

Managing Communicable Disease in Cervids in Bayfield County, WI

*Bayfield County Communicable Disease in Cervids Study Committee
Report and Recommendations to the Bayfield County Board*

June 19, 2019

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Executive Summary

The Bayfield County Communicable Disease in Cervids¹ Study Committee was established by County Amendatory Ordinance No. 2018-10 and convened in October of 2018 with the task of “researching, analyzing, and synthesizing scientific literature regarding the impact of communicable diseases on cervids, both captive and wild, on other animals, on human beings, and on soil, specifically as those issues apply in Bayfield County”. In addition, the Committee was tasked with “reporting recommendations on appropriate county-level regulatory approaches relative to the transport or housing of cervids within Bayfield County and the concerns regarding communicable diseases in cervids to the full Bayfield County Board of Supervisors”.

To fulfill these tasks, the Committee developed and implemented a scope of work to: A) Understand the main diseases affecting captive and wild cervids, B) Determine whether existing regulations and best management practices adequately manage the diseases given the conditions in Bayfield County, and C) Recommend additional actions necessary to address management gaps. Over the course of an 8-month period, the Committee received information from 9 speakers (Appendix 1) and reviewed both primary and secondary literature. **The most concerning disease currently affecting wild and captive cervids in Wisconsin is chronic wasting disease (CWD) and the Committee focused its recommendations on keeping CWD out of Bayfield County.**

Given the importance of cervids (especially white-tailed deer) to Bayfield County and the magnitude of the threat posed by CWD, the Committee is recommending Bayfield County take direct action rather than relying solely on State and Federal agencies. There are many things the county can do to help manage cervid disease generally and CWD specifically. First, and most important, Bayfield County should play a role in educating the citizens and visitors of Bayfield County on steps that can be taken to prevent the spread of CWD into Bayfield County. Second, the county can directly reduce the risk of CWD spreading into the county by enabling testing and proper disposal of harvested deer. Third, Bayfield County should adopt regulations to require enhanced fencing on captive cervid operations and to require additional steps be taken to ensure live cervids imported into Bayfield County are free of CWD. Fourth, Bayfield County should be encouraging the state legislature and state agencies to implement a more robust research program to develop better management tools for CWD. Fifth, Bayfield County should take steps to prepare for possible CWD detection in Bayfield County. Sixth, Bayfield County should urge the State Legislature and adjoining counties to do more to combat CWD.

¹ A “cervid” is any ruminant mammal in the family Cervidae. Cervids found in the wild in the Upper Midwest include white-tailed deer, elk, and moose.

Committee Members, Process, and Scope of Work

The Bayfield County Board of Supervisors adopted Amending Ordinance 2018-10 on May 29, 2018. The ordinance placed a 1-year moratorium on the import of live cervids into Bayfield County and established the Communicable Diseases in Cervids Study Committee composed of a mix of County Board Supervisors, County employees, and citizens. The Committee's information gathering phase began with its first meeting on October 3, 2018 and continued with monthly meetings through May 2019. At each of its monthly meetings the Committee heard presentations from invited speakers and received public comment. The list of speakers and presentations is shown in Appendix 1.

With the exception of CWD, the Committee determined that existing practices and regulations are likely adequate to manage cervid diseases. For this reason, the Committee focused its efforts on developing recommendations to prevent CWD from entering the County and for more effective management and control of CWD.

To develop recommendations, the Committee identified possible regulatory, public education, and legislative advocacy actions that Bayfield County could take to better manage CWD. From these possible actions, the Committee used a consensus-based deliberation process to choose which actions to recommend to the County Board of Supervisors. Draft recommendations were presented at a public hearing on May 29, 2019 to gather feedback, comments, and suggestions from the public. On June 6, comments on the draft recommendations were reviewed by the Committee resulting in the final recommendations presented herein.

Cervid Diseases of Concern

There are a number of diseases that affect cervids in Wisconsin, some more serious than others. Additional information about the diseases listed below and others can be found at the WI Department of Natural Resources (DNR) website: <https://dnr.wi.gov/topic/wildlifehabitat/disease.html>.

Cutaneous fibromas are hairless tumors on the skin caused by a virus, though the mode of transmission is uncertain. The tumors are unsightly but are generally non-lethal to deer. In severe cases the tumors can reduce fitness and lead to sickness and death. The disease does not readily spread and, thus, has no known impacts on local or regional deer populations.

Cranial abscessation syndrome (CAS) is a bacterial infection of the brain that causes neurological impairment and can lead to death of individual deer. The bacteria occur naturally on deer and can enter through wounds at the base of antlers. The disease does not spread from deer-to-deer, is naturally occurring, and requires a physical wound so the effect on deer populations is considered negligible.

Epizootic hemorrhagic disease (EHD) is a viral disease that is often fatal to deer and hoofed animals. It was first detected in Wisconsin in 2002. The virus is spread by a midge insect sometimes called no-see-ums (*Culicoides sp.*). Mortality rates can be high, especially in populations with no prior exposure to the virus. However, new infections end at the first hard frost in the fall when the insects die, which limits the spread of the disease. With a warming climate this disease is expected to expand in range in Wisconsin.

Bovine Tuberculosis (TB) is a bacterial disease of deer and mammals that is slow to progress but eventually causes respiratory illness and will eventually weaken the deer. Bovine TB can be spread across species (including to humans) and for this reason there are aggressive regulatory requirements in place to stop and slow spread, particularly in the livestock industry. High population densities, such as occur in captive farms or near baiting and feeding sites is a risk factor for spreading TB, but TB has not been found in wild deer in Wisconsin since testing began in 1996.

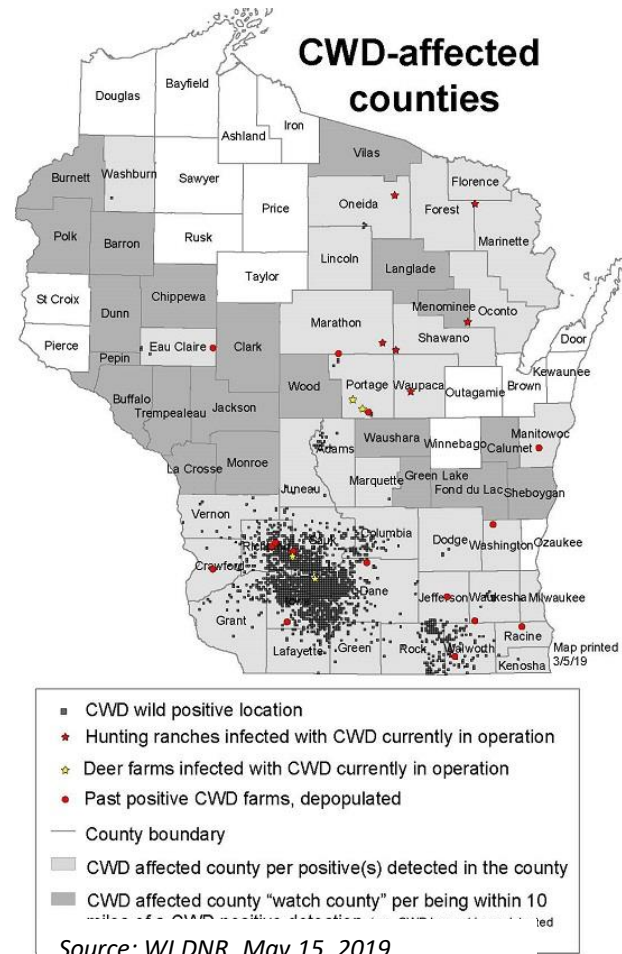
Chronic Wasting Disease

Note: *The Committee’s report and the information about chronic wasting disease presented herein is not intended as a comprehensive technical review of chronic wasting disease or efforts to manage the disease. For additional information, the Committee recommends reading the 2018 technical report published by the Association of Fish and Wildlife Agencies (AFWA)².*

Prions and Transmissible Spongiform Encephalopathy

Chronic wasting disease is a transmissible spongiform encephalopathy (TSE) that occurs in cervids (e.g. deer, elk, moose) and is characterized by non-reversible degeneration of brain tissue, ultimately resulting in death. The degeneration is currently understood to be the result of abnormally folded proteins called prions (proteinaceous infectious particle). How the become misfolded is not fully known but is believed to be caused by the misfolded proteins themselves.³ TSEs occur in a range of animal species and also in humans. The most well-known of the TSEs are scrapie in sheep, bovine spongiform encephalopathy (BSE) in cows (mad-cow disease), and Creutzfeldt-Jakob disease in humans.

Prions are a particularly insidious threat as they do not elicit an inflammatory response or cause visible symptoms during the long incubation periods making it difficult to detect the disease. Furthermore, asymptomatic animals shed prions through saliva, urine, and feces, and the prions persist in carcasses, soil, and plant material for years. **Thus, by the time CWD is detected it is likely to have already spread to other animals.** Of major concern is the potential for the prions to move from the host cervids and infect humans. CWD has not yet been detected in humans, but regardless, the WI Department of



² Gillin, Colin M., and Mawdsley, Jonathan R. (eds.). 2018. AFWA Technical Report on Best Management Practices for Surveillance, Management and Control of Chronic Wasting Disease. Association of Fish and Wildlife Agencies, Washington, D. C. 111 pp.

³ Bolton, David. (2004). Prions, the Protein Hypothesis, and Scientific Revolutions. 10.1201/9780203912973.ch2.

Health, Center for Disease Control, and the World Health Organization all recommend that meat from cervids only be eaten from healthy appearing animals that have tested negative for CWD.

CWD Prevalence and Effects on Populations

Chronic wasting disease was first detected in Wisconsin in 2002 in a wild deer harvested in 2001. As of 2018 testing, the disease has now been found in wild deer in 26 WI counties and in 25 captive deer operations since 2002. According to the DNR, in the most heavily infected areas of Dane and Iowa Counties, the prevalence rate in adult males has increased substantially and is now over 35 percent and in adult females it is now over 15 percent, with rates expected to continue rising. Since 2002, 1352 wild deer have been tested in Bayfield County and none have tested positive. With no positive tests in the surrounding counties (Ashland, Douglas, Sawyer) it is likely Bayfield County is still free of CWD, however of the 1352 tested deer, only 84 were tested in the last five years and with the long latency period of CWD it's possible CWD is already in Bayfield County, but hasn't yet been detected. The DNR is planning more extensive testing in northern Wisconsin in 2019/2020, which will provide a more robust understanding of CWD prevalence in the region.

The effect of CWD on an individual animal is certain death, but it is important to note that most deer do not die of CWD but succumb to other causes due to degenerative cognitive functioning. It is not yet fully clear what long-term effect CWD will have on a local or regional population. The disease is not immediately fatal which means the animal has time to reproduce before death occurs. The disease also occurs at a higher rate in males compared to females. Thus, one outcome of the disease may be a younger population where animals simply don't live as long. If this higher rate of mortality in older-aged animals is not compensated by an increase in recruitment, then the population will decline. This demographic change could also mean fewer older trophy animals. There has been documentation of population decline caused by CWD in mule deer in Wyoming⁴, but many factors affect deer populations, thus, the results from such studies are not easily transferable to other locations. For this reason, it is important that research on CWD impacts on deer populations in Wisconsin be continued and expanded.

Another scenario posed by CWD is that concerns about effects of CWD on human health result in less hunting and deer populations actually increase significantly. Short term this would mean more opportunities for deer harvests, but also more vehicle collisions, more crop damage, and increased difficulty with tree regeneration. Eventually, the higher deer population densities would increase CWD transmission rates and possibly lead to other communicable disease issues, such as bovine TB or EHD. For now, it appears that hunting rates have not been affected by CWD, but if CWD is found in humans hunting is likely going to decline.

Genetic resistance and natural selection could eventually result in a population of deer that is resistant to CWD. It is important to note that deer resistance to CWD can still carry prions and shed them into the environment. For such a genetic shift in population to occur there needs to be both heritable CWD resistance within the population and a higher recruitment of CWD resistant deer. The extent of such genetic resistance within the wild deer population is currently unknown, and regardless, such a change in population would likely be slow given the relatively high fecundity of susceptible deer.

⁴ DeVivo MT, Edmunds DR, Kauffman MJ, Schumaker BA, Binfet J, Kreeger TJ, et al. (2017) Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLoS ONE 12(10): e0186512.

The Prospect For A Cure

There is currently no vaccine or cure for TSEs, including CWD, and there is no short-term prospect for a cure, either. This is in part because prions in general are not well understood. With no cure or vaccine available, the best option for managing CWD right now is to prevent or at least slow the geographic spread of CWD and reduce the transmission of the disease once it is found and that means minimizing the risk factors responsible for the geographic movement of CWD prions.

The Challenges of Horizontal Transmission

Prions are spread through horizontal transmission, with direct deer-to-deer contact the most likely mode of spread. Because of the persistence of the prions outside living animals and the shedding of prions by still healthy animals, transmission also occurs indirectly through contact with carcasses, contaminated soil, and contaminated feed. **Cervid carcasses, in particular, are a concern for indirect transmission as the prions are concentrated in the discarded brain and spinal cord and when dispersed on the landscape may be further dispersed by scavengers.**

Wisconsin is no stranger to trying to control invading pests. Whether it be insects (emerald ash borer, gypsy moth), plants (garlic mustard, Japanese knotweed), or animals (zebra mussel, bighead carp), the State of Wisconsin and its many local partners have extensive experience trying to stop the spread and movement of disruptive pests. But it's not easy. One lesson we have all learned from the experience with invasive pests, it is far easier to prevent the establishment of these pests than it is to eradicate them once they have arrived. Like all of these, CWD has been a challenge to manage because the prions can be moved by so many different vectors. With CWD the challenge is even greater because of the contentious nature of all aspects of deer management. For example, though baiting and feeding and high population densities likely increases the chances of CWD transmission, banning such baiting and feeding or reducing populations is hugely contentious.

To be effective, any effort to slow the spread of CWD needs to have buy-in from stakeholders and the public. To generate the buy-in, any proposed action needs to be perceived as necessary, relatively effective, and practical. The Committee's recommendations reflect this reality. Ultimately however, it is important to note that CWD may spread to all corners of the state because CWD will move by vectors we can't control such as the movement of wild deer. But, there is much that can be done to reduce human-assisted spread. The ultimate solution to CWD is a cure, a vaccine, or some other not yet known intervention that halts the spread. In the meantime, by reducing the risk factors and slowing the spread, we can buy time to find a solution. But, buying time is only worth it if the investment is made during that time to develop a solution. CWD is a horrendous disease, but because it is relatively slow to spread and does not immediately kill deer, there is concern that the public and elected officials will not act with the urgency necessary to find a solution before CWD becomes prevalent throughout the state.

Relevant Existing Regulations

Wild Cervid Populations

State statutes entrust the management of wild cervids with the DNR and this includes the management of diseases like chronic wasting disease. Under its statutory authority the DNR developed and is continuing to implement their [CWD Response Plan](#). The plan is regularly updated and currently includes 112 implementation steps organized around six main objectives: Prevent new introductions, monitor for and respond to new disease areas, control distribution and intensity, increase public recognition and

understanding of CWD, address the needs of DNR customers, and enhance scientific information about CWD. The current CWD Response Plan was developed in 2010 after eight years of trying to eradicate CWD through herd reduction strategies. After the eradication effort, the DNR determined eradication would be impossible and, further, that stopping the spread would also be unlikely. The current response plan is, thus, an attempt to slow the spread. This may be appropriate for southern Wisconsin where the disease is entrenched, but here in the north we still have a disease-free population of white-tailed deer (as far as we know) and the opportunity to keep the north free of the disease.

A major focus of the CWD Response Plan is educating the public and stakeholders through a public information and education program. The intent is to enlist the help of hunters and others to test their harvested animals for CWD and to take voluntary actions to limit the spread of CWD primarily by limiting transport of harvested animals. The DNR's Adopt-A-Kiosk program encourages stakeholders to install and manage kiosks to facilitate testing of harvested deer. The Adopt-A-Dumpster program is an effort to encourage hunters to dispose of carcasses in landfills rather than dispersing them on the landscape. The DNR also encourages hunters and landowners to limit artificial congregation of deer by not baiting and feeding. Amplifying these programs in Bayfield County is a relatively low-cost action to help prevent the spread of CWD to the county. The DNR would also like to reduce deer population densities as a means to limit transmission but is limited by pressures to manage population levels for other objectives, as well. County deer advisory councils (CDACs) can assist the DNR in the population reduction efforts by helping convince hunters and stakeholders in a given locality that lower population densities may be better in the long term for the deer population, particularly if CWD is present.

Beyond information and education, the CWD Response Plan has led to adoption of DNR Administrative Rules to slow the spread of CWD. Administrative Rule Chapter NR 10.105 places restrictions on the transportation of cervid carcasses out of counties with CWD. Generally, a cervid carcass with the head or spinal column still attached cannot be moved from a county with CWD to a county without CWD unless the animal is transported directly to a licensed processing facility or taxidermist within 72 hours of registering the harvest. Cut and wrapped meat, hides, finished taxidermy heads, and skulls without brain tissue attached may be transported without restrictions. NR 10.07(2m) prohibits baiting and feeding cervids within counties where CWD is present or within 10 miles of the CWD location. However, WI Act 41 passed in 2017, limits the prohibition on baiting and feeding to three years after a positive detection within the county in which the detection occurred and two years in counties that fall within the 10-mile radius of the positive detection.

Despite implementation of the Response Plan and promulgation of the Administrative Rules, ongoing efforts have not stopped the spread of CWD as the range and prevalence has steadily grown since the first detection in 2002. The reality is that controlling the spread of CWD in wild populations is difficult because the populations are wild and preventing all transmission is impossible.

Captive Populations

With respect to CWD, the primary concern with captive cervid farms is the long-distance transport of live animals that may or may not be infected with CWD given the current lack of a reliable live-animal CWD test. Once transported, CWD can be transmitted locally by direct transmission to wild deer across fence lines or from escapes, and/or indirectly through contaminated soil and other materials. In addition, the high population densities common to cervid farms can result in rapid CWD transmission within the farm creating a hotspot of infection.

It should be noted these concerns are the same for wild cervids. Transport of CWD infected carcasses by hunters can result in long-distance vectoring of CWD, just like long-distance transport of live animals. High population densities of wild cervids created by artificial congregation or high population targets can increase transmission, just as in captive operations.

Captive cervids are considered livestock and are thus primarily regulated by the WI Department of Agriculture Trade and Consumer Protection (DATCP) via ATCP 10.45 through 10.58. DATCP's regulatory approach is primarily focused on assuring CWD positive animals are not transported from one farm to another. If a 100% reliable live animal test were available an animal could simply be tested and, if negative, the animal could be transported without concern of moving CWD. However, such a test does not exist so DATCP has to rely on post-mortem testing as a de facto means to determine with reasonable certainty that any given animal in the herd doesn't have CWD. This testing and verification program is implemented through the Herd Status Program (HSP). Over a 5-year period the HSP requires testing of 100% of animals over 12 months of age when they die or are shipped to slaughter. If no positives are found during that 5-year period the operation has HSP status and is eligible to export live animals. Before a live animal is moved to another licensed facility (moving among properties under the same license is permitted) the animal must first have a Certificate of Veterinary Inspection (CVI) that requires a veterinarian to inspect the animal and herd to verify there are no clinical signs of CWD and that the animal has been adequately separated from wild cervids known to have CWD.

Enrolling in the HSP is voluntary and is primarily only done by operations involved in the sale of breeding stock that need to move live animals. In 2018 there were 385 registered captive cervid operations in Wisconsin and of those, 169 were enrolled in HSP. Enrollment in the HSP is not a guarantee that CWD will be avoided. There have been 7 cases of farms enrolled in the HSP that have found CWD on the farms more than 5 years after enrollment. The remaining operations are primarily hunting ranch facilities. They are still regulated, but they have less stringent testing requirements than enrolled facilities. As a result, they are not allowed to move live animals unless they are going directly to a licensed slaughter facility.

An important exemption to these rules as specified in ATCP 10.46(4) allows live cervids from a single registered herd located at 2 or more locations to be moved between the locations without a CVI. This exemption is concerning as it increases the risk of moving a CWD+ animal from one part of the state to another without any apparent good reason for the exemption.

DATCP also has the statutory authority to quarantine (ATCP 10.52(7)(7m)) and condemn (ATCP 10.52(8)) captive herds that test positive for CWD. Condemnation and slaughter of the entire herd was standard practice by DATCP when captive herds tested positive, but since 2013 DATCP has modified their approach and has allowed positive herds to continue operating under a Herd Plan. As of 2018, 8 such operations were still in business. This change in strategy is concerning as it effectively allows for a known CWD hotspot to develop and increases the risk of transmission outside the operation.

The WI DNR also has regulatory jurisdiction through NR 16.45, which specifies fencing requirements for captive game farms including cervid farms. A captive cervid farm must build and maintain an 8-foot high perimeter fence or physical barrier to prevent cervids from getting in or out. In addition, the operator must report fence failures or animal escapes to the DNR within 24 hours of discovery. If an escaped deer is returned to the captive herd after 120 hours from escape the herd loses HSP status. If the deer escapes into a CWD management region and is returned to the herd after 24 hours the herd loses HSP status. In the event 2 wild deer within 5 miles of a captive cervid operation test positive for CWD, the

captive operation must install either a single solid barrier or two 8-foot high fences in order to maintain HSP status.

Committee Recommendations

Experience with CWD in other parts of Wisconsin and the US show clearly that once CWD enters a deer herd it is nearly impossible to control the spread and prevalence, much less eradicate it, in part because the disease shows up before testing or clinical signs can find it and second because the prions are highly persistent and can spread through both direct and indirect contact. As such, the Committee is recommending the Bayfield County Board of Supervisors take actions to achieve three main objectives: 1) Reduce the risk of CWD entering Bayfield County, 2) Encourage and enable testing of wild deer harvested in Bayfield County to increase the chances of catching the disease early, and 3) Develop a multi-stakeholder response plan to be ready in the event CWD is found in Bayfield County. To achieve these objectives the Committee is recommending the specific actions outlined below. The actions include a public education and information program to enlist hunters and the public to help keep CWD out of Bayfield County, recommending and requesting the State legislature and agencies to conduct additional research and take more aggressive action to limit spread of CWD, and new regulations in Bayfield County to minimize the chances of CWD spreading between captive and wild cervid populations.

Recommendation #1 - The Committee recommends that Bayfield County develop and implement a public information program to educate citizens about ways to help keep chronic wasting disease (CWD) out of Bayfield County.

The public information program should encourage the following actions:

- a) Encourage hunters to have their harvested cervids processed in the counties in which they were killed.
- b) Inform hunters of the importance and methods of proper carcass disposal.
- c) Inform hunters of the importance and their options for testing their harvested deer for CWD.
- d) Discourage baiting and feeding in order to reduce the chances of transmission of cervid disease within wild cervid populations in Bayfield County.
- e) Discourage the use of lures and scents that contain cervid products to reduce the chances of transmission of cervid disease within wild cervid populations in Bayfield County.
- f) Educate hunters on best management practices for field-dressing and butchering harvested cervids in order to enable CWD testing of the carcass, minimize hunter exposure to CWD prions, and reduce spread of prions in the environment.
- g) Encourage CDACs and stakeholders to consider infectious disease management when developing and implementing cervid population management goals.

Rationale and Justification: Clearly the best way to manage CWD in Bayfield County is to keep it out of Bayfield County. But, if it arrives the county needs to be prepared to minimize transmission and possibly eradicate it. To that end, the Committee is recommending Bayfield County play an active role in educating hunters and the public about things they can do to minimize the chances of bringing CWD to Bayfield County. Recognizing that traditions and behaviors around deer hunting are deeply ingrained, the Committee is recommending the use of education and assistance to achieve voluntary compliance with best management practices rather than regulatory forced compliance. Developing buy-in and acceptance from the public will be more effective. The Committee also recognizes that natural vectors, such as movement of wild deer, are likely to bring CWD into the county at some point, but while we still

have the opportunity to keep CWD out of the county it is important we try to eliminate human-assisted transmission. Changing habits around baiting and feeding, carcass transport, and carcass disposal now will make the county better prepared to slowing transmission if CWD does make it into the county.

Cost: Implementing a public education and information program in Bayfield County will require staff time and funding for advertising and messaging. Listed below are two options to consider. The DNR and DATCP should be contacted about possible cost-sharing to help cover the costs.

- Utilize existing staffing in the Extension, Land Conservation, and Health Departments to develop and implement the public education programs. Recognizing such staffing time is limited due to other demands, this option would likely be limited to amplification of DNR messaging and educational materials through existing low-cost media outlets. There likely would be no new cost to the county, but it would require diversion of staff time and resources away from other needs.
- Allocate new funding to hire an LTE position for 6 months (Aug-Jan) in each of 2019/2020 and 2020/2019. The position would be responsible for developing and implementing the educational messaging as well as coordinating the Adopt-A-Kiosk and Adopt-A-Dumpster programs. A primary focus of the position would be developing partnerships with stakeholder groups, public agencies and adjacent counties to most efficiently develop and implement the programs. It is possible grant funding could be secured to fund this position, but given the urgency of CWD, the Committee is recommending Bayfield County commit to funding at least the 2019/2020 position if grant funding can't be secured by then.

Recommendation #2: The Committee recommends the Bayfield County Board develop and implement programs to support more CWD testing and proper carcass disposal.

- a) For the 2019/2020 hunting season, work with the DNR to install and support a minimum of eight testing kiosks in Bayfield County that can be used by hunters to prepare and drop off deer heads for CWD testing. The kiosks should be located at: Herbster, Iron River, Barnes, Cable, Grandview, Ashland, Washburn, Bayfield.
- b) After 2019, install and support a minimum of three testing kiosks in Bayfield County.
- c) Develop and implement a testing program for freshly killed deer found along roads and highways in Bayfield County.
- d) For the 2019/2020 hunting season, provide carcass disposal dumpsters at eight locations in Bayfield County during the deer hunting season. The dumpsters should be located at: Herbster, Iron River, Barnes, Cable, Grandview, Ashland, Washburn, Bayfield. For the 2020/2021 season and beyond, develop an Adopt-A-Dumpster program by working with stakeholder groups and waste haulers to host dumpster sites for carcass disposal.
- e) Investigate options for requiring taxidermists and deer processors to properly dispose of cervid carcasses.

Rationale and Justification: The objective of this recommendation is to make testing harvested and roadkill deer for CWD and disposal of carcasses in landfills, rendering or composting facilities standard practice. To help hunters make these changes, the Committee is recommending Bayfield County lead the way by directly assisting hunters with testing and carcass disposal for the 2019/2020 season and developing a self-sustaining testing and carcass disposal program for 2020/2021 and beyond. Roadkill

deer are an important source of CWD information as the mortality occurs year-round and CWD+ deer may be more likely to be killed by cars. The Committee is recommending the Bayfield County highway department collect heads from freshly killed deer when possible and submit them for CWD testing.

Cost: The estimated cost for installing and emptying the 8 proposed dumpsters is \$2620. The Committee is proposing Bayfield County budget \$5000 (or secure other funding) for the program to support the dumpsters, provide stipends to host sites, and to develop and install signage. The DNR is planning to install and manage 4 testing stations in Bayfield County for the 2019/2020 season. The Committee recommends Bayfield County budget \$4000 (or secure other funding) to install and manage 4 additional testing stations.

Recommendation #3: The Committee recommends Bayfield County develop and implement a captive cervid fencing ordinance that:

- a) Requires all *existing* captive cervid operations in Bayfield County to comply with WI DNR fencing standards specified in NR 16.45.
- b) Requires annual inspection of the fencing at all *existing* and *new* captive cervid operations at least once per year to ensure compliance with the standards.
- c) Requires all *new* captive cervid operations in Bayfield County to comply with the WI DNR fencing standards specified in NR 16.45 *AND* to implement one of the following:
 - i. Install and maintain a second 8-foot high perimeter fence that meets the standards specified in NR 16.45 with at least 8 feet but not more than 16 feet between the two fences.
 - ii. Install and maintain one solid perimeter fence with the lower 7 feet covered with solid material that prevents animals on opposite sides of the fence from making visual or physical contact. The solid perimeter fence shall contain at least one single strand of electrified wire on the inside or outside of the entire length of the perimeter fence at a height of 3 feet and shall be at least 2 feet from the main fence.
 - iii. Install and maintain at least three strands of electrified wire on the inside or outside of the entire length of the perimeter fence, including gates, at heights ranging from 6 inches to 48 inches from the ground.

Rational and Justification: The proposed ordinance would do two things. First, by adopting the existing DNR fencing standards by local ordinance, Bayfield County would be able to conduct inspections and enforce compliance rather than relying on DNR staff. Second, ensuring that new captive cervid operations have a solid barrier or double fencing will decrease the likelihood of direct CWD and other disease transmission between wild and captive cervids.

Recommendation #4: The Committee recommends Bayfield County develop and implement a captive cervid import ordinance that:

- a) Prohibits the importation of live cervids into Bayfield County *without exception* unless:
 - i. The animal comes from a herd enrolled in the Herd Status Program as specified in ATCP 10.53.

- ii. The animal has a certificate of veterinary inspection (CVI) as specified in ATCP 10.56(2-3).
- iii. Documentation is provided that shows the animal is coming from a location that is not within 10 miles of a known positive CWD detection in a wild or captive cervid recorded within five years prior to the animal being moved.

Rationale and Justification: The movement of live cervids represents a risk of transmitting CWD over long distances. One option to mitigate this risk is to simply prohibit the transport of live cervids, but it is doubtful a county has the statutory authority to enact such a prohibition and, furthermore, such a prohibition would be a significant burden to captive operations that rely on import of live animals to operate their business. The best solution is to develop a 100% reliable live animal test and require such testing before moving an animal, as is done with other livestock. As specified in Recommendation #7, the Committee is recommending Bayfield County urge the state to help develop such a test, and once developed, require testing before moving animals. In the meantime, the Committee is recommending Bayfield County enact an ordinance to close gaps in the existing live animal transport rules.

The ordinance addresses two main gaps in existing rules. First, it closes the loophole that allows transport of animals among geographically separated herds under the same cervid operation registration without a CVI. Administrative Rule ATCP 10.56(1)(a-d) specify exceptions by which live cervids could be moved without a CVI. The Bayfield County ordinance would eliminate those exceptions when moving live deer into Bayfield County. Second, it prohibits the movement of live animals from areas with known CWD positive animals. In the Committee's opinion, the existing regulations do not adequately guarantee separation of captive herds from wild herds and, furthermore, the Committee was told by multiple captive cervid operators that they don't buy live animals from captive herds within CWD+ regions regardless of the operation's HSP status. Thus, such a prohibition is unlikely to be an undue burden on captive operations.

Recommendation #5 – The Committee recommends the Bayfield County Zoning Committee consider applying conditions specifically targeted to CWD when granting a conditional use permit (CUP) for the citing of a new captive cervid operation in Bayfield County, which may include, but are not limited to, conditions such as:

- a) If not otherwise required by County zoning ordinance, require enhanced perimeter fencing as specified in Recommendation #5(b-c).
- b) Install a remote monitoring system to the perimeter fence to immediately detect damage to fence lines caused by falling trees or flooding. The form and type of remote monitoring system should be negotiated with the permit applicant and consider the technology available upon application for the permit.
- c) Remove or prune all trees with 3-inch dbh (diameter at breast height) or greater inside and outside of the perimeter fencing to ensure that were the tree to fall it would not contact the fence. Install the outermost perimeter fence with a setback from property lines sufficient to allow for pruning and removal of trees necessary to meet this condition.
- d) Require double gates at each ingress and egress point in the perimeter fence or other comparable system to ensure no animals can pass through the gates when moving vehicles through the fencing.

- e) If not otherwise required by County zoning ordinance, prohibit the import of live cervids into Bayfield County unless the conditions specified in Recommendation #6a are met.
- f) Require testing all testable cervids 12 months or older that are killed or are found dead for CWD.
- g) If a cervid within the captive operation tests positive for CWD require the following actions:
 - i. Depopulate all cervids from the operation within 3 months.
 - ii. Maintain the perimeter fencing for a minimum of 5 years from the date the last cervid is removed.
 - iii. Quarantine the facility with no cervids moved into the facility within 5 years from the date the last cervid is removed.

Rationale and Justification: Any new captive cervid operation in Bayfield County requires a Conditional Use Permit (CUP) from the Bayfield County Zoning Department. The CUP requirement authorizes the County to place conditions on the permit it deems necessary to protect adjoining landowners and the natural resources of Bayfield County from the proposed operation. The Zoning Committee will consider 17 decision-making criteria when making a decision about possible conditions, including: “the maintenance of safe and healthful conditions” and “the community or general welfare and economic impacts”.⁵ Based on the information about CWD and its management available at the time of writing this report, the Committee is recommending the Zoning Committee consider applying the listed conditions to effectively prevent a possible CWD outbreak on a captive cervid operation from spreading to Bayfield County’s wild cervid population. Bayfield County should also consider amending its zoning ordinance to ensure that all conditional use permits include evaluation of “possible spread of communicable and zoonotic disease to and from humans, wildlife, and domesticated livestock.

Recommendation #6 - The Committee recommends that the Bayfield County Board request the legislature to fund and direct the University of Wisconsin, WI DNR, WI DATCP, and WI Department of Health to conduct additional research on chronic wasting disease as specified in the Resolution shown in Appendix 2: “Conduct Additional Research on Chronic Wasting Disease to Improve Testing, Treatment, and Management Options”.

Rationale and Justification: Prions and transmissible spongiform encephalopathies, including CWD, are not well understood. Given the magnitude of the risks posed by CWD to cervid and human health and the potential disruption to such an economically and culturally important part of Wisconsin life it is imperative that the legislature and public agencies commit the resources necessary to develop more rapid and reliable tests for CWD, develop a cure and vaccine, better understand the long-term impacts on cervid populations, and better understand the threat of CWD to human health. Such commitment of resources is not going to happen unless the public and stakeholders demand that it happen.

Recommendation #7: The Committee recommends Bayfield County facilitate a multi-stakeholder planning process to develop a coordinated response plan to be prepared in the event chronic wasting disease is found in wild or captive deer in Bayfield County.

⁵ Bayfield County Zoning Ordinance Section 13-1-41 (c)

Rationale and Justification: In the event of a new detection in Bayfield County, the DNR will take the lead in developing a New Foci Response Plan. Taking action after a new detection is essential but being prepared to take the action is more important. To that end, the Committee is recommending Bayfield County lead a multi-stakeholder effort to develop a response plan that can be implemented if a new detection occurs. This planning effort will ensure that all parties know their roles and that contentious decisions about depopulation, mandatory testing, and limits on baiting and feeding are made before a detection occurs. The planning effort should also include a public education component so the public is aware of what likely will happen if a new detection occurs, making implementation of the response plan easier and with less controversy.

Recommendation #8 - In order to more aggressively limit the spread of CWD, the Committee recommends that the Bayfield County Board request the legislature to enact more stringent regulations as specified in the Resolution shown in Appendix 3: “Enact Stronger Regulations to Limit the Spread of CWD”

Rationale and Justification: State law limits the authority of counties to take more aggressive regulatory action to manage CWD. As such, the Committee is recommending Bayfield County recommend and request the state legislature to enact more stringent regulations in order to reduce the chances of CWD coming to Bayfield County.

Recommendation #9 - In order to more aggressively limit the spread of CWD, the Committee recommends that the Bayfield County Board share this report with adjacent counties and urge them to implement the recommendations to further slow the potential spread of CWD in NW Wisconsin.

Rationale and Justification: As of writing, the counties surrounding Bayfield County were not yet infected with CWD and given the limited management options available, it is important the counties work together to keep CWD out of the region. It is also important for unaffected counties to have a unified voice when urging the state legislature to do more to stop CWD.

Appendix 1 – Presentations to the Communicable Disease of Cervids Study Committee

November 1, 2019

Deer Disease Primer, Dr. Bryan Richards, USGS-National Wildlife Health Center

December 6, 2019

Management of Chronic Wasting Disease, Dave Clausen, retired veterinarian. Dave Clausen also provided the document: “The Challenge of CWD: Insidious and Dire”, published by the Alliance for Public Wildlife and edited by Dr. Valerius Geist, David Clausen, Vince Crichton, and Darrel Rowledge

Wisconsin Conservation Congress and CWD, Al Horvath, Vice-Chair, Wisconsin Conservation Congress Deer and Elk Committee

January 10, 2019

Management of Wisconsin Deer Farms, Dr. Darlene Konkle, WI DATCP Assistant State Veterinarian; Dr. Amy Horn-Delzer, WI DATCP Veterinary Program Manager

The Importance of Whitetailed Deer to Ojibwe Culture, Gerry DePerry, Tribal Member, Red Cliff Band of Lake Superior Chippewa

February 28, 2019

Diseases in Cervids-Regulation, Surveillance, and Management, Tami Ryan, WI DNR Wildlife Health Program Chief, Wisconsin Department of Natural Resources

March 7, 2019

Deer Farming & Chronic Wasting Disease, Laurie Seale, Vice-President, Whitetails of Wisconsin. Laurie Seale also provided the Committee with the document: “Current Scientific Knowledge about CWD”, published by the American Cervid Alliance and edited by Dr. Donald Davis, Dr. Kenneth Waldrup, Dr. Greg Stewart, and Dr. James Kroll

Chronic Wasting Disease: Human Health Concerns, Sara Wartman, Director, Bayfield County Health Department

April 4, 2019

Bayfield County Zoning Ordinance for Game/Deer Farms, Robert Schierman, Director, Bayfield County Planning and Zoning Department

Resolution

No. 2019-____

CONDUCT ADDITIONAL RESEARCH ON CHRONIC WASTING DISEASE TO IMPROVE TESTING, TREATMENT, AND MANAGEMENT OPTIONS

WHEREAS, Chronic wasting disease (CWD) is a serious disease of captive and wild cervids and threatens to cause considerable economic, cultural, and ecological damage to Wisconsin;

WHEREAS, A better understanding of CWD is needed to develop better management tools;

WHEREAS, Current funding and research levels are not commensurate to the threat posed by CWD;

NOW THEREFORE, BE IT RESOLVED, The Bayfield County Board of Supervisors Assembled This XXth Day Of July, 2019, does hereby urge the State Legislature to direct state agencies and provide funding to conduct the following research and development in order to better manage CWD:

- Develop a reliable, rapid, and easy to administer CWD test that can be conducted on live cervids.
- Develop a reliable, rapid, and easy to administer CWD test that can be implemented in the field on harvested deer and can provide immediate results.
- Develop a vaccine for CWD for cervids.
- Develop a cure for CWD infected cervids.
- Breed heritable resistance to CWD in captive cervids such that the cervids are both asymptomatic and do not carry and shed prions.
- Determine CWD prion longevity and virulence in contaminated soil, feed, and crops under a range of environmental conditions and soil types.
- Develop a better understanding CWD prion movement in the environment once outside of a cervid.
- Expand monitoring of individual animal and herd health in CWD endemic zones to better understand the effect of CWD on population dynamics.

- Conduct epidemiological assessment of CWD prions on human health including whether humans are already carriers of CWD prions, the likelihood of CWD prions infecting humans and causing disease, and the impact of eating CWD positive deer, if any.
- Conduct additional research to determine viability and methodology for composting CWD infected cervids.

BAYFIELD COUNTY BOARD OF SUPERVISORS

Dennis Pocernich, *Chairman*

STATE OF WISCONSIN)

)ss.

BAYFIELD COUNTY)

I, Scott S. Fibert, Bayfield County Clerk, hereby certify that the foregoing is a true and correct copy of Volume 22, adopted by the Bayfield County Board of Supervisors at their meeting held on the ____ day of _____, 2019.

Scott S. Fibert, Bayfield County Clerk

Resolution

No. 2019-___

ENACT STRONGER REGULATIONS TO LIMIT THE SPREAD OF CWD

WHEREAS, Chronic wasting disease (CWD) is a serious disease of captive and wild cervids and threatens to cause considerable economic, cultural, and ecological damage to Wisconsin;

WHEREAS, With no known cure or vaccine, the only option currently available to manage CWD is to aggressively limit the transmission and spread of CWD;

WHEREAS, Current regulations do not adequately limit human assisted transmission of CWD;

NOW THEREFORE, BE IT RESOLVED, The Bayfield County Board of Supervisors Assembled This XXth Day Of July, 2019, does hereby urge the State Legislature to make the following changes to State Statutes and concordant Administrative Rules:

- Change ATCP 10.56(1) to eliminate exceptions that allow transport of live cervids without a Certificate of Veterinary Inspection.
- Change NR 10.105(7) to prohibit the export of cervid carcasses which have any part of the spinal column or head attached from CWD affected areas in which a wild or captive cervid tested positive for CWD in the last 10 years.
- Enact new rules to require the disposal of harvested cervid carcasses in approved landfills, rendering, or composting facilities.
- Enact new rules to prohibit the export of live cervid animals from areas within 10 miles of a known positive CWD detection within the last five years.
- Enact new rules to require all captive cervid operations to install solid perimeter or enhanced-fencing.
- Once a reliable live animal CWD test has been developed, enact rules to prohibit the transport of live cervids unless the animal tests negative for CWD.

BAYFIELD COUNTY BOARD OF SUPERVISORS

Dennis Pocernich, *Chairman*

STATE OF WISCONSIN)

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BAYFIELD COUNTY)

I, Scott S. Fibert, Bayfield County Clerk, hereby certify that the foregoing is a true and correct copy of Volume 22, adopted by the Bayfield County Board of Supervisors at their meeting held on the ___ day of _____, 2019.

Scott S. Fibert, Bayfield County Clerk