

National Wildlife Health Center Newsletter

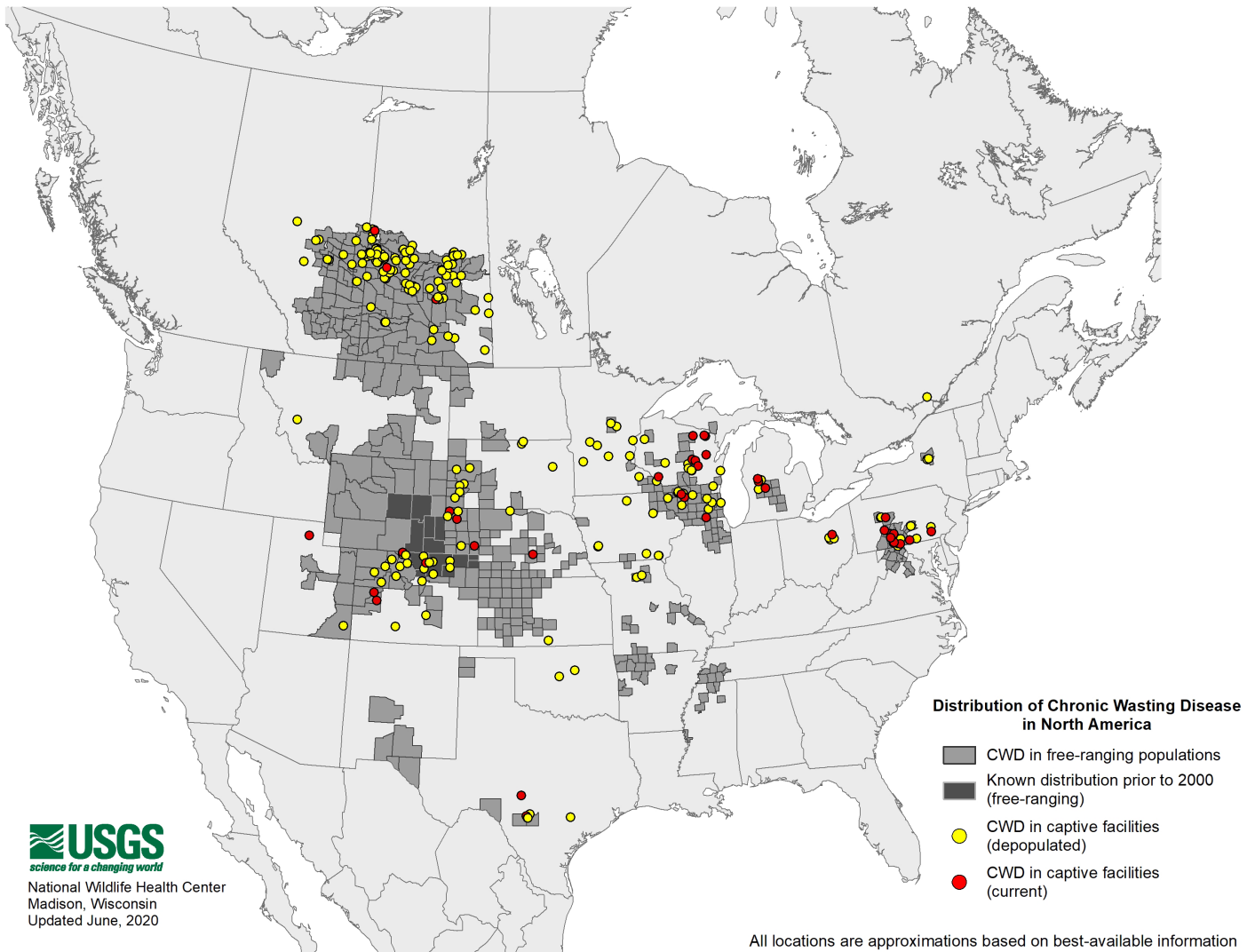
June 2020

Chronic Wasting Disease

In this edition of the USGS National Wildlife Health Center (NWHC) newsletter, we are focusing on current and collaborative work on chronic wasting disease (CWD). CWD continues to spread across

the landscape creating challenges for wildlife management agencies. NWHC's work on CWD ranges from technical assistance for management agencies, tracking the spread of CWD, measuring impacts of CWD

on deer populations, and developing novel management tools. More information about CWD, including fact sheets and additional information resources, can be found on [our website](#).



National Wildlife Health Center
Madison, Wisconsin
Updated June, 2020

Distribution of documented chronic wasting disease in North America. Data collated by USGS National Wildlife Health Center. Updated June 12, 2020. See page 3 for more information on the expanding distribution of CWD.

Impacts of chronic wasting disease on Wisconsin deer

NWHC and the Wisconsin Department of Natural Resources (DNR) are partnering to study the population level effects of chronic wasting disease (CWD) on white-tailed deer (*Odocoileus virginianus*) in the core/endemic CWD area in southwest Wisconsin. In this study, we are using data collected during DNR's previous and on-going CWD field research projects to examine the importance of CWD on overall deer demographic rates compared to other factors such as hunting or predation. From 2017 through March 2020, DNR personnel have collared 764 adult deer, 322 newborn deer, 47 bobcats, and 69 coyotes. Data collection for adult deer include antemortem and postmortem CWD testing, genetic samples, morphometric and body condition measurements, location data from GPS collars, and fate of the animal. Deer fawns are monitored for survival as well. These data will be used with infection rates to develop an integrated population model that

includes the impacts of CWD on population dynamics. This model will then be used to forecast the long-term impacts of CWD on deer populations under alternative CWD and harvest management scenarios given projected changes in CWD prevalence. Ultimately, these results will allow managers to evaluate the

potential effects of disease control efforts on deer populations while accounting for other stressors, and thereby select the management strategies most likely to reduce the impacts of CWD and protect the health of deer populations. For more information, contact Dr. Dan Walsh, dwalsh@usgs.gov.



White-tailed deer fawn. Credit: Bryan Richards, USGS.

Multistate CWD research consortium

In July of 2019, Michigan State University invited leading chronic wasting disease (CWD) researchers to participate in a facilitated multistate CWD strategic planning session. The goal of this effort was "to develop an interdisciplinary consortium that provides a mechanism for information exchange and multistate collaboration focused on fostering research to better understand the biology of chronic wasting disease and improve our ability to detect and remove the disease from the landscape." The initial meeting of the consortium, funded by the Michigan Department of Natural Resources and the Michigan State University

Wildlife Disease Initiative, took place in September 2019, in East Lansing, MI.

Forty-six participants representing CWD research from 14 universities, seven state agencies, one province, one non-governmental organization, and three federal agencies participated in the initial meetings. Through facilitated discussions, the group formed into multidisciplinary teams of researchers and partner agencies, each tasked with developing new research proposals and prioritizing those most likely to directly inform disease management needs. Five thematic research

areas were prioritized and further developed over the course of the meeting, including:

- Develop an amplification assay using improved sourcing for substrate and implementation of RT-QuIC.
- Develop a multistate adaptive management approach for CWD to evaluate management strategies.
- Establish and support human dimensions research to better understand values, attitudes, and motivations regarding CWD management.
- Establish a national CWD tissue database and repository for

Multistate CWD research consortium, continued

transmission and pathogenesis research.

- Conduct controlled CWD research using depopulated cervid facilities where CWD has been detected.

Since the initial meeting, groups representing the five research themes

have worked independently to focus research and funding opportunities. Additional outcomes of the initial meeting were a consensus decision to formalize the research consortium, to meet annually to continue research development, and to regularly update natural resource management and partner agencies. Currently,

the second consortium meeting is being planned for late July 2020. For additional information on the multistate CWD consortium, please contact Dr. Sonja Christensen, Department of Fisheries and Wildlife, Michigan State University, at chris625@msu.edu.

Chronic wasting disease – Expanding geographic distribution

According to state-based surveillance for chronic wasting disease (CWD), detections of CWD in free-ranging cervids occurred in 38 new counties in 11 states in the United States in 2019. These detections were made in Arkansas (one county), Iowa (four counties), Minnesota (two counties), Mississippi (two counties), Montana (nine counties), North Dakota (two counties), South Dakota (eight counties), Tennessee (four counties), Texas (one county), Virginia (two counties), and Wisconsin (three

counties). State-based surveillance during 2020 has already resulted in detections in three additional counties in three states (Minnesota, Montana, and Nebraska). As of May 2020, CWD has been documented in free-ranging cervids in a total of 313 counties in 24 U.S. states. The distribution of CWD in commercial captive cervid facilities has also expanded, with 19 new facilities in eight states in 2019 and seven additional facilities in six states as of May 2020. Captive facility detections

during this time frame occurred in Colorado (two), Iowa (two), Michigan (two), Minnesota (two), Montana (one), Nebraska (one), Ohio (one), Oklahoma (one), Pennsylvania (10), South Dakota (two), Texas (one) and Wisconsin (two). To date, CWD has been detected in 130 commercial captive cervid facilities in 17 U.S. states. The current CWD distribution map, based on best-available data, is available from the [USGS National Wildlife Health Center](#).

Development of genetic-based tools to address deer and CWD management questions

NWHC is leading a chronic wasting disease (CWD) collaborative research initiative of Midwestern and other state agencies aimed at promoting regional collaboration on deer and CWD research and management. The goal of this initiative is to align CWD efforts across various agencies to minimize redundancy, permit the pooling of resources, and allow the examination of regional-scale questions, while still meeting each member's individual objectives. One joint research endeavor currently being undertaken by the initiative is focused on leveraging recent genetic technological advancements to design a novel suite of efficient,

cost-effective, collaborative genomic resources for white-tailed deer that will be commercially available to wildlife managers and researchers. The development of multiple density SNP (single nucleotide polymorphism) panels can be used to provide population assignment of wild deer; distinguish captive and wild deer; screen prion protein (PRNP) gene variation; and investigate the connection between relatedness, landscape dynamics, and spread of diseases at a fraction of the cost of current techniques. This project is being funded by the Michigan Department of Natural Resources, Michigan State University,

and the Association of Fish and Wildlife Agencies. The Principal Investigators include geneticists from the Michigan Department of Natural Resources, Iowa State University, National Oceanic Atmospheric Administration (NOAA) Auke Bay Genetics Laboratory, University of Wisconsin-Milwaukee, and Texas A&M University-Kingsville, and involves partners from Iowa, Georgia, Michigan, Minnesota, Mississippi, Missouri, Pennsylvania, South Dakota, and Wisconsin state wildlife agencies. For more information, contact Dr. Dan Walsh, dwalsh@usgs.gov.

International reporting of wildlife diseases of interest to the OIE

Chronic wasting disease (CWD) is one of [53 non OIE-listed diseases affecting wild animals](#) that were selected by the [World Organisation for Animal Health](#) (OIE) for voluntary reporting due to their importance for wildlife conservation and for providing early warning to protect animal and human health. OIE Member Countries report data on these diseases to the OIE on a 6-monthly basis. Reporting of wildlife diseases, like CWD, is important to build situational awareness regarding wildlife health, build national and global knowledge capacity, increase coordination among agencies, and integrate wildlife health data into other surveillance frameworks.

Through the wildlife disease diagnostic and surveillance activities conducted at NWHC in collaboration with the U.S. Department of Agriculture and

other partners, we compile data on wildlife disease outbreaks for submission to the OIE to contribute to global wildlife disease surveillance information. Data from the January-June, 2019 reporting period is now [available on our website](#).

Scientists at the NWHC, in collaboration with the University of Wisconsin-Madison and [the OIE Working Group on Wildlife](#), have also developed 20 Wildlife Disease Technical Cards for the OIE (including [CWD](#)). The technical cards contain information on the non OIE-listed diseases in wildlife including the etiology, epidemiology, diagnosis, prevention and control, and potential impacts of the disease agent. The cards provide guidance on case and disease definition and are designed to facilitate reporting of these diseases to the OIE. Additional technical cards are under development.

Natural resource management

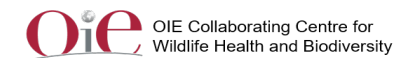
partners can contribute wildlife disease information to be submitted to the OIE by:

- Registering as a Natural Resource Management Professional and submitting data through the [WHISPers portal](#). Contact whispers@usgs.gov for more information.
- Or, by contacting the OIE National Focal Point for Wildlife for the United States, Jonathan Sleeman (jsleeman@usgs.gov; 608-270-2401), to submit data or with any questions.

If you are a private individual or entity with a wildlife mortality event to report, please contact your [state department of natural resources or state game and fish agency](#).



National Wildlife Health Center



CWD outreach and technical assistance from NWHC

NWHC regularly provides technical assistance to our state, federal, and tribal partners to provide information and outreach about chronic wasting disease. Here are some recent examples:

- [Chronic wasting disease, Outstanding in the Field podcast](#) from USGS Ecosystems Mission Area
- [CWD in Pennsylvania: What Does the Future Hold?](#) video by National Deer Alliance
- [CWD Management podcast](#), Deer University, Mississippi State University Extension



White-tailed deer. Credit: John J. Mosesso, USGS.

More Information from the NWHC

Visit our website at www.usgs.gov/nwhc and follow us on Twitter [@USGSWILDLIFE](https://twitter.com/USGSWILDLIFE)

To sign up to receive Newsletters and Wildlife Health Bulletins from the NWHC, please email nwhcoutreachdb@usgs.gov.