

FINAL TITLE

Vegetation Analysis of Missouri Southern State University Prairie

ABSTRACT

Historically, it is estimated that Missouri had 5.7 million hectares of tallgrass prairie but there has been a 99.9% decrease of those lands. Tallgrass prairie contains a variety of diverse species assemblages that are quickly becoming endangered, threatened, or extinct. This study was conducted on the Missouri Southern State University prairie, an approximately 40 acre remnant prairie in Joplin, Missouri. I quantified plant cover, species richness, diversity, frequency, and ratio of native to exotic plant species in 40 study plots. Vegetation was sampled three times during the growing season to account for the different phenologies of the plant species using a modified Daubenmire cover class system. . A total of 117 plant species from 35 families were encountered in the sampling plots. The Shannon Diversity Index for the prairie was 4.03. The five most frequently encountered species in the prairie were *Coreopsis grandiflora*, *Carex meadii*, *Ruellia humilis*, *Erigeron strigosus*, and *Plantago virginica*. The five plant species contributing the greatest amount of cover were *Diodia teres*, *Schizachyrium scoparium*, *Rhus copallinum*, *Andropogon gerardii*, and *Aristida oligantha*. In comparison to other remnant tallgrass prairies, MSSU prairie had higher species richness and diversity than those seen in Illinois, Iowa, and Texas. Even with the conservative sampling method used during this study, a significant number of plant species were identified, which further supports the fact that remnant plant communities, such as MSSU prairie, harbor significant species richness and diversity at small spatial scales.