
Science Report

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UW-MADISON FIELD STUDY TO TRACK DEER IN CWD TERRITORY

Researchers are hoping for cooperation from landowners and hunters

We may never know how chronic wasting disease got into Wisconsin's wild deer herd, but we're going to get a better idea of how the disease could move across the state's farm and forest landscapes.

In a five-year study spanning 14 counties, University of Wisconsin-Madison wildlife ecologist Nancy Mathews will analyze the behavior of wild whitetails in the farmlands and woodlots of south-central Wisconsin. Mathews' research group will live-trap, tag and radio-collar deer, then follow them through radio telemetry and deer-hunt registration data.

Mathews will first focus on the behavior and movement patterns of deer in the 385-square mile eradication zone during the fall 2002 hunt. The results will show whether or not hunting pressure pushes deer out of their home areas. By comparing the number of tagged deer shot by hunters with the number of deer on the landscape, researchers will also be able to document the rate of decline of deer in this heavily hunted zone.

Tags and telemetry will allow Mathews to monitor the dispersal movements of all sex and age classes, helping to show which segment of the deer population is responsible for spreading CWD across the landscape.

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CWD STUDY — add one

Mathews thinks CWD is spread by adult bucks during the rut, along with dispersing male juveniles. "Right now we don't know when animals are getting infected, but we think young deer can be infected before they disperse," she says. "They may not show symptoms until a year or two after they've become infected."

Southern Wisconsin's patchwork of farmland and woodlots offers ideal deer habitat, but the deer don't distribute themselves evenly across the landscape.

"We know that deer are clustered across the landscape in matriarchal (female-dominated) social groups that stay there for life," Mathews points out. Earlier studies have shown that 85 to 100 percent of males disperse at one year old, while nearly all females stay near their birthplace. In southern Wisconsin farm country, these female social groups have ranges of about three square miles.

Radio telemetry will allow the researchers to assess the rate of potential contact among does within their social groups and also between groups — possible transmission routes for CWD. Mathews will also look at the potential contact that deer have with cattle, and monitor how deer use livestock pastures.

Mathews is selecting study sites based on their ratio of farmland to forest land. "We want to look at how deer are using and affecting the landscape in areas with different degrees of landscape fragmentation — for example, in high forest/low agricultural areas versus low forest/high agricultural areas," Mathews says.

"We hope to work with a wide range of landowners, on land that's hunted as well as land that's closed to hunting. We need to determine whether there are pockets of land that serve as refuges for deer, and pockets of deer that serve as reservoirs for the disease."

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CWD STUDY — add two

Mathews will monitor deer in the eradication zone, the intensive management zone, and outside the management zone. Deer densities will range from low in the eradication zone to 10 per square mile in the management zone to typical densities — up to 60 deer per square mile — outside the management zone. Mathews has selected nine landscape study areas, each 65 square miles in size.

Between now and April 2003, Mathews plans to trap 300 deer. She's hoping for early snow this year, which will make the traps much more effective. All trapped deer will get small ear tags, which won't be obvious even through a rifle scope. About 120 animals will get radio collars.

"While it's legal to shoot a radio-collared deer, we're asking hunters to please NOT shoot a collared deer if they have a choice between collared and non-collared deer," she says. "We want to get as much data as possible out of the collared deer, and follow them through the fawning season next year. Radio-tagged deer will be removed in accordance with disease management objectives when the research need has ended."

Hunters who shoot ear-tagged deer need to call the DNR at the number on the tag. Any deer shot within 30 days of tagging still carries some residual drugs from the tagging procedure, and shouldn't be eaten. Hunters who register tagged deer can get free replacement permits allowing them to shoot another deer, and can keep the antlers of any deer they turn in.

The team will use clover traps (metal frames with cloth mesh) and box traps (large plywood crates open at both ends, with doors that fall and close the openings when a deer trips the trap). Mathews also plans to use rocket netting in open fields to capture groups of deer. "We need to get social groups, and rocket netting is the best way to trap an entire group at once," she notes. Researchers use bait at the trap sites, but remove the bait as soon as the deer are trapped. Veterinarians will take tonsil biopsies from trapped deer. Mathews' group will aid others studying whether these biopsies are an effective way of detecting prions in live animals.

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CWD STUDY — add three

This is part of a larger study with UW-Madison forest ecologist Dave Mladenoff. The project will assess the impacts of herd reduction on the ecosystem, especially the effects on vegetation, birds and small mammals.

Mathews has a graduate student and seven technicians working on this project, and will also use student interns and volunteers to help with radio telemetry and rocket netting.

The study is co-directed with Wisconsin Department of Natural Resources deer biologist Tim Van Deelan, and funded in part by grants from the National Cattlemen's and Beef Association, Whitetails Unlimited. and the Wisconsin Agricultural Experiment Station.

Counties in the study: Crawford, Dane, Grant, Green, Iowa, Juneau, La Crosse, La Fayette, Monroe, Richland, Rock, Sauk, Vernon, Walworth.

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