

# Targeted culling of deer controls disease with little effect on hunting

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A new study found that the targeted culling of deer prevents the rampant spread of chronic wasting disease to healthy deer. Credit: L. Brian Stauffer

Chronic wasting disease, the deer-equivalent of mad cow disease, has crept across the U.S. landscape from west to east. It appeared first in captive mule deer in Colorado in the late 1960s. By 1981, it had escaped to the wild. It reached the Midwest by 2002. Little is known about its

potential to infect humans.

Now researchers at the University of Illinois offer a first look at the long-term effectiveness of the practice of culling [deer](#) in areas affected by CWD to keep the disease in check. Their study appears in the journal *Preventive Veterinary Medicine*.

Each year, the Illinois Department of Natural Resources tests 7,000 (hunted, culled or incidentally killed) deer for CWD infection, conducts aerial surveillance to see where deer congregate and sends in sharpshooters to cull deer at the sites with disease, said Jan Novakofski, a professor of animal sciences at the University of Illinois and an author of the study.

"We know a lot about how far deer typically move," he said. "If they're sick, they're going to spread the disease that far. So if you find a deer that's sick, you draw that small circle and you shoot there."

He called this approach "a textbook scientific strategy for control. You reduce contact and you reduce the spread of infection with the smallest overall impact on healthy deer."

Novakofski and his colleagues at the Illinois Natural History Survey (part of the Prairie Research Institute at the U. of I.) found that the strategy worked: The prevalence of CWD in tested Illinois deer remained at about 1 percent from 2002 to 2012.

The team also found that hunters were killing more deer each year in each region of the state (north, central and south) regardless of CWD and CWD management. Statewide, the number of deer killed by hunters went from 147,830 in 2001, before the appearance of CWD, to 181,451 in 2012. The only exception: Two counties out of 10 with cases of CWD saw a reduction in hunter harvest over the same period.

"We wanted to know whether Illinois hunters have fewer deer to hunt now than they did before CWD," said Nohra Mateus-Pinilla, a wildlife veterinary epidemiologist at the INHS who led the study with postdoctoral researcher Mary Beth Manjerovic. "We found that hunter harvest has increased, and the prevalence of CWD has been maintained at low levels for 10 years in Illinois."

This finding answers a long-time complaint by some hunters that the culling of deer makes it harder for them to find deer to shoot, Novakofski said.

"Since 2001, hunter harvest of deer has increased similarly in the northern region of Illinois, where CWD occurs, and the rest of the state, where there is no disease or sharpshooting," he said.

In the two Illinois counties with fewer deer, "the reductions were 11 to 20 percent," Manjerovic said.

The team compared the Illinois experience with that of Wisconsin, which changed its CWD-management strategy from one that relied on culling to one that consisted primarily of allowing [hunters](#) to thin deer herds, the researchers said. Wisconsin saw a striking increase of infection in CWD-tested deer after it did that, the team found.

"In the early years in Wisconsin, (CWD prevalence) was still about 1 percent, just as it was in Illinois," Manjerovic said. "Then the strategy changed. Since 2007, CWD prevalence has increased to about 5 percent."

"We can't find an environmental or other variable that explains the increase in prevalence except a change in management," Novakofski said.

The numbers may not seem alarming to some, said postdoctoral researcher and co-author Michelle Green. But the trend is of concern, she said.

"CWD is a prion disease (like mad cow disease) and it's 100 percent fatal. There's no current way that we can actually make the deer better, so it's important that we keep it from spreading too far throughout the population," she said. "And then there's also the connection to [mad cow disease](#). We don't have enough information yet to really understand what the impact to human health could be."

"We all hope that there is never a case of [chronic wasting disease](#) in humans. We all hope that it never spreads to people or agricultural animals," Novakofski said. "If it ever does, the investment in maintaining prevalence at a low level in Illinois will be repaid a thousand-fold."

**More information:** "The Importance of Localized Culling in Stabilizing Chronic Wasting Disease Prevalence in White-Tailed Deer Populations," [www.sciencedirect.com/science/ ...  
ii/S0167587713002894](http://www.sciencedirect.com/science/.../ii/S0167587713002894)

Provided by University of Illinois at Urbana-Champaign

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