Form 1100-001
(R 9/07)

NATURAL RESOURCES BOARD AGENDA ITEM

Item No. 3.B.7

SUBJECT: The department's five year plan for managing chronic wasting disease in Wisconsin's free-ranging wild deer

FOR: AUGUST, 2009 **BOARD MEETING**

TO BE PRESENTED BY: Tom Hauge, Bureau Director and Davin Lopez, CWD Management Coordinator

SUMMARY:

The department has developed a 5-year CWD management plan that recognizes a public trust responsibility for managing wildlife and ensuring the health of wildlife populations around the state. Recommendations in the plan are intended to minimize the area of Wisconsin where CWD occurs and to limit the number of infected deer in the state.

The plan's goal, specific objectives, and management actions were developed based on the best scientific information currently available and build on the work of the stakeholder advisory group and public comments received during that process.

The key objectives are to:

- Prevent new introductions of CWD
- Respond to new disease focal points
- Control distribution and intensity of CWD
- Increase public recognition and understanding of CWD risks
- Address the needs of the public
- Enhance the scientific information about CWD

Additionally, the plan includes a number of specific management and monitoring actions that will be taken in order to achieve the overall goal and the individual objectives.

RECOMMENDATION: Request approval of a five year plan for managing chronic wasting disease in Wisconsin

LIST OF ATTACHED MATERIALS:

No	☑	Fiscal Estimate Required	Yes ☐	Attached
No	☑	Environmental Assessment or Impact Statement Required	Yes ☐	Attached
No	☐	Background Memo	Yes ☑	Attached

APPROVED:

Tom Hauge — Bureau Director, — Date 7/3/09

Laurie Ross — Administrator, — Date 7/3/09

Matt Frank — Secretary, Matt Frank — Date 7-29-09

cc: Laurie J. Ross - AD/8
Davin Lopez WM/6
Tom Hauge WM/6
Scott Loomans WM/6

CORRESPONDENCE/MEMORANDUM

State of Wisconsin

DATE: July 24, 2009

TO: Natural Resources Board

FROM: Matthew J. Frank

SUBJECT: Approval of the Five Year CWD Management Plan

Plan Summary

The plan establishes the following goal for the management of CWD over the next 5 years: **Minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state.**

The key objectives of this management plan are to:

- Prevent New Introductions of CWD
- Respond to New Disease Foci
- Control Distribution and Intensity of CWD
- Increase Public Recognition and Understanding of CWD Risks
- Address the Needs of our Customers
- Enhance the Scientific Information about CWD

The plan includes a number of specific management and monitoring actions that will be taken in order to achieve the overall goal and the individual objectives established.

These key actions include:

- Maintaining 2008 season structure to continue moving toward population goals
- Offering deer testing for hunters in high-prevalence areas
- Providing access to food pantries for hunters to donate deer
- Continuing to pursue a statewide ban on baiting and feeding
- Continuing to conduct rotating surveillance outside of the CWD Management Zone
- Continuing to work with DATCP to minimize risk of CWD transmission to wild cervids
- Monitoring trends in CWD prevalence and disease patterns in known affected areas

Summary of Responses to Comments Received

The Department received a wide range of comments on the draft CWD management plan. The final version that I am forwarding for your approval strikes a balance among those disparate views and charts a course for managing this disease over the next 5 years. The subject areas of the plan that received the most comment and our responses are listed below:

- **Plan Length**: We are recommending changing the plan from a 10-year plan to a 5-year plan.
- **Goal Statement**: We are recommending no change to the wording of the goal statement.
- **Season Structure:** Regarding the effectiveness of the season structure and Earn-a-Buck in reducing deer populations, we are changing the proposed 5-year review to a 3-year review starting at the end of the 2010 season and occurring again at the end of the 2013 deer season.

- **Statewide Ban on Baiting and Feeding:** We continue to call for a statewide ban on baiting and feeding.
- **Captive Cervid Farms:** Although this is a plan for free-ranging deer, we re-emphasize the importance of working closely with DATCP and the captive cervid industry and are working to improve state authority to better address the transmission of CWD between captive and wild deer populations.
- **Role of the Tribes:** Narrative was added to recognize the value of deer to tribal culture and the need for consultation with the tribes regarding disease management actions proposed in the ceded territory and on reservations.
- **Landowner Permits:** We are recommending no change to the proposal to use landowner permits that are valid from January through March in the CWD Management Zone.
- **Sharpshooting:** We recommend that sharpshooting remain an option in the plan for future consideration to address disease clusters, affirming a role for DNR-trained citizen sharpshooters and working with local citizens and cooperating landowners. Sharpshooting plans would be developed in collaboration with local citizens and the Conservation Congress, approved by the Natural Resources Board, and contingent upon available funding.

Background

After receiving the final report from the CWD Stakeholder Advisory Group, I asked Department staff to put together their recommendations on how we should manage chronic wasting disease in Wisconsin. I asked staff to consider the advisory group recommendations as well as the wide diversity of public comments that we have received since our efforts began on February 28, 2002. I asked staff to draw on all that we have learned about managing this disease from our experiences, our partners, and our research, as well as the experiences and research of others across the country.

At the same time, I cautioned them not to develop their recommendations in a vacuum that ignores the significant social, political, and economic challenges that we have faced and will continue to face as we try to manage this disease. For example, as a result of legislative action in the 07-09 state budget, we had $1 million/year less for managing CWD in the current biennium. In the biennium that started July 1, we will lose another $400,000/year in spending authority. At the federal level, it seems likely that funding for CWD management will continue to decline.

A DNR team was assembled in the spring of 2008 and charged with writing the plan. After 7 months of work gathering the latest data and experiences and considering several iterations of the plan, a draft plan was posted for comment on the DNR website on November 4, 2008. An electronic comment form was created on the web to solicit comments on the plan. A range of conservation organizations, sister agencies, tribes, and partners received briefings on the plan during November and December.

The plan acknowledges that the currently identified geographic distribution of CWD is substantially larger than was known in 2002 and is likely increasing. It acknowledges that political and social support for the extent of deer-population reduction that was an integral part of the original CWD management goal have changed since 2002. In the end, however, because of the enormous value of deer and deer hunting to the state and the potential long term impact of the disease on Wisconsin's deer herd and deer hunting culture, it remains clear that effective CWD management is essential regardless of the challenges.

This plan is not without controversy, but I believe it strikes the necessary balance and I request approval of the attached CWD Management Plan.

Discussion

Department staff extended offers for briefings on the plan to the tribes and a variety of agencies and organizations, 26 of which accepted our offer to brief them on the draft plan. (Appendix A). To-date, the following agencies and organizations have provided comments on the plan:

Dunn County Conservation Alliance
Great Lakes Indian Fish and Wildlife Commission
Illinois Department of Natural Resources
St. Croix County Alliance of Sportsman's Clubs
USGS – National Wildlife Health Center
Wisconsin Chapter of The Wildlife Society
Wisconsin Conservation Congress
Wisconsin Department of Agriculture, Trade and Consumer Protection
Wisconsin Department of Health Services
Wisconsin Veterinary Medical Association

A comment form posted on the web was visited by 716 people who responded to the first two questions (Appendix B). The entire comment form was completed by 480 respondents. Comments received are not a statistically-based sample of people from across the state, but certainly represent the diverse perspectives of those that took the time to respond.

Slightly more than half, (56%) of people providing comments identified themselves as hunters (66% had hunted in a CWD Zone and 34% had not). Nearly half (44%) identified themselves as non-hunters. Ninety percent of respondents live in Wisconsin and at least one response was received from 61 of the 72 Wisconsin counties. Double-digit responses came from Columbia, Dane, Fond du Lac, Grant, Green, Iowa, Jefferson, Milwaukee, Rock, Sauk, Walworth, and Waukesha counties. One-third (34%) of all responses were from either Dane or Waukesha County.

Nearly half (48%) of the people providing comments said they read the plan from cover to cover. Twenty-one percent said they read at least half of the plan, 21% said they just read the executive summary, and 4% admitted they answered the survey without reading any of the plan.

Additionally, the Wisconsin Conservation Congress, an elected advisory body to the Department and Natural Resources Board, thoroughly reviewed the proposed CWD management plan. Although the Conservation Congress Ad-hoc CWD Committee at first voted to reject the plan outright, the Big Game Committee voted to approve the plan with the caveat that they wanted to work closely with the Department on landowner permits and sharpshooting. The final Conservation Congress decision, reached by a floor vote at the 2009 annual statewide meeting, was to support the majority of the plan, reject the use of sharpshooters and landowner permits, and recommend the plan length be changed from ten years to five.

Comments received on the plan varied widely: some groups offered full support, one group rejected the Plan completely, and some supported parts of the plan but had concerns about specific elements The Voigt Intertribal Task Force was particularly concerned that the plan did not acknowledge the importance of deer to tribal people and did not acknowledge the role of the tribes in management decisions on tribal reservations and in the ceded territory. We worked with Jon Gilbert, Wildlife Section Leader (GLIFWC) to change the narrative in the plan to include recognition of the importance of deer to tribal culture and

acknowledgement that disease management actions in the ceded territory or on reservations requires consultation with the tribes.

The major points of concern with the plan follow:

Plan Length

The only organization to take a position against the 10-year length of the plan was the Conservation Congress. They recommended that the plan be for 5 years. Five people offered a comment on plan length in the web-based survey, all of whom thought that 10 years was too long.

In light of some of the controversial parts of the management plan, the Department has revised the narrative so that the plan charts the course for managing the disease for 5 years, through the 2013 deer season. This will allow for the reassessment of strategies at the end of that time.

The Goal Statement – *Minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state*

Reaction to the goal statement varied widely, from concern that we are giving up on eradication too easily to a belief that the goal is unrealistic and unachievable. Many of the stakeholder groups we met with seemed to accept the goal statement as a more realistic goal than disease eradication. Most agreed that management efforts are needed to keep the disease from getting worse.

Some question whether the actions proposed in the plan are adequate to achieve the goal and the expected results. Others are concerned that it will be difficult to assess the success or failure of reaching a goal that is so broadly stated.

When asked whether they agree or disagree with the goal, 46% of those who provided comments via the website strongly agreed or agreed, 41% strongly disagreed or disagreed, and 13% were unsure. When asked if the plan is sufficient to reach the goal: 11% think it is, 11% think it doesn't go far enough, 23% are unsure, and a majority (54%) think the plan goes too far.

We were very deliberate in choosing the wording of this goal statement. We want to avoid using "contain" out of concern that the first time a positive animal was found on the other side of the contain "line" the management effort would be viewed as a failure. We did not use "slow the spread" because it implies acceptance of the inevitable spread of the disease across the entire state. The Department believes the goal statement remains appropriate, particularly in light of the divergent views expressed by the groups and the comments received.

Statewide Ban on Baiting and Feeding

Other than the Voigt Intertribal Task Force, none of the groups that we met with voiced concern over the proposal for a statewide ban on baiting and feeding, with many endorsing the proposal. The tribes have noted that hunting over bait is a hunting method protected by the Voigt decision and therefore the tribes would not be bound by the baiting ban in the ceded territory. A majority of those that offered web comments favored the baiting and feeding ban, with a few suggesting that food plots and the use of doe urine should be added to the ban.

The Department and the NRB believe that a statewide ban on baiting and feeding of deer is an important component of the disease management plan because baiting and feeding causes concentrations of deer that increases disease transmission.

Sharpshooting

Sharpshooting remains very controversial. The Conservation Congress is opposed to sharpshooting. Other groups tacitly approved of the use of sharpshooting through their endorsement of the plan, while some groups recognized that recreational hunting alone is not enough to manage this disease and specifically endorsed the need for sharpshooting as a management tool. The Illinois DNR uses sharpshooting as part of their management of CWD and encouraged the Wisconsin DNR to use post-hunting season sharpshooting to supplement hunter harvest along the Illinois-Wisconsin border.

Of the 59 people who chose to offer web-based comments on sharpshooting, the majority were opposed to sharpshooting, with concerns expressed about the costs of sharpshooting, the strife created among neighbors, concern that sharpshooting actually dampens recreational hunter harvest, and concern that the use of bait for sharpshooting poses an unacceptable disease risk and is hypocritical when the department is pursuing a statewide ban.

While acknowledging these concerns, the Department continues to believe that the use of sharpshooting is an important tool to tactically deploy in the instances described in the plan (e.g. in the immediate vicinity of disease clusters along the leading edge of the disease in the CWD Management Zone and in response to new disease foci discovered outside of the CWD Management Zone) and should remain in the plan for future consideration. Recreational hunting alone will not be enough to focus the necessary harvest pressure in these instances. In recognition of the controversy surrounding the use of sharpshooting, DNR staff will work with local citizens and the Conservation Congress to develop a sharpshooting plan when such measures are called for. That plan will then be presented to the Natural Resources Board for approval prior to deploying sharpshooters. Contingent upon available funding, the Department will then use DNR-trained citizens in conjunction with agency employees when instituting sharpshooting and will work with cooperating landowners to select shooting sites.

Landowner Permits

The only organization to take a position in opposition to the use of landowner permits was the Conservation Congress. The Wisconsin Chapter of The Wildlife Society endorsed the use of landowner permits suggesting that the permits should extend beyond March 31. Most groups did not offer comments on the use of landowner permits. Of the 37 people who chose to offer web-based comments on the use of landowner permits, the majority were opposed to their use.

We believe post-hunting season landowner permits in the CWD Management Zone intensify harvest in locations where it is important to remove more deer. We allow landowners to shoot deer under the authority of an agriculture damage shooting permit for similar reasons. Landowner permits allow landowners to make their own decision on whether or not to further reduce the deer populations on their property.

Captive Cervid Farms

There is great concern shared among the Department and many conservation groups about the potential risk captive-cervid farms present for the transmission of CWD to wild cervids. Deer farmers also have

concerns about transmission of the disease to their farms from wild deer. Although this plan is for managing CWD in free-ranging deer, many questions were raised about the captive-cervid industry during the briefings that were held. The Conservation Congress, Wisconsin Wildlife Federation, Wisconsin Chapter of The Wildlife Society, and the Voigt Intertribal Task Force all voiced concerns about the captive-cervid industry. The tribes in particular view captive-cervid operations in the ceded territory as a bigger threat to spreading CWD in the ceded territory than free-ranging deer. Of the 29 people who offered web-based comments on captive-cervid farms, half called for the elimination of game farms in Wisconsin and half called for tighter regulations. Concerns were raised about the number of escapes, the amount of time it has taken to depopulate some CWD-positive deer farms, and the future risk these positive farms pose to free-ranging deer if the fences are removed at these facilities. Currently, the Department of Natural Resources only has authority over the fences of currently populated white-tailed deer farms. The Department of Agriculture, Trade and Consumer Protection (DATCP) regulates animal health aspects of captive-cervid farms as it does for other animal farming operations.

To address the expressed concerns, DNR and DATCP are working together on specific farm situations as well as to fulfill the direction of the Natural Resources Board to identify and attempt to rectify any gaps in authority that are deemed obstacles to preventing the exposure of uninfected wild deer to CWD-positive captive deer, and likewise, uninfected captive deer to CWD-positive wild deer. The Departments are currently in the process of identifying those authority gaps.

Although the plan only affects the Department's authority for managing CWD in free-ranging deer, these comments emphasize the importance of the Department's continuing efforts to work closely with DATCP and the captive cervid industry to address the concerns raised during plan development

Season structure

Comments on our proposal to maintain the same season structure for five years were quite diverse. Some felt that the current season structure was inadequate to significantly reduce deer populations and were concerned about keeping an ineffective season in place for five years with no option for changes before then. Others felt that the season structure was too aggressive, that it would result in dramatic reduction in local deer populations, and that there should be more flexibility to change the season without waiting for five years. Still others supported the idea of a consistent season structure for five years without change.

Web comments on the season structure were numerous and wide ranging. For example, 34 people offered their opinion on Earn-a-Buck with a majority opposed to its continuation. Seventeen people offered an opinion on the use of unlimited tags, with a majority opposed. Approximately 109 people commented on their perception of deer densities, with about half saying there are too few deer and half saying there are too many deer and the population needs to be reduced. Slightly more than 200 people commented on the non-hunting recreational use conflicts posed by gun seasons in October and December. Opposition to the October gun season was voiced by people who like to hike, bike, and camp during that time of year. Opposition to the December gun season and the CWD Management Zone Holiday gun season was voiced by winter sports enthusiasts such as snowmobilers, skiers, and others who want to be outdoors, particularly during the holiday period. A majority of hunters who commented on early seasons, late seasons, and longer seasons were opposed to each. Few offered alternative solutions to reach the deer density goals or minimize the number of infected deer.

In response to calls for increased flexibility to adjust the season framework, the Department proposes that the season framework be revisited every 3 years. Since 2008 was the first season under the current structure, the next review of season structure would be after the 2010 season and again after the 2013

season. As a reminder, the current CWD rule allows for a change from unlimited Earn-a-Buck to unlimited either-sex hunting if a CWD unit reaches the interim over-winter goal adopted in administrative code.

Summary of Other Changes Made to the Original Draft Management Plan

The following is a summary of additional changes that the Department made based on comments received on the plan. Any changes or additions listed below were made in the final version of the plan going to the Natural Resources Board for approval.

- A description of the current rule language that establishes the season structure was added as Appendix A.
- A description of the interim over-winter deer management unit goals was added as Appendix B.
- Clarification was added to the plan that under NR 10.41(3) (f) 1. – The department may include additional deer management units in the CWD management zone where and when additional CWD positive deer are found.
- The boundaries of the western core monitoring area and the eastern monitoring area were added to Figure 2.
- All figures, test results, harvest numbers, and similar information were updated to include data collected during the 2008 hunting season and disease surveillance effort.
- An acknowledgement section was added to the end of the plan.

Appendix A – CWD Management Plan Briefings

Internal Briefings

- Southeast Region DNR management team
- West Central Region DNR wildlife staff
- Northeast Region DNR wildlife staff
- South Central Region DNR law enforcement, wildlife, and parks staff
- Southeast Region DNR wildlife staff

Partners

- Interagency Health and Science Team
- USDA/APHIS/Wildlife Services
- Illinois DNR
- Wisconsin Department of Agriculture Trade and Consumer Protection
- USDA/APHIS/Veterinary Services
- Wisconsin Department of Health Services
- USGS National Wildlife Health Center – no briefing but Bryan Richards provided comments

Tribes

- Voigt Intertribal Task Force and Great Lakes Indian Fish and Wildlife Commission

Stakeholders

- Wisconsin Veterinary Medical Association
- Wisconsin Chapter of The Wildlife Society Executive Board
- Wisconsin Wildlife Federation Board
- Conservation Congress Big Game Study Committee
- Conservation Congress Ad-hoc CWD Committee
- Conservation Congress Executive Committee

Conservation Alliances

- Waukesha County Alliance
- Sheboygan County Alliance
- Dodge County Sporting Conservation Alliance
- Green County Conservation League
- Alliance of Dunn County Conservation and Sports Clubs
- Sauk County Sportsman's Alliance
- Manitowoc County Alliance

Appendix B – Results of the web-based comment form

The management plan establishes the following goal for the management of CWD over the next 10 years: **Minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state.**

Do you agree or disagree with this goal?	Response Total	Response Percent
Strongly agree	112	16%
Agree	218	30%
Unsure	94	13%
Disagree	107	15%
Strongly disagree	185	26%

Do you believe the plan is sufficient to reach this goal?	Response Total	Response Percent
I think it is	82	11%
I don't think it goes far enough	81	11%
I think it goes too far	389	54%
I'm not sure	164	23%

What aspects of the plan, if any, do you agree with or support?
Total Respondents **293**

What aspects of the plan, if any, do you disagree with or oppose?
Total Respondents **373**

Any other comments that you care to offer? **Total Respondents** **290**

How much of the draft CWD Management Plan did you read?	Response Total	Response Percent
All of it - cover to cover	244	48%
About half of it	112	22%
Less than half	31	6%
Just the Executive Summary	107	21%
None of it	19	4%

Are you a Wisconsin resident?	Response Total	Response Percent
Yes	462	90%
No	51	10%

In which Wisconsin County is your primary residence located? **456 Respondents**
61 counties represented

Since 2002 when CWD was discovered in Wisconsin, have you done ANY deer hunting in a CWD zone?

	Response Total	Response Percent
Yes – I have hunted in a CWD Zone	174	37%
No, but I have hunted deer elsewhere in Wisconsin	89	19%
No, I have not done any deer hunting in Wisconsin	203	44%

A Plan for Managing Chronic Wasting Disease in Wisconsin:

The Next Five Years

Wisconsin Department
of Natural Resources
2009

Contents

Executive Summary

After more than seven years of chronic wasting disease (CWD) management in Wisconsin, it is increasingly clear that controlling CWD in Wisconsin's free-ranging white-tailed deer will be extremely challenging, and will require a commitment of human and financial resources over an extended period of time. The management of disease in free-ranging wildlife populations generally is difficult, expensive, and controversial, particularly when significant population reduction is a part of the plan. Control of CWD in a high density, free-ranging, white-tailed deer population is unprecedented. Yet, the Department of Natural Resources (DNR) is not currently willing to accept the eventual spread of chronic wasting disease across the state. CWD has the potential for significant impacts on the future of deer hunting in Wisconsin.

Deer hunting is enjoyed by over 700,000 hunters in the state, providing nearly 7 million days of hunting recreation, and generating nearly $1.4 billion in total impact to the state's economy each year. Because of the special significance of deer to the Ojibwe people, CWD also poses a real threat to these tribes and tribal culture.

The DNR has public trust responsibility for managing wildlife and ensuring the health of wildlife populations in the state. There are real health risks to deer and elk from CWD and ongoing questions about possible health risks to humans and livestock. Additionally, there are secondary risks to the state's economy, socio-cultural traditions and ecosystem from the effects of the disease or its management.

The currently identified geographic distribution of CWD is substantially larger than was known

CWD positive 3-year old doe showing clinical signs of the disease before being shot by a DNR warden in Columbia County, August, 2006.

in 2002 and is likely increasing. Given the difficulty in managing CWD in free-ranging deer, magnitude of deer reductions required to significantly impact the disease, and declining political and social support, eliminating CWD from Wisconsin is unlikely.

There is still a need, however, to take steps to effectively manage CWD regardless of the continued challenges. We are therefore establishing the following goal for the management of CWD over the next 5 years: **Minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state.**

University of Wisconsin researcher uses telemetry equipment to locate a radio-collared deer in the CWD zone.

This goal indicates a shift in our management approach by accepting a CWD endemic area in southern Wisconsin, and at the same time, focusing CWD control efforts on limiting CWD to and controlling its intensity and distribution in that area of the state.

Advances in understanding about the ecology and epidemiology of CWD in Wisconsin have contributed significantly to informing our management actions. Yet there is no clear prescription for managing CWD. The DNR will need to continue intensive monitoring of CWD prevalence and distribution in order to make decisions on CWD management using an adaptive management approach. We believe that the results of our ongoing monitoring of CWD in the state's wild deer along with advances from research into the epidemiology of the disease over the next 5 years will allow the state to better evaluate the effectiveness of management actions on controlling CWD.

The Key Objectives of this Management Plan are to:

- Prevent New Introductions of CWD
- Respond to New Disease Foci
- Control Distribution and Intensity of CWD
- Increase Public Recognition and Understanding of CWD Risks
- Address the Needs of our Customers
- Enhance the Scientific Information about CWD

The plan includes a number of specific management and monitoring actions that will be taken in order to achieve the overall goal and the individual objectives established. These actions include:

- Implementing the 2008 hunting season structure as the basic season structure for all units in the CWD Management Zone through 2010 with an evaluation of the effectiveness of the season structure in reducing deer populations after the 2010 season and after the 2013 season.
- Issuing landowner hunting permits in the CWD Management Zone that are valid from the close of the regular hunting season until March 31.
- Ensuring hunters have the option of having their deer tested for CWD in areas with the highest prevalence of the disease.
- Cooperating with food pantries and meat processors in the CWD Management Zone to provide hunters options for donating deer.
- Pursuing a statewide ban on the feeding and baiting of deer to reduce the risk of transmission of CWD or other serious cervid diseases in new areas.
- Begin a third round of surveillance outside of the CWD Management Zone, beginning in 2011 and concluding by 2013.
- Encouraging the proper disposal of deer carcasses from areas inside and outside of Wisconsin where CWD has been detected.
- Working jointly with DATCP for federal and state funding, reducing the number of animals escaping from captive cervid farms, increasing compliance with monitoring, testing, record keeping and cervid movement regulations, and expeditiously depopulating, securing, and decontaminating cervid farms with CWD-positive animals.
- Using survey data to better understand public opinions about CWD management and to develop, test, and refine messages and delivery mechanisms that enhance public support for CWD management.
- Continuing to cooperate with DHS to maintain the registry of persons known to have consumed venison from CWD positive deer.
- Supporting and cooperating with research to better assess the risks that CWD may pose to humans and livestock, including farmed cervids.
- Continuing efforts to seek new funding to support management-oriented research on CWD.
- Monitoring trends in CWD prevalence and disease patterns in the known affected area.
- Cooperate with Indian tribes to develop action plans for the management of CWD on reservation lands or ceded territories.
- In cooperation with local citizens and the Conservation Congress, and with approval from the Natural Resources Board, conducting focused sharpshooting on public and private lands where permission can be obtained in areas of disease clusters along the edges of the known CWD distribution using DNR-trained citizens and agency employees.

The goal, specific objectives, and management actions established for addressing CWD were developed based on the best scientific information currently available. As new information becomes available, and we monitor and evaluate progress in managing CWD—steps will be taken to adapt our management approaches and actions. This adaptive management strategy is essential because the understanding of CWD epidemiology and efficacy of CWD management techniques in free-ranging populations is still developing. As additional information about CWD in Wisconsin and elsewhere becomes available, we will continue to modify our CWD management strategies and techniques to increase their effectiveness.

Background

CWD was first identified in Wisconsin on February 28, 2002. The Department of Natural Resources management goal at that time was to: minimize the negative impact of CWD on wild and captive deer and elk populations and to the state's economy, hunters, landowners and others dependent upon healthy wild and farmed populations of deer and elk. Management program objectives included: 1) defining the geographic distribution and prevalence of infection, 2) investigating the possible origin of the disease in the state, 3) minimizing the potential spread of CWD to new areas, 4) eradicating the disease in the affected area, 5) enhancing scientific information about the disease, 6) using the best available scientific information to guide management, and 7) providing the public with timely, complete, and accurate information.

Management of disease in free-ranging wildlife populations generally is difficult, expensive and controversial, particularly when significant population reduction is a part of the plan. Control of CWD in a high density, free-ranging white-tailed deer population had not been previously attempted. There are no proven techniques for control of CWD in free-ranging populations.

Over the past seven years, we have learned a lot about CWD and the challenges involved in managing the disease. We have also learned much about people and human nature. It is the consensus opinion of wildlife disease experts that without intervention, CWD will spread further in Wisconsin over time and prevalence of the disease will increase where the disease is currently found. Passive disease management will likely eventually result in decreased deer populations and decreased opportunities for the enjoyment of this valuable resource in the state of Wisconsin. This document represents a coordinated effort to use the best information currently available to guide the DNR's response to CWD for the next 5 years.

Disease Overview

CWD is a fatal nervous system disease known to naturally infect white-tailed deer, mule deer, moose and elk. It belongs to a group of fatal diseases of animals known as transmissible spongiform encephalopathies, or TSEs. Other TSEs include scrapie in sheep, bovine spongiform encephalopathy (BSE, also called "mad cow disease") in cattle, and Creutzfeldt-Jakob disease of humans.

TSEs are thought to be caused by an abnormal form of a protein called a prion. Infection occurs by conversion of normal prion proteins into a disease-associated, misfolded form that is highly resistant to degradation. CWD is characterized by slow accumulation of abnormal prions in tissues, especially nervous and lymphoid tissues.

Clinical signs of the disease typically appear more than 1.5 years after infection, as accumulation of prions results in destruction of brain tissues. Animals in later stages of the disease exhibit behavioral changes and progressive weight loss. Clinical signs are not unique to the disease and each could be due to another condition such as malnutrition, vehicle trauma, etc. Currently, there are no available treatments for infected individuals or vaccines for CWD and all infections are believed to be fatal. Management efforts to control CWD are complicated by the protracted course of the disease, ease of transmission, and lack of early clinical signs. The National CWD Management Plan recognizes host population reduction as the control method most likely to be effective for controlling CWD in free-ranging deer.

Agency Responsibility

The Department of Natural Resources has the public trust responsibility for managing wildlife as embodied in State Statute 29.011 **Title to wild animals (1)** *The legal title to, and the custody and protection of, all wild animals within this state is vested in the state for the purposes of regulating the enjoyment, use, disposition and conservation of those wild animals.*

The DNR's responsibility for ensuring healthy wildlife populations is further described in Administrative Code NR 1.015(2): *The primary goal of wildlife management is to provide healthy life systems necessary to sustain Wisconsin's wildlife populations for their biological, recreational, cultural and economic values. Wildlife management is the application of knowledge in the protection, enhancement and regulation of wildlife resources for their contribution toward maintaining the integrity of the environment and for the human benefits they provide.*

The DNR must balance its responsibility for managing all wildlife in the state with its responsibility for maintaining a healthy deer herd. We take our public trust responsibility for maintaining a healthy deer herd very seriously and it is in that spirit that this 5-year plan for managing CWD has been developed.

Role of Ojibwe Indian Tribes

Although the State of Wisconsin has the public trust responsibility for managing wildlife it also has a responsibility to recognize the role that Ojibwe Indian tribes play in the use of these same wildlife resources. There must be close, coordinated, consultation between the state of Wisconsin and the Ojibwe Indians when dealing with wildlife issues on or near the various reservations and this is especially true with CWD. In the ceded territories of Wisconsin, the state's management options are in some instances significantly narrowed by the tribes' treaty rights and there is an increased burden on the state to consult with tribes about wildlife management issues, including the management of CWD. In addition Governor Doyle's policy regarding consultation with Wisconsin's Indian tribes (2005) calls for the Wisconsin DNR to consult with the tribes when making natural resources management decisions.

Assumptions Made About CWD & Disease Management

Several assumptions, based on the best available science, guide the recommendations in this management plan.

- CWD was introduced into the state, is not part of our native ecosystems, and its distribution is currently limited to areas in southern Wisconsin.
- CWD is transmitted from deer to deer.
- CWD prions can persist in environmental reservoirs which may serve as a source for transmission.
- CWD is consistently lethal, and there is currently no effective vaccine or treatment.
- Though a small percentage of Wisconsin deer appear to have reduced susceptibility to disease from CWD (and therefore may transmit CWD over a longer period of time), there has been no genetic profile identified that provides complete resistance to CWD infection.
- CWD is a slowly progressive disease; therefore, success of CWD management techniques cannot be measured over a few years.
- A major means by which CWD can move across the landscape is through the movement of deer.
- Rate of disease transmission is affected by the density of deer and the number of infected deer.
- There is no evidence that CWD will "disappear" or "run its course" on its own.

Risks and Potential Future Impacts of the Disease

There are real health risks to deer and elk from CWD and ongoing questions about possible health risks to humans and livestock. Additionally, there are secondary risks to economic, socio-cultural, and ecosystem values from the effects of the disease or its management.

Deer Herd

The discovery of CWD in southern Wisconsin poses a significant risk to the state's white-tailed deer population and the culture of deer hunting in the state. Wisconsin has more than 700,000 deer hunters who have harvested an average of 480,000 deer annually during the past 10 years.

The effect of CWD on the wild deer population over the next decade may be low. However, studies of Wisconsin wild deer data using spatial analytic tools and real-world data from Colorado and Wyoming show that without control efforts, CWD prevalence can reach high levels and spread geographically. Additionally, both the analytic modeling and the Colorado and Wyoming monitoring suggest CWD can reduce deer populations. Prevalence in adult male mule deer on some local winter ranges in Colorado more than doubled during a six year period (1997–2002), reaching levels of 25–40%. A study in Boulder, Colorado showed that prevalence among 46 adult male mule deer sampled was 41% and prevalence among 69 adult female mule deer was 20%. The study concluded that high prevalence and low survival of infected deer is sufficient to have produced the observed population decline. Preliminary findings from research in Wyoming have estimated a prevalence of 27% among white-tailed deer and have documented lower survival rates among CWD positive animals.

Human Health

Risk of transmission to humans appears to be low, but that risk may not be zero. The Centers for Disease Control and World Health Organization (WHO) say there is no scientific evidence that CWD causes human illness; however, WHO and the Wisconsin Department of Health Services recommend that no part of an animal known to have CWD be consumed by humans and that safe handling and processing procedures are followed.

Livestock Health

The risk of transmission to traditional livestock is low but may not be zero. There is evidence, based on experiments involving a few animals, that CWD from mule deer is not readily transmitted to cattle and sheep. However, a laboratory study suggests the possibility that CWD from white-tailed deer may be more easily transmitted to livestock. It has been shown, when CWD is injected directly into the brain, cattle and sheep can be infected. However, there have been no cattle infections in studies where cattle are exposed orally or when cattle co-habit with infected mule deer. The risk to farm-raised cervids is high. CWD has been identified in nine farm-raised cervid herds in Wisconsin since 2002.

Economics

Deer hunting contributes more than 7 million days of recreation each year in Wisconsin. In 2006, deer hunting generated nearly $900 million dollars in retail sales and nearly $1.4 billion in total impact to the state's economy.

Should prevalence and distribution of CWD increase dramatically, the disease could severely impact the social and economic stability of the communities that depend on hunting. Surveys of deer hunters suggest that nearly half would stop hunting if CWD prevalence increased to 50% and losses of deer hunters would be even greater if a linkage is ever made between CWD and human disease. This could have significant effects on the economic vitality of rural

communities that are dependent on hunting revenue, the preservation of cultural and family traditions, management and control of deer populations, wildlife agency revenue, and public support for wildlife management.

If prevalence or distribution of CWD increases substantially it is likely that hunter demand for CWD testing of harvested deer will rise. Therefore, the costs of managing CWD increase if disease spreads, assuming that state interest in testing pantry deer, regulating disposal of deer carcasses, and testing hunter-killed deer continues. If a link to human or livestock health problems is ever established, it could convert the management of the Wisconsin deer herd worth billions of dollars into a multi-million dollar pest control program.

Socio-cultural

Wisconsin survey results indicate that the public wants us to do something to control CWD. Surveys of Wisconsin hunters suggest that if risks to human or livestock health are identified, or if the severity of the disease increases, the willingness of hunters to harvest deer may decline. As a consequence of reduced hunting pressure, the deer population in the CWD affected area may actually increase for a period of time before expected disease-mortality-related population declines occur. This could exacerbate already existing impacts from over-abundant deer populations in southern Wisconsin (agriculture damage, deer-vehicle collisions, etc.). Unless specific risks to human health are identified, impacts of CWD on deer populations and hunting traditions will likely develop over decades, whereas the impacts of CWD control efforts (e.g. extended hunting seasons, earn-a-buck regulations, reduced deer populations) on hunting traditions are felt more quickly.

Ojibwe Culture

Waawaaskishi (white-tailed deer) and Waawaaskishikewin (deer hunting) are important elements of Ojibwe culture and life-way. In the Ojibwe world view all animals have a role to play and all have an important place. Many animal species are credited with providing indispensable service to the Ojibwa in their time of need. Waawaaskishi offered up himself to the Ojibwe when they found themselves starving and in need of food. The deer meat that came from this harvest sustained the Ojibwe people and Waawaaskishi was given special recognition for this service. To this day deer hunting and the food that Waawaaskishi provides continues to sustain the Ojibwe. However, this service that Waawaaskishi provided to the Ojibwe in their time of need also has earned deer a place in their spiritual well being. Thus Waawaaskishi offers sustenance to the Ojibwe people not only for their physical well being, but also their spiritual well being. CWD poses a real threat to the tribes and tribal culture, because of the special significance of deer to the Ojibwe people. CWD has the potential to disrupt an important part of the Ojibwe social structure as well as leading to the decline in physical and spiritual health of Indian people.

Ecosystems

The risks that CWD pose to the larger ecosystem are poorly understood at this time. Numerous species of mammals and birds have been documented to feed on deer carcasses and gut piles, and other species could be exposed to prions shed into the environment. To date, testing of common mammalian scavengers (raccoons, coyotes, and opossums) from the southwestern Wisconsin affected area has not detected evidence of a prion disease in those species and laboratory studies with mink, raccoon, skunk, and ground squirrels have not been able to demonstrate transmission. In contrast, experimental infection studies have shown potential for CWD to be transmitted to

meadow voles. If voles were to become naturally infected in the wild, it is possible that they could facilitate transmission to other species.

Indirect ecosystem effects are possible as a result of deer population changes. If increasing disease intensity reduces hunter numbers and therefore deer harvest declines, deer populations may increase in the short-term and ecosystem impacts resulting from overabundant deer populations (forest regeneration, browsing on preferred plant species, loss of nesting habitat for shrub-nesting birds, etc.) could expand. If disease intensity increases to the point that deer populations are significantly reduced then food availability could be reduced for a number of mammalian and avian species in southern Wisconsin (e.g. coyotes, American crow, turkey vulture), although these species are generalists and not highly dependent on deer. If CWD were to spread to northern Wisconsin, reduced deer populations could negatively affect timber wolves. Northward expansion of CWD would also threaten the health of Wisconsin's fledgling elk population.

A Brief History of CWD and its Management in Wisconsin

CWD was initially documented in a Colorado research facility in 1967. It was first found in a free ranging animal in 1981, when it was diagnosed in a Rocky Mountain elk, also from Colorado. CWD has been discovered in captive and/or free-ranging populations of wild deer, moose or elk in 15 states and two Canadian provinces **(Figure 1)**.

The Wisconsin DNR began active surveillance for CWD in 1999 following increased awareness of interstate transport of elk from CWD-infected western game farms. Through fall 2001 approximately 1,100 hunter-harvested deer had been sampled from across the state. In February 2002 the DNR was notified that three deer harvested the previous fall from Deer Management Unit 70A in western Dane County tested positive for CWD.

This discovery launched an intensive surveillance effort that continues today in Wisconsin and accounts for over 152,000

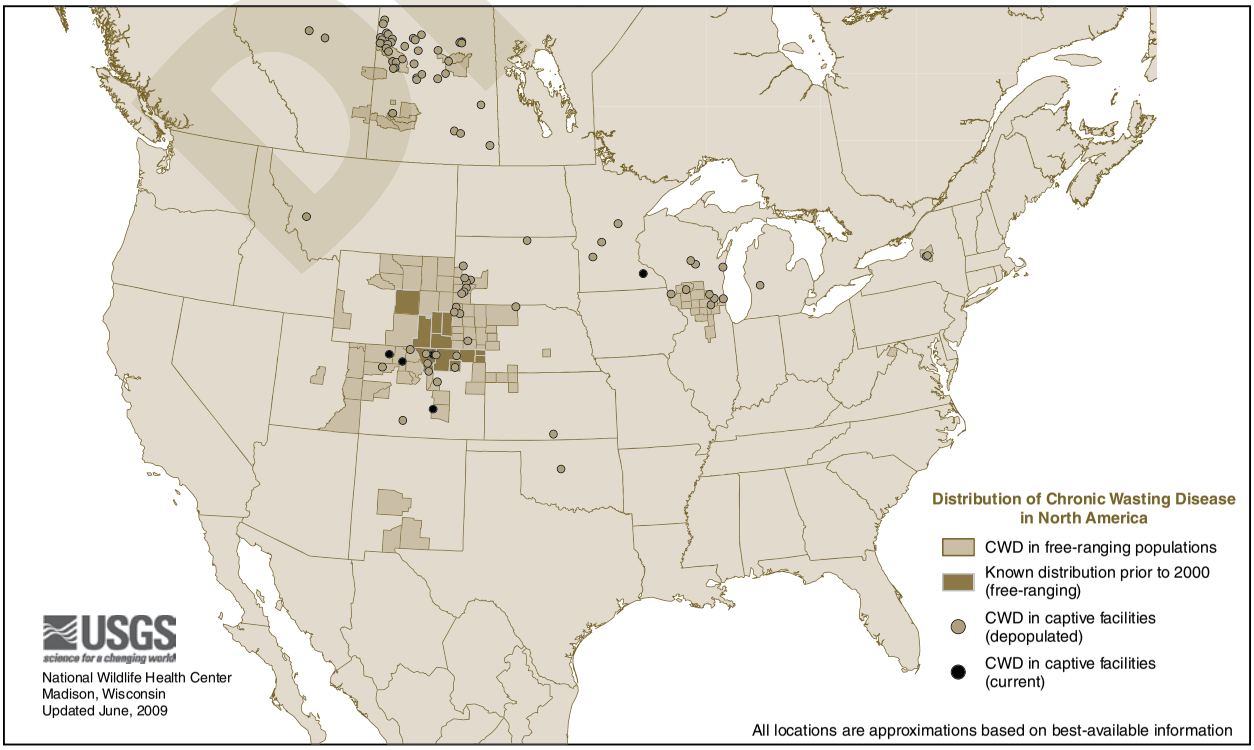


Figure 1 Map of Chronic Wasting Disease in North America

samples from wild white-tailed deer as of April 2009, 1172 of which have tested CWD-positive. Surveillance has been continuously conducted since 2002 in the southern portions of the state, as well as periodically statewide. Sampling intensity has been sufficient in the majority of the state to have a high degree of confidence that CWD would have been detected if the disease exists at 1% prevalence. CWD has been found in 12 southern Wisconsin counties. The current CWD Management Zone encompasses all the known locations of CWD test-positive free-ranging deer **(Figure 2)**.

Analysis of the sex and age composition of positive deer has shown that very few fawns are infected; only 23 out of more than 14,500 tested. Disease prevalence increases with age and the rate of increase is faster in males than in females. Prevalence measured in yearling and adult does and bucks showed an increase for the first time in 2008 in the western core monitoring area of western Dane and eastern Iowa counties **(Figure 3)**. Whether the elevated prevalence estimates in 2008 are the first indications of an exponential increase in prevalence as has been seen in western states, or a one year anomaly, is difficult to say at this time. More years of sampling will be needed to know if the increase in prevalence observed in 2008 continues.

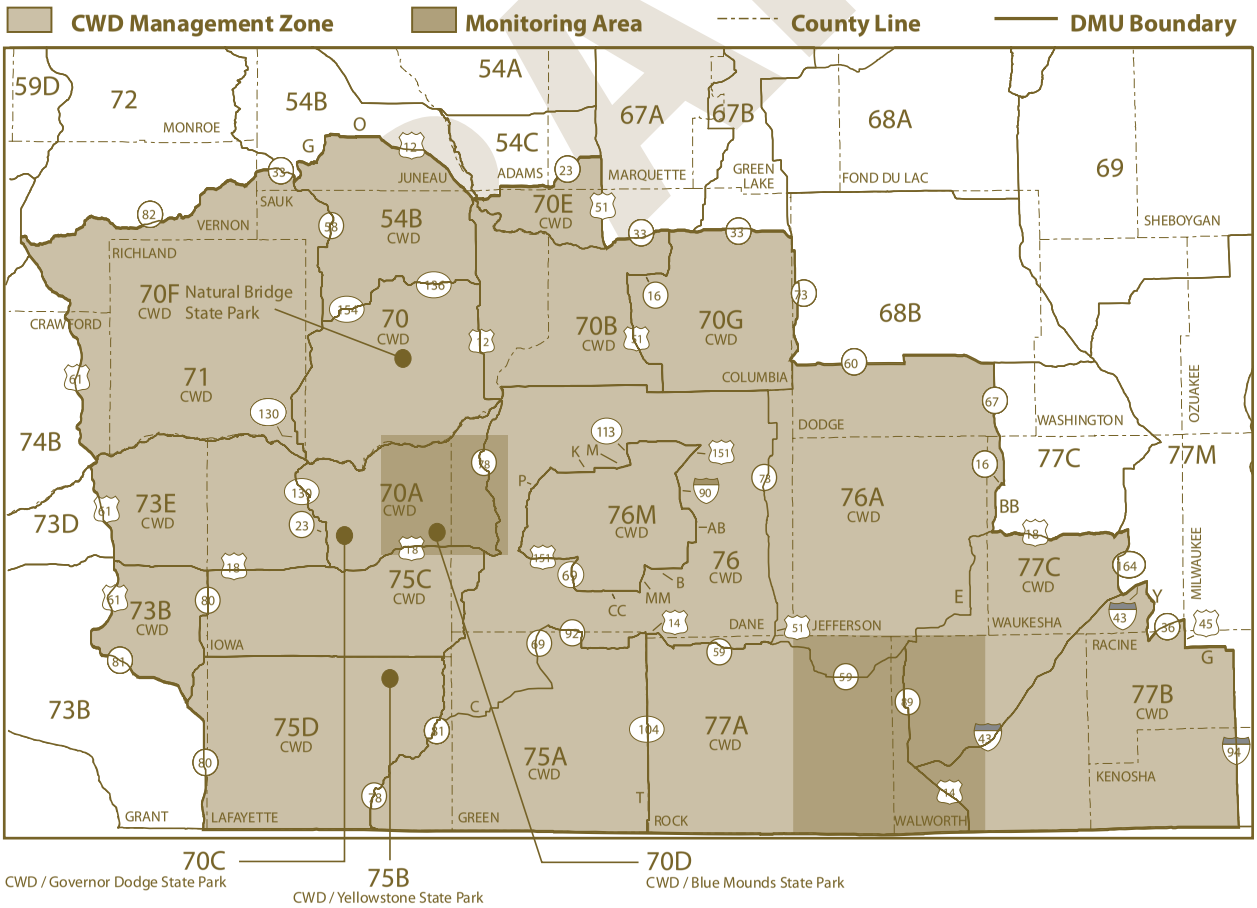
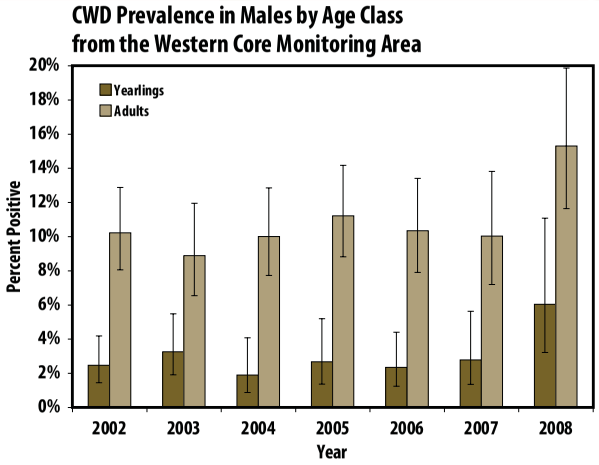


Figure 2 CWD Management Zone Map (including boundaries of western core and eastern monitoring areas)



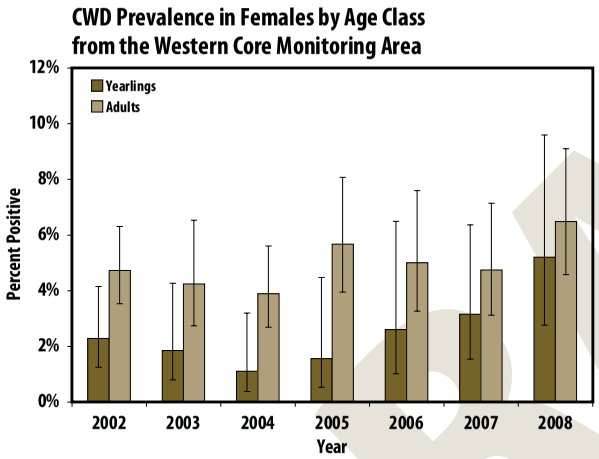


Figure 3 Estimated prevalence of CWD in yearling and adult male (top chart) and female (bottom chart) white-tailed deer from the western core monitoring area, 2002-2008. Vertical lines are 95% confidence intervals.

There appear to be two epicenters of CWD in Wisconsin (**Figure 4**). One is centered in western Dane and eastern Iowa counties. The second epicenter is located in northern Illinois and extends into southeastern Wisconsin. As of April 2009, 256 CWD positive deer have been found in Illinois since they first detected the presence of CWD in fall 2002.

Analyses of the geographic distribution of disease in these two areas show that the disease is not evenly distributed throughout the affected areas. Disease prevalence is much higher near the centers of each epicenter and declines with increasing distance from the center. In a few sections near the center of the southwest epicenter, overall prevalence has been 5–8%. These spatial patterns are consistent with two separate disease introductions at some time in the past (likely more than 20

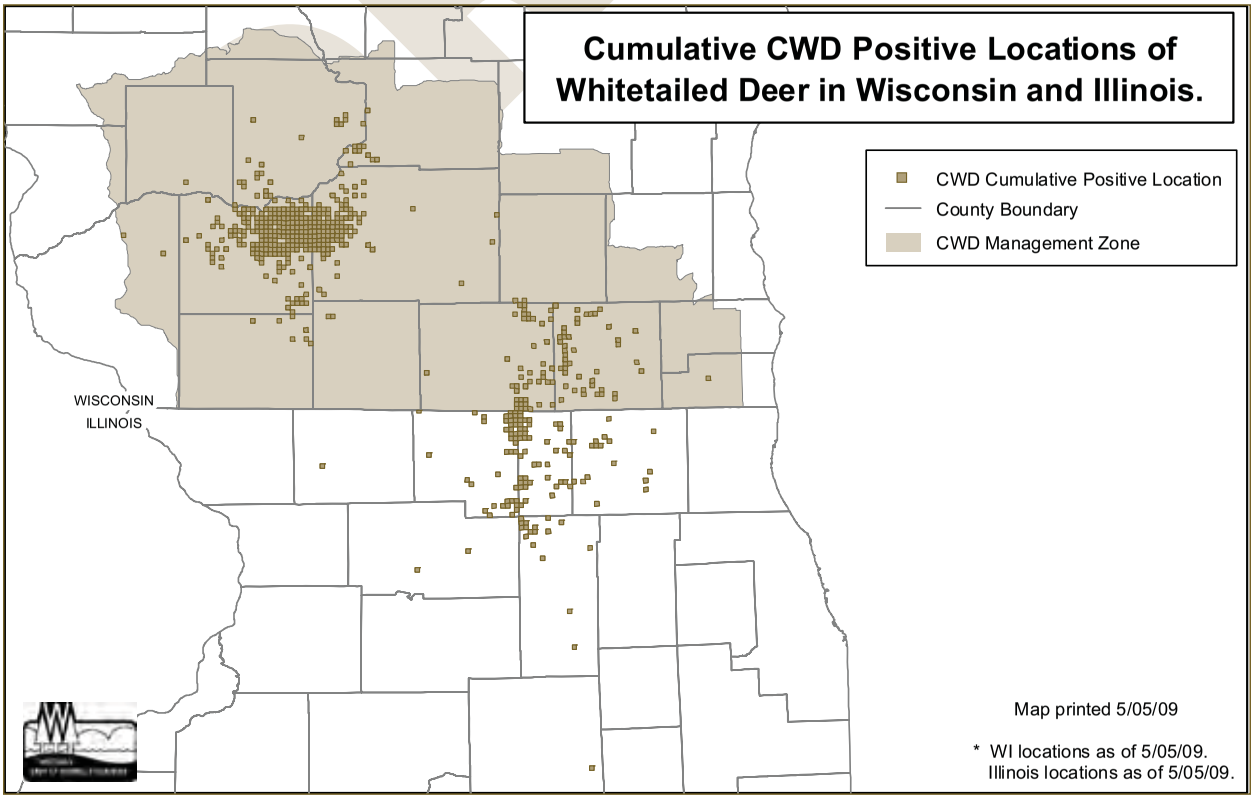


Figure 4 Cumulative CWD positive locations of white-tailed deer in Wisconsin and Illinois.

years ago) with growth in prevalence near the points of introduction and spread to the current distribution.

Wisconsin has implemented a variety of approaches to remove deer as part of managing CWD. Methods have included 1) extended hunting seasons with liberal bag limits, 2) out-of-season shooting permits issued to landowners, 3) government-agency sharpshooters, and 4) incentives. Intensified public hunting was intended to achieve significant deer population reduction and removal of positive deer over large geographic areas while landowner permits, agency sharpshooters and a payment-for-positives incentive were intended to focus culling efforts in high prevalence areas. Earn-a-buck regulations were used during six of the last seven deer hunting seasons to focus harvest on the antlerless (doe and fawn) component of the population because harvesting of antlerless deer has the greatest effect on reduction of deer populations.

Current analyses suggest that the deer population in the CWD Management Zone increased substantially during the 1990s and peaked at over 200,000 in 2002 and has been slowly declining since then **(Figure 5)**.

Illinois has pursued a strategy of somewhat expanded public hunting regimes coupled with localized, intensive sharpshooting in an effort to increase population turnover with a goal of preventing spread of CWD and eventually eliminating CWD from the affected populations. Sharpshooting has contributed more than 20% of the deer removed from the four Illinois counties that have been the primary focus of management efforts during the past five years. The goal is to annually augment the hunting season kill by reducing the deer population an additional 40% in the immediate vicinity of the sharpshooting effort. Illinois is currently evaluating the effectiveness of their first five years of CWD management. The Wisconsin and Illinois efforts to manage CWD are inextricably linked to the success or failure of the other.

In other states and provinces, approaches to CWD management vary depending upon such factors as length of time the disease has been present, cervid population density, human and financial resources, and social dynamics. In areas where CWD may be recently introduced and not yet endemic, disease eradication

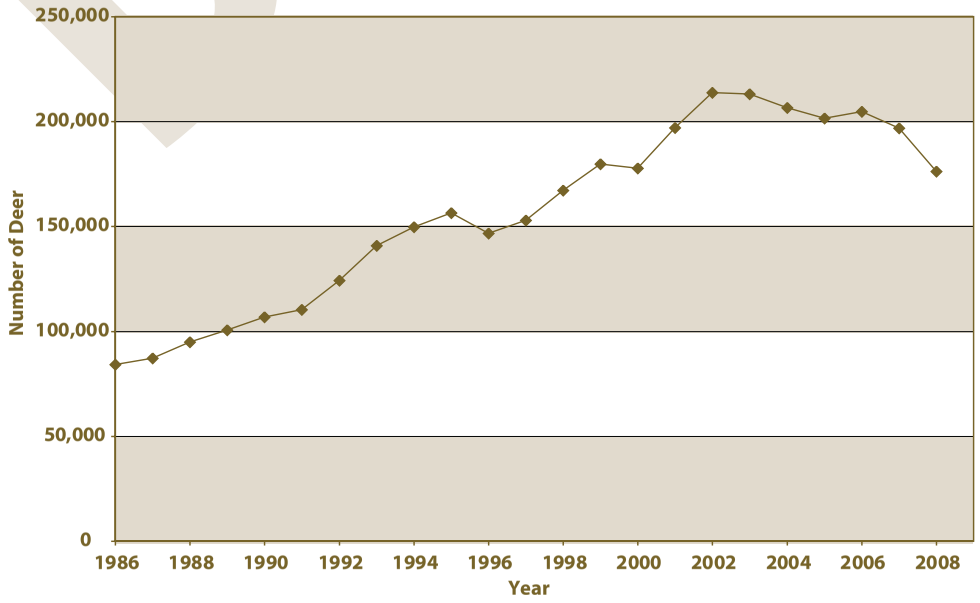


Figure 5 Estimated post-hunt deer population in deer management units affected by CWD (includes portions of 54B, 73B and 77C that are outside of the CWD management zone).

is being considered as an ultimate goal for management. In states where there has been sufficient surveillance to document that CWD is long-standing and widely distributed (endemic), managers have refrained from committing to disease eradication because it is likely unachievable in most situations.

A variety of other strategies have been adopted in jurisdictions as part of CWD response plans. A number of states and provinces have cervid feeding and/or baiting bans or restrictions in place. Carcass movement restrictions are in place in 36 states and two Canadian provinces. Selective culling of clinical suspects is common practice. Localized population reduction and focal culling by agency personnel have been used by disease-affected states and provinces in an effort to manage the disease and gather additional surveillance data.

Increasing scientific knowledge about CWD has been a major priority of the DNR since the disease was discovered in the state. A comprehensive research plan was developed and numerous research projects were actively supported through either direct funding or sharing of tissues or data. This research has expanded our understanding of many facets of the disease including: 1) genetic susceptibility of white-tailed deer to CWD, 2) deer social organization and movement patterns, 3) effects of artificial feeding and baiting on deer interactions, 4) binding of prions to soils, and 5) attitudes and behaviors of hunters and landowners in the CWD affected area. In addition, research to improve the diagnostic tools for detecting CWD has significantly reduced the cost of CWD surveillance and shortened the time required to notify most hunters of the status of their deer. However, the DNR's financial support for CWD research was greatly reduced in 2007 due to reductions in both state and federal funding for CWD management in Wisconsin.

The DNR spent approximately $5 million annually on CWD management through 2006. Funding came primarily from hunting license revenue, with some federal funding, mostly through USDA/APHIS/VS. The limited availability of federal funding has required the DNR to redirect wildlife program staff and program dollars to maintain the emphasis on CWD management and control. In 2007 and 2008, with budget cuts at the state and federal level, expenditures on CWD management were cut in half, to approximately $2.5 million.

In the summer of 2007, the DNR began a seven-month process of engaging an 18-member Stakeholder Advisory Group in a discussion of the next phase of CWD management in Wisconsin. The goal of the CWD dialogue was for the public and the DNR to reach decisions on how to manage chronic wasting disease to minimize the impact of the disease on Wisconsin's free-ranging deer population, the habitats and biological systems that include deer, the economy, hunters, landowners and other constituents that benefit from a healthy deer herd. Selected recommendations from the Stakeholder Advisory Group final report were incorporated into the season framework and regulations that were in effect during the 2008 deer season. The work of the Group also helped to inform the objectives and actions contained in this plan.

Conclusions After the First Seven Years

At the time Wisconsin initiated efforts to control CWD in 2002, the goal was to eliminate the disease from the state. This was an ambitious goal and it was not known at that time whether it was going to be possible to achieve that goal. Control options were and continue to be limited because no treatment currently exists for infected animals and there are no vaccines available to prevent infection. Deer population reduction and the removal of CWD-positive deer are recognized as the control methods most likely to be effective

in controlling CWD in the wild. Strategies to significantly reduce deer populations and remove infected deer in the CWD affected area were implemented using 1) extended deer-hunting seasons with no bag limits, 2) out-of-season shooting permits issued to landowners, and 3) government agency sharpshooters.

The success of these strategies for eliminating CWD from Wisconsin depended on a number of factors including 1) the geographic distribution of CWD, 2) landowner's willingness to allow hunters and agency shooters access to their land, 3) hunter's willingness to hunt in the infected area and shoot more deer than they normally would, and 4) available agency resources for CWD control. As we learned from surveillance over the past seven years, CWD was already substantially more widespread than the initially identified focus near Mount Horeb, making eliminating CWD from Wisconsin extremely difficult.

The currently identified geographic distribution of CWD is substantially larger than was known in 2002 and is likely increasing. Given the difficulty in managing CWD in free-ranging deer, magnitude of deer reductions required to significantly impact the disease, and declining political and social support, eliminating CWD from Wisconsin is unlikely. There still is a need, however, to take steps to effectively manage CWD regardless of the continued challenges.

DNR wildlife biologist works with a hunter to locate the property on which he killed his deer as part of disease surveillance efforts.

5-Year CWD Management Goal

Minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state.

The 5-year goal for managing CWD will drive the DNR's management approaches, which will focus on minimizing the area affected by the disease and reducing the number of deer infected. This goal means accepting a CWD endemic area in southern Wisconsin and focusing CWD control efforts on limiting CWD to southern Wisconsin.

Even with active management some growth in the size of the affected area and the intensity of disease may occur during the next 5 years. However, significant progress in CWD control will have been achieved during this period if the growth of the affected area and disease intensity within the affected area is substantially lower than would have occurred in the absence of active management.

But because we cannot know with certainty how quickly the distribution and severity of CWD would change in the absence of management, it will be difficult to directly measure effectiveness of control actions. Such an evaluation will have to be based not only on data from Wisconsin but will also have to consider results of control efforts in other states and provinces that are attempting to manage CWD.

Ultimately, assessment of the effectiveness of control actions for CWD must be based primarily on documentation of changes in the prevalence and geographic distribution of the disease. Because CWD is a slowly progressive disease, significant changes in distribution and prevalence in free-ranging deer populations will likely occur over a protracted time scale.

Advances in understanding about the ecology and epidemiology of CWD in Wisconsin have contributed significantly to informing our management actions, yet there is no clear prescription for managing CWD. The DNR will need to continue intensive monitoring of CWD prevalence and distribution in order to make decisions on CWD management using an adaptive management approach. We believe that the results of our ongoing monitoring of CWD in the state's wild deer along with advances from research into the epidemiology of the disease will allow the state to better evaluate the effectiveness of management actions on controlling CWD.

Objectives, Actions and Anticipated Results

1. Prevent New Introductions of CWD

It is clear from Wisconsin's experience in managing CWD, and Michigan and Minnesota's experiences with bovine tuberculosis, that preventing new disease establishment in wild deer herds is much less expensive and less damaging to the state than fighting diseases after they are established. As a result, the DNR will pursue the following policies to reduce the risk of CWD establishment in areas of Wisconsin where the disease has not yet been detected.

(a) Deer & elk farms. Wisconsin's wild and farm-raised deer herds are both at risk from CWD. Since January 2003 the DNR and the Department of Agriculture, Trade, and Consumer Protection (DATCP) have shared enforcement and regulatory oversight of the Wisconsin captive cervid industry. DATCP's responsibility includes registration of all Wisconsin captive cervid herds, regulation and monitoring of movements of captive cervids both inter-state and intra-state, and disease testing programs and protocols designed to detect, monitor, and control diseases in the deer farm industry. DNR's regulatory responsibility includes the administration of a white-tailed deer farm fence program and the investigation of and response to reports of escaped farm raised deer. Staff at different levels of both agencies meet regularly in an effort to improve inter-agency communication, share data and information, and coordinate agency field enforcement and compliance efforts. A joint task force was established to oversee these shared responsibilities

Action: The DNR will continue to build on our cooperative working relationship with DATCP. This will include jointly working for federal and state funding, reducing the number of animals escaping from captive cervid farms, increasing compliance with monitoring, testing, record keeping and cervid movement regulations, the expeditious depopulation of farms with CWD-positive animals, and minimizing the future risk of those depopulated farms to wild and captive herds.

(b) Carcass movement. Research indicates that carcasses of deer, elk, and moose improperly disposed of may be a potential source of disease spread. Thirty-six states and two Canadian provinces have adopted regulations addressing the transportation of hunter-harvested carcasses in an effort to minimize that risk.

Action: Beginning September 1, 2009, Wisconsin will prohibit the movement of whole wild-cervid carcasses from within the CWD Management Zone into the rest of the state as well as into Wisconsin from other states and provinces that have CWD in wild cervids.

(c) Wild deer herds. CWD research has documented that this disease can be spread to healthy animals through both animal to animal contact and environmental contamination. Deer herds with populations that are above established population management goals will have a greater level of animal to animal contact and shared environmental use than herds at goal.

Action: The DNR will continue to recommend annual statewide deer quotas and seasons designed to keep deer populations at the established population goals for Wisconsin's deer management units.

(d) Baiting & feeding. The possibility of dispersal of CWD-positive deer to uninfected areas of the state, the escape of a CWD-positive captive cervid, or contamination of the environment through transport and improper disposal of CWD-positive cervid parts all pose the risk of spreading the disease to other parts of Wisconsin. Baiting and feeding of deer causes concentrations of deer that unnecessarily increase the risk of transmission and establishment of the disease in such situations.

Action: The DNR will pursue a statewide ban on the feeding and baiting of deer to reduce the risk of transmission of CWD or other serious cervid diseases in new areas.

Anticipated Results by 2014

- There is a statewide ban on baiting and feeding.
- The rate of escapes and number of animals per escape from captive cervid farms has declined.
- Farms with CWD-positive animals are depopulated, secured, and decontaminated quickly.
- Hunters throughout the state are aware of the importance of proper disposal of butcher waste and carcass parts and options for proper disposal are readily available.
- No high risk parts of wild cervids are being moved from CWD affected areas.
- Statewide deer populations are moving closer to goal.

2. Respond to New CWD Disease Foci

CWD experts have suggested that aggressively culling animals near a newly discovered focus is the best option for disease control and has three main goals. The first goal is to determine prevalence in the immediate area of a new case. The second goal is to possibly eliminate new infection in a localized area. The third goal is to reduce the prevalence in the new area and slow the spread of the disease.

A scientifically sound surveillance strategy is key to responding to new disease foci. Should a CWD-positive deer be found significantly outside of the current CWD Management Zone boundary, DNR staff, landowners, and hunters will be asked to assist with additional sampling in the immediate vicinity of the positive deer to define the extent of the disease. The results of that sampling will determine subsequent management actions.

If the new focus is adjacent to the existing CWD Management Zone and prevalence at the new focus appears to be similar to that of the adjacent zone, then the new focus would be included in a new Management Zone boundary as allowed by the CWD rule currently in place (NR 10.41(3) (f) 1. —*The department may include additional deer management units in the CWD management zone where and when additional CWD positive deer are found).*

If the new focus is adjacent to the existing CWD Management Zone, appears to be a cluster of positives, and prevalence is found to be significantly higher than in the surrounding area (e.g. Devil's Lake State Park), then the new focus would be included within the new Management Zone boundary and additional measures would immediately be taken to try to reduce deer numbers in the vicinity of that cluster.

If the new focus is distant from the existing CWD Management Zone, the DNR should respond aggressively with extended hunting opportunity, landowner permits, and

sharpshooting in an effort to evaluate and manage the new focus. If DNR staff recommend sharpshooting as part of the response to a new disease focus, staff will work with local citizens and the Conservation Congress to develop a sharpshooting plan. That plan will then be presented to the Natural Resources Board for approval, prior to deploying sharpshooters.

If the new focus is found within the ceded territory (1837 and 1842) and off-reservation, the DNR will consult with the Ojibwe tribes prior to any action that reasonably impacts the Ojibwe harvest right. If the new focus is found on or adjacent to reservations, the DNR will meet with and reach consensus on actions with the affected tribes.

Action: Begin a third round of surveillance outside of the CWD Management Zone, beginning in 2011 and concluding by 2013.

Action: Intensive sampling and testing of deer will be done in an area surrounding newly discovered CWD positive deer that are outside of the current CWD Management Zone to assess the spatial extent and intensity of the outbreak. Depending on the results of the assessment, aggressive localized culling may be considered in an effort to control the new focus. Ojibwe tribes must be consulted before any action is taken in the ceded territory or on (or adjacent to) reservations that reasonably impacts the Ojibwe harvest right.

Anticipated results by 2014:

- New CWD-affected areas are discovered quickly.
- Aggressive control actions (in consultation with Indian Tribes when necessary) are implemented in a new CWD-affected area when the spatial extent and intensity of the outbreak warrant that response.

3. Control Distribution and Intensity of CWD

Currently there are no practical therapeutic strategies available to control CWD in wild deer herds. Consequently, CWD disease management aimed at controlling prevalence or distribution of the disease involves deer population management to reduce the number of CWD-positive animals. This may include focal culling of deer in localized areas of high disease prevalence or along the leading edge of the disease. It also means reducing deer herds to lower levels of abundance than might be desired for cultural and recreational uses to reduce the rate of disease transmission.

Removing as many deer as possible, each year, from infected areas provides the best opportunity for controlling the disease by 1) removing infectious individuals from the population, 2) eventually reducing the number of susceptible animals below the threshold

needed for the disease to thrive or persist, and 3) limiting the accumulation of infectious CWD prions in the environment.

By increasing the number of deer removed from the population each year, the remaining population will be younger, with few older age class animals in the population likely to transmit the disease. Older aged animals (3 years old and older) have the highest levels of infection. In addition, the remaining population will have a lower density, so contact between individual animals or groups of animals will be reduced. This is expected to reduce the rate of disease transmission, as well as the number of deer that move significant distances to new areas. If annual removal of infected animals is greater than the number of deer that are newly infected with the disease each year, then over time this will result in reduced prevalence of the disease.

In Wisconsin, CWD management is highly dependent upon the cooperation and actions of deer hunters and landowners. Recreational hunting and providing access to land is critical to reducing infected deer herds to target levels and then maintaining them at those levels. The DNR will implement deer season frameworks that achieve the desired deer population objectives and to the extent practical, recognize the socio-cultural hunting season desires of citizens within the CWD-infected area of the state. The DNR also will encourage greater hunter and landowner awareness of the areas with high numbers of CWD-positive deer and encourage maximum hunting effort in these locations. In situations and locations where recreational hunting is not able to provide the needed disease management, the DNR will explore additional deer removal options.

(a) Hunting season structure. A consistent hunting season structure for the first three years would be appreciated by hunters because they would not have to learn a new set of rules each year and would be helpful to the DNR because the consistency would make it easier to evaluate management efforts. See Appendix A for a description of the 2008 season structure.

Action: The DNR recommends that the 2008 season structure be the basic season structure for all units in the CWD Management Zone through 2010.

(b) Landowner permits. The use of post-season landowner permits provides landowners who are interested in harvesting more deer opportunities to do so and intensifies harvest in locations where it is important to remove more deer than would happen under the regular hunting season framework. Permits that are valid only after the regular hunting season have minimal fiscal implication to the DNR.

Action: Issue landowner hunting permits in the CWD Management Zone that are valid from the close of the regular hunting season until March 31.

(c) Sharpshooting. In addition to zone-wide population reduction through the hunting season framework, there is also a need for more focused removal of CWD positive deer. Sharpshooting is an effective tool for removing additional deer after hunting seasons are over and in the case of disease management, has been shown to remove a higher proportion of positive deer than recreational hunting because of the focus in areas of high disease prevalence. Sharpshooting efforts resulted in 978 deer being shot in the CWD Zones from January—March, 2007; of which 26 deer tested positive for CWD. Although sharpshooting accounted for 1.7% of the total kill in the CWD zones, the targeted nature of the shooting effort produced 12.5% of the CWD-positive deer shot.

A review of the age and sex composition of deer shot by DNR staff during that same time period shows 205 (21%) were adult bucks and 773 (79%) were antlerless deer. In comparison, deer registered by hunters included 45% adult bucks

and 55% antlerless deer. Agency shooters shot a much higher proportion of antlerless deer than hunters in the 2006 CWD Zone season.

Illinois reports similar success with sharpshooting, which is a key component of their CWD management strategy. To date, Illinois DNR sharpshooters have accounted for 13% of the deer tested for CWD but 38% of the positive deer. They believe their ability to focus culling and disproportionately remove positives can have a significant impact on the disease.

Sharpshooting will be used tactically along the periphery of the CWD Management Zone in the vicinity of disease clusters. DNR staff will work with local citizens and the Conservation Congress to develop a sharpshooting plan for each cluster. That plan will then be presented to the Natural Resources Board for approval, prior to deploying sharpshooters. The Department will use DNR-trained citizens as well as agency employees when instituting sharpshooting and will only shoot in areas with landowner permission.

Action: Conduct focused sharpshooting on public and private lands where permission can be obtained in areas of disease clusters along the edges of the known CWD distribution (e.g. Devil's Lake State Park or distant new CWD foci).

(d) Conduct review after the 2010 and 2013 deer seasons. The DNR has based its CWD management approach on the best scientific information available and will continue to modify management strategies over time as new data become available. As part of our adaptive management approach, the DNR will conduct a review after the conclusion of the 2010 and 2013 deer seasons to assess progress in reducing deer populations in the CWD Management Zone toward goal. Based on the results of this review, recommendations may be made to alter the hunting season framework, the use of landowner permits, and/or the use of sharpshooting.

Action: Conduct a review of our progress in reducing deer populations after the 2010 and 2013 deer seasons and make needed modifications based on the review.

(e) Additional days of gun-hunting opportunity. If the review indicates additional gun hunting opportunity is necessary to reduce deer populations, the DNR will recommend adding that opportunity before the traditional 9-day gun deer season.

Action: Add more days of gun-hunting opportunity prior to the traditional 9-day gun deer season if additional herd reduction is recommended as a result of the review.

(f) Additional focused sharpshooting. If, based on the review, recreational harvest of deer is not adequately reducing deer density the DNR may consider employing additional focused sharpshooting in areas that are not around disease clusters located along the periphery of the known CWD-affected area. DNR staff will work with local citizens and the Conservation Congress to develop a sharpshooting plan if additional focused sharpshooting is recommended. That plan will then be presented to the Natural Resources Board for approval, prior to deploying sharpshooters

Action: Based on the results of the review, consider expanding the use of sharpshooting on public and private lands in areas of high disease prevalence and/or high deer density that are not along the periphery of the known CWD-affected area.

(g) Additional tools. In many situations, public hunting is the most efficient method to control deer populations over large areas. Public hunting has often been supplemented by government-agency sharpshooting to reach specific disease surveillance and control objectives. These options must continue to be key components of CWD management in Wisconsin to maximize the efficiency of management actions. As additional tools for controlling deer numbers or managing the disease emerge, it will be important to evaluate those techniques for their applicability in Wisconsin.

Action: Evaluate additional tools and implement those that meet efficacy and acceptability criteria as needed to enhance progress towards CWD control objectives.

DNR wildlife staff working with hunters to collect samples for CWD testing.

Anticipated Results by 2014:

- The number of infected deer in the CWD Management Zone has declined.
- The geographic distribution of the disease is not significantly larger than the current known distribution.
- Deer populations in the CWD Management Zone have been reduced by 40% from the 2008 post-hunt population estimate.

4. Increase Public Recognition and Understanding of CWD Risks

Information about CWD is growing as additional experience is gained and research is completed. It is important that Wisconsin's citizens are kept informed on the latest scientific knowledge and recommendations for managing this disease.

Outreach activities are used to inform the public about CWD and enhance support for CWD management policies and strategies. It is critical that the public, especially landowners in the CWD Management Zone, support the CWD management plan if we're going to be successful in minimizing the presence of this disease in Wisconsin. It is essential that the DNR engage all stakeholders and affected tribes to listen and to respond to their questions and recommendations and to gain their support and assistance. These outreach activities should be informed by research conducted to understand public perceptions about CWD and its risks as well as how the public and tribes feels about methods for management of the disease.

Hunters and landowners play a pivotal role in managing deer and CWD in Wisconsin. Statewide deer population goals and disease management goals cannot be met without the continued support of hunters and landowners across the state. Over the last decade, 700,000 deer hunters have killed an average of 480,000 deer each year in Wisconsin. Seven of the 10 highest deer harvests ever recorded in Wisconsin have occurred during the past 10

years. Over the last 25 years, hunters have doubled the total deer kill/deer hunting license sold from approximately 0.25 deer killed/license sold to more than 0.5 deer killed/license sold.

However, after seven years it is apparent that we need to encourage hunters to shoot even more deer and that recreational hunting alone will not be enough to manage CWD. We need broad public support to manage this disease and this support must be demonstrated not just through attitudinal changes, but also through behavioral changes.

Over the past seven years there has been demonstrated unwillingness among many deer hunters to change their behavior in response to "risks" that seem remote and uncertain, even when most hunters indicate a general concern about CWD. The reality is that current CWD prevalence levels are low in most areas and the likelihood that a hunter will encounter a clinically ill deer also is low. Not surprisingly, hunters' perception of risks from CWD is limited by the fact that most have not yet experienced the impacts of the disease directly.

Deer population reduction is currently believed to be the disease control method most likely to be effective in controlling CWD in free-ranging deer. Regulated hunting has been shown over the past 50 years to be an ecologically sound, socially beneficial, and fiscally responsible method of managing deer populations. Hunter harvest in the CWD Management Zone during the past seven years appears to have stabilized the growth of the deer population in this region but it has not been sufficient to cause substantial population decline. Surveys have shown that while hunters acknowledge the potential for long-term negative impacts from CWD, they are largely unconvinced that the risks to the deer resource, human health, or livestock are immediate enough to substantially alter their hunting behavior.

A 2006 survey of Disease Eradication Zone hunters conducted by the University of Wisconsin Stevens Point found that buck hunters on average passed up more shots (~ 5.0 shots) than either-sex hunters (2.4 shots). Bow hunters passed up the highest average number of shots, followed by gun hunters and then those that enjoy gun and bow hunting equally. These findings underscore the difficulty in getting hunters to shoot additional deer, but also demonstrate that there is an opportunity for hunters to kill more deer if they believe the long-term risks to the deer resource are significant.

Substantial changes in public attitudes toward CWD and its management will take time, perhaps best measured by generations. The literature on social marketing advises that if there are barriers to a particular behavior (i.e., shooting more deer) that are insurmountable within the target audience (i.e., hunters and landowners), focusing on that behavior without first reducing the barriers would be self-defeating. In this case, if we are asking hunters to shoot more deer than they traditionally shoot, and asking landowners to allow hunters onto their land to shoot deer, then we must first identify and work to reduce the barriers to those desired behaviors. Hence, it is essential that we re-visit our constituents to identify those barriers. Information garnered from these discussions could be used to inform an outreach effort designed to build support and change behavior.

While providing the public with timely, complete, and accurate information about CWD has been an important component of Wisconsin's CWD control effort, sufficient resources have not been directed toward communicating with the public and hunters to inform them of the magnitude of the risks posed by CWD to Wisconsin's deer hunting tradition. Relying on recreational hunters to play an important role in controlling CWD will not be successful unless communication and social marketing efforts can change the beliefs and behaviors of hunters.

Action: Use survey data to better understand public opinions about CWD management and to develop, test, and refine messages and delivery mechanisms that enhance public support for CWD management. Use research to identify barriers to harvesting more deer and allowing access to land for deer removal and to develop a communication strategy to reduce those barriers.

Anticipated Results by 2014:

- Communication strategies to increase support among hunters, the general public, and decision makers for the state's approach to CWD management have been developed and are being implemented.
- The deer population shows a steady (annual) decline.
- The number of deer hunters in the CWD Management Zone has not declined faster than deer hunter numbers in the rest of the state.
- Hunter effort increases (hunters are spending more time in the field and as the deer population declines, more time will be required to harvest a deer) and the harvest rate of antlerless deer in the CWD Management Zone increases.
- The percentage of landowners granting access to their land for deer removal increases.

5. Address the Needs of Our Customers

Human dimension research has shown that a large majority of hunters believe that the state should offer CWD testing to hunters who shoot deer in areas where CWD is present. In addition, most hunters surveyed believe that the state should contribute to the costs of processing venison donated to food pantries and should assume the costs for disposal of deer carcasses, butcher waste, and road-killed deer from the CWD affected area. However, recent reductions in the fiscal resources for the CWD program have significantly limited the DNR's ability to meet these expectations. Public expectations for these services and the resulting costs are projected to increase if Wisconsin is not able to minimize the area affected by CWD.

(a) Hunter service testing. The World Health Organization, Centers for Disease Control and Wisconsin Department of Health Services recommend that deer that test positive for CWD not be consumed. The vast majority of hunters surveyed responded that they believed testing should be available in the CWD affected area and for some families the ability to get a deer tested affects their willingness to kill deer. Currently only laboratories certified by the USDA are authorized to conduct CWD tests and virtually all CWD testing in Wisconsin is conducted though a program jointly operated by the DNR and the Wisconsin Veterinary Diagnostic Laboratory. This program has been funded by the DNR, and testing fees have generally not been charged to hunters to cover the costs of the testing service provided.

Action: The DNR will insure that hunters have access to CWD testing in areas with the highest prevalence of CWD. The DNR will explore alternative strategies for reducing or recovering costs and/or privatizing this program such as developing programs that would allow hunters to collect their own samples or charging testing fees to partially cover costs of sample collection and testing. The DNR also will support efforts to develop quicker and less expensive sampling and testing procedures.

(b) Donation of venison to food pantries. The DNR and local partners have operated a food pantry program for CWD zone deer in cooperation with DATCP and the Wisconsin Department of Health Services. A protocol was established following DATCP and DHS recommendations that would allow participating meat processors in the CWD zones to hold donated carcasses until test results are returned, finish processing those deer that tested negative, and dispose of carcasses from lots that included a CWD positive deer. Lots containing all negative carcasses were then ground and distributed to cooperating food pantry's that indicated an interest in receiving that product.

Donations to the pantry program have, to date, accounted for 2–3% of the total deer harvest in CWD zones. Although few hunters have shot more deer to donate to pantries, the majority of survey respondents believe that the DNR should "continue to pay these costs as a way to encourage hunters to participate in the deer donation program." The psychological value of knowing the pantry program exists may be significant in motivating hunters. Therefore, a robust pantry program and creative marketing of that program are considered important to increasing the deer kill.

Action: The DNR will cooperate with food pantries and meat processors in the CWD Management Zone to provide hunters an avenue for donation of harvested deer in excess of their personal needs. The DNR will actively market the pantry program to encourage an increase in hunter harvest. The DNR will partner with others to seek funding from nongovernmental organizations to help off set the costs of processing and storing donated venison.

(c) Disposal assistance. Safe and cost-effective means of containing prions from deer carcasses are important for limiting new infections and facilitating hunter harvest. The Interagency CWD Health and Science Team conducted a qualitative risk assessment in 2002 and concluded that engineered sanitary landfills provide a safe and effective means for carcass disposal. An indemnification bill has been enacted that protects landfills from financial liability. Lastly, the University of Wisconsin-Madison has completed a quantitative risk assessment that supports landfilling of deer. However, local governments, landfill operators,

and municipal waste water treatment facilities throughout the CWD Management Zone remain concerned about accepting unwanted carcasses, butcher waste and car-killed deer. Providing easy and cost-effective disposal options for hunters and meat processors will become a bigger problem if the geographic extent of the disease increases and this will likely affect hunters' willingness to harvest deer.

Action: The DNR will continue to work with local governments, landfill operators, and municipal waste water treatment facilities to increase their understanding of the safety and cost-effectiveness of landfilling deer so as to increase the availability of landfills for carcass disposal.

(d) Monitoring for human prion diseases. Although there is no evidence that CWD has ever caused illness in people, because BSE has been linked to the new variant form of Creutzfeldt-Jakob disease (CJD) in humans, uncertainty remains about the health risk posed by CWD. International health authorities continue to recommend that deer known to be infected with CWD not be consumed by people and that people avoid consuming certain tissues where prions accumulate. The Wisconsin Department of Health Services (DHS) has been conducting surveillance for CJD to assess potential relationships between CJD and CWD. This surveillance is based on reports from clinicians as well as ongoing reviews of all death certificates. DHS, in cooperation with DNR, has established a registry of persons known to have consumed venison from CWD positive deer for later comparison to the CJD case list.

Action: The DNR will continue to cooperate with DHS to maintain the registry of persons known to have consumed venison from CWD positive deer. The DNR will monitor and support research to better assess the risks that CWD may pose to humans. The DNR will continue to provide hunters with information on ways to reduce risks when field dressing and butchering deer.

(e) Potential risk to livestock. The risk of transmission to traditional livestock is low but may not be zero. It has been shown, when CWD is injected directly into the brain, cattle and sheep can be infected. However, there have been no cattle infections in studies where cattle are exposed orally or when cattle co-habit with infected deer, and TSE-like-disease has not been detected in cattle in areas of North America where they share range with CWD-affected wild deer and elk populations. However, studies have shown that TSEs can go through changes when in an abnormal host and increase their ability to affect new species; this increases concern about the possibility that eventually, if uncontrolled, CWD could become a problem for cattle or sheep. Certainly, uncontrolled CWD in wild Wisconsin deer poses a high risk to the state's farmed cervids and is of great concern to those producers.

Action: The DNR will support and cooperate with research to better assess the risks that CWD may pose over time to livestock, including farmed cervids.

Anticipated results by 2014:

- Hunters in the CWD Management Zone are able to get their deer tested if they so desire and work is underway to expand financial and logistical partnerships to provide this service.
- Food pantries will accept donated venison from the CWD-MZ and hunter contributions to the pantry program will exceed historic contributions.
- Additional landfills within the CWD Management Zone will accept untested deer carcasses and butcher waste.
- Hunters have a clear understanding of what is known about the human health risks associated with venison consumption from CWD-affected deer populations and ways to minimize those risks.
- Stakeholders have access to current information about potential risks to livestock, and cervid farmers concerns continue to be part of the consideration in state CWD management planning.

6. Enhance the Scientific Information about CWD

The DNR has played an important role in generating new information on many aspects of CWD, both by conducting in-house research, directly funding university research and by collaborating in studies conducted nationally and internationally. Although a sustained research and monitoring effort is needed, funding available for these activities has declined. Outside funding has off set some of the decline in state funding, but reliance on such funding could jeopardize long-term research efforts if such funding diminishes.

Priorities for CWD research in Wisconsin should be reviewed and updated so that efforts most important to disease control will continue. Research needs related to improving our understanding of the risk of CWD to humans, livestock, and other animals and the effectiveness of public communication strategies have been previously addressed in this plan. Continued research and modeling to assess changes in spatial distribution and prevalence of disease will be important for assessing the effectiveness of management actions. Analysis of our existing data sets to identify opportunities to increase the cost-effectiveness of disease surveillance and monitoring strategies should be a priority.

A better understanding is needed of host and habitat factors that may affect disease transmission and geographic spread. By understanding the effects of factors such as deer density, deer movement patterns, habitat composition and landscape pattern, we will be able to improve predictions of disease progression and to focus management efforts. Research to identify specific mechanisms of disease transmission and assess the relative contribution of direct (deer-to-deer) and indirect (deer-to-environment-to-deer) transmission is needed to identify opportunities to block transmission. Additional information on the persistence and availability of prions in the

environment and how these are affected by environmental conditions such as temperature, moisture or soil ecology is needed to improve our forecasts of disease dynamics and long-term implications of the disease. Control of CWD transmission risk from deer and elk farms would be enhanced by development of effective disinfection mechanisms for disease-impacted captive facilities.

Increased understanding of effects of CWD on deer reproductive rates and susceptibility of CWD positive deer to different sources of mortality (hunting, predation, vehicle-collisions, etc.) is needed to refine estimates of impacts to deer populations in Wisconsin. Additional data are needed to predict the economic costs of disease control activities and failure to control the spread of CWD in Wisconsin.

Management experiments to directly assess the effects of specific disease control strategies on the intensity and spread of CWD are critically needed for long-term control efforts. Specifically, research to determine the effects of intensive deer population reduction on disease dynamics is needed to resolve questions about the effects of deer density on CWD transmission rates. In addition, research is needed to evaluate the cost-effectiveness of alternative tools beyond recreational hunting and sharpshooting to reduce deer populations and/or remove CWD-positive deer. These evaluations should also consider animal welfare issues, ability to selectively remove deer without significantly impacting non-target species, and social acceptability.

Action: The DNR will continue to seek funding to support applied, management focused research on CWD and will continue to cooperate with outside researchers by sharing tissues and data.

Anticipated results by 2014:

- There is a well-funded and vibrant CWD research program in the state.
- Research to fill important knowledge gaps related to disease transmission mechanisms and CWD effects on deer populations in Wisconsin is under way.
- Assessments about the effectiveness of specific disease management tools have been initiated.
- Better methods are available to assess the progression of CWD, spatially and in intensity.

University of Wisconsin researchers attach a radio collar to a deer in the CWD zone.

Monitoring and Measuring Progress

We must be able to assess whether progress is being made in meeting the goal and objectives established and whether the actions taken are achieving the anticipated results. It is therefore imperative that monitoring systems be in place to acquire and analyze data during the 5-year life of the management plan. Monitoring efforts will allow the DNR to measure progress toward each objective and if necessary, to adapt our actions along the way.

1. Monitor CWD Disease Patterns and Trends

In order to determine whether we are preventing new introductions of CWD, are able to respond to new disease occurrences and are controlling the distribution and intensity of CWD, we need to effectively monitor disease patterns and trends. The best evidence of progress in CWD control would be if the growth of the geographic area affected and the increase in number of CWD-positive deer is lower than would have occurred in the absence of control efforts. However, with current knowledge on CWD in wild white-tailed deer populations, it is difficult to predict how the disease pattern would likely change over the next 5 years without management, so determining that control efforts have limited the expected changes will be challenging. In particular, detecting meaningful trends at the outer edges of the currently known geographic distribution is highly unlikely in a 5 year timeframe, because there are relatively few CWD-positive deer in these areas, so finding them to assess geographic spread and to determine if there has been a significant change in these very low prevalences requires sampling and testing extremely large numbers of deer.

Based on results of surveillance efforts to date in the known CWD-affected areas of Wisconsin and the development of new assessment tools by collaborating CWD researchers, monitoring areas have been chosen in the higher prevalence CWD epicenters in south-central and southeastern Wisconsin. These will be the best areas for monitoring disease patterns to detect trends in geographic spread and numbers of positive deer resulting from control efforts. Intensive sampling and testing of hunter-harvested deer from the western core and eastern monitoring areas will be conducted annually during the five years of this plan.

To assess progress towards the objectives of preventing new introductions of CWD in currently unaffected areas of the state and to respond to new disease foci quickly and effectively, statewide sampling and testing of deer on a large scale will need to be conducted, approximately every five years. It will be important to work closely with the tribes during any surveillance efforts that include the ceded territory.

CWD is a disease that cannot be confirmed through simple visual inspection. It requires the collection of specific tissues and testing conducted by a USDA-approved laboratory. Trends in CWD prevalence and geographic distribution can only be measured if statistically sufficient, large sampling is conducted. Testing and surveillance costs accounted for over 50% of the total DNR expenditures during 2002–2008 and will likely continue to be the single largest cost of CWD management over the coming years. However, state and national efforts to improve the cost efficiency of tissue collection, testing, and data management and assessment will result in cost savings during the duration of this plan.

Active surveillance for disease in Wisconsin's white-tailed deer populations has always included monitoring for evidence of bovine

tuberculosis (TB). During CWD surveillance work, cranial lymph nodes are also visually screened for changes typical of TB and suspect samples are submitted for laboratory analysis. Since 1996, Wisconsin has screened over 152,000 deer for evidence of TB. If TB was present in wild deer in Wisconsin at the level detected in other jurisdictions (such as Michigan, Minnesota, and Manitoba); there is a very high likelihood that it would have been detected. To date there has been no evidence of bovine TB detected in free-ranging cervids in Wisconsin.

Action: The DNR will conduct sampling and CWD testing that is sufficient to:

- Monitor trends in prevalence and disease pattern within the western core monitoring area in western Dane and eastern-Iowa counties and the eastern monitoring area in Rock and Walworth counties;
- Monitor spatial and prevalence patterns at selected higher prevalence areas at the outer borders of the current CWD geographic distribution;
- Detect new disease foci at the borders of the currently known CWD affected area and statewide.

Action: The DNR will continue surveillance for bovine tuberculosis as an adjunct to CWD surveillance.

2. CWD Zone Deer Population Monitoring

Understanding the status of Wisconsin's deer herd—in particular the deer population in the CWD Management Zone—is critical to determining progress in minimizing the presence of CWD. Reducing the deer population is currently the only available management strategy for the control of CWD once it is established in a free-ranging deer population. Understanding how the deer population in the CWD Management Zone is changing over the next 5 years is important in order to understand changes in CWD transmission rates and prevalence and in order to assess the effectiveness of specific harvest regulations. For all units in the CWD MZ to reach their interim goal as recommended by the CWD Stakeholder Advisory Group (SAG)—the population would have to drop to ~68,000 (to ~ 19 deer/square mile of deer range—see Appendix B).

Staff at the WDNR's Black Earth lab process samples collected from hunter-killed deer in preparation for CWD testing

Action: Changes in the size of the deer population in the CWD Management Zone will be monitored using a combination of helicopter and fixed-wing aircraft surveys and population modeling. Deer population monitoring will likely be conducted annually during the duration of the plan.

3. Monitor Hunter Participation and Public Support for CWD Management; Assessing Attitude and Behavior Changes

We will continue to monitor public opinions and attitudes towards CWD and its management strategies over the next 5 years. Monitoring to assess specific public opinions and attitudes towards CWD will address; 1) whether the public supports the DNR's CWD management goal and its strategies, 2) whether the public accepts the fundamental assumptions that we make about the disease, 3) whether the public agrees that the risks of CWD to the deer herd, to recreational hunting, to human health, to livestock health, and to public-DNR relationships warrant the efforts to control CWD, 4) what the level of concern is regarding CWD in the state, 5) whether hunters and landowners feel a personal responsibility for helping to manage the deer population in the area they most frequently hunt/on the land that they own, and 6) what the public has to say about our communication and marketing strategies overall.

Public support must go beyond attitudinal measures. Public support must be demonstrated through changed behavior. As with public attitudes, we must continue to monitor hunter and landowner behavior—that is, are hunters shooting more deer now in an effort to assure good hunting and a healthy herd in the future? Specific behavioral measures to be monitored include, 1) the number of hunters in the CWD Management Zone (including hunter retention, recruitment and changed hunting locations to non-CWD deer management units), 2) hunter effort in the CWD Management Zone (including number of days hunted and hours hunted per harvested deer), 3) the number of antlerless and antlered deer harvested, 4) the number of deer donated to food pantry programs from the CWD Management Zone, 5) the number of hunters that landowners are allowing to hunt on their land, 6) and the number of landowners who are granting access to their land to kill deer.

Action: Scientific behavioral and attitudinal studies of our publics will be conducted on a regular basis, especially in response to a change in management strategy.

Summary

The goal for CWD management in Wisconsin over the next 5 years is to minimize the area of Wisconsin where CWD occurs and the number of infected deer in the state. This will require a sustained commitment of effort and resources to support the surveillance, research, outreach and education, and other tools necessary to reach this goal. Likewise, our ability to reach this goal is subject to support from the legislature and continuing federal financial support. Ultimately, this plan will be successful when it has earned the support of our partners and the public.

We have based this plan's specific objectives and recommended actions, on the best scientific information currently available. An adaptive strategy for CWD management is essential because there is still much being learned about CWD epidemiology and the efficacy of CWD control techniques in free-ranging populations. As additional information becomes available through research and monitoring in Wisconsin and elsewhere, we will continue to modify our CWD management objectives and actions to improve CWD management in Wisconsin.

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Appendix A—Season structure in the CWD Management Zone as adopted by the Natural Resources Board in rule order WM-05-08

Archery season: An archery deer hunt beginning on the Saturday nearest September 15 and continuing through the Sunday nearest January 6. (September 13–January 4 during the 2008 deer season)

Early firearm season: An antlerless-only firearm deer hunt beginning on the Thursday nearest October 15 and continuing for 4 consecutive days. (October 16–19 in 2008)

Traditional 9-day firearm season: A firearm deer hunt beginning on the Saturday immediately preceding the Thanksgiving holiday and continuing for 9 consecutive days. (November 22–30 in 2008)

10-day muzzleloader-only season: A muzzleloader hunt beginning on the Monday immediately following the Thanksgiving holiday and continuing for 10 consecutive days. (December 1–10 in 2008)

Late firearm season: An antlerless-only firearm deer hunt beginning on the second Thursday following the Thanksgiving holiday and continuing for 4 consecutive days. (December 11–14 in 2008)

Holiday firearm season: A holiday firearm season with earn-a-buck regulations when the deer population is above goal beginning on December 24 and continuing through the Sunday nearest January 6. (December 24 – January 4 during the 2008 deer season)

Unlimited earn-a-buck regulations with the ability to pre-qualify for deer management units above goal.

Unlimited either-sex regulations for deer management units that are at or below goal.

Appendix B—Deer management unit goals in the CWD Management Zone as recommended by the Stakeholder Advisory Group (SAG) and adopted by the Natural Resources Board in April, 2008

DMU	2001 Goal	SAG Goal	Deer Range	Deer Population At Goal	DMU	2001 Goal	SAG Goal	Deer Range	Deer Population At Goal
54BCWD	25	20	203	4060	75CCWD	20	16	124	1984
70CWD	25	20	273	5460	75DCWD	20	16	112	1792
70ACWD	25	20	219	4380	76CWD	20	16	320	5120
70BCWD	30	24	212	5088	76ACWD	25	20	305	6100
70ECWD	30	24	69	1656	76MCWD	10	10	78	780
70GCWD	30	24	122	2928	77ACWD	20	16	124	1984
71CWD	25	20	626	12520	77BCWD	15	15	216	3240
73BCWD	20	16	54	864	77CCWD	15	15	187	2805
73ECWD	22	18	277	4986					
75ACWD	20	16	146	2336	Total			3667	68083

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