

*By Ken Rebizant*  
Big Game Biologist  
Manitoba Conservation

As a young and somewhat naive graduate student many years ago, I would never have guessed that one of the main wildlife management issues that I would be working on in the year 2001 would be a new disease of deer and elk. The disease I am referring to is Chronic Wasting Disease, CWD for short. I would not characterize myself as a doomsday prophet, but the more I learn about the disease, the more concerned I become. At present, my assessment is that if CWD were to become endemic in our wild deer and elk populations, it would have devastating and likely irreversible consequences over the long-term.

CWD is such a recent phenomenon that there is much that is not known about the disease, and this causes much concern. We do know that CWD is a transmissible spongiform encephalopathy (TSE) which infects deer and elk and that it is always fatal. The disease is related to other TSE's which include scrapie in sheep, Bovine Spongiform Encephalopathy (BSE, or mad cow disease) in cattle and Creutzfeld-Jakob disease (CJD) in humans.

All TSE's, including CWD, are caused by an accumulation of abnormal particles of protein, called prions, in brain tissue. The prions cause changes in the cell wall structure of brain tissue, with areas of the brain stem becoming riddled with small holes, giving the brain tissue the appearance of a sponge under the microscope. There is no live test for the disease - it can only be diagnosed by staining brain tissue of dead animals and examining it under a microscope. The exact mode of transmission of the disease is not fully understood. The disease is likely passed on through saliva, urine and faecal matter and the points of transmission can be feeding and watering sites. There is also some evidence that soil contaminated with CWD prions may remain infectious for an extended period of time, perhaps up to ten years.

Animals which have advanced stages of the disease are generally lethargic, drool excessive amounts of saliva, often stand for long periods of time with their head and ears drooped, and are emaciated. These animals stop eating and eventually waste away and die. It is believed that most animals show clinical signs of the disease only after 18 to 36 months of being infected, but some may harbour the disease for 5 or more years before exhibiting any clinical signs. Animals can "shed" the disease, and potentially infect others, for a long time before appearing sick. These characteristics of the disease make it very difficult to contain and eradicate. Hunters have expressed concern about the human health risks of CWD and whether it is safe to eat the meat from deer and elk in infected areas. The answer to these questions is not straightforward. There is currently no firm scientific evidence to indicate that CWD can be transmitted to humans. However, state and provincial wildlife agencies which have CWD in deer and elk populations advise hunters to take precautions to minimize the risk of exposing themselves to CWD. These include wearing rubber gloves when field dressing carcasses, avoid handling or consuming brain, eye or spinal tissue, deboning the carcass, and washing hands promptly

afterwards. As well, some health agencies have issued a strong caution, and advise against eating the meat from deer and elk that have tested positive for CWD. The ultimate choice is left up to the hunter.

CWD has been detected in farmed deer and elk in six states (South Dakota, Montana, Oklahoma, Colorado, Nebraska and Wyoming), and in Saskatchewan; and in wild deer and elk in Colorado, Nebraska, Wyoming and Saskatchewan. In some game units in Colorado and Wyoming it is estimated that up to 15% of the deer are infected with the disease. It is believed that populations in these areas are decreasing because the disease.

Manitoba Conservation is concerned about what is happening in our neighbouring province. In Saskatchewan, more than 150 farmed elk on 35 farms have been diagnosed with CWD. All infected animals have been traced back to a single source farm which imported a CWD infected elk from South Dakota in the late 1980's. The Canadian Food Inspection Agency (CFIA) has or will soon have destroyed 6,300 farmed elk in that province in an effort to contain the disease. Their containment efforts are ongoing. As well, two wild mule deer have tested positive for CWD in Saskatchewan. Both deer were shot in the west-central part of the province in the Manitou sandhills near the Alberta border and within 100 kms of the original infected elk farm. Saskatchewan will be undertaking an extensive CWD surveillance program in 2001 by testing 7,000 - 10,000 hunter shot deer. Sampling effort will concentrate in the Manitou sandhills area and near infected elk farms. As well, they are planning to reduce the deer herd in the Manitou sandhills area by 60% with the hope that this will reduce the likelihood of this disease becoming endemic in the province's deer population.

Thankfully, to date, there has not been a CWD positive case detected in any wild deer or elk, or farmed elk in Manitoba. Since 1997, Manitoba Conservation has tested over 500 hunter harvested elk and 200 deer from the Riding Mountain area for CWD. As well, Manitoba Agriculture and Food has tested all farmed elk that die for evidence of CWD. It is our intention for 2001 to continue with the testing of elk from the Riding Mountain area and enhance the surveillance of hunter harvested deer by collecting samples from the southwestern part of the province along the Saskatchewan border and testing 350 of these deer samples.

Manitoba hunters can help in this undertaking by submitting the heads from deer harvested in GHAs 13A, 18A, 18C, 22 (west of PTH 83), 23, 23A, and 27 to a local Manitoba Conservation office. Hunters will also be asked to submit samples at several checkstops conducted during the deer seasons.

Hopefully, these efforts and those being undertaken to restrict the movement of deer and elk imports into Manitoba will pay off in the long run.

### ***CWD INFORMATION***

**Range Extension for Chronic Wasting Disease in Wild Deer in Saskatchewan**  
Chronic Wasting Disease (CWD) has been detected in two wild mule deer (*Odocoileus hemionus*) shot by hunters in the fall of 2002 near the South Saskatchewan River

north of Swift Current. This is a new location for CWD in wild deer in the province and is approximately 250 km from the location where CWD was diagnosed in the past in three wild mule deer. Diagnosis in the most recent cases was based on demonstrating abnormal prion protein in tonsils. In one deer, lesser amounts of abnormal prion protein was detected in the obex of the brain, whereas in the other deer, brain tissue was not available for testing. Research has shown that testing of tonsils and specific lymph nodes in the head of white-tailed deer and mule deer are equal to, if not superior to, testing brain. This does not appear to be the case in elk. The option of testing tonsils, lymph node and/or brain has meant that more hunter shot animals are suitable for testing. This new occurrence indicates that CWD in wild deer in Canada is not restricted to a single geographic location and highlights the importance of continued surveillance in order to determine the geographic range and movement of this disease. - Kevin Omoth – Saskatchewan Environment, Keith West, Prairie Diagnostic Services, Trent Bollinger

***– Information from Canadian Cooperative Wildlife Health Centre, Wildlife Health Centre Newsletter Winter 2002***