

# DISEASE AT THE DOOR

**MONTANA WILL RELY ON HUNTERS AND LANDOWNERS  
TO HELP CONTROL CWD WHEN (NOT IF) IT ARRIVES.**

BY LAURA LUNDQUIST

One day soon, Montana Fish, Wildlife & Parks veterinarian Jennifer Ramsey will receive the email she's long dreaded: Colorado State University technicians will have found chronic wasting disease in one or more of the deer tissue samples she sent them. That message will change the future, both for FWP and the state's deer and elk hunters.

In early May of this year, Ramsey thought that day had come. A woman called about a deer in her yard that was acting oddly. Her children had freed the deer from a fence, but then it just stood there, dazed and drooling, head down, emaciated—all symptoms of a deer suffering from chronic wasting disease (CWD).

After the deer was euthanized, Ramsey removed two lymph nodes from its neck and sent them to Colorado. Then she waited. "It was a pretty stressful couple of weeks. When I got the email, I swear I opened it like this," Ramsey says, covering her eyes with her hand and slowly peering through two fingers.

It turned out the deer was just old. But when CWD settles in Montana, many deer and elk will start dying well before their time. And, if nothing is done, Montana could eventually see large-scale die-offs like those in Colorado's and Wyoming's infected mule deer herds. "I don't think any of us will be surprised when we get a positive result," Ramsey says. "How could it be everywhere around us and not here?"

## DEADLY BRAIN DISEASE

The origins of CWD are unknown. It was first reported in the United States in 1967, when researcher Beth Williams saw telltale symptoms in captive mule deer that eventually died at a Colorado Division of Wildlife facility. She recognized the probable cause

because she'd already seen the disease in captive deer in her previous job at the Toronto Zoo. After that, researchers were dismayed to find the disease popping up in other captive herds across North America and then, even more alarming, in wild populations.

Like mad-cow disease and scrapie in sheep, CWD kills by causing proteins in the brain and nervous system to malfunction. Like some cancers, it takes a while—one and a half to two years—before CWD progresses to where symptoms appear and the afflicted animal dies. Lacking easy and noninvasive tests to find it in live animals, scientists have a hard time detecting the disease until it becomes widespread.

CWD is caused by a deformed protein



**WASTING AWAY** Chronic wasting disease is named for its symptoms, which include emaciation, as seen in this infected game farm elk.

called a prion that, once it invades deer or elk, changes normal, working prions into abnormal, malfunctioning ones. Because CWD is not caused by a bacteria or virus, antibiotics and other conventional medicines don't work, frustrating wildlife biologists who have tried to stop its relentless spread.

Abnormal prions invade a healthy animal through contact with an infected animal's saliva, urine, feces, or decaying carcass. Because elk and deer are social animals that congregate, the disease moves within and among herds. The odds of transmission are especially high when animals are packed into wildlife farms or feed grounds—such as the 8,000 to 10,000 elk that gather in the National Elk Refuge in Jackson Hole, Wyoming, to eat hay and cattle pellets provided by the refuge. The disease is always fatal.

Killing CWD-infected deer and elk does not solve the problem. Prions can persist in the environment for at least two years, waiting for the next curious deer to come along.

In the West, mule deer, especially bucks, seem most susceptible to CWD, followed by white-tailed deer. Elk and moose are affected to a lesser degree.

So far, CWD has turned up in wild herds in two Canadian provinces and 21 states, most recently Arkansas in 2015. Four states have found it only in captive populations, including Montana in 1998 when elk on a Philipsburg game farm tested positive.

The Philipsburg operation was shut down, but it scared enough people for FWP to start a CWD surveillance program. Testing began in 2000 thanks to federal funding, and 1,500 to 2,000 animals, mostly harvested by hunters, were sampled each year. After 2012, however, federal funding dried up. Until recently, FWP has lacked funds to continue monitoring, which concerns Ramsey. “Without annual surveillance, we don’t know what’s going on out there,” she says.

#### NEARLY SURROUNDED

Over the past decade, CWD has nearly surrounded Montana (see map below).

*Laura Lundquist is a journalist in Missoula.*

Infected animals live just over the border on three sides of the state in Wyoming, the Dakotas, Saskatchewan, and Alberta. In 2016, a deer tested positive north of Cody, Wyoming, just eight miles from the Montana border. “The odds are good it’s already here. We just haven’t discovered it yet,” says John Vore, FWP Game Management Bureau chief.

Though CWD could arrive from any neighboring state or province, Wyoming is the most likely source. Once scientists there learned that CWD wasn’t a proven health threat to humans, Wyoming stopped managing for the disease. Since then, infection rates in mule deer have climbed higher than 30 percent in some districts. As a result, the size of some infected herds has declined by

up to 20 percent each year. Last year, the Wyoming Game and Fish Commission voted to renew efforts to limit CWD.

Unfortunately, once CWD infects most of a herd, there’s little state wildlife agencies can do. They can’t eradicate the disease because, by that time, it has pervaded the environment. Large-scale culling doesn’t work either, because it’s nearly impossible to kill all the deer or elk in a large area—not to mention that people don’t like seeing entire herds wiped out.

Despite these challenges, states that tackle the problem early and approve special hunts that keep the infection at less than 5 percent of a population might keep the threat under control, says Colorado Parks & Wildlife veterinarian Michael

“

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**WAITING FOR THE NEWS** FWP veterinarian Jennifer Ramsey at the agency’s wildlife pathology laboratory in Bozeman. When CWD arrives in Montana, she’ll be the first to know about it.

### ► Chronic Wasting Disease in North America

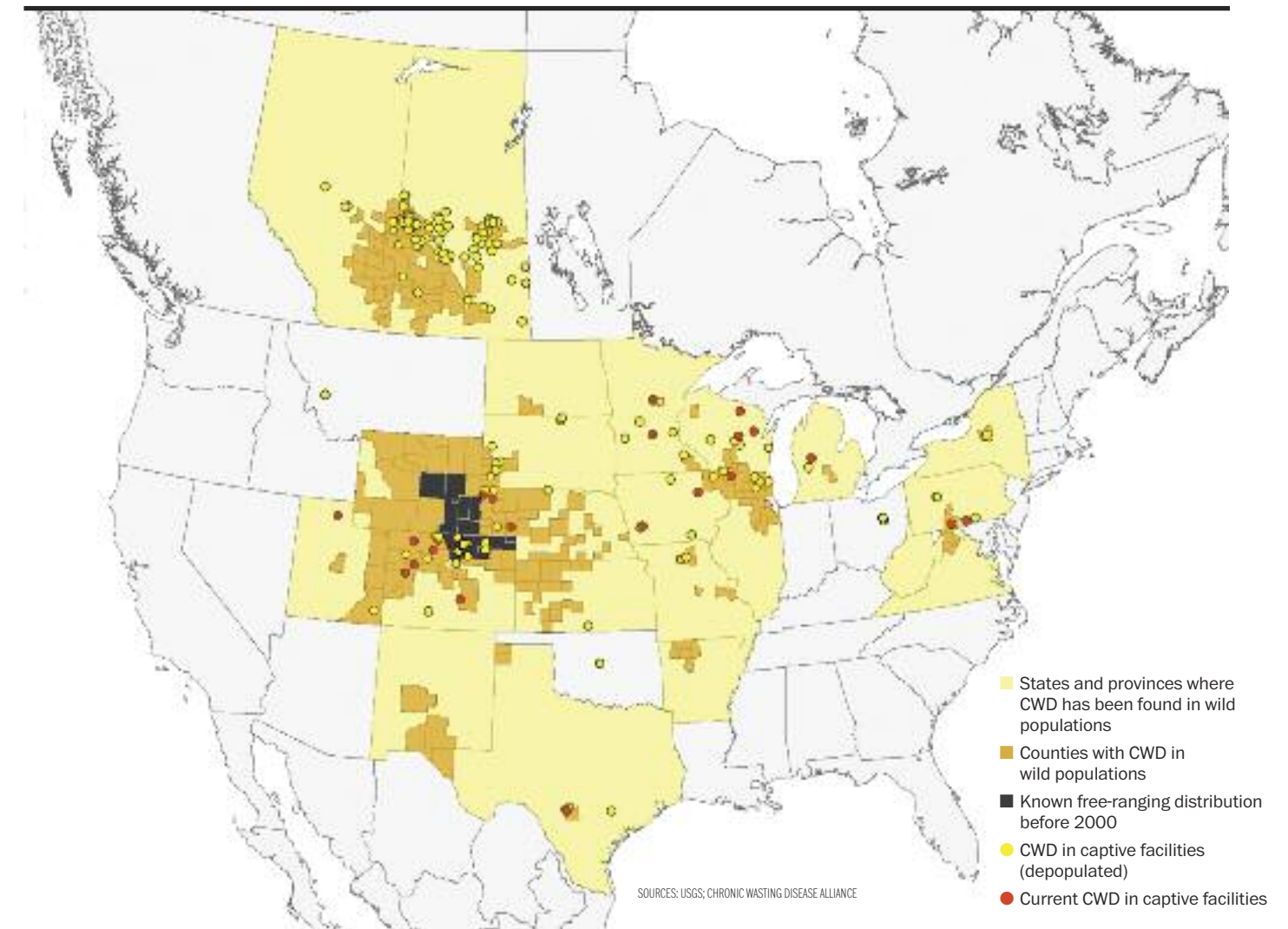


PHOTO: THOMAS LEE

“Instead of attempting eradication, which is nearly impossible, our goal will be to keep prevalence low and prevent the disease from spreading.”

**FALSE ALARM** Ramsey removes tissue from a mule deer suspected of CWD infection. Though the results came back negative, she says it's only a matter of time before a deer or elk shows up in Montana carrying the deadly disease.

Miller, who has studied CWD for the past 20 years. “Wildlife managers need to be engaged somewhere between the knee-jerk crisis response and just sitting back and seeing what happens,” Miller says. “CWD is just another way for animals to die. If it's a rare way for them to die, then it's probably sustainable. But if it starts to become a common source of mortality, well, then you've got problems.”

Ramsey says that once CWD gets into a deer or elk population, there's no feasible way to eradicate it. “Instead, our goal will be to keep prevalence low and prevent it from spreading,” she says.

#### DEER TISSUE NEEDED

Vore says FWP is renewing surveillance this hunting season. Biologists will sample mule deer in southwestern and south-central Montana and then focus on eastern, central, and western Montana in 2018. Workers at hunter check stations will request tissue samples that will be sent in for testing. “We'll also work with game processors and taxidermists to obtain samples from targeted areas,” Vore says.

In addition, FWP wildlife disease ecologist Emily AlMBERG will test deer near the defunct Philipsburg elk farm. “Because it's a slow-growing disease, it's unlikely that we would have found a positive wild animal in that area back in the late 1990s. But now...?” AlMBERG says, shrugging. “I'm mentally preparing myself to find it at a higher prevalence there and in other areas than we would like, because we've done almost no surveillance over the past four years.”

FWP is working with a citizens' advisory panel to determine an initial response once the disease is found in Montana deer or elk. The department would likely institute a special CWD hunt in which hunters would harvest 300 to 500 animals within at least a 10-mile radius of the first CWD-positive animal. That's the harvest size AlMBERG says is necessary for her to understand what percentage of animals are infected and

how far across an area the disease has spread. “The point of the special hunt wouldn't be to try to eradicate the disease, but to determine its prevalence and geographical range,” she says.

Any special CWD hunt would take place during or near the general five-week season, Vore says. FWP would likely issue special restricted licenses to prevent hunters from flooding the area.

To keep prions from spreading, hunters wouldn't be able to leave a special hunt area with a whole carcass, just as they can't

Will increasing buck harvest be a hard sell to hunters, especially if it's required in hunting districts managed for trophy deer? Chad Klinkenborg thinks not. The Montana director of the Mule Deer Foundation and a member of the CWD advisory panel suspects that hunters wouldn't put up much resistance, especially if they understood the consequences. “I think most will have the attitude of, ‘Let's do whatever is necessary to contain this, because we want to protect the mule deer population at large,’” Klinkenborg says.

Tom Toman of the Rocky Mountain Elk Foundation says his organization is committed to helping Montana respond to outbreaks and manage for the disease. “We continue to promote sound science and fund research to help contain CWD,” he says.

#### ALL HANDS ON DECK

Landowner cooperation also will be critical. During a CWD hunt, hunters will need to spread out across the response area to harvest enough animals for scientific study. If some landowners are unwilling to allow public hunting, then CWD surveillance and disease control will be severely hampered. Vore hopes all landowners will see the value in keeping the disease contained.

Perhaps the biggest challenge in managing CWD will be to sustain public interest and cooperation. “It's not like blue tongue [disease], where you have a bunch of dead deer lying around,” says Ramsey. “CWD takes 20 years to start to affect a deer or elk population.” Both Colorado and Wyoming have struggled to keep hunters, landowners, and others engaged over the long haul. Those states warn that when vigilance with the slow-moving disease wanes, more deer and elk start to die. “They're advising us to predict a lot of hoopla when we find CWD,” says Vore. “But then people may lose interest and stop working with us because they won't see any changes to populations. But, unfortunately, their grandkids will.”

**TISSUE TAKING** This fall, hunters in some areas of Montana will be asked at check stations to allow workers to remove tissue from their deer to be analyzed for chronic wasting disease.



legally bring carcasses into Montana from states or provinces where CWD exists. Instead, they'd have to use game processors or taxidermists in those areas. Because a CWD test takes a few weeks, hunters won't know right away if their animal is infected.

If a deer or elk does have CWD, it's up to the hunter to decide whether to eat the venison. It won't be an easy decision. The Centers for Disease Control states that “no strong evidence of CWD transmission to humans has been reported.” At the same time, the federal agency recommends not eating the meat of infected animals.

If, after a special CWD hunt, AlMBERG finds low prevalence of the disease, FWP would likely maintain the existing general hunting season in that area. If more than 5 percent of harvested animals have the disease, the department may modify the general season to reduce prevalence. That would likely require targeting older bucks, which have a higher infection rate.