

Bats Perish, and No One Knows Why

Published: March 25, 2008


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People are not believed to be susceptible to the affliction. But New Jersey, New York and Vermont have advised everyone to stay out of all caverns that might have bats. Visitors to affected caves and mines are asked to decontaminate all clothing, boots, ropes and other gear, as well as the car trunks that transport them.

[Enlarge This Image](#) One affected mine is the winter home to a

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Al Hicks

Bats dying from a mystery illness dotted with a white fungus.

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Corcoran, a science editor, explores the topics addressed in this week's Science Times.

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third of the Indiana bats between Virginia and Maine. These pink-nosed bats, two inches long and weighing a quarter-ounce, are particularly social and cluster together as tightly as 300 a square foot.

“It’s ironic, until last year most of my time was spent trying to delist it,” or take it off the endangered species list, Mr. Hicks said, after the state’s Indiana bat population grew, to 52,000 from 1,500 in the 1960s.

“It’s very scary and a little overwhelming from a biologist’s perspective,” Ms. von Oettingen said. “If we can’t contain it, we’re going to see extinctions of listed species, and some of species that are not even listed.”

Neighbors of mines and caves in the region have notified state wildlife officials

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Al Hicks

DIRE EFFECTS Ryan von Lindin, a biologist (with Tina Kelley of The New York Times), in a mine in the Adirondacks.

of many affected sites when they have noticed bats dead in the snow, latched onto houses or even flying in a recent snowstorm.

Biologists are concerned that if the bats are being killed by something contagious either in the caves or elsewhere, it could spread rapidly, because bats can migrate hundreds of miles in any direction to their summer homes, known as maternity roosts. At those sites, females usually give birth to one pup a year, an added

challenge for dropping populations.

Nursing females can eat up to half their weight in insects a day, Mr. Hicks said.

Researchers from institutions like the [Centers for Disease Control and Prevention](#), the United States Geological Survey's National Wildlife Health Center, [Boston University](#), the New York State Health Department and even Disney's Animal World

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Death in the Adirondacks

Biologists fear a significant die-off of bats in about 15 caves and mines in New York, as well as at sites in Massachusetts and Vermont.

Source: "The Wild Mammals of Missouri," by Charles W. Schwartz and Elizabeth R. Schwartz

THE NEW YORK TIMES

are addressing the problem. Some are considering trying to feed underweight wild bats to help them survive the remaining weeks before spring. Some are putting temperature sensors on bats to monitor how often they wake up, and others are making thermal images of hibernating bats.

Other researchers want to know whether recently introduced pesticides, including those released to stop [West Nile virus](#),

may be contributing to the problem, either through a toxin or by greatly reducing the bat's food source.

Dr. Thomas H. Kunz, a biology professor at Boston University, said the body composition of the bats would also be studied, partly to determine the ratio of white to brown fat. Of particular interest is the brown fat between the shoulder blades, known to assist the bats in warming up when they begin to leave deep hibernation in April.

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“It appears the white nose bats do not have enough fat, either brown or white, to arouse,” Dr. Kunz said. “They’re dying in situ and do not have the ability to arouse from their deep torpor.”

His researchers’ cameras have shown that bats in the caves that do wake up when disturbed take hours longer to do so, as was the case in the Adirondack mine. He also notes that if females become too emaciated, they will not have the hormonal reactions necessary to ovulate and reproduce.

In searching for a cause of the syndrome, researchers are hampered by the lack of baseline knowledge about habits like how much bats should weigh in the fall, where they hibernate and even how many bats live in the region.

“We’re going to learn an awful lot about bats in a comprehensive way that very few animal species have been looked at,” said Dr. Elizabeth Buckles, an assistant professor at Cornell who coordinates bat research efforts. “That’s good. But it’s unfortunate it has to be under these circumstances.”

The die-offs are big enough that they may have economic effects. A study of Brazilian free-tailed bats in southwestern Texas found

that their presence saved cotton farmers a sixth to an eighth of the cash value of their crops by consuming insect pests.

“Logic dictates when you are potentially losing as many as a half a million bats in this region, there are going to be ramifications for insect abundance in the coming summer,” Mr. Darling, the Vermont wildlife biologist, said.

As Mr. Hicks traveled deeper in the cave, the concentrations of bats hanging from the ceiling increased. They hung like fruit, generally so still that they appeared dead. In some tightly packed groups, just individual noses or elbows peeked through. A few bats had a wing around their nearest cavemates. Their white bellies mostly faced downhill. When they awoke, they made high squeaks, like someone sucking a tooth.

The mine floors were not covered with carcasses, Mr. Hicks said, because raccoons come in and feed on them. Raccoon scat dotted the rocks along the trail left by their footprints.

In the six hours in the cave taking samples, nose counts and photographs, Mr. Hicks said that for him trying for the perfect picture was a form of therapy. “It’s just that I know I’m never

going to see these guys again,” he said. “We’re the last to see this concentration of bats in our lifetime.”

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