Effects of Black-tailed Prairie Dog (*Cynomys ludovicianus*) on Short Grass Vegetation of the Chalk Flats Region of Western Kansas

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Previous studies indicate the black-tailed prairie dog (*Cynomys ludovicianus* (Ord, 1815)) alters its environment through grazing, clipping, and burrowing activities, which affects plant community composition by shifting from competitive to ruderal species. However, previous research often has been contradictory, showing varying degrees of effect, and cannot be universally applied to all areas where the black-tailed prairie dog occurs. Limited research has been conducted on the effects of the black-tailed prairie dog on vegetation in western Kansas. We examined some effects of black-tailed prairie dog activity on plant community composition and aboveground biomass based on four treatments: prairie dog only, cattle only, prairie dog and cattle, and neither species. Six replicates of each treatment were observed four times during the growing season. Plant community composition was also observed on three areas representing different age classes on eight colonies. Data were obtained along line transects. For community composition, we used a point intercept method and frequency quadrats; for aboveground biomass, we used a disk meter. We compared composition both on and off colonies. On-colony sites had significantly higher abundance of ruderal forb species than off-colony sites. Graminoid species of low herbivore preference occurred in higher abundance on colony. However, they did not respond as readily as forbs to the presence of the prairie dog. The black-tailed prairie dog and cattle treatment had the greatest effect on aboveground biomass. When considered as independent causes, black-tailed prairie dog had a greater effect than cattle on aboveground biomass.