

**1:30 – 2:00 Tangible
Examples of NVC Uses from
Monitoring, Mapping, and
Habitat Modeling. (Todd Keeler-
Wolf, ESA Panel)**

Habitat Modeling for Mojave Ground Squirrel: a rare species of the Western Mojave Desert

- A state listed species considered in conservation planning for western Mojave Desert
- Endemic, declining, threatened by conversion of habitat, feral predators, invasive competing species
- Major threats are solar and wind generation expansion in and near core areas

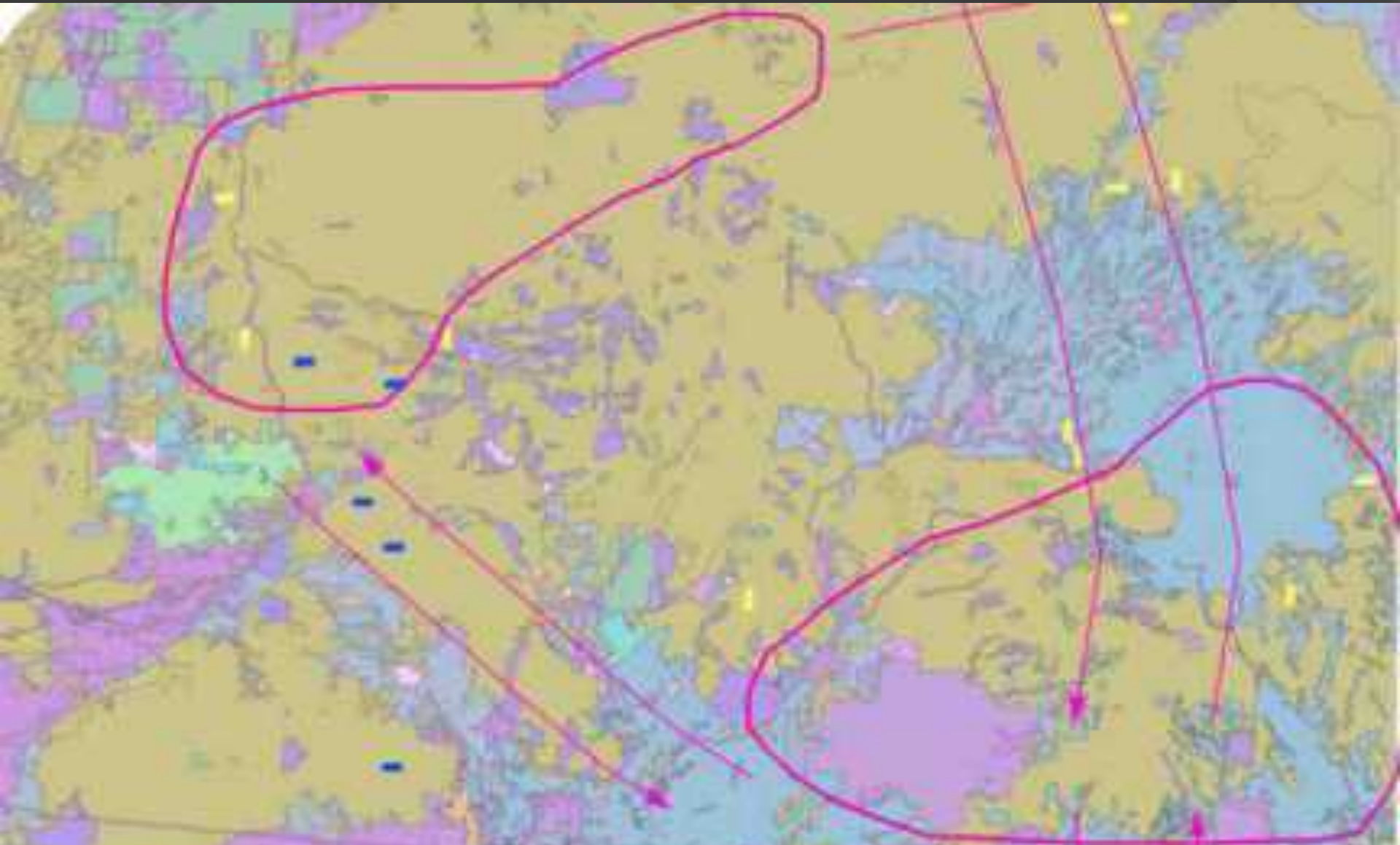
MGS Relies heavily on vegetation for food, shelter,



Most models to predict habitat are not based on vegetation because it is difficult to map in the desert; Yet:

- MGS relies on native annual herbaceous vegetation
- abhors coarse non-native grasses
- Relies on a diverse shrub layer for harsh years when no annuals are present
- Requires particular substrate and topographic conditions for burrowing
- All of which are correlated with Vegetation attributes

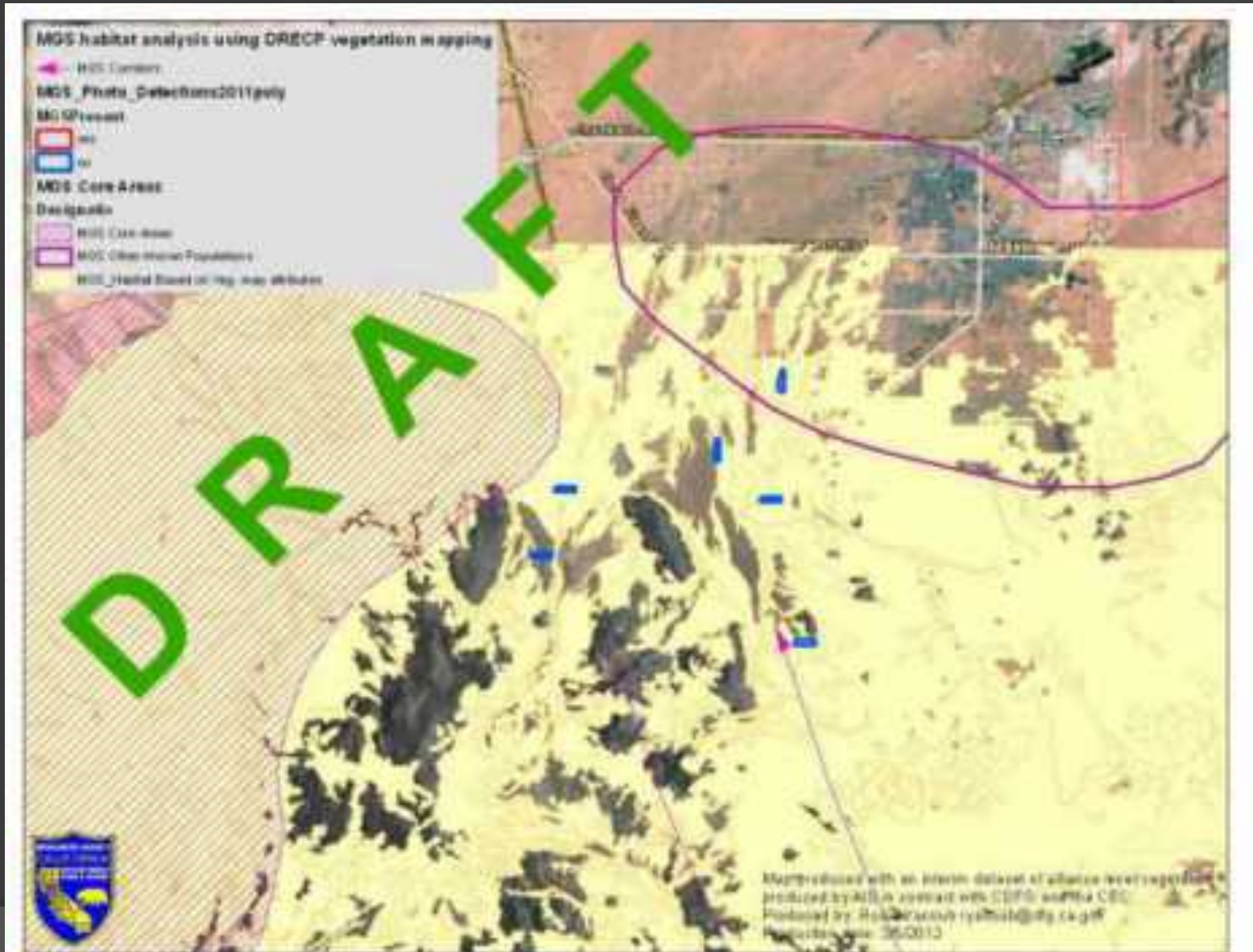
Overlay of expected corridors linking populations with detailed, multi-attribute vegetation polygons



Field sampling in recent seasons indicate presence or absence of MGS related to Vegetation Map attributes



Mapping shows “open” polygons as lower quality habitat



Areas of more contiguous habitat as defined by map polygons tend to have MGS



A Vegetation Classification and Map for the Santa Monica Mountains NRA: An Essential Tool for Cooperative Conservation Planning



John Tiszler, NPS-SAMO
CNPS Conservation Conference 2012

NPS is minority landowner in the NRA



National Recreation Area: 62,000 ha

Public Lands: 32,200 ha (52% of NRA)

NPS Lands: 10,300 ha (32% of Public Lands; 17% of NRA)

NPS is not a *regulator* in the NRA, but a *stakeholder*.

Who makes land management decisions?

- 3 Federal Congressional Districts
- 3 State Assembly and 2 State Senate Districts
- 2 Counties- Los Angeles and Ventura
- 10 City Councils
- 65 Federal, State & Local Agencies
- 265 Homeowners Associations
- 17 million people live within 1 hour drive

If NPS does not own all the land in the NRA and does not regulate it, how do we meet our mandate to “preserve and enhance”?

One approach:
Provide to decision makers scientifically sound and comprehensive data that can be used to address conservation questions.

Plants and Vegetation

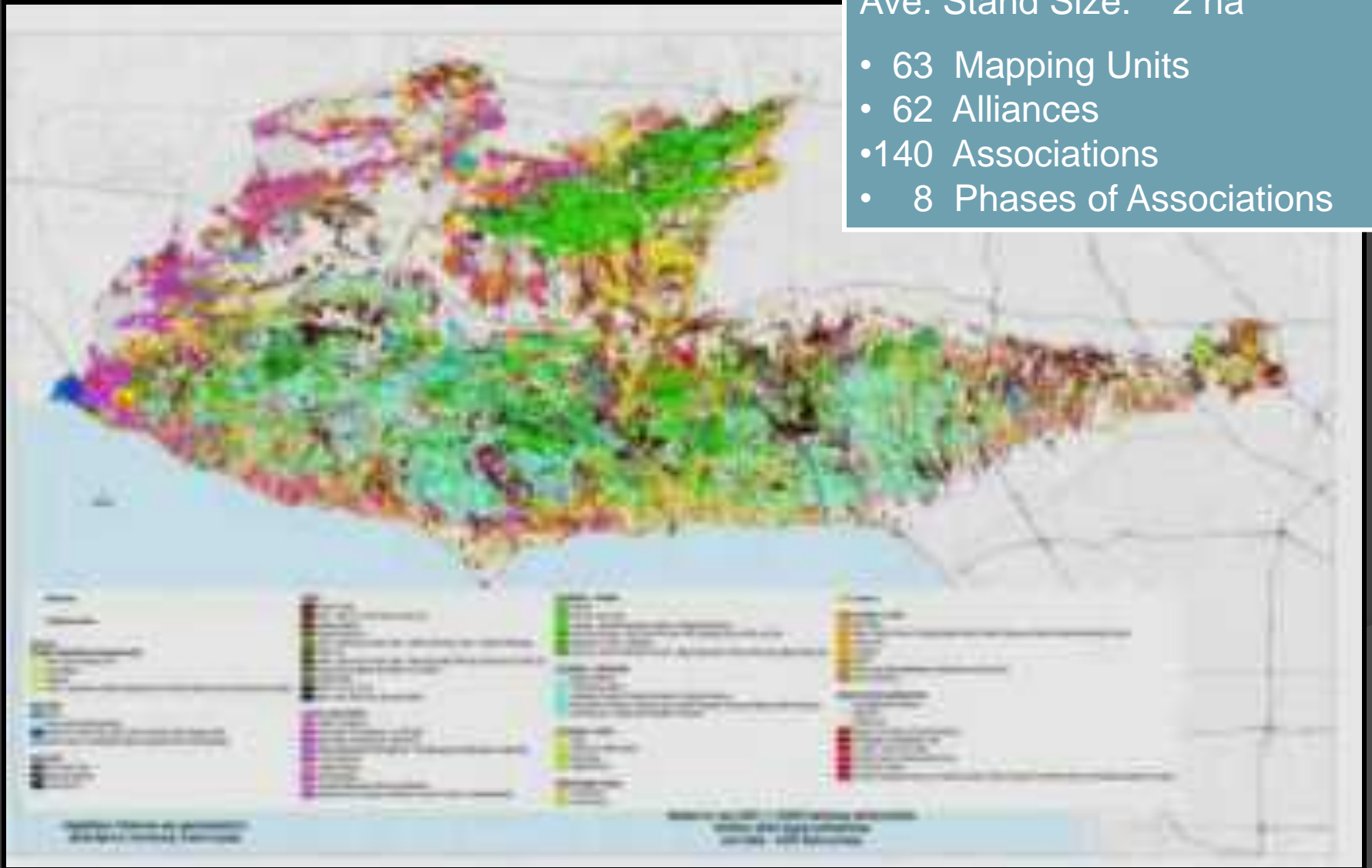
Inventory (Mapping) and Monitoring

- Vegetation
- Uncommon and Rare Plants
- Invasive Plants

Made available to agencies and public

Area mapped: 122,600 ha
Mapped Stands: 50,600
Ave. Stand Size: 2 ha

- 63 Mapping Units
- 62 Alliances
- 140 Associations
- 8 Phases of Associations





Accuracy Assessment

Based on 54 Major Alliances / Mapping Units

Overall Accuracy: 86%
90% CI: 85-87%

Kappa Statistic*: 82%
90% CI: 81-84%

Alliance level

Overall Accuracy

86%

90% CI: 85-87%

Kappa Statistic*

82%

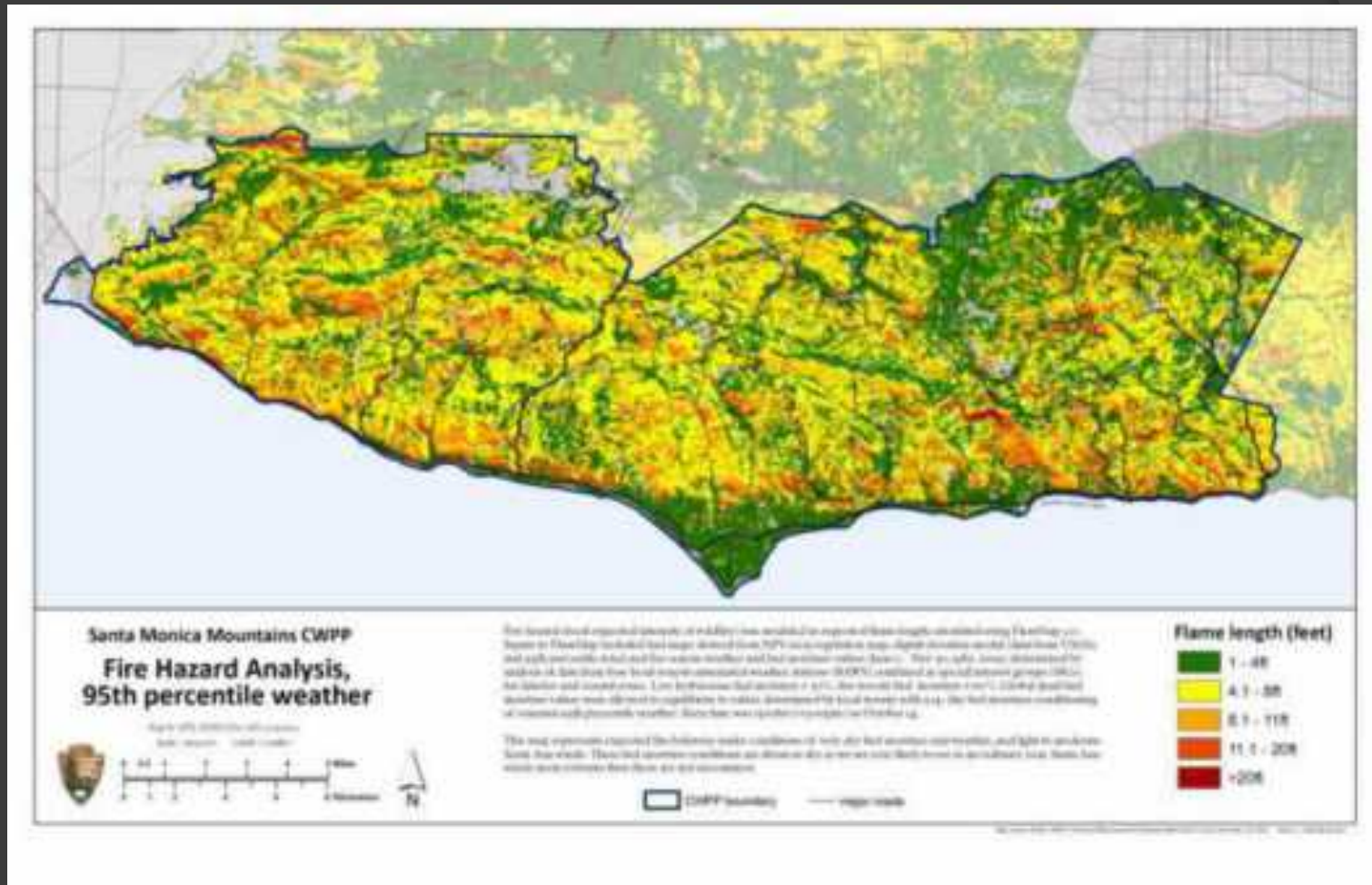
90% CI: 81-84%

*Estimate of how much better is agreement than expected by chance alone

How does NPS Use the Map?

- Planning
 - Environmental impact analysis.
 - Development monitoring.
 - Determining land acquisition priorities
- Resource Damage Assessment and Mitigation
- Fire Management (Modeling)
 - Achieve safety without impacting resources
- Vegetation Protection and Management

Flame Length Prediction Based on Vegetation Type



Fuels types, canopy cover, canopy height, canopy base height combined with wind and weather models

SOME TESTIMONIALS!

I just wish we had a vegetation map like this for the entire County!

Christina Danko,
Staff Biologist
Ventura County Planning Division



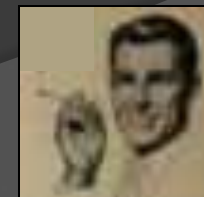
It's such a plethora of information, I keep it accessible on my computer!



Gina Natoli
Supervising Regional Planner
L.A. County Dep't of Regional Planning

The NPS vegetation map is one of our best, most useful, and most used tools for our work.

Jonna Engel
Ecologist
California Coastal Commission



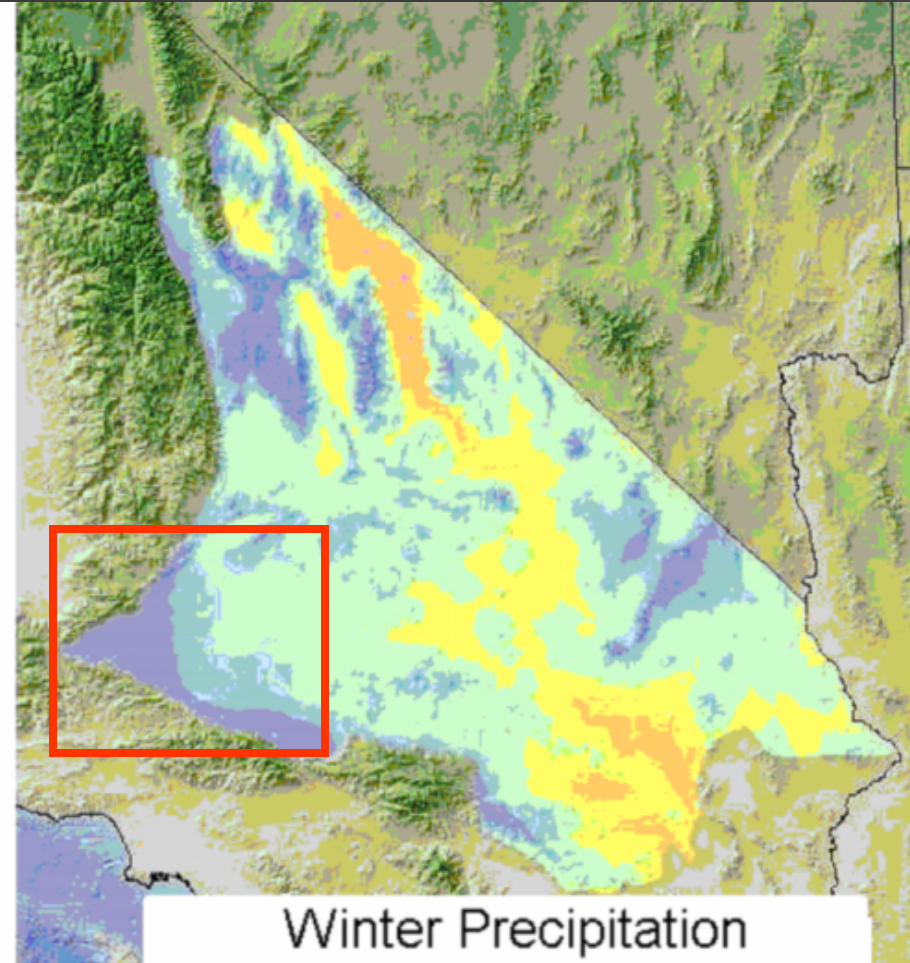
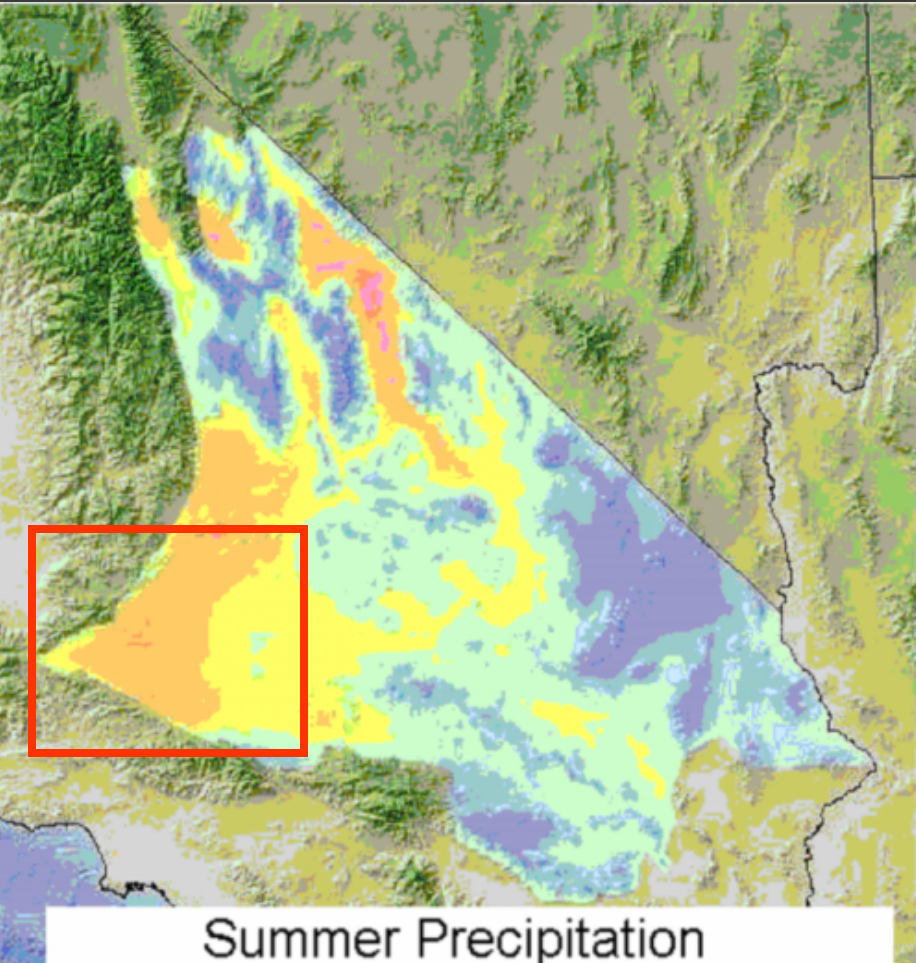
Case Study: Corridor Development and Natural Community Conservation in the Antelope Valley, Mojave Desert



Landscape Conservation concepts in range management

- ⦿ consider several scales of spatial pattern and related spatial processes
- ⦿ core concepts
 - spatial heterogeneity
 - a primary goal and helps
 - understand why a practice succeeds or fails in different areas
 - spatial pattern
 - a conservation objective
 - used to indicate critical processes that are not reflected in other measures, such as connectivity
 - spatial scaling
 - how characteristics of the landscape affect the local success of a practice
 - The effects of practices across the extent of the landscape

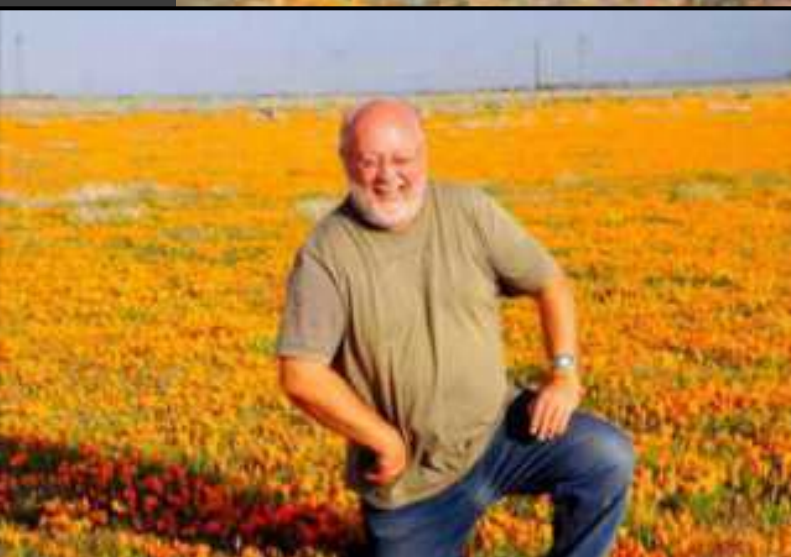
The western Mojave Desert has a Mediterranean Climate similar to that of California west of the Mountains



In the Antelope Valley, Vegetation is a mix of desert and cismontane California and does not react the same as west of the mountains



Antelope Valley has one of the best remaining reliable examples of wildflower displays due to its transitional climate, management practices, and soils



We are finding herbaceous and woody perennial persistence/recovery much more reliable than predicted based on non-desert California models



Despite past agricultural and rangeland use much of the Antelope Valley has high native species composition and does not remain weedy and beyond irreversible thresholds

