

Managing Bovine Tuberculosis in Minnesota's Wild Deer



Background

Since 2005 bovine tuberculosis (TB) has been discovered in eleven cattle operations in northwestern Minnesota. The strain is consistent with bovine TB found in cattle in the southwestern U.S. and Mexico.

The Minnesota Department of Natural Resources (DNR) conducted surveillance for the disease in hunter-harvested deer within a 15-mile radius of the infected farms every fall since 2005. To date, the disease has been confirmed in 17 free-ranging deer, including 4 deer harvested in fall 2007. All infected deer have been adult animals, and were taken within five miles of a cluster of four bovine TB-infected cattle operations.

Because of these discoveries, the U.S. Department of Agriculture (USDA) downgraded the state's bovine TB status from "free" to "modified accredited advanced" in 2006. As a result, cattle producers across the state face mandatory testing of cattle and restrictions on cattle movement. The discovery of two additional bovine TB-infected livestock operations, as well as the increased number of infected wild deer, has put the state at greater risk to drop another level in status to "modified accredited" in 2008. The DNR is committed to assisting the Minnesota Board of Animal Health (BAH) in regaining the state's bovine TB-Free status.

Current Efforts to Manage Bovine TB in wild deer

Following the discovery of more infected deer in fall 2006, DNR decided to take more aggressive action to minimize the disease in wild deer. As a first step, recreational feeding of wild deer and elk was banned in a 4,000mi² area in northwestern Minnesota, as a preventative measure to minimize disease transmission. Secondly, a Bovine TB Management Zone was created to focus management efforts based on current knowledge of prevalence and geographic location of the disease in wild deer.

In February 2007, DNR contracted with USDA-Wildlife Services for assistance with deer removal within the Bovine TB Management Zone, with focus in a 140mi² core area that encompassed all the locations of infected deer found to date. The primary method of deer removal by USDA in these critical areas was sharp shooting. The goal with this deer removal effort was to reduce the opportunity for deer-to-deer or deer-to-livestock transmission of bovine TB by removing potentially TB-positive deer through a reduction of deer densities in critical areas. The BAH, the Minnesota State Cattlemen's Association (MSCA), and the Minnesota Deer Hunters Association (MDHA) all support this method of deer removal and believed it was immediately necessary to accomplish our goal. This was NOT an effort to eradicate all the deer, rather eradicate the disease.

Just prior to the start of the deer removal efforts, DNR conducted an aerial survey to assess deer numbers and distribution within the Bovine TB Management Zone and the core area. This survey work was done to help guide deer removal efforts by focusing on key areas with high deer concentrations. A population estimate of 923 ± 150 deer was determined for the 140mi²

core area alone. Also, 29 illegal deer feeding sites on 22 properties were identified during the survey operation and led to enforcement investigations aimed at stopping these illegal activities.

Trained DNR staff examined all deer and lymph nodes were extracted for further testing for bovine TB. A total of 488 deer, nearly 50% of the local deer population, were removed in the core of the Bovine TB Management Zone. Six deer were found infected with the disease and were harvested within 5 miles of previously infected cattle operations.

In fall 2007, DNR created a new deer permit area, DPA 101, which encompassed the Bovine TB Management Zone to assist with management of the disease. To increase the harvest of deer in DPA 101, DNR created both an October early antlerless season and a special January 16-day hunt, in addition to the tradition 16-day November firearm season. In total, 1,166 hunter-harvested deer were tested for bovine TB in the surveillance zone; 4 deer were confirmed positive. Although the discovery of additional infected deer was unfortunate, the prevalence of the disease remains low (0.37%) and the geographic distribution of infected animals is confined to the core of the Bovine TB Management Zone.

Future Plans

DNR repeated the aerial survey of the 140mi² core area in late-January 2008, and a population estimate of 803 ± 133 deer was determined. Eventhough a large number of deer were harvested from this area in 2007, DNR did not achieve a significant reduction in deer abundance from 2006 to 2007; thus, DNR plans to continue putting pressure on this deer herd by removing potentially positive animals by sharp shooting in winter 2008 as well as continued liberal hunting seasons in the fall. Additionally, enforcement of the recreational feeding ban will continue.

A deer-proof fencing program, currently being managed by DNR, has provided up to \$5,000 worth of fencing materials to help farmers protect their stored agricultural feed from wild deer. To date, 15 fences on 10 farm sites have been erected and an additional 10 farms are scheduled for fencing in 2008. DNR will continue to promote risk minimization of disease transmission between deer and livestock through help from state and federal agencies and key stakeholder groups (e.g., MSCA, MDHA).

DNR will continue monitoring for the disease through sampling of hunter-harvested deer. DNR is planning to conduct hunter-harvested surveillance within the larger bovine TB surveillance zone in fall 2008, with a sampling goal of 1,000 deer. This level of surveillance will continue every fall until we have two consecutive years of no positives. At that time, DNR may suspend surveillance efforts for a three-year period and then sample deer again to be sure the infection is eliminated is wild deer.

For more information on bovine tuberculosis contact Dr. Michelle Carstensen, DNR wildlife disease coordinator, (651) 296-2663.