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EDITOR'S PICK

TOPICAL

LYME DISEASE | GOING AFTER THE SOURCE

Ticks that can carry Lyme disease becoming abundant in Madison

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AMBER ARNOLD -- State Journal

Xia Lee, a UW-Madison graduate student, Susan Paskewitz, a UW-Madison entomologist, and Brad Herri ecologist with the UW Arboretum, look over a map related to sites where Paskewitz leads research on deer which can be infected with Lyme disease. The population of immature deer ticks found at 17 sites in the A increased 18-fold between 2014 and 2015. "They're definitely moving," Paskewitz said. "It's not a static si

When Susan Paskewitz searched the UW Arboretum two years ago for immature deer ticks, the kind most likely to infect people with Lyme disease, she found 32.

Last year, during the same amount of sampling at the same 17 sites in the Arboretum, she found 592.

“We’re really seeing them move into areas in Madison, in Milwaukee and in other parts of southeast Wisconsin,” said Paskewitz, a UW-Madison professor of entomology.



A vial contains a deer tick found in the UW-Madison Arboretum last week as university scientists prepared sites for research on ticks this summer.

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Lyme disease, a bacterial infection that in Wisconsin was mostly confined to the northwest part of the state years ago, has become a statewide problem. More than 3,200 cases were reported in people last year, a tenth of what health officials believe actually occurred.

Other diseases carried by deer ticks, such as anaplasmosis and ehrlichiosis, also appear to be on the rise. Like Lyme, they can cause fever, chills, fatigue, muscle pain and severe headache. All of the conditions can be treated with antibiotics, but they sometimes cause serious complications.

“Anyone can get a tick-borne disease,” said Diep Hoang Johnson, vector-borne disease epidemiologist with the state Department of Health Services. “It’s all over Wisconsin ... It can be in your backyard, even in the cities.”

Zika virus, spread by mosquitoes, has been getting a lot of attention this year because an outbreak in Latin America and the Caribbean was accompanied by serious birth defects. But it’s unlikely anyone will be exposed to Zika in Wisconsin this summer, health officials say.

Mosquitoes in the state can carry West Nile virus and other potentially serious diseases, but reports of human cases are relatively rare.

People concerned about bug bites making them sick should especially watch out for deer ticks, also known as blacklegged ticks, officials say. The ticks started circulating in April, typically peak in June and surge again in October.

Wood ticks, or American dog ticks, are also common in Wisconsin but aren’t known to spread disease here.

To prevent tick-borne diseases, people should avoid wooded, bushy areas or wear long pants and long sleeves and use repellent, health officials say. After being outdoors, they should check for ticks and remove any with tweezers.

Paskewitz and others from her lab visit more than 30 areas in the state to look for deer ticks. In the Madison area in recent years, they have discovered the ticks in Sandburg Woods on Madison's Far East Side, UW-Madison's Lakeshore Nature Preserve and the Pheasant Branch Conservancy in Middleton.

At Sandburg, 19 percent of immature ticks were infected with Lyme. Sampling at Owen Park on Madison's West Side hasn't turned up deer ticks, Paskewitz said.



UW-Madison graduate student Scott Larson marks an area where he and others from the lab of UW-Madison entomologist Susan Paskewitz will research deer ticks this summer. It's the third year of the project, which involves counting ticks, testing them for Lyme disease and studying ways to reduce their populations and spread of the disease.

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In the Milwaukee area, the researchers have found deer ticks at Doctors Park, Cedarburg Bog, Muskego Lake and Richard Bong State Recreational Area. The ticks weren't tested for Lyme.

In the Arboretum, where Paskewitz first discovered deer ticks in 2010, she and others from her lab are studying two ways to reduce the population of deer ticks and the percentage of them infected with Lyme.

Working in 17 half-acre plots in the Arb's Lost City Forest, the researchers are removing buckthorn from some of the areas to create dry environments inhospitable to ticks.

In other areas, they're targeting white-footed mice, a major source of blood for deer ticks. They soak cotton balls with insecticide, place the balls in PVC pipes and leave the pipes in the forest. Mice use the cotton balls to make nests, and when ticks get on the mice the insecticide kills them.



Susan Paskewitz, a UW entomologist, holds a PVC pipe filled with cotton balls. She and others from her lab treat cotton

balls with insecticide, put them in the pipes and leave them in parts of the UW Arboretum. When white-footed mice use the cotton balls as bedding, the insecticide can kill deer ticks, some of which carry Lyme disease.

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“It’s a bit like treating your dog with Frontline,” Paskewitz said.

In some plots, the researchers do both activities. In others, they do neither, so they can compare the effect.

Monthly, from May to August, they trap mice and chipmunks, and drag white sheets across parts of each area, to count ticks and test them for Lyme.

Last year, in the sites where buckthorn was removed and/or cotton balls were used, about 4 percent of immature ticks tested were infected with Lyme. In the untouched areas, it was 12 percent.

Overall, the figure was 8 percent. Statewide, it ranged from 5 percent in the northeast to 32 percent in the northwest.