

# Chronic Wasting Disease in Wisconsin's Wild White-tailed Deer

## Frequently Asked Questions and Misconceptions

### Common Questions About CWD

#### *What is Chronic Wasting Disease?*

- CWD is a nervous system disease of deer, moose, and elk. It belongs to the family of diseases known as transmissible spongiform encephalopathies (TSEs) or prion diseases. Though it shares certain features with other TSEs, like bovine spongiform encephalopathy (“mad cow disease”) and scrapie in sheep, it is a distinct disease. CWD occurs only in members of the cervid or deer family, both wild and captive.
- CWD has been found in deer or elk farms in Colorado, Kansas, Michigan, Minnesota, Missouri, Montana, Nebraska, New York, Oklahoma, South Dakota, Wisconsin, Wyoming and the Canadian provinces of Alberta and Saskatchewan. CWD has also been detected in wild deer or elk herds in Colorado, Illinois, Minnesota, Kansas, Nebraska, New Mexico, New York, South Dakota, Utah, West Virginia, Virginia, Wisconsin, Wyoming and the Canadian provinces of Alberta and Saskatchewan.

#### *What is the CWD Management Zone?*

- The CWD Management Zone (CWD-MZ) is an area of approximately 9000 mi<sup>2</sup> in southern Wisconsin where CWD has been detected. Within in the management zone, the DNR has engaged in active disease management and more intensive surveillance. Within the CWD-MZ, there are three smaller monitoring areas where testing of harvested adult deer is mandatory in order to maximize our ability to monitor disease progression and learn critical information about CWD. Additionally within the CWD-MZ, a focus study area is rotated around the monitoring areas from year to year. This allows for the most widespread yet cost effective annual surveillance.

#### *Why should people outside of the CWD-MZ care about the disease?*

- CWD is a statewide issue, not just a southern Wisconsin issue, for the following reasons:
  - Without appropriate management where CWD has been detected, the disease will spread to other areas of the state.
  - Based on current knowledge of the disease, including information from western states where CWD likely has been for a longer period of time, CWD poses a significant threat to the long term health of Wisconsin's deer herd.
  - Projections based on current WI CWD data suggest that CWD will ultimately reduce the number of deer available each year for hunter-harvest.
  - A healthy deer herd is important for hunting traditions. Wisconsin has more than 700,000 deer hunters who have harvested an average of over 400,000 deer annually during the past decade.
  - Deer hunting contributes more than 7 million days of recreation every year.
  - Deer hunting annually generates more than \$500 million dollars in retail sales and over \$1 billion in total impact to the state's economy. A healthy deer herd is critical to the state's economy.

### ***Does CWD pose a health risk to humans?***

- CWD has never been shown to cause illness in humans. For several decades CWD has been present in wild populations of mule deer and elk in western states. During this time there has been no known occurrence of a human contracting a prion disease from eating venison from a CWD infected deer. Additionally, here in Wisconsin, the incidence rate of Creutzfeldt Jacob Disease (CJD), the prion disease in humans, is detected at the same rate as in the rest of the world, about one in a million.
- In Europe, a prion disease of cattle called BSE (also known as “mad cow disease”) is the cause of a fatal nervous system disease in some humans who have eaten meat and organs from infected cattle. Because of this, the Center for Disease Control, the World Health Organization, and the Wisconsin Dept. of Health Services recommends that people not consume meat from deer that test CWD-positive. Some simple precautions should be taken when field dressing deer in areas where CWD is found including:
  - **Wearing rubber gloves** when field dressing your deer
  - **Boning out the meat** from your deer
  - **Minimizing the handling** of brain and spinal tissues
  - **Washing hands and instruments thoroughly** after field dressing is completed
  - **Avoiding the consumption** of brain, spinal cord, eyes, spleen, tonsils and lymph nodes of harvested animals. (Normal field dressing coupled with boning out of a carcass will essentially remove all of these parts)
  - **Requesting that your animal is processed individually**, without meat from other animals being added to meat from your animal

### ***How is CWD transmitted?***

- It is not fully understood how CWD is transmitted between deer. Current information suggests that CWD may be transmitted both directly through animal to animal contact and indirectly from a CWD-prion contaminated environment. Recent studies indicate that CWD prions exist in the saliva, urine, and feces of infected deer. Prions shed from an infected individual bind to the soil and can persist there for long periods of time. Some research also suggests that these prions, when bound to certain soil types, may be more infective than unbound prions when orally ingested.

### ***Besides testing for it, what is being done to learn more about the disease?***

- In Wisconsin, and many other states, research is being conducted on various aspects of CWD. Tissue samples and data from Wisconsin’s large-scale hunter-supported deer-sampling program have been used in CWD research around the world such as in England and Germany. Here are just a handful of the topics being researched both in Wisconsin and throughout the world:
  - The impact of deer dispersal, social behavior, and mortality on the spread of CWD
  - Spatial patterns and prevalence of CWD in southwest and southeast Wisconsin
  - Transmission mechanisms, including the effects of baiting and feeding
  - Susceptibility of other species, such as cattle and scavengers, to CWD
  - Effects of CWD on WT deer and deer populations
  - Human health risks from CWD
  - Attitudes, behaviors, and desires of hunters and landowners in relation to CWD
  - Analysis of deer density reduction efforts in southwest Wisconsin and impacts on CWD progression

### ***Is Wisconsin the only state trying to control CWD?***

- States and provinces with confirmed cases of CWD engage in management practices of varying degrees of intensity and scope. In Wisconsin, there is an extensive testing and surveillance program that also utilizes aggressive deer season frameworks to help achieve disease management goals. Also in Wisconsin, and many other states, restrictions on baiting and feeding of deer and elk and on the importation of cervid carcasses have been implemented.
- Some states and provinces have considered or are attempting to control the spread of CWD through deer populations reductions; the biology of the disease within the herd and the landscape vary widely and are important factors in determining if herd reduction is an effective control method.
- For example, in certain areas where CWD occurs, such as Minnesota and West Virginia, the disease appears to be newer and less widespread; other areas, such as Colorado and Wyoming, appear to have a geographically widespread and well established occurrence of the disease.
- Surveillance testing helps determine the focus of the disease in Wisconsin.
- Illinois, a state that also does intense surveillance, is continuing to conduct an aggressive sharpshooting program. The IL-DNR and the WI-DNR have been collaborating on cross-border management of CWD since its initial discovery in this area. To learn more about what other states are doing about CWD please visit the CWD Alliance web page at: [CWDA Regulations](#)

### ***What's being done to manage CWD in Wisconsin?***

- The DNR's overall goal is a healthy deer herd. Specifically, the department's goals are to minimize the negative impacts of CWD on deer and elk farms, the state's economy, hunters, landowners, and other people who depend on healthy wild and farmed populations of deer and elk.
- Scientific data suggest that when the deer population density is high, CWD is more easily transmitted between deer and can become more easily established in a population. Because of this, the DNR is trying to lower the deer densities within the CWD management zone.
- Although our original goal was to eradicate CWD from Wisconsin, because of advancements in the understanding of the transmission and persistence of the disease, the social difficulties in lowering deer herds to very low numbers, and the limitations on the current tools available, we are now trying to minimize the distribution and intensity of CWD.
- We hope that as more research is conducted and more tools become available that we can make further inroads into battling and perhaps even eradicating CWD. Hunters and landowners are the key partners with this control program.
- Extended seasons, extra seasons, earn-a-buck regulation, unlimited tagging, and sharpshooting are all tools that have been utilized to increase harvest numbers. CWD management in Wisconsin combines these tools with testing deer for the disease, allowing us to monitor the spread and prevalence of the disease as we try to control it.
- Restrictions on feeding and baiting deer are another important tool to reduce transmission of CWD.
- There are also restrictions on carcass movement outside the CWD management zone and carcass disposal methods to reduce the chance of moving infection to new areas.

***If older bucks have higher CWD prevalence and move the disease around more, why does the DNR use earn-a-buck regulations to combat CWD?***

- While earn-a-buck regulations (where a hunter must first harvest an antlerless deer prior to harvesting an antlered deer) are not the perfect season structure for managing CWD since the restriction tends to save mature bucks to some degree, it is the most effective tool we have for lowering deer populations and thus reducing disease spread.
- Although unlimited, either sex seasons are, in theory, a better tool for managing CWD, history has shown that when such seasons have been implemented, such as in 2006, antlerless (and thus doe) harvest has dropped significantly, and as a result, the populations have tended to subsequently increase.
- The DNR will continue to explore possible management options and season structures as we go forward. For more information please see: [Why Earn-A-Buck Regulations?](#)

***What would happen if we did nothing to manage CWD?***

- A simulation model suggests that, if left unmanaged, CWD will spread throughout Wisconsin and the prevalence will increase to at least 40% of adult deer being infected. These research results are mirrored by current data in Colorado and Wyoming, where in some areas average prevalence is over 40%, across thousands of square miles, suggesting the disease continues to spread widely across the landscape. Modeling research also suggests that an increase of CWD prevalence in our deer herd will cause a moderate to substantial long-term reduction in the harvestable surplus in a deer population. Researchers in Wyoming are seeing indications that CWD may be reducing both the age structure and overall populations in some of the highest CWD prevalence areas. If these indications are correct, ultimately, such declines in Wisconsin would have significant negative impacts on deer hunting and the state's economy.

***Does CWD management pose a greater threat to deer hunting and its culture than the disease itself?***

- The effects of efforts to manage and control CWD are felt much more quickly than the effects of the disease itself. However, management efforts can be reduced or ended over time, whereas CWD would become a permanent and ever-increasing part of the landscape if nothing were to be done. Furthermore, with the reproductive abilities of healthy eastern white-tailed deer populations in areas such as southern Wisconsin, restoration of huntable populations after culling for CWD management will likely be relatively easy.

***What's happening out West?***

- In Colorado and Wyoming, states where CWD has likely infected wild deer for several decades, recent studies of some deer populations are documenting high prevalence rates of 20-40% and lower survival of CWD-infected deer when compared to other deer in those populations. In some researched deer populations, declines are being observed which could be attributed to CWD. To see where CWD has been found out West and throughout North America, please see the CWD Alliance web page at: [CWDA: Learn About CWD: Map](#)

## ***If we let nature take its course, will the deer become completely resistant to CWD?***

- The agent of CWD is a type of protein, not a virus or bacteria. These proteins, called prions, have a normal form that occurs naturally in deer and all mammals. Since prions are a normal part of deer and since animals are likely to survive through at least one more breeding season after being infected, immunity and genetic selection are likely functioning differently than with more typical diseases.
- No white-tailed deer have been identified with complete resistance to CWD. Research shows that white-tailed deer with a certain genotype survive longer with the disease than other genetic types. They still eventually die from CWD, and living longer merely means that they have more time to expose other deer.

## ***Can CWD be transmitted to livestock?***

- To date, there has been no documented occurrence of livestock contracting CWD from free ranging deer or elk. Furthermore, in long-term studies where cattle have been housed in pens with CWD-infected deer, transmission has not occurred.
- In studies where cattle were infected with CWD by direct injection into the brain, many of the cattle developed the prion disease. However, with experimental oral exposure to CWD, cattle did not develop the disease.
- These experiments show that CWD can be transmitted to cows, but infection is highly unlikely via natural forms of transmission.
- There are similar findings from CWD infection studies with sheep and goats. Farmed deer and elk, however, are highly susceptible to CWD and farmed cervid CWD management is as important as wild deer CWD management in our state.

## **Common Misconceptions about CWD**

### ***CWD has always been in Wisconsin***

- The exact year that CWD came to Wisconsin is not known but it is most likely an introduced disease and has not always been in our deer herd. Surveillance for infected deer has detected two focal areas of high prevalence surrounded by a zone where prevalence drops off rapidly; this is a pattern of a recently introduced disease. Given that CWD spreads slowly, a trend of prion diseases, the current best estimate is that it has been in Wisconsin for at least 20 years and likely longer.

### ***CWD is actually everywhere in Wisconsin, it just hasn't been found yet***

- Two complete sweeps of statewide surveillance have been conducted since 2002. Consistent surveillance also occurs in areas around depopulated CWD infected game farms and for any deer exhibiting signs of CWD infection. Over 150,000 cervids in Wisconsin have been screened for evidence of CWD. The intense level of sampling that has been conducted during the 2 statewide surveys would likely have detected another CWD focus like the one detected in 2002 in southern Wisconsin. It is a much higher level of sampling than has been done in much of the rest of the U.S.

### ***I'm not seeing any sick deer while hunting so CWD isn't in my area***

- Deer with CWD do not begin to show physical signs until very near the end of disease progression. An infected individual can appear healthy and not display any signs for over 18 months.
- Once the individual is in the final stages of the disease they typically seek refuge and are no longer moving and as visible. Additionally, once the individual dies at about two years post infection, their carcasses are often quickly scavenged and thus it would be hard to visually determine the cause of death.
- CWD is a neurological disease meaning behavior is one of the first things to be affected. Because of this, many wild CWD-positive deer will not survive long enough to look sick due to the fact that their affected behavior may make them more susceptible to predation and/or harvest.
- Citizens are encouraged to report sick deer to the DNR throughout the year and from any area of the state. Replacement tags are available to hunters who turn over harvested deer with signs compatible with CWD.
- Testing sick deer is the most sensitive approach to identifying CWD in new areas. Also, removing sick deer found in the CWD-Management Zone is an important contribution to controlling the disease.

### ***CWD is caused by a mineral imbalance***

- Controlled experiments using captive deer and elk, where all of the study animals received the same feed, have shown that CWD is a transmissible disease and not the result of a dietary imbalance.
- The relationship between trace minerals (particularly copper and manganese) and CWD has been a topic of considerable discussion over the years. Research has shown that these minerals may play a role in the onset of the disease, but the exact mechanism is unclear.
- The vast majority of researchers agree that neither a deficiency nor excess of a given mineral actually causes CWD.
- One common hypothesis revolves around a copper deficiency. Although there seems to be a relationship between copper and CWD, it is unclear as to whether the disease causes copper depletion or whether a significantly lower copper level pre-disposes a given animal to contract CWD.

### ***CWD can never be eradicated from the landscape or even controlled at a manageable level***

- While CWD may have never been eradicated from a wild population where it is firmly established, disease eradication has never been attempted in an such an area at a level that most CWD experts believe to be sufficient to test whether eradication is possible. I
- It is clear that even limiting the spread of the disease will take huge effort and resources over an extended period of time. Currently, IL is showing some progress in reducing their prevalence rates through hunting and sharpshooting. Minnesota and New York may have caught the disease very early after it was introduced and successfully eliminated it through local culling.

## ***CWD is being used as an excuse to further an agenda of whole-herd reduction in southern Wisconsin***

- Deer population goals within Wisconsin's CWD management zone are set based on objectives for disease control and are completely distinct from the system used in the rest of the state. Therefore, reducing deer numbers in southern Wisconsin is strictly aimed at controlling the spread of CWD.

## ***The DNR benefits financially from CWD management***

- If CWD were to spread throughout the state, it could have a tremendous impact to all people who benefit from deer hunting including the DNR.
- The actual management of CWD is a financial liability for the state. It costs the WI DNR an average of \$90 for each deer tested for CWD and every year the WI DNR applies for federal grants and other funding to continue research and management.
- It has been rumored that insurance companies offer additional funding to the DNR to perpetuate "the myth" of CWD with the goal of reducing the deer and therefore reducing car-deer collisions. The goal of herd reduction is disease management; insurance companies do not fund the DNR in any way.

### ***For more information on CWD:***

For more WI information and local research publications:

- Visit the WI DNR website at: [WDNR: CWD](#) or our new, CWD dedicated website [Knowcwd.com](http://knowcwd.com)
- Or call the DNR information line at 1-888-WDNRINFO, 7 a.m. – 10 p.m., 7 days a week

And for worldwide information and research publications:

- Visit the CWD Alliance website at: <http://www.cwd-info.org/>
- Or the USGS – National Wildlife Health Center website at: [http://www.nwhc.usgs.gov/disease\\_information/chronic\\_wasting\\_disease/](http://www.nwhc.usgs.gov/disease_information/chronic_wasting_disease/)