

Chronic Wasting Disease in Arkansas

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What is Chronic Wasting Disease?

Chronic Wasting Disease (CWD) is a contagious, neurodegenerative disease that affects members of the Cervidae Family (elk, moose, white-tailed deer, mule deer, and caribou/reindeer); no cure, no therapy, always fatal. This disease is known as a Transmissible Spongiform Encephalopathy (TSE). Similar diseases are scrapie in sheep, Bovine Spongiform Encephalopathy (Mad Cow) in cattle, and Creutzfeldt-Jakob disease (CJD) in humans. What separates this disease from many others is that it is not viral or bacterial, but the infectious agent is an abnormally folded protein, called a prion. Because of its nature, it is very resilient to enzymes, chemicals, heat, disinfectants, and time. Infection can occur through ingestion, direct contact of animals, and indirectly through the environment. Transmittable prions have been found in the saliva, feces, urine, blood, and decaying carcasses of infected animals. To add to the scariness of this disease, infectious prions can be shed within 6 months of acquiring and can have a very long incubation period; clinical symptoms can appear within 18-60 months.



What are the Clinical Symptoms?

The disease can include a wide variety of clinical symptoms appearing in animals ranging in age from yearling to adult. These symptoms are associated with CWD but not necessarily restricted to the disease, other diseases may share similar symptoms. It is also important to note that animals diagnosed with CWD may appear completely healthy and not demonstrate any sign of the disease. Clinical symptoms include: loss of body condition, change in behavior, may walk in repetitive courses, wide base stance, excessive drinking and urination, head and ears lowered, and excessive salivation.

Where has CWD been found?

The disease was first recognized in 1967 in captive mule deer in Colorado, but not identified until 1978. It was then detected in free-ranging elk in 1981, by the Colorado Division of Wildlife. In 2000, CWD was found in a Saskatchewan mule deer, making the first time the disease was found in the province's wild cervids. Another important date in the history of this disease would be in 2002, when it was detected in wild white-tailed deer in Wisconsin. This discovery seemed to be the spark that ignited many states to become more aware of the disease. The dominoes continued to fall, reaching a total of 24 states, 2 Canadian Provinces, South Korea, and most recently, Norway being CWD positive.

How is the disease detected?

Many people are curious in how the disease is detected. Disease detection should include a high level of confidence about the results. Therefore, the gold standard test recommended for detecting CWD is the Immunohistochemistry test (IHC). This test involves collecting a portion of the animal's brain stem, known as the obex, and the retropharyngeal lymph nodes. Samples are stained and then microscopically reviewed for the disease. This test is expensive and time-consuming, but provides high amount of confidence in detecting or not detecting the disease. Many researchers are currently exploring a live animal test, but so far, no practical, reliable, USDA certified live animal test is available.

What about Arkansas?

Arkansas has conducted surveillance testing for CWD in our wild cervids since 1998. Prior to the disease being detected, over 200 elk and 7,000 white-tailed deer were tested. This includes random, county-wide surveillance and the collection of sick animals, in all 75 counties. In addition, Arkansas Game and Fish Commission (AGFC) staff regulates the limited number of captive cervid facilities in the state. These permitted facilities are required to submit all their cervid mortality for CWD testing. In addition, biologists have been monitoring the wild cervids around many of these enclosures in the recent years due to the increased risk. In 2006, a moratorium was passed on issuing additional Commercial Hunting Resort Permits and Breeder/Dealer Permits for future facilities. The AGFC also developed regulations on the importation of live cervids in 2002 and cervid carcasses

in 2005, revised in 2013. Most recently, a regulation was adopted to prohibit the hand-capturing of any white-tailed deer. This was an attempt to reduce any deer behind a fence.

Arkansas's CWD Response AGFC staff developed a CWD Response Plan in 2006. Since that time, the plan has been on the shelf, collecting dust. On February 17, 2016, when AGFC staff were notified of a CWD suspect animal, the plan was taken down, reviewed, and refreshed to include the latest knowledge concerning the disease. The plan identified the following goals:

1. Determine prevalence and spatial distribution of CWD.
2. Apply management actions to limit the spread of CWD.
3. Determine the origin of any CWD-positive cervid.
4. Continue surveillance throughout the state to ensure early detection.
5. Provide accurate and relevant information on CWD to the public, agency staff and other stakeholders.
6. Continue to gather and evaluate information that would guide research on CWD and its epidemiology to support future management efforts.

The first phase of implementing the plan was randomly sampling deer within a 125,000 acre, capsule-shaped area (CWD Focal Area) predominately in Newton County. A total of 266 deer were collected, with 62 being positive for the disease. This equates to a 23% prevalence rate for the CWD Focal Area. The second phase focuses on learning the spatial distribution of the disease. To accomplish this task, AGFC staff are collecting road-kill and sick deer and elk, statewide. At the time this article was developed, a total of 332 road-kill and 78 target animals have been collected. Preliminary results show 6 road kill animals and 15 total target animals being positive for the disease. When you add these positives to the first hunter-killed elk with the disease, it brings the total CWD positive animals to 84.

Why the Concern?

We hear some voice their thoughts as why worry about this disease. These same individuals claim that no state has ever won the battle against CWD, so why waste valuable resources and manpower on a war we can't win? To get everyone thinking about this question, I have developed a list of items we should all consider. I have my own thoughts to each statement, but I ask each reader to take the time, ponder on these items, and decide for yourself why the concern.

- Impact on Arkansas's hunting heritage: Deer will not go extinct, but deer hunting practices could change drastically.
- Population dynamics: Can a herd increase with high CWD prevalence? Consider the number of females and fawns infected and the impact on population. Can the animal replicate itself before it succumbs to the disease?
- Management strategies: Attention shifts from quality deer management to disease management. What about antler restrictions?
- Rule and regulations: increased protocols to minimize disease movement. How would carcass movement regulations impact deer processors and taxidermists?
- Economic impact: How big are the economic impacts related to deer hunting?
- Human health concerns: Increased doubt in consuming venison.
- Diversion of Agency Funds: Disease management is expensive, where do the extra funds come from? What budgeted, line-item will be reduced to ensure funds are available?
- Persistent, long-term battle: How long must we fight the disease?

I hope you see the complexity of this disease. The AGFC realizes the impact CWD can have, not only on the resource, but on the social and economic components related to hunting. We realize that eradication is not possible, but managing prevalence rates and containment should be top priority. Developing a proper disease management strategy is crucial. We ask you stay tuned as our knowledge of the disease increases, and a management strategy is developed and implemented for the 2016 hunting season. In addition, if you observe any sick deer, please contact the AGFC Radio Room (1-800-482-9262).