

Fall 2016

Special points of interest:

- Travel Grant Winner
- WDWG-sponsored Symposium on One Health
- HPAI Detection in Alaska

The Vector Timeline

Winter (Vol. 10, Iss. 4)	Spring (Vol. 11, Iss. 1)
Submissions Due 16-Dec-16	Submissions Due 17-Mar-16
Publication Date 30-Dec-16	Publication Date 31-Mar-16

The editors of The Vector welcome your contributions. If you wish to submit an article, but suspect you will not quite make the deadline, please contact Samuel M. Goldstein.

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Your membership in the WDWG can only be obtained by joining and renewing your annual TWS Membership each year. At the time that you join simply indicate that you want to be a member of this working group on the TWS application. Membership dues are \$5.

With your membership you will receive our quarterly newsletter to keep up-to-date with our group business and the most current disease issues. Your membership also provides an opportunity to work closely with other wildlife disease professionals.

The Vector

The Newsletter of The Wildlife Society
Wildlife Diseases Working Group

**From the Chair:**

The leaves are starting to turn, geese are starting to fly, and the temperatures are cooling a bit here in Colorado. Regardless of where you are, I hope you're enjoying the beginning of autumn. It is also the time of year for the annual conference of the Wildlife Society, and I hope you'll be able to attend the conference October 15-19 in Raleigh, North Carolina. There are always a great number of sessions, workshops, and receptions to attend, and of course networking with old colleagues and meeting new friends. I hope you'll keep in mind and attend the Wildlife Disease Working Group

sponsored activities on Tuesday, October 18. From 1:10-5:00 we are sponsoring a symposium titled *Big Science & Wildlife Diseases: Applying One Health Approaches in the Real World*. The symposium will provide an in-depth discussion of the challenges associated with understanding and responding to wildlife disease across agencies, organizations and professions under the umbrella of One Health. Case studies will be presented as "worked examples" of One Health in action and will serve as a basis for identifying factors that impede and facilitate management response to wildlife disease. A big thank you goes out to Kezia Manlove, Alan Franklin, and Rich Chipman for organizing the symposium! Then from 7:00-9:00PM we'll gather for our annual WDWG meeting. It will be a chance to meet current Officers and Board Mem-

(Continued on page 2)

Student Travel Grant Winner Announcement!

The Wildlife Diseases Working Group has awarded its 2016 Student Travel Grant to Sarah Sells, a PhD student at the University of Montana. Sarah will receive a \$500 travel grant to support her travel to the 2016 Wildlife Society Conference in Raleigh, NC. She will also receive a 1 year membership to the WDWG. At the conference, Sarah will be making an oral presentation entitled "Application of structured decision making to wildlife management in Montana" describing her risk and management decision models developed to assist wildlife managers with pneumonia epizootics in Montana bighorn sheep. A description of her work was featured in the Journal of Wildlife Management (February 2015; August 2016).

Current Research in Wildlife Disease

Zylberberg, M., C. Van Hemert, J.P. Dumbacher, C.M. Handel, T. Tihan, and J.L. DeRisi. 2016. Novel picornavirus associated with avian keratin disorder in Alaskan birds. *mBio*. 7

(4):e00874-16. doi:10.1128/mBio.00874-16. A recent study published in *mBio* has identified a new virus linked to an epizootic of beak deformities affecting birds in Alaska and the Pacific Northwest. The disease responsible for debilitating with a bird's ability to feed and more than a decade of research. The picornavirus was strongly associated with deformities in Black-capped Chickadees. This virus, called Poecivirus after capped Chickadee in which it was gaged as a prime candidate for causing the USGS and collaborators has widening distribution of avian keratin disorder, suggesting that it is an increasingly common disease of wild birds. The disease was first detected in Black-capped Chickadees from south-central Alaska in the late 1990s and has since been observed to be spreading rapidly both geographically and in terms of host species affected. Additional information and other publications about avian keratin disorder in Alaskan birds can be found at: http://alaska.usgs.gov/science/biology/landbirds/beak_deformity/



Black-capped Chickadee with beak deformity characteristic of avian keratin disorder. Homer, AK. Photo by Martin Renner.

A recent study published in *mBio* has identified a new deformities affecting birds in Alaska because of avian keratin disorder, the beak overgrowth that interferes preen, has remained elusive despite new report announces that a novel with the occurrence of beak deformities and two other affected species. The scientific name of the Black-capped Chickadee first detected, is now being investigating the disorder. Past research by documented the emergence and spread of the disorder in Alaska and elsewhere. The disease was first detected in Black-capped Chickadees from south-central Alaska in the late 1990s and has since been observed to be spreading rapidly both geographically and in terms of host species affected. Additional information and other publications about avian keratin disorder in Alaskan birds can be found at: http://alaska.usgs.gov/science/biology/landbirds/beak_deformity/

From the Chair (Continued from page 1)

bers and find out who your new representatives on the Board will be. We'll also discuss topics including response to the membership survey on TWS position and issue statements, benefits of membership in the working group, and reports from and opportunities for involvement in working group committees. We are always interested in leads for articles for The Vector and for workshops and symposia to sponsor in the coming years, so bring your good ideas. I look forward to seeing you in Raleigh! If you can't join in person, keep up with the working group's activities in future issues of The Vector, on our website, or soon on Facebook.

Symposium: Big Science and Wildlife Diseases: Applying One Health Approaches in the Real World

Organizers: Kezia Manlove, Penn State, Bozeman, MT; Alan Franklin, USDA APHIS Wildlife Services, Fort Collins, CO; Rich Chipman, USDA APHIS Wildlife Services, Concord, NH

Supported by: Wildlife Diseases Working Group

<http://www.twsconference.org/sessions/big-science-and-wildlife-diseases-applying-one-health-approaches-in-the-real-world/>

When: October 18, 2016 • 1:10 pm–5:00 pm

Disease is a growing threat to wildlife conservation. Emerging infectious agents, such as white nose syndrome (WNS) in bats and *Batrachochytrium dendrobatidis* (Bd) in amphibians, significantly impact population dynamics and animal health of wildlife throughout the United States. Despite this conservation threat, researchers and management agencies continue to struggle to identify and implement comprehensive surveillance and management strategies that effectively reduce risks and mitigate impacts of disease on wildlife populations. One Health approaches that bridge disciplinary boundaries provide a means of integrating animal health and population ecology, yet constructing effective One Health collaborations is sometimes difficult.

In this symposium, we will provide an in-depth discussion of the challenges associated with understanding and responding to wildlife disease across agencies, organizations and professions under the umbrella of One Health. We will integrate talks on overarching concepts with real-life case studies on two systems of major importance to wildlife health: white nose syndrome in bats, and pneumonia in bighorn sheep. Speakers will represent a variety of perspectives including wildlife biologists and managers, veterinarians, wildlife health experts, and quantitative disease ecologists. The goal of the case studies is to offer "worked examples" of One Health in action; they will serve as a basis for identifying factors that impede and facilitate management response to wildlife disease. The symposium will culminate in a discussion among speakers and the audience aimed at synthesizing proposed solutions, with the ultimate goal of generating a white paper laying out possible pathways toward collaborative response to emerging wildlife diseases.

Schedule with Speakers

TIME	PRESENTATION	SPEAKER
1:10-1:30 pm	<i>The increasing problem of disease in wildlife management</i>	Kezia Manlove
1:30-1:50 pm	<i>What is One Health?</i>	Margaret Wild
Case Study 1: Bighorn pneumonia		
1:50-2:10 pm	<i>Pathogen/within host (Identifying causal agents of a multifactorial wildlife disease)</i>	Tom Besser
2:10-2:30 pm	<i>Transmission Dynamics (Spillover to endemism: Feedbacks between pathogen transmission and population dynamics of bighorn sheep)</i>	Raina Plowright
2:30-2:50 pm	<i>Management (Inducing pathogen fade-out in free-ranging bighorn sheep)</i>	Frances Cassirer
2:50-3:20 pm	BREAK	
3:20-3:40 pm	<i>Application of "big science" to wildlife disease management</i>	Jonathan Sleeman
Case Study 2: White-nose Syndrome in Bats		
3:40-4:00 pm	<i>Pathogen/within host (Metabolic consequences of White-nose syndrome in bats)</i>	David Hayman
4:00-4:20 pm	<i>Transmission Dynamics (Ecological drivers of White-nose Syndrome)</i>	Winifred Frick
4:20-4:40 pm	<i>Management (The North American Bat Monitoring Program)</i>	Jeremy Coleman
4:40-5:00 pm	<i>Panel Discussion</i>	All Presenters

Program Activity Report of the USDA-APHIS-WS-NWDP

H5N2 Highly Pathogenic Avian Influenza Detection In Alaska

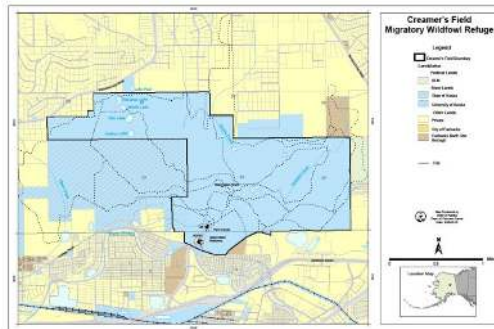
by Dr. Thomas Deliberto

Wild migratory waterfowl are a natural reservoir for influenza A viruses. Typically, viruses isolated from these birds are of low pathogenicity for poultry including H5 and H7 subtypes; however, one specific H5 lineage (originating with a goose virus detected in Guangdong Province, China in 1996) can be carried by wild migratory waterfowl in a form that is highly pathogenic for poultry.

An H5N8 virus of this lineage (H5 2.3.4.4) originating from Eurasia spread rapidly in the U.S. during 2014. Introduction of this virus has allowed mixing with North American origin viruses and generated new combinations with genes from both Eurasian and North American origin (or “reassortant” viruses). This group of Eurasian H5 lineage viruses is highly pathogenic in poultry. To date, no humans or other mammals have shown signs of disease from these highly pathogenic viruses in North America; but field personnel should take appropriate precautions including wearing protective clothing when handling potentially diseased wildlife, sick wildlife, or carcasses.

On 12 August 2016, Alaska Fish and Game biologists live-captured an adult female mallard at Creamer’s Field Migratory Waterfowl Refuge in Fairbanks. The mallard was sampled for avian influenza as part of the ongoing national early detection and surveillance system. The

sample was sent to the Washington Animal Disease Diagnostic Laboratory at Washington



State University where it screened positive for an H5 influenza virus. Subsequently, the sample was shipped to the National Veterinary Services Laboratories for further characterization where, on 24 August, it tested positive for a highly pathogenic H5 virus. Partial sequencing on 25 August confirmed the presence of Eurasian-North American H5N2 2.3.4.4 highly pathogenic avian influenza. The sequencing analysis indicated that the virus was >99% similar to the first Eurasian origin highly pathogenic virus detected in a northern pintail duck from Whatcom County, WA on 8 December 2014. This represents the first confirmed detection of a Eurasian lineage H5 highly pathogenic virus since June 2015.

The USGS Alaska Science Center, Alaska Department of Fish and Game, and the NWDP continue to conduct wild bird surveillance in Alaska. Between 26 August and 6 September, 101 environmental fecal samples, and 592 hunter-harvested samples have been collected. Fecal samples are being screened at the National Wildlife Research Center in Fort Collins, CO, while hunter-harvested samples are being screened at the USGS National Wildlife Health Center in Madison, WI, and the Washington Animal Disease Diagnostic Laboratory, in Pullman, WA. To date, no additional samples have tested positive for highly pathogenic avian influenza.



For additional information please contact:

John.A.Baroch@aphis.usda.gov or
Dennis.Kohler@aphis.usda.gov

Call for Written Contributions to The Vector

The Wildlife Diseases Working Group is just one of 26 other working groups in TWS, but it has one of the largest memberships—close to 200!! You should be proud to be part of a group with such a dedicated group of researchers, biologists, managers, students, and others who have a commitment to furthering our mission. That being said, let’s share our knowledge and passion with each other!

Each quarter, the WDWG distributes The Vector showcasing the wonderful work of our students, ongoing research, and current topics related to wildlife disease. We need your help!! With writings contributed from our large and diverse membership, we can supplement the content of The Vector and augment the number of informative articles disseminated through the newsletter. This is an opportunity for you to share information on a topic you find important and valuable to our members.

Please consider providing a short article about your profession or path to becoming a wildlife disease expert, major projects, research findings, or a hot topic in the wildlife disease field. Senior-level professionals may feel free to share lessons learned in their career to benefit students and early career professionals. Please encourage your students or technicians to do the same. Articles are not only a great way to share your current work, but they can also open doors for future collaboration. Articles need not be long or formal, and will go through an editing process by the editors and/or Student Affairs Committee upon submission. We encourage you to submit a few photos to accompany your writing.

Please jump at this opportunity to get involved, give back to your profession, share a little bit about what you do, and help shape your working group for the future. Inquiries and articles can be submitted at any time to Sam Goldstein (Samuel.M.Goldstein@aphis.usda.gov) or Katrina Alger (kealger@syr.edu).

Wild Pig Management and Research Techniques

What: Hands-on workshop at the 23rd Annual Meeting of TWS

When: October 15th, 8:00-5:00

Registration:

<http://www.twsconference.org/sessions/wild-pig-management-and-research-techniques/>

\$45/student, \$55/professional

For further information:

david.keiter@gmail.com

Sponsored by: Wildlife Damage Management Working Group



Includes:

- Demonstration of trap types and triggers/thermal scopes
- Hands-on sample collection, radio-collaring
- Discussions and/or demonstrations of:
 - UAV use for wild pig damage assessment
 - Use of scat detection dogs for early detection
 - Alternative wild pig management strategies
 - Disease surveillance
 - Eradication strategies
 - Q&A sessions



Officers and Board Members

Executive Board

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Mission Statement

The mission of the Wildlife Diseases Working Group is to promote better scientific understanding of the causes and consequences of disease in ecosystems and wildlife populations; to apply the principles of wildlife science, ecology, and epidemiology to the prevention and management of diseases in wildlife; to foster education and transfer of information on diseases to wildlife management professionals and the public; and to apply this knowledge to enhance the health and conservation of wildlife populations and their interactions with humans and domestic animals.

Have you worked on a wildlife disease research project?
Have you engaged in a wildlife-related veterinary externship?

We want to hear about it!

Here is a short list of all the things we like to publish right here in The Vector:

- Abstracts or summaries and URL for recently published articles
- Summaries of ongoing research or management projects
- Field observations and photos with captions
- Press releases of scientific articles
- Meetings and conferences
- Lessons learned from your project or career

We accept topics from all-comers: students, technicians, biologists, managers, researchers, etc.

*As a bonus, we enter all authors through the year into a drawing for a \$50 gift certificate (REI or Cabela's), which is announced at our annual TWS meeting.

**Also, for student and postdoctoral authors whose article gets published in The Vector, the WDWG is happy to sponsor a 1-year membership to both TWS and WDWG!



Interested in learning more?
Contact the WDWG Student Affairs Committee Chair:

Katrina Alger: kealger@syr.edu