

**MIDWEST FURBEARER GROUP
ANNUAL REPORT
May 19, 2021**

MEETING TIME AND PLACE

The 2021 MAFWA Furbearer Workshop was held virtually on April 28 and May 5, 2021. The virtual meeting was hosted by the state of Michigan.

ATTENDANCE

Furbearer biologists, from 13 Midwest member states and 3 provinces (Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin, Manitoba, Ontario and Saskatchewan) participated in the 2021 virtual meeting. Attendees also included presenters for the workshop. In order to streamline the virtual meeting and provide opportunities for workgroup members to participate in discussions, attendance was limited to workgroup members and presenters. In addition, presentations were only solicited from workgroup members with a focus on state/province funded research or management issues. A complete list of presenters and contact information for state/province furbearer biologists is available in Appendices 1 and 2.

EXECUTIVE SUMMARY

Forums such as the Midwest Furbearer Workshop provide valuable opportunities for state furbearer biologists to become acquainted with emerging issues and exchange information and ideas related to furbearer research and management. As such, the need for state fish and wildlife agencies to establish/maintain furbearer biologist positions and support travel of furbearer biologists to the annual Midwest Furbearer Workshop is critical to maintaining quality furbearer management and research in each state. It is more important than ever that state agencies are in the forefront of issues related to furbearer management and regulated trapping in order to ensure abundant populations, address conflicts, and provide sustainable recreational opportunity.

At the 2021 virtual workshop, participants heard 16 presentations, all directly related to furbearer management issues within a member agency or related to research projects funded by a member agency. As requested, the work group discussed and have provided (Appendix 5) furbearer research priorities for consideration for AWFA.

The work group enjoyed their discussions and a chance to exchange ideas, as well as to hear presentations on research and management topics after missing this part of the workshop last year. However, participants missed the breaks and evening hours of an in-person meeting which typically allow much exchange of information on current results from population and harvest surveys, current challenges, and issues in furbearer management within each state, and an opportunity to discuss new or proposed research projects. The full in-person workshop provides a good venue for discussing new ideas or issues that affect multiple state agencies.

The work group had no Director Action Items for discussion but did have several Information Items which were discussed at the business meeting.

DIRECTOR ACTION ITEMS

None

DIRECTOR INFORMATION ITEMS

1. COVID-19 - Information primarily from zoos and other captive facilities such as mink farms suggests that mustelids are susceptible to COVID-19 while other families such as felids and canids may also be susceptible to COVID-19. Some states have developed handling protocols for research on these species to reduce the risk of human-wildlife transfer. However, much is unknown about the ability of the virus to transfer from humans to wildlife or from wildlife to humans. Even less is known about the potential population level impacts of COVID-19 on furbearing animals. Given the economic and human impacts from COVID-19, the work group encourages funding on research to examine these issues related to COVID-19 and furbearing animals.
2. Support for BMPs – The group continues to support the ongoing BMP testing procedures. Recommendations are needed for trap types to test along with varying trap placement and baiting protocol for multiple species. The work group recommends continued support for BMPs at the regional level along with promotion of ongoing research and the need for more public, agency, and trapper outreach.
3. CITES Issues - The USFWS again granted a national no-detriment finding for bobcat harvest in February 2021, allowing Midwest (and other) states the ability to continue bobcat harvest management programs and processing CITES requirements as they have been doing. A national non-detriment finding also exists for river otters.
4. Spotted Skunk ESA Review - The Plains subspecies of the eastern spotted skunk 12-month review for potential Endangered Species Act listing by USFWS is set to begin in 2021 with

the listing decision in 2022. The first “kick-off” meeting with external organizations is scheduled for May 27, 2021. . Listing could seriously impact trapping in Midwestern states.

5. Large Carnivore Report - The group will continue to annually update the Directors on changes in large carnivore management in the Midwest via Appendix 5.
6. Muskrat Declines –There is substantial evidence from trapping records corrected for effort that there has been a decline in muskrat abundance throughout much of their range in Midwest and Eastern North America over the past several decades. A research project funded by GLFWRA to assess potential factors associated with declines in the Great Lakes Basin is ongoing. The group will continue to seek funding for cooperative research projects to assess causes for those declines with an emphasis on developing management actions to reverse declines where feasible.
7. Wolf and Lynx Delisting- USFWS delisted Great Lakes gray wolves on January 2, 2021. However, there is pending litigation on the delisting. Canada lynx delisting was recommended in 2018, and a proposal was expected in the Federal Register last year. This action has not been completed. The group encourages MAWFA to express concern over the delay with USFWS leadership.

The group thanks state Directors for their continued support of travel of state furbearer biologists to the annual Midwest Furbearer Workshop. With tight budgets and restricted travel this annual workshop continues to be a critical component of sound resource management in the Midwest. Annual meetings allow for an open, thorough exchange of information and knowledge resulting in efficient, effective, and sound management of these unique species.

TIME AND PLACE OF NEXT MEETING

Nebraska Game and Parks will host the 2022 Midwest Furbearer Workshop. An exact time and location are yet to be determined. A complete list of previous host states is available in Appendix 3.

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APPENDIX 1. CONTACT INFORMATION FOR MIDWEST ASSOCIATION OF FISH AND WILDLIFE AGENCIES FURBEARER WORK GROUP MEMBERS.

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APPENDIX 2. LIST OF PRESENTATIONS AND PRESENTERS AT THE MIDWEST FURBEARER VIRTUAL WORKSHOP APRIL 28 AND MAY 5, 2021.

Assessing influences on muskrat populations in Great Lakes coastal wetlands
Kylie McElrath

Assessing decline of a keystone wetland species, the muskrat, (*Ondatra zibethicus*)
Dwayne Etter

Assessment of reproductive success for North Dakota fishers and river otters by examining post-mortem tissue
Tristan Darland

Statistical population reconstruction of North American river otter using a chi-square objective function
Sergey Berg

A new update about an old topic – beavers and non-lethal control
Vince Evelsizer

An eDNA evaluation of river otter (*Lontra canadensis*) diet with respect to fishes
Erangi Heenkenda

Establishment of Missouri's first black bear hunting season
Laura Conlee

Evaluating species-specific responses to camera-trap survey designs
John Erb

Assessing population viability and susceptibility to harvest of Ohio's recovering bobcats (*Lynx rufus*)
Marissa Dyck

Identifying scale of effect improves predictors of site occupancy by swift fox at the edge of their range
Ty Werdel

Landscape composition and proximity to water structure American badger (*Taxidea taxus*) distributions in shortgrass prairies
Colleen Piper

Wetland occupancy by muskrats is influenced by local habitat quality, presence of mink
Caleb Bomske

AFWA Communication Plan – One state’s approach

Matt Peek

New York City fur ban: Experiences and lessons from my attempt to testify to the NY City Council

Matt Peek

Update on Indiana Research Projects

Gerriann Albers

Evaluating illegal take of furbearers in Michigan

Jessica Bell Rizzolo

APPENDIX 3. HOST STATES FOR MIDWEST FURBEARER WORKSHOPS, 1979-2021.

Year	State	Year	State
1979	Kansas	2017	Iowa
1983	Wisconsin	2018	North Dakota
1984	Illinois	2019	Oklahoma
1985	Iowa	2020	Michigan (virtual business meeting)
1987	Minnesota	2021	Michigan (virtual)
1988	Indiana		
1989	Missouri		
1990	Nebraska		
1991	South Dakota		
1992	Ohio		
1993	Oklahoma		
1994	North Dakota		
1995	West Virginia		
1996	Michigan		
1997	Illinois		
1998	Kansas		
1999	Wisconsin		
2000	Missouri		
2001	Ohio		
2002	Iowa		
2003	Minnesota		
2004	Illinois		
2005	North Dakota		
2006	Michigan		
2007	Nebraska		
2008	Kansas		
2009	Kentucky		
2010	South Dakota		
2011	Wisconsin		
2012	Missouri		
2013	Illinois		
2014	Ohio		
2015	Indiana		
2016	Minnesota		

APPENDIX 4. LARGE CARNIVORE STATUS REPORT FOR MOUNTAIN LIONS, BLACK BEARS, AND WOLVES.

MOUNTAIN LIONS

	Protected (Y/N)¹	Estimated population	Harvest (Y/N/NA)²	Recent changes in distribution
Illinois	Y	No breeding population	NA	Rare visitor
Indiana	Y	0	NA	Rare visitor
Iowa	N	<5	NA	Occasional visitor
Kansas	Y	0	NA	None, still getting infrequent dispersers
Kentucky	Y	0	NA	
Michigan	Y	No breeding population	NA	A few transients each year, 68 confirmed sightings since 2008. All but 1 in Upper Peninsula.
Minnesota	Y	No breeding population	NA	Decline in transients apparent from 2014 – 2017 compared to 2010 – 2013, and then recent uptick in confirmations from 2018 - 2021.
Missouri	Y	No breeding population	NA	Several transients confirmed each year; 86 confirmations since 1994
Nebraska	Y	No statewide estimate; Pine Ridge Unit: 34 (2019 survey)	Y	3 populations formed since mid-2000s
North Dakota	Y	None available	Y	No
Ohio	N	0	NA	
South Dakota	Y	Approximately 260 in Black Hills, no statewide estimate	Y	No
Wisconsin	Y	No breeding population	NA	Rare transients; 93 confirmed/probable reports since 2015

¹Yes indicates the species is protected by state or provincial laws (e.g. listed as a game animal with an open or closed season).

²NA indicates the question is not applicable because no known breeding populations exist with the state or province.

BLACK BEARS

	Protected (Y/N) ¹	Estimated population	Harvest (Y/N/NA) ²	Recent changes in distribution
Illinois	Y	No breeding population	NA	Occasional visitor
Indiana	Y	0	N	Occasional visitor
Iowa	N	<5	NA	Occasional visitor
Kansas	Y	0	NA	None, still getting infrequent dispersers
Kentucky	Y	800-1,000 in core area	Y	Expanding population
Michigan	Y	~12,500	Y	Stable population in Upper Peninsula (80% of MI bear population), expanding population in Lower Peninsula
Minnesota	Y	12 ~ 15,000	Y	Decline from late 90's to ~ 2010, slight increase since
Missouri	Y	~800	N	Growing and expanding population; First bear hunting season scheduled for October 2021.
Nebraska	N	0	NA	Rare visitor, have confirmed 3 since 2002
North Dakota	Y	No breeding population	N	Regular visitor, with some individual bears overwintering
Ohio	Y	5-10	N	50-100 transients confirmed each year (increasing trend); <5 confirmed reproducing females
South Dakota	Y	0	NA	Rare occurrence
Wisconsin	Y	~23,300	Y	Stable population across northern Wisconsin, expanding southward

¹Yes indicates the species is protected by state or provincial laws (e.g. listed as a game animal with an open or closed season).

²NA indicates the question is not applicable because no known breeding populations exist with the state or province.

WOLVES

	Protected (Y/N) ¹	Estimated population	Harvest (Y/N/NA) ²	Recent changes in distribution
Illinois	Y	No breeding population	NA	Rare visitor
Indiana	Y	0	NA	Rare visitor
Iowa	Y	<5	NA	Occasional visitor
Kansas	Y	0	NA	None, have only confirmed 2
Kentucky	Y	0	NA	N/A
Michigan	Y	~695 (2020)	N	UP fully occupied. Minimum population estimate.
Minnesota	Y	~2700 (in winter 2019-20)	N	Slight expansion, most suitable habitat occupied
Missouri	Y	0	NA	Occasional visitor, 7 confirmations since 2001
Nebraska	Y	0	NA	Rare visitor
North Dakota	Y	0	NA	Occasional visitor
Ohio	N	0	NA	
South Dakota	Y	0	NA	Rare occurrence
Wisconsin	Y	~1,195 (in winter of 2019-20)	Y	Distribution stable, most suitable habitat likely occupied

¹Yes indicates the species is protected by state or provincial laws (e.g. listed as a game animal with an open or closed season).

²NA indicates the question is not applicable because no known breeding populations exist with the state or province.

APPENDIX 5. RECOMMENDED RESEARCH PRIORITIES IN AFWA IDENTIFIED SCIENCE-BASED MANAGEMENT NEEDS FOCUS AREAS.

In priority order within each category. Ranking score (lower is better) in parentheses at end of each description.

A. Wildlife Health

- 1. Establish standardized/systematic surveillance of furbearer disease prevalence across the region.** Need for more proactive regional monitoring of diseases. Example motivation - concerns with regional gray fox declines and early localized data to suggest distemper may be part of the problem, perhaps attributable to high raccoon populations (23).
- 2. Emerging contaminant concerns with furbearers.** Examples include questions/concerns associated with potential effects of neonicotinoids and PFAS on aquatic furbearers, but relevant to all wildlife taxa (36).
- 3. Research/recommendations associated with Covid.** Examples include guidance for researchers handling wildlife, spillover potential from mink farms in to wild populations, and potential population effects on wildlife (e.g., mustelids and felids) (47).
- 4. Research or risk assessment on potential human health and economic impacts from furbearer diseases or parasites.** Some diseases have/may emerge or expand due to climate change or increasing population density (e.g., due to reduced harvest pressure on populations). Disease risks both to hunters/trappers from handling animals as well as the 'general public'. Economic impacts could be associated with human illness, loss of hunting/trapping income or opportunity, or increasing nuisance animal management costs (49).
- 5. Review/research on potential role (none, good, or bad) of carnivores in CWD prevalence/transmission.** Many states getting questions on this topic, appears to be limited data on the subject (56).

B. Weather and Temperature-Related Concerns

- 1. Research on population effects and mitigation options/recommendations associated with increasing water extremes (droughts, floods) and impacts to aquatic furbearers and their habitats.** Effects are compounded by tiling/channelization/urban runoff/water demand in arid areas (14).

2. Range retraction/expansion of furbearers and potential ecological impacts. Some northern species' range could retract outside of U.S. (e.g., martens, lynx), whereas others could expand northward (e.g., armadillos, nutria, opossums, raccoons). Needs include systematic regional monitoring to detect changes, research/modeling on potential ecological impacts (disease, interspecific competition, predation), and potential mitigation recommendations (25).

C. Invasive Species

1. Research on population effects of aquatic invasives (carp, hybrid cattail, loosestrife, phragmites) on semi-aquatic furbearers. Effects on muskrats a key need, but also relevant to other semi-aquatic furbearers. Research on control methods for aquatic invasives often does not include assessment of effects/responses of furbearers to those treatments (15).

2. Feral cat impacts on furbearers. Potential impacts of feral cats on furbearer prey species, disease transmission, and their potential role in emerging concerns about suspected or known weasel population declines (29).

3. Potential for range expansion and detection of nutria into parts of the Midwest. Will it be detected fast enough, novel methods (e.g., eDNA) for detection, identification of high-risk areas and strategies for response (34).

D. Emerging Technologies

1. User-friendly/flexible/adaptable software for managing trail camera images and identifying species using AI. Cameras will play an increasing role in monitoring wildlife. AFWA/MAFWA should play a role in coordinating with state agencies and a software company to encourage development of camera/image management apps that meet the needs of agency biologists and researchers and can be utilized by all states. Pooling resources can allow for better products accessible to all (27).

2. Acquisition, development, and more frequent use of technology to remotely assess habitat and populations (e.g., drones, LIDAR flights, thermal/other imagery, cellular trail cameras). More consistent habitat assessments at small and regional scale, as well as for assessing/counting populations of animals or indications of their presence (e.g., muskrat house counts, beaver dams/houses, aerially detecting animals in forest) (31).

3. More research/development/acquisition/training related to use of e-DNA tools for various wildlife sampling/monitoring goals. e-DNA tools are seeing increasing use in monitoring for rare

or invasive species, diet studies, predation/depredation studies, etc. Agencies should expand their capabilities/knowledge in this arena (34).

4. Encourage research and development of cheaper, smaller, and more reliable GPS collars (38).

E. Interjurisdictional cooperation (surveillance, management, assessment)

1. Promote the benefits/role of trapping in research/conservation/management. More regional collaboration on agency and public outreach on trapping, more incorporation of trapping in to R3 programs, encourage agency leaders to support/implement a state action plan on trapping outreach (AFWA Fur Committee has developed an Outreach Plan for guidance), standardized agency website template for trapping outreach, support for biologists in one state to testify on anti-trapping bills in another state when their staff are not allowed, etc (20).

2. Support/development for regional "Living with Wildlife" content. Managing human-wildlife conflicts is likely to increase (e.g., low fur prices, fewer trappers, changing human demographics). There is a need for more research to assess/develop best practices for resolving specific conflicts, more development of user-friendly online 'do-it-yourself' resources and resources that connect citizens with private trappers/NWCOs, etc. AFWA/MAFWA should pool resources to develop regional/national best practices and online resources that all agencies can utilize in working and communicating with the public. Can also be an opportunity to promote the role of wildlife harvest in managing/minimizing certain types of conflicts. Some regions have already been doing this, but more is needed (28).

3. Support/encouragement for standardized regional population/trend/disease monitoring. Although resources and infrastructure vary by state, management and conservation would be improved if regional protocols were developed/used by all states. This takes both collective research to develop recommended protocols and a collective commitment by state agencies to pursue those monitoring protocols when possible (30).