

Research to focus on how deer respond to changes in moon phase, weather

17 March 2015, by Jeff Muhollem



The Deer-Forest Study, currently funded through 2017, is a collaborative research project studying how deer, soils and vegetation interact to affect Pennsylvania forests. Penn State is partnering with the Pennsylvania Game Commission and the state Bureau of Forestry in the research. Credit: Joe Kosack/PGC

There seems to be a lot of common wisdom that exists when it comes to whitetails, such as, "It's near full moon, so the deer are only moving at night." Or how about, "A cold front is coming, which is why the deer are out feeding."

Do you believe these axioms? Are they really accurate? Well, researchers in Penn State's College of Agricultural Sciences are going to find out. But first, they are going to ask the public how they think deer respond to changes in [weather](#) and moonlight—and then test these ideas with data from movements of radio-collared deer.

"There are a lot of widely held beliefs about what causes deer to move, how far they move and when they move," said Duane Diefenbach, adjunct professor of wildlife ecology and leader of the

Pennsylvania Cooperative Fish and Wildlife Research Unit at Penn State.

"In our current [research project](#), we are collecting hundreds of thousands of locations from GPS-collared white-tailed deer. We thought it would be fun to see what people think about how deer move and see if that's actually true."

Diefenbach doesn't think anyone has studied the validity of these common beliefs about how deer respond to weather and moonlight. "This is a great opportunity to learn," he said. "I'm certainly curious. Little has been published on deer movement in regard to changes in weather and moon phases, and what has been published is contradictory.

"Some studies found the moon phase had no effect or that deer were less active during a full moon. Another paper that I found suggested deer are more likely to be active during the [full moon](#)."

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The Deer-Forest Blog, where researchers share their findings with the public, is [online](#). For the next several weeks anyone can answer a few questions posted there about how they think deer respond to different [weather conditions](#), such as cold fronts, rain and wind, and how deer movements change with the moon's phases.

"We even have heard that some hunters notice that deer appear to become nocturnal during the early muzzleloader season in October," said Chris Rosenberry, supervisor of the Deer and Elk Section of the Game Commission. "We now have access to technology to see if that is actually true."

Both adult male and female deer have been captured and fitted with GPS collars that transmit the deer's coordinates via satellite every three hours during October. Researchers first will investigate deer movements during this month because it is the archery and early muzzleloader hunting seasons, and it's before most of the breeding occurs.

"The last week of October is when the rut starts to occur in Pennsylvania," noted Bret Wallingford, deer biologist with the Game Commission.

"However, compared to November, most deer still exhibit normal movements and likely are more influenced by weather conditions than breeding urges."

Anyone interested in taking the brief online survey can go to the [website](#), where the link will be displayed prominently.

After the survey is closed, the responses will be summarized and shared on the blog, which is becoming increasingly popular with hunters. "I am pleased—our Web analytics indicate that word is getting out there. We're getting comments from around the country, but I did a talk recently and no one had seen it, so we are not there yet," said Diefenbach.

"It will be interesting to see what people think. Hunters talk about the weather and the moon, but it will be fun to see whether there is a lot of agreement."

Two undergraduate students in the College of Agricultural Sciences, Kate Williams, a wildlife and fisheries science major, and Leah Giralico, a veterinary and biomedical sciences major, will analyze the data to see how deer actually respond to weather and other factors. They have compiled more than 13,000 [deer](#) locations for October 2013 and October 2014 to analyze.

Provided by Pennsylvania State University

APA citation: Research to focus on how deer respond to changes in moon phase, weather (2015, March 17) retrieved 13 April 2021 from <https://phys.org/news/2015-03-focus-deer-moon-phase-weather.html>

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