



Midwest Fish and Wildlife Health Committee Annual Meeting

April 8th, 13th, and 14th, 2021

Video Conference

Table of Contents

Meeting Time and Place.....	3
Agenda	3
Attendance.....	3
Executive Summary, Meeting Presentations:.....	3
State and Provincial Wildlife Health Presentation Summaries	3
Supporting One Health: Missouri Example- Dr. Sherri Russel	3
SARS-CoV-2 Updates	4
National Deer Association: CWD Communication and Outreach-Kip Adams and Nick Pinizzoto	4
Why Size Matters: A Qualitative Discussion about CWD Prevalence – Dr. Michelle Carstensen and Kelsie LaSharr	4
PFAS Research State Updates and Discussion: MN, WI, MI.....	5
Committee Action Item:.....	5
Director Action Item	6
Resolution	6
Director Informational Items	9
Committee Elections	9
AFWA Science Needs Request	9
AFWA Federal Appropriations Recommendations for 2022 Federal Budget	14
Appendix I: Spring Meeting Agenda	15
Appendix II: Spring Meeting Attendees and Contact Details.....	16
Appendix III: State Reports	17

Meeting Time and Place

Our annual meeting took place via video conference with scheduled discussions occurring on April 8th, 13th, and 14th 2021. Travel restrictions and the ongoing COVID-19 pandemic required that the meeting this year, similar to last, be conducted in this way. The meeting was spread out over 3 days to allow for adequate time without video conference fatigue.

Agenda

See Appendix I

Attendance:

The 2021 Midwest Fish and Wildlife Health Committee Meeting was attended by representatives from 18 state or provincial wildlife agencies (MAFWA Members included: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Ontario, South Dakota, Saskatchewan, and Wisconsin; guests from Arkansas, Tennessee, and Virginia) and 3 federal agencies: USDA-APHIS-Wildlife Services, USGS-National Wildlife Health Center, and the US Fish and Wildlife Service.

Executive Summary, Meeting Presentations:

State and Provincial Wildlife Health Presentation Summaries

Each state or province in attendance provide an update during the annual meeting on wildlife health initiatives, disease concerns, ongoing research in their jurisdiction, and work adjustments or problem solving to accommodate for public health initiatives during the COVID-19 pandemic response. Many provided corresponding written reports. These reports can be found in Appendix III.

Supporting One Health: Missouri Example- Dr. Sherri Russel

An overview was provided on the challenges wildlife health agencies have faced in being incorporated by or uniting under the One Health umbrella with agencies representing human and domestic animal health. This presentation and discussion was a follow-up on the resolution that the directors passed last year on the importance of integrating wildlife health programs into state and federal One Health discussions. This past year, the One Health Federal Interagency COVID-19 Coordination (OH-FICC) integrated wildlife health professionals from federal and state agencies into pertinent sub-groups and invited each state liaison to attend bi-weekly update calls on advancements of knowledge in relation to SARS-CoV-2 and animals, including wildlife. While this interaction and incorporation was a healthy advancement, it was based on urgency. This group has worked to ensure that while COVID-19 can be zoonotic it is primarily a disease of humans. The current focus on One Health can both be of benefit and deterrent as people feel fatigue, hopelessness, and apathy. We discussed ways to change the narrative by discussing the value of protecting and striving to integrate wildlife health and ecological health discussions instead of focusing on wildlife disease. Much interest was given in how to incorporate wildlife health and how it can be a reflection of ecological health into existing agency frameworks, especially as we move out of the pandemic. The goal being to provide means to a vision of a healthy environment, healthy animals, healthy people. The Committee is planning additional meetings to address this topic and provide and share ideas on how to accomplish this at state/provincial, regional, and national levels.

SARS-CoV-2 Updates

Wildlife surveillance surrounding positive Mink Farms:

The committee was provided updates on SARS-CoV-2 farmed mink positive facilities in Michigan (1) and Wisconsin (2) and the subsequent surveillance in wildlife conducted around these farms. Both Michigan and Wisconsin wildlife health programs worked with their state agriculture and public health agencies as well as the CDC. USDA-APHIS-WS assisted both states in providing trappers who were also able to collect and submit appropriate samples to the USDA -National Veterinary Services Laboratory for testing. Neither state found any positive wildlife around these facilities. Wisconsin is further collaborating with USGS-National Wildlife Health Center to further understand what Coronaviruses may be naturally occurring in some of our native wildlife species.

Wildlife Rehabilitation:

The committee further discussed and shared changes or planned changes to their rehabilitation guidance based on documented natural transmission of the SARS-CoV-2 virus in felids and mustelids, research that had identified the possibility of transmission of the SARS-CoV-2 virus between white-tailed deer, and continued concern for bat populations that have already faced severe population impacts from WNS. State regulations on rehabilitation are wildly varied as have been what changes are available. Overall, the committee identified the complexity of the issue and support for what could be integrated by each state in line with the precautionary principle to reduce the risk of transmission of the virus from human populations to wildlife. The CDC-OH-FICC Wildlife and Zoo subgroup prepared informational items on their Guidance to Reduce the Risk of SARS-CoV-2 Spreading between people and wildlife. This webpage provides guidance documents for wildlife managers, researchers, and for rehabilitation facilities to reduce the risk of transmission between people and wildlife based on the hierarchy of controls model. This model provides details on how best to reduce risk from the most effective (eliminate handling) to least effective providing agencies mechanisms to assess and integrate risk reduction protocols into actions for which they have oversight.

National Deer Association: CWD Communication and Outreach-Kip Adams and Nick Pinizzoto

Kip Adams and Nick Pinizzoto reached out to the committee to provide information on their current outreach efforts regarding CWD. As an organization that is concerned with the continued health and presence of wild deer, they are interested in providing the public with a place to learn more about CWD and what it's spread means. They currently have a website, have developed video outreach, and have been working with some states to identify further ways in which they can get messaging out on CWD and get hunters to be strong partners in the fight against CWD. They discussed a willingness to present what they can offer to individual state agencies or as a larger initiative to MAFWA.

Why Size Matters: A Qualitative Discussion about CWD Prevalence – Dr. Michelle Carstensen and Kelsie LaSharr

Michelle provided a review of the Minnesota CWD response plan elements with a focus on comparing and assessing prevalence within states in a way that can be more consistent across state lines. An MFWHC working group was initiated to identify how to assess prevalence in disease establishment progression within the region. The working group found that there were many differences between what samples are included in each states' reported data and the spatial unit that is reported out.

Utilized MN experiences to provide known examples on adjustments that have to occur based on data collection and possible changes to sample collecting. Described the known biases that are introduced into the process by collection strategies (hunter-harvested, post-season culling, vehicle-kills, sick or found deer), as well as landscape sampling. The conclusion of the group is to work on standardizing how we report our state/province prevalence, provide assistance in what the numbers mean (the constraints that may be in the data), and discuss the qualitative discussion with the quantitative researchers to assess what our numbers that we provide really mean and how we act on them.

[PFAS Research State Updates and Discussion: MN, WI, MI](#)

Representatives from each of these three states provided updates on ongoing sampling and research efforts and any current food consumption advisories occurring within their individual states.

[Committee Action Item:](#)

- **Organizational guidelines**

The committee reviewed the current charter and identified multiple inconsistencies within the document. The committee decided to initiate a working group to evaluate and determine recommendations on changes to make to the directors.

Director Action Item:

Resolution:

Resolution to promote awareness of and preparedness for Rabbit Hemorrhagic Disease2

The Midwest Fish and Wildlife Health Committee discussed and proposed the following resolution in support of promoting awareness of and preparedness for rabbit hemorrhagic disease.

RESOLUTION TO PROMOTE AWARENESS OF AND PREPAREDNESS FOR RABBIT HEMORRHAGIC DISEASE

WHEREAS, the first stated objective of MAFWA is to protect the right of jurisdiction of the Midwestern states over their wildlife resources on public and private lands; and

WHEREAS, rabbit hemorrhagic disease (RHD), caused by a *Lagovirus* in the family *Calciviridae* named Rabbit Hemorrhagic Disease Virus – Type 1 (RHDV1), likely emerged in the 1970s or 1980s in Europe, and spread globally, impacting domestic rabbits, but not wild lagomorphs; and

WHEREAS, rabbit hemorrhagic disease virus – type 2 (RHDV2), was first reported in 2010 in Europe and spread rapidly, likely due to humans moving infected domestic rabbits and contaminated materials; and

WHEREAS, RHDV2, unlike RHDV1, affects wild North American lagomorphs, with high mortality rates; and

WHEREAS, RHDV2 was detected in isolated instances in North America in 2018 and 2019 in domestic and feral domestic rabbits; and

WHEREAS, an RHDV2 outbreak began in the southwestern U.S. and adjacent northwestern Mexico in the spring of 2020, affecting wild, domestic, and feral domestic lagomorphs; and

WHEREAS, by May of 2021, RHDV2 had now been confirmed in wild and feral domestic lagomorphs in 77 counties in 12 U.S. states, and 21 municipalities in 12 Mexico states, but none in MAFWA jurisdictions (RHDV2 was recently reported in a domestic rabbit in Custer County, SD); and

WHEREAS, once RHDV2 is detected in wild lagomorph populations, management options are limited, it is critical that MAFWA jurisdictions take appropriate measures at this time,

NOW, THEREFORE, BE IT RESOLVED, that the Fish and Wildlife Health Committee hereby urges the Midwest Association of Fish and Wildlife Agencies Directors to support, adopt and implement appropriate precautionary measures to address the threat of rabbit hemorrhagic disease caused by RHDV2; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages member states and provinces to initiate baseline population-level monitoring of lagomorphs within their jurisdictions, such that any future disease-associated impacts may be assessed; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages member states and provinces to implement enhanced surveillance and monitoring that promote early detection of disease within their jurisdictions; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages member states and provinces to develop appropriate response plans to protect the integrity of any remnant, threatened or endangered lagomorph populations in their jurisdictions; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages member states and provinces to consider and promote development of appropriate informational materials regarding RHDV2, the risks associated with moving domestic or wild lagomorphs (and associated materials), that include appropriate biosecurity measures that can be applied, and encourage reporting of sick/dead lagomorphs, and making these materials broadly available to potentially affected audiences, including domestic rabbit and hunting communities; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages member states and provinces to consider working with agricultural authorities, as appropriate, to develop and implement appropriate restrictions on the importation and movement of domestic and wild rabbits; and

BE IT FURTHER RESOLVED, the Midwest Fish and Wildlife Health Committee encourages the Midwest Association of Fish and Wildlife Agencies directors to adopt this resolution at their annual meeting in 2021.

HELP PROTECT WISCONSIN RABBITS AND HARES FROM RHDV-2

Steps for hunters while training and afield

Rabbit Hemorrhagic Disease Virus Type 2 is highly contagious and deadly among rabbits, hares and pikas, both wild and domestic. Robust biosecurity is essential to preventing its spread.

Wisconsin hunters may encounter rabbits or hares while afield or when working with their dogs. This flyer provides steps you can take to help prevent RHDV-2 from coming to Wisconsin.

PREVENT THE INTRODUCTION OF RHDV-2 TO WISCONSIN



- Be aware of [where RHDV-2 has been found](#).
- Avoid purchasing live rabbits or hares from areas where RHDV-2 has been found.
- Follow all State [regulations for bringing live rabbits to Wisconsin](#) from other states.
- Avoid bringing to Wisconsin dead rabbits or hares from areas where RHDV-2 has been found.
- Report any mortalities involving 3 or more wild rabbits, hares or pika to the local state wildlife authority.



TAKE PRECAUTIONS WHEN TRAINING OR TRIALING WITH YOUR DOG OR HOUND



When you're in areas where RHDV-2 has been found:

- Clean and disinfect all surfaces and equipment that come into contact with rabbits or hares.
- Scrub first with soap and rinse thoroughly with water. Then disinfect with a 10% bleach solution.
- Bag any clothes you've worn while handling rabbits until they can be washed.

WHAT TO DO IF YOU FIND A DEAD RABBIT, HARE OR PIKA



- Report any mortalities involving 3 or more wild rabbits, hares or pika. In Wisconsin, contact your [local wildlife biologist](#).
- Do not touch any wild animal carcasses that you find dead.
- Do not allow dogs to eat found carcasses.
- Do not move the carcasses of rabbits, hares or pika.

dnr.wi.gov/topic/wildlifehabitat/rhdv2

Director Informational Items

Committee Elections

Due to unforeseen circumstances, Committee Chair, Dr. Nancy Boedeker, stepped down in June of 2020. The Committee is extremely thankful for her commitment to the committee and for her energy in advancing wildlife health issues and knowledge. Dr. Lindsey Long who had previously been elected Vice-Chair of the committee was elected to chair during a special summer meeting. Dr. Sherri Russel was elected to be the new Vice Chair of the Committee.

AFWA Science Needs Request

Science Based Management Needs: MAFWA Fish and Wildlife Committee Evaluation:

1. Fish and Wildlife Diseases of importance voted on by the committee (these were the top diseases as ranked, individual states may have additional elements that aren't represented)

1. CWD: Continued spread, impacts on cervid populations, what tools are available that may be successfully utilized by state agencies
2. Neonictinoids: environmental persistence, widespread distribution, and unknown impacts on species
3. RHDV-2: Impacts on lagomorph populations in addition to those species that rely on lagomorphs for food.
4. Bovine Tuberculosis: Susceptibility of numerous species when introduced into an ecosystem. Human health issue as well.
5. Emerging diseases (yet unknown, including tick borne diseases): Introduction or conditions that allow for the emergence of diseases that may be population impacting.
6. Rana viruses

Specific High Science questions or priorities:

1. CWD: objective assessments of suppression or control strategies
2. CWD: Environmental persistence and disposal of CWD positive material
3. Chytrid: Continued research into epidemiologic factors and susceptibility of species
4. What are the disease risks associated with rehabilitation of various species or close contact between species in rehab or commercial facilities?

2 -3. What are the main factors (pathogens, parasites, toxins, and vectors) that ultimately affect the health of the wildlife and fish?

General categories of Factors challenging Health:

1. Climate Change

- a. Parasite and vector change as a consequence of climate changes

- b. In addition, more frequent extreme weather events mean more frequent stranded/stunned wildlife. This has direct effects but also means more wildlife in rehab settings.
 - i. More rehab ALSO has direct implications, not least of which is an expanded human/wildlife disease interface
- c. Movement of larger species
 - i. Ex: Possums and Armadillos moving North
- d. Stress from climate disruption may erode health resilience, leading to higher susceptibility to emerging or established diseases.

2. Land Use Patterns and Management Practices

- a. Example: CWD and fragmented habitat to withstand disease
- b. Agriculture productivity pressures in conjunction with the use of neonicotinoids and long-term impacts to Wildlife

3. Toxins: both legacy and new contaminants

- a. Of particular concern are known, such as PFOS, PFAS, and neonicotinoids
- b. Of additional concern next generation agricultural pesticides

4. Bio- diversity loss

- a. Obligate species and the adjustments related to food scarcity
 - i. Example Loss of Milkweed impacting Monarchs
- b. Monoculture and possibility of disease agent abundance

5. Anthropogenic Disease factors

- a. Domestic and International Animal movement and management
- b. Captive / Commercial Management
- c. Rehabilitation
 - i. Efficacy and impact
 - 1. Survivability
 - 2. Antibiotic use and emerging tick borne disease
 - 3. Zoonotic disease transmission and maintenance
 - ii. Inconsistent standards by state
 - iii. Population/social impact
- d. Pet trade- especially relevant to propagation of B Sal

6. Risk/ Science Communication

7. **Ecosystem changers:** Examples of ecosystem changers include: feral hogs, invasive carp (bighead, silver, black, etc.), feral cats, emerald ash borer, gypsy moth, Asian long-horned beetle, zebra mussels, cane toads, Burmese pythons, brown snake, hammerhead worm, bush honeysuckles, sericea lespedeza, Callery pears, cogon grass, cheat grass, hydrilla, etc.

What needs for more advanced technologies are most pressing in the Midwest region (e.g., animal side tests or decontamination regimes for CWD)?

- Rapid detection of new diseases and invasive species
- Joining in with precision agriculture
- Passive loggers and monitors and the associated computing power to store and analyze patterns in “big data”.
- Bat deterrents at wind turbines
- CWD field” rapid” test (animal side or at check stations)
- LiDAR coverage and libraries to accumulate/use
- Expanded use of drones – policy issues and assessments of impacts of use on species.
- More coordination of habitat mapping – regional coordinated mapping
- eDNA – emerging field for pollinators, invasive species detection, etc.
- Artificial Intelligence and machine learning – e.g., taxonomic identification for inverts
- System to remotely sense cool vs warm season grass

What are the greatest needs for alignment between multiple agencies in the region for the management of fish and wildlife? What management concerns would be better addressed through interagency science-based approaches?

- Species management
- Priority setting
- Threats surveillance (disease, invasive species, etc.)
- CWD related restrictions on carcass movement, baiting, etc.
- Shared collaboration with leadership approval, softening of jurisdictional boundaries, shared resources, and increased capacity
- Consistent wildlife rehabilitation standards
- Social science and human dimensions

- “Common languages” across jurisdictions for standardized habitat classification, ecosystem condition assessment, and criteria for identifying shared conservation opportunities
- Identification of potential points of convergence for fish and wildlife habitat
- Alternative energy development
- Carbon sequestration
- Regenerative agriculture and soil health
- Water quantity/quality management
- Other potential energy/climate/food initiatives that may present opportunities to incorporate values beneficial to fish and wildlife

Additional Factors:

What are the main factors (pathogens, parasites, toxins, and vectors) that ultimately affect the health of the wildlife and fish?

General categories of Factors challenging Health:

8. Climate Change

- Parasite and vector change as a consequence of climate changes
- In addition, more frequent extreme weather events mean more frequent stranded/stunned wildlife. This has direct effects but also means more wildlife in rehab settings.
 - More rehab ALSO has direct implications, not least of which is an expanded human/wildlife disease interface
- Movement of larger species
 - Ex: Possums and Armadillos moving North
- Stress from climate disruption may erode health resilience, leading to higher susceptibility to emerging or established diseases.

9. Land Use Patterns and Management Practices

- Example: CWD and fragmented habitat to withstand disease
- Agriculture productivity pressures in conjunction with the use of neonicotinoids and long-term impacts to Wildlife

10. Toxins: both legacy and new contaminants

- Of particular concern are known, such as PFOS, PFAS, and neonicotinoids
- Of additional concern next generation agricultural pesticides

11. Bio- diversity loss

- a. Obligate species and the adjustments related to food scarcity
 - i. Example Loss of Milkweed impacting Monarchs
- b. Monoculture and possibility of disease agent abundance

12. Anthropogenic Disease factors

- a. Domestic and International Animal movement and management
- b. Captive / Commercial Management
- c. Rehabilitation
 - i. Efficacy and impact
 - 1. Survivability
 - 2. Antibiotic use and emerging tick borne disease
 - 3. Zoonotic disease transmission and maintenance
 - ii. Inconsistent standards by state
 - iii. Population/social impact
- d. Pet trade- especially relevant to propagation of B Sal

13. Risk/ Science Communication

14. Ecosystem changers:

- a. Examples of ecosystem changers include: feral hogs, invasive carp (bighead, silver, black, etc.), feral cats, emerald ash borer, gypsy moth, Asian long-horned beetle, zebra mussels, cane toads, Burmese pythons, brown snake, hammerhead worm, bush honeysuckles, sericea lespedeza, Callery pears, cogon grass, cheat grass, hydrilla, etc.

AFWA Federal Appropriations Recommendations for 2022 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:

- Chronic Wasting Disease-Equine/Cervid Health line item for CWD surveillance, research and management on wild, free-ranging cervids (USDA APHIS): \$30M
- Bovine Tuberculosis- Ruminant Health line item for bovine TB surveillance, research and management on wild, free-ranging cervids (USDA APHIS): \$10M
- White Nose Syndrome-surveillance, research and management efforts (USFWS DOI): \$15M
- Neonicotinoids-research on impacts of neonicotinoids to wildlife species (USFWS DOI): \$3M
- Fish, Amphibian and Reptile Health-surveillance, research and management of emerging fish, amphibian and reptile health issues. (USGS DOI): \$5M
- 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.: \$1M
- Southeast Cooperative Wildlife Disease Study (SCWDS), 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.: \$1M
- Wildlife Disease Monitoring and Surveillance program (USDA). This program provides wildlife disease assistance to states, such as CWD and bovine TB surveillance, feral hog control, and participation of wildlife disease biologists in state agency wildlife disease management activities.: \$1M

Appendix I: Spring Meeting Agenda

Midwest Fish and Wildlife Health Committee Meeting

April 8,13,&14th, 2021

Virtual via Zoom

Thursday, April 8th

9:00	Welcome	Lindsey Long
9:15	State Reports	State Representatives
11:00	Break: Meeting zoom room can stay open for further conversation	
1:00	State Reports Continued	State Representatives
1:45	Federal Partner Updates	Federal Partners
3:00	Adjourn for day	

Tuesday, April 13th

9:00	Agenda Repair	Lindsey Long
9:15	Discussion: Charter update and Budget	Lindsey Long
10:00	Discussion: Supporting OneHealth: Missouri Example	Sherri Russell
10:30	Discussion: AFWA Request: Science-Based Management Needs	Lindsey Long
11:00	Break: Meeting zoom room can stay open for further conversation	
1:00	Discussion Continued: AFWA Request	
2:00	Discussion: Rehabilitation and SARS-CoV-2/Mink	Sherri Russell
3:00	Adjourn for the day	

Wednesday, April 14

9:00	Director Liaison Introduction	Sara Parker Pauly
9:30	Invited Presentations	
	Topics: National Deer Association: CWD Communication and Outreach	Kip Adams Nick Pinizzoto
10:15	Why Size Matters: A Qualitative Discussion About CWD Prevalence	Michelle Carstensen
1:00	PFAS research state updates and Discussion	MN, WI, MI
2:00	Non-lead Partnership update	Lindsey Long
3:00	Spring meeting adjournment	

Appendix II: Spring Meeting Attendees and Contact Details

Name	State/province/agency	Email
Daniel Skinner	Illinois	Daniel.J.Skinner@Illinois.gov
Mitch Marcus	Indiana	mmarcus@dnr.in.gov
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