TARLETON STATE UNIVERSITY
Timberlake Biological Field Station

EFFECTS OF GRAZING ON ARTHROPOD DIVERSITY AT TIMBERLAKE BIOLOGICAL FIELD STATION

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Grazing can have a significant effect on plant diversity and species abundance, this then can influence arthropod communities that use grasses and forbs as nutrient and shelter providers. The Timberlake Biological Field Station (TBFS) grazing experiment in Texas looks for the effects of grazing on biodiversity by dividing a grassland area into three grazing types (ungrazed, partially grazed (grazed only by dear), grazed by deer and cattle) in a Latin square design. It was hypothesized that this difference in treatment could possibly lead to a great comparative fluctuation between arthropod abundance and diversity and the type of grazing a grassland is subjected to. To understand the effects of grazing on arthropods pitfall traps were placed in the TBFS grazing experiment to collect arthropods in areas with different grazing levels at three different times. Arthropods species and community composition were visualized using non-metric multidimensional scaling (NMDS) for treatment and time. In treatment NMDS showed little to no overlap between the species composition of grazing and ungrazed treatments, while the partially grazed treatment showed overlap with both of the other treatments. In time NMDS showed no overlap among the communities found at the three different sampling times. There was some difference among treatments in richness and Shannon Index that were also taken into account. Results from this study lead us to believe that grazing has an important influence on the arthropod community that can be found in an area.