

A JOINT PROJECT  
BETWEEN

USDA APHIS  
WILDLIFE SERVICES

AND

INDIANA DNR  
DIVISION OF FISH AND  
WILDLIFE

# Indiana Wildlife Disease News



Volume 2, Issue 4

October 2007

## Special points of interest:

- EHD in Indiana's deer
- Southern Tick Associated Rash Illness explained
- Update on VHSV
- Bovine Tuberculosis
- Meet the new Indiana DNR Deer Research Biologist
- Update on avian influenza surveillance in Indiana

## Inside this issue:

- VHSV update 2
- Bovine TB: fact or fantasy in IN 4
- AI surveillance update 5
- In Focus: Chad Stewart 6
- Midwest Wildlife Disease Update 7
- National Feral Hog Conference 7

## Effects of EHD on Indiana's Deer Herd

The epizootic hemorrhagic disease (EHD) outbreak that has been killing deer throughout the state may affect certain local deer herds this year, but hunters can take solace in knowing that it likely will not have any long-term effects, according to a DNR deer research biologist. "We have had more reports this year than in recent history, particularly in the southwest and southeast part of the state, and we'll probably see those effects in the harvest data at the end of the year" said the DNR's Chad Stewart. "But those areas also have some of the highest deer densities in the state, so there are likely to be more deer affected and found dead." Since those areas have so many deer to begin with, Stewart said, they will also be able to withstand the outbreak better than other parts of the state might.

EHD is often mistakenly called bluetongue virus (BTV). Although similar, they are two genetically different viruses. Deer in Indiana have tested

positive for only EHD serotype 2 virus this year; none have tested positive for bluetongue virus. EHD was first positively identified in deer herds in 1955 in deer in New Jersey and Michigan, but reports of deer dying with symptoms similar to EHD have been reported as early as 1890. The viral disease EHD is carried by a biting midge of the genus *Culicoides*. After a bite from one of these insects transmits the virus to the deer, the virus spends a brief incubation period inside the deer. Shortly thereafter, the animal begins to show clinical signs of the disease. These signs can include loss of both appetite and the fear of humans, as well as excessive salivation, rapid pulse and respiration, and fatigue. After symptoms occur, the animal can die within 72 hours. Deer infected with EHD often seek water, since they are often febrile and dehydrated. Death usually occurs near water.

"Not every deer will become infected with EHD, and not every deer that contracts EHD will die because of it" Stewart said. "It's Continued on pg. 6

## Southern Tick Associated Rash Illness (STARI)

Southern Tick Associated Rash Illness (STARI) produces a rash similar to those seen in cases of Lyme disease. Most reports of this disease have been linked to the lone star tick (*Amblyomma americanum*), which is found from central Texas and Oklahoma eastward across the southern states and along the Atlantic coast as far north as Maine. The adult female is distinguished by a white dot or "lone star" on her back. All three life stages of the lone star tick aggressively bite people.



Lone star tick. Photo: CDC

According to the Centers for Disease Control and Prevention (CDC), "the rash may be accompanied by fatigue, fever, headache, muscle and

joint pains." The rash presents as "a red, expanding 'bull's eye' lesion that develops around the site of a lone star tick bite. The rash, when present, usually appears within 7 days of the tick bite and expands to a diameter of 8 centimeters (3 inches) or more. The rash should not be confused with much smaller areas of redness and discomfort that can occur commonly at tick bite sites. Unlike Lyme disease, STARI has not been linked to any arthritic, neurological, or chronic symptoms."

The CDC also reports that "the cause of STARI is unknown. Studies have shown that it is not caused by *Borrelia burgdorferi*, the bacterium that causes Lyme disease. An- Continued on pg. 3

## Update to VHSv in the Great Lakes Area

The Viral Hemorrhagic Septicemia virus (VHSv) continues to spread through the upper Great Lakes. At its closest approach to Lake Michigan in 2006, VHSv was roughly 20 miles from the Straits of Mackinac. After new spring 2007 mortality events, the virus has spread to Lake Michigan's Green Bay and Lake Michigan near Algoma, WI.

Other new locations are Hamilton Harbor, Ontario on western Lake Ontario, Thames River in Ontario and Skaneateles Lake in New York. However, the two most notable new occurrences are Budd Lake in Clare County Michigan and Lake Winnebago system in Wisconsin. Budd Lake has no connection to a Great Lake and is in the middle of Michigan's Lower Peninsula. The Lake Winnebago system is isolated from Green Bay by several impassible dams.

The finding of VHSv in waters isolated from the Great Lakes demonstrates the concern of this pathogen spreading via water recreation equipment or bait. Despite regulations and public service announcements, it's up to anglers to do their part to prevent the spread of the virus by mechanical transmission.

The Great Lakes Fish Health Committee met this last August. Much of their agenda was centered on VHS. The GLFHC is comprised of state, provincial, federal, and tribal agencies within the Great Lakes basin. A few of the topics discussed were egg disinfection studies, surveillance results, and APHIS funding.

The use of iodine as an egg disinfectant has long been used on trout and salmon eggs. This practice prevents the spread of certain pathogens that may reside on the outside of the egg but cannot infect the developing embryo. Current knowledge of VHSv says it cannot penetrate an egg. Since the Type IVb strain of VHSv is not just a salmonid pathogen, the use of iodine on other species such as walleye, northern pike and muskellunge is untried.

This spring, many agencies experimented with egg disinfection during the water hardening phase for these cool-water species. After reviewing the data, the GLFHC is recommending that iodine also be used on the eggs of these species.

Agency surveillance efforts have included hundreds of case studies representing well over 15,000 fish. Of interest has been the lack of finding the virus where previously found. A tool that is needed is an assay for detection of antibodies but this has yet to be developed for the Type IVb strain of VHSv. The GLFHC is recommending that surveillance continues. An important aspect of surveillance is to sample when the virus is most likely to be found. This is in cold water when fish congregate for spawning.

Earlier this year, APHIS made \$891,000 available to a 19 state region surrounding the Great Lakes. The bulk of the money is targeted for the states touching the Great Lakes. The money will be made available as a grant and be used to pay for surveillance of VHSv where it has not yet been found. The states must kick in 30% to get 70% reimbursement. The grant money will run through early spring of 2008 but is expected to be replaced with new money at the beginning of the next federal fiscal year.

Article by: Dave Meuninck, IDNR



Red stars indicate locations positive for VHSv. Map: IDNR

## USDA APHIS Amends VHS Susceptible Species List

The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) has amended its Federal Order on viral hemorrhagic septicemia (VHS) by revising the list of VHS-susceptible species. Since the VHS strain of concern is only known to occur in the Great Lakes region, the updated list includes only those species found in freshwater environments in the United States and Canada. The updated list only includes those species that have been infected with VHS under natural or non-experimental conditions and in which the virus has been isolated in a cell culture with the strain identified through molecular detection.

VHS is a destructive pathogen that, while not harmful to people, causes internal hemorrhaging and death in a wide range of fish species. APHIS issued the original October 2006 Federal Order in response to the rapid spread of VHS in the Great Lakes and related tributaries. That order prohibited the importation of 37 species of live fish from two Canadian provinces into the United States and the interstate movement of the same species from the eight states bordering the Great Lakes.

When APHIS originally issued the order, the agency took a conservative approach and restricted the movement of all species listed by the World Organization for

Animal Health (OIE) as susceptible to all known strains of VHS. The species no longer affected by the Federal Order include:

Atlantic Cod (*Gadus morhua*)  
 Coho salmon (*Oncorhynchus kisutch*)  
 Chum salmon (*Oncorhynchus keta*)  
 Grayling (*Thymallus thymallus*)  
 Haddock (*Gadus aeglefinus*)  
 Herring (*Clupea spp.*)  
 Japanese flounder (*Paralichthys olivaceus*)  
 Pacific cod (*Gadus macrocephalus*)  
 Pink salmon (*Oncorhynchus gorbuscha*)

Continued on pg. 3

## STARI (Continued from pg. 1)

other spirochete, *Borrelia lonestari*, was detected in the skin of one patient and the lone star tick that bit him. However, subsequent study of over two dozen STARI patients has found no evidence of *B. lonestari* infection. In the cases of STARI studied to date, the rash and accompanying symptoms have resolved promptly following treatment with oral antibiotics.”



Current range of STARI in US. Map: CDC

In a study funded by the National Institutes of Health, the Southeastern Cooperative Wildlife Disease Study (SCWDS) is conducting

research on the natural history of this disease throughout the eastern United States. Because information on the transmission of *B. lonestari* is unclear, researchers at SCWDS led by Dr. Michael Yabsley and graduate student Jessica Murdock are attempting to identify the natural transmission cycle, including reservoir host(s) and vector(s), to aid in future research on the epidemiology of STARI. This project aims to test the serum from a

variety of species with a wide distribution to determine exposure to *Borrelia lonestari* and other borreliae. Because of key epidemiologic features (transmission by lone star ticks, naturally infected white-tailed deer, and



Head of lone star tick: Photo: SCWDS experimental evidence white-tailed deer susceptibility), white-tailed deer is the primary target host. Because exposure of deer with *Borrelia burgdorferi* may confound results, they are also conducting surveillance for this pathogen.

USDA APHIS Wildlife Services - Wildlife Disease Program in Indiana is participating in this research by collecting blood from hunter-harvested deer throughout the state. Blood is being collected from at least 20 hunter-killed deer per population during scheduled regulated hunts from northern and southern Indiana. Blood is occasionally taken from road-killed animals in areas where no hunter-harvested animals are collected. While Indiana is currently outside the range of reported STARI cases, this data will help establish the northern range of the disease. In addition, testing of deer for *B. burgdorferi* antibodies furthers our understanding of the range of this important human pathogen.

Source: CDC website and Dr. M. Yabsley, SCWDS

## Changes to VHS Species List (Continued from pg. 2)

Rockling (*Onos mustelus*)  
 Sprat (*Sprattus spp.*)  
 Turbot (*Scophthalmus maximus*)  
 Whitefish (*Coregonus spp.*)

APHIS also recently determined that several additional freshwater fish species not included in the original order are susceptible to VHS. These species originate in freshwater locations in the United States and/or Canada and have been infected by the VHS virus under natural (i.e. non-experimental) conditions of exposure. Scientists have been able to isolate the VHS virus in these species through laboratory testing. As a result, three new species are now listed in the Federal Order:

Lake whitefish (*Coregonus clupeaformis*)  
 Spottail shiner (*Notropis hudsonius*)  
 Trout-perch (*Percopsis omiscomaycus*).

Two species that remain on the Federal Order’s VHS-susceptible list have had

their scientific names clarified:  
 Shorthead redhorse (*Moxostoma macrolepidotum*)  
 Silver redhorse (*Moxostoma anisurum*).

APHIS issued the original Federal Order in response to the rapid spread of VHS in the Great Lakes region and the potential impact of the disease on a growing number of fish species, including species of fish raised commercially in the United States. Dead and diseased wild fish have been reported in the St. Lawrence River and in Lake Erie, Lake Huron, Lake Michigan, Lake Ontario and Lake St. Clair. Outbreaks of VHS have also been reported in inland lakes of Michigan, New York and Wisconsin.

The intent of the Federal Order is to prevent the introduction of VHS into aquaculture facilities by controlling the movement of live fish species from the Great Lakes region at risk of harboring

the VHS virus. The order allows APHIS to gather more information on the disease and puts a federal regulatory program in place that allows for the interstate movement of fish susceptible to VHS via testing and certification. This revised Federal Order will remain in effect until the interim rule is published. Both the modified and the original emergency order can be found on our Web site at [http://www.aphis.usda.gov/animal\\_health/animal\\_dis\\_spec/aquaculture](http://www.aphis.usda.gov/animal_health/animal_dis_spec/aquaculture).

For additional information, please contact P. Gary Egrie by telephone at (301) 734-0695 or by e-mail at [Paul.G.Egrie@aphis.usda.gov](mailto:Paul.G.Egrie@aphis.usda.gov).

USDA is an equal opportunity provider and employer.

Source: USDA

# Bovine Tuberculosis: Fact or Fantasy in Indiana

Several years ago the Indiana Board of Animal Health (BOAH) and Department of Natural Resources stepped up their surveillance both in cattle and deer, primarily because of the bovine tuberculosis (TB) outbreak in whitetail deer and cattle in the northern portion of Michigan's lower peninsula. Veterinarians, wildlife biologists, and others were alerted to do more testing and watch for clinical signs of TB. Clear, color photographs of TB infected chest cavities and organs were provided for reference to DNR personnel as well as deer check stations and deer processors. I knew then what to look for, and even heard it said that there could be a few TB infected deer scattered around the state. TB quickly went on my radar and I fully expected that one day I might see a TB infected deer at a check station.

After talking with Doug Metcalf, Chief of Staff at BOAH, expectations have diminished. Since 2001, BOAH and veterinari-

ans around the state have been vigorously conducting TB tests in cattle and captive deer. Since October 1, 2006, over 11,500 Indiana cattle have been tested for TB. In 2007 alone 345 captive deer have had TB checks. Starting in 2001, each captive deer herd has undergone three consecutive years of testing for TB. No TB has been discovered. Many of the animals tested are from northern Indiana where both dairy farms and captive deer farms are more common. It would seem that if TB were to spread from a known source, northeast lower Michigan, it would enter and be detected in northern Indiana.

Indiana attained TB free status in 1984 and continues to enjoy that designation. Metcalf said, "I'd be real comfortable saying that TB does not exist in Indiana cattle or deer, captive or wild." This causes me to breathe a bit easier. While we need to be responsible and continue to watch for the disease at every oppor-

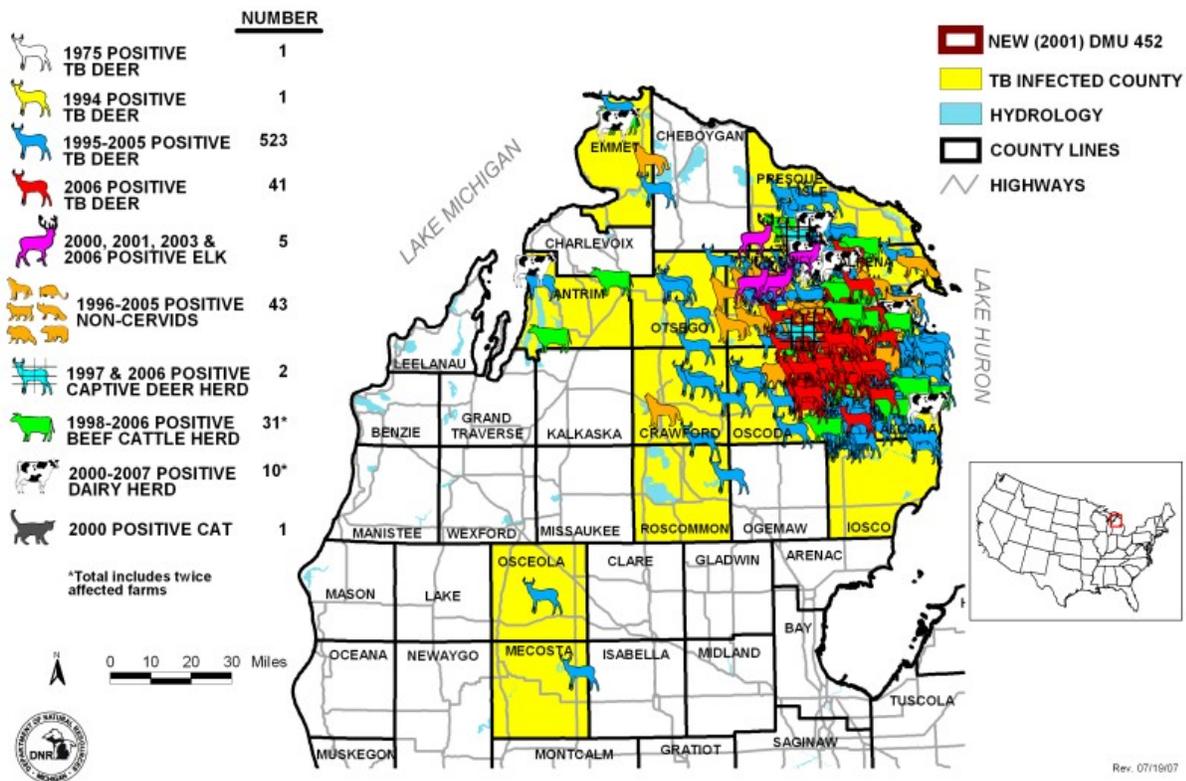
tunity, we must also be careful not to cause the public any undo concern. We must also be putting out factual information and down play the likelihood of encountering this disease.

In the highly unlikely event you encounter lesions (white or red blister-like sores) on the internal organs or carcass of a deer, exercise caution in handling the animal. BOAH should be contacted immediately for further instructions and examination by BOAH veterinarians. BOAH may be contacted by calling (toll-free) 877-747-3038 ext. 358.

If contact cannot be made, the carcass should be iced down or refrigerated (not frozen) if possible. Keep the animal, including the head, intact until examined, and avoid contact with other deer carcasses. BOAH should be contacted first thing the next business day.

Article by: D. Zimmerman, IDNR

## BOVINE TUBERCULOSIS SURVEY RESULTS



Michigan is the closest state where we know TB is present in wildlife. For more information on TB in Michigan, visit the Michigan Emerging Disease Website at <http://www.michigan.gov/emergingdiseases/0,1607,7-186-25804---,00.html>. Source: State of Michigan web site.

# Indiana Avian Influenza Surveillance Update

Since 1998, U.S. Department of Agriculture (USDA) scientists, in cooperation with the U.S. Department of the Interior (DOI), have monitored wild migratory birds for AI viruses. The agencies have tested more than 12,000 birds in the Alaska flyway, and since 2000, tested more than 3,000 birds in the Atlantic flyway.

Since 2006, the U.S. Geological Survey (USGS), U.S. Fish and Wildlife Services (USFWS), DOI, USDA, and state wildlife agencies have been working to conduct avian influenza surveillance, which includes all of the major migratory flyways. This program serves to provide an early warning to the agriculture, public health, and wildlife communities should migratory birds be found to carry this particular virus. Details about the surveillance in Indiana was in the January 2007 of the Indiana Wildlife Disease News.

The avian influenza surveillance in wild birds continues in Indiana in 2007. USDA Wildlife Services and the Indiana Department of Natural Resources (DNR) implemented the surveillance plan for the H5N1 strain of high path avian influenza in wild birds in July.

During the 2007 surveillance season, which runs from April 1 2007 until May 31 2008, USDA APHIS Wildlife Services and the Indiana Department of Natural Resources Division of Fish and Wildlife will collect 750 samples from throughout Indiana. Approximately one-third of the samples were taken during the resident bird season this past summer (2007).

## DEAD BIRD CALLS

Similar to last year, morbidity and mortality events of waterfowl will occur year-round. Any mortality events consisting of waterfowl or shorebirds can be reported to USDA APHIS Wildlife Services Wildlife Conflicts Information Hotline at 1-800-893-4116. Mortality events consisting of 5 or more individuals of any species will be first investigated through phone evaluation. Based on the phone evaluations, biologist may decide to investigate the mortality event and sample individuals for avian influenza.

From April 1 through September 30, 2007, the hotline has received 143 calls about dead birds. Most calls have been regarding 1 to 4 dead birds. Only 4 calls met the criteria to initiate a dead bird investigation. One call was regarding 4 dead doves that had died over a period of about 2 weeks. Another call was

regarding 1 to 2 dozen dead geese in Marion county; however, this incident turned out to be hunted geese that had been 'breasted-out' and then dumped in a small pond. The last significant call was about multiple dead ducks in Allen county; however, this was the site of a botulism outbreak last year and the veterinarian confirmed that the ducks that were dying this year were exhibiting the same symptoms as the previous year. The last was a single mallard that was picked up and sampled in Tippecanoe County.

## SAMPLING TO DATE

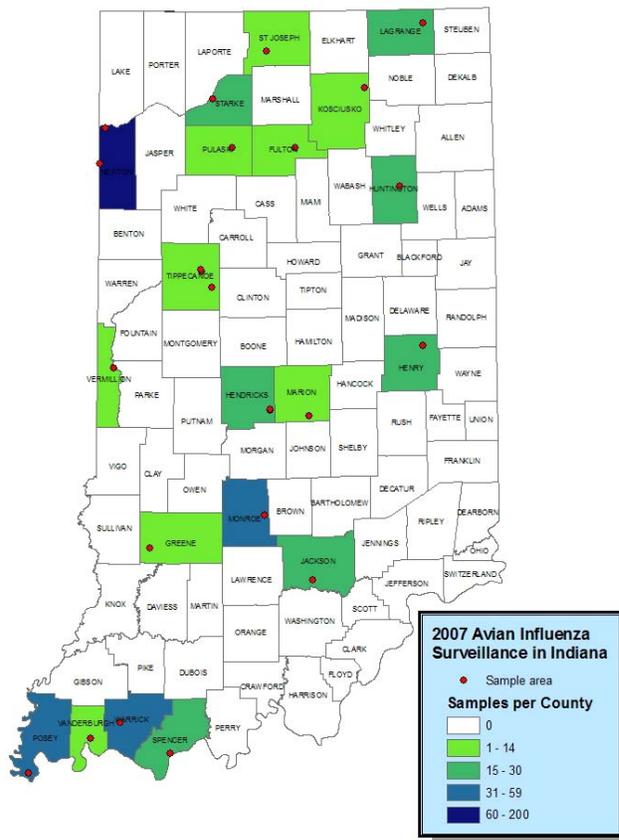
In June, USDA APHIS Wildlife Services collected samples from 180 resident Canada geese during several of the Indiana DNR Division of Fish and Wildlife goose banding projects. After samples were collected from the geese, they were released on-site.

In July and August, approximately 45 free-ranging wood ducks were sampled by the Indiana DNR. The remaining birds will be taken during the 2007 waterfowl hunting season from licensed hunters.

Article by: Dr. J. N. Caudell, USDA

Species	Number of Samples	
	Actual	Target
American Green-winged teal	185	200
Canada geese	182	200
Mallard	125	200
Dabbling Ducks	112	150
Other	2	

Target and actual sample numbers from April 1 through Oct 31 2007.

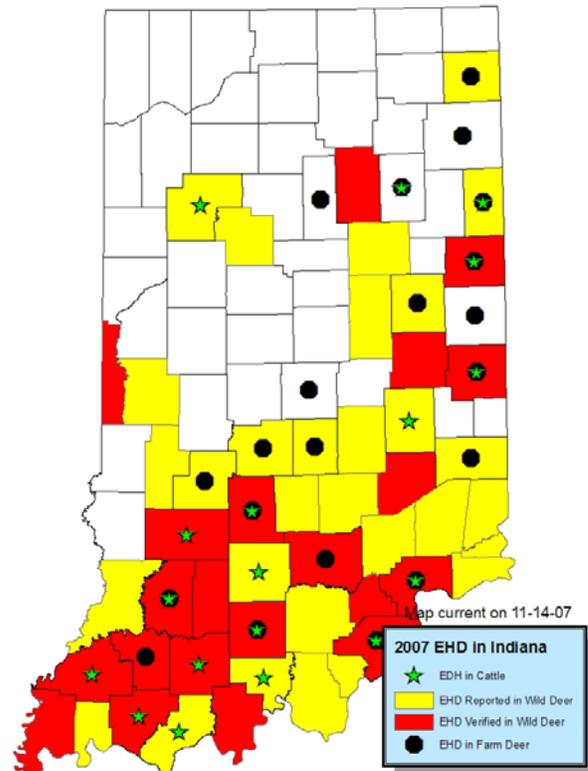


Location of avian influenza surveillance in Indiana from May 2007 until Oct 31, 2007.

## EHD in Indiana (Continued from Pg. 1)

natural for people to see a couple of dead deer around a stream or pond and think that every area is experiencing deer loss at the same level, but this disease is spotty. It will affect certain areas significantly and leave other areas nearby untouched. So, deer can be significantly reduced at the property level, but at the county level, we don't see nearly that level of loss." Stewart said that the current drought conditions are likely contributing to the increased number of dead deer that have been reported this year. "The drought has dried up quite a few shallow pools or streams where the deer typically go for water, concentrating more of them in other watering areas, and in the process increasing the opportunity for interaction between the midge and the deer." This, he said, often can attribute to the varying degree which the virus is expressed across the landscape. Stewart said that some deer hunters will experience a disappointing season and notice a drastic difference between the numbers seen on their property last year and this year, but that level of drop-off is not likely to be reflected across a given county. For that reason, Stewart said, there are no plans to change the current deer hunting regulations or the bonus antlerless quotas this year. "To adjust the deer quotas for this disease this year would be a knee-jerk reaction," he said. "Instead, we'll look at the harvest numbers after the season and make any adjustments that we deem necessary for the 2008 hunting season." Deer afflicted with EHD are fit to eat. Stewart said the virus has never been proven to be transmitted to humans via consumption of an infected animal. EHD is not related to Chronic Wasting Disease, which has never been documented in the state of Indiana.

Source: INDR News Release



EHD in deer and cattle in Indiana. Source: IDNR, BOAH, Wildlife Services, SCWDS

### In Focus

## Chad Stewart, IDNR Deer Research Biologist

Chad Stewart has been the Deer Research Biologist for the Indiana Department of Natural Resources since January 2007. Chad is responsible for recommendations and reports regarding deer harvests, disease monitoring, crop damage, deer vehicle accidents, and all things deer-related. He has a B.S. from Penn State University in Wildlife and Fisheries Sciences and an M.S. in Natural Resources and Environmental Sciences from the University of Illinois. After completion of his M.S. degree, he worked through the University of Georgia on a white-tailed deer project in West Virginia before moving onto the National Zoo's Conservation and Research Center in Virginia.



Chad Stewart

While there, he worked on several projects relating to white-tailed deer, including the effectiveness of a contraceptive drug on limiting deer reproduction. During that time, Chad also worked for a private company that specialized in urban deer management. Chad has also been able to take part in several international projects, including a biodiversity monitoring project in Malaysia, and an ecological study on takin (*Budorcas taxicolor*) a poorly studied goat in China, in which he is still involved. In his free time, Chad enjoys spending time hiking with his wife and/or dog, hunting for deer, turkey, and quail, and watching an unhealthy amount of baseball and football.



Takin. Photo: C. Stewart

Article by: C. Stewart, IDNR



## Midwest Wildlife Disease Update

**Wabash River Sturgeon Die-off-** In July 2007 over 100 shovel-nose sturgeon

(*Scaphirhynchus platyrhynchus*) were found dead at two or three locations on the Wabash River in west-central Indiana. Bill James, Indiana Chief of Fisheries, advised that the Purdue Animal Disease Diagnostic Laboratory was unable to determine the cause. James reported that Iowa has observed several shovel-nose sturgeon die offs in the Des Moines River since 1990, one numbering in the thousands. They have also been unable to isolate a cause, but have noted that die offs occurred during very low flow conditions, generally in the same stretch of river and at the same time of year as we observed in the Wabash River.

**Rabies in Bats-** Illinois authorities have confirmed bat rabies in record numbers this summer, with 79 bats testing positive for rabies, mostly in northeastern Illinois. Cook County (Chicago area) was home to 21 of those testing positive. Since 1996, bats have accounted for 96% of animal rabies cases in Illinois. Indiana has had several bats test positive as well this summer, from Putnam, Owen and Adams County. Thankfully there were no human exposures. (Source- ProMed)

**EHD In Deer-** According to the Univ. of Georgia's Southeast Cooperative Wildlife Disease Study, EHD is the most common ailment affecting deer in the eastern United States. Outbreaks in 2007 have occurred in Indiana, Illinois,

Ohio, Kentucky, Tennessee, Pennsylvania, Virginia, West Virginia and New Jersey. Drought like conditions and warm fall weather facilitated the spread and extent of the disease this year in the Ohio River valley. (Source- ProMed)

**Indiana Hunter and CWD Risk-** An Indiana hunter will be allowed to keep the head mount of a deer he killed in Wyoming that tested positive for Chronic Wasting Disease. The Wyoming Game and Fish Department notified the hunter who had submitted a sample for testing at a check station. Indiana DNR officials disposed of the meat, but the hunter was allowed to keep the mount. A veterinarian with the Indiana Board of Animal Health said, "As long as the skull cap and cape are cleaned properly, the hunter can safely keep the mount." No information was presented on where the trophy was mounted, Indiana or Wyoming. (Source- ProMed)

**Disappearing Crows-** Wild birds have been dying by the millions since the start of North America's WNV epidemic. In looking at 26 years of Breeding Bird Survey data, Shannon LaDeau of the Smithsonian Migratory Bird Center found that out of 20 bird species checked, the drop was particularly shocking for the American Crow whose populations had dropped 45% in certain regions from 1998 levels. (Source- TWS The Wildlife Professional)

**West Nile Sentinels-** Dead crows have been the quintessential harbinger of the

spread of West Nile Virus (WNV) in the U.S. Now a new study in the *American Journal of Tropical Medicine and Hygiene* (v.76/1) suggests wildlife managers look to a new sentinel of the disease: mid-sized predators. Kevin Bentler of the USDA's National Wildlife Research Center in Ft. Collins, CO, teamed with other researchers to determine WNV infection rates in opossums, foxes, skunks, and raccoons. The testing 936 animals for WNV antibodies in 2003 and 2004 revealed that infection prevalence was high in areas where WNV infected large numbers of birds and humans (e.g. Ohio, where 60% of adult raccoons had antibodies), and low in areas where WNV wasn't a problem. Since many of these species are already regularly monitored for rabies, the authors note, surveillance for WNV could be as easy as one more lab test. (Source- TWS The Wildlife Professional)

**Crappie Die-off-** The Minnesota DNR reported that an acute bacterial infection killed thousands of crappies in a lake near Ashby, MN in early September 2007. Lab staff labeled the cause of death as Environmental Gill Disease. The disease is also called Columnaris after the name of the bacteria – *Flexibacter columnaris*. The bacteria attacks the gills and prevents the uptake of oxygen from the water. The bacteria are naturally occurring and not harmful to humans. Fish kills occur when susceptible fish are weakened by some environmental stress such as sudden water temperature change. (Source- ProMed)

Continued on pg. 8



## The National Feral Hog Conference is Coming

A National Conference on Feral Hogs will be held in St. Louis, Missouri on April 13-15, 2008. The conference will be held in St. Louis, Missouri at the Crowne Plaza Hotel in the downtown area. Rooms can be reserved by calling 1-800-925-1395 and mentioning the Feral Hog Conference. Room rates are \$103 for a single king bed or two double beds. Rooms need to be booked by March 24, 2008 to guarantee the rate and room.

More details will be available at [www.missouriconservation.org](http://www.missouriconservation.org) around the end of November. We will provide more information about this conference in the *Indiana Wildlife Disease News* as it becomes available.



# 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.

## Editorial Staff

### Editors

Joe N. Caudell, Wildlife Services  
jcaudell@aphis.usda.gov

Dean Zimmerman, IDNR DFW  
dzimmerman@dnr.IN.gov

### Reviewers

Judy Loven, Wildlife Services  
APHIS—LPA

### Subscriptions

The Indiana Wildlife Disease News is only published in electronic format. To add or remove you name from the mailing list, please send an e-mail to jcaudell@aphis.usda.gov

### 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.

DNR- Div. Fish and Wildlife  
402 W. Washington St., Room W-273  
Indianapolis, IN 46204  
Phone: 317-232-4080  
Website: [www.wildlife.IN.gov](http://www.wildlife.IN.gov)

## 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.

USDA APHIS Wildlife Services  
Purdue University, SMTH Hall, 901 W. State Street  
West Lafayette, IN 47907-2089  
Phone: 800-893-4116  
Website: [www.entm.purdue.edu/wildlife/wild.htm](http://www.entm.purdue.edu/wildlife/wild.htm)



## Midwest Wildlife Disease Update (Continued from pg. 6)

**Eastern Equine Encephalitis (EEE)-** A total of 24 horses in 17 Indiana counties have tested positive EEE in 2007. "It's the widest dispersion of the virus in Indiana in recent memory," said Dr. Sandra Norman, equine director for the Indiana State Board of Animal Health. "Typically, in years when we receive reports of EEE, we see them clustered in the most northern counties in Indiana, particularly on the western side of the state." Positive tests this year came from: Adams, Boone, Daviess, Decatur, DeKalb, Elkhart, Hendricks, Howard, Jay, Kosciusko, LaGrange, LaPorte, Noble, Putnam, Rush, Steuben, and St. Joseph Counties. Mosquitoes first feed on infected birds and then spread the virus to horses and humans. (Source- ProMed)

**Avian Die-off, Trematode-** Since 2002 more than 25,000 birds, mostly coots and scaup, have died on the upper Mississippi River as a result of eating faucet snails that carry an intestinal parasite. Dead waterfowl continue to be found into the fall of this year. Exotic faucet snails were brought to this country from East-

ern Europe in the late 1800's. The snail can host two varieties of trematode with up to 100 of the parasites in a single snail. Birds can get a lethal dose in less than 24 hours of feeding and die within 3 to 8 days. Infected birds die from blood loss, shock from a chemical imbalance, or stomach infection. Birds often cannot swim or dive and are generally lethargic. (Source- ProMed)

**Botulism Suspected in Michigan Bird Deaths-** Scientists suspect botulism associated with invasive mussels is to blame for dead loons and grebes washing ashore in the Grand Traverse Bay area this fall. In November 2006, nearly 3,000 gulls, grebes and red-breasted mergansers turned up dead on beaches along a 12 mile stretch of Sleeping Bear Dunes National Lakeshore. They died from type E botulism, a neuromuscular disease caused by bacteria. Scientists believe zebra and quagga mussels, which invaded the Great Lakes in the 1980's, may filter the bacteria and pass it up the food chain to fish such as the round goby, which in turn are prey for aquatic birds. (Source- ProMed)

Column by D. Zimmerman, IDNR