



ABSTRACTS

Comparison of arthropod diversity and abundance in a heavily grazed pasture and a revegetated pasture in a cross timbers grassland

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Overgrazing and conversion to cropland has greatly reduced the historical range of the Great Plains over the past century, with only approximately 27% of the cross timbers savannah grassland estimated to remain. This habitat loss can lead to decreases in arthropod diversity and abundance, particularly for host-specific grassland families. This has led to questions of how to effectively restore the biodiversity native to these regions. In this study, we compared arthropod family diversity and abundance in a heavily grazed cattle pasture, and a previously grazed pasture that has been allowed to revegetate without active restoration efforts. This comparison is important to determining how arthropod communities are impacted when grazing is ceased in an area, but no efforts are made to restore native flora. Utilizing pitfall traps to sample these two pastures, we found that both alpha richness and diversity were higher in the grazed pasture than in the ungrazed pasture, though the ungrazed pasture had a higher abundance of arthropods. Furthermore, even after accounting for differences in abundance, the grazed site had more families present than the ungrazed site. In both pastures, the arthropod communities were largely comprised of ants and slender springtails (Hymenoptera: Formicidae; Collembola: Entomobryidae), though the grazed pasture had other common grassland families such as leafhoppers (Hemiptera: Cicadellidae), that were nearly absent in the ungrazed site. These results suggest that the cattle grazing maintains diversity in this case, likely through creating a unique mosaic of biotic and abiotic factors that allow more niches to be present.