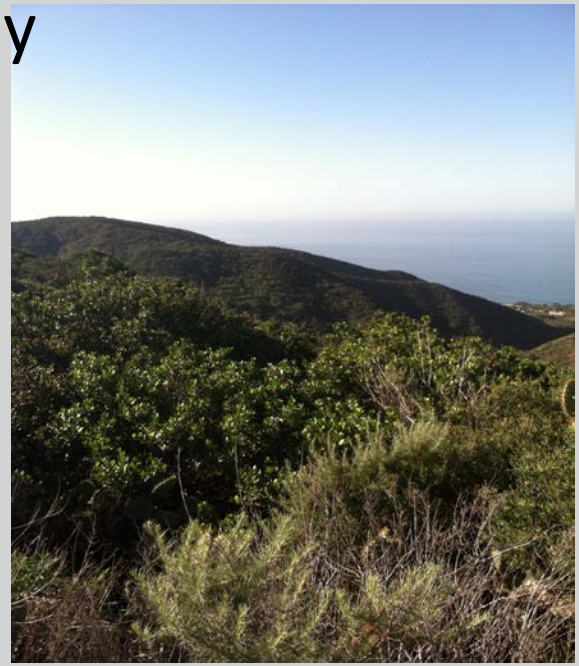
PRESERVING OUR LEGACY

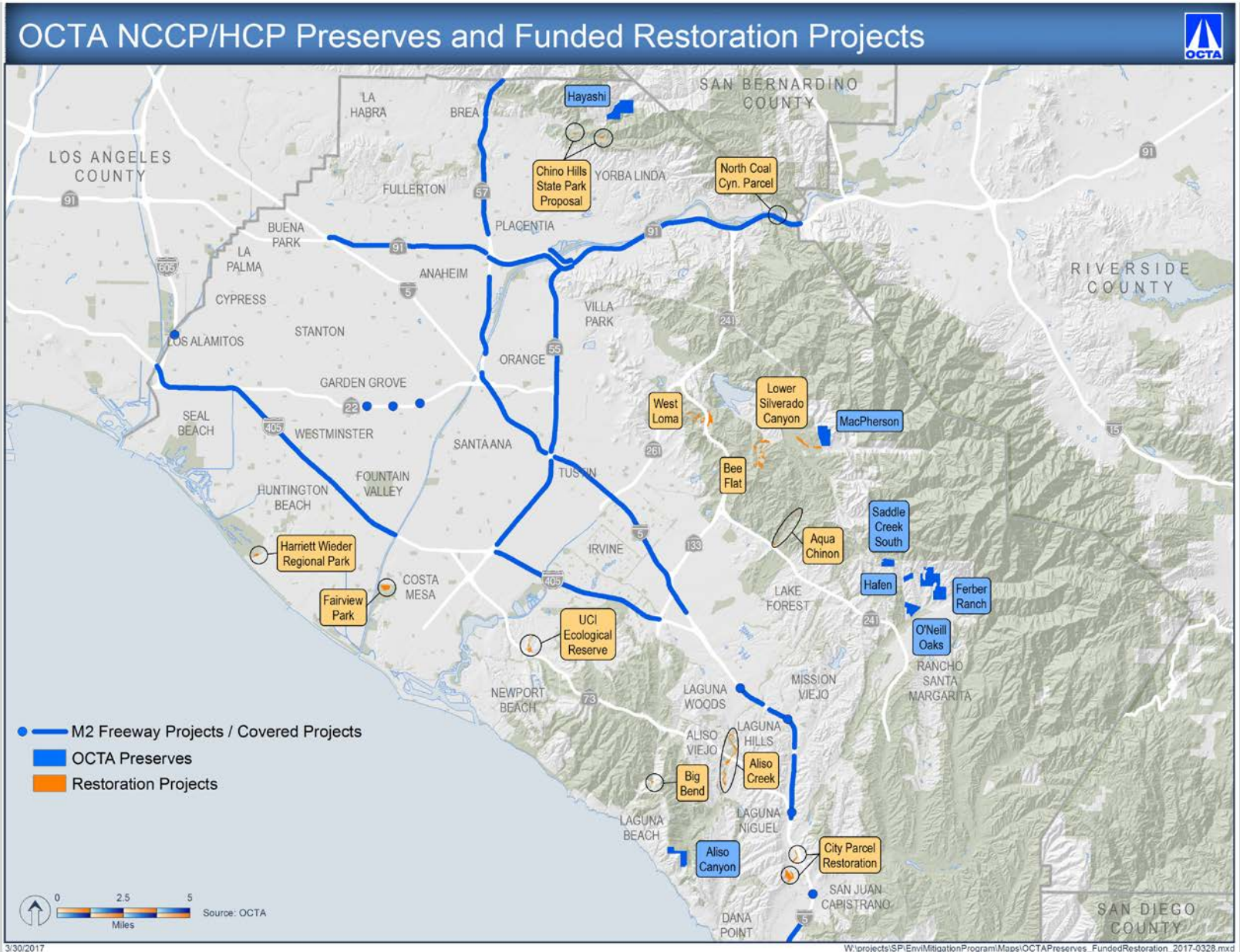
OCTA Environmental Mitigation Program
Vegetation Monitoring 2017

Measure M2 (M2)
Environmental Mitigation Program Overview

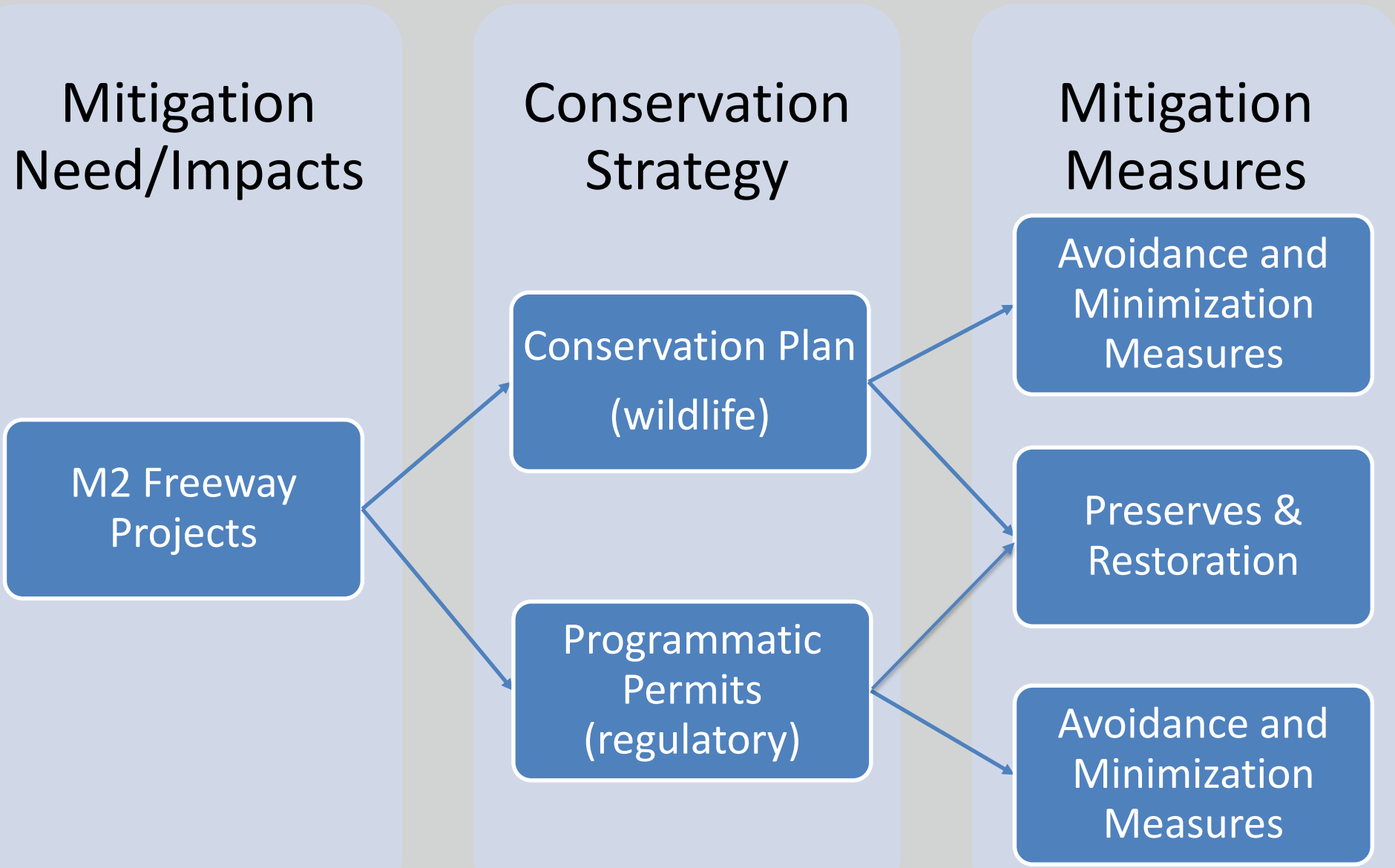
- M2-approved - November 2006
- Approximately 5% of the M2 freeway program revenue
- Innovative Freeway Environmental Mitigation Program
- November 2016 Completed Natural Community Conservation Plan/Habitat Conservation Plan (Conservation Plan)



Acquisition and Restoration



M2 Environmental Mitigation Program Conservation Strategy



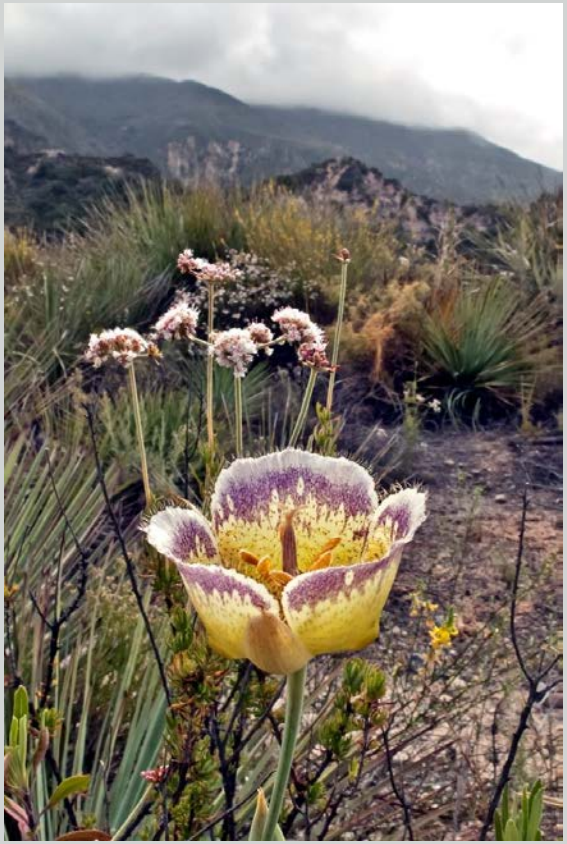
Covered Species

BIRDS				
COMMON NAME	Cactus wren	Coastal California gnatcatcher	Least Bell's vireo	Southwestern willow flycatcher
REPTILES				
COMMON NAME	Coast horned lizard	Orangethroat whiptail	Western pond turtle	
PLANTS				
COMMON NAME	Intermediate mariposa lily	Many-stemmed dudleya	Southern tarplant	
MAMMALS				
COMMON NAME	Bobcat	Mountain lion		
FISH				
COMMON NAME	Arroyo chub			

Preserve Management and Monitoring Program

Types of Monitoring/Frequency

- Baseline Monitoring
- General Stewardship Monitoring
- Effectiveness Monitoring
- Targeted Monitoring
- Regional Monitoring



Preserve Management and Monitoring Program (cont.)

Baseline (Inventory) Monitoring (2012 – 2015)

- Bonterra Consulting
- Overall condition of the Preserves to guide the RMPs
- Vegetation mapping (Sawyer, Keeler-Wolf)
- Focused surveys for OCTA M2 Covered Species

Effectiveness Monitoring (Vegetation)

- Comprehensive (every 10 years)
- Invasive Species (annually)
- **Statistical Sampling (every 4 years)**

NCCP/HCP Goal and Objectives

Statistical sampling of vegetation to:

- measure ecological changes using sampling design and field protocols developed in conjunction with NCC (Deutschman et al. 2008. *Improving Statistical Sampling and Vegetation Monitoring for Open Space in Central Orange County*. Prepared for NROC.)
- will involve stratified random sampling that takes into account habitat types, acreage, and statistical sampling.

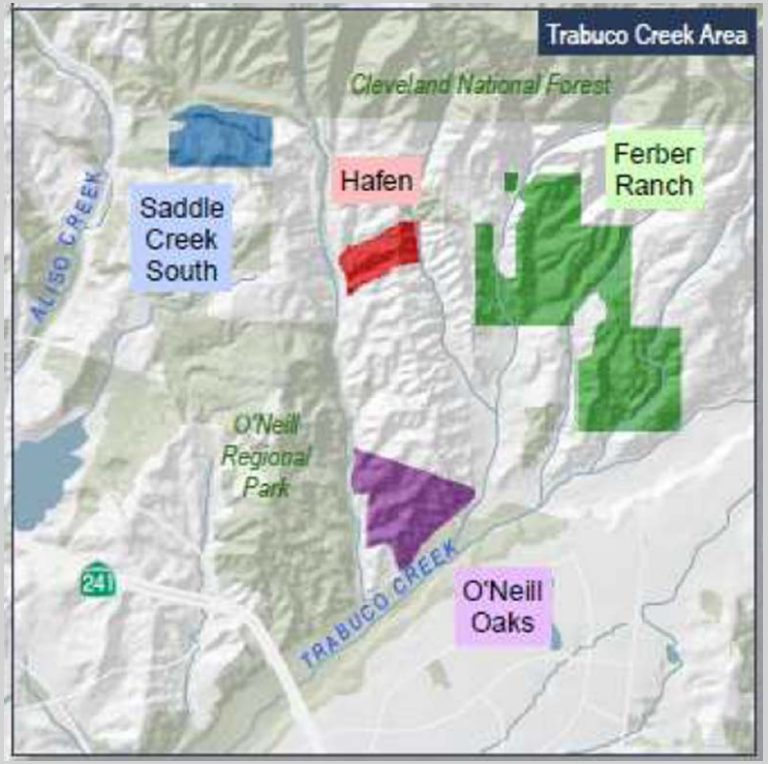
OCTA NCCP/HCP Regional Coordination Goal

"OCTA will coordinate regularly with Wildlife Agencies, Preserve managers in other NCCP/HCP areas, and other relevant efforts about monitoring issues to ensure that the most current, established protocols are being used."

Audubon Starr Ranch

- Goal is to determine baselines for plant communities
- 5 year vegetation monitoring project
- 3 of the OCTA Preserves
- Quantitative (disturbance, fire, impacts, etc.)
- Qualitative (coverage) monitoring

Audubon Vegetation Monitoring



Saddle Creek South

Audubon Vegetation Monitoring

O’Neill Oaks

Hafen

Site Specific Approach/Methodology

Chaparral, Coastal Sage Scrub, and Grasslands	Oak Woodlands
• Transects	• Y Cluster method – central tree and 3 nearby neighbors
• Photopoints	• One photopoint in Cattle-disturbed O'Neill Oaks • Vantage point reconnaissance
• Sample size calculations assuming OCTA property vegetation sample sizes were proportional to Irvine Ranch Open Space properties	• Sample size calculations assuming proportional Y Cluster samples on Irvine Ranch Open Space properties

- Resource Management Plan recommendations
- based on Deutschman and Strahm, San Diego State
- minimum sample sizes for paired t-test then multi year regression

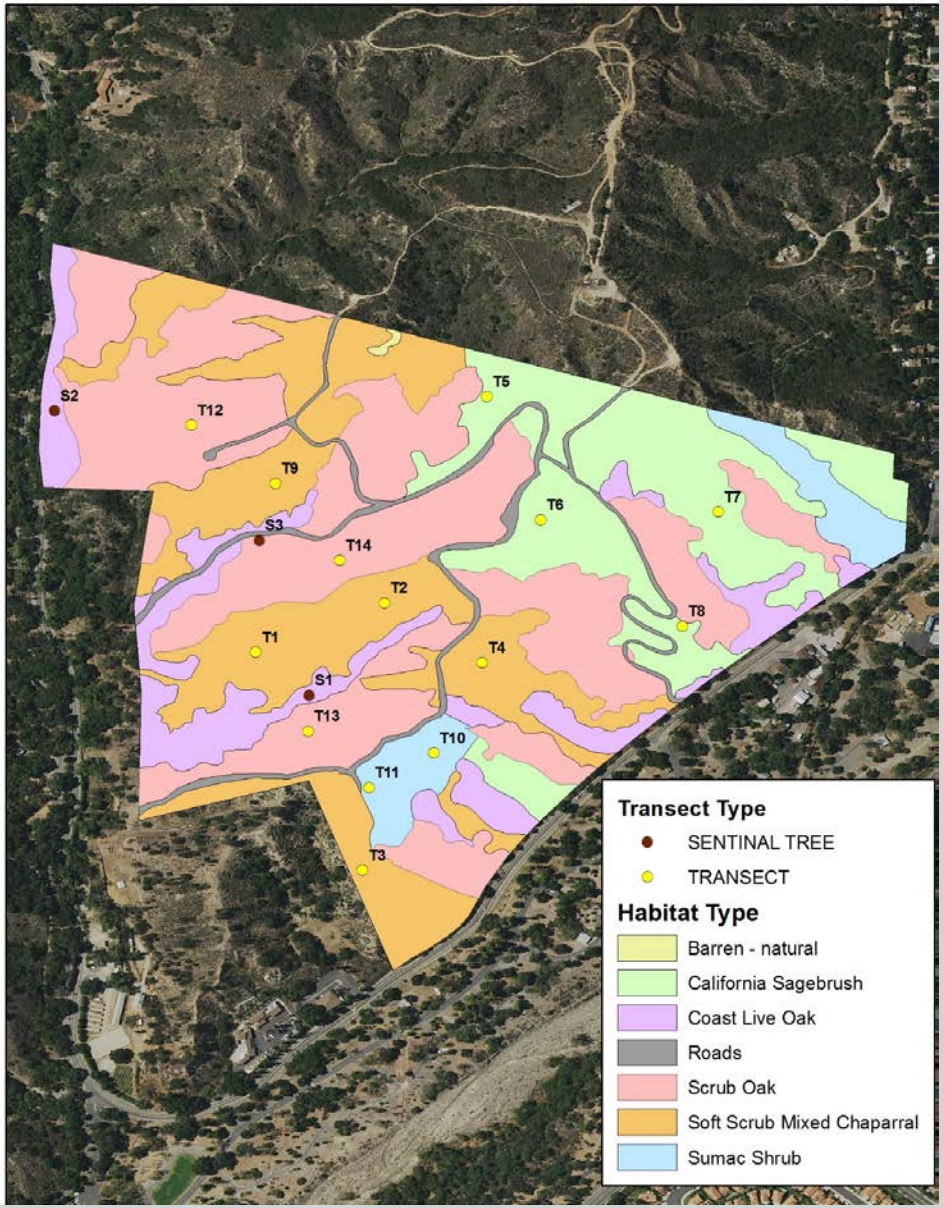
Example: O'Neill Oaks Preserve

Transects: CSS, Chaparral, Grassland

- Stratified per vegetation subtypes
- Randomly Located

Sentinel Oak Trees (Y Clusters)

- Randomly Located



Overall Findings

- Longtime absence of grazing and fire is associated with health, intact vegetation.
- Drought and higher temperatures will increase threat of fires.
- Oak woodlands appear healthy, but continued drought may increase susceptibility to pests and pathogens.
- Disturbed O'Neill Oak site had more non-native species.
- Lack of disturbance and site conditions may suggest natural vegetation succession (e.g. grassland to CSS).

Contacts

Lesley Hill
Project Manager, Environmental Mitigation Program
OCTA
lhill@octa.net
(714) 560-5759

Sandy DeSimone, Ph.D.
Director, Research & Education
Audubon Starr Ranch Sanctuary
SDESIMONE@audubon.org
(949) 858-0309