

Bats Matter!

Bats are an essential, beneficial part of our ecosystem. The death of our bat populations will cause an ecological ripple effect, with potentially far-reaching consequences.

Bats play critical roles in insect control, plant pollination, seed dissemination, and cave ecosystems. They are also food for other animals, including hawks, raccoons, skunks, and owls.



Merlin D. Tuttle,
Bat Conservation International

Bats and You

Consuming over half their body weight in insects each night, bats are primary predators of night-flying insects including many crop and forest pests. Bats in the U.S. eat thousands of tons of insects nightly. Recent studies concluded that **losing our bats could result in agricultural damage as high as \$53 billion each year!**

Cave-roosting bats are keystone species, because their droppings provide vital nutrients for cave ecosystems and are often the basis of a cave's food chain. This guano is used by microorganisms and invertebrates, which become food for fish, salamanders, frogs, and other larger animals.

Bats also play a significant role in science and medicine. Research conducted on bats has enabled advancements in sonar, vaccine development, blood coagulation, artificial insemination, and more.

**WNS not only affects bats -
it impacts entire ecosystems.**

Research is Critical

Scientists around the world have partnered to develop research and management strategies to combat WNS. Numerous field and laboratory projects are underway as scientists urgently try to discover the cause of WNS and how to fight it.

Your Help is Needed!

- Please honor cave closures. Check with your state conservation department or a local chapter of the National Speleological Society for the status of caves and caving in your area.
- Follow the protocols recommended by the USFWS to decontaminate clothes, footwear, and equipment used in caves or mines.
- Stay out of caves and mines where bats are hibernating.
- Report bats showing signs of WNS, and bats that are dead, dying, or appear diseased, to your state wildlife agency.
- Help spread the word about WNS and the value of bats.

More Information

For more information on WNS, including decontamination procedures, visit the U.S. Fish and Wildlife Service Web site:
www.fws.gov/whitenosesyndrome

- For more information on bats and caves, visit:
- Bat Conservation International: www.batcon.org
 - National Speleological Society: www.caves.org

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Battle for Bats

The WNS Tragedy



White-Nose Syndrome (WNS)

is responsible for the catastrophic death of hibernating bats in the United States and Canada. This previously unknown disease has spread very quickly among bats since it was first discovered, and it poses a considerable threat to millions of bats and entire ecosystems.

White-Nose Syndrome

A new disease is decimating entire populations of bats in the U.S. and Canada as they hibernate in caves and mines. Affected bats are frequently waking up and flying during hibernation, using up the fat reserves they rely on to survive the winter. Scientists estimate well over a million bats have already died.

White-nose syndrome (WNS) has spread rapidly. The earliest evidence of WNS was photographed in 2006 in a cave in New York. Now, bats with WNS or its associated fungus have been found in Midwestern and Eastern United States, as well as in four provinces in Eastern Canada.

Scientists believe WNS is responsible for the most dramatic decline of North American wildlife in 100 years, with potentially dire environmental consequences. It threatens ecosystems both in caves and above ground, and presents new challenges for conserving fragile cave environments.



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Alarming Death Rate

The impact of WNS is frightening! Up to 99% of bats in some WNS-infected populations die within a few years. Little brown bats, our most common species, have the highest mortalities: **over 90% die in the first years** after contracting the disease. This once common species may be in danger of extinction within the next 15 years! More than half of the 47 species of bats that live in the U.S. hibernate in caves and mines to survive the winter. Two species and two sub-species of these bats are federally endangered (Indiana, gray, Virginia and Ozark big-eared bats) and live within or near WNS-affected areas.

Other Signs

The white powdery fungus is not always visible on affected bats. Sometimes bats with WNS simply display unusual behavior such as flying outside during the day in near-freezing weather. This quickly uses up their fat reserves at a time when insects are not available for food. As a result, in winter you may find dead or dying bats on the ground or in buildings or other structures. If you encounter a bat, do not handle it.

How WNS is Spread

Bat-to-Bat: WNS has spread to caves and mines in a pattern that indicates the fungus primarily is transmitted from bat to bat. Additionally, bat-to-bat infection has been proven in a laboratory.

Other Means: Scientists believe that it may be possible for humans to inadvertently carry *G. destructans* spores on their apparel or equipment.

If the spread of WNS is not slowed or halted, we face the real possibility of losing entire bat species.

The Cause of WNS

This affliction was named “white-nose syndrome” because of the telltale white fuzzy growth on the nose, ears, and wing membranes of affected bats. Scientists identified a previously unknown species of cold-loving fungus, *Geomyces destructans*, as the cause of the skin infection. *G. destructans* thrives in low temperatures (40–55° F) and high humidity – conditions commonly found in caves and mines where bats hibernate.

While evidence indicates that *G. destructans* is likely causing the deaths of infected bats, the exact process is unknown. Scientists are working to determine if there are conditions that increase a bat’s susceptibility to WNS and/or death.

Please honor cave closures. As a precaution, clothing, footwear, and gear used in a WNS-affected site should be decontaminated according to the U.S. Fish and Wildlife Service (USFWS) protocols. **It is particularly important for cave visitors not to take clothing and gear used in a WNS-site to caves or mines outside a WNS-affected area.**



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