

Project Highlight – SD State Wildlife Grant

Project Type Research

Title What factors affect territoriality and productivity of black-footed ferrets?

In a nutshell This study takes a closer look at ferrets living on certain prairie dog colonies in the Conata Basin in southwestern South Dakota. The research examined how ferrets use space and resources to partition themselves into territories and how ferrets and badgers partition space and other resources. The results will improve predictions about the number of ferrets that can be supported by various prairie dog age structures and colony sizes and configurations. State Wildlife Grant dollars supported a portion of a larger study.

Relevant Species of Greatest Conservation Need

- black-footed ferret (*Mustela nigripes*)

Relevant Habitats black-tailed prairie dog colonies

Cooperators University of Idaho (Janet Rachlow; Shaun Grassel, graduate student)

Purpose

- measure space use of black-footed ferrets in small black-tailed prairie dog complexes and relate territory size, colony size, and carrying capacity
- measure space use by female ferrets and compare the degree of overlap with offspring and unrelated ferrets
- measure space use and resource overlap between black-footed ferrets and badgers
- measure and relate ferret productivity, prairie dog productivity, and forage productivity

Timeframe 2008 - 2010

Location Buffalo Gap National Grassland, southwestern South Dakota

Summary or Important Findings

- Female ferrets avoided female badgers, but not male badgers; male ferrets showed less avoidance than did female ferrets
- This avoidance decreased with increasing prairie dog densities
- Prairie dog reproduction was influenced by precipitation during the previous year and winter severity
- Ferret reproduction varied little across years, even as prairie dog reproduction declined during one year
- Badgers in the study area specialized on prairie dogs as their prey

- Overall, prairie dog colonies were proven important to badgers and black-footed ferrets and their role as a keystone species in the grassland ecosystem was emphasized

Best contact person Shaun Grassel

More Information

Grassel, S. M. 2015. Ecological relationships of black-footed ferrets, American badgers, and black-tailed prairie dogs in South Dakota. Ph. D Dissertation, University of Idaho, Moscow.

Grassel, S. M., J. L. Rachlow, and C. J. Williams. 2016. Reproduction by black-tailed prairie dogs and black-footed ferrets: Effects of weather and food availability. *Western North American Naturalist* 76(4):405-416.