

An Evaluation

Chronic Wasting Disease

Department of Natural Resources

2005-2006 Joint Legislative Audit Committee Members

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November 16, 2006

Senator Carol A. Roessler and
Representative Suzanne Jeskewitz, Co-chairpersons
Joint Legislative Audit Committee
State Capitol
Madison, Wisconsin 53702

Dear Senator Roessler and Representative Jeskewitz:

As requested by the Joint Legislative Audit Committee, we have completed an evaluation of state efforts to manage chronic wasting disease (CWD), a fatal neurological disease of deer. The Department of Natural Resources (DNR) is responsible for coordinating CWD management in the wild deer population. Farm-raised deer are the responsibility of the Department of Agriculture, Trade and Consumer Protection (DATCP). The Wisconsin Veterinary Diagnostic Laboratory provides CWD testing and carcass disposal services, while the Department of Health and Family Services investigates possible effects on human health. Through fiscal year (FY) 2005-06, these agencies spent \$32.3 million managing the disease.

DNR has developed several strategies to manage CWD, within the geographic areas in which infected deer are known to live, which are known as CWD zones. They include altering the length and rules of hunting seasons, establishing a ban on baiting and feeding deer, using sharpshooters, and creating monetary incentives for hunters to shoot more deer.

To date, DNR's efforts to eradicate CWD in the free-ranging deer population have not been effective. Neither the estimated number of deer in CWD zones nor the percentage infected with CWD has decreased. In addition, fewer deer have been killed in the CWD zones: the number declined from 23.1 deer per square mile in the 2003 hunting season to 17.4 deer per square mile in the 2005 hunting season.

In an October 2006 report to the Natural Resources Board, DNR conceded the need to modify its management efforts to more effectively address CWD. We include options for DNR and the Legislature to more effectively address the disease and control costs in the future.

We appreciate the courtesy and cooperation extended to us by staff of DNR, other state agencies, and interest groups. DNR's response follows the report.

Respectfully submitted,

Janice Mueller
State Auditor

JM/PS/ss

Report Highlights ■

DNR accounted for \$26.8 million of the \$32.3 million spent on CWD through FY 2005-06.

To date, DNR's efforts to eradicate CWD have not been effective.

DATCP has taken steps to limit the spread of CWD in farm-raised deer.

Hunters must wait longer to receive CWD testing results for their deer.

DHFS reviews potential effects of CWD on human health.

Wisconsin's approach to CWD should be reevaluated.

Chronic wasting disease (CWD) is a fatal neurological disease that affects members of the deer family, including white-tailed deer and elk. It was first identified among free-ranging deer within the state in February 2002. In the past five fiscal years, four state agencies have spent \$32.3 million to address the disease and monitor its spread, both in the wild and among farm-raised deer.

The Department of Natural Resources (DNR), which accounted for 82.9 percent of all expenditures, has attempted to eradicate CWD by reducing the number of free-ranging deer in areas where it has been identified. The Department of Agriculture, Trade and Consumer Protection (DATCP), which regulates deer farms, has established herd-monitoring programs and issues quarantines. The Wisconsin Veterinary Diagnostic Laboratory, which is operated by the University of Wisconsin-Madison, tests deer tissue for infection and disposes of infected carcasses. The Department of Health and Family Services (DHFS) monitors potential human health effects.

Legislators and hunters have raised concerns about the cost and effectiveness of efforts to eradicate CWD. At the request of the Joint Legislative Audit Committee, we therefore analyzed:

- trends in program expenditures and staffing levels;
- the effectiveness of DNR's current approach to CWD;
- DATCP's management of the disease in farm-raised deer;

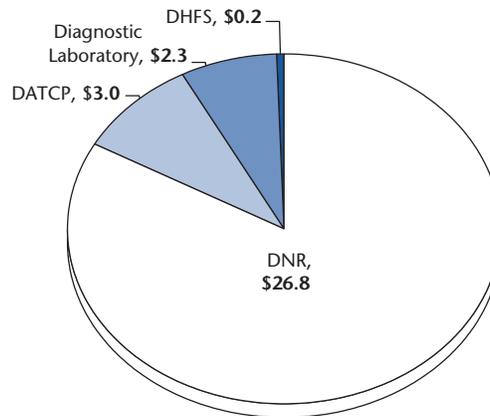
- the role of the Diagnostic Laboratory in conducting CWD tests and disposing of deer carcasses; and
- activities undertaken by DHFS to address potential human health concerns.

CWD Expenditures

DNR is the lead agency for coordinating Wisconsin’s efforts to address CWD and for managing the disease in the free-ranging deer herd. From fiscal year (FY) 2001-02 through FY 2005-06, DNR spent \$26.8 million on CWD, as shown in Figure 1. Nearly two-thirds of the \$32.3 million that all state agencies spent to address CWD, or \$20.1 million, has been provided from the Fish and Wildlife Account of the Conservation Fund. That account is funded primarily through fees paid by hunters and anglers.

Figure 1

Expenditures by Agency
(In Millions)



In FY 2005-06, DNR, DATCP, the Diagnostic Laboratory, and DHFS employed 58.8 full-time equivalent (FTE) staff to address CWD. Most were wildlife biologists and technicians employed by DNR.

Disease Management in Free-Ranging Deer

Through June 2006, 651 free-ranging deer have tested positive for CWD in Wisconsin. All were from the southern part of the state, and 590 were from Dane and Iowa counties.

DNR has adopted two main strategies to limit the spread of CWD in free-ranging deer: surveillance to determine the disease's prevalence, and reducing the deer population in areas it has defined as CWD zones. To reduce the number of deer and limit the spread of CWD, DNR has:

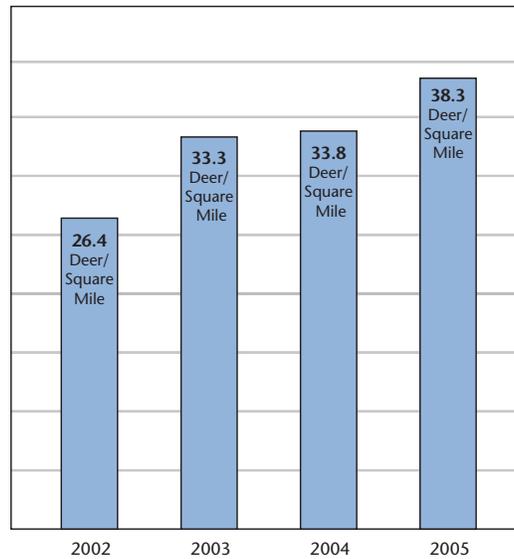
- increased the length of deer hunting seasons;
- required hunters to shoot a doe before shooting a buck;
- established and enforced a ban on baiting and feeding deer in 26 counties; and
- created incentives for hunters that include monetary rewards, low-cost permits, and a program to donate venison to food pantries.

DNR also relies on sharpshooters who are DNR employees. Sharpshooting efforts by DNR staff accounted for 5.2 percent of deer killed in the 2004 and 2005 hunting seasons.

Available data indicate that to date, DNR's efforts to eradicate CWD have not been effective:

- in CWD zones, the number of deer killed has declined from 23.1 per square mile during the 2003 hunting season to 17.4 per square mile during the 2005 hunting season;
- the CWD infection rate in the 210-square-mile "core area" that DNR uses to monitor infection rates has not declined; and
- the estimated number of deer in CWD zones has increased from a post-hunt population of 26.4 deer per square mile in 2002 to 38.3 deer per square mile in 2005, as shown in Figure 2.

Figure 2

Estimated Number of Deer in CWD Zones¹

¹ Post-hunt population. In the period shown, the size of CWD zones increased from 2,510 to 3,682 square miles. Because of changes in methodology, DNR staff believe population estimates for 2002 cannot be compared with later years and that changes in post-hunt populations are statistically insignificant.

Disease Management in Farm-Raised Deer

DATCP regulates farm-raised deer, which include both native deer and exotic species such as sika and reindeer. Anyone who wishes to sell live deer within Wisconsin must enroll in DATCP's herd monitoring program.

The monitoring program supplements mandatory CWD testing for all farm-raised deer that are 16 months of age or older at the time of death. It requires annual reporting on the health of deer from enrolled herds. Farm owners may not import deer from outside of Wisconsin unless they are from herds that have been monitored in their state or country of origin.

DATCP quarantines the herd of any farm on which a deer tests positive for CWD. It is also authorized to quarantine farms from which a CWD-positive deer originated and those whose herds may have been exposed to CWD. Through June 2006, DATCP issued CWD-related quarantines for 43 deer farms. A total of 95 animals tested positive for CWD on 7 of these farms.

CWD Testing and Disposal

We found increases in both the number of CWD tests performed by the Diagnostic Laboratory during the nine-day regular gun hunting season and the time required to report test results. On average, test results were not available until 51.8 days from the time a deer was killed in November 2005. In 2003, results were available in 26.6 days.

Hunters who submit deer for CWD testing typically want test results before they eat their deer. To assist during the peak workload period from late November through mid-January, DNR plans to provide 2.0 FTE staff to assist the Diagnostic Laboratory with CWD testing.

The Diagnostic Laboratory also operates a chemical tissue digester to dispose of CWD-positive carcasses and other deer testing remains. The tissue digester destroys prions, which are believed to be the cause of CWD. In FY 2005-06, the tissue digester disposed of 370,768 pounds of deer tissue, of which 93.9 percent was from DNR's surveillance program. The remainder was from testing farm-raised deer.

Potential Human Health Risks

DHFS assesses potential human health risks of CWD by monitoring cases of related human diseases, establishing a registry of people known to have consumed venison from CWD-infected deer, and informing the public of potential risks associated with CWD. To date, there is no evidence to suggest that eating CWD-infected venison can lead to human disease. However, because a similar disease in cows has been linked to human illness, DHFS, the World Health Organization, and the federal Centers for Disease Control and Prevention advise people not to consume any venison from CWD-infected deer as a precautionary measure.

Future Considerations

Compared to other states in which CWD has been identified, Wisconsin has taken an aggressive approach to combating the disease. That approach has also been more costly, but it has not been effective to date. We therefore highlight three alternative approaches for consideration by DNR and the Legislature: making no changes; increasing efforts, which would likely increase program costs; or reducing or eliminating some CWD-related activities.

Recommendations

Our report includes a recommendation for the Diagnostic Laboratory and DNR to:

- ☑ report to the Joint Legislative Audit Committee by April 15, 2007, on the time required to notify hunters of CWD test results for the 2006 hunting season (*p. 73*).

We also recommend that DNR, in consultation with DATCP, DHFS, and the Diagnostic Laboratory:

- ☑ report to the Joint Legislative Audit Committee by April 15, 2007, on:
 - how recent changes in hunting rules in the CWD zones affected the number of deer taken from these zones during the 2006 hunting season;
 - the number of CWD-positive deer killed as a result of DNR sharpshooting and trapping efforts during the 2006 hunting season;
 - whether testing performed on deer from the 2006 hunting season indicates any changes in the spread of CWD;
 - plans to improve communication with hunters; and
 - strategies that will be employed to reduce CWD-related costs (*p. 90*).

■ ■ ■ ■

Introduction ■

***CWD has been identified
in 14 states, including
Wisconsin.***

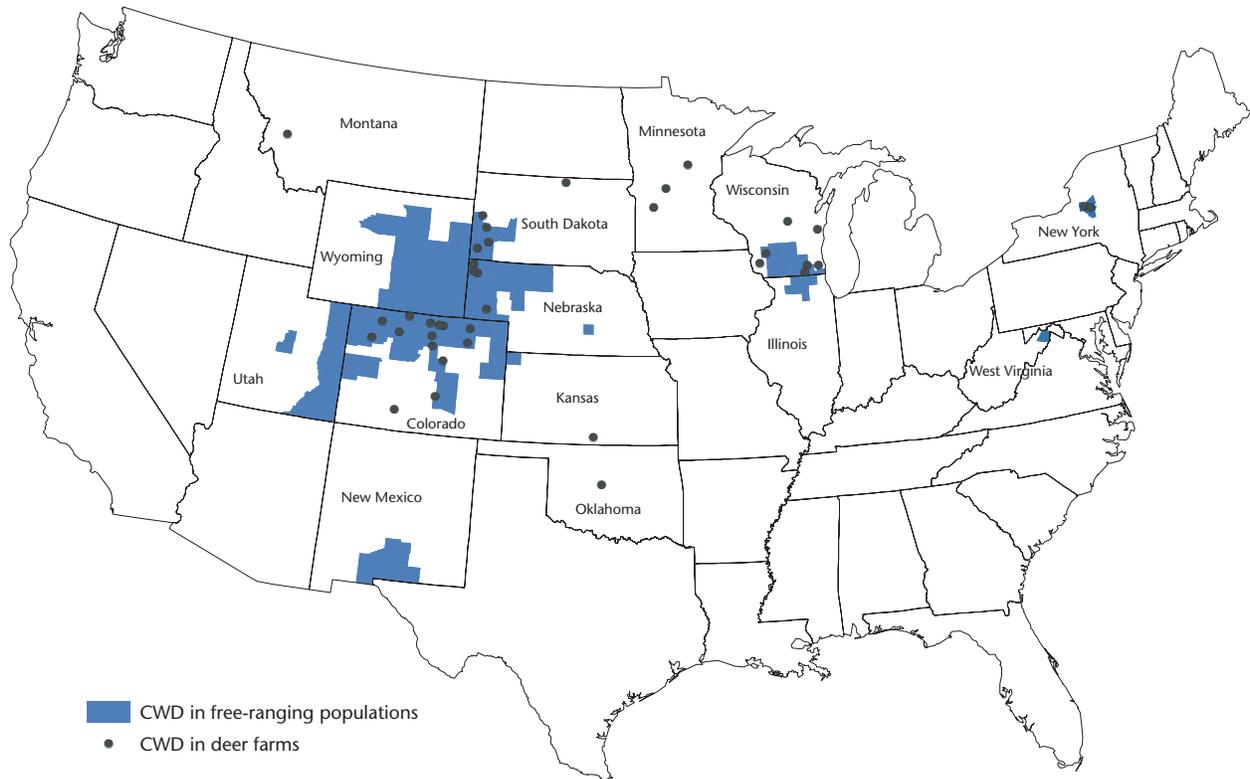
CWD belongs to a group of diseases known as transmissible spongiform encephalopathies, which produce microscopic holes in brain tissue and eventually lead to the death of infected animals. Similar diseases include “mad cow disease” in cattle, scrapie in sheep, and Creutzfeldt-Jakob disease in humans. As of June 2006, CWD has been identified in the free-ranging deer populations of 11 states and in the farm-raised populations of 9 states, as shown in Figure 3.

CWD is confirmed through post-mortem testing of brain or lymph node tissue. Its cause is believed to be a deformed self-replicating protein known as a prion. The disease is thought to be transmissible through mechanisms that include direct contact between deer, contact with their saliva and feces, and contact between deer and contaminated material such as foliage and soil. It can take three to five years from the time of exposure for deer to develop clinical symptoms, which include weight loss, tremors, and unusual behavior such as stumbling. There are no known treatments.

Symptoms were first noted in 1967 among mule deer at a northern Colorado wildlife research facility, but it was not until 1978 that CWD was first classified as a transmissible neurological disease of the deer family. It was first identified in the free-ranging deer population of Colorado in 1981. White-tailed deer and elk are the

Figure 3

Distribution of Chronic Wasting Disease in the United States



Source: United States Geological Survey National Wildlife Health Center

only known members of the deer family to be free-ranging in Wisconsin. To date, CWD has not been discovered in Wisconsin's free-ranging elk population, which is illegal to hunt.

As shown in Table 1, CWD was identified in five states contiguous to Colorado, as well as Wisconsin and Illinois, by 2002, and in West Virginia and New York by 2005. The pattern of spread has raised questions about whether the disease is being transmitted entirely through free-ranging deer or whether it is also the result of infection spread by farm-raised deer transported from state to state.

Table 1
States in Which CWD Has Been Identified

State	Year Identified in Free-Ranging Population	Year Identified in Farm-Raised Population
Colorado	1981	1967 ¹
Illinois	2002	–
Kansas	2005	2002
Minnesota	–	2002
Montana	–	1998
Nebraska	2000	1998
New Mexico	2002	–
New York	2005	2005
Oklahoma	–	1998
South Dakota	2001	1997
Utah	2002	–
West Virginia	2005	–
Wisconsin	2002	2002
Wyoming	1986	–

¹ CWD identified in mule deer at a research facility.

DNR began random testing for CWD in early 1999, as part of a larger effort to monitor the health of the free-ranging white-tailed deer population. In February 2002, testing results indicated three deer shot during the 2001 hunting season had the disease. Since then, DNR has undertaken extensive monitoring efforts and, as shown in Table 2, has tested more than 100,000 white-tailed deer through June 2006. It is important to note that because testing efforts have focused on areas where CWD is known to exist, the data shown in Table 2 do not reflect the prevalence of CWD statewide.

Table 2

Results of CWD Tests of Free-Ranging White-Tailed Deer

Year	Number Tested	Test Results			Percentage Positive
		Inconclusive	Negative	Positive	
1999	233	0	233	0	0.0%
2000	335	0	335	0	0.0
2001	387	0	384	3	0.8
2002	38,471	54	38,245	172	0.4
2003	16,208	26	16,036	146	0.9
2004	18,392	20	18,249	123	0.7
2005	25,092	29	24,886	177	0.7
2006 ¹	1,009	0	979	30	3.0
Total	100,127	129	99,347	651	0.7

¹ Through June 2006. It is likely the percentage positive is substantially higher than in other years because deer from the 2006 hunting season are not yet included.

A total of 94 farm-raised white-tailed deer and 1 elk in Wisconsin have tested positive for CWD.

The first case of CWD in farm-raised white-tailed deer and elk in Wisconsin was confirmed in September 2002, on a Portage County farm. As of November 1, 2006, 94 farm-raised white-tailed deer and 1 elk have tested positive for CWD, including 82 animals from the farm where CWD was first detected. The remaining 13 animals were from six other farms. Currently, DATCP requires CWD testing of each farm-raised deer that is 16 months of age or older when it dies of natural causes or is shot as part of hunting preserve activities or slaughtered for meat.

CWD testing may be performed at any of 27 laboratories approved by the United States Department of Agriculture (USDA). The Diagnostic Laboratory is the only approved laboratory in Wisconsin. It also has the capacity to dispose of deer tissue through a chemical process that destroys infectious prions.

To address concerns regarding the effectiveness of Wisconsin's approach to CWD and whether funding related to it has reduced spending for other programs, we interviewed staff in the four agencies responsible for CWD oversight; reviewed the agencies' policies; and analyzed data on CWD testing, deer harvests, expenditures, and allocation of staff time. We also interviewed numerous interest groups, deer farmers, officials in other states, and individuals involved in performing academic research related to CWD.

Expenditures and Staffing

As the lead agency, DNR accounted for 82.9 percent of the \$32.3 million state agencies spent on CWD.

As shown in Table 3, as the lead agency, DNR was responsible for 82.9 percent of the \$32.3 million that four state agencies spent to address CWD through FY 2005-06. Each agency's spending peaked in FY 2002-03, when efforts to determine the prevalence and spread of CWD were greatest.

Table 3

Chronic Wasting Disease Expenditures, by Agency

	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total
DNR	\$1,399,700	\$11,206,300	\$4,526,800	\$5,066,400	\$4,602,100	\$26,801,300
DATCP	271,500	868,500	355,500	693,400	841,700	3,030,600
Diagnostic Laboratory	0	695,100	378,300	612,500	658,900	2,344,800
DHFS	4,600	64,000	35,600	15,900	31,800	151,900
Total	\$1,675,800	\$12,833,900	\$5,296,200	\$6,388,200	\$6,134,500	\$32,328,600

As shown in Table 4, segregated revenue funded \$21.2 million in CWD expenditures. That amount included \$20.1 million spent by DNR from the Fish and Wildlife Account of the Conservation Fund.

Table 4

Chronic Wasting Disease Expenditures, by Funding Type
FY 2001-02 through FY 2005-06

Funding Source	DNR	DATCP	Diagnostic Laboratory	DHFS	Total	Percentage of Total
Segregated Revenue	\$21,050,500	\$ 145,500	–	–	\$21,196,000	65.6%
Federal Revenue	4,188,800	1,028,100	\$ 166,400	\$118,100	5,501,400	17.0
Program Revenue	225,600	513,400	2,178,400	31,800	2,949,200	9.1
General Purpose Revenue	1,336,400	1,343,600	–	2,000	2,682,000	8.3
Total	\$26,801,300	\$3,030,600	\$2,344,800	\$151,900	\$32,328,600	100.0%

State staffing to address CWD included 58.8 positions in FY 2005-06.

In FY 2005-06, state staffing to address CWD included 58.8 FTE positions, as shown in Table 5. Most of these positions were DNR staff, and some were limited-term employees (LTEs). Like expenditures, all four agencies' CWD staffing levels peaked in FY 2002-03.

Table 5

Estimated Staffing to Address CWD
(FTE Positions)

	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06
DNR	17.1	109.3	43.6	56.7	48.7
DATCP	3.2	7.0	3.6	5.5	3.9
Diagnostic Laboratory	–	5.8	3.1	5.1	5.8
DHFS	0.1	0.5	0.4	0.4	0.4
Total	20.4	122.6	50.7	67.7	58.8

DNR Resources for Chronic Wasting Disease ■

To better understand how DNR spent \$26.8 million to address CWD from FY 2001-02 through FY 2005-06, we analyzed its expenditures by funding source, by type, by organizational unit, and by the functional purpose for which they were made. We also analyzed staffing, including DNR's reliance on LTEs to perform CWD activities.

DNR Expenditures

Hunting and fishing fees funded most CWD expenditures.

As shown in Table 6, segregated revenue that was primarily hunting and fishing fees deposited into the Fish and Wildlife Account funded three-quarters of DNR's CWD-related expenditures in the past five fiscal years. Federal funds from USDA provided another \$4.2 million, or 15.6 percent of the total. DNR's annual expenditures for CWD peaked at \$11.2 million in FY 2002-03, largely because of extensive statewide testing to determine whether CWD was present outside of south-central Wisconsin.

Table 6

DNR Expenditures for CWD by Funding Source

Source	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total Expenditures
Segregated Revenue						
Fish and Wildlife Account ¹	\$1,143,400	\$ 8,488,200	\$3,347,800	\$3,637,100	\$3,434,000	\$20,050,500
Recycling Fund ²	–	1,000,000	–	–	–	1,000,000
Subtotal	1,143,400	9,488,200	3,347,800	3,637,100	3,434,000	21,050,500
Federal Revenue	213,000	504,900	1,107,000	1,324,400	1,039,500	4,188,800
General Purpose Revenue	26,800	1,094,200	66,600	84,900	63,900	1,336,400
Program Revenue³	16,500	119,000	5,400	20,000	64,700	225,600
Total	\$1,399,700	\$11,206,300	\$4,526,800	\$5,066,400	\$4,602,100	\$26,801,300

¹ Of the \$20.1 million spent from the Fish and Wildlife Account, \$6.0 million was from a CWD appropriation established by 2001 Wisconsin Act 108, and \$14.1 million was from other DNR appropriations.

² During FY 2002-03, the Joint Committee on Finance approved the use of \$1.0 million from the Recycling Fund for CWD management.

³ Includes \$118,600 received from other entities and government agencies for providing facilities, materials, and services, and \$107,000 in fees imposed on owners and operators of stationary sources of air contaminants through the Division of Air and Waste.

In the past five fiscal years, DNR spent \$16.8 million on staffing to address CWD.

As shown in Table 7, DNR spent \$16.8 million on CWD-related staffing from FY 2001-02 through FY 2005-06. These expenditures represented 62.6 percent of all CWD expenditures in the five-year period. Professional services, which include information technology support and research assistance, as well as materials and supplies and equipment acquisition and maintenance expenditures, constituted most of the remaining expenditures.

Table 7

DNR Expenditures for CWD by Type

Type	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total Expenditures
Staffing						
Permanent Staff Salaries	\$ 693,200	\$ 4,764,200	\$ 1,524,200	\$ 1,617,800	\$ 1,467,000	\$ 10,066,400
Fringe Benefits	218,500	2,064,600	747,900	834,800	814,700	4,680,500
LTE Salaries	50,000	585,300	328,500	567,200	493,300	2,024,300
Subtotal	961,700	7,414,100	2,600,600	3,019,800	2,775,000	16,771,200
Supplies and Services						
Professional Services ¹	86,400	1,449,300	1,296,400	788,500	809,500	4,430,100
Materials and Supplies	71,300	637,400	100,400	483,100	205,000	1,497,200
Equipment Acquisition and Maintenance	96,400	451,100	115,700	199,100	266,500	1,128,800
Travel	68,700	417,200	150,800	173,200	122,300	932,200
Allocated Costs ²	87,000	315,800	118,400	142,900	153,700	817,800
Building, Maintenance, and Utilities	14,100	265,700	109,800	167,000	111,700	668,300
Other ³	14,100	255,700	34,700	92,800	158,400	555,700
Subtotal	438,000	3,792,200	1,926,200	2,046,600	1,827,100	10,030,100
Total	\$1,399,700	\$11,206,300	\$4,526,800	\$5,066,400	\$4,602,100	\$26,801,300

¹ Includes services such as information technology and research assistance.

² Represents expenditures for supplies and services that were not directly charged to the CWD program but allocated through a formula.

³ Includes expenditures for advertising, printing, and miscellaneous expenses.

Table 8 shows DNR expenditures by division and bureau. Three bureaus had principal responsibility for CWD-related activities in the period shown:

Bureau of Wildlife Management staff are primarily responsible for DNR's deer management activities.

- the Bureau of Wildlife Management, which spent \$18.6 million, employs the wildlife biologists and wildlife technicians who are primarily responsible for all of DNR's deer management activities and who register hunters' deer and conduct deer population surveys;
- the Bureau of Law Enforcement, which spent \$3.0 million, largely for efforts to conduct comprehensive reviews of white-tailed deer farms before the transfer of regulatory responsibility to DATCP in January 2003 and for enforcing the ban on deer baiting and feeding in counties where CWD has been found; and
- the Bureau of Integrated Science Services, which spent \$1.6 million for conducting hunter and landowner surveys and disease research.

In addition to these three bureaus, the Division of Customer and Employee Services spent \$1.5 million, largely for issuing landowner permits to shoot deer and for answering hunters' questions about expanded hunting seasons in CWD zones.

Table 8

DNR Expenditures for CWD by Organizational Unit

Organizational Unit	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total Expenditures
Division of Land						
Wildlife Management	\$1,006,500	\$6,510,400	\$3,341,300	\$4,154,200	\$3,549,800	\$18,562,200
Facilities and Land	28,000	279,000	35,800	68,600	58,400	469,800
Parks and Recreation	143,600	100,700	19,900	16,000	5,900	286,100
Endangered Resources	16,800	54,400	11,900	3,300	16,600	103,000
Division Management	2,100	41,500	2,500	1,100	4,600	51,800
Subtotal	1,197,000	6,986,000	3,411,400	4,243,200	3,635,300	19,472,900
Division of Enforcement and Science						
Law Enforcement	100	1,946,000	215,100	287,100	524,800	2,973,100
Integrated Science Services	69,400	642,500	290,100	343,400	281,200	1,626,600
Division Management	0	77,600	17,600	14,000	18,100	127,300
Subtotal	69,500	2,666,100	522,800	644,500	824,100	4,727,000
Division of Customer and Employee Services						
	95,100	679,200	520,800	137,600	103,100	1,535,800
Division of Air and Waste						
	27,200	274,400	25,200	26,700	9,800	363,300
Division of Water						
	0	311,400	22,100	6,300	9,000	348,800
Division of Forestry						
	10,900	285,300	23,000	8,100	20,800	348,100
Other Organizational Units¹						
	0	3,900	1,500	0	0	5,400
Total	\$1,399,700	\$11,206,300	\$4,526,800	\$5,066,400	\$4,602,100	\$26,801,300

¹ Includes the Office of the Secretary and the Bureau of Management and Budget.

DNR spent \$10.6 million to collect and extract deer tissue through FY 2005-06.

Table 9 shows the types of activities funded by DNR expenditures for CWD in the past five fiscal years. The most expensive activity was collecting and extracting deer tissue for CWD testing, for which spending totaled \$10.6 million through FY 2005-06. The second largest expenditure total, \$2.6 million, was for staff planning and policy development, including developing surveillance strategies and determining modifications to hunting season regulations.

Table 9

DNR Expenditures for CWD by Activity

Activity	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total Expenditures
Collection and Extraction of Deer Tissue for Testing	\$ 506,200	\$4,337,400	\$2,160,500	\$2,011,800	\$1,545,700	\$10,561,600
Planning and Policy Development	394,300	1,279,900	210,200	348,400	391,100	2,623,900
Public Relations and Outreach	180,600	1,274,300	201,400	388,100	282,200	2,326,600
Carcass Disposal ¹	24,500	1,163,500	538,500	367,400	174,900	2,268,800
Research	44,900	533,800	449,000	599,200	574,800	2,201,700
Other ²	206,300	1,611,800	–	–	–	1,818,100
Deer and Elk Farm Management	42,900	763,200	147,900	82,000	147,300	1,183,300
Sharpshooting and Trapping ³	N.A.	N.A.	N.A.	356,300	612,300	968,600
Information Technology Support ⁴	N.A.	N.A.	255,800	206,900	247,900	710,600
Enforcement of the Ban on Baiting and Feeding	–	90,600	107,800	191,000	282,300	671,700
Deer Harvest Incentives ⁵	–	–	247,600	270,000	64,800	582,400
Law Enforcement Related to CWD ⁶	–	151,800	208,100	83,300	104,400	547,600
Deer Donation Program ⁷	–	–	–	162,000	174,400	336,400
Total	\$1,399,700	\$11,206,300	\$4,526,800	\$5,066,400	\$4,602,100	\$26,801,300

¹ Includes expenditures to transport carcasses, as well as landfill and incineration costs. Does not include amounts paid to the Diagnostic Laboratory.

² Includes expenditures classified as overhead, such as data processing, Web site development, human resources, and accounting services that could not be categorized by activity in FY 2001-02 and FY 2002-03.

³ Sharpshooting and trapping expenditures were not tracked separately from other CWD expenditures until FY 2004-05.

⁴ Information technology support expenditures were not tracked separately from other CWD expenditures until FY 2003-04.

⁵ Includes programs that provided monetary rewards to hunters and landowners for shooting deer in the disease eradication zone.

⁶ Includes CWD activities not coded to a specific law enforcement activity.

⁷ Reflects expenditures for processing deer from the disease eradication zone that are donated to food pantries.

Three other activities on which a significant amount of funding has been spent over the past five fiscal years include:

- public relations and outreach, for which \$2.3 million was spent on activities that included developing a Web site with CWD information, publishing information about the disease and DNR’s efforts to combat it, in-person communication with landowners in CWD zones, and a toll-free phone line;
- CWD research, for which \$2.2 million was spent on activities that included estimating the deer population in CWD zones; determining possible relationships between CWD transmission and deer genetics, movement, and dispersal patterns; and conducting hunter and landowner surveys; and
- sharpshooting and trapping deer, for which at least \$968,600 has been spent. The exact amount is not known because DNR did not specifically track these expenditures from FY 2001-02 through FY 2003-04.

In addition to \$26.8 million for CWD management, DNR spent \$10.8 million on deer management from FY 2000-01 through FY 2005-06.

As shown in Table 10, not all of DNR’s deer management expenditures were related to CWD. In addition to the \$26.8 million spent on CWD management, DNR spent \$10.8 million on deer management activities such as registering harvested animals, conducting deer population surveys, establishing deer hunting seasons, setting harvest quotas, and administering contracts with counties to collect and dispose of car-killed deer. However, as available resources were devoted to managing CWD, expenditures for deer management activities declined 29.5 percent over the five-year period shown.

Table 10

Comparison of Deer Management and CWD Expenditures

Fiscal Year	Deer Management Expenditures	Percentage Change	CWD Management Expenditures	Percentage Change	Total	Percentage Change
FY 2000-01	\$ 2,353,700	–	–	–	\$ 2,353,700	–
FY 2001-02	1,720,300	(26.9)	\$ 1,399,700	–	3,120,000	32.6%
FY 2002-03	1,547,000	(10.1)	11,206,300	700.6%	12,753,300	308.8
FY 2003-04	1,732,200	12.0	4,526,800	(59.6)	6,259,000	(50.9)
FY 2004-05	1,778,900	2.7	5,066,400	11.9	6,845,300	9.4
FY 2005-06	1,658,800	(6.8)	4,602,100	(9.2)	6,260,900	(8.5)
Total	\$10,790,900		\$26,801,300		\$37,592,200	

DNR Staffing

In FY 2005-06, 75.4 percent of DNR staff working on CWD efforts were wildlife management staff.

As shown in Table 11, both permanent and LTE staff from throughout DNR have worked to manage CWD in the past five fiscal years, but the majority were from the Bureau of Wildlife Management. In FY 2005-06, 75.4 percent of all DNR staff working on CWD were wildlife management staff, 13.1 percent were law enforcement, and 11.5 percent provided support services such as public information and assistance with the collection of deer tissue at registration stations. Staffing levels were highest in FY 2002-03, when 39,418 deer were tested for CWD.

Table 11

DNR Staff Performing CWD Activities¹

Organizational Unit	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06
Division of Land					
Wildlife Management	11.1	63.1	31.5	45.2	36.7
Facilities and Land	0.5	2.1	0.4	1.0	0.8
Parks and Recreation	0.3	1.1	0.3	0.2	0.3
Endangered Resources	0.1	0.9	0.1	0.2	0.2
Division Management	2.3	1.4	0.3	0.2	0.1
Subtotal	14.3	68.6	32.6	46.8	38.1
Division of Enforcement and Science					
Law Enforcement	<0.1	9.5	5.4	4.6	6.4
Integrated Science Services	1.1	6.6	2.4	2.4	1.7
Division Management	0.0	0.3	0.2	0.1	0.2
Subtotal	1.1	16.4	8.0	7.1	8.3
Division of Customer and Employee Services					
	1.2	10.7	2.2	1.9	1.4
Division of Forestry					
	0.2	4.9	0.3	0.4	0.5
Division of Water					
	0.0	5.1	0.3	0.2	0.3
Division of Air and Waste					
	0.3	3.5	0.2	0.3	0.1
Other Organizational Units²					
	0.0	0.1	<0.1	0.0	0.0
Total	17.1	109.3	43.6	56.7	48.7

¹ Based on the number of hours coded by both permanent and LTE staff.

² Includes the Office of the Secretary and the Bureau of Management and Budget.

DNR has increasingly relied on LTEs to conduct work related to CWD.

Although most of DNR's work related to CWD has been conducted by permanent staff, the share performed by LTEs increased from 12.9 percent in FY 2001-02 to 42.3 percent in FY 2005-06, as shown in Table 12. DNR officials indicate LTEs are used to address short-term, seasonal workload needs and are less costly than permanent employees because they are typically not eligible for sick leave, vacation, or holiday pay.

To assist with CWD management and testing, 2001 Wisconsin Act 108 increased DNR's authorized staffing by 3.0 project positions, which are funded from the wildlife damage appropriation of the Fish and Wildlife Account. One of these positions—1.0 FTE wildlife veterinarian who oversees CWD surveillance, some research efforts, and operations at DNR's laboratory in Black Earth—was converted to a permanent position by 2003 Wisconsin Act 33. The other two—an information specialist who maintains DNR's statewide CWD data and reporting systems and a communications specialist who develops and implements its CWD public information and education program—will expire in June 2008. In October 2005, DNR also received authorization through the Department of Administration for 2.0 FTE federally funded project positions to assist with CWD management in the eastern disease eradication zone. Those positions expire in September 2009.

Table 12

Permanent and LTE Staff Performing CWD Activities

Fiscal Year	Permanent	LTE	Total	Percentage of Total Staff that are LTE Staff
FY 2001-02	14.9	2.2	17.1	12.9%
FY 2002-03	86.2	23.1	109.3	21.1
FY 2003-04	30.0	13.6	43.6	31.2
FY 2004-05	32.7	24.0	56.7	42.3
FY 2005-06	28.1	20.6	48.7	42.3

In FY 2005-06, 592 DNR employees worked on CWD-related activities.

In FY 2005-06, 136 of the 592 DNR employees who performed CWD-related activities were LTE staff. However, as shown in Table 13, nearly one-half of all DNR employees who worked to manage CWD in that year spent 40 hours or less on CWD-related activities. Five of the 8 employees who spent more than 1,280 hours on CWD activities were in positions created specifically to address CWD.

Table 13

Time Spent by DNR Staff on CWD-Related Activities
FY 2005-06

Number of Hours Worked	Number of Employees	Percentage of Total
0.5 to 40 hours	271	45.8%
40.5 to 80 hours	109	18.4
80.5 to 160 hours	85	14.4
160.5 to 320 hours	55	9.3
320.5 to 640 hours	30	5.1
640.5 to 1,280 hours	34	5.7
Greater than 1,280 hours	8	1.3
Total	592	100.0%

Effects of CWD Workload on Other Program Areas

Because few staff were authorized specifically to work on CWD, the majority of CWD-related work performed by DNR's permanent staff represents a loss to other program areas. To assess this loss, we analyzed staffing information for 23 permanent employees who worked at least 40 hours on CWD-related activities in FY 2005-06 and who worked in organizational units that are not primarily responsible for CWD management. CWD activities undertaken by these staff represent a direct loss of work to their respective areas.

We found that 16 of the 23 employees spent a total of 1,356 hours assisting with registration of deer and collecting tissue samples in the CWD zones:

- 7 had regular duties providing customer service and issuing licenses;
- 2 had regular duties administering grants related to fish, wildlife, and recreation programs;
- 2 had regular duties providing land program leadership and coordination;

- 2 had regular duties related to property and land management;
- 1 had regular duties managing human resources;
- 1 had regular duties managing and developing trout habitat; and
- 1 had regular duties managing forests.

Another 4 of the 23 employees spent a total of 331 hours as sharpshooters, including:

- 2 who had regular duties related to property and land management;
- 1 who had regular duties assisting with administration of federal fish and wildlife programs; and
- 1 who had regular duties enforcing laws related to parks and recreation.

One of the remaining three employees spent 59 hours assisting with law enforcement related to CWD when his regular duties were administering grants related to recreation programs. One spent 58 hours assisting with carcass disposal when his regular duties were administering air and waste programs. Finally, one spent 93 hours assisting with registration of deer and collecting tissue samples in the CWD zones, 140 hours assisting with public relations and outreach related to CWD, and 635 hours working as a sharpshooter; his regular duties were related to property and land management.

■ ■ ■ ■

Establishing Goals and Deer Management Strategies ■

DNR has attempted to control CWD by establishing CWD management zones in which it has altered hunting rules, enforced a ban on deer baiting and feeding, utilized agency sharpshooters, and provided hunter incentives.

CWD Management Zones and Population Goals

DNR based its response to CWD, in part, on models developed in 2002 by a UW-Madison researcher, which projected what could happen to Wisconsin's deer herd if CWD were not controlled. These models were based on Colorado's experience with CWD in mule deer and indicated that without intervention, as many as 40 percent of the deer in the area where CWD had been identified would be infected within 30 years.

DNR initially established a goal of 0 deer per square mile in the area where CWD had been identified.

In response to these findings and other states' experiences with CWD, DNR moved aggressively by developing a disease eradication policy with the goal of eliminating CWD from Wisconsin's deer population. In June 2002, the Natural Resources Board approved a plan with a population goal of 0 deer per square mile in the area of south-central Wisconsin referred to as the intensive harvest zone, and less-stringent goals elsewhere.

DNR's efforts to manage deer populations have historically involved the establishment of deer management units through which it makes population estimates and tracks deer harvest

numbers. In 2006, the state was divided geographically into 135 deer management units.

For the 2003 hunting season, DNR established three types of CWD zones.

After CWD was identified in Wisconsin, DNR reconfigured some deer management units in an effort to monitor and control the disease. In March 2002, it designated a 415-square-mile surveillance zone in western Dane and eastern Iowa counties, where three deer that had tested positive for CWD had been shot. That initial designation was discontinued for the 2003 hunting season in favor of an approach that established three types of CWD zones:

- disease eradication zones, which are still in use today;
- intensive harvest zones, which were discontinued for the 2004 hunting season; and
- a herd reduction zone, which is still in use today.

A disease eradication zone is a core area of known CWD infection and is designated by DNR as an area in which substantial depopulation of the wild deer herd is required to limit the spread of the disease. Among the three zones established in 2003, disease eradication zones represented the smallest area. They consisted of all land contained within or intersected by a circle with a radius of up to 4.5 miles, drawn from the center of a section of land found to have contained a deer that tested positive for CWD.

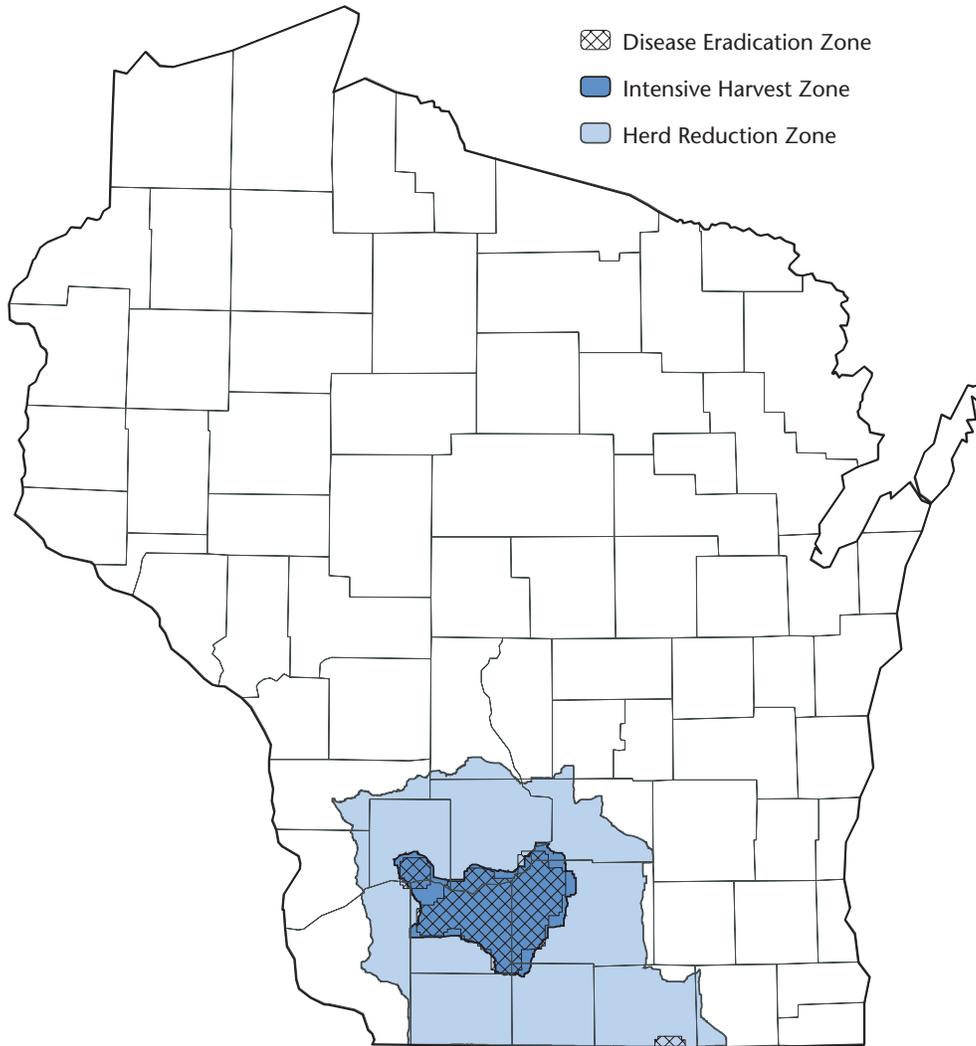
Until this designation was discontinued, an intensive harvest zone extended slightly beyond the boundaries of the eradication zone designated in 2003. It was delineated so that hunters could more easily identify areas in which the depopulation of deer was encouraged, and it was defined by readily identifiable road boundaries that closely followed the outline of the eradication zone. Use of the intensive harvest zone was discontinued in 2004 largely to reduce confusion among hunters and the general public.

A herd reduction zone that was initially known as the management zone represented the largest land area among the CWD zones DNR designated in 2003. It was established to reduce the risk of CWD transmission to adjacent areas. Unlike DNR's goals for the other two zones, which were to eliminate all deer or as many as possible, the goal for the herd reduction zone was to reduce the population to approximately 10.0 deer per square mile. The area of the herd reduction zone was initially based on road boundaries that were located approximately 40 miles from areas in which CWD-infected deer were first identified.

Figure 4 shows the boundaries of the CWD zones established in 2003.

Figure 4

2003 CWD Zones



Source: DNR

DNR typically expands CWD zones when it identifies CWD-infected deer outside the zones.

Over time, the types and locations of CWD zones have changed in response to the identification of additional CWD-positive deer. For example, during the 2003 hunting season, DNR established a 25-square-mile disease eradication zone near the Wisconsin-Illinois border following the identification of CWD among deer in northern Illinois. The 25-square-mile disease eradication zone was expanded in 2004 when a hunter shot an infected deer five miles north of its border.

For the 2004 hunting season, DNR formally established an eastern disease eradication zone in Rock and Walworth counties; expanded the herd reduction zone to include adjacent deer management units; and, as noted, eliminated the intensive harvest zone. In 2005, it expanded both the western and the eastern disease eradication zones and added more area to the herd reduction zone. However, DNR did not expand the disease eradication zones to include areas in which four CWD-positive deer had been found in 2005. Those areas were all within the herd reduction zone, and DNR concluded that expanding the disease eradication zone in response to every positive test result was not practical, particularly when the area's infection rate is less than 1.0 percent and additional infected deer have not been discovered.

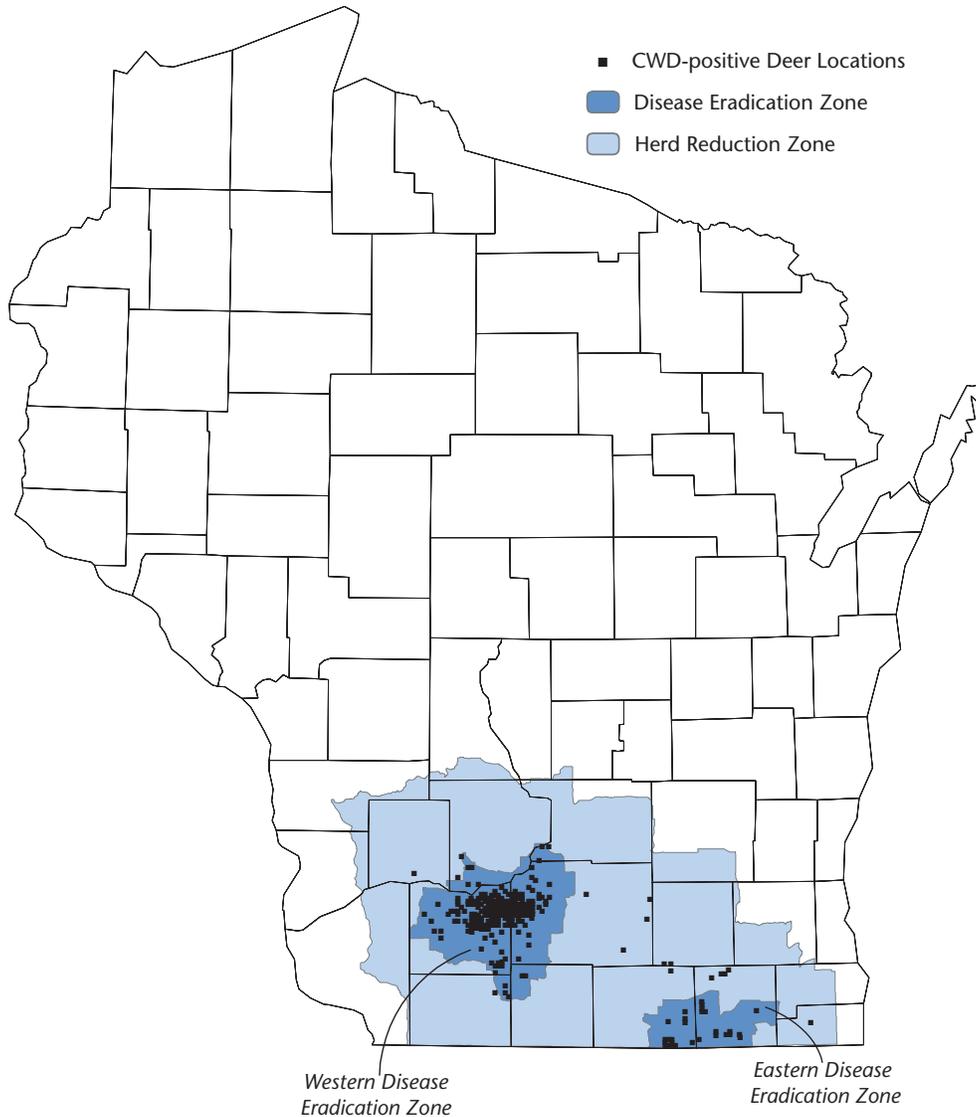
Based on these factors and a desire to limit confusion among hunters, DNR chose not to expand the eradication zones for the 2006 hunting season. Figure 5 shows 2006 CWD zones and the locations of deer found to be CWD-positive.

Some hunters believe DNR did not effectively communicate the reasoning behind its CWD management strategy.

In interviews, both hunters and interest groups raised concerns about DNR's initial CWD policy. Some hunters believe that DNR did not effectively inform the public of its reasons for adopting an eradication strategy, that ineffective communication reduced cooperation from private landowners and discouraged some individuals from hunting, and that DNR's target population goals were unnecessarily low and prevented others from joining the sport. Some believe DNR should have conducted additional disease surveillance before adopting an eradication policy, because without the cooperation of hunters and landowners, the likelihood that CWD will be eradicated is reduced.

Figure 5

2006 CWD Zones and Positive Deer Locations



Source: DNR

However, by 2003, DNR's initial deer reduction goals had changed. For example, for the 2003 hunting season, its goal of 0 deer per square mile in the disease eradication zone was changed to less than 5.0 deer per square mile. In other areas of the state, deer population goals ranged from 10.0 to 30.0 deer per square mile. Before CWD was identified, population goals in most deer management units that are now within a CWD zone ranged from 25.0 to 30.0 deer per square mile.

DNR's current CWD management goal is to minimize the negative impact of CWD on free-ranging and farm-raised populations, as well as Wisconsin's economy, hunters, landowners, and others dependent on healthy deer. A 2005 DNR report indicates that Wisconsin's CWD management strategies are based on the following assumptions:

- CWD is a transmissible spongiform encephalopathy caused by prions that are spread by direct contact between animals but may also be spread through environmental contamination.
- CWD was introduced into the state, is not part of our native ecosystem, and its distribution is limited to areas in southern Wisconsin.
- If left uncontrolled, CWD could have a significant negative effect on white-tailed deer populations, and its presence diminishes the real or perceived value of deer and elk.
- High animal density and frequent animal contact are associated with increased transmission and prevalence of the disease.
- CWD will not disappear spontaneously in the absence of efforts to combat it, and restrictions on human activity are necessary to prevent its spread into new areas.

DNR's plan is based on generally accepted guidelines for CWD management.

In an October 2003 report on DNR's CWD management plan, six out-of-state wildlife professionals who reviewed it at DNR's request indicated that the plan is aligned with generally accepted guidelines for CWD management. These guidelines include a national plan developed by USDA, the Department of the Interior, and staff from universities and state agencies, as well as multi-state guidelines that have been adopted by natural resource agencies in 25 other states.

Strategies to Control CWD

DNR uses four main strategies to control the spread of CWD and reduce deer populations. They are:

- altering the length and rules of hunting seasons;
- adopting and enforcing baiting and feeding bans in some counties;

- using sharpshooters in targeted areas; and
- offering monetary incentives for hunters.

Altering the Length and Rules of Hunting Seasons

DNR has made changes to the length of hunting seasons in the CWD zones.

As shown in Table 14, in each year since CWD was identified in Wisconsin, DNR has made changes to the length of deer hunting seasons in an effort to reduce the number of white-tailed deer in CWD zones.

Table 14

Length of Hunting Seasons

	Hunting Season in Non-CWD Zones ¹	Hunting Season in Herd Reduction Zone	Hunting Season in Disease Eradication Zone
Gun			
2001	24 days	–	–
2002	27 days	41 days	100 days
2003	27 days	47 days	66 days
2004	27 days	49 days	68 days
2005	27 days	50 days	64 days
2006	25 days	27 days	32 days
Archery			
2001	93 days	–	–
2002	102 days	102 days	140 days
2003	104 days	113 days	113 days
2004	98 days	108 days	108 days
2005	99 days	109 days	109 days
2006	104 days	114 days	114 days

¹ For 2001, the number of days included the regular 9-day hunting season, a 7-day muzzleloader season, and two 4-day hunts in overpopulated deer management units during October and December. For 2002 through 2005, the number of days included the regular 9-day hunting season, a 10-day muzzleloader season, and two 4-day hunts in overpopulated deer management units during October and December. For 2006, the number of days includes the regular 9-day hunting season, a 10-day muzzleloader season, one 2-day youth hunt in October, and one 4-day statewide hunt during December.

Traditionally, hunters in Wisconsin have targeted bucks rather than does. During the 2002, 2003, and 2004 hunting seasons, DNR required hunters in CWD zones to shoot a doe before they could legally harvest a buck. This rule, known as “earn-a-buck,” is intended to reduce the breeding population and has been used since September 1996 in various deer management units when population estimates significantly exceeded deer population goals.

For the fall 2006 hunting season, DNR has not established any earn-a-buck requirements in the CWD zones, in part because testing has shown that bucks are more likely than does to carry the disease. DNR officials therefore believe that eliminating earn-a-buck requirements will potentially slow the transmission of CWD. The requirement was also removed in response to pressure from hunters, among whom it was unpopular. Some hunters had argued that because it forced them to forgo a buck until they shot a doe, the requirement could result in no deer being taken by some hunters, which would be counterproductive. Some bow hunters also questioned DNR’s use of earn-a-buck requirements during the archery season, because bow hunters may have only one opportunity for a shot during the archery season.

Baiting and Feeding Ban

Many believe that baiting and feeding contributes to increased rates of CWD transmission. This is a concern because some hunters use bait to attract deer, and some landowners feed deer for wildlife viewing purposes. Both practices increase the concentration of deer, which allows the disease to pass more easily from one animal to another, and recent research has shown that the disease can be spread through saliva and other bodily fluids.

In June 2002, the Natural Resources Board passed an emergency rule that banned baiting and feeding statewide. The statewide ban expired in April 2003. It was replaced in September 2003 with an emergency rule that banned deer baiting and feeding in 22 Wisconsin counties in which deer had tested positive for CWD or were at risk of contracting the disease because they were located within ten miles of where an animal had tested positive. The rule was effectively extended in April 2004, when the Legislature passed 2003 Wisconsin Act 240 and prohibited feeding deer for hunting or viewing purposes throughout a county if:

- the entire county, or a portion of the county, is in a CWD zone;
- a positive test for CWD or tuberculosis has been confirmed in any captive or free-ranging animal; or

- the entire county, or a portion of the county, is within a ten-mile radius of the known location of an animal that has been tested and confirmed to have either CWD or tuberculosis.

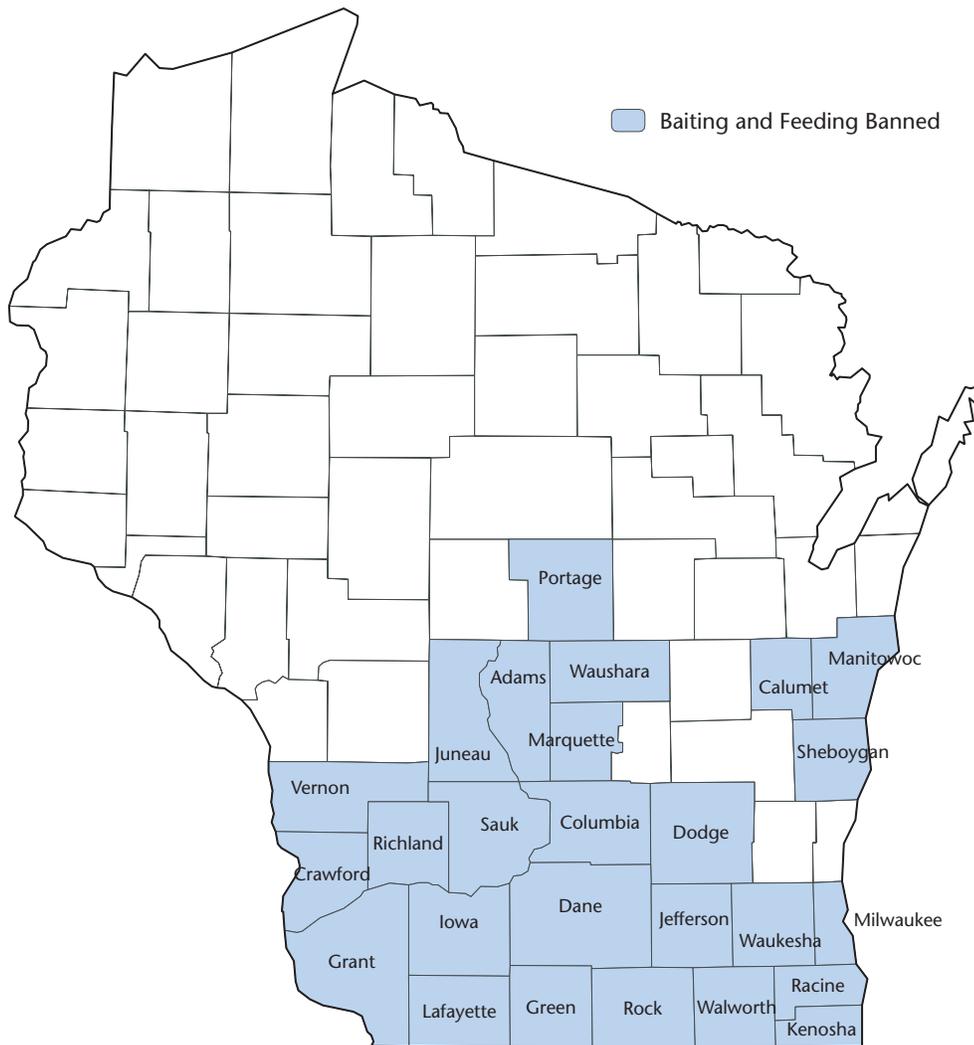
Baiting or feeding in counties that are not included in the ban is restricted to 2 gallons per site.

Baiting and feeding is banned in 26 counties.

Since June 2004, deer baiting and feeding has been banned in 26 counties, which are shown in Figure 6. All are located in the southern half of Wisconsin, and most are part of a CWD zone.

Figure 6

Counties in Which Baiting and Feeding Is Banned



DNR wardens enforce the rules on baiting and feeding, which were the rules most frequently violated during the 2005 hunting season. In general, we found that most hunters and interest groups favor the ban on baiting and feeding in counties where CWD had been identified. However, some researchers are concerned that the ban has not been extended statewide to slow the spread of the disease in areas where CWD has not been identified. Among the seven states we contacted, deer baiting and feeding is banned statewide in Colorado, Illinois, Minnesota, Nebraska, New York, and South Dakota. Michigan uses an approach similar to Wisconsin's to determine the counties in which baiting is banned.

Sharpshooters

DNR uses sharpshooters to remove deer in areas where CWD has been identified.

Beginning in March 2002, DNR used approximately 100 of its own staff to shoot deer in areas where CWD-infected deer have been found. These staff are commonly referred to as sharpshooters. Starting in October 2004, DNR sharpshooters other than wardens were required to attend a three-day training session at a shooting range near Wausau. The session involved training in safety, weapon care, shooting at moving targets, and proper decision-making when there is more than one deer available to shoot.

Initial sharpshooting efforts were concentrated in Iowa and western Dane counties and had the primary purpose of CWD surveillance. During February and March 2003, additional sharpshooting was conducted in Richland and Rock counties, in response to the identification of one CWD-infected deer in Richland County and of CWD in northern Illinois, just across the border from Rock County. As shown in Table 15, DNR sharpshooters shot 2,359 deer through March 2006.

Table 15

Number of Deer Shot by Sharpshooters¹
 March 2002 through March 2006

Time Period	Western Disease Eradication Zone	Eastern Disease Eradication Zone	Herd Reduction Zone	Total
March 2002 through March 2003	721	51	139	911
October 2004 through March 2005	635	107	5	747
January 2006 through March 2006	501	139	61 ²	701
Total	1,857	297	205	2,359

¹ Does not include 102 deer that were trapped.

² Includes 31 deer from state parks.

DNR staff seek landowner permission before sharpshooting on private lands.

Sharpshooters have hunted deer on both public and private land. Section 29.924(5), Wis. Stats., states that DNR may “after making reasonable efforts to notify the owner or occupant, enter private lands to retrieve or diagnose dead or diseased wild animals and take actions reasonably necessary to prevent the spread of contagious disease.” However, DNR staff noted that they always secure permission from landowners before shooting deer on their property. Between October 2004 and March 2005, DNR received permission to shoot deer on 77 properties in the western disease eradication zone and 43 properties in the eastern disease eradication zone. Between January and March 2006, DNR received permission to shoot deer on 87 properties in the western disease eradication zone and 42 properties in the eastern disease eradication zone. Information related to the number of acres of private land within CWD zones to which sharpshooters were allowed access was not readily available.

Although DNR staff initially had the authority to shoot and herd deer using aircraft, they did not do so. This authority expired on June 30, 2004. Using aircraft to herd and shoot deer is currently prohibited under s. 29.307, Wis. Stats.

Through March 2006, 102 deer have been trapped and then killed in the eastern disease eradication zone. In that zone, the location of deer is more fragmented and less dense because of a diverse landscape, and the risk of harming people through sharpshooting is greater than in the western zone.

Since 2004, DNR sharpshooting and trapping have been responsible for 5.2 percent of deer killed in the disease eradication zones.

To understand the effect of sharpshooters in reducing the infected deer population, we compared the number of deer in the disease eradication zones killed by hunters during the 2004 and 2005 hunting seasons and by sharpshooters during and after those seasons. Hunters killed a total of 27,032 deer in the disease eradication zones, while sharpshooters shot 1,382 deer and trapped another 102 deer. However, sharpshooters were more effective at culling CWD-positive deer than hunters, because they focused on shooting deer in areas where infected deer were found. DNR sharpshooting and trapping efforts were responsible for killing 41 of the 322 deer that tested positive for CWD between October 2004 and March 2006, or 12.7 percent, but only 5.2 percent of the deer taken.

Using DNR expenditure information, we calculated the average cost per deer taken by sharpshooting and trapping during the past two fiscal years. The average cost per deer was \$478 between October 2004 and March 2005, and \$768 between January and March 2006. It should be noted that at least \$84,000 of FY 2005-06 expenditures funded equipment that can be used in future seasons, such as night vision scopes. As a result, it is likely that future sharpshooting costs will decrease.

DNR officials believe sharpshooting is an effective tool for managing CWD.

DNR officials believe sharpshooting is an effective tool for managing CWD because sharpshooters can work in areas that have low hunting pressure, areas where CWD is most prevalent, and areas with large deer populations. DNR currently has no plans to discontinue its sharpshooting efforts. However, some hunters and interest groups remain opposed to the use of sharpshooters.

Some hunters are concerned that sharpshooters may be shooting bucks and keeping the antlers for themselves. According to DNR staff, when a sharpshooter shoots a buck that still has its antlers, the antlers are removed. Some sharpshooters bind the pair of antlers together and tag them with the date of the kill and a barcode number used to track the deer, but this has not been done consistently. Antlers may be given to the landowners who want them, but DNR has not tracked the number of instances in which this has occurred.

Sharpshooters reported taking 332 adult bucks from 2004 through 2005.

According to DNR staff, only about one-third of the 332 adult bucks taken by sharpshooters from 2004 through 2005 had antlers, because bucks begin to shed their antlers in late December and sharpshooting efforts continue through March. Among the antlers that DNR staff indicated were taken from deer shot by sharpshooters in the western disease eradication zone, we identified a total of 89 sets. DNR staff responsible for the eastern disease eradication zone reported having an additional 11 sets of antlers from sharpshooting efforts there. We found the number of antlers maintained by DNR to be reasonable considering the number of adult bucks taken, the time of year they were taken, and that some antlers were reported to have been given to landowners.

DNR sharpshooters sometimes bait deer in areas where baiting is otherwise banned.

Some hunters with whom we spoke are concerned about DNR's authority and practice of baiting deer in areas where baiting has otherwise been banned. They contend that baiting was justifiably banned because it can lead to the transmission of CWD when deer congregate at bait piles. DNR staff argue that by drawing the deer into a common area where they can be more easily shot, DNR's baiting allows sharpshooting efforts to be more efficient and effective, and the importance of eliminating more infected deer outweighs the increased risk of spreading the disease through the use of bait. An external review of DNR's CWD management plan released in October 2003 recommended that DNR prohibit baiting and feeding throughout the state and not allow agency personnel to shoot over bait, which sends a mixed message to Wisconsin hunters and erodes support for a statewide ban. However, DNR plans to continue baiting in the 2006 hunting season.

DNR staff also have the authority to shoot deer at night, which is prohibited for other hunters under NR 10.06, Wis. Adm. Code. Some

hunters do not believe it is appropriate for sharpshooters to shoot deer outside of normal hunting hours, but DNR staff assert that because deer are largely nocturnal between January and March, shooting at night is necessary for their efforts to be most effective.

Hunter Incentives

To encourage hunters and landowners to shoot more deer, DNR has provided various incentives that include free carcass tags, monetary rewards, low-cost permits, and a food pantry donation program. In addition, DNR does not limit the number of deer that hunters may shoot in CWD zones.

DNR has provided free carcass tags to hunters and landowners.

Hunters in the CWD zones may receive up to four free tags per day. A tag is required to be placed on the carcass of each deer taken. They were known as special CWD earn-a-buck tags during the 2002 through 2005 hunting seasons, and are known as CWD deer carcass tags for the 2006 hunting season. In addition, landowners in the disease eradication zone were given two free buck tags during the 2003 hunting season to encourage them to shoot deer on their land, and one free buck tag during the 2004 and 2005 hunting seasons. More than one-half of landowners who responded to a survey conducted after the 2003 hunting season indicated that because of the free buck tags, they spent more time hunting than they would have if the tags had not been offered.

During the 2003 hunting season, landowners also received \$200 for each CWD-positive deer shot on their land. The hunters who shot the deer received \$200 as well. Funding was provided under a program known as Focus on Positives, which was operated by Whitetails Unlimited in partnership with DNR. The program was financed through a \$250,000 reward fund that included \$200,000 in DNR funds and \$50,000 from an anonymous donor, and it provided \$43,400 in payments to 218 individuals. Most of the remaining \$206,600 in the reward fund was disbursed through a program called Every Deer Helps, which provided \$20 per deer through a lottery to 9,956 hunters who registered deer in the disease eradication zone. Including administrative expenses such as postage, \$247,600 of the \$250,000 was spent on these incentive programs in 2003.

In the past, DNR provided monetary incentives to hunters and landowners.

During the 2004 hunting season, DNR operated the same programs, disbursing 258 payments of \$200 and 9,726 payments of \$20. Through random drawings, DNR has also provided \$2,000 payments to landowners and \$500 payments to hunters who shot deer in what it referred to as the "Hollandale and Richland County sparks areas." Funding for these programs came from DNR sources,

and after the inclusion of administrative expenses, program expenditures totaled \$270,000 for the 2004 hunting season. During the 2005 hunting season, DNR funded only the Focus on Positives program and provided \$200 payments to 324 hunters and landowners. DNR has decided to discontinue its monetary rewards programs for the 2006 hunting season.

Hunters and interest groups told us that additional monetary rewards probably do not increase the likelihood of more deer being successfully hunted. This is consistent with hunter and landowner surveys conducted by DNR staff after the 2002 and 2003 hunting seasons. For example, after the 2003 hunting season, respondents to a DNR survey of landowners in the western disease eradication zone indicated that increasing the incentive from \$20 to \$50 per deer would not affect their hunting behavior, and about 40 percent were opposed to any monetary incentives for killing deer. Members of some hunting groups told us they believe that monetary incentives are similar to bounties, and many view bounty hunting as unethical.

DNR allows landowners and other hunters in the disease eradication zones to hunt using low-cost permits.

DNR provides special permits for landowners and others who plan to hunt on private lands in the disease eradication zones. The special permits cost \$2. They are valid beginning with the early CWD deer hunting season in October and through the following March. Table 16 shows that the number of special permits issued to landowners increased from 2002 to 2004, and then declined in 2005.

Table 16

Number of Landowner Permits Issued

Year	Number of Permits Issued to Landowners	Additional Permits Issued to Hunters Under the Authority of a Landowner Permit
2002 ¹	1,780	–
2003 ¹	3,409	–
2004	4,084	3,962
2005	3,441	3,553

¹ Data regarding the additional permits issued to hunters under the authority of a landowner permit were not available for 2002 and 2003.

DNR has established a food pantry program in the CWD zones.

Hunter resistance to DNR incentive programs appears due, in part, to a desire not to waste deer meat. The interest groups and hunters with whom we spoke indicated that having the option to donate venison was important. In addition, surveys conducted by DNR after the 2003 hunting season indicated that landowners were more likely to allow hunters on their land if venison could be donated to a food pantry. To address this concern, DNR began a food pantry program in the disease eradication zones in 2004. In 2005, DNR paid meat processors \$70 per deer for venison that was then donated to local food pantries. Before the venison is provided, DNR tests each deer for CWD.

The food pantry program in disease eradication zones supplements another food pantry program operated by counties outside the disease eradication zones, which is partially funded by DNR through wildlife damage surcharges. As shown in Table 17, 1,712 deer from disease eradication zones were donated to food pantries during the 2005 hunting season. Expenditures related to these programs were \$162,000 in FY 2004-05 and \$174,400 in FY 2005-06. During the 2006 hunting season, processors will accept and test deer from both the herd reduction zone and the disease eradication zones.

Table 17

Number of Deer Donated from Disease Eradication Zones

Hunting Season	Deer Donated	Number of Processors Participating
2004	2,286	6
2005	1,712	7



Program Effectiveness ■

To determine the effectiveness of DNR's CWD management strategies, we reviewed trends in the number of deer successfully hunted, deer population estimates, and CWD infection rates. We found that neither the estimated number of deer in CWD zones nor the percentage infected with CWD has declined, and fewer deer have been killed per square mile in the CWD zones.

Number of Deer Successfully Hunted

During the 2002 hunting season, 73,000 fewer deer were killed than in 2001.

A key component of DNR's attempts to address CWD is to reduce deer populations through hunting. As shown in Table 18, the number of deer successfully hunted statewide varies from year to year, based on factors that include weather conditions, the number of individuals hunting, and access to private land. The emergence of CWD has also played a role. For example, during the 2002 hunting season, which was the first hunting season after the identification of CWD in Wisconsin, the hunt total declined by more than 73,000. It has since rebounded, but this rebound appears to have resulted largely from fewer hunters shooting more deer.

Table 18

Number of Deer Successfully Hunted Statewide

Hunting Season ¹	Deer Successfully Hunted	Percentage Change
1996	465,079	–
1997	362,975	(22.0%)
1998	411,519	13.4
1999	497,670	20.9
2000	618,274	24.2
2001	446,957	(27.7)
2002	373,926	(16.3)
2003	486,637	30.1
2004	519,338	6.7
2005	467,923	(9.9)

¹ Beginning in September and ending in January of the following year.

Deer hunting license sales have not returned to pre-CWD levels.

Before CWD was identified in Wisconsin, deer hunting license sales were fairly stable. However, as shown in Table 19, license sales declined 11.9 percent from the 2001 to the 2002 hunting season, and although they have since increased somewhat, they have not returned to pre-CWD levels. License sales are important because DNR relies on revenue from them to fund most of its CWD management efforts.

Because it is most important to reduce the deer populations where CWD has been detected, we analyzed data on the number of deer successfully hunted in the disease eradication zones and the herd reduction zone. As shown in Table 20, the number of deer killed by hunters in these zones increased from 2002 through 2004 but declined in 2005. DNR staff are not certain why this decline occurred, but it reduces the likelihood of slowing the spread of CWD by reducing the deer populations in the CWD zones.

Table 19

Deer Hunting License Sales

Year ¹	Nonresident			Resident			Total	Change from Preceding Year
	Patron ²	Archery	Gun	Patron ²	Archery	Gun		
1996	–	5,862	30,512	43,915	186,338	602,645	869,272	–
1997	2	6,151	30,636	50,043	181,608	591,025	859,465	(1.1%)
1998	1	6,661	32,284	53,891	181,856	582,782	857,475	(0.2)
1999	21	7,555	36,517	67,172	177,567	586,484	875,316	2.1
2000	28	8,581	41,836	77,415	171,978	575,433	875,271	(<0.1)
2001	25	8,460	40,989	81,314	169,821	566,212	866,821	(1.0)
2002	38	6,691	33,166	81,895	138,011	503,846	763,647	(11.9)
2003	38	7,449	35,201	81,076	158,650	528,503	810,917	6.2
2004	393	7,482	33,721	74,427	170,298	541,414	827,735	2.1
2005	548	7,521	34,245	69,854	173,127	537,142	822,437	(0.6)

¹ DNR tracks license sales from March 10 to March 9 of the following year.

² A patron license combines a variety of hunting season privileges, such as fishing, small game, and deer, for a single fee.

Table 20

Deer Successfully Hunted in CWD Zones

Hunting Season ¹	Disease Eradication Zones	Herd Reduction Zone	Total	Percentage Change
2002	9,509	41,777	51,286	–
2003	13,694	53,510	67,204	31.0%
2004	14,918	54,809	69,727	3.8
2005	12,114	52,006	64,120	(8.0)

¹ Beginning in September and ending in January of the following year.

The number of deer successfully hunted per square mile of habitat in CWD zones declined in the past two years.

It is also important to note that the area of deer habitat within the zones has increased from 2,510 square miles in 2002 to 3,682 square miles in 2005, primarily because of the addition of the eastern disease eradication zone. We therefore analyzed the number of deer successfully hunted per square mile of habitat in CWD zones. By this measure, the number of deer successfully hunted in CWD zones has declined in each of the past two years. As shown in Table 21, it had been 23.1 deer per square mile during the 2003 hunting season and was 17.4 deer per square mile during the 2005 hunting season.

Table 21

Deer Successfully Hunted per Square Mile of Habitat in CWD Zones

Hunting Season ¹	Disease Eradication Zones	Herd Reduction Zone	All CWD Zones	Overall Percentage Change
2002	24.4	19.7	20.4	–
2003	19.0	24.5	23.1	13.2%
2004	17.8	20.7	20.0	(13.4)
2005	14.5	18.3	17.4	(13.0)

¹ Beginning in September and ending in January of the following year.

Changes in Deer Populations

DNR uses aerial surveys to estimate the deer population in CWD zones.

For most deer management units, DNR estimates populations using what is known as the “sex-age-kill method.” This method uses the age of bucks successfully hunted and an estimate of the adult buck mortality rate, which is determined by the number of deer legally killed by hunters, to estimate the deer population. DNR staff indicate that for accurate results using this method, buck harvest rates must be stable. Because the earn-a-buck requirements DNR implemented in the CWD zones caused buck harvest rates to fluctuate, the sex-age-kill method cannot be used for the zones. Instead, in 2003 DNR began estimating the deer population in CWD zones by conducting aerial surveys.

How DNR estimates deer populations has historically been the subject of much debate. In March 2005, the Natural Resources Board directed DNR to conduct a review of the sex-age-kill method. A review panel consisting of six experts, including officials from other

state agencies and university scientists from outside of Wisconsin, was selected by a stakeholder committee. The panel anticipates completing a report to the Board in early 2007.

DNR's efforts to reduce the deer population in CWD zones have not been effective.

In addition, DNR staff believe that deer population estimates for 2002 cannot be compared with later years because of changes in methodology. However, these estimates represent the only available data on deer populations in Wisconsin. Therefore, we used them in our analyses. Based on these data, efforts to reduce the deer population in CWD zones have not been effective. As shown in Table 22, the estimated number of deer in the CWD zones increased from 26.4 per square mile in 2002 to 38.3 per square mile in 2005, which is the greatest density since the identification of CWD in Wisconsin. Moreover, the deer population has never come close to meeting DNR's current population goals of less than 5.0 deer per square mile in the disease eradication zones and 10.0 deer per square mile in the herd reduction zone. DNR staff note that changes in deer population estimates from 2002 through 2005 are statistically insignificant. Therefore, they believe that the number of deer in CWD zones has not changed.

Table 22

Deer Population Estimates per Square Mile

	Pre-hunt Population per Square Mile	Post-hunt Population per Square Mile	Percentage Change
CWD Zones¹			
2002	49.2	26.4	(46.3%)
2003	59.9	33.3	(44.4)
2004	56.5	33.8	(40.2)
2005	58.1	38.3	(34.1)
Balance of State			
2002	36.5	25.5	(30.1)
2003	45.1	30.6	(32.2)
2004	44.3	28.5	(35.7)
2005	43.4	29.2	(32.7)

¹ CWD zones were first established for the 2002 hunting season. Between the 2002 and 2005 hunting seasons, the size of CWD zones increased from 2,510 to 3,682 square miles.

Regardless of whether the number of deer has increased or remained unchanged, the number of deer in the CWD zones has raised concerns that the incidence of CWD will increase because it will be easily spread as a result of high deer concentrations.

Determining the Prevalence of CWD

It is possible that DNR's efforts to target infected deer could have reduced the prevalence of CWD infection, even though its efforts to reduce the number of deer within the CWD zones have not been effective. To determine whether that occurred, we analyzed available data on changes in the percentage of tested deer that were infected with CWD.

More than 1.0 percent of tested deer from Dane and Iowa counties were infected with CWD.

As shown in Table 23, from November 2001 through June 2006, DNR tested 99,917 deer for CWD and found 651 to be infected, including 590 taken in Iowa and Dane counties. These were the only two counties with CWD infection rates of 1.0 percent or more.

To determine how CWD infection rates have changed over time, DNR has identified a 210-square-mile area in the western disease eradication zone that it refers to as the "core area," because it is where the majority of infected deer have been found. DNR uses this area to monitor infection rates. We analyzed DNR's testing results for the core area from the 2002 through the 2005 hunting seasons. Deer killed outside the hunting seasons are not included because most were shot by sharpshooters, who generally target areas that have a higher than average prevalence of CWD.

The infection rate among deer tested in the core area has increased from 3.1 percent in 2002 to 5.4 percent in 2005.

As shown in Table 24, we found that the percentage of deer infected with CWD in the core area increased each year from 2002 through 2005. DNR staff believe that when differences in the age and sex of the deer tested are accounted for, there has been no significant increase in the percentage of deer infected, largely because more male deer were tested and research suggests that they are more likely to have CWD. However, regardless of whether the percentage of infected deer has increased or remained unchanged, DNR's efforts to reduce the prevalence of CWD have not been effective.

Table 23

Infection Rates
November 2001 through June 2006

Area	Number of Deer Tested	Number that Tested Positive for CWD	Percentage that Tested Positive
Western CWD Zone Counties			
Iowa	23,672	381	1.6%
Dane	15,378	209	1.4
Lafayette	1,349	6	0.4
Sauk	6,719	7	0.1
Columbia	2,282	3	0.1
Richland	4,563	3	0.1
Green	1,623	2	0.1
Subtotal	55,586	611	1.1
Eastern CWD Zone Counties			
Walworth	3,288	20	0.6
Rock	3,300	17	0.5
Jefferson	3,514	2	0.1
Kenosha	659	1	0.2
Subtotal	10,761	40	0.4
Balance of State	33,570	0	0.0
Total	99,917	651	0.7

Table 24

CWD Infection Rates in the Core Area

Hunting Season ¹	Deer that Tested Positive for CWD	Male Deer Tested	Female Deer Tested	Total Deer Tested	Percentage Infected with CWD
2002	106	1,724	1,749	3,473	3.1%
2003	72	1,006	871	1,877	3.8
2004	72	878	905	1,783	4.0
2005	79	845	623	1,468	5.4

¹ Beginning in September and ending in January of the following year.

Types of Deer and Farms
Expenditures and Staffing
Regulation of Deer Farms
Deer Imports and Exports
Herd Destruction and Indemnity Payments
Farm Inspections and Investigations
Oversight of Meat Processing

Farm-Raised Deer ■

DATCP regulates deer farms in Wisconsin and establishes import regulations, enforces quarantines, inspects deer processed for food, and oversees the destruction of deer exposed to CWD. We reviewed its CWD-related expenditures and staffing, as well as its regulatory programs and efforts to control CWD through quarantines, inspections and investigations, and oversight of meat processing. Through FY 2005-06, DATCP spent \$3.0 million on CWD efforts. To date, 95 farm-raised deer and elk have tested positive for CWD, and DATCP has paid farm owners \$242,300 in compensation for farm-raised deer that were destroyed.

Types of Deer and Farms

The majority of farm-raised deer in Wisconsin are white-tailed.

As shown in Table 25, a variety of species such as white-tailed deer, elk, and exotics such as sika and reindeer are raised on Wisconsin's deer farms. White-tailed deer are the most prevalent, but the number of farms that raise them decreased from 639 in 2002, before CWD was identified in Wisconsin's farm-raised deer population, to 371 in 2006. Because of problems in implementing a new database, DATCP could not determine the number of species by farm in each year since it assumed responsibility for white-tailed deer farm regulation in 2003.

Table 25

Farm-Raised Deer Species
June 30, 2006

Species	Number of Deer	Number of Farms ¹
White-tailed	13,536	371
Elk	5,677	208
Red	1,867	25
Fallow	643	30
Sika	213	12
Reindeer	122	17
Other	51	8
Total	22,109	

¹ Some farms raise more than one type of deer and therefore are included in more than one category.

Farm owners may raise deer to keep as part of a hunting preserve or in order to sell semen or breeding stock, venison, or other deer products such as antler velvet. Some owners concentrate on one of these activities, while others perform several on a single farm. Many deer farms are run as full-time businesses, while others are operated as part-time or hobby ventures.

In July 2006, there were 50 deer hunting preserves in Wisconsin.

Data do not exist on how many deer farms are used for each specific purpose. However as of July 2006, DATCP had certified 50 hunting preserves in Wisconsin. Hunting preserves are typically designed to simulate hunting in the wild; the deer roam freely and may reproduce naturally. Before the enactment of 2001 Wisconsin Act 56, any deer farm at least 10 acres or larger could operate as a hunting preserve. Act 56 changed this requirement to at least 80 acres. Subsequently, 2005 Wisconsin Act 359 allowed white-tailed hunting preserves smaller than 80 acres to be grandfathered into certification if they held a valid deer farm license issued by DNR on December 31, 2002.

Expenditures and Staffing

71 percent of DATCP's CWD expenditures were for staffing.

As shown in Table 26, DATCP spent \$3.0 million to address CWD from FY 2001-02 through FY 2005-06, primarily for the salaries and fringe benefits of staff who establish and enforce farm-raised deer regulations. DATCP's CWD expenditures peaked at \$868,500 in

FY 2002-03, largely as a result of initial efforts to determine an appropriate response to CWD and implement new regulations. The increase in the past two fiscal years resulted primarily from the disbursement of USDA grant funds for activities such as reimbursing farm owners for 50 percent of the cost of erecting double fencing.

Table 26
DATCP Expenditures for CWD

	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total
Staffing						
Permanent Staff Salaries	\$188,100	\$475,400	\$196,100	\$372,000	\$245,300	\$1,476,900
Fringe Benefits	76,900	196,400	85,700	145,600	94,300	598,900
LTE Salaries	0	24,500	20,700	17,800	14,800	77,800
Subtotal	265,000	696,300	302,500	535,400	354,400	2,153,600
Supplies and Services						
Professional Services ¹	0	2,700	4,100	72,400	264,300	343,500
Indemnity Payments ²	0	141,200	26,100	22,900	52,100	242,300
Travel	6,500	24,300	20,000	19,300	22,900	93,000
Materials and Supplies	0	200	900	2,200	45,800	49,100
Other	0	3,800	1,800	400	21,400	27,400
Equipment Acquisition and Maintenance	0	0	0	7,600	1,100	8,700
Building, Maintenance, and Utilities	0	0	100	600	1,300	2,000
Subtotal	6,500	172,200	53,000	125,400	408,900	766,000
Allocated Costs³	0	0	0	32,600	78,400	111,000
Total	\$271,500	\$868,500	\$355,500	\$693,400	\$841,700	\$3,030,600

¹ Includes funds provided to deer farm owners for installation of double fencing and animal identification, such as microchips, and to veterinarians for CWD sampling. These services were paid with federal USDA grant funds.

² Represents amounts paid to deer farm owners for deer that were killed under a CWD-related quarantine.

³ Allocated costs represent administrative staffing and supplies expenditures charged to federal grants.

Indemnity payments are made when DATCP reimburses farm owners for deer that have been killed under a CWD-related quarantine. Sections 95.23(1m)(b) and 95.31(3), Wis. Stats., require DATCP to pay farm owners two-thirds of the difference between a deer's appraised value and its net salvage value, up to \$1,500. Travel expenditures through FY 2005-06 included \$73,000 for in-state travel related to activities such as site inspections and enforcement.

In December 2002, the Joint Committee on Finance authorized 7.0 FTE staff to enable DATCP to perform more timely work on CWD issues. These positions were also intended to serve as general staff in DATCP's Division of Animal Health. As of June 2006, a total of 17.0 FTE staff in the Division of Animal Health were assigned to work on a variety of issues, including CWD:

- 10.0 FTE animal health inspectors are assigned to specific areas of the state to inspect animal facilities and their records for compliance with laws and regulations, and to assist individuals in obtaining appropriate licenses;
- 4.0 FTE animal health consultants conduct statewide fieldwork, including performing investigations and educating farm owners about animal health issues;
- 2.0 FTE compliance officers supervise the inspectors and consultants; and
- 1.0 FTE veterinary program manager is responsible for statewide efforts to prevent and control animal diseases, including a specific assignment to dedicate 25 percent of his time to CWD monitoring and eradication.

In FY 2005-06, DATCP dedicated 3.9 FTE staff to CWD-related work.

Table 27 shows the estimated FTE positions that DATCP dedicated to CWD efforts from FY 2001-02 through FY 2005-06. The number peaked at 7.0 FTE staff in FY 2002-03, when DATCP began its enhanced oversight of elk and exotic deer and began regulating white-tailed deer.

Table 27

DATCP Staff Performing CWD Activities

	Farm Regulation/ Animal Health ¹	Food Safety	Agriculture Resource Management ²	Office of the Secretary	Total
FY 2001-02	2.1	0.1	0.1	0.9	3.2
FY 2002-03	4.4	0.2	–	2.4	7.0
FY 2003-04	3.1	–	–	0.5	3.6
FY 2004-05	4.1	–	–	1.4	5.5
FY 2005-06	3.4	–	–	0.5	3.9

¹ FTE positions responsible for protecting the health of farm animals. CWD efforts include enforcing general regulations related to farm-raised deer.

² FTE positions responsible for protecting environmental resources and human health. CWD-related work includes providing information to farm owners and animal feed plant operators about the ban on ruminant products in animal feed, which was established in federal regulations in 1997.

Regulation of Deer Farms

DATCP began regulating white-tailed deer in January 2003.

DATCP has been responsible for the regulation of elk and exotic deer farms, including issuing registrations and monitoring movement, since 1995. Before 2003, farm-raised white-tailed deer were regulated by DNR. However, under 2001 Wisconsin Act 56, which was enacted less than two months after CWD was first identified in Wisconsin, DATCP was directed to regulate farm-raised white-tailed deer beginning January 1, 2003. DNR remains responsible for regulating farm fencing for white-tailed deer, while statutes establish farm fencing requirements for all other types of deer. Through a memorandum of understanding with DATCP, DNR responds to reports of escaped deer of all types.

DATCP adopted emergency rules to address CWD in April 2002 that were made permanent on June 1, 2003, and expanded in September 2004. These rules:

- require farm owners to register with DATCP and to notify a veterinarian if any of their deer have symptoms of CWD;
- require CWD tests to be performed and results to be reported to DATCP for each farm-raised deer at least 16 months of age that dies or is killed;

- place restrictions on which farm-raised deer can be imported into or sold within Wisconsin; and
- require DATCP to quarantine farms on which a deer has tested positive for CWD and authorize DATCP to condemn the herd and order the animals destroyed.

Both DATCP and DNR charge fees to help fund regulatory efforts for farm-raised deer. For example, DNR charges a \$50 fee for issuing white-tailed deer fence certificates for farms under 80 acres, and a \$100 fee for farms 80 acres or larger. These certificates are valid for approximately 10 years and must be obtained before DATCP will issue a registration certificate for owners to legally operate their farms. DATCP charges owners a \$50 annual registration fee if the farm has 15 deer or less, and a \$100 annual registration fee if the farm has more than 15 deer. In addition, farm owners who sell, grant, or offer the opportunity to hunt farm-raised deer on their land are required to obtain a \$150 hunting preserve certificate from DATCP, which is also valid for 10 years.

DNR develops and enforces fencing requirements for white-tailed deer farms.

DNR adopted administrative rules that increased the required height of white-tailed fencing by two inches in October 2003. Fences currently must be at least eight-feet high and made of durable material such as a heavy-gauge wire. Neither DATCP nor DNR regulates fencing for other species. However, s. 90.20, Wis. Stats., requires fences for most farm-raised deer other than white-tailed deer to be at least 7 feet 10 inches high and made of durable material such as a heavy-gauge wire. Fencing for reindeer can be as low as 5 feet, because they do not typically jump as high as other deer.

Farm Registration

All deer farms must complete their fencing and register with DATCP before beginning operations. Farm registration enables DATCP both to track the number of farms it regulates and to collect data about each farm. DATCP requires each applicant to provide information on the farm's location and the number of animals by species, age, and sex, and to update this information annually. In addition, DATCP requires all registered deer farm owners to:

- notify a veterinarian within 24 hours if the owner notices any deer with symptoms of CWD;
- maintain complete records of animals entering or leaving the herd;

- report any escapes to DATCP within 48 hours; and
- attach identification to every deer before it leaves the farm, for example with an ear tag that has a unique number.

CWD Testing

A total of 95 farm-raised Wisconsin deer have tested positive for CWD.

As noted, CWD testing is required for all farm-raised deer that are 16 months or older when they die. Although deer may contract CWD at a young age, it takes a number of months before prions can be detectable using current testing methods. Typically, the owner’s local veterinarian collects the tissue sample and sends it to a laboratory approved by USDA for testing. As shown in Table 28, through June 2006, a total of 14,654 farm-raised Wisconsin deer were tested for CWD. Of that number, 95 deer, or 0.6 percent, have tested positive for CWD. All 65 positive results in FY 2005-06 come from a single quarantined Portage County farm.

Table 28

CWD Testing in Farm-Raised Deer

	Number of Deer Tested	Number with Positive Test Results	Percentage with Positive Test Results
FY 2001-02	331	0	0.0%
FY 2002-03	3,298	8	0.2
FY 2003-04	4,352	8	0.2
FY 2004-05	3,747	14	0.4
FY 2005-06	2,926	65	2.2
Total	14,654	95	0.6%

Restrictions on Deer Sales

Farm owners must enroll in DATCP’s monitoring program to sell deer in Wisconsin.

DATCP requires the herd of any owner who wishes to sell live deer to another Wisconsin deer farm to be enrolled in its CWD monitoring program, which is a supplement to mandatory CWD testing. The monitoring program places additional requirements on farm owners to track their herds for signs of CWD, including

attaching individual identification to each deer that is at least one year of age and providing the identification numbers to DATCP. Owners must also provide DATCP with a written statement from a veterinarian certifying that no member of the herd has shown signs or symptoms of CWD during the previous 12 months. Once a herd is enrolled in the program, the owner must continue to demonstrate compliance with enrollment requirements annually.

Since its inception in 2002, the program's requirements have increased each year, so that in 2006, a herd must have been enrolled for at least three years before deer can be transported to another farm. As of June 30, 2006, 504 of the 611 deer farms in Wisconsin were enrolled in DATCP's monitoring program.

Farm-raised deer purchased from another state must have been enrolled in a comparable CWD monitoring program in their home state. In 2006, the out-of-state herd must have been enrolled for a minimum of three years, and a veterinarian must certify that there have been no signs or symptoms of CWD in it during the past five years.

White-tailed deer farmers who opt not to enroll in DATCP's monitoring program, such as hunting preserve owners who do not plan to transport live deer off of their farms, are subject to additional requirements established by DNR. White-tailed farms that are less than 80 acres and do not participate in the monitoring program must install either:

- double fencing, with each fence at least 8 feet high and between 8 and 16 feet apart; or
- solid fencing, which must be at least 8 feet high, with the bottom 7 feet covered in material that prevents visual and physical contact with the other side, and with a strand of electrified wire at a height of 3 feet placed 2 feet from the solid fence.

Owners of white-tailed farms that are 80 acres or more have three options: enrolling in DATCP's monitoring program, installing double or solid fencing, or establishing a farm harvest plan. To ensure that an adequate number of deer are tested for CWD, farm harvest plans require a minimum of 10 percent of deer older than two years to be tested for CWD in each of three consecutive years following enrollment, and a minimum of 5 percent of deer each year thereafter. Test results must be reported to DNR annually. As of June 2006, 17 farm owners had installed double or solid fencing, and 64 had enrolled in the farm harvest plan.

Quarantine and Condemnation Orders

DATCP has issued 43 deer farm quarantines to control the spread of CWD.

When a farm-raised deer tests positive for CWD, administrative rules require DATCP to quarantine the herd so that no live deer may leave the farm. DATCP also has the authority to issue quarantines for farms from which a CWD-positive deer originated and those that may have been exposed to CWD, either through contact with deer from a farm at which the disease was identified or by virtue of their location in a CWD zone designated by DNR. Through June 2006, DATCP issued CWD-related quarantines for 43 deer farms, 10 of which were in the disease eradication zone.

Sections 95.23(1m) and 95.31(1), Wis. Stats., allow DATCP to conduct surveillance testing for CWD, which currently requires animals to be killed, and to condemn and slaughter or destroy animals that have been infected with, or exposed to, CWD if doing so is necessary to prevent or control the spread of the disease. At 17 of the 43 farms placed under quarantine, deer herds have been destroyed. In each of these cases, the farm owner consented to the process. If an owner does not consent, DATCP could maintain a quarantine order for an indefinite period of time. Officials indicated that such an order would not be released until the State Veterinarian, who is a DATCP employee, is satisfied the herd is healthy.

Escaped Deer

DNR staff respond to reports of escaped deer.

Administrative rules require all farm-raised deer escapes to be reported to DATCP within 48 hours, and white-tailed deer escapes to be reported to DNR within 24 hours. Under the terms of a memorandum of understanding between the two agencies, DATCP is to promptly notify DNR when a farm-raised deer has escaped, and DNR staff are to determine an appropriate course of action based on their assessment of the disease risk posed by the escaped animal or animals. Action taken by DNR staff ranges from giving the owner time to recover the animals to killing the escaped deer. Section 29.875, Wis. Stats., authorizes DNR to seize and dispose of an escaped deer if the animal travels more than three miles, does not return within 24 hours, or is a threat to either public safety or the health of other animals.

DNR staff estimate that only half of the deer that escape from farms are recovered.

Some farm owners indicated that the majority of escaped deer return within 24 hours, typically seeking food, but DNR staff estimate that only half of escaped deer are ever recovered. From April 2003 through June 2006, deer farmers and other witnesses reported to DNR that at least 525 deer had escaped. The reports identified escapes from 98 farms, and 36 reported escapes were from unknown locations. Typical causes of escapes included fence gates left open or damaged fences.

Deer Imports and Exports

Over the past five fiscal years, the number of deer imported into Wisconsin decreased 90.9 percent.

As shown in Table 29, the number of deer imported into Wisconsin declined substantially since FY 2001-02. The primary reason is DATCP's stricter regulations on deer movement. Since April 2002, all deer imported into Wisconsin must be from herds enrolled in a CWD monitoring program.

Table 29

Imports to Wisconsin Deer Farms

Species	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Percentage Change
Elk	263	85	5	13	5	(98.1%)
White-tailed	66	10	38	16	25	(62.1)
Fallow	3	0	37	0	0	(100.0)
Reindeer	18	2	0	0	2	(88.9)
Chinese Water	2	0	0	0	0	(100.0)
Total	352	97	80	29	32	(90.9)

From FY 2001-02 through FY 2005-06, deer were imported from 17 states and Canada, as shown in Table 30: 70.0 percent of all imports, or 413 deer, were from states in which CWD has been detected in either captive or free-ranging populations or from Canada, where it has been detected in two provinces.

Table 30

Source of Wisconsin Deer Imports
FY 2001-02 through FY 2005-06

Location	Total
Minnesota ¹	251
Canada ²	91
Iowa	61
New York ¹	37
Ohio	33
Michigan	25
Pennsylvania	19
Illinois ¹	16
North Dakota	16
Indiana	14
Oklahoma ¹	6
Missouri	6
Colorado ¹	5
New Mexico ¹	5
South Dakota ¹	2
Texas	1
Louisiana	1
Oregon	1
Total	590

¹ CWD has been detected in either captive or wild deer.

² CWD has been detected in the provinces of Alberta and Saskatchewan.

Like deer imports, deer exports from Wisconsin have also declined, as shown in Table 31. Deer farm owners attribute the change to apprehension by farmers in other states about the potential spread of CWD from Wisconsin deer.

Table 31

Exports from Wisconsin Deer Farms

Species	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Percentage Change
Elk	132	151	251	166	62	(53.0%)
White-tailed	312	25	70	136	136	(56.4)
Fallow	42	72	79	54	7	(83.3)
Red	47	37	60	43	24	(48.9)
Reindeer	49	16	5	15	31	(36.7)
Chinese Water	4	0	5	7	0	(100.0)
Total	586	301	470	421	260	(55.6)

Over the past five fiscal years, the number of deer sold within Wisconsin increased 268.0 percent.

Although deer imports and exports both declined from FY 2001-02 through FY 2005-06, the number of deer sold within the state increased 268.0 percent, as shown in Table 32. In-state sales of white-tailed deer increased 885.3 percent.

Table 32

Farm-raised Deer Sold within Wisconsin

Species	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Percentage Change
White-tailed	116	704	676	933	1,143	885.3%
Elk	254	290	318	188	170	(33.1)
Red	13	56	33	48	67	415.4
Reindeer	10	39	30	42	34	240.0
Fallow	10	3	38	32	21	110.0
Sika	0	0	9	2	1	–
Muntjac	0	7	0	0	0	–
Mule	0	0	0	0	2	–
Unknown	0	115	135	8	45	–
Total	403	1,214	1,239	1,253	1,483	268.0

Herd Destruction and Indemnity Payments

Deer on 17 farms have been destroyed to control CWD.

As noted, deer from farms that are placed under a CWD-related quarantine may be destroyed to ensure that CWD does not spread. From FY 2001-02 through FY 2005-06, 687 animals were destroyed on 17 farms that were under quarantine for a variety of reasons:

- 5 because the farm was located inside a CWD zone;
- 5 as a result of exposure to CWD, including 3 farms on which only selected animals were killed;
- 4 because a deer from the herd tested positive for CWD; and
- 3 because they were identified as part of the source herd of a CWD-infected animal.

As shown in Table 33, 380 of the animals destroyed were white-tailed deer and 228 were elk, which are the only types of deer in Wisconsin to have confirmed cases of CWD.

Table 33

Animals Destroyed Because of CWD

Species	FY 2001-02	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total
White-tailed	–	125	26	109	120	380
Elk	–	197	–	31	–	228
Fallow	–	–	51	–	–	51
Red	–	–	–	–	28	28
Total	–	322	77	140	148	687

All farmers who voluntarily have their deer destroyed because of CWD are eligible for federal indemnity payments provided by USDA and for state indemnity payments provided by DATCP under s. 95.23(1m)(b) and s. 95.31(3), Wis. Stats. Federal indemnity payments are limited to 95 percent of a deer’s appraised value, up to a maximum of \$3,000. State indemnity payments based on a deer’s appraised value may not exceed \$1,500.

Nine of the 17 farm owners received federal indemnity payments, which totaled \$649,300 for 443 deer through FY 2005-06 and averaged \$1,500 per deer. All received state indemnity payments. When a federal indemnity payment has been applied for, the state payment cannot exceed 5 percent of a deer's appraised value, so that the total paid cannot be more than the value of the deer.

In the past five fiscal years, DATCP's indemnity payments to 17 farm owners totaled \$242,300 for 687 deer and averaged \$400 per deer. Indemnity payments peaked at \$141,200 in FY 2002-03, when 322 deer were destroyed.

In response to concerns that even the combination of federal and state funding may not fully reimburse losses, 2005 Wisconsin Act 25 provided DATCP with additional authority to reimburse deer farm owners for costs incurred for animal destruction, including disposal, transportation, and storage. DATCP officials noted they had not yet paid any additional amounts under this provision through FY 2005-2006, but farm owners may have been reimbursed for these expenses by USDA.

Cases of CWD have been confirmed on seven farms in Wisconsin.

CWD was confirmed in 95 deer on 7 of the 17 farms at which animals were destroyed. Table 34 shows the number of animals on each farm that tested positive for CWD, when each quarantine began, and when each herd was destroyed. The farm that had the most cases of CWD, Farm A in Portage County, was also the farm with the longest period between the date of quarantine and the herd's destruction, which was delayed while the farm owner filed an administrative appeal with DATCP and a civil lawsuit. These cases were dismissed after the owner voluntarily agreed in November 2005 to have the herd destroyed.

Table 34

Time between Quarantine and Herd Destruction

	Number of CWD-Positive Animals	Date of Quarantine	Date Herd Destruction Completed ¹	Elapsed Time (Days)
Farm A, Portage County ²	82	September 18, 2002	January 17, 2006	1,217
Farm B, Walworth County ³	6	September 18, 2002	December 11, 2002	84
Farm C, Walworth County ⁴	3	September 18, 2002	November 3, 2004	777
Farm D, Manitowoc County ³	1	September 24, 2002	May 20, 2003	238
Farm E, Sauk County ²	1	October 14, 2003	November 4, 2003	21
Farm F, Racine County ²	1	May 22, 2004	June 10, 2004	19
Farm G, Crawford County ^{2, 5}	1	January 7, 2005	–	–

¹ Some herds were destroyed in stages over a period of time.
² Quarantine issued following identification of CWD-infected deer through routine testing.
³ Quarantine issued following exposure of herd to a CWD-positive animal.
⁴ Quarantine issued following identification of herd as the source of a CWD-positive animal.
⁵ This farm owner has filed a civil lawsuit against DATCP contending there is no evidence the CWD-positive sample is from the owner's farm.

Farm Inspections and Investigations

As part of ongoing efforts to regulate deer farms and control the spread of CWD, DATCP staff conduct:

- inspections, which include routine record-keeping checks and examining farm fencing; and
- investigations, which include determining whether deer farm owners are complying with registration, movement, and CWD testing requirements.

DATCP staff have completed 539 deer farm inspections.

From 2002 through September 2006, DATCP reported completing 539 inspections and 320 investigations. In addition, DATCP staff conducted site visits to farms on which deer were destroyed as a result of DATCP actions. Of the 58 site visits from 2002 through September 2006, 6 were to provide 24-hour oversight while herds were destroyed, 23 were to clean and disinfect the area from which deer had been destroyed, and 29 were to inspect fencing after herd destruction.

Farm owners are required to maintain fencing around an area from which deer have been destroyed for up to five years, so that free-ranging deer are not exposed to potential contamination. They are also restricted from introducing any new farm-raised deer into the area. While some restrictions last only one year, such as when a site is “minimally contaminated,” other owners have agreed to permanent restrictions on raising deer on their property.

Oversight of Meat Processing

Venison may be legally processed without inspection, but it must be inspected if it is sold.

Some deer species, such as elk and red deer, are raised for venison, and DATCP regulates meat processing in Wisconsin that is not regulated by the federal government. Federal regulations governing meat processing for human consumption do not include venison, unless it is combined with meat from other animals or sold in another state. Under administrative rules promulgated by DATCP before the identification of CWD in Wisconsin:

- Venison may be processed by anyone, including hunters who process their own deer. This type of processing is not regulated, and the meat may be consumed only by the owner, his or her family, and guests. It may not be sold.
- Venison may be processed without inspection by establishments that are licensed by DATCP. Administrative rules governing general sanitary standards must be followed, and the meat must bear a “Not for Sale” label. It may be consumed only by the owner, his or her family, and guests.
- Farm-raised venison may be processed and inspected at licensed establishments by DATCP’s meat inspectors. Venison processed in this manner may be labeled “WIS. DEPT. AGR. INSPECTED” and sold commercially within the state.

The majority of venison is processed without inspection, but since 2002, DATCP has provided information in brochures and on its Web site concerning precautions for handling and processing venison. They include wearing gloves and minimizing contact with brain and spinal cord tissue, because prions are known to accumulate in these areas.

The number of deer inspected for meat processing has more than doubled.

As of June 2006, 300 state-licensed meat establishments could process inspected venison. As shown in Table 35, the number of deer inspected by DATCP staff and processed by these facilities has declined in the past two years, although the number of deer processed and inspected at licensed establishments more than doubled since CWD was identified in Wisconsin.

Table 35

Number of Deer Processed with Wisconsin Inspection

Federal Fiscal Year	Number of Deer Inspected	Percentage Change
2000-01	383	–
2001-02	622	62.4%
2002-03	1,296	108.4
2003-04	1,122	(13.4)
2004-05	922	(17.8)

It should be noted that DATCP inspectors address food safety issues, but DATCP’s testing for CWD is intended to manage the disease in the farm-raised deer population rather than to provide a guarantee that venison is free of the disease. Officials note that the test for CWD is not a food safety test; however, they are unaware of any cases in which venison from a CWD-positive deer has been sold.



CWD Testing and Disposal ■

The Veterinary Diagnostic Laboratory performs CWD tests and operates a tissue digester.

Since FY 2002-03, the Wisconsin Veterinary Diagnostic Laboratory, which is part of the University of Wisconsin-Madison, has tested deer tissue samples for CWD, and it operates a tissue digester that destroys prions. Before the Diagnostic Laboratory began conducting tests, testing had been conducted by USDA's National Veterinary Services Laboratories in Ames, Iowa. We reviewed the Diagnostic Laboratory's CWD-related expenditures and staffing and its testing and tissue disposal activities.

Expenditures and Staffing

Most Diagnostic Laboratory expenditures are for supplies associated with CWD testing.

The Diagnostic Laboratory first incurred expenditures related to CWD in FY 2002-03. As shown in Table 36, these expenditures through FY 2005-06 totaled \$2.3 million and were primarily for supplies and services rather than staff. Through FY 2005-06, the Diagnostic Laboratory spent \$909,200 for testing supplies and \$183,000 to operate the tissue digester.

Table 36

Diagnostic Laboratory Expenditures for CWD

	FY 2002-03	FY 2003-04	FY 2004-05	FY 2005-06	Total
Staffing					
Permanent Staff Salaries	\$156,700	\$ 80,000	\$146,400	\$175,000	\$ 558,100
Fringe Benefits	49,100	26,200	46,300	54,100	175,700
LTE Salaries	56,400	40,200	19,100	26,000	141,700
Subtotal	262,200	146,400	211,800	255,100	875,500
Supplies and Services					
Materials and Supplies	67,400	179,400	323,000	339,400	909,200
Building, Maintenance, and Utilities	203,100	0	0	100	203,200
Tissue Digester ¹	0	50,300	74,200	58,500	183,000
Equipment Acquisition and Maintenance	153,300	0	0	0	153,300
Professional Services	3,800	900	2,500	5,000	12,200
Travel	5,300	1,100	800	600	7,800
Other	0	200	200	200	600
Subtotal	432,900	231,900	400,700	403,800	1,469,300
Total	\$695,100	\$378,300	\$612,500	\$658,900	\$2,344,800

¹ Includes costs to operate the digester, including supplies, electricity, and sewage service, which are estimated based on the amount of CWD-related tissue digested.

In FY 2005-06, staffing costs included salary and fringe benefits for 5.8 FTE microbiologists who prepare samples and run tests, veterinarians who analyze test results, and custodial staff who run the tissue digester. During the peak hunting season, when the majority of samples are submitted, LTEs are hired to prepare sample vials and slides for testing.

In FY 2002-03, a 2,160-square-foot heated garage was built adjacent to the Diagnostic Laboratory to house the digester. Because the digester was to be used primarily to dispose of CWD-related waste, the facility's cost of \$354,000 was shared:

- \$143,800 was paid by the Diagnostic Laboratory;
- \$76,400 was paid by DNR;
- \$76,400 was paid by DATCP; and
- \$57,400 was paid by the University of Wisconsin's Building Trust Fund.

Testing Process

Initially, the Diagnostic Laboratory used an Immunohistochemistry, or IHC, test for all deer samples. This test is still used for all farm-raised deer and may be requested by individual hunters through veterinarians. The Diagnostic Laboratory is currently paid \$25 per sample for the IHC test. Funding for tests on farm-raised deer is provided by USDA. After samples are prepared and placed on slides, results can be interpreted by a veterinarian in several days. Positive results are reviewed by USDA's National Veterinary Services Laboratories.

Since FY 2003-04, a different test for CWD has been performed on tissue from free-ranging deer submitted by DNR during the deer hunting season. This test, known as a screening test, requires as little as one day for results but is less reliable than the IHC test. Therefore, all positive screening test results must be confirmed by the Diagnostic Laboratory using the IHC test before deer are declared CWD-positive. DNR pays the Diagnostic Laboratory \$18.50 per screening test, primarily with funds from the Fish and Wildlife account.

DNR provided samples for more than 90 percent of tests performed.

As shown in Table 37, DNR provided samples for more than 90 percent of the 102,960 CWD tests performed by the Diagnostic Laboratory through July 2006.

Table 37

CWD Tests Completed by the Diagnostic Laboratory¹
July 2002 through July 2006

Source of Sample	IHC Test	Screening Test	Total
DNR	43,781	51,833	95,614
Deer Farm	7,233	–	7,233
Hunter ²	113	–	113
Total	51,127	51,833	102,960

¹ Does not include tests that are repeated for the same deer.

² Submitted at the request of a hunter by a veterinarian.

Concerns have been raised about the time required to obtain CWD testing results. Diagnostic Laboratory staff have noted that during the hunting season, when hundreds of samples arrive daily, a backlog of tests develops. For hunters, there are meat storage implications.

Both the number of tests conducted and average reporting times have increased.

We reviewed DNR and Diagnostic Laboratory data to determine how long it takes for tests to be completed during the traditional nine-day gun hunting season and during an off-season period. When a hunter submits a deer to DNR for sampling, DNR staff require some time to extract tissue and deliver it to the Diagnostic Laboratory, and data were not available for this period. However, as shown in Table 38, we found that during the nine-day regular gun season, both the number of tests and average reporting time increased in each year. In November 2005, it took an average of 51.8 days from when a deer was killed for test results to be reported to DNR. In 2003, results were available in an average of 26.6 days.

Table 38

Reporting Time for Free-Ranging CWD Tests

Period	Average Number of Days ¹	Number of Tests
November Nine-Day Gun Deer Season		
2003	26.6	6,057
2004	46.6	6,129
2005	51.8	11,746
Off-Season		
May 2004	24.9	7
May 2005	38.3	11

¹ From the time a deer was killed until results were reported to DNR.

DNR posts negative test results on its Web site and notifies hunters by mail within 24 hours of receiving a report from the Diagnostic Laboratory. When test results are positive, DNR first notifies the hunter by telephone and then posts them on its Web site.

Diagnostic Laboratory and DNR staff met in February 2006 to discuss how CWD testing results can be provided to hunters more quickly. One option they considered is sending additional samples to out-of-state laboratories. However, to assist during the 2006 hunting season, DNR indicates that it plans to provide 2.0 FTE staff to the Diagnostic Laboratory during the peak workload period from late November 2006 until mid-January 2007. These positions will be LTE staff that will supplement, not replace, Diagnostic Laboratory staff.

Recommendation

We recommend the Wisconsin Veterinary Diagnostic Laboratory and the Department of Natural Resources report to the Joint Legislative Audit Committee by April 15, 2007, on the time required to notify hunters of CWD test results for the 2006 hunting season.

Disposal

The tissue digester chemically decomposes CWD-positive deer remains.

DNR is responsible for transporting deer remains to appropriate locations for disposal. Since November 2003, the Diagnostic Laboratory has disposed of CWD-positive carcasses and other deer testing remains using an alkaline hydrolysis tissue digester to chemically decompose the waste. The liquid remaining after the digestion process is complete contains no active prions and enters the local sewage treatment system.

Until recently, the Diagnostic Laboratory relied on a single mobile unit owned by USDA, which could be removed when needed elsewhere, such as in response to an animal health emergency. USDA exercised its authority to remove this tissue digester on one occasion, for a demonstration at a national meeting.

DNR is the source of 82.0 percent of material processed in the tissue digester.

To cover operating costs, the Diagnostic Laboratory has charged \$0.30 per pound of tissue disposed of in the USDA tissue digester. As shown in Table 39, 82.0 percent of the tissue disposed of in FY 2005-06 was from DNR's surveillance program, while 5.3 percent was associated with CWD testing of farm-raised deer.

Table 39

Tissue Digester Use

Source of Material	Number of Pounds Digested FY 2004-05	Percentage of Total	Number of Pounds Digested FY 2005-06	Percentage of Total
CWD Testing				
DNR Testing	414,315	88.8%	348,171	82.0%
Farm-Raised Deer Testing	36,061	7.7	22,597	5.3
Subtotal	450,376	96.5	370,768	87.3
Other Uses				
Scrapie (Sheep) Testing	712	0.2	40,678	9.6
UW Veterinary School Waste Disposal	15,477	3.3	11,805	2.8
Mad Cow Testing	0	0.0	1,478	0.3
Total	466,565	100.0%	424,729	100.0%

Before the tissue digester became available, DNR disposed of CWD-positive deer and related testing materials primarily by incineration. It was relatively costly, at approximately \$93 per deer. CWD-negative deer were sent to landfills, at a cost of \$20 to \$30 per deer, until landfill owners refused to accept CWD-positive deer from DNR because of concerns about the long-term effects of prions in landfills. Under 2005 Wisconsin Act 286, which was enacted in April 2006, DNR is authorized to enter into agreements to indemnify landfill operators for any future damage caused by the disposal of deer materials, but as of November 1, 2006, no landfill operators have entered into such agreements.

In early November 2006, the Diagnostic Laboratory moved to a new facility on the main UW-Madison campus and purchased its own tissue digester for \$910,000. Because the unit is also available to dispose of other animal tissue in the event of a public health disaster, \$690,000 of its cost was funded by a grant awarded by the Office of Justice Assistance through the federal government's State Homeland Security Grant Program. Because the former tissue digester could be removed at any time by USDA, staff of the Diagnostic Laboratory believe the new tissue digester will provide a more stable, long-term capacity to dispose of materials related to animal testing.

■ ■ ■ ■

Assessing Potential Human Health Effects ■

DHFS assesses data on potential human health risks posed by CWD.

DHFS assesses data on potential human health risks posed by CWD, issues public health advisories, monitors cases of related human diseases, and has established a registry of people who are known to have consumed venison from CWD-positive deer. From FY 2001-02 through FY 2005-06, DHFS spent \$151,900 on these efforts, funded primarily with federal grants.

Providing Information to the Public

DHFS advisories warn people not to consume deer that may be infected with CWD.

DHFS public health advisories provide hunters, food pantry patrons, and the general public with information on the potential health risks of CWD. They warn against consuming the brain, spinal cord, eyes, spleen, tonsils, or lymph nodes of any deer, because CWD prions occur at higher levels in these tissues, and advise people not to consume venison from CWD-positive deer. Similar advice is provided by the World Health Organization and the United States Centers for Disease Control and Prevention.

At deer harvest registration stations in the disease eradication zones, DHFS provides a fact sheet for hunters emphasizing that deer from the areas should not be consumed unless test results indicate they are not infected with CWD. The fact sheet also provides information on how to safely butcher a deer and how to obtain additional information on DATCP's Web site regarding venison processing. DHFS staff noted that nine hunters they contacted who were known to have consumed venison from CWD-positive deer reported receiving the fact sheet.

Two fact sheets were developed for food pantry patrons. One is distributed at food pantries that offer venison from deer hunted within disease eradication zones, the other at those that offer venison from deer hunted outside the eradication zones. The fact sheets explain that the deer were processed to remove tissue where prions concentrate and that while CWD is not currently known to cause illness in humans, it is not possible to predict with certainty that CWD will never cause a human disease.

DHFS also provides information on Creutzfeldt-Jakob disease, a human degenerative neurological disorder that is caused by prions. That information is posted on its Web site as part of a communicable disease fact sheet series. In addition, DHFS has prepared a detailed video and transcript on Creutzfeldt-Jakob disease that is posted on DNR's Web site along with CWD information developed by DNR.

Monitoring Related Human Diseases

There is no evidence, to date, that CWD causes human illness.

The primary CWD-related activity undertaken by DHFS has been to monitor cases of Creutzfeldt-Jakob disease, although to date there is no evidence to suggest that eating CWD-infected venison can cause it or any other disease in humans. However, Bovine Spongiform Encephalopathy, which is better known as "mad cow disease" and is caused by prions, has been linked to a new variant form of Creutzfeldt-Jakob disease that was transmitted to humans in Great Britain and other European countries.

In 2002, as a precautionary measure, DHFS convened a workgroup of 13 experts, primarily neurologists and neuropathologists, to determine how to monitor any possible connection between CWD and Creutzfeldt-Jakob disease. Like CWD in deer, Creutzfeldt-Jakob disease in humans is confirmed through post-mortem testing. However, in July 2004 the workgroup informed all Wisconsin neurologists that it had developed clinical criteria for identifying suspected cases of Creutzfeldt-Jakob disease for reporting to DHFS.

To investigate reported cases, DHFS collects information from medical records, autopsy results, and details from family members about the person's background, including hunting history and whether the person ate venison. DHFS has also reviewed Wisconsin death certificates going back to 1997. By identifying cases that differ from expected frequencies or demographic characteristics, DHFS staff hope to determine whether occurrences of Creutzfeldt-Jakob disease were likely to have been caused by exposure to CWD.

The federal Centers for Disease Control and Prevention indicate the normal incidence of Creutzfeldt-Jakob disease in the United States is

within the range of one to two cases per million per year, and the disease typically occurs sporadically. As shown in Table 40, cases in Wisconsin have not exceeded the normal incidence during the period reviewed by DHFS.

Table 40

Annual Incidence of Creutzfeldt-Jakob Disease in Wisconsin

Calendar Year	Incidence per Million People
1997	1.2
1998	1.3
1999	0.8
2000	0.4
2001	0.9
2002	1.5
2003	1.1
2004	1.1
2005	2.0

It was widely reported in 2002 that three hunters who participated in wild game feasts that included venison had contracted fatal illnesses in the 1990s that were possibly linked to CWD-positive deer. A joint investigation by DHFS and the Centers for Disease Control and Prevention concluded that only one of these individuals died of Creutzfeldt-Jakob disease, and its onset was not linked to consumption of venison but was the typical sporadic form. The other two individuals died of unrelated causes.

The joint investigation also inquired into the sources of venison served at the wild game feasts, as well as the health of the other feast participants. The investigators determined that the venison was primarily from Wisconsin. Although the three deceased hunters had also brought game from the western United States back to Wisconsin, CWD was not known to be endemic where or when their hunting activities took place. Investigators also determined that 4 of 31 other individuals who reported attending the wild game feasts were deceased, but none had a cause of death associated with Creutzfeldt-Jakob disease, and none of the living participants had any signs or symptoms consistent with the disease.

Establishing a Registry

DHFS maintains a registry of individuals who have consumed venison from CWD-infected deer.

In 2004, DHFS established a registry of individuals in Wisconsin who have consumed CWD-positive deer, which is updated after each hunting season. DNR staff who inform hunters of positive CWD test results ask whether the hunter or anyone else has consumed venison from the animal. If the answer is yes, DHFS follows up to obtain information about whether the hunter was aware of warnings not to consume CWD-positive deer and to collect information on anyone who has done so.

DHFS plans to use the registry as another method for determining whether any cases of Creutzfeldt-Jakob or any related disease can be traced to CWD exposure. For example, staff can use it to quickly verify whether an individual with a suspected case of Creutzfeldt-Jakob disease is known to have consumed CWD-positive venison.

As shown in Table 41, 159 hunters' names were provided to DHFS by the end of the 2005 hunting season. DHFS staff have not yet contacted the majority of hunters from the 2005 hunting season, although they intend to do so. From the 63 hunters who have been contacted, DHFS obtained the names of 56 additional individuals who likely consumed infected venison. However, more individuals have likely done so, because some hunters were unwilling to share personal information about themselves or others with DHFS.

Table 41

Registry of Hunters Who Potentially Consumed Venison from CWD-infected Deer

Hunting Season	Number of Hunters Identified by DNR	Number of Hunters Interviewed by DHFS
2003	29	20
2004	58	43
2005 ¹	72	N.A.
Total	159	63

¹ DHFS staff have not yet completed interviewing hunters from the 2005 hunting season.

Future Considerations ■

Four years ago, when DNR developed its initial plan to eradicate CWD, it used the best information available at that time. Since then, more has been learned about CWD, but the mechanisms of its transmission are still not completely understood.

Compared to other states in which CWD has been identified, Wisconsin's approach has been aggressive, in part because of the large size and economic importance of the deer herd. Without exception, every scientist and researcher with whom we spoke believed that, given the information available in 2002, the initial approach was both reasonable and appropriate. However, most now believe that eradication of CWD is not possible. Therefore, it appears likely that the rate of CWD growth can only be slowed. In a report to the Natural Resources Board in October 2006, DNR conceded the need to modify its management efforts to more effectively address the disease.

Comparisons with Other States

We interviewed wildlife managers in six other states in which CWD has been identified: Colorado, Illinois, Minnesota, Nebraska, New York, and South Dakota. CWD has been identified among free-ranging deer in all of these states except Minnesota, and among captive deer in all but Illinois.

In response to CWD in free-ranging deer, two states have made specific changes to their hunting regulations:

- South Dakota added 20 days to the hunting season in CWD areas; and
- Illinois created a special 3-day January hunt in CWD areas, and it increased the number of available permits for either-sex deer by 47 percent and for antlerless-only deer by 114 percent. Officials note the available permits currently exceed the demand.

Wisconsin's approach to modifying hunting regulations in CWD zones has been more extensive than other states'.

In comparison, Wisconsin's approach to modifying hunting regulations in CWD zones has been more extensive. As noted, the length of hunting seasons has been substantially increased, an unlimited number of free carcass tags is available, and hunters were required until 2006 to shoot a doe before a buck in the CWD zones.

CWD surveillance efforts also vary substantially among the states we contacted:

- In 2004, Minnesota concluded a three-year effort to collect approximately 28,000 tissue samples, which identified no CWD-infected free-ranging deer statewide. For 2006, Minnesota plans to do targeted testing of up to 400 deer near areas where captive deer are known to be infected.
- In 2002, New York began a statewide testing program in which approximately 1,000 samples were collected per year. It conducted more intensive testing in 2005 that included more than 2,000 deer near the site of the infected deer, and 6,000 in the remainder of the state. That testing resulted in the identification of 2 free-ranging deer infected with CWD in a single county. New York plans a similar effort for 2006.
- In 2002, Illinois conducted statewide testing of 4,562 deer from 40 counties. Results indicated that CWD was located in northern Illinois, near the Wisconsin border. From 2003 through 2005, Illinois conducted targeted surveillance in high-risk counties. For 2006, Illinois plans to significantly expand its surveillance efforts by as much as 70 percent over the 4,667 samples collected in 2005.

- In 2005, Colorado completed a three-year statewide testing cycle. Tests were conducted on 38,600 deer and showed that CWD was widely distributed among free-ranging deer in the state. For 2006, Colorado anticipates collecting at least 15,000 samples statewide through voluntary submissions from hunters.

Through June 2006, more than 100,000 deer have been tested for CWD in Wisconsin.

Wisconsin’s approach to CWD surveillance has been conducted on a larger scale: through June 2006, more than 100,000 deer have been tested. This approach differs from those of other states for a number of reasons, including DNR’s aggressive efforts to combat CWD, the large size of Wisconsin’s deer herd, the importance of hunting to Wisconsin’s economy, and a desire to provide some level of confidence that hunted deer are likely to be free of the disease. In comparison to the other states we contacted, Wisconsin has both the largest number of deer and the largest number successfully hunted, as shown in Table 42.

Table 42

Comparison of Deer Population and Hunting Results¹

State	Estimated Deer Population	Number of Deer Successfully Hunted
Wisconsin	1,624,000	466,000
Minnesota	1,241,000	256,000
Illinois	800,000	190,000
New York	800,000	180,000
South Dakota	295,000	87,000
Nebraska	325,000	60,000
Colorado	600,000	46,000

¹ Figures are for the most recent hunting season and do not include elk or moose.

Not surprisingly, Wisconsin also spent substantially more than other states to combat CWD, as shown in Table 43. All states reported that the majority of their CWD-related spending was for tissue collection and testing, and other states are similar to Wisconsin in relying on hunting license revenues and federal grants to fund their CWD efforts.

Table 43

Comparison of CWD-Related Expenditures for Free-Ranging Deer¹

State	CWD-Related Expenditures
Wisconsin²	\$5,261,000
New York	3,500,000
Colorado	2,160,000
Illinois	1,000,000
Nebraska	785,000
South Dakota	162,000
Minnesota	40,000

¹ Expenditure amounts are based on estimates for the most recently completed fiscal year, which typically ended in June 2006.

² To provide an amount for comparison with other states, excludes DATCP and DHFS expenditures.

Other states have implemented measures to reduce CWD testing costs.

To reduce their CWD-related costs, other states have employed measures to reduce testing costs. For example, Colorado, Illinois, Minnesota, and Nebraska do not require a deer's head to be removed to collect a tissue sample, as is currently the practice in Wisconsin. Furthermore, testing is voluntary in Colorado, and hunters themselves are permitted to collect tissue samples and submit them to state wildlife management staff for testing, although the majority of hunters request that state staff remove the sample. In Illinois, state staff collect samples but do not completely remove the head, which is taken by the hunter rather than disposed of by the state. Similarly, Minnesota state wildlife management staff have been trained to collect tissue samples without removing the deer's head, in part because Minnesota officials found Wisconsin's approach too costly.

Future CWD Funding

As was shown in Table 6, DNR's Fish and Wildlife Account has funded \$20.1 million in CWD expenditures since FY 2001-02, including \$6.0 million through the CWD appropriation that was established by 2001 Wisconsin Act 108. That appropriation is funded through wildlife damage surcharges on hunting licenses that were originally established to reimburse farmers whose crops have been damaged by wildlife. It was subsequently authorized to finance wild animal control efforts and urban wildlife abatement and control grants. Since FY 2002-03, wildlife damage surcharge revenues have also been authorized to fund CWD-related activities, including the

venison donation program that began in FY 2004-05. The remaining \$14.1 million came from various other appropriations within the Fish and Wildlife Account, including DNR’s appropriations for general wildlife management operations, law enforcement, and administrative support. In FY 2005-06, wildlife damage surcharges generated \$7.2 million, of which \$1.7 million was spent on CWD-related activities.

2005 Wisconsin Act 25, the 2005-07 Biennial Budget Act, transferred \$2.9 million from the Recycling Fund to the wildlife damage appropriation of the Fish and Wildlife Account to fund CWD management and other wildlife damage programs in FY 2005-06. To further increase funding available for these purposes, the Governor used his veto authority to increase the wildlife damage surcharge on each general hunting license from \$1.00 to \$2.00, and the surcharge on each conservation patron license from \$2.00 to \$4.00. These increases took effect on July 25, 2005, and are expected to generate an additional \$1.1 million in FY 2006-07.

As shown in Table 44, the cash balance of all appropriations funded with wildlife damage surcharges has declined from \$7.8 million in FY 2000-01 to \$3.3 million in FY 2005-06. If the transfer from the Recycling Fund had not occurred, the cash balance would have been \$385,800 at the end of FY 2005-06. It should be noted that only \$1.1 million of the \$3.3 million cash balance at the end of FY 2005-06 was actually available, because \$2.2 million had been encumbered to account for expenses incurred but not yet paid.

Table 44

Activity in Appropriations Funded by Wildlife Damage Surcharges

Fiscal Year	Beginning Balance	Revenues	Expenditures	Ending Balance
FY 2000-01	\$8,643,100	\$2,369,800	\$3,165,800	\$7,847,100
FY 2001-02	7,835,600 ¹	548,700	3,140,100	5,244,200
FY 2002-03	5,089,600 ²	7,641,800	8,357,700	4,373,700
FY 2003-04	4,373,700	3,466,800	4,950,800	2,889,700
FY 2004-05	2,889,700	2,778,400	5,123,300	544,800
FY 2005-06	544,800	7,197,000 ³	4,456,000	3,285,800

¹ Beginning balance reflects a lapse of \$11,500.

² Beginning balance reflects a \$154,600 reduction in spending authority due to changes in appropriation type.

³ Revenues reflect a transfer of \$2.9 million from the Recycling Fund.

The second-largest of source of CWD funding is the federal government, which funded 17.0 percent of Wisconsin's CWD expenditures from FY 2001-02 through FY 2005-06. The amount of federal funding expended on CWD in Wisconsin has increased in each year, from \$220,400 in FY 2001-02 to \$1.8 million in FY 2005-06. However, if more states discover CWD in their deer herds or the disease continues to spread in states where it has already been identified, requests for federal funding will increase and it will become more difficult for Wisconsin to obtain additional funds.

Management Options

In October 2006, DNR announced that it is reevaluating its approach to CWD management. We offer three broad approaches for DNR and the Legislature to consider as changes are debated:

- make no changes, in hopes that additional time spent implementing current strategies will eventually lower both the number of deer in the CWD zones and the percentage of deer infected with CWD;
- increase efforts to reduce the number of deer in the CWD zones, which will likely increase program costs; or
- reduce or eliminate some CWD-related activities in recognition of their limited effectiveness, which will also lower program costs.

Some argue that current efforts have slowed the spread of CWD and should be given a longer time to prove their effectiveness. However, it is not possible to determine the extent to which the disease would have spread in the absence of past efforts to control it. All researchers with whom we spoke agreed that reducing the number of deer is key to controlling CWD, but while there is widespread agreement on this solution, there is less optimism about the State's ability to accomplish it. Deer populations can be reduced naturally during harsh winters or through predation by wolves and coyotes, but there are currently only two known strategies available to DNR for reducing the number of infected deer: public hunting or culling by sharpshooters. To reduce the number of infected deer in CWD zones, DNR could attempt to encourage hunters to take more deer and also expand its own sharpshooting efforts.

A lack of support for DNR's policies among some hunters and other groups has hampered its ability to achieve deer-reduction goals.

However, a lack of support for DNR's policies among some hunters and other groups has hampered its ability to achieve its deer-reduction goals. While most hunters are very supportive of efforts to combat CWD, some believe DNR has done a poor job of explaining its policies and practices, has created unnecessarily complex hunting rules and regulations, and is unwilling to consider additional measures such as applying the baiting ban to DNR sharpshooters.

Because hunters are responsible for almost all deer shot in the CWD zones, it is imperative that DNR develop strategies to improve communication and enhance the level of support among all hunters. Without such efforts, it is unlikely that ongoing attempts to reduce the deer population and control the spread of CWD will be effective. To improve communication and enhance the level of hunter support, DNR could:

- increase educational and outreach efforts, in an attempt to convince more hunters of the need to reduce deer populations;
- work with interest groups to develop expanded hunting seasons that may be less objectionable to hunters, and therefore increase participation;
- create a workgroup of DNR staff, hunters, and other interested parties to propose simplified hunting rules and regulations;
- provide annual reports on the results of its sharpshooting and trapping efforts, including the locations of these activities and results by location; and
- establish a moratorium on deer baiting for its own sharpshooters and assess its effects on the number of deer killed. This practice may reduce the spread of CWD by eliminating places where deer congregate and could increase hunter approval of DNR's practices.

Enhancing efforts to combat CWD would likely increase costs.

DNR could also consider additional steps. For example, it could further reduce the cost of licenses and fees for hunters in CWD zones, and it could reintroduce and increase the value of cash incentives for hunters and landowners to shoot more deer. However, most of these options would increase costs or reduce revenues. In addition, there is reason to believe they would have limited effectiveness. In 2006, a DNR employee, in cooperation with a researcher from the University of Wisconsin-Stevens Point,

completed an analysis of nine hunter surveys conducted by various individuals and organizations from 2002 through 2005 that suggests hunters are likely unwilling to shoot more deer because:

- most do not believe the spread of CWD can be successfully halted;
- the majority do not believe in killing more deer than they can consume;
- even when offered up to \$1,000 to shoot deer, the majority indicated they were unwilling to shoot more deer than they could use; and
- even with increased opportunities to hunt, most reported limited hunting success and shot no deer or only one deer.

DNR could also increase its sharpshooting efforts, but because sharpshooters currently account for only 5.2 percent of all deer killed in the CWD zones, efforts would need to expand markedly for more significant results. This could entail more DNR staff resources or, as some have suggested, recruiting a taskforce of citizen sharpshooters. However, if the use of citizen sharpshooters is to be seriously considered, issues associated with safety and potential liability for the State would have to be addressed. The extent to which any enhanced sharpshooting efforts would be effective in reducing deer populations is not known and would depend, in part, on DNR's efforts to convince landowners that sharpshooters should be permitted access to their land.

Finally, CWD efforts could be curtailed and program costs reduced, as there is no guarantee that spending at current or increased levels will produce desired results. DNR and the Legislature could therefore consider reducing the resources currently invested, and bringing Wisconsin's CWD expenditures more in line with those of other states.

Because most CWD expenditures are related to collecting tissue samples and testing, testing fewer samples would immediately lower program costs. Of the \$32.3 million spent on CWD through FY 2005-06, \$15.2 million, or 47.1 percent, was for DNR and Diagnostic Laboratory costs associated with CWD testing, including collection and extraction of tissue, laboratory tests, and carcass disposal.

In 2005, DNR tested all deer submitted in the eastern disease eradication zone and all deer submitted in the core area of the

western disease eradication zone. In the remainder of the western disease eradication zone, testing was based on hunter demand. DNR staff stated that these parameters ensured they collected enough deer to accurately determine the prevalence and location of the disease in these areas. However, 7,858 deer from the disease eradication zones were tested from the 2005 hunting season, which is significantly more than the number required to be confident that the testing results accurately reflect the prevalence and location of the disease. To detect CWD in areas outside of the CWD zones, DNR based the number of deer it tests on the minimum required to be 95.0 percent confident that a positive test will be obtained if at least 1.0 percent of the local deer population is infected. For the 2005 hunting season, 10,904 deer from the herd reduction zone and 5,105 deer from 16 counties in the northeast region were tested.

DNR does not charge Wisconsin hunters a fee for CWD testing on their deer.

If DNR reduces the number of deer tested annually, it may become necessary to deny some hunters' requests for deer testing, potentially resulting in more hunters being unwilling to hunt in CWD zones because of uncertainty about whether their deer are infected. Alternatively, DNR could charge hunters a fee for testing. Currently, none is charged, but a fee would likely be unpopular. Colorado typically charges hunters \$15 to cover the fee for a laboratory test, although total testing costs per deer are approximately \$50. Minnesota does not charge hunters a fee if their deer are from an area under surveillance or had symptoms of CWD; otherwise, Minnesota hunters may independently submit material for testing at their own expense.

DNR could also look for other strategies to reduce its costs. For example, staffing costs could be reduced if hunters, rather than DNR employees, were required to provide deer tissue samples for testing. DNR could also consult with Minnesota's and Illinois' wildlife management staff regarding their cost-savings measures, including collecting tissue samples without removing the deer's head.

Finally, DNR could continue its discussions with landfill operators in an effort to provide a lower-cost option for disposing of deer carcasses. As noted, 2005 Wisconsin Act 286 allows DNR to enter into agreements that indemnify landfill operators for any future damage caused by disposing of deer material in their landfills, but to date no landfill operators have entered into such agreements. In determining whether this option should be pursued, the benefits of reducing costs would need to be weighed against the potential long-term effects of prions in landfills, which are not known.

DNR's ability to reduce costs depends on the extent to which CWD testing could be reduced, whether any additional fees would be charged and their amount, and how much staff time could be saved if tissue collection processes were changed. The optimal approach to combating CWD in the future is not clear, and its determination is complicated by incomplete knowledge of the nature of the disease; the desire to spend funds effectively and limit unnecessary costs; and the need to balance the interests of hunters, landowners, and the general public. However, given Wisconsin's experience with CWD and newly published research confirming one way in which the disease is spread, now is an appropriate time to reassess the State's current approach.

Recommendation

We recommend the Department of Natural Resources, in consultation with the Department of Agriculture, Trade and Consumer Protection, the Department of Health and Human Services, and the Wisconsin Veterinary Diagnostic Laboratory, report to the Joint Legislative Audit Committee by April 15, 2007, on:

- *how recent changes in hunting rules in the CWD zones affected the number of deer taken from these zones during the 2006 hunting season;*
- *the number of CWD-positive deer killed as a result of its sharpshooting and trapping efforts during the 2006 hunting season;*
- *whether testing performed on deer from the 2006 hunting season indicates any changes in the geographic spread and percentage of deer infected with CWD;*
- *plans to improve communication with hunters; and*
- *strategies that will be employed to reduce CWD-related costs.*

■ ■ ■ ■



State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES

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Scott Hassett, Secretary

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Date: November 10, 2006

To: Janice Mueller, State Auditor
22 E. Mifflin St., Ste. 500
Madison, WI 53703

Subject: Legislative Audit Bureau Chronic Wasting Disease (CWD) Audit

Dear Ms. Mueller:

Thank you for the opportunity to comment on the audit of the State of Wisconsin's Chronic Wasting Disease (CWD) management programs. More than 640,000 hopeful deer hunters are preparing for the 2006 gun deer season that opens next weekend. A lot of deer camps will be talking about CWD and what Wisconsin should do about it. It's a conversation well worth having. A healthy deer herd is important to all of us.

The Departments of Natural Resources (DNR), Agriculture, Trade and Consumer Protection (DATCP), Health and Family Services (DHFS), and the Wisconsin Veterinary Diagnostic Lab (WVDL) have invested more than \$32 million since February 2002 to reduce the negative impact of this disease to our state. It's a sizeable and deliberate investment that we believe is warranted given what Wisconsin has at stake. White-tailed deer are not just Wisconsin's state animal, they are a powerful economic engine that contributes an estimated one billion dollars every year to our economy. Wisconsin is home to 650 deer farms; the livelihood of those farm families depends upon a healthy deer herd both inside and outside of their fences. CWD is a prime example of a disease that affects both Wisconsin's wildlife resources and the animal agriculture industry. A serious animal disease that impacts Wisconsin's wildlife is not good for Wisconsin agriculture and vice versa.

The audit documents that despite significant state efforts, the wild deer herd remains abundant in the CWD-infected areas and the prevalence of the disease has not decreased. It is very clear that CWD is not going to be eradicated in wild deer herds in the near future. Surveys repeatedly show that Wisconsinites don't want CWD to spread in our state. Your audit report challenges us to find additional disease management tools that are effective at containing CWD. This won't be easy. You've documented that even with unprecedented 60-100 day gun deer hunting seasons; deer remain abundant within the CWD-infected areas of our state. An abundant deer population facilitates disease transmission and provides a source for disease sparks to disperse outward in our state. If we can achieve successful containment of CWD, there is hope for further control down the road.

Wisconsin's CWD accomplishments

In 2002, when Wisconsin became the 1st state east of the Mississippi River to find CWD, the news shocked both our state and the country. DNR, DHFS, and DATCP immediately collaborated and we reached out to national experts to build Wisconsin's initial response. We find your statement "*Without exception, every scientist and researcher with whom we spoke believed that, given the information available in 2002, Wisconsin's approach to combating CWD was reasonable and appropriate*"

reassuring. Wisconsin received a lot of advice, but no one handed us a roadmap. We've continued our collaborative approach both within state government and with neighboring states since 2002. We believe that our efforts have built a solid foundation upon which Wisconsin's next phase of CWD management can be built. The accomplishments include:

- Building a **solid base of CWD surveillance data** on the distribution or prevalence of CWD within Wisconsin. The audit found that 50% of DNR's \$26.8 million in CWD costs since 2002 was spent on testing 99,917 deer to determine the geographic distribution of the disease and to monitor changes in prevalence within CWD-infected areas. This **extensive testing has bolstered hunter confidence and put deer back on the dinner table instead of in the dumpster**. Similarly, 14,654 farm-raised deer have been tested during this time allowing deer farms to document the health of their herds and take action where CWD was found.
- Wisconsin Veterinary Diagnostic Lab **creating a USDA-approved, state-of-the-art CWD testing facility that annually has led the nation in the number of CWD tests** it performs. They have recently migrated to even better facilities at the UW-Madison Veterinary School.
- Completing a **baseline audit of Wisconsin's deer farms** and working with the deer farm industry to implement **comprehensive health monitoring regulations** to protect captive and wild deer herds. These regulations have helped identify CWD-infected animals and depopulate several infected captive herds.
- Implementing **five years of expanded hunting season frameworks and \$580,000 in financial incentives to encourage increased deer hunter participation in disease control**. Investing \$336,000 to build a **venison pantry program** for the CWD zones that tests all donated adult deer. Spending \$671,000 to enforce **baiting and feeding regulations in order to reduce the risk of disease transmission**.
- Obtaining legislative authority in spring 2006 to reduce disease spread risks by regulating the disposal of deer carcasses from CWD-infected areas, as well as, **obtaining authority to indemnify landfills for accepting CWD-positive carcasses**. Landfilling carcasses is safe and, if we can successfully negotiate landfill indemnity agreements, we could reduce waste disposal costs by 75%.
- Providing **factual information on the human health risks related to CWD including instructional information on proper meat handling techniques**; ongoing surveillance of the incidence of Cruetzfeldt-Jakob cases in Wisconsin; and **establishment of a registry of Wisconsin citizens that have consumed venison from CWD-positive deer**.
- **Building a comprehensive Wisconsin CWD research program** that is examining the vulnerability of deer to CWD by genotype, age and sex; describing the role soil plays in environmental CWD contamination; documenting deer movement, survival and dispersal; developing disease modeling using Wisconsin data to predict likely disease patterns; providing deer tissues to develop new testing techniques and understanding attitudes of hunters and landowners toward CWD.

CWD Challenges Ahead

Your report correctly observes that, *“Wisconsin’s approach differs from that of other states for a number of reasons, including DNR’s aggressive approach to combating CWD, the large size of Wisconsin’s deer herd, the importance of hunting to Wisconsin’s economy, and desire to provide hunters with some level of confidence that the animals they harvest are likely free of the disease.”*

Wisconsin does have a lot at stake with this disease and our agencies’ combined effort reflects that. Yet, we can’t equate effort with successful disease outcomes. Significant challenges still lay ahead in our state’s efforts to deal with this disease.

What is needed to contain (prevent further spread) CWD in Wisconsin? – I have indicated that the DNR will lead a public dialogue on this very question in 2007. The response of Wisconsin’s citizens will impact every corner of our state and generations to come. CWD surveillance has identified disease “sparks” out ahead of the core area of CWD infection. These sparks represent the advancing front of the disease and can become new core areas of disease. We must engage the public in identifying what additional tools or techniques should be applied to snuff out our identified sparks and reduce the intensity of the disease in our core areas.

Whether one lives in Douglas County or Iowa County, CWD challenges impact all Wisconsin citizens. Similarly, deer hunters and non-hunters alike will share the consequences. If the geographic area affected by CWD grows, so do our shared challenges. There will be an even greater desire for testing of hunter-killed deer increasing costs to either the state, hunters, or both. The cost of the venison pantry program will also increase as up-front CWD testing would be mandatory across a larger area. CWD deer carcass disposal procedures will need to be applied to larger areas and a larger volume of deer. More of Wisconsin’s farms, raising deer and other livestock, will operate with CWD-positive deer as neighbors. Finally, as your audit reports, we remain very aware that *“...while CWD is not currently known to cause illness in humans, it is not possible to predict with certainty that CWD will never cause a human disease.”* For this reason, there is a distinct public health interest in minimizing the number of people who might consume venison from CWD-positive animals.

Can costs be reduced if the disease spreads? Your audit documented that 65.6% percent (\$21.1 million) of the CWD management expenses to date were funded from Segregated Revenues, nearly all of which came from the Fish & Wildlife Account which is funded by hunting and fishing license fees. Another 17% came from Federal Revenues. The future viability of these funding sources will certainly be a challenge, especially if CWD spreads. As you reported in the audit, testing deer amounted to about 50% of the \$32.3 million spent by the State of Wisconsin. A doubling of the geographic area infected by CWD would drive testing costs well beyond existing state and federal funding sources ability to support such testing.

We are committed to seeking and implementing cost-saving measures wherever possible. We’ll work hard to deliver a cost-effective CWD management program. We recognize, however, that our ability to drive costs down depends to a large extent upon technological advancements (faster, cheaper tests) and the availability of less expensive ways of disposing of carcasses.

How can we turn public support for disease control to action? – University surveys of hunter attitudes in both CWD-infected zones and the rest of the state have consistently shown strong support for controlling CWD and not letting it spread. However, Dr. Robert Holsman and Robert Smail, UW- Stevens Point, have documented that those desires for CWD control are superseded by other factors when hunters are hunting within CWD zones. When hunters in the CWD Eradication Zone were asked what factors determine how many deer they decide to shoot, the “desire to help eradicate CWD” ranked lower than a

variety of factors including the amount of venison they wanted, number of deer seen, the opportunity to shoot bucks, conservation of the resource, and the time they had available to hunt.

Existing attitudinal or social norms are imposing limits on the harvest threshold of hunters and landowners within the CWD-infected areas. This is a very significant challenge to CWD management. We need to develop the messages, tools and strategies that effectively control this disease.

We have learned a lot about CWD in the past five years and our accomplishments have helped Wisconsin deal with this disease. We could not have come as far as we did without strong cooperation among state agencies, or help from our neighboring states and federal partners. As we go forward, continued cooperation will be vital.

We must also continue to learn from and build on the foundation of science we have begun and adapt our management to the new findings. Our success in managing CWD is vital for the health of our natural resources and for our future economic and social well-being.

Sincerely,

A handwritten signature in black ink that reads "Scott Hassett". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

Scott Hassett, Secretary
WI Dept of Natural Resources