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*Cute, But in Control: Prairie Dogs and the Short-Grass Prairie*

This research examined how black-tailed prairie dogs impacted plant diversity in the short-grass prairie. Prairie dog colonies create habitat that differs from the surrounding grassland by changing vegetation structure through grazing.

The hypothesis was: prairie dogs are keystone predators - If they preferred to eat grass (premise 1) and grass was the dominant competitor (premise 2), then the prairie dog town should have higher plant diversity than the prairie outside of the prairie dog town (inference of the hypothesis).

Research was conducted in four prairie dog towns. Study 1 examined diet choices (grass/forbs) of prairie dogs via direct observation. Study 2 used a quadrant sampling method to measure vegetation structure (grass cover, forb cover, grass height, forb height) and species diversity.

A Chi-square supported premise 1: prairie dogs preferred grass over forbs. An ANOVA in Study 2 also found preferential grazing: there was more grass where prairie dogs did not graze (undisturbed prairie) than where they grazed (the general town, center of town).

Study 2 supported premise 2: A regression found that forbs and grass competed, and an ANOVA found grass density higher than forb density in the ungrazed prairie. The inference of the hypothesis was supported by an ANOVA which showed there was greater diversity in the general town than the ungrazed prairie.

Further analyses showed that competition from grass decreased diversity, diversity was related to forb coverage, and moderate amounts of grazing increased diversity. Thus, prairie dogs regulate diversity on the prairie and have important implications for land management.