

Never-before-seen insights into deer movement offered on research website

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As part of the research, 40 deer, both male and female, fitted with GPS radio-collars are maintained on four study tracts of between 25 and 40 square miles each in Bald Eagle, Rothrock and Susquehannock state forests. Credit: Jake Dingel/PGC

Two years into a study of factors influencing forest regeneration in

Pennsylvania, researchers in Penn State's College of Agricultural Sciences are offering never-before-seen insights into deer movement.

As part of the research, the study maintains 40 deer, both male and female, fitted with GPS radio-collars on four study tracts of between 25 and 40 square miles each in Bald Eagle, Rothrock and Susquehannock state forests. The collars transmit data and receive commands via satellite and can be remotely signaled to change the time between location fixes.

Lead researcher Duane Diefenbach, adjunct professor of wildlife ecology, believes animations showing deer movement from 2013 will be of great interest to hunters and other wildlife lovers. "New technology allows us to get deer locations as often as every 20 minutes, plus we can turn those sequences of locations into video simulations showing how deer move across the landscape," he said.

"The behaviors of some of these deer are fascinating. We currently are showing the movements of four different bucks during September and October 2013. Then we will offer animations showing how the bucks traveled during the 2013 rut, which occurs early to mid-November.

The animations and other information about the research are on the [study website](#). Researchers on the project are posting regular blog entries, too, summarizing research results and interesting findings, such as deer movement. Also, the website provides a link for visitors to receive an email when new information is posted.

"We want to start sharing updates and findings from research with the public," Diefenbach said. "In coming weeks and months, we'll share how deer movements change over the seasons. Hunters and anyone interested in deer behavior will find it really fascinating to see how these deer move around."

The research, a collaboration among Penn State, the Pennsylvania Game Commission and the state Department of Conservation and Natural Resources, is examining multiple factors that affect [forest regeneration](#), such as deer, soil conditions and competing vegetation.

Diefenbach is leader of the [Pennsylvania Cooperative Fish and Wildlife Research Unit](#), which is a partnership between Penn State, the Game Commission, the Pennsylvania Fish and Boat Commission, and the U.S. Geological Survey.

"We plan to keep the website updated with the latest information from our research, and it is not going to be just about deer movement," Diefenbach said. "In the future, there will be other findings about forest vegetation, hunters, harvest rates and the deer population."

But for now, buck movements from 2013 will be featured. In November, during the rut, the GPS collars collect locations every three hours. During the firearms deer-hunting season, deer locations are captured every 20 minutes. Animations showing those movements will be available on the website in coming months.

But tracking deer movements is being done not only to entertain hunters, Diefenbach noted. "Even though our study areas are 25 to 40 square miles, which is huge, the deer we are studying don't necessarily spend all of their time on our study areas. Deer locations provide insights into how landscape features influence deer movements, and this will provide important information as we monitor how [deer](#) populations change during the study and how the forest responds."

Deer hunters who hunt on the state forests where the research is being conducted can help. Go to the [study website](#) and click on the "Register for Study" tab at the upper left. After the hunting seasons, hunters will be able to share their hunting experiences and opinions.

Provided by Pennsylvania State University

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