

The Root of the Tick Problem? It's the Deer.

Dr. Sam Telford is a Professor of Infectious Disease and Global Health at Tufts University, Patrick Roden-Reynolds is the Public Health Biologist for the Inter-Island Public Health Excellence Collaborative, and Richard Johnson is the former director of the MVTick-Borne Illness Reduction Program and a board member of TickFreeMV.org.

Martha's Vineyard has a tick crisis. Daily life on the Vineyard has been dramatically altered: from "alpha gal friendly" menus at our restaurants, to the rising cases of tick-borne disease and allergy, to many of us forgoing what we cherish most about Island life - being outside in nature. But until now, we haven't embraced a clear path out of (and back into) the woods.

All of us have spent time on the ground here, evaluating and recording the explosion of ticks. Collectively, we have decades of experience and observation in the field of tick-borne illnesses and allergies, and hundreds of person-hours spent across the Island landscape conducting hard science. And while our career paths have differed, we share one rock-solid conclusion: the best way to stop the explosion of ticks is to reduce the Island's herd of white-tailed deer.

"The best way to stop the explosion of ticks and the pathogens they carry is to get serious about reducing the Island's herd of white-tailed deer."



"A single deer can produce as many as 2 million larval ticks per season."

Tick-borne disease risk comes from two separate processes: the production of new ticks, and the infection of those ticks with pathogens. Deer are responsible for the first. Both adult lone star and deer ticks require a blood meal from a large mammal to reproduce. On the Vineyard, deer are the only host large enough to serve that role. Deer ticks are born uninfected, and smaller animals like white-footed mice and shrews infect them with Lyme, babesiosis, and other pathogens as they feed at the larval and nymph stages.

But without deer, there is no tick production to begin with, and infection becomes a moot point. Even though alpha-gal syndrome caused by lone star ticks does not depend on infection - they carry it in their saliva - they still feed on deer at every point of their life cycle. Any effort to mitigate the current unacceptable level of tick-borne disease and allergy must start with managing the white-tailed deer herd.

A photo taken by Mr. Roden-Reynolds last month shows the ear of a single deer encased with over 150 lone star ticks. This winter's aerial drone survey counted 4,681 deer - a density of 53 per square mile, with some hotspots registering 100. After the spring fawning season, our population has almost certainly grown to over 5,000. Multiply that by the number of ticks per deer, and the number of eggs per tick, and the scope of the problem is glaring. A single deer can produce as many as 2 million larval ticks per season.

Still, Martha's Vineyard being an island has its advantages. Because deer are the only large mammals here capable of hosting the tick's reproductive cycle, bringing the herd down to a stable 1,500 will create the conditions to sharply reduce the tick population.

But outside of the standard hunting season, how does the Vineyard begin to make a serious dent in the deer population? Deer Damage Permits (DDPs) are a critical first step. Intended for large land stewards such as farmers and conservation holders whose land is unduly harmed by deer, DDPs allow for deer to be taken by registered hunters outside of the hunting season and quickly processed, with the meat donated to food pantries. The Vineyard was an early adopter of the state's Hunters Share the Harvest venison donation program, and with Island Grown Initiative's leadership and the help of local partners, it can grow into an even more valuable community food program.

And while deer reduction is by no means the only tool in our anti-tick kit - habitat modification, controlled burns, and acaricide deer treatments all show promise - none of these methods can work effectively with our outsized deer herd. Reducing the deer population from its current level of over 5,000 to a healthier, stable level of 1,500 must happen before the Island's tick crisis can be reduced to an acceptable level.

As biologists who have devoted our careers to the health of this Island's natural ecosystems, we say this plainly: it is irresponsible stewardship to let the deer herd grow unchecked. We urge this community to focus on deer management as the necessary first step which will give the rest of the toolkit the chance to work. Nothing happens overnight; this is a multi-year effort. The best time to tackle deer overpopulation on the Island was years ago. The second-best time is right now.

**TICK
FREE**
MARTHA'S VINEYARD

Tick Free Martha's Vineyard | TickFreeMV.org