

Welcome!

Habitat Management Plan (HMP) Annual Meeting

February 27, 2018

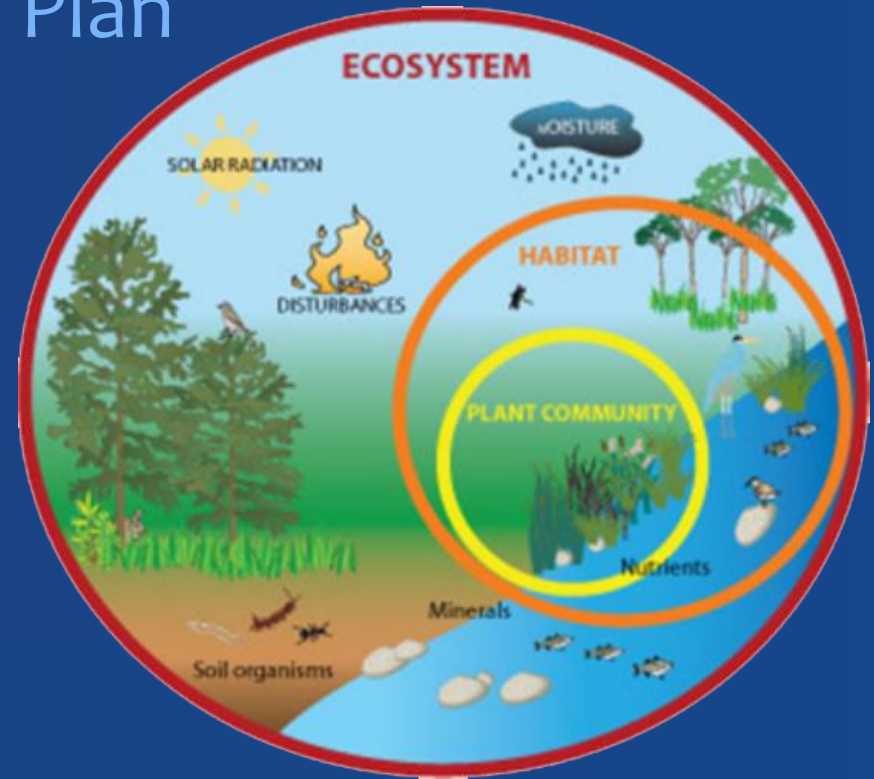
Agenda

- Welcome and introductions
- Overview of the HMP
- Monitoring/Management Highlights
- Preserve manager presentations
- Q&A and public input

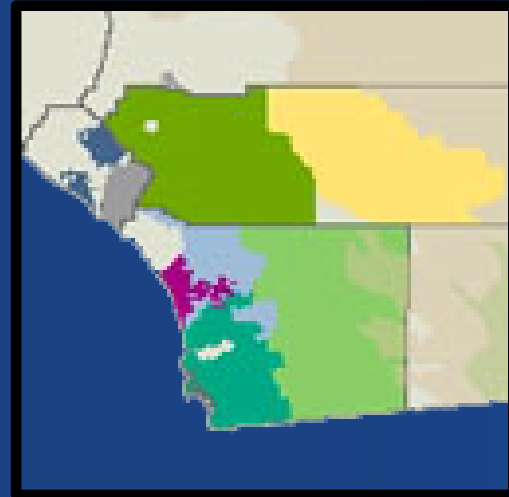
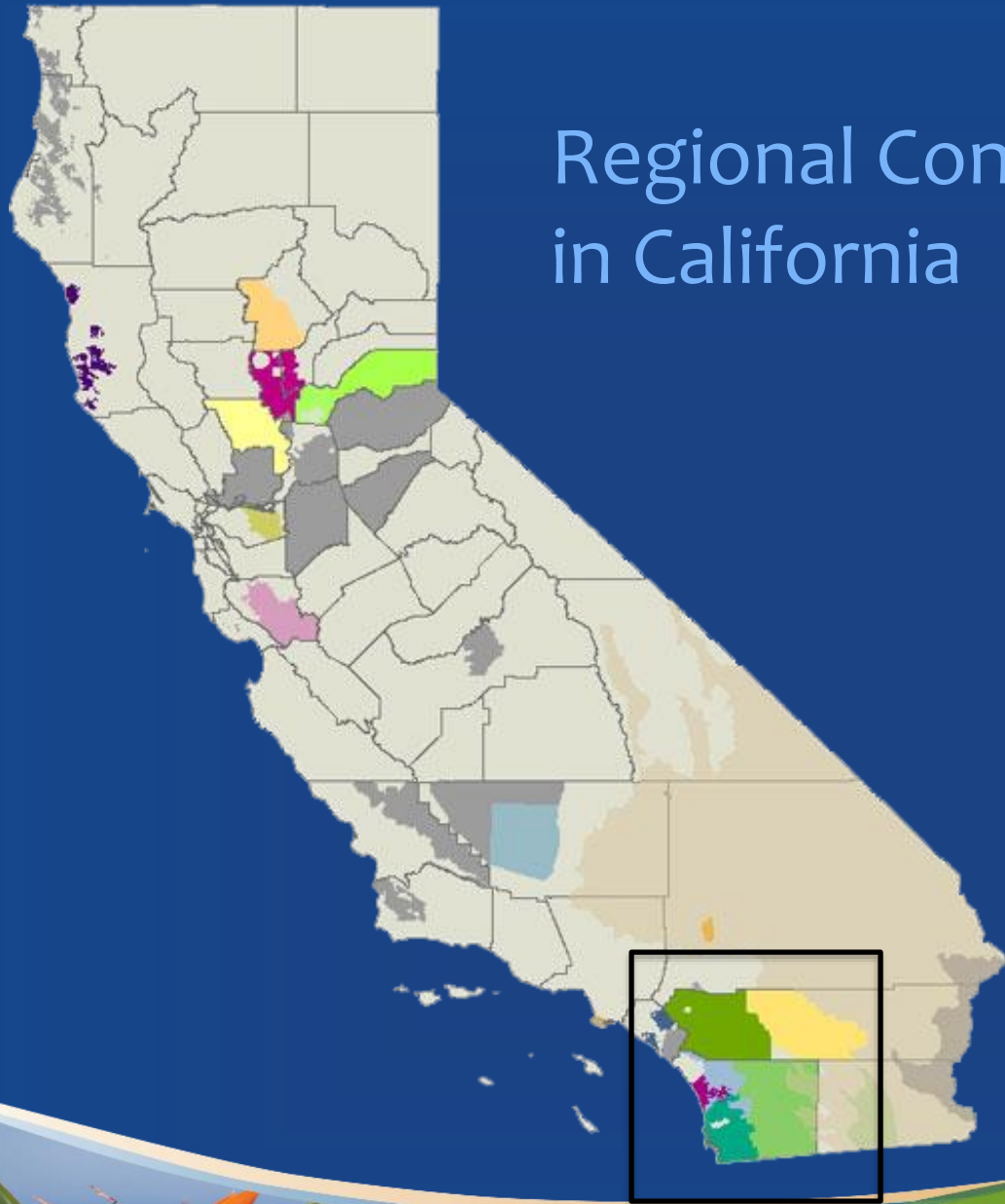
What is the HMP?

Regional Conservation Plan

- Ecosystem-scale
- Protects multiple species and habitats across political boundaries

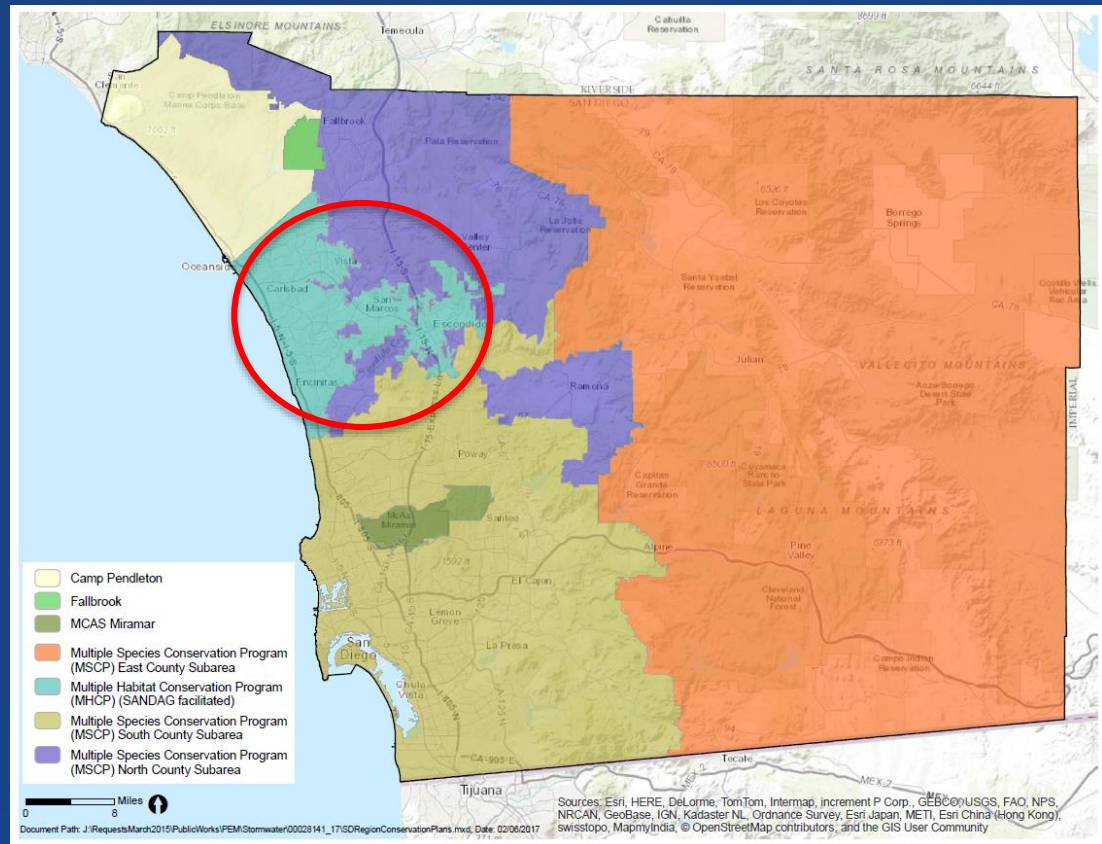


Regional Conservation Plans in California



HMP Overview

San Diego Conservation Plans



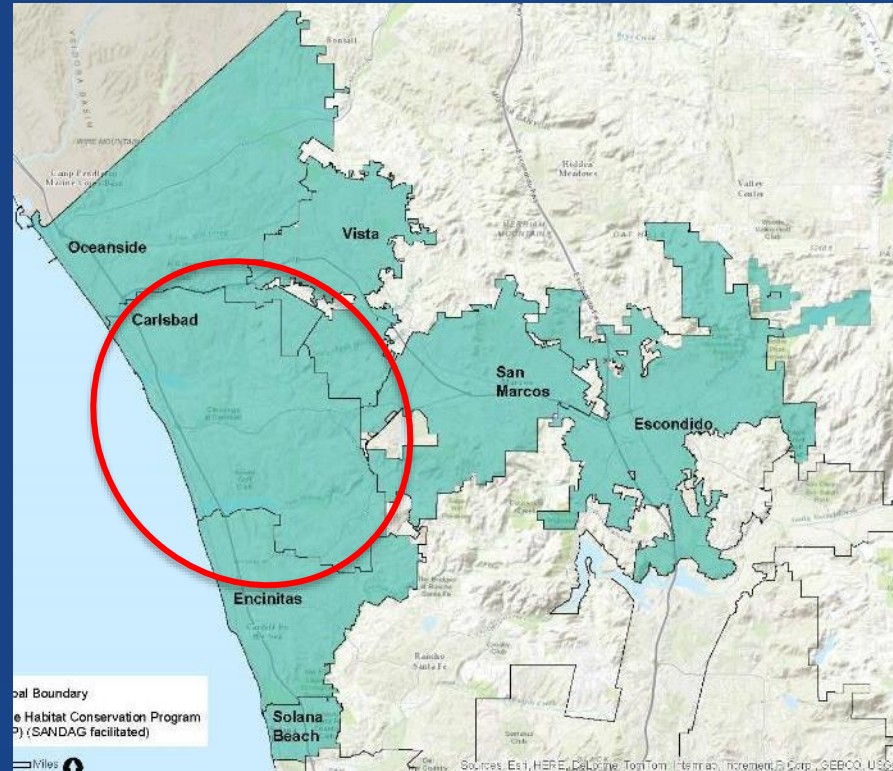
HMP Overview

Multiple Habitat Conservation Plan (MHCP)



MHCP

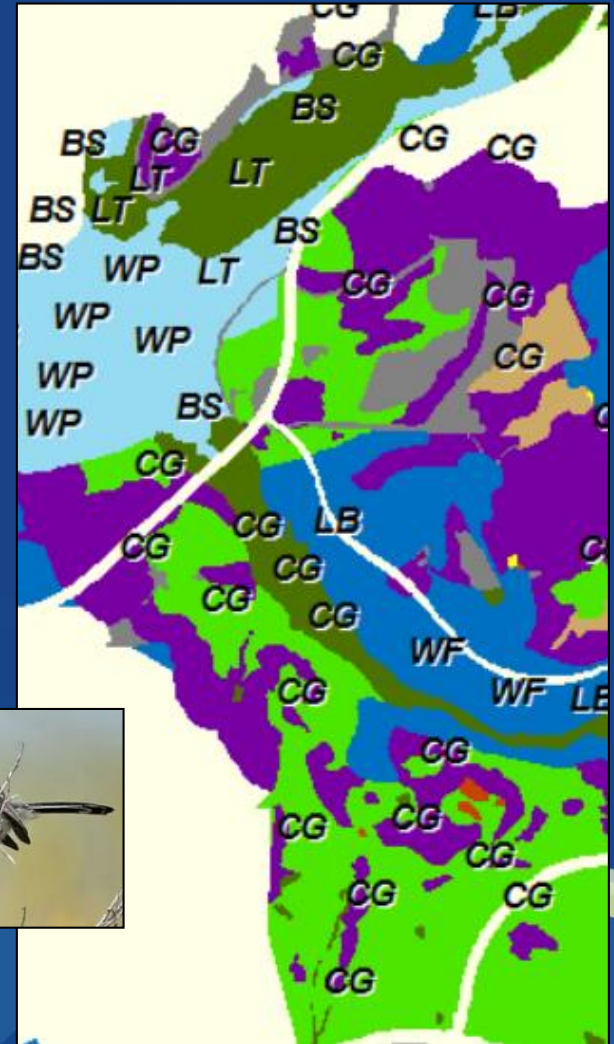
The HMP is a subarea
plan under the MHCP
=implementation Plan



HMP History

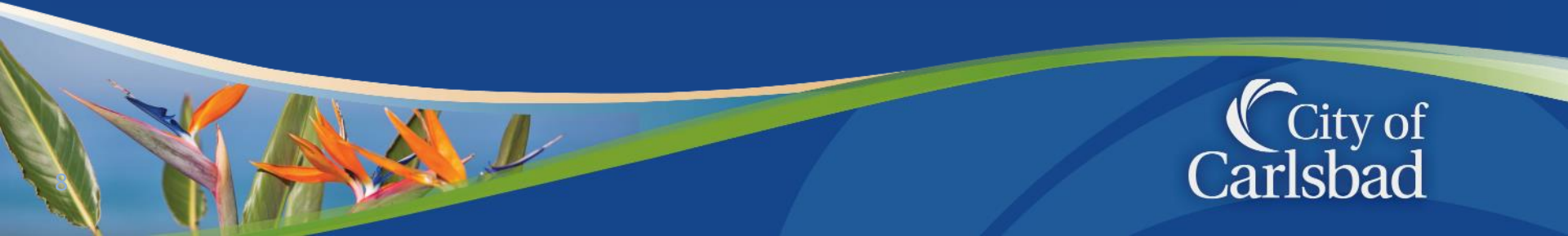
MHCP/HMP Planning began in early 1990's

- Wildlife Agencies, City representatives, biological experts, public
- Researched species requirements
- Data collection and mapping to determine current conditions
- Projected city's growth
- Sufficient habitat to conserve species even after build-out?



HMP Goals

- Conserve full suite of native vegetation communities
- Conserve large core habitat areas connected by linkages
- Protect native plants and animals in perpetuity
- Maintain functional wildlife movement corridors and habitat linkages within and beyond the city
- Provide a framework for preserve system management and monitoring

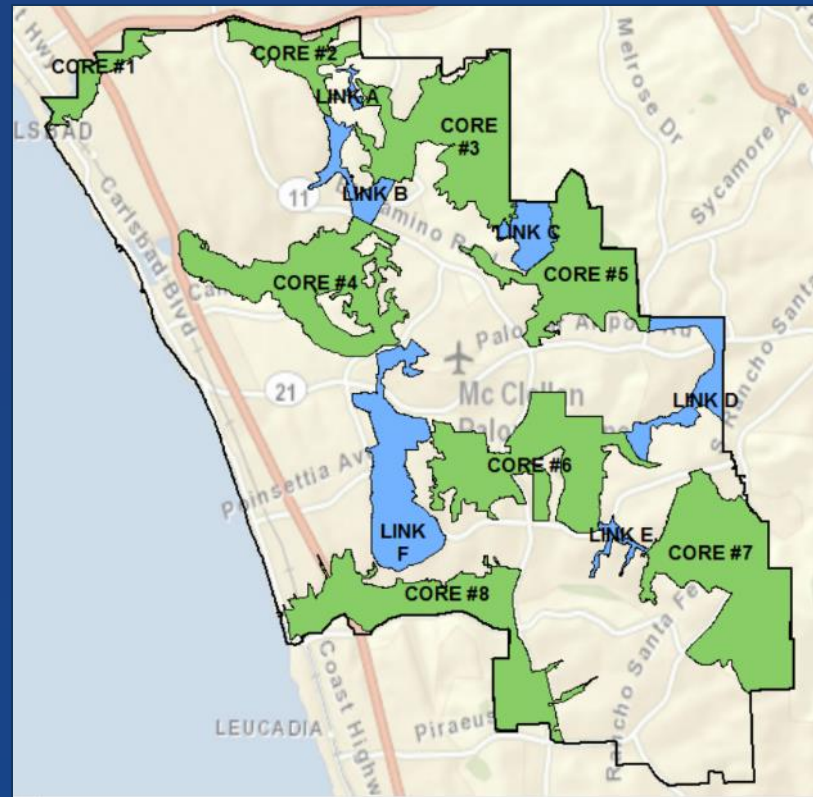


HMP History

HMP = How to implement MHCP in Carlsbad



Focus Planning Area

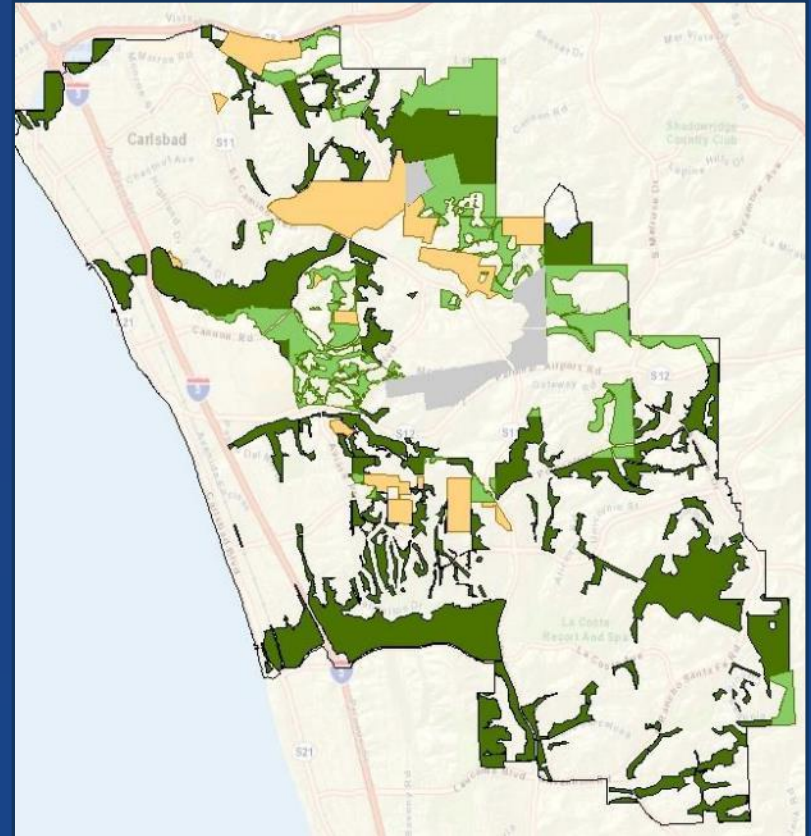
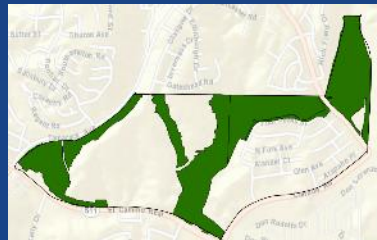
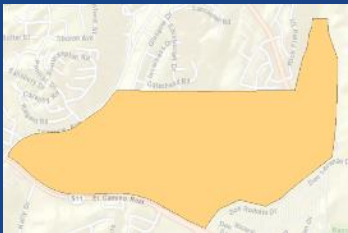
1. Core Areas
2. Habitat Linkages/
Wildlife movement
corridors



HMP Preserve Baseline (2004)

Further refined target preserve areas

1.  Existing Preserves
2.  Proposed Hardline
3.  Standards Areas

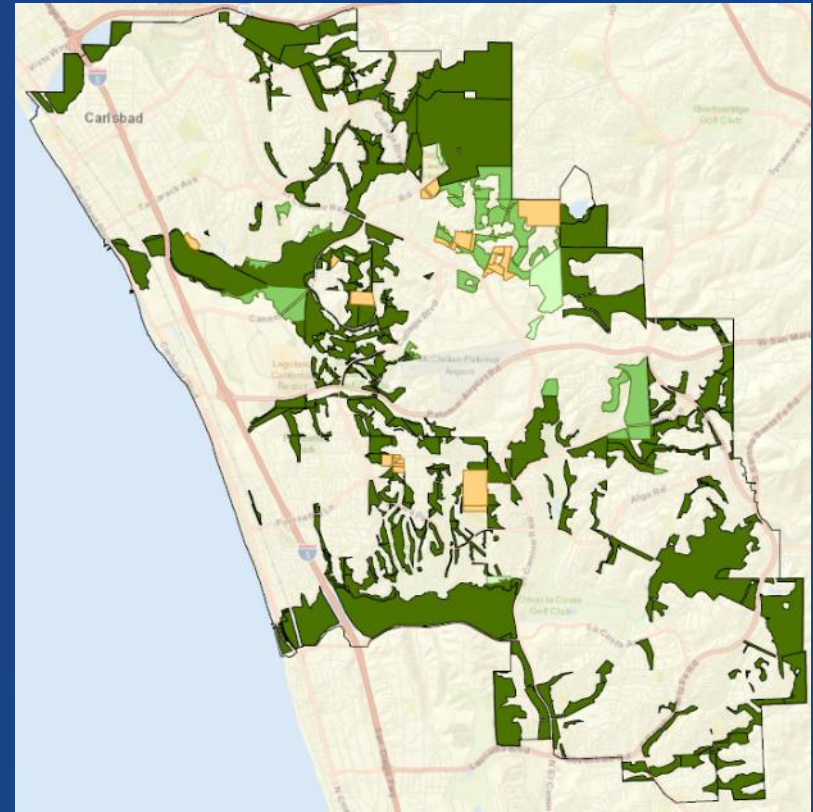


HMP Overview

HMP Preserve System



■ Permanently preserved,
6,143 acres

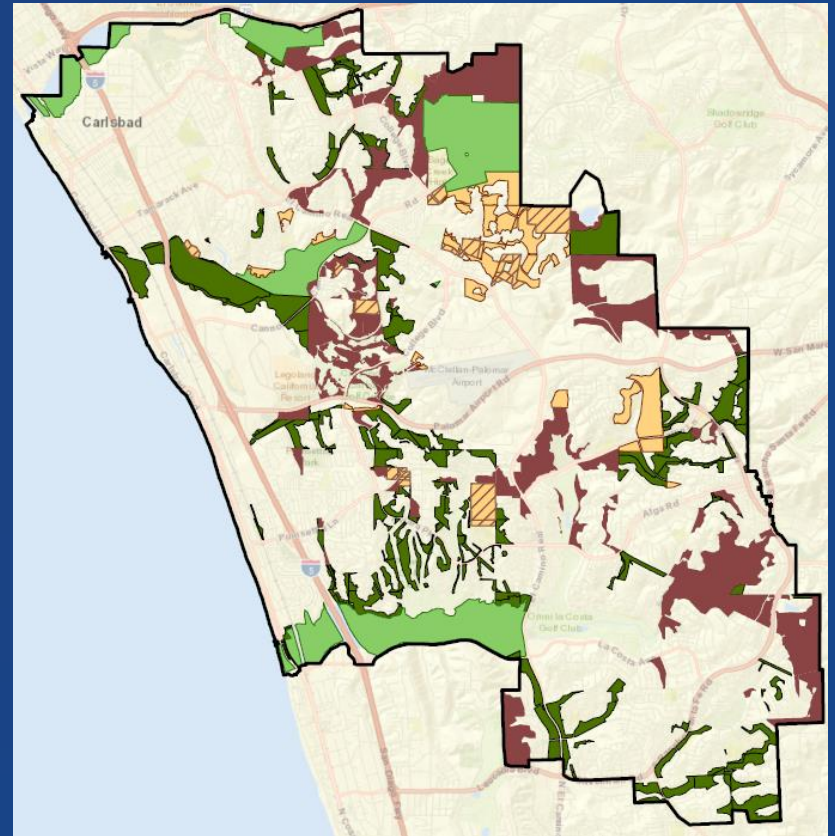
Current Condition



HMP Overview

Preserve Categories

-  Established private and City-owned preserves
-  CDFW Ecological Reserves
-  Pre-existing natural open space areas
-  Future preserves



2017 HMP Annual Report & 2015-2017 Triennial Monitoring Report

Plan Administration

- HMP preserve system coordination
- Regulatory tracking and preserve assembly

Management and Monitoring

- Management activities
- Species and habitat monitoring

Financing

- HMP mitigation fees (*in-lieu* fee program)
- Long-term management endowments

HMP Preserve System Coordination

Preserve Managers

- CDFW, CNLM, SDHC, SDUCHS, HRS, Helix

Resource Agencies

- USFWS, CDFW, CCC, ACOE, RWQCB

City Departments

- Planning, P&R, PW, PD, FD, Comm, Eng., LDE

HOAs and Business Associations

- Close to 100 different entities

Non-Governmental Organizations

- PC, BLF, BVA, BVLF, AHLF

General Public

Management and Monitoring

Invasive Species Control

- A variety of plant species
- Shot hole borer-fusarium dieback disease
- Gold-spotted oak borer
- Argentine ants



Management and Monitoring

Vegetation and Rare Plants

- Long-term coastal sage scrub monitoring (CNLM)
- Thread-leaved brodiaea
- San Diego thornmint
- Orcutt's hazardia
- Nuttall's lotus
- Orcutt's brodiaea



Management and Monitoring

Wildlife

- Lagoon bird species
- Least Bell's vireo
- California gnatcatcher
- Wildlife movement
- Threats assessment



Management and Monitoring

Access Control/Enforcement

- Trash/encampment removal
- Public outreach and patrolling
- Fence/sign maintenance
- Closing unauthorized trails



Management and Monitoring

Access Control/Enforcement Unauthorized trails



Unauthorized trails created by cutting through high quality habitat



Surface erodes, native topsoil, incl. microbes, is lost



Often, natives will not grow back, even with active restoration effort.

Management and Monitoring

Habitat Restoration and Enhancement



Very
expensive
and labor
intensive

Management and Monitoring

Erosion Control, Trail Repair, Trail Closure



M&M Highlights Pilot Ranger Program

- One year pilot program, initiated July 2017
- Funded by SANDAG and City of Carlsbad
- Two full-time rangers and off-road vehicle
- Focus is on education, but have citation authority
- Preserves, lagoons, beaches and parks
- Quarterly reports



M&M Highlights

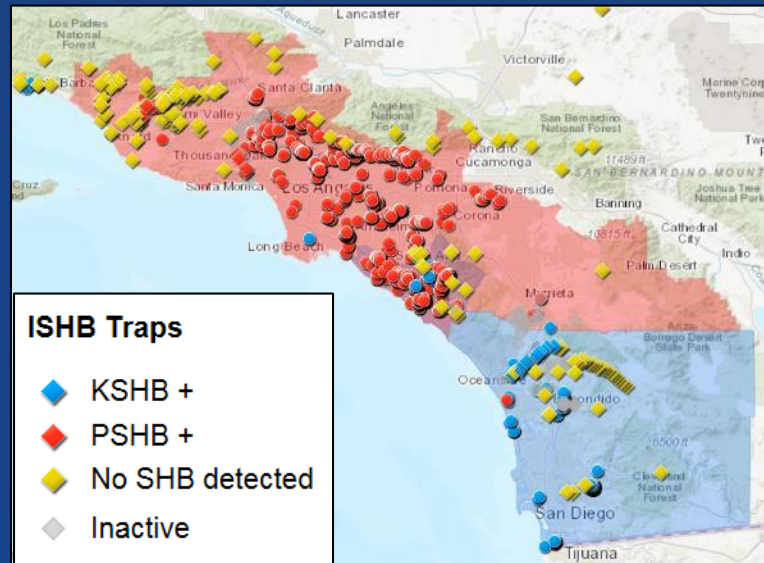
Shot Hole Borer-Fusarium Dieback Disease

- Bores holes into trees bringing fungus with it
- Creates galleries under the bark where it cultivates the fungus
- Fungus kills the tree by stopping flow of water and nutrients
- Attacks >300 species of trees, including many native riparian species



M&M Highlights

Shot Hole Borer-Fusarium Dieback Disease



Most photos by John Boland

Monitoring Highlights

Shot Hole Borer-Fusarium Dieback Disease

Tijuana River Valley Summer 2015



Photo by John Boland

Monitoring Highlights

Shot Hole Borer-Fusarium Dieback Disease



Photo by John Boland

Monitoring Highlights

Shot Hole Borer-Fusarium Dieback Disease

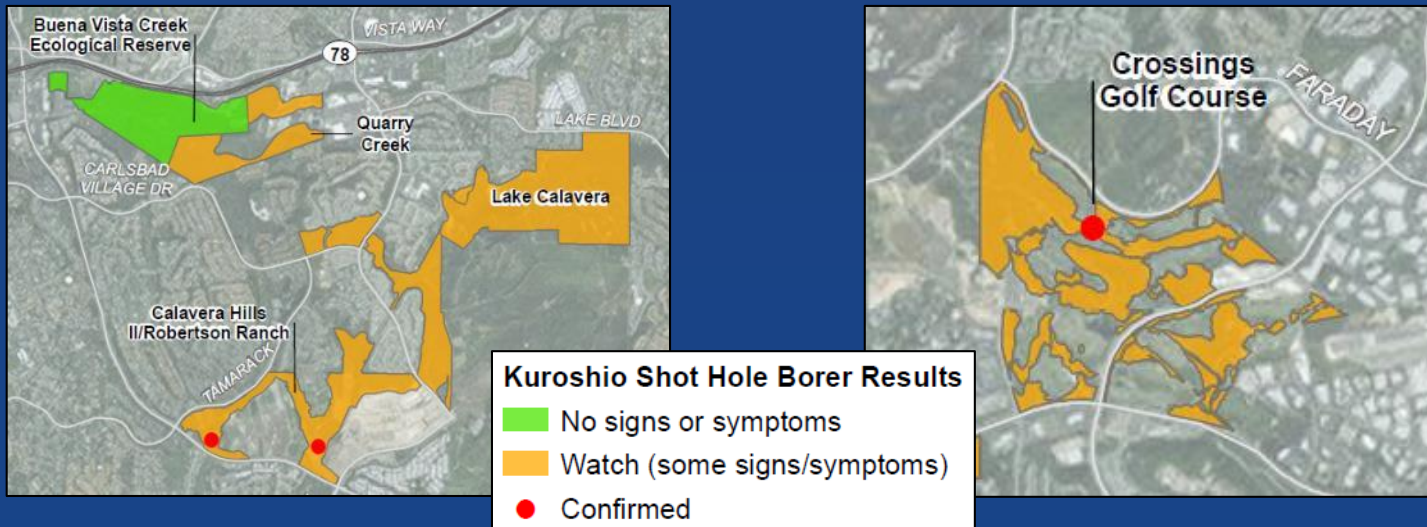
- Major threat to least Bell's vireo & other riparian species
- Could result in replacement with non-natives



Monitoring Highlights

Shot Hole Borer-Fusarium Dieback Disease

- All PMs were asked to survey their properties
- Minor infestations documented from three locations in Carlsbad



Monitoring Highlights

Shot Hole Borer-Fusarium Dieback Disease

What can be done?

- Cut down trees, chip in place, solarize for 2 years
- Extensive research by UC
 - ❖ Biological controls
 - ❖ Fungicides
 - ❖ Insecticides



M&M Highlights

Wildlife Movement

HMP Goal: Maintain functional wildlife movement corridors and habitat linkages within and beyond the city

Why is wildlife movement important?

- Urbanized environments are fragmented
- Larger animals have larger home ranges
- Genetic exchange
- Resiliency during climate change

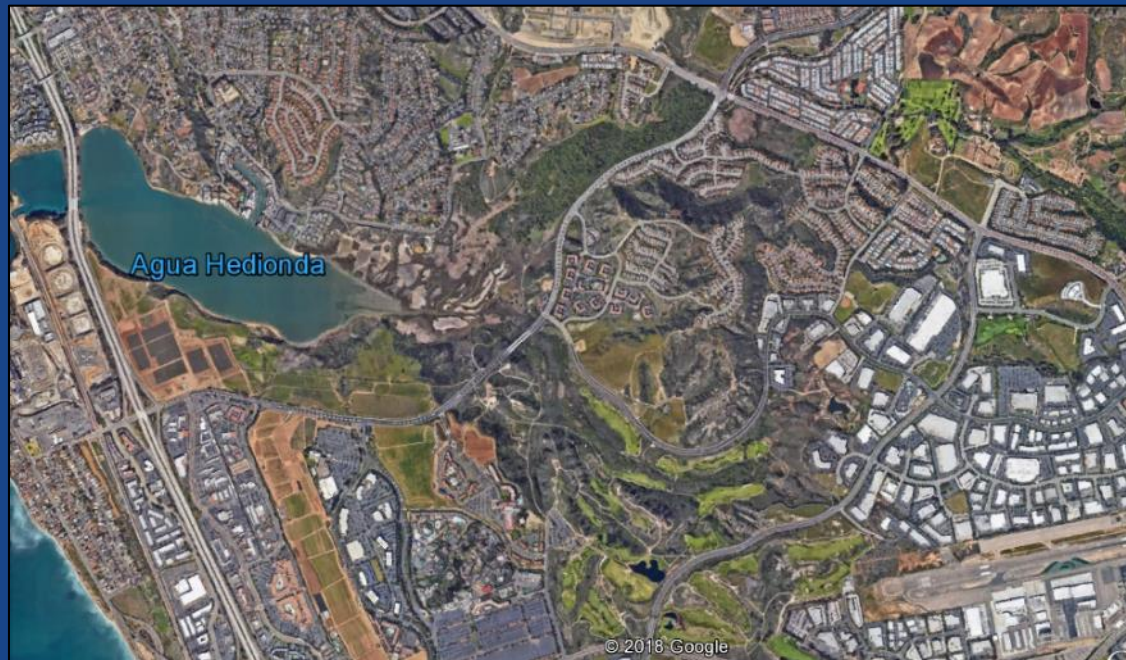


Monitoring Highlights Wildlife Movement

Monitoring 2013 – 2017 (City, CNLM, ESA)

- Baseline inventory of linkages and pinchpoints (USGS methods; funded by CDFW Local Assistance Grant)
- Monitored selected locations (cameras, tracking)
- CNLM conducted focused deer tracking
- Prioritized locations for adaptive management

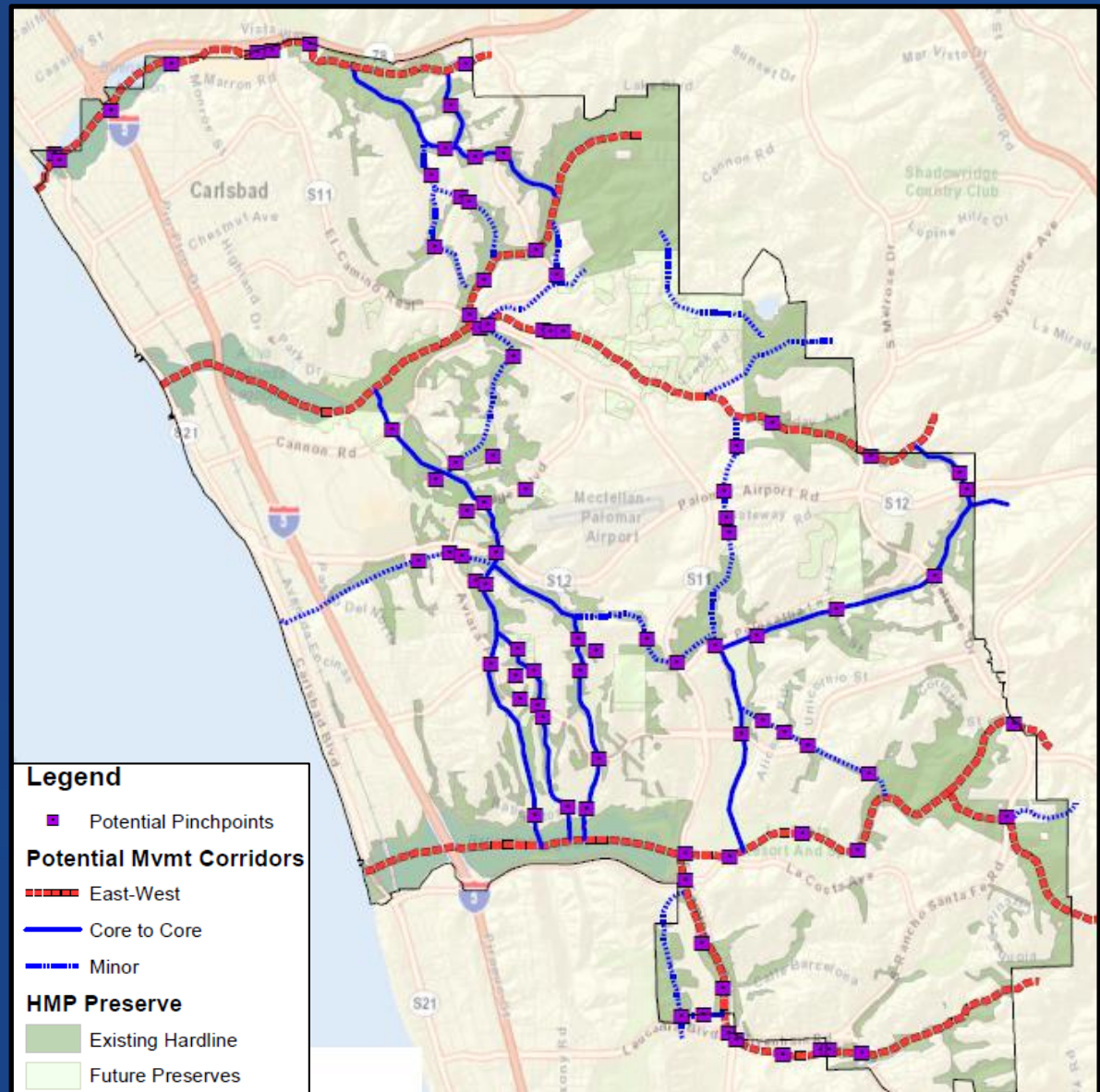
Pinchpoints =
potential barriers to
movement



Monitoring Highlights Wildlife Movement

Movement corridors and pinchpoints

Documented vegetation, traffic, undercrossing structure, fencing, substrate. Took photos.

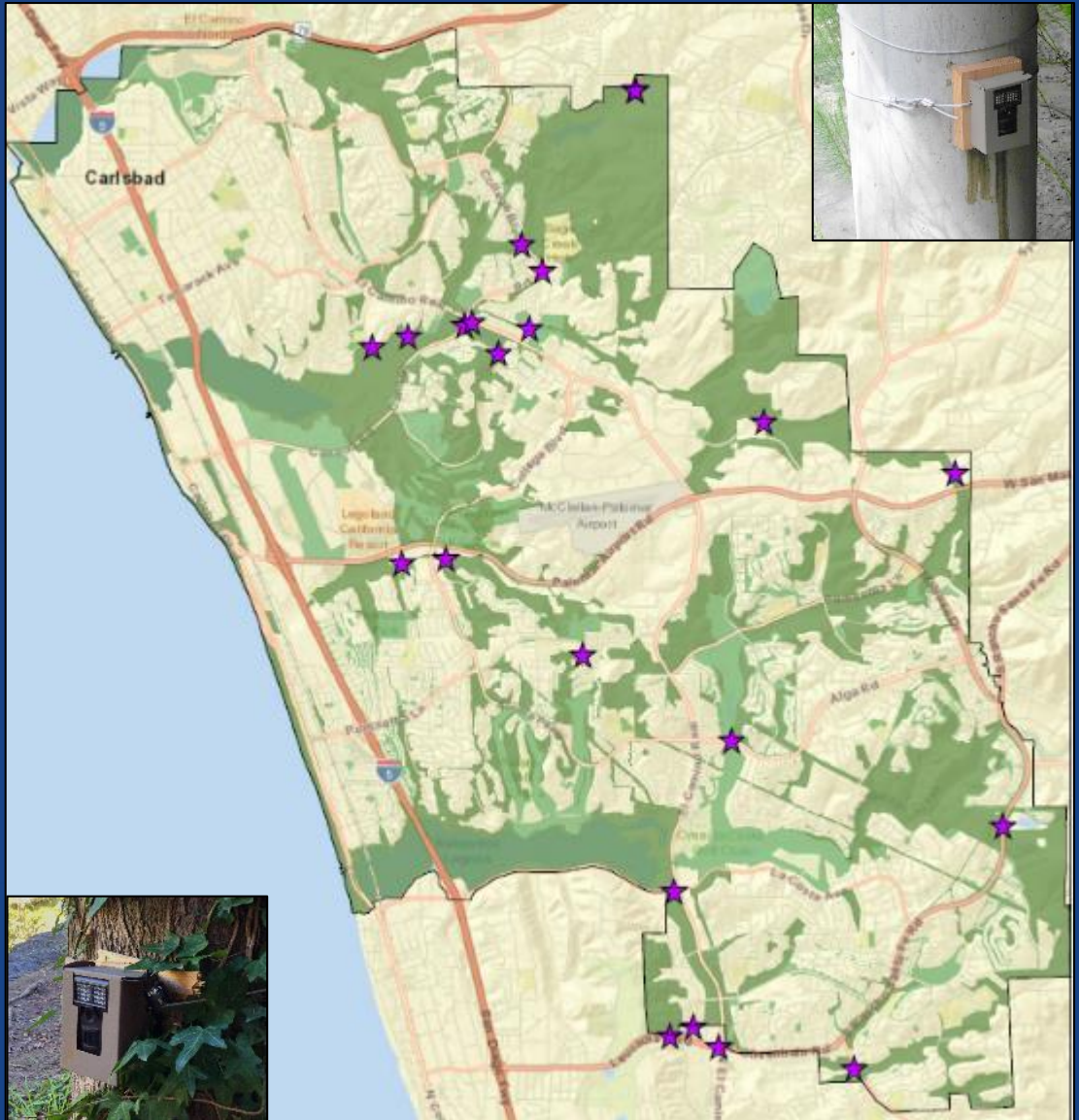


Monitoring Highlights Wildlife Movement

Wildlife
Camera
Locations
2013-2018

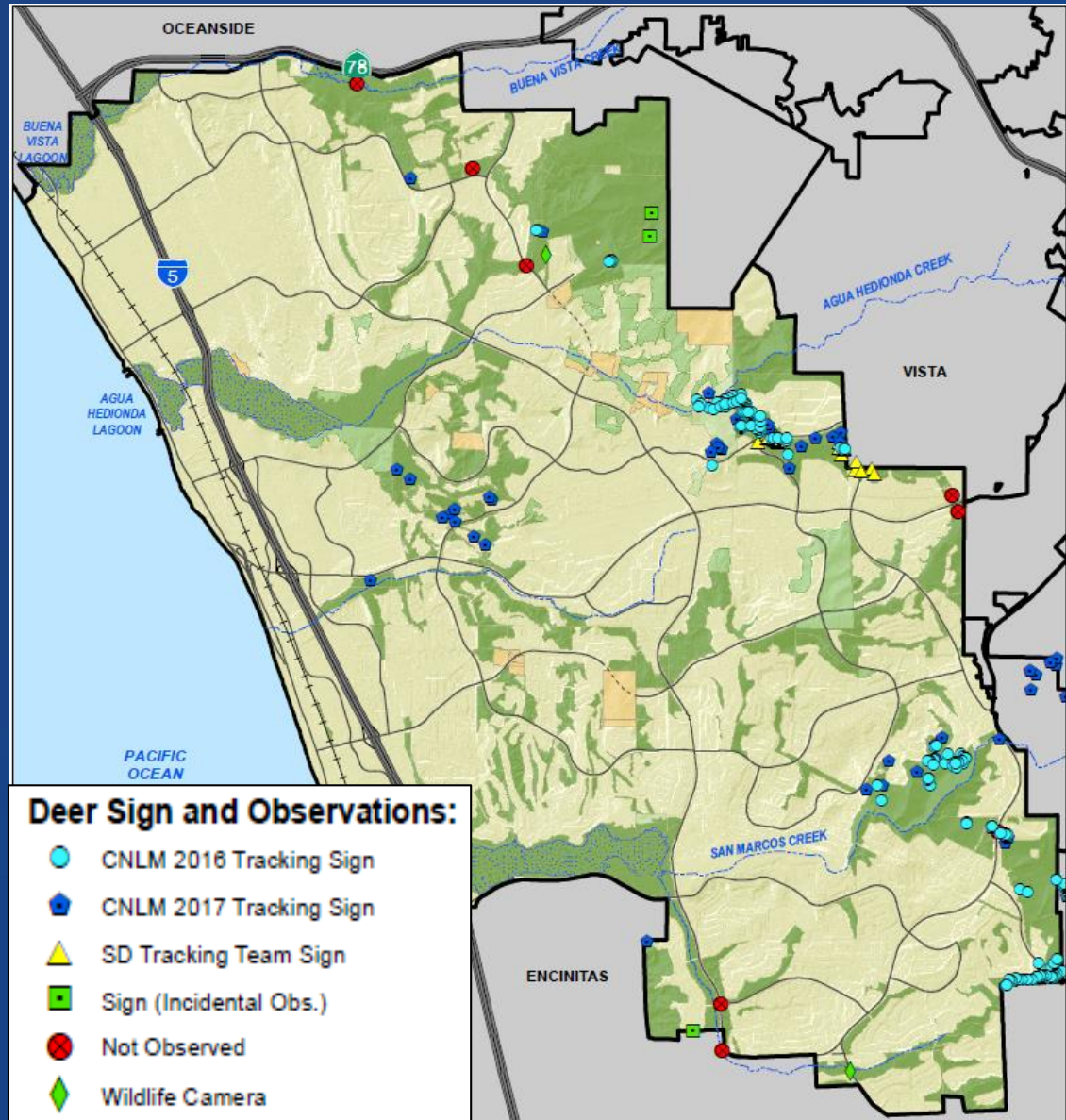


Bobcats
observed at
almost all sites



Monitoring Highlights Wildlife Movement

CNLM-Focused
deer tracking
and cameras
2016-2017



Monitoring Highlights Wildlife Movement

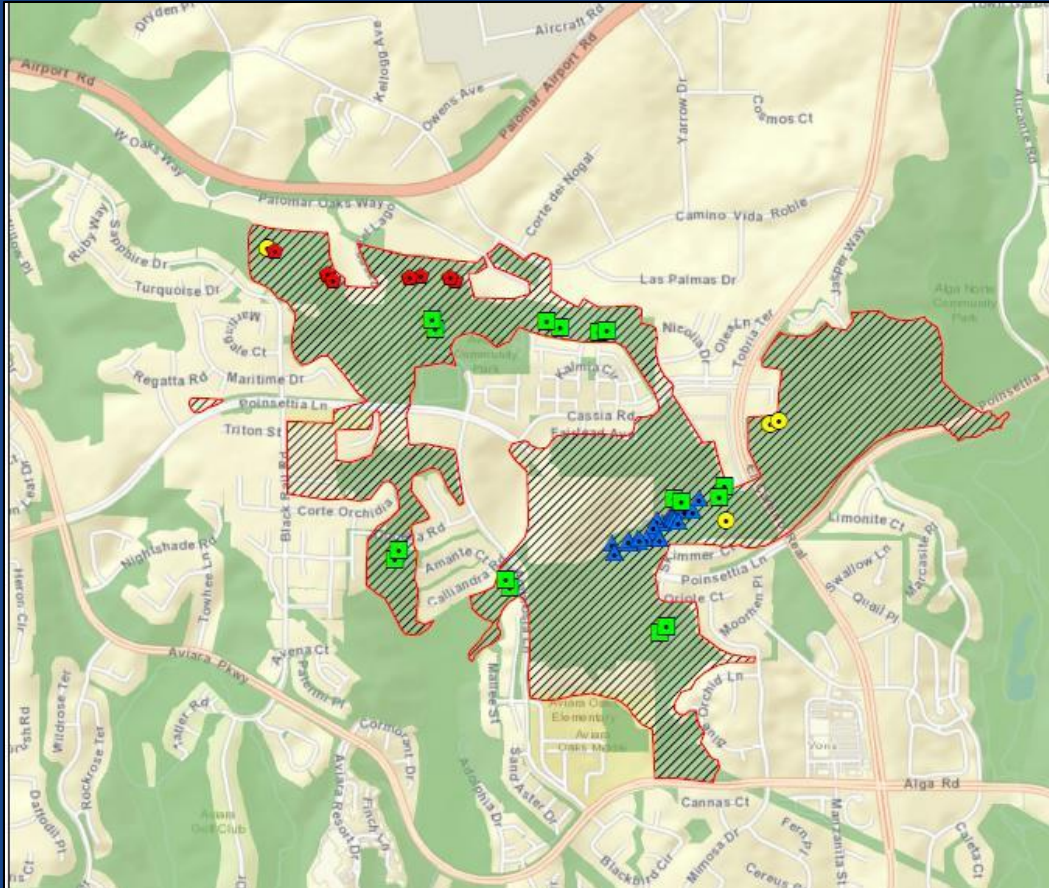
Conclusions

- Overall, substantial number of wildlife appear to be using undercrossings
- Bobcats found at almost every location, suggesting that they are adapting to the urban environment
- Deer have more constraints to movement due to large size
- Greatest threats = network of roads/traffic, homeless people, vegetation, sedimentation, hydrologic issues

1. City of Carlsbad, CNLM, ESA. 2015. City of Carlsbad Wildlife Movement Analysis Report
2. ESA. 2018. Triennial Monitoring Summary Report.
3. City of Carlsbad. 2018. Wildlife Movement Summary Report.






Management and Monitoring

Post-Fire Monitoring



Conducted by

- City
- ESA
- CNLM
- SDHC
- HRS/Dudek
- Urban Corps

	CHP
	CSS
	OAK
	SMC
	VP

Management and Monitoring

Post-Fire Monitoring

Results

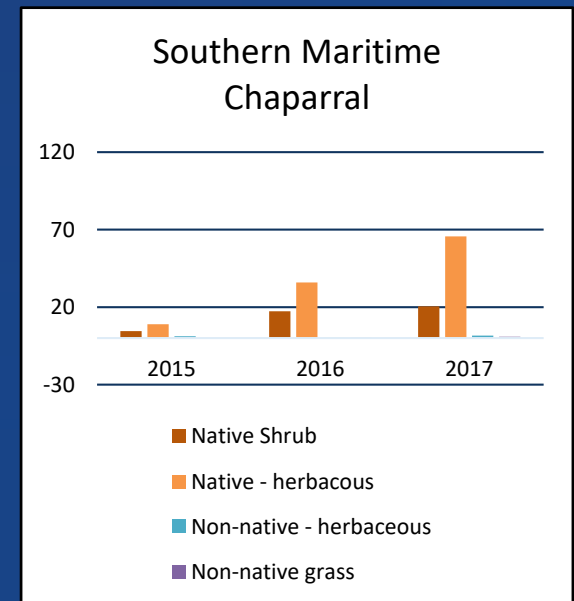
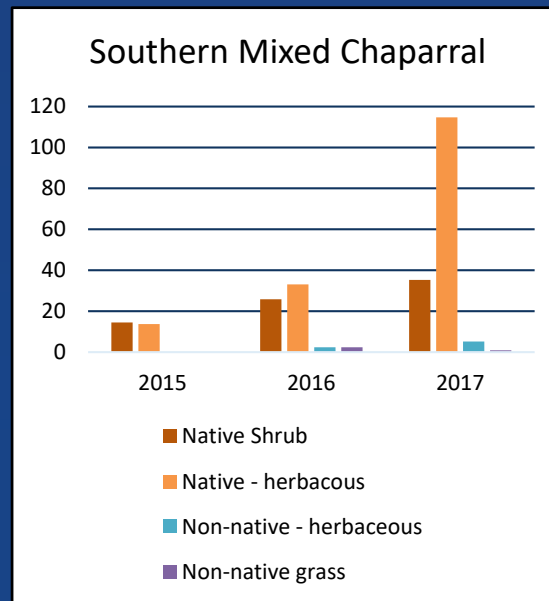
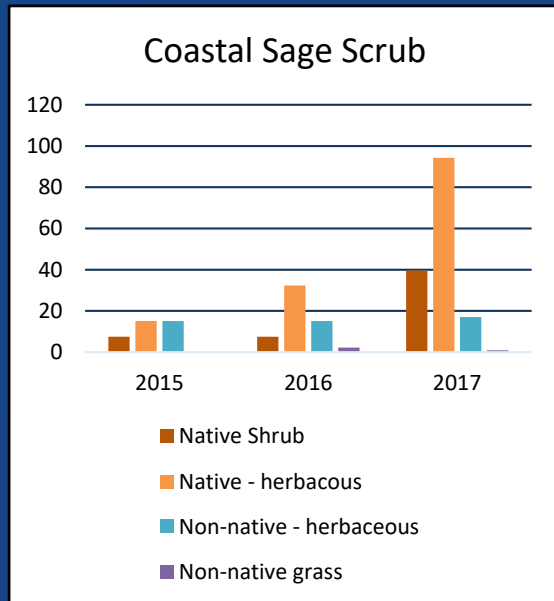
- Good recovery of shrublands
- CHP recovering better than CSS
- Oaks recovering slowly; little recruitment
- Weed cover low on slopes, but high in drainages



Management and Monitoring Results

Post-Fire Monitoring

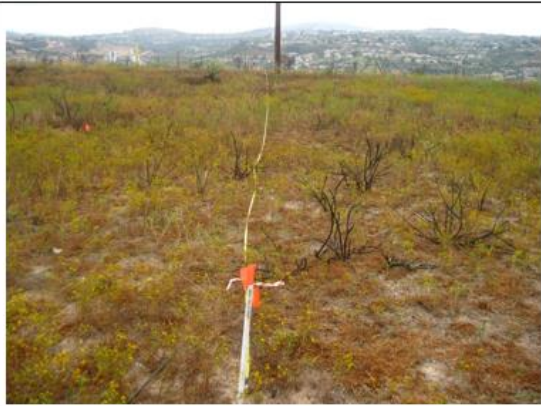
	Percent Cover								
	Coastal Sage Scrub			Southern Mixed Chaparral			Southern Maritime Chaparral		
	2015	2016	2017	2015	2016	2017	2015	2016	2017
Native shrub	7.5	7.5	39.6	14.5	25.8	35.3	4.5	17.3	20.5
Native-herbaceous	15.1	32.3	94.3	13.7	33.1	114.7	9	35.9	65.6
Non-native-herbaceous	15.1	15.1	17	0	2.4	5.2	1.2	0.2	1.6
Non-native grass	0	2.2	0.9	0	2.4	0.9	trace	0.2	0.9



Management and Monitoring

Post-Fire Monitoring

Coastal Sage Scrub



Manzanita CSS-2 2015



Manzanita CSS-2 2016



2017

Southern Mixed Chaparral



POCB-CHP-1; 2015



2016



2017

Management and Monitoring

Post-Fire Monitoring

Southern Maritime Chaparral



AVI-SMC-2; 2015



2016



2017

Southern Maritime Chaparral



RLC Greens SMC-4 2015



RLC Greens SMC-4 2016



2017

Management and Monitoring

Post-Fire Oaks



2015



2016



2017



2015



2016



2017

Monitoring Highlights

Regional Monitoring

- Rare Plant monitoring
- Regional wildlife movement studies
- Monitoring/management strategic plans-SD County
- Genetic studies – variety of species
- Invasive species research
- Pollinator studies
- Climate change – projections and management
- Post-fire –habitat recovery; effects on wildlife
- Monitoring methods
- Effects of recreation on species/habitats

Thank you!



HMP Annual Report and Triennial Report: www.carlsbadca.gov

Presentations will also be posted to the website

Email questions or comments to Rosanne.Humphrey@carlsbadca.gov