

Adaptation: Climate Change & Biodiversity Draft Strategy for California

Cal-IPC Symposium

Visalia 2009

Rick Rayburn

California State Parks



Managing Ecological Change

Precipitation



Temperature



**Changing
Climate**



**Altered
Ecological
Processes**



**New
Priorities ?**

Hydrology



Fire



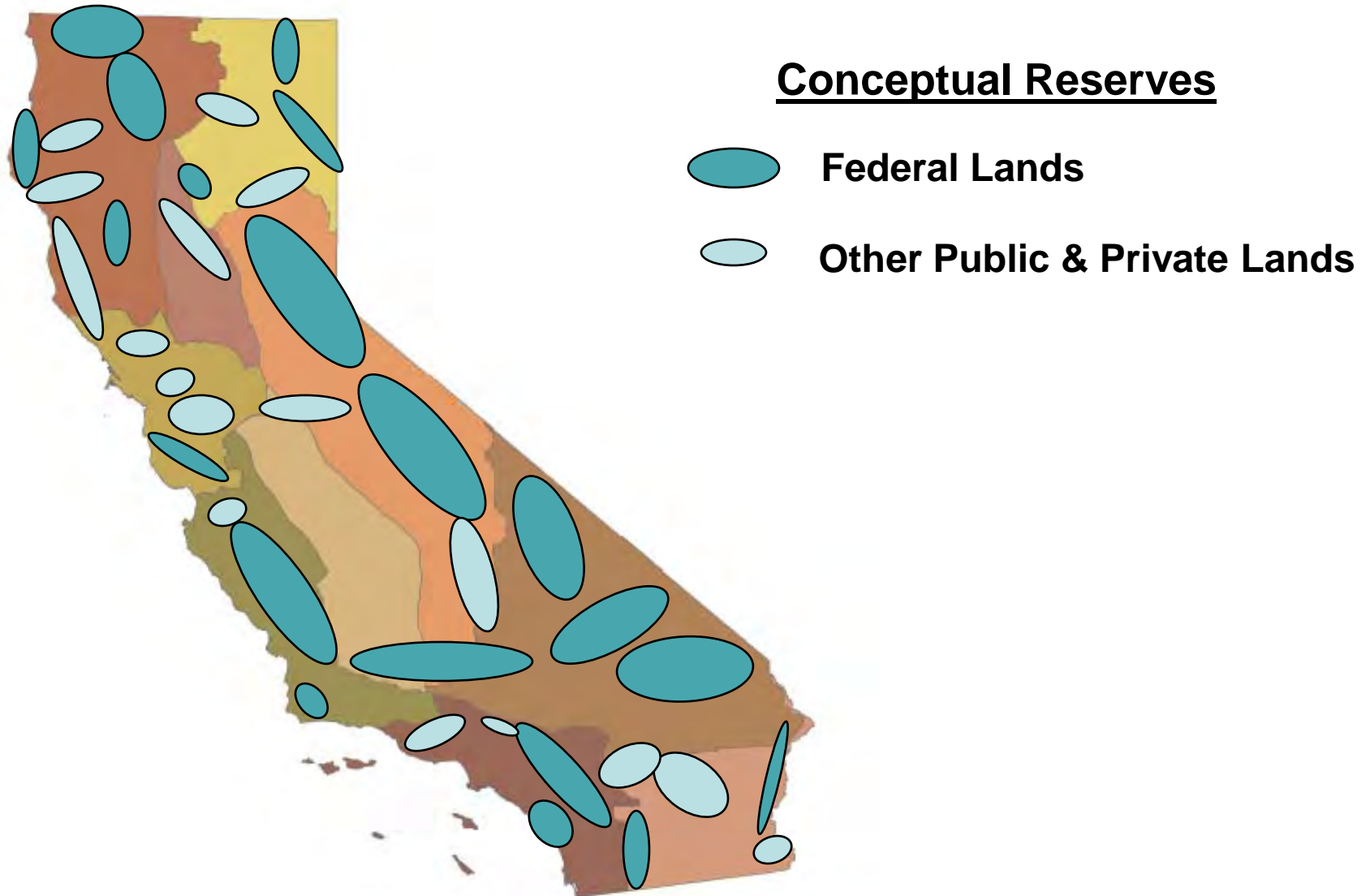
California Adaptation Plan: Biodiversity Strategies

1. Landscape Reserves
2. Habitat Management



3. Research/Guidelines
4. Regulatory Needs
5. Education/Interp.

Conceptual Landscape Reserve System



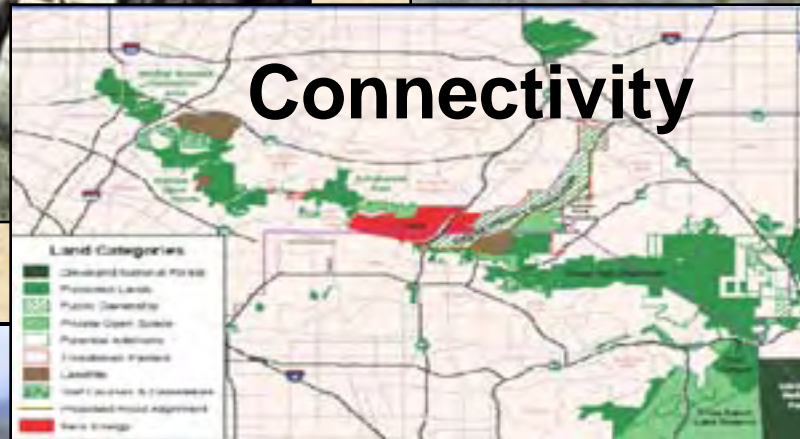
**Sustainable
Size**



**Elevation Gradient
Latitudinal Gradient**



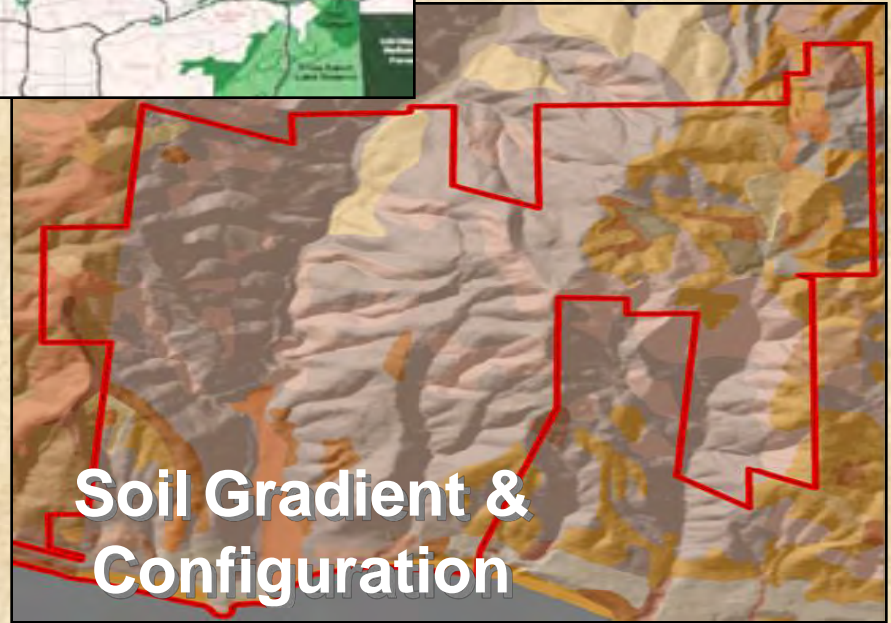
Connectivity



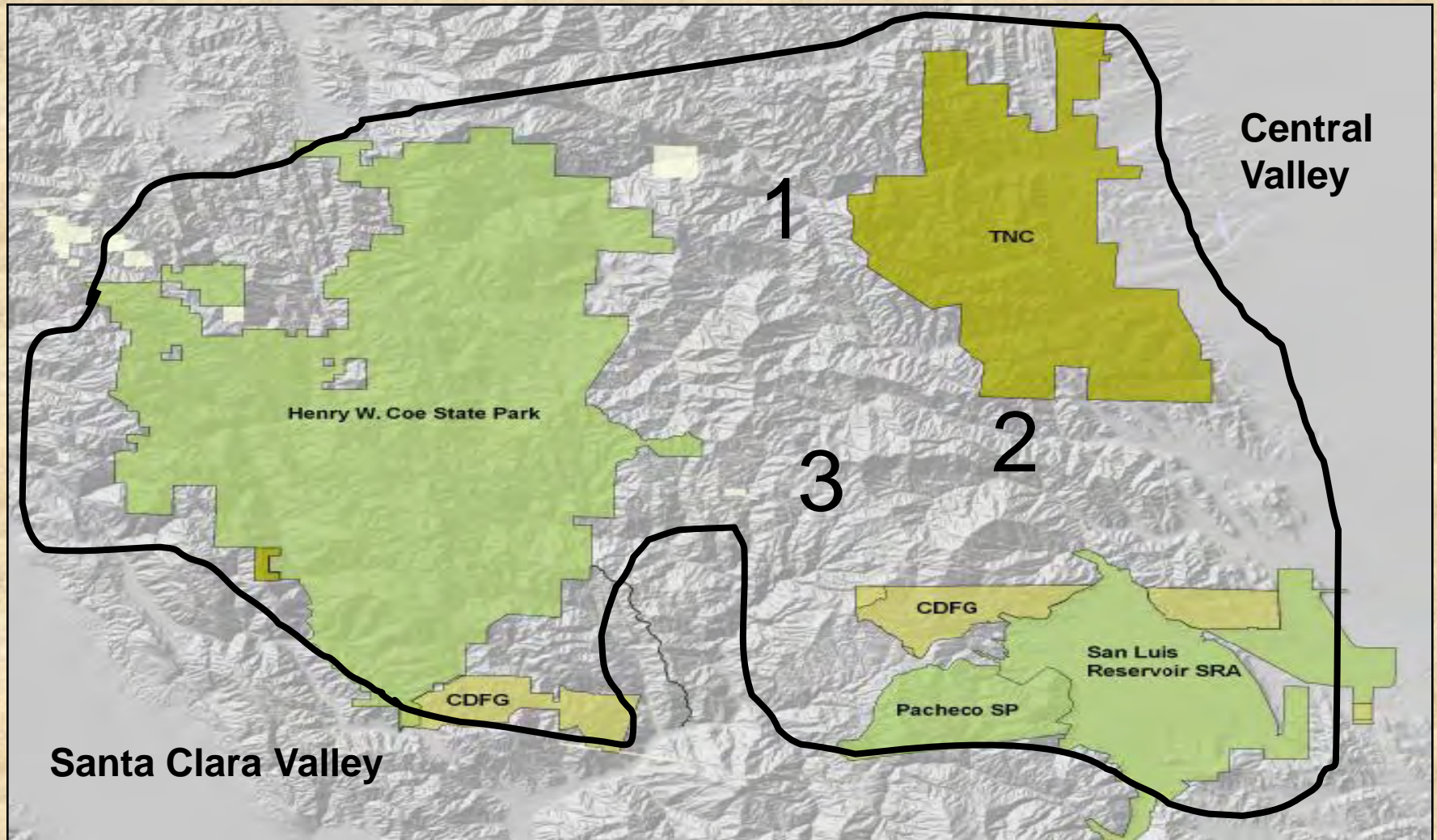
**Endemic Movement &
Evolutionary Hot Spots**



**Soil Gradient &
Configuration**



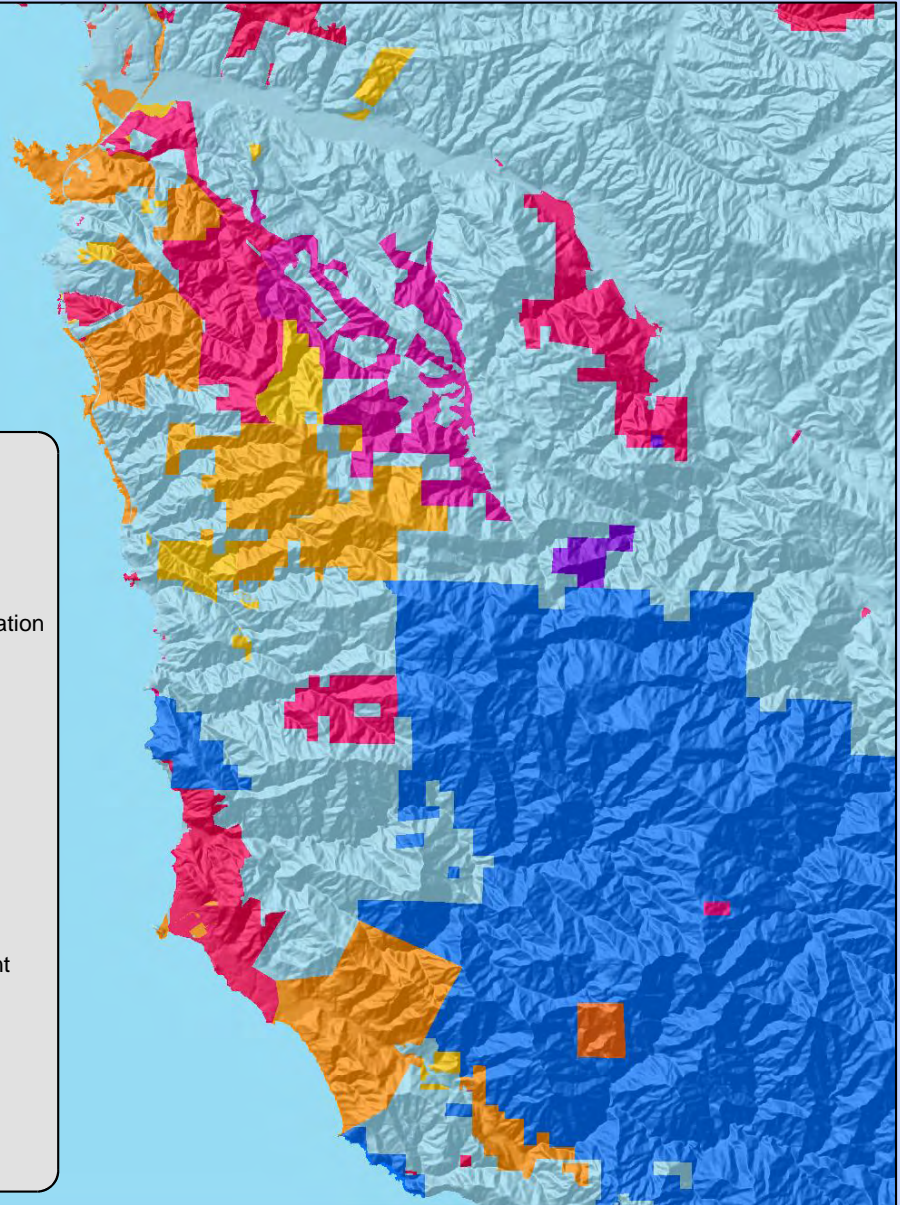
Perfecting Reserve: Linking Existing Protected Areas – Mt. Hamilton 300,000 Acres



Big Sur Reserve Lands

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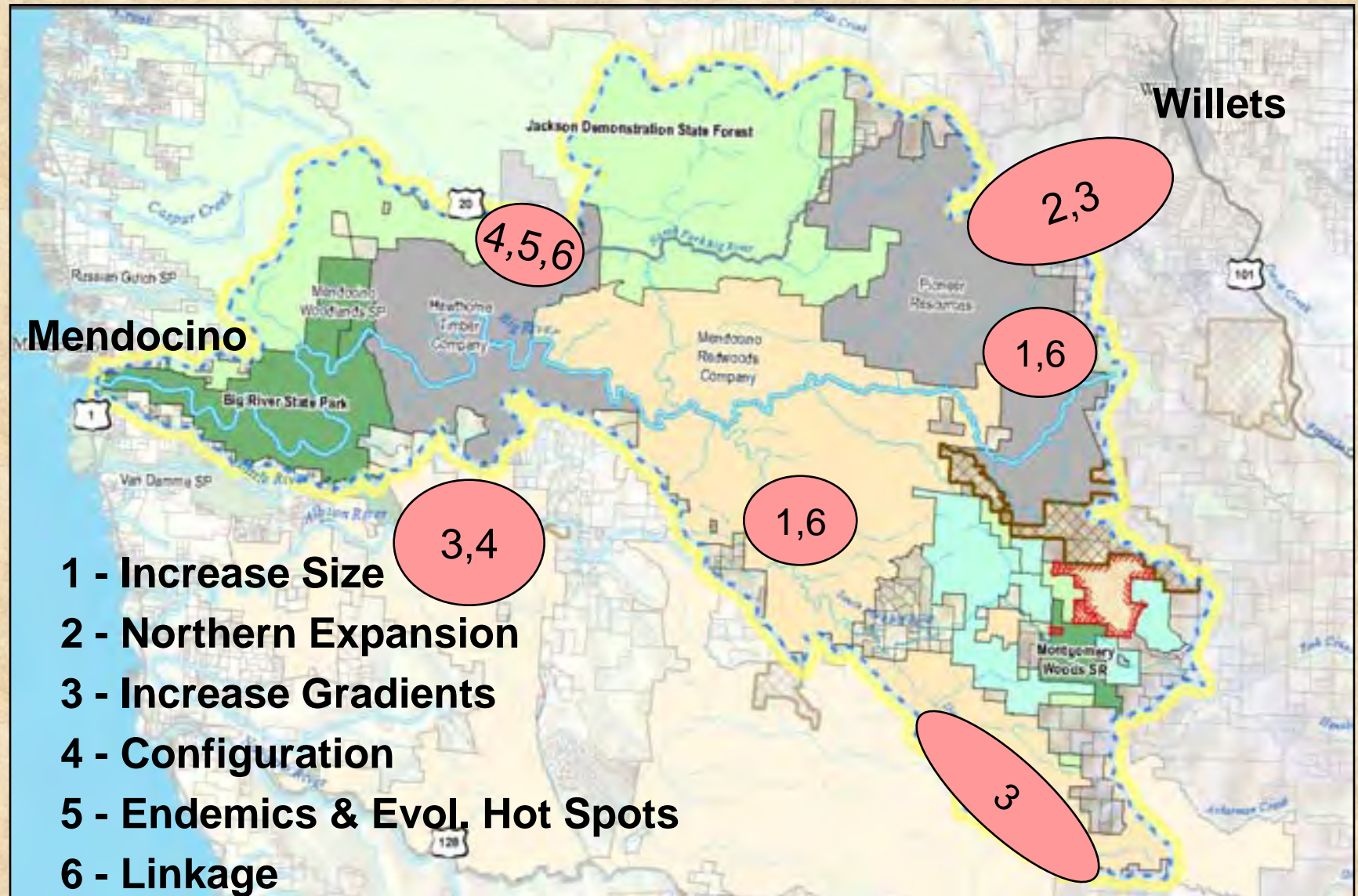
Santa Monica Mountains Reserve

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Perfecting 125,000 Acre Big River Reserve




additions illustrative only

BAY AREA

PROTECTED LANDS

 Bayland Ecosystem Goals Project Boundary
A project of SFEI that created a vision of the types, amounts, and distribution of wetlands and related habitats needed to sustain diverse and healthy communities of fish and wildlife in the San Francisco Bay Area. They are intended to provide a biological basis to guide public and private efforts seeking to preserve, enhance, and restore the integrity of the baylands ecosystem.

Protected Lands - 1,159,748 acres (Land and Water)

 Fee Title - 961,265 acres (includes mixed and transfer lands)

Fee: A property that is owned by a government agency or conservation organization.

 Agricultural or Conservation Easement - 180,831 acres

Easement: A property that is owned by a private landholder whose development rights are held by a government agency or by a conservation organization.

Urban Areas

 Urban - 777,158 acres

Lands that are developed at a density of at least one residential unit per 1.5 acres, or the equivalent density for commercial or industrial development.

0 50 100 Miles
Data Sources: BACIS, FMMP, USGS
Map Produced by OpenStax Network
August 2009

 ~20,000 A

 Lead Entity



San Francisco Bay Area Upland Goals Project
Preserving Biodiversity for Future Generations

Reserve: Management & Restoration

Reduce Environmental Stressors



Big Tujunga Canyon

Priority Actions:

- invasive weeds
- fire-reduce & prescribed
- roads, culverts & sediment
- feral animals
- aquatic management

Priority Areas:

- wildlife movement
- plant movement

Exotic Plants - Real Losers

State Parks Long-term Monitoring

Tree of Heaven

European Beach Grass

Artichoke Thistle

Arundo

Black Mustard

Brooms

Cape Ivy

Castor Bean

Diffuse Knapweed

English Ivy

Gorse

Harding Grass

Helichrysum

Himalayan Blackberry

Hoary Cress

Iceplant

Italian Thistle

Pampas Grass

Milk Thistle

Pepperweed

Periwinkle

Tamarisk

Tocalote

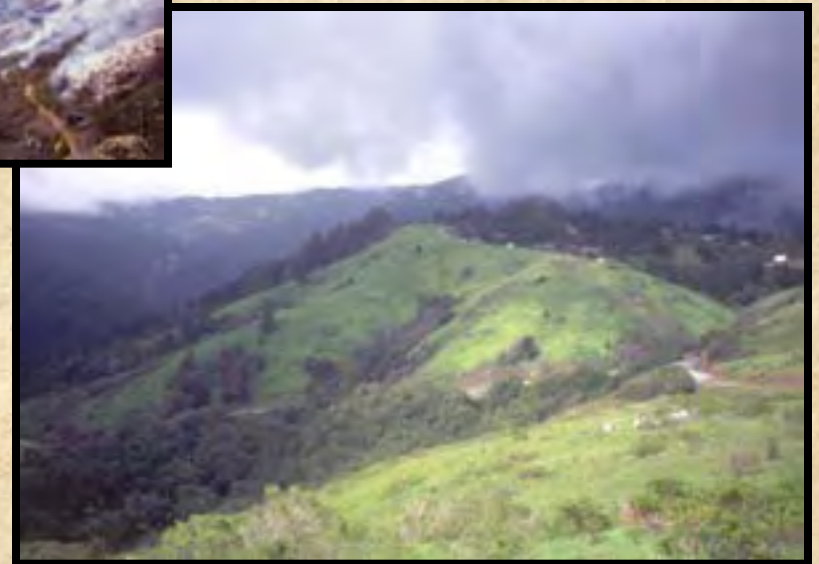
Veldt Grass

Wild Fennel

Yellow Starthistle

Broom Removal

Mt. Tamalpais SP



Exotic Species Control

Wilder Ranch SP



Pig damage - exposing soil to
invasive plants and erosion



Baited pig trap

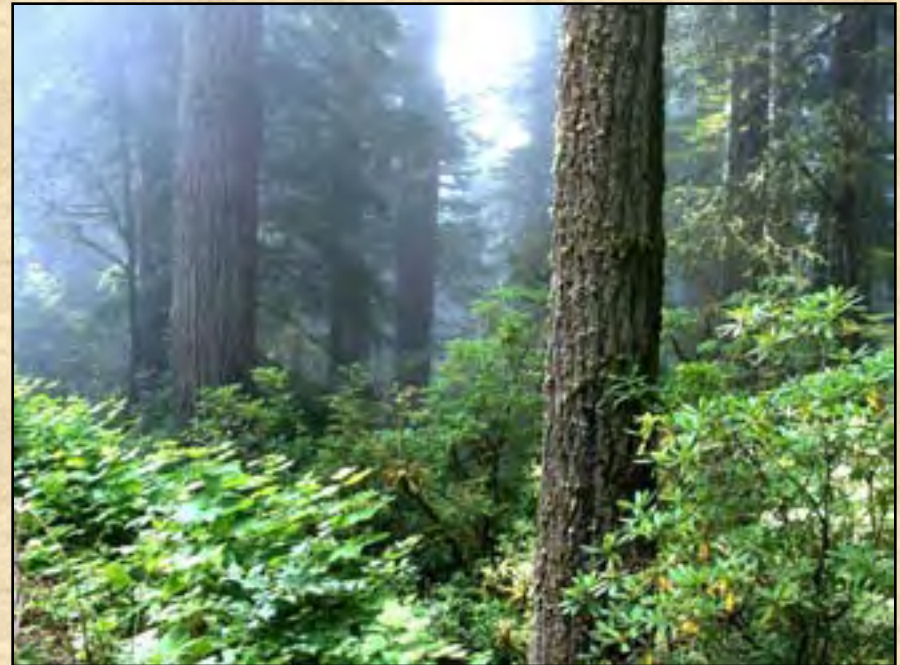


Managing Fire

- Drought: reduces plant water
- Crown fire: habitat replacement
- Losses: biodiversity, recreation, facilities



Catastrophic Crown Fire



Natural Open Forest Condition

Crown Fire:

- lack of forest regeneration**
- site conversion to brush**





Fire

Chino Hills SP

Orange County



**Habitat
Conversion:**

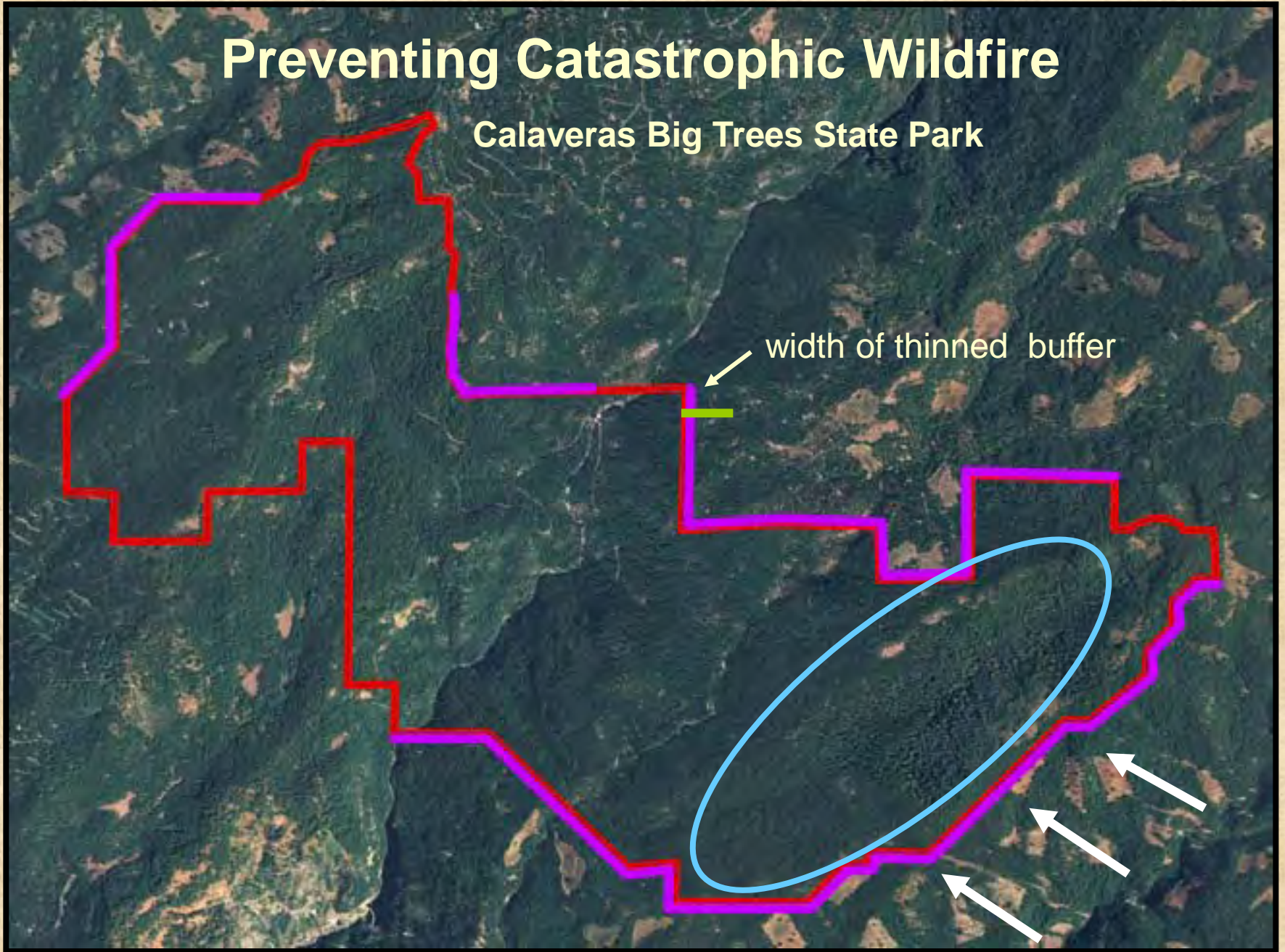
Woodlands to Shrubs

Shrublands to Grass

Preventing Catastrophic Wildfire

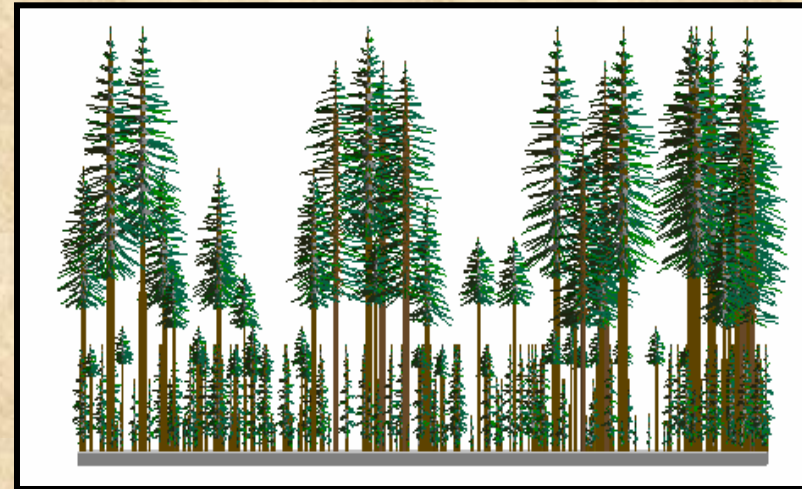
Calaveras Big Trees State Park

width of thinned buffer

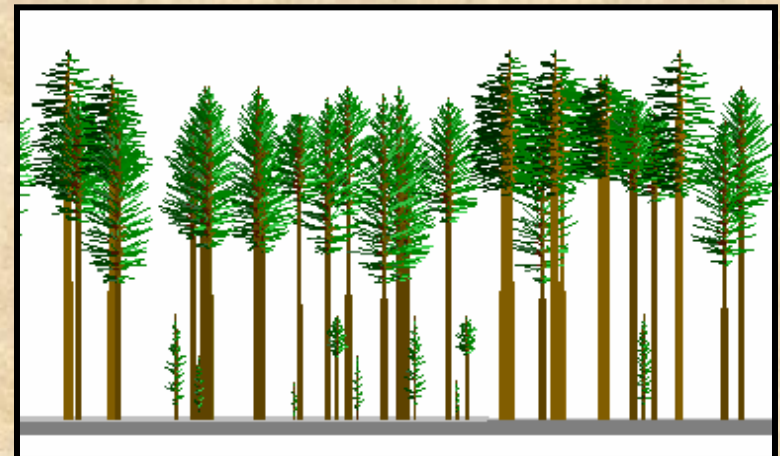




Overstocked
200-300 trees / acre



Thinned / prescribe burned
60-70 trees / acre



Fire Management Actions

Partners:
CalFire
USFS
NPS
USGS

Natural forest thinning
Roadside treatment
Prescribe burning
Limited revegetation



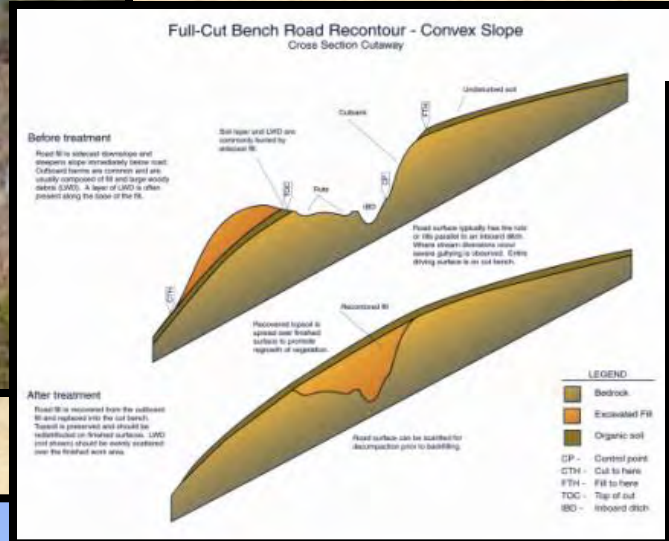
Aquatic Management

- Reduce Sedimentation
- Genetic diversity
- Habitat complexity
- Cold water resources
- Connect river and floodplain
- Alpine meadows & riparian
- Wild & hatchery fish



Road Removal-Reduce Sediments

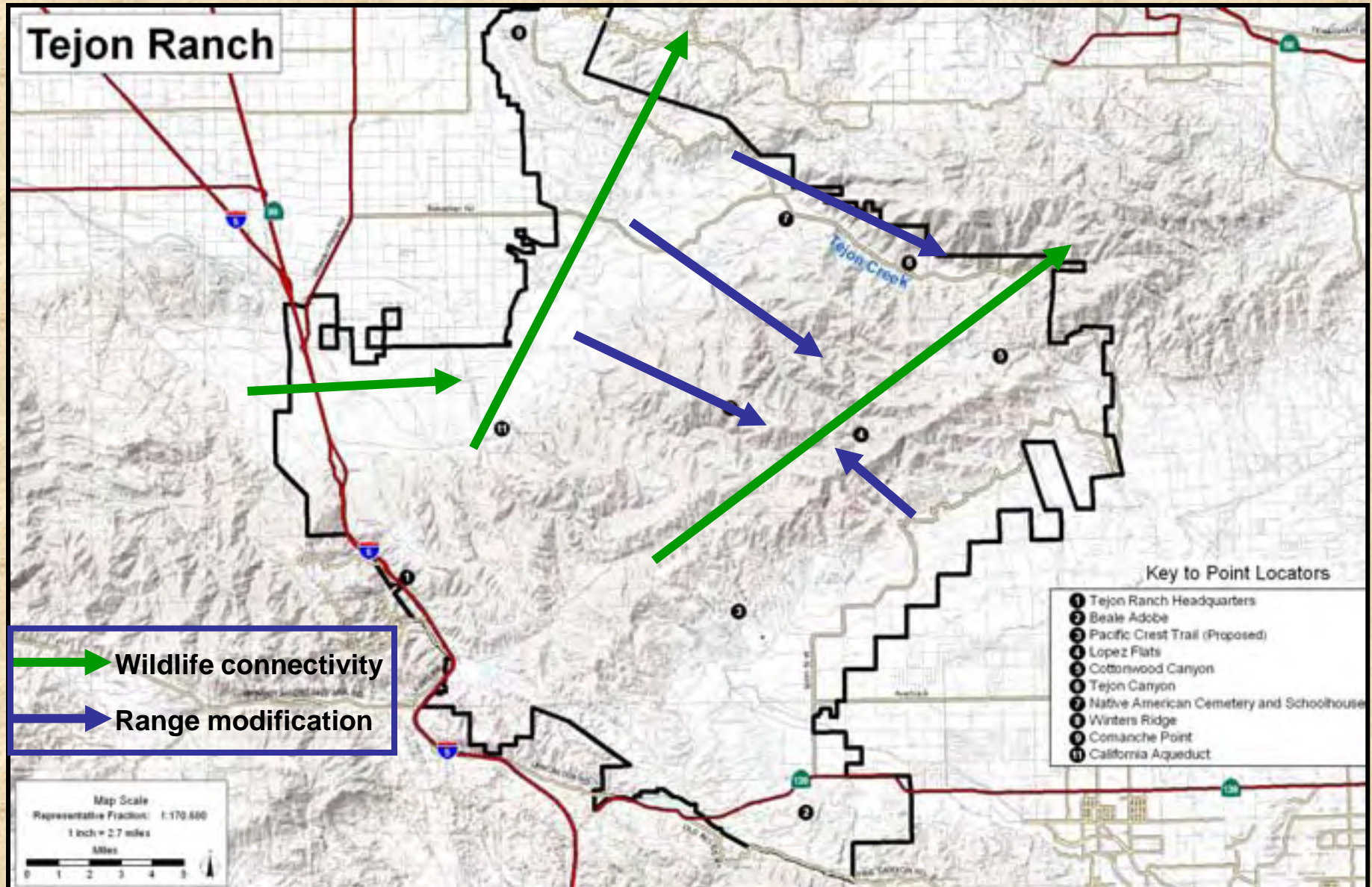
Mt. Livermore
Angel Island SP



Research Strategy

- **Adaptation Research Council**
- **Quick Release of Research & Evaluations**
- **Reserve System & Sustainability**
- **Priorities: Connectivity & Range Modification**
- **Evolutionary Development**
- **Statewide Monitoring Effort**

Research: Connectivity & Range Modification



Prairie Creek Redwoods State Park, 2076



(Death Valley NP)



The End

Interpretation

10 Pt. Plan

Public talking points

Panels

Campfire program

Historic carbon calculator

CC curriculum

Podcast

Jr. Ranger program

PORTs

Links for teachers

Online resources





Protecting Biological Diversity End



PUBLIC LANDS WITHIN THE NINE-COUNTY BAY AREA

LEGEND

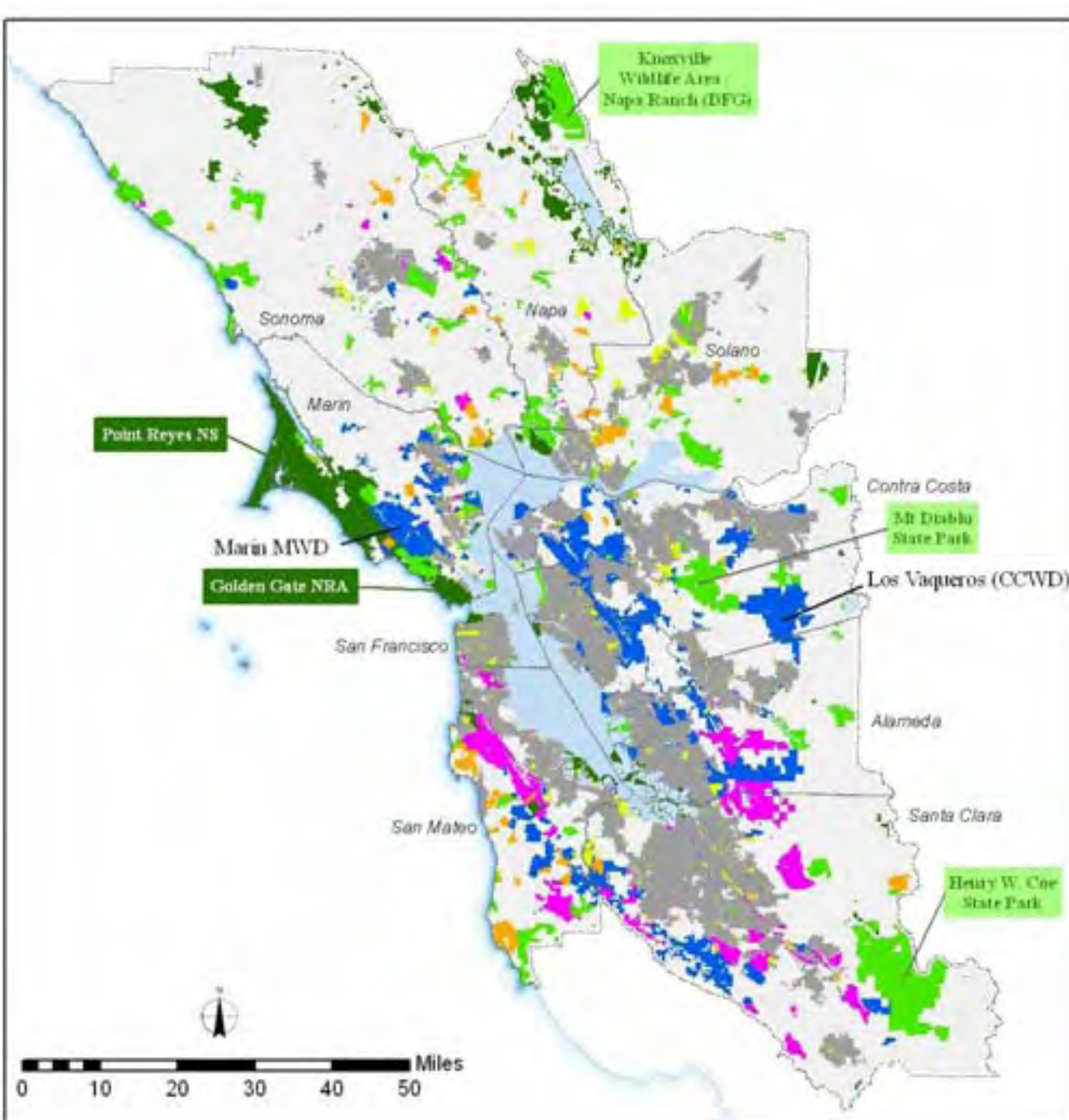
Calif Public Lands*

Agency Type:

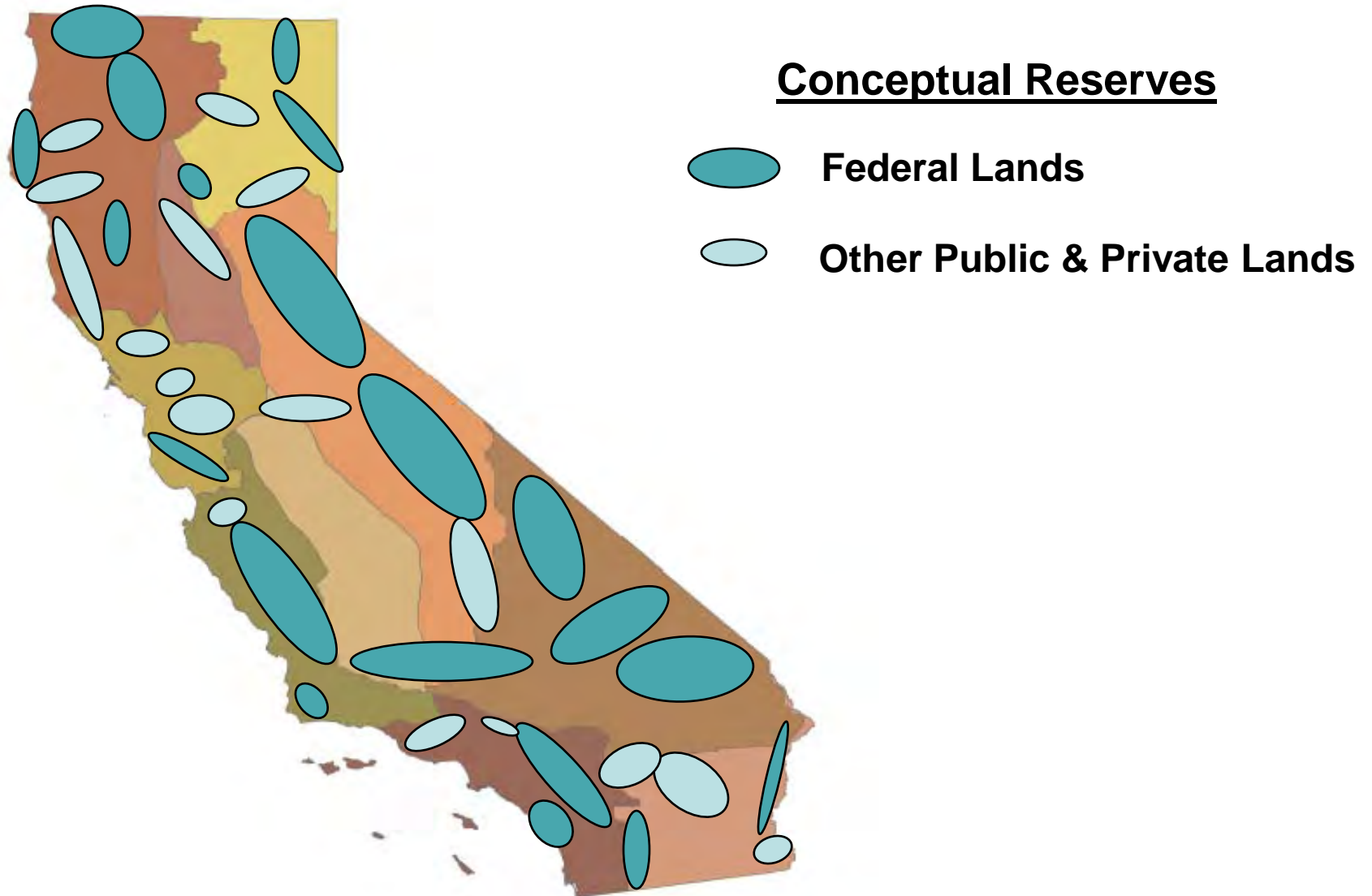
- Federal
- State
- County
- City
- Special District
- Non Profit
- Private
- Counties
- Cities

*Source: GreenInfo Network
Calif. Protected Areas
Database, 2009

Calif State Parks
July 1, 2009
Natural Resources
Division



Conceptual Landscape Reserve System



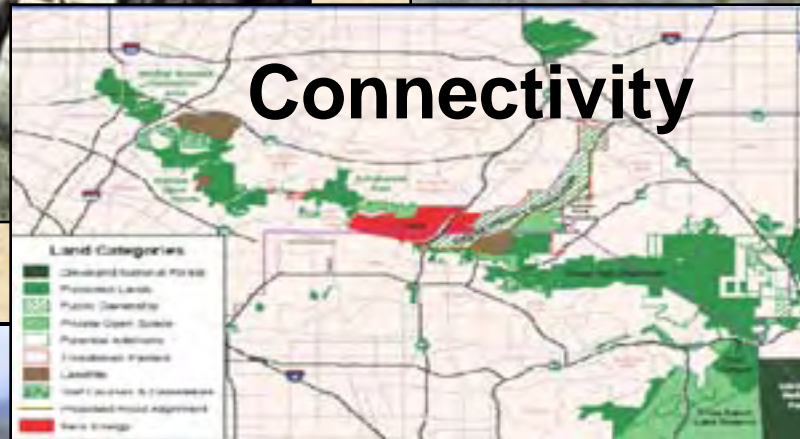
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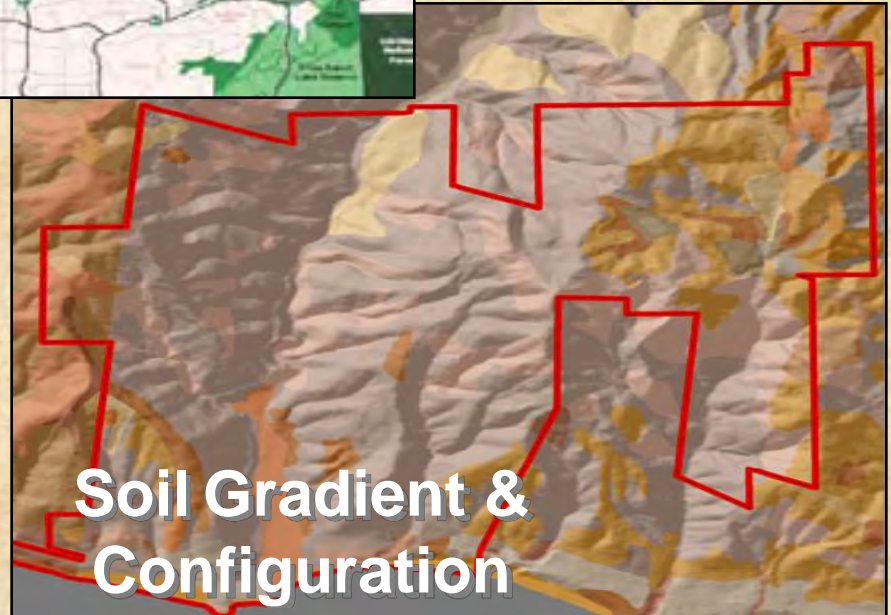
Connectivity



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**Tolowa
Dunes**

**Seriously
degraded,
monotypic**



Asilomar

**Restored,
Diverse and
Native**



Mt. Diablo State Park

Highly flammable urban interface

Significant annual effort to protect from fire





'ey man, I'm set, how about you?

**Experience Global Warming
VISIT
BORREGO SPRINGS, CALIFORNIA**

Eucalyptus Removal

Angel Island State Park

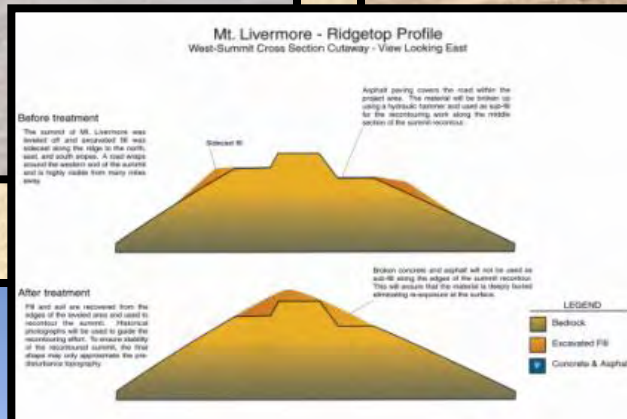


Landform Restoration

Angel Island SP



Old pavement and terraces



Reshaping



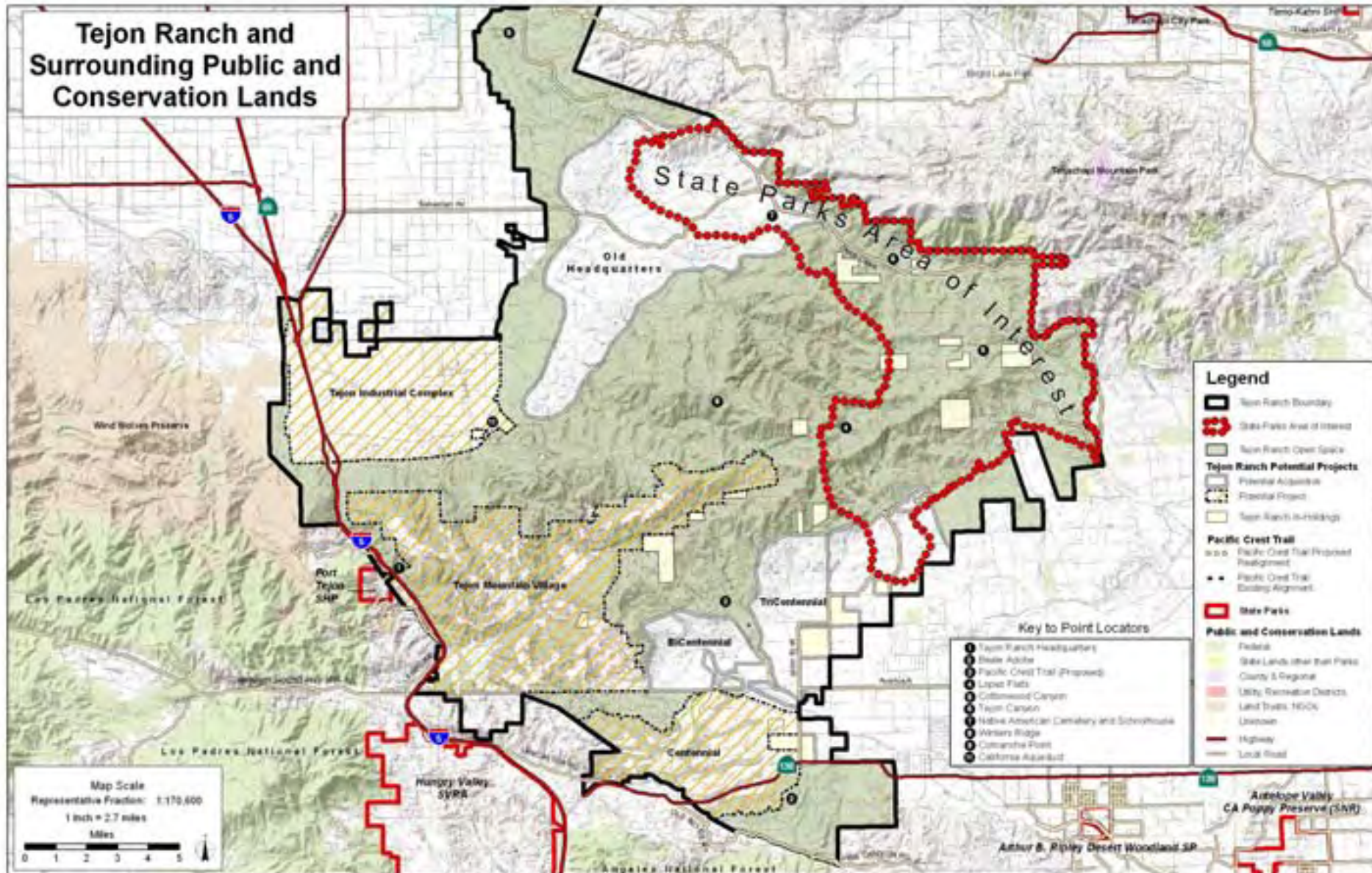


“Mother Nature is just chemistry, biology and physics. That’s all she is. And because of that you cannot spin Mother Nature. You cannot bribe Mother Nature. You cannot sweet talk her, and you cannot ignore her. She’s going to do with the climate whatever chemistry, biology and physics dictate. And Mother Nature always bats last, and she always bats a thousand.”

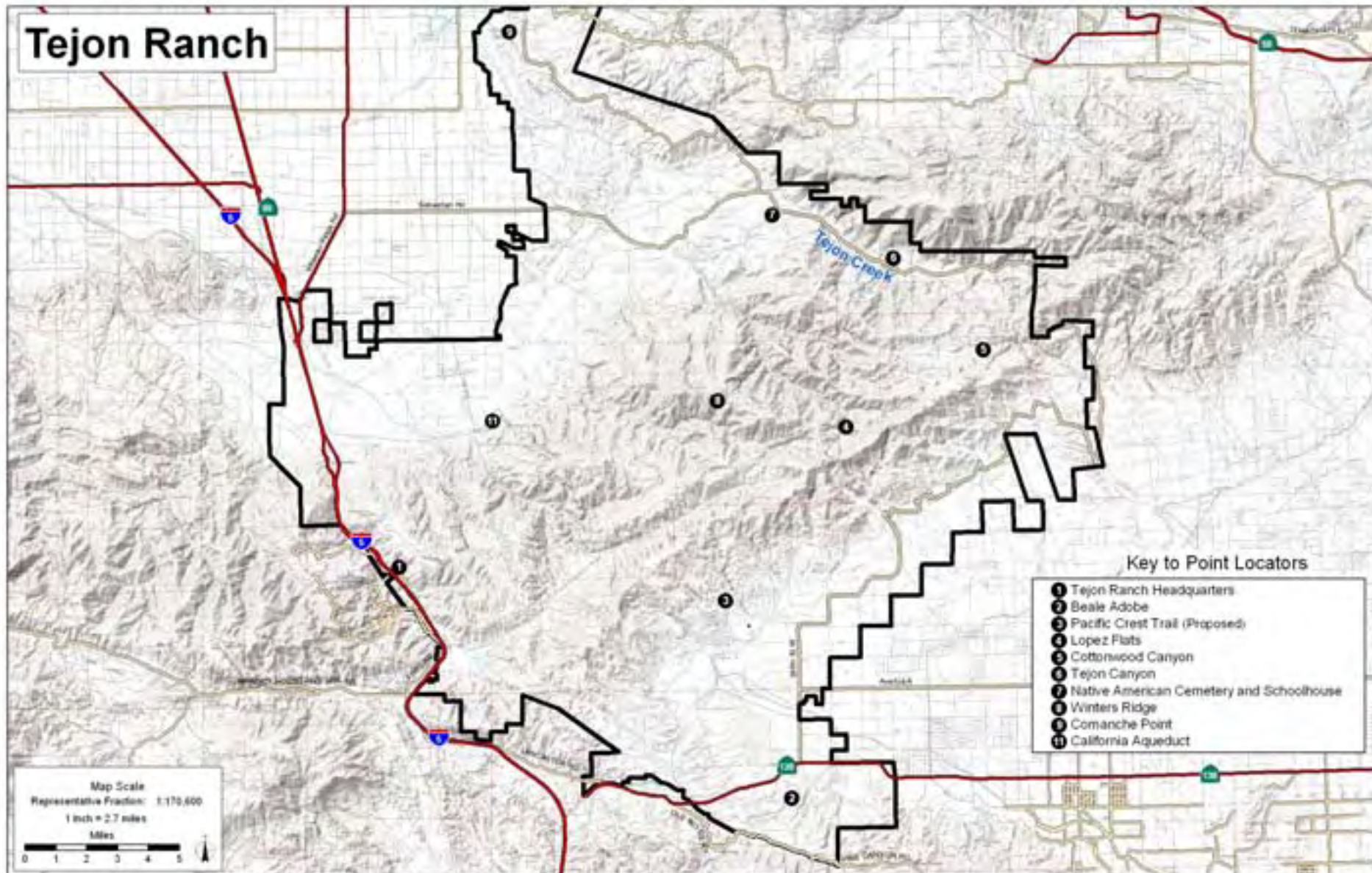


Rob Watson, Father of LEED, EcoTech Int.

Tejon Ranch and Surrounding Public and Conservation Lands



Tejon Ranch



- Do slide here that intros deal
- Brief review of impacts of cc
- Reserves system and management
- New slide with 4 ecol. Process of slide 3 but change out with my 4 photos for each ie temp, hydrology etc
- Add research one re see last slide

Duty Statement

North Bay District

State Park Superintendent V

The State Park Superintendent V works under the direction of the Division Chief of Park Operations for the Northern Division. Additional management direction for this position is provided in personal performance standards and the statement of delegation for the State Park Superintendent position. This position is responsible for the management of the North Bay District and is responsible for all components of the district's Administrative, Resource Management, Real Property, Visitor and Technical Services programs. He/she will ensure continuous external leadership as the primary facilitator in the collaborative expansion and management of the Mt. Saint Helena Reserve and sustaining the nature resource values in light of climate change.

35% MANAGEMENT AND SUPERVISION

Participates in strategic planning, program coordination, employee development planning and implementation, and project facilitation.

10% RESOURCE MANAGEMENT

Ensures the natural resources of district are properly managed...

