BIOLOGICAL RESOURCES

RIDGECREST SOLAR POWER PLANT

PUBLIC WORKSHOP

May 3-4, 2010

Prepared and presented by Dick Anderson

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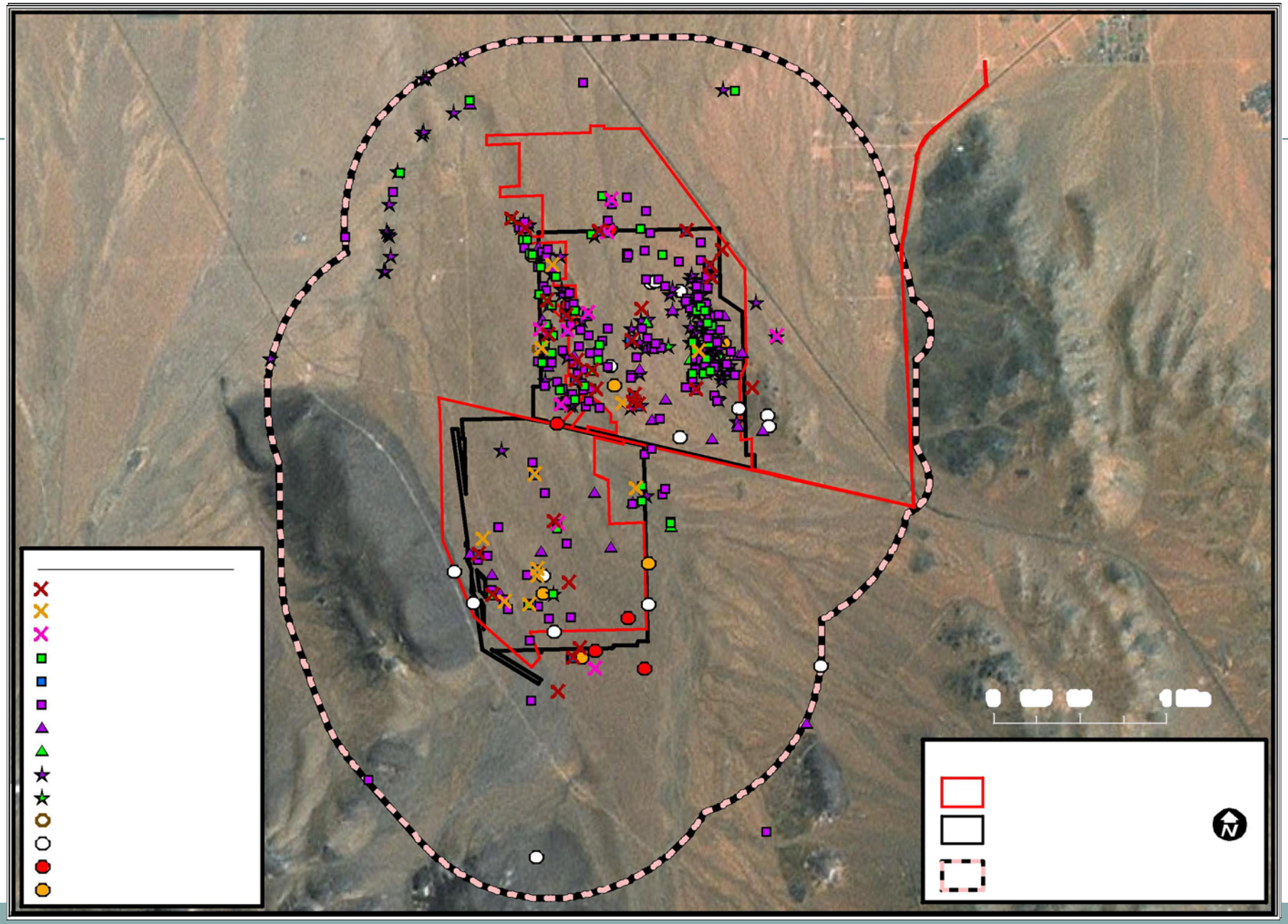
Desert Tortoise

- **HABITAT VALUE**
- **DENSITY CONFUSION**
- **RANGE-WIDE DECLINE**
- **CONNECTIVITY**
- **IMPACTS**



Desert Tortoise

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DENSITY CONFUSION

- AFC - DESERT TORTOISE DENSITY IS 9.8/SQ KM AND ESTIMATED 69 TORTOISES.
- NOW – DESERT TORTOISE DENSITY IS 8.1/SQ KM AND ESTIMATED 57 TORTOISES.
- 40 TORTOISES OBSERVED ON-SITE, 23 ADULTS, 12 JUVENILES, AND 5 THAT WERE NOT MEASURED.
- THOSE 5 COULD BE ADULTS OR SMALLER THAN ADULTS.
- DENSITY 8.1 – 9.8/ SQ KM, AND ESTIMATE 57 – 69 TORTOISES ON SITE.

Desert Tortoises Densities (USFWS 2009)

NE Mojave	Density (km²)
2001	2.4
2002	-
2003	3.7
2004	1.2
2005	1.8
2007	1.7
E Mojave	
2001	6.2
2002	4.1
2003	-
2004	5.3
2005	7.2
2007	5.8

E Colorado	Density (km²)
2001	10.1
2002	7.7
2003	4.0
2004	6.4
2005	7.9
2007	5.0
N Colorado	
2001	7.2
2002	-
2003	6.3
2004	6.9
2005	10.8
2007	4.6

Desert Tortoises Densities (USFWS 2009)

W Mojave	Density (km²)
2001	5.6
2002	5.8
2003	3.8
2004	4.4
2005	6.1
2007	4.7
Ridgecrest 2009	**8.1 - 9.8**

	Density (km²)
Ridgecrest SPP	**8.1 - 9.8**
Ivanpah SPP	**1.6 (no correction)**
	Raw Data (no correction)
Ridgecrest	**5.1** (km²)
Ivanpah	**1.6** (km²)

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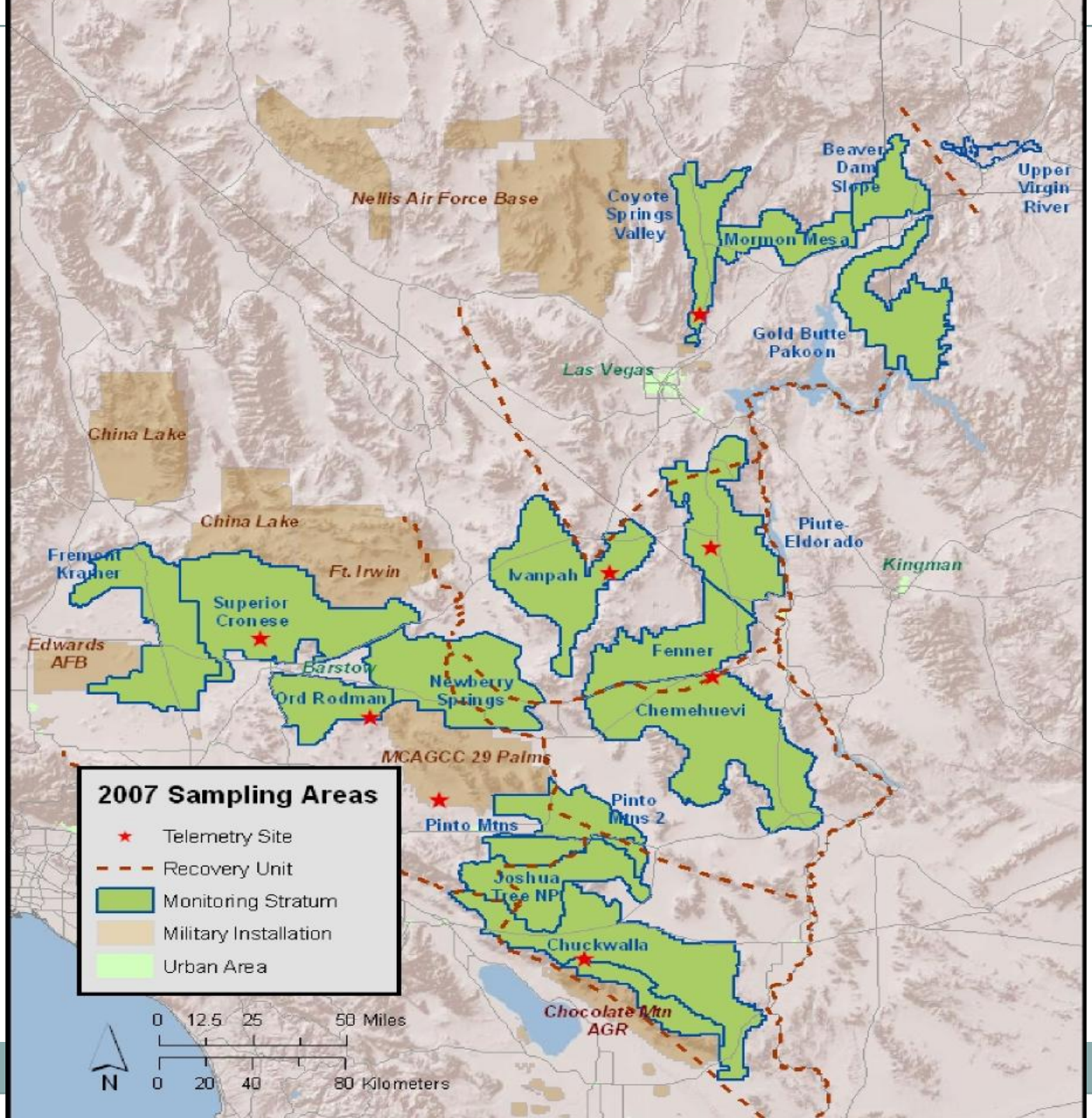
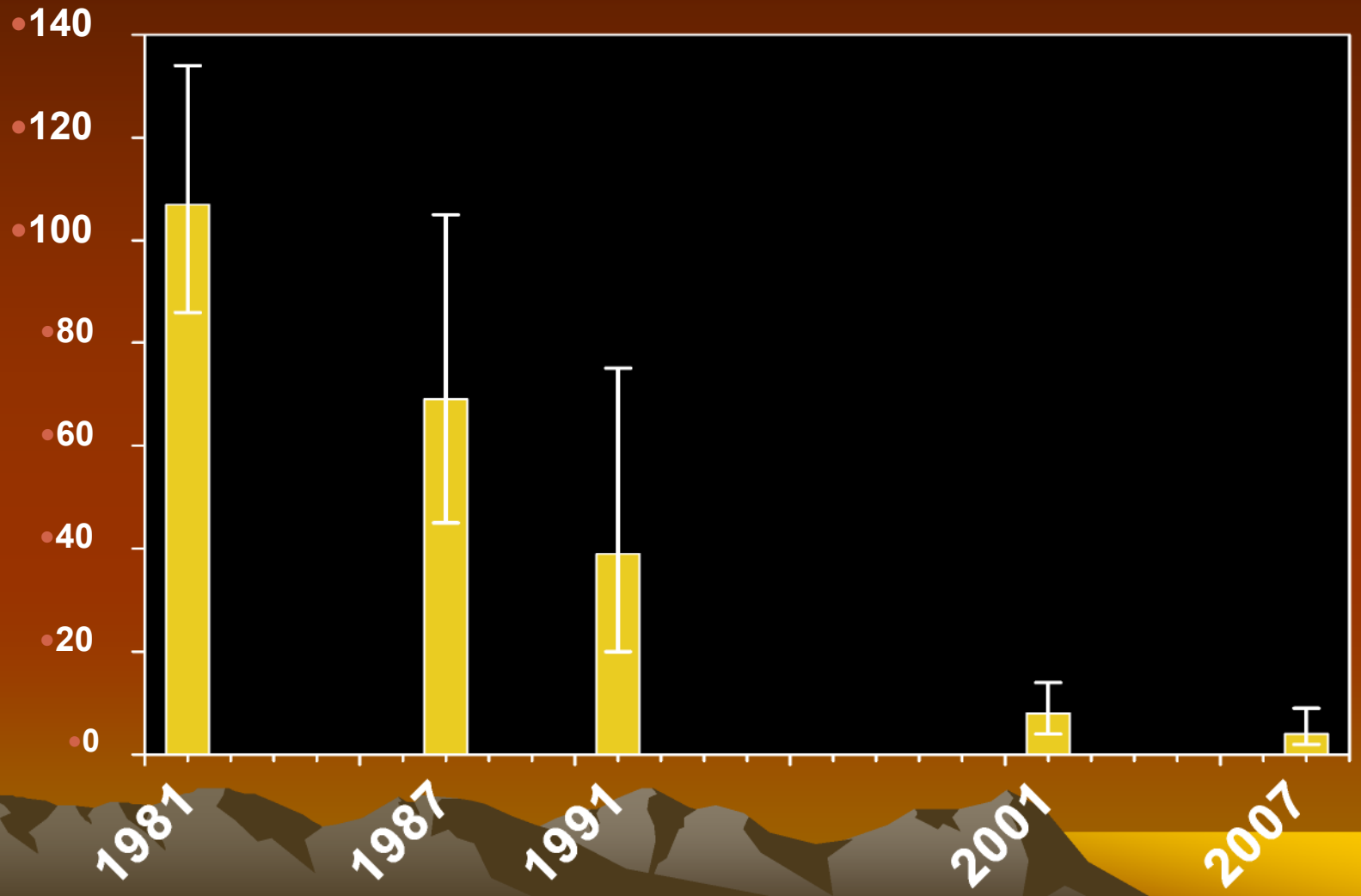

Nellis Air Force Base
Coyote Springs Valley
Beaver Dam Slope
Upper Virgin River
Mormon Mesa
Gold Butte Pakoon
Las Vegas
China Lake
China Lake
Fremont Kramer
Ft. Irwin
Superior Cronese
Ivanpah
Piute-Eldorado
Kingman
Edwards AFB
Barstow
Ord Rodman
Newberry Springs
Fenner
Chemehuevi
MCAGCC 29 Palms
Pinto Mtns
Pinto Mtns 2
Joshua Tree NP
Chuckwalla
Chocolate Mtn AGR
2007 Sampling Areas
Telemetry Site
Recovery Unit
Monitoring Stratum
Military Installation
Urban Area
0 12.5 25 50 Miles
N
0 20 40 80 Kilometers

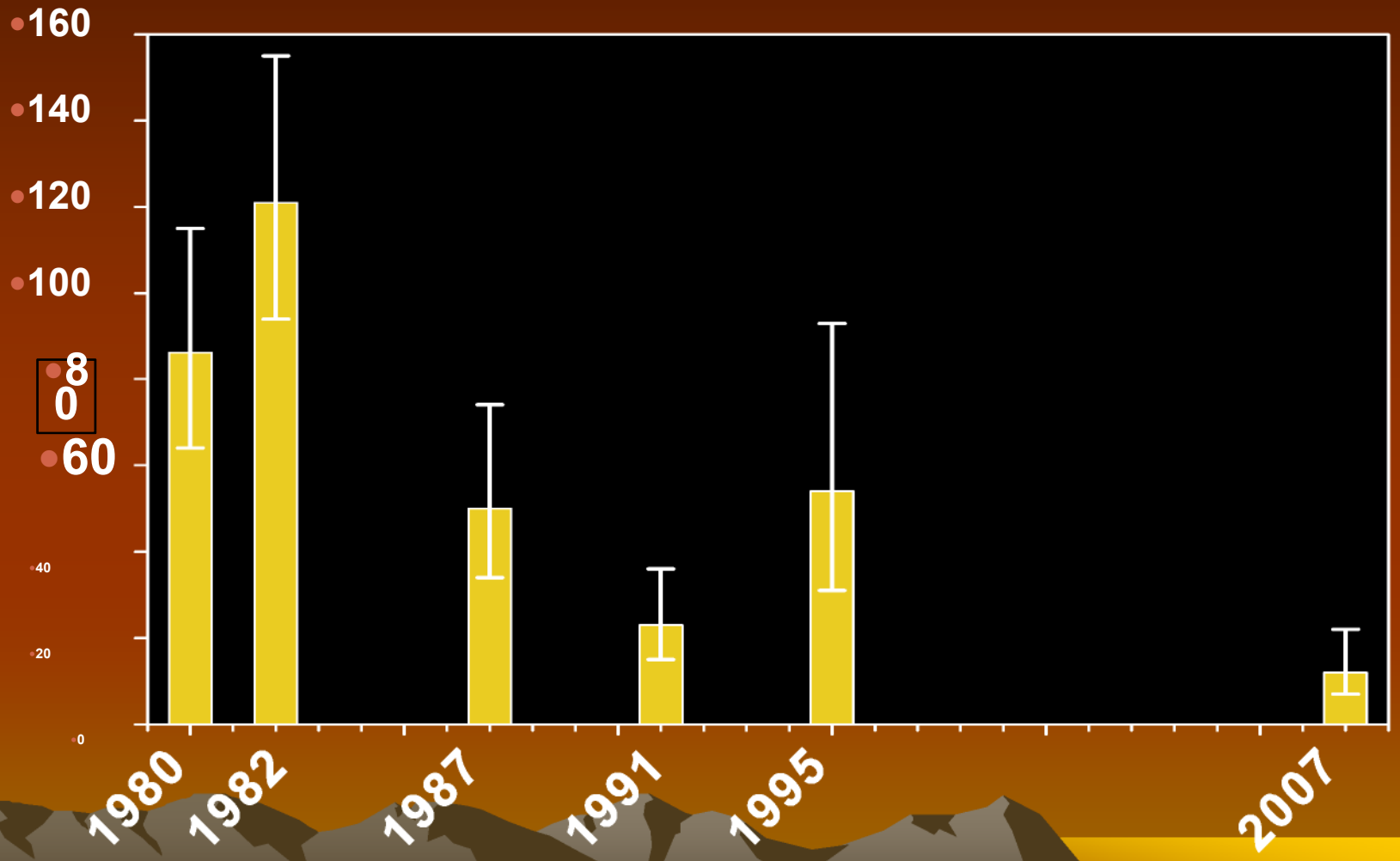
Fremont Valley— ALL sizes

- Tortoises / km^2



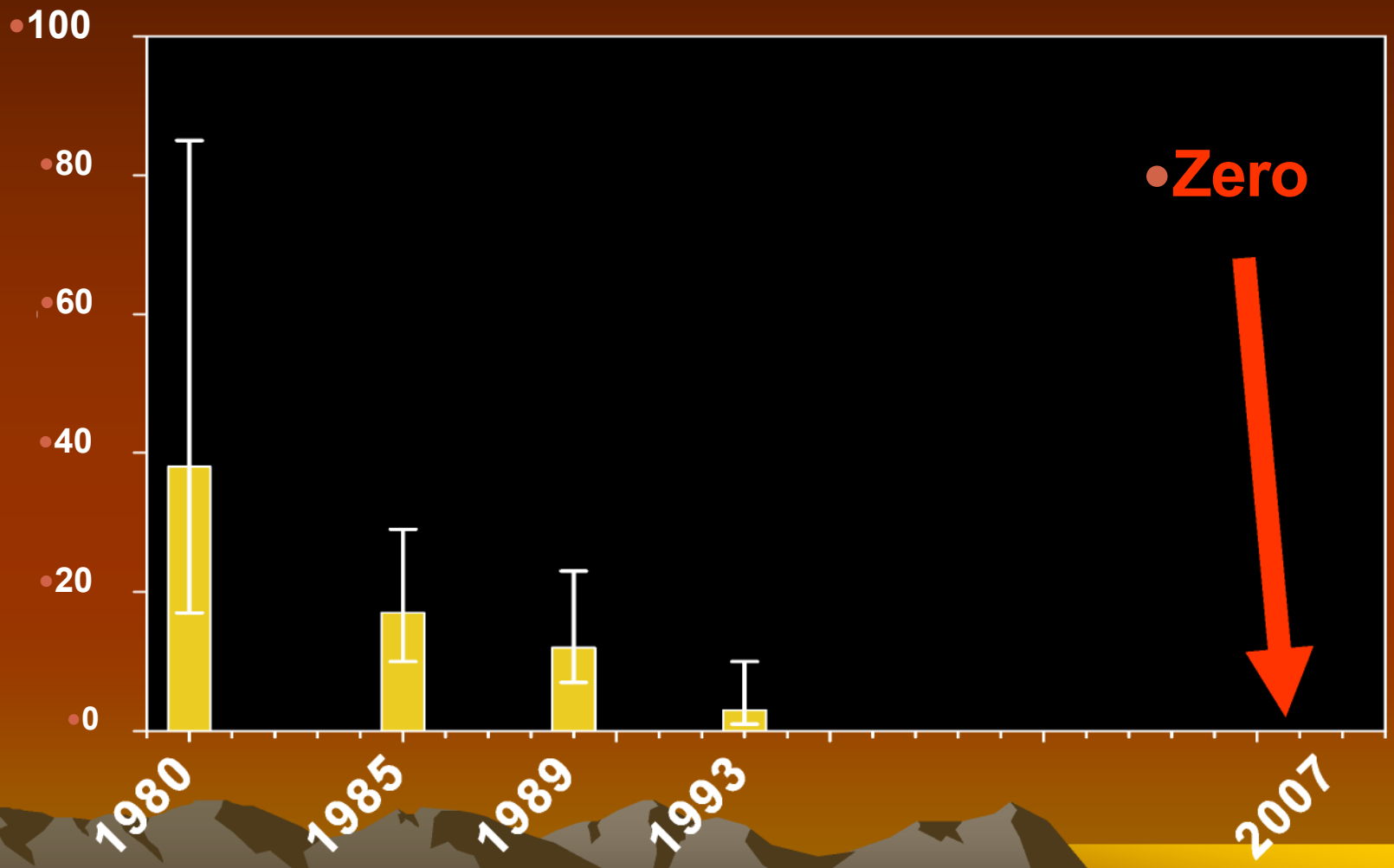
Kramer Hills— All sizes

- Tortoises / km 2



Fremont Peak— All sizes

- Tortoises / km 2



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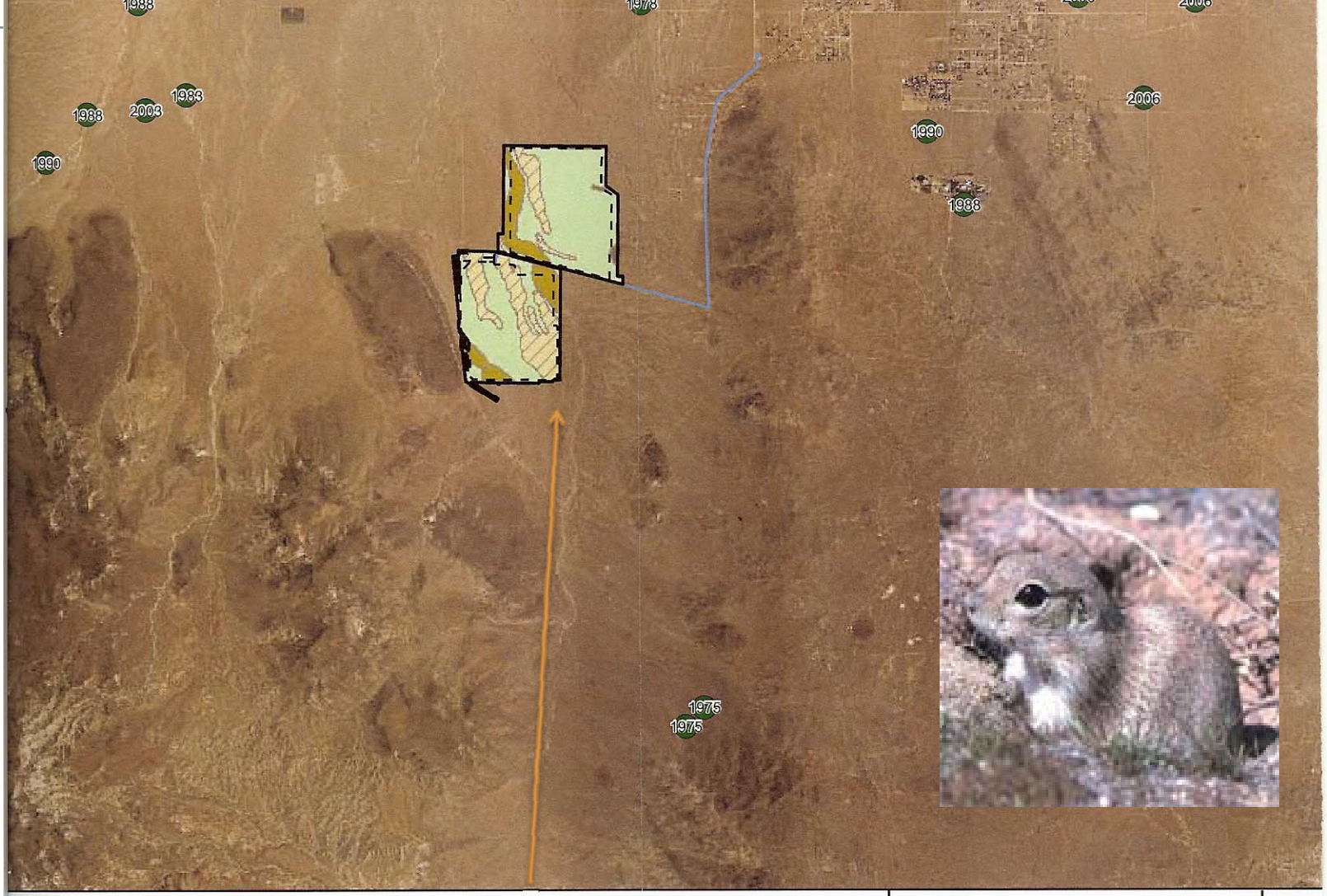
CONNECTIVITY

- These connections between populations counteract inbreeding depression by maintaining genetic connectivity.
- Ecosystems, native plants and, wildlife populations depend on habitat connectivity in order to survive. Connectivity is more than just wildlife corridors or linkages; it is the quality of a landscape which allows living things to live and move naturally. Wildlife movement is needed for many purposes, including foraging, reproduction, and migration. Wildlife populations decline when they are no longer able to move naturally, and natural movement is declining due to development and transportation infrastructure.



Mojave Ground Squirrel
Habitat Quality[1]

- High - Desert Washes and Adjacent High Diversity Creosote Bush
- Medium - Low Diversity Creosote Bush
- Low - Monotypic Creosote Bush
- Unsuitable - Rocky Terrain

2009

[1] NOTE: Vegetation descriptions for the purposes of MGS habitat quality does not correspond to mapped vegetation communities

N
W E
S

1 inch = 8,333 feet

0 8,333 16,666 Feet

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IMPACTS

- Direct impacts---Loss of all habitat and many individual species. Site lost forever (30-50 years). Significant impacts.
- Indirect impacts--- affects of surrounding area- lights, noise, water, human activity, road kills, increased OHV use, increase in predators---surrounding area out to 100 m - .5 km will be affected. Significant impacts.
- Cumulative impacts significant. Continued fragmentation of habitat, loss of some connectivity. Will affect long-term survival of species.
- It is not just the acres of habitat and the number of DTs that will be lost if the project is built, but it is the loss of a high value physical site for DT.
- ***Solution -*** Select Alternative Brownfield Site.