

To: Natural Resource/Conservation Managers
From: Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center
Title: Indiana and North Carolina: White-nose syndrome in bats confirmed
Date: February 18, 2011

White-nose syndrome, a devastating disease of hibernating bats, continues to spread to new states. Indiana and North Carolina have recently confirmed cases of white-nose syndrome (WNS) in bats.

At the end of January, scientists in Indiana found two little brown bats in Endless Cave in Washington County that exhibited white fungal growth. The [USGS National Wildlife Health Center](#) determined these bats were infected with the fungus *Geomyces destructans* and confirmed the disease (WNS) by histopathologic examination (microscopic examination of tissues). The [Indiana Department of Natural Resources](#) issued a [news release](#) on Feb. 1. It is known that endangered Indiana bats also hibernate in Endless Cave.

Scientists from the [North Carolina Wildlife Resources Commission](#) (WRC) also found bats in two locations in Avery County on Feb. 1 with suspect fungal growth and sent carcasses to the [Southeastern Cooperative Wildlife Disease Study](#) (SCWDS) in Georgia for testing. SCWDS confirmed the disease in three bats: a little brown bat, a tri-colored bat, and a northern long-eared bat. The North Carolina WRC issued a [news release](#) on Feb. 9.

Indiana is the farthest location west where bats have been identified with laboratory-confirmed disease (WNS). Sites in Missouri and Oklahoma have tested positive for DNA from the fungus *Geomyces destructans*, but disease (WNS) has not yet been confirmed among bats at these sites nor has unusual bat mortality been observed. It is important to note the distinction between detecting the disease agent (the fungus, *Geomyces destructans*) versus actual infection of bats with the disease (WNS). Scientists at the NWHC have created documents that describe [case definitions](#) for WNS and the various [sampling methods](#) used to diagnose WNS in bats.

The NWHC continues to research this disease and we are developing a fuller understanding of how *G. destructans* causes death. During hibernation, a bat's internal body temperature drops to that of its cold environment, making it susceptible to infection by *G. destructans*. This fungus is severely destructive to bat skin, particularly the wing membranes. Bat wings are not only important for flying, but have other critical physiological functions such as regulating body temperature, blood pressure, water balance, and gas exchange. A [recent paper](#) in BMC Biology by USGS scientists hypothesized that infection with *G. destructans* disrupts these critical functions and results in death.

More information on WNS in bats can be found at:

- ❖ U.S. Fish and Wildlife Service: <http://www.fws.gov/whitenosesyndrome/>
- ❖ USGS National Wildlife Health Center: http://www.nwhc.usgs.gov/disease_information/white-nose_syndrome/
- ❖ USGS Fort Collins Science Center: <http://www.fort.usgs.gov/WNS/>

To report or request assistance for wildlife mortality events or health issues, visit

http://www.nwhc.usgs.gov/mortality_events/reporting.jsp or contact Dr. Anne Ballmann, 608-270-2445, aballmann@usgs.gov, Dr. LeAnn White, 608-270-2491, clwhite@usgs.gov, Dr. Thierry Work, 808-792-9520, thierry_work@usgs.gov (Hawaii and Pacific Islands) or Jennifer Bradsby, 608-270-2443, jbradsby@usgs.gov (single mortality events nationwide).

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