Fish and Wildlife Health

2019 MAFWA Committee Report

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Executive Administrator, Wildlife Management & Research

Midwest Fish and Wildlife Health Committee Meeting

April 23-24, 201

Duluth, MN

Hosted by:

Minnesota Department
of Natural Resources

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Meeting Time and Place

April 23-24, 2019
Duluth, MN

Agenda: see Appendix I

Attendance

Attending this year's Midwest Wildlife and Fish Health Committee Meeting were representatives from 13 state fish and wildlife agencies: Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, North Dakota, Ohio, South Dakota, Tennessee, Virginia, and Wisconsin; 2 provincial wildlife agencies: Ontario and Saskatchewan; and representatives from 3 federal agencies:

- the United States Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services (USDA-APHIS-WS), and
- the United States Geological Survey, National Wildlife Health Center (USGS-NWHC)
- the United States Fish and Wildlife Service (USFWS)

Additionally, representatives from two Indian Tribes participated in the meeting this year:

- Fond du Lac Band of Lake Superior Chippewa Indians
- Sault Ste. Marie Tribe of Chippewa Indians

A total of 37 individuals participated in the meeting either remotely or on site (Appendix II), including invited guests from Michigan State University, the University of Minnesota, and representatives from the Southeastern Cooperative Wildlife Disease Study (SCWDS). Kansas, Nebraska, and Manitoba were not represented.

Executive Summary

Disease Presentation Summaries

Each state or province in attendance, the National Wildlife Health Center, and USDA-Wildlife Services provided an update on the wildlife disease issues within their jurisdiction. See Appendix III.

Minnesota's Approach to CWD Management, Michelle Carstensen, Minnesota DNR

From fall 2018 thru March 2019, a total of 8,009 samples were tested for CWD in Minnesota, confirming 34 additional positive deer. Of these positives, 24 were from within our CWD management zone, DPA 603, 4 from DPA 346, 2 from DPA 347, and 1 from the north-central surveillance area in DPA 247. To date, Minnesota has confirmed 52 positive wild deer in 5 counties. MNDNR mounted an aggressive

response the increased prevalence and disease spread by implementing special late hunts, landowner shooting permits and agency culling. The agency also updated is CWD Surveillance and Management Plan to include 3 phases of disease response: initial detection, persistent infection, and endemic disease. A work group will be formed within MAFWA to explore how CWD prevalence within each state/province has changed from initial discovery of the disease by utilizing various management tools.

Research Update on Deer Movement Studies in CWD
Daniel Storm, PhD, Natural Resources Research Scientist, Wisconsin DNR

The Wisconsin DNR is partnering with the USGS National Wildlife Health Center and University of Wisconsin – Madison to study the impact of chronic wasting disease on deer populations. WDNR is gps-collaring deer and performing antemortem CWD tests, enabling researchers to estimate how CWD reduces deer survival. Initial study results demonstrate that CWD substantially reduces deer survival. Data collection for this study began in 2017 and will continue through 2021.

Chris Jennelle, PhD, Research Scientist, Minnesota DNR

The southeast MN deer movement study aims to determine cause-specific mortality for population modeling and to document dispersal patterns and activity ranges to inform corridors of possible CWD spread. 109 WTD in 2018 and 64 in 2019 were captured, GPS collared, and released. After mortalities and significant collar hardware failure, there is active monitoring of 72 deer. The longest trek (77 miles) was by a juvenile female. Preliminary results suggest higher than expected female spring dispersal and high variation in distance traveled; spring dispersal movements are longer and more prevalent than fall movements; two-thirds of fall excursions were temporary movements between clusters of locations – suggesting seasonal home ranges for bucks as a possibility. For future study, the year 2 collar hardware and software were improved and data will be collected until deer die or collars fall off or stop transmitting. Attempts will be made to recover all collars. In Feb-Mar 2020 40 juvenile females and 40 juvenile males will be capture to deploy additional GPS collars.

Jonathan Trudeau, Michigan State University (1st author), and Sonja Christensen, Michigan State University (presenter)

<u>Deer movement:</u>
Last year (2018 capture season), captured 73 deer. Of these, we collared 35 fawns (1.5 years old come hunting season). We collared 22 males and 13 females (35 deer). In total, we had 9 deer disperse (26% of the total cohort and 41% of the males). The average dispersal distance was 7.5km (4.7mi) with a range of 1.86-13.11km (1.15-8.15mi). We have two additional fawns that made large movements, but were harvested (12.02km), or hit by a vehicle (6.76km) before the completion of the movement. We have observed a large proportion of deer making relatively quick, excursive movements outside of their established home ranges (63% of marked deer). Both males and females, typically as fawns, have made excursions. Some excursive movements have been as great as 29 km.

<u>Causes of mortality:</u>

During the hunting season, we had 14 deer harvested (2 were shot with bow and arrows but appeared to have been intentionally left where they died). The vast majority (n=11) were harvested during archery season and only 3 of the deer were harvested with firearms, one with a disease control permit. We have had 12 DVCs.

2019 deer capture update

We captured 89 deer during the winter/spring of 2019. We currently have 102 deer with active GPS collars (2018=35, 2019=67); 31 males and 71 females. Of the 102 deer collared, about 25% are fawns and we are already starting to see some potential dispersals. We have had some issues with male deer tossing their collars, but changed out the collar design slightly to have a fixed amount of expansion and our tossed collar rate dropped dramatically. We have had 5 capture related deaths. Causes include predation by canids shortly after release (n=3), euthanized after a spinal fracture resulting from a steel weight hitting the back (n=1), and euthanized due to broken leg (n=1). We have roughly 42% of our collars in the rural portion of our study area and the other 58% in the suburban portion of the study area.

Data Collection:

We are collecting blood, hair, tissue, and fecal material from every deer when possible. We are also recording total length, body length, chest girth, neck circumference, and collar circumference. Our fix rate for location data is every 30 minutes.

Update on Tri-state Collaborative for WNV in Grouse (MN, MI, WI)
Michelle Carstensen, Minnesota DNR (1st author), and Charlotte Roy, (presenter)

The ruffed grouse population index in Minnesota from 1949 to the present was reviewed. Based in part on studies in Pennsylvania, there is regional concern about the potential impact of WNV on grouse populations. West Nile Virus was confirmed in 1 of 161 grouse in 2005. A pilot study was initiated to assess the feasibility of working with grouse hunters to obtain samples and data, to estimate exposure of grouse to WNV, to evaluate how many exposed groused developed disease, and to understand the potential impact of WNV on grouse populations. Lessons learned include friends, family, staff, and retirees were critical resources to obtain sufficient samples, planned hunts were not reliable sources of large numbers of samples, effective communication with cooperators is important, providing mailing kits for sample submission is worth the added expense, and expect to distribute twice as many kits as will be returned with samples. One more year of sampling to reach a target of 400 samples is planned. Sampling area will be enlarged to include entire ruffed grouse range in MN and more mailing kits will be provided and made available at area wildlife offices before the start of the season.

Julie Melotti, Wildlife Disease Lab Technician, Michigan DNR

In the fall of 2018, the Michigan, Minnesota, and Wisconsin Departments of Natural Resources began a multi-state collaborative study to understand the impacts of West Nile virus (WNV) on ruffed grouse (*Bonasa umbellus*) in the Great Lakes region. In Michigan, four distinct sampling areas were chosen in the Upper and Northern Lower Peninsulas with a statewide goal of 400 samples. Grouse hunters were recruited via email from lists provided by the Ruffed Grouse Society and MI DNR staff. Five hundred kits were distributed to 39 grouse hunters prior to the start of the early grouse season (September 15-

November 14). Hunters were asked to collect blood on a Nobuto strip and return it along with the breasted-out carcass and a completed data sheet. Two hundred six samples were returned, most of which appeared to be adequately collected. These samples are in the preliminary stages of analysis. In addition to the multi-state study, the MI DNR has been conducting morbidity and mortality investigations on ruffed grouse, having examined 46 birds from August 2017 through November 2018. Of these, 19 (41%) were positive for WNV on PCR, with 16 of 18 PCR positive birds exhibiting myocardial lesions consistent with a viral infection and 7 of 18 being positive on immunohistochemistry.

Nancy Businga, Senior Microbiologist, Wisconsin DNR

Wisconsin distributed 500 sampling kits to ruffed grouse hunters in 2018 with 238 kits returned (48%). Samples were distributed across the northern half of Wisconsin, especially in Price and Oneida counties which are known good ruffed grouse habitat. From October through December, 16 sick or dead grouse were collected and submitted to the Wisconsin Veterinary Diagnostic Lab for diagnostic necropsy. Three were WNV positive by PCR: one with evidence of clinical disease and two late season weak positives indicating a waning or subclinical infection.

Adopt-A-Dumpster, Tami Ryan, Wildlife Health Program Chief Wisconsin DNR

The Wisconsin Department of Natural Resources (DNR) Adopt-a-Dumpster (AAD) program was a new initiative in 2018, and it was created because of interest from individuals and organizations in helping the DNR provide hunters an option for appropriate deer carcass waste disposal, especially in areas where carcass disposal options are very limited or not already available. A related program, Adopt-a-Kiosk (AAK), was also a new initiative in 2018, and it was created because of interest from individuals and organizations in helping the DNR provide more options for deer hunters to submit samples for chronic wasting disease (CWD) testing. Just over 150,000 pounds of deer carcass waste was collected statewide during the 2018 deer season from all sixteen of our AAD participants. For the AAK program, there were two participants at the intermediate level. A summary of the AAK and AAD participation was presented as a poster at the 2019 Wisconsin Chapter of The Wildlife Society meeting and a handout of this poster was provided (attached). This poster helped bring attention to these two new programs and acknowledge the great participation we had this past year. Certificates of Appreciation were provided to adopters for their assistance during the 2018 deer season. We value partnerships like the AAD and AAK programs because they are instrumental as we work together in continued efforts to reduce the risk of disease spread through proper carcass disposal.

North American Non-Lead Partnership, Leland Brown, Non-Lead Hunting Education Coordinator, Oregon Zoo

Sportsmen and -women have been at the forefront of natural resource conservation throughout North America for over a century, and hunters continue to meet increasingly complex conservation challenges each year. Historically, many successful conservation efforts have focused on individual species recovery, and habitat conservation and improvement. In the last 20 years, significant research has identified lead exposure in scavengers across North America, and the world, with continental evidence of impacts.

However, discussion of solutions has been mired in political controversy, limiting engagement from necessary stakeholders. The North American Non-Lead Partnership seeks to expand the coalition of hunters, anglers and other conservationists dedicated to improving ecosystem and wildlife health by choosing non-lead options. Using a fact based, collaborative approach, focused on incentives and voluntary participation, the Partnership has had success engaging stakeholders. This Partnership helps to create specifically tailored processes for partners like state agencies and traditional hunting conservation groups to engage with their own stakeholders on the specific details of the issue, ammunition choices, and ways to protect both our tradition of wildlife conservation and hunting heritage that are critical to both the North American Model and the future of hunting.

NRC Proposal Process and Ideas, Nancy Boedeker, Indiana DNR

National Conservation Need (NCN) and Multistate Conservation Grant Program (MSCGP) specifications, application processes, and timelines were reviewed. An update on the progress of the MAFWA health committee's Chronic Wasting Disease management-related proposal was provided. The proposal, which describes the need for a system of increased information sharing between states and provinces regarding both CWD results and hunter locations, was put forth by the MAFWA directors and then accepted by the AFWA directors as a NCN. In answer to this acknowledged need, a letter of intent, describing a multi-state/province workshop to identify any concerns and limitations and to result in the design of an information-sharing system, has been submitted by DJ Case & Associates in partnership with the Michigan and Indiana DNRs. If accepted, the next step will be the submission of a full MSCGP proposal. During this presentation, comments on the letter of intent were solicited for submission to the MSCGP review committee. Awarded MSCGP funds become available in January 2020 for use during the calendar year.

Developing a Rapid CWD Test, Peter Larsen, Assistant Professor, University of Minnesota Dept. of Veterinary and Biomedical Sciences

Chronic Wasting Disease (CWD) is spreading throughout cervid populations in the United States, Canada, and Europe. Available diagnostic assays for the detection of CWD are limited, with the most effective tests requiring tissue (e.g., brain or lymph nodes) from sacrificed animals. Moreover, existing diagnostics for detecting CWD in live animals are expensive, time-consuming, and require significant technical expertise. To combat the spread of CWD an accurate, rapid, and easy-to-use diagnostic test that 1) identifies infected animals in the preclinical stages of the disease, 2) can detect pathogenic prions in environmental samples, and 3) can be deployed under field conditions for deer-side testing must be designed. Such a test would facilitate early detection of CWD and would help stakeholders manage the disease in real-time. We have formed a team of researchers at the University of Minnesota with expertise in genomics, prion biology, neurodegeneration, and biosensor engineering. The mission of this team is to design and experimentally validate a new and advanced diagnostic test for CWD. The diagnostic test will be capable of detecting CWD prions in both environmental and biological samples (e.g., collected from either hunter-harvested deer or live deer). We are currently testing microfluidic platforms and will release functional prototypes within two years.

USDA-WS Update, Tom DeLiberto, USDA APHIS-WS

An update on WS health related activities and research was provided. Information on African Swine Fever including the current global status, risk of introduction to North America, and USDA-APHIS preparedness and response planning was presented. A brief summary of the current situation and deployment plans in response to the ongoing Newcastle disease outbreak in California was given. An update (including video documentation) on significant achievements in the disease detection program using domestic dogs was also provided. Nationwide avian influenza surveillance is not planned for the upcoming year.

CWD Update, Bryan Richards, USGS-National Wildlife Health Center

The current distribution of CWD was reviewed and updates on detections from various states were summarized. Both geographic spread and increase in prevalence have been convincingly documented. Though definitive population declines have not been proven in all areas where CWD has been detected more recently, it is certain that the disease is at least having population impacts, including changes in age structure. Numerous bills to provide funding for CWD research and management that have been introduced and sponsored were described, though none have yet passed or been enacted. Alternate CWD funding sources were discussed. Input on regional and national needs for CWD surveillance, response, and research (in addition to funding) was solicited.

Director Action Items

Committee Elections

No elections this year. Dr. Kelly Straka continues in her 2nd year as Chair of the Committee. Dr. Nancy Boedeker continues in her 2nd year as Chair of the Committee.

Resolutions: none

Director Information Items

CWD Prevalence Tracking Ad Hoc Working Group

The Midwest Association of Fish and Wildlife Agencies Fish and Wildlife Health Committee is forming a new Ad Hoc Working group on CWD, proposed and lead by Michelle Carstensen of the MN DNR. The mission of the CWD Ad Hoc Working group will be to develop a means to track and portray CWD prevalence over time in relation to the relative degree and type of CWD response across the MAFWA States/Provinces. The goal is to provide information about which response strategies appear to be most effective in managing prevalence of the disease.

AFWA Federal Appropriations Recommendations for 2021 Federal Budget

We recommend the following funding is needed to support state and tribal monitoring, research and management of these diseases in free-ranging wildlife:

- Ranking #1, Chronic Wasting Disease-$40M increase - Equine/Cervid Health line item for CWD surveillance, research and management on wild, free-ranging cervids (USDA APHIS)
- Ranking #2, Bovine Tuberculosis-$15M increase - Ruminant Health line item for bovine TB surveillance, research and management on wild, free-ranging cervids (USDA APHIS)
- Ranking #3, White Nose Syndrome-$15M increase in funding to support surveillance, research and management efforts (USFWS DOI)
- Ranking #4, Neonicotinoids-$10M increase in funding to support research on impacts of neonicotinoids to wildlife species (USFWS DOI)
- Ranking #5, Fish, Amphibian and Reptile Health-$10M increase in funding to support surveillance, research and management of emerging fish, amphibian and reptile health issues. (USGS DOI)

We recommend continuing funding of $750,000 for the Southeast Cooperative Wildlife Disease Study (SCWDS). SCWDS is a state-federal wildlife health cooperative providing research expertise, diagnostic capacity, and training to agencies. SCWDS is instrumental in the protection of this nation's wildlife resources, domestic livestock interests, and human health.

We also recommend funding for USDA for the Wildlife Disease Monitoring and Surveillance program for $10M. This program provides wildlife disease assistance to states at no cost, such as CWD and bovine TB surveillance, feral hog control, and participation of wildlife disease biologists in state agency wildlife disease management activities.

Finally, we recommend $10M to support the USGS National Wildlife Health Center. The USGS National Wildlife Health Center is the only national center dedicated to wildlife disease detection, control, and prevention in the United States. Its mission is to provide national

leadership to safeguard wildlife and ecosystem health through active partnerships and exceptional science.

Time and Place of Next Meeting

During the wrap-up, the committee suggested the location for the 2019 meeting would be in North Dakota in April.

This year's meeting was a raging success and we want to thank the Directors who sent representatives and presenters to this meeting and encourage those who did not, to consider sending one to next year's meeting. Also, we thank Minnesota Department of Natural Resources for hosting this year's meeting, because it was fantastic.

Submitted by: Kelly Straka, Chair and Nancy Boedeker, Vice-Chair

APPENDIX 1. AGENDA

Midwest Fish and Wildlife Health Committee Meeting

April 23-24, 2019

Canal Park Lodge, Duluth, MN

Tuesday, April 23

12:00	Arrival and welcome	Michelle Carstensen
12:15	Opening remarks and introductions	Kelly Straka
12:30	State disease reports	State Representatives
2:15	*Break*	
2:30	State disease reports (continued)	State Representatives
5:00	*Break for dinner*	

Wednesday, April 24

8:00	Minnesota's approach to CWD management	Michelle Carstensen
8:30	**Invited presentation: Research update on deer movement studies in CWD areas**	D Storm, C Jennelle, D Williams (WI,MN,MI)
9:30	Update on Tri-state Collaborative for WNV in Grouse	MI, WI, MN, SCWDS
10:15	*Break*	
10:30	Adopt a Dumpster Program	Tami Ryan
10:50	**Invited presentation: North American Non-lead Partnership**	Leland Brown
11:30	NRC Proposal Process and Ideas	Nancy Boedeker
12:00	*Lunch provided*	
1:00	**Invited presentation: Developing a rapid CWD test**	Peter Larsen, UMN
1:30	CWD Surveillance & Management	Bryan Richards
3:00	*Break*	
3:15	Additional health concerns in the States	All
4:00	AFWA Federal Appropriations Recommendations	All
4:30	Action Items	All
5:00	Wrap up and next year's host	All

APPPENDIX II. PARTICIPANT NAMES AND CONTACT INFORMATION

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