

Dangers White-Tailed Deer Pose to the Ecosystem



http://www.statesymbolsusa.org/Pennsylvania/Animal_White_tailed_Deer.html

Discussion of the paper: *Reduction and Maintenance of a White-Tailed Deer Herd in Central Massachusetts*, (McDonald, Clark, and Woytek) 2007

Andrew Schroeder

Marian University

School of Mathematics and Science,
Institute for Green and Sustainable Science

Indianapolis, IN

Range of white-tailed deer



- Well adapted
- Native to: United States (except five states), Canada, Mexico, Central America and South America.
- Has moved into residential areas such as golf courses and parks

Diet of white-tailed deer



http://en.wikipedia.org/wiki/White-tailed_deer

- Ruminant
 - Changes in bacteria according to season
- Diet is varied and changes according to food availability
 - Sometimes resorts to field mice and nesting songbirds

What are their natural predators?

- Adult deer:

- Wolves, Cougars, Bears, Jaguars, and American Alligators

Deer fawns:

- Bobcats, Lynxes, and packs of coyotes



<http://en.wikipedia.org/wiki/Cougar>

Behavior leading up to reproduction



- Commonly known as the “rut”
- Males compete for breeding opportunities
 - Sparring determines dominance
- Temperature and latitude dependent

Reproduction



http://en.wikipedia.org/wiki/White-tailed_deer

- Triggered by declining photoperiod
 - Dependent on:
 - Population density
 - Food availability
- 1-3 young
 - Males leave after a year
 - Females leave after 2 years

Why is all of this important?



<http://blog.sysomos.com/2010/05/19/twittera-as-a-resource-tool/question-mark/>

The Problems

- Overpopulation
 - Forest regeneration Failure
 - Loss of biodiversity
 - Lyme disease
 - Human Interactions



<http://www.superstock.com/stock-photos-images/4201-55589>

Forest Regeneration Failure

- Caused by over browsing
 - Loss of saplings
 - Loss of shrubs



<http://www.greenandsticky.com/deer-resist.htm>

Loss of Biodiversity

- Caused by over browsing
 - Deer eat all palatable plants such as various berries
 - Leaves only unpalatable plants such as garlic mustard and black huckleberry
 - Invasive species creep in



<http://web.extension.illinois.edu/deer/naturalhistory.cfm>

Lyme Disease

- Primary reproductive stage host
- Bring ticks closer to inhabited areas
- Thinning deer herds caused documented cases of Lyme disease to decrease



<http://sagharboronline.com/sagharbor-express/page-1/word-has-it-tick-numbers-are-up-13123>

Human Interactions

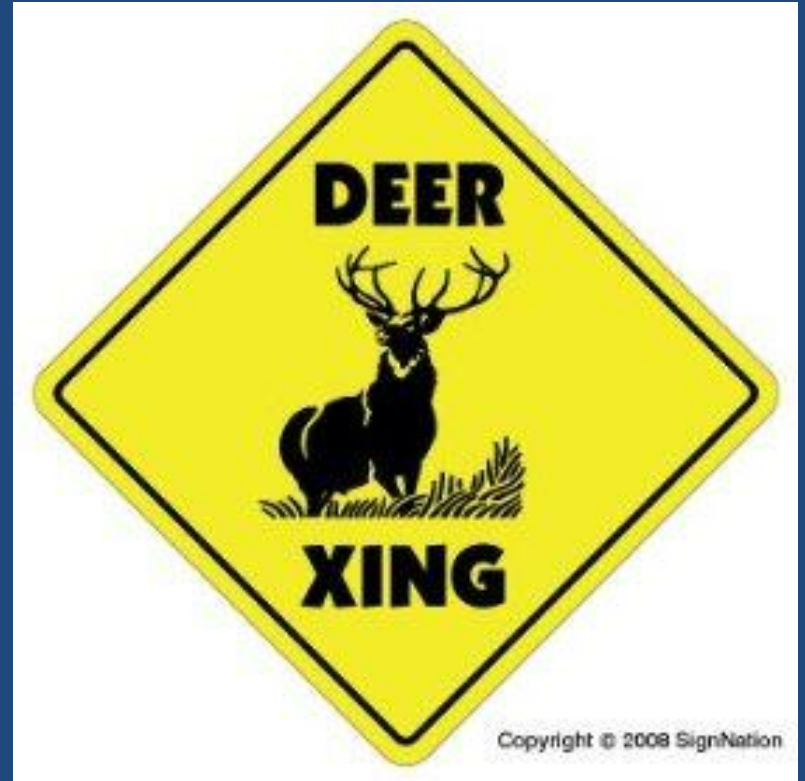


- Car accidents
 - Most frequent at night and during rutting season
- Damage to crops and suburban plants

<http://news.discovery.com/autos/deer-startling-device-gets-a-tryout-in-utah.html>

Solutions

- Hunting
- Sterilization
- Fences
- Better Lighting
- Deer crossing signs



<http://www.thecottagechronicles.com/2009/01/20/cottage-animal-warning-signs/>

Pros and Cons to Primary Paper

- Pros:
 - Study was a success
 - Helps maintain the ecosystem
 - Opened up other areas of interest
- Cons:
 - Required multiple other papers to gather all necessary information

Questions?



<http://vampirelabs.com/blog/?tag=eco-charging>