Big effort to better understand bats takes wing in 31 states

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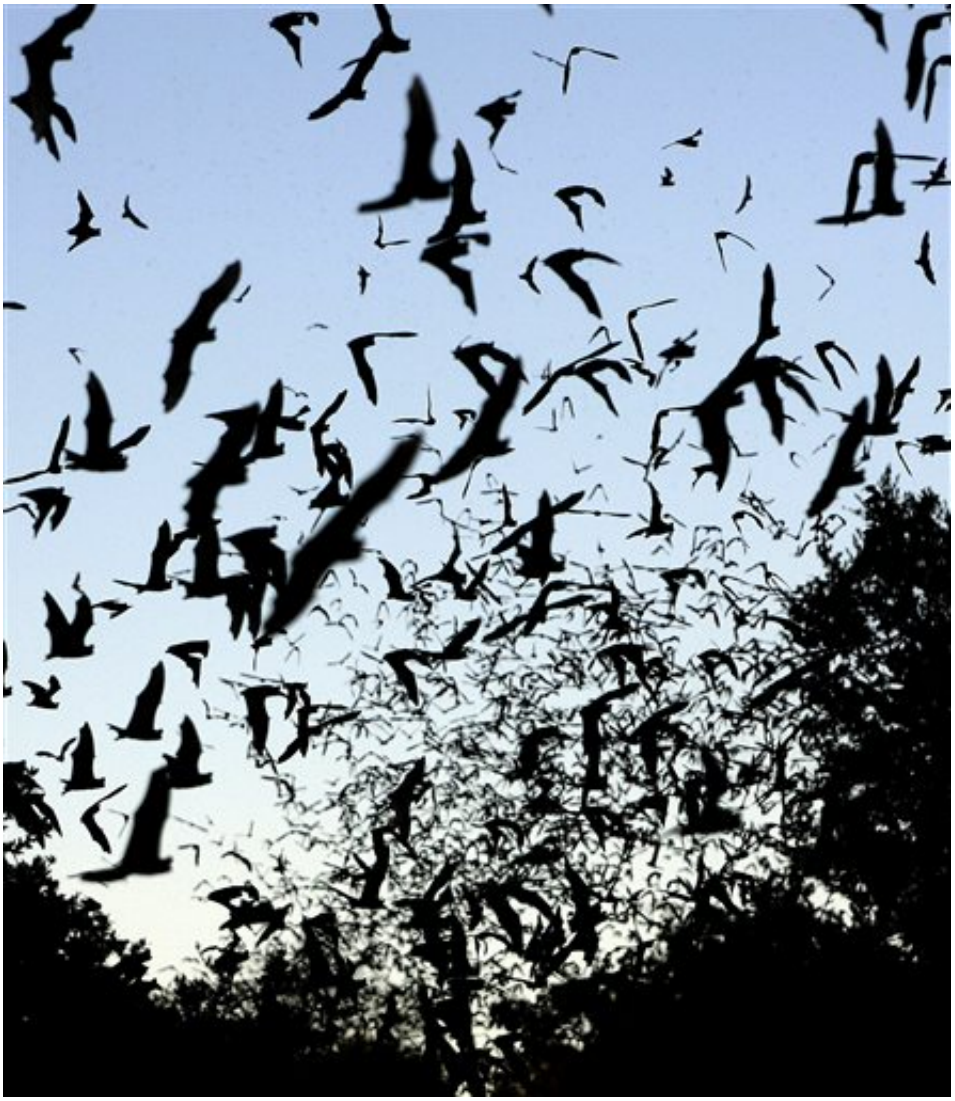

In this Aug. 6, 2009, file photo, bats take flight outside the Old Tunnel Wildlife Management Area near Fredericksburg, Texas. Researchers with the North American Bat Monitoring Program are conducting pilot acoustic surveys to

detect the high-pitched frequencies emitted by the flying mammals to capture bugs in flight and navigate in the dark. (AP Photo/Harry Cabluck, File)

An effort spanning 31 states and 10 Canadian provinces has been working to better understand the ecological role that bats play, and the threats they face from climate change, habitat loss and wind energy development.

The North American Bat Monitoring Program involves acoustic surveys to detect the high-pitched frequencies emitted by the flying mammals as they capture bugs and navigate in the dark.

"It's long overdue," said Patty Stevens, the U.S. Geological Survey's branch chief for Trust Species and Habitats at the Fort Collins Science Center in Colorado where the program's data will be stored and made available. "It's going to provide a lot of information to natural resource managers."

Researchers say the monitoring program has been spurred by a disease called white-nose syndrome that has killed millions of bats and is spreading.

North America has some 150 species of bats, 47 of them in the United States. Some migrate more than 500 miles, and others hibernate in caves or abandoned mines. Less than a handful of bat species are well understood.

"Most of our bats are very small, they fly at night, and they're very difficult to study," said Susan Loeb, a research ecologist with the U.S. Forest Service based in Clemson, South Carolina. "In the last 10, 20 years, we're getting better and better technology that allows us to learn

about bats."

For example, she said, acoustic monitoring of bats at one time involved carrying equipment on a vehicle. Now, she said, a device can be hooked up to an iPhone. Scientists are also trying to perfect software that can identify the species of bat making the sound.

Loeb is the lead author of the U.S. Department of Agriculture's Plan for the North American Bat Monitoring Program that sets out the initial strategy.

The plan relies heavily on acoustic monitoring that includes both mobile monitoring sites and stationary sites, with the number of sites varying by state as the program gets going. Idaho got off to a tough start this year after giant wildfires hindered efforts at about 10 sites, Loeb said.

Researchers are using other methods as well, including counting hibernating bats in winter, and in summer doing maternity colony counts.

In five years, Loeb said, researchers should have enough information to spot trends.

"We know that many bat populations are declining, but we don't know the magnitude of that decline," she said.

Information like that is important because bats are thought to be a key component in forest health, she said, due to their diet of insects.

Not much information exists on bat insect consumption, but scientists estimate the Brazilian free-tailed bat colonies in Texas that often number more than a million individuals can consume more than 8 tons of insects in a night.

Most North American bats eat insects, but there are some nectar-feeding bats that help pollinate plants. The iconic saguaro cactus in Arizona, for example, is pollinated by the lesser long-nosed bat and the Mexican long-tongued bat.

A more recent threat to bats, scientists say, are wind farms, where an estimated 200,000 to 800,000 bats die annually in collisions with spinning blades.

"We still don't know why bats are getting killed by these turbines," said Loeb. "Why can't they detect them? Are they attracted? And how do we deter them?"

Scientists are trying to figure that out, and Loeb said clues might ultimately be found in the bat monitoring program.

Meanwhile, scientists are also working to raise awareness of bats, coordinating much of those efforts leading up to Halloween with National Bat Week. Loeb herself is spending part of the week at a meeting of The North American Society for Bat Research.

"Using Halloween as a means to engage people that bats aren't bad maybe one way to do it," Loeb said. "The public perception of bats is changing as people learn how important they are and how fascinating they are."