



White-tailed Deer Monitoring at Wilson's Creek National Battlefield

Importance: *An important component of the battlefield's ecosystem*

White-tailed deer (*Odocoileus virginianus*) populations in Missouri have rebounded from their lowest level, an estimated 400 in the 1930s, to a current estimate of nearly one million deer. Visitors view deer as an important component of the battlefield's ecosystems, but large numbers of deer can impact restoration efforts and visitor safety. Deer can damage resources, pose a hazard to motorists and contribute to the spread of human diseases. High densities of deer can also cause the spread of disease and starvation within localized deer populations.

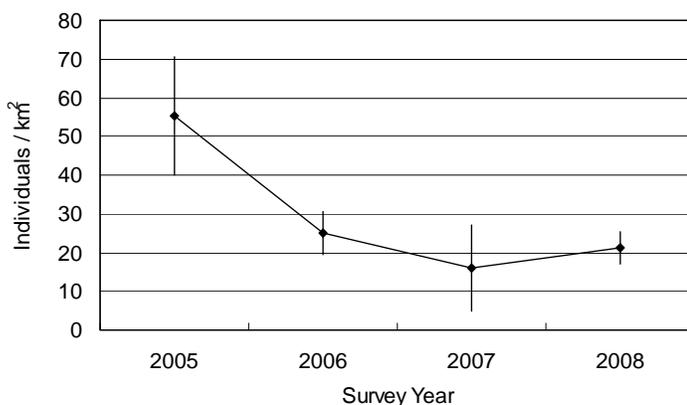


Long Term Monitoring: *Assessing trends in population size¹*

The Heartland Network, Inventory and Monitoring Program, initiated a pilot study of deer population densities in 2005 and implemented long-term monitoring in 2006. The primary objectives include (1) determining annual changes in white-tailed deer numbers and (2) determining long-term trends in white-tailed deer numbers. With this information, scientists can detect the presence of acute factors of concern to managers and determine if managers should take measures to maintain herd health and minimize vegetation damage in and around the battlefield.

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

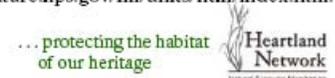
Scientists saw a 71% decline in deer population density from 2005 to 2007. This decline was attributed to hemorrhagic disease. The population seems to be rebounding in 2008 with a deer density increase of over 33% from the 2007 low. Additionally, scientists made several other observations:



Average density index (+ std. dev.) of white-tailed deer in the survey area of Wilson's Creek National Battlefield, Missouri, 2005 - 2008.

1. Deer at Wilson's Creek may be vulnerable to over population, and subsequent disease and starvation, in the absence of predators and hunting.
2. Hard spring frost in 2007 reduced mast production for wintering deer in 2008, but good summer food supplies and the addition of the historic Ray and Sharp's cornfield contributed to deer survival.
3. Over-browsing by deer may cause a shift in plant species assemblages, plant diversity, and function of the plant community.

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



¹Cribbs, J.T. and D.G.Peitz. 2008. White-tailed Deer Monitoring at Wilson's Creek National Battlefield, Missouri: 2008 Status Report. Natural Resource Technical Report NPS/HTLN/NRTR—2008/102. National Park Service, Fort Collins, Colorado.