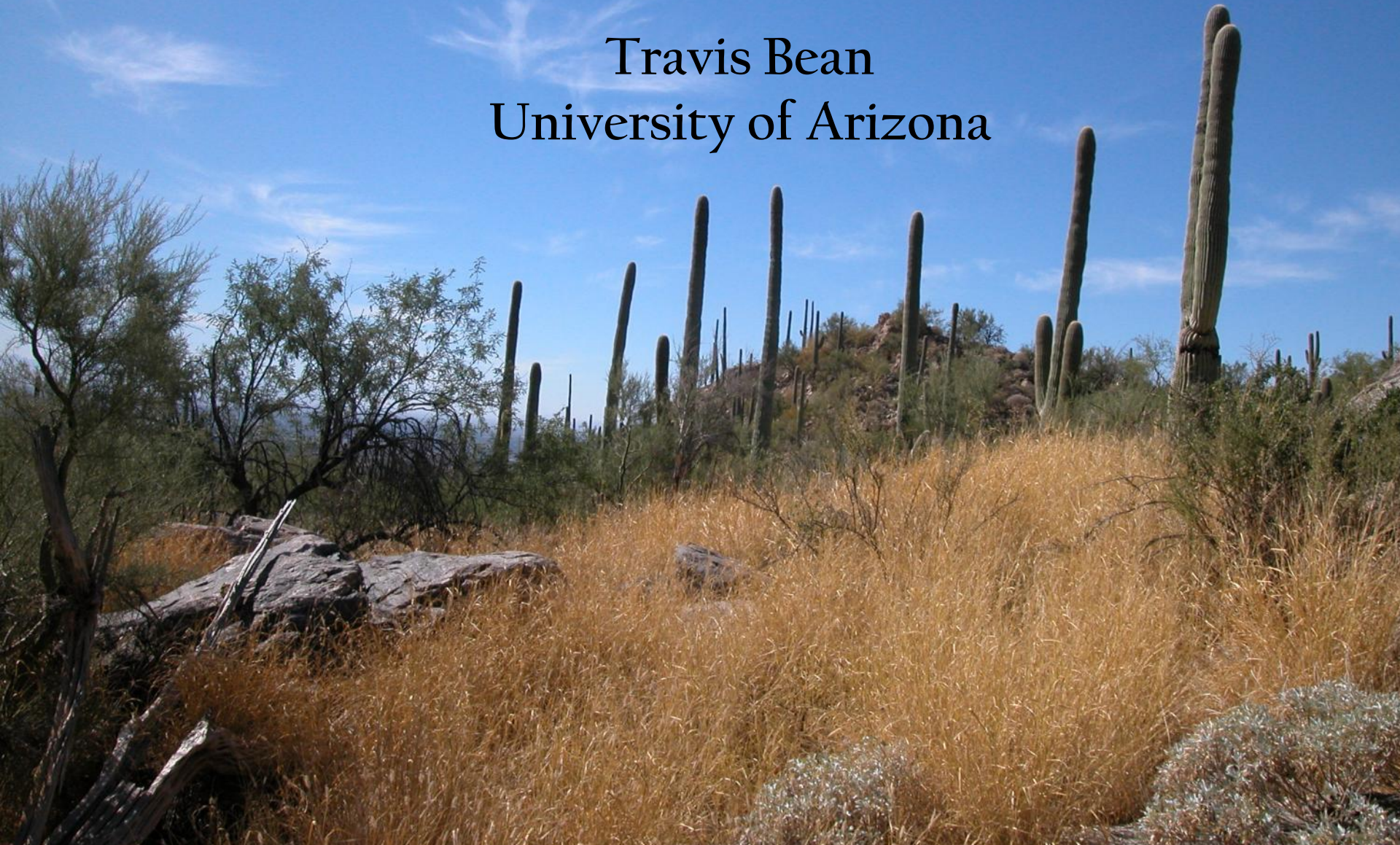


Integrated Buffelgrass Management: What Works & What's Needed

Travis Bean
University of Arizona



Obstacles to effective management

- Already entrenched in many areas
- Rapid rate of spread
- Inaccessibility of many infested areas
- Cross-jurisdictional
- Short, seasonal time window for control
- No trained labor force for control
- No comprehensive mapping/monitoring effort

Buffelgrass patches on South slope of Catalina Mts. & in subdivisions rapidly coalescing





Buffelgrass invasion rates must be taken into account



1996



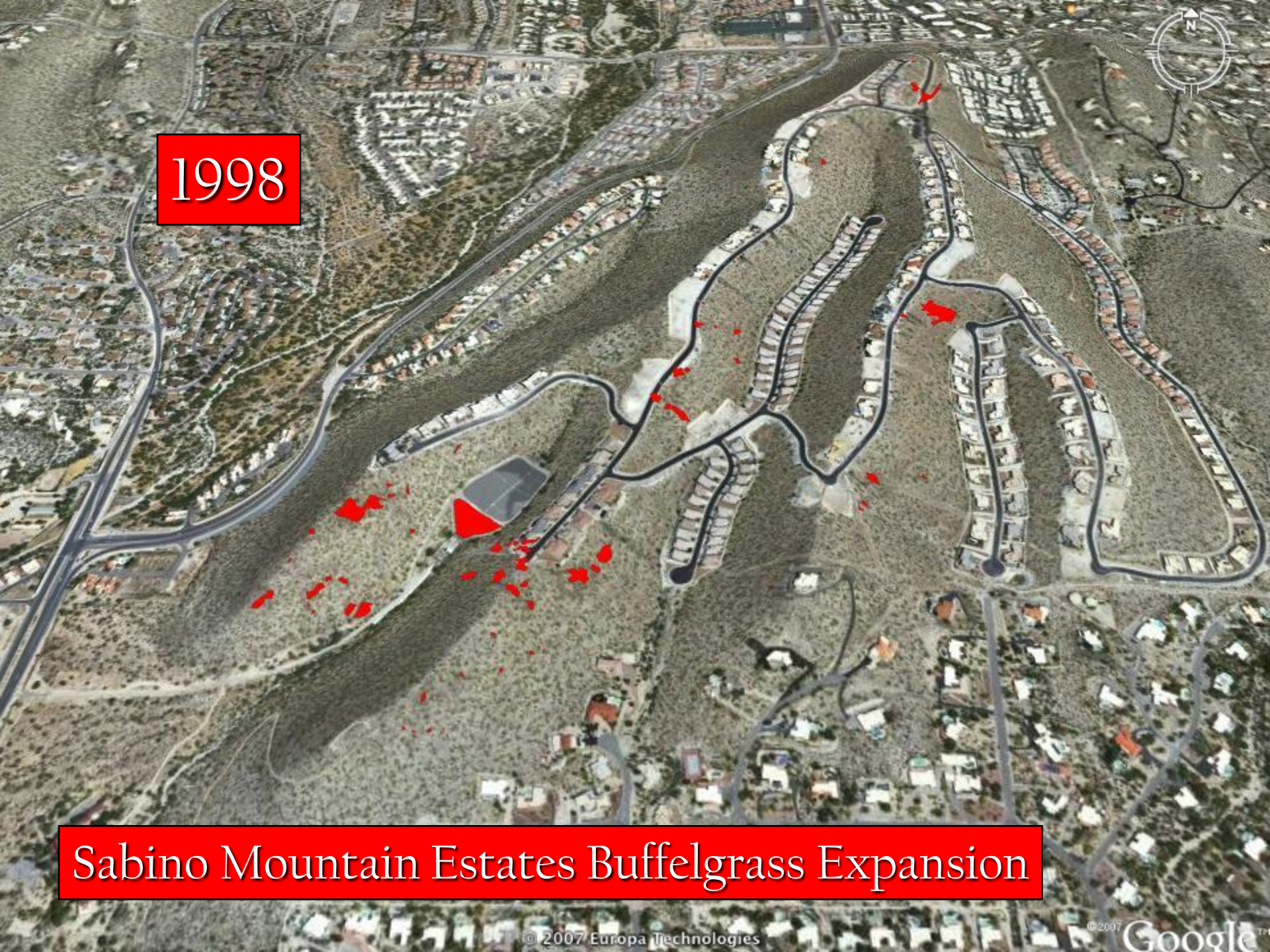
buffelgrass



Sabino Mountain Estates Buffelgrass Expansion

1998

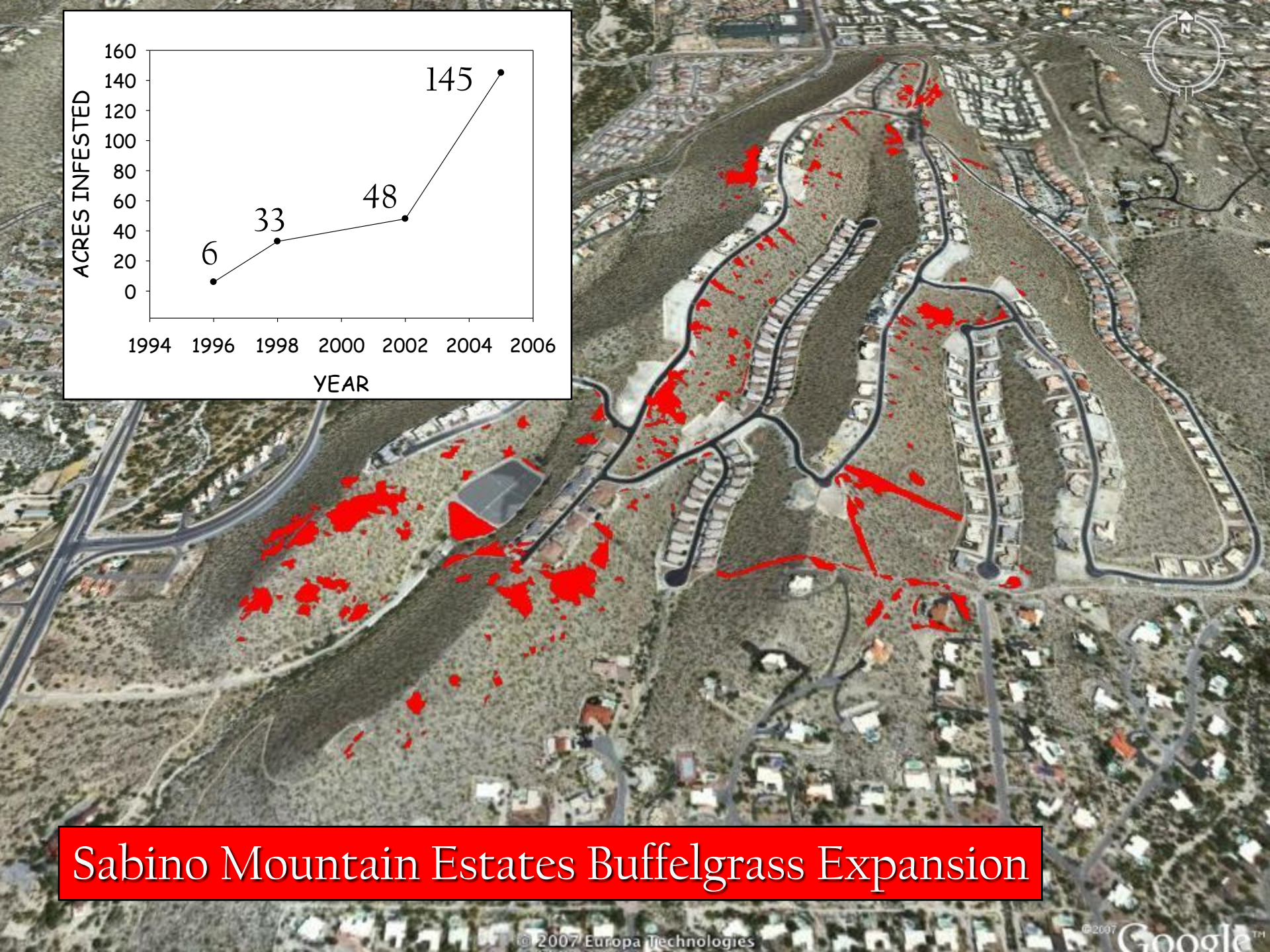
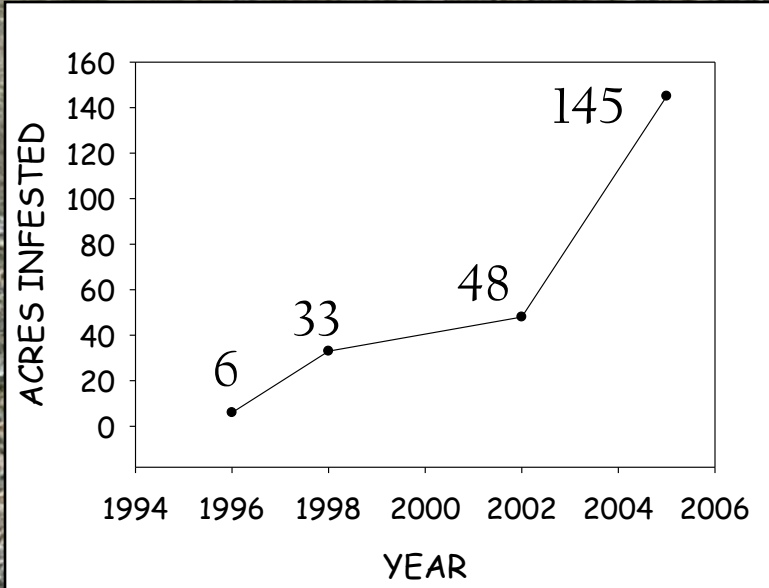
Sabino Mountain Estates Buffelgrass Expansion



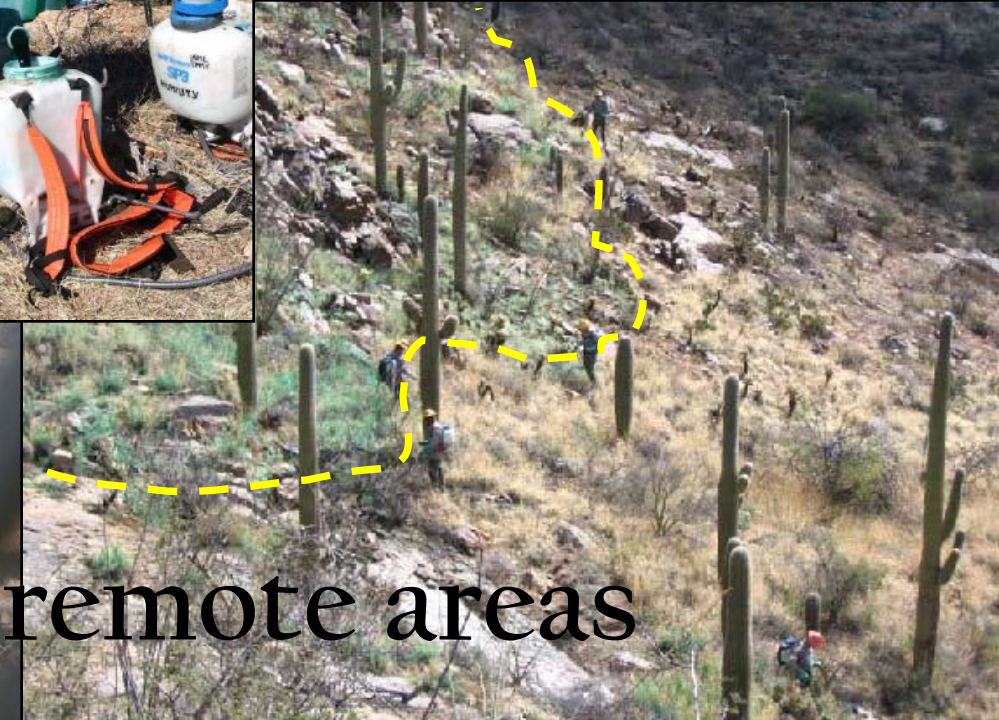
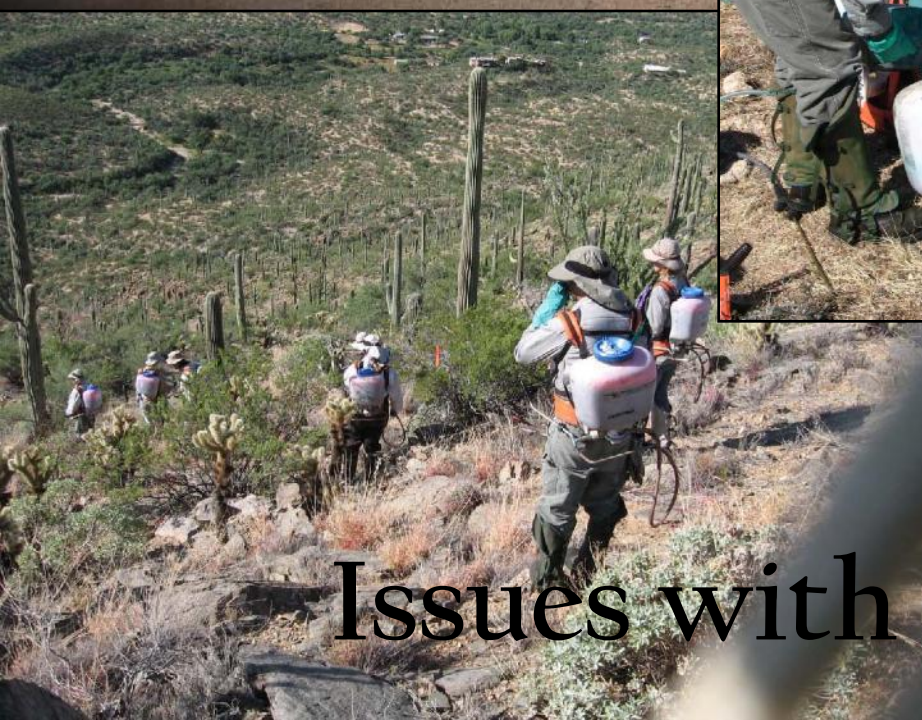
2002



Sabino Mountain Estates Buffelgrass Expansion



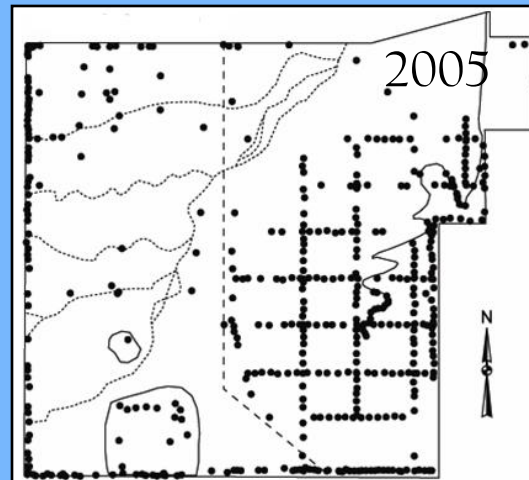
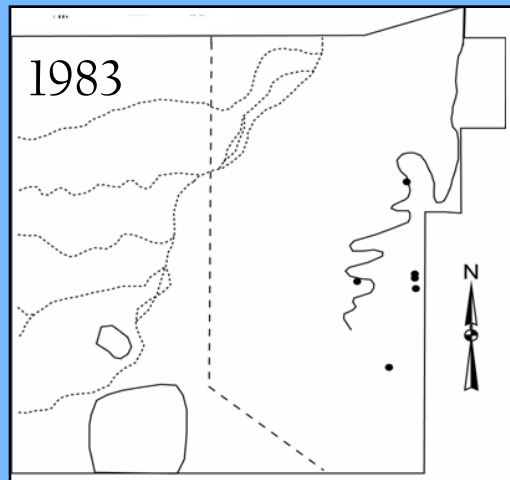
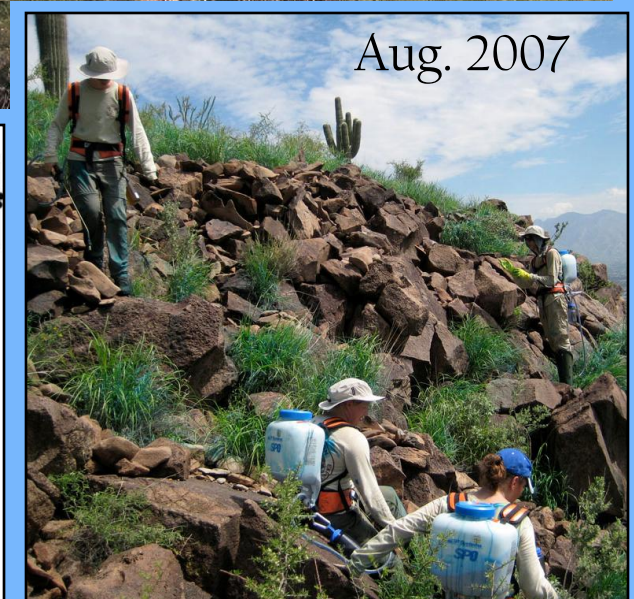
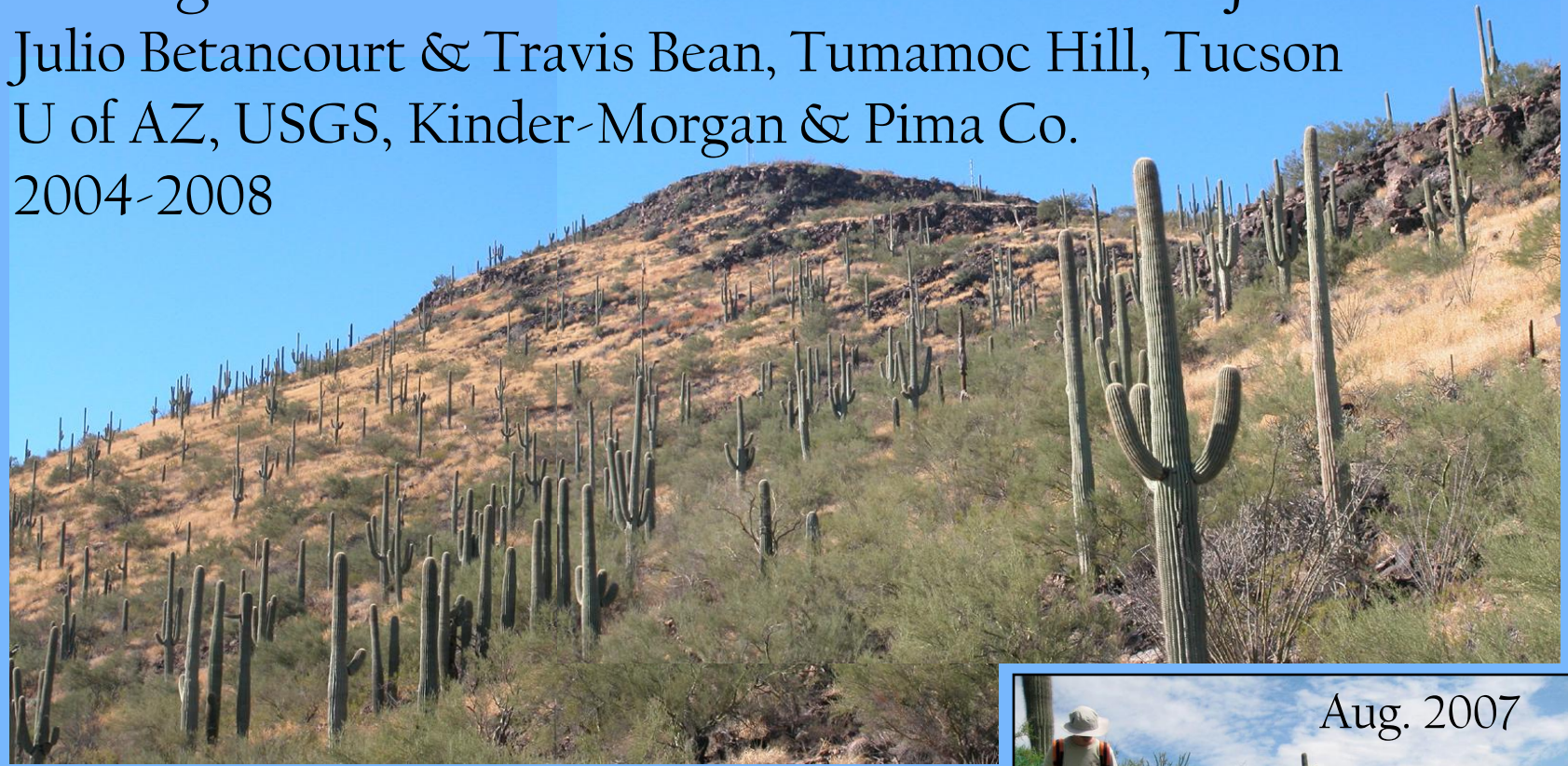
Sabino Mountain Estates Buffelgrass Expansion



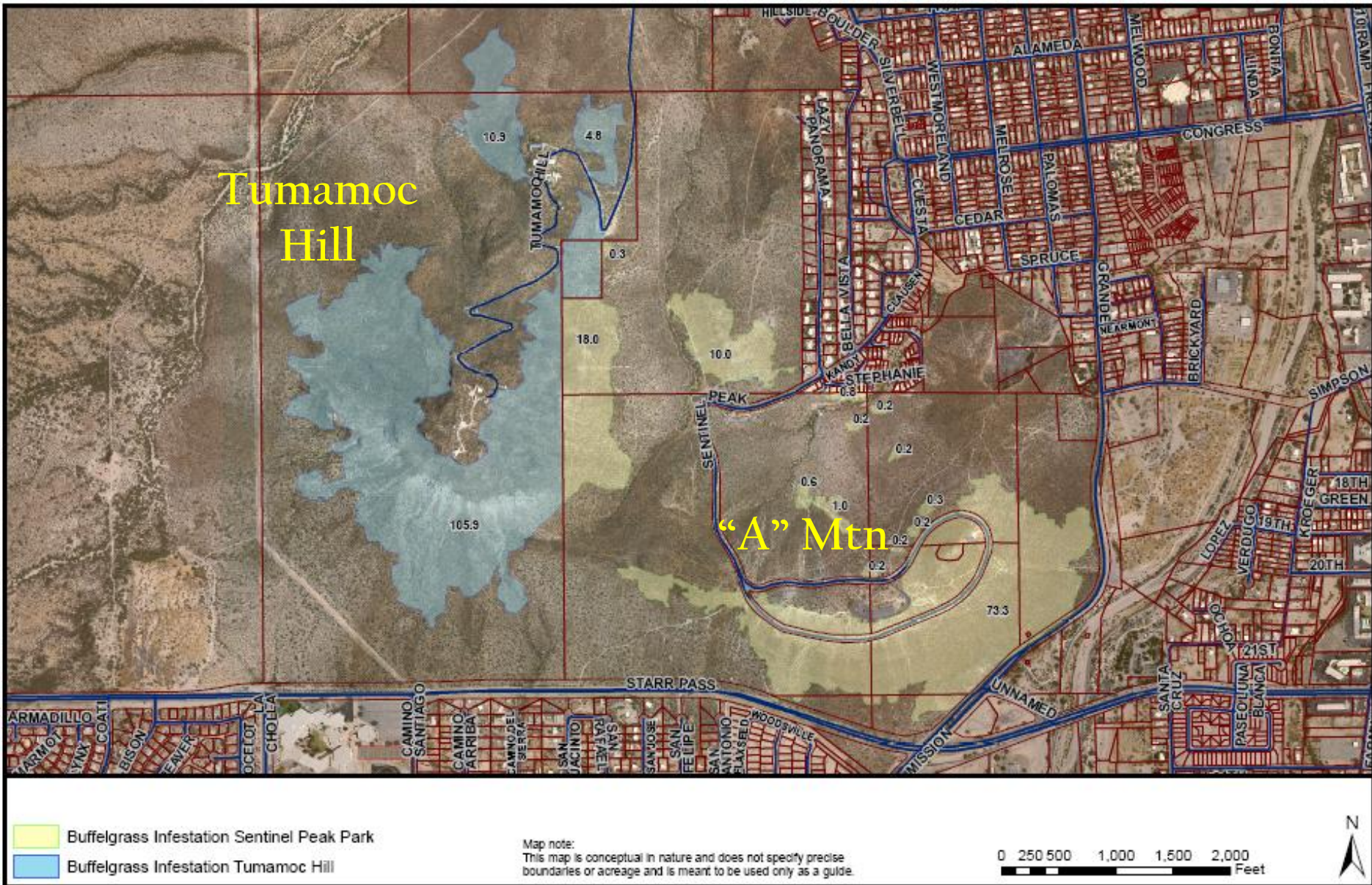
Issues with remote areas

Buffelgrass Outreach & Demonstration Project

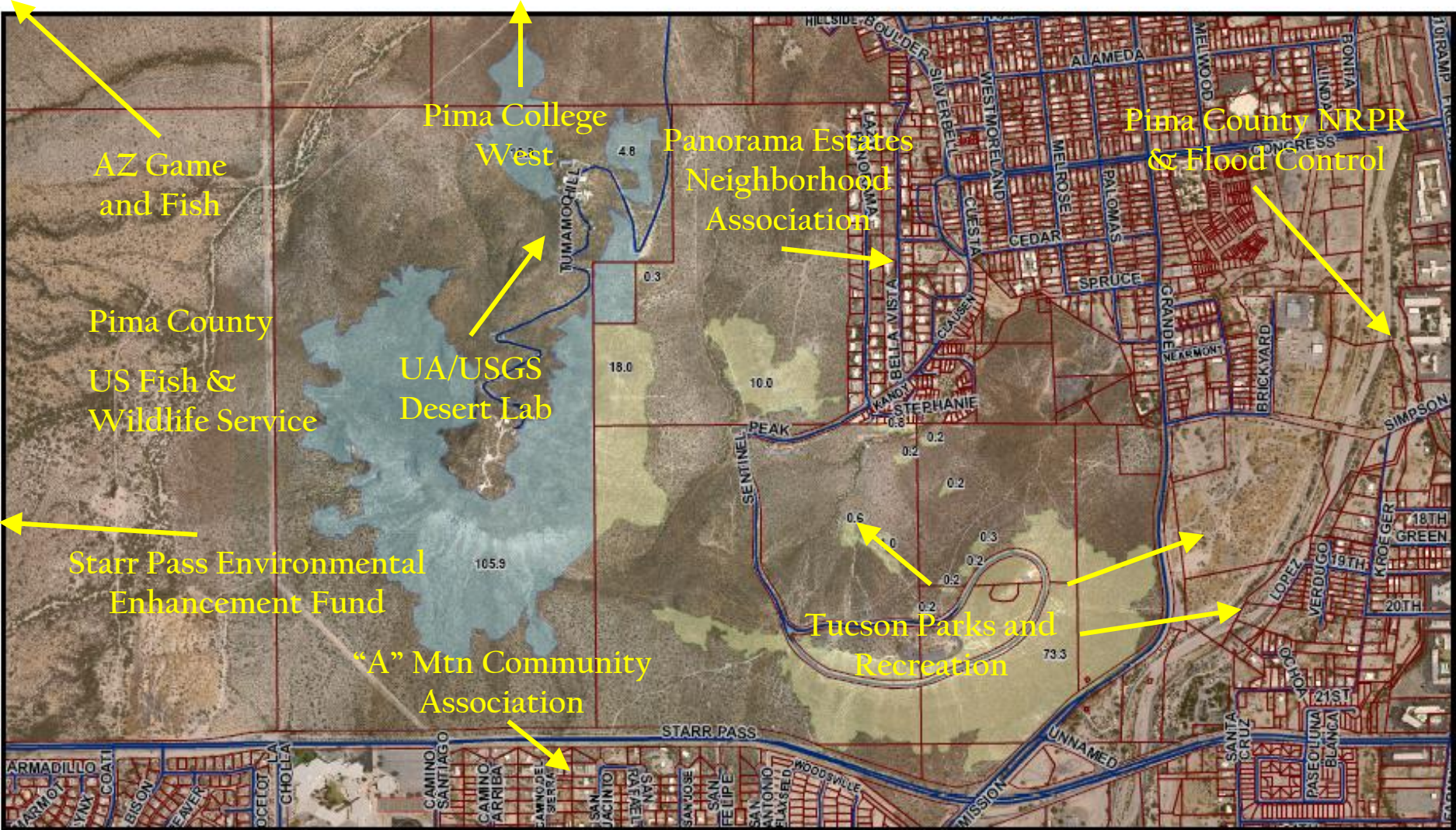
Julio Betancourt & Travis Bean, Tumamoc Hill, Tucson
U of AZ, USGS, Kinder-Morgan & Pima Co.
2004-2008





Buffelgrass Control on Tucson's West Side




A Cooperative Effort With:

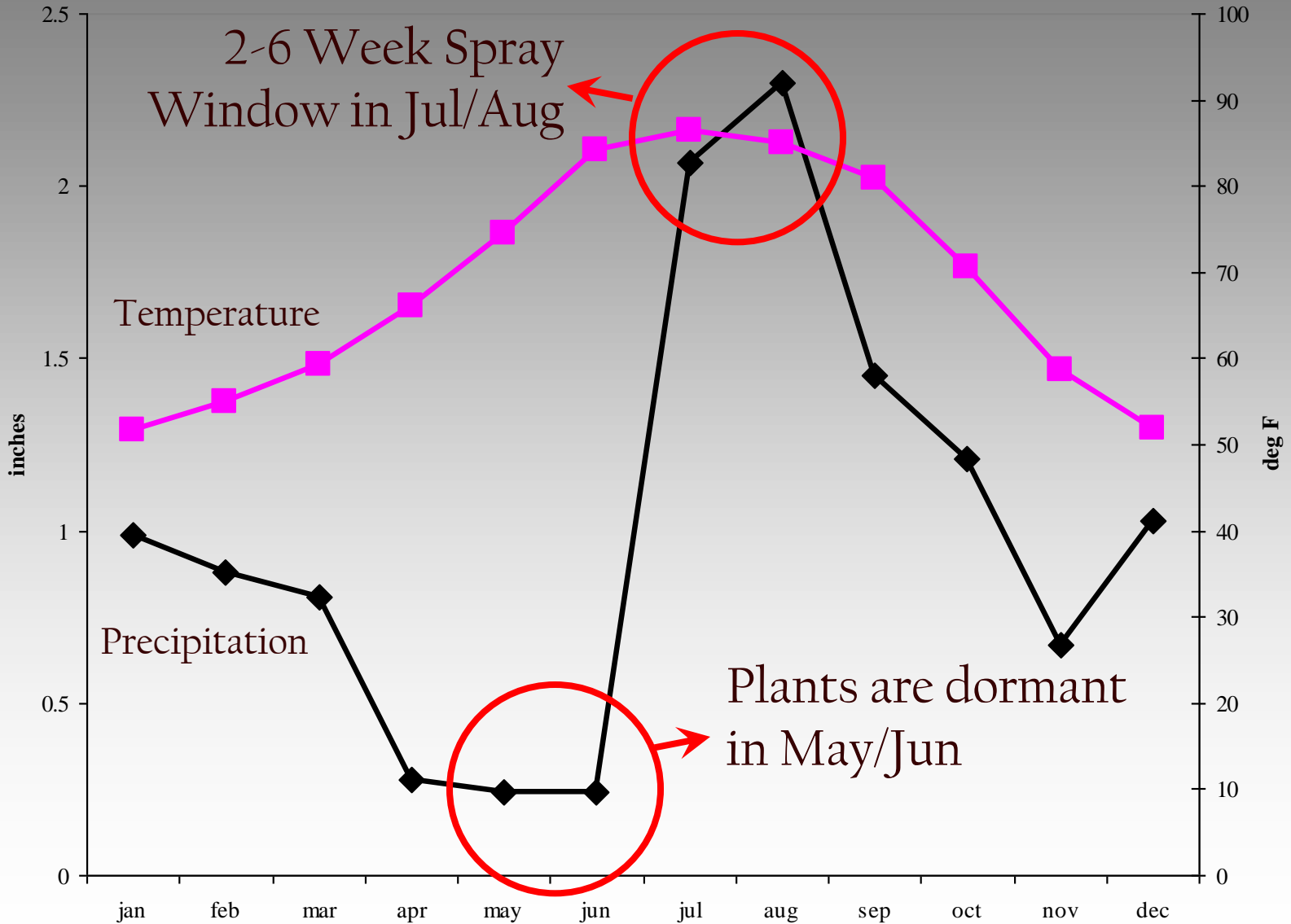


 Buffelgrass Infestation Sentinel Peak Park
 Buffelgrass Infestation Tumamoc Hill

Map note:
This map is conceptual in nature and does not specify precise boundaries or acreage and is meant to be used only as a guide.

0 250 500 1,000 1,500 2,000 Feet


Seasonal Predictability of Buffelgrass Phenology: only 2 “givens”





Dormant 9 months
of the year (not
susceptible to
herbicides)

← October-June

July-September →



Common Mistakes made by Landscapers

- Confusing native vegetation for buffelgrass
- Buffelgrass can only be hand-pulled when the ground is soft
- Cutting buffelgrass as a stand-alone control measure
- Post-emergent herbicides are only effective at the height of active growth (green-up)
- Not being prepared for green-up 1-2 weeks after rain
- Pre-emergent herbicides are still being evaluated for buffelgrass control, no luck yet...
- No follow-up

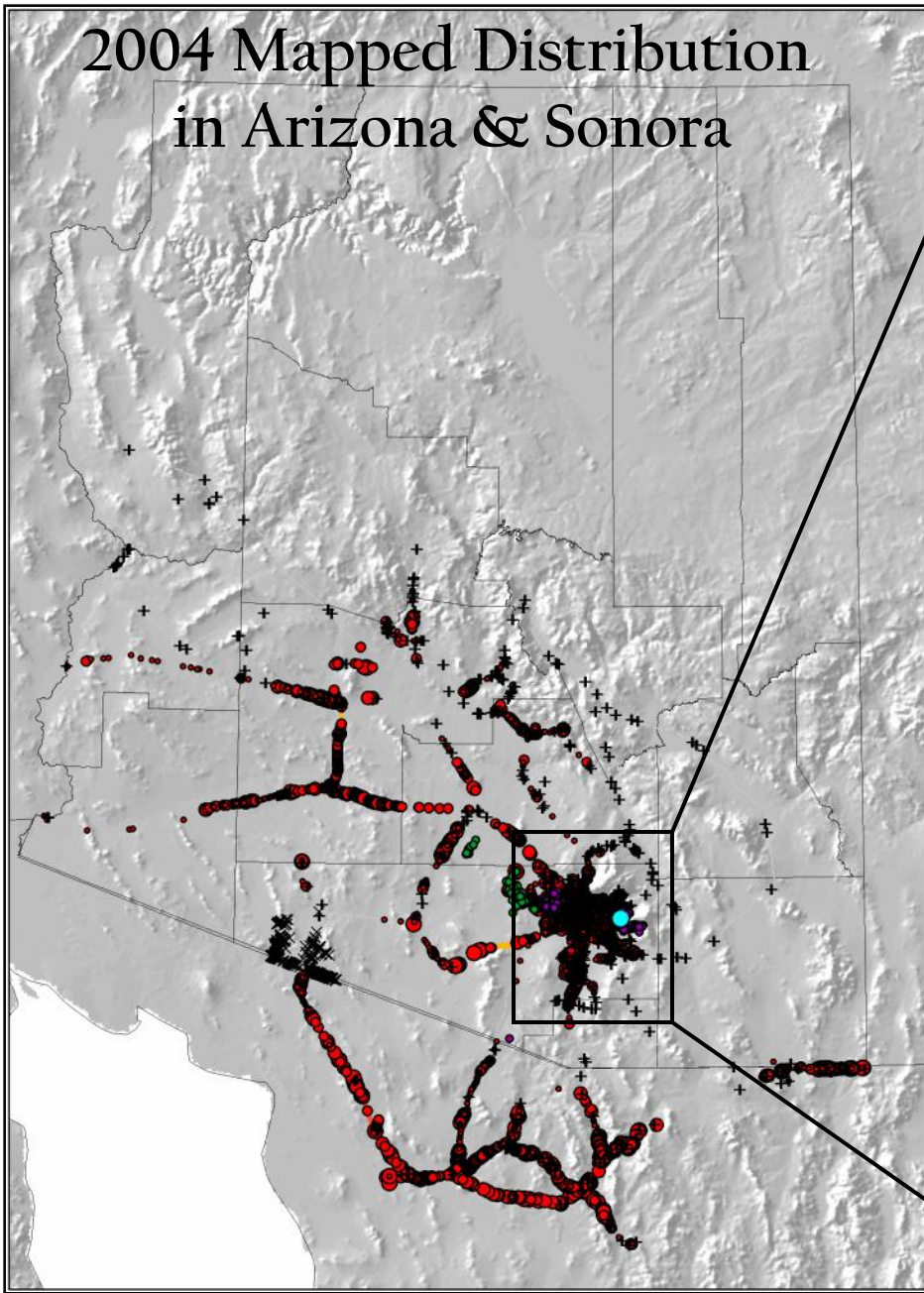
Much different than conventional
landscaper work



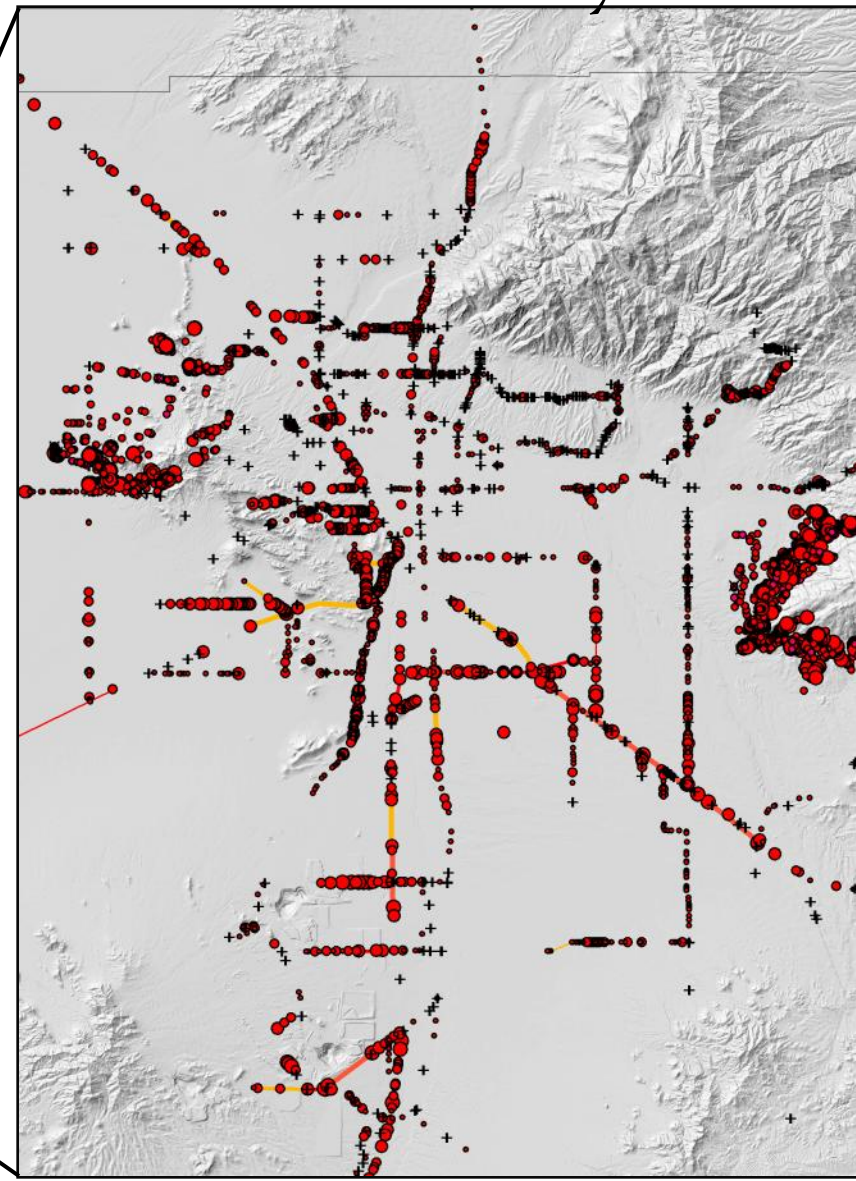
Conservation Corps groups provide
best labor source so far



2004 Mapped Distribution in Arizona & Sonora

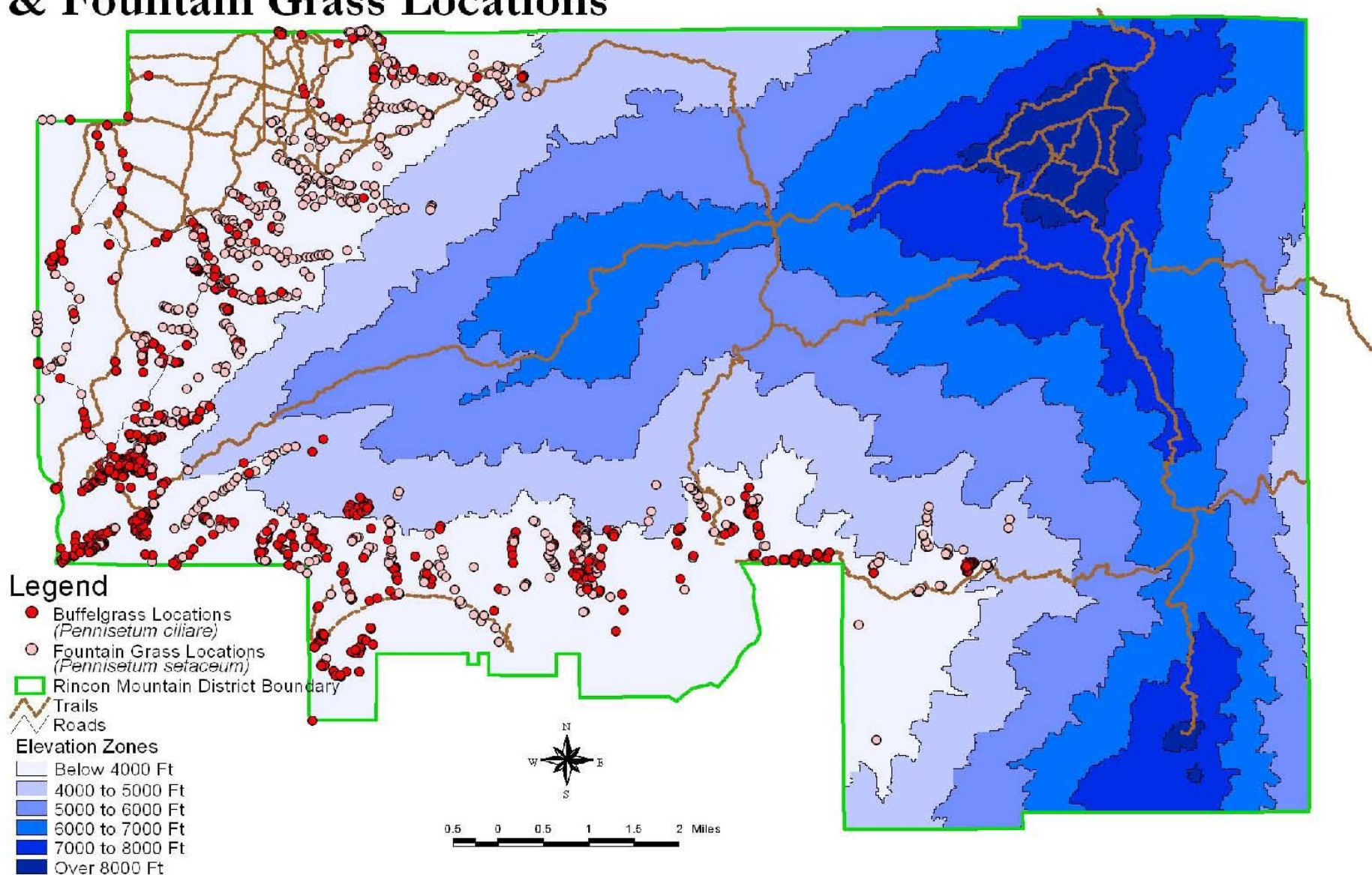


Pima County



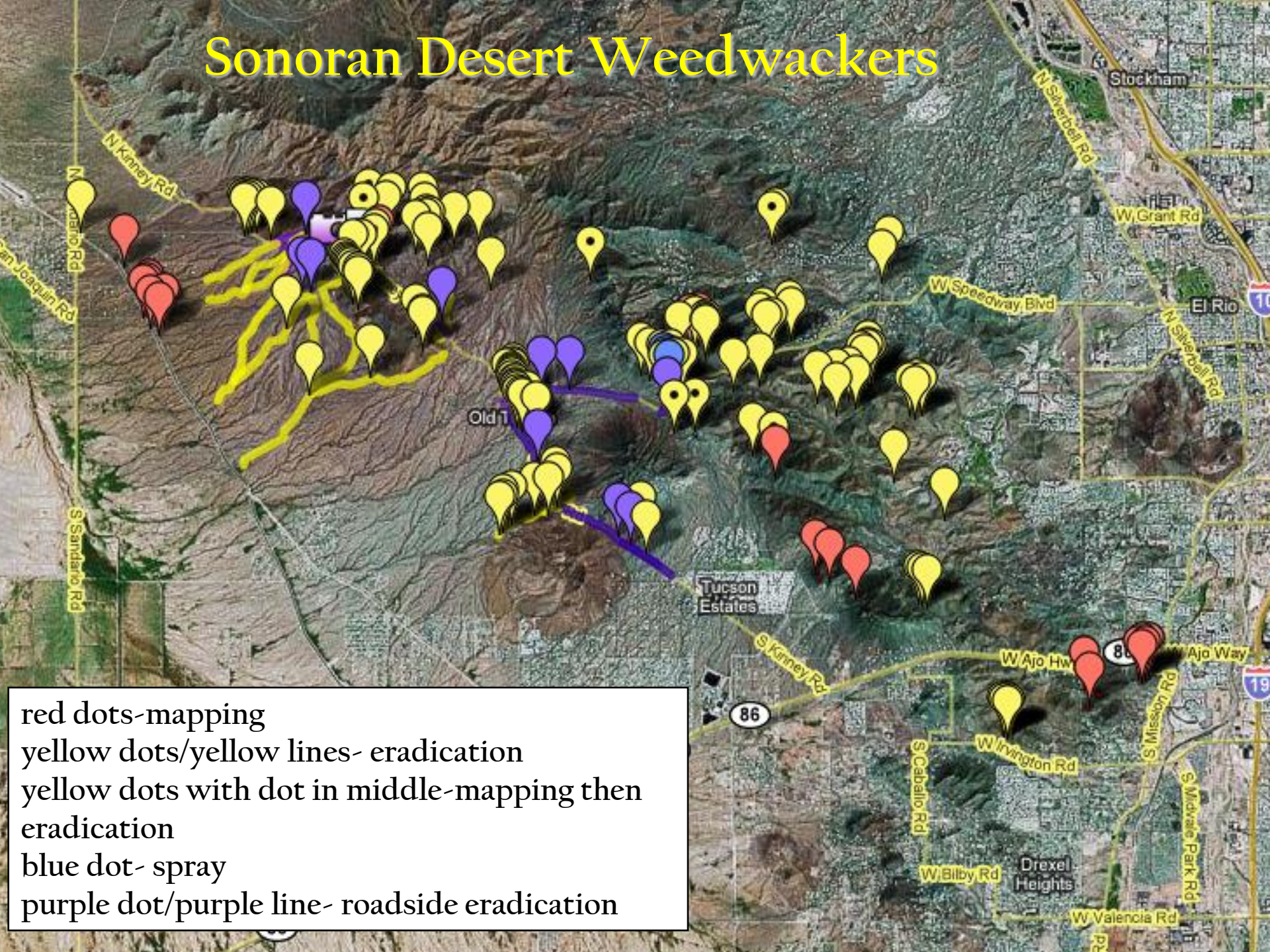


Rincon Mountain District Buffelgrass & Fountain Grass Locations



- Legend**
- Buffelgrass Locations (*Pennisetum ciliare*)
 - Fountain Grass Locations (*Pennisetum setaceum*)
 - Rincon Mountain District Boundary
 - Trails
 - Roads
- Elevation Zones**
- Below 4000 Ft
 - 4000 to 5000 Ft
 - 5000 to 6000 Ft
 - 6000 to 7000 Ft
 - 7000 to 8000 Ft
 - Over 8000 Ft

Sonoran Desert Weedwackers



red dots-mapping
yellow dots/yellow lines- eradication
yellow dots with dot in middle-mapping then eradication
blue dot- spray
purple dot/purple line- roadside eradication

What's needed: Regional Coordination

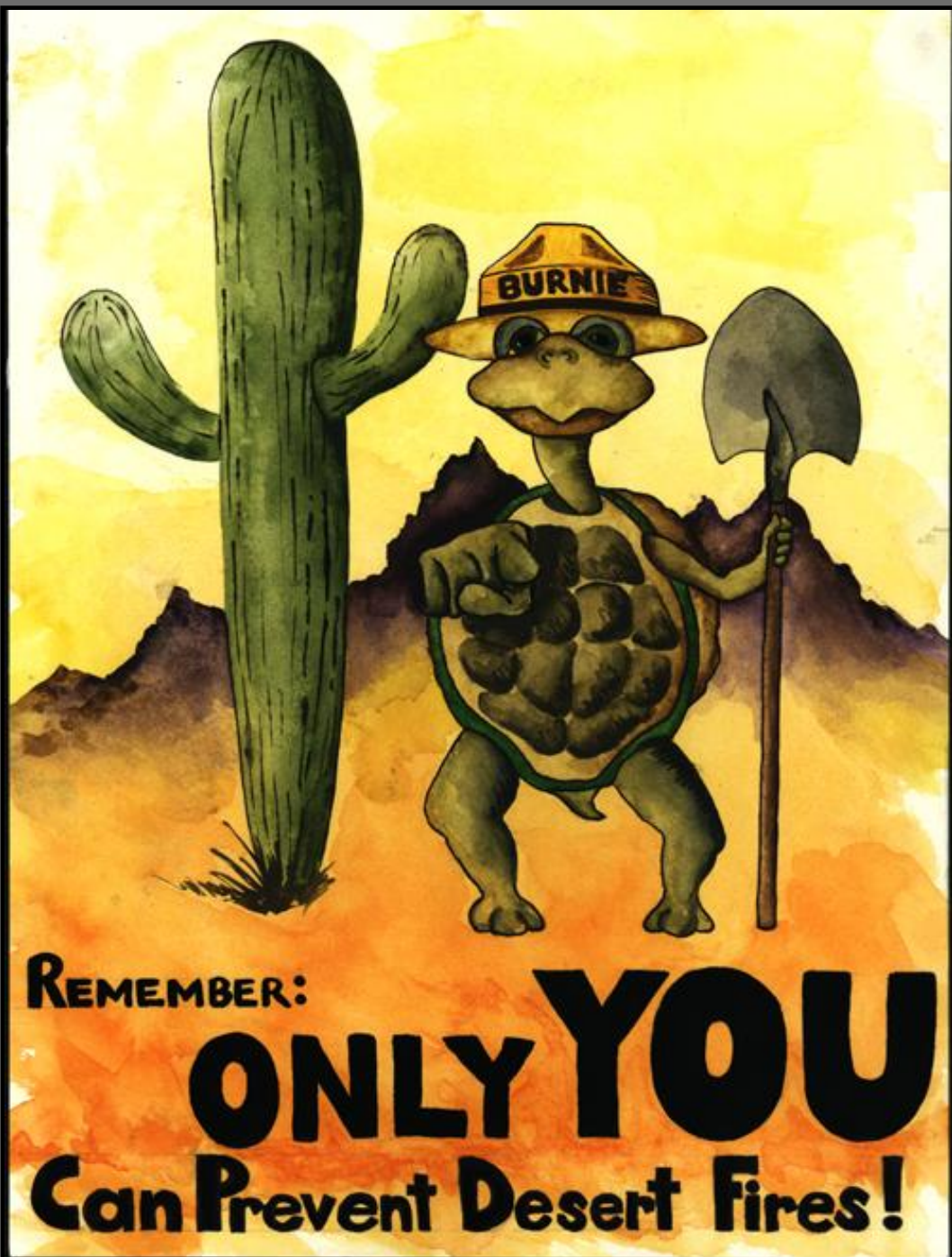
- Informational Clearinghouse
 - Mapping & Inventory Data
 - Treatments
 - Research (Results & Gaps)
 - Policy
- Resource and Learning Center
 - Volunteers
 - General Public
 - Media (Public Campaigns)
- Demonstration & Rapid Response Teams
 - Provide expertise
 - Demonstration plots
 - Research treatment options
 - Seasonal crews
 - Rapid mobilization
- Fiduciary Agent
 - Public & Private Funds
 - Donations
 - Grant Management

Buffelgrass Science Needs

- Remote Sensing & Mapping
- Economic analysis
- Restoration after treatment or fire
- Effects of Herbicides
- Phenological Models
- Seed Bank & Dispersal Ecology
- Impact on rare spp. & critical habitat
- Decision Support Systems
- Eradication Treatment Experiments
- Soil Nutrient Dynamics
- Genetic studies
- Biocontrol

Travis Bean
520.621.8589
bean@email.arizona.edu
buffelgrass.org





Travis Bean

520.621.8589

bean@email.arizona.edu

buffelgrass.org

*Image © Acacia
Betancourt*