Private Lands

2020 MAFWA Private Lands Working Group Directors Report

Submitted by: Mark Norton, South Dakota Department of Game, Fish and Parks

Meeting Time and Place

May 12th from 1:00 to 4:00 p.m. and May 13th 8:30 to 11:00 a.m. held via conference call hosted by SD Game, Fish and Parks

Attendance

There were fourteen (14) participants in the meeting which was held via conference call. All member states were represented at the private lands working group except Kansas, Kentucky, Minnesota, and Wisconsin. Scott Taylor, the National Pheasant Plan Coordinator provided an update on the Pheasant Plan which is in the middle of being revised. Greg Pilchak, AFWA Ag Policy provided an overview of AFWA comment letters submitted over the past year on Farm Bill Conservation Program Rules and provided guidance for discussion about CRP. See Appendix 1 for participant names.

Executive Summary

This year's private lands working group discussions focused on the sharing of new and successful projects in each state, modifications to CRP SAFE projects, developing recommended changes for the General CRP Environmental Benefits Index (EBI) and the possible new version of the Soil Health & Income Protection Program in the HEROES Act. See Appendix 2 for meeting agenda. The group felt this was a productive meeting with relevant discussions. There is value in meeting counterparts from different states, comparing successful projects, issues and challenges and working together toward solutions. **The group encourages the Directors to continue their support for this Working Group and to prioritize attendance by their staff.**

Director Action Items: None

Director Information Items:

State Updates – New or Successful Projects

Illinois received a Voluntary Public Access and Habitat Incentive Program (VPA-HIP) grant from USDA to increase public hunting access on private land. They also are starting a new Regional Conservation Partnership Program (RCPP) project that will provide cost-share to tenants on IL DNR lands to transition 25% of the cropland to no-till, add cover crops, and use multi-crop rotations.

Indiana received a VPA-HIP grant to expand their private land hunting access program to include deer and waterfowl hunting opportunities. They are also working on an agreement with the Natural Resources Conservation Service (NRCS) in Indiana to help NRCS with CRP technical assistance, planning, and status reviews.

Iowa was successful in signing up lands into perpetual wetland conservation easements through USDA easement programs and planning the restorations on 8,000 acres. High demand remains and they are hopeful for additional funding to enroll more land in 2020. They were also successful at developing wildlife habitat through the Environmental Quality Incentive Program (EQIP), especially with practices like brush management which they were able to provide 75% cost-share on. Received a VPA-HIP grant which will enable them to double the amount of land in their private land habitat and access program.

Michigan completed a new strategic plan that refocuses their private lands hunting access program on three priorities of limited access areas near population centers, access to areas to prevent limit wildlife and livestock disease transmission, and areas that will provide unique hunting opportunities like sharp-tailed grouse hunting. Their private lands habitat program also has added a commitment to monitoring results of grassland habitat management to guide program delivery.

Missouri Department of Conservation will be reorganizing as of July 1, 2020 which will create a new private lands branch. This will result in an increased focus on private lands habitat work with over 150 staff in this branch working on forestry, fisheries, wildlife, and urban habitat. They have received a VPA-HIP grant that will enable them to double their private lands hunting access program enrollment.

Nebraska also had a busy year with enrollment of perpetual USDA wetland conservation easements due to increased funding available from the extreme flooding in 2019. They are updating the Bergen Pheasant Plan which to date has impacted over 115,000 acres of habitat. Their private lands public access program grew to its largest enrollment of 347,000 acres and 44.5 miles of streams.

North Dakota started offering only neonic free food plot seed this year. They are working on a new RCPP proposal to native grassland restoration and management. Recenly completed a survey of hunters and landowners about their views of energy development on private lands leased for public hunting access. Results should be available later this year. Started marketing their CREP with on-line ads through Facebook and Google and are receiving a lot of interest from landowners from these efforts.

Ohio is updating its private lands tactical plan and possibly adding 6 new positions that would work on both public and private land habitat. Received a new VPA-HIP grant for controlled public hunting access. Water quality has been a priority and they have spent approximately $30 million over the last year on wetland restoration projects primarily in the Lake Erie watershed.

They also continue to partner with the Ohio Pollinator Habitat Initiative and successfully implement pollinator habitat by providing free pollinator seed and milkweed plugs for restoration projects. Looking forward to being part of the CRP CLEAR 30 pilot area to reenroll CRP contracts for 30 years.

South Dakota added a private lands habitat biologist position in 2019 as part of a reorganization of the private lands staff. They started implementing a new short term (5 year) working lands habitat program that establishes a diverse mix of perennial grasses and forbs on cropland and allow for haying and grazing as part of the Governor's Second Century Initiative. A new habitat stamp was created that goes into effect July 1, 2020 that will raise funding for public land habitat work and for private land access which will be used to fully enroll 100,000 acres of CREP. They are currently reenrolling the 1st expiring CREP contracts.

Other Information Items

NABCI Private Lands Staff Forum – This inaugural forum originally scheduled for March 24-25, 2020 in Kansas City, MO was postponed until the same time next year. It had over 100 registrations from federal, state, and NGO partner private land habitat professionals from across the country. The goal of this forum is to provide a high-quality environment for training and mentoring, exchange of ideas, and developing a community of practice that enhances the ability of private lands staff to effectively deliver Farm Bill and other conservation programs.

CRP SAFE Project Modifications - All states on the call were in the middle of modifying CRP SAFE Projects as required by the Farm Service Agency CRP Notice-897. States had many questions and were getting different answers from various state FSA offices. Greg Pilchak had submitted seven questions to the National FSA office prior to this meeting and had received no answers. The group supports AFWA sending a letter to FSA requesting an extension of the deadline to have the SAFE modifications submitted to the National FSA office to June 30th.

CRP Environmental Benefits Index – Beverly Preston with the National FSA office had requested at the North American Conference in March that AFWA provide suggested changes to the EBI. We discussed ideas on how to adjust the EBI to improve the competitiveness of SAFE general CRP offers. The group supported adding points for SAFE in the enduring benefits and air quality benefits portions of the index. We also supported any adjustments be added to previously approved AFWA EBI change recommendations and all changes be submitted together to the FSA. The AFWA CRP Committee will be further discussing these changes and finalizing their recommendations.

Soil Health Income and Protection Program (SHIPP) in the HEROES Act – A new bill in Congress included a provision to increase SHIPP to 5 million acres, expand it to nationwide, and streamline the requirements and payments into a 3-year program. The working group came up with few benefits to wildlife if this became law and had many concerns about the negative impacts this could have including:

- A single rental rate nationwide would overpay or underpay in most of the country and only be fair in a small section.
- It would diminish interest in CRP, which could have serious negative impacts to the budget for CRP in the next Farm Bill, negative impacts on the reenrollment of existing CRP habitat, and negative impacts on CRPs ability to add habitat to the landscape.
- 3-year contracts with cheap cover provides and promotes minimal wildlife habitat

The group would prefer any stimulus funding for conservation be used to increase CRP rental rates, practice incentive payments, and cost-share for mid contract management.

Time and Place of Next Meeting

The next meeting will be held during May of 2021 in Wisconsin.

Appendix 1. Attendance List

Participant Name	Organization
Bob Caveny	Illinois DNR
Sam Whiteweather	Indiana DNR
Josh Griffin	Indiana DNR
Brian Hickman	Iowa DNR
Todd Bogenschutz	Iowa DNR
Mike Parker	Michigan DNR
Lisa Potter	Missouri DOC
Erich Zach	Nebraska GPC
TJ Walker	Nebraska GPC
Kevin Kading	North Dakota GF
John Kaiser	Ohio DOW
Mark Norton	South Dakota GFP
Gregory Pilchak	AFWA
Scott Taylor	MAFWA/Pheasants Forever

Appendix 2. Meeting Agenda

MAFWA Private Lands Working Group Meeting Agenda
May 12-13th, 2020
Conference Call
Central Time

Member States: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin

Tuesday, May 12

1:00 – 1:15 Welcome (Mark Norton) and Review of 2019 Meeting in Ohio (John Kaiser)

1:15 – 2:45 State Updates

2:45 – 3:00 Break

3:00 – 3:30 AFWA Farm Bill Rule Comment Summary – Greg Pilchak

3:30 – 4:00 National Pheasant Plan Update – Scott Taylor

Wednesday, May 13

8:30 – 10:00 CRP SAFE Project Review, CRP EBI recommended chages, Soil Health Income and Protection Progam

10:00 – 10:15 Break

10:30 – 11:00 Meeting summary, action Items, resolutions, letters for Directors

Public Lands

MAFWA Public Lands Working Group

Respectfully submitted by
Paul Coughlin, Wildlife Habitat Program Administrator
South Dakota Game, Fish and Parks

Meeting Time and Place

The MAFWA Public Lands Working Group met via video-conference on May 7, 2020. The meeting was originally planned for May 11-14, 2020 at Watertown, SD, to be held in conjunction with the MAFWA Private Lands Working Group meeting. Unfortunately, the joint meeting was cancelled due to concerns and restrictions associated with COVID-19.

Attendance

In attendance for the video-conference were representatives from Indiana (Brad Feaster), Iowa (Pete Hildreth), Kansas (Dustin Mengarelli), Kentucky (Chris Garland), Michigan (Val Frawley), Nebraska (Pat Molini), Ohio (Michael Ervin), South Dakota (Paul Coughlin), and Wisconsin (Anne Reis). Note: The Public Lands Working Group is in need of a representative from Missouri Department of Conservation.

Executive Summary

The 2020 MAFWA Public Lands Working Group meeting, originally planned for early May in conjunction with the MAFWA Private Lands Working Group meeting, was canceled due to COVID-19 pandemic. However, the Working Group met via video-conference call to discuss topics relevant to management of state wildlife lands and consider Action and Information Items for the Directors' attention.

The Working Group spent time discussing impacts of COVID-19 on public land use and management. All agreed that while impacts were being felt regarding normal operations and maintenance activities - including impacts to hiring critical permanent and necessary seasonal staff positions - an interesting situation seems to be occurring with a noticeable increase in public use and visitation to many public lands and waters, including state wildlife areas.

Specific Information Items discussed included several perennial subject matters but supplemented with new and updated information from individual states. For example, the topic of neonicotinoid treated seed use on state wildlife areas and challenges associated with moving away from their use has been discussed for several years. The Working Group learned many states have successfully taken steps to eliminate treated seed use on their lands as challenges such as availability of non-treated seed have diminished due to market supplies and demands.

The Working Group again this year concurred on the importance of continuing as a working group of MAFWA. The annual working group meeting provides a valuable opportunity for state public lands administrators to reconnect with colleagues and encourages and informs peer to peer communications throughout the year amongst Midwest states on common issues, challenges, and innovations in managing state wildlife areas.

Director Action Items

There were no Action Items identified by the Working Group.

Director Information Items

The following Information Items were discussed by the Working Group:

Opportunity/Issue: Importance of the MAFWA Public Lands Working Group
While still a recognized Working Group through 2022, it is consensus of the participants to continue as a MAFWA Working Group. Further, given its value and importance to the Working Group participants, the members encourage MAFWA directors to continue to support attendance and participation by agency staff in the annual meeting. This event allows a valuable opportunity to reconnect with colleagues and encourages and informs peer to peer communications throughout the year amongst MAFWA states on common issues, challenges, and innovations in managing state wildlife areas.
Action: None

Opportunity/Issue: Compatible use on state wildlife areas
Compatible use of state wildlife management areas is an annual discussion item for the Working Group. Lands acquired and managed for fish and wildlife production and hunting and fishing opportunities also often provide opportunities for other outdoor related recreation. Direct impacts to fish and wildlife resources and their habitats, along with conflicts between hunters, anglers, and trappers can result from expanded use of state wildlife lands by a wider array of public interests, often presenting interesting challenges for land managers. However, the Working Group understands these non-traditional users also represent a newer and broader-based constituency group whose advocacy for public lands contributes to increased relevancy of state owned and managed wildlife management areas. Previous reports have suggested opportunities to continue education efforts designed to inform all public land users about the various funding sources used to purchase and manage state wildlife areas. Additionally, the Working Group agreed it remains important to clearly specify in acquisition grants (e.g. WSFR) the intended use of newly acquired wildlife management areas, but to make clear that secondary uses are also allowed when they do not conflict with primary uses and purposes. The challenge lies in achieving a balance of serving a broader constituency of outdoor enthusiasts while also acknowledging and maintaining a clear understanding of the primary purposes for which state wildlife areas are acquired and managed.
Action: None

Opportunity/Issue: Available resources for managing state wildlife lands
Most habitat and public use management activities occurring on state wildlife areas are funded through WSFR with required matching agency funds (75:25). In some MAFWA states, necessary staffing, support funding, and basic operations, maintenance, and development projects can be limited when decision makers do not fully understand or appreciate the funding source or mechanisms by which wildlife management funding is derived. Thus, state wildlife agencies, including wildlife land management programs, are often subject to fiscal limitations

applied to other state agencies receiving general appropriations. Despite availability of both WSFR and license funds to address wildlife habitat and public use needs on state wildlife management areas, imposed financial and human resources limitations often equate to merely lack of available spending authority in management budgets. The Working Group discussed possible approaches to address this, including: (1) the need for enhanced communication with legislators and other elected public officials to better inform these decision makers regarding all aspects of the WSFR program and the direct ties this program has to an agency's spending authority as it relates to responsible management of state wildlife areas; and (2) supporting development of various professional media products at the MAFWA organizational level for distribution to state legislators, elected official, and the public.
Action: None

Opportunity/Issue: Neonicotinoid treated seed use on state wildlife areas
For several years the Working Group has discussed the topic of phasing out neonicotinoid pesticide treated seed use on state wildlife management areas. This topic is of even greater importance with a nation-wide heightened focus on the critical role pollinators play in properly functioning ecosystems. Several Working Group states report success with their efforts to discontinue use of treated seed, giving both assurance and encouragement to other states as they continue their efforts, including addressing challenges such as seed availability and tenant compliance.
Action: None

Time and Place of Next Meeting

Wisconsin; specific details yet to be determined.

Wildlife Action Plan

Midwest Association of Fish and Wildlife Agencies
Wildlife Action Plan Working Group Report

Report submitted by Eileen Dowd Stukel, incoming Chair, to Ollie Torgerson on 17 June 2020

Meeting Time and Place -
The working group held quarterly conference calls and one annual meeting over the last year. Conference calls were held on June 5, September 3, and December 3, 2019 and March 3, 2020. The annual, in-person meeting was planned for Columbus, Ohio, in May 2020, but because of the coronavirus pandemic, a Zoom meeting was held instead. See Appendix 1 for the meeting agenda.

Attendance -
Working group members from 12 of the 13 states participated in the meeting. The Wildlife Action Plan Working Group includes State Wildlife Action Plan Coordinators, Wildlife Diversity Coordinators, and Threatened and Endangered Species Coordinators from the MAFWA states (See Appendix 2); all were invited. Additional participants included invited speakers, U.S. Fish and Wildlife Service staff, and MAFWA-affiliated leaders.

Director Information Items -

1. State and Tribal Wildlife Grant (STWG) Funding
    a. STWG funds continue to be the primary source of federal funds for rare and declining species conservation and State Wildlife Action Plan implementation. Efforts continue to assure that these funds are available as a stopgap until permanent, long-term funding can be secured. In FY2020, $67.7 million was provided through apportionments and competitive grants.
    b. To commemorate the 20th anniversary of this program, the Association of Fish and Wildlife Agencies (AFWA) is working with the U.S. Fish and Wildlife Service to highlight regional, state, and tribal success stories resulting from STWG funding. The completed report should be available for distribution at the September 2020 AFWA meeting.

2. Recovering America's Wildlife Act
    a. At the time of this report, HR 3742 (Recovering America's Wildlife Act) has 181 cosponsors (136 Democrat, 45 Republicans), but has not yet been brought to the House floor for a vote. A companion Senate bill has not yet been introduced. RAWA will redirect $1.3 billion per year in existing revenues from the U.S. Treasury to provide federal match funds to help states implement wildlife action plans, deliver environmental education and wildlife-associated recreation programs, and assist tribes with wildlife conservation on their lands.
    b. The pandemic has affected in-person lobbying opportunities. RAWA advocates are exploring ways to make this funding need relevant at a time when the public has renewed its interest in nature and outdoor activities. For example, a recent letter circulated to House and Senate leadership describes the economic impact of RAWA to states and tribes. Such efforts will continue in the face of legislative strategies focused on pandemic response and economic recovery.

c. Working Group members appreciate your past support and ask for continued support of the Act. Long-term and stable funding will facilitate improved regional collaboration within MAFWA. Many MAFWA states have passed updated Commission resolutions in support of RAWA, state legislative resolutions on the topic, and state-specific vision documents to encourage support and guide spending priorities.

3. State involvement with federal Endangered Species Act activities:
    a. Following a legal challenge, the northern long-eared bat remains a federal threatened species with a 4(d) rule. The USFWS will review the status of this species during a combined species status assessment (SSA) for 3 bat species – northern long-eared, little brown, and tricolored bats. The SSA should be completed by June 2021, with potential listing determinations approximately 1 year later.
    b. USFWS Region 3 presented a 5-year review schedule on upcoming listing determinations that is contained in the Working Group's meeting notes. They provided this website address for viewing species profiles: https://ecos.fws.gov/ecp/; then search by name.
    c. MAFWA states continue their interest in being involved in recovery planning in coordination with the USFWS. This is a new effort, with one example – the eastern massasauga rattlesnake. This Working Group will form a small group to further discuss recovery planning and implementation strategies.

4. Landscape Scale Conservation and Regional Coordination
    a. MAFWA's Midwest Landscape Initiative (MLI) efforts continue to be fleshed out through three Working Groups - At-Risk Species, Habitat Inventory and Assessment, and Wind Energy Development. These and related efforts have allowed improved coordination across state boundaries on shared resource challenges and opportunities that can be further explored in upcoming Wildlife Action Plan revisions. Related efforts are focused on landscape health, climate change, and grasslands.
    b. MAFWA states have been working on ways to develop and use a regional Species of Greatest Conservation Need list, potentially similar to efforts in the Northeast and Southeast Associations of Fish and Wildlife Agencies. The present direction is to explore options for hiring a consultant able to dedicate the necessary time and expertise to move this forward.
    c. With the completion of the MAFWA Mid-America Monarch Conservation Strategy and related state plans, MAFWA states are in various stages of monarch and native pollinator planning and implementation. The Monarch CCAA for Energy and Transportation Lands hopes to create more than 2 million acres of habitat and includes commitments from 13 Departments of Transportation and 12 energy companies. The USFWS Region 3 has begun a pollinator effort and reached out to MAFWA states on this topic.

Director Action Item

1. Rename the MAFWA Wildlife Action Plan Working Group to MAFWA Wildlife Diversity Working Group.

The mission of this working group is:

Advance wildlife and fish conservation in the member states of the Midwest Association of Fish and Wildlife Agencies (MAFWA) by providing a forum to facilitate program priorities and common objectives identified in the Wildlife Action Plans, activity that will result in coordinated conservation actions and recommendations to MAFWA on wildlife and fish diversity from the member states.

State representatives on this Working Group have a wide variety of duties and responsibilities, as reflected in the following job titles: wildlife action plan coordinator, threatened and endangered species coordinator, nongame program leader, diversity program leader, aquatic diversity program leader, natural heritage program biologist, conservation biologist, wind energy coordinator, and research chief. Renaming this group as the Wildlife Diversity Working Group (proposed name change approved by the working group at May meeting) will better describe the broad and comprehensive responsibilities associated with staff that help draft, implement, and revise state wildlife action plans in addition to working on broader fish, wildlife, and habitat issues.

Time and Place of Next Meeting

The working group will continue with quarterly conference calls. The next in-person meeting will be held in the spring of 2021, with the host state to be South Dakota or Wisconsin, pending further discussion.

APPENDICES -

Appendix 1. Meeting Agenda, MAFWA WAP Working Group – May 5-6, 2020

May 5 morning: Making Connections – updates from relevant committees/groups/teams - Kate

Welcome - Chief Kendra Wecker

Introductions – Kate Parsons

Background of this team – Kate Parsons

Regional priorities and status of projects

- Mussels – Tyler Schartel
- Pollinators – Katy Reeder
- Grasslands and Grasslands group update – Nate Muenks
- Herps – Kate Parsons

Monarch CCAA for Energy and Transportation Lands — Iris Caldwell

- Update on MAFWA state participation
- *Background materials*:

- General Monarch CCAA webpage for general information: http://rightofway.erc.uic.edu/national-monarch-ccaa/
- The final CCAA documents and a general FAQ are also available on the USFWS website: https://www.fws.gov/savethemonarch/CCAA.html

Update on Midwest region FWS pollinator effort – Brad Potter

- Transformation of monarch to general pollinator initiative. How is it working to move from monarch to landscape scale?

Climate Change initiatives – Nate Muenks

- MO provide an update on their work then other states can chime in as they wish.

Midwest Landscape Initiative (MLI) Update:

Steering and technical committees – Katy Reeder
Work groups:
At-risk – Kate Parsons
Wind – Erin Hazelton
Landscape health – Nate Muenks
Discussion: does the MAFWA working group feel connected?

Next steps – All

May 5 afternoon: SWAP revision, RAWA - Katy

Recovering America's Wildlife Act – State Agency Planning and Messaging

- Story Map – Kristin Hall
- Nebraska's approach to planning for Recovering – Melissa Panella

MAFWA Regional SGCN: Review of progress and discussion of potential uses – Katy Reeder, Kate Parsons, Brad Potter

- *Background materials*: The Midwest Landscape Initiative's At-Risk Species Working Group has been in discussions with Terwilliger Consulting Inc. about development of a regional SGCN list and associated information and tools. To be prepared for this discussion, please review the following webinar prior to the meeting: https://zoom.us/rec/share/_-xlEO3N-GFLWLP_yHrGW5QKQoTJeaa82ylP-6ANzRrQEFiesefcbltpke0qFzwn

SWAP revision plans and opportunities for collaboration

- Determine interest in a regional SWAP revision (5-years out) workshop – Jessica Piispanen
- Discussion of best practices – Mark Humpert

Next steps - All

May 6 morning: T&E species and recovery planning - Erin

Federal T&E species updates – Angie Boyer

ESA Legal Challenges Updates – Barb Hosler

- NLEB Decision

- Multi-District Listing Settlement / Listing Workplan lawsuit
- Challenge to SSA process (was dismissed)
- Other relevant updates

Monarch CCA – Phil Delphey
State's Involvement in Recovery Planning and Implementation – Any communication changes or improvements to report?

- Template for state recovery plans to feed into Recovery Implementation Strategies

Next steps

May 6 afternoon: Discussion of priorities, governance and next steps - Eileen

Future approach for regional priorities?

- Begin with discussion of potential uses of regional priorities

New name for working group?

- Review comparable working group/committee names and charges for other AFWA regional associations

Regional boundaries and states- Region 6 states comment on how they can stay engaged in this group

Director's Action Items

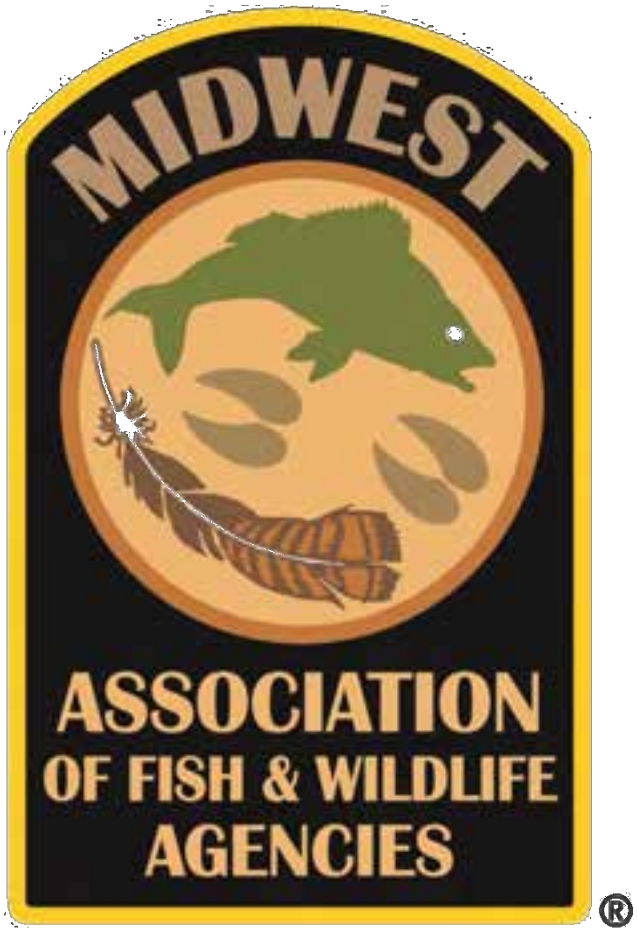
Next Steps

- Eileen (SD)– Director's report and presentation
- Eileen (SD) to set quarterly conf calls
- WI next lead (spring 2021)?
- In-person meeting?

Appendix 2. Meeting attendance list

State	Attendee
IA	Kelly Poole
IA	Katy Reeder
IA	Karen Kinkead
IL	Leon Hinz
IL	Joe Kath
IL	Tyler Schartel
IN	Scott Johnson
KS	Daren Riedle
KS	Chris Berens
KS	Megan Rohweder
MI	Scott Hanshue
MI	Amy Derosier
MI	Kevin Wehrly
MN	Kristin Hall
MN	Cynthia Osmundson
MN	Daren Carlson
MN	Alison Cariveau
MO	Kelly Rezac
MO	Nathan Muenks
NE	Melissa Panella
NE	Sarah Nevison
NE	Melissa Marinovich
NE	Caroline Jezierski
ND	Patrick Isakson
ND	Greg Link (MAFWA Director-Liaison)
OH	Kate Parsons
OH	Erin Hazelton
OH	John Navarro
OH	Sarah Stankavich
SD	Eileen Dowd Stukel
WI	Shari Koslowsky
WI	Tara Bergeson
USFWS Region 3	Brad Potter
USFWS Region 3	Jess Piispanen
USFWS Region 3	Angie Boyer
USFWS Region 3	Barb Hosler
USFWS Region 3	Phil Delphey
USFWS Region 3	Patrice Ashfield
AFWA	Mark Humpert
MAFWA - MLI	Ed Boggess
University of Illinois at Chicago	Iris Caldwell

Wildlife & Fish Health



Midwest Fish and Wildlife Health Committee Meeting

April 29, 2020

Video Conference

Hosted remotely by:

North Dakota Game and Fish Department

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Meeting Time and Place

Our annual meeting took place on April 29, 2020 by video conference hosted remotely by the North Dakota Game and Fish Department. The meeting had originally been intended to take place in person on April 28 and 29, 2020 in Bismarck, North Dakota, but was changed to a remote meeting due to COVID-19 pandemic-related travel restrictions. To supplement the primary meeting, additional specific topic focused conference calls (SARS-CoV-2, RHDV2, CWD, WHISPers) were scheduled and are summarized below.

Agenda: see Appendix I

Attendance:

Attending this year's Midwest Wildlife and Fish Health Committee Meeting were representatives from 15 state fish and wildlife agencies: including representatives from all MAFWA member states (Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin) as well as Tennessee and Virginia; representatives from all 3 MAFWA provincial wildlife agencies: Ontario, Manitoba, 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)
- the United States Geological Survey, National Wildlife Health Center (USGS-NWHC)
- the United States Fish and Wildlife Service (USFWS)

A total of 27 individuals participated in the meeting (Appendix II).

Executive Summary, Meeting Presentations:

State Wildlife Health Presentation Summaries

Each state or province in attendance provided an update during the annual meeting on the wildlife disease issues and ongoing research in their jurisdiction. See Appendix III.

USDA-WS and American Association of Wildlife Veterinarians (AAWV) Update, Tom DeLiberto, USDA APHIS-WS

Dr. DeLiberto provided updates during the annual meeting on a number of relevant topics including the standing of several pieces of chronic wasting disease legislation under consideration. He informed the Committee of the opportunity to participate in the government relations committee of the AAWV that helps to ensure that legislators are aware of the wildlife perspective when considering upcoming legislation.

Region-wide CWD Management, Kelly Straka and Bryan Richards and Sherri Russell

Updates were provided during the annual meeting on regional collaborative programs and projects including by Sherri Russell on the Four Corners CWD project involving Iowa, Kansas, Missouri, and Nebraska. Representatives from fish and wildlife agencies from these states met to collaborate on messaging and outreach related to high level management objectives for CWD and noted they would be happy to share the products of their meeting with other agencies. An update was also provided by Mike Tonkovich on recent meetings, including a value stream mapping exercise, and progress on the Midwest Landscape Initiative. An emphasis was placed on the need to engage hunters in CWD management.

WHISPers Update, Bryan Richards

Bryan Richards provided an abbreviated update during the annual meeting on the revised version of the NWHC's national disease tracking database. It was agreed to schedule a meeting specific to this topic in the near future with the intent of encouraging increased use of this tool to increase its value to the wildlife health community.

MSCGP CWD Networking and Information Sharing Project Update, Nancy Boedeker

Nancy Boedeker provided an update on this project during the annual meeting which initiated out of an NCN submitted by the MAFWA health committee and was subsequently funded through the MSCGP and supported by AFWA. The objective of the grant is to meet the need for increased information sharing about chronic wasting disease across North America to improve the effectiveness and efficiency of management of this devastating disease. This would include sharing information about CWD test results and out-of-state hunters. Throughout the first half of 2020, DJ Case, the subcontractee for the grant, will be conducting interviews with representatives with legal, information technology, wildlife health, and deer management expertise from all fish and wildlife agencies across the United States and Canada to identify potential concerns and limitations with regard to interagency information sharing. In the third quarter they will host a workshop to develop solutions to those concerns and by the end of the year will develop a basic framework for an accepted and effective information sharing tool. The Michigan DNR, Indiana DNR, and DJ Case plan to submit a proposal to apply for 2021 MSCGP funds, potentially with additional partners, to then build, initiate, and develop a plan for maintenance of this tool. Committee members were urged to encourage their agency's active participation in the interviews and workshop in 2020 and directors are encouraged to do the same.

SARS-CoV-2 Update and Discussion, Conference Call, 5/8/20

By request of committee members, a call hosted by NWHC was held to provide updates and an opportunity for discussion of wildlife management issues related to SARS-CoV-2, the causative agent of the current global human health pandemic which likely arose from contact between humans and wildlife. Concern for the potential for infection by humans of wildlife species including bats, felids, mustelids, and other species was discussed using information assimilated from multiple sources including AFWA, NWHC, USDA-APHIS, CDC One Health Covid group, and OIE. Diagnostic testing needs and concerns related to wildlife were discussed Updates were provided on recent and upcoming AFWA health committee documents and

discussion related to this disease as well as on the NWHC bat risk assessment and North American bat susceptibility study. Considered, proposed, or enacted wildlife management changes related to SARS-CoV-2 concerns of the state and provincial Midwest fish and wildlife agencies were discussed. Discussion focused in part on addressing concerns of wildlife rehabilitators in enacting management actions. Prior to the meeting Committee members developed an online chart for each state and provincial representative to update in regard to these actions or considerations with various species. Members were requested to keep the chart up to date as additional changes are made within their agency, state, or province so the chart can serve as a useful reference of what measures other agencies have adopted.

RHDV-2 Update and Discussion on Collaborative Management Opportunities, Conference Call, 5/20/20

By request of committee members, a meeting focused on Rabbit Hemorrhagic Disease Virus-2 (RHDV-2) was scheduled. Invited guest speakers included Tom Gidlewski from the National Wildlife Research Center and Barb Bodenstein, Robin Russell, Bob Dusek, and Katherine Richgels from the National Wildlife Health Center. In addition to SARS-CoV-2, a virus with potential impact on wildlife and demanding attention from wildlife health specialists, another emerging foreign animal disease is impacting wildlife in the United States. This virus, RHDV-2, though sporadically identified causing domestic and feral rabbit mortality in the U.S. in recent years, was identified for the first time in early 2020 as the cause of mortality in wild rabbits of multiple species as well as domestic rabbits in the Southwestern U.S. and Mexico. A risk assessment for wild rabbit populations at the national level is being conducted by NWHC but rapid spread throughout the country is currently considered quite possible. NWHC is also conducting more targeted risk assessments for endangered rabbit species populations including, in the Midwest, Indiana's state endangered swamp rabbit. Several fish and wildlife agencies are initiating discussions with their state and federal health management counterparts in agricultural and domestic animal health to collaborate on outreach and education as a preventive measure to limit the spread of this disease. Species susceptibility trials and the possibility of development of an oral vaccine for endangered rabbits are under consideration by USDA-APHIS-WS. Because RHDV-2 is classified as a foreign animal disease, testing is currently limited by the capacity at Plum Island, but options to expand approved testing facilities which would increase opportunities for surveillance of wildlife are being actively pursued. A site for Committee members to share outreach documents, stakeholder lists, and informational resources related to this disease was established immediately following this meeting to aid in collaborative and unified regional messaging efforts. We greatly appreciate that several southwestern states have contributed documents to that site as well, facilitated through the NWHC.

CWD Update, Conference Call Planned for 6/3/20

For this upcoming meeting, the agenda includes CWD related updates from all states and provinces. Committee members have been asked to focus on discussing COVID-19 related changes to their CWD management plans, carcass disposal methods in use or under

consideration, risk assessment tools in use or under consideration, and response and management strategies post-detection. Discussion will also focus on collaborative and/or regional scale management coordination, risk assessment, or research approaches in use or under consideration by the MAFWA states and provinces. This will include programs such as Four Corners and the Wisconsin USGS/Wisconsin DNR/NWHC project. Also, Krysten Schuler from Cornell University has been invited to attend the meeting to discuss her SOP4CWD project which several Midwestern states are already a part of. Additionally, Michelle Carstensen will provide an update on the Ad Hoc Committee she is leading on CWD Prevalence Tracking. A brief update will be provided on further progress and future plans for the MI/IN CWD information sharing project funded through the MSCGP. Finally, a request from SCWDS and Virginia Game and Fish for MAFWA Fish and Wildlife Health Committee members to participate in a survey on taxidermist and processor engagement and participation for CWD surveillance will be discussed.

WHISPers Demo, Conference Call, planned for July 2020.

This upcoming call will be led by Bryan Richards of the USGS National Wildlife Health Center. He will explain, present, and demonstrate the updated NWHC national disease tracking system and will allow MAFWA health committee participants to test out data entry procedures with the goal of increasing use of the system by MAFWA agencies.

Director Action Items:

Committee Elections

Dr. Kelly Straka opted to resign as Chair of the Committee in April of 2020. Her dedication to the advancement of wildlife health concerns in the Midwest region while Chair is greatly appreciated. She has left big shoes to fill! Dr. Nancy Boedeker, previously the Vice Chair of the Committee, was approved to serve as the new Chair of the Committee. Dr. Lindsey Long was elected to be the new Vice Chair of the Committee.

Resolutions

Two resolutions are respectfully submitted to the directors for review and consideration.

1. Resolution to Join the North American Non-Lead Partnership. See Appendix 4 (resolution and supplemental information)
2. Resolution to Promote Fish and Wildlife Agency Engagement in the One Health Approach. See Appendix 5 (resolution and supplemental information)

Director Information Items:

AFWA Federal Appropriations Recommendations for 2022 Federal Budget

Due to time restrictions related to switching the annual meeting from in-person to remote and due to great uncertainties about agency budgets and potential restrictions on work due to the COVID-19 pandemic, the Committee did not make recommendations for specific federal appropriations modifications. However, the Committee continues to strongly support the work of the programs it has previously recommended funding increases for, namely:

- Chronic Wasting Disease-Equine/Cervid Health line item for CWD surveillance, research and management on wild, free-ranging cervids (USDA APHIS)
- Bovine Tuberculosis- Ruminant Health line item for bovine TB surveillance, research and management on wild, free-ranging cervids (USDA APHIS)
- White Nose Syndrome-surveillance, research and management efforts (USFWS DOI)
- Neonicotinoids-research on impacts of neonicotinoids to wildlife species (USFWS DOI)
- Fish, Amphibian and Reptile Health-surveillance, research and management of emerging fish, amphibian and reptile health issues. (USGS DOI)
- 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.
- 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.
- 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.

The Committee is very encouraged by the ongoing efforts of AFWA in 2020 to raise awareness amongst legislators of the need for increased funding for wildlife health research and management. Support for this need is gaining traction, especially in light of the current COVID-19 pandemic which likely arose from human exposure to a virus harbored in wildlife. Several members of the MAFWA Fish and Wildlife Health Committee have been actively engaged in helping to define these needs as federal funding for the improvement of national wildlife health management capacity is sought through various COVID stimulus and response packages. Committee members are happy to provide MAFWA directors with further explanation and insight into these needs and their prioritization upon request.

Time and Place of Next Meeting

Many uncertainties related to the ongoing global pandemic remain. Initially the committee had hoped to reschedule the in-person meeting for later in 2020, however, this seems increasingly less likely due to the status of the pandemic itself as well as due to associated budget and travel restrictions. The committee hopes to meet in-person for our next annual meeting in April of 2021 and is considering that the location be in North Dakota as was planned for this year. The committee will continue to meet by video conference as needed to discuss timely issues of mutual interest to member agencies throughout 2020.

Despite the limitations posed by the COVID-19 pandemic, this year's meeting was quite successful and we want to thank the Directors who allowed time for the representatives and presenters to participate in this meeting. Meeting remotely was a good alternative for this year, but it can't fully substitute for the extensive discussion and relationship building that come out of in-person meetings. We continue to encourage directors to support in-person attendance by MAFWA Fish and Wildlife Health Committee members at future meetings. Also, we thank the North Dakota Game and Fish for their willingness to host this year's meeting in person and the time spent on those preparations as well as their flexibility in agreeing to switch to a remote meeting.

Submitted by: Nancy Boedeker, Chair

APPENDIX 1. AGENDA

Midwest Association of Fish and Wildlife Agencies Health Committee Meeting Agenda
April 29th, 2020 12:00 – 5:00 CST

12:00	Opening Remarks and Introductions	
12:10	Member Summaries	State Representatives

Members will have up to 10 minutes to provide highlights and answer any questions. The order of reports will be as follows:

Arkansas
Illinois
Indiana
Iowa
Kansas
Kentucky
Michigan
Minnesota
Missouri

1:30	Region-wide CWD Management CWD and Midwest Landscape Initiative; B. Richards 4 Corners; Sherri Russell	Kelly Straka
2:15	Break	
2:30	Member Summaries Continued	State Representatives

Manitoba
Nebraska
North Dakota
Ohio
Ontario
Saskatchwan
South Dakota
Tennessee
Virginia
Wisconsin

4:00	WHISPers	Bryan Richards
4:10	MSCGP CWD Networking Grant Proposal	Nancy Boedeker
4:30	Budget Recommendations, Discussion	Kelly Straka
5:00	Meeting Adjourns	

APPPENDIX II. PARTICIPANT NAMES AND CONTACT INFORMATION

Participants	Affiliation	E-mail
Bahnson, Charlie	North Dakota Game and Fish	cbahnson@nd.gov
Batten, Jasmine	Missouri Department of Conservation	jasmine.batten@mdc.mo.gov
Boedeker, Nancy	Indiana Department of Natural Resources	nboedeker@dnr.in.gov
Carstensen, Michelle	Minnesota Department of Natural Resources	michelle.carstensen@state.mn.us
Casey, Christine	Kentucky Department of Fish and Wildlife Resources	christine.casey@ky.gov
Davis, Richard	Manitoba Sustainable Development	richard.davis@gov.mb.ca
DeLiberto, Tom	USDA Wildlife Services	thomas.j.deliberto@aphis.usda.gov
Dufford, Doug	Illinois Department of Natural Resources	doug.dufford@illinois.gov
Dunn, Shaun	Nebraska Game and Parks Commission	shaun.dunn@nebraska.gov
Espie, Rick	Saskatchewan Ministry of Environment	rick.espie@gov.sk.ca
Garner, Dale	Iowa Department of Natural Resources	dale.garner@dnr.iowa.gov
Griffin, Steve	South Dakota Game Fish and Parks	steve.griffin@state.sd.us
Grove, Daniel	North Dakota Game and Fish	dmgrove@nd.gov
Hesting, Shane	Kansas Department of Wildlife, Parks, and Tourism	shane.hesting@ksoutdoors.com
Jones, Lee	US Fish and Wildlife Service	lee_c_jones@fws.gov

APPENDIX II. (cont.) PARTICIPANT NAMES AND CONTACT INFORMATION

Kirchgessner, Megan	Virginia Department of Game and Inland Fisheries	megan.kirchgesssner@dgif.virginia.gov
Long, Lindsey	Wisconsin Department of Natural Resources	lindsey.long@wi.gov
Nordeen, Todd	Nebraska Game and Parks Commission	todd.nordeen@nebraska.gov
Nituch, Larissa	Ontario Ministry of Natural Resources and Forestry	larissa.nituch@ontario.ca
Richards, Bryan	USGS National Wildlife Health Center	brichards@usgs.gov
Ruden, Rachel	Iowa Department of Natural Resources	rachel.ruden@dnr.iowa.gov
Russell, Sherri	Missouri Department of Conservation	sherri.russell@mdc.mo.gov
Ryan, Tami	Wisconsin Department of Natural Resources	tamara.ryan@wi.gov
Shelton, Paul	Illinois Department of Natural Resources	paul.shelton@illinois.gov
Straka, Kelly	Michigan Department of Natural Resources	strakak1@michigan.gov
Switzer, Chad	South Dakota Game Fish and Parks	chad.switzer@state.sd.us
Tonkovich, Mike	Ohio Department of Natural Resources	mike.tonkovich@dnr.state.ohio.us

Illinois Disease Issues/Surveillance Report
Midwest Fish and Wildlife Health Committee Meeting
April 29, 2020

Hemorrhagic Disease (HD) – White-tailed Deer (Doug Dufford, IDNR Wildlife)

IDNR produces news releases each summer asking citizens to report dead/moribund deer they observe in their area, particularly those associated with water. Reports are compiled by local biologists and conservation police officers throughout the summer, and staff follow-up when possible to collect samples for potential virus isolation.

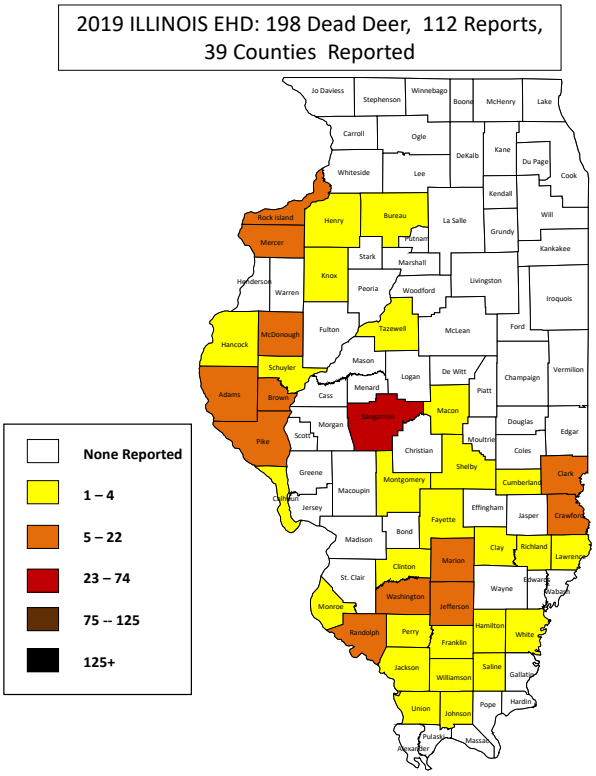


Figure 1. Distribution and intensity of suspected cases of HD in Illinois during calendar year 2019.

Low levels of HD were reported in 2019 with 198 suspected cases reported from 39 counties (Figure 1). The disease was reported at low levels across the southern third and western central portions of the state.

HD virus was isolated from 5 spleen samples submitted from Fayette (EHDV_2), Pike (EHDV_2), Sangamon (no serotype determined), and Union (no serotype determined).

EHD reporting levels in 2019 were typical for most years (Figure 2). By comparison, the worst three outbreaks observed during the last 20 years were 2012 (2,968 dead deer from 87 counties), 2007 (1,966 dead deer from 54 counties), and 2013 (1,224 dead deer from 64 counties).

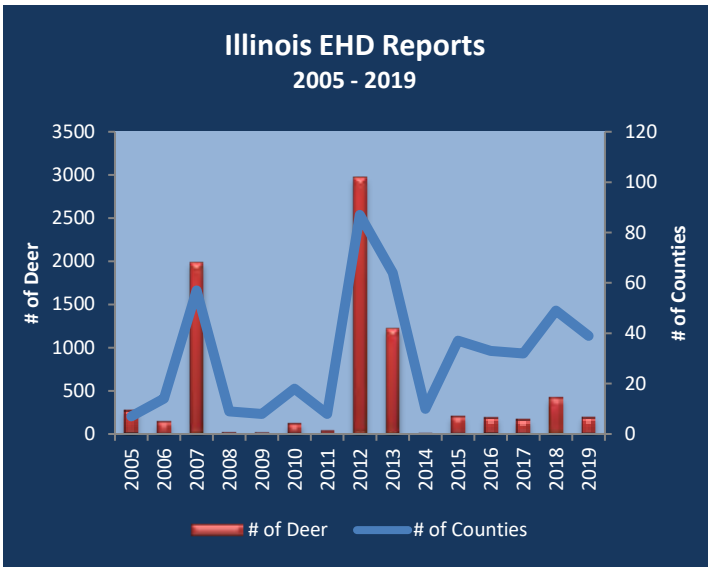


Figure 2. Illinois suspected HD reports 2005 – 2019.

Feral Swine Population Control and Disease Surveillance (Brad Wilson – USDA Wildlife Services)

IDNR has teamed up with USDA – Wildlife Services (WS) to identify areas with feral swine (FS), develop and implement a technical assistance program for landowners experiencing FS conflicts, coordinate and expand disease surveillance, conduct outreach to stakeholders and the general public, and provide direct control management assistance. Technical assistance and/or direct control assistance has been provided to numerous State, County, and Private land owners throughout the state since 2011 and a total of 485 FS have been removed. A total of four known, self-sustaining breeding populations of FS in Illinois have been successfully eliminated. IDNR and WS continue to monitor reports of FS received from deer and turkey hunters as well as citizens throughout the state. Follow-up investigations are conducted to confirm the presence of this invasive species. A total of 38 reports were investigated in 2019, with one new isolated population of FS being confirmed in Pope County as well as one adult boar in Pulaski County.

Figure 3. Feral swine observed in Pulaski County, Illinois, 2019.

After local hunters and agricultural producers alerted WS to an emerging FS population in Pike County, IL, the USDA-WS program worked closely with the IDNR, Pike County Soil and Water Conservation District, Pike County Farm Bureau, Illinois Department of Agriculture, USDA NRCS, and the Illinois State Police (aerial surveys) to identify the source of this population. WS removed 26 FS from the Township and continues to conduct surveillance for additional FS in the region. No other reports of FS among this area has been received since January 2019.

Figure 4. Feral swine observed in Pope County, Illinois, 2019.

WS has received reports of FS in Pope and Pulaski Counties in southern Illinois. On the ground surveillance and removal efforts began on March 19, 2019 in an effort to determine distribution, density and begin to eliminate populations before they become self-sustaining. WS has confirmed one adult boar among private properties in Pulaski County and at least 10 adult FS in Pope County among private properties and Shawnee National Forest lands spanning approximately 100 sq mi. FS damage management efforts among these two counties will continue through 2020.

Chronic Wasting Disease (CWD) – White-tailed Deer (Patrick McDonald – IDNR)

During the period of July 1, 2018 – June 30, 2019 (FY2019), IDNR staff collected and submitted 8,877 tissue samples from white-tailed deer, yielding a total of 90 CWD cases in 14 northern Illinois counties from 8,824 testable samples (Figure 6). Disease prevalence in CWD counties for adult deer harvested by hunters was 1.6%, with adult males (1.9%) slightly above that of adult females (1.2%).

To date in FY2020, 172 cases of CWD have been confirmed from 9,112 tested samples, which is a 91% increase in cases from last year. A total of 7,089 hunter-harvested samples were collected (7,049 tested) revealing 117 CWD-infected animals. IDNR sharpshooting operations concluded on March 12, two weeks earlier than anticipated, due to a state-wide “shelter-in-place” directive in response to Covid-19. Forty-two (42) CWD-infected deer were identified from 1,107 collected samples (1,105 tested). These include 9 samples from Kaskaskia Island (Randolph Co.) as part of surveillance to detect potential CWD-positive deer across the Mississippi River from Missouri.

Since 2002 when first detected in Illinois, CWD has spread from 4 initial counties to include 18 counties in northern Illinois. Cook County was added this year from an archery harvest deer which tested positive for CWD. Prevalence rates which approximate 1% have remained relatively steady over the 18-year history of the disease in this state.

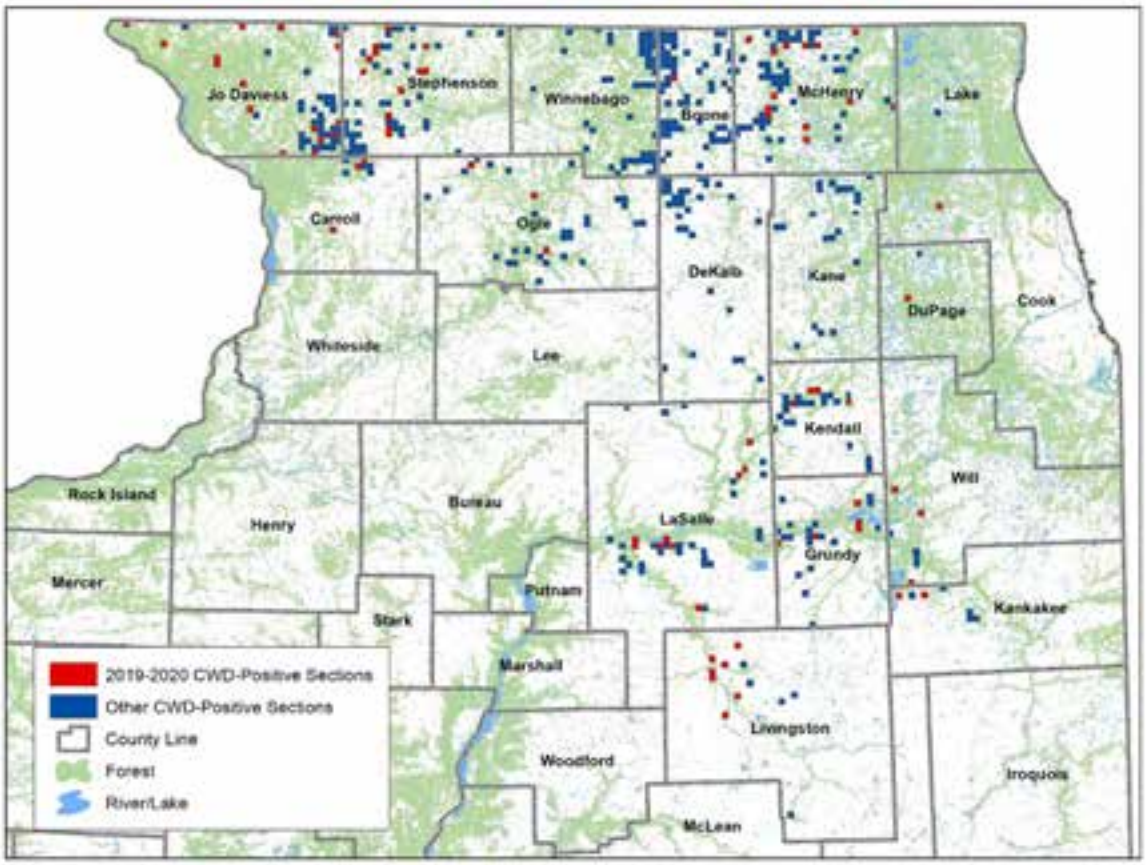


Figure 6. Known distribution of chronic wasting disease in Illinois, April 9, 2020. Sections in which CWD was identified for the first time in FY20 are shown in red.

White-Nose Syndrome (WNS) – Bats (Tara Hohoff, Illinois Bat Conservation Program Coordinator)

White-Nose Syndrome was first confirmed in Illinois bats in 2013. The disease has been documented in bats from nearly all Illinois counties with known bat hibernacula. As of Spring 2018, 14 Illinois counties were confirmed positive for this disease. The site that has been impacted the most by WNS in Illinois is the Blackball Mine Nature Preserve in LaSalle County. Since 2013, wintering populations in this mine have dropped from a 20+ year high of 26,000 hibernating animals to less than 500 animals (2018 survey) – this represents a 98% population decline in 5 years.

In 2019, the Illinois Bat Conservation Program completed 20 NaBat acoustic surveys as well as mist net surveys at Fermilab National Accelerator, Embarras River Bottoms State Habitat Area and The Morton Arboretum. Also initiated was the installation of long term bat monitoring stations, which will allow for year-round surveillance for bats and provide better understanding of their seasonal movement patterns.

Enterotoxemia – Waterfowl – Montgomery County (Randy Smith – IDNR)

For the fourth subsequent year, 2 ponds in Montgomery County experienced waterfowl mortality, involving 800 – 1200 dead fowl (primarily snow geese, but including ducks and swans) in mid- to late-February, 2020. Enterotoxemia was confirmed in 2018, with associated tests ruling out avian influenza, lead poisoning, avian cholera, poisoning by organophosphate insecticides, and Mycotoxin. IDNR staff visited the site to assess the situation, and discussed potential hazing techniques to prevent additional mortality, but did not collect carcasses.

Figure 8. Snow goose carcasses from mortality event in Montgomery County, 2018.

MAFWA HEALTH COMMITTEE

2019 REPORT - INDIANA

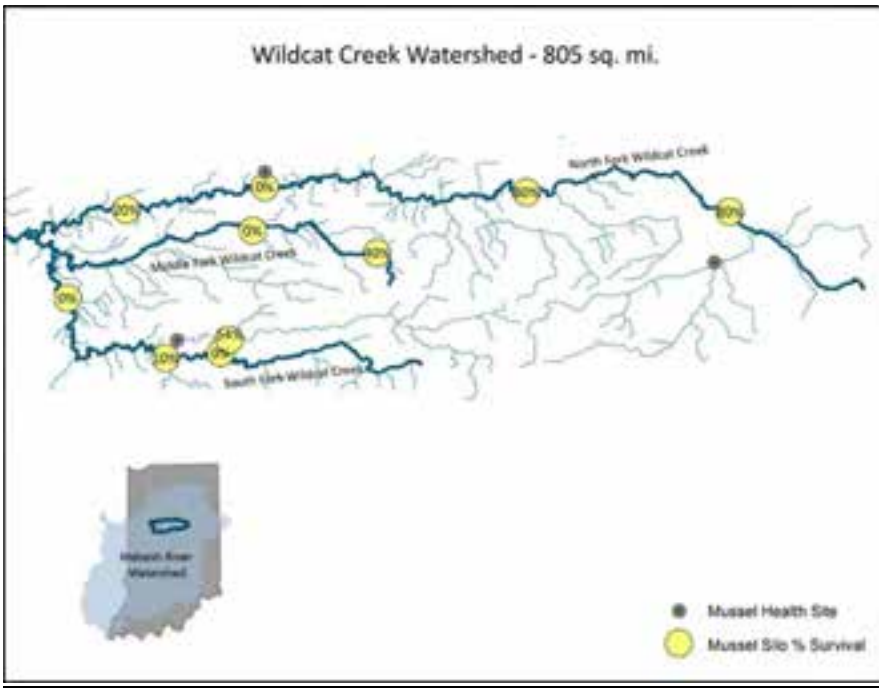
Freshwater Mussels

Die-off Response Development and One Health Assessment Study

Freshwater mussels are among North America's most imperiled species. Die-offs are increasingly recognized as population threats, with etiologies frequently undetermined. Minimal health and disease data exists for freshwater mussels. Detailed plans and descriptions of techniques for thorough and rapid diagnostics to guide a targeted die-off response are lacking. The objectives of this ongoing, collaborative, multidisciplinary project are to develop die-off response protocols in coordination with partners nationwide and establish and compare baseline health parameters for freshwater mollusks in Indiana waterways. Study species include native Fatmucket (*Lampsilis siliquoidea*) and Plain Pocketbook (*Lampsilis cardium*) and non-native Asian clam (*Corbicula fluminea*), all common in Indiana. During the summer 2019 study period, methods involved: 1) collection of mollusks (20 per species per site) from three Wildcat Creek drainage sites under assessment for mussel translocation suitability, 2) determination of microbial populations (viral, bacterial, parasitic, and fungal) and antibiotic resistance of bacteria cultured, 3) assay of hemolymph and tissue samples to determine analyte levels (including glycogen, stable isotopes, contaminants) and histologic tissue evaluation, and 4) habitat assessments. Analysis of results, compared between species and sites and to water quality parameters, identifies potential pathogens associated with Asian clam that might threaten native species, evaluates potential interspecies competition based on dietary composition comparison, adds to assessment of the suitability of the three sites for translocations, and increases understanding of antimicrobial resistance in aquatic environments. Using common species, this study allows for optimization of techniques and protocols for use in diagnostic response to die-offs of potentially endangered species. It establishes baseline health parameters of multiple species at varied sites which is critical for interpretation of results in the event of a die-off. In 2019 scientific presentations of the study design and preliminary results of this project were given at both the annual Freshwater Mollusk Conservation Society conference and the Wildlife Disease Association conference.

We plan to continue health assessments of our freshwater mussels annually, expanding sites evaluated, and eventually species and seasons as well. In 2020 we plan to evaluate mussels from the 2019 sites and also at new sites in the White River watershed, upstream and downstream of the city of Muncie. We seek partnerships

for future expansion of this pilot study, incorporating additional locations and species over time, to generate data to develop risk mitigation strategies for microbes and contaminants that contribute to freshwater mussel morbidity and mortality.



Fish

A total of 44 separate case submissions from Indiana State Fish Hatcheries or public water related to fish health were accessioned at the Indiana Animal Disease Diagnostic Laboratory located at Purdue University, West Lafayette, IN, from January 1 to December 31, 2019. Sixteen out of 44 cases were routine fish health inspections as required by the Great Lakes Disease Control Policy and Model Program. At least 60 fish were

sampled from each individual case and subjected to examination by gross pathology and/or histopathology, bacteriology (including bacterial culture, isolation, sensitivity test, or immunofluorescent antibody assay), virus isolation, parasitology (including *Myxobolus cerebra/is* spore screening), molecular diagnostic assays (primarily - polymerase chain reaction), or toxicology (primarily water quality test).

Two fish kidney specimens from one case of trout submission were positive for *Renibacterium salmoninarum* (bacterial kidney disease organism) by immunofluorescent antibody assay and PCR. *Yersinia ruckeri* (enteric red mouth disease organism) and *Aeromonas salmonicida* were not isolated from any cases submitted for fish health inspections. Whirling disease organism *(Myxobolus cerebra/is)* was not detected in the head sections from four cases of salmon or trout submissions by histopathology and *Myxoboluscerebra/is* spore screening test. *Tetracapsula renicola* (proliferative kidney disease organism), *Ceratomyxa shasta,* and *Heterosporis* protozoal parasites and associated lesions were not detected by gross pathology and histopathologic examination in any of the submissions for fish health inspections. No regulatory fish viruses (including virus hemorrhagic virus) were isolated from any submissions for fish health inspections. Twenty-one out of 44 cases were submissions for viral screening or virus hemorrhagic septicemia virus testing and monitoring. Largemouth bass virus was isolated from one submission of largemouth bass and bluegill and the isolation was further confirmed by PCR. Virus hemorrhagic septicemia virus and other regulatory fish viruses were not isolated from the kidney and spleen pools from any of 21 submissions. Six out of 44 submissions were diagnostic fish-kill or diagnostic pathology cases. *Yersinia ruckeri* was isolated from one submission of redear sunfish and largemouth bass with high mortality. *Ichthyophthirius multifillis* infection (ICH) and *Aeromonas* spp. Infection were detected in one case of steelhead trout mortality. All six fish-kill cases were caused by or suspected to be associated with stress induced by inadequate water quality and followed by secondary bacterial, fungal, and/or parasitic infections, with *Aeromonas* spp. being the primary contributors to infections.

Salamanders

Batrachochytrium salamandrivorans (Bsal)

A template was produced by the Bsal Response Working Group as part of their work with the Bsal Task Force's Technical Advisory Committee (see www.salamanderfungus.org for additional information), and is considered a living document that will be updated as more information becomes available. The template and its recommended actions are intended to be customized by any agency or institution with management jurisdiction over wild or captive amphibians, when actions in response to the disease may be warranted. It provides an outline and guidance for local, rapid response actions that could be triggered upon initial or subsequent detections of Bsal, in either wild or captive amphibian populations. Rapid containment and response measures may prevent broad impacts. The DNR has continued working to customize the template for use in Indiana.

Bsal is not known to occur in North America and suggested responses described in the template are consistent with the high-alert condition of Bsal being as yet undetected or rare in North America. The template is part of the National Bsal Strategic Framework, in which larger surveillance and monitoring strategies, research needs, development of a Bsal reporting database, policy needs, and related prevention strategies, along with public outreach and communication, are addressed. In order to be optimally prepared for the likelihood of the introduction of this disease to North America through the pet trade (or otherwise), the DNR continues with its support of regional and national Bsal research and plans to initiate Bsal outreach efforts to pet stores and pet owners.

Bsal sampling was conducted on amphibians in 3 counties (Madison, Pike, Jefferson) in Indiana in November 2016 and May 2017. Since 2017, the DNR has required researchers requesting permits for fieldwork with reptiles and amphibians to follow published biosecurity and decontamination guidelines (NEPARC).

Eastern hellbender releases

The DNR, in collaboration with Purdue University and several Indiana zoos, has continued its captive breeding program for State Endangered Eastern hellbenders. An additional 81 hellbenders were released into the Blue River in southern Indiana in the summer of 2019 bringing the total number released since 2017

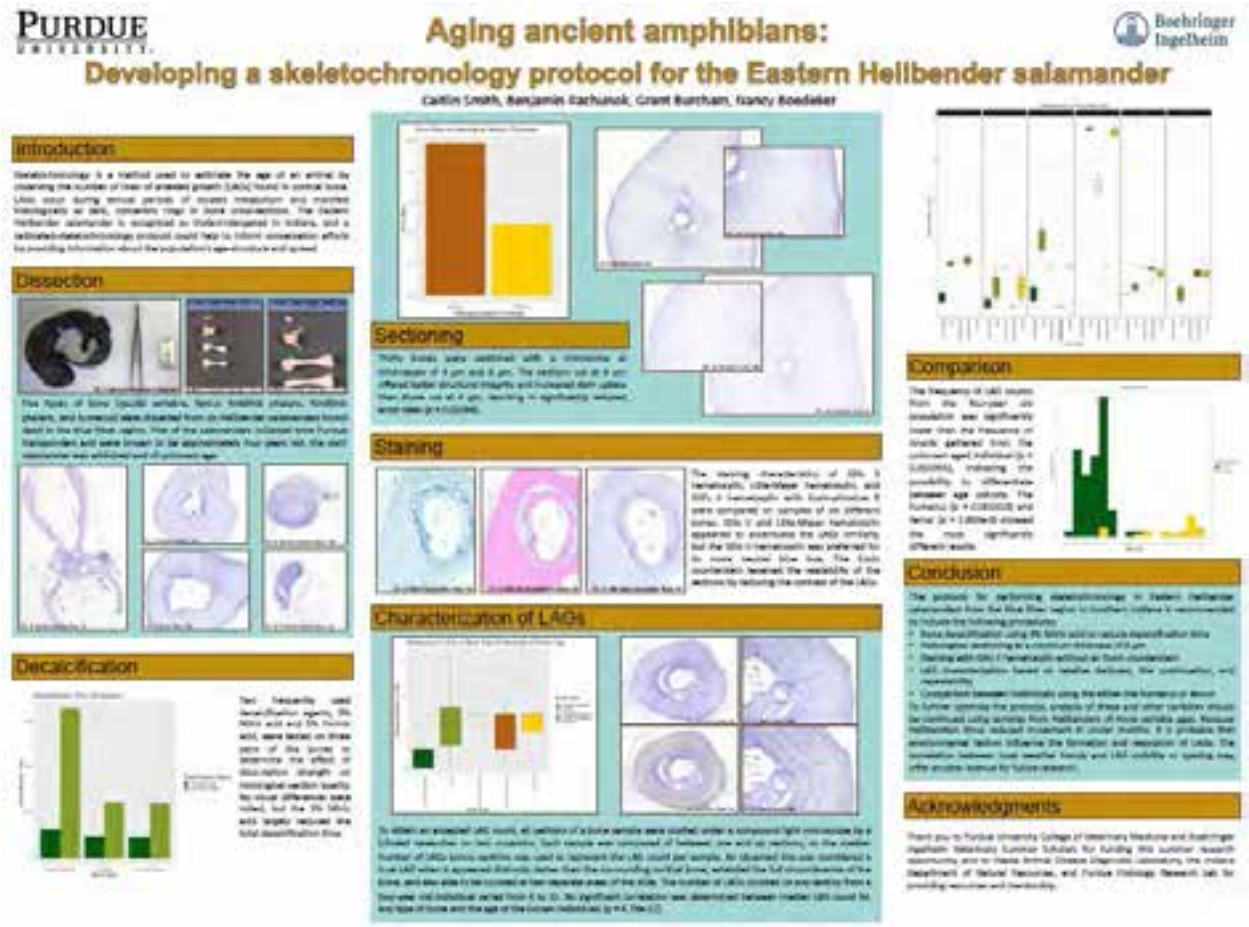
to 200. Prior to release, all individuals were screened for the presence of the chytrid fungus *Batrachochytrium dendrobatidis* before release into the wild.

Hellbender skeletochronology study

In 2018, the DNR in collaboration with the Purdue College of Veterinary Medicine completed a pilot study comparing and optimizing protocols for skeletochronology for use in hellbenders and investigating the feasibility of using this technique to determine hellbender age. Skeletochronology involves relating the number of lines of attenuated growth (LAGs) identified through histologic evaluation of cortical bone sections to individual animal age. This information could help to inform conservation efforts by contributing to our understanding of age structure in wild populations.

Based on findings from this pilot study, skeletochronology shows promise for aging hellbenders. The DNR seeks further cortical bone samples from known age hellbenders (captive or wild) to increase sample size for future study focused on better correlating LAGs with a wider range of ages.

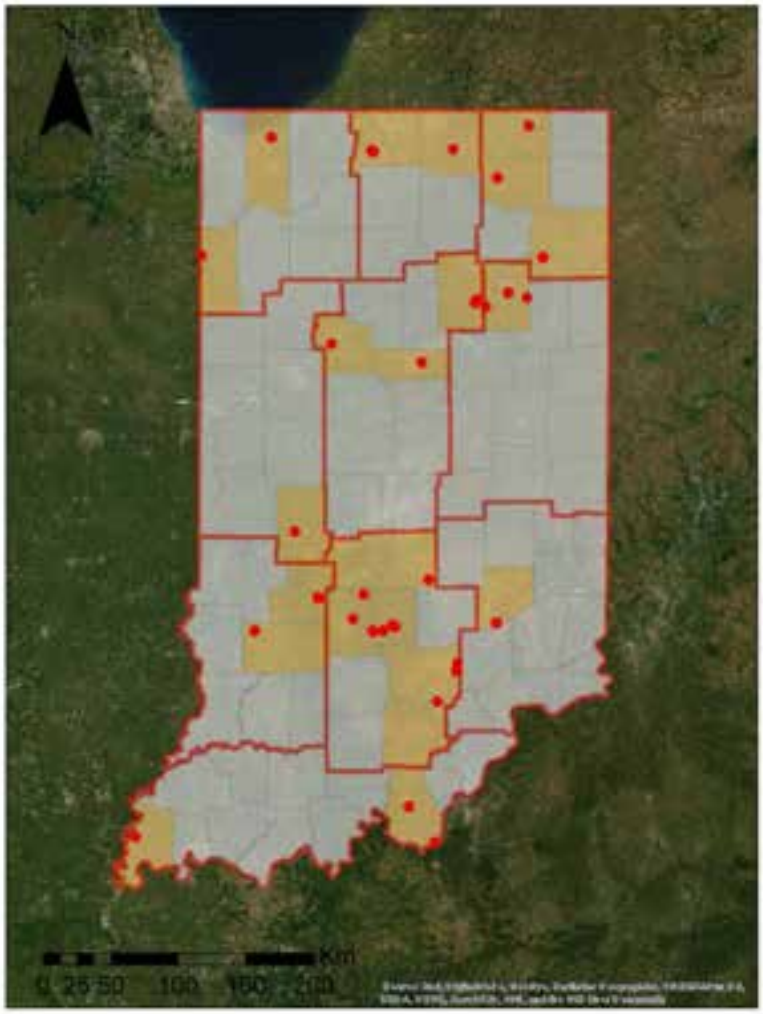
In 2019, the DNR began a collaboration with the University of Illinois College of Veterinary Medicine (CVM) to continue this study in 2020 to better characterize LAGs from hellbenders of different age classes. A University of Illinois veterinary student has been selected to conduct this study under the co-mentorship of DNR and CVM staff.



Snakes

Snake fungal disease

Snake fungal disease, caused by the fungus *Ophidiomyces ophiodiicola,* was first identified in Indiana during 2017 as part of an ongoing DNR-funded surveillance project for the disease conducted by Dr. Matt Allender and his team at the University of Illinois. In the three years of this study, 25 species have been sampled and the causative fungus has been identified in swabs taken from the skin of 76 of 383 snakes tested from Indiana. Thirteen snakes (24%) tested positive in 2017, 11 (6%) in 2018, and 52 (32%) in 2019; the overall prevalence was determined to be 19.8%. Twelve species tested positive for *Ophidiomyces*, with the majority of positive detections coming from northern watersnakes. Other genera testing positive for *Ophidiomyces ophiodiicola* include *Thamnophis*, *Storeria, Regina*, *Crotalus*, *Clonophis*, *Coluber*, *Lampropeltis*, and *Pituophis*. Two state endangered species, Kirtland's snakes and timber rattlesnakes, tested positive for the fungus. *Ophidiomyces ophiodiicola* has been detected throughout the state in 23 Indiana counties.



Waterfowl

Avian Influenza

Indiana has not experienced any outbreaks of HPAI since January 2016 (Dubois County). All Indiana poultry farms were released from quarantine by May 1, 2016. Beginning in 2019, the DNR, along with other state and federal regulatory agencies, has been invited to participate in routine Emergency Poultry Disease Planning meetings hosted by the Indiana State Poultry Association.

Due to scaling back of federal funds, the DNR was not requested to conduct routine surveillance of waterfowl for HPAI in 2018 as has been done in recent years as part of the national surveillance plan. DNR personnel did submit samples for opportunistic sampling, consisting of collecting wild birds that died of unknown causes that met the following criteria: waterfowl, shorebirds, gallinaceous birds (grouse,

pheasant, wild turkeys), raptors, and songbirds during a mortality event of five or more individuals. All of the birds submitted tested negative for HPAI.

Mute Swan Die-off

Members of the public reported a number of mute swan carcasses from around George Lake, adjacent to a former smelting facility, in Hammond, in northwestern IN, originally in October and November of 2018. A total of six partially decomposed carcasses were submitted through the Indiana Department of Natural Resources to Purdue's Animal Disease Diagnostic Lab to determine the cause of death. Major pathologic changes were associated with parasitism. All six carcasses had elevated lead levels in the kidneys, some to toxic levels. Results from additional tests, including those for avian influenza, botulism, and other toxicants were negative. In the fall of 2019 waterfowl (primarily mute swans) mortalities were again reported from the area and five (4 adult, 1 juvenile) swan carcasses were submitted for testing and were found to have parasitism and enteritis, as well as elevated lead levels in the kidneys of the adults, though the primary cause of death was not determined. The DNR is supporting the Indiana Department of Environmental Management and the city of Hammond in coordinating the response to concerns at this site.

Wild Turkeys

During 2019 there were no significant disease issues noted with wild turkey flocks around the state, but there were a few more reports of individual birds exhibiting symptoms suggesting avian pox, likely related to the increase of insect vectors (mosquitoes and midges). The increase in avian pox reports coincided with the increase in EHD reports in deer this summer related to the above normal precipitation early in the summer followed by above normal temperatures through the rest of the summer into fall.

One potential emerging issue that may be contributing to poult mortality and the general declining trend in summer brood production in the last 15 years, is the recent outbreaks of large numbers of black flies (e.g., *Simulium meridionale)* in the late spring and early summer, often associated with above normal precipitation. The outbreaks are intense but relatively short-lived (e.g., 2 weeks) and often localized, even at the county level. The black flies have been suspected of causing direct mortality in the young birds, e.g., bluebird nestlings and barn owlets and have been observed causing distress in adult gobblers. The occurrence of the black flies outbreaks, especially in the southern part of the state, is a relatively recent occurrence in the last 10-15 years. The flies can completely swarm young birds, especially when in natal down, and their biting and blood sucking overwhelms the already fragile existence of young birds. Mortality in young and adult backyard poultry have been reported, with swarms of flies causing respiratory issues with adult poultry.

A 2018 study of 120 years of weather data in Indiana found the average precipitation during June-August has increased 18% in the last 20 years. A recent study of water quality in Indiana noted the first occurrence of black fly larva in 50 years in river water sampling and their occurrence was likely related to the success of the 1972 Clean Water Act and subsequent amendments (1977, 1987). This would suggest, perhaps, that the recent outbreaks of black flies may actually represent the return of an historical external parasite impacting the survival of young birds.

Bald Eagle

The DNR received a report that a juvenile bald eagle under the care of a wildlife rehabilitator in western Indiana for poor feather growth and an inability to fly had tested positive on PCR for Psittacine Beak and Feather disease (PBFD), a circoviral infection normally associated with psittacines (parrots) and not previously reported in North American eagles. Upon consultation with the University of Georgia lab that ran the test, it was discovered that the test was not actually positive for PBFD, but was positive for a related circovirus on PCR. The apparent discovery of this virus in this bald eagle and the potential for negative population effects on this species was of concern to the Indiana DNR, the USFWS, and the National Wildlife Health Center. Strong interest was expressed in following the course of disease in this bird over time since it is uncommon in raptors and some non-parrot species reportedly seem to be able to recover from infection. Consideration was given to conducting circoviral surveillance of other birds in the area where this eagle was initially found. Fortunately however, after further examination of the bird and extensive diagnostics in coordination with Dr. Ritchie's lab at the University of Georgia, the circovirus test result was determined to be a false positive. The likely primary cause of this bird's clinical signs was a severe mixed fungal and bacterial infection of the feather shafts non-responsive to treatement and euthanasia was recommended.

Feral or Wild Pigs

USDA-Wildlife Services and Division of Fish and Wildlife, IDNR personnel have continued efforts to reduce the number of Eurasian wild pigs from 3 counties in south-central Indiana. During the 2019 calendar year, USDA-WS field technicians removed 66 wild pigs (aerial 21, firearms 31, and live traps 14) and submitted 33 serum samples for Classical Swine Fever testing and archiving and 36 tissue samples for DNA profiling to the USDA-WS labs in Colorado. Overall, the number of Eurasian wild pigs has been substantially reduced in the target 3 counties with the USDA-WS feral swine reduction project shifting toward the "elimination phase" with hopefully elimination completed in the next couple of years. A chronic and an ever increasing swine problem across the state is the abandonment, poorly confined, illegally released or dumped carcasses of pot-

bellied/Heritage pigs that were likely unwanted pets. These pigs still pose a threat to native flora and fauna along with being a potential reservoir for swine pathogens.

Allegheny woodrats

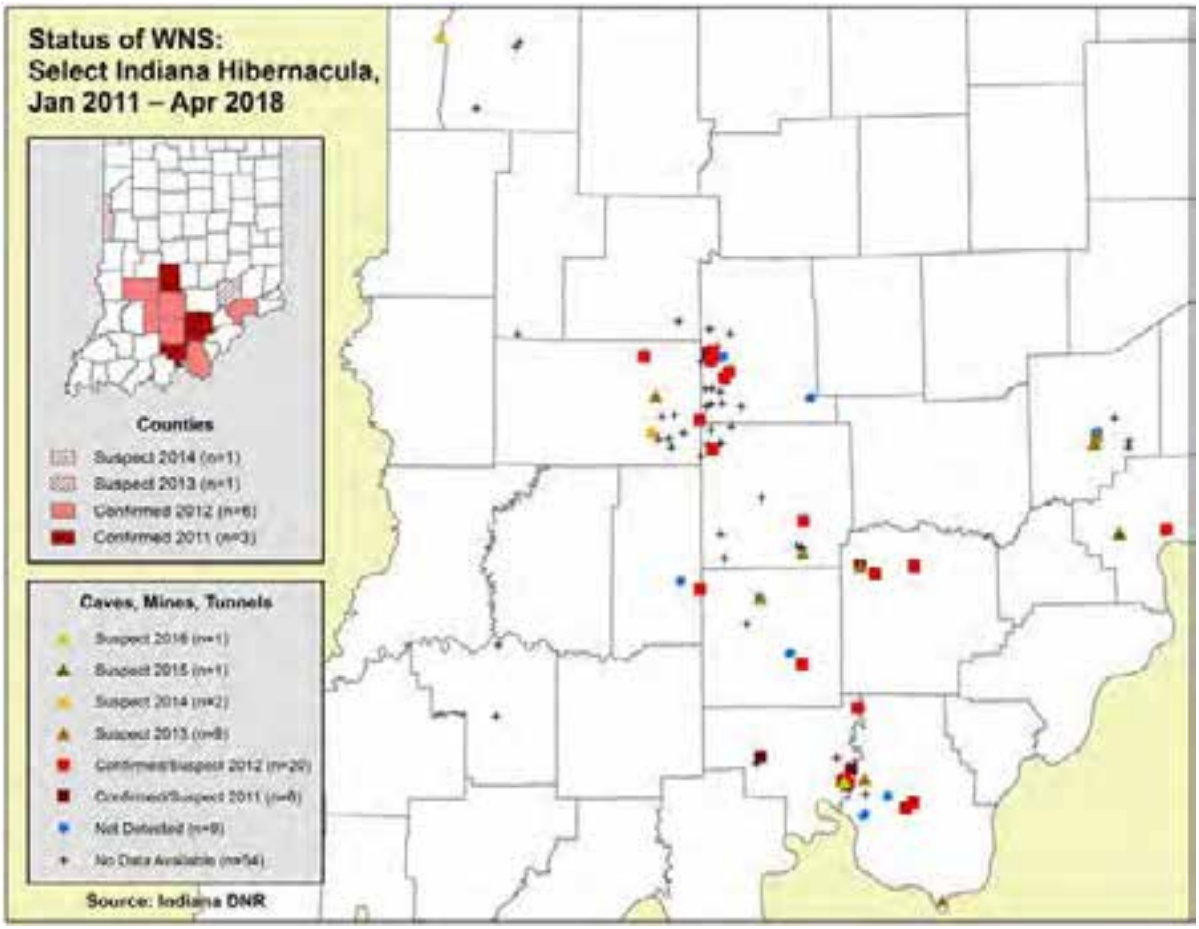
In a partnership with Purdue University, the DNR has invested a great deal of effort towards understanding factors impacting Indiana's State Endangered Allegheny woodrat population. The overall understanding developed from these efforts revealed two factors are negatively impacting this species: 1) genetic drift as a result of isolated sub-populations coupled with inbreeding depression, and 2) mortality caused by infection with *Baylisascaris procyonis.* In order to conserve this species in the state, active management aimed to reduce infection with raccoon roundworm must be utilized in order for any relocation events could occur. However, it would also benefit Indiana's Allegheny woodrat population to add genetic diversity while increasing connectivity between sub-populations. Treating raccoons at known Allegheny woodrat sites has been shown to reduce the prevalence of *B. procyonis* in raccoon latrines. This can lead to reduced infection rates in woodrat sub-populations and lift an ecological pressure from this species in order to provide them an opportunity to increase their success. This project is projected to begin in 2021, although acquisition of anthelmintic baits may push the desired start date to 2022. The success of this baiting and planned assisted migration will be measured in terms of recruitment and genetic analysis through SNP assays.

Bats

During 2019, WNS-related projects in Indiana included elements of disease surveillance and population monitoring. Winter bat surveys were conducted in 15 hibernacula during January and February 2018. Counts of Indiana and little brown (*Myotis lucifugus*) bats both decreased marginally from 2016, while big brown (*Eptesicus fuscus*) and tri-colored (*Perimyotis subflavus*) bats both increased marginally. All four species have declined since the first detection of WNS in Indiana in 2011. Little brown and tri-colored bats have been hit especially hard, with both species declining approximately 90%. Populations generally appear to be stabilizing in recent years, although multiple tri-colored bats still exhibited severe symptoms of WNS at the time of the 2018 surveys.

Surveillance for white-nose syndrome (WNS) was again performed in conjunction with the hibernaculum surveys. No swabs for WNS testing were submitted from bats or caves in Indiana in 2019 as data collection for the continental-scaled study of the geographic distribution, spread, and transmission of Pd, concluded in 2016; results were published in 2017 (Frick *et al*. 2017). However, observed signs of WNS on bat species were noted during these hibernacula surveys; primarily on tri-colored and little brown bats.

The fungal growth observed on each bat was much less in 2019 when compared to fungal growth observed on bats when WNS was first observed within Indiana.



WNS was first detected in Indiana in January 2011. During the 2019 winter counts, no new sites with bats with visible signs of infection were identified. To date, WNS has been detected in 39 hibernacula from 11 Indiana counties.

Hibernaculum surveys: % Change in Species over Time

Major Hibernacula	2009	2015	2017	2019	% change from pre-WNS	% change from previous survey
Indiana	210465	184641	180060	176903	-14%	-2%
Little Brown	5515	530	593	589	-89%	-1%

Tri-colored	835	59	57	68	-93%	20%
Big Brown	178	84	78	152	-60%	94%

Deer

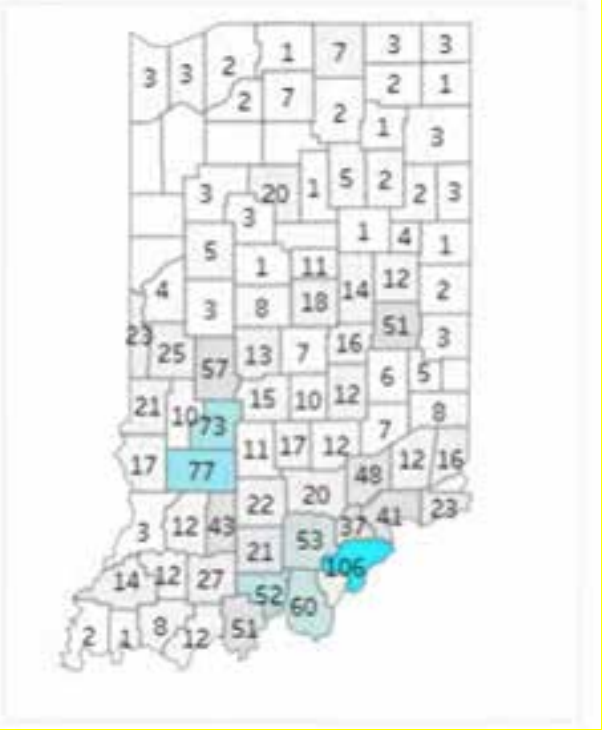
Epizootic Hemorrhagic Disease

Epizootic hemorrhagic disease (EHD) is a virus spread to white-tailed deer (*Odocoileus virginianus*) through a biting midge (*Culicoides variipennis)* in Indiana. Often worse in drought years, outbreaks tend to occur in five- to 10-year cycles. In 2019, Indiana DNR received 981 reports of potential EHD cases involving 1,719 deer from 85 counties. Deer were reported as sick, dead, or in a group with a sick animal via the online Report a Dead or Sick Animal form (https://reportsickanimal.dnr.in.gov/report) and through calls directly to DNR offices. A total of 61 deer were tested for EHD from 43 counties. Forty-eight (78.7%) of those deer were positive for EHD, confirming the presence of EHD in 36 counties. The number of deer tested in each county ranged from one to four. EHD testing requires fresh samples, and Indiana DNR tests deer to confirm only the presence of EHD in a county and not the total number of infected animals. Surveillance efforts and test results were made available to the public online through the DNR's website.

In response to reports of potential EHD across the state, Indiana DNR reduced the allowable harvest limits in 27 counties by lowering the county bonus antlerless quotas to two just prior to the start of the 2019 hunting season. Hunters could still participate in the Special Antlerless Firearms season in the 19 counties that were participating before the quota adjustment.

Prior to 2019, the last major outbreak of EHD in Indiana occurred in 2012. A less-widespread but significant outbreak occurred in 2013.

Reports of Suspected EHD



Lab Confirmed Cases

Totals

As of: 3/9/2020 1:45:40 PM

Deer Reported	1,689
Dead Deer	1,131
Sick Deer	254
Healthy Deer	304
Tested Deer	61
Confirmed Cases	47
NegativeCases	13
PendingCases	1

Bovine Tuberculosis

Bovine tuberculosis (bTB) is a chronic zoonotic disease caused by the bacterium *Mycobacterium bovis* that can affect most mammal species. Indiana DNR and other State and federal partners test wild white-tailed deer for bTB because it was found in Franklin County cattle in 2008, 2009, and 2016, and in Dearborn County cattle in 2011. The disease was also detected in captive deer from a farm in Franklin County in 2009. Between 2009 and early 2017, a total of 3,524 wild hunter-harvested white-tailed deer were sampled in the bTB surveillance zones, and none of these deer tested positive for the disease.

In December 2016, another case of bTB was detected in a different cattle farm in Franklin County. As a result, surveillance in the 2017-2018 deer hunting season was focused in a 225-square-mile area centered on this farm in Franklin and Fayette counties. Just prior to the 2017-2018 hunting season, U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS) Wildlife Services (WS) collected 37 raccoons, 12 opossums, and 16 deer from or adjacent to the affected premises for testing. One wild raccoon from the December 2016 farm was found to be positive for bTB. As was the case with the positive deer and raccoon collected from the May 2016 farm, genetic analysis of the mycobacterial organism cultured from this raccoon strongly suggested that the infection was transmitted from cattle to the wildlife. During the 2017-2018 hunting season, hunters brought in a total of 531 deer to the various check stations, and bTB was not detected in any of these deer samples.

During the 2018-2019 hunting season, the surveillance area was reduced to a 1.5-mile radius centered on the affected farm, although deer could still be submitted from within the 225- square-mile area if hunters were concerned about bTB. Indiana DNR tested a total of 89 samples from deer within the bTB surveillance area. Two deer from outside the bTB surveillance area that exhibited signs of a potential bTB infection were also tested. Bovine tuberculosis was not detected in these deer or any others tested during the season.

Following the 2018-2019 hunting season, Indiana DNR issued special disease permits to landowners directly surrounding the 2016 affected cattle farm in Franklin County to reduce the risk of potential disease transmission. Additionally, USDA-APHIS Wildlife Services removed deer and other wildlife from the affected cattle farm as part of a targeted clean-up process. Through these efforts 95 additional deer and 34 small mammals were removed within a 1.5-mile radius of the affected farm. Bovine tuberculosis was not detected in any of these deer; however, bTB was detected in one raccoon taken from the affected farm in March 2019. Additional targeted clean-up efforts focusing on small mammals to be conducted by USDA-APHIS-WS and funded by USDA-APHIS-VS are planned for 2020 with timing dependent on COVID-19 restrictions.

To date, all deer sampled through intensive surveillance since the 2016-2017 hunting season have tested negative for bTB. These results suggest that the prevalence of bTB in wild deer in the Franklin County

surveillance zone is at a level difficult to detect and is likely very low to non-existent. As a result, Indiana DNR did not conduct intensive bTB surveillance in Fayette and Franklin counties during the 2019-2020 hunting season. However, Indiana Board of Animal Health (BOAH) collected samples from four deer exhibiting signs of potential bTB infection, one each from Allen, Decatur, Franklin/Ripley line, and Pike counties. All tested negative for bTB.

Chronic Wasting Disease

Chronic wasting disease (CWD) has not yet been detected in captive or wild deer in Indiana. It has been detected in white-tailed deer in three states bordering Indiana. CWD has been detected in captive deer in Ohio. Michigan has detected CWD in both wild and captive deer with the closest positive white-tailed deer found approximately 30 miles from the Indiana border. Illinois reported 90 new detections of CWD in wild deer during fiscal year 2019. Two of these new cases were reported in Kankakee County, Illinois, approximately 30 miles west of the Illinois/Indiana boundary. Six total positive deer have been detected in that county since 2014.

Each year, Indiana DNR collects tissue samples from hunter-harvested and road-killed deer throughout the state for CWD testing. Samples are collected as part of the statewide CWD surveillance program to monitor for the presence of CWD in Indiana. Sick deer reported by citizens are also tested through the statewide CWD surveillance program.

Following the CWD surveillance efforts in northwest and northeast Indiana during the 2018 season, Indiana DNR returned to those areas during opening weekend of firearms season in 2019 to conduct targeted CWD surveillance due to their proximity to known positive wild deer identified in Illinois and Michigan. Biologists were stationed at 15 northwest locations throughout Newton, Jasper, Lake, LaPorte, Porter, Pulaski, and Starke counties and at 10 northeast locations throughout Steuben, Lagrange, Noble, and Dekalb counties. Submission of samples for testing was voluntary, and cooperating hunters received a commemorative Deer Management Partner magnet and a metal tag reminiscent of historic confirmation tags for participating.

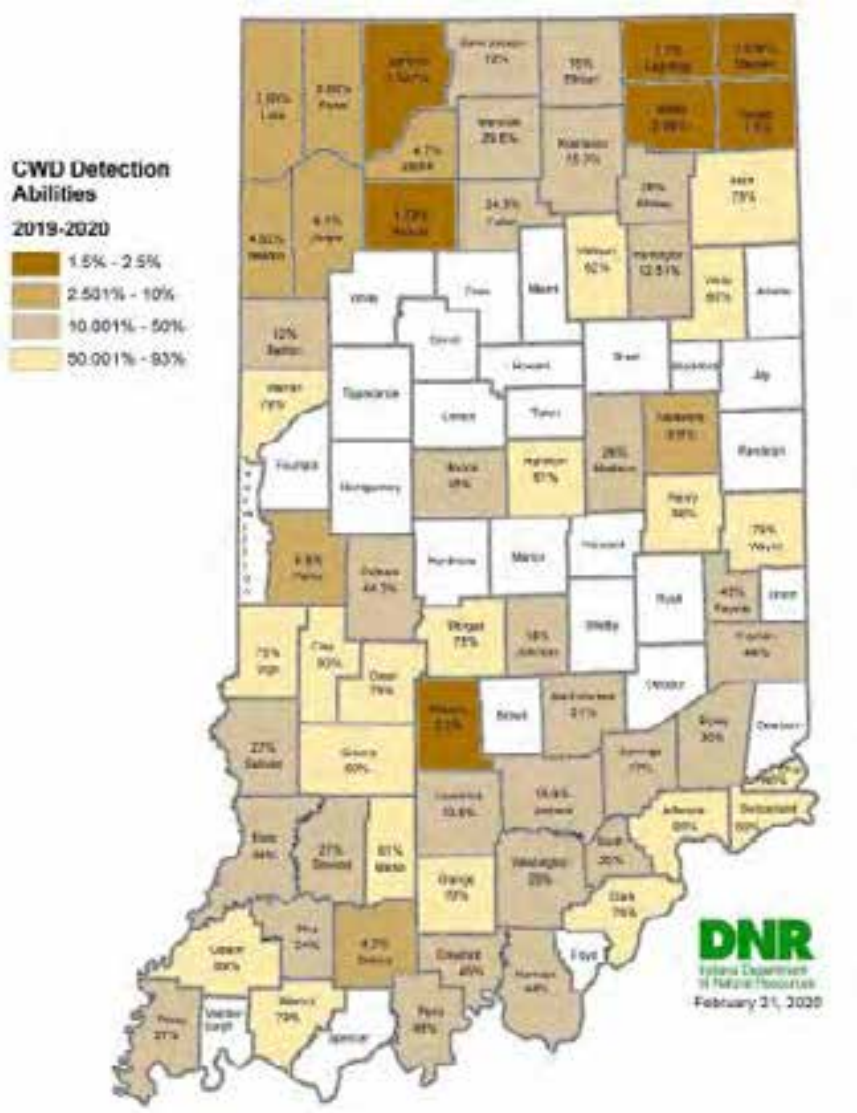
In addition to the targeted surveillance, hunters interested in having their deer tested for CWD were able to drop off deer heads at any participating Fish and Wildlife Area office throughout the season. The heads were later sampled by Indiana DNR. Wildlife biologists and wildlife property managers routinely collected samples from road-killed and hunter-harvested deer, and biologists and veterinary staff responded to calls about sick deer that were consistent with clinical signs of CWD. The public was able to report sick deer online through the Report a Dead or Sick Animal form. Hunters were also able to submit the heads or lymph nodes from their harvested deer to the Animal Disease Diagnostic Lab (ADDL) at Purdue University to be tested for a fee.

Samples collected by staff were submitted to approved laboratories and tested using immunohistochemical (IHC) staining procedures. Results were posted online for hunters to access using the confirmation number for that hunter-harvested deer. Any positive deer would have resulted in a phone call to the hunter prior to results being posted online.

A total of 772 hunter-harvested deer, 28 road-killed deer, and 32 targeted deer were tested statewide in 2019, including 9 hunter-harvested deer from Ohio and Michigan. To date, no wild deer from Indiana have tested positive for CWD. Our detection abilities were calculated for each targeted surveillance county and non-target counties based on sampling intensity. Our detection ability provides us with a calculated prevalence of CWD in free-ranging deer for which there is a 95% probability the true prevalence falls below. For example, in Lagrange County, if CWD is present in the population, there is a 95% chance that the disease occurs in less than 1.7% of the population (Jennelle et al. 2018) based on our sampling efforts. Our ability to detect the disease ranged from 1.53% to 5.10% in the northwest targeted area and from 1.50% to 2.06% in the northeast targeted area.

County	Hunter-Harvested Samples	Road Killed Samples	Targeted Deer	Total Samples	County	Hunter-Harvested Samples	Road Killed Samples	Targeted Deer	Total Samples
Adams	0	0	0	0	Martin	1	0	0	1
Allen	1	0	0	1	Miami	0	0	0	0
Bartholomew	2	1	1	4	Monroe	2	2	4	8
Benton	2	0	1	3	Montgomery	0	0	0	0
Blackford	0	0	0	0	Morgan	1	0	0	1
Boone	1	0	0	1	Newton	36	1	0	37
Brown	0	0	0	0	Noble	45	0	2	47
Carroll	0	0	0	0	Ohio	1	0	0	1
Cass	0	0	0	0	Orange	3	0	0	3
Clark	1	0	0	1	Owen	1	0	0	1
Clay	1	0	0	1	Parke	8	0	1	9
Clinton	0	0	0	0	Perry	2	0	0	2
Crawford	2	0	0	2	Pike	3	1	0	4
Daviess	5	2	0	7	Porter	60	0	0	60
Dearborn	0	0	0	0	Posey	5	0	0	5
Decatur	0	0	0	0	Pulaski	70	0	1	71
Dekalb	50	0	3	53	Putnam	5	0	0	5
Delaware	0	0	2	2	Randolph	0	0	0	0
Dubois	5	1	2	8	Ripley	2	0	1	3
Elkhart	9	0	0	9	Rush	0	0	0	0
Fayette	4	0	0	4	Saint Joseph	12	0	1	13
Floyd	0	0	0	0	Scott	2	0	0	2
Fountain	0	0	0	0	Shelby	0	0	0	0
Franklin	4	0	0	4	Spencer	0	0	0	0
Fulton	8	0	0	8	Starke	41	0	0	41
Gibson	0	1	0	1	Steuben	78	1	1	80
Grant	0	0	0	0	Sullivan	4	0	0	4
Greene	1	0	0	1	Switzerland	1	0	0	1

Hamilton	2	0	0	2	Tippecanoe	0	0	0	0
Hancock	0	0	0	0	Tipton	0	0	0	0
Harrison	2	0	0	2	Union	0	0	0	0
Hendricks	0	0	0	0	Vanderburgh	0	0	0	0
Henry	2	1	0	3	Vermillion	1	0	0	1
Howard	0	0	0	0	Vigo	1	0	1	2
Huntington	10	1	0	11	Wabash	1	0	0	1
Jackson	3	2	1	6	Warren	1	0	0	1
Jasper	33	1	0	34	Warrick	5	0	0	5
Jay	0	0	0	0	Washington	1	0	0	1
Jefferson	0	1	0	1	Wayne	1	0	0	1
Jennings	2	0	1	3	Wells	0	0	0	0
Johnson	6	5	0	11	White	2	0	1	3
Knox	2	0	0	2	Whitley	0	0	1	1
Kosciusko	9	1	0	10	Other States				
Lagrange	59	1	2	62	Branch County, MI	3	0	1	4
Lake	32	0	2	34	Hillsdale County, MI	1	0	0	1
LaPorte	90	3	1	94	St. Joseph County, MI	1	0	0	1
Lawrence	11	2	0	13	Van Buren County, MI	1	0	0	1
Madison	1	0	1	2	Unknown county, MI	1	0	0	1
Marion	0	0	0	0	Defiance County, OH	1	0	0	1
Marshall	8	0	0	8					



Eastern Equine Encephalitis

Eastern equine encephalitis virus (EEEV) is an arthropod-borne virus (arbovirus) that is primarily transmitted in Indiana by mosquitoes in the genus *Coquillettidia*. People infected with EEEV can develop severe inflammation in the brain. Only a few (seven on average) cases of EEEV disease are typically reported in the United States each year. Most occur in eastern or Gulf Coast states. EEEV can be transmitted in Indiana by mosquitoes in the genus *Coquillettidia*, but some members of the genus *Aedes* may also play a role in transmission to humans and animals. These mosquitoes become infected when they feed on infected wild birds. Infected mosquitoes can then spread EEEV to people, horses, and other mammals, including deer. Once infected, people and other mammals are “dead-end hosts,” which means that they do not pass the virus on to other biting mosquitoes.

In 2019, Michigan had 10 human cases with 6 fatalities, 29 equine cases, and 14 white-tailed deer cases focused in the southern part of the state. Indiana had one human fatality in Elkhart County, 14 equine cases in Elkhart and LaGrange counties, and the virus was identified in 1 pool of mosquitoes in Elkhart County. Targeted aerial spraying of an insecticide to reduce regional mosquito populations in high risk areas was coordinated by State and county health departments. The Michigan and Indiana DNRs coordinated on their messaging about this disease to hunters. The Indiana DNR increased response to reports of deer with neurologic signs in Northern Indiana to aid in surveillance, but no EEEV positive deer were identified.

CWD Task Force

The DNR formed a CWD task force, or working group, which began monthly meetings in the summer of 2018. The group is comprised of DFW and other DNR staff with diverse areas of expertise and responsibility including veterinary, deer biology, financial, legal, permitting, administrative, managerial, legislative, communications, outreach/education, and law enforcement. Objectives for the group include staying informed and raising awareness about CWD, staying in communication with counterparts in other states, developing a CWD communications strategy, promoting practices for prevention of spread of CWD, and development of internal implementation plans.

In 2019 members of the task force conducted a series of listening sessions to seek input and engage with the public on issues regarding CWD with a diverse array of stakeholders. These sessions were informative to the DNR and appreciated and well received by our stakeholders. The task force also had multiple facilitated sessions exploring CWD outreach and preventive measures. Finally, in 2019 the task force completed its revision of the joint DNR/Board of Animal Health State CWD surveillance and response plan which was signed in early 2020.

Multistate Conservation Grant Program – CWD information sharing

Chronic wasting disease (CWD) threatens long-term cervid population health and diverts critical resources for wildlife management. An acknowledged risk factor for spread of CWD is the transport and improper disposal of infected carcasses and parts from areas where CWD is present. Hunters who travel across state/provincial boundaries may return with CWD infected carcasses, unknowingly risking introduction of disease. While wildlife agencies have internal CWD mitigation strategies, no infrastructure to facilitate consistent information sharing between state/provincial entities currently exists. There is urgent need for a tool that allows for sharing and integration of disease-related data between wildlife agencies, improving collective

surveillance and management planning. Acknowledging the complexities of information-sharing, this project will meet this need by applying a systematic approach to understanding the CWD datasharing desires and constraints of wildlife agencies and developing an adaptive tool that optimizes effectiveness for all participants. This will be accomplished through interviews with state/provincial representatives to identify barriers to CWD data-sharing followed by a workshop to develop solutions to these problems. Using this input, a conceptual model of a widely acceptable information-sharing network will be developed. Future grant opportunities will be sought to allow for building and implementation of the network.

The proposal for this project, submitted by the Michigan DNR in conjunction with the Indiana DNR, was selected by the AFWA grants committee, approved by the AFWA directors, and awarded USFWS funds ($99.000) in 2019. Work on the project, led by DJ Case, began in 2020 and is expected to be completed by early 2021.

Rabies

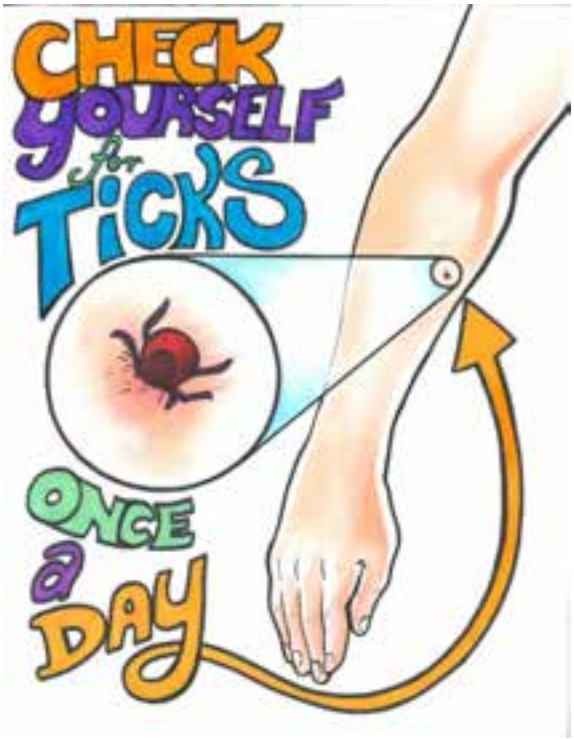
Testing of wildlife for rabies is conducted by the Indiana State Department of Health's rabies lab in cases of known or suspected human exposure. Submitted bats have continued to test positive on occasion (13 of 552, or 2.36%, bats tested positive in 2018). Receipt of 2019 data from the Department of Health is pending due to COVID19 related activities. Only 3.7% of 1,945 bats submitted to the ISDH lab during 2012-2016 tested positive. 14 of 425 (3.29%) bats tested positive in 2017. Of terrestrial wildlife, the last rabies positive skunk in Indiana was identified in 2004, the last rabies positive fox in Indiana was identified in 1990, and the last rabies positive raccoon in Indiana was identified in 1979.

Tickborne Disease

DNR's State wildlife veterinarian serves as an invited member of the State's Tickborne Disease Advisory Committee which formed in 2018. Objectives for this committee include advising on tickborne disease management and education/outreach activities as well as coordinating tick and tickborne disease surveillance efforts throughout the State. The DNR continued to provide government and academic researchers with access to hunter harvested deer at State Park deer reduction hunt check-in stations for the purpose of collection, identification, and disease screening of ticks. The DNR and State Department of Health also collaborated on development of a successful tick bite prevention educational campaign poster contest for school children that occurred in the spring of 2019. Prizes, including educational material, fishing gear, and State Park passes, were supplied by the DNR. DNR's active involvement with partners on this committee helps to achieve One Health

goals for the State and provide information to the public about best practices to avoid exposure to tickborne diseases while encouraging enjoyment of the outdoors.

Courtney T. Grade 7



Evan O. Grade 11

Wildlife Health Database Application

In 2019, we saw the first phase of development completed for a comprehensive wildlife health application. Employees with the Indiana Division of Fish and Wildlife worked with developers in the Indiana Office of Technology to design a custom web-based application. The application is used by the wildlife health team and division biologists and is designed to efficiently manage wildlife health cases. Observations solicited from the public can be easily vetted and turned into active cases. Animals, samples, tests, and results are all tied to active cases, and cases are not closed until all results have been entered into the system. We also built case quick entry and bulk entry tools to accommodate large-scale disease surveillance efforts. The application went live in October 2019 and was used to manage the influx of chronic wasting disease samples from hunter harvested white-tailed deer. The next year of development will include improvements to the public reporting tool, the user experience, and sample storage tracking. The application's reporting capabilities are limited, and we are currently exploring reporting options. The goal of any reporting tool is real-time analysis and visualization of the data collected by the application to aid in rapid detection and response to emerging wildlife health threats.