

Management & Monitoring Strategic Plan for Conserved Lands in Western San Diego County: *A Strategic Habitat Conservation Roadmap* “MSP Roadmap”

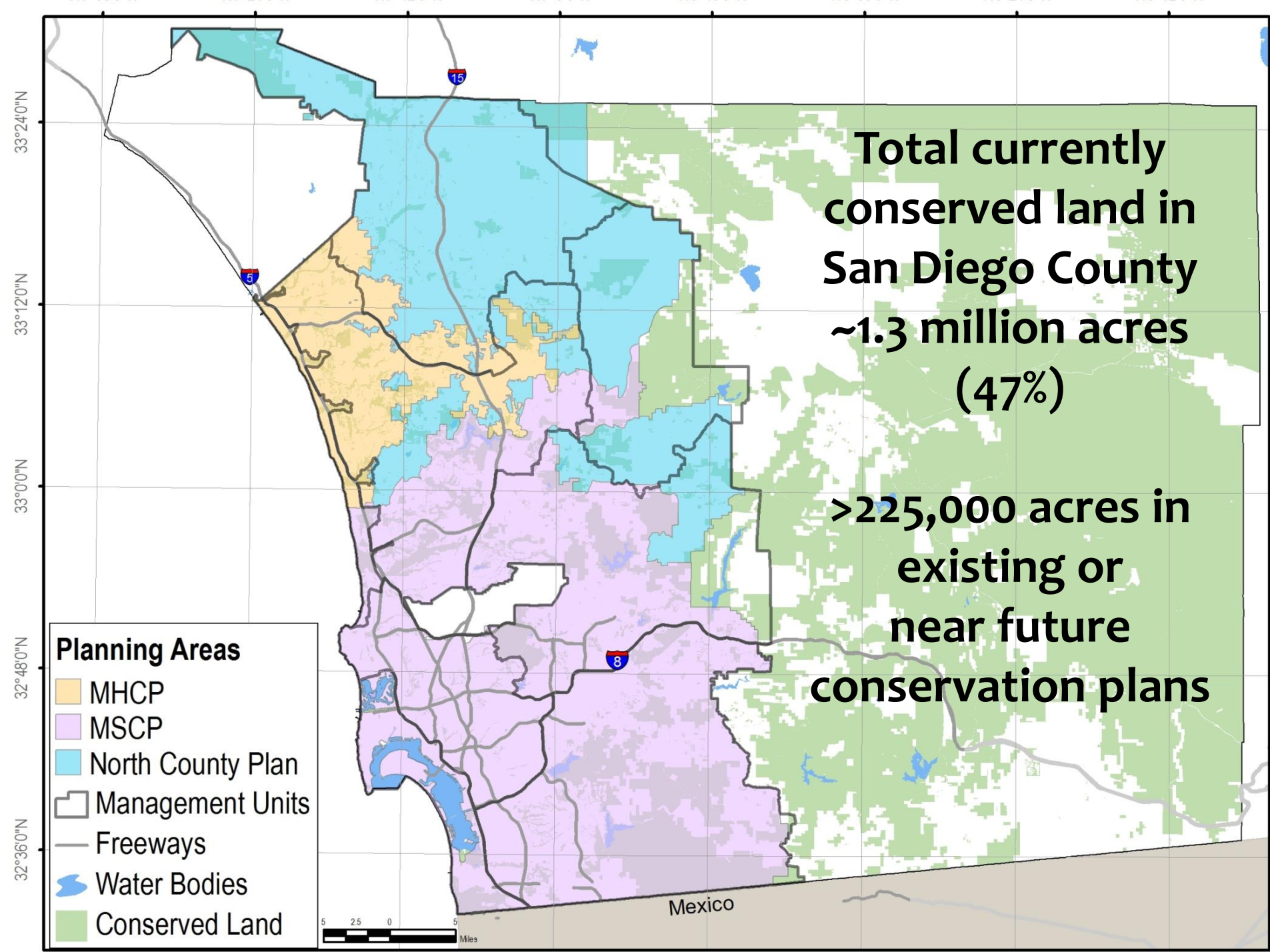
*A collaboration between the San Diego
Management & Monitoring Program and
The Nature Conservancy*

International Urban Wildlife Conference
5 June 2017

Yvonne C. Moore, Program Administrator

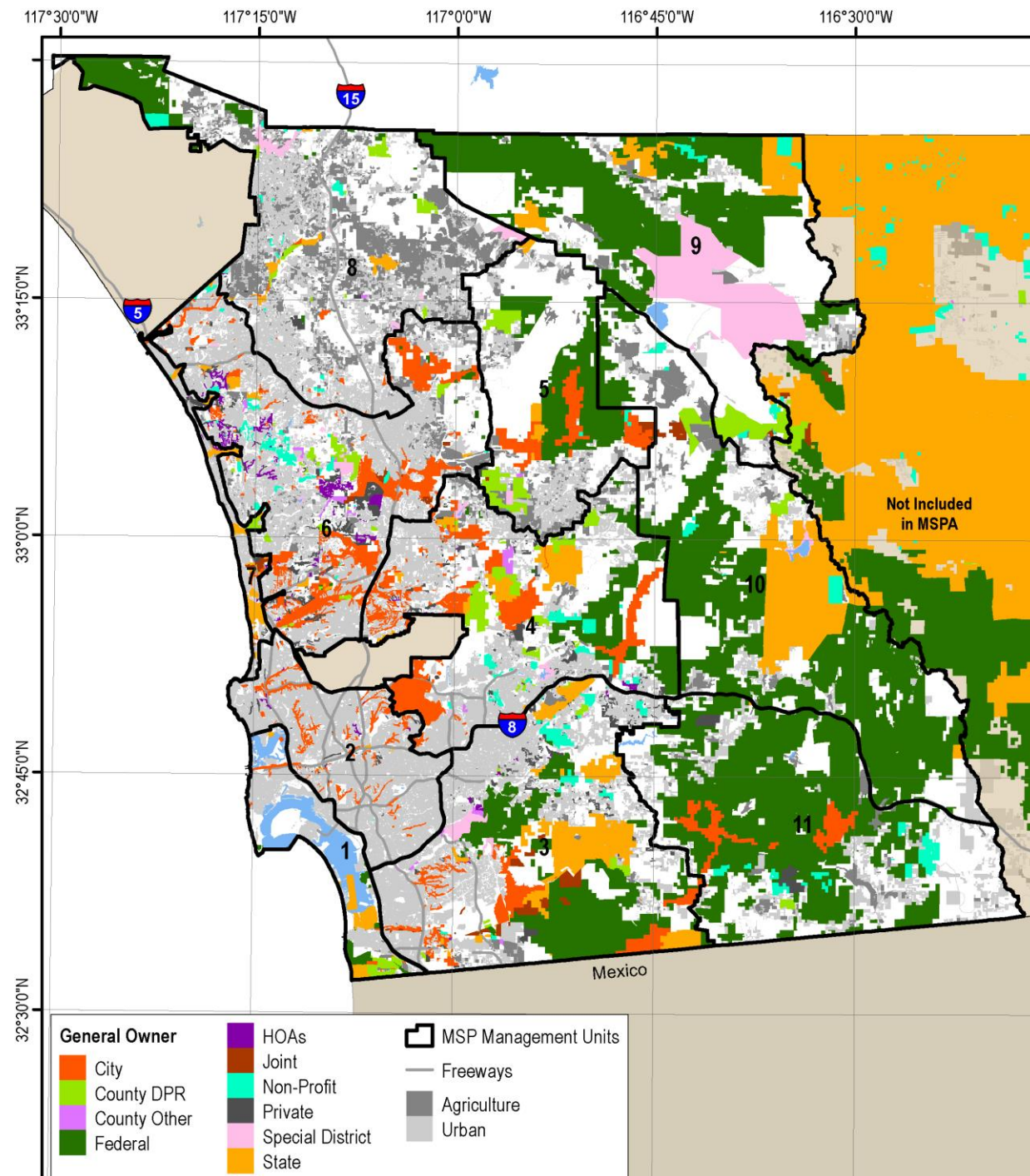






San Diego Numerous Landowners

- City
- County
- State
- Federal
- Non-Profit
- Private



How is the preserve system doing?



Designing Monitoring Programs
in an Adaptive Management
Context for Regional Multiple
Species Conservation Plans



**Designing Monitoring Programs
in an Adaptive Management
Context for Regional Multiple
Species Conservation Plans**

**Atkinson et al.
2004**

Assessment of the Biological Monitoring
Plan for San Diego's Multiple Species
Conservation Program

Report for Task A of Local Assistance Grant #P0450009



August 2005

Prepared for
California Department of Fish and Game
Grant Coordinator: Dr. Brenda S. Johnson

Prepared by
Department of Biology, San Diego State University
Loren A. Hays, Dr. Helen M. Rogers,
Dr. Janet Franklin, and Dr. Douglas W. Derrington

**Assessment of the Biological Monitoring
Plan for San Diego's Multiple Species
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Report for Task A of Local Assistance Grant #P0450009

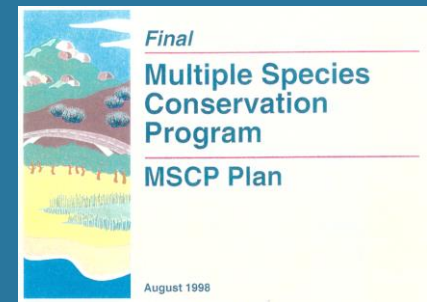
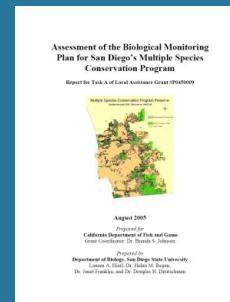
**Hierl et al.
2005**



McEachern et al. 2006

**San Diego Multiple Species Conservation
Program (MSCP)
Rare Plant Monitoring Review and Revision**

Hierl et al. 2005



“...it is still difficult to determine if the MSCP reserve is meeting its biological conservation goals.

Implementation of the monitoring protocols has been limited, and each monitoring partner has used different methods and priorities.”

Local A



+

Local B



≠

Regional



How is the preserve system doing?

Need

- Regional goals and objectives
- Data collected at regional scale
- Common data collection methods
- Centralized database and data analysis
- Covariate data



Keep San Diego Moving

TransNet

½ cent sales tax

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**Environmental
Programs**

Highway Projects

Local Agency Grants

Transit & Rail Projects

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TransNet – Your Tax Dollars at Work!

www.keepsandiegomoving.com/

TransNet is the voter approved half-cent sales tax for San Diego region transportation projects. It is administered by the **San Diego Association of Governments** (SANDAG). During the 60 year life of the program, funds will be generated and distributed among highway, transit, and local road projects in approximately equal thirds.



Promises Made, Promises Kept

Thanks to funding from *TransNet*, more than 650 highway, transit, bike and pedestrian, habitat conservation, local street repairs, and grant projects and programs totaling more than \$13.7 billion have been completed.

[VIEW STORY MAP](#)



Funding for Regional Program

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**\$40 million
over past 10
years for
Mgmt &
Monitoring**

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[Acquisitions](#)

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The Environmental Mitigation Program (EMP) provides funds through *TransNet* to protect, preserve, and restore native habitats as offsets to disturbance caused by the construction of regional and local transportation projects. Over the past decade, the \$850 million program has helped **acquire** and/or restore more than 8,600 acres around the region with a total value of about \$150 million, in part by leveraging \$27 million from conservation partners. Some of the recent acquisitions go above and beyond required environmental mitigation and are made possible through savings achieved by buying land early, at lower prices, and in larger parcels.

Conservation Highlights

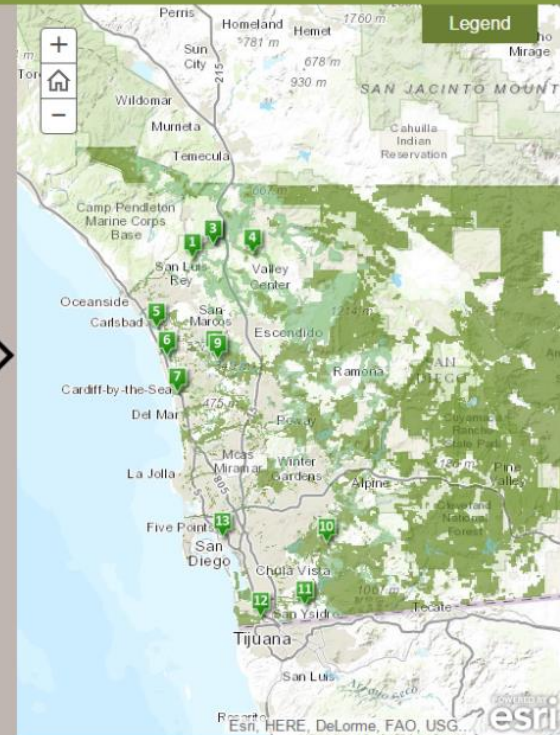
Funded by the regional half-cent sales tax for transportation, the *TransNet* Environmental Mitigation Program (EMP) has been a key driving force in habitat conservation efforts in San Diego County. This story map highlights some of the program's successes.

[Click here for more information about the EMP](#)



Welcome to the EMP Story Map

Through its award-winning *TransNet* Environmental Mitigation Program (EMP), SANDAG buys and restores native habitat as offsets to disturbance caused by transportation projects. Since its inception in 2008, the program has funded 31 acquisitions and conserved 3,455 acres.





Regional Entity

- **Mission**: Coordinate science-based, biological management and monitoring of lands in San Diego that have been conserved through various conservation planning and mitigation efforts.
- **7 Core Staff**, embedded with US Geological Survey
- **> 350 partners** representing **> 100 different entities**





Regional Collaboration

- **Hold Regular Meetings to Coordinate with Partners**
- **Implement Regional Monitoring Studies**
- **Assist with Transnet Land Management Grant Program**
- **Develop Strategic Management and Monitoring Plans**
- **Oversee the Development of a Centralized Database**
- **Provide Technical Support to Land Managers**

Regional Strategic Plans

Connectivity
Invasive Plants
Management
+
Monitoring
Wildfire
Invasive Animals



**Management &
Monitoring Strategic
Plan (MSP)
“Roadmap”
2017-2021**

MSP Roadmap



Management and Monitoring Strategic Plan
for Conserved Lands in Western San Diego County:
A Strategic Habitat Conservation Roadmap



***Vol 1:
Overview and
Approach***

***Vol 2:
Goals and
Objectives***

***Vol 3:
Supporting
Documents***



**2A - Regional Preserve System
2B - Threats/Stressors
2C - Vegetation
2D - Species**

MSP Roadmap Vol. 2B & 2C

Vol 2B Threats

Altered Fire Regime
Loss Connectivity
Invasive Animals
Invasive Plants
Climate Change
Ecological Integrity
Altered Hydrology
Human Use
Urban Development



Vol 2C Vegetation

Coastal Sage Scrub
Chaparral
Grassland
Riparian
Torrey Pine
Cypress Forest
Oak Woodland
Vernal Pools
Salt Marsh

MSP Roadmap: Vol. 2D Species

57 Plants

30 Birds

8 Mammals

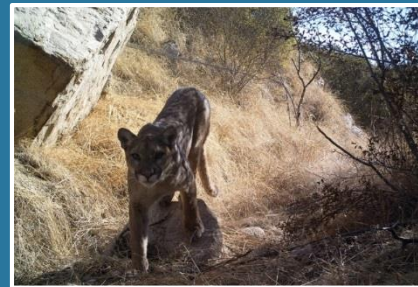
7 Invertebrates

5 Reptiles

3 Amphibians

1 Fish

111 At-Risk Species



<https://portal.sdmmp.com/>

San Diego Management & Monitoring Program

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Applying science to conservation through collaboration

The SDMMP's mission is to coordinate science-based biological management and monitoring of lands in San Diego that have been conserved through various conservation planning and mitigation efforts.

MSP Portal

Management & Monitoring Strategic Plan: Goals, Objectives & Actions
The Management & Monitoring Strategic Plan provides goals, objectives and actions for species, vegetation communities, and threats/stressors. Use the MSP Portal to search this information spatially, by keywords, or by progress/status.

[Enter portal](#)

Projects

Project Profiles & Associated Reports, Data, and Maps
Numerous management and monitoring efforts are taking place across the South Coast Ecoregion. Search Projects to obtain more information on these efforts and view and download associated project reports, data, and maps.

[View projects](#)

Maps

Advanced GIS Viewer
Create maps using an advanced online ArcGIS software program which displays a specific set of spatial layers that allows users to access tools to investigate the layers interactively. SDMMP has numerous spatial layers available for users.

[Access viewer](#)

Library

Reports & Other Documents
Hundreds of reports and documents exist that describe conservation efforts in San Diego County and the region, and the plants and animals of conservation concern. Search the library to view and download documents.

[Browse library](#)

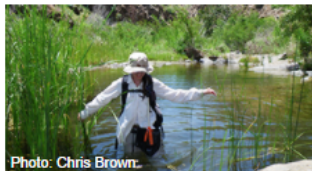


Photo: Chris Brown

Highlighted projects

California Gnatcatcher South Coast Regional Monitoring Program

The USGS, USFWS, SDMMP, and the Nature Reserve of Orange County have joined together to develop a long-term coordinated regional monitoring program for the federally-threatened Coastal California Gnatcatcher (*Poliopitila californica californica*) in the United States portion of the species



Announcements

Job Announcement- Southern California Field Manager (River Partners)

May 04, 2017 0:00am to May 16, 2017 0:00am

Shot Hole Borer Survey

April 03, 2017 0:00am to May 31, 2017 0:00am



Upcoming events

International Urban Wildlife Conference 2017

June 04, 2017 0:00am to June 07, 2017 0:00am

Free Pesticide Container Recycling

June 10, 2017 8:00am to June 10, 2017 14:00pm

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San Diego Management & Monitoring Program

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MSP Portal

The MSP Portal is a toolbox for accessing information about the [Management & Monitoring Strategic Plan \(MSP\)](#). The information available includes goals, objectives, actions, background & rationale, tables of occurrences, and maps for MSP Species, Vegetation, Threats/Stressors & Preserves, & Projects. The MSP Portal also provides the ability to track progress on goals, objectives, and actions. There are three ways to search the MSP Portal



Spatial search

Search for an area of interest & view information on a basic map

[Spatial search](#)

Photo: Chris Brown

Topic search

Search for information by topic or keywords

[Topic search](#)

Photo: John Martin

Track progress

Track progress of MSP goals, objectives, & actions

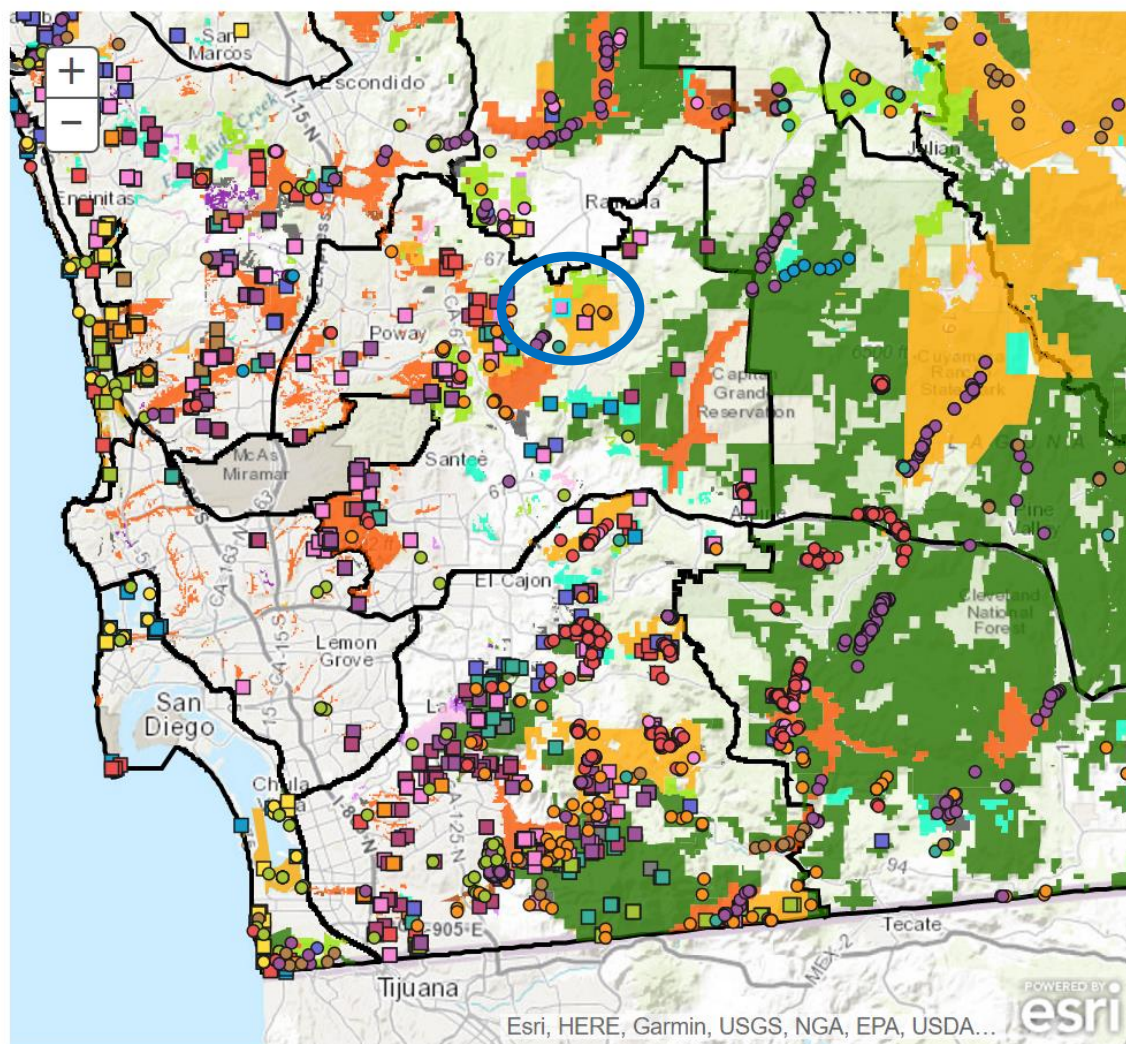
[Track progress](#)

MSP document

Complete documentation of Management & Monitoring Strategic Plan

[MSP document](#)

Projects
Species
Vegetation
Preserves



San Diego thorn-mint

Acanthomintha ilicifolia

View species profile

Occurrence information

Management category: SO

Preserve name: Canada de San Vicente

Land owner: California Department of Fish and Wildlife

Land manager: California Department of Fish and Wildlife

Management unit: 4

Number detected: 100

Year surveyed: 1995

MSP Species information

MSP Species Background

Table of Occurrences (MOM)

MSP Table of Occurrences (MOM)

Goals & Objectives

MSP Goals and objectives

Data associated with this species

Projects

Reports library

Program

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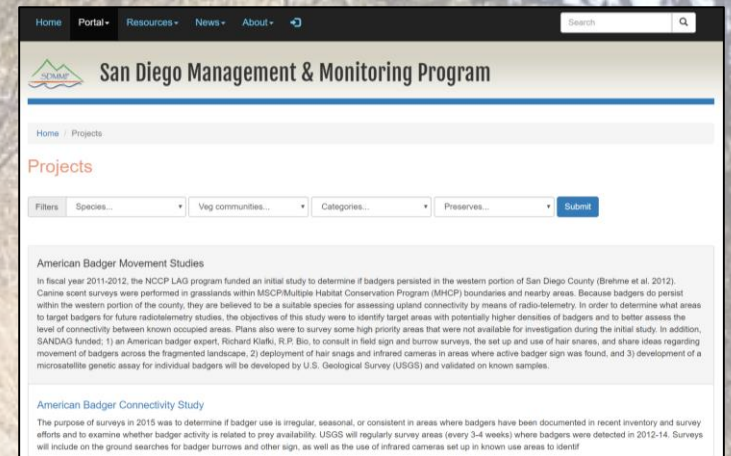
Applying science to conservation
through collaboration

Coordinate science-based biological management and
that have been conserved through various conservation

The S
monito
planning

Regional Projects

- Vegetation Mapping
- Best Management Practices
- Genetic Studies
- Threats Coordination – Wildfire, Connectivity, etc.
- Wide Ranging Species - Mountain Lion, Deer, Pond Turtle, California Gnatcatcher, Cactus Wren, Golden Eagle, American Badger, Arroyo Toad, Rare Plants
- Regional Preserve System Monitoring – Vegetation +





Mountain Lion

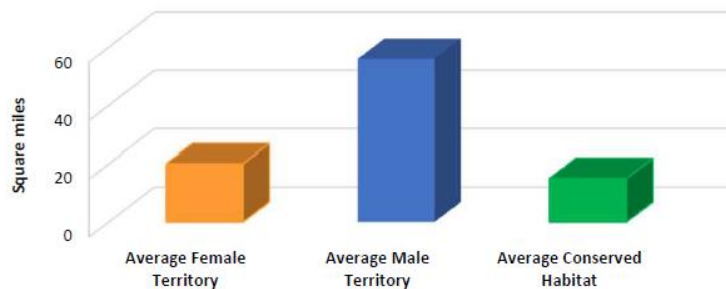
A Wide Ranging Species of Concern

What Have We Learned?

With an average territory size of 100 square miles, mountain lions have the **largest territory** of any other mammal in the County.

Studies revealed that mountain lion **territories are much larger than almost any single conserved habitat area in San Diego County**. Large territories mean mountain lions must cross many roads to find food, shelter, and mates.

Average Territory Size Compared to Average Conserved Habitat without Major Roads in Western San Diego County



Scientists and land managers in Southern California are working to **conserve corridors** important for mountain lion movement. This includes **designing safer underpasses and overpasses** and **installing fencing** along major roads to direct movement.



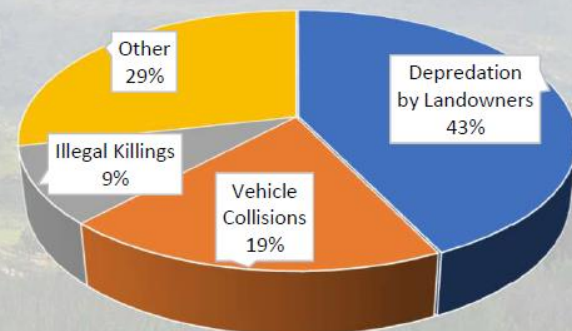
UC Davis Wildlife Health Center researchers studied mountain lions in S. California for the past 15 years. **Mountain lions are prime indicators of how well habitat patches are connected for wildlife movement.**

Only **5** mountain lions west of I-15 and only **24** east of I-15 **contribute genes** to their populations. Researchers identified several key **I-15 locations** that could be **improved for safe crossings**; increasing genetic health of both populations.



The **annual survival rate** of mountain lions in the region is **very low** (near 50%). The top two causes of mortality: **depredation by landowners protecting livestock** and **vehicle collisions**.

Causes of Lion Mortality in San Diego County



With **good livestock husbandry practices**, the loss of mountain lions from **depredation** is **almost totally preventable**.





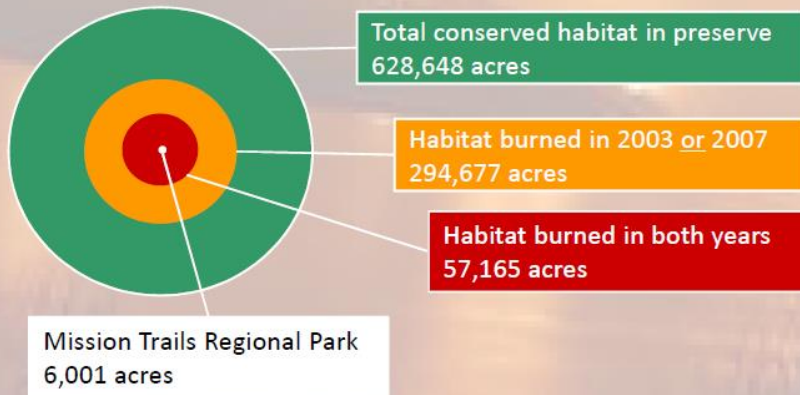
Wildfire

Largest Impact to Natural Resources

What Have We Learned?

The **two largest fires recorded** in San Diego County **occurred in 2003 and 2007**, with catastrophic environmental consequences especially for lands burning twice. **Nearly 50%** (294,677 acres) of conserved lands (CLs) **burned** at least once and over **57,000 acres burned twice**.

How many acres of conserved habitat burned?



More frequent fire is increasing weed invasion into native vegetation across the preserve system.

Native high quality habitat before fire



Habitat invaded by weeds due to repeat fires



Research has shown that **extremely large Santa Ana wind-driven fires increased abruptly since 2003** and are associated with dead vegetation, high temperatures and severe drought.

The **two largest sources of ignitions** are **faulty powerlines** and **sparks from the use of power equipment**.



Wildfires can **kill individuals** and indirectly impact plant and animals by **changing habitat so it no longer supports them**. Plants and animals most at risk from fire include:



Hermes copper butterfly



San Diego thorn-mint



Southwestern pond turtle



Coastal cactus wren

Researchers, land managers and fire fighting agencies have come together to **identify solutions** to protect resources and to **identify priority areas to manage**.



Solutions

- ✓ Initiate Volunteer Fire Watch programs
- ✓ Limit target shooting during severe fire risk
- ✓ Public education to reduce ignitions
- ✓ Clear dead fuels
- ✓ SDG&E fire prevention measures (replace wood with metal poles, turn off powerlines during Santa Ana winds, manage vegetation, track weather)

Questions?

SDMMP website
<https://portal.sdmmp.com>

Transnet EMP
<http://www.keepsandiegomoving.com>

