



**Report to the Western Association of Fish and Wildlife Agencies
from the USGS National Wildlife Health Center
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The USGS National Wildlife Health Center provides national leadership to safeguard wildlife and ecosystem health through dynamic partnerships and exceptional science.

The following information is of a topical nature for wildlife management agencies and entities; many partners and collaborators are involved in gathering and researching this information.

Wildlife Health Information Sharing Partnership – Event Reporting System (WHISPerS)

The USGS National Wildlife Health Center (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 date, 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 (see http://www.nwhc.usgs.gov/publications/quarterly_reports/index.jsp); after the initial rollout, other wildlife professionals will be able to enter data that can be viewed by others. A prototype of the reporting system was demonstrated at the Association of Fish and Wildlife Agencies (AFWA) Fish and Wildlife Health Committee meeting in September and a Webex demonstration was given to partners to gather additional feedback. A [Frequently Asked Questions](#) handout is available.

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Wildlife Morbidity/Mortality Summaries: January 2014 to March 2014

White-nose syndrome winter 2013/2014 summary

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 this past winter season, increasing the total number of affected states to 25. Although no new Canadian provinces were added in winter 2013/2014 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. Non-lethal PCR-based swab surveillance for the causative fungus, *Pseudogymnoascus destructans* (*Pd*), was expanded into Great Plains and Southern states last winter, and the fungus was detected for the first time in several central Mississippi counties. Despite the addition of several new states to the list of WNS confirmed states, there were not any large geographic jumps in the continued

spread of white-nose syndrome during winter 2013/2014. Wide-spread detection of *Pd* and clinically ill bats in multiple counties throughout Missouri indicates that the disease is now endemic there.

Also of note, Woodward County, Oklahoma, classified in spring 2010 as “WNS suspect”, was removed from the official list of areas suspected to be contaminated with *Pd* based on ongoing surveillance and subsequent reanalysis of archived samples at NWHC using an improved molecular test (PCR). As a result, cave myotis (*Myotis velifer*) has been removed from the list of species found to harbor *Pd*, although this species likely remains at risk for infection as WNS continues to spread westward. More information is available about these changes at <https://www.whitenosesyndrome.org/news/> (posted May 7, 2014). *Pseudogymnoascus destructans* was also recently identified by molecular testing (PCR) of a silver-haired bat (*Lasionycteris noctivagans*) hibernating at a site in Delaware known to be contaminated with the fungus since winter 2011/2012. View the current map of WNS Occurrence by County created by the Pennsylvania Game Commission at http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/ Current NWHC bat submission guidelines are available at: http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/USGS_NWHC_Bat_WNS_submission_protocol.pdf. Contact: Anne Ballmann, National Wildlife Health Center, 608-270-2445, aballmann@usgs.gov

Chlamydia in rosy-faced lovebirds (Arizona)

In late August 2013, a mortality event involving rosy-faced lovebirds (*Agapornis roseicollis*) at a backyard feeding station was reported to the Arizona Game and Fish Department by a Mesa resident. Between August 17 and September 4, 2013, it was estimated that eighteen lovebirds had died. No other species were reported to be affected. Five carcasses were collected and submitted to the USGS National Wildlife Health Center for diagnostic evaluation. The lovebirds were a mixture of juveniles and adults in fair to emaciated nutritional condition. Necropsies were conducted on four carcasses. *Chlamydophila psittaci* was detected by PCR in the four birds tested. Tests were negative for avian paramyxovirus, West Nile virus, and avian influenza. Brain cholinesterase levels were not depressed, ruling out poisoning by organophosphate pesticides. Follow-up communication with the resident revealed that the individual had sought treatment at a medical clinic for a febrile illness with respiratory symptoms and was not improving with amoxicillin clavulanate treatment shortly after cleaning around the feeders. After being advised of the cause of the mortality in the lovebirds, she revisited her physician and her medication was changed to doxycycline. Within three days, her symptoms began improving. A single convalescent titer taken by Maricopa County Department of Public Health in late September was positive for exposure to *C. psittaci* by microimmunofluorescence testing. Wild birds that have been implicated in transmission of psittacosis to humans are fulmars, parrots, pigeons, ducks, and turkeys. Recently, human cases have been more frequently associated with psittacines kept as pets but with increasing numbers of invasive populations of psittacines identified around the world, this case serves as a reminder to physicians, wildlife veterinarians and wildlife management agencies about the public health implications of such non-native populations. **Contact:** Barbara Bodenstein, National Wildlife Health Center, 608-270-2447, bbodenstein@usgs.gov

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 collector urchins, 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. **Contact:** Thierry Work, NWHC Honolulu Field Station, 808-792-9520, thierry_work@usgs.gov

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. U.S. Geological Survey National Wildlife Health Center (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. **Contact:** Barbara Bodenstern, National Wildlife Health Center, 608-270-2447, bbodenstern@usgs.gov

Avian cholera in seabirds in Alaska

Large numbers of sick and dead seabirds were observed washing ashore along the northern coast of Saint Lawrence Island, Alaska in late November 2013. Citizens of Gambell and Savoonga, two tribal villages approximately 40 miles apart on this remote 100-mile long island in the Bering Sea, reported the event immediately to the University of Alaska's Marine Advisory Program stationed in Nome. Villagers were able to collect some specimens from the initial die-off, including a thick-billed murre (*Uria lomvia*), a Northern fulmar (*Fulmarus glacialis*), and a crested auklet (*Aethia cristatella*), which were sent to the National Wildlife Health Center for diagnostic evaluation. Avian cholera (*Pasteurella multocida*) was diagnosed based on bacterial cultures of liver and characteristic lesions in all bird specimens submitted. Prior to this event, avian cholera had not been reported in Alaska. The closest avian cholera outbreak reported in recent history involved snow geese (*Chen caerulescens*) on Banks Island, Northwest Territories, Canada. The closest avian cholera outbreak involving seabirds was reported in common eiders (*Somateria mollissima*) and occurred on East Bay Island, Nunavut, Canada.

Native communities on Saint Lawrence Island rely almost exclusively on the subsistence harvest of many marine species, including birds, for food. Many seabirds use this area of the Bering Sea as a staging area during migration and it is an overwintering area for eiders, including the world's remaining population of spectacled eider (*Somateria fischeri*). For more information, view the [Wildlife Health Bulletin](#) on this topic. **Contact:** Barbara Bodenstern, National Wildlife Health Center, 608-270-2447, bbodenstern@usgs.gov

Sea star mortality on the West Coast

Millions of sea stars on the west coast, from Alaska to Southern California, died during a mortality event that began in June 2013. The USGS National Wildlife Health Center collaborated with scientists from multiple entities to learn more about this mortality event, conduct necropsies, and assist to coordinate a response. Collaborators included the Monterey Bay, Seattle, and Vancouver, B.C. Aquaria; University of California–Santa Cruz and UC Davis/SeaDoc Society; Wildlife Conservation Society; Western

Washington University; Cornell University; Roger Williams University; and a veterinary pathologist from Northwest ZooPath. The event affected various sea star species in wild and captive populations; the two species affected most are *Pisaster ochraceus* (purple sea star or ochre starfish) and *Pycnopodia helianthoides* (sunflower sea star). To date, no underlying cause(s) of these mass mortalities have been identified. In previous outbreaks, bacterial and viral agents as well as environmental toxins and contaminants were suggested as underlying causes, but they were not confirmed. The 2013 outbreak appears more severe than previous outbreaks, killing up to 95 percent of some populations and affecting a much larger geographic area along the west coast. For more information, please see the [Wildlife Health Bulletin](#) on this topic. **Contact:** Barbara Bodenstern, National Wildlife Health Center, 608-270-2447, bbodenstern@usgs.gov

Request for wildlife mortality and morbidity event reporting (All States)

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 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 report can be found online at http://www.nwhc.usgs.gov/mortality_events/ongoing.jsp.

Additional Disease Research

Sylvatic plague vaccine for prairie dogs

Laboratory studies have demonstrated that oral vaccination of prairie dogs against plague using raccoon pox-vectored vaccine is feasible, resulting in significant protection against challenge 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 are being 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. During the 2014 field season, some sites are hosting a media field day where reporters and others are invited to learn more about the SPV field trials at selected prairie dog colonies. **Contact:** Tonie Rocke, 608-270-2451, trocke@usgs.gov.

Results of *Mycoplasma ovipneumoniae* ring test

Numerous microorganisms have been associated with pneumonia in bighorn sheep, but *Mycoplasma ovipneumoniae* is considered to be one of the key pathogens. This bacterium presents considerable diagnostic challenges due to its slow or inconsistent growth on solid agar media and its lack of readily detectable phenotypic characteristics for speciation of the bacterium when it does grow. Over the past several years, inconsistencies among different diagnostic and research laboratories in detecting *M. ovipneumoniae* from diagnostic samples collected from bighorn sheep have come to light. Consistency among laboratories is key to developing effective disease management strategies; however, little formal evaluation of the extent of variation in results among labs (also known as proficiency testing or a ring test) has accompanied testing procedures. For the wildlife management community to make informed management decisions, development of a proficiency testing program for *M. ovipneumoniae* in wild

bighorn sheep is needed. In conjunction with our partners, NWHC scientists examined the consistency of testing results for *M. ovipneumoniae* from the five diagnostic laboratories that voluntarily participated in the study. The partners and participating laboratories considered the ring test a success, and some laboratories made changes to their protocols based on the results of this test. Thus, this ring test served to provide new insights on current methods and the consistency of inter-laboratory results for the benefit of bighorn sheep disease management efforts. For more information about the ring test and the report, please contact Dan Walsh. **Contact:** Daniel Walsh, 608-270-2481, dwalsh@usgs.gov.

THANK YOU

The NWHC thanks all the state, federal and tribal agencies who worked with us the past year. We are at your service to provide technical support, field investigation assistance and diagnostic capabilities.

Disease Investigation Services

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, 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 (see below).

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. Field epidemiology and pathology team members are listed below. Further information can be found at our Website: <http://www.nwhc.usgs.gov/services/>.

Field Epidemiology Team Contacts:

Anne Ballmann, 608-270-2445, aballmann@usgs.gov
Barb Bodenstein, 608-270-2447, bbodenstein@usgs.gov
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Wildlife Pathology Team Contacts:

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A primary focus of the NWHC is to meet the needs of our partners in the field. If you have any questions or concerns regarding the scientific and technical services we provide please do not hesitate to contact me at 608-270-2401, jsleeman@usgs.gov.