

HOW PREVALENT IS CWD?

Why FWP needs to understand the disease's pervasiveness in deer herds

by Paul Queneau



Few things are simple about chronic wasting disease (CWD), the brain-eating illness slowly spreading among Montana's deer herds. But there's one simple math calculation that can indicate just how strong a hold CWD has on any given deer herd.

It's called "prevalence."

Prevalence is determined by dividing the total number of animals tested in a given area by the number of CWD-positive results. "It gives us a clear idea of what percent of a herd is infected," says Dr. Emily Almborg, a wildlife disease ecologist with Montana Fish, Wildlife & Parks.

For instance, if FWP tests 100 deer from a hunting district and 15 are positive for CWD, the prevalence in that district is 15 percent.

It's an equation Almborg has done hundreds of times over the five years that she has helped lead the department's CWD management response since the disease was first detected in Montana's free-roaming big game herds in 2017. She says determining prevalence is essential for helping FWP figure out the best way to respond to outbreaks and understand how long the disease has been in an area. It also helps hunters decide where they want to hunt and what to do with a harvested deer.

Though the math is easy, arriving at the equation's two numbers is difficult. It requires that hunters provide key data in the form of dead animals that are then tested for CWD. The more hunters who submit samples, and the more landowners who provide access to hunters, the more accurate Almborg's prevalence estimates become.

"Hunters are essential if we hope to slow the rate of spread of CWD, and we rely heavily on landowners, too," Almborg says. "Without public hunter access to private property, our tools for managing infected herds are extremely limited."

Neither a virus nor a bacteria, CWD is

Paul Queneau an editor for Bugle, the magazine of the Rocky Mountain Elk Foundation. He lives in Missoula.



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NEEDING THE NODES Above: An FWP technician removes lymph nodes from a hunter's deer at a check station near Havre. Below: CWD sample kits containing lymph nodes submitted by hunters. FWP sends the kits to the Montana Veterinary Diagnostic Lab for testing.



caused by misfolded proteins called prions that attack the brains and other organs of mule deer, white-tailed deer, elk, and moose until it kills them. To date, there have been no reported cases of CWD infection in people. Infected animals will eventually show outward signs that can include weight loss, lethargy, drooling, droopy ears, and excessive drinking and urinating.

Those indicators are what led residents of the small northwestern Montana town of Libby to report an emaciated and sick-looking white-tailed deer inside the city limits in spring 2019. FWP officials euthanized and tested the sick doe, which soon proved to be the first positive case in Montana west of the Continental Divide.

Unfortunately, animals that reach such a state will likely have spread the disease to others. Infected animals may look healthy for two years or more while transmitting the disease to other deer, elk, or moose, usually in saliva through nose-to-nose contact. The only sure way to tell if an animal has CWD is through laboratory testing of the lymph nodes or brainstem. These tissues can only be collected from dead animals, and to accurately estimate prevalence, wildlife managers want to test as many samples as possible.

In Libby, FWP began trapping and euthanizing deer living in town while vastly increasing the number of doe hunting permits within a larger Libby CWD Management Zone. Those efforts would eventually reveal a 10-percent positivity rate (or prevalence) for deer inside Libby city limits and 4 percent in the surrounding special management zone.

More unwelcome surprises were in store.



“You do not get that kind of prevalence overnight.”



TELL-TALE SIGNS: From top to bottom: Indications of CWD infections include droopy ears, excessive drooling, and emaciation. If you see deer with these symptoms, report them to FWP.



Also in 2019, a whitetail tested positive for CWD east of Dillon along the lower Ruby River in southwestern Montana. As in Libby, FWP conducted a special management hunt the following fall to boost harvest. As test results rolled in, more than one in five came back positive. By the end of 2021, prevalence rates in Hunting District 322 (where the lower Ruby is located) topped 30 percent, Montana’s highest rate so far.

“You do not get that kind of prevalence overnight,” says Austin Wieseler, an FWP wildlife health biologist who works closely with AlMBERG on CWD at the state wildlife health lab in Bozeman. “That means it’s likely been there for years and maybe more than a decade.”

High prevalence can lead to significant deer population declines. In Colorado, where CWD was first identified in a captive mule deer herd in 1967, some infected wild mule deer herds have experienced a 45 percent decline. “Numbers like that are one reason we take CWD so seriously,” Wieseler says.

In 2021, Montana Fish, Wildlife & Parks tested 8,777 samples, of which 349 were positive.

Knowing prevalence guides the way FWP manages infected herds. In areas with high prevalence, wildlife managers may try to reduce total numbers more aggressively to contain the disease and lessen its spread within a herd and to nearby herds. Because bucks range much wider than does, bucks may be especially targeted. “Some hunters don’t like us to reduce buck numbers, but that can be really important for controlling the spread of CWD,” AlMBERG says.

Hunters: Get used to harvesting lymph nodes

Hunters in Montana can bring the heads of their harvested deer to FWP regional offices, where technicians remove lymph nodes for CWD testing. Hunters learn if their deer has CWD, in which case the meat should not be eaten but rather disposed of in a Type II landfill (see “Don’t Move CWD Around,” pages 14-15). Testing also provides FWP with information on the prevalence of the disease in specific areas across the state.

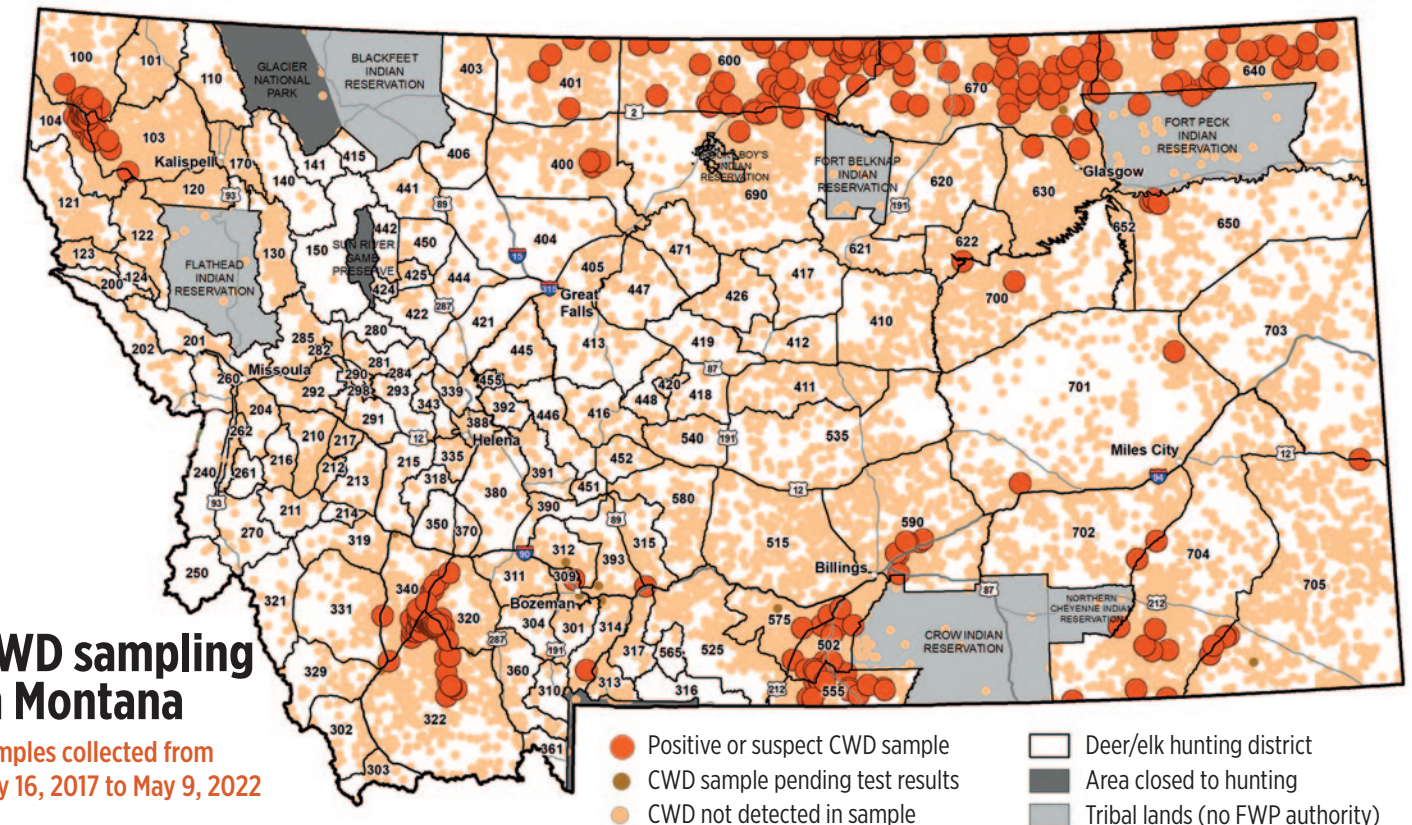
Because CWD is here to stay in Montana, FWP officials are looking for ways to make surveillance and management sustainable. “One way hunters can help is to become proficient in removing lymph nodes themselves,” says Dr. Emily AlMBERG, FWP disease ecologist. “We’ll still take care of the testing, but this small contribution from hunters will free up time and funding for conservation and management work.”

FWP has produced a video and printable instructions with easy-to-follow steps to help hunters extract lymph nodes in the field. Find these resources at fwp.mt.gov/cwd.

FWP is hoping that lymph node removal becomes just another part of regular field dressing.



CWD CENTRAL Above: At the department’s wildlife health lab in Bozeman, FWP wildlife disease ecologist Dr. Emily AlMBERG cuts out lymph nodes as Austin Wieseler, FWP wildlife health biologist, watches. Below: Intensive testing of deer sent to FWP by hunters allows FWP to determine the prevalence of CWD in an area and thus what measures may need to be taken to contain the disease there and reduce the risk of spreading.



ALL PHOTOS: PAUL N. GUENEAU/EXCEPT BOTTOM LEFT: TOM DICKSON

FROM TOP: KURTIS FRASSER; MAP BY MONTANA FWP