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# Bracing for a Hungry Tick Season

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People heading into the woods this spring in Northeastern states will be at higher risk than usual of coming down with [Lyme disease](#), according to researchers at the [Cary Institute of Ecosystem Studies](#) in Millbrook, N.Y.



Centers for Disease ControlThe tick population is expected to pose a far greater threat of Lyme disease transmission this spring.

They do not blame deer or the recent mild winter for the increased threat, but rather [fluctuating numbers of acorns and mice](#), said Dr. [Richard S. Ostfeld](#), a disease ecologist who has studied the acorn-mouse-tick dynamic for 20 years. A bountiful acorn crop in 2010 led to peak populations of white-footed mice in 2011, giving black-legged ticks easy access to their preferred hosts, said Dr. Ostfeld, whose work is financed primarily by the National Science Foundation.

But the boom cycle was followed by one of the smallest acorn crops ever seen, and mouse populations are crashing, he said. “That means plenty of Lyme-infected ticks will be looking for a blood meal,” he said. “Instead of finding mice in the woods, they’re going to find mammals like us.”

Ticks feed as larvae, nymphs and adults, and the May-to-July nymph season will be especially dangerous because it is a time of year when many people head to the woods and ticks often go unnoticed.

“They’re really tiny — about as big as poppy seeds—so they’re hard to detect,” he said. “You might not even know they’re crawling on you or embedding in your skin. But infected nymphs are responsible for the vast majority of Lyme cases, he added.



Richard S. OstfeldThe white-footed mouse population has nosedived recently.

Because there were so many mice to feed on when the ticks were larvae last year, the percentage of Lyme-infected nymphs will be especially high this spring, Dr. Ostfeld said. “About 90 percent of larvae that feed on mice get infected. That’s twice as much as with any other host.”

Ticks prefer mice because they are poor groomers, but various mammals are fair game for ticks as well. Whitetail deer are generally regarded as the main vector, but Dr. Ostfeld contends that the deer-Lyme connection has been “way overemphasized.”

“There’s all this entrenched dogma about the quintessential role of deer in the disease, but we find in our research sites that fluctuating deer abundance has no explanatory power,” he said. “A good number of studies show actual cases of Lyme disease don’t correlate with deer numbers.”

Weather has a strong effect on tick behavior, with either very cold or hot temperatures and dry conditions causing ticks to go dormant, Dr. Ostfeld said.

“This fools people into thinking that the ticks have been killed, but once harsh conditions moderate — a warming trend in winter, or a thunderstorm in summer — ticks come out with a vengeance,” he said.

The role of weather and global warming on the proliferation of ticks and their geographic spread is still poorly understood, however, he added.

“Climate warming is probably allowing ticks to spread northward into northern New England and Canada but can’t explain their expansion southward into Maryland and Virginia,” he said. “And little evidence links recent warming trends in the Northeast to the proliferation of ticks there, although warming could play a role.”

Given that a single tick can deposit 3,000 eggs, Dr. Ostfield is convinced that this year's abundance at the research sites he monitors could break the record set five years ago after a similar boom-bust cycle of acorns and mice.

Cases of Lyme disease have spiraled over the past 30 years from a few hundred to 30,000 reported annually, with 90 percent of them occurring in the Northeast. While there are effective treatments, the disease can cause chronic fatigue, joint pain and neurological problems if left undiagnosed.