

SUMMIT COUNTY CITIZEN VOICE

Bat-killing disease spreads to Mammoth Cave NP

White-nose syndrome threatening new populations of bats, including endangered species



Visitors explore the Broadway section of Mammoth Cave. Photo courtesy National Park Service

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FRISCO — The news that white-nose syndrome has spread to a second cave in Kentucky's Mammoth Cave National Park triggered renewed calls for action from conservation advocates.

"A northern long-eared bat, showing symptoms of white-nose syndrome, was found in Long Cave in the park," said Mammoth Cave National Park Superintendent Sarah Craighead. "The bat was euthanized on January 4 and sent for laboratory testing. Those tests confirmed white-nose syndrome."

Long Cave, an undeveloped cave 1.3 miles long, is the park's largest bat hibernaculum and houses endangered Indiana bats and gray bats, along with other non-

threatened species. Long Cave is not connected to Mammoth Cave and has not been open to visitors for more than 80 years.

Craighead said tours of Mammoth Cave will continue under a white-nose Syndrome Response plan written in collaboration with several National Park Service parks and offices, as well as the Kentucky Department of Fish and Wildlife Resources and the U.S. Fish and Wildlife Service. The plan permits cave tours and limited research with decontamination procedures to minimize the spread of white-nose syndrome into and out of park caves.

"Discovery of this deadly bat killing disease at Mammoth Cave National Park is a national tragedy," said Mollie Matteson, bat advocate at the

Center for Biological Diversity. “More needs to be done to stop the spread of this disease and help bats.”

Matteson said she’s concerned that the park’s decontamination procedures have not been field-tested.

I’m hoping the National Park Service will reconsider its protocol ... at the very least, do some field testing. We shouldn’t knowingly be putting federally listed species at risk by allowing visitation to continue,” she said.

I think the fact that you now have white-nose syndrome in one of the most heavily visited cave parks in the country, and the National Park Service is continuing to allow tours raises concerns that now now that it has become a potential source for infections elsewhere,” she added.

White-nose syndrome is primarily transmitted from bat to bat, but spores of *Geomyces destructans*, the fungus that causes white-nose syndrome, may be inadvertently carried between caves by humans on clothing, footwear, and caving gear.

White-nose syndrome was first detected in New York State in 2006 and has killed more than 5.5 million cave-dwelling bats in the eastern third of North America as it has spread south and west. The fungus that causes white-nose syndrome has been confirmed in 21 states; white-nose syndrome has been confirmed in 19 states. It has also been confirmed in four Canadian provinces. A map of the current spread of white-nose syndrome can be found at <http://whitenosesyndrome.org/resource/wns-map-01162013>

Decontamination procedures to prevent spread of the fungal spores by human beings were adopted more than two years ago as white-nose syndrome was decimating bat populations in the northeast. Mammoth Cave National Park implemented such procedures years ahead of any actual finding of white-nose syndrome in the park in an effort to delay its arrival and to be fully prepared should it appear.

“About 400,000 people tour Mammoth Cave each year, providing an excellent opportunity for us to educate the public about the importance of bats and the disease,” Craighead said. We screen all visitors

before they go on a cave tour and visitors walk across decontamination mats as they exit their tours.”

There are more than 400 caves within the park, including the 390-mile long Mammoth Cave. All park caves are closed to human access except via ranger-led tours or by research permit. Cave tours travel through 12 miles of Mammoth Cave. A portion of Mammoth Cave extends outside the park boundary and the Mammoth Cave System watershed stretches as many as 20 miles to the south and east of the park.

Park staff submitted bats for white-nose syndrome testing in 2009, 2010, 2011 and 2012. All those results were negative. Park staff and partners continue to look for evidence of white-nose syndrome in the park. Scientists regularly visit the entrances of bat roost-caves (hibernacula) to look for unusual bat behavior. Three solar-powered bat detectors have been placed outside hibernacula to record bat calls, and all park staff report sick or dead bats.

“Because we suspected white-nose syndrome was coming, we partnered with various researchers to gather baseline data on bat populations and bat ecology,” said Craighead. “The data provide important information on which bat species are present and how many, when they give birth, and when they feed. We now have five years of data collected prior to the arrival of white-nose syndrome, and will continue monitoring through the course of the disease.”

Nine species of cave-dwelling bats inhabit the park, two of which are the endangered Indiana and gray bats. All nine species are at risk from white-nose syndrome. Four species of tree-dwelling bats are also found in the park; thus far, tree-dwelling bats have not been found to suffer from white-nose syndrome.

Bats play a key role in the food chain. In caves, for example, bat guano is a food source for animals that spend their entire lives underground. In forests and farm fields, bats play an important role by consuming enormous numbers of damaging insects such as beetles and moths. The number of North American bats estimated to have died from white-nose syndrome thus far had the capacity to consume up to 8,000 tons of insects per year according to the United States Geological Survey.

“The National Parks have a dual role,” said Craig-head, “to preserve natural treasures and to provide a way for people to enjoy them. Our response to challenges such as white-nose syndrome applies the best available science and research to find the proper balance between those roles, and a sustainable future for our parks.”

“Two federally endangered bat species are at grave risk from this disease, and several more species urgently need federal protection as they are now in a nose dive toward extinction,” Matteson said.

The Center for Biological Diversity has also strongly advocated for more stringent measures restricting non-essential human access to federal caves, and for mandating decontamination of gear when cave entry does occur. Diminished cave visitation reduces the risk of fungal spread and lessens disturbance to disease-stressed bats. Bats are likely the primary vector of disease spread, but biologists have gathered substantial evidence that humans also can transport white-nose fungal material.

“The best hope for bats all along has been for research on the disease to speed up, for human travel into caves to slow down, and for government agencies, cave recreationists, and everyone else to take all the protective measures possible to save the bats we have left,” Matteson said. “It will be a sad day, indeed, if the day comes that hibernating bats are no longer part of the mystery and beauty of North American caves.”