

North Texas Alternative Futures

Habitat Diversity

A key indicator for
comparing alternative future scenarios

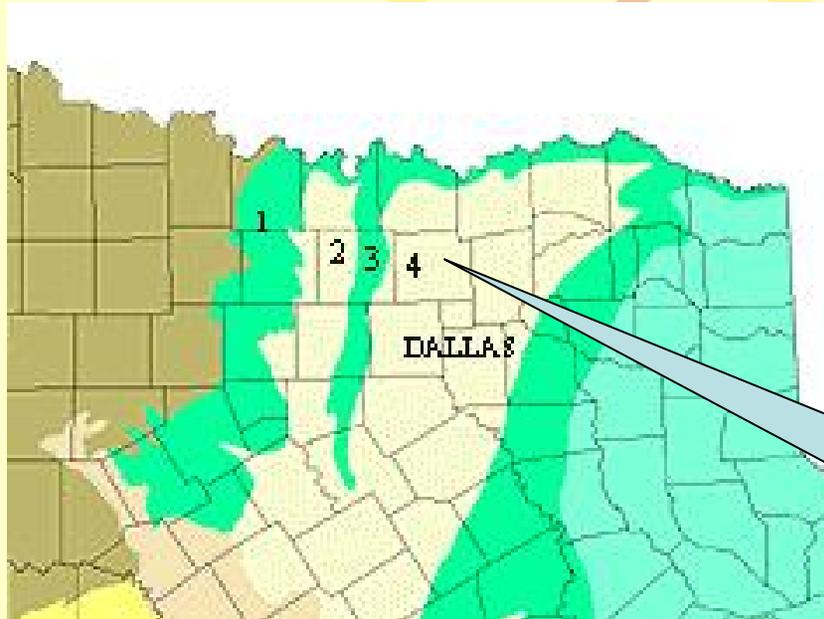
This powerpoint presents:

- What is this key indicator ?
- How do the alternative future scenarios compare ?



Introduction to Blackland Prairies and Cross Timbers and Prairies

Physiographic Zones



<http://www.nhnct.org/urban/biod.html>

- North Central Texas, a region roughly the size of Kentucky, cuts across two physiographic zones with distinct habitat regions; the Blackland Prairies and the Cross Timbers and Prairies. Each boasts a rich, diverse wildlife population.

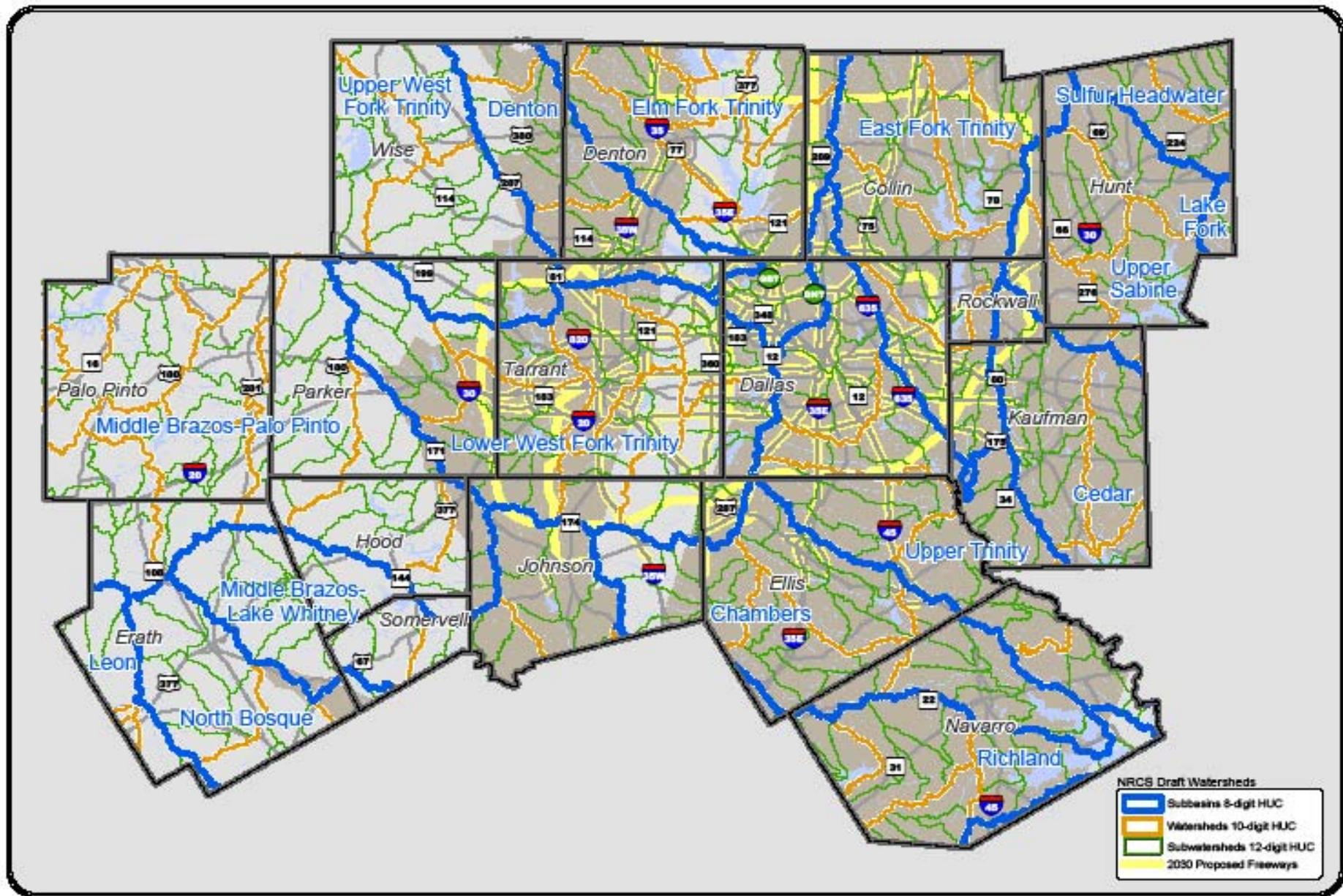
1. Western Cross Timbers
2. Grand Prairie
3. Eastern Cross Timbers
4. Blackland Prairie

<http://www.nhnct.org/urban/biod.html>



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Understanding Our Options for Growth

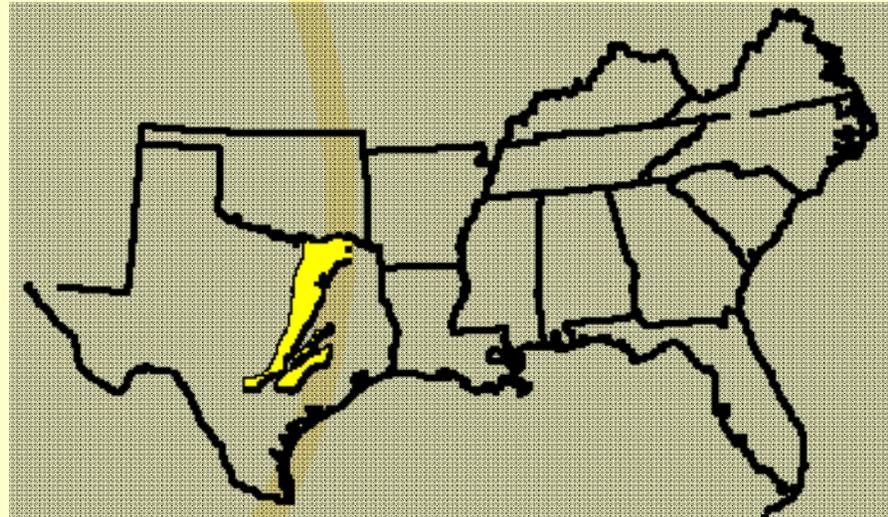


Blackland Prairie

What are Blackland Prairies?

- This ecosystem is made up of *easily-eroded* Cretaceous shales and marls that produces rich, black soils in flat to gently rolling topography where grasslands predominate.

Source: <http://www.nhnct.org/urban/biod.html>



Source: <http://soilphysics.okstate.edu/S257/south/mlra/86.htm>

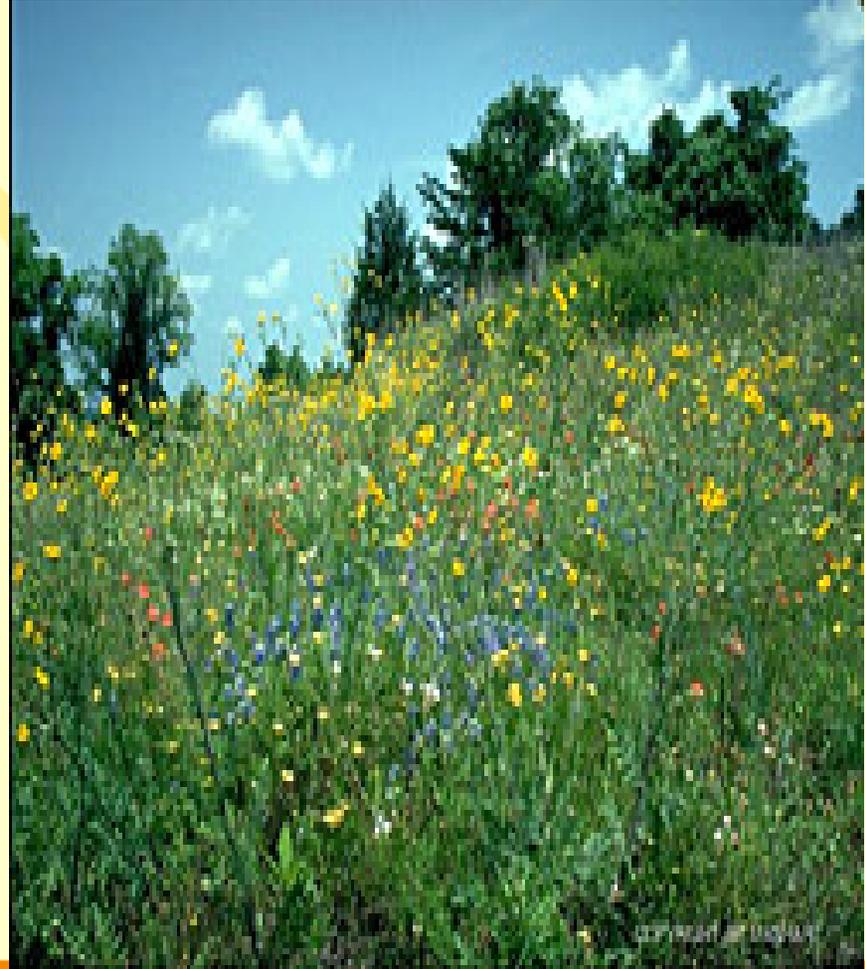


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Where are Blackland Prairies?

- The Texas Blackland Prairies are an ecoregion located in Texas that runs roughly from the Red River in North Texas to San Antonio in the south. It encompasses all of Collin, Ellis, Hunt, Tarrant, Kaufman, Rockwall and most of Dallas Counties (among others).



Why Is It Important to Protect Blackland Prairies?



View of the Blackland Prairie in southern Dallas County, near Lancaster

- Primary threats to prairie remnants are urbanization, row crop agriculture, invasion by exotic plant species, fragmentation, and loss of landscape-scale processes, especially fire and grazing by large native herbivores.
- Almost all of the remaining Blackland Prairie is under private ownership. Approximately 12% of the remaining Blackland Prairie is currently under protection by The Nature Conservancy of Texas, the Texas Chapter of The Nature Conservancy.



Federal /State Conservation Efforts: Texas Parks & Wildlife Department

- **Comprehensive Wildlife Conservation Strategy (CWCS)**
 - Blackland Prairies: Tier I – High Priority Ecoregion
 - **Conserved Status**: This ecoregion ranked medium in conserved status because there is only a small percentage of public and non-profit conservation land and private property operated under wildlife management plans.
 - **Threats**: This is ***the most severely altered of Texas' ecoregions***, since most of the Blackland Prairie has been converted for cropland or urban development. Only an estimated 5,000 ac. remain in their historic condition in terms of plant species. All habitats in this ecoregion are threatened by rapid population growth and accompanying conversion to urban areas and pastureland, fragmentation and decreased land parcel size.



CWCS: Blackland Prairies(cont'd)

- **Rare Plants and Communities:** This ecoregion ranks lowest in number of rare plant species and seventh in number of endemics, but all four native Blackland Prairie grass communities are rare.
- **Rare Animals:** Many tall grass prairie birds have declined drastically due to land conversion and fragmentation. This region is an important stopover habitat for migrant songbirds and wintering raptors.
- **Priorities: Protection and restoration of remnant prairies is a high priority**



Source: Texas Parks and Wildlife Department

Source: Audubon Society



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Local Efforts to Protect Blackland Prairies

- Clymer Meadow remains one of the largest and most diverse remnants of the Blackland Prairie and one of the most scenic areas in North Central Texas.
- Clymer Meadow Preserve serves as a center for study of the Blackland Prairie and has been the site of more than a dozen scientific investigations ranging in scope from inventories of prairie invertebrates to noxious weed control.



Clymer Meadow Preserve in Celeste, TX

Source: Nature Conservancy



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Cross Timbers and Prairies



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Source: University of Arkansas: The Ancient Cross Timbers Consortium

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What are Cross Timbers and Prairies?

- This ecosystem is made up of ***erosion-resistant*** rocks that produce soils that sustain the growth of mixed oak woodlands and prairies.

Source: <http://www.nhnct.org/urban/biod.html>



Source: Cross Timbers Urban Forestry Council



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Where are Cross Timbers and Prairies?

- Encompasses all of Hood, Parker, Wise, and most of Denton, Johnson & Tarrant Counties (among others)
- North Central Texas Cross Timbers are made up of subregions:
 - The East Cross Timbers
 - Fort Worth Prairie
 - Lampasas Cut Plain
 - West Cross Timbers



Source: Wikipedia/Creative Commons



Why Is It Important to Protect Cross Timbers and Prairies?

- The Cross Timbers may be one of the least disturbed forest ecosystems that survives in the eastern United States.
- Oil and gas drilling in the Barnett shale layer pose a serious threat to these last remnants.



Federal /State Conservation Efforts: Texas Parks & Wildlife Department

- Comprehensive Wildlife Conservation Strategy (CWCS)
 - Identified as a Tier II secondary priority ecoregion in Texas

Conserved Status: This ecoregion, along with the High Plains, rank the lowest in conserved status. There is little public land, few private preserves and a low percentage of private land under wildlife management plans.



Source: Fort Worth Prairie Park



CWCS & Cross Timbers and Prairies Ecoregion (cont'd)

- ***Threats***: The Cross Timbers and Prairies ecoregion ranked medium in terms of land conversion, but the potential for rapid conversion and fragmentation in the future is imminent.
- ***Rare Animals***: The region provides nesting habitat for the federally endangered blackcapped vireo and the golden-cheeked warbler.



Source: <http://www.nhnct.org/urban/biod.html>



CWCS & Cross Timbers and Prairies Ecoregion (cont'd)

- **Rare Plants and Communities:** This ecoregion harbors only one rare plant and has relatively low endemism. Patches of Blackland Prairie grasslands within the Cross Timbers are made up of threatened communities similar to those described for other ecoregions.
- **Priorities:** Protecting the ecoregion's prairies, woodlands and remaining river corridors should be a priority.



Source: <http://www.nhnct.org/urban/biod.html>



Local Efforts to Protect Cross Timbers & Prairies

- *Cross Timbers Conservancy*

- *Goals:*

- **Educate** landowners in the Cross Timbers about their ecosystem, it's uniqueness, and the importance of preserving and protecting its less-altered, more natural character.
 - **Conserve** the woodlands of the Cross Timbers, especially those old-growth remnants that predate settlement, by obtaining the conservation commitment of landowners through execution of Conservancy Agreements.
 - **Protect** the ecosystem of the Cross Timbers from intentional or inadvertent destruction by individuals, corporate interests, or government agencies.
 - **Support and enhance** opportunities for education and research efforts by qualified biologists, botanists, and wildlife specialists.



Habitat Diversity

Conditions would worsen under Business As Usual with more habitat loss

Scenarios Compared to Business As Usual



Connected Centers

+ Improves



Return on Investment

+ Improves



Diverse Distinct
Communities

+ Improves



Green Region

++ Improves Greatly



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Connected Centers

This scenario envisions many human-scale, moderate intensity mixed use centers located throughout the region, similar to projects near DART light rails stations.



+Improves Habitat Diversity compared to Business As Usual

- Less land in rural areas would be disturbed since development would be more concentrated
- Clustered “gray” infrastructure provides more opportunity to protect and enhance “green” infrastructure



Return on Investment

This scenario envisions that existing neighborhoods and business areas are maintained, and underutilized properties are revitalized, within the current urban service area through reinvestment in existing infrastructure.



+Improves Habitat Diversity compared to Business As Usual

- Land outside the urban service area would not be substantially disturbed, and some key sites in private ownership could still be acquired
- Revitalizing the existing urban area would provide opportunities to restore habitat in critical locations
- Daylighting paved-over creeks would provide new corridors for habitat restoration



Diverse Distinct Communities

This scenario supports revitalization and investment in the downtowns of large and small communities around the region. It creates places with a mix of housing and jobs, with infrastructure efficiently clustered rather than extending to large areas of low intensity development.



+Improves Habitat Diversity compared to Business As Usual

- Land “in-between” the diverse district communities could be preserved, rather than being developed as low intensity urban
- Certain communities could choose to have habitat preservation or restoration as an important element of their identity



Green Region

This scenario begins with the preservation of important open spaces and environmental assets. It emphasizes the inclusion of natural areas in the development pattern of all parts of the region, supports green jobs, and reduces the region's carbon footprint.



++Improves Greatly Habitat Diversity compared to Business As Usual

- By definition, the “Green Region” scenario places primary emphasis on preservation of natural assets including habitat
- For relatively undisturbed watersheds, natural areas for preservation would first be identified, then development would cluster away from these areas
- Within the current urban area, reinvestment would place great attention on restoring habitat during redevelopment

