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NEWSLETTER

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70TH ANNUAL INTERNATIONAL CONFERENCE

WILDLIFE DISEASE ASSOCIATION

JULY 23-29, 2022 • MADISON, WI • USA

HOLISTIC SOLUTIONS FOR WILDLIFE HEALTH

Our 2022 International Wildlife Disease Association Conference is coming up – and it will be IN PERSON! Like many others I'm sure, I had many questions about logistics, changes, and also just general excitement at the opportunity to see other members once again. What should we expect?? I spoke with Jonathan Sleeman, chair of the conference committee, to get an idea.

To begin, the conference headline on the website sums the goals of the conference up nicely:

"The COVID-19 pandemic has highlighted the need for transformative changes in human societal relationships to wildlife and the environment. This need is magnified by other societal challenges such as climate change, global pollution, food insecurity, inequities and injustices, that all have a nexus with wildlife and wildlife health. These challenges and the need to find holistic solutions that optimize outcomes for humans, animals and the environment form the basis of the scientific themes for this conference. We are planning a cutting edge, impactful science program to be delivered in engaging and innovative ways. All interested individuals are invited to attend."

With this overview, we jumped into what he was most excited about, and he started with having the opportunity for an in-person meeting. When the conference committee had initially confirmed having the conference in Madison, it was pre-pandemic, so this has been quite the wild ride those involved! The first conference servicer they had booked actually went out of business during the pandemic, and venues have had to be booked and re-booked and re-arranged, like a very strange rendition of musical chairs. He said it was a good opportunity to assess virtual vs in-person vs hybrid meetings,

Photo credit: Jennifer Summers

and that they will be doing all they can to make sessions and posters accessible to those who do not yet feel safe travelling. The committee has learned to have patience, and would like to request it of conference attendees. They are continuing to watch the data with the pandemic, and are prepared to make additional changes if they become necessary. COVID-19 and general safety guidelines will be posted prior to the start date.

While discussing that we will be in-person, I brought up "greening" concerns. By nature of the travel required for

members and guests to attend, we will be creating a large carbon footprint. It has become part of the mission of conference committees to come up with creative solutions to minimize impact. Dr Sleeman said that they had been "embracing a sustainability pledge" and had been asking themselves at each planning stage what could create a more earth-friendly conference environment. Per usual, of course, they will be encouraging people to bring their own reusable drinking vessels, and are minimizing waste and need for transportation. They are also looking into a carbon offset activity.

Speaking of food – there will be an entirely new social event! There is a field trip planned to the International Crane Foundation with an accompanying picnic on Monday! This should be a fun addition to the traditional evening events of the week, which include the Icebreaker Sunday, Auction and live band Tuesday, and Banquet on Thursday. Wednesday afternoon will give everyone free time to explore Madison, a lovely state capital with a large college and science presence, and a fun cultural vibe. A free outdoor concert series occurs on Wednesday evenings throughout the summer on the capitol square, within walking distance of the hotel.

Photo credit: Ian Barker

During the days, Dr Sleeman thinks attendees will find the scientific program innovative. While in the planning stages, the committee tried to think of what the next phase will be for wildlife health. They wanted to promote resilience of ecosystems and wildlife populations, but do this in the context of thriving human communities and economies – thus the emphasis on a holistic approach. There will be several panel sessions he was excited to discuss, and thinks will open lively discussions about hot topics in wildlife health. We agreed that our organization in particular will be able to use the power of collaboration to tackle some of the forward-thinking questions on our minds. As the fields of wildlife health are undergoing transformative changes, it is important that WDA as an organization is engaged, and these panels should exemplify that opportunity.

Lastly, the students are always one of the greatest reasons for pre-conference enthusiasm. There will be a pre-conference student workshop again, which should be an excellent opportunity for focused learning for student attendees. And remember, students get reduced registration fees, and there are ample opportunities for students to present oral presentations and posters, and a student-mentor mixer. Travel grants are available annually, and awards are given out for oral presentations and poster sessions.

Speaking with Dr Sleeman left me excited for July, and for the future of these meetings in general! Don't forget to REGISTER for the conference before May 18 to get the discounted early rate!

Photo credit: Daniel Walsh, USGS

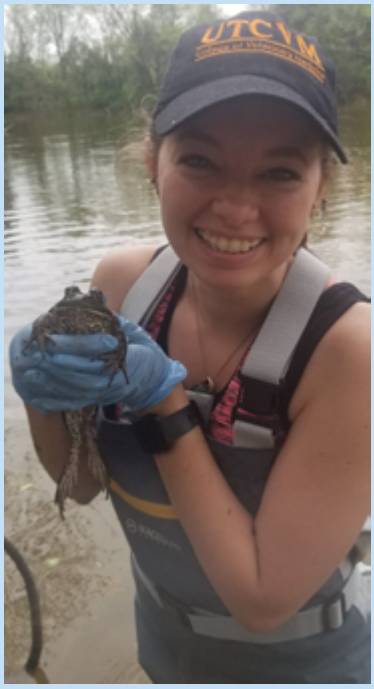
WDA-IAAM Award Winner – Ana Towe

Photo Credit: Todd Amacker

The Wildlife Disease Association and the International Association for Aquatic Animal Medicine (IAAAM) jointly provide an award for the best student-authored aquatic animal paper in the previous year's Journal of Wildlife Diseases. The scholarship has a value of $1,500 US, which can be used for fees, books, supplies, equipment and other educational expenses during the pursuit of your graduate degree, or to support travel to conferences. Additionally, the student receives a on-year membership to both WDA and IAAAM.

Ana Towe is a PhD candidate at the University of Tennessee. Her winning paper was published in the October 2021 Issue of JWD, entitled "*Batrachochytrium salamandrivorans* can devour more than salamanders."

Ana attended the University of Pittsburgh, where she earned a B.S. in Biology and a B.A. in English Fiction Writing. She graduated with her D.V.M. from the University of Tennessee College of Veterinary Medicine in May 2020. She is studying under Dr. Debra Miller and her PhD research investigates pathophysiology and potential treatments for *Batrachochytrium salamandrivorans* (Bsal). She has been involved in amphibian disease research since 2017 and is excited to be a part of the international collaborative effort to understand deadly emerging infectious diseases in wildlife.



Here is a little more about her journey, in her own words:

I have been interested in wildlife health for several years and started participating in amphibian research when the opportunity presented itself during the summer after my first year of vet school. I continued to work with various projects related to chytrid throughout vet school and decided to pursue a PhD because of the opportunity to contribute to what I saw as an essential area of research for amphibian health. The Cuban Treefrog project grew out of concerns for the possibility of popular species in the pet trade contributing to the spread of Bsal to new areas.

My next big project, which is already underway, is an investigation of the effects of sublethal Bsal infection on reproductive fitness in eastern newts

My eventual goal is a career in clinical zoo and wildlife medicine, and I hope to continue to participate in wildlife research as well. But as for right now, I am just looking forward to finishing my last semester of PhD classes and having more time to focus on my research!

Bridging the gap: 25 years of capacity building for wildlife health professionals

Photo Credit: ZSL

What image comes to mind when you hear the term wildlife health professional? Join our ZSL Science and Conservation event on **10 May 2022 18:00 - 19:30 (BST)** to find out the diverse set of roles wildlife health professionals trained by the collaborative initiative 'The Wildlife Health Bridge' have gone on to fill. Showcasing the impact these professionals have had on the wider world of wildlife health over the past twenty-five years and highlighting why they are needed now more than ever. Details of the event can be found HERE.

The event will be livestreamed on the ZSL YouTube channel: ZSL Science and Conservation- YouTube. The time zone is British Summer Time as the event is being hosted in the UK.

The Nordic Board for Wildlife Research and the Nordic Section of Wildlife Disease Association are pleased to announce the 17th Nordic Congress of Wildlife Research, which will take place on September 19-23, 2022 in Uppsala, Sweden. The congress will be hosted in cooperation with the Swedish Environmental Protection Agency, the Swedish Association for Hunting and Wildlife Management and the National Veterinary Institute.

The aim of the Nordic Congress of Wildlife Research is to bring together all those active in wildlife research and management to meet and discuss challenging issues in wildlife ecology and management in a broad sense. This includes natural and social scientists, wildlife and land managers, political decision-makers and anyone else working with related questions, e.g., at non-governmental, governmental and intergovernmental organisations.

Themes will include:

- Past experiences and future challenges in wildlife management (related to the 50-year anniversary for the Nordic Board for Wildlife Research in 2021)
- The need to bring wildlife ecology and wildlife veterinary sciences together to handle wildlife diseases
- Combining ecology and social sciences to mitigate conflicts between humans about wildlife and management
- Wildlife disease – cross boundary – climate change

For additional information, please visit the website at: https://www.nkv2022.se/

PANORAMA
SOLUTIONS FOR A HEALTHY PLANET

Call for Case Studies on Wildlife Health and Zoonotic Disease Risk Reduction

To support knowledge sharing and best practices, the IUCN is collecting solutions for the PANORAMA - Solutions for a Healthy Planet Species Conservation platform that address the prevention, detection, response, and/or recovery from wildlife health and zoonotic disease threats and impacts. These solutions offer insight into the ways in which diverse stakeholders are utilizing interventions to optimize outcomes.

We are looking for case studies to highlight successful intervention strategies such as:

- Wildlife health and pathogen surveillance
- Risk assessment and risk reduction strategies
- Monitoring and early warning systems
- Risk communication, community engagement, and behavior change
- Outbreak investigation and response
- Vaccination programs
- One Health coordination mechanisms.

For any questions, or if you would like support in writing up a case study, please contact Catherine Machalaba (machalaba@ecohealthalliance.org). Please note there are several PANORAMA portals; please make sure to submit any case studies on this topic to the Species Conservation Portal. To learn more, please visit:

https://www.iucn.org/news/protected-areas/202202/call-solutions-wildlife-health-and-zoonotic-disease-risk-reduction

Quarterly Wildlife Mortality Report *April 2022*

Written and compiled by members of the U.S. Geological Survey's National Wildlife Health Center.

Highly pathogenic avian influenza in North America

The first detection of highly pathogenic avian influenza (HPAI) H5N1 in North America in 2021 occurred on December 20th, in a multi-species exhibition farm in the Avalon Peninsula of Newfoundland and Labrador, Canada. This H5N1 virus belongs to the Eurasian A/Goose/Guangdong/1/96 (Gs/Gd) H5 lineage, within clade 2.3.4.4b, which is genetically similar to the viruses (H5N8, H5N2) identified in the 2014/2015 North American outbreak. The specific virus first reported in the Atlantic Flyway in 2021/2022 apparently segregated from the Eurasian H5N1 viruses in the spring of 2021. A positive white-tailed eagle *(Haliaeetus albicilla)*, recovered in October 2021 in Iceland may represent an intermediate (spatial and temporal) location between Europe and North America (Iceland report to OIE). As of April 25, 2022, HPAI EA H5 and H5N1 viruses have been confirmed in wild birds, backyard flocks, and commercial poultry facilities in both Canada and the U.S. (Figure 1), in 37 states and 10 Canadian provinces spanning all four North American flyways (U.S. Department of Agriculture, Canadian Food Inspection Agency, World Organisation for Animal Health, states, provinces). The lone HPAI H5N1 virus detected in a wild bird in the Pacific Flyway to date, from a bald eagle *(Haliaeetus leucocephalus)* found dead in Vancouver, British Columbia, is closely related to the virus currently circulating in Europe, and likely represents a separate introduction from the other North American flyways (Canada report to OIE). Additionally, multiple highly pathogenic virus reassortants, with gene segments from both North America and Eurasia, have now been reported in wild birds in 13 states (FL, GA, IN, IA, KS, MO, NE, NC, NY, ND, OH, SD, and SC) and three provinces (ON, QC, and SK), and commercial poultry in southern Ontario.

Among North American wild birds, the H5N1 virus has been detected in 51 species, with approximately 1,000 wild bird confirmations, and is associated with morbidity and mortality among the Orders Accipitriformes, Anseriformes, Charadriiformes, Galliformes, Passeriformes (two blue jays, *Cyanocitta cristata*, from Nova Scotia), Pelecaniformes, and Strigiformes. At least two substantial wild bird mortality events associated with HPAI are on-going in the U.S. In Brevard County, Florida, mortality in lesser scaup *(Aythya affinis)* has been estimated to exceed 1,000, with multiple additional species involved (https://whispers.usgs.gov/event/201789). In Strafford County, New Hampshire, approximately 50 Canada geese *(Branta canadensis)* have died (https://whispers.usgs.gov/event/201798). Multiple additional mortality

Lesser Scaups. Photo Credit: Ian Barker

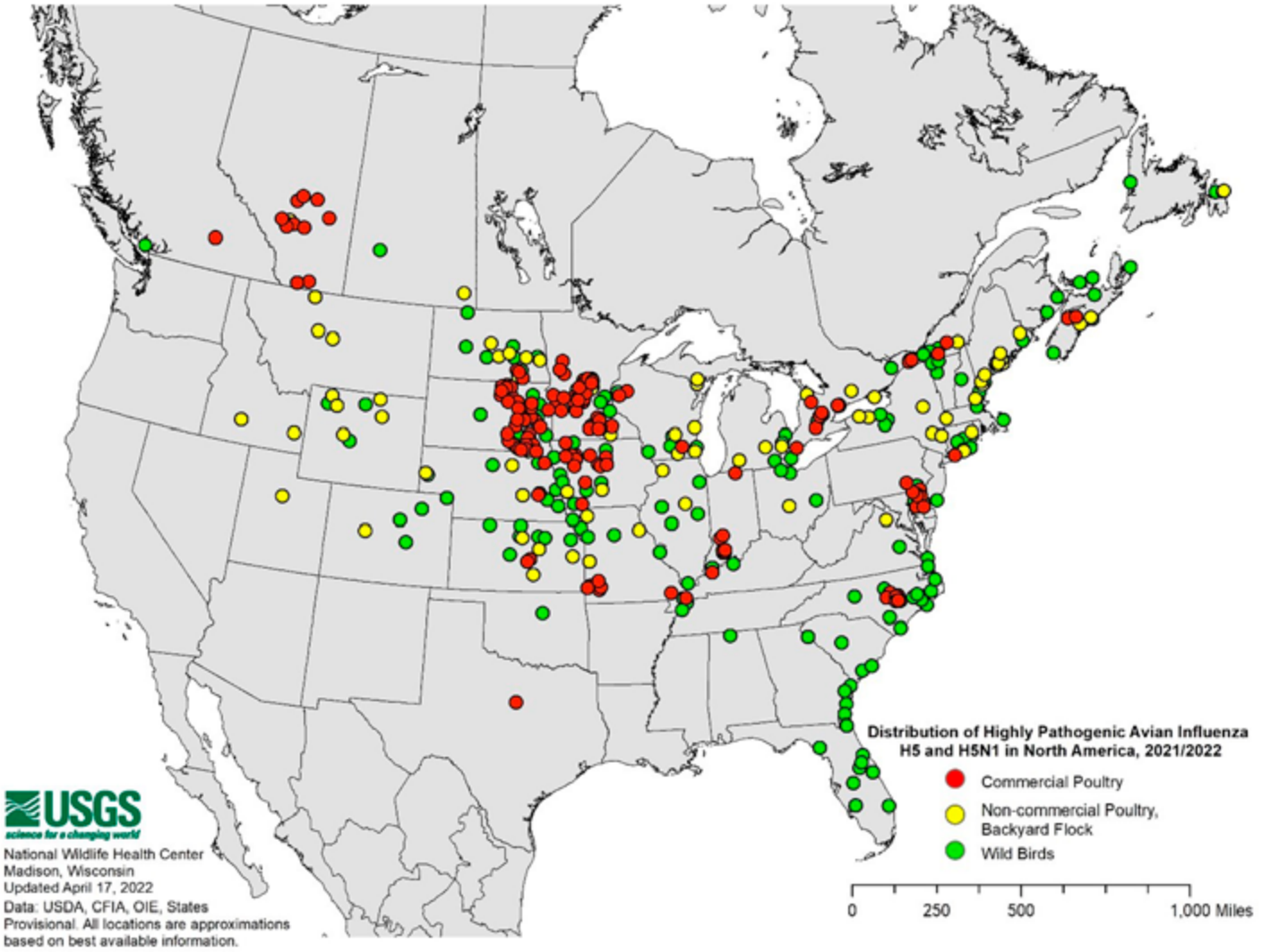


Figure 1. Confirmed locations of EA H5, EA/AM H5N1, and EA H5N1 HPAI viruses in North America as of April 25, 2022.

events have been reported in the Central Flyway (KS, NE, SD, ND), consisting primarily of light geese (snow geese, *Chen caerulescens*; Ross' geese, *Anser rossii*), with additional waterfowl and raptor species involved. Neurologic signs such as lethargy, dull mentation, incoordination/inability to stand, and circling have been reported in these events. Histopathologic evidence attributing HPAI as the cause of death in these and smaller events is currently being evaluated.

Confirmed locations in all sectors (commercial, backyard, and wild bird) in the U.S. are maintained, posted, and regularly updated by USDA. Confirmed locations in North America (all sectors) are being mapped and served by the U.S. Geological Survey National Wildlife Health Center (NWHC, Figure 1). Information on wild bird morbidity and mortality events is maintained in the Wildlife Health Information Sharing Partnership – event reporting system (WHISPers, select the top "popular search" in the lower left corner of the interface).

A multi-agency response to the detection of HPAI viruses in the U.S. is being deployed. The U.S. Interagency Steering Committee for Surveillance for Highly Pathogenic Avian Influenza in Wild Birds is encouraging expanded surveillance and increased vigilance for morbidity/mortality in wild birds including waterfowl, raptors, and avian scavengers (e.g., ravens, crows, gulls). Activities for some of the involved agencies and diagnostic laboratories are summarized below:

- USDA-Animal and Plant Health Inspection Service-Wildlife Services (WS)- National Wildlife Disease Program is continuing activities called for in the current Implementation Plan for Avian Influenza in Waterfowl in the United States including targeted surveillance in the Atlantic and Pacific Flyways. Substantial additional WS/state-based surveillance efforts in all four North American Flyways is also underway.
- Southeastern Cooperative Wildlife Disease Study (SCWDS) is conducting targeted surveillance activities in shorebirds and waterfowl in the southeast and working with partner states to further enhance surveillance.
- U.S. Fish and Wildlife Service is providing field and logistical support for partner agencies conducting HPAI surveillance activities as well as preparing their law enforcement, emergency management, refuges, and field stations to conduct investigations that will increase availability of opportunistic submissions for HPAI.
- USGS National Wildlife Health Center expanded their submission criteria for waterfowl and other water bird morbidity/mortality events. As the epizootic evolves these criteria will also evolve and we will continue to provide timely updates to affected partners.

For more information, please contact Bryan Richards, brichards@usgs.gov.

SARS-CoV-2 and North American wildlife

As SARS-CoV-2, the virus that causes COVID-19 in humans, has spread globally, questions have emerged about the potential for humans to transmit the virus to North American wildlife, its potential effects on native wildlife populations, and the resultant possibility and consequences of establishing a persistent wildlife reservoir. Recent studies have detected SARS-CoV-2 in white-tailed deer *(Odocoileus virginianus)* and escaped/wild mink *(Neovison vison)* (Chandler et al. 2021, Hale et al. 2021, Ip et al. 2021, Kuchipudi et al. 2021, Shriner et al. 2021, Pickering et al. 2022), suggesting that additional surveillance for SARS-CoV-2 in North American wildlife, especially at the human-wildlife interface, is warranted.

The USGS National Wildlife Health Center (NWHC) is collaborating with the U.S. Centers for Disease Control and Prevention (CDC) One Health Office to assess the prevalence of SARS-CoV-2 and the diversity of other coronaviruses in North American wildlife. Surveillance is being coordinated with the U.S. Department of Agriculture, who is leading the testing of cervids in partnership with states. In addition to surveillance, NWHC and CDC will develop a risk assessment to identify high risk interfaces for human-wildlife transmission of SARS-CoV-2.

To date, NWHC has initiated pilot work with select partner agencies to collect and test samples from wildlife for SARS-CoV-2 and other coronaviruses. This first phase of surveillance focuses on samples of convenience (i.e., those already available to partner agencies or NWHC), and species and situations associated with a presumed elevated risk of human to wildlife transmission. We have identified and are leveraging multiple sampling opportunities with federal and state partners and anticipate evaluating samples collected from approximately 600 mammals including mustelids, felids, canids, cervids and other ungulates, bats, ursids, marine mammals, rodents, and peridomestic species from across the continental U.S. and Alaska. All positive test results will be reported to partner agencies, as well as the CDC and the World Organisation for Animal Health (OIE) using established communication protocols. NWHC is available to assist partners with interpretation and communication of results. Findings from this broad-scale, initial approach will be used to inform the risk analysis, to refine and target subsequent surveillance efforts, and to identify potential reassortment from coronavirus co-infections.

Currently, there is limited evidence that wildlife may be a source of infection for people in North America. However, we are aware of the potential impacts of negative perceptions on wildlife conservation efforts, particularly when the pathogen of interest affects humans (see MacFarlane and Rocha 2020). Therefore, NWHC has developed communication guidance to assist interested partners that put risk in context and balance the importance of wildlife conservation with disease concerns.

NWHC's partnership with the CDC to assess SARS-CoV-2 and other coronaviruses in wildlife will be a multi-year endeavor and we plan to provide regular updates to our partners. This important work could not be accomplished without the assistance and support of partner natural resource agencies. We thank our partners for their interest in One Health and wildlife disease issues and their continued participation. For more information, please contact Bryan Richards, brichards@usgs.gov.

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Fieldwork to test methods to control corallimorphs at Palmyra Atoll

Beginning in 2007, an infestation of corallimorphs (an invasive anemone) centered on a shipwreck was documented overgrowing the reef at Palmyra Atoll National Wildlife Refuge. Expansion of this infestation in 2011 prompted the U.S. Fish and Wildlife Service to remove the shipwreck in 2013. Follow up surveys in 2016 showed abatement of the infestation around the wreck, but new foci of invasion to the southwest and south of the atoll. These findings prompted the development of two new control methods, the application of hot water and a biodegradable toxic paste. In September 2021, scientists from the USGS National Wildlife Health Center's Honolulu Field Station, in collaboration with the U.S. Fish and Wildlife Service and The Nature Conservancy, successfully deployed the two methods and will monitor for their ability control the invasive corallimorphs. These two methods add to the set of tools available to control invasive sessile marine organisms in other locations. For more information, please contact Thierry Work, thierry_work@usgs.gov.

For additional information on the USGS National Wildlife Health Center see the following links:

- Main website: www.usgs.gov/nwhc.
- Disease Investigation Services: www.usgs.gov/nwhc/services.
- Report Mortality Events and Submit Specimens: www.usgs.gov/NWHC/submit.

To view, search, and download historic and ongoing wildlife morbidity and mortality event records nationwide visit the Wildlife Health Information Sharing Partnership event reporting system (WHISPers) online database: http://whispers.usgs.gov/

Applying control treatments (left: hot water; right: toxic paste) to invasive corallimorphs at Palmyra Atoll National Wildlife Refuge.