Scientists find drugs that may fight bat disease

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(AP) -- Scientists may have found some ways to help the nation's bats, which are being wiped out by a novel fungal disease, an unprecedented wildlife crisis.

Lab tests show that several drugs can fight the germ and that some antiseptics might help decontaminate areas where bats live or the shoes and hands of people who visit them, researchers reported at an infectious-diseases conference Sunday.

"Both of those are critical elements. The decontamination is in my mind the most immediate need," because people may be helping to spread the disease, called white-nose syndrome, said Jeremy Coleman, who heads the U.S. Fish and Wildlife Service's response to the problem.

Coleman had no role in the research, which was done by New York state's Department of Health in Albany, the state capital. The department's scientists helped identify the fungus as the cause of the bat die-off, first seen in Albany, about 150 miles north of New York City, in 2006.

Bats have a key role in nature - eating and helping control mosquitoes and other insects that harm crops and carry disease. One type, the little brown bat, "was the most common bat in the Northeast and typically the most common bat in the nation, and they've been just completely decimated," Coleman said. In some areas, "we're down to 3 percent of

the original population."

More than 1 million bats have died from the fungus, which has been found as far south as Tennessee and as far west as Oklahoma. Some caves on federal land have been closed to the public to try to stem the spread, but scientists don't know how the disease is transmitted or even how it is killing the bats.

The fungus grows on the nose, wings and ears, and one theory is that it irritates these membranes, causing bats to wake often during hibernation and burn so much energy that they starve to death before spring. But there are signs the fungus is directly damaging wings, which are important for maintaining water balance and blood pressure control, Coleman said.

"It might not be as simple as they're waking up too much," he said.

Which is why the work by microbiologist Vishnu Chaturvedi and others at the New York state lab is so important. They wanted to find treatments in case scientists have to take drastic steps to preserve the species or specific colonies.

They tested six strains of the novel fungus against drugs already used to treat people and animals such as cats and dogs for ailments ranging from athlete's foot to life-threatening infections.

"We found that two major classes of antifungal drugs have very good activity" against the bat germ, Chaturvedi reported Sunday in Boston at a meeting of the American Society for Microbiology.

The drugs include fluconazole, the most widely used antifungal drug, which is sold as Diflucan by Pfizer Inc. and in generic form. Four other drugs also seem highly effective, Chaturvedi said.

Researchers also screened more than 2,000 compounds and found five antiseptics that greatly inhibit the fungus.

Now comes the difficult part: how to use these tools in a safe and practical way. No one has ever tried anything quite like this before to treat a large wildlife die-off or to decontaminate areas where the animals live.

When West Nile virus emerged in the United States a decade ago and caused a massive crow die-off, health experts focused on controlling the mosquitoes spreading the disease and treating some rare or captive birds such as zoo penguins.

Treatments can backfire, too: Drugs used a few years ago to try to help frogs being decimated by a fungal disease in many parts of the world turned out to harm tadpoles, Chaturvedi said.

Trying to handle surviving bats for treatment may stress them more than the disease does. And bats' habitats have other important plant and animal life that could be harmed by spraying antiseptics, Coleman said.

"You don't want to go in and bomb a cave with an antifungal because you could be impacting other species," he said.

More research needs to be done to test treatment and decontamination, such as cleaning people's footwear before and after they enter caves. Measures might first be tested in abandoned mines rather than natural caves, and a national plan due out in a few weeks includes setting priorities for research, he said.

Finding possible treatments and antiseptics "opens up other testing that needs to be done," Chaturvedi said. "If you want to do conservation, possibly this is a route. We don't know the outcome, but this does give

an option."

More information: U.S. Fish and Wildlife Service: http://www.fws.gov/WhiteNoseSyndrome/
U.S. Geological Survey National Wildlife Health Center: http://tinyurl.com/batdieoff