Don’t depend on bats to control West Nile mosquitoes

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Bonnie Bradshaw has been fielding a lot of calls this summer from people interested in attracting bats to their backyards. They’re concerned about mosquito-borne West Nile virus, Bradshaw says, and they’ve heard somewhere ¬ from the media, friends, neighbors or elsewhere ¬ that bats suck up mosquitoes like living vacuum cleaners.

To be sure, on the Internet and elsewhere, you can find claims from seemingly solid sources that bats gobble up 1,000 mosquitoes per hour.

Bradshaw, a Dallas-area wildlife rehabilitator and founder of 911 Wildlife, says she doesn’t let her callers down easy. “It’s just not true that bats eat a lot of mosquitoes. They mainly eat moths. People who put up bat houses thinking they’ll control mosquitoes are going to be disappointed.”

North Central Texas is home to two species of small bats that do eat mosquitoes, the Eastern pipistrelle and the evening bat, says Diana Foss, a biologist for the Texas Parks and Wildlife Department. They eat other insects as well, she says, so it is difficult to say whether bats would have an impact on mosquitoes if a homeowner successfully enticed them to roost in the backyard.

“They’re opportunistic eaters,” she said of both small bats, which have bodies about 3 inches long. “They’ll feed on what’s available.”

Foss said only the smallest bats will eat something as tiny as a mosquito. The other bat species found in Dallas-Fort Worth, including the Mexican free-tailed bat, the most common bat in the area, feed on larger insects such as moths and beetles. “It’s an energy equation. They need to get more bang for the buck,” she said.

The Eastern pipistrelle lives in crevices in caves or trees, while the evening bat, which is one of the first bats to emerge at dusk and often can be seen catching insects around streetlights, typically lives in tree hollows. Both prefer small colonies and can be attracted to backyard bat boxes, Foss says.

“Where there’s a loss of trees and habitat, bat houses can be a good alternative,” she said.

Authorities in states that host large populations of mosquito-eating bats say without qualification that they are not a biological control for mosquitoes. In Michigan, for example, where the mosquito-eating little brown bat is found, state biologists point out that mosquitoes make up only a small portion of the species’ diet.

“Mosquitoes don’t swarm, they provide small amounts of energy, and they are more likely to be found in vegetation, not in areas where the bats will be feeding,” the state’s website says. The thrust of the post is to dissuade people that little brown bats, or any bat species, can solve homeowners’ mosquito problems.

Bat conservation advocates have tended to promote bats as mosquito-eaters, perhaps in their zeal to counteract all the negative misinformation surrounding the gentle, intelligent little mammals.

Dottie Hyatt, vice president of the Mineral Wells-based Bat World Sanctuary, a national organization of bat rehabilitators, says without equivocation that bats can help control mosquitoes. She says she knows of a colony of 3,000 evening bats in Lake Worth that eat so many mosquitoes that the people hosting them don’t worry about getting bit during evening cookouts.

Over its nearly 30-year history, the Austin-based Bat Conservation International has tended to embrace the notion that bats eat mosquitoes in large enough quantities to make a difference. The group’s founder, Merlin Tuttle, wrote an article in which he stated, “Individuals of some bat species can capture from 500 to 1,000 mosquitoes in a single hour.” His footnoted source for that statement, however, is a 1960 Harvard University research paper on echolocation, a bat’s ability to use sonarlike sound pulses to find and catch its insect prey. The research had nothing to do with what types of insects that bats eat in natural settings. For the Harvard study, fruit flies or mosquitoes were supplied in laboratory “flying chambers” in experiments designed to measure a bat’s ability to capture prey.

Scientific studies of bats' diets, conducted through analysis of stomach contents, have shown that mosquitoes make up only a small portion of the diet of even those species known to eat mosquitoes.

Still, the bat conservation group points to other studies suggesting that bats do have an impact on mosquitoes. In a 2009 research paper, two university scientists concluded that bats can help limit mosquitoes. They reported counting about a third fewer mosquitoes in controlled settings where a mosquito-eating species of bat was present.

Pitching an animal as a mosquito-killer to endear it to humans is a path that has been taken before. In the early 1960s, Jesse J.L Wade invented the now-ubiquitous purple martin "condo" and popularized it by telling people the swift-flying birds eat "2,000 mosquitoes a day." Martins have been shown, in fact, to eat few mosquitoes. One of their preferred meals, in fact, is the dragonfly, one of the more voracious mosquito-eaters known. Still, purple martin advocates say nobody did as much to help save and conserve the species as Wade, who died in 2007.

"We should be raising dragonflies if we really want to have something that eats mosquitoes," says Bradshaw, who has helped commercial garage owners in Fort Worth and Dallas deal with colonies of Mexican free-tailed bats that take up summer residence in the tall, dark structures.

Even if they aren't a solution to human mosquito miseries, bats should be conserved and encouraged, naturalists say.

"Bats eat the tar out of all kinds of insects, a lot of which are agricultural pests," said Brett Johnson, an urban wildlife biologist in the state parks department in Dallas. "They're very beneficial."

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