

A JOINT PROJECT  
BETWEEN

USDA APHIS  
WILDLIFE SERVICES

AND

INDIANA DNR  
DIVISION OF FISH AND  
WILDLIFE

# Indiana Wildlife Disease News



Volume 7, Issue 1

Winter 2012

## Special points of interest:

- Mycoplasmosis
- Wild Turkey Disease Surveillance
- Wildlife Data Integration Network
- Global Wildlife Disease News Map

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## *Disease in Focus*

### Mycoplasmosis

This information on Mycoplasmosis is taken from the USGS Field Manual of Wildlife Diseases: Birds. Chapter 11: Mycoplasmosis. It is accessible at [http://www.nwhc.usgs.gov/publications/field\\_manual/chapter\\_11.pdf](http://www.nwhc.usgs.gov/publications/field_manual/chapter_11.pdf) (last accessed on March 30, 2012). Only part of the information is presented here. For a more complete description of the disease, including information on seasonality and diagnosis, please visit the website.

#### Cause

Mycoplasmosis is caused by infection with a unique group of bacteria that lack cell walls but possess distinctive plasma membranes. Mycoplasma are also the smallest self-replicating life-forms, and they are responsible for a variety of diseases in humans, animals, insects, and plants. These bacteria can cause acute and chronic diseases in hosts that they infect, and they are also implicated with other microbes as causes of disease when the immune system of the host has become impaired through concurrent infection by other disease agents or

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## *Disease Surveillance Update*

### Update on Wild Turkey Disease Surveillance

Because of a recent outbreak of turkey coronavirus in domestic turkeys in southern Indiana, USDA APHIS Wildlife Services, Indiana Department of Natural Resources, Heeke Disease Diagnostic Lab, and Farbest Farms began a project to conduct surveillance for turkey coronavirus and other diseases in wild turkeys during the Spring of 2011 (Indiana Wildlife Disease News 6:2). While we hypothesized that the introduction of turkey coronavirus would not have a significant effect on a typical wild turkey population, it is still of interest to determine if wild turkeys are becoming infected around positive farms. We were also interested in examining wild turkeys for the presence of other diseases significant to both wild and domestic turkeys from around the state

#### Methods

During the spring wild turkey hunt of 2011, surveillance occurred around or on the infected

premises in Dubois County. Anyone hunting on these previously infected farms collected a blood sample from wild turkeys that were harvested. The samples were tested at the Heeke Lab at the Southern Indiana Purdue Agricultural Center in Dubois, Indiana.

Blood collection packets were also sent to 5 Indiana DNR properties in northern Indiana. The properties were chosen because there were no commercial poultry facilities within the immediate proximity. At these properties, the entire pluck (the trachea, heart, lungs, intestines, and other internal organs) were also removed from the bird.

The serum was tested for turkey coronavirus, avian influenza (AI), *Mycoplasma gallisepticum* (MG), *Mycoplasma synoviae* (MS), *Bordetella avium*, and avian paramyxovirus-1.

#### Results

A total of 39 wild turkeys were collected during the spring turkey season. Eleven

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# Mycoplasmosis (Continued from pg 1)

through other processes. This article focuses on mycoplasmal infections of birds by *Mycoplasma gallisepticum* (MG).

## Species Affected

Until recently, mycoplasmosis has not been considered an important disease of wild birds. During late winter 1994, eye infections in house finches caused by MG were first observed in the Washington, D.C. area. Since then, mycoplasmosis has rapidly spread throughout much of the eastern range of the house finch. Mycoplasmosis has also appeared in wild populations of American goldfinch within the eastern United States. Clinical or observable disease caused by MG has not previously been found in wild passerine birds in the United States despite a long history and common occurrence of MG in poultry wherever poultry are raised. Molecular studies of isolates from the songbirds shows that those isolates are similar but that they are distinctly different from isolates obtained from poultry.

*M. gallisepticum* is a known pathogen of upland gamebirds raised in captivity, and it has been isolated from ducks and geese. Studies of mycoplasmosis in Spain have resulted in isolation of MG from free-ranging peregrine falcons, and isolation of MG from a yellow-naped Amazon parrot is further evidence of a diverse host range that can become infected by this organism (Table 11.1). Strain differences of MG exist and differ in their ability to cause clinical disease. Also, isolates of the same strain can vary widely in their ability to cause clinical disease in different species. This variance in the ability to cause clinical disease is, in part, shown by the greater numbers of birds that have antibody to MG than by the presence of mycoplasmosis in species and populations tested. The isolates of MG from wild songbirds do not cause significant disease in chickens.

Chickens and turkeys are commonly infected with MG, and direct contact of susceptible birds with infected carrier birds causes outbreaks in poultry flocks. Aerosol transmission via dust or droplets facilitates spread of MG throughout the flock. Transmission through the egg is also important for poultry, and MG is thought to spread by contact with contaminated equipment. The highly gregarious behavior of house finches and their use of birdfeeders likely facilitates contact between infected birds or with surfaces contaminated with the bacteria. Infected finches are thought to be responsible for spreading this disease because they move between local birdfeeders and to distant locations during migration.

## Seasonality

Because mycoplasmas in poultry are commonly transmitted through the egg and are present in carrier birds, there is no distinct seasonality associated with disease in those species. Observations of house finch conjunctivitis are most frequent when birds are using birdfeeders during the colder months of the year.

## Field Signs

Mycoplasma infections in poultry are generally more severe than those reported for house finches, the only wild bird for which any substantial field observations of clinical disease have been made. The prominent field signs are puffy or swollen eyes and crusty appearing eyelids (Fig. 11.2). A clear to somewhat cloudy fluid drainage from the eyes has been reported for some birds. Birds rubbing their eyes on branches and birdfeeder surfaces have also been reported. Other observations of infected birds include dried nasal discharge, severely affected birds sitting on the ground and remaining at feeders after other birds have departed, and birds colliding with stationary objects due to impaired vision.

## Control

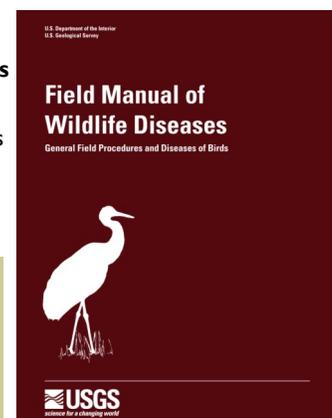
Routine cleaning and disinfection of birdfeeders with household bleach is recommended to prevent mycoplasmosis and other diseases that can be transmitted at birdfeeders. A 10 percent solution of household bleach applied weekly for feeders with high bird use will reduce the potential for contaminated surfaces to transmit disease. Close observation of birds using feeders and the prompt reporting of suspect cases of mycoplasmosis to authorities will provide the opportunity for early intervention based on timely diagnosis and for initiating an appropriate disease-control strategy specific to the location and population involved.

Birds that survive infection can become disease carriers that serve as a source for initiating new outbreaks. Also, aerosol and egg transmission of mycoplasmosis is common for poultry. Similar transmission is likely for wild birds and must be taken into consideration during the rehabilitation of wild birds infected with mycoplasmosis. The potential for interspecies transmission of MG from poultry to upland gamebirds being reared in captivity for sporting purposes must also be considered. This same consideration exists for raptors that may be fed poultry carcasses and waste.

## Human Health Considerations

None. Mycoplasmas that infect birds are not known to be hazards for humans.

For more information on this and other wildlife diseases, take a look at the USGS Field Manual of Wildlife Diseases



Source: USGS Field Manual of Wildlife Diseases.

# wdin Wildlife Data Integration Network

## Wildlife Disease Resource

# The Wildlife Data Integration Network

The Wildlife Disease Integration Network (WDIN) is a collaborative project working to develop a Web-based monitoring and reporting system to provide state and federal resource managers, animal disease specialists, veterinary diagnostic laboratories, physicians, public health workers, educators, and the general public with access to data on wildlife diseases, mortality events, and other critical related information. Data are contributed voluntarily, with partners deciding which data they choose to share.

The WDIN is a dynamic and evolving Web resource, reflecting the expanding and continually changing face of wildlife disease. As more partners come together as part of this collaborative project, the resulting distributed wildlife disease data warehouse can be a valuable resource for all to share and use to enhance the understanding, surveillance, management, control, and prevention of wildlife diseases around the world.

### WDIN Objectives

Building partnerships and providing tools to facilitate long-term collaborative efforts in the wildlife disease arena.

- Facilitate access to data and information on wildlife and zoonotic diseases;
- Visualize clusters on morbidity and mortality events;

- Track the prevalence and spread of various diseases at the most discrete spatial and temporal levels through interactive GIS mapping and other applications;
- Predict possible new disease appearances;
- Identify previously unrecognized wildlife-human-domestic animal disease relationships;
- Help limit further disease spread;
- Help prevent future outbreaks.

### WDIN Resources

The WDIN contains a variety of resources that we will be highlighting in the next several issues. Several of these include:

- Global Wildlife Disease News Map
- Wildlife Health Monitoring Network
- Wildlife Health Event Reporter

There is also information available on specific diseases from around the world. Be sure to take the time to visit the WDIN at <http://www.wdin.org/index.jsp>

## Wild Turkey Surveillance Update (Continued from page 1)

birds were collected from Dubois County, 8 samples were collected from Winamac Fish and Wildlife Area (FWA) in Pulaski County, 3 samples were collected from Pigeon River FWA in LaGrange County, 10 samples were collected from Jasper Pulaski FWA in Jasper County, 2 samples from Willow Slough FWA in Newton County, and 3 samples were collected from Kingsbury FWA in LaPorte County. Two additional samples were also collected from wild turkeys in Jackson and Lawrence Counties. 1 sample from Dubois County was positive for turkey corona virus. All other samples were negative for turkey coronavirus.

There was enough sera from 33 of the samples to run test for the remaining diseases. Two samples from Pulaski County were positive for MG and avian paramyxovirus-1, 21 of the samples from throughout the state were positive for *Bordetella avium*, and none of the samples were positive for AI and MS.

The remaining samples are being send to the National Wildlife Health Center in Madison, Wisconsin to determine if the samples that were positive for avian paramyxovirus-1 are Newcastle disease or another type of avian paramyxovirus.

### Future Surveillance—Spring 2012

We will be conducting additional surveillance for these same diseases in wild turkeys throughout Indiana during the Spring 2012 turkey season. Many of the DNR properties and personnel will be participating. If you are interested in participating in the upcoming surveillance, contact Steve Backs ([SBacks@dnr.IN.gov](mailto:SBacks@dnr.IN.gov)) or Joe Caudell ([joe.n.caudell@aphis.usda.gov](mailto:joe.n.caudell@aphis.usda.gov)) to find out how to assist.

Article by Steve Backs (IDNR) and Joe Caudell (Wildlife Services)

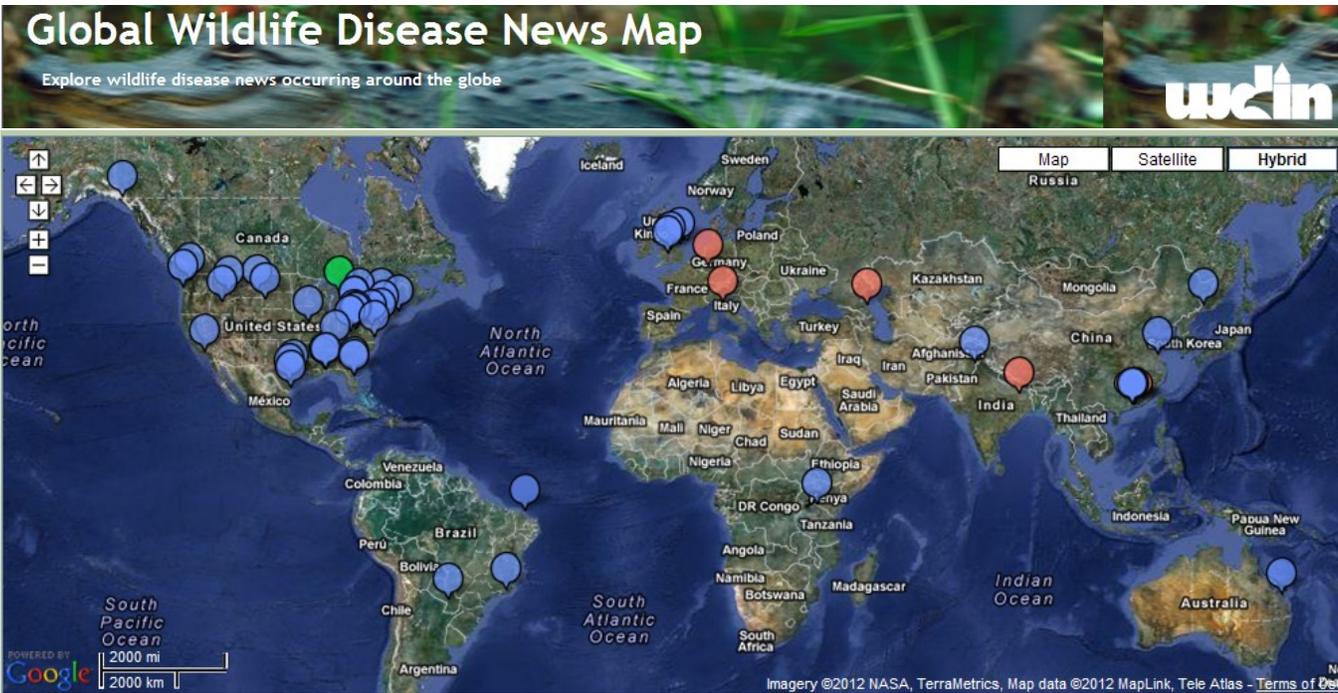


Disease Information Resource

## Global Wildlife Disease News Map

One of the resources of the Wildlife Disease Integration Network is the Global Wildlife Disease News Map. This resource allows wildlife managers and others interested in wildlife diseases to keep track of wildlife disease news events from around the globe.

Visitors to the website can zoom in to a particular region and click on balloons that represent current disease events that have made the news. Be sure to visit the Global Wildlife Disease News Map at <http://www.wdin.org/newsmap/>.



## Indiana Caves Closed Due to White-nose Syndrome

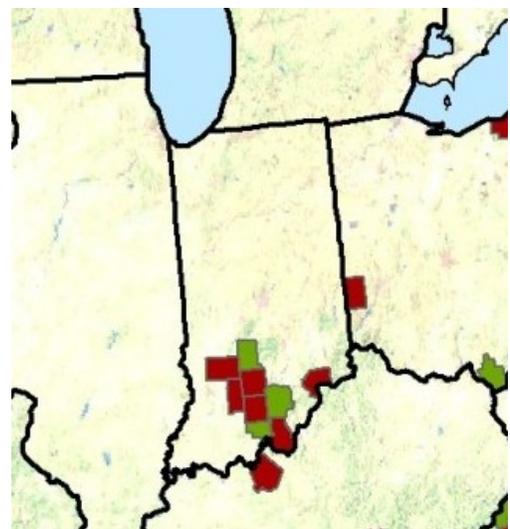
In response to growing concern for bat populations in other states that have been affected by White-Nose Syndrome, the Indiana Department of Natural Resources has closed public access to caves, sinkholes, tunnels and abandoned mines on DNR-owned land until further notice.

The exception is Twin Caves at Spring Mill State Park.

This action, made in consultation with the U.S. Fish & Wildlife Service, is a proactive step to slow or stop the spread of this deadly fungus from moving into Indiana. High population densities of bat species are found in southern Indiana, particularly the federally endangered Indiana bat.

White-Nose Syndrome has killed more than a half million bats in states from Vermont to West Virginia and has had mortality rates in excess of 90 percent in some bat hibernacula.

For the latest information on WNS in Indiana, visit the Indiana DNR website on bat disease at <http://www.in.gov/dnr/fishwild/5404.htm>.



WNS update for Indiana and surrounding states. Green are positives from 2010-2011, red is positives from 2011-2012. Map courtesy of Cal Butchkoski, PA Game Commission.

Source: Indiana DNR Website



# Midwest Wildlife Disease Update

March 2012

## White Nose Syndrome Update

On the verge of another season of winter hibernating bat surveys, U.S. Fish and Wildlife Service biologists and partners estimate that at least 5.7 million to 6.7 million bats have now died from white-nose syndrome. Biologists expect the disease to continue to spread.

White-nose syndrome (WNS) is decimating bat populations across eastern North America, with mortality rates reaching up to 100 percent at many sites. First documented in New York in 2006, the disease has spread quickly into 16 states and four Canadian provinces. Bats with WNS exhibit unusual behavior during cold winter months, including flying outside during the day and clustering near the entrances of caves and mines where they hibernate. Bats have been found sick and dying in unprecedented numbers near these hibernacula.

“This startling new information illustrates the severity of the threat that white-nose syndrome poses for bats, as well as the scope of the problem facing our nation. Bats provide tremendous value to the U.S. economy as natural pest control for American farms and forests every year, while playing an essential role in helping to control insects that can spread disease to people,” said Fish and Wildlife Service Director Dan Ashe. “We are working closely with our partners to understand the spread of this deadly disease and minimize its impacts to affected bat species.”

Estimating the total number of bat deaths has been a difficult challenge for biologists. Although consistent population counts for federally listed endangered bats, like the Indiana bat, have been a priority for state and federal biologists, establishing population counts of once “common” bat species, like little brown bats, was historically not the primary focus of seasonal bat population counts.

“White-nose syndrome has spread quickly through bat populations in eastern North America, and has caused significant mortality in many colonies,” said National WNS Coordinator, Dr. Jeremy Coleman, “Many bats were lost before we were able to establish pre-white-nose syndrome population estimates.”

More than 140 partners, including tribal, state and federal biolo-

gists and bat researchers convened in Carlisle, Pennsylvania for the 2012 Northeast Bat Working Group (NEBWG) meeting last week to discuss challenges facing bat research, management and conservation. Coordinating with wildlife officials in Canada, the group discussed population-level impacts to hibernating bats and developed the estimate of bats lost to WNS.

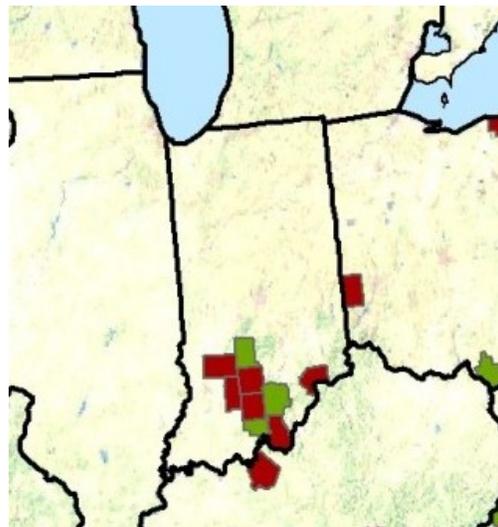
Source: USFWS Press Release. For the full press release, visit <http://www.whitenosesyndrome.org/news>

## CWD Presence Affects Recreational Hunter Attitudes

A research study titled “The Impacts of Chronic Wasting Disease and its Management on Recreational Hunters,” by Zimmer, Boxall and Adamowicz, examined the site choices of recreational deer hunters in context of changing levels of

chronic wasting disease (CWD) and its management in Alberta. CWD is a prion disease that affects wild cervids and is found in Saskatchewan and Alberta. There are no known human health risks from CWD but the condition is fatal for cervids. The methodological approach employed utilizes both revealed and stated preference data collected from resident hunters using a computer-based survey. The results suggest that while hunting behavior is not significantly altered by current CWD levels and management programs, there would be some changes given higher prevalence and spread levels of the disease. To avoid a situation of high CWD spread and prevalence, hunters would be willing to pay on average \$20.35 per trip to keep CWD at current levels. This translated into just under a million dollars of direct economic value.

Although the estimate is not large compared to other provincial economic activities, when added up over a number of years the economic losses could be substantial. (Source: Canadian Journal of Agricultural Economics/Revenue, Volume 6, Issue 1, pages 71-92, March 2012)



WNS update for Indiana and surrounding states. Green are positives from 2010-2011, red is positives from 2011-2012. Map courtesy of Cal Butchkoski, PA Game Commission.

## No CWD Detected in Indiana and Ohio

Results from the Indiana Division of Fish and Wildlife’s 2011 CWD sampling failed to detect the presence of CWD in 869 deer sampled from hunter harvested and road killed deer. CWD has not been detected in over 12,200 deer sampled during the monitoring period of 2002 through 2011. (Source: 2011 Indiana Deer Season Summary by Chad M. Stewart, Indiana Div. Fish and Wildlife)

For the ninth straight year, testing of Ohio’s deer herd has found no evidence of chronic wasting disease (CWD). According to the Ohio Department of Natural Resources, Division of Wildlife, state and federal agriculture and wildlife officials collected 588 samples last year from hunter-harvested deer from 44 counties, pri-

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# Indiana Wildlife Disease News

A joint project between:

Indiana DNR  
Division of Fish and Wildlife

and

USDA APHIS Wildlife Services  
National Wildlife Disease Surveillance and Emergency Response Program

to provide information on wildlife diseases in Indiana and surrounding states.

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### Submissions or Participation

If you would like to submit a wildlife disease related article, ideas, comments, or other information, please contact one of the editors.

We welcome individuals or agency representatives to act as reviewers or to provide assistance in the production of this newsletter. To assist, please contact one of the editors.

Providing information on wildlife diseases in Indiana and surrounding states



## Indiana Department of Natural Resources Division of Fish and Wildlife

The mission of the Division of Fish and Wildlife is to professionally manage Indiana's fish and wildlife for present and future generations, balancing ecological, recreational, and economic benefits. Professional management is essential to the long term welfare of fish and wildlife resources, and providing for human health and safety. Communication between agency professionals and educating the public are important aspects of professional management.

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## USDA APHIS Wildlife Services NATIONAL WILDLIFE DISEASE SURVEILLANCE AND EMERGENCY RESPONSE PROGRAM

The mission of the National Wildlife Disease Surveillance and Emergency Response Program is to provide Federal leadership in managing wildlife disease threats to agriculture, human health and safety, and natural resources by assisting Federal, State, Tribal, and Local governments, private industry, and citizens with management of zoonotic and other wildlife diseases of concern.

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## Midwest Wildlife Disease Update (Cont. from pg. 5)

marily during the deer-gun season that ran November 29 - December 5. In addition to CWD, all 588 samples of the hunter-harvested deer samples were also tested for bovine tuberculosis. Results found no evidence of this disease in Ohio deer. Additional CWD samples are being taken from road-killed deer, but those test results are not yet available. Sampling continues through April. (Source: Ohio DNR News Release, February 7, 2012, from their website, edited)



USDA APHIS Veterinary Services veterinarian Dr. Don Linderman collecting lymph nodes for Indiana CWD surveillance. Photo USDA.

Column by D. Zimmerman, IDNR