



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.

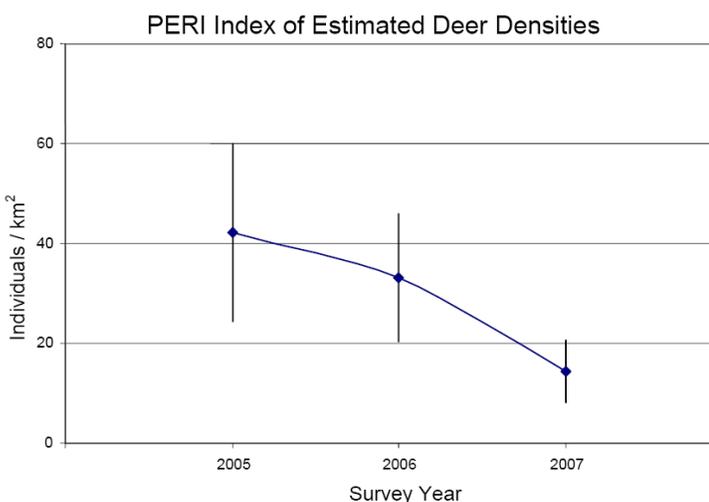


Long Term Monitoring: *Assessing trends in population size*¹

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: *Sudden decline in population size attributable to a deer disease*

Scientists saw a decline in deer population density of 66% in the three years of study with a decline of 56% in winter of 2006-2007. It appears that deer have died from disease, perhaps hemorrhagic fever, although this is unconfirmed. Additionally, scientists made several other observations:



Index of white-tailed deer density estimates during all survey years. Standard deviation is shown with error bars.

1. Deer at Pea Ridge National Military Park may be vulnerable to over population, and subsequent disease, in a fragmented habitat with the absence of predators and hunting.
2. Implementation of a deer monitoring program on Pea Ridge National Military Park yielded important results about a possible disease related decline in the population.
3. Population densities have approached sustainable densities in the park, but further declines may occur. Annual monitoring will identify changes in deer population affecting adaptive management.

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. 2007. *White-tailed Deer Monitoring at Pea Ridge National Military Park, Arkansas: 2007 Status Report*. Natural Resource Technical Report NPS/HTLN/NRTR—2007/026. National Park Service, Fort Collins, Colorado.