Welcome

Illinois Deer Management Program Review

Goal

The goal of the deer management program review is to gather information from deer management stakeholders to address any concerns they may have about Illinois' deer population status and the deer management approach used by the Illinois Department of Natural Resources (IDNR).

Approach

The IDNR is using three approaches to gather information from our deer management stakeholders to conduct this review.

- Conduct five open houses to gather direct feedback from stakeholders and provide them with relevant information.
- Perform an informal survey (available in paper form at open houses and on the Internet) that gives stakeholders the opportunity to provide structured and documented feedback.
- Complete a scientific survey that measures the attitudes from a representative sample of stakeholders.

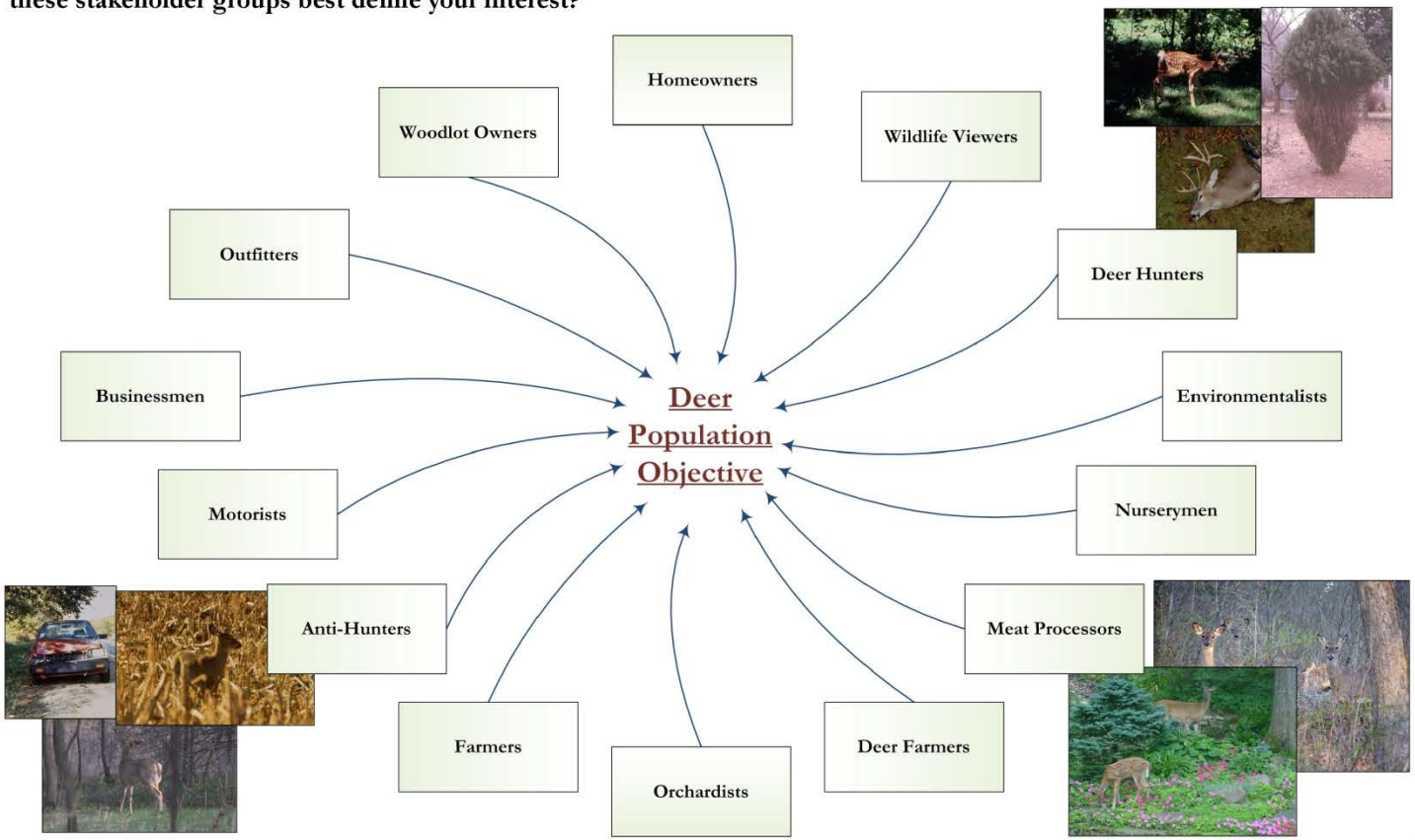
Photo courtesy of Danny Brown

The following series of posters are provided for everyone in Illinois to view information about deer, deer management, and social data in Illinois. This poster explains the goals of the deer management program and lists the approaches used to gather information from our stakeholders.

Deer Population Stakeholders

There is a diversity of stakeholders with an interest in deer management issues that the IDNR must consider when making decisions.

Which of these stakeholder groups best define your interest?



Deer Goals and Status

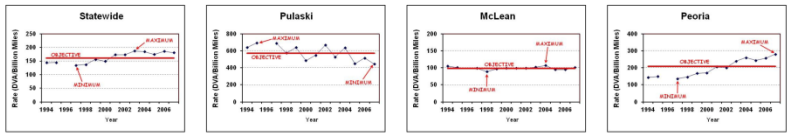
Background

In 2007 the Illinois General Assembly passed House Joint Resolution 65, which created the Joint Task Force (JTF) on Deer Population Control. The General Assembly's concern was that (*in their words*) "deer overpopulation is rampant in some counties in Illinois." The Task Force was charged "to examine and make recommendations on ways to manage the Illinois deer population." The Task Force consisted of 15 members, of which 8 were members of the General Assembly (or their appointee). The JTF met 4 times between April and October 2008, and conducted a series of 6 public meetings around the state to seek public comment about changes that were being considered.

The JTF recommended that the Late-Winter Deer Season be lengthened, and that permits for that season be made available over-the-counter. Most significantly, they recommended that the rate of deer/vehicle accidents be used as the objective by which to judge the success or failure of deer management programs. The specific target rate (both statewide and at the county level) was set at halfway between the minimum and maximum rates measured during the period 1994-2007. This rate corresponded to a decrease of 14% in the accident rate from the statewide peak observed during 2003, and an 11% reduction from 2007 levels. The Department has been using these objectives since that time, although modifications were made to accommodate the five central Illinois counties formerly in the "Restricted Archery Zone".

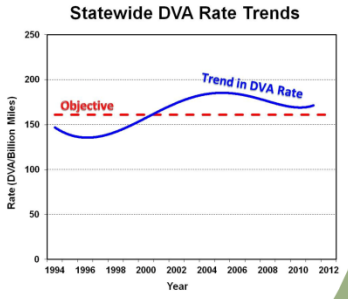
Examples

Below are some examples demonstrating how deer/vehicle accident objectives were set.



Current Status

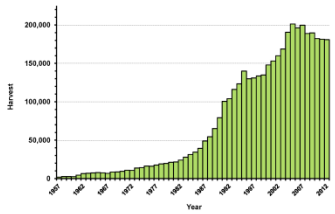
The Illinois Department of Transportation is still compiling accident figures for 2012, but significant strides had been made through 2011 in achieving statewide DVA objectives (see graph). As counties reach population objectives, they are removed from the Late-Winter Season and permit quotas are adjusted as necessary to relieve harvest pressure and stabilize populations. The number of counties open to the Late-Winter Antlerless Season during the 2012 hunting season was 55, compared to 76 in 2008 (a few counties have been moved into the Special CWD Season). Biologists are examining the existing county-specific goals, as the original goal-setting methodology may have called for greater reductions in certain counties than needed.



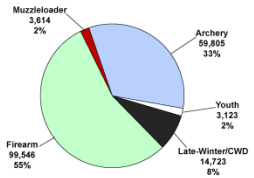
Illinois Harvest by the Numbers

Illinois' deer harvest increased by leaps and bounds after the opening of modern hunting seasons in 1957, reaching a peak in 2005. Harvest levels have declined somewhat as population goals throughout much of the state have been achieved.

Historic Illinois Deer Harvest Totals



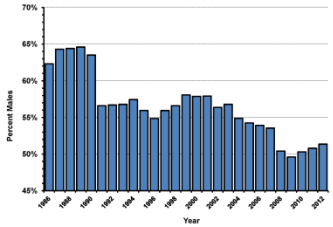
2012-2013 Illinois Deer Harvest by Season



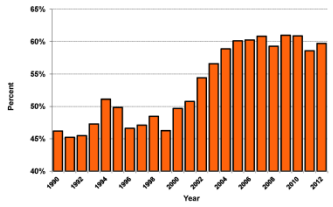
Illinois hunters harvested 180,811 deer during the 2012-2013 seasons. Most importantly, the harvest consisted of a balanced mix of males (bucks) and females (does), as well as old and young. During the past two decades, IDNR biologists have emphasized harvesting female deer in order to control herd size while maintaining the age structure of bucks for which Illinois is famous.

Female deer currently make up a much larger part of the harvest than they did before the 1990s. The number of hunters "holding out" for a buck had become progressively higher throughout the years of the modern firearm season, until the trend was reversed by using antlerless-only permits as a management tool beginning in 1991.

Sex Ratios: Percent Males in Illinois' Deer Harvest (All Seasons)

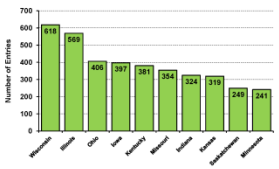


Age Structure in the Illinois Deer Harvest:
Percent of Antlered Bucks That Are at Least 2.5 Years Old

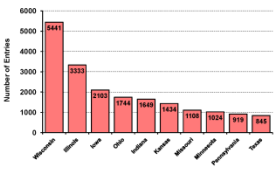


As a result of our emphasis on doe harvest and careful control of county quotas, yearling bucks are not as large a part of the antlered buck harvest as they were in the past. What does this mean, exactly? It means that more bucks in our herd have been getting older, and that the odds of harvesting a mature buck have actually increased.

Top 10 States/Provinces for Boone & Crockett White-tailed Deer, 2002-2011



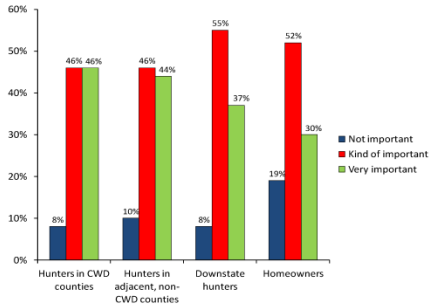
Top 10 States/Provinces for Pope and Young White-tailed Deer, 2003-2012

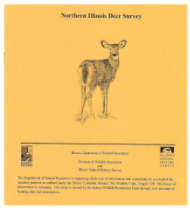


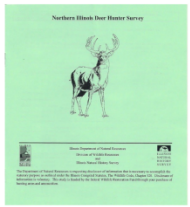
How Residents Think IDNR Should Manage the Illinois Deer Herd

How IDNR should manage the deer herd varies depending on the individual you ask. In order to accurately define how Illinois hunters and non hunters feel about deer and deer management, the Illinois Natural History Survey collected data about this issue from approximately 7,500 residents in 2012. An overwhelming majority of hunters and non hunters thought the health of the deer herd was **the most important** quality to manage. Specific results can be seen below.

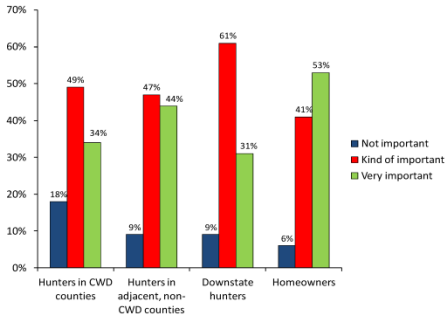
Importance of the number of deer desired by hunters



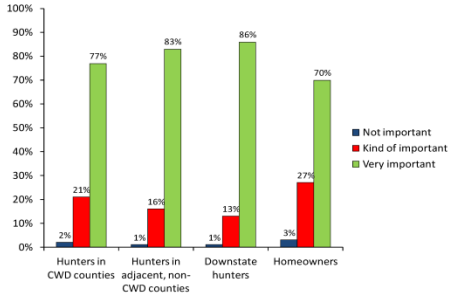


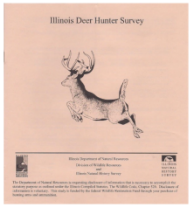


Importance of the number of deer-vehicle collisions



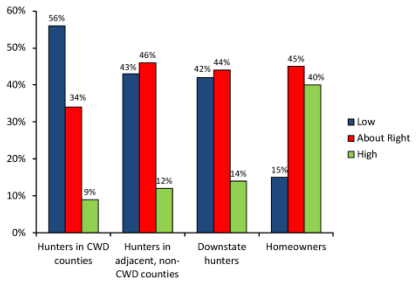
Importance of the health of the deer herd



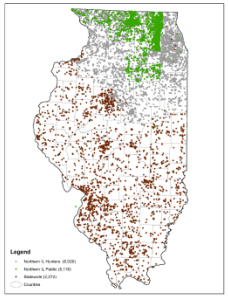


Illinois Residents' Perception of Deer Population and IDNR Trust

Describe deer population where you hunt or live

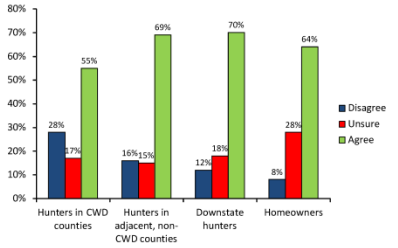


A total of 15,000 hunters and non hunters throughout the State were surveyed in 2012 about deer and deer management in Illinois. Residents were asked to describe the deer population where they hunted (hunters) or lived (non hunters). The results can be seen in the graph to the left. Each dot in the picture below is where a survey was mailed in 2012.

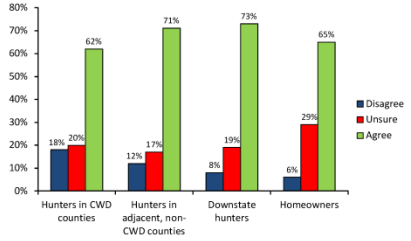


As part of the 2012 surveys, respondents were also asked to determine their trust in IDNR. Summarizing, hunters and non hunters alike placed a high amount of trust in IDNR when making decisions regarding CWD and its management. For example, 65% of hunters trust that IDNR will make good decisions regarding CWD management, and a slightly higher percentage trusts IDNR to follow the best science to manage CWD. The specific breakdown can be observed in the graphs below.

Trust IDNR to make good decisions regarding CWD



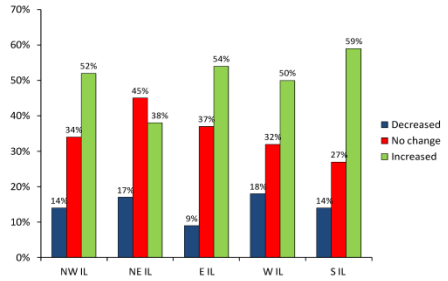
Trust IDNR to follow best science to manage CWD



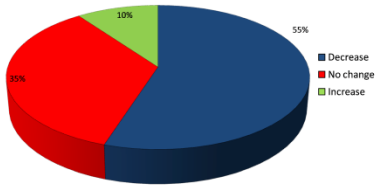
Farmers' Perceptions About the Illinois Deer Herd and Damage

A total of 5,000 farmers throughout the State were surveyed in 2011 about deer in Illinois. One specific question addressed how farmers believed the deer herd had changed in the past 5 years. Most farmers indicated that the deer herd had increased or remained the same.

Illinois farmers' perception of the deer population from 2006-2011



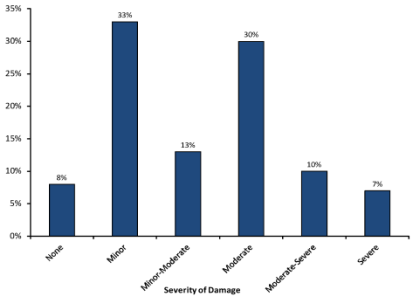
Illinois farmers' preference on the change in deer density in next 5 years



More than half of the farmers surveyed indicated they would like for the deer herd to decline in the next 5 years. Most hunters would indicate the opposite, as past research has shown that hunter satisfaction is highest when they see deer while hunting.

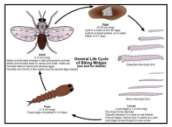
A goal of IDNR is to maintain a healthy deer population for recreation, while simultaneously minimizing property damage in the State. The graph on the right shows the percentage of farmers that reported deer damage to crops, along with the severity of the damage.

Severity of Deer Damage Farmers Perceived



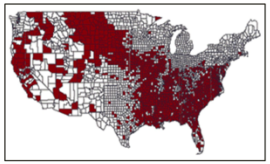
Hemorrhagic Disease in Deer

(EHD and Bluetongue)



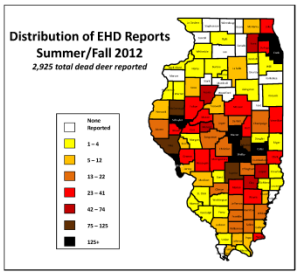
Epizootic Hemorrhagic Disease (EHD) and Bluetongue (BT) are two distinct viral diseases, but they are so similar that they are often referred to collectively as Hemorrhagic Disease (HD). Disease outbreaks in Illinois normally consist primarily of EHD, as confirmed by laboratory isolation of the virus. The viruses are spread by tiny black biting gnats that require wet areas such as ponds/river margins for their life cycle. HD normally appears during summertime, and persists until the first hard frost kills the insects. Disease distribution tends to be very "patchy" on the landscape, because an outbreak can occur only if all the essential components are present in a locality: (1) the proper species of gnat; (2) the virus; and (3) a suitable concentration of deer. HD is not a threat to humans, pets, or (usually) livestock.

Hemorrhagic Disease has been common in the southeastern United States for many years, but outbreaks in the Midwest tend to be sporadic, often with five or more years between significant events. As a result, midwestern deer populations tend to have low levels of resistance to HD.



Known distribution of Hemorrhagic Disease in the United States

HD may strike a deer quickly, resulting in death within a few days, or it may result in a prolonged (chronic) illness over a period of months. It is not always fatal; deer can and do recover from HD. In more acute cases, deer often develop swollen (or bluish) tongues, with hemorrhaging in various internal organs. In more slowly progressing cases, deer may have ulcers of the mouth/tongue, become emaciated, and display abnormal hoof growth (even loss of the hoof covering). Sick or dead deer are often found in or near water, as high fever drives them to quench their thirst or cool off.



During 2012, IDNR solicited reports of suspected HD mortality from Illinois citizens, and received 976 calls reporting 2,925 dead deer from 87 Illinois counties. HD activity was low during the previous four years (2008-2011), producing an average of only 52 individual dead deer reported each year. Our last significant outbreak occurred during 2007, when we received 458 reports of 1,987 deer in 57 counties. While these numbers only serve as an index to Hemorrhagic Disease activity, they are useful for identifying hot spots so that biologists can closely scrutinize other data to determine whether significant impacts occurred.

ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Chronic Wasting Disease Management

Goal:

To suppress CWD prevalence rates at very low levels, eliminate the disease where possible, and slow or stop the spread of CWD into new areas

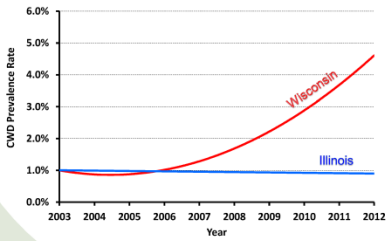
Approach:

- Collect and test as many deer tissue samples as possible from CWD counties and counties at high risk for CWD in order to detect spread of the disease into new areas and to monitor changes in disease prevalence and distribution over time. Sources of samples include deer check stations, hunter sample drop-off stations, cooperating meat lockers, road-killed deer, out-of-season special deer removal permits, suspect animals reported to the Department, and deer taken by agency sharpshooters.
- Use recreational deer hunter harvest for broad-scale control of CWD county deer populations, using liberal permit quotas, no bag limits, and expanded hunting seasons.
- Supplement hunter harvest with a very limited and focused sharpshooting program that takes deer only from very specific areas where we know CWD is present. Sharpshooting occurs only on properties with permission from cooperating landowners, during the winter after the close of deer hunting seasons.

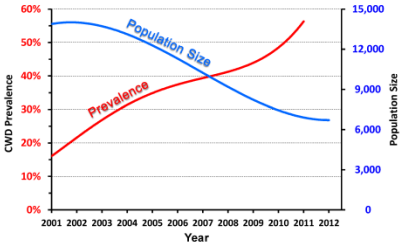
Results/Benefits:

- Using sharpshooting to target specific disease locations allows us to most effectively fight CWD without drastically reducing deer populations throughout the entire county. This location-specific approach is not feasible for hunting seasons.
- Illinois' rate of disease has remained very low in the ten years since we found CWD (see below). In contrast, other states that have not managed CWD or that have attempted to manage through hunting seasons alone have seen increasing rates of disease. No state has been successful in controlling CWD through hunting seasons alone, even though extra seasons, longer seasons, no limit on hunter harvest, "earn a buck" regulations, and even rewards have been employed.

CWD Prevalence Trends: White-tailed Deer in Wisconsin and Illinois



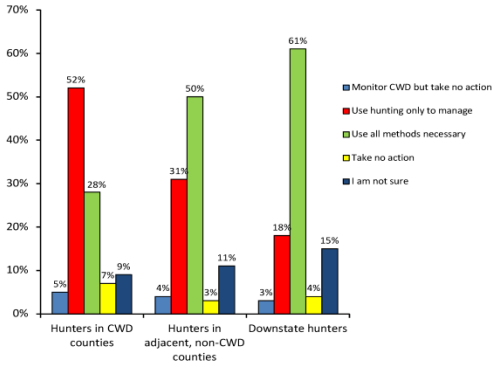
CWD Prevalence and Population Trends: Mule Deer in Wyoming's HA65



Attitudes About Chronic Wasting Disease (CWD) Management

In 2012 hunters were asked how IDNR should manage CWD in Illinois. The takeaway message, which can be seen in the graphs below, is that hunters in CWD counties do not support how IDNR is managing CWD. However, hunters everywhere else in the State **do support** the current management strategy.

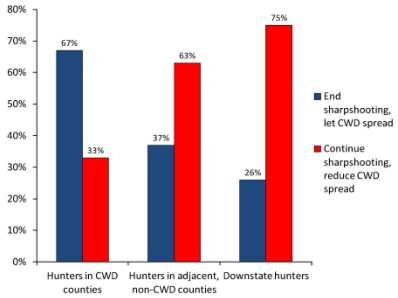
How should IDNR manage for CWD in IL?



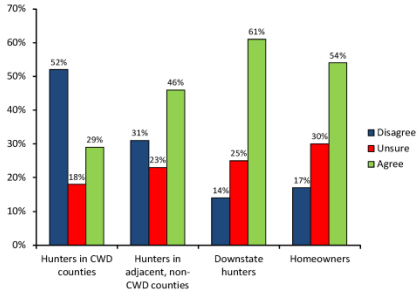
- 61% of downstate IL hunters support using **all methods necessary**
- 28% of IL hunters in CWD counties support using **all methods necessary**
- 52% of IL hunters in CWD counties support using **only hunting**

- Most hunters in non-CWD counties support IDNR sharpshooting program, which is designed to stop the spread of CWD

Opinion toward continuing IDNR CWD sharpshooting program



Reduce the deer herd in N. IL as much as needed to control CWD

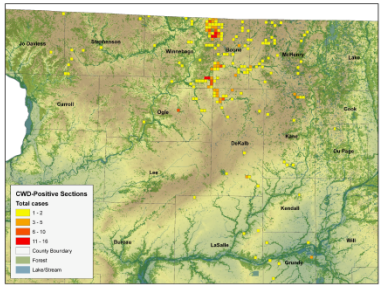


- 29% of hunters in CWD counties **agreed**
- 46% of hunters in northern Illinois, not in CWD counties, **agreed**
- 61% of hunters downstate **agreed**
- 54% of homeowners in northern Illinois **agreed**

Chronic Wasting Disease: A Closer Look

Illinois' first case of CWD was identified in the fall of 2002. To date, we've tested more than 74,000 deer from throughout the state, and identified 408 CWD-positive animals. Most of these were found in our original four CWD counties: Winnebago, Boone, McHenry, and DeKalb. In spite of these low levels of disease, CWD remains a very real concern. Why?

Distribution of CWD-positive deer in northern Illinois during 2002-2013

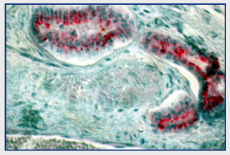


Hunters sometimes ask why we're so worried about CWD in Illinois, when Hemorrhagic Disease (HD) occasionally kills thousands of deer in a year—several times more than the number of cases of CWD identified during the past ten years. There's a simple explanation. Hemorrhagic Disease is an irruptive disease: it starts with very few individuals affected, it builds to a peak in a short period of time, and it disappears from the deer population after the first hard frost. Even though the epidemic may be widespread and mortality may be high in certain local areas, it's usually difficult to document significant effects on deer populations at a larger scale, such as at the county level. HD effects are normally very patchy, and it may be several years between significant outbreaks, so it has little impact on county-level and long-term deer management efforts. Each time a Hemorrhagic Disease outbreak begins, it must start from scratch, and over time deer populations may build up a higher level of resistance to the disease.

Chronic Wasting Disease, on the other hand, does not go away on its own. Once established within a population, all scientific evidence indicates that without management CWD will continue to increase in intensity. Although outbreaks progress slowly in wild herds and infection rates may remain low for years, this is not an indicator of the potential impacts of this disease. The low level of CWD currently found in Illinois should not be misconstrued to mean that CWD is not serious—it's simply a result of the effectiveness of our disease management program. Allowing CWD to increase and spread (as it has in several other states) will have very serious and long-term negative consequences for Illinois' deer herd. Since CWD was discovered in 2002, we must consider the likelihood that deer populations and deer management in Illinois' affected area will never be the same again – at least until a cure is found. If we pretend that CWD is inconsequential, or that it will go away all by itself, we would not be accepting the reality of the situation. Conservation of natural resources is much more than providing abundant deer in the short term for the recreational enjoyment of hunters; it is about being responsible stewards of our deer resource with an eye for their long term benefit and sustainability. Sometimes this requires difficult decisions to be made, and this is certainly one of those times.

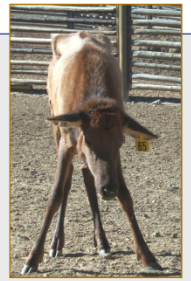
For additional information about CWD, please visit our website at http://www.dnr.illinois.gov/programs/CWD.

Chronic Wasting Disease: General Information



Prion accumulation. Photo courtesy of Dr. Jim Kornfield, USDA.

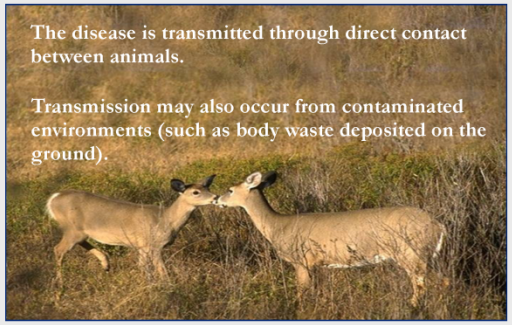
Chronic Wasting Disease (CWD) is a fatal neurological disease of deer, elk, and moose. It belongs to the family of diseases known as transmissible spongiform encephalopathies (TSEs), which attack the central nervous system and cause small holes to form in the brains of infected animals. Other diseases in this family include scrapie (sheep), bovine spongiform encephalopathy (cattle), and Creutzfeldt-Jacob disease (humans).



Adult Capitol elk with CWD. Photo credit: Dr. Terry Kreeger, Wyoming Game and Fish Dept.

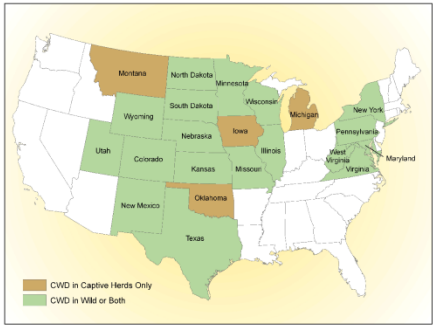
In the later stages of the disease, deer will show signs of progressive weight loss, listlessness, excessive salivation and urination, increased water intake, and loss of coordination. Many of these signs could also be caused by a variety of other illnesses or injuries.

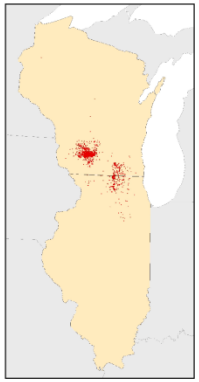
Chronic Wasting Disease is not caused by a bacteria or virus, but by a "prion" – an infectious protein. There is no known treatment or cure – the disease is always fatal. When a deer becomes infected, it may be a year or longer before signs of illness become apparent. However, once clinical signs appear, death normally occurs within a few weeks to months.



These animals show clinical signs of CWD, but 94% of the deer from Illinois that have tested positive for CWD have appeared healthy.

CWD was originally limited to a small area of northeastern Colorado, southeastern Wyoming, and southwestern Nebraska. However, CWD is now found in several states within the U.S. The disease occurs in wild cervid populations in Illinois, Missouri, Wisconsin, Kansas, Minnesota, Texas, Utah, New Mexico, North and South Dakota, New York, Maryland, Pennsylvania, Virginia and West Virginia. In addition, CWD has been found in captive herds in Montana, Oklahoma, Iowa and Michigan.





This map shows the location of CWD-positive deer in Wisconsin and Illinois. The shared disease outbreak requires communication and cooperation between the two states. Collaboration in data sharing and scientific research are an integral component in the effort to control the disease.

State of Illinois
Illinois Department of Natural Resources

Chronic Wasting Disease: Research and Results

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Evaluation of a wild white-tailed deer population management program for controlling chronic wasting disease in Illinois, 2003–2008

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ABSTRACT

We evaluated population management programs for controlling chronic wasting disease (CWD) in wild white-tailed deer in Illinois between November 2002 and March 2008. The intervention consisted of measures of deer removal from three deer population control programs: Illinois Department of Natural Resources culling, deer population control permits and nuisance deer removal permits. We included in the analysis a total of 14,650 white-tailed deer CWD test results. These data also included location and demographic data collected from both deer harvested in the interventions as well as deer from hunter harvests and deer vehicle collisions. We quantified intervention pressures as the number of years of intervention, the total number of deer removed and the average number of deer removed per year. We accounted for temporal and spatial variations of intervention by using mixed logistic regression to model the association between intervention pressures and CWD prevalence change. The results showed that deer population management intervention as practiced in Illinois during the study period was negatively associated with CWD prevalence and the strength of association varied depending on age of deer and the measure of intervention pressure. The population management programs showed a more consistent association with reduced CWD prevalence in fawn and yearling white-tailed deer than in adult deer. Our results also suggested that frequent and continuing intervention events with at least moderate intensity of culling were needed to reduce CWD prevalence. A longer study period, however, is needed to make a more definite conclusion about the effectiveness of similar population management programs for controlling CWD in wild white-tailed deer.

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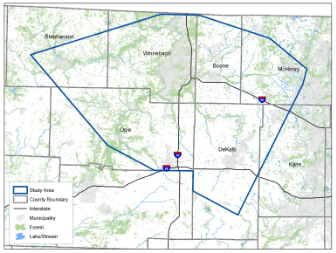
In 2013 scientists from the Illinois Natural History Survey, the University of Illinois, and Purdue University published the results of a study that examined the effectiveness of the first several years' of the Illinois Department of Natural Resources' program for managing Chronic Wasting Disease in the northern Illinois deer herd. The paper appears in the Journal of Preventive Veterinary Medicine (Vol. 110: 541-548), and is available online (without charge) at http://www.sciencedirect.com/science/journal/01675877.

The authors concluded that IDNR sharpshooting was associated with a decline in CWD prevalence in the areas where management occurred during the study period. Some other findings of the study included:

Study area in northern Illinois where CWD management was evaluated



- In areas with management, declines in CWD prevalence were more consistently observed in young deer than in adults, suggesting that management reduces the risk of new infections;
- In areas where no sharpshooting occurred, the odds of a female deer having CWD were about 2.5 times higher than in areas where sharpshooters removed moderate to high numbers of deer (9-59 deer per section per year). Results for male deer differed somewhat, with lower risk of CWD at different levels of sharpshooting. Additional years of data should help clarify the nature of this relationship;
- Deer taken by agency sharpshooters were about twice as likely to be CWD-positive than deer taken by hunters.

The results suggest that frequent and consistent sharpshooting events with at least moderate culling intensity are needed to reduce CWD prevalence.

ILLINOIS DEPARTMENT OF NATURAL RESOURCES