



EFFECTS OF GRAZING AND BROWSING ON SUBTROPICAL GRASSLAND VEGETATION

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We collected data from a long term grazing experiment with a Latin Square design located at Timberlake Biological Field Station near Goldthwaite, Texas. The experiment consists of nine adjacent, equal-sized plots which receive one of three treatments: (1) no fence (allowing both cattle grazing and deer browsing), (2) short fence (excluding cattle grazing), and (3) tall fence (excluding both grazing and browsing). Each treatment was replicated three times. Grazing by cattle was terminated by 1 April 2021 when all cows were sold and removed from the property. For each plot, we identified dominant/codominant forb, grass/grass-like, and woody plant species using Diggs et al. We estimated the percent ground coverage and percent forb/grass/woody plant composition, and noted the presence or absence of some notable native, introduced, and/or invasive species of the area (according to Diggs et al.). We also ran four equidistant measuring tape transects in each plot before placing a ½ meter square quadrat at two random points along each tape. In each quadrat, we counted number of species and number of individuals per species and measured the height (cm) of one stem at each corner. Finally, at 21 random spots in six (no/short-fenced) plots, we measured above ground vegetative biomass (kgDM/ha) using a Platemeter F200. In order to determine what effects (if any) grazing has on this subtropical grassland community, we compared sample means between treatments for height, biomass, and Shannon Diversity data. Our results will serve as a starting point for future monitoring of plant succession patterns in response to removal of cattle grazing at this site. Understanding these patterns is crucial for future maintenance and restoration of this grassland and others like it in the Lampasas Cut Plains ecoregion.