

Wildlife Habitat Restoration in the Eagle Ford Shale Play

Forrest S. Smith

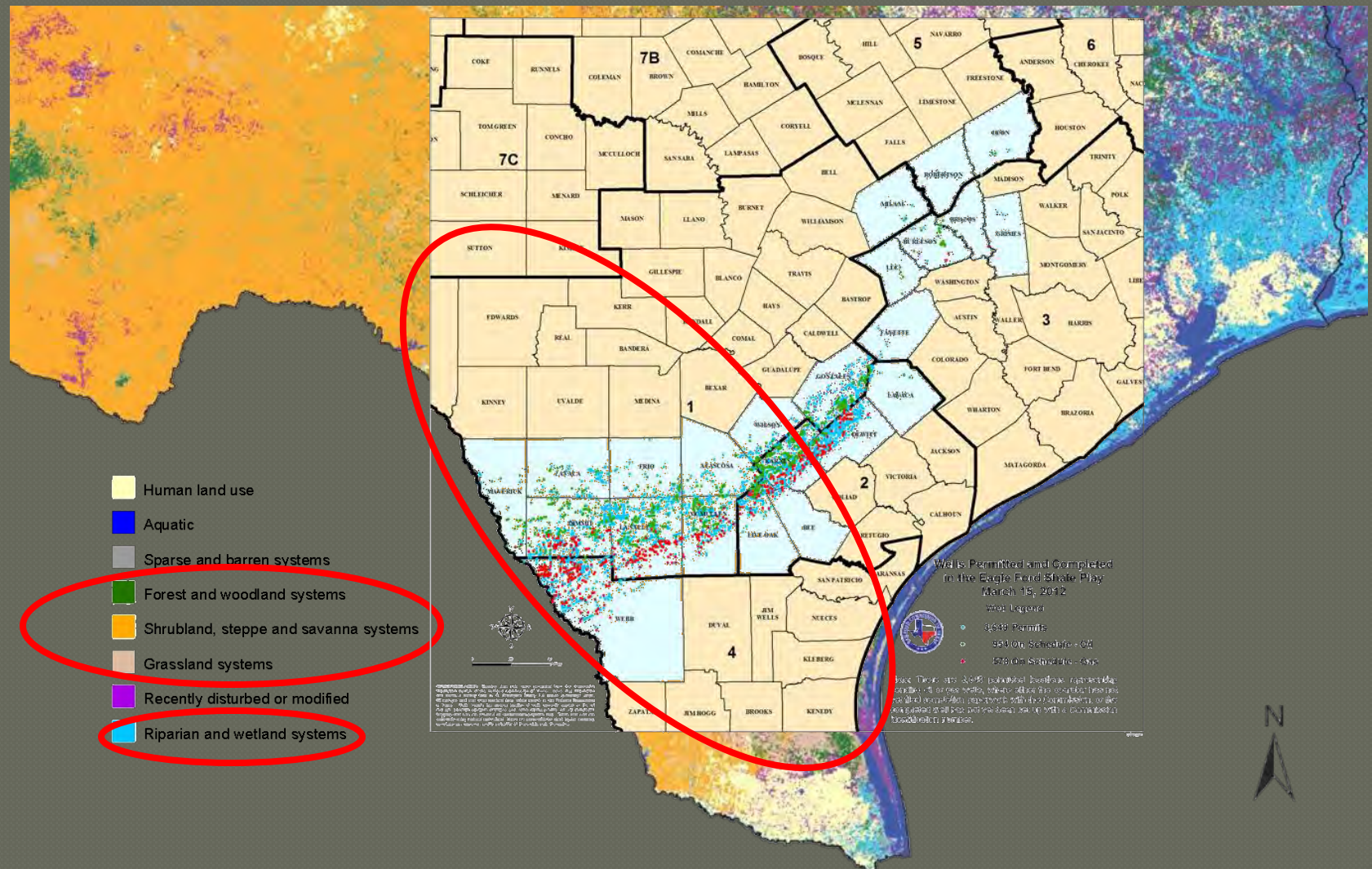
Director

South Texas Natives & Texas Native Seeds Projects

Caesar Kleberg Wildlife Research Institute

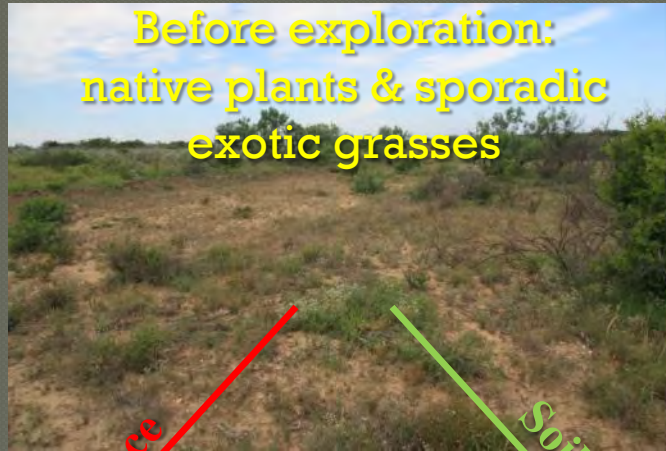


Why the Eagle Ford area is important:



Two paths to go down:

Before exploration:
native plants & sporadic
exotic grasses

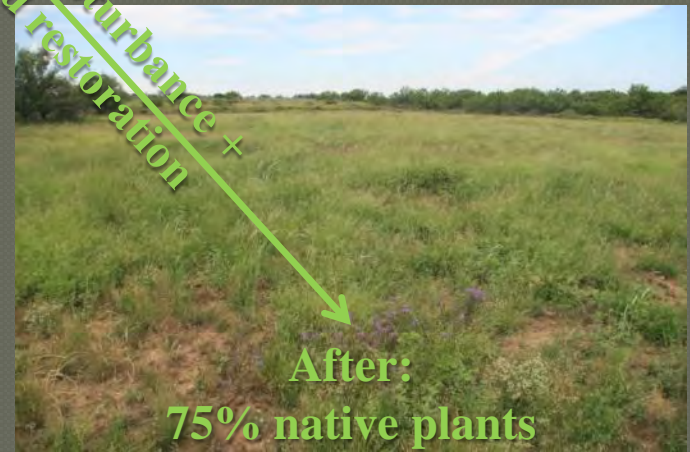


Soil disturbance
only



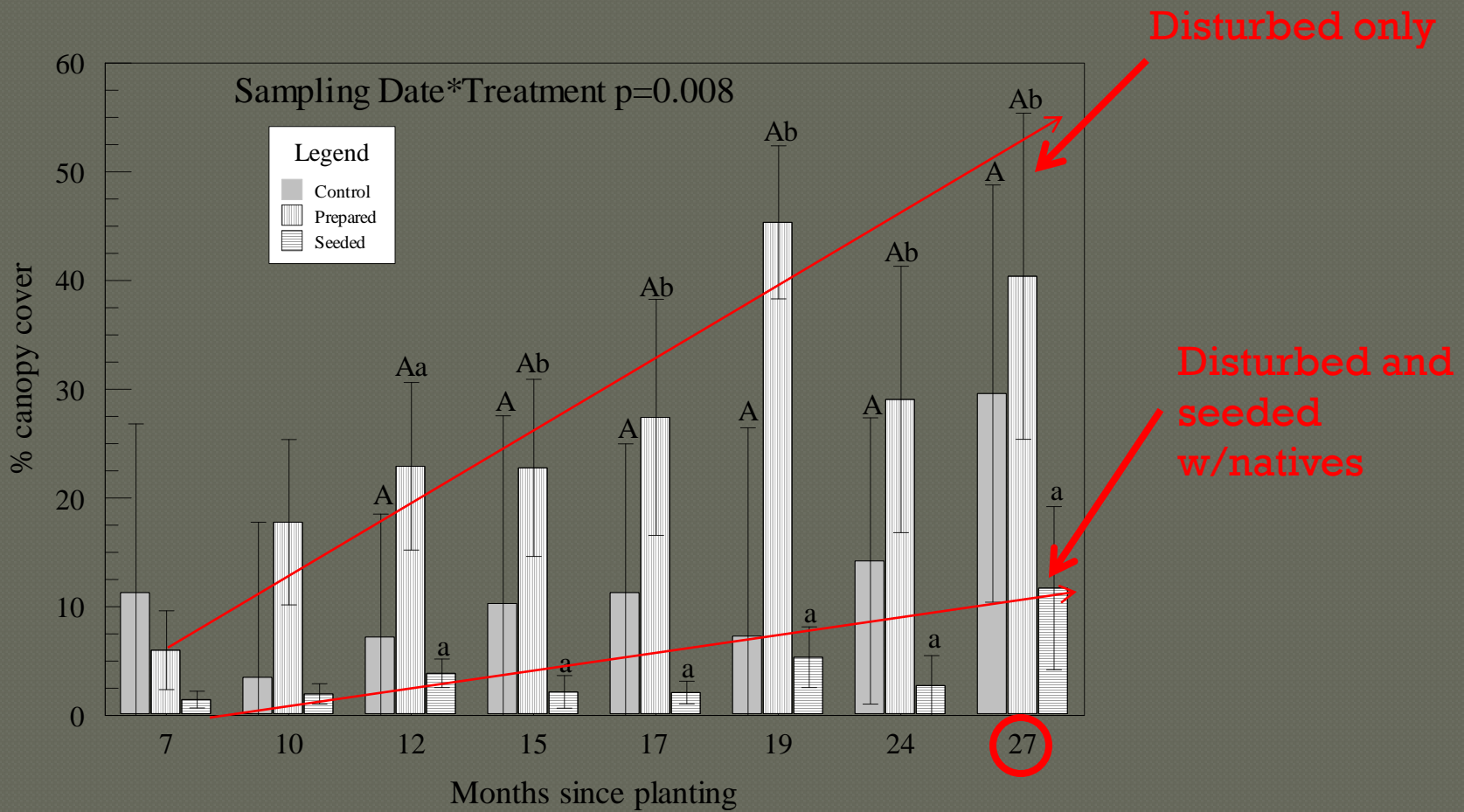
After:
75% exotic grass

Soil disturbance +
good restoration



After:
75% native plants

Exotic grass cover-with and without restoration effort after soil disturbance



Trouble on the horizon?



Why work to restore habitat?

- ◉ Protect your land resource
- ◉ Minimize effects on wildlife
- ◉ Maximize available habitat
- ◉ Enhance degraded sites
- ◉ Maintain habitat connectivity
- ◉ Limit exotic grasses invasion and spread into adjacent native habitats

Primary concerns related to wildlife habitat & Eagle Ford E&P

- **Habitat loss**
- Habitat degradation
- Soil erosion
- Exotic grasses
- Restoration methods



Habitat loss



Habitat loss-how to mitigate?

- Avoid the sweet spots (lose non-habitat)
- Development in previously disturbed areas only
- Development along existing boundaries
- Use existing roads
- Restrict entry into sensitive areas
- Site selection is critical



Eagle Ford Shale Concerns

- ⊙ ~~Habitat loss~~
- ⊙ **Habitat degradation**
- ⊙ Soil erosion
- ⊙ Exotic grasses
- ⊙ Restoration methods



Habitat degradation-how to mitigate? Fix it

- Pay attention to site characteristics
- Always salvage & store topsoil-don't take a chance
- Don't mix soil layers
- Pre/post disturbance soil testing
- Aggressively control exotic species introduction
- Reseed using adapted native seed



Where is very important!



Example: Frac tank dam with sand



Example: Easement through saline site

What *will* happen in most of the Eagle Ford area



The alternative...with good restoration



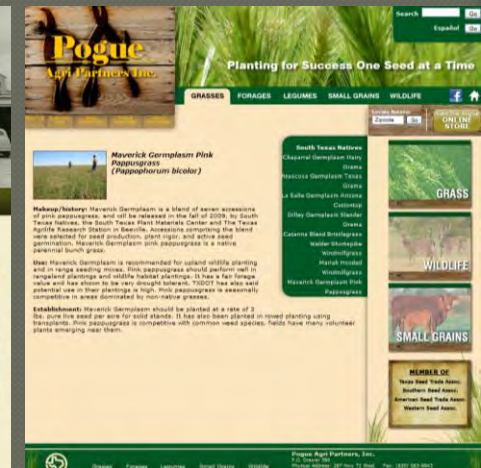
Do you need to reseed?

- These kinds of disturbances are not “natural”
- Soils are often changed such that natural seed bank is lost, damaged, or no longer capable of colonizing these sites
- Rapid cover is very important
 - Prevent soil erosion
 - Limit exotic species invasion



What to plant?

- *South Texas Natives released native seeds are the only adapted native seed source for the Eagle Ford area*
- Cover crops for temporary erosion control
 - Spring/summer-millet & grain sorghum
 - Fall/winter-wheat & oats



Restoration in South Texas-can it be done?



Restoration in South Texas-can it be done?





21 Native Seed Releases for South Texas

- Demand exceeds current supply
- Plan and pre-order
- Seed cost will range \$80-200/acre

Eagle Ford Shale Concerns

- ⊙ ~~Habitat loss~~
- ⊙ ~~Habitat fragmentation~~
- ⊙ **Soil erosion**
- ⊙ Exotic grasses
- ⊙ Restoration methods



Lose the soil, lose the habitat

- Erosion problems throughout the Eagle Ford area
- Result of poor or no reclamation practices
- Seed planted in the soil is not erosion control
- Soils often mixed such that few plants can grow on many sites



Erosion control?



● Soil handling

- Don't mix soil layers
- Re-contour
- Pack/track/mound

● Cover crops

- Millets-spring/summer
- Wheat & oats-fall/winter

● Physical barriers

- Hydro mulching
- Mats
- Vegetative mulches (hydro-axed materials)

Eagle Ford Shale Concerns

- ⊙ ~~Habitat loss~~
- ⊙ ~~Habitat fragmentation~~
- ⊙ ~~Soil erosion~~
- ⊙ **Exotic grasses**
- ⊙ Restoration methods



Exotic grasses-the biggest concern

- **#1 DON'T PLANT THEM!!!!**
- Make an effort to limit introduction
 - Wash equipment
 - Limit travel
- Control invading exotics early & often
 - Spot spray and re-spray with roundup



What ***NOT*** to plant for wildlife!

- Buffelgrass
- Bermudagrass
- Blue panicum
- Wilman lovegrass
- Kleingrass
- Old World bluestems
 - Kleberg
 - King Ranch
 - Caucasian
 - WW-Spar, B-Dahl



Eagle Ford Shale Concerns

- ⊙ ~~Habitat loss~~
- ⊙ ~~Habitat fragmentation~~
- ⊙ ~~Soil erosion~~
- ⊙ ~~Exotic grasses~~
- ⊙ **Restoration methods**



Restoration Methods

- If most of the other stuff is not done right, failure is likely
- *How you plant is as important as what you plant*
- Plant when success is likely-not necessarily according to the calendar
 - Good soil moisture *before*
 - Good chance of precipitation *afterward*
- Know your site
 - Do a soil test
 - Use the right species of plants for your site



Reseeding methods?



Seed mixes?

- 50% Early-successional grasses & forbs

- Slender grama
- Hooded windmillgrass
- Green sprangletop
- Sand dropseed
- Tallow weeds
- Deer pea vetch
- Indian blanket
- Huisache daisy

- 25% Mid-successional grasses & forbs

- Arizona cottontop
- Plains bristlegrass
- Pink pappusgrass
- Whiplash pappusgrass
- Awnless bush sunflower

- 25% Late successional grasses and forbs

- Trichloris
- Little bluestem
- Sideoats grama
- Big sacaton
- Prairie acacia

Natural Progression:



It is your backyard-*look after it!*



Thanks CKWRI Partners!

Your contributions funded:



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Your contributions funded:

*Foundation seed production expenses to improve
commercial seed availability*

