ECOREGIONS OF TEXAS

Texas Master Naturalists
Brazos Valley Chapter
VIDEO: Texas Nature Celebration
LEARNING GOALS

1. Identify 9-11 ecological regions and understand how they relate to larger biomes (6) and smaller subregions (25)
2. Explain why managers use different maps at different scales to solve different problems
3. Explain why ecoregions differ in biodiversity
1. How many ecoregions in Texas?
Some say 6-10

- 6 biomes
- 8 natural regions
- 10 wildlife viewing areas (TPWD)

Figure 1. The rich biological diversity in Texas is represented in the landscapes of natural resource parks within eight major natural regions that have been further subdivided by ecologists according to distinctive vegetation and geology within each region (from Hayes et al., 1987).

SOURCE: Packard & Cook 1995
Or is it 25, counting subregions!

Major Land Resource Areas
MLRA

SOURCE: USDA, NRCS
BIOMES: ecoregions (subregions)

1. KANSAN PRAIRIE: grassland plains
   - rolling plains (3 subregions)
   - high plains
2. CENTRAL TEXAN: savannah
   - blackland prairie (2 subregions)
   - oakwoods & prairie (3 subregions)
3. BALCONIAN: hill country
   - Edwards plateau (3 subregions)
   - Llano uplift
4. AUSTRO RIPARIAN: pineywoods (2 subregions)
5. TAMALIPAN SCRUB: south Texas brush country (3 subregions)
6. GULF COAST: coastal sand plain (2 subregions)
7. CHIHUAHUAN DESERT: Trans pecos (6 subregions)
Where we are in the big picture

Figure 6.5.
The six biomes of Texas (shaded) are larger units classifying vegetation types in the region (Blair 1950); they are a function of gradients of precipitation (thick arrow), annual frost-free period (thick arrow), and underlying geological features (elevation represented by medium-width solid lines) (Thomas 1975).

SOURCE: Packard & Cook 1995
2. Why so many different maps?

- **History** - coarse grain maps initially covered large areas of the continent
- **Technology** - satellite imagery resulted in much finer resolution
- **Scale of the Problem** - scale matters, since managers implement national, state & local laws
- **Biodiversity stewardship** - communities, populations, genotypes
Historical: geological inventory
Technology: satellite imagery
Scale of problem: Fine vs. coarse

Urban & Ag development

Wetland protection
3. Why is our region special?

- **Geology**
  - river drainages run NW to SE
  - soils and bedrocks

- **Frostline gradient**
  - north to south

- **Rainfall gradient**
  - West to east
Geology
Temperature
Rainfall

Annual Texas Rainfall. Courtesy of NRCS.
Connectivity

- Climate conditions predicted to move northeast
- Perpendicular rivers may be barriers to species moving along natural gradients

Figure 4. The river drainages providing potential dispersal corridors among habitat fragments are perpendicular to the assumed northeastern shift in climatic conditions important to native species.

SOURCE: Packard & Cook 1995
Biodiversity stewardship

• Habitat fragmentation
• Global climate change
SUMMARY

Ecoregions within continental biomes (subregions)
- Central Texan savannah (blackland prairie (2), oakwoods & prairie (3))
- Austroriparian (pineywoods (2))
- Balconian escarpment (Edwards plateau (3), Llano uplift)
- Kansan plains (rolling plains (3), high plains)
- Chihuahuan desert (Trans pecos (6))
- Tamaulipan scrub (south Texas brush country/plains (3))
- Gulf coast (coastal sand plain)

Map technology depends on the “problem”
- Biodiversity = Communities (coarse), populations, genotypes (fine)

Ecoregions differ in biodiversity due to geology (northwest/southeast), the frost line (north/south) and the rainfall gradient (west/east)
Sources
