



Black-tailed Prairie Dog at Scotts Bluff National Monument

Importance: A keystone species population decline

The black-tailed prairie dog (*Cynomys ludovicianus*) is a “keystone” species of the short grass prairie. Many species within this ecosystem depend on the keystone for food or habitat. The US Fish and Wildlife Service protects keystone species under the Endangered Species Act when other dependent species are imperiled. The most endangered mammal in the United States, the black-footed ferret (*Mustela nigripes*), depends on prairie dogs for food and shelter. The rare and unique burrowing owl depends on prairie dog tunnels for shelter. Keystone species play a vital role in ecosystem health. Black-tailed prairie dogs once inhabited hundreds of thousands of square kilometers of the Great Plains, but now inhabit only a small fraction of their original range.



Prairie dog in typical pose at its burrow

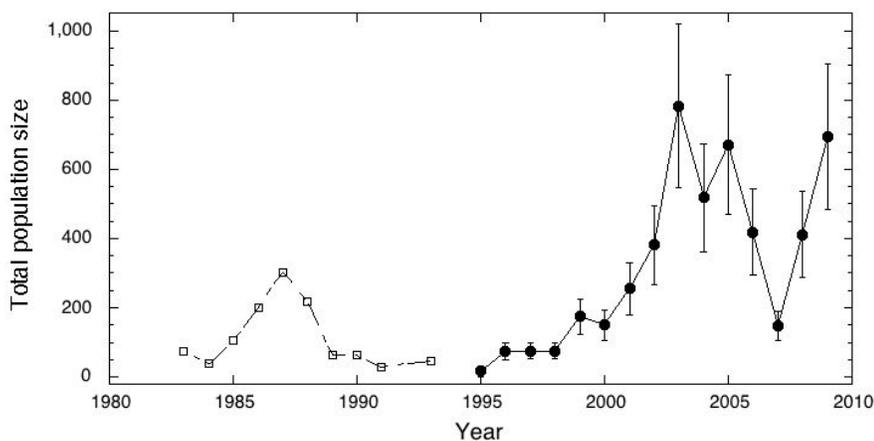
Long Term Monitoring: Helping to stabilize a population ¹

The Heartland Network Inventory and Monitoring Program monitored prairie dogs at Scotts Bluff NM for 15 years to: 1) estimate prairie dog abundance; 2) map annual size and location of the prairie dog colonies; and 3) determine if a potentially fatal disease, *Sylvatic plague*, exists in these colonies. Three prairie dog colonies have existed at the monument: Main Colony was in the northwest corner, North Colony, first observed in 2002; and Saddle Rock Colony, first observed in 2002 and disappeared before the 2008 survey. Scientists conducted visual counts of prairie dogs in each colony to calculate population density and size. They also mapped colonies, monitored for sylvatic plague and recorded environmental factors, such as precipitation, degree days during growing season and use of various vegetation management techniques in the monument.

Status and Trends: Population size increased, but fluctuated

The overall prairie dog population at Scotts Bluff National Monument is relatively small and occupies only a small portion of the monument (i.e., 1.45% of the monument’s 698-hectare grassland). Population fluctuated greatly after 2000 within the Main Colony, but generally numbers increased over those prior to 2000. Additionally, scientists found that:

1. Although the prairie dog is known as a keystone species of grassland ecosystems, the Scotts Bluff population is not large enough to produce this aspect of community structure and function.
2. Mowing and burning treatments appear to have significant positive effects on colony expansion and managers could employ treatments to increase area occupied and total population size.
3. A colony could be reestablished through translocation of individuals from the North Colony that has little room for expansion, but shows population increase.



Estimated total population size of the Main Colony. Open squares represent estimates obtained before establishment of the current monitoring protocol. Bars represent 95% confidence intervals surrounding the point estimate.

Heartland Network Inventory and Monitoring Program of the National Park Service
www.nps.gov/im/units/htln/index.htm

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¹ Morrison, L. W., A. D. Dunkle, and D. G. Peitz. 2010. Black-tailed prairie dog monitoring at Scotts Bluff National Monument: a comprehensive report 1995-2009. Natural Resource Technical Report NPS/HTLN/NRTR-2010/309. National Park Service, Fort Collins, Colorado.