

**LITTLE BROWN BATS  
MAY SOON VANISH IN THE  
NORTHEAST**

BY RICH BARLOW



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# Countdown to Extinction

Little brown bats, those unwelcome summer intruders in barns and houses, but ecologically essential eaters of pestilent insects, may be extinct in the Northeast within 16 years, BU-led researchers predict. The bats, found throughout North America, are dying from the mysterious white-nose syndrome, which has been annihilating bat populations in the northeastern United States since 2006, when it first appeared in New York state.

“Our analysis indicates that at least 73 percent of little brown bats in the Northeast have died in the last four years,” says Thomas Kunz, a College of Arts & Sciences professor of biology and director of BU’s Center for Ecology & Conservation Biology. Kunz assembled a team of researchers, including scientists from BU and the University of California, Santa Cruz, who used computer models to estimate the timeline to possible extinction. Their study was published in a recent issue of the journal *Science*.

It’s not clear how white-nose syndrome (WNS), named for the bleached fungus found on victims’

noses and other body parts, kills. What is known is that afflicted bats rouse early from hibernation, become active, lose body fat, and starve to death. The fungus has been found as far away as Oklahoma, but has been particularly devastating in the Northeast.

Even if the death rate decreases, the researchers fear that the little brown bat population will collapse in less than 20 years, from 6.5 million before the disease to 65,000, with a 90 percent chance of extinction within 65 years.

Winifred Frick, the lead author and a postdoctoral fellow at BU and UC, says that “it was startling to realize just how severe the die-off is. It is very difficult to say how best to stave off extinction. We don’t have a silver bullet yet.”

“We should care about why the bats are dying,” Kunz says. The animals gorge on bugs that attack crops and trees and that carry disease, including mosquitoes bearing West Nile virus. White-nose syndrome has killed one million Northeastern bats in the last four years, and each year, those million bats would have eaten 694 tons of insects. As the bat population is reduced, he says, humans may have an increased need for chemical pesticides.

The first year WNS struck, explains Kunz, only 5 to 10 percent of affected bats died, but the death rate leapt exponentially in the next two years, as the disease wiped out entire hibernating colonies.

“Bats can move the fungus around,” he says. “Once an animal

is infected, they’re carrying the spores with them. Because bats are highly gregarious, disease transmission is certainly expected to be higher.” The fungus grows only at temperatures found during hibernation, so you won’t see the disease’s snow-nosed giveaway in the summer months.

Hope may lie in a vaccine, which scientists are working on, Kunz says. Alternatively, evolution may save the bats, as disease-resistant individuals breed and pass on their hardiness. But don’t count on it, he cautions: “Bats have very low reproductive rates. They typically produce one baby a year, sometimes two, in a single litter. I’ve worked with bats over 45 years. Never have I seen, or known about from the literature, any mortality comparable to what we’re seeing.

“It’s very frustrating,” Kunz says. “In Vermont last year, I picked up 16 little bands that I’d put on bats over 20 years ago, all on dead bats.”

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Watch a video about white-nose syndrome in little brown bats at [bu.edu/bostonia](http://bu.edu/bostonia).



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SAYS** bats afflicted with white-nose syndrome rouse early from hibernation, become active, lose body fat, and starve to death.

VERNON DOUCETTE

