



White-tailed Deer Monitoring at Pea Ridge National Military Park

Importance: *An important component of the park ecosystem*

White-tailed deer (*Odocoileus virginianus*) populations in Arkansas have recovered from near extirpation to current levels of more than one million deer. Visitors view deer as an important component of park ecosystems, but large numbers of deer can impact the park and visitor safety. Deer can damage park resources, pose a hazard to motorists, and contribute to the spread of human transmittable diseases. High densities of deer can also cause the spread of disease and starvation within localized deer populations.

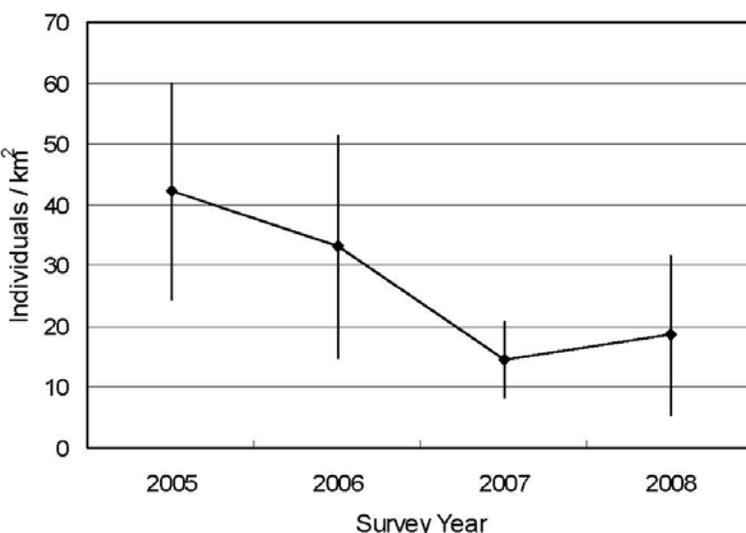


Long Term Monitoring: *Assessing trends in population size*¹

The Heartland Network, Inventory and Monitoring Program, initiated a pilot study of deer population densities in winter 2005. The primary objectives for monitoring white-tailed deer populations include (1) determining annual changes in white-tailed deer numbers and (2) determining long-term trends in white-tailed deer numbers. Understanding trends in deer population density will help park managers determine what measures must be taken to maintain herd health and to minimize vegetation damage within the park or surrounding private properties.

Status and Trends: *Population size stabilized*

Scientists saw a decline in deer population density in the first three years of study, but the index of deer density did not change significantly in 2008. It appeared that the deer decline may have been caused by a disease that ran its course, although this is unconfirmed. Additionally, scientists made several other observations:



Average density index (\pm std. dev.) of white-tailed deer in the survey area of Pea Ridge National Military Park, Arkansas, 2005 - 2008.

1. Deer at Pea Ridge National Military Park may be vulnerable to over population, and subsequent disease.
2. Overall, the index of deer density declined an estimated 55% since the monitoring began.
3. Deer counts this year varied greatly between sampling nights. The resulting high standard error may be the reason that population densities show no statistically significant difference from 2007 to 2008.

Heartland Network Inventory and Monitoring Program of the National Park Service. Visit www1.nature.nps.gov/im/units/htln/index.htm.

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¹ Cribbs, J.T. and D.G. Peitz. 2008. White-tailed Deer Monitoring at Pea Ridge National Military Park, Arkansas: 2008 Status Report. Natural Resource Technical Report NPS/HTLN/NRTR—2008/104. National Park Service, Fort Collins, Colorado.