

White nose syndrome

By Celeste Silling

White-nose syndrome is a disease that in recent years has killed millions of bats in North America. White-nose syndrome, or WNS for short, affects bats as they hibernate. The condition is caused by the fungus *Pseudogymnoascus destructans*, which grows in cool, damp, dark places and eats away at the bats' skin. The fungus appears as white fuzz on the muzzles of the bats, giving the disease its name.



Photo caption: Little brown bat with white-nose syndrome.

Photo credit: Marvin Moriarty

WNS can kill bats in a number of ways. The fungus can invade the wings, leaving the bat unable to fly and hunt. It can also cause

behavioral changes in bats, making them wake up and become active, flying around outside during times when they ought to be hibernating. This can cause the bat to burn up the fat and nutrients that it had stored for winter or even freeze to death.

White-nose syndrome was entirely unknown to science until 2007, when researchers near Albany, New York noticed that bats with white powder on their noses were getting sick and dying. Since then, scientists have been studying the disease, but there is still no known cure.

After the disease was first found in the U.S., researchers also found it in bats in Europe and Asia. The bats in those continents, however, seemed less affected, indicating that they had already adapted to the fungus. If this is true, the fungus was probably brought from Europe to North America a short time ago.

Since there are no bats that migrate from Europe or Asia to North America, it is believed that the fungus was brought over by humans. It is likely that cavers visited a cave in Europe, got some fungal spores on their gear or clothing, then accidentally brought those spores to cave in North America. The fungus then spread as North American bats visited different caves and interacted with one another.

Usually, the disease kills about 70-90 percent of bats in an infected hibernaculum (where bats hibernate), but it has also been known to kill 100 percent, eradicating colonies of hundreds of thousands of bats. In 2012, a study revealed that an estimated 6.7 million bats had died from the disease in the six short years since it's discovery. Even more have died since then.

The disease is known to affect several bat species, especially the northern long-eared bat, little brown bat, and tricolored bat. Bats are important parts of the ecosystem. They control pest species, including mosquitos, and some even pollinate plants and spread seeds. The loss of so many of these key species is devastating to the system as a whole.

So how can we do our part to help bats and stop the spread of WNS? For one thing, stay out of caves and other areas where bats hibernate during the winter. If you do go in an area that might contain bats, decontaminate your gear with Clorox and Lysol. If you come across a bat, keep your distance and try not to disturb it.

As of May 2019, WNS was found in 21 counties in Texas and it's spreading fast. So if you observe any unusual bat behavior, such as bats flying during the day, struggling to get off the ground, or dying, report it to your local Fish and Wildlife agency. WNS is spreading rapidly, so it is important to remain vigilant even in areas that are so far unaffected. Let's do our best to protect our flying friends!