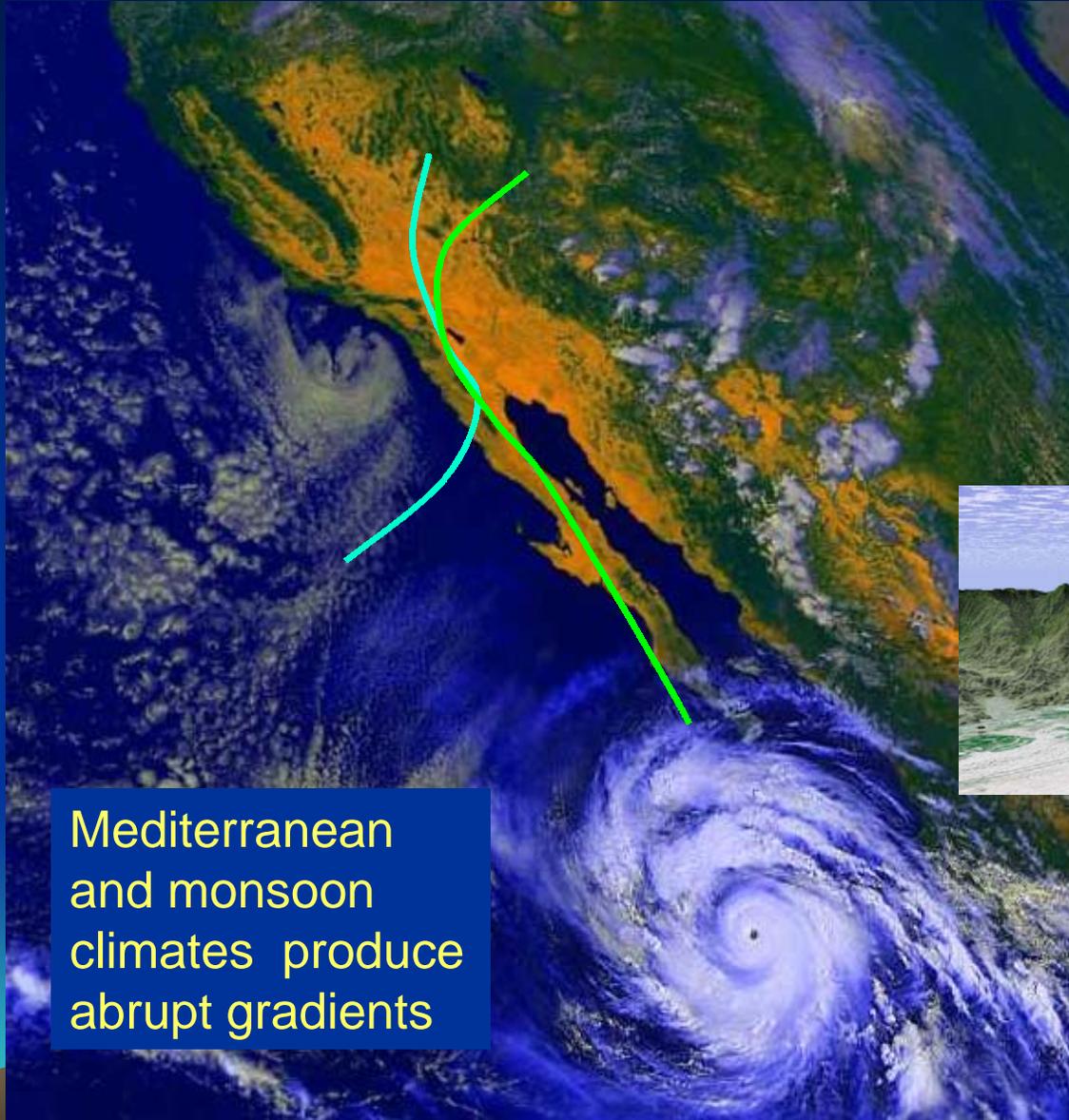
A satellite image of Earth showing California and a hurricane. The state of California is highlighted in orange and red, contrasting with the green and blue of the surrounding land and oceans. A large, swirling hurricane is visible in the lower right quadrant of the image.

Habitat Fragmentation in California: our past, current rate, and likely future

Tom Scott

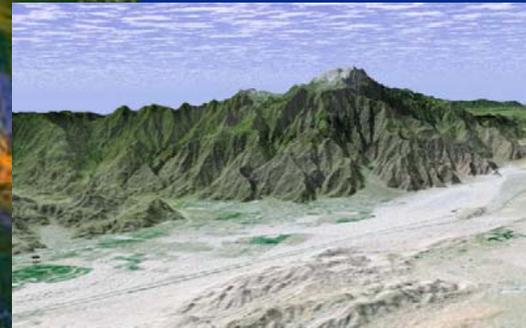
IHRMP, Department of Environmental
Science, Policy and Management,
UC Berkeley
Center for Conservation Biology,
UC Riverside

California is a land of abrupt transitions



Mediterranean
and monsoon
climates produce
abrupt gradients

Movements of the Pacific
and North American
tectonic plates create a
geological callopie



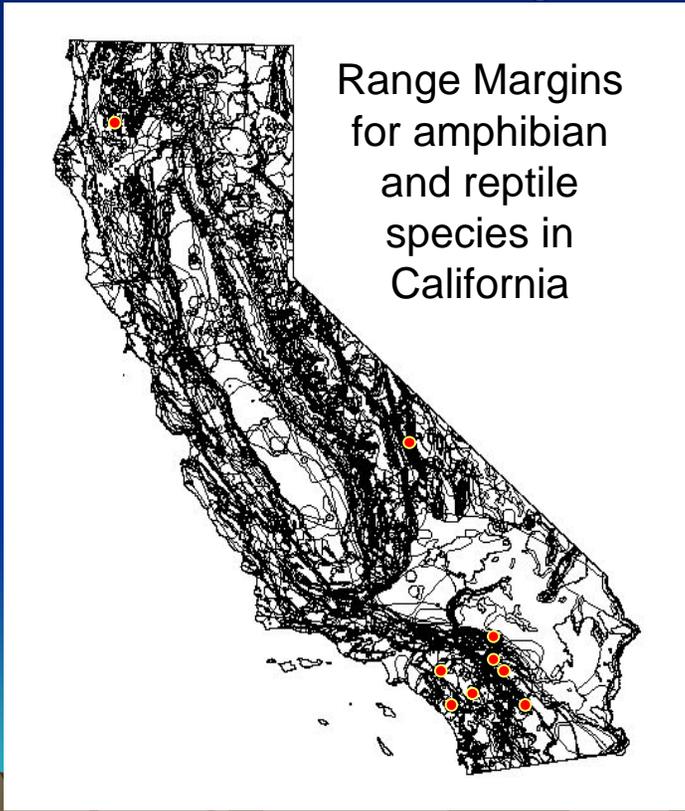
Red-breasted Nuthatch
(North to Yukon)



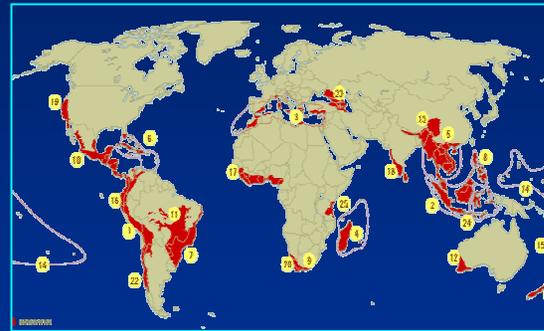
Vermillion Flycatcher
(South to Equator)

Result is the greatest number of rare and endemic species in the continental United States, and the greatest potential for endangered species conflicts

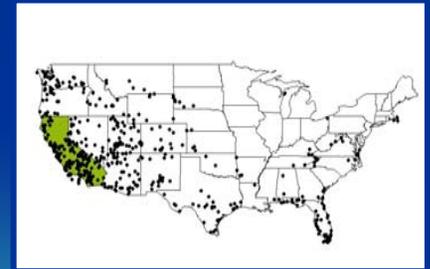
Endemic Species at distributional margins



Biodiversity Hot Spots

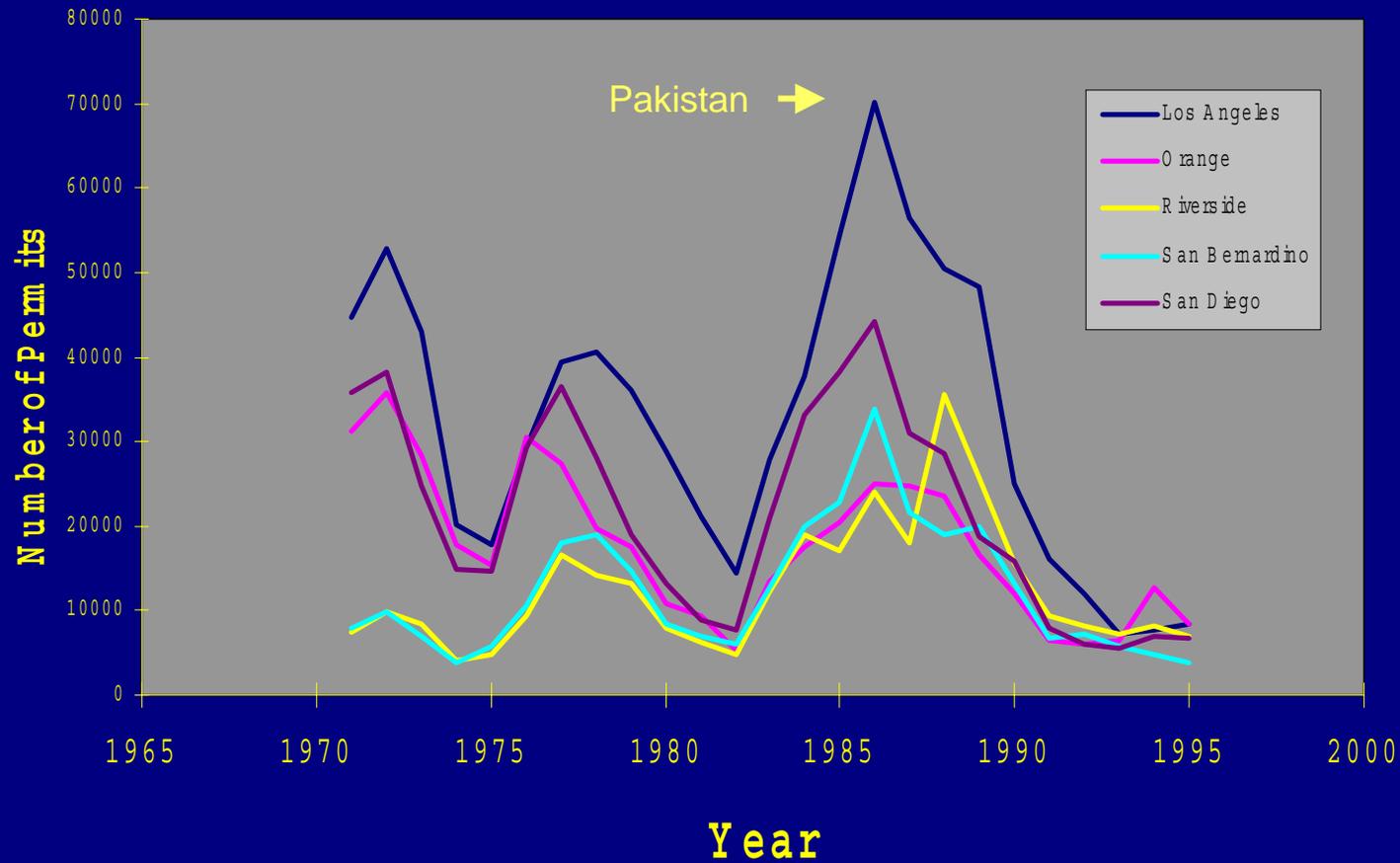


Listed Species



Actualized by hyperbolic rates of suburbanization

Building Permits Issued



A SENSE OF LOSS AND ANGST

The desire for open space and wildlands continues to drive rural and semi-rural housing development



Expanded road networks
Stealth Cities
Captured Wildlands

This demand for wild amenities creates an exceptionally odd juxtaposition of destruction and demand

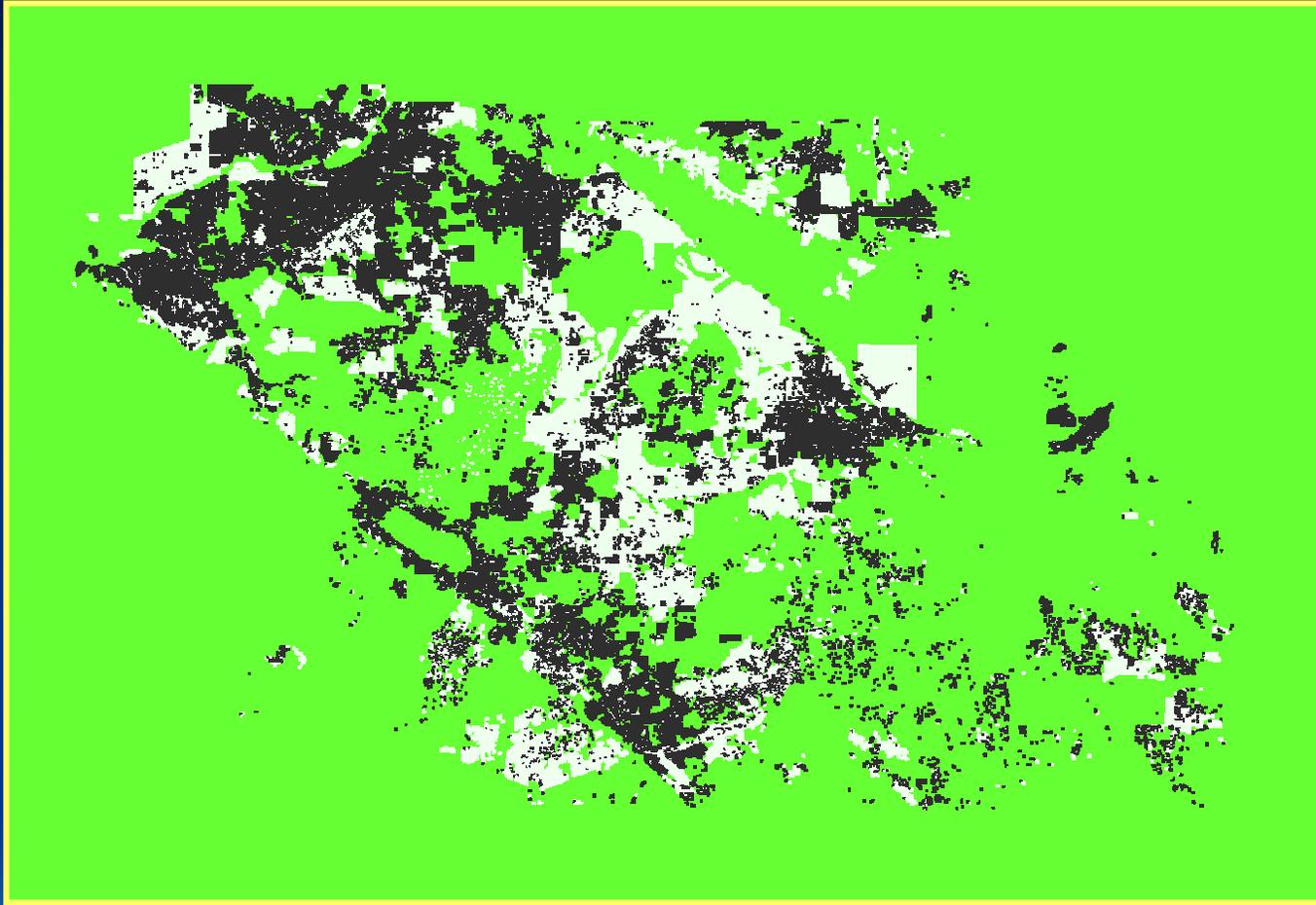


Theme of my talk

Most of us
envision
two Californias,
one where we live
and work,
the other where
wild things roam



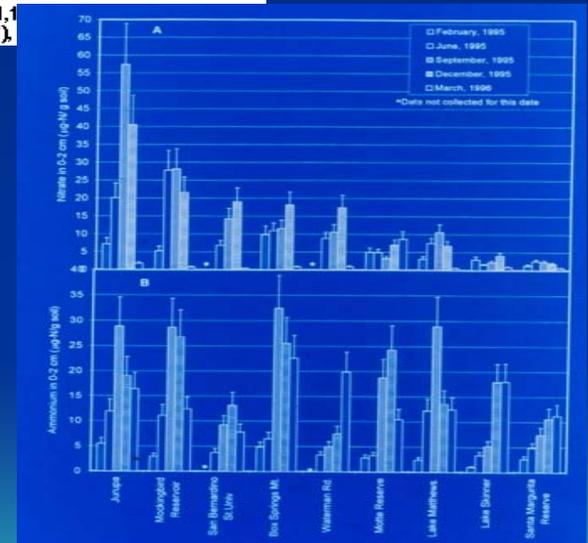
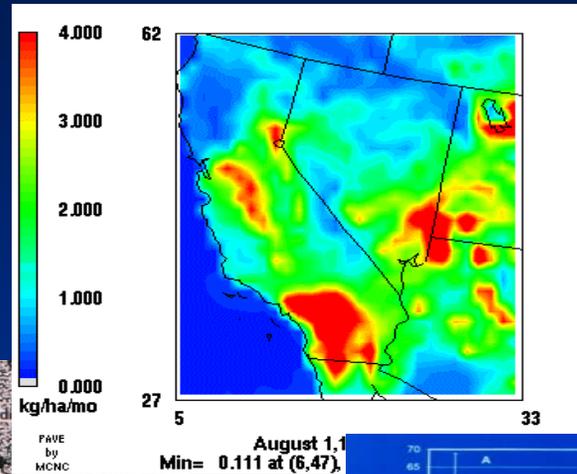
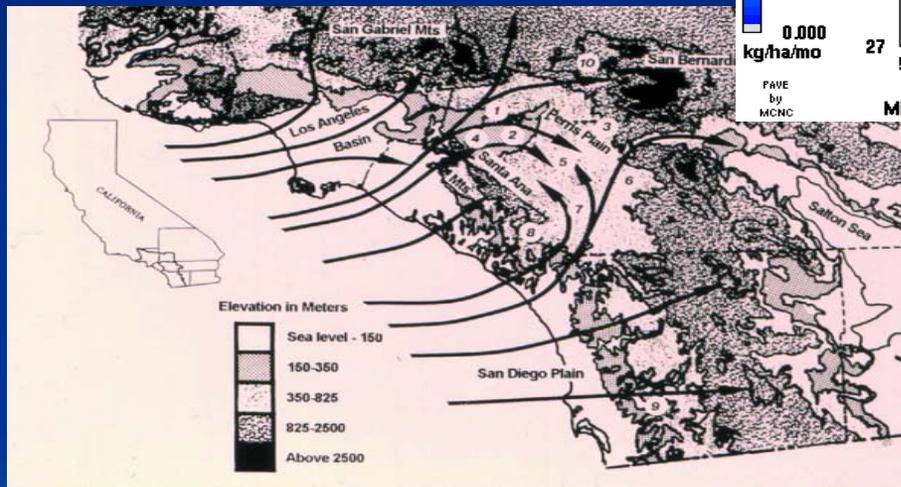
But our reality is the Wildland Urban Interface



Renamed the wild urban interzone by CDF

Extending this thought one step further,

Nothing in California escapes human influence



Regional Nitrogen Deposition Work of Drs. Edith Allen and Gail Tonneson

If no place in California escapes human influence

- Need to reexamine

Our belief systems surrounding wildlands

Our perspectives on management and preservation

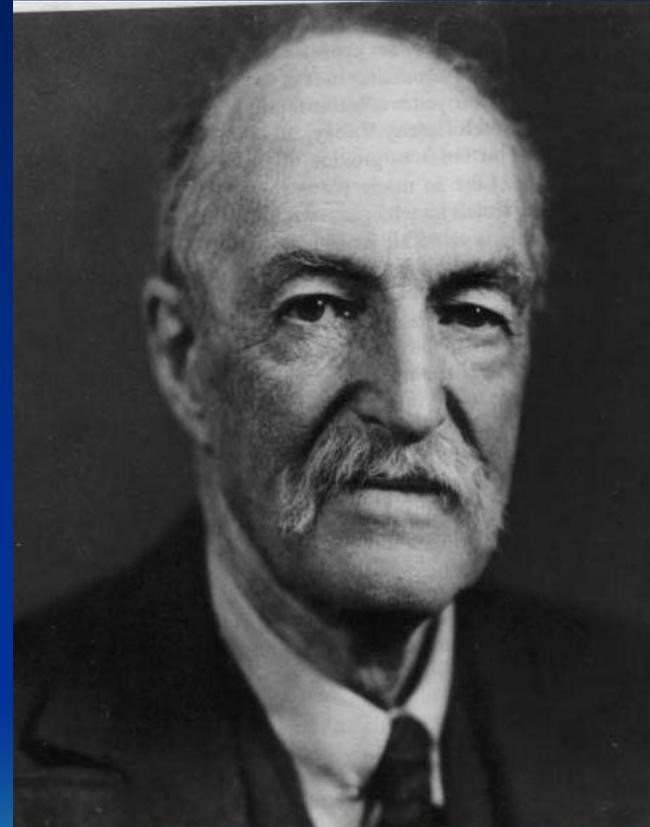
- Should we continue to envision a separate California and the necessity of systems which are untainted by humans?

Perhaps not.

- With this admission comes a certain kind of flexibility in thinking that isn't possible if we try to maintain an artificial dichotomy



Most of us grew up with John Muir's perspective of *wilderness apart*, and but few have been exposed to Gifford Pinchot's concept of wildland management



Muir's viewpoint is still a proper framework to reverence Nature, but Pinchot's pragmatism may lead to better persistence of species

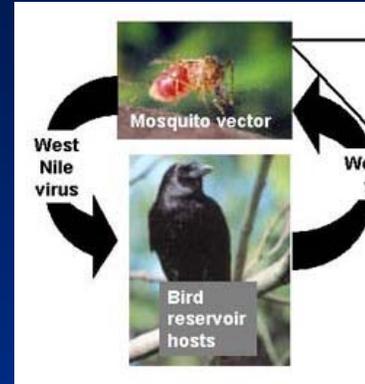
Ecological processes effectively nullify the concept of intact areas and natural regulation in preserves



Invasive Species



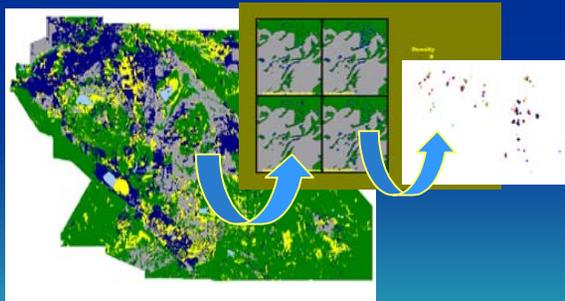
Energy: Fire in preserve patches



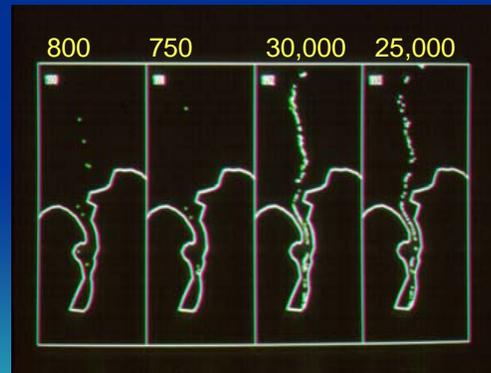
Continental Epidemics /Epizootics



Air pollution



Biological: Spatial dynamics of populations and ecological associations



Human presence: occupancy and use



Gravity: Urban drool, refuse, ravel, and floods

Only about 6% of California's land area is urban or suburban

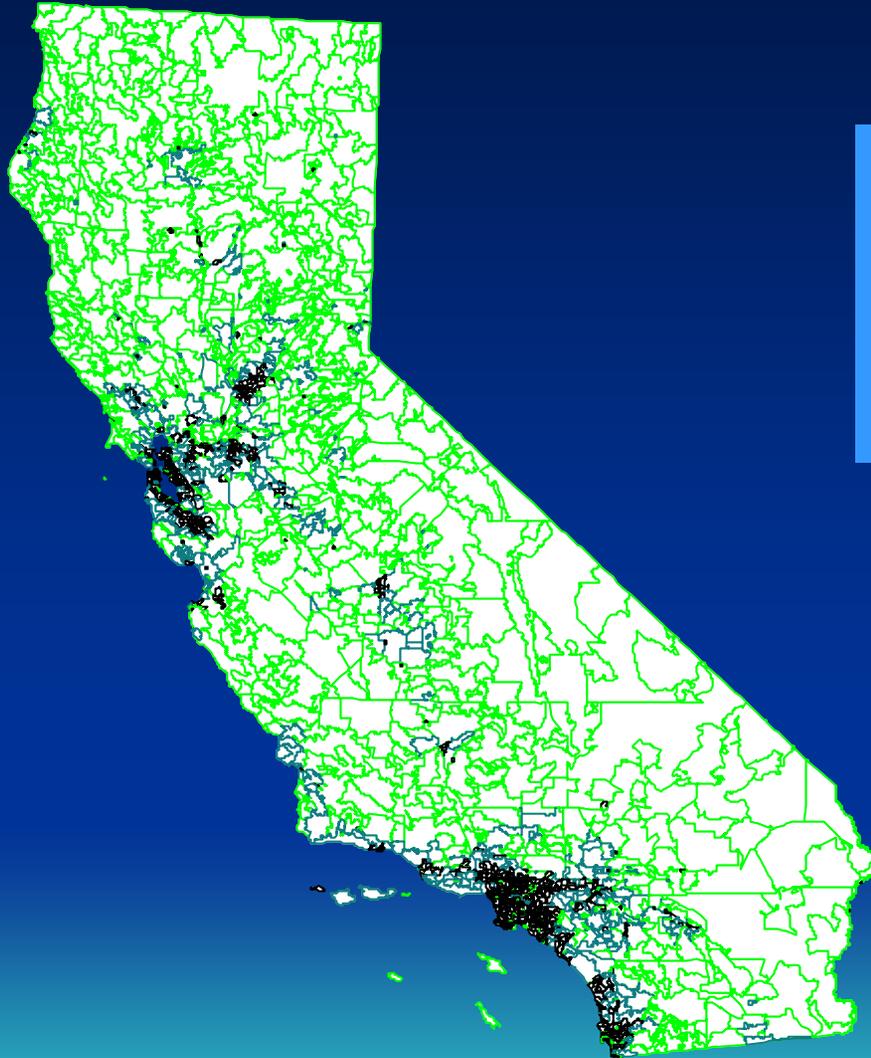


Density of housing for California zip codes

■ >250 houses/km²

■ <1 houses/km²

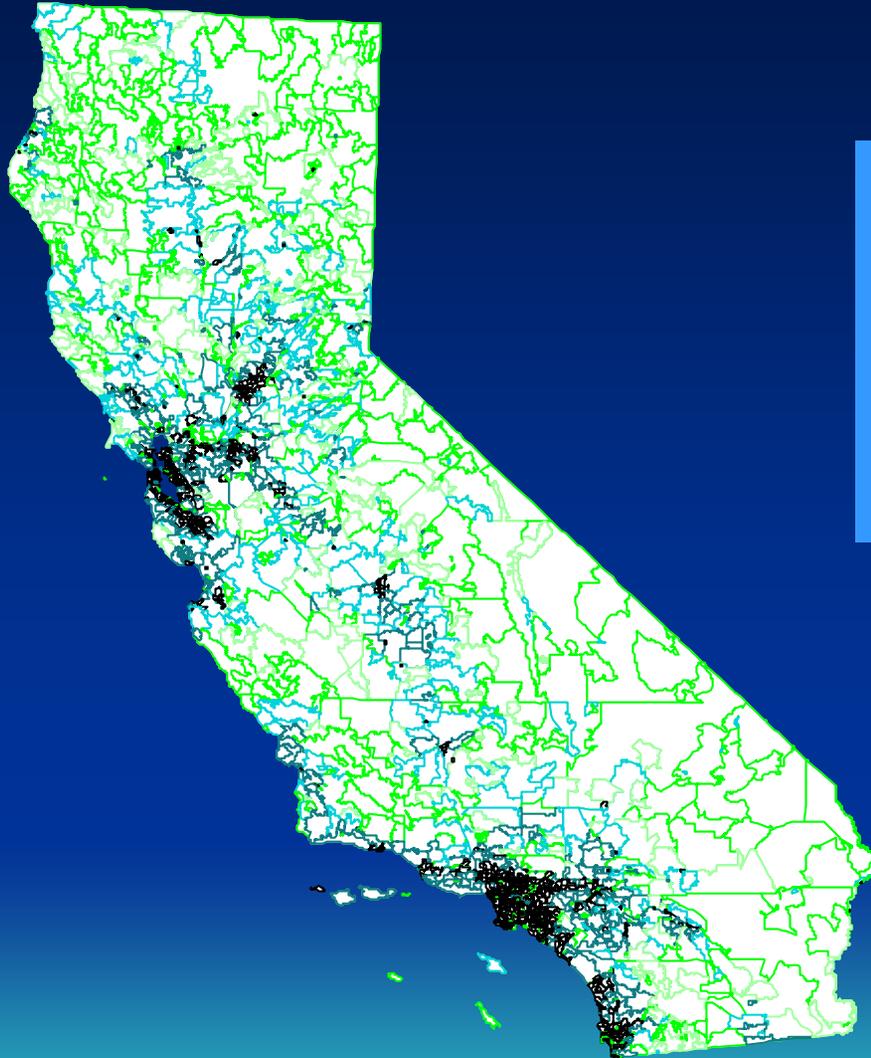
About 13% of the land area is rural/ranchette



Density of housing for
California zip codes

- >250 houses/km²
- 25 to 249 houses/km²
- <25 houses/km²

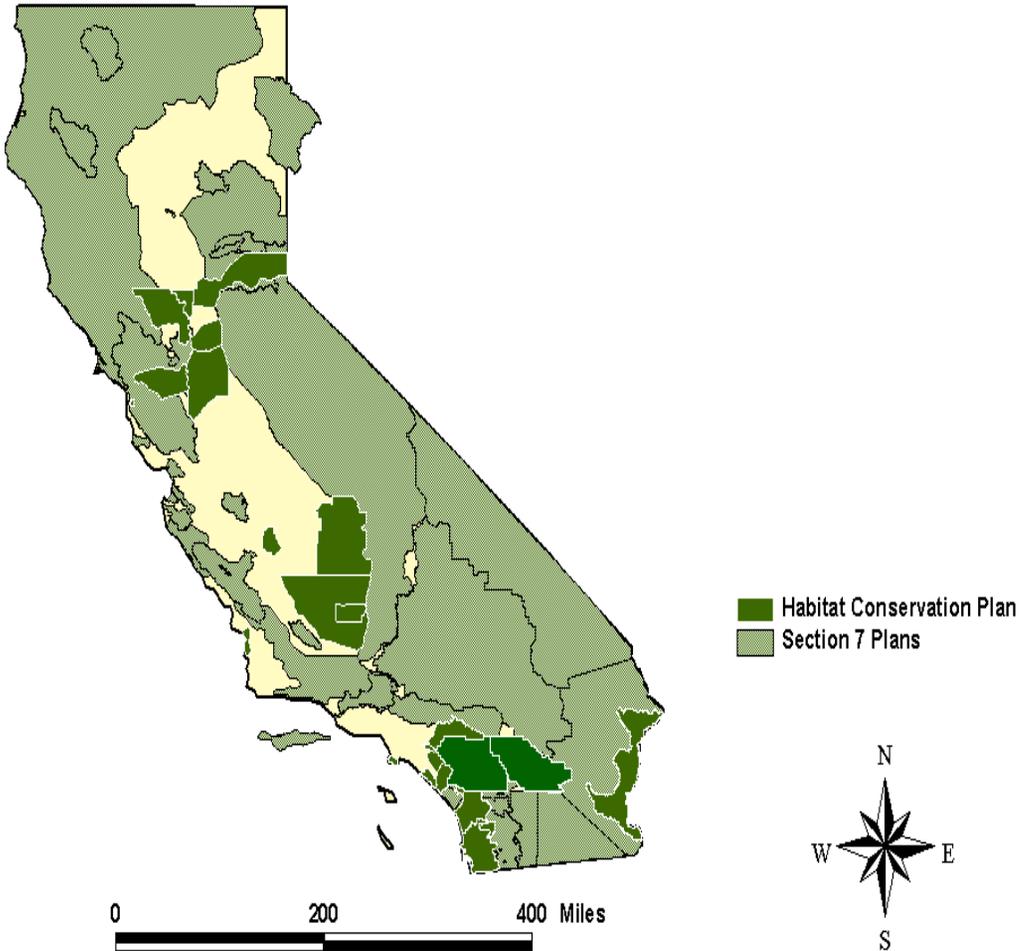
But about half the land area is in the Wildand Urban Interface



Density of housing for
California zip codes

- >250 houses/km²
- 25 to 249 houses/km²
- 1 to 24 houses/km²
- <1 houses/km²

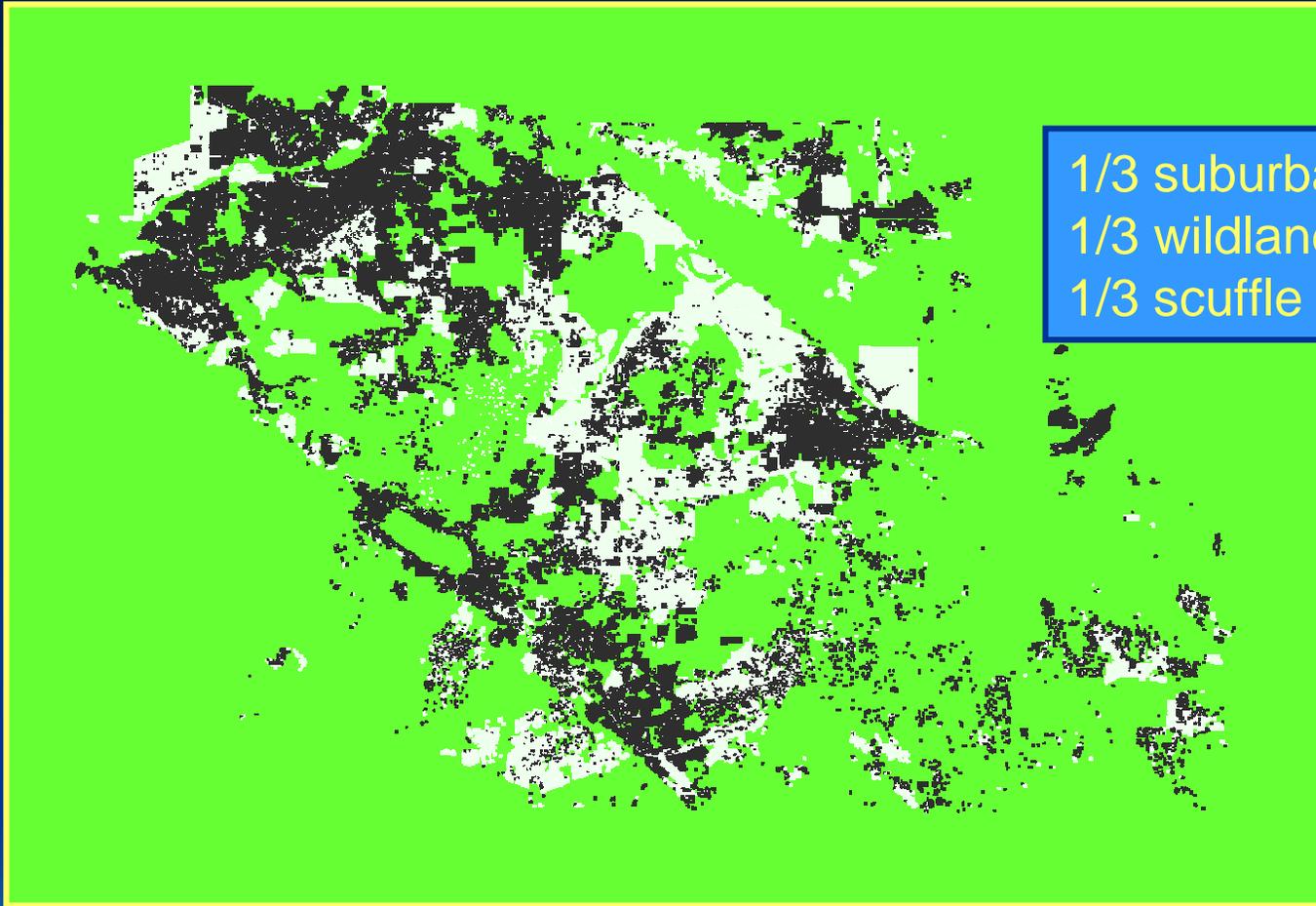
California Regional HCPs and Section 7 Plans



A recognized need for managing ecosystem, but a greater need to get in from of the bulldozers

Necessity of bioregional planning for undeveloped Land

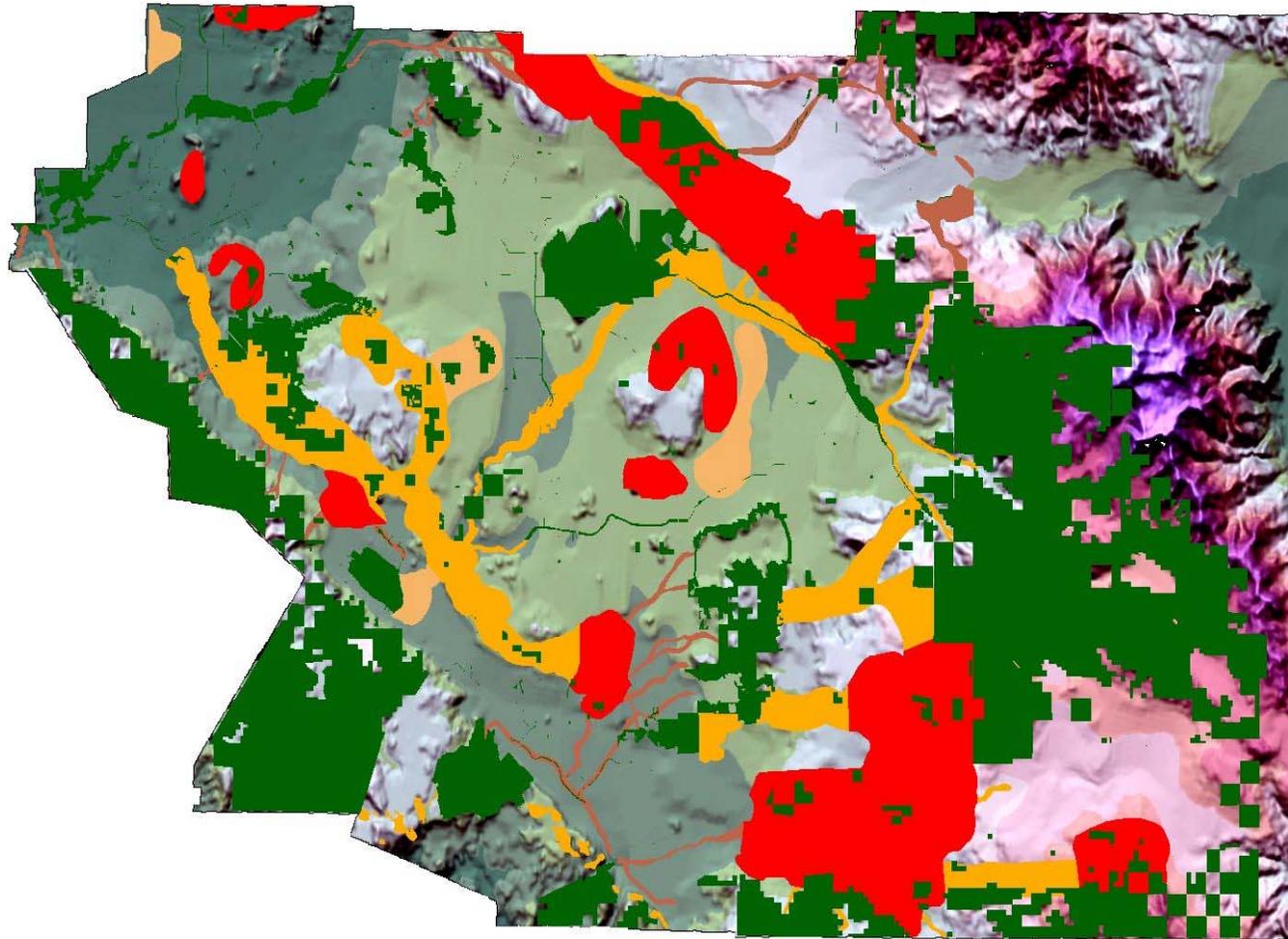
Western Riverside County is divided by thirds



1/3 suburban – urban
1/3 wildland -- preserve
1/3 scuffle zone

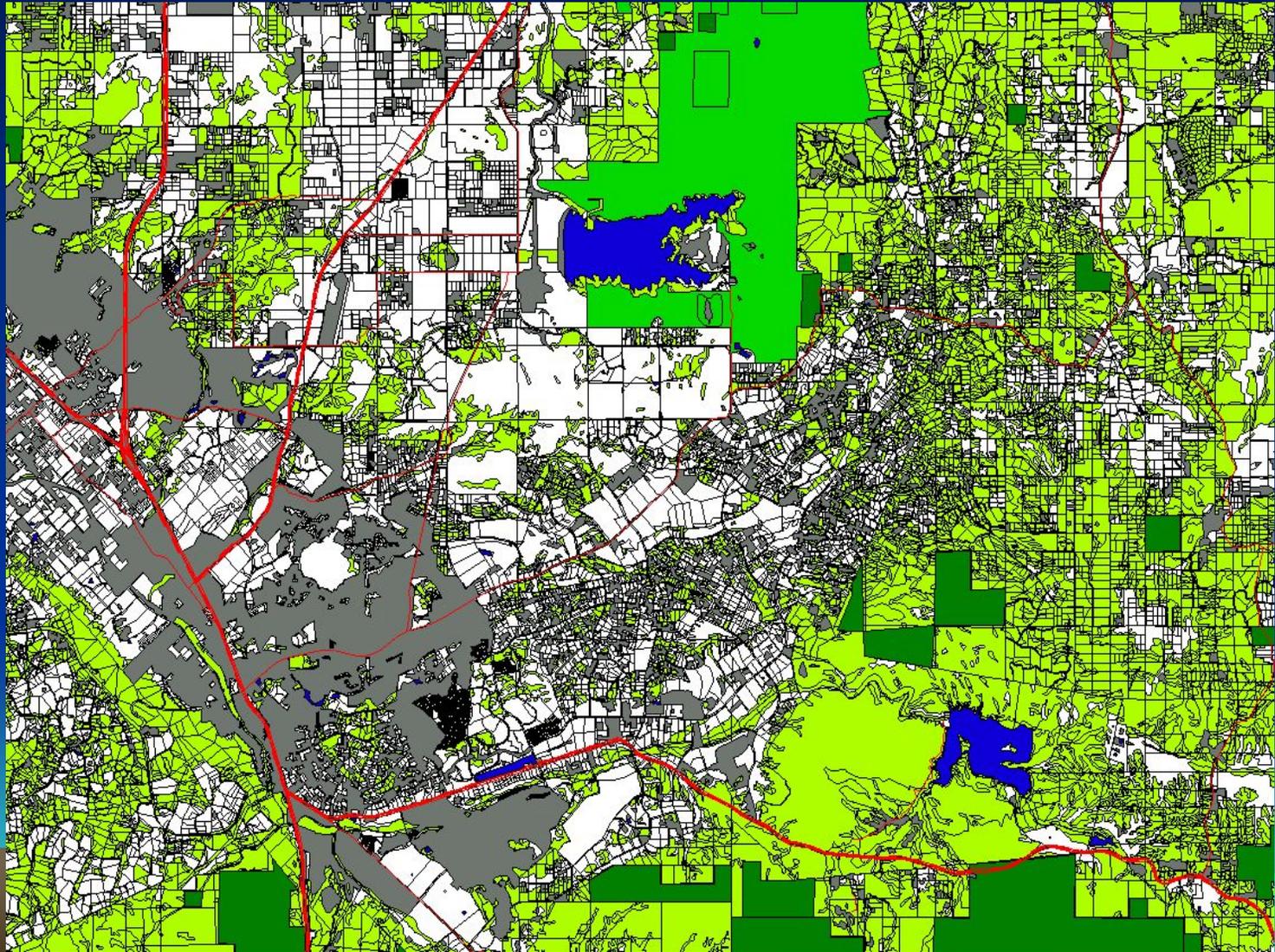
Has 2300 km of suburban edge

Separation is a natural function of polygons



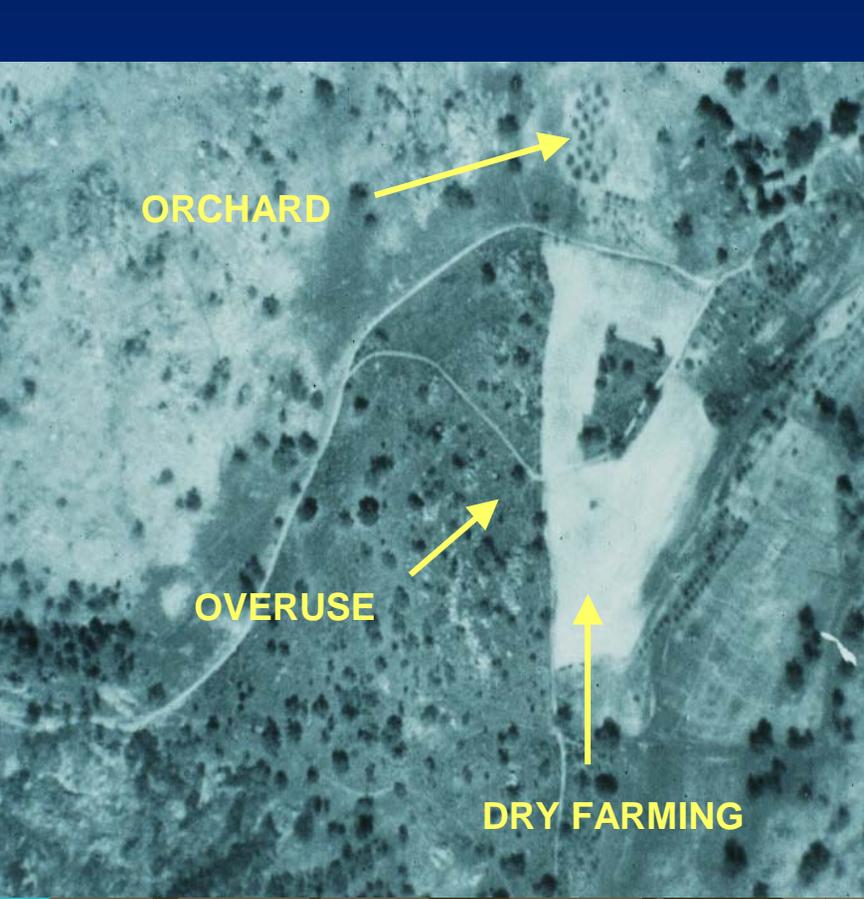
Over-emphasize homogeneity and boundary decisions

But in the footrace for preservation we often lose sight of the complex ecological processes and interactions on the ground



Also loose our sense of ecosystem dynamics

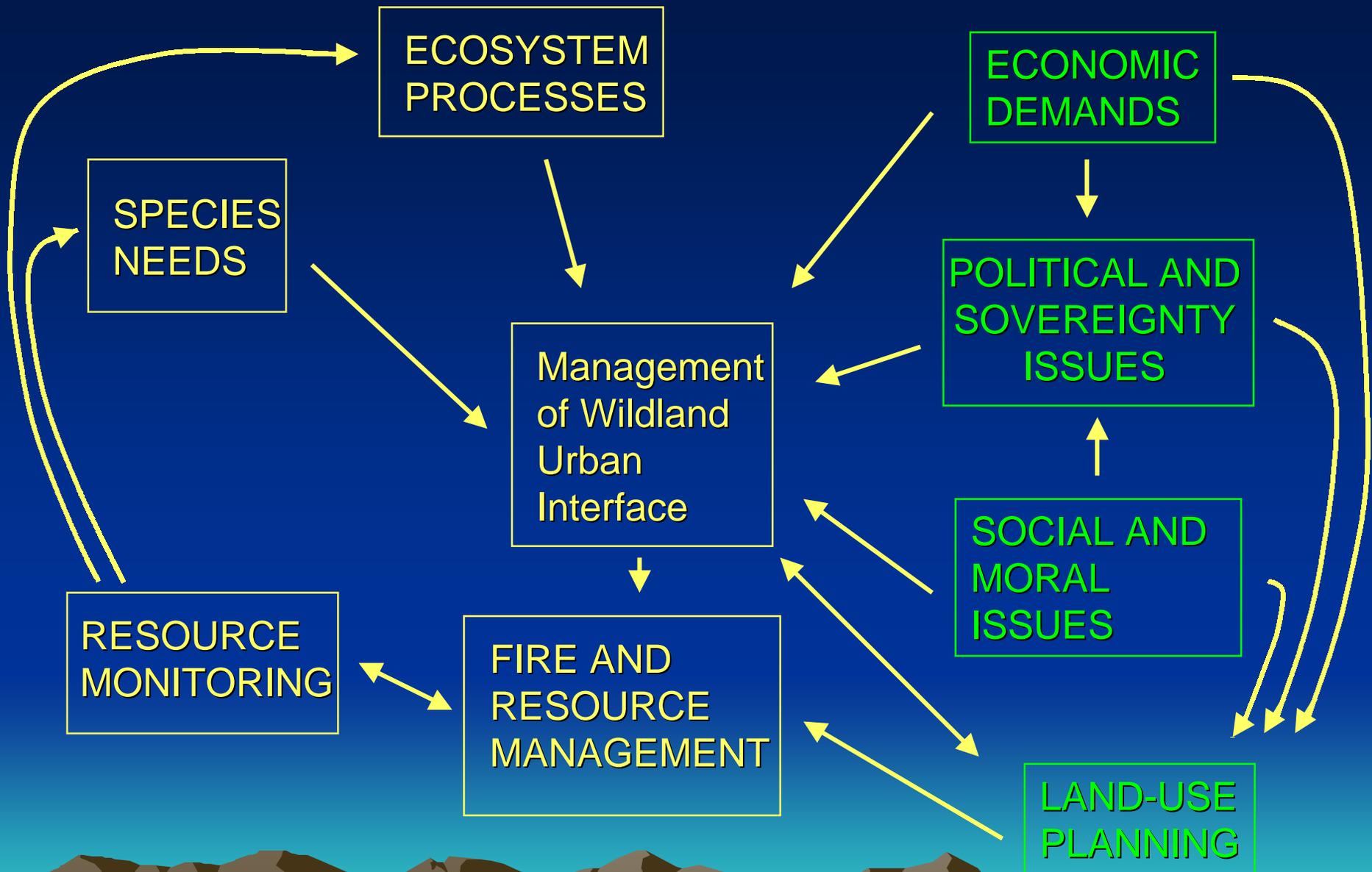
Strong indication that overuse and drought(s) in the early 1900's,
But a recovery in of biomass since 1930



1928



1990



ECOSYSTEM PROCESSES

ECONOMIC DEMANDS

SPECIES NEEDS

POLITICAL AND SOVEREIGNTY ISSUES

Management of Wildland Urban Interface

SOCIAL AND MORAL ISSUES

RESOURCE MONITORING

FIRE AND RESOURCE MANAGEMENT

LAND-USE PLANNING

How can we re-establish a balance between process and preservation?

Disciplinary topics which help balance in management and preservation:

Invasive Plants

Wildfire and Fuel Management

Air pollution

Runoff

Wildland Recreation

Connectivity



Invasive species,

by definition,

unite the concepts of land preservation
and ecological process together

I hope this helps you to recognize the
unique position of CAL-IPC to help
California transition into the 21st century

