

US forest service research team releases bats treated for WNS

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Sybill Amelon, USDA Forest Service research wildlife biologist, and representatives of Bat Conservation International, the U.S. Fish and Wildlife Service, and the Missouri Department of Conservation hand-released bats on Tuesday at Mark Twain Cave Complex near Hannibal, Mo. The bats were part of

research on a natural inhibitor of White-nose Syndrome over the past winter.
Credit: Katie Gillies, Bat Conservation International.

USDA Forest Service scientists, collaborators, and supporters gathered at Mark Twain Cave Complex in Hannibal, Mo., on Tuesday evening to express cautious optimism about a possible treatment for White-nose Syndrome (WNS). The purpose of the gathering was to release bats that had WNS last fall but were successfully treated during a field trial over the past winter.

"While more research is needed before we know if our current discovery is an effective and environmentally safe treatment for White-nose Syndrome, we are very encouraged," said Michael T. Rains, Director of the Northern Research Station and the Forest Products Laboratory. "We are extremely grateful for the support of Bat Conservation International and The Nature Conservancy, and honored to be collaborating with Georgia State University on research that has potential to reduce mortality of [bats](#) in the face of this devastating disease."

White-nose Syndrome is caused by a cold-loving fungus, *Pseudogymnoascus destructans* (Pd), which is deadly to hibernating bats because it penetrates tissues of the nose and mouth as well as the wings, which are vital to bats' ability to avoid dehydration and maintain body temperature. In affected hibernacula, 78 to 100 percent of bat populations have died; total overall deaths so far are estimated at between 5 and 6 million bats.

In partnership with universities and state and federal wildlife agencies, and with funding support from Bat Conservation International and The Nature Conservancy, U.S. Forest Service researchers Sybill Amelon, a wildlife biologist, Daniel Lindner, a researcher specializing in fungal

diseases, and Chris Cornelison, a scientist with Georgia State University, are studying the use of native soil bacteria that produce natural volatiles that inhibit growth of the Pd fungus. Amelon, Lindner and Cornelison conducted field trials last fall in which diseased bats in the laboratory were treated with compounds produced by the bacteria. Many of the bats in those trials experienced increased health and survival.

Bat Conservation International has provided funding for the research since 2012. "We are pleased to see such progress being made on the development of a tool to control the WNS-fungus," said Katie Gillies, Director of Imperiled Species, US/Canada for BCI. "The work that the USDA Forest Service and Georgia State University have completed to date bring us closer to managing this devastating disease. It's imperative that we continue to support such management-based research to ensure the future of North America's bats."

Collaboration has been a vital component of the research. Many entities, including the U.S. Fish and Wildlife Service, Missouri Department of Conservation, Missouri Department of Natural Resources, the Kentucky Department of Conservation, and Mark Twain Cave Complex have provided scientists with access to caves and other resources. "While it has been discouraging to watch the spread of White-nose Syndrome and the loss of bats, the collaboration that has resulted among institutions, agencies, non-profits and volunteers who are committed to bats has been immensely gratifying," said Amelon. Disease management research such as this is a priority for the White-nose Syndrome Interagency Group, coordinated by the U.S. Fish and Wildlife Service.

As a major predator of defoliating forest and agricultural insects, bats are important to forests and forest health. The value of bats to the agricultural industry is estimated at \$23 billion/year.

Provided by USDA Forest Service

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