

Evaluation and Development of Native Seed Sources for West Texas

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West Texas Program Coordinator

Texas Native Seeds




What is *Texas Native Seeds*?

- **Mission:** *Develop Native Seeds Sources for Texas*
- Modeled after *South Texas Natives*
 - 25 native seed sources developed in in the last 13 yrs for South Texas
 - >20K acres of seed annually
- What we do:
 - Collect seed of native plants from naturally occurring stands
 - Test, select, and increase high performing populations
 - Provide seed stock to commercial growers
 - Figure out the best ways to restore native plants




Atascosa


Germplasm Texas Grama
Bouteloua rigidata Steud.





Bali Germplasm
Prostrate Boudleflower
Desmanthus illinoensis (L.) Hitchc.
var. *illinoensis* (Walt.) S.L. Turner





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Catarina Blend
Bouteloua
Breeds: *Bouteloua curtipendula* (L.) Hitchc. & *Bouteloua eriopoda* (L.) Hitchc.
Breeds by: *Bouteloua eriopoda* (L.) Hitchc. & *Bouteloua curtipendula* (L.) Hitchc.



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Kingville, Texas




Chaparral

Germplasm Hairy Grama
Bouteloua hirsuta (Lag.) Chap. & Peck





Dilley

Germplasm Slender Grama
Bouteloua spinescens (Nutt.) Scribn. & Smith





Divot

Tallus Weed Blend
Plantago: *Plantago lanceolata* Fisch. & Mey.
Plantago: *Plantago major* L.





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Falfurrias Germplasm
Big Sacaton
Arundo donax L.
Munro ex DC.





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Goliad Germplasm
Orange Zosteremia
Zosteremia ovata (L.) Gray
S.L. Turner



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Hidalgo Germplasm
Multiflower Fawn
Rhodes Grass
Panicum polyanthum (Sw.) DC.



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Hoverson Germplasm
Deer pea vetch
Vicia hirsutissima (Sw.) J.





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Kinney Germplasm
Fawn Rhodes Grass
Panicum urvillei (Lag.) Parodi



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La Salle


Germplasm Arkansas Cotnolop
Digitaria californica (Benth.) Hilleb.







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Lavaca Germplasm
Canada Wildrye
Elymus canadensis L.



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Mariah Germplasm
Hooded Windmillgrass
Chloris cucullata (Sw.) DC.






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Maverick

Germplasm Pink
Pappgrass
Paspalum bicolor E. Fourn.







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Oso Germplasm
Hill's Paspalum
Paspalum hillii (Steud.) Gray
var. *hillii* (Steud.) Gray



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Rio Grande Germplasm
Prairie Aroclora
Aroclora argentea (Mill.) (Nutt.) Hitchc.
var. *argentea* (Mill.) (Nutt.) Hitchc.



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South Texas Germplasm
Sedona Grass
Bouteloua curtipendula (L.) Hitchc.
Tall var. *curtipendula* (L.) Hitchc. & *Bouteloua eriopoda* (L.) Hitchc.







Venado Germplasm
Andalus Bushflower
Stemodia coccinea (Engelm.) S.B. Gray & Gray





Webb

Germplasm Whiplash
Pappgrass
Paspalum vaginatum Buckley

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Welder Germplasm
Shortspike Windmillgrass
Chloris subdichotoma (Sw.) DC.
var. *subdichotoma* (Sw.) DC.



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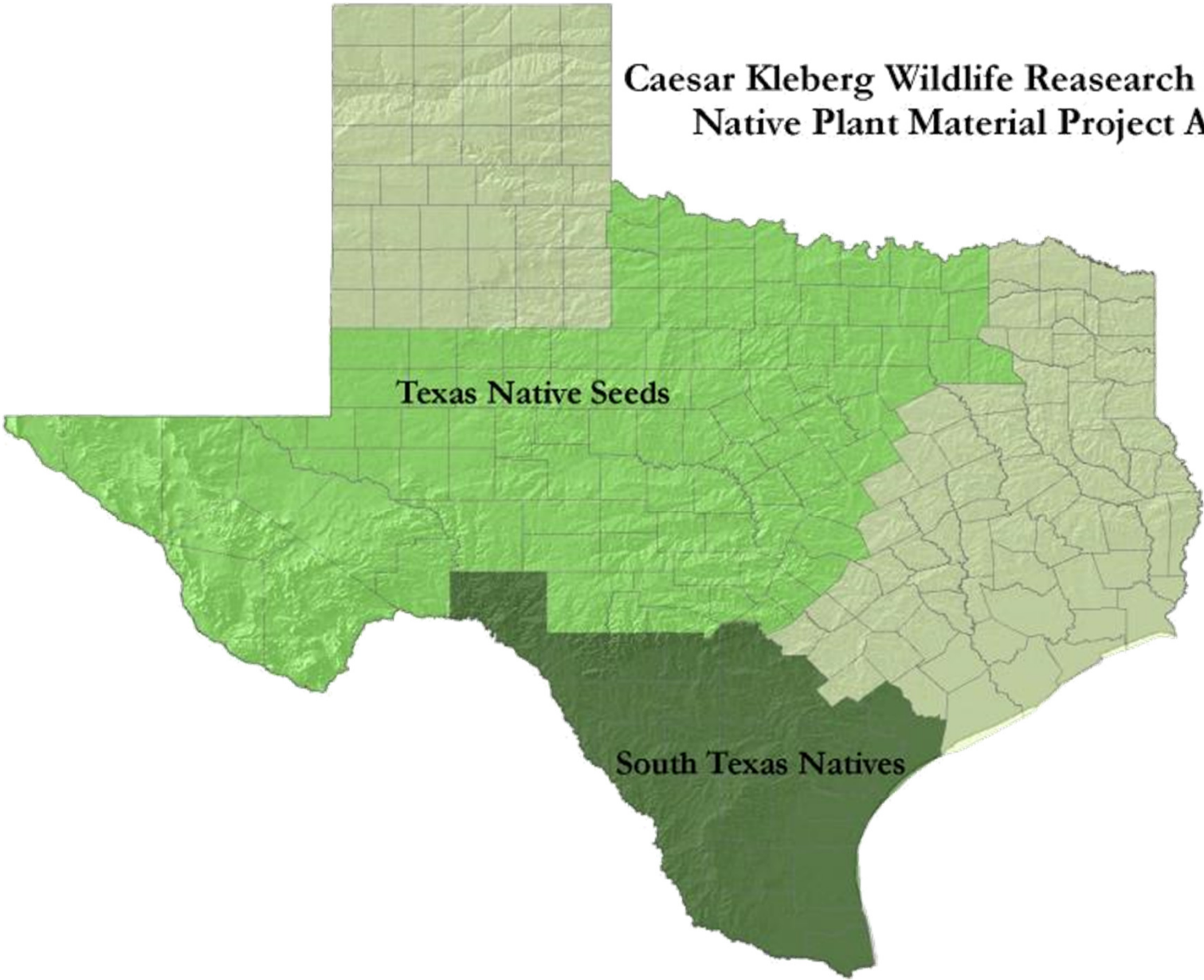

Zapata

Germplasm Rio Grande
Clammyweed
Polypogon monspeliensis (L.) DC.
var. *monspeliensis* (L.) DC.





**Caesar Kleberg Wildlife Research Institute
Native Plant Material Project Areas**



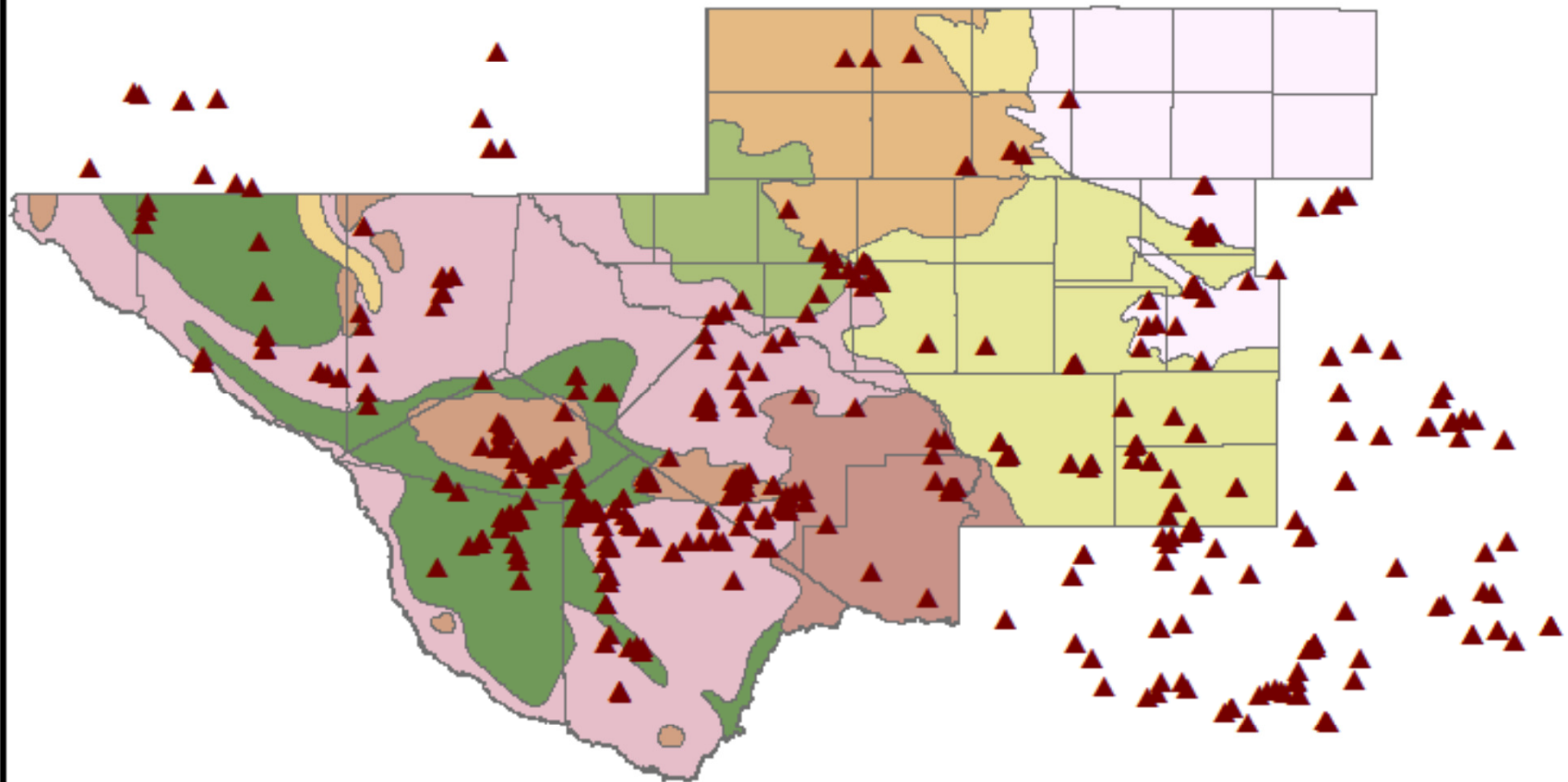
Texas Native Seeds

South Texas Natives

West Texas Native Plant Material Initiative

Seed Collection Locations

2011 - 2014

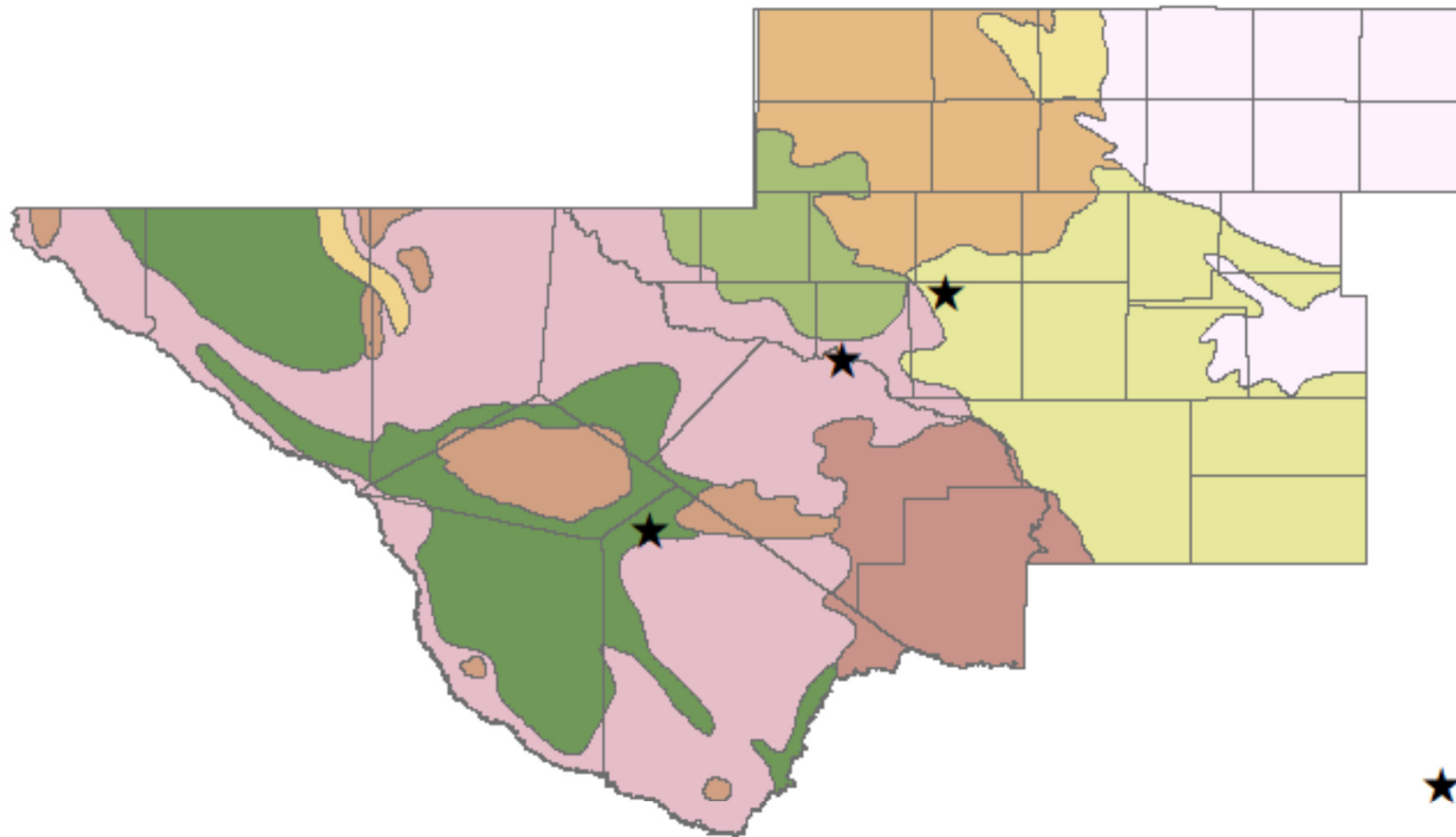


676 Unique Collections

- | | | |
|------------------------|---------------------------|-------------------|
| ▲ Seed Collection Site | High Plains | Salt Basin |
| Desert Scrub | Live Oak-Mesquite Savanna | Sand Hills |
| Desert Grassland | Mesquite Plains | Stockton Plateau |
| | Mountain Ranges | Escarpment Breaks |

West Texas Native Plant Material Initiative

Plant Material Evaluation Sites



- ★ Plant Evaluation Site
- Desert Scrub
- Desert Grassland
- High Plains
- Live Oak-Mesquite Savanna
- Mesquite Plains
- Mountain Ranges
- Salt Basin
- Sand Hills
- Stockton Plateau
- Escarpment Breaks

Starting from Scratch



Beginning Site Preparation



**Sierra la Rana Plant Evaluation and Research Facility Development
Alpine, Texas**

Site Ready to Plant



Second Year of Operations
Nine Species Under Evaluation





Railway Ranch Evaluation Site, Odessa, TX Operational Spring 2015



Evaluations Across Sites

Uvalde, TX



Imperial, TX



Performance Between Populations



Tobosa Grass A



Tobosa Grass B



Little Barley



White Tridens



Common Name	Scientific Name	Area of Adaptation	Evaluation Stage & Expected Release
Texas wintergrass	<i>Nasella leucotricha</i>	South Texas, Central Texas, Western Edwards Plateau	2nd Year Evaluation, 2016
Little barley	<i>Hordeum pusillum</i>	South Texas, Central Texas, Western Edwards Plateau	Seed Increase, Fall 2015
White tridens	<i>Tridens albescens</i>	South Texas, Central Texas, Western Edwards Plateau	Seed Increase, Fall 2015
Purple threeawn	<i>Aristida purpurea</i>	South Texas, Central Texas, Western Edwards Plateau	Seed Increase, Fall 2015
Sideoats grama	<i>Bouteloua curtipendula</i>	Central Texas, North Texas, Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	2nd Year Evaluation, Spring 2015
Silver bluestem	<i>Bothriochloa laguroides</i>	Central Texas, North Texas, Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	2nd Year Evaluation, Spring 2015
Hall's panicum	<i>Panicum hallii</i> <i>var. hallii</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	2nd Year Evaluation, Spring 2015
Blue grama	<i>Boutelous gracilis</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016
Tobosa grass	<i>Pleuraphis mutica</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016
Vine mesquite	<i>Panicum obtusum</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016
Slim/Rough tridens	<i>Tridens muticus</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016
Whiplash pappusgrass	<i>Pappophorum vaginatum</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016
Sand dropseed	<i>Sporobolus cryptandrus</i>	Trans Pecos, Western Edwards Plateau, Southern Rolling Plains	1st Year Evaluation, 2016

Where native seed used in restoration *originated* from is very important

Haskell
Sideoats Grama

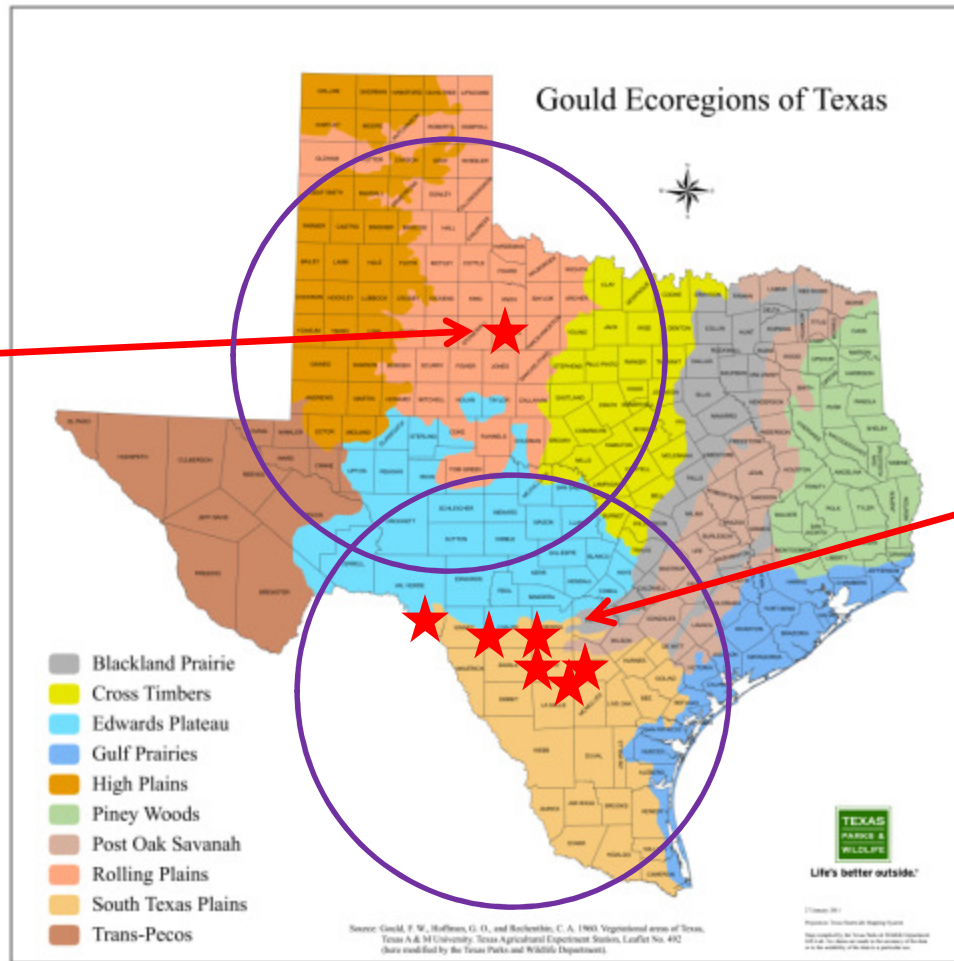


A long-season native, rhizomatous sideoats selection

- High-quality grass for range or pasture uses
- Adapted to Central and South Texas
- Helps control erosion on surface-mined areas

The Texas Agricultural Experiment Station
Neville F. Clarke, Director
The Texas A&M University System
College Station, Texas

In cooperation with the U.S. Department of Agriculture's Soil Conservation Service and USDA Agricultural Research Service



South Texas
Germplasm
Sideoats Grama

Bouteloua curtipendula (Michx.)
Torr. var. *caespitosa* Gould & Kapadia

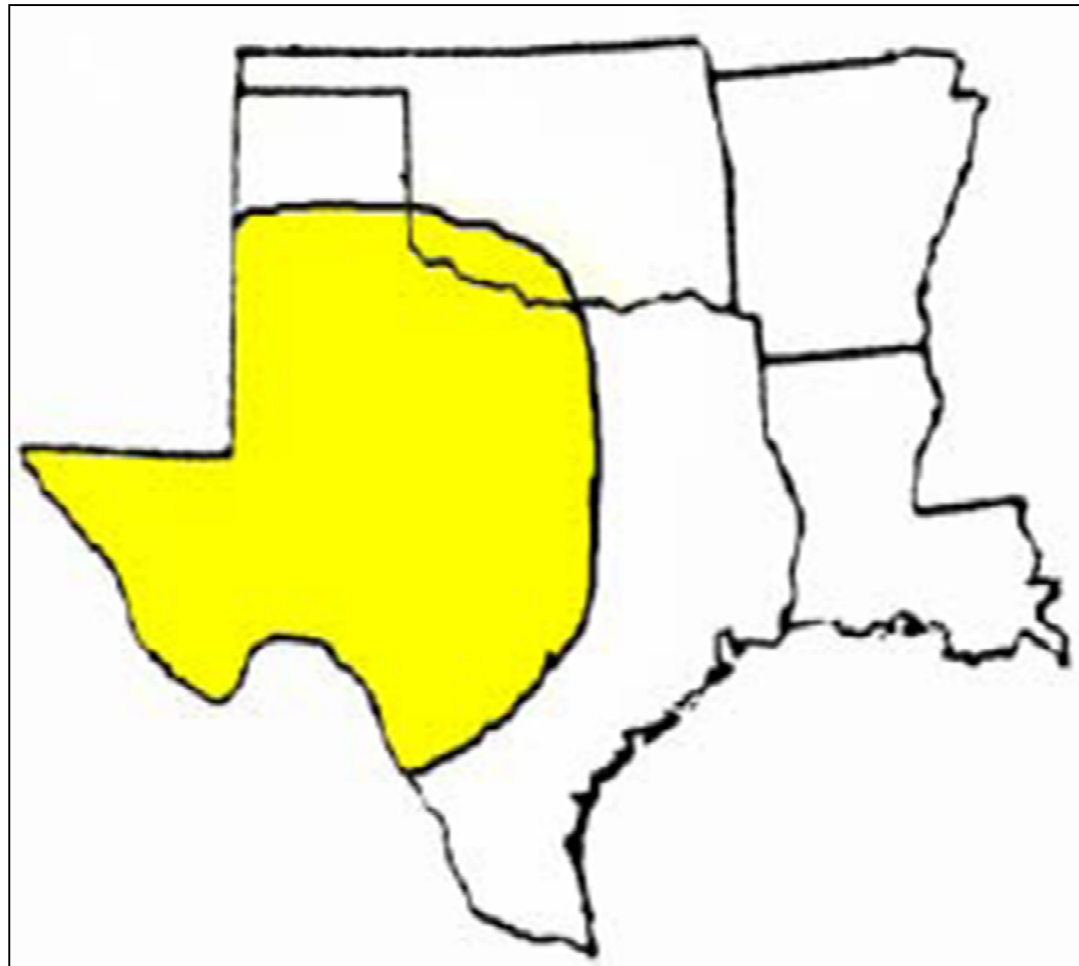


South Texas Natives

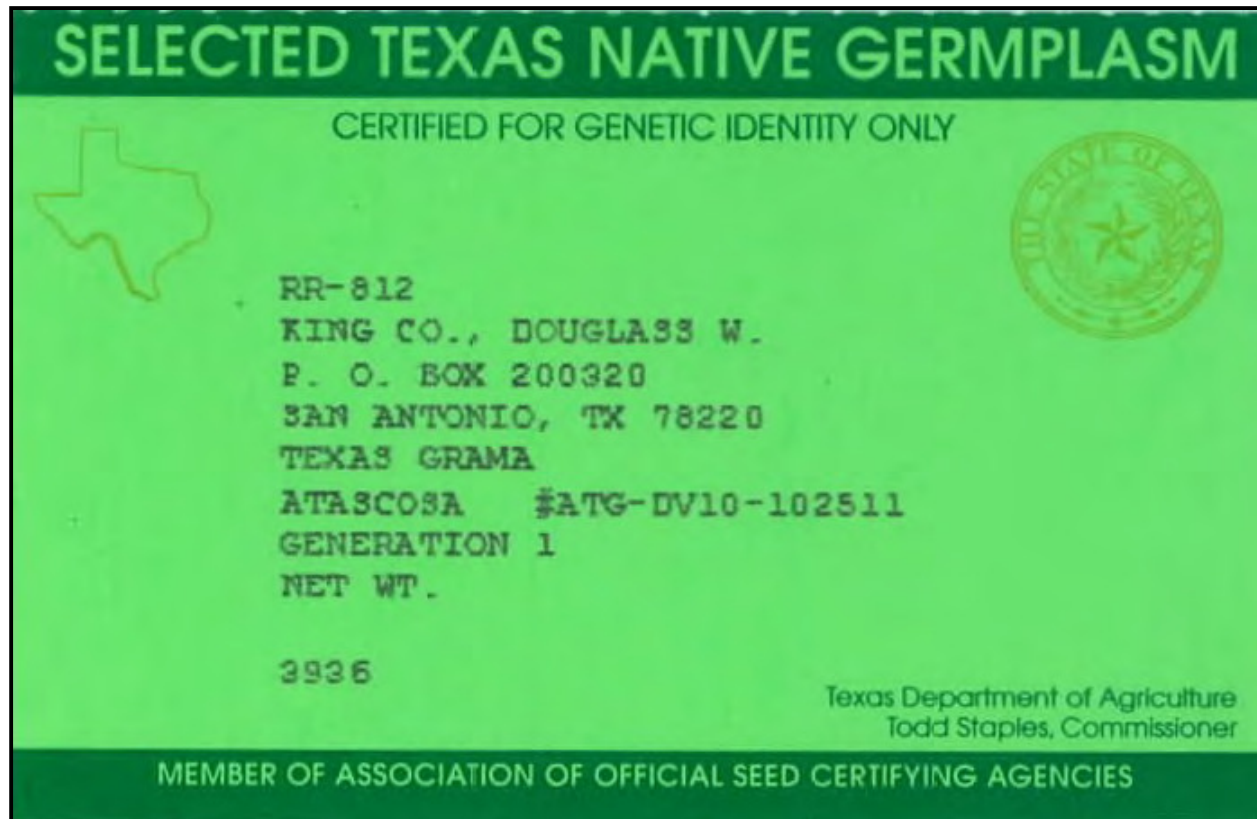
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AgriLIFE RESEARCH
Texas A&M University

Van Horn green sprangletop
The lone plant material source from the
Trans Pecos



Seed Quality is Equally Important



High Quality Certified Seed

Contamination Issues:

- Spotted knapweed in USFWS plantings
- KR Bluestem in “native prairie” harvested seed mixes



Pecos County, TX



Brewster County, TX



Brewster County, TX



Crane County, TX



Crane County, TX



Winkler County, TX



Drought 2011 – Live Lehmann, Dead Native Bunch Grasses



Upton County, TX



Sutton County, TX









South Texas Natives

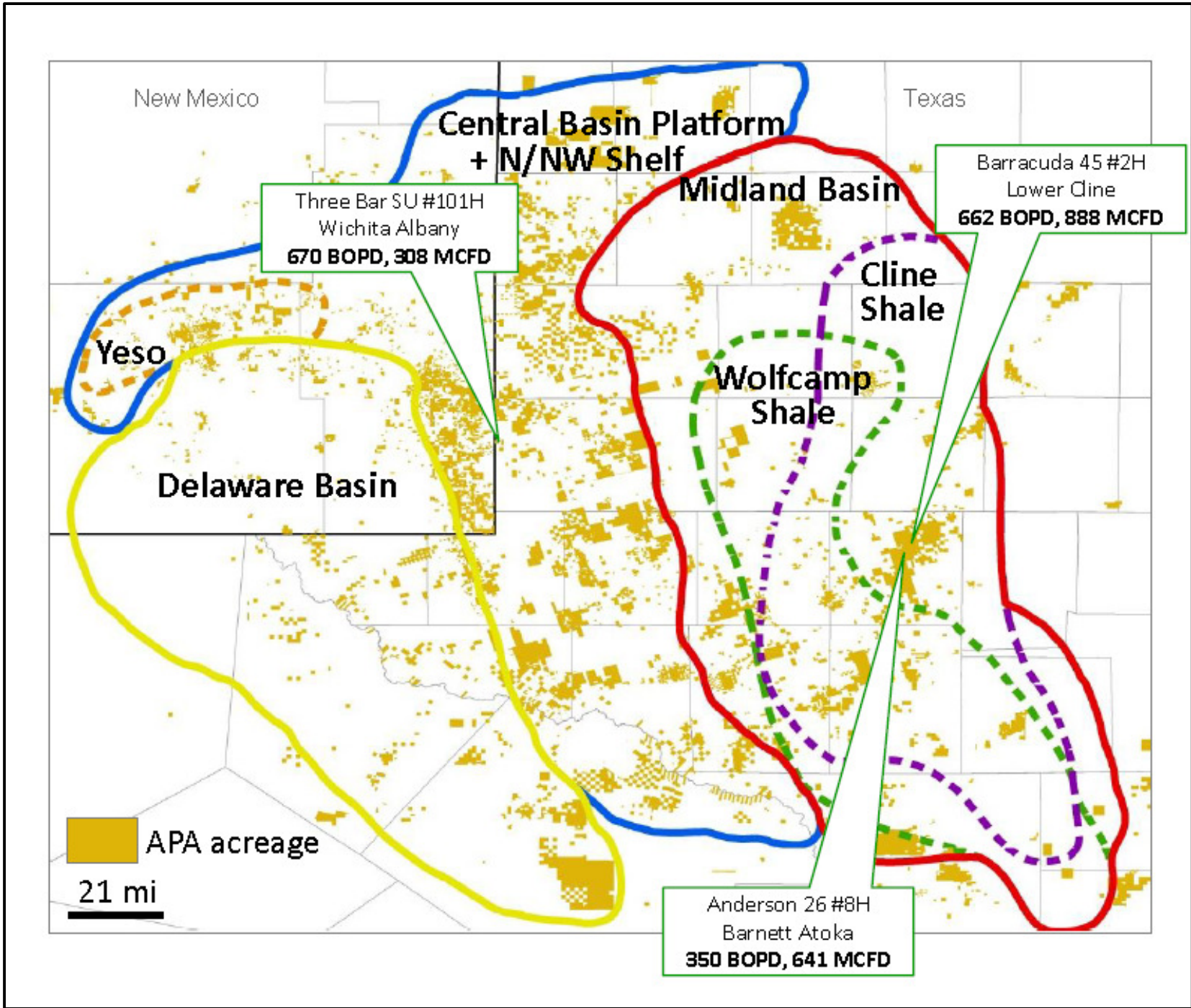
**Live Oak County
Eagle Ford Shale Pipeline
Planted February 2012, Photo June 2012**

Standard Industry Mix



Two Years Later







8 Months Ago



Today

Partners & Collaborators

