

**Testimony of William Werkheiser
Science Advisor to the Secretary
Department of the Interior
before the
House Appropriations Subcommittee on Interior, Environment, and Related Agencies
for a hearing entitled
“Chronic Wasting Disease”**

October 17, 2019

Chair McCollum, Ranking Member Joyce, and members of the subcommittee, thank you for the opportunity to discuss Chronic Wasting Disease (CWD). I am William Werkheiser, Science Advisor to the Secretary of the Department of the Interior (Department). My testimony provides an overview of Chronic Wasting Disease and focuses on Departmental efforts to respond to CWD, highlighting the roles of the U.S. Geological Survey and the U.S. Fish and Wildlife Service within the Department in this regard.

Overview of Chronic Wasting Disease

Chronic Wasting Disease (CWD) is a contagious, fatal disease that is becoming more prevalent in wild North American cervid populations, such as deer, elk, and moose. Unfortunately, there is no known treatment or cure for CWD. Therefore, prevention of the disease and limiting its spread is essential.

CWD was first detected in 1967 in a captive deer and elk research facility in Colorado. Subsequently, the disease was found in 1978 in free-ranging cervid populations. It has now been detected in free-ranging and captive cervid facilities in 26 U.S. States and 3 Canadian provinces as well as South Korea, Norway, Sweden, and Finland. CWD is caused by infectious prions, or misfolded proteins that are transmissible, that pass between animals or are acquired from contaminated soil and plants. Animal-to-animal transmission is likely the initial driver of disease transmission, but high environmental prion contamination and persistence is expected to maintain transmission risk for years to come.

All cervid species native to North America, including White-tailed deer, Mule deer/Black-tailed deer, Elk, Moose, and Caribou/reindeer, are susceptible to CWD. Animals may appear healthy for a year or more after infection with CWD, but the animal likely sheds infectious prions in feces, saliva and urine for much of the disease course. Infected animals can show signs of weight loss, decreased social interaction with the herd, loss of awareness, altered posture, head tremors, and lack of coordination. CWD affects the brain, nerves, lymph nodes, spleen, and neuroendocrine tissues. Diagnosis of CWD requires special laboratory testing of lymph nodes and brain stem, collected post-mortem. Although live-animal sampling techniques have been developed, they require specialized techniques that are difficult to perform and have a much lower rate of success in detecting CWD.

Determining the degree to which CWD is causing cervid population declines is challenging because it can take several years for infection to cause illness in an individual animal. However,

research and modeling studies published in the last ten years have detected declines of up to 10 percent and 21 percent in several deer and elk populations respectively, including populations in Wyoming, Colorado, and Wisconsin.

The Role of the Department of the Interior in Response to CWD

A high level of collaboration and communication between Federal and State agencies, tribes, non-governmental organizations, and academia is needed to address the expanding presence of CWD. While States are the leaders for CWD, the USGS brings considerable expertise in wildlife disease research. An important component of the Department's support is the recently established interdepartmental CWD Task Force that works with Federal and State agencies to better coordinate CWD response and research.

Within the Department, we are involved in CWD surveillance, management, and research. The U.S. Fish and Wildlife Service and the National Park Service are working closely with State wildlife management agencies to manage CWD on public lands. Many States have CWD response plans and collectively they have produced the "*AFWA Best Management Practices for Prevention, Surveillance, and Management of Chronic Wasting Disease*," which the Department's CWD Task Force has adopted for use in addressing CWD on Federal lands.

The U.S. Geological Survey

As the science agency of the DOI, USGS' mission is to provide unbiased scientific information to Federal and non-Federal resource managers and planners. Over the past 17 years, USGS scientists have worked in the field and in the lab to provide science to support CWD surveillance; develop tools for early detection and management; and understand the biology of CWD. USGS tools and information have been applied to CWD management across the Nation.

The USGS maintains highly specialized facilities for the study of CWD, including the only Federal biosafety level three facilities (BSL3) dedicated to wildlife disease investigations and experimental research. In addition to this unique Federal science center, USGS has subject matter experts in disease ecology, cervid health, ungulate genetics, and cervid migration across other science centers and cooperative research units that contribute to USGS's CWD research portfolio.

CWD Surveillance

USGS maintains for the Nation a constantly updated online map of CWD detections in captive and wild cervids in North America. Map data originates from State wildlife agencies, USDA, and the Canadian Food Inspection Agency and represents the best-available information. This map is used and cited by Federal, State, and academic partners to monitor CWD spread. USGS updates this map with every change in CWD distribution once the information has been verified with the appropriate responsible agencies.

USGS is also working with land managers to assess and refine CWD surveillance efforts for each unique situation in their respective States. Prions are thought to be the most likely agent of transmission of CWD. Prion-contaminated soil may remain infectious for many years, so surveillance and early detection are critical. For example, USGS science on CWD genetics is informing the refinement of CWD surveillance programs in the Mid-Atlantic Region, an area

with a recent history of this disease. In addition, working with Wisconsin DNR and the National Park Service, USGS developed an online tool to help States design a white-tailed deer surveillance program that ensures a robust cost-effective sample size for testing.

Tools for Early Detection and Management

The gold standard for detecting this disease is a post-mortem test of brain and lymph node tissues. There are only 18 accredited USDA labs for CWD testing with varying turnaround times for results during peak hunting season. In response to this, ongoing USGS research, in collaboration with Federal and State agencies, is focused on developing rapid and sensitive diagnostic tests to detect prions in blood, feces, and the environment. These tests will potentially provide alternative methods for ante-mortem testing and help managers detect infection earlier in the disease course.

CWD Biology

Because CWD and cervids may cross jurisdictions, USGS scientists are partnering with State agencies and wildlife disease cooperatives to coordinate research at the regional level. Genetic analyses help show whether some individual cervids may be more likely to develop CWD than others. This appears to be linked to variation in the prion protein gene (*Prnp*). In coordination with State CWD white-tailed deer surveillance programs, small tissue samples have been collected for genotyping that used USGS assays. Genetic data was incorporated with demographic and environmental factors as well as disease status to inform CWD risk assessments.

For FY19, USGS invested \$720,000 in CWD efforts. Future USGS research will concentrate on early detection and effective tools to support CWD management.

U.S. Fish and Wildlife Service

Since 2004, the U.S. Fish and Wildlife Service has supported State-led CWD management through the Wildlife Health office. The Wildlife Health office is part of the Natural Resource Program Center, which serves as the science center for the National Wildlife Refuge System and provides wildlife health technical support to all 567 National Wildlife Refuges as well as many other programs within the U.S. Fish and Wildlife Service. The Wildlife Health office funds CWD work on State and U.S. Fish and Wildlife Service lands and provides training on CWD sample collection to State and Federal personnel. The Wildlife Health office also collects and tests samples for CWD in direct support of State activities, and works with States to develop collaborative plans that include CWD management and monitoring strategies. States also receive funds from the U.S. Fish and Wildlife Service's Wildlife and Sport Fish Restoration program through the Pittman-Robertson Act, which are then used to research and combat CWD. For example, the Minnesota Department of Natural Resources currently uses over \$2.3 million of their Pittman-Robertson funds annually to manage CWD.

Currently, 49 National Wildlife Refuges, 24 Waterfowl Production Areas, and 8 Fish Hatcheries are located in counties already affected by CWD. The U.S. Fish and Wildlife Service is working with States to ensure that activities on U.S. Fish and Wildlife Service -managed lands are focused on preventing the further spread of CWD.

The U.S. Fish and Wildlife Service will continue to work with Federal and State agencies, tribes, non-governmental organizations, and academia to address CWD. Future work will include communicating the effects of CWD on wildlife health both to the public and with our partners, applying human dimensions research to disease management and the U.S. Fish and Wildlife Service's interactions with hunters, enhancing the application of CWD research on U.S. Fish and Wildlife Service lands, and ensuring appropriate best management practices are applied throughout affected or at-risk National Wildlife Refuges.

Conclusion

Chronic Wasting Disease is of great concern to wildlife managers. Controlling this disease requires current, science-based information and concerted coordination among Federal agencies, State wildlife management and animal health agencies, tribal governments, and local partners. The Department is committed to working with State and Federal agencies, and other partners to develop consensus-based actions to address CWD.

Thank you for the opportunity to testify today. I would be happy to answer any questions you may have.