

Native Plant Restoration as an Invasive Grass Management Tool

Tony Falk, Forrest Smith, Dr. Timothy Fulbright
and Steve Benn



Why do restoration

- Spend millions on invasive species control and eradication
- Many rangelands are degraded
 - Over grazed, Brush Manipulation, Changes in disturbance, and changes in land use
- In many of these cases native species are absent
- Makes natural revegetation unlikely

- Leaves a void
- Open to reinvasion
- Until recently no locally adapted native seed
- Currently several projects underway to test the competitive ability of locally adapted native seed

Single species planting

- Laredo, TX.
- Previously buffelgrass
- Areas were deep disked several times
- Single species planted
- Goal to determine most competitive grasses for restoration of buffelgrass dominated sites



Conclusions

- Early successional grasses most competitive 1-2 yrs after planting
- Plots reinvaded from surrounding population by 3 yrs., sooner if immediate cover not obtained
- Little to no native seed bank
- Several species were seasonally competitive

Slender grama



Short spike windmillgrass



3 species with herbicide

- Benavides, TX
- Previously buffelgrass
- Sprayed with arsenal[®] (1.34 L ai/ha)
- Seeded with three species
 - Four flower trichloris, short spike windmillgrass, silver bluestem

Conclusions

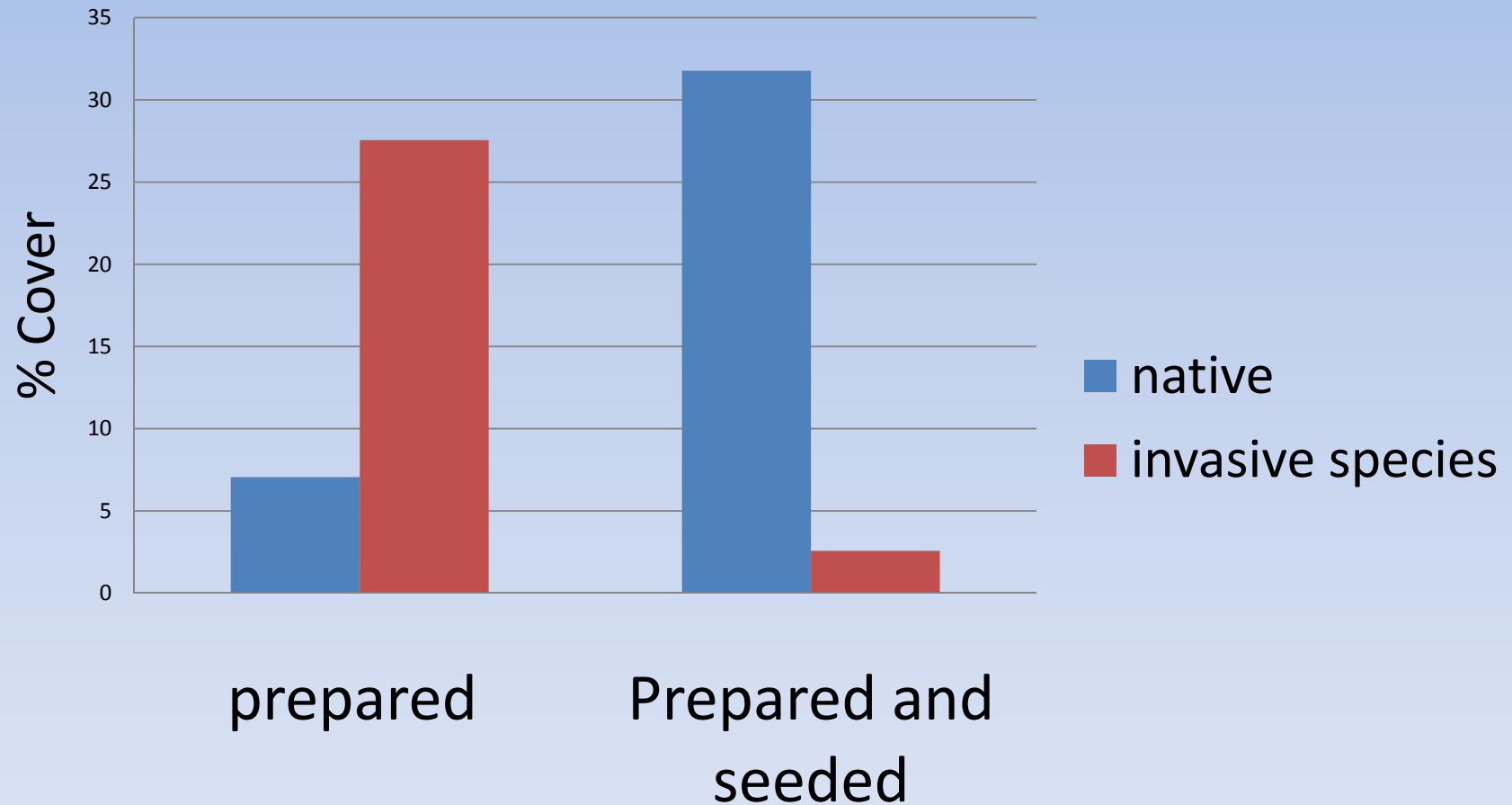
- Only short spike windmillgrass established
- Germination did not affect buffelgrass cover
- Spraying allowed for establishment
- No long term persistence

Diverse Species planting

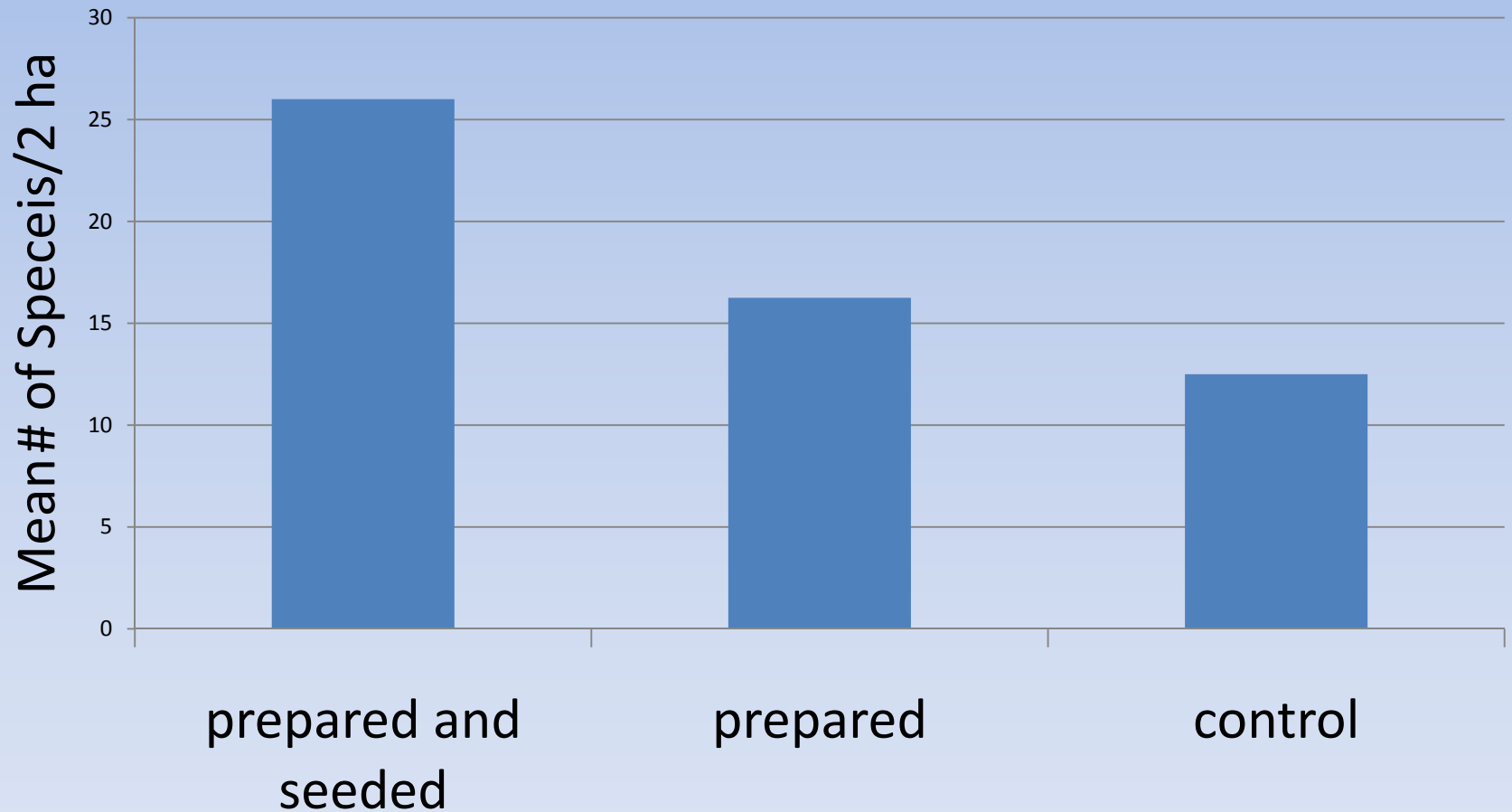
- Donna, TX
- Previously dominated by Old World Bluestems
- Intensive land preparation
- Seeded with 31 native species



Mean % Canopy Cover of Perennial Natives and Invasive Grasses 19 months after seeding

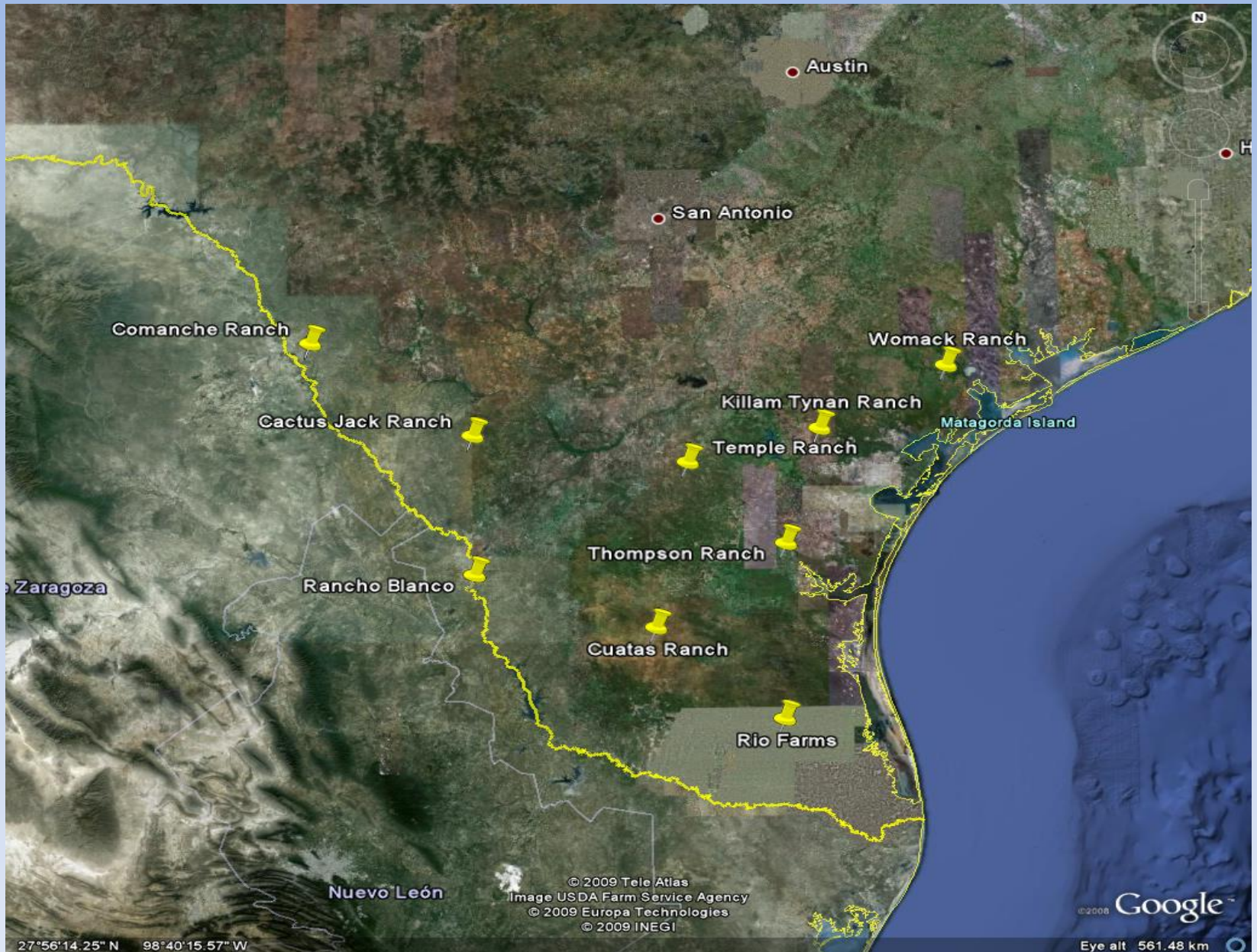


Mean Species Richness 19 Months After Planting



Diverse Species Plantings

- Plantings through out South Texas
- Each made up of multi-species seed mixes
 - 12 species mix
 - Total should be available in 3 years
- Different soil types, rainfall patterns, and invasive species



Demonstration Planting Thompson Ranch

September 2008

May 2009



Las Cuatas Ranch



What have we learned

- Restoration is a process not an event
- Anything you can do to reduce seed bank is good
 - Chemical
 - Cover crops
- Diverse site appropriate seed mixes
- Multiple species for each functional, and successional group
- Early competition is important



What have we learned

- Reduce vectors for reinvasion
- Treat early
- Have realistic goals
 - not going to completely eliminate invasive species

For the future

- Need to continue to develop seed releases
- More commercially available seed
- More research into management practices to prevent reinvasion
- Development of new and more effective methods to control invasive species

Acknowledgements

- Texas Parks and Wildlife
- South Texas Natives
- Ceasar Kleberg Wildlife Research Institute
- South Texas Chapter Quail Unlimited
- TxDOT
- South Texas Natives Project Supporters and Donors
- Las Cuatas Ranch
- Temple Ranch
- Comanche Ranch
- Womack Ranch
- Kilam Tynan Ranch
- Rio Farms, Inc.
- Thompson Ranch
- Cactus Jack Ranch
- Rancho Blanco
- Hixon Ranch

A photograph of a lush, green field with tall grass and scattered yellow and white flowers. The scene is bright and natural, with sunlight filtering through the foliage. A semi-transparent white rectangular box is centered over the middle of the image, containing the text "Questions ?".

Questions ?