database Management and Contributions

Data collected between January 1, 2020 and December 31, 2020 were submitted to California Natural Diversity Database, San Diego Biological Information and Observation System, and South Coast Multi-taxa Database on February 2, 2021.

MSP IMG field forms and spatial data collected in 2021 were finalized and submitted to the SDMMP group on September 24, 2021.

Subtask 4b. (FY 2020-21): Annual Report

The 2020 Annual Report for the Otay Ranch Preserve was submitted to the POM on January 22, 2021 (RECON 2021b). The annual report summarized all Preserve monitoring and operations/maintenance tasks performed between January 1 and December 31, 2020.

Subtask 4c. (FY 2020-21): Quino Checkerspot Butterfly Pre-survey Notification Letter

The PSB submitted the QCB pre-survey notification letter to USFWS and the POM on January 14, 2021 (RECON 2021c). Eric Porter (USFWS) approved the pre-survey notification letter via email on January 14, 2021. On February 24, 2021, USFWS, the PSB, and the POM agreed to postpone QCB surveys to the following year (FY 2021-22) due to the below average rainfall and lack of observed host plants during the habitat assessments.

Subtask 4d. (FY 2020-21): Coastal California Gnatcatcher Pre-survey Notification Letter

The PSB submitted the CAGN pre-survey notification letter to USFWS and the POM on January 25, 2021 (RECON 2021d). CAGN surveys were conducted according to USFWS protocol (USFWS 1997).

Subtask 4e. (FY 2020-21): FY 2021–22 Annual Work Plan

The draft FY 2021–22 Annual Work Plan was submitted to the POM on March 4, 2021. The work plan proposed Preserve monitoring and operations/maintenance tasks to be performed between July 1, 2021 and June 30, 2022. On July 14, the POM confirmed that they had no comments on the draft work plan. The work plan was finalized and submitted to the POM on July 19, 2021 (RECON 2021a).

Subtask 4f. (FY 2020-21): Quino Checkerspot Butterfly Post-survey Report

A QCB post-survey report was not prepared, as the surveys will be postponed to the following year (FY 2021-22).

Subtask 4h. (FY 2020-21): Long-term Raptor Management Plan

A long-term raptor management plan was not prepared. Instead, the PSB supported long-term management plan actions identified in USGS's working raptor management plan, where efforts overlap into the Preserve. The PSB conducted the following items in support of this:

- The PSB researched trail cameras to monitor golden eagle.
- The PSB prepared for and attended a meeting with the POM and USGS on February 8, 2021. The PSB prepared and submitted meeting notes on February 15. The PSB prepared a proposed reallocation of the current fiscal year budget remaining under this task to assist with USGS by installing and monitoring camera locations for golden eagle.
- The PSB coordinated with USGS to assist them with installing and monitoring camera locations for Golden Eagle.
- The PSB prepared a figure of northern harrier locations within the Preserve for USGS's upcoming surveys within the Preserve. The PSB coordinated with AECOM biologists who requested access onto the preserve for the purpose of northern harrier and tricolored blackbird surveys on conserved lands for SDMMP.

Subtask 4i. (FY 2020-21): Fire Management Plan

The PSB prepared and submitted an outline for the Fire Management Plan to the POM on July 21. On October 18, the PSB met with Kris Preston (USGS/SDMMP), Jill Terp (USFWS), and Cheryl Goddard (City of Chula Vista) to discuss fire management plans. On November 8, the PSB met with Rick Ballard (City of Chula Vista Fire), Justin Gipson (City of Chula Vista Fire), Cheryl Goddard (City of Chula Vista), and Scott Donaghe (City of Chula Vista) to discuss the Fire Management Plan. The POM approved extending the submittal deadline past December 31.

Subtask 4j. (FY 2020-21): Strategic Plan

The PSB prepared and submitted an outline to the POM for the Strategic Plan on March 5. The PSB resubmitted this outline along with the Operational Plan and Fire Management Plan outlines to the POM on July 21. The draft plan was submitted to the POM on September 30.

Subtask 4k. (FY 2020-21): Operational Plan

The PSB prepared and submitted an outline for the Operational Plan to the POM on July 21. The POM approved extending the submittal deadline past December 31.

Subtask 4a. (FY 2021-22): Coastal California Gnatcatcher 2021 Post-survey Report

The PSB submitted the 2021 CAGN post-survey report to the POM and USFWS on July 9, 2021 (RECON 2021e). Attachment 1: Figures 22 through 27 show 2021 CAGN observation points and CAGN Use Areas. In total, RECON identified 58 CAGN Use Areas within the Otay Ranch Preserve conveyed lands surveyed in 2021. The mapped CAGN Use Areas were extrapolated from the sum of the observation points and represent the approximate area used by CAGN during the 2021 breeding season. Of the 58 CAGN Use Areas identified within the Otay Ranch Preserve conveyed lands, there are 43 CAGN Use Areas within the Salt Creek parcels (see Attachment 1: Figure 22), three CAGN use areas in San Ysidro (see Figure 23), one CAGN use areas within Millenia (see Figure 24), four use areas within Western Wolf Canyon (see Figure 26), and seven use areas within Ridge (see Figure 27). One CAGN was detected foraging within the Proctor Valley (South) parcel during the first survey in 2021 (see Figure 25). However, as this observation occurred in February, it is likely this individual was passing through the parcel. Therefore, no CAGN Use Area was identified at Proctor Valley (South). It is unclear why CAGN were not detected during the other surveys at the Proctor Valley (South) parcel, as the individual was initially observed in high-quality coastal sage scrub. The results of the 2021 CAGN surveys are summarized in Table 32.

Table 32
2021 Coastal California Gnatcatcher Protocol Survey Results

Parcel Set	CAGN Survey Results
Salt Creek	43 CAGN Use Areas comprising 34 pairs and 9 males
San Ysidro	3 CAGN Use Area comprising 2 pair and 1 male
Millenia	1 CAGN Use Area comprising 1 male
Western Wolf Canyon	4 CAGN Use Area comprising 4 pairs
Ridge	7 CAGN Use Area comprising 6 pairs and 1 male
Proctor Valley (South)	0 CAGN detected

Subtask 4c. (FY 2021-22): Baseline Survey Reports

The PSB submitted the Proctor Valley Extension and Johnson Canyon Otay Tarplant Preserve baseline survey reports to the POM on September 15 (RECON 2021f and RECON 2021g), and the Piper Ranch baseline survey report to the POM on July 30, 2021 (RECON 2021h).

Subtask 4i. (FY 2021-22): Fire Management Informational Video

The POM approved extending the submittal deadline past December 31.

Subtask 4j. (FY 2021-22): Wet Season Fairy Shrimp Pre-survey Notification Letter

The PSB prepared the wet season fairy shrimp pre-survey notification letter to conduct surveys at Piper Ranch for submittal to USFWS and the POM on November 4, 2021 (RECON 2021i). USFWS provided approval to commence wet season surveys on November 4, 2021.

3.0 Operations/Maintenance

This chapter describes operations/maintenance tasks that occurred between January 1 and December 31, 2021. These tasks were proposed in the FY 2020–21 annual work plan (RECON 2020).

Task 5: Access Control

Access control within the Preserve continues to be one of the highest priority tasks. Sensitive habitat, plants, and wildlife are being impacted by unauthorized foot and bicycle traffic, off-highway vehicle, target-shooting activities, and unauthorized trail creation. The following sections detail work that was performed in an ongoing effort to minimize damage to the Preserve.

Subtask 5a. (FY 2020-21 and FY 2021-22): USCBP/Agency Meetings & Coordination

- The PSB prepared a log of access control actions conducted in 2020 regarding the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels for submittal to the County on January 15. The PSB prepared a summary of access control actions conducted during 2011 through 2019 regarding the illegal Horseshoe Mountain Trail for submittal to the County on January 21.

- On February 10, the RECON crew left the Millenia site in the afternoon for safety concerns due to firearm target practice occurring under the SR 125. A figure was prepared showing the location of the firearm targets for submittal to the POM.

- The PSB submitted a Right of Entry request to the City of Chula Vista for submittal to SDG&E on March 17, 2021 to use the SDG&E road to access the Johnson Canyon Otay Tarplant parcels. The PSB submitted a Right of Entry request to the City of Chula Vista for submittal to SDG&E on April 8, 2021 to use the SDG&E road to access the Proctor Valley Extension parcels. An additional Right of Entry request was submitted by the PSB on August 30, 2021 to Tracie Nelson (CDFW) to drive through Rancho Jamul to access the Proctor Valley Extension parcels.

- On June 17, the PSB coordinated with the POM regarding illegal motor bike access points into Northern Salt Creek.

- On June 25, the PSB received an email from Amber Craig (USCBP; Supervisory Border Patrol Agent) regarding the upcoming Otay Mesa Run scheduled in July. The PSB coordinated internally regarding safety during the event.

- On August 3, the PSB emailed Ranger Parra-Gonzalez (City of San Diego) regarding access issues related to the unauthorized Horseshoe Mountain Trail.

- On August 20, Kayo Valenti (RECON), Anna Leavitt (RECON), Cheryl Goddard (POM), Jill Terp (USFWS), Dwane Binns (USFWS), John Martin (USFWS), Tracie Nelson (CDFW), and Beth Principe (County of San Diego) attended a meeting to discuss access control near Otay Lakes Road and Pio Pico Campground.

- On September 13, the PSB emailed Amber Craig (USCBP) to report a cut border patrol lock along Minnewawa Truck Trail within Dulzura Parcels. The lock was replaced by a border patrol agent on September 14.

- On September 14, the PSB emailed Amber Craig (USCBP) to provide information regarding the fence extension and repair locations that would block the unauthorized vehicle trails within Dulzura Parcels.

- On October 25, the PSB coordinated with Tracie Nelson (CDFW) regarding a Right of Entry Permit for the Proctor Valley Extension parcels through Rancho Jamul Ecological Reserve.

- On November 8, the PSB coordinated with the POM, CDFW, and USCBP regarding proposed fence installation at the Northern San Ysidro and McMillin parcels.

Subtask 5b. (FY 2020-21 and FY 2021-22): Fence and Sign Installation and Repair

In general, there was an increase in habitat damage and unauthorized activity within the Preserve as a consequence of the COVID-19 pandemic. An increase of residents spent more time outdoors as it was considered a safe activity during the pandemic, and many residents had additional free time. Specifically, there was an increased amount of trespass compared to past years at the following parcels: Jamul Mountains, Salt Creek, Northern Salt Creek, Dulzura, and Proctor Valley (North). Native vegetation was damaged at Northern Salt Creek and Salt Creek due to ATV use, at Dulzura due to off-road truck use, and at Proctor Valley (North) due to illegal trail creation. Additional vegetation was damaged at Northern San Ysidro with a new motor bike trail; at Johnson Canyon (East, Piper Ranch, and Johnson Canyon Otay Tarplant Preserve due to ATV use; and off-road truck use at Millenia. Along the illegal trail creation within Proctor Valley (North), the PSB found and removed two geocaches within and adjacent to the Preserve. Online resources were reviewed to determine if additional geocaches are present within the Preserve.

Access control issues were addressed through December 31, 2021. Tables 33 through 40 summarize access control measures that were implemented per Parcel between January 1 and December 31, 2021. Access control issues are described below the tables. In addition, on April 5 and 9, the PSB ordered and picked up 20 signs stating No Trespassing/Preserve for installation throughout the

Preserve. The following bullet points provide a summary of total POM property installations/repairs for fence, signs, and gates, and the total off-site adjacent to the Preserve installations/repairs conducted during 2021:

- Total POM property installations/repairs conducted during 2021 include: 1,476 linear feet of fencing installed, 211 linear feet of fencing repaired, 5 signs installed, 17 signs replaced, and 1 gate repaired.

- Total off-site (adjacent to the Preserve Jamul Mountains parcels) City of San Diego property installations/repairs conducted during 2021 include: 45 linear feet of fencing installed, 549 linear feet of fencing repaired, 3 signs installed, 3 signs replaced, and 1 sign repaired.

- Total off-site (adjacent to the Preserve Northern Salt Creek parcels) City of Chula Vista property installations conducted during 2021 include: 30 linear feet of fencing installed.

- Total off-site (adjacent to the Preserve Dulzura parcels) USFWS property installations conducted during 2021 include: 245 linear feet of fencing installed.

Table 33 Jamul Mountain Parcels & Adjacent City of San Diego Property: Fencing, Sign, and Gate Installation and Repairs								
Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Jamul Mountains (off-site City of San Diego Property)	1/6/2021	-	3	-	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	1/14/2021	-	40	-	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	1/18/2021	-	3	-	1	-	-	-
Jamul Mountains (off-site City of San Diego Property)	2/2/2021	-	3	-	-	-	-	Dead branches placed across southwest trail split
Jamul Mountains (off-site City of San Diego Property)	2/19/2021	-	30	-	-	-	-	-
Jamul Mountains	2/23/2021	-	-	-	1	-	-	-
Jamul Mountains (off-site City of San Diego Property)	2/25/2021	-	20	2	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	3/24/2021	-	56	-	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	4/14/2021	45	275	-	2	-	-	-
Jamul Mountains (off-site City of San Diego Property)	6/17/2021	-	101	1	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	8/10/2021	-	15	-	-	-	-	-
Jamul Mountains (off-site City of San Diego Property)	8/31/2021	-	-	-	-	1	-	-
Jamul Mountains (off-site City of San Diego Property)	11/15/2021	-	3	-	-	-	-	-
TOTAL (POM Property)	-	-	-	**1**	-	-	-	
TOTAL (off-site City of San Diego property)		**45**	**549**	**3**	**3**	**1**	**-**	**Branch barrier**
*Ground length, not total materials used for repair.								

Table 34 Salt Creek Parcels: Fencing, Sign, and Gate Installation and Repairs								
Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Salt Creek	3/1/2021	-	10	-	-	-	-	-
Salt Creek	6/04/2021	-	-	-	10	-	-	-
Salt Creek	8/10/2021	-	7	-	-	-	-	-
Salt Creek	8/24/2021	-	-	-	-	-	1 (repair)	-
Salt Creek	11/15/2021	-	45	-	-	-	-	-
Salt Creek	12/16/2021, 12/17/2021	552	-	-	-	-	-	-
TOTAL (POM Property)		**552**	**62**	**-**	**10**	**-**	**1 (repair)**	-
*Ground length, not total materials used for repair.								

Table 35 Northern Salt Creek Parcels & Adjacent City of Chula Vista Property: Fencing, Sign, and Gate Installation and Repairs								
Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Northern Salt Creek	6/04/2021	-	-	-	1	-	-	-
Northern Salt Creek	8/10/2021	14	-	1	-	-	-	-
Northern Salt Creek (off-site on City of Chula Vista Property)	8/24/2021	30	-	-	-	-	-	-
TOTAL (POM Property)		**14**	**-**	**1**	**1**	**-**	**-**	**-**
TOTAL (off-site on City of Chula Vista Property)		**30**	**-**	**-**	**-**	**-**	**-**	**-**
*Ground length, not total materials used for repair.								

Table 36
Dulzura Parcels & Adjacent USFWS Property: Fencing, Sign, and Gate Installation and Repairs

Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Dulzura	3/16/2021	-	4	-	-	-	-	-
Dulzura	6/18/2021, 6/21/2021	220	90	1	-	-	-	-
Dulzura (off-site USFWS Property)	6/21/2021	245	-	-	-	-	-	-
Dulzura	9/10/2021	60	55	-	-	-	-	-
TOTAL (POM Property)		**280**	**149**	**1**	-	-	-	-
TOTAL (off-site USFWS Property)		**245**	-	-	-	-	-	-

*Ground length, not total materials used for repair.

Table 37
Millenia Parcels: Fencing, Sign, and Gate Installation and Repairs

Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Millenia	6/04/2021	-	-	-	4	-	-	-
Millenia	9/15/2021	450	-	-	-	-	-	-
TOTAL (POM Property)		**450**	**-**	**-**	**4**	**-**	**-**	**-**

*Ground length, not total materials used for repair.

Table 38
Little Cedar Canyon Parcels: Fencing, Sign, and Gate Installation and Repairs

Parcel	Date	Fencing Installed (Linear Feet)*	Fencing Repaired (Linear Feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Little Cedar Canyon	1/18/2021	-	-	1	1	-	-	Rock barrier
TOTAL (POM Property)		**-**	**-**	**1**	**1**	**-**	**-**	**Rock barrier**

*Ground length, not total materials used for repair.

Table 39 Proctor Valley (North) Parcels: Fencing, Sign, and Gate Installation and Repairs								
Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
Proctor Valley (North)	5/5/2021	-	-	2	-	-	-	-
Proctor Valley (North)	5/20/2021	-	-	-	-	-	-	Dead branches placed throughout the illegal trails created
TOTAL (POM Property)		**-**	**-**	**2**	**-**	**-**	**-**	**Branch barrier**
*Ground length, not total materials used for repair.								

Table 40 McMillin Parcels: Fencing, Sign, and Gate Installation and Repairs								
Parcel	Date	Fencing Installed (linear feet)*	Fencing Repaired (linear feet)*	Signs Installed	Signs Replaced	Signs Repaired	Gate Installed or Repaired	Other Access Control Installed
McMillin	11/15/2021	180	-	-	-	-	-	-
TOTAL (POM Property)		**180**	**-**	**-**	**-**	**-**	**-**	**-**
*Ground length, not total materials used for repair.								

Dulzura Parcels

Attachment 1: Figure 37 shows access control data collected in 2021.

- On March 16, approximately 4 linear feet of cut barbed wire was repaired at the east end of the Dulzura parcels by the gate at Thousand Trails Pio Pico RV Resort and Campground.
- On June 18, just east of the northwest corner of the parcel boundary:
    - Approximately 90 linear feet consisting of four strands of barbless wire was repaired.
- On June 18 and 21, near the northwest corner of the parcels the following two sections were installed adjacent to a previously installed fence that had been bypassed by vehicles. The purpose was to extend the old fence to further restrict vehicle access.
    - Approximately 130 linear feet consisting of four-strand barbless wire were installed.
    - Approximately 90 linear feet consisting of four-strand barbless wire were installed.
- On June 21, near the northwest corner of the parcels:
    - One sign stating "Road Closed" was installed facing away from the parcel boundary. The sign was placed near where a previously installed "Road Closed" sign faces inward toward the parcels.
- On June 21, on USFWS property west of the Dulzura parcels:
    - Approximately 245 linear feet of four-strand barbless wire was installed.
- The PSB coordinated with USFWS Refuge Manager Dwane Binns Jr. prior to installing the fence. Mr. Binns provided authorization on June 17, 2021.
- The PSB coordinated internally regarding access issues observed at the Dulzura parcels during site visits. During the site visit on July 16, tire tracks were observed where a large vehicle had driven around the recently installed fence on USFWS property.
- On July 27, approximately 70 linear feet of four-strand barbless wire was installed within USFWS property, west of the Dulzura parcels, under a separate contract with USFWS.
- On August 24, the PSB assessed two proposed fence locations and a proposed gate location off-site on the boundary of CDFW and New Thousand Trails property northeast of the Dulzura parcels.
- On September 10, the RECON crew repaired damaged fence along the northern boundary and installed fencing to block a new truck trail off Minnewawa Truck Trail.

Jamul Mountains Parcels

Attachment 1: Figure 38 shows access control data collected in 2021.

- On January 6, approximately 3 linear feet of cut barbed wire fence was repaired at the trailhead to the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels.

- On January 14, approximately 40 linear feet of cut barbed wire fence was repaired at the trailhead to the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels. Additional fence stays were installed at loose portions along the fence north of Otay Lakes Road.

- On January 18, one Preserve sign was replaced at the southwest corner of Jamul Mountains parcels. Approximately 3 linear feet of cut barbed wire fence was repaired at the trailhead to the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels.

- On February 2, approximately 3 linear feet of cut barbed wire fence was repaired at the trailhead to the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels.

- On February 19, approximately 10 linear feet of cut barbed wire fence was repaired at the southwest trailhead to the illegal Horseshoe Mountain Trail on City of San Diego property leading to Jamul Mountains parcels. Approximately 20 linear feet and two t-posts were repaired on the northwestern illegal trailhead on City of San Diego property that connects to the Horseshoe Mountain Trail within Jamul Mountains parcels.

- On February 23, one Preserve sign was replaced at the northwest border of the Jamul Mountains parcels on the trail that connects to the illegal Horseshoe Mountain Trail.

- On February 25, two signs, Preserve and City of San Diego, were installed on one concreted post on the northwestern illegal trailhead on City of San Diego property that connects to the Horseshoe Mountain Trail within Jamul Mountains parcels. At this location, two t-posts were reinstalled, six new t-posts were installed, and approximately 20 linear feet of fencing was repaired. The POM and City of San Diego were notified of the sign installation and repairs.

- On March 24, approximately 35 linear feet of barbed wire was repaired, and six t-posts were reinstalled directly south of the northwest illegal trailhead on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels. Approximately 16 linear feet of barbed wire fencing were repaired at the southwest illegal trailhead on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels. A 5-foot section of fence was repaired and two t-posts were reinstalled north of Otay Lakes Road.

- On April 5, the PSB ordered a trail camera for monitoring access issues off-site at Jamul Mountains.

- On April 14, near the northwest parcel corner and south of the Arizona crossing on Proctor Valley Road on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
    - A signpost and No Trespassing/Preserve sign were replaced.
    - One trail camera was placed in a shrub to monitor illegal access and damage to the fence.
    - Three sections of barbed wire fencing were repaired with three-strand barbed wire.
        - Approximately 100 linear feet of primary fence and approximately 45 linear feet of secondary fence was installed parallel to the primary fence.
        - Approximately 15 linear feet of fence along the northwest fence line.
        - Approximately 10 linear feet of fence along the northeast fence line past the metal gate.
    - Previously illegally cut fence material and removed t-posts that had been left nearby were hauled out and properly disposed of on April 14.
- On April 14, near the southwest parcel corner on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
    - One No Trespassing/Preserve sign was replaced.
    - Replaced approximately 25 linear feet of combination barbless wire and barbed wire fence.
    - Approximately 125 linear feet of five-strand barbed wire was replaced.
- The PSB coordinated with the City of San Diego and picked up one City of San Diego Public Utilities sign on April 16 for installation at the Horseshoe Mountain Trail.
- On June 17, near the northwest parcel corner and south of the Arizona crossing on Proctor Valley Road on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
    - One signpost with a concrete base was installed at a new location. A City of San Diego sign stating "Keep Out" was installed on the post.
    - Approximately 6 linear feet of three-strand barbless wire fence was repaired parallel to the primary fence at 4 separate locations. These sections served as secondary enforcement.
    - Approximately 15 linear feet of three-strand barbless wire fence was repaired on the northwest side of the fence line.

  - Approximately 10 linear feet of three-strand barbless wire fence was repaired northeast of the primary fence line past the metal gate.

- On June 17, near the southwest parcel corner on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
  - Approximately 5 linear feet of five-strand barbed wire was repaired.
- On June 17, slightly east of the southwest parcel corner on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
  - Approximately 20 linear feet of five-strand barbed wire was repaired.
- On June 17, north of upper Otay Lake Dam on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
  - Approximately 3 linear feet of one-strand barbed wire was repaired.
  - Approximately 4 linear feet of two-strand barbless wire was repaired.
- On June 17, on the north side of Otay Lake Road east of the trail to upper Otay Lake Dam on City of San Diego property that leads to the illegal Horseshoe Mountain Trail on Jamul Mountains parcels:
  - Approximately 10 linear feet of five-strand barbless wire was repaired.
  - Approximately 10 linear feet of two-strand barbless wire was repaired.
- On August 10, the RECON crew repaired damaged fence on City of San Diego property adjacent to the Jamul Mountains parcels.
- On August 31, on City of San Diego property near the northwest corner of the parcels, the PSB replaced the bolts on the off-site sensitive habitat preserve sign. The bolts were bent to make unauthorized removal more challenging.
- On November 15, the RECON crew repaired damaged fence on the off-site City of San Diego property that is part of the unauthorized Horseshoe Mountain Trail.

Little Cedar Canyon Parcels

Attachment 1: Figure 40 shows access control data collected in 2021.

- On January 18, the PSB replaced one "road closed" sign at the western road turnaround and installed one "road closed" sign at the southern turnaround within Little Cedar Canyon parcels. Rock barriers and dead branches were placed besides both signs.

McMillin Parcels

Attachment 1: Figure 40 shows access control data collected in 2021.

- On November 15, the RECON crew installed 180 linear feet of four-strand barbless wire fence to block illegal vehicle use in sensitive habitat.

Millenia Parcels

Attachment 1: Figure 39 shows access control data collected in 2021.

- On June 4, west of State Route 125 (SR-125):
    - Replaced one No Trespassing/Preserve sign and one Off-road Activity Prohibited sign on an existing post where signs were missing.
- On June 4, east of SR-125:
    - Replaced one No Trespassing/Preserve sign and one Off-road Activity Prohibited sign on an existing post where signs were damaged from firearm ammunition.
- On September 15, the RECON crew installed fencing along the dirt road within the eastern portion of the parcels west of SR-125 to block unauthorized trucks from driving within an Otay tarplant (*Deinandra conjugens*) population and restoration area.

Northern Salt Creek Parcels

Attachment 1: Figure 41 shows access control data collected in 2021.

- On June 4, at the site entrance from Hunte Parkway near the western boundary of the parcels:
    - One damaged "Gate to Remain Locked at All Times" sign was replaced on the swing gate.
- On August 10, the RECON crew installed two sections of barbed wire fence. Each section was approximately 7 linear feet with five strands of barbed wire. The fencing overlapped for approximately 3 linear feet to allow pedestrian access. One No Trespassing Otay Ranch Preserve sign was installed on a t-post in the center of the unauthorized trail in front of the newly installed barbed wire fence. The purpose of the fence was to restrict ATVs from accessing the preserve.
- On August 16, the PSB sent the POM an email with a photograph and description of the fence and sign installed along the northern boundary on August 10.
- On August 24, the RECON crew installed approximately 30 linear feet of five-strand barbless wire t-post fence off-site on City of Chula Vista property west of the Northern Salt Creek parcels and east of Hunte Parkway. The fence was installed to block off-road vehicles from entering into the preserve.

Proctor Valley (North) Parcel

Attachment 1: Figure 44 shows access control data collected in 2021.

- On May 5, the PSB called the adjacent property owner at Proctor Valley (North) (Baldwin and Sons) to discuss the unauthorized trail building that had occurred on both Proctor Valley (North) and on property owned by Baldwin and Sons.
- On May 20,
    - The RECON maintenance crew installed two signposts with one preserve sign on the central southeastern corner of the parcel boundary and one preserve sign near the northeastern corner of the parcel boundary at ingress and egress locations on the unauthorized trail that was discovered on April 28.
    - The PSB decommissioned the illegal trail by laying the cut vegetation across the trail and dispersing the rocks that were lined along the edges of the trail.

Salt Creek Parcels

Attachment 1: Figure 41 shows access control data collected in 2021.

- On March 1, approximately 10 linear feet of cut barbless wire was repaired north of the red gate within the Salt Creek parcels, just west of Wueste Road.
- On June 4, at the western boundary of the southernmost Salt Creek parcel:
    - Two signposts and two No Trespassing/Preserve signs were replaced where previous signs and posts were missing.
- On June 4, near the northeast corner of the southernmost Salt Creek parcel:
    - Two signposts and two No Trespassing/Preserve signs were replaced where previous signs and posts were missing.
- On June 4, near the northern boundary of the southernmost Salt Creek parcel:
    - One new signpost and one Sensitive Environmental Resources sign were installed.
- On June 4, in the northwest section of the parcels just west of the Salt Creek drainage:
    - One wooden signpost was re-installed with concrete.
    - One damaged Sensitive Environmental Resources sign and one Off-road Activity Prohibited signs were replaced.
- On June 4, at the central eastern boundary of the parcels just north of the entrance off Wueste Road:

  - One No Trespassing/Preserve sign and one Off-road Activity Prohibited sign were replaced on a previously installed post.

- On June 4, at the gate north of the regular entrance from Wueste Road:
  - One Off-road Activity Prohibited sign was replaced.
- The PSB coordinated internally regarding off-site gates near the southeast corner of the parcels.
- On August 2, the PSB mapped locations where fence repairs were proposed.
- On August 10, the RECON crew repaired 7 linear feet of barbless wire fencing near the eastern red gate.
- On August 24:
  - At the off-site gate southeast of the parcel boundary, the PSB tightened all bolts and fixed the locks in the daisy chain so it functioned correctly.
- On November 15, the RECON crew repaired fencing along the eastern boundary near the red gate.
- On December 16 and 17, the RECON crew installed 552 linear feet of three-strand barbless wire fence. The fence was installed to protect a new cholla planting area.

Task 6: Invasive Species Treatment

Subtask 6a. (FY 2020-21 and FY 2021-22): Vegetation Treatment and Removal

Vegetation treatment and removal occurred January through December 2021. The RECON crew removed weeds within a variety of habitats described below. RECON biologists coordinated vegetation treatment and removal work, and qualitatively monitored treatment areas to determine proper timing for weed treatment. Weed species treated with glyphosate herbicide included primarily short-pod mustard (*Hirschfeldia incana;* Cal-IPC Rating: Moderate), tocalote (*Centaurea melitensis*; Cal-IPC Rating: Moderate), native annual grasses (*Bromus* spp. and *Avena* spp.; Cal-IPC Rating: Moderate), and other species such as horehound (*Marrubium vulgare*), common poison hemlock (*Conium maculatum*), non-sweetclover (*Melilotus* sp.), California burclover (*Medicago polymorpha*), and filaree (*Erodium* sp.). Fennel (Cal-IPC Rating: Moderate) was treated with Ranger Pro/glyphosate and Garlon 4 to ensure successful treatment. Non-native plants removed by line trimmer consisted primarily of tocalote, oats, and other various grasses. Stinkwort (*Dittrichia graveolens*) was primarily treated by hand removal. The long-term goals of vegetation treatment are to decrease non-native plant cover to (1) maintain and enhance foraging habitat for coastal cactus wren, (2) increase bare ground cover for QCB, (3) increase habitat quality for vernal pool wildlife and plant species, and (4) reduce non-native competition for Otay tarplant. Table 41 lists vegetation treatment and removal dates and locations. Vegetation treatment and removal areas are shown in Attachment 1: Figures 47 through 53.

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
1/4/2021	Dethatch-cut with line trimmers	Salt Creek	Patches 2 and 3	5001970	6649	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Tocalote and various dried non-native grasses
1/5/2021, 1/6/2021, 1/7/2021, 1/8/2021	Shrub thinning and applying herbicide	Western Wolf Canyon	Northeast patch	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/11/2021	Shrub thinning	Western Wolf Canyon	Northeast patch	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/12/2021, 1/13/2021, 1/14/2021	Shrub thinning and applying herbicide	Western Wolf Canyon	Northeast patch	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/15/2021, 1/18/2021, 1/19/2021	Shrub thinning and applying herbicide	Salt Creek, Northern Salt Creek	New patch at the border of both parcels	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/19/2021, 1/20/2021, 1/21/2021, 1/22/2021	Shrub thinning and applying herbicide	Northern Salt Creek	Northernmost new patch at southwest end	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/27/2021	Shrub thinning and applying herbicide	Salt Creek	Southernmost new patch on the west side	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
1/28/2021	Shrub thinning and applying herbicide	Salt Creek	New patch near SDG&E tower at the northwest end	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry, jojoba, San Diego viguiera, California encelia, and California sagebrush
2/1/2021	Shrub thinning	Salt Creek	New patch near SDG&E tower at the northwest end	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
2/2/2021, 2/3/2021	Shrub thinning and applying herbicide	Salt Creek	New patch near SDG&E tower at the northwest end	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Lemonadeberry
2/4/2021	Plant installation	Salt Creek, Northern Salt Creek	New shrub thin patch at border of both parcels	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Coast cholla and shore cactus (*Opuntia littoralis*) planting
2/5/2021	Plant installation	Northern Salt Creek	Northernmost new patch at southwest end	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Coast cholla and shore cactus planting
2/8/2021, 2/9/2021, 2/10/2021, 2/11/2021	Dethatch-cut with line trimmers	Millenia	East of SR125, Otay tarplant enhancement area	N/A	5256	Otay Ranch Preserve	Otay tarplant (*Deinandra conjugens*)	Non-native annual grasses and tocalote
2/8/2021, 2/9/2021, 2/10/2021, 2/11/2021	Dethatch-cut with line trimmers	Millenia	East of SR125, Patches 8 and 9	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Non-native annual grasses and tocalote
2/12/2021	Dethatch-cut with line trimmers	Millenia	Patch 10	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Non-native annual grasses and tocalote
2/15/2021	Dethatch-cut with line trimmers	Millenia	Non-native plant treatment area	N/A	5256	Otay Ranch Preserve	Vernal pools and native grassland	Non-native annual grasses
2/17/2021	Dethatch-cut with line trimmers and applying herbicide	N/A	3-acre restoration site within the County of San Diego parcel APN 646-010-06	5004730	8116	Otay River Valley Cactus Wren EMP Grant	Coastal cactus wren	Short-pod mustard and filaree
2/18/2021, 2/22/2021, 2/23/2021, 2/24/2021	Dethatch-cut with line trimmers	Millenia	Non-native plant treatment area	N/A	5256	Otay Ranch Preserve	Vernal pools and native grassland	Non-native annual grasses

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
3/5/2021	Apply herbicide	Western Wolf Canyon	Otay tarplant habitat - non-native plant treatment area, and along the road	N/A	5256	Otay Ranch Preserve	Otay tarplant (*Deinandra conjugens*)	Horehound, tocalote (*Centaurea melitensis*), common poison hemlock (*Conium maculatum*), and non-native annual grasses (*Bromus* spp.)
3/8/2021	Apply herbicide	Western Wolf Canyon	Shrub thinning areas	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Horehound, tocalote, common poison hemlock, non-native annual grasses, sweetclover, and California burclover
3/16/2021	Apply herbicide and removal by hand	Dulzura	Revegetation slopes along Minnewawa Truck Trail	N/A	5256	Otay Ranch Preserve	Revegetation maintenance	Non-native annual grasses, and filaree
3/17/2021	Apply herbicide	Northern Salt Creek	Western shrub thinning areas	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Tocalote, non-native annual grasses, and filaree
3/18/2021	Apply herbicide	Millenia	Non-native plant treatment area, West of SR125	N/A	5256	Otay Ranch Preserve	Vernal pools	Tocalote, non-native annual grasses, and filaree
3/19/2021	Apply herbicide	Millenia	West of SR125, Otay tarplant enhancement area	N/A	5256	Otay Ranch Preserve	Otay tarplant	Tocalote, non-native annual grasses, and filaree
3/24/2021	Apply herbicide	Millenia	West of SR125, Otay tarplant enhancement area	N/A	5256	Otay Ranch Preserve	Otay tarplant	non-native annual grasses
3/29/2021	Herbicide	Salt Creek	Previously planted elderberry area	5001970	6649	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Short-pod mustard, tocalote, non-native annual grasses

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
3/29/2021	Herbicide	Salt Creek	Cactus Wren Habitat Restoration / Erosion Control / Illegal Road Closure Area (CFD 97-2 funded: planted in 2015)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote, non-native annual grasses
3/29/2021	Herbicide	Northern Salt Creek	Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote, non-native annual grasses
3/30/2021	Herbicide	Salt Creek	Patch 2	5004943	8340	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement: Shrub Thinning Program	Coastal cactus wren	Short-pod mustard, tocalote, filaree
3/30/2021	Apply herbicide	Salt Creek	Previous County SANDAG TransNet EMP CACW habitat restoration area	5001133	N/A	Salt Creek Coastal Cactus Wren Habitat Restoration Project (County of San Diego Department of Parks and Recreation [DPR])	Coastal cactus wren	Short-pod mustard, tocalote, filaree
3/31/2021	Herbicide	Salt Creek	Patch 2	5004943	8340	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement: Shrub Thinning Program	Coastal cactus wren	Short-pod mustard, tocalote, filaree
3/31/2021	Apply herbicide	Salt Creek	Previous County SANDAG TransNet EMP CACW habitat restoration area	5001133	N/A	Salt Creek Coastal Cactus Wren Habitat Restoration Project (County of San Diego DPR)	Coastal cactus wren	Short-pod mustard, tocalote, filaree

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
4/01/2021	Herbicide	N/A	3-acre restoration site within the County of San Diego parcel APN 646-010-06	5004730	8116	Otay River Valley Cactus Wren EMP Grant	Coastal cactus wren	Short-pod mustard, tocalote, filaree
4/05/2021	Herbicide	N/A	3-acre restoration site within the County of San Diego parcel APN 646-010-06	5004730	8116	Otay River Valley Cactus Wren EMP Grant	Coastal cactus wren	Short-pod mustard, tocalote, filaree
4/06/2021	Cut with line trimmers Herbicide	Millenia	Millenia (west) within the mesa where San Diego button-celery occurs	NA	5256	Otay Ranch Preserve	Vernal pool Variegated dudleya	Non-native grasses, filaree
4/15/2021	Cut with line trimmers	Millenia	Millenia (east) Otay Tarplant Habitat – Non-native Plant Treatment Area	NA	5256	Otay Ranch Preserve	Otay tarplant	Short-pod mustard, red brome
4/15/2021	Cut with line trimmers	Millenia	Millenia (east)	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Short-pod mustard, red brome
4/19/2021	Herbicide	Millenia (east)	Millenia (east) Otay Tarplant Habitat – Non-native Plant Treatment Area	NA	5256	Otay Ranch Preserve	Otay tarplant	Red brome, oats

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
4/20/2021	Herbicide	Millenia	Millenia (east) Otay Tarplant Habitat – Non-native Plant Treatment Area	NA	5256	Otay Ranch Preserve	Otay tarplant	Red brome, oats, short-pod mustard
4/20/2021	Herbicide	Millenia	Millenia (east)	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Red brome, oats, short-pod mustard
4/21/2021	Herbicide	Salt Creek	Shrub thinning area (CFD 97-2 funded: January 2021 [near the SDG&E tower in the northwest section of the parcels]	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Red brome, tocalote, sow thistle (*Sonchus* spp.), nightshade (*Solanum* sp.)
4/21/2021	Herbicide	Salt Creek	Patch 1	5004943	8340	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	CACW	Red brome, tocalote, sow thistle, nightshade
4/29/2021	Herbicide	Salt Creek	Patch 3a	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	tocalote
4/30/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/05/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
5/06/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/17/2021	Herbicide	Salt Creek	Throughout the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/18/2021	Herbicide	Salt Creek	Throughout the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/19/2021	Herbicide	Salt Creek	Throughout the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/20/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
5/25/2021	Cut by hand Herbicide	Northern Salt Creek	Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard
5/26/2021	Cut by hand Herbicide	Northern Salt Creek	Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard
5/26/2021	Cut by hand Herbicide	Salt Creek	Patch 3c	5004731	7682	Otay Ranch Coastal Cactus Wren Habitat Restoration and Enhancement Program	Coastal cactus wren	Short-pod mustard, tocalote
5/27/2021	Cut by hand Herbicide	Western Wolf Canyon	Non-native removal area along road edge	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
5/27/2021	Cut by hand Herbicide	Western Wolf Canyon	Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote
5/28/2021	herbicide	Western Wolf Canyon	Non-native removal area along road edge	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote
5/28/2021	herbicide	Western Wolf Canyon	Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Short-pod mustard, tocalote
6/01/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/02/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/03/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/03/2021	Dethatch-cut with line trimmers	Piper Ranch	Non-native plant treatment area	N/A	9864	Piper Ranch	Vernal pools and native grassland	Non-native annual grasses
6/04/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/07/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
6/08/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/09/2021	Herbicide	Millenia	Millenia (west)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/11/2021	Dethatch-cut with line trimmers	Piper Ranch	Non-native plant treatment area	N/A	9864	Piper Ranch	Vernal pools and native grassland	Non-native annual grasses
6/14/2021	Herbicide	Salt Creek	Throughout the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/14/2021	Herbicide	Northern Salt Creek	Throughout eastern portion of the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/16/2021	Herbicide	Salt Creek	Throughout the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/17/2021	Cut with line trimmers	San Ysidro	QCB Habitat Restoration Area (County of San Diego CDFW LAG Grant; ended spring 2019)	N/A	8406	Quino Checkerspot Butterfly Habitat Restoration and Enhancement Project	QCB	Non-native grasses

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
6/18/2021	Cut with line trimmers	San Ysidro	QCB Habitat Restoration Area (County of San Diego CDFW LAG Grant; ended spring 2019)	N/A	8406	Quino Checkerspot Butterfly Habitat Restoration and Enhancement Project	QCB	Non-native grasses
6/22/2021	Herbicide	Salt Creek	Throughout the southern portion of the parcels	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/22/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/22/2021	Dethatch-cut with line trimmers	Piper Ranch	Non-native plant treatment area	N/A	9864	Piper Ranch	Vernal pools and native grassland	Non-native annual grasses
6/23/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
6/24/2021	Herbicide	Northern Salt Creek	Northwest corner of the parcels	N/A	5256	Otay Ranch Preserve	Otay tarplant Coastal California gnatcatcher	Fennel
6/24/2021	Herbicide	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Native grassland and other various native habitats	Fennel
6/24/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
6/25/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
6/28/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
6/29/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
6/30/2021	Cut with line trimmers	Millenia	Millenia (east)	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
8/12/2021	Dethatch-cut with line trimmers	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
8/13/2021	Dethatch-cut with line trimmers	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
8/16/2021	Dethatch-cut with line trimmers	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
8/17/2021	Dethatch-cut with line trimmers	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
8/18/2021	Dethatch-cut with line trimmers	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
8/19/2021	Removed by hand	Salt Creek	North-central section of the parcels	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
8/24/2021	Removed by hand	Northern Salt Creek	Western trail	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
8/25/2021	Removed by hand	Salt Creek	Northeastern boundary of the parcels	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/01/2021	Removed by hand	Salt Creek	Southern sections of the parcels	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/02/2021	Removed by hand	Salt Creek	Southern sections of the parcels	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/02/2021	Removed by hand	N/A	3-acre restoration site within the County of San Diego parcel APN 646-010-06	5004730	8116	Otay River Valley Cactus Wren EMP Grant	Coastal cactus wren	Stinkwort
9/03/2021	Removed by hand	Salt Creek	Northern boundary of the parcels	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/13/2021	Rake cut thatch	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
9/14/2021	Rake cut thatch	Millenia	Millenia (east) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
9/15/2021	Dethatch-cut with line trimmers	Millenia	Millenia (west) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
9/16/2021	Removed by hand	Salt Creek	Main Salt Creek drainage	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/17/2021	Cut with line trimmers and rake	Millenia	Millenia (west) Non-native Plant Treatment Area	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Non-native grasses
9/21/2021	Removed by hand	Northern San Ysidro	Main Northern San Ysidro drainage	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/21/2021	Removed by hand	San Ysidro	Main San Ysidro drainage	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
9/22/2021	Cut with line trimmers	San Ysidro	QCB Habitat Restoration Area (County of San Diego CDFW LAG Grant; ended spring 2019)	N/A	8406	Quino Checkerspot Butterfly Habitat Restoration and Enhancement Project	QCB	Non-native grasses
9/23/2021	Rake cut thatch	San Ysidro	QCB Habitat Restoration Area (County of San Diego CDFW LAG Grant; ended spring 2019)	N/A	8406	Quino Checkerspot Butterfly Habitat Restoration and Enhancement Project	QCB	Non-native grasses
10/6/2021	Removed by hand	Northern Salt Creek	Along central north-south road	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
10/6/2021	Removed by hand	Salt Creek	Northwest section of the parcels, on SDG&E access road.	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort

Table 41
Vegetation Removal and Treatment Locations

Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
10/13/2021	Removed by hand	San Ysidro	Main San Ysidro drainage	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
10/13/2021	Removed by hand	Northern San Ysidro	Main Northern San Ysidro drainage	N/A	5256	Otay Ranch Preserve	Various native habitats	Stinkwort
10/04/2021	Remove cut thatch	Salt Creek	Mesa vernal pools	N/A	7754	QCB Recovery Program	QCB, vernal pool plant species, vernal pool branchiopods	Filaree, Oat
10/20/2021	Herbicide application	Salt Creek	Mesa vernal pools	N/A	7754	QCB Recovery Program	QCB, vernal pool plant species, vernal pool branchiopods	Filaree
10/21/2021	Herbicide application	Salt Creek	Mesa vernal pools	N/A	7754	QCB Recovery Program	QCB, vernal pool plant species, vernal pool branchiopods	Filaree
10/22/2021	Herbicide application	Salt Creek	Mesa vernal pools	N/A	7754	QCB Recovery Program	QCB, vernal pool plant species, vernal pool branchiopods	Filaree
11/04/2021	Removed by hand	Millenia	Millenia (west of SR-125): proposed vernal pool mesa	N/A	5256	Otay Ranch Preserve	Potential QCB and potential vernal pool habitat	Stinkwort
11/18/2021	Dethatch-cut with line trimmers	Millenia	Millenia (west of SR-125) within the mesa where San Diego button-celery occurs	N/A	5256	Otay Ranch Preserve	Quino checkerspot	Oat

Table 41 Vegetation Removal and Treatment Locations								
Treatment Date	Treatment Type	Parcel(s)	Specific Location	Previous SANDAG Grant Number	Previous RECON Project Number	Previous Project Name	Focal Sensitive Species or Resource	Plant Species Treated
11/19/2021	Dethatch-cut with line trimmers	Millenia	Millenia (west of SR-125) within the mesa where San Diego button-celery occurs	N/A	5256	Otay Ranch Preserve	Quino checkerspot	Oat
11/22/2021	Cut by hand & herbicide application	Salt Creek	Salt Creek: Previous County SANDAG TransNet EMP CACW habitat restoration area	5001133	N/A	Salt Creek Coastal Cactus Wren Habitat Restoration Project (County of San Diego Department of Parks and Recreation)	Coastal cactus wren, coastal California gnatcatcher	Broom baccharis (*Baccharis sarothroides*)
11/23/2021	Cut by hand & herbicide application	Salt Creek	Salt Creek: Previous County SANDAG TransNet EMP CACW habitat restoration area	5001133	N/A	Salt Creek Coastal Cactus Wren Habitat Restoration Project (County of San Diego Department of Parks and Recreation)	Coastal cactus wren, coastal California gnatcatcher	Broom baccharis
11/24/2021	Cut by hand & herbicide application	Northern Salt Creek	Northern Salt Creek: Shrub thinning area (CFD 97-2 funded: January 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Broom baccharis, Lemonadeberry (*Rhus integrifolia*), short-pod mustard
12/17/2021	Cut with line trimmers	Salt Creek	Cholla planting patch 64 (CFD 97-2 funded: December 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Oat, filaree
12/22/2021	Plant installation	Salt Creek	Cholla planting patch 64 (CFD 97-2 funded: December 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Coast cholla and shore cactus planting
12/23/2021	Plant installation	Salt Creek	Cholla planting patch 64 (CFD 97-2 funded: December 2021)	N/A	5256	Otay Ranch Preserve	Coastal cactus wren	Coast cholla and shore cactus planting

Noteworthy events documented during vegetation treatment and removal activities are described below:

- On January 7, the PSB mapped locations where shrub thinning occurred within the Western Wolf Canyon parcels.
- The PSB reviewed and coordinated with USGS to determine new locations within Salt Creek and Northern Salt Creek that would benefit from shrub thinning activities. The PSB flagged and mapped the potential locations on January 7, 13, and 15.
- On February 25, the PSB mapped locations where shrub thinning occurred within the Western Wolf Canyon and Salt Creek parcels.
- On July 14, the PSB mapped weeds at Northern Salt Creek and Salt Creek for prioritizing weeding efforts for the restoration crew.
- On July 15, the PSB conducted a qualitative survey at the Millenia parcels east of SR-125 to plan future dethatching efforts.
- On July 19, the PSB conducted a qualitative survey at the former CDFW LAG grant project within the San Ysidro parcels to plan future weed treatment.
- On August 17, Mark Dodero (RECON) sent Barbara Kus (USGS), Kristine Preston (USGS), Trish Smith (The Nature Conservancy), Suellen Lynn (USGS), Alexandra Houston (USGS), Cheryl Goddard, Michael Beck (Endangered Habitats Conservancy), Christine Beck (CDFW), and Sarah Mccutcheon (SDMMP) an email discussing the benefits of weed removal within coastal cactus wren habitat.
- Mark Dodero (RECON) coordinated with City of San Diego and Black Sage Environmental to recommend where and how to collect cholla within the Preserve. On December 22, the PSB met Black Sage Environmental at Salt Creek parcels to point out the recommended collection location.

Vernal Pool Habitat (Salt Creek and Piper Ranch)

The long-term goal within vernal pool habitat vegetation treatment areas is to increase habitat quality for vernal pool wildlife and plant species. Non-native species such as filaree and oat were treated within the 30 vernal pools established through grading in 2015 within approximately 0.25 acre at the Salt Creek parcels, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 47 and Attachment 2: Photograph 25).

Various non-native grasses were dethatched from 2.06 acres within potential vernal pool habitat within the Piper Ranch parcels (see Attachment 1: Figure 49). In addition, herbicide was applied to Australian saltbush (*Atriplex semibaccata*) within the non-native plant treatment area at Piper Ranch parcels.

Cactus Wren Habitat Enhancement (Salt Creek, Millenia, County of San Diego Property, and Western Wolf Canyon)

Previous coastal cactus wren SANDAG grant areas have continued to be maintained through CFD 97-2 funding after the grant projects ended. A coastal cactus wren grant project (previous SANDAG grant number 5001970; Attachment 1: Figure 47; previous RECON project number 6649) planted cholla cuttings on approximately 15 acres during the fall/winter of 2012-13. These planting areas have had weed control efforts funded by the CFD 97-2 since the fall of 2015. The plants are slowly maturing and are within about 2 to 3 years of becoming tall enough for coastal cactus wren to nest in. The blue elderberry (*Sambucus nigra* ssp. *caerulea*) trees planted for this previous SANDAG grant have continued to grow, flower, and set seeds. Weeding was conducted within the elderberry area, High Tech Middle patch, and patches 1, 2, and 3, totaling 11.85 acres of this previous coastal cactus wren grant project. Patches 4 and 5 were assessed for weed treatment and no treatment was necessary in 2021. Patch 6 received treatment in late December of 2020 and additional treatment in 2021 was not necessary.

Short-pod mustard, tocalote, and various non-native annual grasses were also removed within Patches 3a and 3c, totaling 3.25 acres at the Salt Creek parcels (see Attachment 1: Figure 47; previous SANDAG grant number 5004731; previous RECON project number 7682). Patches 1a, 1b and 1c were dethatched late December 2020 and additional treatment in 2021 was not necessary. Patches 2, 3b, and 4 through 7 were assessed for weed treatment and no treatment was necessary in 2021. Short-pod mustard, tocalote, and filaree were removed within 1.15 acres at the Salt Creek parcels (see Attachment 1: Figure 47; previous SANDAG grant number 5001133). Short-pod mustard, tocalote, filaree, red brome, sow thistle, and nightshade were treated within Patches 1 and 2 within the previous SANDAG grant number 5004943 (2.66 acres; previous RECON project number 8340; see Attachment 1: Figure 47). Patches 3 through 5 were assessed for weed treatment and no treatment was necessary in 2021. Short-pod mustard, tocalote, and various non-native grasses were treated with herbicide from the 0.93-acre Salt Creek Cactus Wren Habitat Restoration/Erosion Control/Illegal Road Closure Area (see Attachment 1: Figure 47). The 0.72-acre shrub thinning effort from January/February 2017 was assessed for weed treatment and no treatment was necessary in 2021. Long-term control of weeds and shrubs around coast cholla habitat patches will reduce the risk of catastrophic fires that have the potential to cause loss of coastal cactus wren habitat. Although the Work Plan (FY 20-21) states that approximately 58.8 acres of coastal cactus wren habitat will be treated at Salt Creek parcels, as mentioned above, several areas did not require treatment. Therefore, a total of 19.84 acres of coastal cactus wren habitat were treated at Salt Creek parcels in 2021.

Per the Work Plan (FY 20-21), short-pod mustard, tocalote, and various non-native annual grasses were removed within 1.38 acres at the Millenia parcels (see Attachment 1: Figure 48; previous SANDAG grant number 5004731; previous RECON project number 7682). In 2021, vegetation within cactus wren habitat enhancement areas was treated with herbicide and removed by hand and line trimmer. Various non-native plants including short-pod mustard, tocalote, and filaree were removed from within 3-acres of the previous SANDAG grant number 5004730 at the County of San Diego parcel (see Attachment 1: Figure 50; previous RECON project number 8116). In addition, Figure 50 shows incidental coastal cactus wren observations.

Shrubs were selectively thinned and removed from existing coast cholla patches within approximately 1.59 acres of the Western Wolf Canyon parcels (Attachment 1: Figure 51) and 0.86 acre of the Northern Salt Creek and Salt Creek parcels, in accordance with the Work Plan (FY 20-21) (Attachment 1: Figure 47 and Attachment 2: Photograph 26). Coast cholla and shore cactus plants were installed within the new shrub thinning locations (0.86 acre; shrubs thinned in January/February 2021) at Salt Creek and Northern Salt Creek parcels (Attachment 2: Photograph 27). Coast cholla and shore cactus cuttings were also planted within an additional 0.59 acre area in December 2021 at the Salt Creek parcel. Coast cholla patches have declined due to drought and competition with weeds and large shrubs such as lemonadeberry. All shrub thinning occurred outside of the breeding season to ensure that no negative effects to coastal cactus wren or other bird species occurred. The primary shrubs removed during shrub thinning activities was lemonadeberry and also included jojoba (*Simmondsia chinensis*), San Diego viguiera (*Bahiopsis laciniata*), California encelia (*Encelia californica*), and California sagebrush (*Artemisia californica*). Large shrubs were removed and the stumps were sprayed with herbicide to prevent them from growing and competing with coast cholla and shore cactus. The primary shrub treated with herbicide during shrub thinning activities was lemonadeberry and some jojoba. In addition, non-native annuals within the shrub thinning areas at the Salt Creek and Western Wolf Canyon parcels were treated with herbicide, per the Work Plan (FY 20-21).

Quino Checkerspot Butterfly Habitat (San Ysidro and Millenia)

QCB habitat enhancement continued within approximately 6.35 acres at San Ysidro during 2021, in accordance with the Work Plan (FY 20-21) (Attachment 1: Figure 52). The primary weeds removed were non-native annual grasses. QCB was incidentally observed within the habitat enhancement area (Attachment 2: Photograph 28).

Various non-native grasses were removed from 16.86 acres within QCB and potential vernal pool habitat within the Millenia parcels, per the Work Plan (FY 20-1) (see non-native plant treatment area on Attachment 1: Figure 48).

Otay Tarplant Habitat (Millenia, Western Wolf Canyon)

The long-term goal at the Otay tarplant habitat treatment sites is to decrease non-native plant cover to maintain and enhance habitat for Otay tarplant. Red brome, oats, and short-pod mustard were removed from within 5.11 acres of Otay tarplant habitat within the Millenia parcels, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 48). Horehound, tocalote, common poison hemlock (*Conium maculatum*), and non-native annual grasses were removed within 2.49 acres of Otay tarplant habitat within the Western Wolf Canyon parcels, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 51).

Fennel within Native Grassland and Other Various Native Habitats (Northern Salt Creek, Salt Creek, and Millenia)

Fennel (CAL-IPC rating: Moderate) was targeted for control at Salt Creek and Millenia parcels, in accordance with the Work Plan (FY 20-21). Very sparse to dense patches of fennel occurring within

784.5 acres at Salt Creek and 189.2 acres at Millenia were treated with herbicide. In addition, fennel was treated within 148.6 acres at Northern Salt Creek. The RECON labor crew covered all three parcels in search of fennel (see Attachment 1: Figures 47 and 48 and Attachment 2: Photograph 30). Controlling fennel is intended to decrease the cover and distribution of this invasive species in native grassland and other habitats where sensitive resources are present.

Early Detection Rapid Response (Salt Creek, Northern Salt Creek, Wolf Canyon, Northern San Ysidro, San Ysidro, Millenia, and County of San Diego Property)

Stinkwort (CAL-IPC rating: Moderate/Alert) is sparsely distributed within the treatment survey areas at Salt Creek, Northern Salt Creek, the previous SANDAG grant number 5004730 on County of San Diego property, San Ysidro, Northern San Ysidro, Wolf Canyon, and Millenia. An 'alert' designation indicates that it has high potential for invasion into wildlands (Cal-IPC 2021). Stinkwort is removed by hand where encountered on the Preserve. Stinkwort was treated throughout the 784.5-acre Salt Creek parcels and 148.6-acre Northern Salt Creek parcels, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 47 and Attachment 2: Photograph 29).

Stinkwort was also removed within the previous EMP Grant 5004730 on County of San Diego property (3 acres; see Attachment 1: Figure 50; previous RECON project number 8116). Stinkwort was removed by hand along the dirt road within the Wolf Canyon parcels (see Attachment 1: Figure 51). Within the Northern San Ysidro and San Ysidro parcels, stinkwort was removed from within the 5.09-acre treatment survey area, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 52). Stinkwort was removed by hand at one location within Millenia parcels, in accordance with the Work Plan (FY 20-21) (see Attachment 1: Figure 48).

Stinknet (CAL-IPC rating: high) has only been observed at two locations within the Preserve in the past. One individual was previously observed and removed from the Millenia parcels on March 15, 2015 (see Attachment 1: Figure 48). One individual was observed and removed from the Salt Creek parcels on April 29, 2019 (see Attachment 1: Figure 47). This species typically germinates in spring and flowers from March through July (Jepson Interchange, University of California 2021). On March 17, April 28, and May 12, the previously mapped stinknet location west of SR-125 at the Millenia parcels was visited, per the Work Plan (FY 20-21). On March 15, April 12, and May 11, the previously mapped stinknet location at Salt Creek was visited, in accordance with the Work Plan (FY 20-21). No stinknet individuals were observed at either location.

Minnewawa Revegetation Area

At the Dulzura parcels, weeds were removed at the 0.86-acre Minnewawa Revegetation Area in 2021, in accordance with the Work Plan (FY 20-21). Attachment 1: Figure 53 shows the location of the Erosion Control/Revegetation Area. The primary weeds removed were non-native annual grasses and filaree.

Herbicide Application

For all herbicide activities, a field crew with annual pesticide training–under the supervision of a Qualified Applicator and project biologist–sprayed weeds.

4.0 Future Tasks to be Performed

Anticipated tasks to occur between January 1 and June 30, 2022 are listed below (RECON 2021a). Tasks to be performed between July 1 and December 31, 2022 will be proposed in the draft FY 2022–23 Annual Work Plan, which will be submitted to the POM by February 1, 2022.

- Vernal pool plant seed collection and redistribution at the Salt Creek parcels (Subtask 1a).
- Focused rare plant surveys focusing on conspicuous perennial species at Proctor Valley Extension and Piper Ranch parcels and annual and herbaceous perennial species at Dulzura, Jamul Mountains, Johnson Canyon (East), Johnson Canyon Otay Tarplant Preserve, Little Cedar Canyon, McMillin, Northern Salt Creek, Northern San Ysidro, Proctor Valley, Piper Ranch, and Proctor Valley Extension (Subtask 1b).
- QCB surveys at the Proctor Valley (South), Millenia, Dulzura, Jamul Mountains, Little Cedar Canyon, McMillin, and Northern San Ysidro parcels (Subtask 1c).
- Vegetation mapping at the Northern Salt Creek parcels (Subtask 1d).
- Photographic monitoring at the Northern Salt Creek parcels (Subtask 1e).
- Coastal California gnatcatcher surveys at the Piper Ranch parcels (Subtask 1f).
- Baseline surveys at Bonita Glen and Eastlake Self Storage parcels if conveyed before March 1 (Subtask 1g).
- Least Bell's Vireo & Yellow-billed Cuckoo surveys at the Salt Creek, Northern Salt Creek, and Wolf Canyon parcels (Subtask 1h).
- Kuroshio Shot Hole Borer Tree Health Surveys at the Salt Creek, Northern Salt Creek, and Wolf Canyon parcels (Subtask 1i).
- Gold-spotted oak borer monitoring at the Dulzura parcels (Subtask 1j).
- Hermes Copper butterfly surveys at the Dulzura parcels (Subtask 1k).
- Golden eagle camera surveys at the Proctor Valley (North), Ridge, McMillin, and Dulzura parcels (Subtask 1l).
- Vernal Pool Plant Monitoring at the Piper Ranch parcels (Subtask 1m).
- Wet Season Fairy Shrimp Surveys at the at the Piper Ranch parcels (Subtask 1n).

The following deliverables from the FY 2021–22 Annual Work Plan are anticipated to be submitted between January 1 and June 30, 2022:

- Fire Management Plan (FY 2020-21)
- Strategic Plan (FY 2020-21)
- Operation Plan (FY 2020-21)
- Database management and contributions for data collected between January 1, 2021 and December 31, 2022 (Subtask 4b).
- Annual report (Subtask 4d).
- Coastal California gnatcatcher pre-survey notification letter (Subtask 4e).
- FY 2022–23 annual work plan for all tasks to be completed within the Otay Ranch Preserve between July 1, 2022 and June 30, 2023 (Subtask 4f).
- QCB pre-survey notification letter (Subtask 4g).
- QCB post-survey report (Subtask 4h).
- Fire Management Informational Video (Subtask 4i).
- Wet Season Fairy Shrimp Post-survey Report (Subtask 4k).

All Land Stewardship (Subtask 2a), Meetings and Coordination (Subtasks 3a–3d), Access Control (Subtasks 5a and 5b), and Invasive Species Treatment (Subtasks 6a) tasks are considered ongoing and will continue through the end of FY 2021–22.

5.0 Climate Adaptation Strategy

Climate change adaptation is defined by the National Wildlife Federation as "'initiatives and measures to reduce the vulnerability of natural or human systems against actual or expected climate change effects" (National Wildlife Federation 2014). The monitoring strategies conducted in 2021 provide the PSB and POM with information regarding the responses of species populations to the effects of climate change, as well as early detection of threats to sensitive populations. Management actions, such as invasive species control, were used to improve the resiliency of populations of sensitive vegetation communities, plants, and animals that are considered the most susceptible to these effects.

The two general types of monitoring that can be used to detect and measure the biological trends are:

1. Monitoring changes in vegetation community composition and distribution over the long term, and

2. Monitoring changes in the distribution and abundance of sensitive animal and plant species associated with climate change.

Long-term climate predictions for California vary from warmer and drier to warmer and wetter, depending on which models are consulted. Identifying and predicting specific outcomes and changes in climate, attributable to human activities, are difficult because of the inherent natural variation in climate patterns that already exists, regardless of human intervention. The one aspect of climate change that does exhibit a consensus in climate models is that temperatures will be warmer overall. In a warmer environment, there will be greater evaporation. When higher evaporation is combined with a pattern of less rainfall, the negative effects of drought on native habitat systems may be compounded.

Species monitoring tasks were implemented within the Preserve in 2021 that may be used to identify and track long-term changes in species diversity resulting from climate change in the future. These tasks include CAGN surveys, CACW surveys, Thorne's hairstreak surveys, HDS surveys, baseline vegetation mapping, photo point monitoring, repeat vegetation mapping, repeat photo point monitoring, focused rare plant surveys, KSHB monitoring, GSOB monitoring, and golden eagle camera surveys.

Table 42 identifies discrete tasks that were implemented in between January 1 and December 31, 2021 to monitor for biological trends that are likely to be driven by climate change. By comparing the results of these surveys to data collected in the future, trends in vegetation composition and species diversity due to climate change may be detected.

As part of the long-term monitoring efforts, available climate data, including rainfall and temperature, were reviewed and included in this 2021 annual report to aid in determining how observed changes in vegetation community distribution and species dominance and diversity may relate to climate change.

Table 42 Cross-walk of 2021 Annual Report Tasks with Climate Change Adaptation Strategies	
Monitoring Task	Purpose
Botanical Resources	
Baseline Vegetation Mapping and Photographic Monitoring (Tasks 1c, 1d, and 1l)	Vegetation mapping and photographic monitoring provide biological data for vegetation communities and plant species present within the Preserve at the time the monitoring is conducted. These data can be used to track changes in vegetation community and/or plant species diversity or abundance due to the effects of climate change, as well as provide a baseline for recovery should a climate-related catastrophic event, such as fire or severe flooding, occur.
Focused Surveys for Rare Plants (Task 1a)	Focused surveys monitored the response of sensitive plant species populations that are susceptible to the effects of climate change (e.g., increased drought, proliferation of non-native plant species). The 2021 monitoring effort will inform management actions to reduce threats and improve the resiliency of high-priority populations. Management actions may include habitat enhancement and weed control in areas with high-priority sensitive plant populations.
Seed Collection/Vernal pool plant seed collection and redistribution (Task 1h)	Management actions, such seed collection and redistribution, were used in 2021 to improve the resiliency of populations of sensitive plants that are considered the most susceptible to these effects.
Invasive Species Treatment: Non-native Plants (Task 6a)	Management actions, such as invasive species control, were used in 2021 to improve the resiliency of populations of sensitive vegetation communities, plants, and animals that are considered the most susceptible to these effects.
Zoological Resources	
Focused Surveys for Sensitive Wildlife: Coastal Cactus Wren, Coastal California Gnatcatcher, Thorne's Hairstreak, Harbison Dun Skipper, and Golden Eagle (Tasks 1e, f, g, i, and l)	Focused surveys monitored the response of sensitive wildlife species populations that are susceptible to the effects of climate change (e.g., reduced food availability, type conversion of suitable habitat). The 2021 monitoring effort will inform management actions to reduce threats and improve the resiliency of high-priority populations. Management actions may include habitat restoration and enhancement to expand the amount of suitable habitat available, create refugia, increase potential food sources, and connect fragmented or isolated habitat patches.
Invasive Species Treatment: Kuroshio Shot Hole Borer Monitoring and Gold-spotted Oak Borer Monitoring (Tasks 1j and k)	Invasive species monitoring provided information regarding new and emerging threats to sensitive habitats and species. The 2021 monitoring effort will inform management actions (e.g., trapping and other control methods) to reduce threats to high-priority populations of sensitive wildlife species, as well as to prevent the establishment of new populations of high-priority invasive species.

6.0 Additional Habitat Restoration Projects within the Otay Ranch Preserve

[To be inserted]

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2021d Pre-Survey Notification of Focused Surveys for Coastal California Gnatcatcher at Otay Ranch Preserve, San Diego County. January 25.

2021e Post-Survey Notification of Protocol Survey Results for the Coastal California Gnatcatcher at Otay Ranch Preserve. July 9.

2021f 2021 Baseline Survey Report for Otay Ranch Preserve – Proctor Valley Extension Parcels. September 15.

2021g 2021 Baseline Survey Report for Otay Ranch Preserve- Johnson Canyon Otay Tarplant Preserve Parcels. September 15.

2021h 2021 Baseline Survey Report for Otay Ranch Preserve – Piper Ranch Parcels. July 30.

2021i Wet Season Fairy Shrimp Pre-Survey Notification Letter. November 4.

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ATTACHMENTS

ATTACHMENT 1

Figures 4–53

Image Source: Nearmap (flown September 2021)

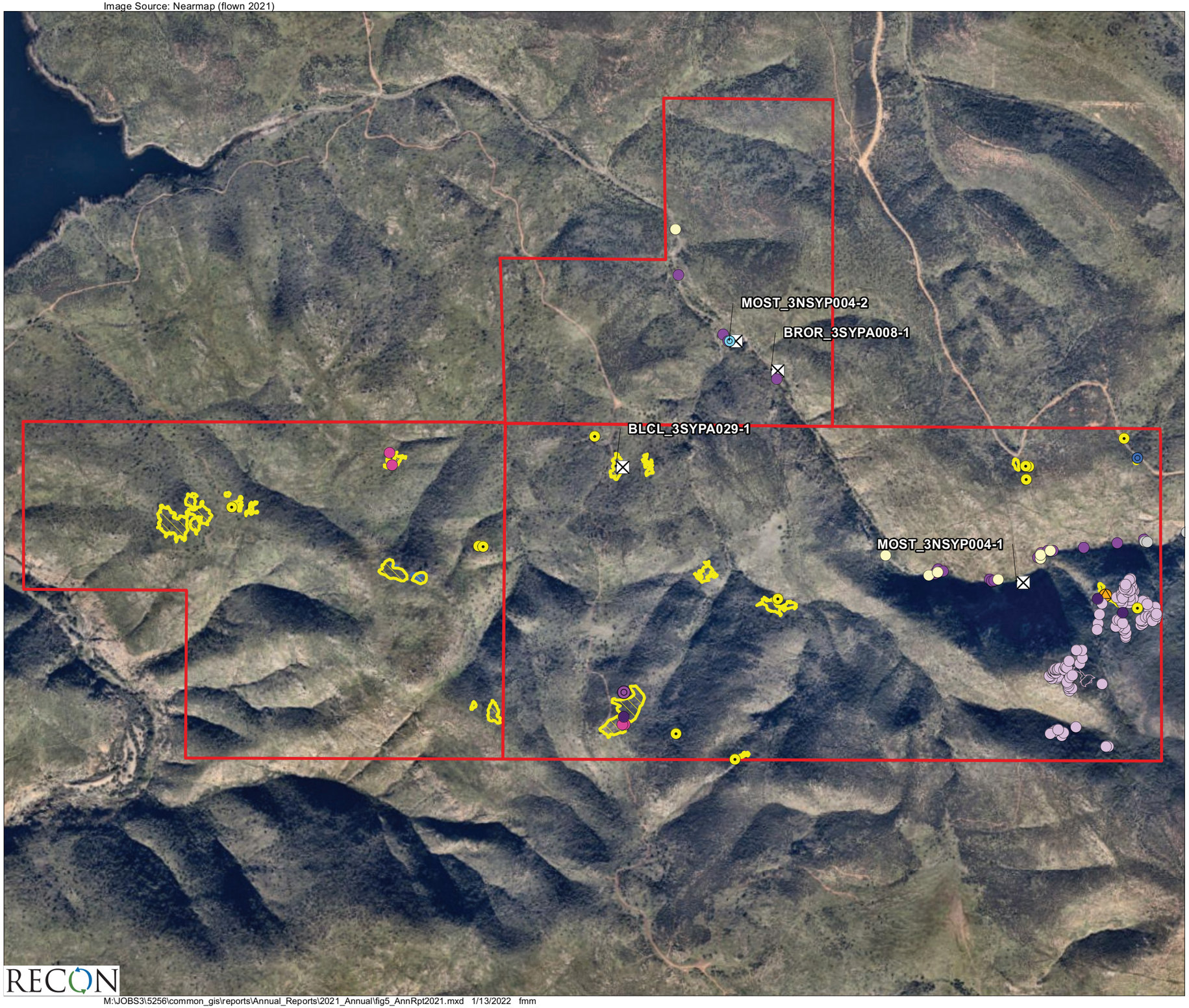


FIGURE 4
Rare Plant Survey Results, Salt Creek and Northern Salt Creek Parcels

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Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 1

- Dunn's Mariposa Lily (*Calochortus dunnii*)
- Gander's Pitcher Sage (*Lepechinia ganderi*)
- Variegated Dudleya (*Dudleya variegata*)

Priority Group 2

- Tecate Cypress (*Hesperocyparis forbesii*)

Priority Group 3

- Purple Stemodia (*Stemodia durantifolia*)
- Summer Holly *Comarostaphylis diversifolia* ssp. *diversifolia*

Priority Group 4

- Golden-ray Pentachaeta (*Pentachaeta aurea* ssp. *aurea*)
- Cooper's Rein Orchid *Piperia cooperi*

IMG MSP/Priority Group 1

- Rare Plant Monitoring Locations
- Orcutt's Brodiaea (*Brodiaea orcuttii*)
- Jennifer's Monardella (*Monardella stoneana*)
- San Diego Goldenstar (*Bloomeria clevelandii*)

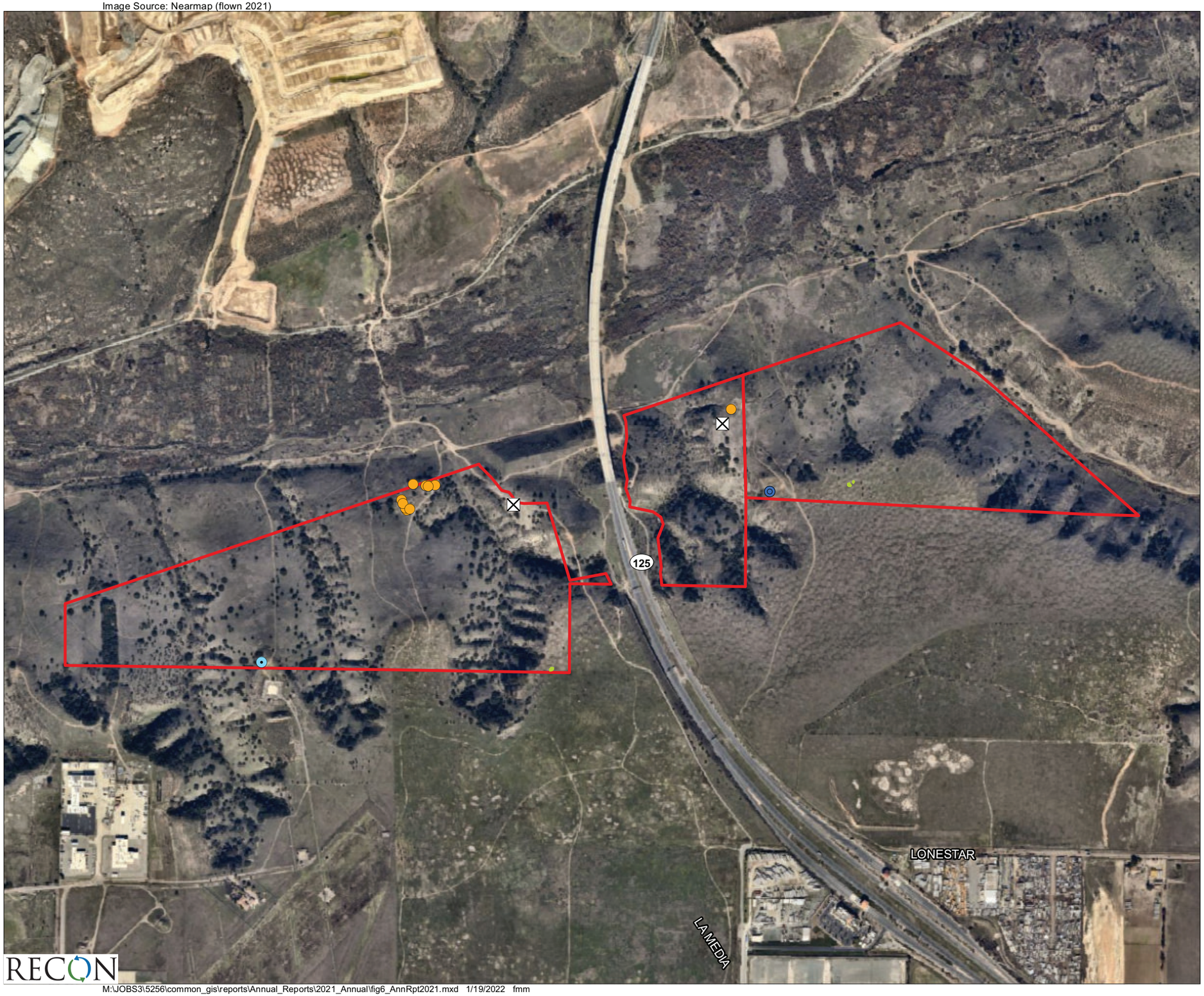
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FIGURE 5
Rare Plant Survey Results,
San Ysidro and Northern San Ysidro Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 1

Variegated Dudleya (*Dudleya variegata*)

San Diego Button-celery *Eryngium aristulatum* var. *parishii*

Priority Group 2

San Diego Barrel Cactus (*Ferocactus viridescens*)

IMG MSP/Priority Group 1

Rare Plant Monitoring Locations*

Otay Tarplant (*Deinandra conjugens*)

*IMG MSP plot established in 2021.
An Occurrence ID will be assigned by SDMMP.

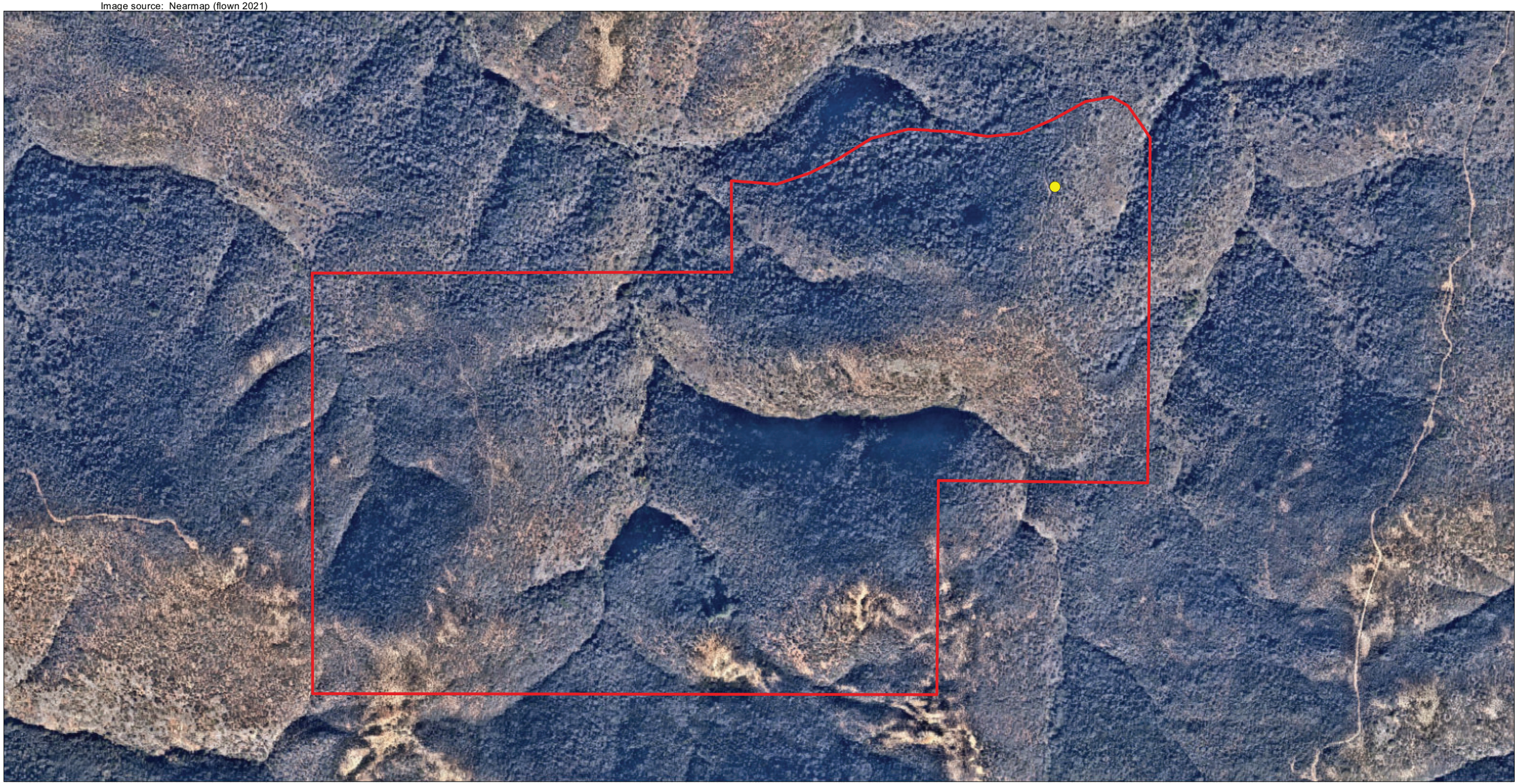
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FIGURE 6
Rare Plant Survey Results,
Millenia Parcels

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 1

Dunn's Mariposa Lily
(*Calochortus dunnii*)

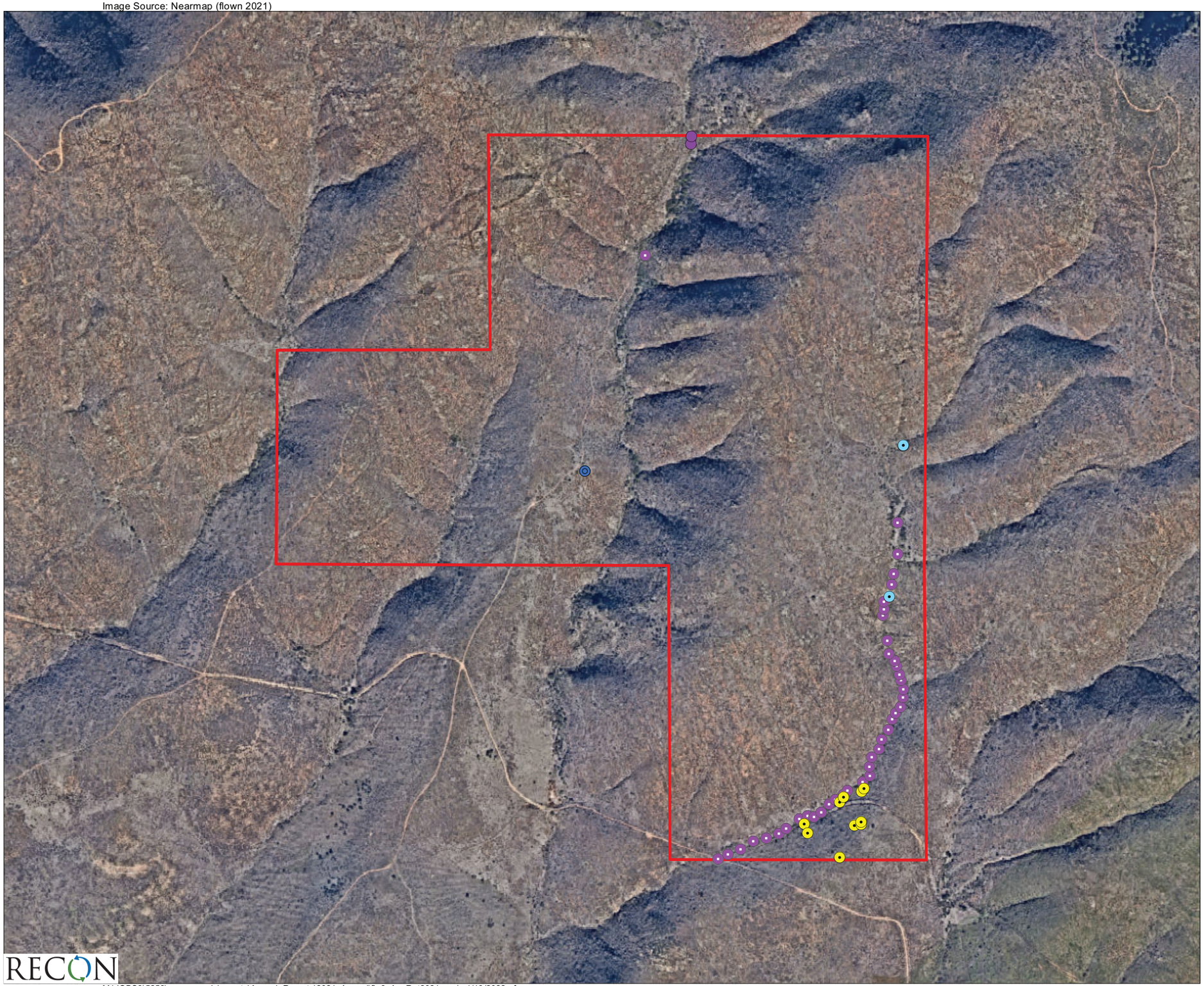
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FIGURE 7
Rare Plant Survey Results,
Proctor Valley (North) Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 1

- San Diego Goldenstar (*Bloomeria clevelandii*)
- Variegated Dudleya (*Dudleya variegata*)

Priority Group 2

- San Diego Barrel Cactus (*Ferocactus viridescens*)

Priority Group 3

- San Diego Marsh-elder (*Iva hayesiana*)
- Purple Stemodia (*Stemodia durantifolia*)

0 Feet 600

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FIGURE 8
Rare Plant Survey Results,
Ridge Parcels

Image Source: Nearmap (flown September 2020)



Conveyed Land Under POM Management

IMG MSP/Priority Group 1

- Rare Plant Monitoring Locations
- Otay Tarplant (*Deinandra conjugens*)

Sensitive Plants

Priority Group 1

- Variegated Dudleya (*Dudleya variegata*)

Priority Group 3

- South Coast Saltscale (*Atriplex pacifica*)

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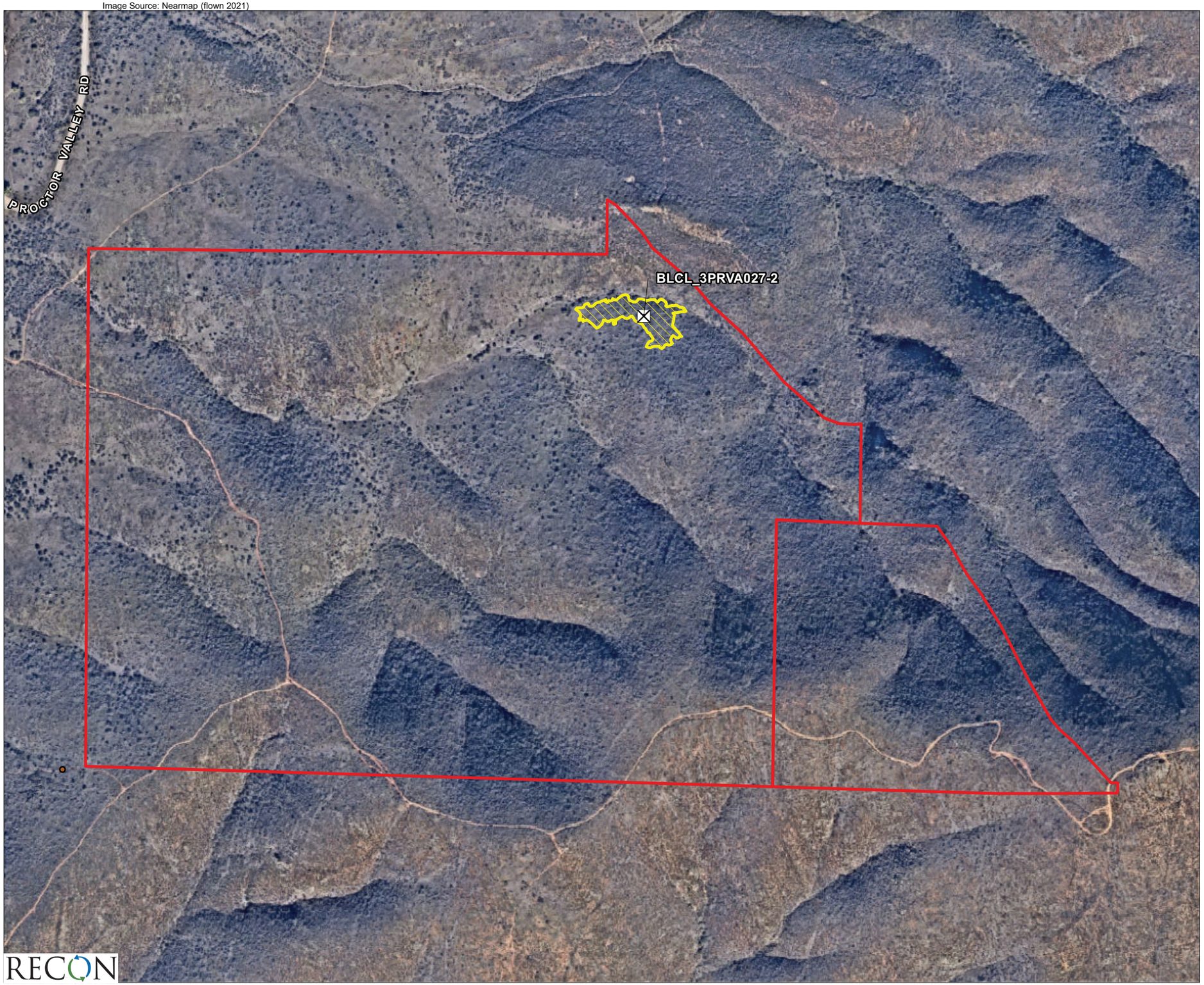
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FIGURE 9

Rare Plant Survey Results,
Western Wolf Canyon and Wolf Canyon Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

IMG MSP/Priority Group 1

Rare Plant Monitoring Locations

San Diego Goldenstar
(*Bloomeria clevelandii*)

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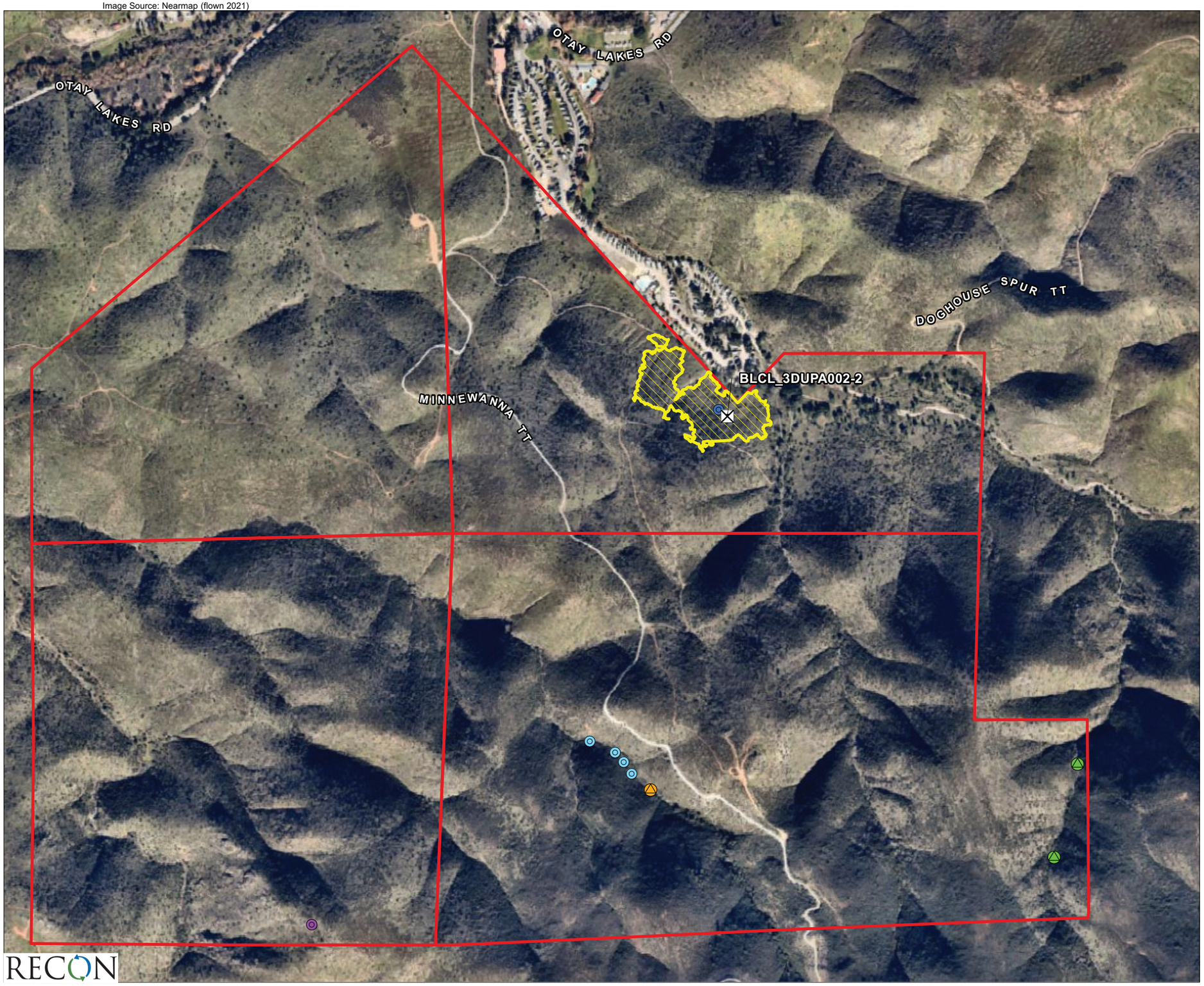
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FIGURE 10

Rare Plant Survey Results,
Jamul Mountain Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

IMG MSP/Priority Group 1

Rare Plant Monitoring Locations

San Diego Goldenstar (*Bloomeria clevelandii*)

Sensitive Plants

Priority Group 1

Variegated Dudleya (*Dudleya variegata*)

Priority Group 2

Tecate Cypress (*Hesperocyparis forbesii*)

Priority Group 3

Summer Holly (*Comarostaphylis diversifolia* ssp. *diversifolia*)

Delicate Clarkia (*Clarkia delicata*)

Priority Group 4

Western Dichondra (*Dichondra occidentalis*)

0 Feet 700

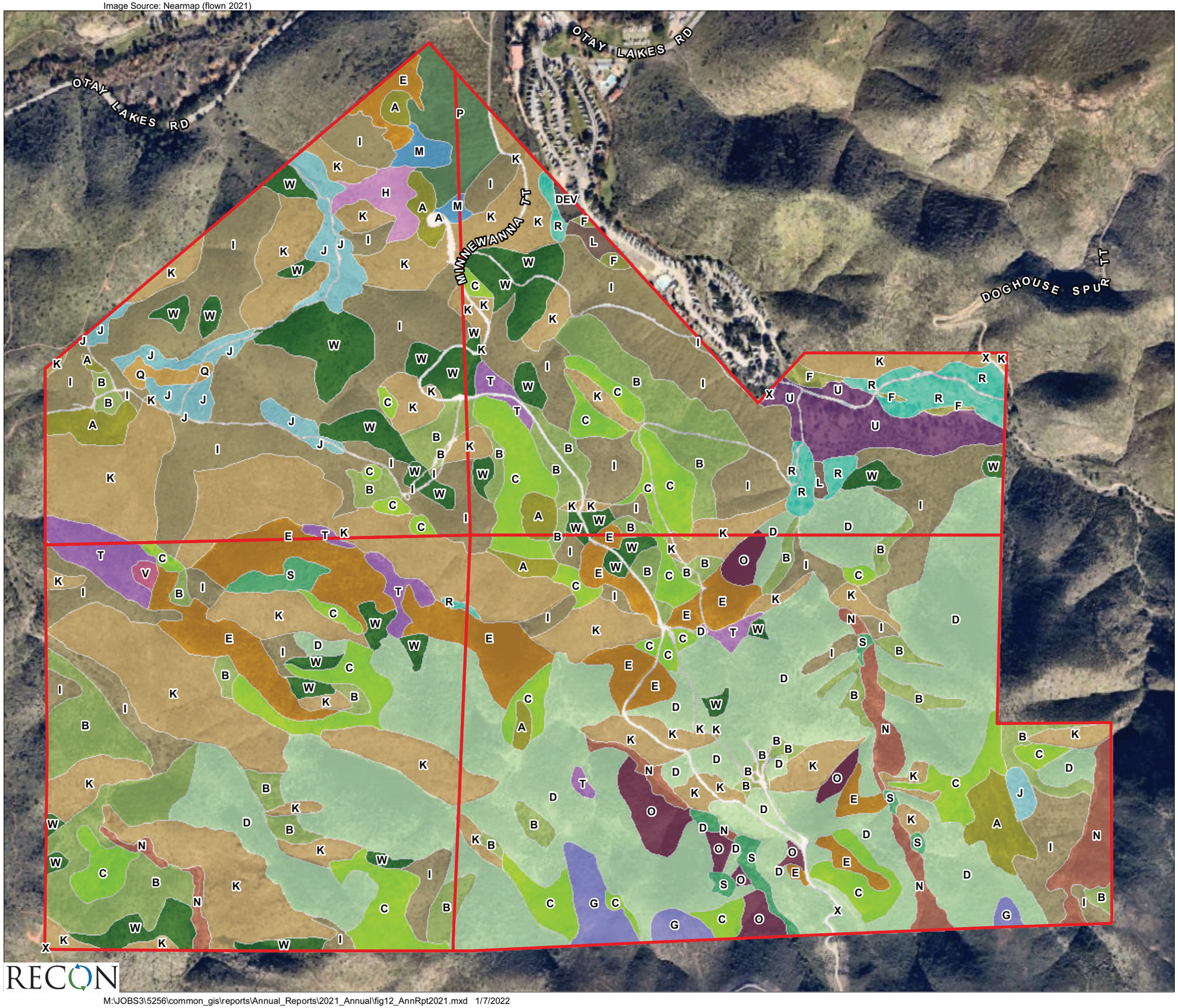
FIGURE 11

Rare Plant Survey Results, Dulzura Parcels

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Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Vegetation Communities

- A: *Adenostoma fasciculatum* Alliance
- B: *Adenostoma fasciculatum (Eriogonum fasciculatum-Artemisia californica-Salvia mellifera)* Association
- C: *Adenostoma fasciculatum-Xylococcus bicolor* Association
- D: *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* Association
- E: *Adenostoma fasciculatum-Xylococcus bicolor-Quercus (berberidifolia, xacutidens)* Association
- F: *Ambrosia monogyra* Provisional Association
- G: *Arctostaphylos glandulosa-Adenostoma fasciculatum-Chamaebatia australis* Association
- H: *Artemisia californica* Association
- I: *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association
- J: *Avena (barbata, fatua)* Semi-natural Stands
- K: *Bahiopsis laciniata-Artemisia californica-Eriogonum fasciculatum* Association
- L: *Bromus diandrus* Semi-natural Stand Type
- M: *Bromus rubens* Semi-natural Stand Type
- N: *Callitropsis forbesii* Provisional Association
- O: *Ceanothus tomentosus* Association
- P: *Eriogonum fasciculatum* Association
- Q: *Nassella pulchra* Association
- R: *Quercus agrifolia/Toxicodendron diversilobum*/Grass Association
- S: *Quercus agrifolia/Quercus (berberidifolia, xacutidens)* Association
- T: *Quercus (berberidifolia, xcutidens)* Association
- U: *Quercus engelmannii-Quercus agrifolia/Toxicodendron diversilobum*/Grass Association
- V: *Rhamnus crocea* Provisional Association
- W: *Salvia apiana-Artemisia californica* Association
- X: Unvegetated
- DEV: Urban/Developed

0 Feet 700

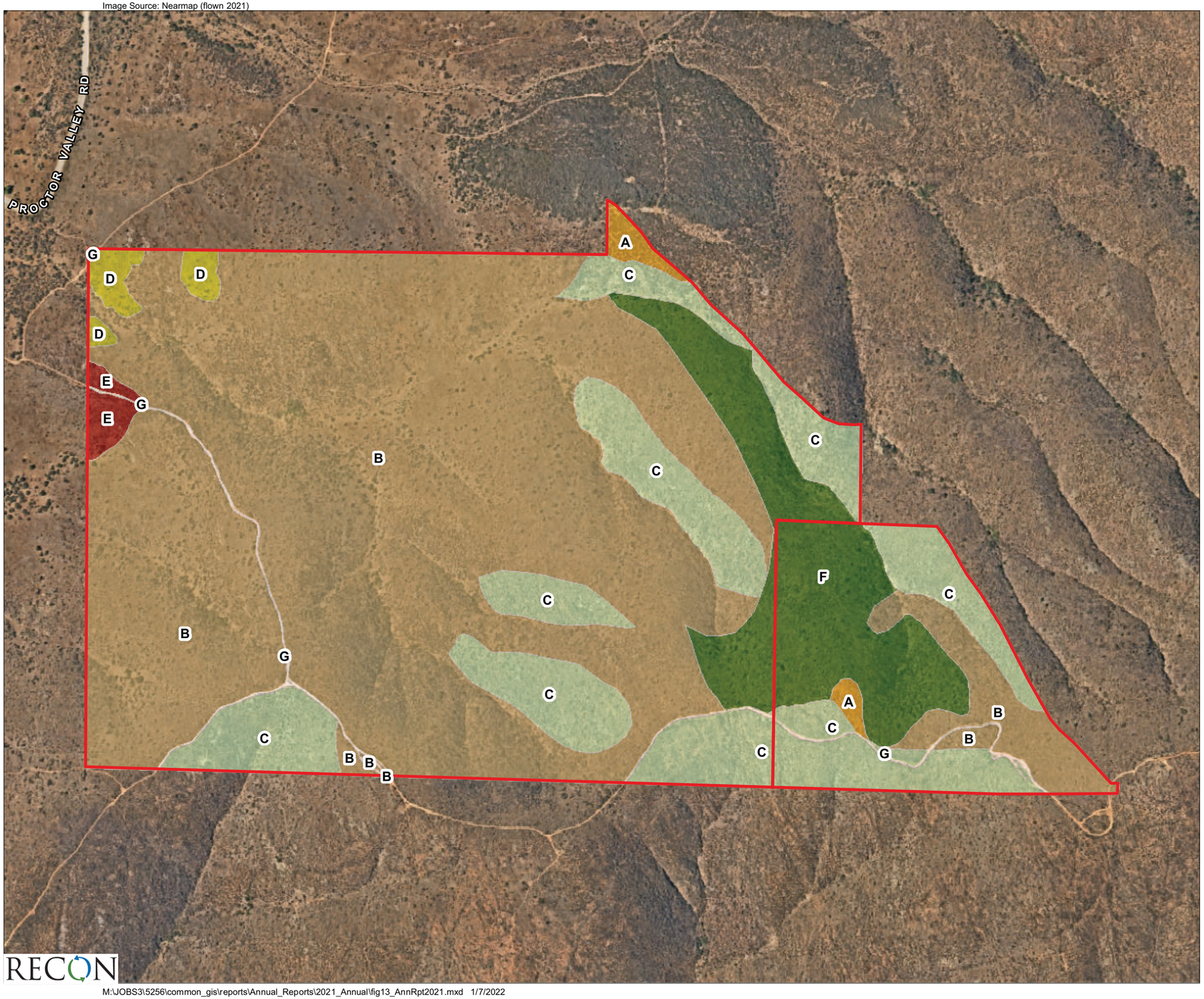
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FIGURE 12

Dulzura Parcels Vegetation Communities

Image Source: Nearmap (flown 2021)



- Conveyed Land Under POM Management

Vegetation Communities

- A: *Adenostoma fasciculatum-Xylococcus bicolor-Quercus (berberidifolia, xacutidens)* Association
- B: *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association
- C: *Bahiopsis laciniata-Artemisia californica-Eriogonum fasciculatum* Association
- D: Mediterranean California Naturalized Annual and Perennial Grassland Semi-Natural Stands
- E: *Nassella pulchra* Association
- F: *Salvia apiana-Artemisia californica* Association
- G: Unvegetated

0 Feet 500

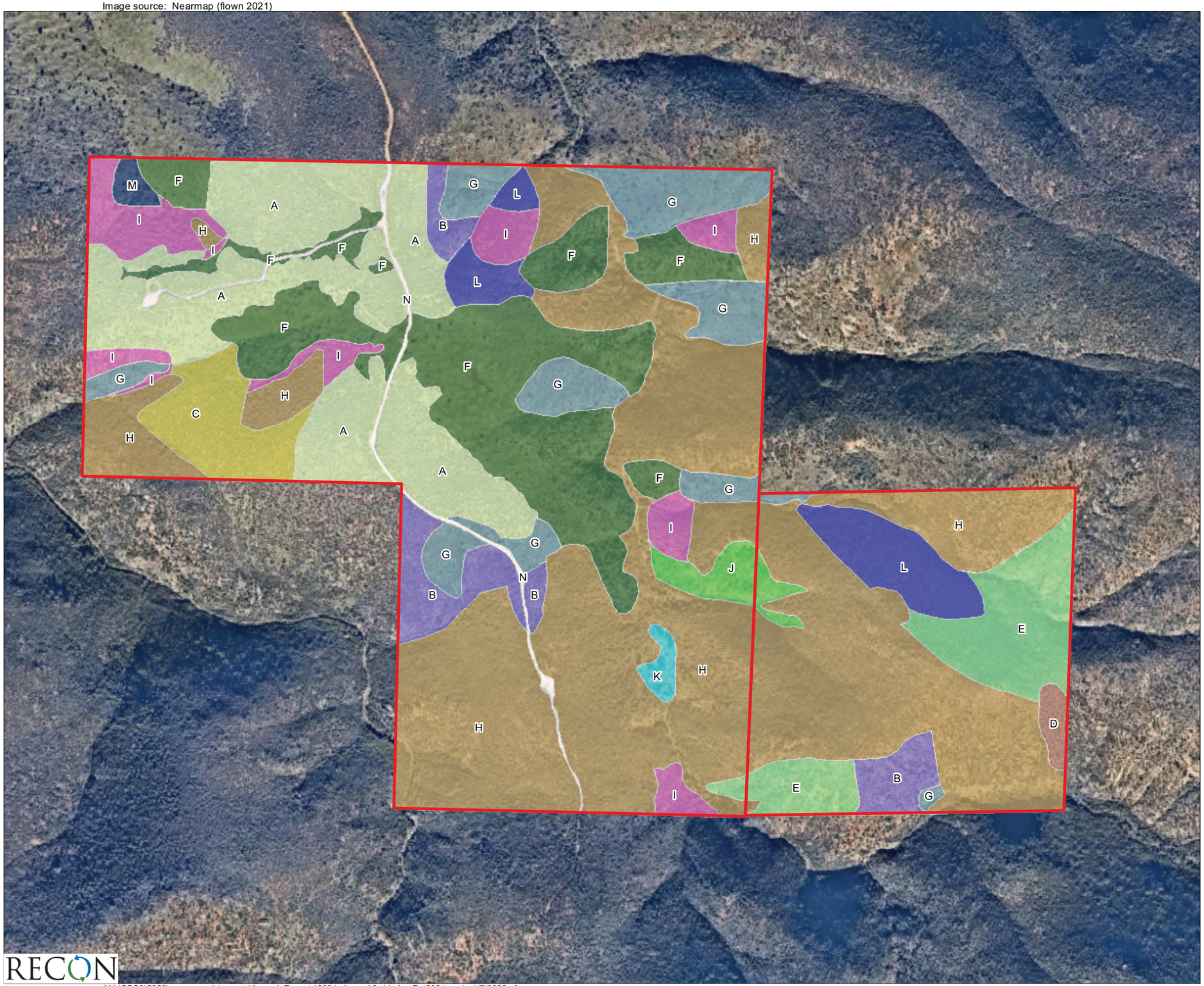
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FIGURE 13

Jamul Mountains Parcels
Vegetation Communities

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Vegetation Communities

- A: *Adenostoma fasciculatum* Alliance
- B: *Adenostoma fasciculatum-Ceanothus tomentosus* Association
- C: *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* Association
- D: *Adenostoma fasciculatum-Xylococcus bicolor-Pickeringia montana* Association
- E: *Arctostaphylos glandulosa-Adenostoma fasciculatum- Chamaebatia australis* Association
- F: *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association
- G: *Bahiopsis laciniata-Artemisia californica-Eriogonum fasciculatum* Association
- H: *Callitropsis forbesii* Provisional Association
- I: *Ceaothus tomentosus* Association
- J: *Malosma laurina-Lotus scoparius* Association
- K: *Quercus agrifolia* Alliance
- L: *Quercus (berberidifolia, xacutidens)* Association
- M: *Rhamnus crocea* Provisional Alliance
- N: Unvegetated

0 Feet 400

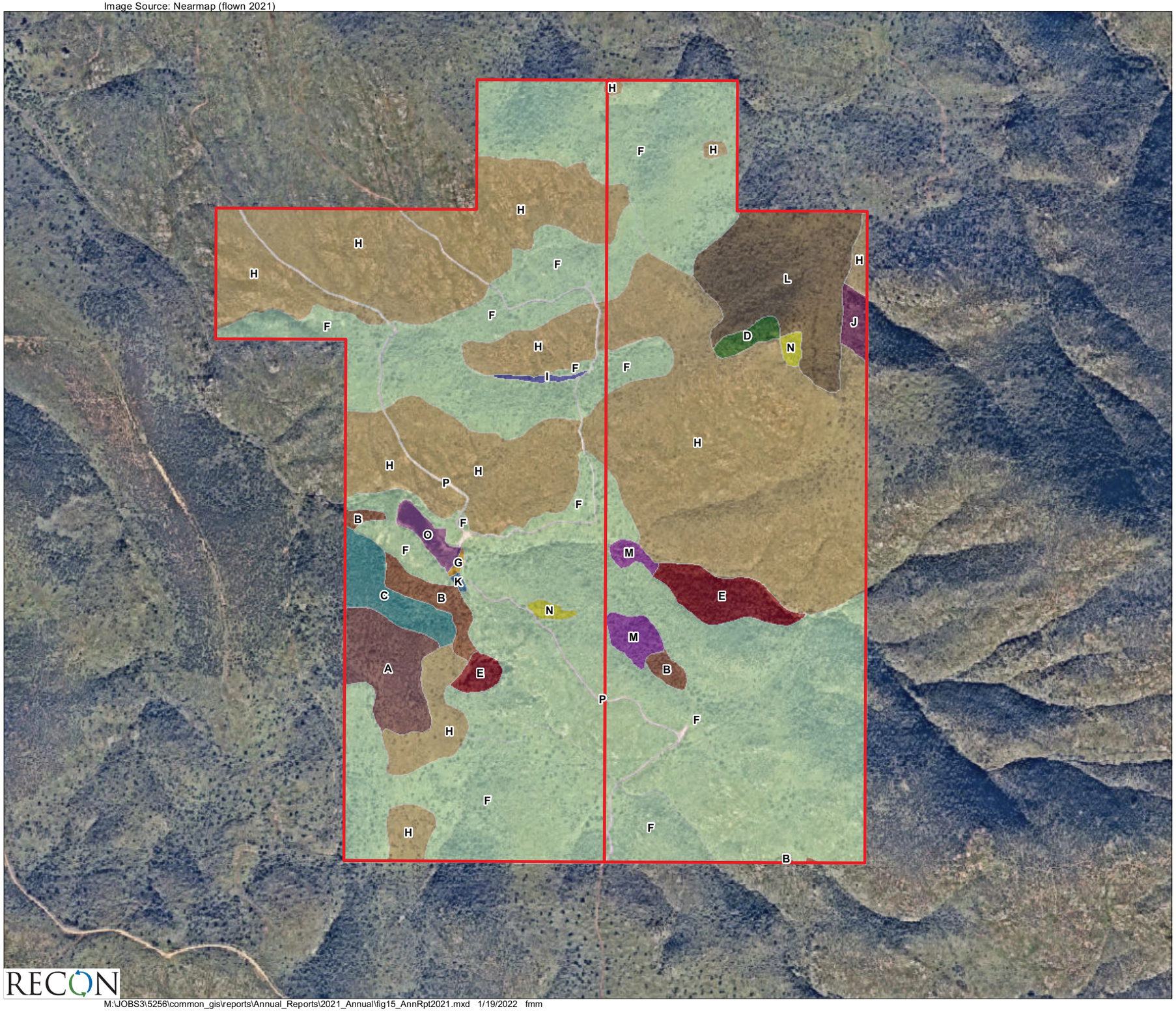
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FIGURE 14

Little Cedar Canyon Parcels
Vegetation Communities

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Vegetation Communities

- A: *Adenostoma fasciculatum* Alliance
- B: *Adenostoma fasciculatum-(Eriogonum fasciculatum, Artemisia californica, Salvia mellifera)* Association
- C: *Adenostoma fasciculatum-Xylococcus bicolor* Association
- D: *Adenostoma fasciculatum-Xylococcus bicolor-Ceanothus tomentosus* Association
- E: *Adenostoma fasciculatum-Xylococcus bicolor-Queber (berberidifolia, xacutidens)* Association
- F: *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association
- G: *Baccharis salicifolia* Association
- H: *Bahiopsis laciniata-Artemisia californica-Eriogonum fasciculatum* Association
- I: *Bromus diandrus* Semi-Natural Stand Type
- J: *Ceanothus tomentosus* Association
- K: *Iva hayesiana* Special Stands
- L: *Malosma laurina-Lotus scoparius* Association
- M: *Rhamnus crocea* Associaition
- N: *Salvia apiana-Artemisia californica* Association
- O: *Schoenoplectus californica* Association
- P: Unvegetated

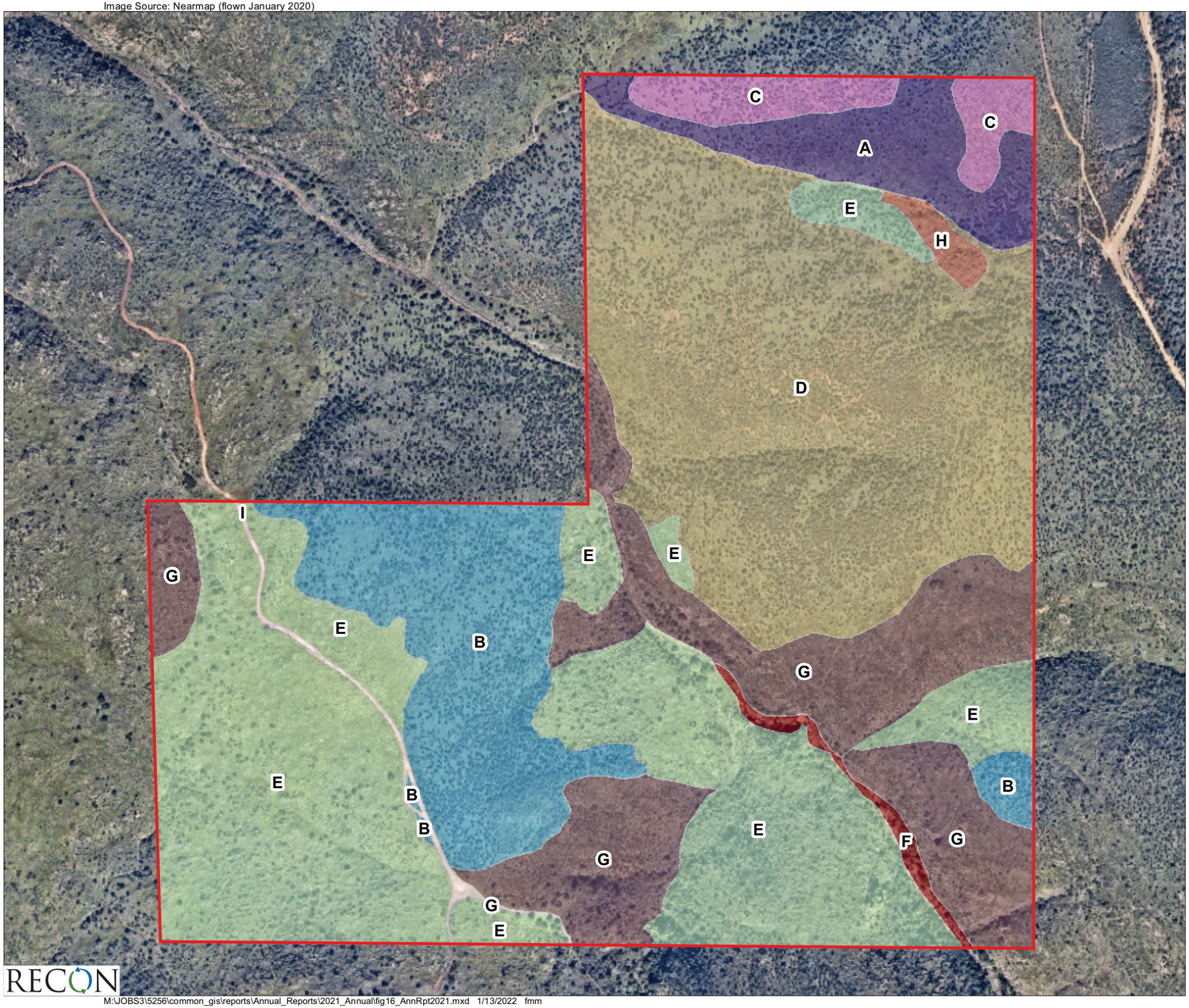
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FIGURE 15
Focused Rare Plant Monitoring:
McMillin Parcels

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Image Source: Nearmap (flown January 2020)



Conveyed Land Under POM Management

Vegetation Communities

- A: *Adenostoma fasciculatum-Lotus scoparius* Association
- B: *Adenostoma fasciculatum* Alliance
- C: *Adenostoma fasciculatum-(Eriogonum fasciculatum, Artemisia californica, Salvia mellifera)* Association
- D: *Adenostoma fasciculatum-Xylococcus bicolor* Association
- E: *Artemisia californica-Eriogonum fasciculatum-Malosma laurina* Association
- F: *Baccharis salicifolia* Association
- G: *Bahiopsis laciniata-Artemisia californica-Eriogonum fasciculatum* Association
- H: *Nassella pulchra* Association
- I: Unvegetated

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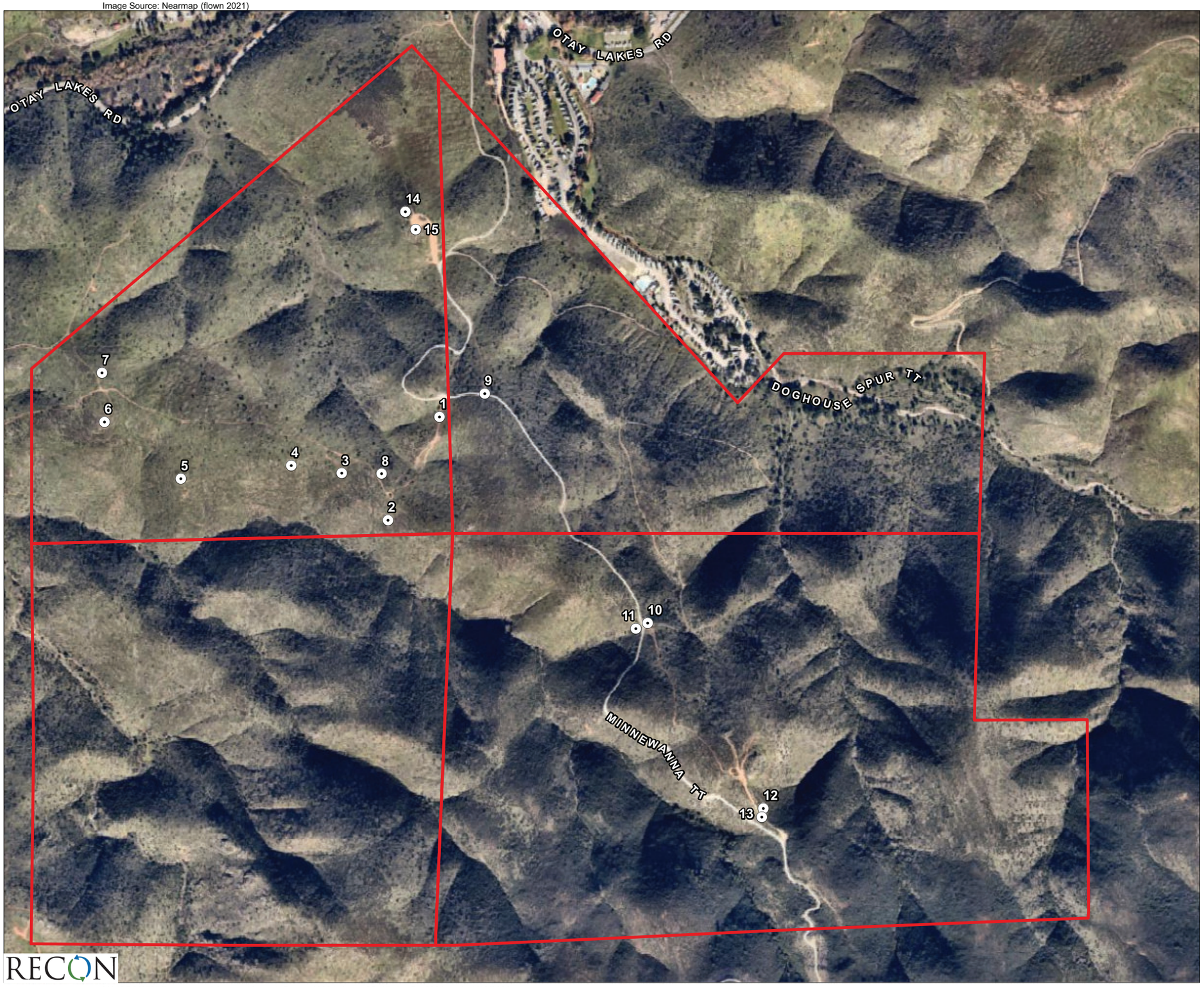
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FIGURE 16

Northern San Ysidro Parcels

Vegetation Communities

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Photo Monitoring Points -
Established in 2012. Repeated in 2021

0 Feet 700

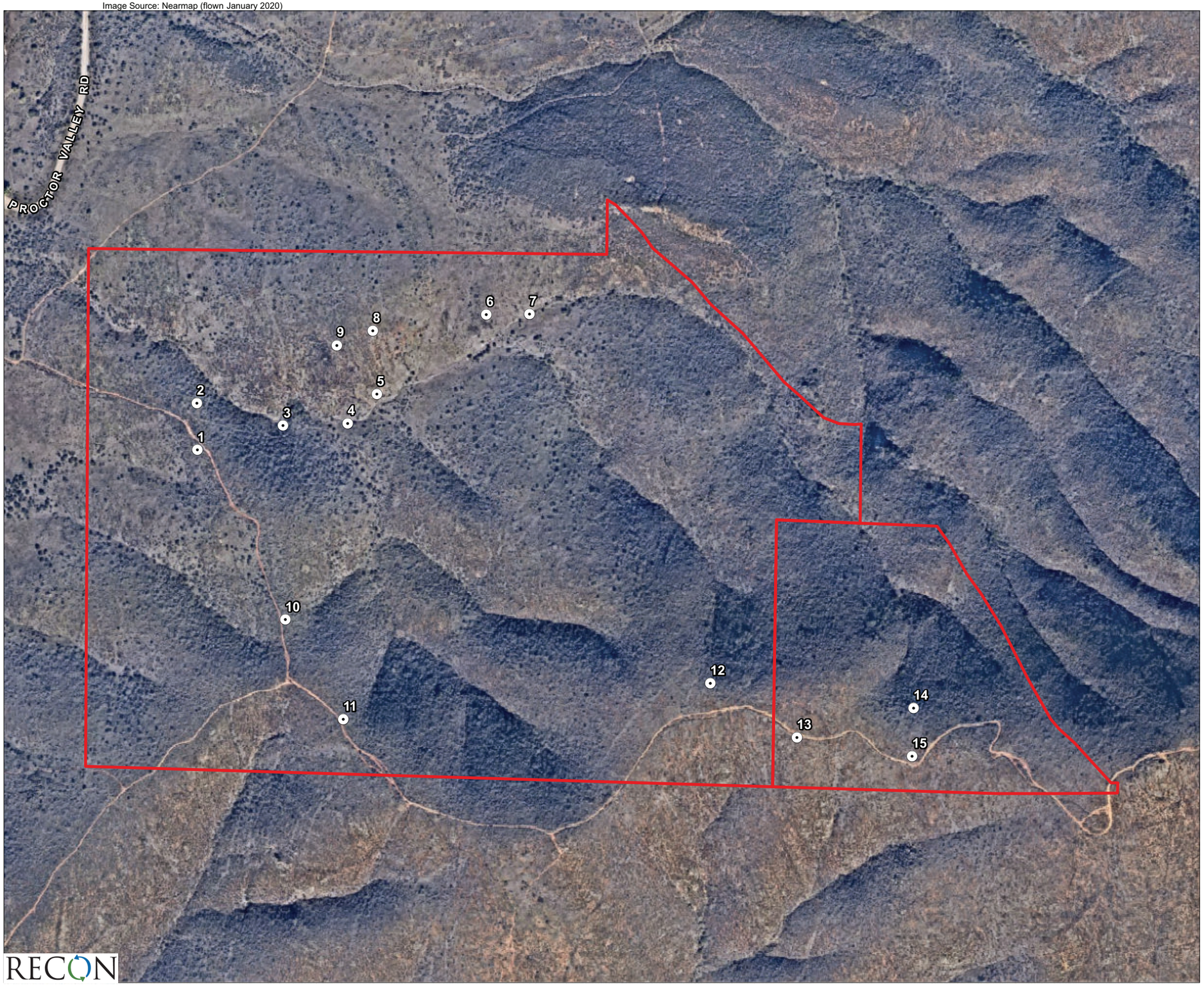
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FIGURE 17

General Landscape Photographic Monitoring, Dulzura Parcels

Image Source: Nearmap (flown January 2020)



Conveyed Land Under POM Management

Photo Monitoring Points -
Established in 2012. Repeated in 2021

0 Feet 500

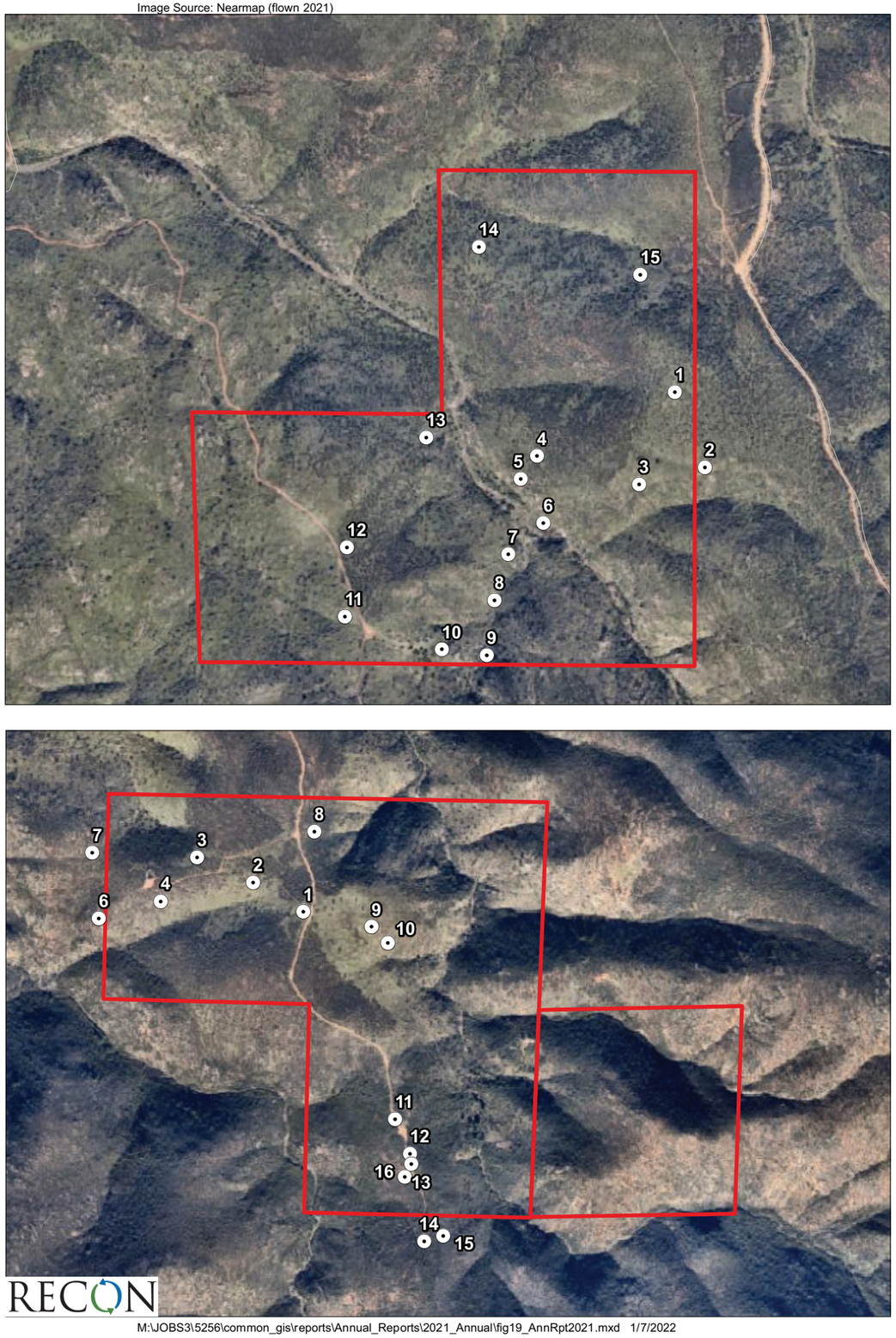
FIGURE 18

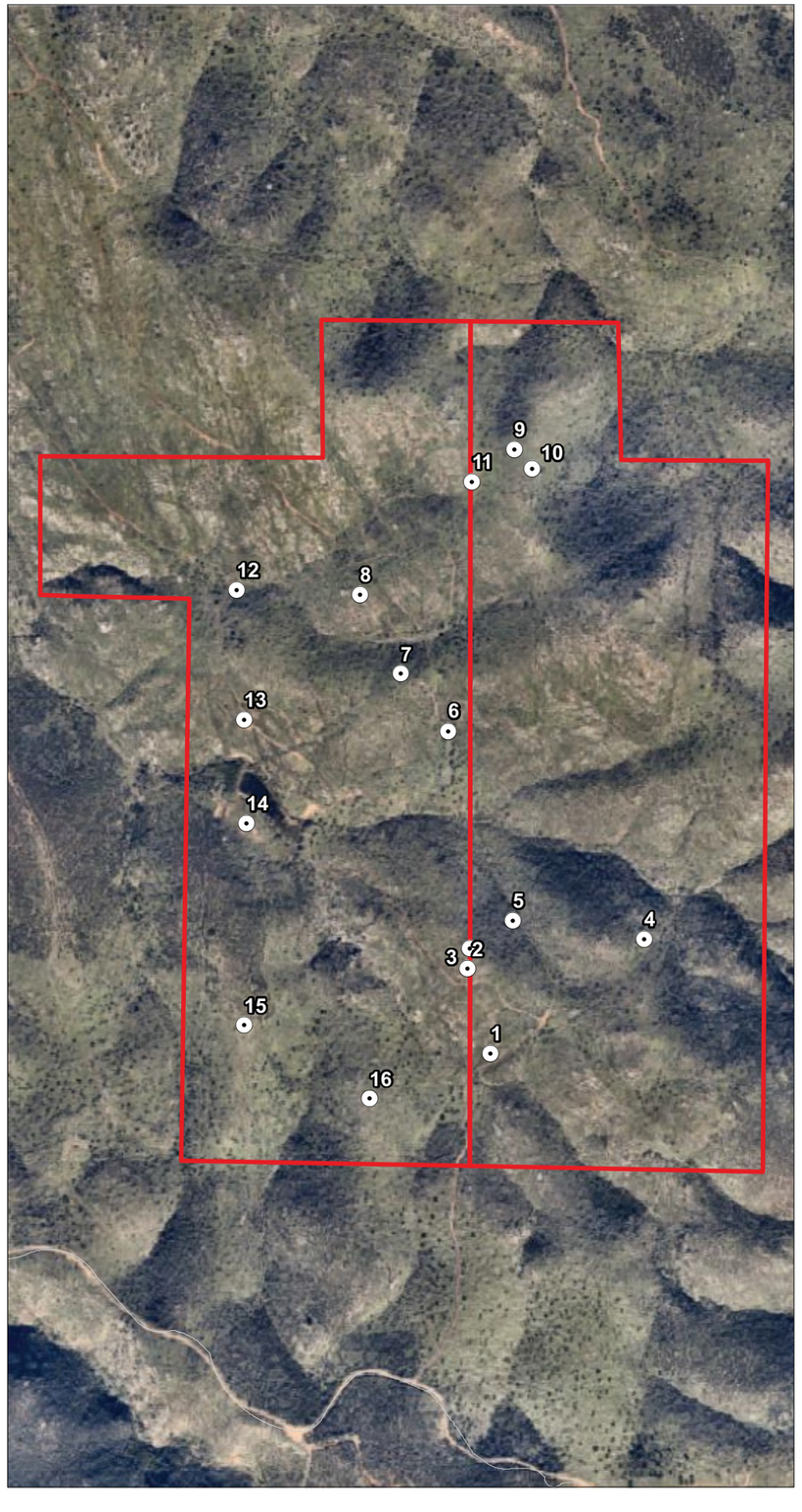
General Landscape Photographic Monitoring, Jamul Mountains Parcels

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Image Source: Nearmap (flown 2021)





Conveyed Land Under POM Management

Photo Monitoring Points -
Established in 2012. Repeated in 2021

0 Feet 700

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FIGURE 19

General Landscape Photographic Monitoring, Northern San Ysidro, McMillin, and Little Cedar Canyon Parcels

Image source: Nearmap (flown 2021)



0 Feet 800

- Conveyed Land Under POM Management
- Coast Cholla Height Survey Area
- CACW Survey Area
- CACW Photographic Monitoring Points
- Coastal Cactus Wren
- Coastal Cactus Wren Nest
- Coastal Cactus Wren and Nest

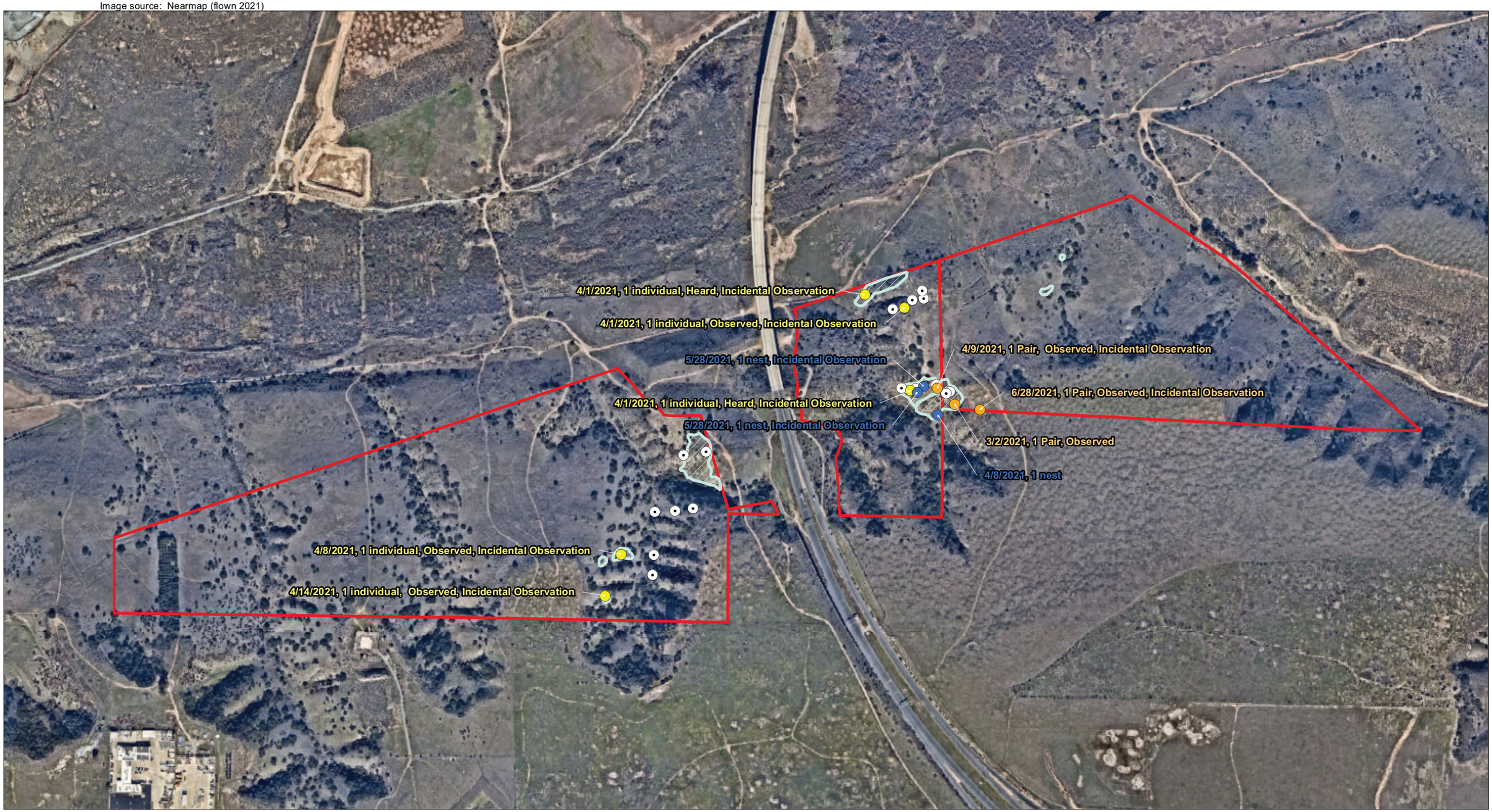
RECON

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FIGURE 20

Focused CACW Survey Area, Salt Creek Parcels

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

CACW Photographic Monitoring Points

CACW Survey Areas (3.48 acres)

Coastal Cactus Wren

Coastal Cactus Wren Pair

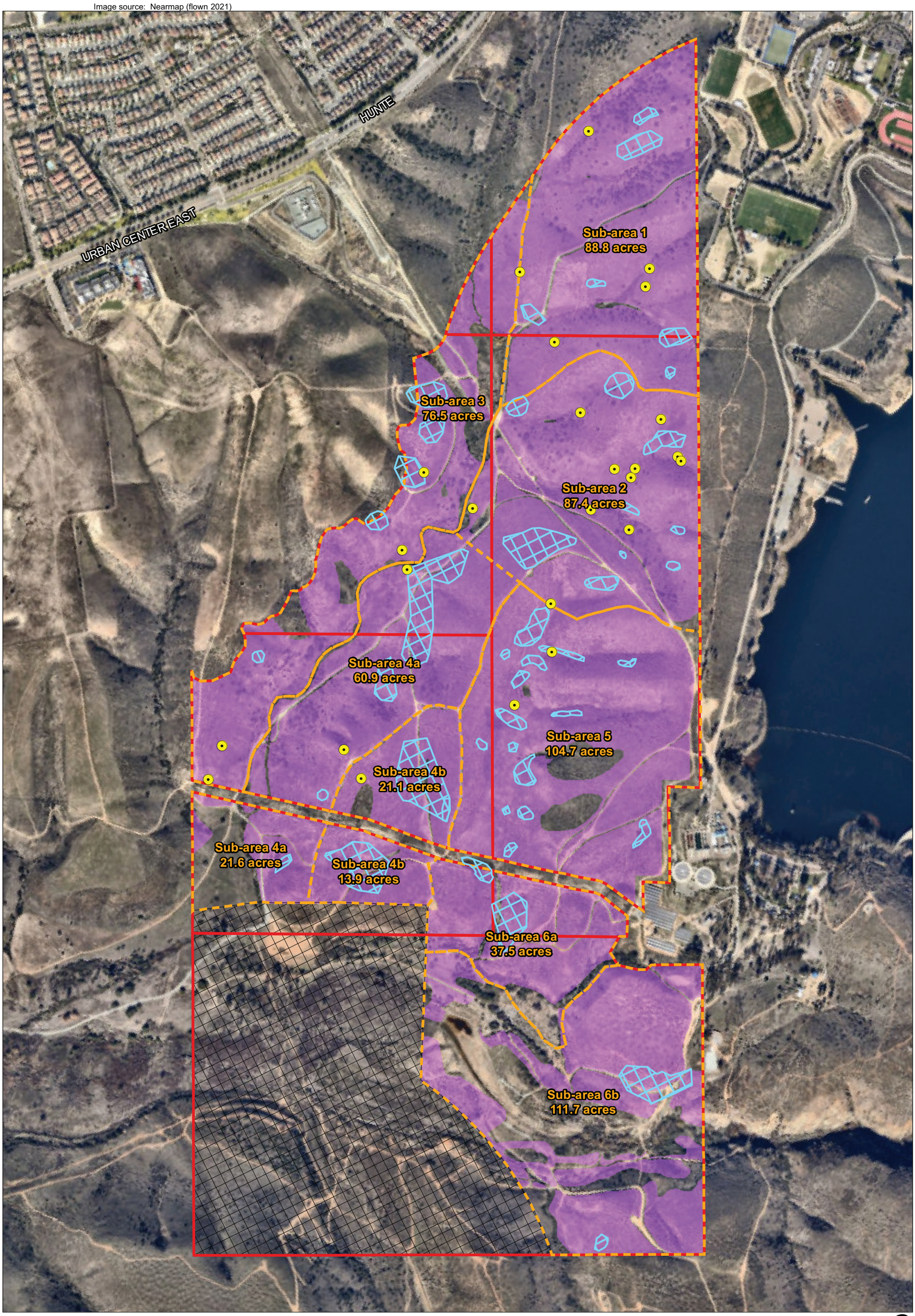
Coastal Cactus Wren Nest

RECON

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FIGURE 21
CACW Survey Area and Photographic Monitoring Locations, Millenia Parcels

Image source: Nearmap (flown 2021)

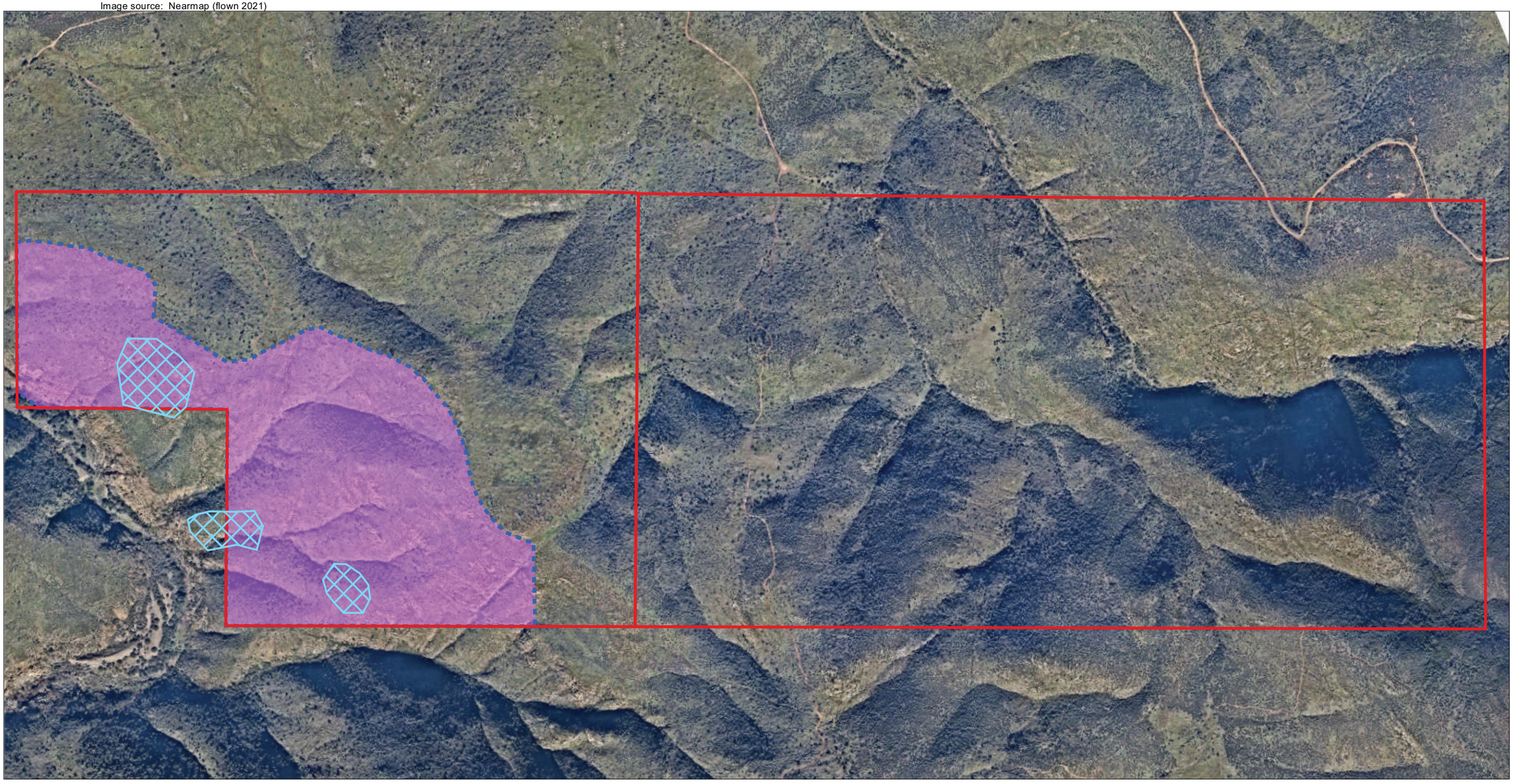


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FIGURE 22
2021 CAGN Surveys,
Salt Creek Parcels

Image source: Nearmap (flown 2021)



0 Feet 600

Conveyed Land Under POM Management

CAGN Use Area

2021 CAGN Survey Area per the Pre-survey Notification Letter Dated January 25, 2021

Suitable CAGN Habitat Surveyed in 2021 (88.74 acres)

FIGURE 23
2021 CAGN Surveys,
San Ysidro Parcels

RECON

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Image source: Nearmap (flown 2021)



0 Feet 600

Conveyed Land Under POM Management

CAGN Use Area

2021 CAGN Survey Area per the Pre-survey Notification Letter Dated January 25, 2021

Suitable CAGN Habitat Surveyed in 2021 (44.16 acres)

RECON

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FIGURE 24
2021 CAGN Surveys,
Millenia Parcels

Image source: Nearmap (flown 2021)



0 Feet 200

Conveyed Land Under POM Management

CAGN Observation

2021 CAGN Survey Area per the Pre-survey Notification Letter Dated January 25, 2021

Suitable CAGN Habitat Surveyed in 2021 (29.32 acres)

RECON

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FIGURE 25
2021 CAGN Surveys,
Proctor Valley (South) Parcel

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

CAGN Use Area

2021 CAGN Survey Area per the Pre-survey Notification Letter Dated January 25, 2021

Suitable CAGN Habitat Surveyed in 2021 (32.39 acres)

0 Feet 400

RECON

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FIGURE 26

2021 CAGN Surveys,
Western Wolf Canyon Parcels

Image source: Nearmap (flown September 2020)



Conveyed Land Under POM Management

CAGN Use Area

CAGN Observation

CAGN Sub-survey Area

Suitable CAGN Habitat Surveyed in 2021
(270.00 acres)

0 Feet 500

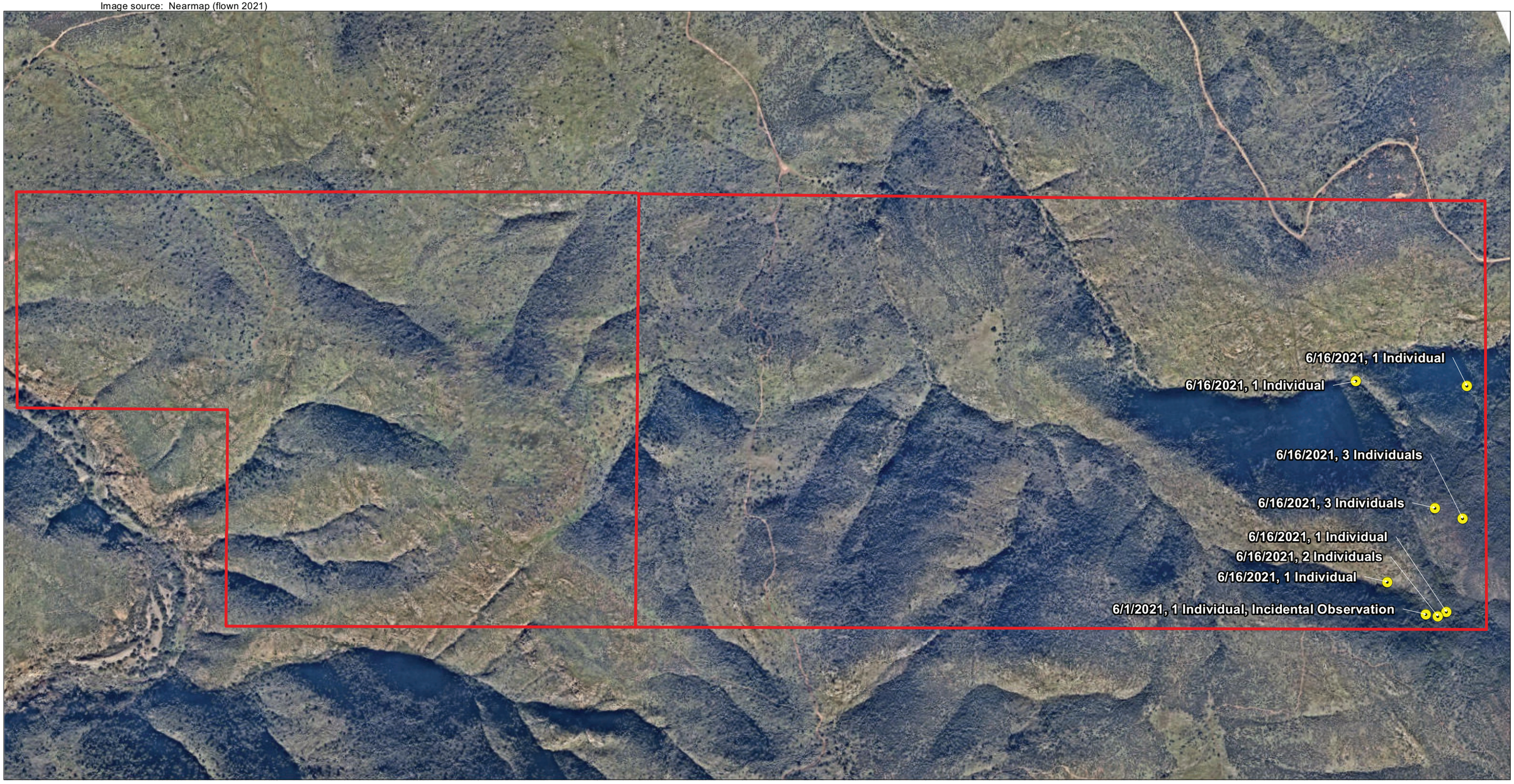
RECON

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FIGURE 27

2021 CAGN Surveys,
Ridge Parcels

Image source: Nearmap (flown 2021)



0 Feet 600

Conveyed Land Under POM Management

Sensitive Wildlife

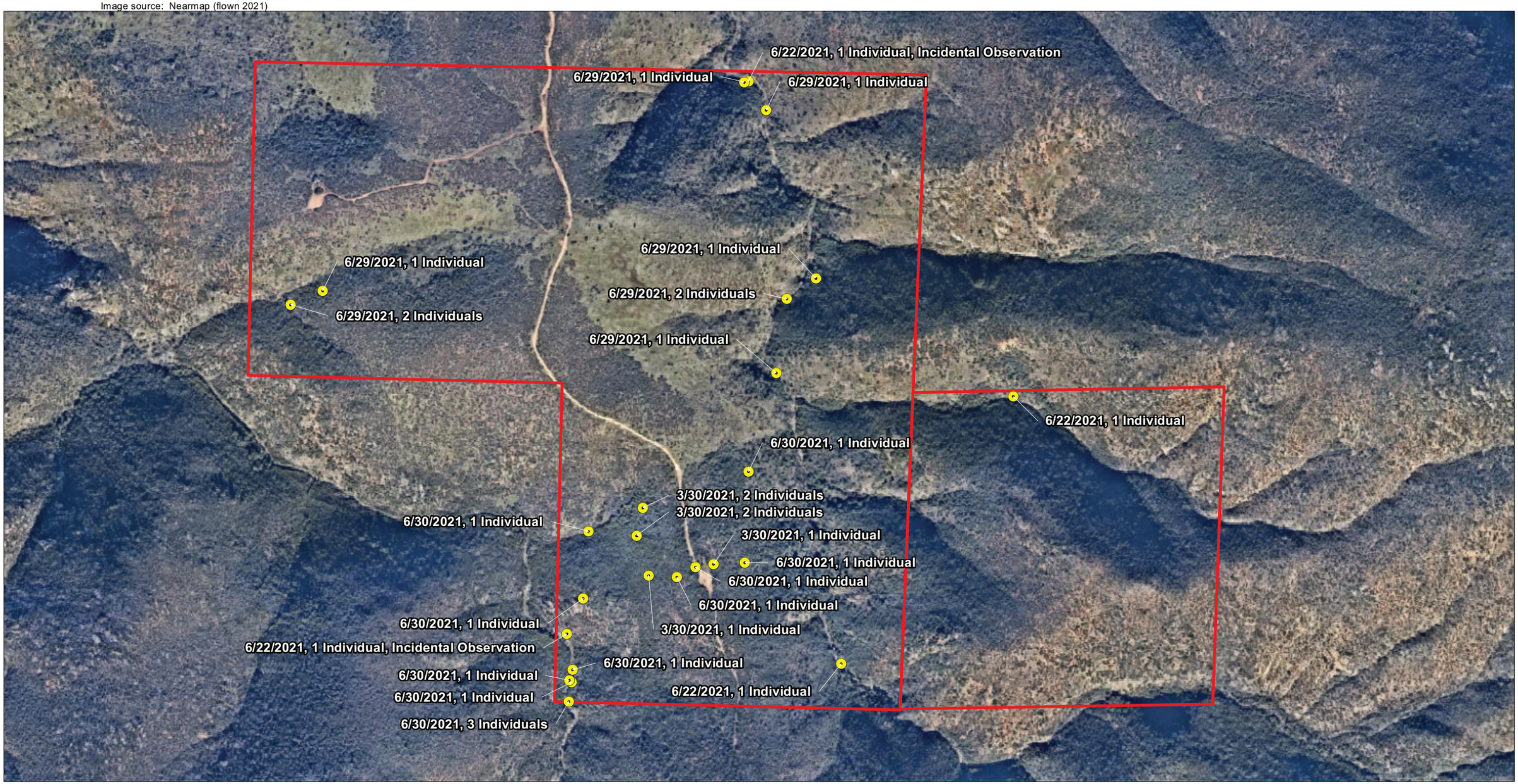
Thorne's Hairstreak
(*Callophrys [Mitoura] grynea thornei*)

FIGURE 28
Thorne's Hairstreak Survey Results,
San Ysidro Parcels

RECON

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Image source: Nearmap (flown 2021)



0 Feet 400

Conveyed Land Under POM Management

Sensitive Wildlife

Thorne's Hairstreak
(*Callophrys [Mitoura] grynea thornei*)

RECON

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FIGURE 29
Thorne's Hairstreak Survey Results,
Little Cedar Canyon Parcels

Image Source: Nearmap (flown 2021)

OTAY LAKES RD

OTAY LAKES RD

MINNEWANNA TT

DOGHOUSE SPUR TT

6/8/2021, 1 Individual

6/28/2021, 2 Individuals, Incidental Observation

6/28/2021, 1 Individual, Incidental Observation

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/11/2021, 1 Individual

6/28/2021, 1 Individual, Incidental Observation

6/28/2021, 1 Individual, Incidental Observation

6/9/2021, 1 Individual

6/9/2021, 2 Individuals

6/9/2021, 1 Individual

6/9/2021, 1 Individual

6/9/2021, 2 Individuals

6/8/2021, 2 Individuals

6/8/2021, 1 Individual

RECON

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Conveyed Land Under POM Management

Sensitive Wildlife

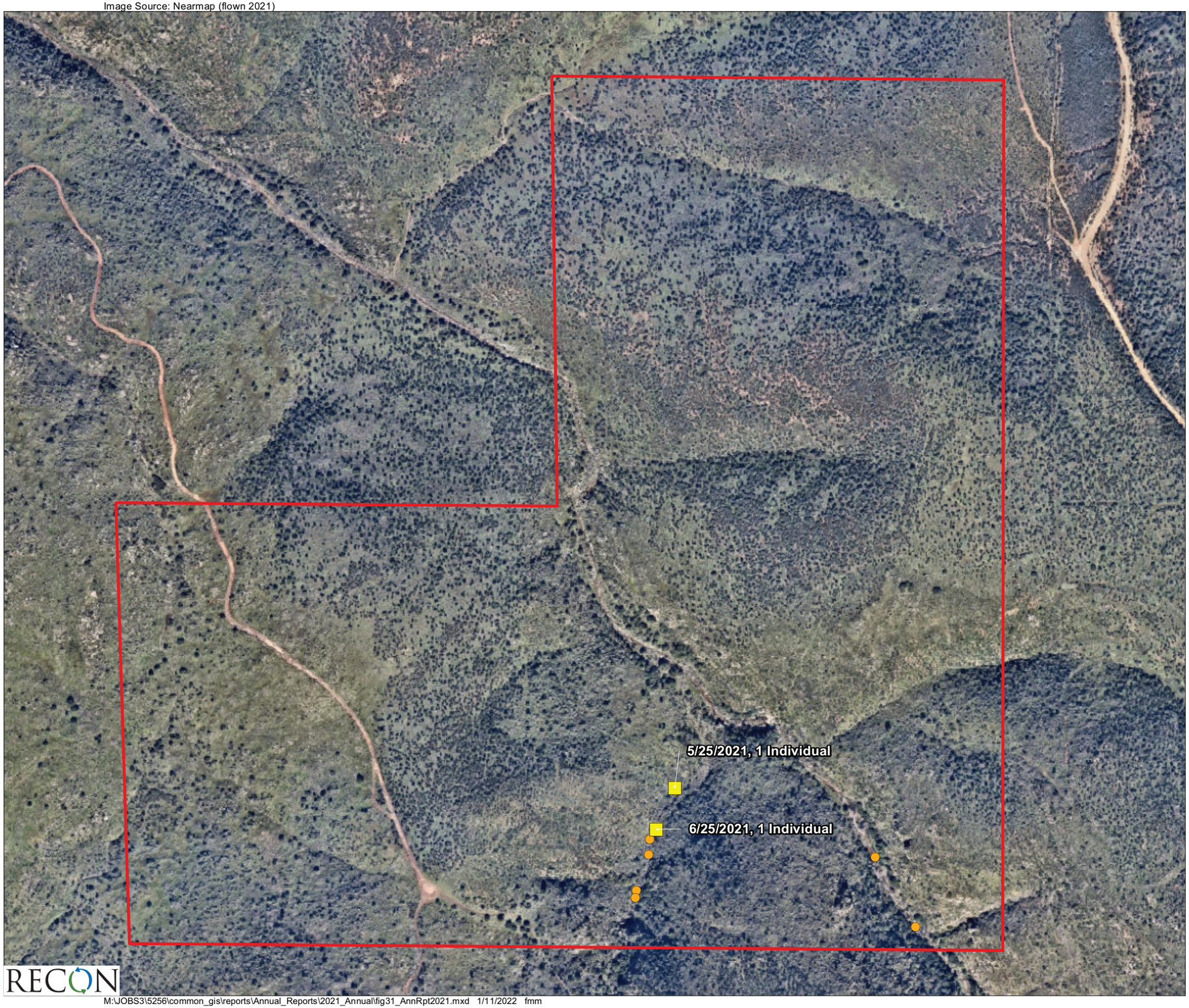
Thorne's Hairstreak
(*Callophrys [Mitoura] grynea thornei*)

0 Feet 700

FIGURE 30

Thorne's Hairstreak Survey Results,
Dulzura Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Wildlife

Harbison Dun Skipper
(*Euphyes vestris harbisoni*)

Host Plant

San Diego Sedge
(*Carex spissa*)

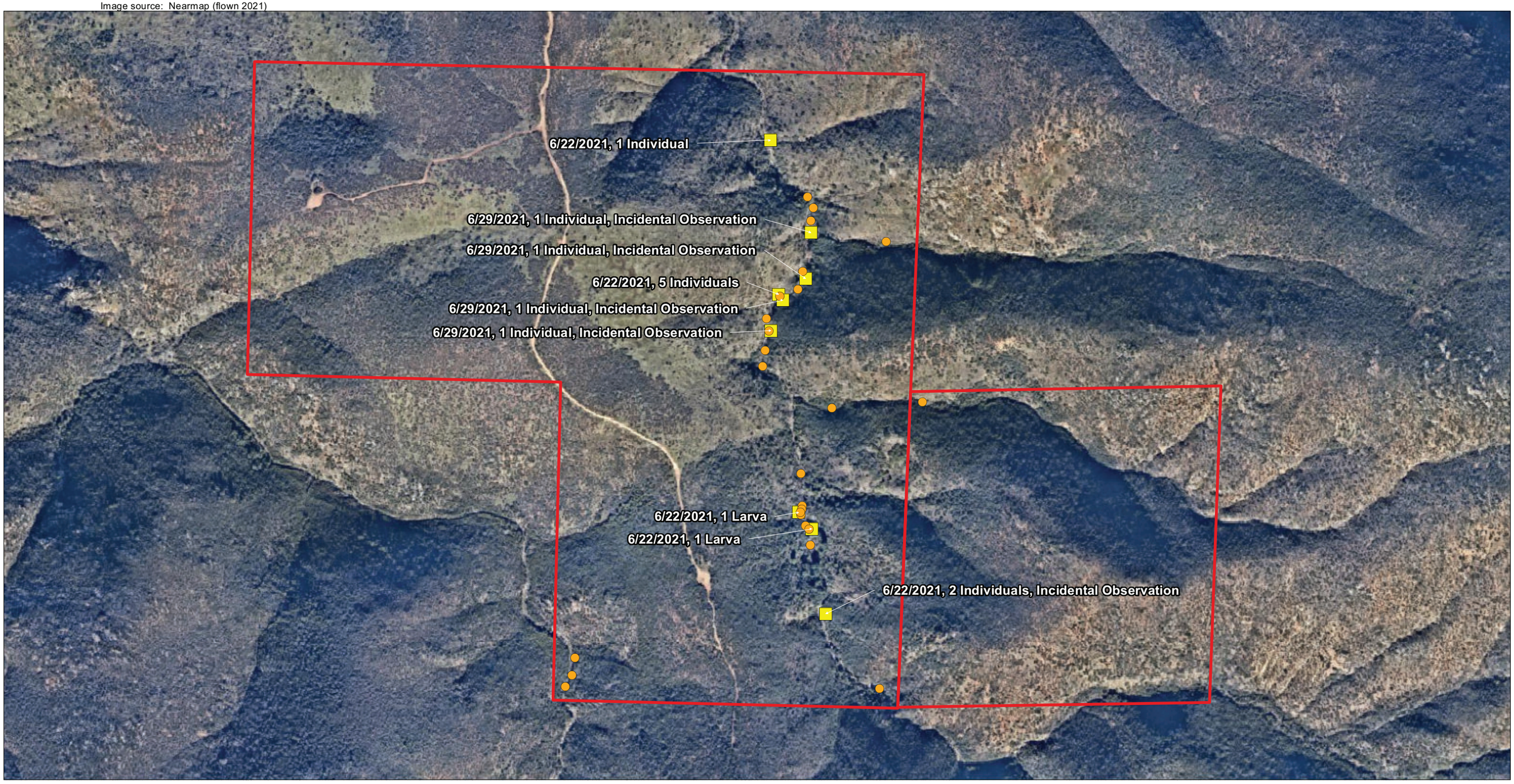
0 Feet 300

RECON

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FIGURE 31
Harbison Dun Skipper Survey Results,
Northern San Ysidro Parcels

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

0 Feet 400

Sensitive Wildlife

Harbison Dun Skipper
(*Euphyes vestris harbisoni*)

Host Plant

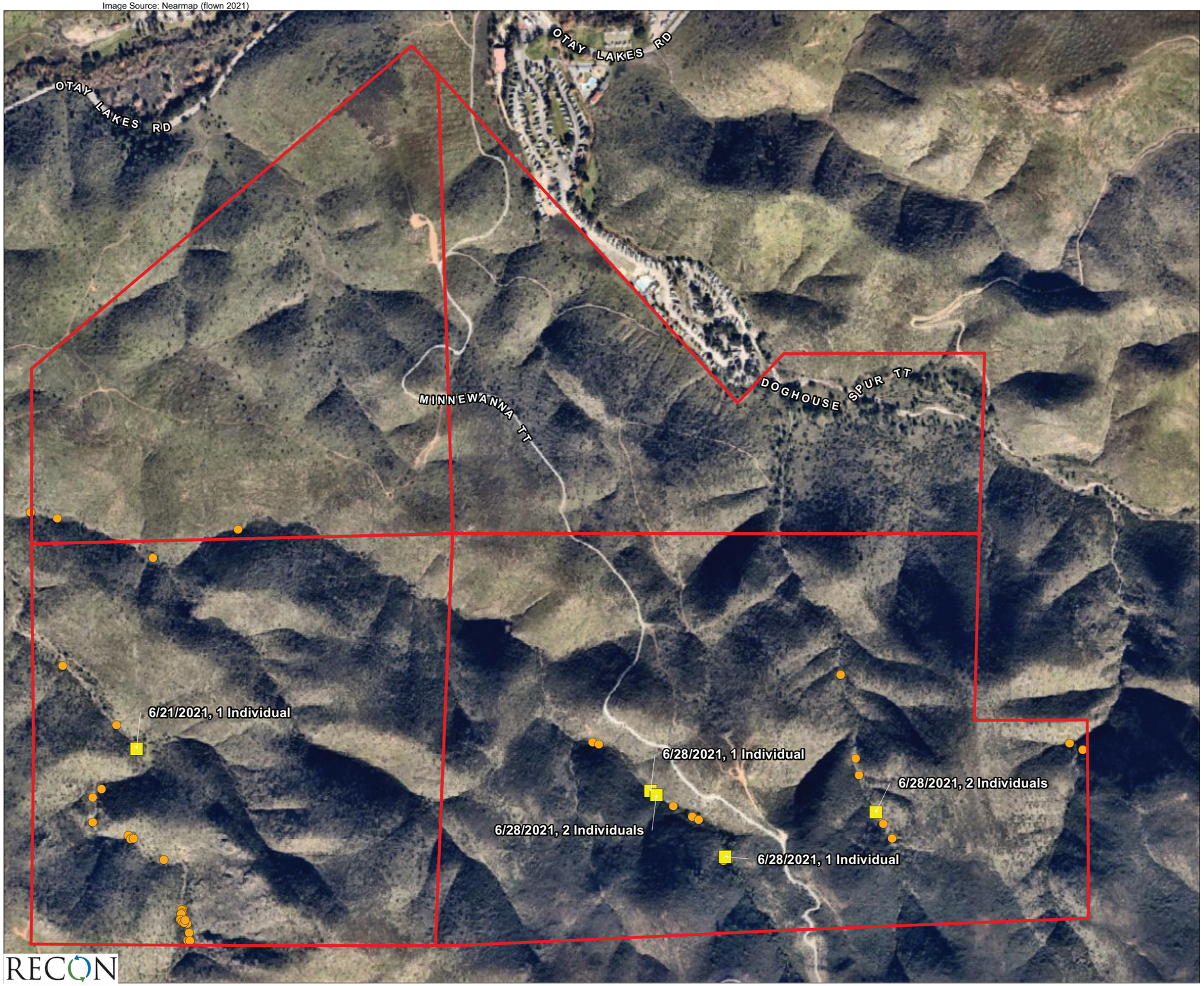
San Diego Sedge
(*Carex spissa*)

RECON

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FIGURE 32
Harbison Dun Skipper Survey Results,
Little Cedar Canyon Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Wildlife

Harbison Dun Skipper
(*Euphyes vestris harbisoni*)

Host Plant

San Diego Sedge
(*Carex spissa*)

0 Feet 700

RECON

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FIGURE 33

Harbison Dun Skipper Survey Results,
Dulzura Parcels

Image source: Nearmap (flown 2021)



0 Feet 2,000

Conveyed Land Under POM Management

KSHB Tree Health Survey Area

Riparian Photo Monitoring Points – Established in 2021

Sampling Locations for Fusarium in 2018

Fusarium Detected in 2018 (Sample Points 1, 2 and 5-8)

Fusarium Not Detected in 2018 (Sample Points 3 and 4)

Sampling Locations for Fusarium in 2021

New Sample Point

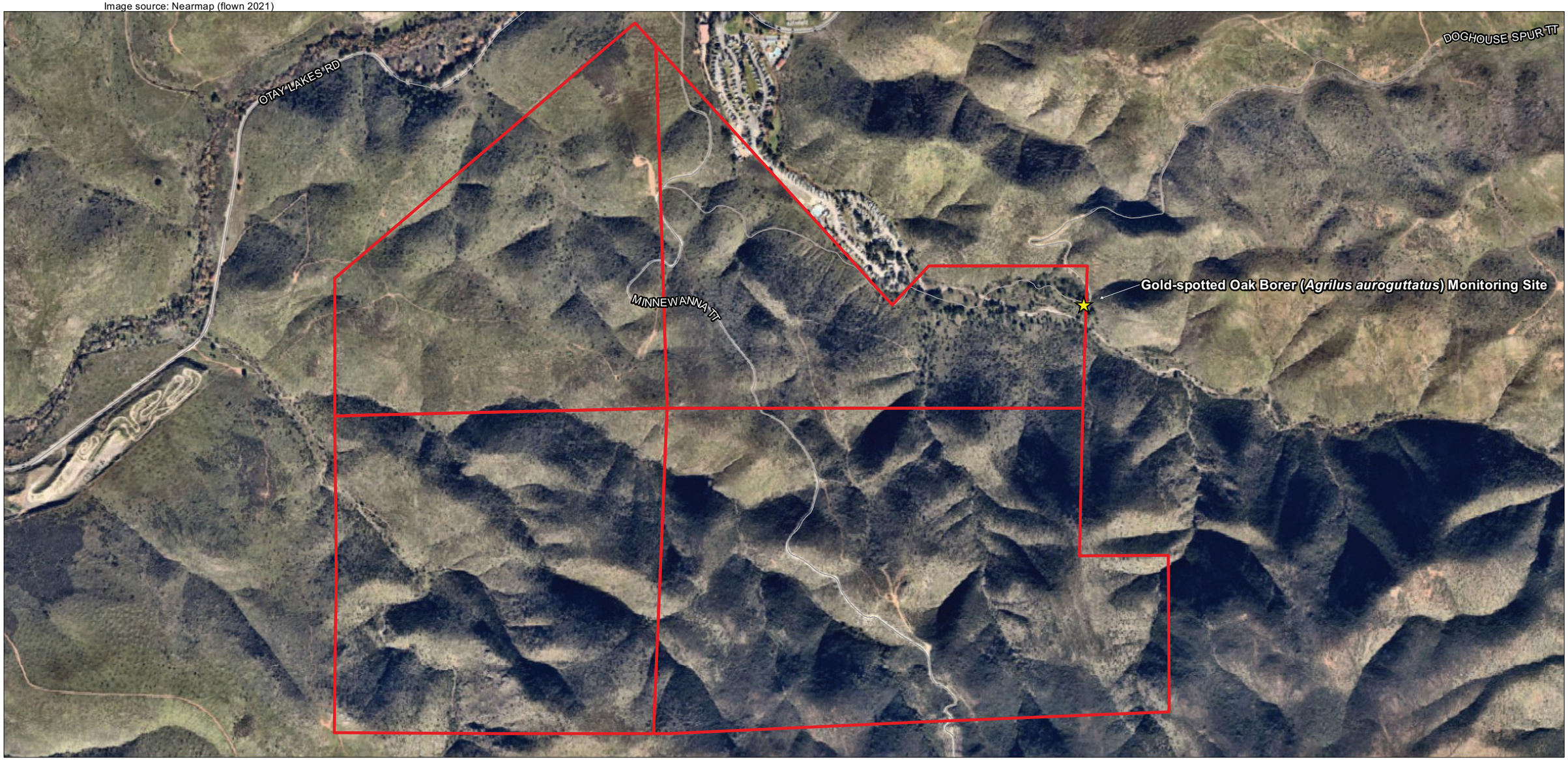
FIGURE 34

KSHB Monitoring Results and Potential Fusarium Fungus Sampling Locations, Salt Creek, Northern Salt Creek, and Wolf Canyon Parcels

RECON

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Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Gold-spotted Oak Borer (*Agrilus auroguttatus*) Monitoring Site

RECON

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FIGURE 35
GSOB Monitoring Location,
Dulzura Parcels

Image source: Nearmap (flown 2021)



0 Feet 150

Conveyed Land Under POM Management

Graded Pools

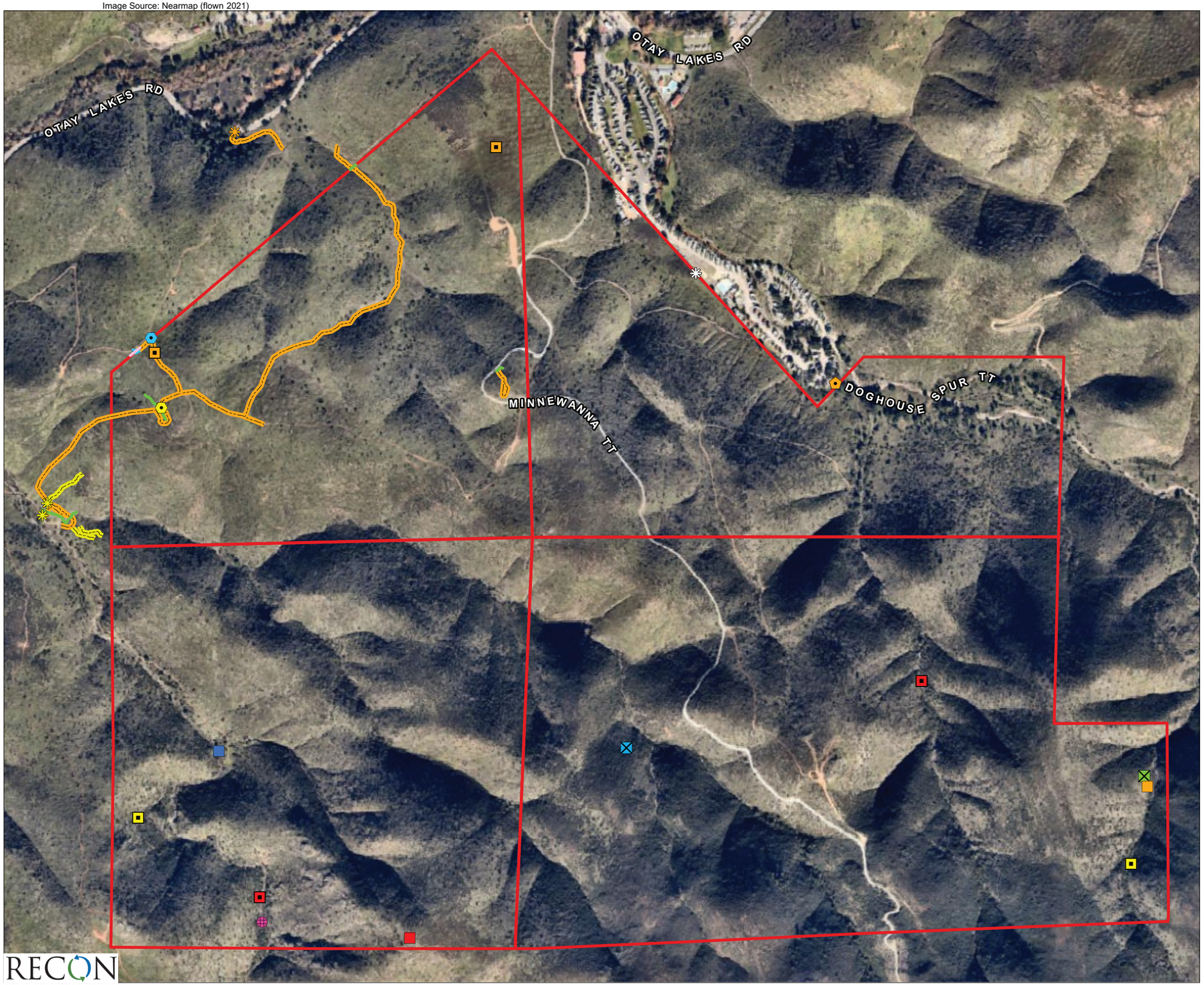
FIGURE 36

Vernal Pool Seed Redistribution Location,
Salt Creek Parcels

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Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Invasive Plants

- Pampas Grass (*Cortaderia selloana*)

Wildlife Points

Priority Group 1

- Golden Eagle (*Aquila chrysaetos*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Northern Harrier (*Circus hudsonius*)

Priority Group 2

- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
- Southern Mule Deer (*Odocoileus hemionus fuliginata*)

Priority Group 3

- Red Diamond Rattlesnake (*Crotalus ruber*)
- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)
- Two-striped Gartersnake (*Thamnophis hammondii*)

Installed Fence

- T-post (barbless wire)

Repaired Fence

- T-post (barbless wire)
- T-post (barbless wire)

Signs

- Installed
- Repaired

Unauthorized Trails

- Mountain Bike
- ATV
- Truck
- Foot
- ATV
- Truck

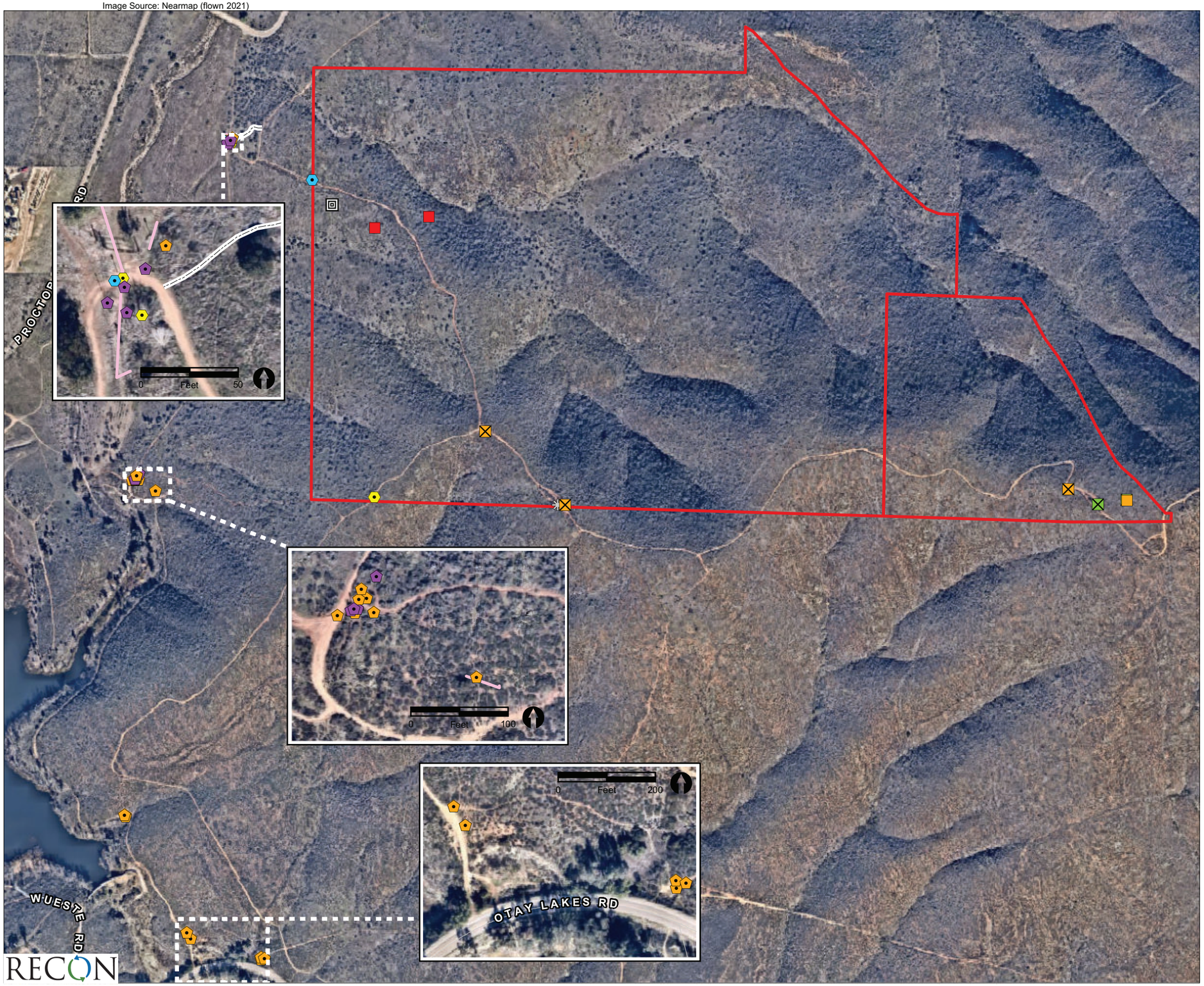
0 Feet 700

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FIGURE 37
Noteworthy Plants and Wildlife, and Access Issues, Dulzura Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Wildlife Points

Priority Group 1

- Golden Eagle (*Aquila chrysaetos*)
- Northern Harrier (*Circus hudsonius*)

Priority Group 2

- Blainville's [=Coast] Horned Lizard (*Phrynosoma blainvillii*)
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Priority Group 4

- White-tailed Kite (*Elanus leucurus*)

Repaired Fence

- T-post (barbless wire)
- T-post (barbless wire)
- T-post (barbed wire)

Signs

- Installed
- Repaired

Unauthorized Trails

- Foot
- Duplicate\Spur Road

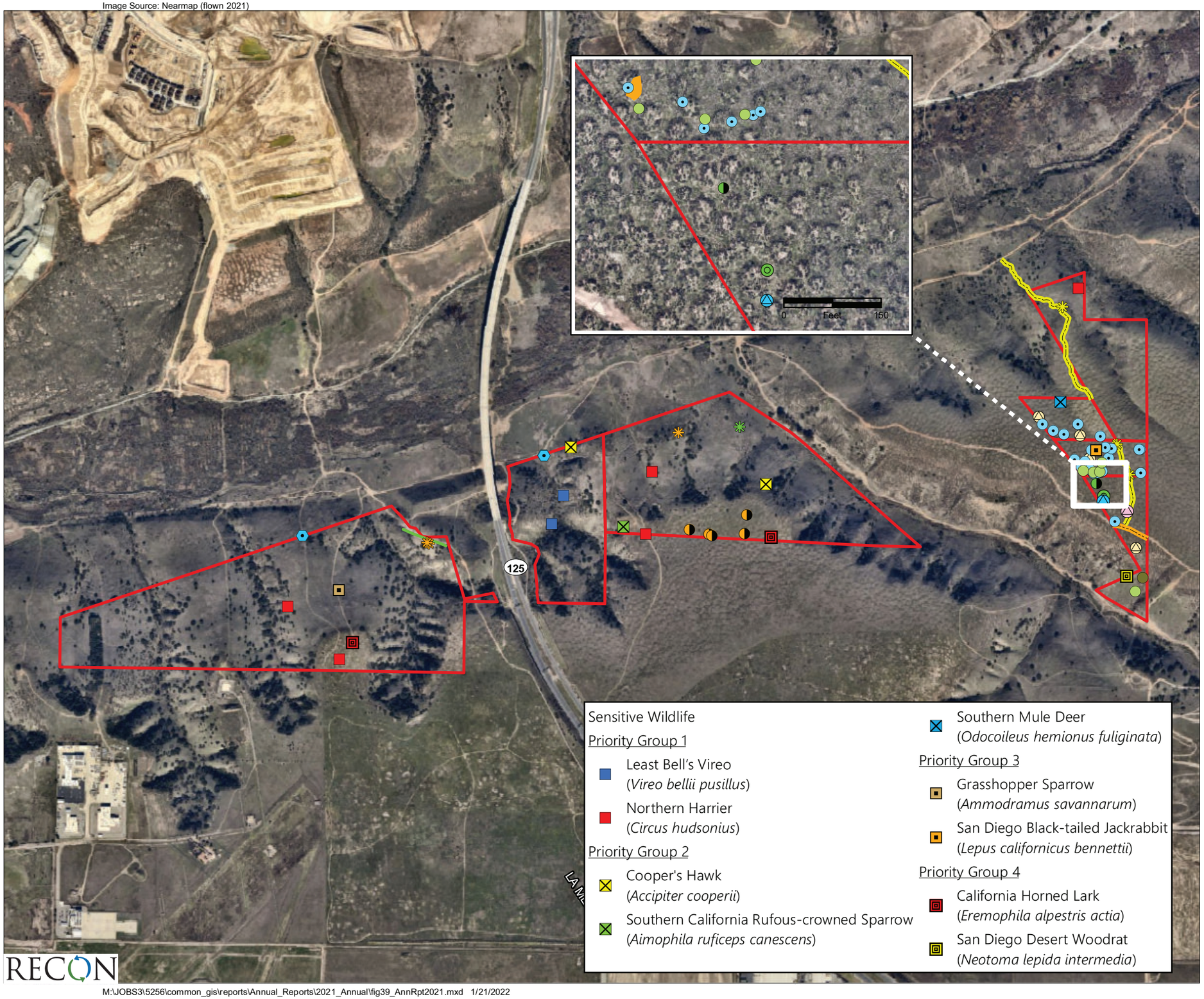
0 Feet 600

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FIGURE 38
Noteworthy Wildlife, and Access Issues,
Jamul Mountain Parcels

Image Source: Nearmap (flown 2021)



Sensitive Wildlife

Priority Group 1

- Least Bell's Vireo (*Vireo bellii pusillus*)
- Northern Harrier (*Circus hudsonius*)

Priority Group 2

- Cooper's Hawk (*Accipiter cooperii*)
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)
- Southern Mule Deer (*Odocoileus hemionus fuliginata*)

Priority Group 3

- Grasshopper Sparrow (*Ammodramus savannarum*)
- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)

Priority Group 4

- California Horned Lark (*Eremophila alpestris actia*)
- San Diego Desert Woodrat (*Neotoma lepida intermedia*)

- Conveyed Land Under POM Management

Sensitive Plants

Priority Group 2

- San Diego Barrel Cactus (*Ferocactus viridescens*)

Priority Group 3

- Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*)
- San Diego Bur-sage (*Ambrosia chenopodiifolia*)

Priority Group 4

- Ashy Spike-moss (*Selaginella cinerascens*)
- Graceful Tarplant (*Holocarpha virgata* ssp. *elongata*)
- Palmer's Grapplinghook (*Harpagonella palmeri*)
- San Diego Viguiera *Bahiopsis laciniata*

Common Plant

- Adobe Popcornflower (*Plagiobothrys acanthocarpus*)
- Western Sea-purslane (*Sesuvium verrucosum*)

Host Plant

- Dot-seed Plantain (*Plantago erecta*)

Installed Fence

- T-post (barbless wire)

Signs

- Repaired

Unauthorized Trails

- ATV
- Truck
- ATV
- Motor Bike
- Truck

0 Feet 1,000

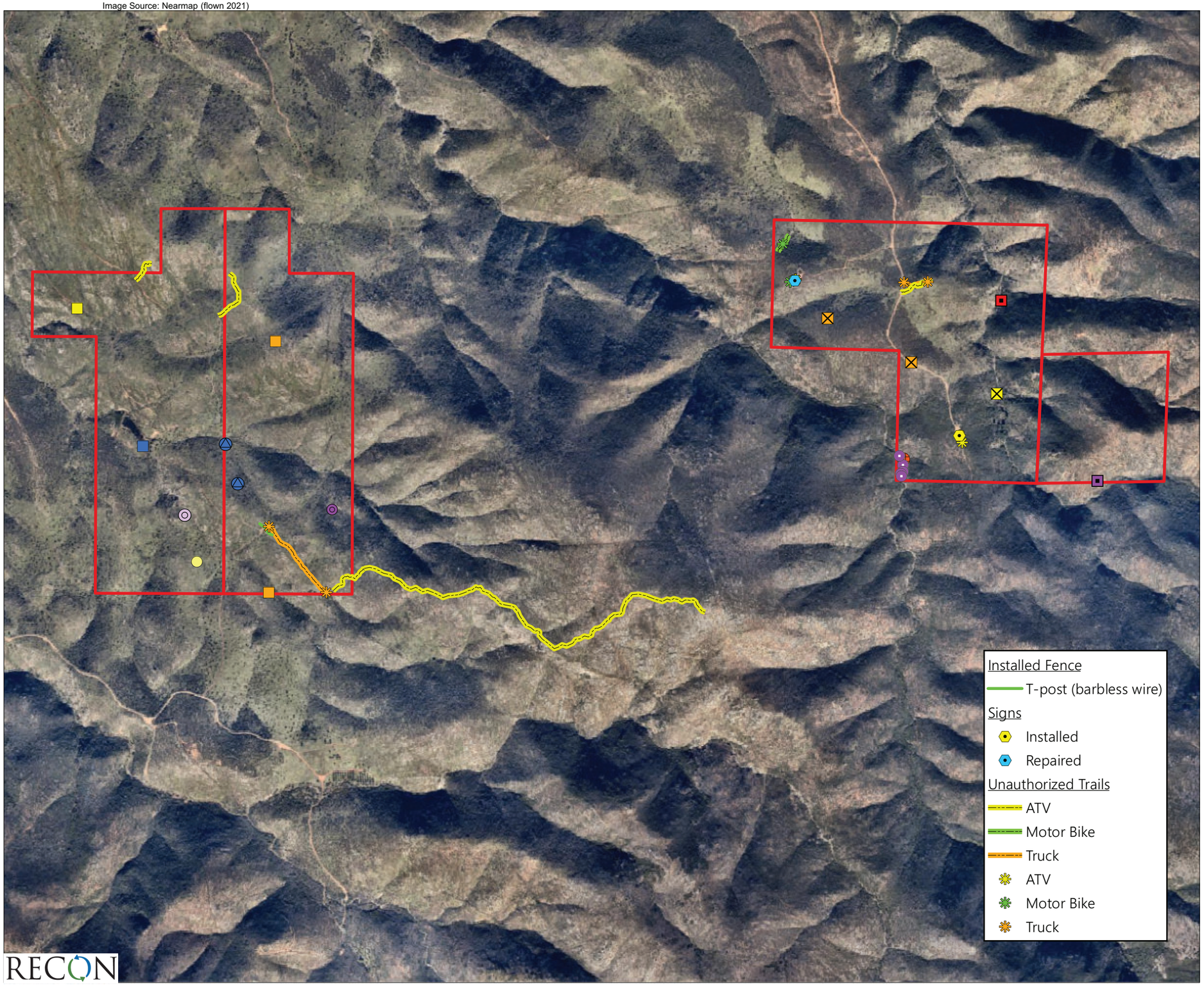
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FIGURE 39

Noteworthy Plants and Wildlife, and Access Issues, Johnson Canyon (East), Piper Ranch, Johnson Canyon Otay Tarplant Preserve, and Millenia Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 3

- San Diego Marsh-elder (*Iva hayesiana*)

Priority Group 4

- Cooper's Rein Orchid *Piperia cooperi*
- Golden-ray Pentachaeta (*Pentachaeta aurea* ssp. *aurea*)
- Western Dichondra (*Dichondra occidentalis*)

Host Plant

- Spiny Redberry (*Rhamnus crocea*)

Invasive Plants

- Pampas Grass (*Cortaderia selloana*)

Sensitive Wildlife

Priority Group 1

- Coastal California Gnatcatcher (*Polioptila californica californica*)
- Golden Eagle (*Aquila chrysaetos*)
- Least Bell's Vireo (*Vireo bellii pusillus*)

Priority Group 2

- Blainville's [=Coast] Horned Lizard (*Phrynosoma blainvillii*)
- Cooper's Hawk (*Accipiter cooperii*)

Priority Group 3

- Red Diamond Rattlesnake (*Crotalus ruber*)
- San Diegan Tiger Whiptail (*Aspidoscelis tigris stejnegeri*)

0 Feet 1,000

FIGURE 40

Noteworthy Plants and Wildlife, and Access Issues, Little Cedar Canyon and McMillin

RECON

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Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Common Plant
- Coast Cholla (*Cylindropuntia prolifera*)
- Smooth Boisduvalia (*Epilobium campestre*)
- Texas Bergia (*Bergia texana*)
- Toothed Downingia (*Downingia cuspidata*)

Host Plant
- Spiny Redberry (*Rhamnus crocea*)
- Dot-seed Plantain (*Plantago erecta*)

Nectar Plants
- Farinose Ground Pink (*Linanthus dianthiflorus*)
- Common Goldfields (*Lasthenia gracilis*)

Invasive Plants
- Fennel (*Foeniculum vulgare*)

Sensitive Wildlife

Priority Group 1
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Northern Harrier (*Circus hudsonius*)

Priority Group 2
- Belding's Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)
- Cooper's Hawk (*Accipiter cooperii*)
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Priority Group 3
- Red Diamond Rattlesnake (*Crotalus ruber*)
- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)

Priority Group 4
- San Diego Desert Woodrat (*Neotoma lepida intermedia*)
- White-tailed Kite (*Elanus leucurus*)

Repaired Fence
- T-post (barbless wire)

Installed Fence
- T-post (barbless wire)
- T-post (barbed wire)
- T-post (barbless wire)
- T-post (barbed wire)

Gate
- Repaired

Signs
- Installed
- Repaired

Unauthorized Trails
- ATV
- Motor Bike
- Truck

0 Feet 1,000

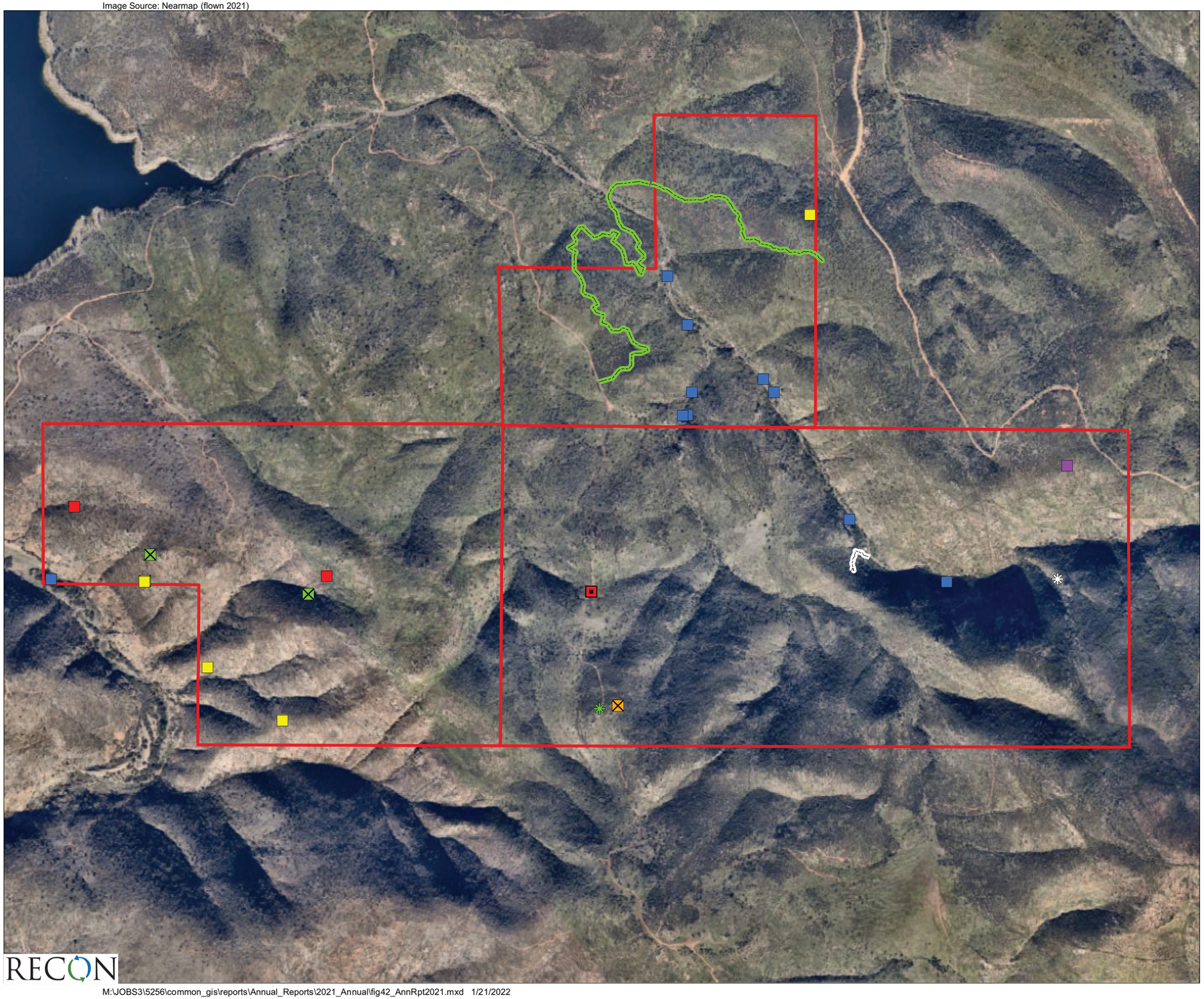
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FIGURE 41

Noteworthy Plants, Wildlife, and Access Issues, Salt Creek and Northern Salt Creek

Image Source: Nearmap (flown 2021)



Sensitive Wildlife

Priority Group 1

- Coastal California Gnatcatcher (*Polioptila californica californica*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Northern Harrier (*Circus hudsonius*)
- Quino Checkerspot (*Euphydryas editha quino*)

Priority Group 2

- Blainville's [=Coast] Horned Lizard (*Phrynosoma blainvillii*)
- Southern California Rufous-crowned Sparrow (*Aimophila ruficeps canescens*)

Priority Group 3

- Red Diamond Rattlesnake (*Crotalus ruber*)

Unauthorized Trails

- Foot
- Motor Bike
- Foot
- Motor Bike

0 Feet 1,000

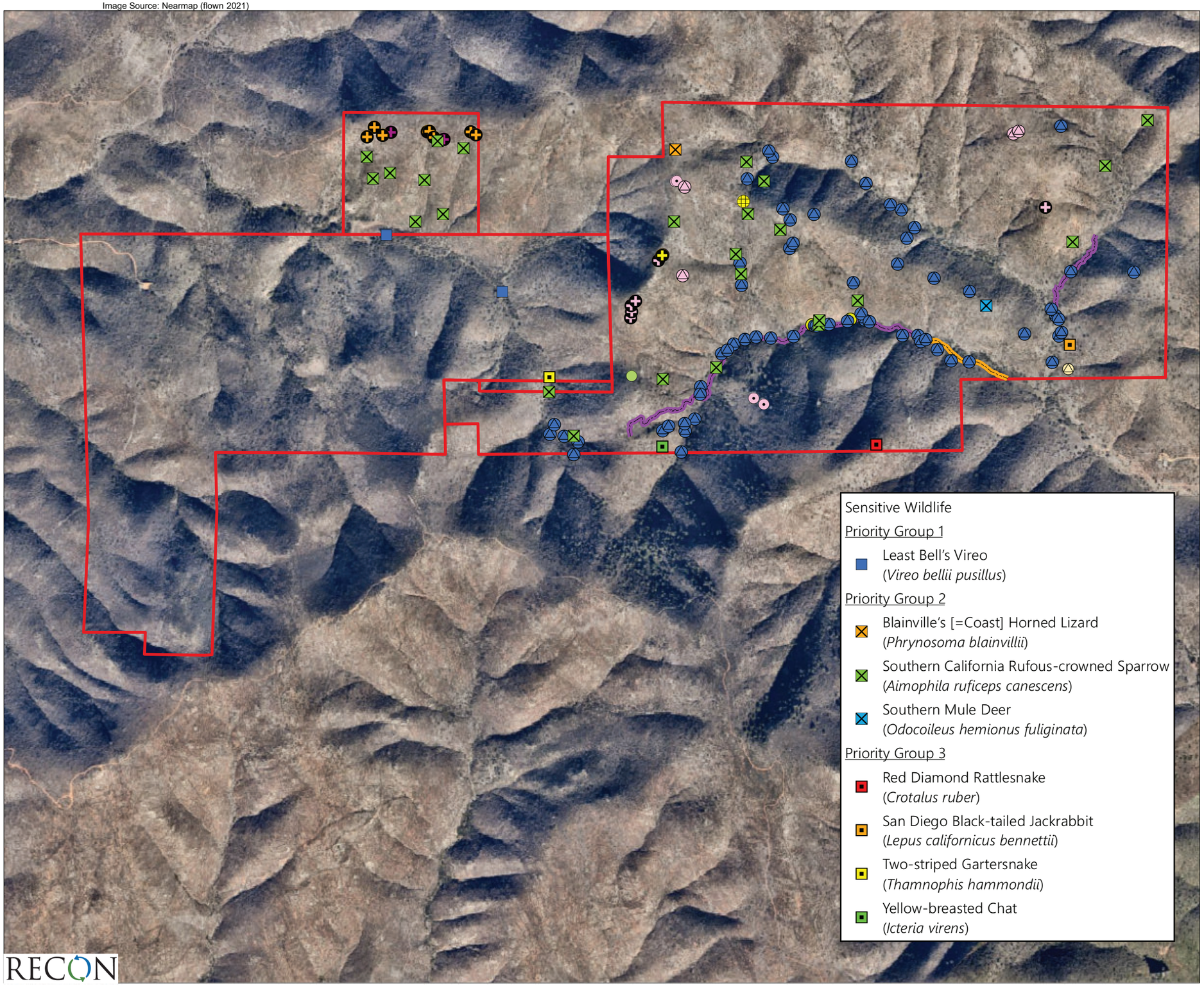
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FIGURE 42

Noteworthy Wildlife and Access Issues,
San Ysidro and Northern San Ysidro

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Plants

Priority Group 3

- Decumbent Goldenbush (*Isocoma menziesii* var. *decumbens*)

Priority Group 4

- Ashy Spike-moss (*Selaginella cinerascens*)
- San Diego Needle Grass (*Stipa diegoensis*)
- Southwestern Spiny Rush *Juncus acutus* ssp. *leopoldii*

Host Plant

- Dot-seed Plantain (*Plantago erecta*)
- Purple Owl's-clover (*Castilleja exserta* ssp. *exserta*)
- Spiny Redberry (*Rhamnus crocea*)

Nectar Plants

- California Wood-sorrel (*Oxalis californica*)
- Common Goldfields (*Lasthenia gracilis*)
- Cryptantha (*Cryptantha* sp.)
- Farinose Ground Pink (*Linanthus dianthiflorus*)

Invasive Plants

- Ripgut Grass (*Bromus diandrus*)

Unauthorized Trails

- Cattle Trail
- Truck

0 Feet 1,000

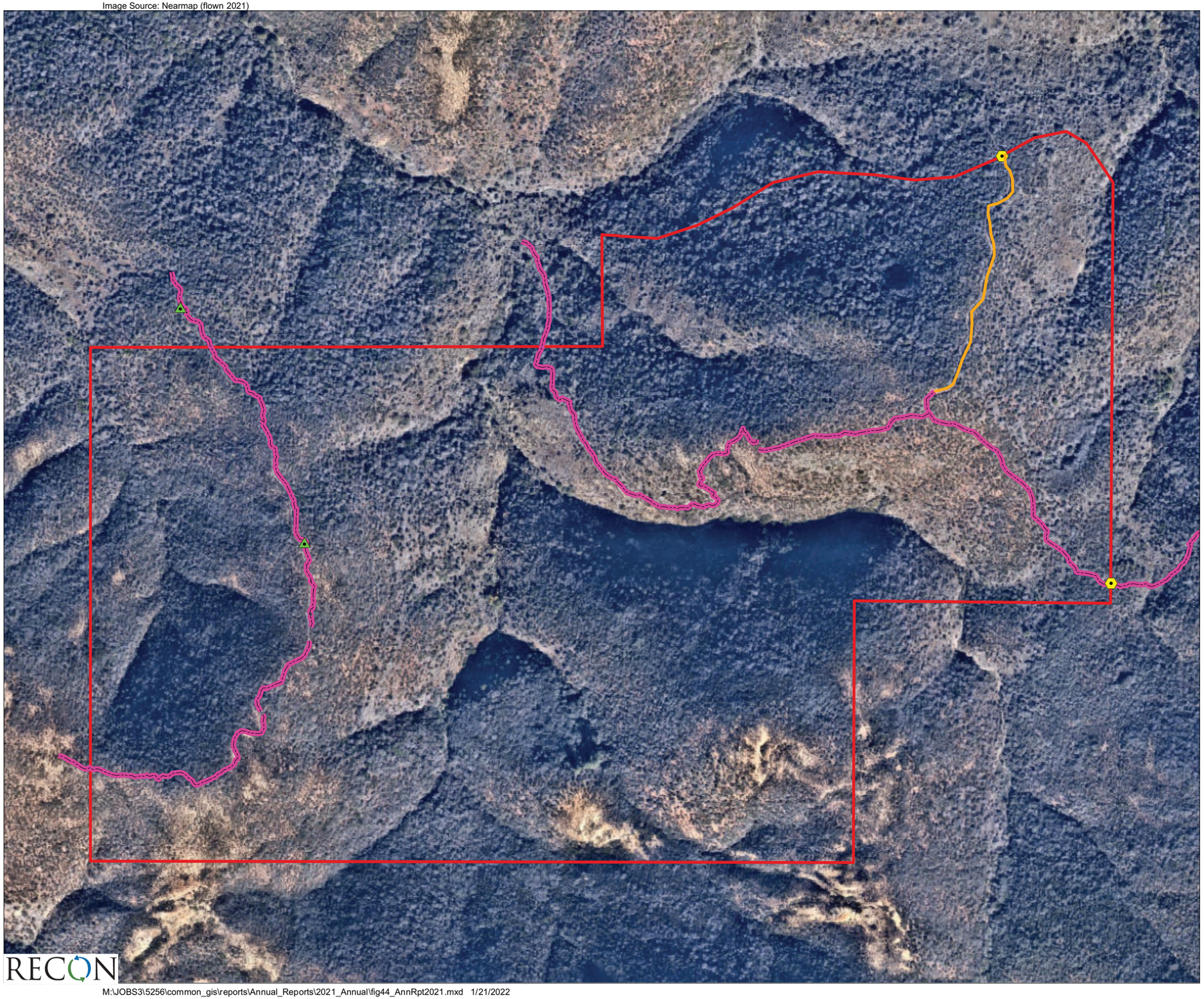
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FIGURE 43

Noteworthy Plants and Wildlife, and Access Issues, Proctor Valley, Proctor Valley Extension, Proctor Valley (South)

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Geocache

Signs

Installed

Unauthorized Trails

Illegal Trail Creation

Illegal Reestablishment of Trail

0 Feet 250

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FIGURE 44

Noteworthy Access Issues,
Proctor Valley (North)

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Host Plants

Dot-seed Plantain
(*Plantago erecta*)

Invasive Plants

Stinkwort
(*Dittrichia graveolens*)

Sensitive Wildlife

Priority Group 1

Golden Eagle
(*Aquila chrysaetos*)

Northern Harrier
(*Circus hudsonius*)

Quino Checkerspot
(*Euphydryas editha quino*)

Priority Group 2

Blainville's [=Coast] Horned Lizard
(*Phrynosoma blainvillii*)

Southern California Rufous-crowned Sparrow
(*Aimophila ruficeps canescens*)

Invasive Wildlife

American Bullfrog
(*Lithobates catesbeiana*)

Unauthorized Trail

Truck

0 Feet 500

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FIGURE 45

Noteworthy Plants, Wildlife, and Access Issues, Ridge

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Sensitive Wildlife

Priority Group 1

- Coastal Cactus Wren (*Campylorhynchus brunneicapillus sandiegensis*)
- Least Bell's Vireo (*Vireo bellii pusillus*)
- Northern Harrier (*Circus hudsonius*)

Priority Group 2

- Belding's Orange-throated Whiptail (*Aspidoscelis hyperythra beldingi*)
- Cooper's Hawk (*Accipiter cooperii*)

Priority Group 3

- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*)
- Yellow-breasted Chat (*Icteria virens*)

Common Wildlife

- Brown-headed Cowbird (*Molothrus ater*)

0 Feet 350

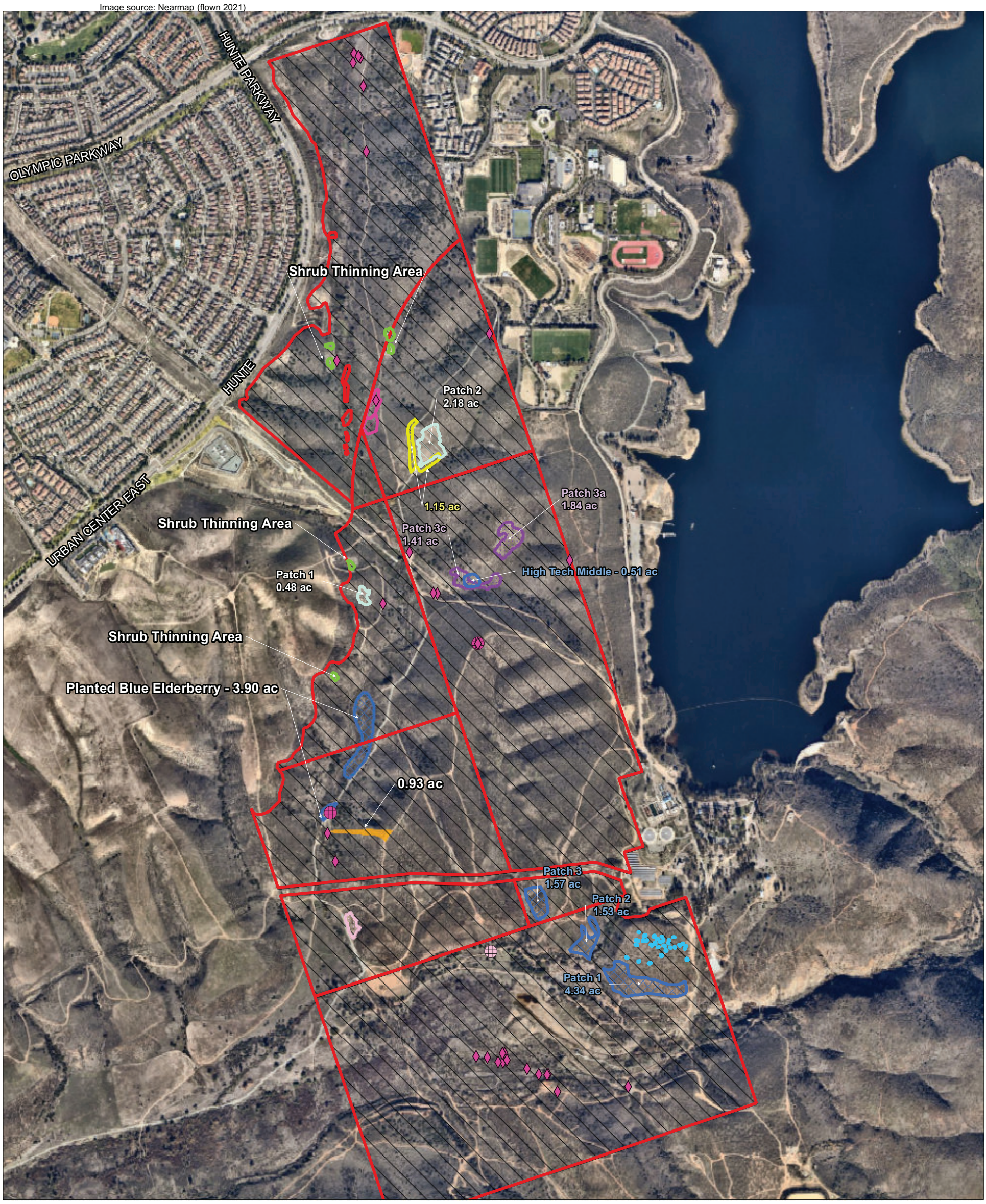
FIGURE 46

Noteworthy Plants, Wildlife, and Access Issues, Wolf Canyon and Western Wolf Canyon

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Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Cactus Wren Habitat Restoration Area (City of Chula Vista EMP Grant 5001970; ended summer 2015)

Cactus Wren Habitat Restoration Area (County of San Diego Parks and Recreation Department EMP Grant 5001133; ended summer 2014)

Cactus Wren Habitat – Cholla Cactus Cuttings Planted in December 2021 (Community Facility District 97-2 funded CACW habitat restoration) - 0.59 acres

Cactus Wren Habitat – Shrubs Thinned in January/February 2021 (Community Facility District 97-2 funded CACW habitat restoration) - 0.86 acres

Cactus Wren Habitat Restoration Area (City of Chula Vista EMP Grant 5004943; ended August 2018)

Cactus Wren Habitat Restoration / Erosion Control / Illegal Road Closure Area (CFD 97-2 funded: planted in 2015)

Otay River Valley and Salt Creek Cactus Wren 3 Project (City of Chula Vista EMP Grant 5004731; ended fall 2018)

Stinkwort (*Dittrichia graveolens*) Treatment Survey Location - 1.33 acres

Fennel (*Foeniculum vulgare*) Treatment Area

Vernal Pools Established through Grading in 2015 (Previous RECON Project No. 7754) – 0.25 acre

Stinkwort (*Dittrichia graveolens*) Treatment Survey Location

Stinknet (*Oncosiphon piluliferum*) Treatment Survey Location

Stinkwort (*Dittrichia graveolens*) Treatment Location

0 Feet 1,000

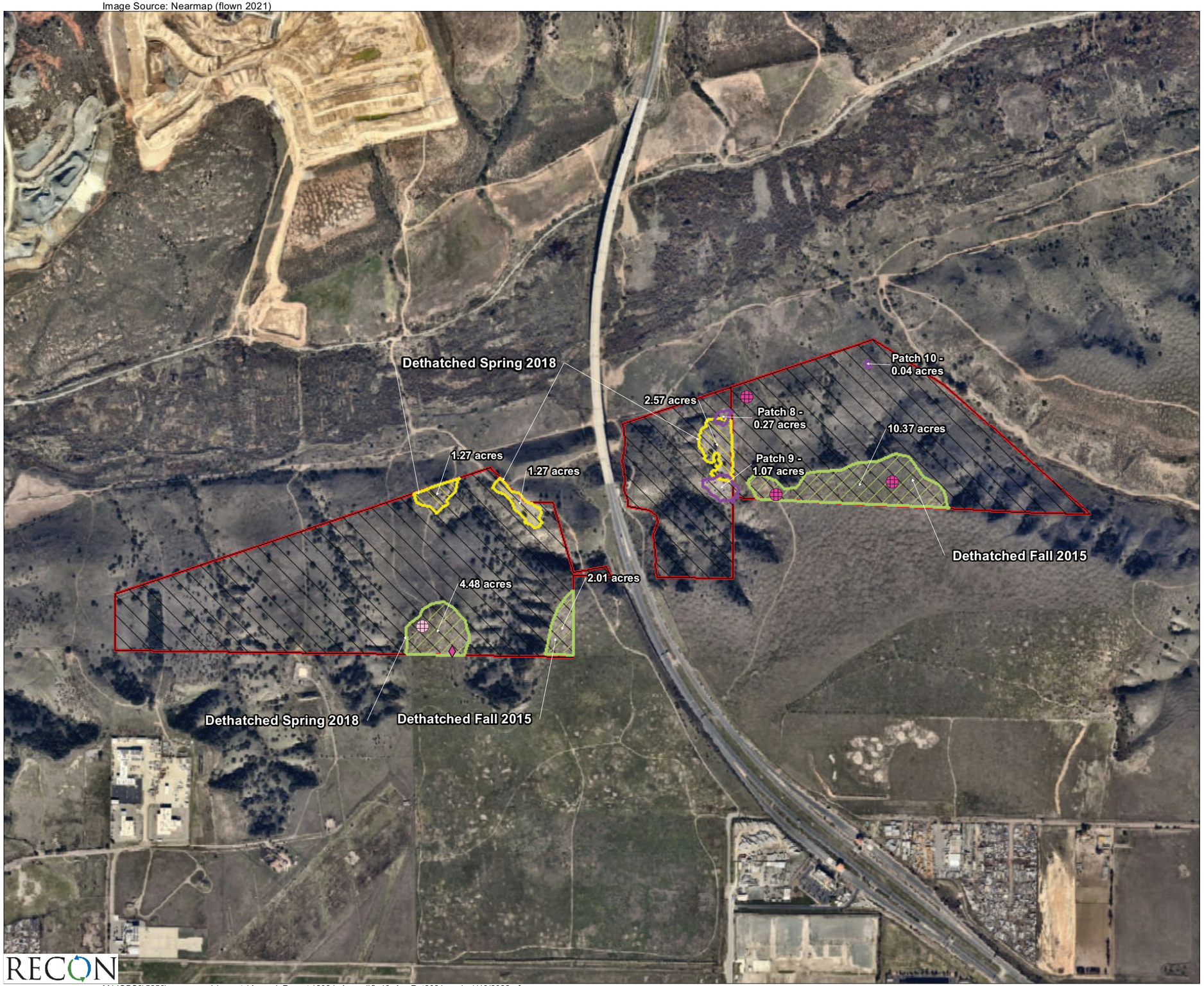
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FIGURE 47

2021 Vegetation Removal and Treatment Areas,
Salt Creek and Northern Salt Creek Parcels

Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Non-native Plant Treatment Area

Otay Tarplant Habitat –
Non-native Plant Treatment Area

Otay River Valley and Salt Creek
Cactus Wren 3 Project
(City of Chula Vista EMP Grant 5004731;
ended fall 2018)

Fennel (Foeniculum vulgare) Treatment Area

Stinkwort (*Dittrichia graveolens*)
Treatment Survey Location

Stinknet (*Oncosiphon piluliferum*)
Treatment Survey Location

Stinkwort (*Dittrichia graveolens*)
Treatment Location

0 Feet 750

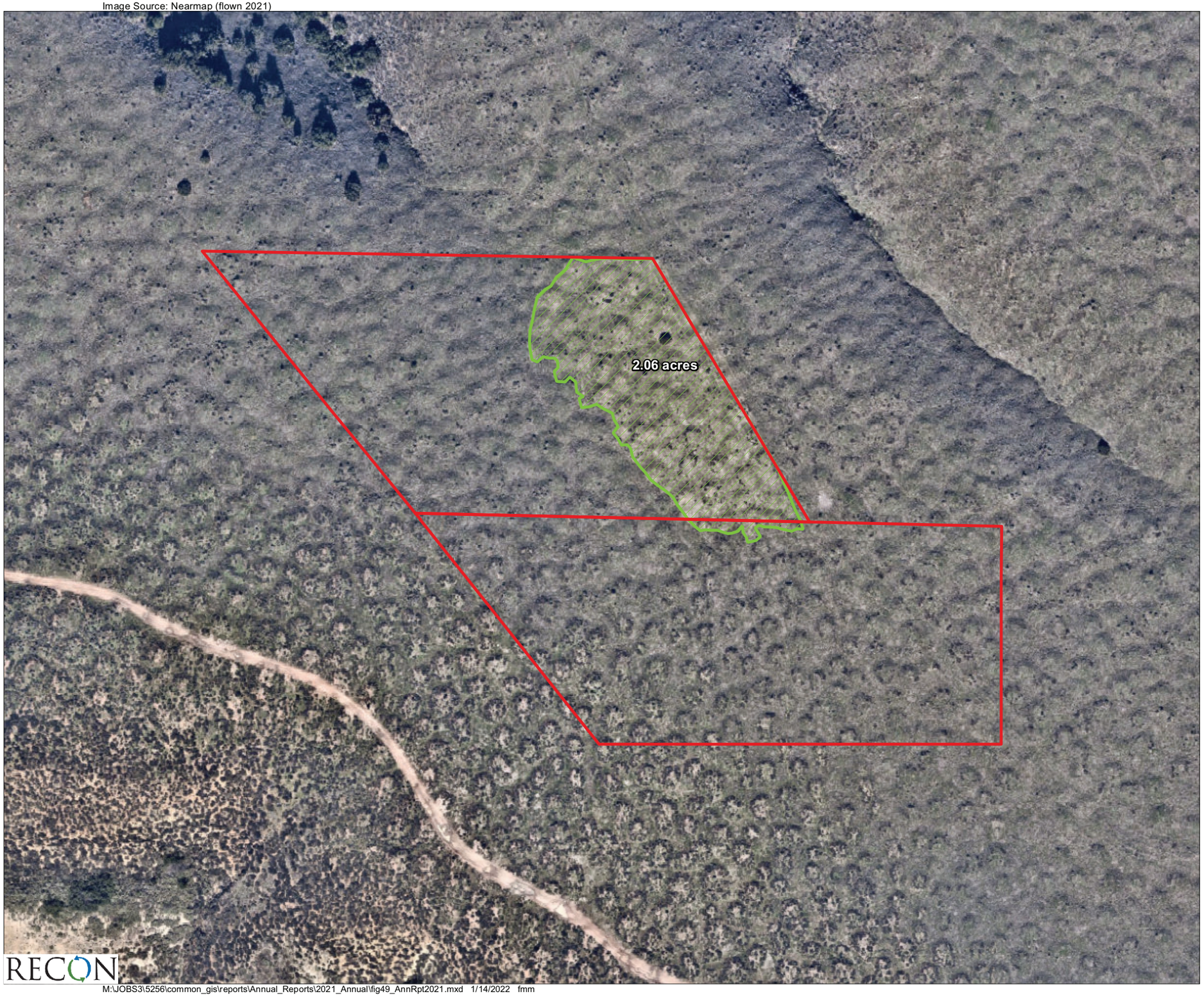
FIGURE 48

2021 Vegetation Removal
and Treatment Areas, Millenia Parcels

RECON

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Image Source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Non-native Plant Treatment Area

0 Feet 150

RECON

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FIGURE 49

2021 Vegetation Removal and Treatment Areas, Piper Ranch Parcels

Image source: Nearmap (flown 2021)



APN 646-010-06

Cactus Wren Habitat Restoration Area
(County of San Diego Parks and Recreation Department EMP Grant 5004730; ended fall 2018) - 3 acres

Coastal Cactus Wren

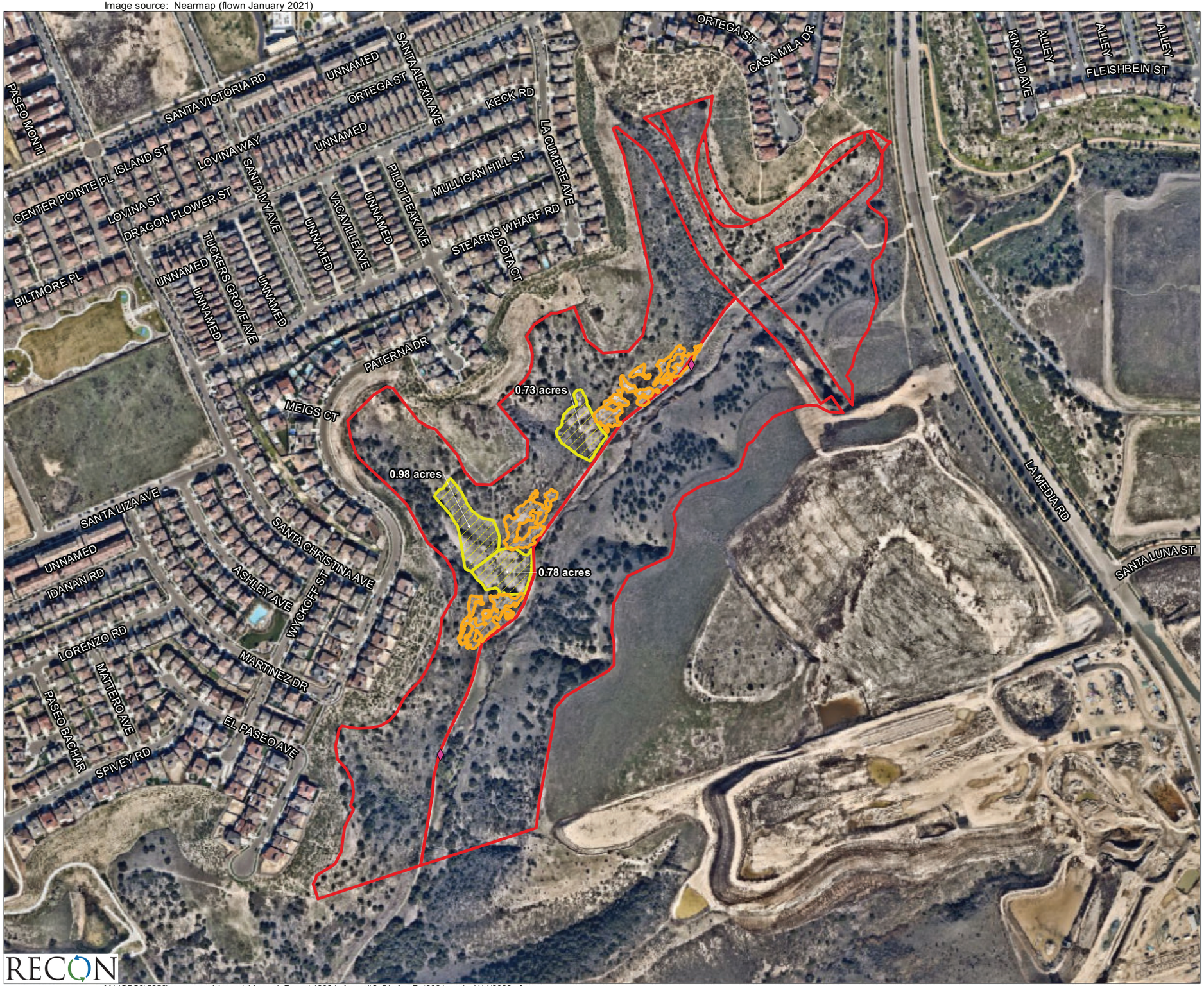
Coastal Cactus Wren Nest

RECON

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FIGURE 50
2021 Vegetation Treatment Areas and Incidental Wildlife Observations, County of San Diego Parcel

Image source: Nearmap (flown January 2021)



Conveyed Land Under POM Management

Cactus Wren Habitat – Shrubs Thinned in December/January 2020-21 (Community Facility District 97-2 funded CACW habitat restoration) (1.59 ac)

Otay Tarplant Habitat – Non-native Plant Treatment Area

Stinkwort (*Dittrichia graveolens*) Treatment Location

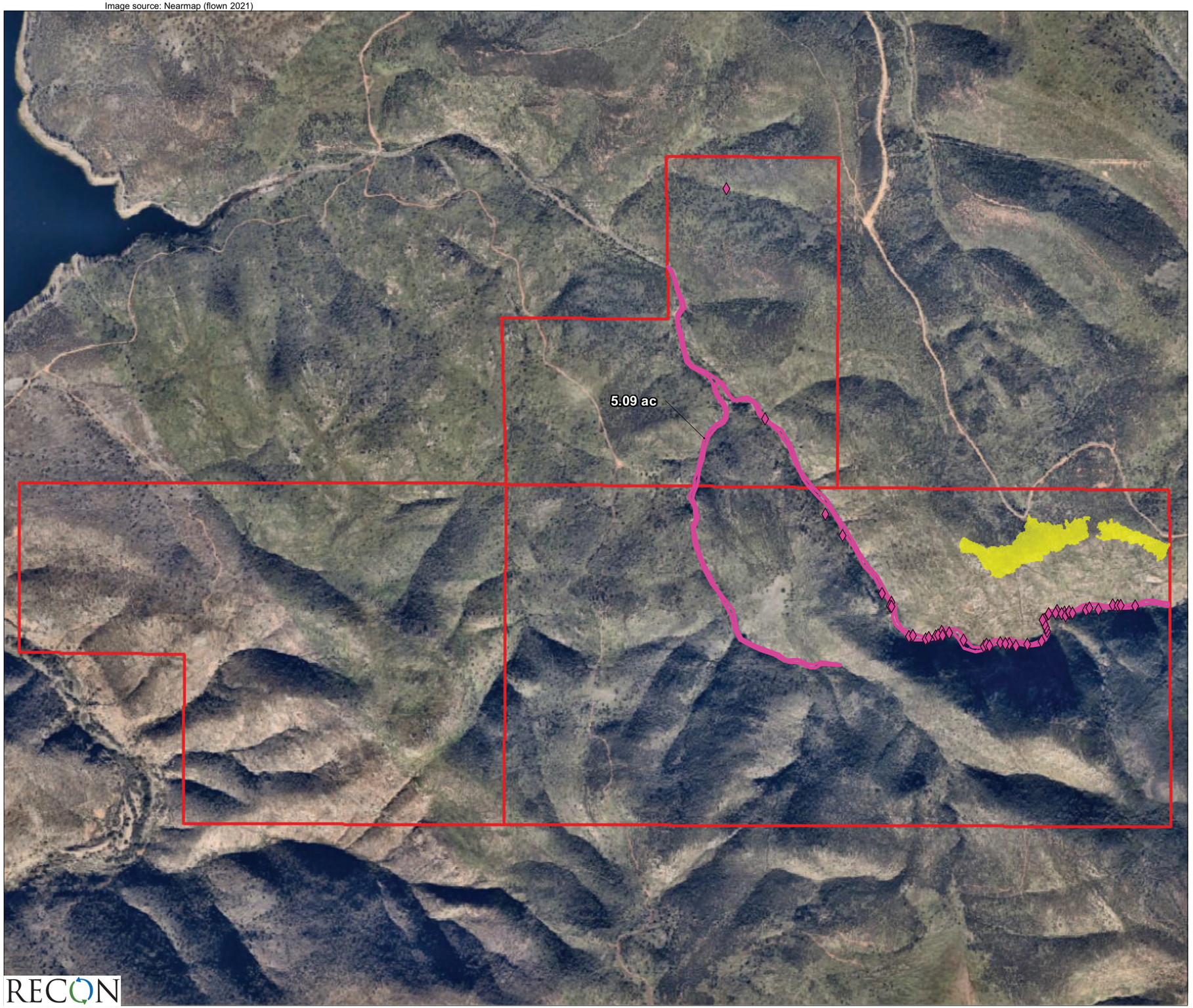
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FIGURE 51
2021 Vegetation Removal and Treatment Areas, Western Wolf Canyon and Wolf Canyon Parcels

Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Stinkwort (*Dittrichia graveolens*)
Treatment Survey Location

QCB Habitat Restoration Area - 6.35 acres
(County of San Diego CDFW LAG Grant;
ended spring 2019)

Stinkwort (*Dittrichia graveolens*)
Treatment Location

0 Feet 800

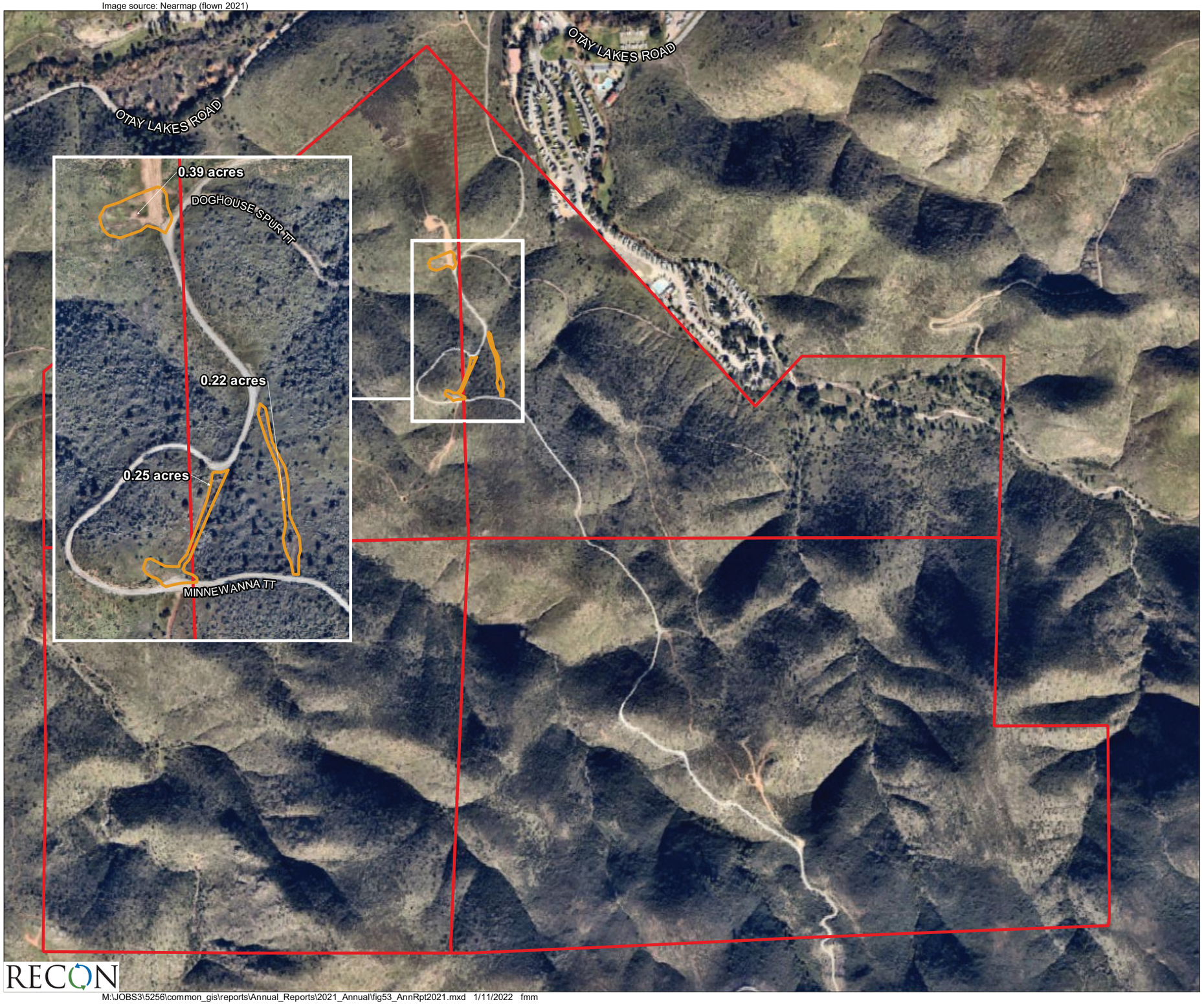
FIGURE 52

2021 Vegetation Removal and Treatment Areas, San Ysidro and Northern San Ysidro Parcels

RECON

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Image source: Nearmap (flown 2021)



Conveyed Land Under POM Management

Non-native Plant Treatment Area

0 Feet 700

FIGURE 53

2021 Vegetation Removal and Treatment Areas, Dulzura Parcels

RECON

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ATTACHMENT 2

Photographs 1–30



PHOTOGRAPH 1
Variegated Dudleya, Salt Creek, May 26, 2021



PHOTOGRAPH 2
Jennifer's Monardella, San Ysidro, May 4, 2021



PHOTOGRAPH 3
Snake Cholla, Salt Creek, May 20, 2021



PHOTOGRAPH 4
San Diego Goldenstar, Dulzura, March 23, 2021



PHOTOGRAPH 5
San Diego button-celery, Millenia, May 26, 2021



PHOTOGRAPH 6
Photo Monitoring Location Number 2, Dulzura, April 14, 2021



PHOTOGRAPH 7
Photo Monitoring Location Number 5, Jamul, May 19, 2021



PHOTOGRAPH 8
Photo Monitoring Location Number 10, Little Cedar Canyon, May 6, 2021



PHOTOGRAPH 9
Photo Monitoring Location Number 7, McMillin, April 20, 2021



PHOTOGRAPH 10
Photo Monitoring Location Number 5, Northern San Ysidro, May 13, 2021



PHOTOGRAPH 11
Coastal Cactus Wren Photo Monitoring Location Number 3, Salt Creek,
March 9, 2021



PHOTOGRAPH 12
Coastal Cactus Wren Photo Monitoring Location Number 18, Salt Creek,
March 9, 2021



PHOTOGRAPH 13
Coastal Cactus Wren Nest, Salt Creek, March 9, 2021



PHOTOGRAPH 14
Coastal Cactus Wren Nest, Millenia, March 2, 2021



PHOTOGRAPH 15
Coastal Cactus Wren Photo Monitoring Location Number 12, Millenia, March 2, 2021



PHOTOGRAPH 16
Coastal Cactus Wren, Millenia, April 14, 2021



PHOTOGRAPH 17
Thorne's Hairstreak Butterfly, Dulzura, June 9, 2021



PHOTOGRAPH 18
Thorne's hairstreak butterfly and Harbison Dun Skipper,
Little Cedar Canyon, June 23, 2021



PHOTOGRAPH 19
Otay Mesa Mint, Salt Creek, April 29, 2021



PHOTOGRAPH 20
Harbison Dun Skipper, Little Cedar Canyon,
June 29, 2021



PHOTOGRAPH 21
Harbison Dun Skipper, Little Cedar Canyon,
June 29, 2021



PHOTOGRAPH 22
Kuroshio Shot Hole Borer Tree Health Surveys, Riparian Photo Monitoring
Location Number 1a, Salt Creek, May 28, 2021



PHOTOGRAPH 23
Kuroshio Shot Hole Borer Tree Health Surveys, Riparian Photo Monitoring
Location Number 6, Salt Creek, May 28, 2021



PHOTOGRAPH 24
Golden Eagle Camera Surveys, Camera Setup, Dulzura,
December 17, 2021



PHOTOGRAPH 25
Vernal Pool Habitat Restoration, Salt Creek, March 15, 2021



PHOTOGRAPH 26
Cactus Wren Habitat Enhancement, RECON Crew Shrub Thinning, Salt Creek, January 28, 2021



PHOTOGRAPH 27
Cactus Wren Habitat Enhancement, RECON Crew
Planting Coast Cholla, Salt Creek, December 23, 2021



PHOTOGRAPH 28
Quino Checkerspot Butterfly within the Habitat Enhancement Area of San Ysidro, March 19, 2021



PHOTOGRAPH 29
RECON Crew Removing Stinkwort, Salt Creek, September 16, 2021



PHOTOGRAPH 30
RECON Crew Applying Herbicide to Fennel, Millenia, June 24, 2021

APPENDIX O

MSCP Covered Species on County Preserves and Current Status

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The following table indicates the status of the MSCP covered species that are found within County parks and preserves. A status update for each species is provided with information for the species that is specific to the County park, preserve or preserves within which each species is found (County Preserve). A status update is also provided for the species from a regional MSCP preserve perspective, indicating overall status across the region (Regional Preserve).

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
Plants		
1. Del Mar manzanita	Lusardi Creek Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved southern maritime chaparral habitat. REGIONAL PRESERVE: 90% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 91% of the known locations.
2. Dunn's mariposa lily	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved chaparral and closed-cone coniferous forest habitats. REGIONAL PRESERVE: 84% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.
3. Encinitas baccharis	Del Dios Highlands Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved southern maritime chaparral habitat. Monitoring and species protection efforts maintain the stable population at Del Dios Highlands Preserve. Regional monitoring efforts are on-going. REGIONAL PRESERVE: 79% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.
4. Felt-leaved monardella	Boulder Oaks Preserve El Capitan Preserve Otay Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral habitat. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 88% of the known locations.
5. Gander's pitcher sage	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved chaparral, coastal scrub, and closed-cone coniferous forest habitats. REGIONAL PRESERVE: 80% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
6. Lakeside ceanothus	Boulder Oaks Preserve El Capitan Preserve Louis A. Stelzer Park Oakoasis Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral habitat. Monitoring and species protection efforts maintain stable populations at Boulder Oaks Preserve, El Capitan Preserve, Louis A. Stelzer Park, and Oakoasis Preserve. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 75% of the known locations.
7. Orcutt's bird's beak	Otay Valley Regional Park Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved maritime succulent scrub habitat. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 75% of the known locations.
8. Orcutt's brodiaea	Boulder Oaks Preserve Los Peñasquitos Canyon Preserve Otay Ranch Preserve Santa Fe Valley Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved of chaparral habitat. REGIONAL PRESERVE: Approximately 69% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.
9. Otay manzanita	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved chaparral habitat. REGIONAL PRESERVE: Approximately 48% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 95% of the known locations.
10. Otay mesa mint	Otay Lakes County Park Otay Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved vernal pools habitat. REGIONAL PRESERVE: Approximately 91% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 91% of the known locations.
11. Otay tarplant	Furby-North Property Otay Ranch Preserve Otay Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved maritime succulent scrub habitat. REGIONAL PRESERVE: Approximately 14% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 66% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
12. Palmer's goldenbush	Lawrence and Barbara Daley Preserve Otay Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral and coastal sage scrub habitats. REGIONAL PRESERVE: Approximately 48% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 66% of the known locations.
13. San Diego barrel cactus	Dictionary Hill Preserve Furby-North Property Lusardi Creek Preserve Otay Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved coastal sage scrub habitat. REGIONAL PRESERVE: Approximately 69% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 81% of the known locations.
14. San Diego button celery	Louis A. Stelzer Park Otay Ranch Preserve Otay Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved vernal pool and marsh habitats. REGIONAL PRESERVE: Approximately 67% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 82% of the known locations.
15. San Diego goldenstar	Dictionary Hill Preserve Los Peñasquitos Canyon Preserve Louis A. Stelzer Park Otay Ranch Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral, coastal scrub, and grassland habitats. REGIONAL PRESERVE: Approximately 52% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 73% of the known locations.
16. San Diego thornmint	Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved coastal sage scrub and chaparral habitats. Monitoring and species protection efforts maintain a stable population at Sycamore Canyon and Goodan Ranch Preserve. REGIONAL PRESERVE: Approximately 62% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 85% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
17. San Miguel savory	Boulder Oaks Preserve Otay Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved coastal sage scrub and chaparral habitats. Monitoring and species protection efforts maintain stable populations at Boulder Oaks Preserve and Otay Ranch Preserve. REGIONAL PRESERVE: Between 25% and 75% of known species locations within the MSCP Plan boundaries have been conserved.[b] The substantial range is given because regional monitoring data is not available for this species. MSCP goal is to conserve 80 to 100% of the identified species locations.
18. Snake cholla	Furby-North Property Otay Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved maritime succulent scrub habitat. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 75% of the known locations.
19. Spreading (prostrate) navarretia	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved vernal pool habitat. Species protection efforts maintain a stable population at Otay Ranch Preserve. REGIONAL PRESERVE: Approximately 80% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 63% of the known locations.
20. Tecate cypress	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved southern interior cypress forest habitat. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 98% of the known locations.
21. Torrey pine	Tijuana River Valley Regional Park	COUNTY PRESERVE: Species distribution was enhanced via the County's Tree Planting Program and is found within preserved coastal sage scrub habitat. REGIONAL PRESERVE: Approximately 100% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
22. Variegated dudleya	Dictionary Hill Preserve Lusardi Creek Preserve Otay Lakes Regional Park Otay Ranch Preserve Otay Valley Regional Park Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral and vernal pool habitats. Monitoring and species protection efforts maintain stable populations at Lusardi Creek and Sycamore Canyon/Goodan Ranch Preserves. Species protection efforts maintain stable populations at Dictionary Hill Preserve, Otay Lakes Regional Park, Otay Ranch Preserve, Otay Valley Regional Park. REGIONAL PRESERVE: Approximately 67% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 75% of the known locations.
23. Wart-stemmed ceanothus	Del Dios Highlands Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved coastal chaparral habitat. REGIONAL PRESERVE: Greater than 75% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 64% of the known locations.
24. Willowy monardella	Otay Ranch Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral, coastal sage scrub, riparian scrub, riparian forest, and woodland habitats. Monitoring and species protection efforts maintain stable populations Sycamore Canyon and Goodan Ranch Preserve and Otay Ranch Preserve. REGIONAL PRESERVE: Between 25% and 75% of known species locations within the MSCP Plan boundaries have been conserved.[b] The substantial range is given because regional monitoring data is not conclusive about the population size of this species. MSCP goal is to conserve 100% of the known locations.
Birds		
25. American peregrine falcon	Del Dios Highlands Otay Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved foraging coastal wetland, riparian, and lake habitats. REGIONAL PRESERVE: Approximately 55% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 61% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
26. Burrowing owl	Otay Ranch Preserve Sycamore Canyon and Goodan Ranch Preserve Ramona Grasslands Preserve[a]	COUNTY PRESERVES: Species populations have been conserved and are found within preserved grassland habitat. Regional monitoring and species protection efforts are on-going. REGIONAL PRESERVE: Approximately 8% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 100% of the known locations.
27. Coastal (San Diego) cactus wren	El Capitan Preserve Furby-North Property Lakeside Linkage Preserve Otay Ranch Preserve Otay Valley Regional Park Sweetwater Regional Park Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved maritime succulent scrub. Monitoring, species protection efforts, and habitat restoration and enhancement maintain a stable population at Lakeside Linkage Preserve. Regional monitoring and species protection efforts are on-going. REGIONAL PRESERVE: Greater than 75% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 80% of the known locations.
28. Coastal California gnatcatcher	Boulder Oaks Preserve Del Dios Highlands Preserve Dictionary Hill Preserve Furby-North Property Lakeside Linkage Preserve Louis A. Stelzer Park Lusardi Creek Preserve Otay Lakes Regional Park Otay Ranch Preserve Otay Valley Regional Park Santa Fe Valley Preserve Stoneridge Preserve Sweetwater Regional Park Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved coastal sage scrub habitat. Species protection efforts on County properties have been successful and are on-going. Regional monitoring and species protection efforts are on-going REGIONAL PRESERVE: Approximately 48% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 65% of the known locations.
29. Cooper's hawk	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve Dictionary Hill Preserve El Capitan Preserve Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Lusardi Creek Preserve Oakoasis Preserve Otay Ranch Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved riparian and wooded habitats. REGIONAL PRESERVE: Approximately 38% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 57% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
30. Ferruginous hawk	Del Dios Highlands Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved foraging grassland habitat. REGIONAL PRESERVE: Approximately 71% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
31. Golden eagle	Barnett Ranch Preserve Del Dios Highlands Preserve El Capitan Preserve Otay Ranch Preserve Ramona Grasslands Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved foraging grassland, chaparral, and coastal sage scrub habitat and nesting cliff habitat. Monitoring and species protection efforts ensure successful fledging at Ramona Grasslands Preserve and El Capitan Preserve. Regional monitoring and species protection efforts are on-going. REGIONAL PRESERVE: Approximately 64% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
32. least Bell's vireo	Furby-North Property Los Peñasquitos Canyon Preserve Lusardi Creek Preserve Otay Lakes Regional Park Otay Ranch Preserve Otay Valley Regional Park Sweetwater Regional Park Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved riparian habitat. Regional monitoring and species protection efforts have been successful and are on-going. REGIONAL PRESERVE: Approximately 40% of populations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 82 to 100% of major populations.
33. Light-footed Ridgway's rail (Clapper rail)	Tijuana River Valley Regional Park	COUNTY PRESERVE: Species populations have been conserved and are found within preserved freshwater marsh and riparian habitats. Monitoring and species protection efforts enhance a population at Tijuana River Valley Regional Park. Regional species protection efforts are on-going. REGIONAL PRESERVE: Approximately 54% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
34. Northern harrier	Del Dios Highlands Preserve Furby-North Property Lawrence and Barbara Daley Preserve Louis A. Stelzer Preserve Lusardi Creek Preserve Otay Ranch Preserve Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved foraging and nesting wetland, marsh, marshy meadow, grassland, and riparian woodland habitats. REGIONAL PRESERVE: Approximately 54% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
35. Southern California rufous-crowned sparrow	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve Dictionary Hill Preserve El Capitan Preserve El Monte Park Furby-North Preserve Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Louis A. Stelzer Park Lusardi Creek Preserve Oakoasis Preserve Otay Ranch Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved coastal sage scrub habitat. REGIONAL PRESERVE: Approximately 45% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 71% of the known locations.
36. Southwestern willow flycatcher	Tijuana River Valley Regional Park	COUNTY PRESERVE: Species populations have been conserved and are found within preserved riparian habitat. Regional monitoring and species protection efforts are on-going. REGIONAL PRESERVE: Approximately 33% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 88% of the known locations.
37. Swainson's hawk	Barnett Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved foraging grassland habitat. REGIONAL PRESERVE: Approximately 71% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
38. Tricolored blackbird	Barnett Ranch Preserve Ramona Grasslands Preserve[a] Tijuana River Valley Regional Park	COUNTY PRESERVES: Species populations have been conserved and are found within preserved foraging grassland habitat. Monitoring and species protection efforts ensure that the population adjacent to Ramona Grasslands Preserve is stable. Species protection efforts maintain populations at Barnett Ranch Preserve and Tijuana River Valley Regional Park. REGIONAL PRESERVE: Approximately 33% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 59% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
39. Western bluebird	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve El Capitan Preserve El Monte Park Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Oakoasis Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved grassland, coastal sage scrub, and riparian woodland habitats. REGIONAL PRESERVE: Approximately 51% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
40. White-faced ibis	Del Dios Highlands Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved freshwater wetland habitat. REGIONAL PRESERVE: Approximately 31% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.
Reptiles		
41. Belding's orange-throated whiptail	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve Dictionary Hill Preserve El Capitan Preserve Furby-North Property Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Louis A Stelzer Park Lusardi Creek Preserve Otay Ranch Preserve Ramona Grasslands Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral and scrub habitats. REGIONAL PRESERVE: Approximately 47% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 62% of the known locations.
42. Blainville's horned lizard	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve Dictionary Hill Preserve El Capitan Preserve Furby-North Property Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Louis A. Stelzer Park Lusardi Creek Preserve Oakoasis Preserve Otay Ranch Preserve Ramona Grasslands Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve Tijuana River Valley Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved chaparral and scrub habitats. REGIONAL PRESERVE: Approximately 42% of known species locations within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 63% of the known locations.

MSCP Covered Species and Habitats	County Preserve or Park	Status of Species
Mammals		
43. Mountain Lion	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve El Capitan Preserve Otay Ranch Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within diverse preserved habitats. Regional monitoring, species protection, and increasing habitat connectivity efforts are on-going. REGIONAL PRESERVE: Approximately 60% of core areas within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 81% of the core areas.
44. Southern mule deer	Barnett Ranch Preserve Boulder Oaks Preserve Del Dios Highlands Preserve El Capitan Preserve El Monte Parka Lakeside Linkage Preserve Lawrence and Barbara Daley Preserve Louis A. Stelzer Preserve Lusardi Creek Preserve Oakoasis Preserve Otay Ranch Preserve Ramona Grasslands Preserve Stoneridge Preserve Sycamore Canyon and Goodan Ranch Preserve	COUNTY PRESERVES: Species populations have been conserved and are found within preserved grassland, scrub, and chaparral habitats. Regional monitoring, species protection, and increasing habitat connectivity efforts are on-going. REGIONAL PRESERVE: Approximately 60% of core areas within the MSCP Plan boundaries have been conserved.[b] MSCP goal is to conserve 81% of the core areas
Invertebrates		
45. San Diego fairy shrimp	Otay Ranch Preserve Ramona Grasslands Preserve[a]	COUNTY PRESERVES: Species populations have been conserved and are found within preserved vernal pool habitat. Monitoring and species protection efforts maintain stable populations at Ramona Grasslands Preserve and Otay Ranch Preserve. REGIONAL PRESERVE: Approximately 54% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 88% of known habitat.
46. Thorne's hairstreak butterfly	Otay Ranch Preserve	COUNTY PRESERVE: Species populations have been conserved and are found within preserved foraging chaparral habitat and larval host Tecate cypress habitat. REGIONAL PRESERVE: Approximately 100% of habitat within the MSCP Plan boundaries has been conserved.[b] MSCP goal is to conserve 100% of known habitat.

[a] Species was observed on draft North County MSCP portion of the County Preserve and is presumed to utilize the South County MSCP area of the County Preserve.
[b] Conservation status of the MSCP covered species within the MSCP Plan Area's boundaries is from the 2012 San Diego Multiple Species Conservation Program Status Report: 1997-2011, which summarized monitoring results for all three South County MSCP Subarea Plan Areas.
Reference:

U.S. Fish and Wildlife Service Carlsbad Field Office, California Department of Fish and Game South Coast Region Office, and San Diego Management and Monitoring Program. 2012. San Diego Multiple Species Conservation Program Status Report: 1997-2011.