

# Rare fungus kills endangered rattlesnakes in southern Illinois

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The eastern massasauga rattlesnake normally spends spring in shallow wetlands and summer in drier upland areas. Credit: Matthew Allender

A small population of rattlesnakes that already is in decline in southern Illinois faces a new and unexpected threat in the form of a fungus rarely seen in the wild, researchers report. The finding matches reports of rattlesnake deaths in the northeast United States.

The eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*), a candidate for protection under the [federal Endangered Species Act](#), suffers from [habitat loss](#) and [environmental stresses](#) wherever it is found, said University of Illinois comparative biosciences visiting instructor and wildlife veterinarian Matthew Allender, who led the health investigation. Long-term population studies of the snake – in Illinois and elsewhere –

had never turned up evidence of debilitating fungal infections. But in 2008, biologists studying the snake reported to Allender that they had found three sick snakes in a park in southern Illinois, all with disfiguring lesions on their heads. The snakes died within three weeks of their discovery. A fourth snake with a similar syndrome was discovered in the same park in the spring of 2010.

Allender conducted necropsies on the snakes and identified the pathogen that had killed them: *Chryso sporium*, a [fungus](#) that plagues portions of the pet reptile industry but is not normally seen in the wild, he said.

"*Chryso sporium* causes disease in bearded dragons and in other snakes and it's a bad bug," Allender said. "We see it in captive animals worldwide, but we don't typically find it in free-ranging animals."

*Chryso sporium* also is emerging as a dangerous infection in humans with weakened immune systems, he said.

Shortly after he first presented his findings at a meeting of the Fish and Wildlife Service, Allender heard from other biologists about similar infections in snakes in the northeast United States.

"They seem to be having a similar problem in timber rattlesnakes in New Hampshire and Massachusetts," Allender said. Although biologists have sporadically identified *Chryso sporium* in those snakes, the symptoms they report – facial swelling and ulcers and malformations of the jaw – are the same, he said. These infections also occurred only within the last five years.

"Fungal pathogens have been increasingly associated with free-ranging epidemics in wildlife, including the well-known effects of *Batrachochytrium dendrobatidis* on frog populations globally and white-nosed syndrome in bats," Allender wrote in a December 2011 report in

*Emerging Infectious Diseases*. "Both of these diseases cause widespread and ongoing deaths in these populations that seriously threaten biodiversity across the United States."

Allender sees this new occurrence of a fungal infection in endangered [snakes](#) as a "yellow flag" that warrants more study.

"Wildlife diseases and human health are not that different," he said. "And often wildlife are our window into a weakened environment that leads to disease in both people and animals."

**More information:** [wwwnc.cdc.gov/eid/article/17/1 ... /11-0240\\_article.htm](http://wwwnc.cdc.gov/eid/article/17/11-0240_article.htm)

Provided by University of Illinois at Urbana-Champaign

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