STATE OF MICHIGAN

DEPARTMENT OF NATURAL RESOURCES

LANSING

JENNIFER M. GRANHOLM
GOVERNOR

REBECCA A. HUMPHRIES
DIRECTOR

April 30, 2009

The Honorable Michelle McManus, Chair
Senate Appropriations Subcommittee
on Natural Resources
S-2 Capitol Building
P.O. Box 30036
Lansing, Michigan 48909-7536

The Honorable Michael Lahti, Chair
House Appropriations Subcommittee
on Natural Resources
S-1489 House Office Building
P.O. Box 30014
Lansing, Michigan 48909-7514

Dear Senator McManus and Representative Lahti:

Pursuant to Section 502, PA 252 of 2008, a report of the Department of Natural Resources' (DNR) bovine tuberculosis eradication efforts, during the second quarter of Fiscal Year 2008-09, is attached.

If you have any questions, please feel free to contact me.

Sincerely,

Sharon M. Schafer, Chief
Budget and Support Services
517-373-1750

Attachment
cc: Senate Appropriations Subcommittee Members
House Appropriations Subcommittee Members
Mr. Bill Bowerman, Senate Fiscal Agency
Dr. Kirk Lindquist, House Fiscal Agency
Mr. Robert Emerson, State Budget Director, Department of Management and Budget (DMB)
Mr. Jacques McNeely, DMB
Ms. Jennifer Harrison, DMB
Director Rebecca Humphries, DNR
Ms. Arminda Koch, Resource Management Deputy, DNR
Mr. Rodney Stokes, Chief of Staff, DNR
Mr. Daniel Eichinger, Legislative Liaison, DNR
Dr. Russ Mason, DNR
Mr. Gary Hagler, DNR
Mr. Mark Bouvy, DNR

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Bovine Tuberculosis Program Legislative Report
Fiscal Year 2008-09 Second Quarter Summary
January 1, 2009 - March 31, 2009

Source: Wildlife Health Section

Disease Surveillance in Wildlife

During this quarter, surveillance activities for bovine TB continued statewide with the majority of deer still being received from the fall hunt, submitted on Disease Control Permits, and as road-killed. In white-tailed deer, 2 of 1,327 animals submitted for testing are considered to be suspects and are being cultured. The table below lists the total deer tested by county. In addition, 1 moose and 148 elk were submitted and tested negative for bovine TB.

County	Suspects *	Positive *
Montmorency	1	0
Oscoda	1	0

* See definitions below

Number of Deer Received by the Wildlife Disease Lab for TB Testing by County: Jan. 1 - Mar. 31, 2009.

County	Total Deer Tested
Alcona	76
Alger	14
Alpena	225
Antrim	21
Arenac	4
Baraga	5
Barry	19
Benzie	1
Berrien	1
Branch	1
Calhoun	2
Charlevoix	34
Cheboygan	10
Chippewa	4
Clinton	6
Crawford	18
Delta	2
Dickinson	17
Eaton	2
Emmet	44
Genesee	1
Gladwin	1
Gogebic	11
Grand Traverse	2

County	Total Deer Tested
Gratiot	2
Houghton	6
Huron	6
Ingham	4
Ionia	15
Iosco	40
Isabella	1
Jackson	22
Kalamazoo	1
Kalkaska	1
Kent	109
Keweenaw	5
Lake	1
Lapeer	2
Leelanau	1
Livingston	6
Luce	17
Mackinac	12
Macomb	4
Manistee	1
Marquette	1
Mecosta	6
Menominee	2
Midland	2

County	Total Deer Tested
Missaukee	2
Monroe	11
Montcalm	9
Montmorency	127
Muskegon	11
Oakland	10
Ogemaw	14
Ontonagon	11
Osceola	2
Oscoda	42
Otsego	32
Ottawa	61
Presque Isle	68
Roscommon	4
Saginaw	2
Sanilac	4
Schoolcraft	7
Shiawassee	46
St. Clair	1
St. Joseph	1
Tuscola	3
Wayne	49
Wexford	1
unknown county	21
Grand Total	**1327**

*** Definitions:**

Pending - Initial laboratory results were negative; still waiting for final results.

Suspect - MDCH is performing bacterial culture and intermediate testing has been positive; still waiting for final results.

Positive - Final culture results were received from MDCH.

Negative - No lesions were found at the Wildlife Disease Lab, or MDCH culture results were final negative.

Research Activities

Title: Trap, Test and Cull Project

In January of 2004, the Michigan Department of Natural Resources (MDNR) initiated a pilot study for a new strategy to combat bovine tuberculosis (TB) in white-tailed deer. The trap/test/cull project was aimed at trapping deer on two properties in townships with relatively high TB prevalence in Deer Management Unit (DMU) 452. Blood was collected from the trapped deer and the deer were radio-collared, ear-tagged and released. The collected blood was sent to Michigan State University's Diagnostic Lab. The cervigam test, one that was the most available at the time, was used to test the blood samples for the presence of TB antibodies. Deer that were identified as positive for TB with this blood test were then tracked and culled using radio telemetry with the assistance of the United States Department of Agriculture (USDA), Wildlife Services (WS). The culled deer were then necropsied by the MDNR and the lymph nodes were removed to be cultured at the Michigan Department of Community Health Tuberculosis Laboratory for the presence of *Mycobacterium bovis*, the causative agent of TB. In the end this blood test proved to be an unreliable predictor of TB status for white-tailed deer.

In the fall of 2004 and 2005 efforts were aimed at developing a more reliable blood test. Blood samples and the heads from hunter harvested deer were collected by the MDNR. The blood samples were sent to the USDA, National Animal Disease Center (NADC) in Ames, Iowa and a private lab, Chembio Diagnostic Systems, in Medford, New York. Each lab ran the blood samples on a couple of different tests for TB. The results of the blood tests were compared to the culture results. One test, the Cervid TB STAT-PAK®, looked to be promising because it performed relatively well detecting positive animals and was able to be done in the field in less than 20 minutes.

In January of 2007 the trap/test/cull project was reinstated. Trapping was conducted by the USDA-WS with assistance from the MDNR. All collected data was archived and analyzed by the MDNR. This time the trapped deer were ear-tagged and a small sample of blood was taken to be tested with the Cervid TB STAT-PAK® at the site of the trap. Deer that tested negative on the blood test were released while deer that tested positive were euthanized on the spot and sent to the MDNR for necropsy. Over the course of 2 months, 429 unique deer (247 of which were adult animals) were trapped and tested. Three of the 429 deer tested positive with the blood test, 2 of which cultured positive, indicating they were infected with TB. The 2 deer that cultured positive had extensive lesions in the chest cavity, demonstrating that the test is able to detect TB in the most highly infectious animals. The results were encouraging, showing that a relatively high number of deer could be trapped and tested and that positive animals could be detected and removed.

In January of 2008 the project began again. The project was conducted under the same protocol as in 2007. This allows the opportunity to determine if the project can be repeated with continued success and to assess the cost effectiveness of the strategy. After two months of trapping, 379 unique deer (213 of which were adult animals) were trapped and tested. Five of the 379 deer tested positive with the blood test and 4 of them were positive on culture. Three of the 4 culture positive animals had lesions upon examination. The next step in this new strategy for combating TB will be to look at the possibility of implementing the use of vaccination. The USDA-NADC has been conducting research on the efficacy of such a vaccine. In their study, groups of captive deer were vaccinated and later euthanized, necropsied and cultured for TB. Preliminary results show that the vaccinated deer developed significantly less severe TB lesions and when give a second dose of the vaccine, developed significantly fewer visible TB lesions. Although approval for the use of a vaccine is still likely to be several years away, it does give hope for opening new doors in combating the disease. Research is on-going to assess the impact that implementing such a vaccine may have, if any, on TB prevalence in DMU 452.

In summary, new methods to combat TB are being researched and developed but our current strategies should not be abandoned. These new approaches should be considered to be used as a compliment to our current ones, not as replacements. Our continued diligence at working to control TB is needed if we hope to eventually eradicate the disease from Michigan.

Title: Evaluating Acceptance of Free-Ranging White-Tailed Deer Bovine Tuberculosis Management Strategies
Primary Investigator: Brent Rudolph, Wildlife Biologist, Wildlife Division

Managers have identified the need to develop publicly acceptable control policies to maintain or improve efforts to eradicate an infection of bovine tuberculosis (TB) from white-tailed deer (WTD) in Michigan. A better understanding of factors influencing hunter compliance with baiting regulations and decisions to harvest deer has been identified as a critical knowledge gap challenging efforts to maintain and enhance TB control strategies. Research collaboration between MDNR and MSU has been initiated to examine these factors. The Michigan Department of Agriculture (MDA) will provide funding support to gain initial insights for this evaluation and will provide a point of contact to MDNR, who will be responsible for coordinating communications related to this portion of the project. MDNR and MSU will conduct one or more workshops and meetings with wildlife managers, law enforcement personnel, agriculture and recreation industry professionals, and small groups of stakeholders to gather data as part of this assessment. Modeling efforts will also be conducted to characterize the degree to which past modifications to deer hunting regulations have influenced harvest levels, while controlling for factors that influence hunting access and deer distribution, such as habitat, land ownership, and development patterns. This effort represents a unique and exciting multi-agency and university collaboration to engage the public in order to understand factors limiting the support for and effectiveness of TB management strategies.

Title: Bovine Tuberculosis Spatial Model for White-tailed Deer
Primary Investigator: Dr. Daniel O'Brien, Wildlife Veterinarian, Wildlife Division

The modeling approach is an adaptation of a spatially-explicit, stochastic model developed for TB in New Zealand brushtail possums to Michigan white-tailed deer. Iteratively applying this model over time, the dynamics of WTD and the expansion or control of TB can be predicted. The model constructs a true spatially-explicit framework rather than applying a non-spatial model to a lattice of cells representing contiguous geographic areas. The result is a continuous time/continuous space model that uses density surfaces to describe both host population density and TB transmission risk. By allowing these to vary continuously across the landscape, their values can be estimated at any point on the geographic and time surface.

The co-Principal Investigator, Dr. David Ramsey of the Arthur Rylah Institute for Environmental Research (ARI), Victoria, Australia, visited the DNR Wildlife Disease Lab (WDL) for 10 days is August, 2008. Meetings were held between the principal investigators and collaborators from Michigan State University and the University of Tennessee to fine tune the adaptation of the model to white-tailed deer. Code changes to the model were executed by Dr. Ramsey during his stay, and initial training of collaborators in running the model took place.

As of January 2009, a beta version of the final model has been completed and is being tested for bugs by the research team. The creation of functional GIS layers to account for habitat-related spatial aggregation of deer on the landscape remains the final piece necessary for completion of the final model. That process, underway at this writing, has been unavoidably delayed somewhat by demands on WDL staff time created by the discovery of Chronic Wasting Disease in captive deer in August, 2008.

An associated study of possible vaccination strategies for TB in white-tailed deer using the spatial model is set to begin as soon as the final model is validated. That effort forms part of the research for a Master's Degree in Fisheries and Wildlife from Michigan State University for Melinda Cosgrove, a technician at the WDL.

Finally, development of a research proposal to expand the TB spatial model to assess risks of transmission between wild white-tailed deer and wild elk, deer and cattle, and elk and cattle is underway. The proposed research will be a collaboration between investigators from MDNR's WDL, the ARI, the University of Tennessee, Michigan State University, and Landcare Research of New Zealand. The proposed funding agency for the work will be the National Institute for Mathematical and Biological Synthesis, a National Science Foundation supported Institute housed at the University of Tennessee at Knoxville.

Meetings Attended by Wildlife Division Personnel and Other TB Activities

- **Brent Rudolph, Wildlife Research Specialist**
  - 2/6/2009: Attended DMU 452 Deer Management Seminar in Hillman, Michigan: Delivered a presentation titled "Deer Biology, Ecology, and Management," which included an overview of several key challenges to bovine tuberculosis eradication
  - 3/2/2009: Attended Bovine Tuberculosis Working Group meeting

- **Dr. Steve Schmitt, MDNR Wildlife Veterinarian, Wildlife Health Section Supervisor**
  - Bovine TB Coordinator Meetings
  - POC Meetings with MDA
  - Bovine TB Federal Earmark for Research Meeting at Michigan State University
  - Talk to North Dakota Legislature on disease consequences of feeding and baiting of deer
  - Annual TB report to the MDNR Commission and the MDA Commission

- **Dr. Dan O'Brien, MDNR Wildlife Veterinarian**
  - 1/29/2009: Conference Call, collaborative research group on TB vaccination of deer with USDA-Agricultural Research Service, USDA-APHIS Veterinary Services and Wildlife Services
  - 3/12/2009: Meeting, DNR TB Workgroup
  - 3/27/2009: Research meeting with MSU graduate student modeling TB vaccination strategies (M. Cosgrove)
  - 3/6/2009: Research meeting with MSU Ph.D. student working on human dimensions of wildlife disease management (S. Hanisch)
  - 3/17/2009: Lectured on TB to CMU Wildlife Disease Class
  - Ongoing work on TB spatial modeling
  - Ongoing analysis of TB surveillance data from 2008
  - Ongoing work on 2009 MOU with USDA-APHIS-VS and MDA

- **Elaine Carlson, MDNR Biologist, Mio, MI**
  - First quarter 2009: TB activities related to deer check
  - Second quarter 2009: Attended several meetings - Risk-a-Syst, TB Work Group
  - Other DNR Wildlife and FMFM pilots flew the winter feed site survey on a portion of the 5 county area. For parts of 5 days, 2 planes and 2 observers per plane were available and on 2 more days, 1 plane and 2 observers flew. A total of 149 feed sites were identified and given to Conservation Officers for follow-up.
  - In both quarters, issues with Disease Control Permits continued to be addressed.

Law Enforcement Division Activities (Covering October 1, 2008 through March 31, 2009)

Lt. Creig Grey, District 5 Law Enforcement, Roscommon Operations Service Center

Conservation officers throughout the Lower Peninsula (LP) divided much of their time early in the fall between surveillance of privately owned cervid facilities and baiting and feeding issues due to the peninsula-wide ban imposed as a result of the discovery of Chronic Wasting Disease (CWD).

Due to the high profile in the LP, the number of baiting and feeding complaints was four times higher than last year. These included both calls to the Department's 24-hour dispatch center (RAP room) and those made direct to a conservation officer (non-RAP). This increase in complaints is a reflection of public awareness of the situation.

Winter feeding violations appeared to increase due to the harsh early weather and the duration of the winter. Law Enforcement Division increased their enforcement efforts and documentation of the same, which no doubt contributed to the increased numbers reflected in the statistics provided.

Officers noted a trend in the placement of bait to avoid detection, such as hiding it under conifers, utilizing smaller amounts, using decoy hunting blinds, use of camouflage, etc.

Agricultural feeding issues that could not be resolved in the initial contact by officers were referred to MDA. This resulted in 15 referrals to MDA for follow-up.

Patrol Efforts:

In the seven counties closed to baiting/feeding due to TB, both the Gaylord and Roscommon districts attempted to have multiple conservation officers in each county working high visibility patrols during the weekends of the deer seasons. This was to provide information regarding the TB Eradication Project, respond to complaints, and deter unlawful activity. Additional officers were brought into the five core counties for the firearm deer season, as has been done in the past few years.

Complaints:

Total complaints for the reporting period were 431 compared to 53 last year for the same time period. Baiting and feeding complaints in the Lower Peninsula were three times higher than the same period last year. This is due to public awareness of the baiting and feeding ban in the Lower Peninsula. Roughly 50 percent of the complaints in the Gaylord and Roscommon districts in September were related to baiting and feeding.

Tickets & Warnings Issued:

193 tickets were issued for this reporting period with 41 tickets issued last year. We started tracking warnings, as they are indicative of follow-up of complaints and effort expended. Many of these warnings were instances where the bait or feed could be immediately cleaned up and the violation resolved. During the month of November, 24 warnings were issued in Alcona County but, 23 tickets were written at the same time.

Aircraft Support:

Department aircraft was utilized on 18 occasions to provide detection of baiting and feeding violations as well as photographic documentation of the violations. We attempted to follow-up on locations identified by the aircraft within two days of the initial observation. In many cases, this allowed the officers to find locations before snow covered the tracks and other evidence.

Counties	RAP Bait/Feed Complaints	(non-RAP) Bait Complaints	(non-RAP) Feed Complaints	Tickets Issued	Warnings	Bait/ Feed Group Patrols	Bait/ Feed Flights
Alpena	9	4	109	52	38	1	3
Presque Isle	9	19	48	6	10	3	5
Otsego	7	10	3	6	4		1
Montmorency	7	20	40	46	16		4
Crawford	7	14	4	14	5		1
Oscoda	16	23	23	26	7		
Alcona	12	21	26	36	34	7	4
Total	**67**	**111**	**253**	**186**	**114**	**11**	**18**

Annual Report to the Natural Resources Commission

MANAGEMENT OF BOVINE TUBERCULOSIS IN MICHIGAN DEER

March 5, 2009

Since 1994, the state of Michigan has recognized a problem with *Mycobacterium bovis* in wild white-tailed deer from a fourteen county area in northeastern Lower Michigan. In 2008, surveillance activities for M. bovis continued statewide, with an emphasis on the northern half of Lower Peninsula. In white-tailed deer, 36 animals cultured positive from 16,260 deer submitted for testing.

Since the index cases were first identified, over 162,000 free-ranging deer have been tested for bovine tuberculosis; 1,631 infected animals have been found. Increasingly, the spatial epidemiology of the disease is revealing a highly focal, clustered pattern. Approximately 97% percent of all positive deer identified to date originated from a five county area. Moreover, within that area, the vast majority of positive deer were from Deer Management Unit (DMU) 452. Even within DMU 452, the spatial arrangement of cases is highly clustered, in spite of the fact that sampling effort has been relatively uniform geographically.

White-tailed deer are the maintenance host and primary reservoir for TB in the Michigan outbreak. If eradication is to be achieved, control strategies must focus on the disease in deer. Strategies for eradication of TB from Michigan wildlife continue to focus on 1) reducing deer population densities to biological carrying capacity and 2) reducing artificial congregation of deer by restriction or elimination of baiting and feeding. These strategies have been implemented through provisions of a late firearm antlerless deer season, sufficient antlerless deer licenses to reduce the deer population, and by prohibition of deer baiting and feeding.

Population estimates based on reconstruction techniques similar to the sex–age–kill method described by Creed et al. (1984)[1] suggest that the deer population in the five county area has declined approximately 27% since 1995. The achievement of this substantial population reduction highlights the critical role that hunters have played in the control of TB in Michigan. Nonetheless, persistent focal areas of high density on private land remain problematic. Baiting and feeding have been prohibited in the seven counties from which 98% of all TB positive deer have originated. In September of 2008, feeding and baiting was banned in the whole Lower Peninsula. The overall scope of feeding has declined dramatically since 1997, with large scale feeding largely a thing of the past. While some illegal baiting and feeding continues to occur, the size of these sites is substantially reduced, and it is hoped that heightened enforcement is expected to reduce the practice further over the next several years.

While much work remains, substantial progress has been made towards eradication of TB from Michigan wildlife. Apparent prevalence in the core area of the outbreak DMU 452 was 1.8% in 2008. Trend analysis of prevalence data from 1995 to 2008 indicates a statistically significant decreasing trend.

Michigan's TB intervention strategies are working; however, it is too early to claim victory in eradicating the disease. The need to stay the course is important, but will be difficult, due to ever increasing pressure from a variety of sources to lessen these intervention strategies.

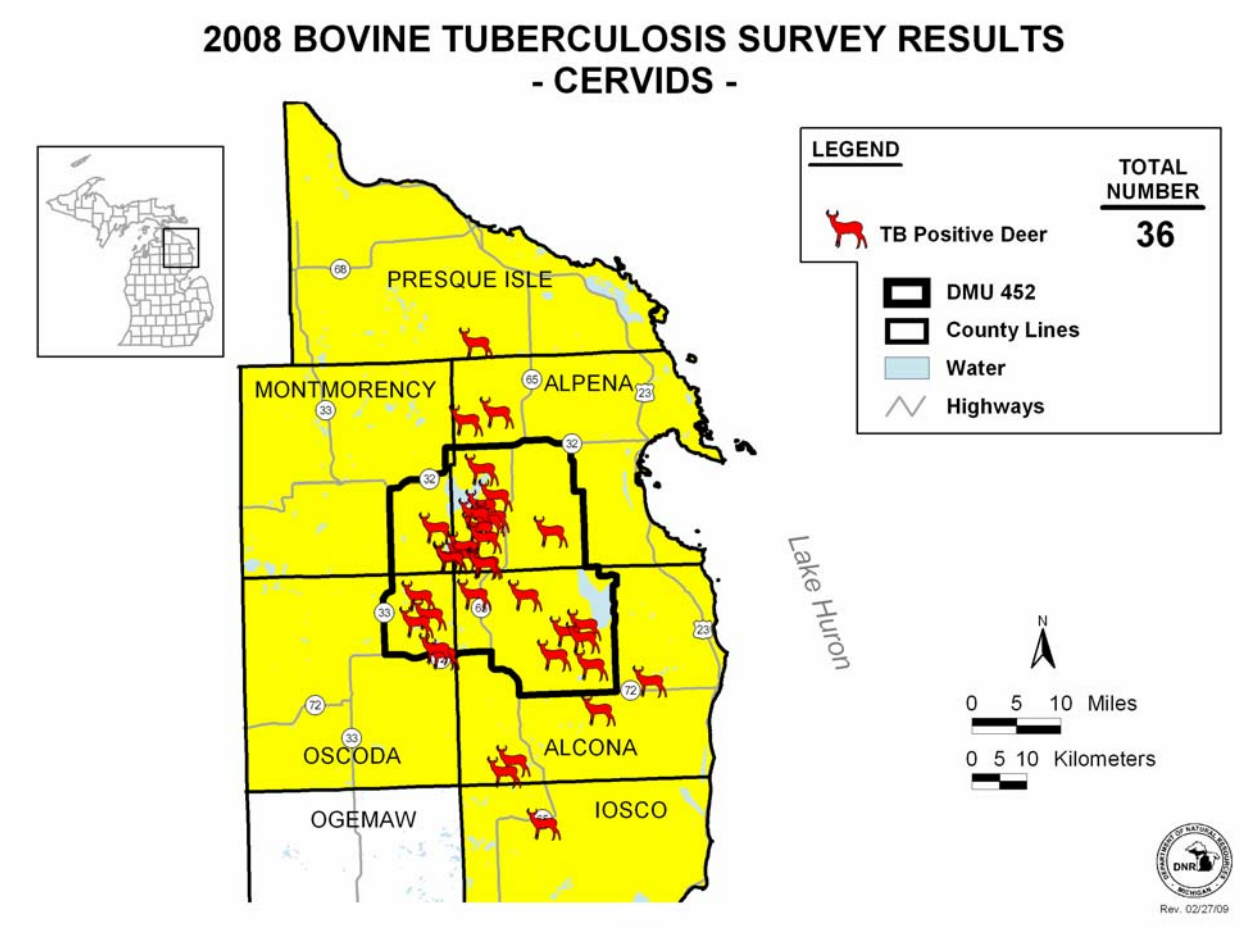
The intervention strategies have been successful in bringing down the average prevalence in DMU 452; however, there are clusters of disease that will be more difficult to manage. With that in mind, the State of Michigan is evaluating a new intervention strategy that may be more acceptable to many hunters and landowners. The new strategy is based on live-trapping and TB-testing of wild deer, and removal of positive animals. And if a safe and effective TB vaccine could be developed, then captured deer that tested negative

for TB could be vaccinated before release. This strategy is not intended to replace initial strategies, but may assist them in eliminating TB from the deer herd in focal areas.

The DNR is working with USDA researchers in Ames, Iowa to develop a TB vaccine for use in wild deer. Preliminary results are encouraging, and the vaccine appears to give some protection from disease. Vaccinated groups of deer given the vaccine orally or subcutaneously had statistically significantly fewer visible TB lesions and less severe TB lesions than unvaccinated deer.

In summary, Michigan is showing progress in eradicating bovine TB from its wild deer population. However, this success is fragile and we need to be diligent in maintaining our control strategies.

[1]Creed, W. A., F. Haberland, B. E. Kohn, and K. R. McCaffery. 1984. Harvest management: the Wisconsin experience. Pages 243–260 in L. K. Halls, editor. White-tailed deer ecology and management. Stackpole, Harrisburg, Pennsylvania, USA.



Summary of Michigan Wildlife Bovine Tuberculosis Surveillance

Michigan Department of Natural Resources Wildlife Disease Lab
Updated March 12, 2009

Initial Occurrences

In 1975 a 9 year-old female white-tailed deer from Alcona County, and in 1994 a 4 year-old male deer from Alpena County were submitted with lesions consistent with and testing positive for Bovine TB.

White-tailed Deer TB Surveillance

Year	Number of Deer Positive	Total Deer Tested
Initial Occurrences	2	2
1995	18	403
1996	56	4,966
1997	73	3,720
1998	78	9,057
1999	58	19,496
2000	53	25,858
2001	61	24,278
2002	51	18,100
2003	32	17,302
2004	28	15,131
2005	16	7,364
2006	41	7,914
2007	27	8,316
2008	36 + 1 pending suspect	16,260
2009 - ongoing	1 pending suspect	335
Grand Total	**632**	**178,502**

Elk Surveillance

- 2,165 elk have been tested since 1996
- Five elk have tested positive
  - 1 - Montmorency 2006
  - 2 - Presque Isle, Montmorency, in 2003
  - 1- Montmorency in 2001
  - 1- Montmorency in 2000

Moose Surveillance

- 50 moose have been tested since 2003
- All have tested negative

Carnivore (Non-cervid) Surveillance

- 1,517 carnivores (16 species) have been tested since 1996
- 43 tested positive for bovine TB:
  - 19 coyotes, 8 raccoons, 7 black bear, 4 bobcat, 3 red fox, 2 opossum

IC 2390-6 (11/04/1999)

2009 DISEASE CONTROL PERMIT PROGRAM UPDATE

First Quarter: January 1, 2009 through March 31, 2009

BOVINE TUBERCULOSIS

Permits for Livestock Producers

Disease control permits (DCPs) have been available for several years on a request basis, but some cattle producers have expressed difficulty in getting the permits in a timely manner when needed. This initiative was designed to make it simpler for cattle producers in areas where bovine tuberculosis (TB) is established to control deer numbers on their farms. Use of the DCPs may help reduce the risk of transmission of TB from free-ranging deer to cattle. Current plans are to make the DCPs available in this manner for three years beginning January 2008, then evaluate the effectiveness of the program.

In Northeastern Michigan, the 5-County TB Area

In early January 2008, the Wildlife Disease Lab (WDL) mailed out DCPs to all cattle producers in Alcona, Alpena, Montmorency, Oscoda, and Presque Isle Counties with more than six head. Each producer was initially mailed five kill tags, with more available upon request when the original five were filled. The permits are valid for a year, and may be used year-round.

- 116 deer have been taken by 34 livestock producers.
- 501 permits and 2,575 permit tags have been mailed.
- 109 signed permits have been received.
- 5 producers have requested more tags.
- 14 producers have indicated that they do not wish to participate and have returned the permit and tags.

In Northeastern Michigan, Outside the 5-County Area

County	Permit Holders	Number of Tags Issued	Notified of Deer Shot
Antrim	12	120	22
Charlevoix	20	130	16
Cheboygan	17	145	14
Emmet	21	190	39
Iosco	5	60	35
Ogemaw	4	35	7
Otsego	9	90	3
TOTALS	88	770	136

In Shiawassee County

Due to finding of a TB positive wild deer in Shiawassee County in the fall of 2007, letters explaining the program were mailed to Shiawassee and Clinton County cattle producers located in a 10-mile radius around the positive deer.

- 17 deer have been taken by 7 livestock producers.
- 129 letters of invitation were mailed.
- 49 permits and 245 tags have been mailed.
- 23 signed permits have been received.
- 1 producer has requested more tags.

Permits for Private Landowners (non-agricultural) in DMU 452

Following changes to Section 5.7 of the Wildlife Conservation Order by the Natural Resources Commission in November 2007, private landowners, other than cattle producers, may be issued DCPs if they own property, 1) in a county where TB is found in any species, or 2) within a 30-mile radius of a location where TB is found in any species. In particular, participation in the DCP program is being offered to private landowners in DMU 452. Consequently, a letter was sent in 2008 and in 2009 to many hunt clubs and larger landowners in DMU 452 to inform them of this additional opportunity to take deer. These permits expire on 4/30/2009.

- 134 deer have been taken by 13 landowners.
- 1 deer is a suspect from DMU 452, and samples are being cultured for TB.
- 165 letters of invitation have been mailed.
- 28 permits and 243 tags have been mailed (27 landowners/hunt clubs requested and were mailed a total of 135 tags. Turtle Lake Hunt Club was mailed 108 tags).
- 18 signed permits have been received.
- 0 have requested more tags.

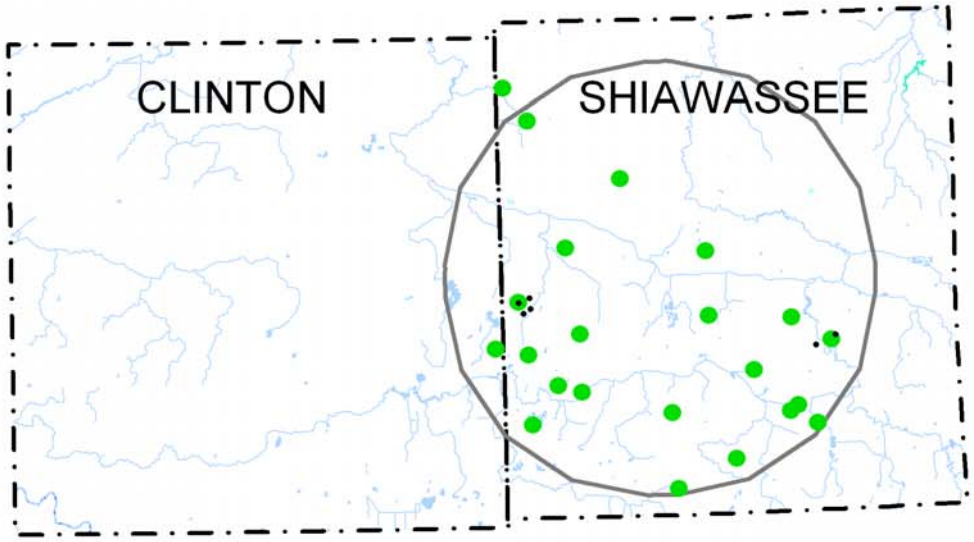
2009 Bovine TB Laboratory Testing for Wild Deer Taken on DCPs

County Name	Total
Alcona	9
Alpena	99
Antrim	2
Charlevoix	5
Cheboygan	3
Emmet	2
Iosco	9
Montmorency	55
Oscoda	3
Presque Isle	28
Shiawassee	6
Grand Total	221

2009
DISEASE CONTROL PERMITS ISSUED AND WHITE-TAILED DEER TESTED FOR BOVINE TUBERCULOSIS IN SHIAWASSEE COUNTY

LEGEND

- Livestock Producer With Signed Permit
- TB Negative Deer
- 10 Mile Buffer Around 2007 TB Positive Deer
- County
- Water



N

0 5 10 Miles

0 5 10 Kilometers

DEPARTMENT OF NATURAL RESOURCES DNR MICHIGAN

Revised 04/09/09

2009 DISEASE CONTROL PROGRAM
January 1, 2009 - March 31, 2009