Assessing functional characteristics of Blackland Prairie Riparian Forest within Travis County

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Walnut Creek Nature Preserve
Ecoregions intersecting Travis County
Gould, 1975 Texas Plants, courtesy of TPWD GIS Lab
The wider the buffer the greater the function
Project Goals

- Characterize existing conditions
- Create accessible diagnostics
- Inform stakeholders & policy makers
Two Parts

• Riparian character
• Floodplain connection

Two Goals

• Characterize current conditions
• Develop assessment tool
Ecoregions intersecting Travis County
Gould, 1975 Texas Plants, courtesy of TPWD GIS Lab
Major Soil Types within the Blackland Prairie ecoregion
SSURGO Soil Classification, TNRIS archive
Sampling Universe
Selected for homogeneous soil type, vegetation class, and ecological influence
Select Riparian Characteristics

• Community structure
• Woody species age classes
• Woody species diversity & wetland indicators
Community Structure

% plant cover in the plot in 3 layers
Community Structure Score

\[ \sqrt{3x_1^2 + 2x_2^2 + x_3^2} \]

Low score: Southern site
High score: Northern site
For the comparison of community structure scores:

- Large sites:
  - North: High score, p = 0.26
  - South: Low score

- Small sites:
  - North: High score, p = 0.03
  - South: Low score

Comparison “Bins”:
- Large
- Small
- North
- South

High score: Northern site
Low score: Southern site
Age Class Diversity

Looking at woody species in their *life stages*
Age Class Diversity Score

= \sqrt{y_1^2 + y_2^2 + y_3^2}
Age Class Diversity Score = $\sqrt{y_1^2 + y_2^2 + y_3^2}$

- Large DA: High score: Northern site, Low score: Southern site
- Small DA
- North: High score, p < 0.001
- South: Low score: Southern site

Comparison “Bins”
Age Class Diversity = $\sqrt{y_1^2 + y_2^2 + y_3^2}$
Species Diversity & Woody Wetland Indicators

Richness and frequency, but not abundance
Total Species Diversity = total # of species observed
Total Species Richness:
- not driven by drainage area
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- is affected by water availability
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- not driven by drainage area
- is affected by water availability
- highly variable at intermediate range drainage areas
Woody Species Wetland Indicator Diversity:

- OBL or FACW status
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- OBL or FACW status

- not driven by drainage area