

Spread of White-Nose Syndrome Forces Closure of Caves

By Karen Leggett

White-nose syndrome (WNS) in bats is spreading across the United States much more quickly than expected, and the U.S. Fish and Wildlife Service in September announced precautions to slow the spread in the National Wildlife Refuge System. Caves and abandoned mines on refuges are closed to the public while research and monitoring protocols are implemented. A national response plan is available for comment in the *Federal Register*.

The syndrome has killed more than one million bats in the Northeast and Mid-Atlantic since being documented in New York in 2006. The fungus associated with WNS has been detected as far west as Oklahoma and is expected to continue spreading. Writing in *Science* magazine, researchers predict that the widely distributed little brown-nosed bat will face extinction in the Northeast in 16 years.

WNS spreads most quickly in hibernation, and more than half of the 45 U.S. bat species hibernate. In some hibernacula, almost all of the bats are dying. Virginia big-eared, Indiana and gray bats – all endangered – depend on undisturbed caves and mines and are particularly at risk.

Bats with WNS exhibit uncharacteristic behavior during winter months, including flying outside in daylight and clustering near hibernaculum entrances. Sick bats may lie on the floor or have white fuzz on their faces. The fungus is transmitted primarily from bat to bat, although biologists suspect it could be transmitted inadvertently by humans on clothing and caving gear. Researchers entering caves follow strict decontamination procedures and limited-access rules.

The Northeast Region has borne the brunt of the syndrome so far, and refuges there have taken the lead in a nationwide acoustic survey of resident summer bat populations. But there are few endangered bats on Northeast refuges per se.



Gray bats in Fern Cave National Wildlife Refuge, AL, are considered at high risk for white-nose syndrome. More information is at <http://www.fws.gov/whitenosesyndrome/>. (Jennifer Pinkney)

The Service now considers these refuges at extreme risk for WNS: Wheeler, Key Cave, Sauta Cave and Fern Cave in Alabama; Logan Cave in Arkansas; Ozark Plateau in Oklahoma; and Ozark Cavefish and Pilot Knob in Missouri. As many as a million bats may be hibernating at Fern Cave Refuge alone. Some of the refuges were established to protect endangered bat species and their habitats.

Cavers Are Cooperating

Wheeler Refuge Complex, as part of the Alabama Bat Working Group, has helped develop a statewide management plan. Wheeler Refuge manager Dwight Cooley says that, in addition to coordinating bat surveys and WNS surveillance, the complex has helped expand outreach and public education. A Friends of Wheeler Refuge brochure instructs people not to touch a strange-acting bat; instead, the brochure suggests taking photos of the bat and contacting a professional.

Ozark Plateau Refuge does not have a Friends organization but is working extensively with the Tulsa Regional Oklahoma Grotto, a chapter of the National Speleological Society. Grotto members help monitor bat populations and build cave gates to limit access only to bats. “Most cavers are very

conservation-minded,” says refuge manager Steve Hensley. “They understand why we are doing this, but it has put a crimp in their caving.”

Farther west, in Arizona, Kofa Refuge manager Susanna Henry is responsible for large populations of non-hibernating bats, including Mexican free-tail and California leaf-nosed bats. Are they susceptible to WNS, too? “We don’t really know. We’ll be following the guidelines as a precautionary measure,” says Henry. Two of the refuge’s 200 abandoned mines already have bats-only access gates; leaflets say mines are unsafe for people; and signs indicate the mines are closed to public entry.

There are more WNS questions than answers. Because bats are primary consumers of insects in temperate regions, the ecological consequences of large-scale population reductions are not known. Numerous laboratories – and state and federal biologists – are working to determine the origin of the fungus, predict its spread, develop strategies to control and mitigate it, and identify bat-survival strategies. 

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