

Our Grasslands: Understanding and Caring for the Beautiful Landscapes – A Seminar About Pocket Prairies

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www.envirosurvey.com

Understanding Grasslands

ecosystems primarily dominated by grasses.

- Types:
 - Prairies- tall, mid, and short grasses; found mainly in the central United States.
 - Savannas - mix of grasses and scattered trees, thriving in warmer climates.
- Other types of grasslands:
 - Steppes
 - Veldts – South Africa
 - Rangelands - Australia
 - Pampas – South America

Global Grasslands Distribution Map

Cover about 40% of Earth's land surface with significant types including prairies, steppes, and savannahs.

MAJOR GRASSLANDS OF THE WORLD



Savanna

1. Llanos of the Orinoco in Venezuela and Colombia
2. Campos of Brazil
3. Sudan in Africa
4. South African veld
5. Australia



Prairie

1. Midwestern United States and Canada
2. Pampa of Argentina, Uruguay, and southeastern Brazil
3. Plains of Hungary, Romania, and historic Yugoslavia
4. Black Earth Belt of Russia
5. Machurian Plain



Steppe

1. Great Plains of North America
2. Kyrgyz Steppe
3. Australia
4. Sudan of Africa



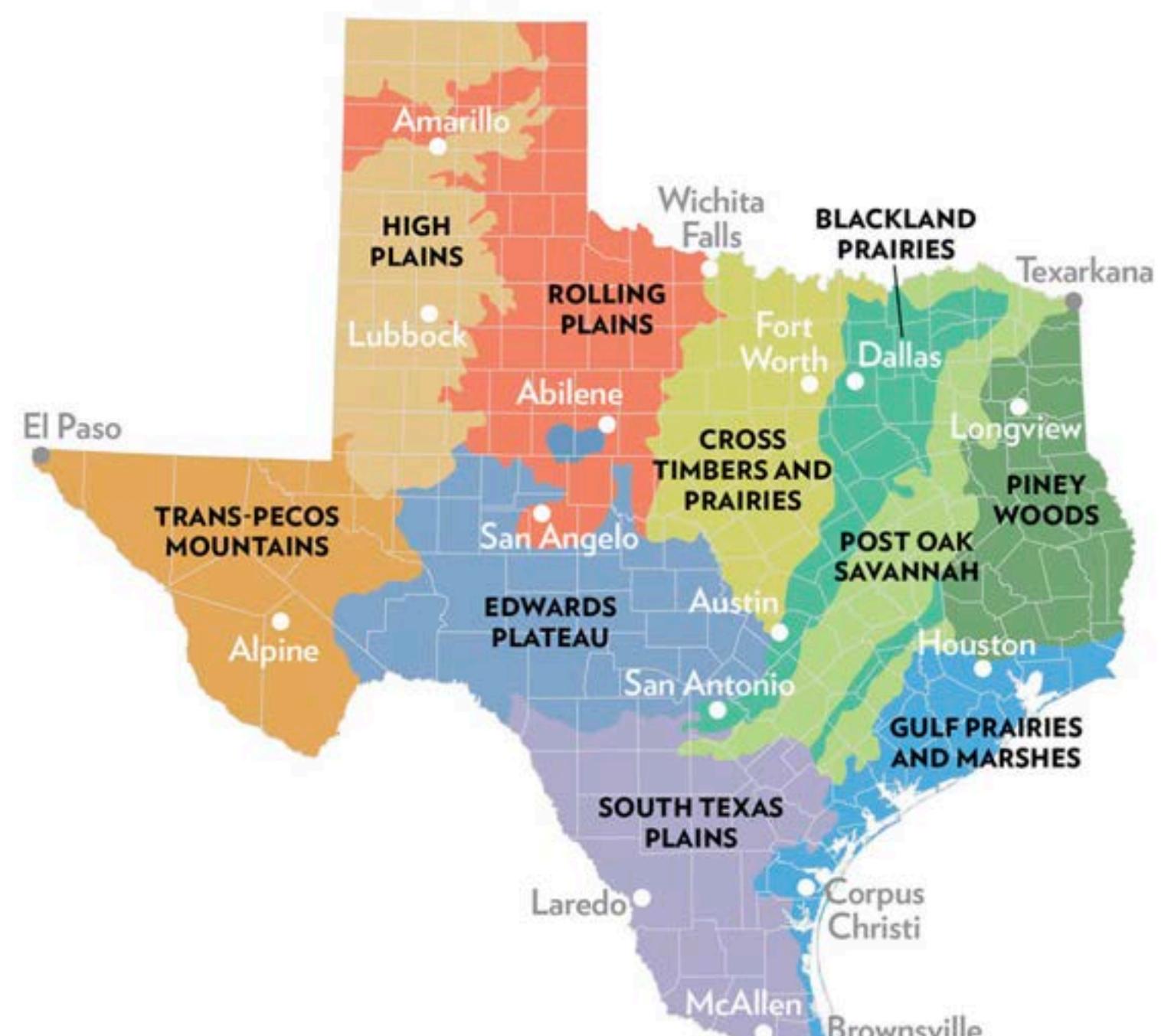


US Grasslands Map

Around 29% of U.S. land is considered grasslands - per USDA.

Texas Grasslands

About 60% of Texas is grasslands or prairies, but only 21% remain intact.

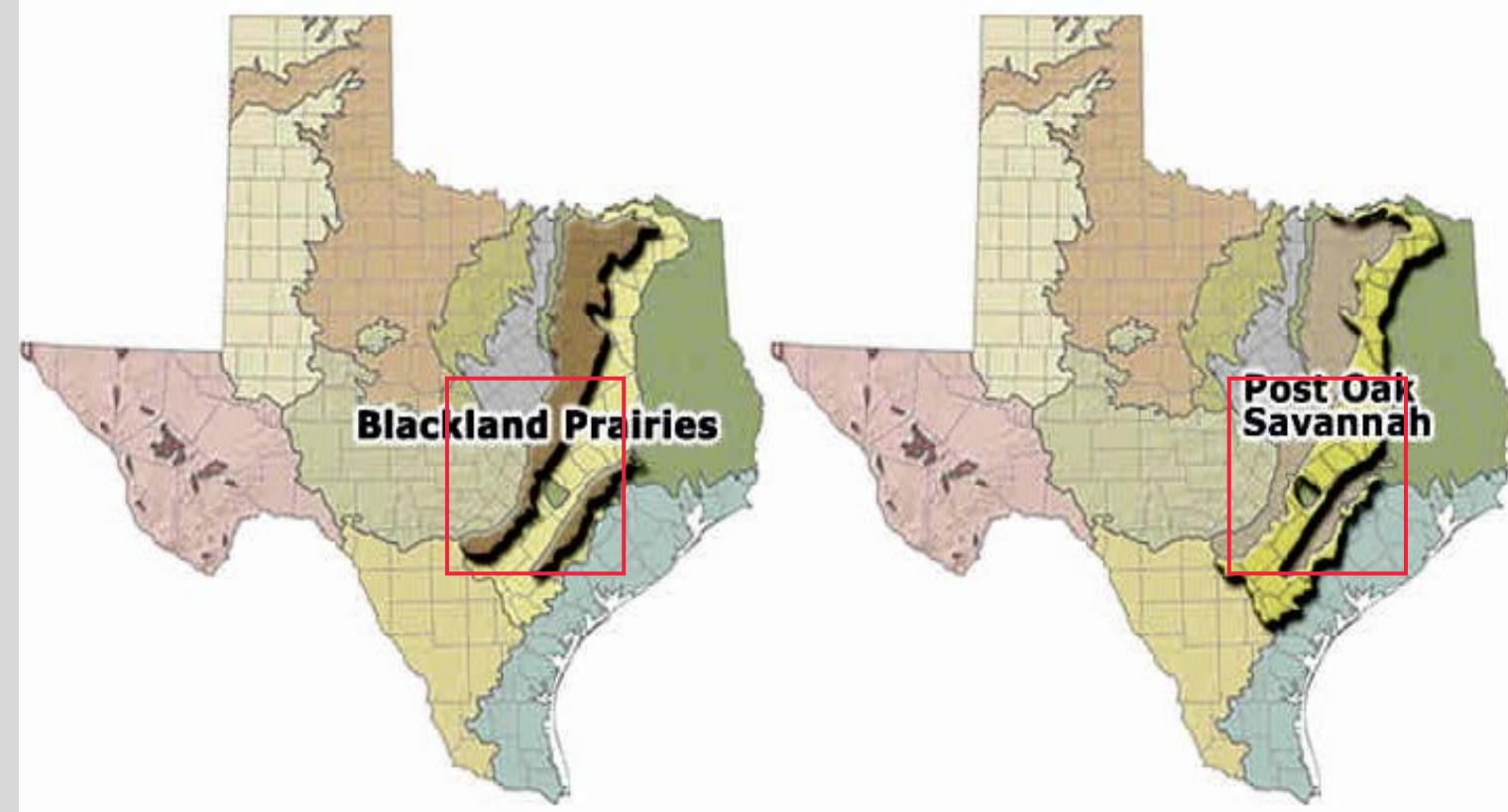


Central Texas Grasslands

- Tall grass prairies -- big bluestem and Indian grass, thrive in moist conditions.
- Mid grass prairies -- little bluestem and sideoats grama, adapted to drier climates.
- Short grass prairies -- buffalo grass and blue grama, suited for arid environments.

Post Oak Savannahs

- Characterized by scattered trees and rich grasses
- prominent in Central Texas, providing unique habitats.







History of Grassland Restoration

Restoration - process of aid in the recovery and revitalization of an ecosystem that has been degraded, damaged, or destroyed.

Why it began?

- Widespread grassland loss due to agriculture and urbanization (18-19th century)
- U.S. tallgrass prairie reduced to <4% by mid-20th century
- Late 20th century – biodiversity, carbon storage awareness fuels expansion



Curtis Prairie

Planting methods and materials:

1. Prairie sod
2. Seed
3. Prairie hay
4. Small shrubs were planted

- **1930s** – Restoration need was recognized (Dust Bowl Era)
- **1935** – Dr. Theodore Sperry, Aldo Leopold, and William Longenecker led UW's first prairie restoration
 - Curtis Prairie –world's oldest ecologically restored prairie
- **1935-1941** – introduction of 42 prairie species
- **1940s** – expanded to 154 species and burning methods
- **1946, 1951, 1956** – John Curtis led prairie surveys

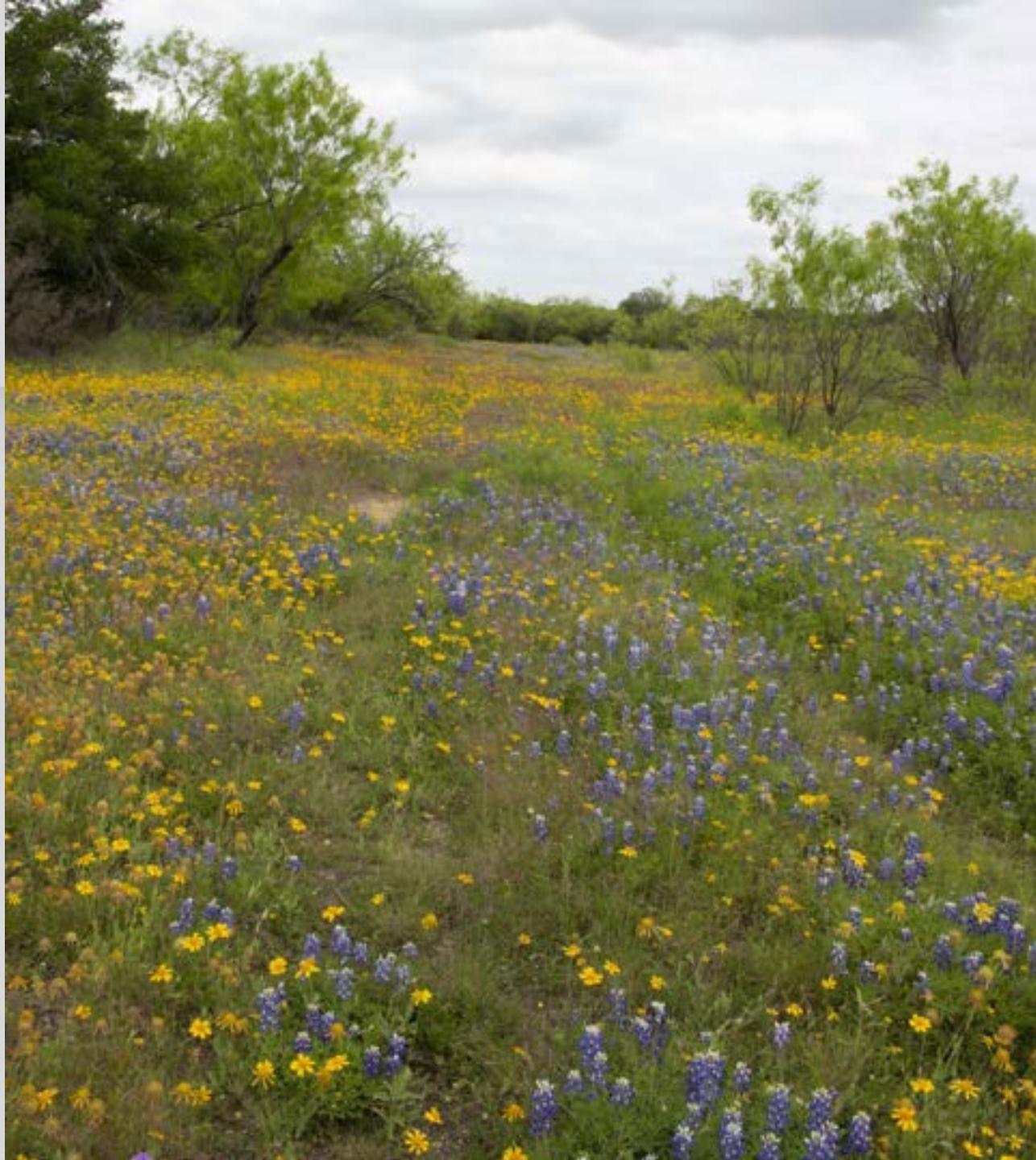






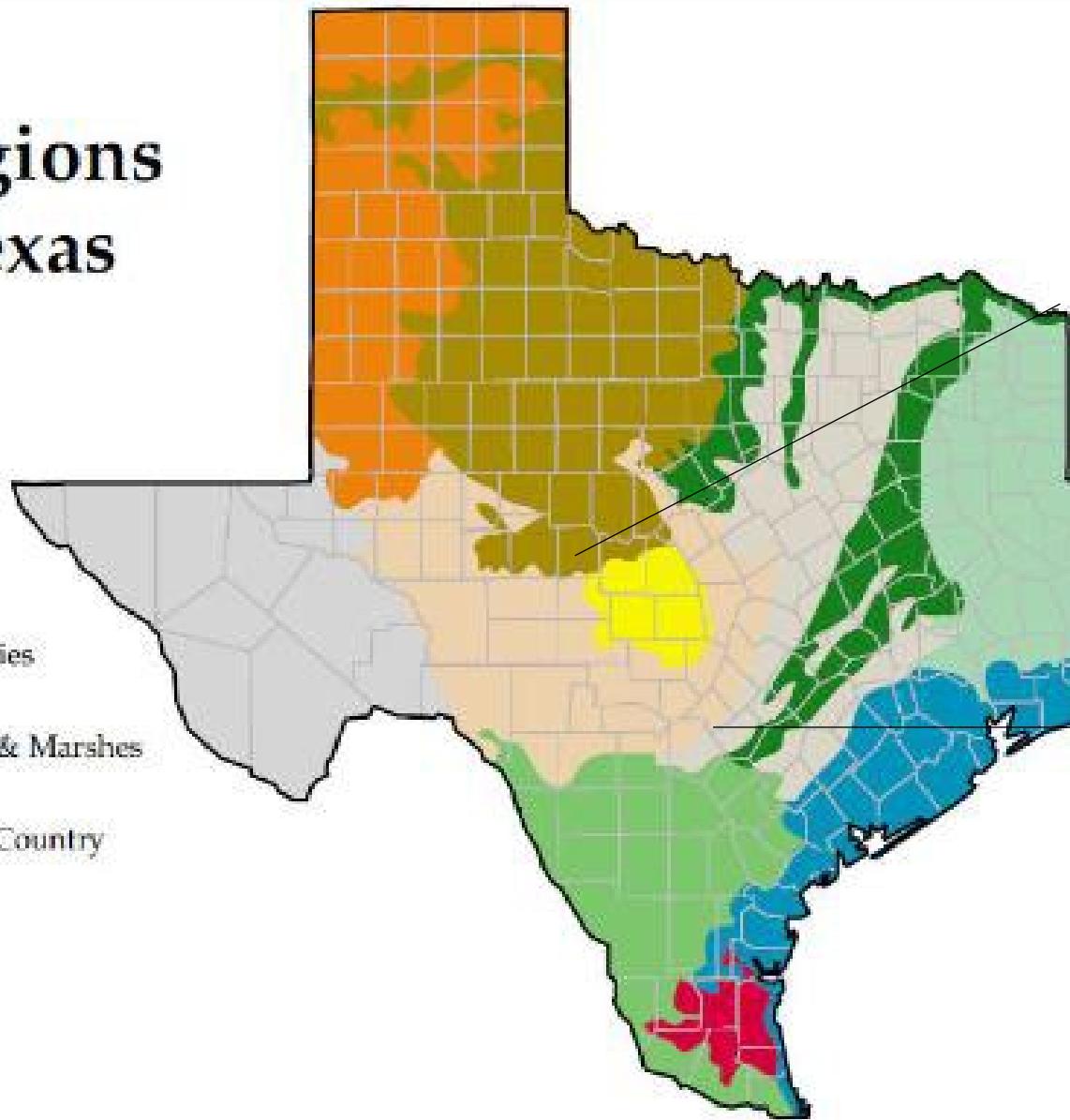
Spicewood Ranch Restoration

35 years of Spicewood Ranch Restoration



Ecoregions of Texas

- Piney Woods
- Oak Woods & Prairies
- Blackland Prairie
- Gulf Coast Prairies & Marshes
- Coastal Sand Plain
- South Texas Brush Country
- Edwards Plateau
- Rolling Plains
- High Plains
- Trans Pecos
- Llano Uplift



Site Analysis at Spicewood Ranch



Plant Communities

1. Live oak savannas
2. Post oak savannas
3. Cedar breaks
4. Brush
5. Mid-grass prairie
6. Riparian woodlands
7. Limestone streambed
8. Limestone cliffs



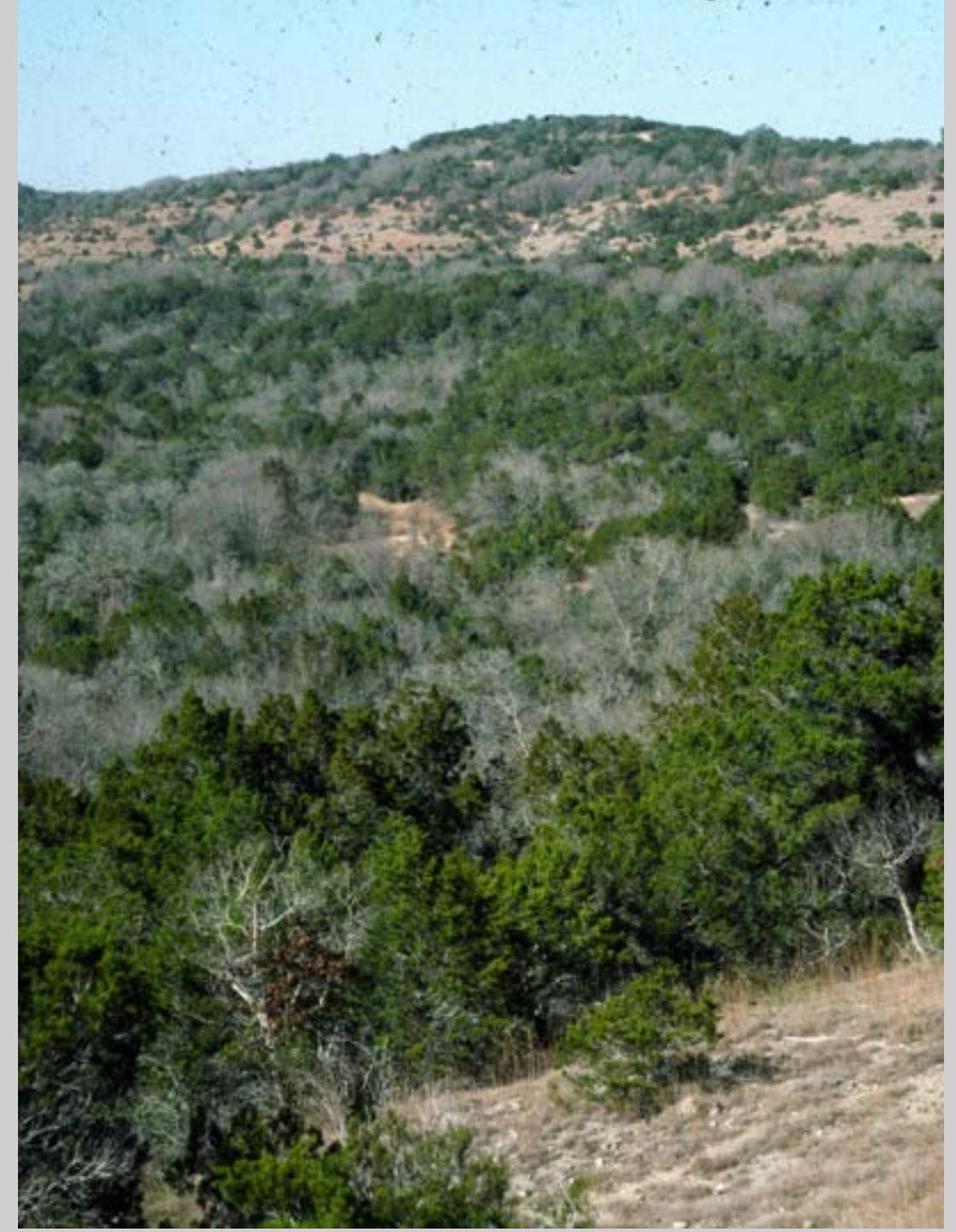
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Sunset Valley Post Oak Savannah Remnant



Remnant of Post Oak

Sunset Valley Live Oak Savannah Remnant





Live Oak remnant with adjacent overgrown section at Sunset Valley.

Management Activities

1. Removal of cattle
2. High fencing
3. White-tailed Deer reduction
4. Cedar/juniper reduction
5. Prescribed fire
6. Exotic species management
7. Deer enclosure
8. Wild seed harvesting
9. Large area seeding



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Burning of prairies



More burns...



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Eragrostis superba

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Wild Seed Harvesting

1. Hand-harvest
2. Grim-reaper
3. Tractor reaper



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Rhus virens –
Cliffside remnant



Silphium radula-
Roadside remnant



Prunus Mexicana
– Ranch relict





*Helianthus
maximilianii* –
First decade





Liatris mucronata-
first decade



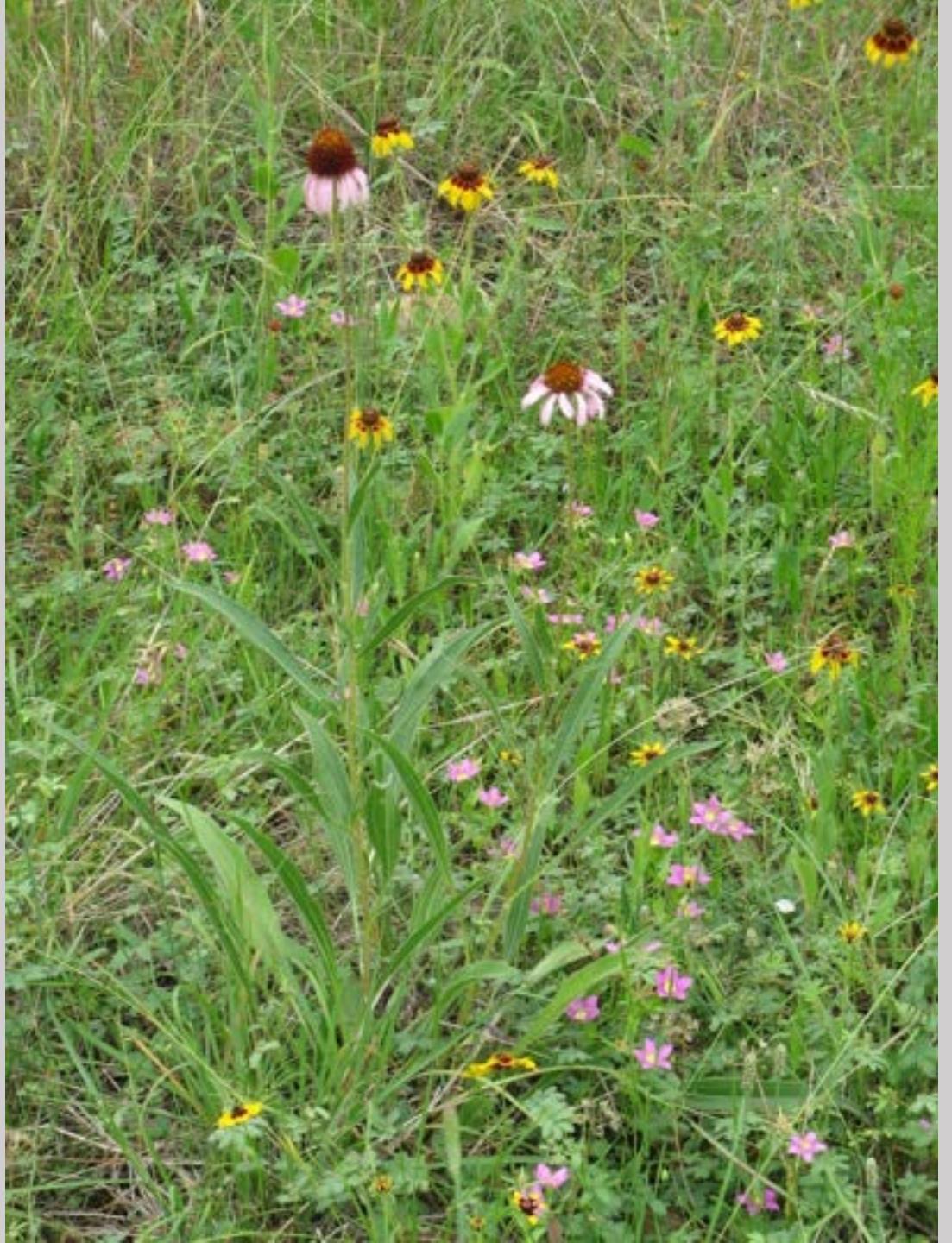
Liatris mucronata-
with deer browsing

Englemannia peristenia -
second decade increase



Englemannia peristenia - third decade increase





Recent successes:
Echinacea angustifolia

Recent successes:
Penstemon cobea



Recent successes:
Penstemon cobea





Recent successes:
Rhus virens



Three Management Principles

Sequential establishment of species reduced by white-tailed deer browsing pressure

Intermittent, non-annual species recovery due to unpredictable droughts

Reduction of invasive KR Bluestem dominance via careful restoration

Drought
conditions



Same habitat, wet
summer conditions



*Bothriochloa
ischaemum-*
monoculture of KR
Bluestem



Native grassland habitat





Liatris and little
bluestem
(*Schizachyrium
scoparium*), Oct
2024

Restoration takes (A LOT) of time!!!



Lewisville, TX Green Infrastructure

- Manage stormwater, drought, and urban heat using nature-based solutions.
- Use natural processes to slow, clean, and reuse stormwater.
- Bioswales, green roofs, rain gardens, and native plants.
- **Benefits:** Reduces pollution, boosts sustainability, improves community spaces.
- Roots for Wings, Main & Mill Complete Streets.



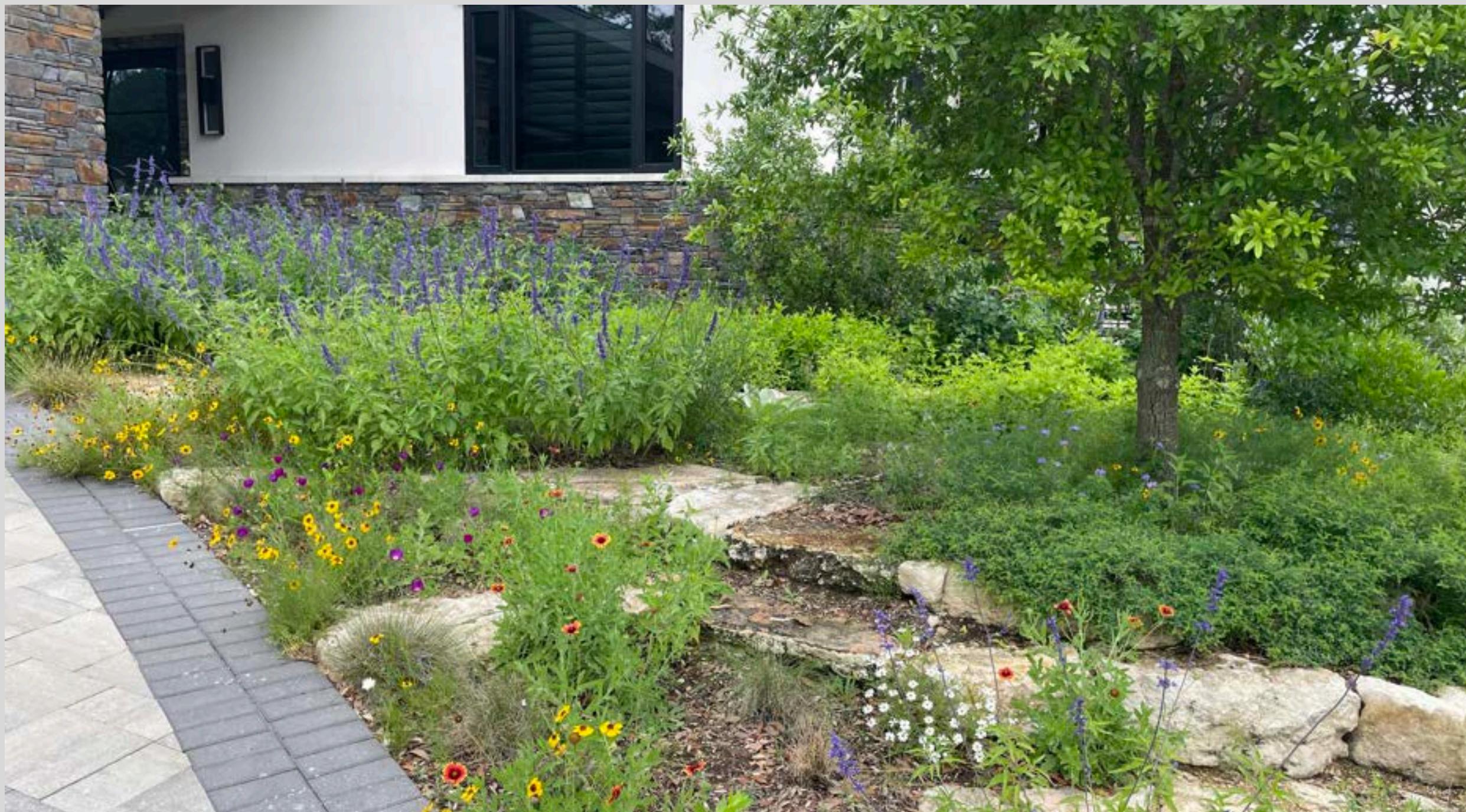
Lewisville, TX



Residential Landscapes







Pocket Prairies

Small native grass/wildflower plots in urban areas

Benefits:

- Boosts biodiversity
- Improves soil, enhancing aesthetics
- Promotes conservation

















Organizations



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