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Fungus that's killing millions of bats 'isn't going away'

By Louis Sahagun
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University of Illinois researchers say that an infectious and lethal cold-loving fungus that has killed an estimated 6 million bats in North America can persist indefinitely in caves whether there are bats in them or not.

The fungus responsible for white-nose syndrome, which scientists know as Geomyces destructans, thrives on all the carbon and nitrogen sources found in caves – twigs, dead spiders and fish, guano, other fungi – making it a permanent menace, according to a study by mycologist Andrew Miller and graduate student Daniel Raudabaugh published this month in the online journal PLOS ONE.

"A hibernating bat is a sort of prime rib for this fungi – but the rest of the cave is its salad bar," Miller said in an interview. "The only hope is that bats will develop some sort of immunity because the fungus isn't going away."

A bat infected with white-nose syndrome.
(Steven J. Taylor / University of Illinois)

Since it was discovered in New York in 2007, the fungus has swept across 22 states as far west as Oklahoma and five Canadian provinces. A majority of the dead were little brown bats, which have lost an estimated 20% of their population in the Northeastern United States over the last six years.

The fungus seems to prefer the 25 species of hibernating bats, but each of the 45 species of bats in the United States and Canada may be susceptible to white-nose syndrome.

White-nose syndrome gets its name from the powdery, white substance that appears around muzzles, ears and wings of affected bats.

Bats with white-nose syndrome 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 sites during a time of year when there are no insects to eat.

Hibernating bats are vulnerable to the fungus because their internal temperature is reduced to slightly above the ambient temperature and the bat immune system is suppressed, the researchers said. The fungus degrades keratin, a key protein in skin, and causes severe skin lesions.

Mollie Matteson, a spokeswoman for the Center for Biological Diversity, described the University of Illinois study as "very troubling because it suggests that this is a very tough organism and it's not going away any time soon, even if bats are wiped out by it."