



News and Notes from the USGS National Wildlife Health Center

November 2014

Welcome!

Welcome to the first issue of the USGS National Wildlife Health Center's (NWHC) revamped newsletter, which we plan to send out quarterly. We hope you find this informative and useful and will pass it along to your colleagues. Please let us know your thoughts about the content (and note that future issues will be shorter). Suggestions are welcome!

Please email Gail Moede Rogall at [gmrogall@usgs.gov](mailto:gmrogall@usgs.gov)

New Branch Chiefs, Familiar Faces

New Branch Chief of  
Wildlife Disease and  
Diagnostic  
Laboratories:  
David Blehert



Starting this past June, David Blehert began as the Wildlife Disease and Diagnostic Laboratories Branch Chief. For the past 10 years, David was the Supervisory Microbiologist for the Diagnostic Microbiology Laboratory, where he worked with others to investigate wildlife diseases, such as avian cholera, avian botulism, bat white-nose syndrome, and snake fungal disease. As Chief of the Wildlife Disease and Diagnostic Laboratories, David will lead a team to advance the diagnostic and scientific work of the Center; in particular, conducting diagnostic investigations to determine cause of death for wildlife mortality events and to detect, discover and characterize pathogens.

David looks forward to new opportunities to work with a larger group of wildlife disease professionals, both within and outside the NWHC, and to further strengthen the disease

## Mission

The National Wildlife Health Center provides national leadership to safeguard wildlife and ecosystem health through dynamic partnerships and exceptional science.

<http://www.nwhc.gov>

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## In This Issue

[New Branch Chiefs](#)

[NWHC Reorganization](#)

[WHISPers](#)

[Wildlife Disease  
Highlights](#)

[International Activities](#)

[NWHC Publication  
News](#)



[NWHC Scientific  
Activities](#)

NWHC disease  
investigation  
services

investigation and research capacities of our Center.

A biography for David can be found [here](#).

## New Branch Chief of Wildlife Epidemiology and Emerging Diseases: LeAnn White



Beginning in August, LeAnn White became the Wildlife Epidemiology and Emerging Diseases Branch Chief. LeAnn now leads a team that provides epidemiological and disease management expertise for our partners on new and unusual wildlife mortality events; conducts emergency preparedness and response; collaborates with federal, state, and tribal partners on designing and conducting epidemiology and disease ecology studies for new or recurring priority diseases; and provides training for external partners. The Branch also provides quantitative and statistical support; manages Center-wide data systems to ensure that databases are well designed and managed; and prepares information products, including the Quarterly Wildlife Mortality Report, Wildlife Health Bulletins, and the Wildlife Health Information Sharing Partnership-Event Reporting System (WHISPer). The Branch also includes the Honolulu Field Station, which provides similar technical (diagnostic and epidemiological) services as well as research for Hawaii and the Pacific Region.

For 5 years, LeAnn was a Wildlife Epidemiologist on the Field Investigations Team where she focused her research on disease ecology and transmission dynamics in wildlife populations. Her current research includes causes of morbidity and mortality in Washington sea otters, transmission dynamics of Newcastle Disease virus in double-crested cormorants, and trophic pathways of avian botulism on Lake Michigan.

A biography for LeAnn can be found [here](#)

## In Memoriam

## Distinguished Wildlife Health Pathologist: Dr. Louis Locke

It is with great sadness that the staff of the National Wildlife

To request diagnostic services or report wildlife mortality events in the lower 48 states, Alaska, or Puerto Rico, please contact the NWHC at 608-270-2480 or by email at NWHC-[epi@usgs.gov](mailto:epi@usgs.gov), and a field epidemiologist will be available to discuss the case. To request these services or report wildlife mortality events in Hawaii or Pacific Island territories, please contact the Honolulu Field Station at 808-792-9520 or email [thierry\\_work@usgs.gov](mailto:thierry_work@usgs.gov).

A field epidemiologist will be your primary point of contact for questions on disease epidemiology and management. A wildlife pathologist will be your primary point of contact on diagnostic findings and cause of morbidity or mortality. Further information can be found [here](#).

## Request for wildlife mortality and morbidity event reporting

The USGS National Wildlife Health Center Quarterly Wildlife Mortality Report, published in the [Wildlife Disease Association's newsletter](#) and on the [NWHC Web site](#), is intended to inform

Health Center announces the death of Dr. Louis Locke on October 29, 2014. In 1975, Dr. Locke became one of the founding members of the NWHC under the U.S. Fish and Wildlife Service (USFWS). Dr. Locke remained highly involved in the wildlife health field during his retirement.



Dr. Locke's professional career spanned over fifty years from 1956 to 2007. After receiving his Doctor of Veterinary Medicine degree from University of California-Davis, Dr. Locke joined the U.S. Public Health Service to study bat rabies. Dr. Locke next transferred to the USFWS Patuxent Wildlife Research Center, in Laurel, Maryland, where he spent 16 years. The remainder of his career was spent at the NWHC in Madison, Wisconsin. Dr. Locke served as a research and diagnostic pathologist, authored and co-authored numerous scientific papers on diseases, parasites, and environmental contaminants in wildlife, and trained countless field biologists in necropsy and disease investigation techniques.

Dr. Locke was highly respected for his concern for the people he worked with, his enthusiasm for the field, his encouragement and mentoring of students and aspiring wildlife disease scientists, and his encyclopedic knowledge of a wide variety of topics. Lou was active in the Wildlife Disease Association, serving as secretary and president, and his many professional contributions were recognized with numerous awards. He was an avid birder and he and his wife, Frankie, traveled the world on birding trips.

Dr. Locke had a far reaching impact on the field of wildlife diseases and those who knew him, both professionally and personally. He will be deeply missed.

## NWHC Notes

### NWHC Reorganizes to Align with Strategic Science Goals

The National Wildlife Health Center recently reorganized the structure of its branches for the purpose of aligning the Center structure with its strategic science goals and objectives outlined in the NWHC [Strategic Science Plan](#). The reorganization will also streamline and improve the technical services provided by the NWHC; foster collaborative

wildlife professionals of wildlife events of interest. We kindly request the help of wildlife professionals in submitting investigations of recent die-offs of mammals, birds, amphibians, and reptiles for inclusion in this report. Credit will be given to appropriate diagnostic laboratories and wildlife management agencies. The quarterly report can be found online [here](#).

[Follow us on Twitter at Wildlife Health](#)

Strength through Partnerships



[World Organization for Animal Health](#)

The NWHC is an OIE Collaborating Centre for Research, Diagnosis, and Surveillance of Wildlife Pathogens, in consortium with the [Canadian Wildlife Health Cooperative](#). The OIE is an intergovernmental organization responsible for improving animal health worldwide.

interactions among scientists internal and external to the Center; and will ensure our work meets the needs of our partners and stakeholders. The organizational structure and functions of our cross-disciplinary branches are described in detail in a [Functional Statements document](#). A July 2014 [Wildlife Health Bulletin](#) gives an overview of the three science branches: Applied Wildlife Health Research; Wildlife Epidemiology and Emerging Diseases; and Wildlife Disease Diagnostic Laboratories.

## Wildlife Health Information Sharing Partnership - Event Reporting System (WHISPers)

The NWHC is introducing a new online database for reporting wildlife health events that will be an easy and efficient way for wildlife professionals across North America to share disease event information, such as outbreak onset and ending dates, general location, species involved, numbers involved, diagnoses, and laboratory and contact names. It is a partner-driven, web-based system for tracking basic information about historic and ongoing wildlife mortality and morbidity events. The primary goal of the system is to provide natural resource partners and the public with timely, accurate situational awareness regarding these events. The system also serves as a searchable archive of historic mortality and morbidity event data. Initially, the NWHC will populate this database with the wildlife mortality data the NWHC has maintained for several years. After the initial rollout, other wildlife professionals will be able to enter [data](#) that can be viewed by others. A Frequently Asked Questions handout is available [here](#).

## 2014 Retirements Set an NWHC Record

The staff at NWHC wishes these recent retirees well in their next phase of life:

Josh Dein, Veterinary Medical Officer

Dan Finley, Chemistry Technician

Dennis Heisey, Research Statistician

Christine Bunck, Deputy Center Director

Duane Liebfried, Maintenance Mechanic

Carol Williams, Biological Aide

Paul Slota, Support Services Branch Chief

## New Student Chapter of the Wildlife Disease Association

NWHC-affiliated UW-Madison graduate students, Bieneke Bron, Michelle Verant, Ben Stading, and Pedro Jimenez, spearheaded the formation of the Wisconsin Student Chapter

of the Wildlife Disease Association (WiscWDA). The first meeting was held in October. The mission of the WiscWDA is "increasing awareness of wildlife health and disease in relation to their biology, conservation and ecology". Currently, 25 members meet monthly and invite guest experts to discuss important issues surrounding wildlife health. Center Director Jonathan Sleeman presented "Current and future perspectives on wildlife health" at the November meeting. In October, Tom Yuill (UW Professor Emeritus) presented "Wildlife Diseases: So what? Who cares?" For more information, visit [www.wiscwda.org](http://www.wiscwda.org) and on Facebook at Wiscwda

## Wildlife Disease Highlights

### Sylvatic plague vaccine for prairie dogs



Laboratory studies have demonstrated that oral vaccination of prairie dogs against plague using raccoon pox-vectorized vaccine is feasible, resulting in significant protection against challenges with *Yersinia pestis*, the bacterium that causes sylvatic plague. The Sylvatic Plague Vaccine (SPV) Subcommittee, under the direction of the Executive Committee of the Black-footed Ferret Recovery Implementation Team, is continuing its work to complete development and delivery of the sylvatic plague vaccine as a management tool to combat plague in prairie dogs and promote the recovery of the black-footed ferret. Field trials completed by Colorado Parks and Wildlife and NWHC in 2012 confirmed the safety of the vaccine in wild prairie dogs and non-target animals. Field studies to assess vaccine efficacy in free-ranging prairie dogs began in the summer of 2013. Vaccine and placebo baits were distributed in select prairie dog colonies in seven western states: Arizona, Colorado, Montana, South Dakota, Texas, Utah, and Wyoming. Prairie dogs are trapped and sampled to determine bait uptake. The field study will continue into 2015. Some sites hosted a media field day where reporters and others were invited to learn more about the SPV field trials at selected prairie dog colonies. Additional information can be found [here](#).

### White-nose syndrome winter 2013/2014

Wildlife officials in three states--Arkansas, Michigan, and Wisconsin--reported their first confirmed cases of white-nose syndrome (WNS) among clinically affected cave-hibernating bats in the 2013/14 winter season, increasing the total number of affected states to 25. Although no new Canadian provinces

were added in winter 2013/14 to the five that are affected, continued expansion of the disease was reported in Nova Scotia, New Brunswick, Quebec, and Ontario, as well as in Midwestern and Southeastern US states. Evidence of clinical WNS now extends as far west as Jackson County, Missouri, which



is on the border with Kansas, as far south as Paulding County, Georgia, and as far north as the 49th parallel in Quebec.

View the most recent [Wildlife Health Bulletin](#) on WNS for more information. View the current map of WNS Occurrence by County created by the Pennsylvania Game Commission [here](#). Current NWHC bat submission guidelines are available [here](#).

## Snake fungal disease

In the last decade, reports of wild snakes from parts of the eastern U.S. with severe, and often fatal, skin infections have increased.



These infections, referred to as snake fungal disease (SFD), are consistently associated with the fungus *Ophidiomyces ophiodiicola*. Clinical signs are variable and range from thickened, crusty scales and nodules below the skin to skin ulcers and severe swelling of the head. NWHC has performed diagnostics on samples collected from over 70 snakes with clinical signs consistent with SFD, and is also participating in a multi-state collaborative project aimed at better understanding the disease and its potential impacts on snake populations. Although the fungus is widely distributed in captive animals, *O. ophiodiicola* has only been identified in wild snakes in the eastern U.S. We would be interested in hearing about potential cases of SFD and testing samples from other parts of the U.S. (i.e., west of the Mississippi River) to better determine the distribution of the fungus. Conservation agencies and natural resource managers in the eastern half of the U.S. are also encouraged to report suspected cases of SFD to the NWHC. More information about SFD, along with photographs of clinical signs, can be found [here](#).

## Chlamydia in rosy-faced lovebirds in Arizona

In May 2014, a mortality event involving feral rosy-faced

lovebirds (*Agapornis roseicollis*) in Phoenix and Scottsdale, Arizona was reported to the NWHC. To date, the mortality has involved at least 45 lovebirds from three locations.



Four lovebirds were submitted to the NWHC for diagnostic evaluation. The cause of death was determined to be avian chlamydiosis caused by the bacterium *Chlamydochlamydia psittaci*. A similar chlamydiosis mortality event in lovebirds in Mesa, Arizona was documented in August-September 2013.

Lovebird mortality, and the occurrence of a disease with zoonotic potential on residential properties, prompted a field investigation in August 2014 by NWHC in collaboration with Arizona Game and Fish Department, Arizona Department of Health Services, Maricopa County Department of Public Health, and the University of Georgia Infectious Disease Laboratory. The objective of the investigation was to examine the prevalence of *Chlamydochlamydia psittaci* in the feral lovebird population in Maricopa County, the role other common backyard bird species have in the maintenance or spread of this bacterium, and the risk of infection by this bacterium to residential property owners that feed these species. Diagnostic results are pending. More information about chlamydiosis can be found [here](#).

## Sea urchin mortality in the Hawaiian Islands



The NWHC Honolulu Field Station is collaborating with the University of Hawaii, the State of Hawaii Division of Aquatic Resources and The Nature Conservancy to investigate an unusual mortality of collector urchins (*Tripneustes gratilla*) ongoing since February 2014. Urchins play a critical role as grazers in tropical coral reefs by helping prevent overgrowth of algae on reefs. Awareness of this issue was made apparent in the early 1980s in the Caribbean when more than 90% of its urchin population declined over a 3.5 million square kilometer area over the span of about a year, resulting in an 80% decline of coral cover with attendant loss of biodiversity. Field investigations on Oahu have revealed at least two sites with mortalities, and a recent investigation on Maui confirmed presence of mortality on west Maui. Occasional reports have come from Hawaii and Kauai. A recent survey of urchins in south and southwest Maui revealed most to be healthy and the disease limited to a single area. The main species affected is

the collector urchin, but there have been occasional reports of other species of urchins dying in north Kauai. Efforts to identify the potential cause of the urchin die-off in the Hawaiian Islands are ongoing.

## Winter deaths of eared grebes and bald eagles at Great Salt Lake attributed to West Nile virus



The Great Salt Lake (GSL) is a major water bird migration site, and in November and December 2013, the Utah Division of Wildlife Resources (UDWR) estimated that 10,000 - 20,000 of the 2 million eared grebes (*Podiceps nigricollis*) that were on the GSL during migration died and 85 of the 750 - 1,250 bald eagles (*Haliaeetus leucocephalus*) were found sick or dead. The NWHC diagnosed West Nile virus (WNV) in dead eared grebes and bald eagles submitted from this GSL mortality event. Diagnoses were based on pathological findings, molecular detection of WNV genetic material in tissues, and isolation of virus from multiple tissues from each bird. There was no evidence of the presence of other infectious diseases. This is the first report of a WNV mortality event of this size and the first report of WNV in eared grebes. West Nile virus infection in bald eagles is also uncommon. The circumstances of this unusual WNV mortality in grebes and eagles may involve increased infectivity or pathogenicity of the virus or unusual environmental conditions. Further studies are ongoing. For more information, view the [Wildlife Health Bulletin](#) on this topic.

## International Activities

### China/USA Sea Turtle Workshop

The NWHC Honolulu Field Station was a principal host of the Hawaii 2014 China/USA Sea Turtle Workshop that took place from August 25-29. The goal of the workshop was to foster information exchange between the National Oceanic and Atmospheric Administration, the Chinese Academy of Fishery Sciences, and the USGS in order to better understand sea turtle ecological concepts and research techniques. The workshop included presentations on sea turtle issues, a tour of the USGS Honolulu Field Station, demonstrations of techniques, hands-on practice opportunities, and field work at



Kailua Bay.

## Common eider mortality in Iceland

The NWHC is collaborating with the University of Iceland's Snaefellsnes Research Centre, the Institute for Experimental Pathology at Keldur, and the West-Iceland Centre of Natural History to investigate a mortality event involving common eiders (*Somateria mollissima*) from a breeding location in Rif, Iceland. Mortality was first noted in May 2014 and continued into early July 2014, with approximately 50 eiders reported dead. No other species seemed affected at this location, although gulls were observed to be scavenging some of the carcasses. This site is managed for wild common eider breeding, with eider down nest lining collected by the property owner at the end of the breeding season. This location has approximately 500 eider nests in very close proximity to each other with both incubating females and attendant males present. To date, no cause of death has been identified and the investigation is continuing.



## NWHC Publication News

### Sea Otters Can Get the Flu, Too

Northern sea otters living off the coast of Washington state were infected with the same H1N1 flu virus that caused the world-wide pandemic in 2009, according to a new U.S. Geological Survey and Centers for Disease Control and Prevention study. During an August 2011 health monitoring project, USGS and CDC scientists found evidence that the Washington sea otters were infected with the pandemic 2009 H1N1 virus, although the exact date and source of exposure could not be determined. The findings suggest that human flu can infect sea otters. For more information go [here](#).



### Avian Flu in Seals Could Infect People

A new study by the U.S. Geological Survey and St. Jude Children's Research Hospital shows that the avian influenza H3N8 strain that infected New England harbor seals could be



transmitted to other mammals through the air without physical contact. Transmission by respiratory droplets through coughing, for example, is the main way influenza viruses spread among people. The study also showed that current seasonal flu vaccines do not protect against this seal virus, meaning a new vaccine would be necessary if there ever was an outbreak in humans. For more information go [here](#).

## Parasite in Live Asian Swamp Eels May Cause Human Illness



U.S. Geological Survey scientists found parasitic worms known as gnathostomes in Asian swamp eels collected between 2010 and 2012 from ethnic food markets and in Florida waters where the eel species is invasive. If eaten raw or undercooked, these eels could transmit their parasites to people, causing mild to serious disease. Severe cases of the infection can lead to blindness, paralysis or death. The USGS study was published in the journal *Emerging Infectious Diseases*. For more information go [here](#).