



March 8, 2008

Chair of Environment Committee
State Senator Ed Meyer
Room 3200
Legislative Office Building
Hartford, CT 06106-1591

Dear Mr. Meyer:

I write as a research scientist and public health educator with 20 years of experience in Lyme disease ecology and epidemiology. I am delighted that the Environment Committee is considering a bill (# 5852) that may promote reducing the risk of Connecticut citizens acquiring Lyme disease, and wish to emphasize the importance of deer reduction in achieving this objective.

The current epidemic of Lyme disease, babesiosis, and human granulocytic ehrlichiosis is due to three factors: changes in the landscape promoting mice, ticks and deer; an ever-increasing deer herd; and increased use of the land for recreation or housing. Of these, only the deer factor is capable of being manipulated at the population level. The scientific literature strongly supports the role of deer as the main determinant of tick density, which is directly related to risk. I cite only a few of the most important ones and can provide, at your request, the full references for the studies that I have cited.

- Islands in Narragansett Bay Rhode Island that lack deer do not sustain deer tick populations even with alternative hosts available (Anderson et al. 1987).
- Deer scat pile density is strongly associated with that of immature ticks within discrete sites such as small islands (Wilson et al. 1985).
- The burden of immature ticks on mice is associated with the sites where deer spend most of their time, as measured by radiotelemetry (Wilson et al. 1990a).
- In one site, deer served as host to 95% of all feeding adult ticks compared to raccoons, opossums, and feral cats (Wilson et al. 1990b).
- Larval burdens on mice increased when the presence of deer was promoted by baiting deer into a site that had been artificially supplemented with tons of acorns (Jones et al. 1998).
- Frequent sighting of deer within yards and proximity to a wildlife conservation area are associated with greater incidence of human infection (Lastavica et al. 1989).
- The Great Island (W. Yarmouth, MA) experiment (which I undertook as a doctoral student at Harvard): deer were reduced from 30-50/square mile to fewer than 6/sq. mi. with resulting order of magnitude reduction in tick densities and reduction of incidence of Lyme disease and babesiosis (Wilson et al. 1988; Telford 1993).
- The Crane Beach (Ipswich, MA) experiment: deer were reduced from ca. 200/sq. mi. to fewer than 50 sq. mi., resulting in reduction of tick densities (Wilson and Deblinger 1993)
- Exclusion of deer by fencing reduced tick densities (Daniels et al. 1993).
- The Monhegan Island, Maine experiment: deer were eliminated by sharpshooting; host-seeking ticks declined from an average of 10/hour to fewer than 1/hour (Rand et al. 2004).

Each female deer tick that successfully feeds will lay 2000 eggs. Each deer may feed as many as 300 female ticks each week for the fall and winter months. Larvae that hatch from these eggs feed on mice, shrews, squirrels, and certain birds and pick up from them the pathogens that cause the 3 diseases. The fed larvae turn into the nymphs, which are the stage of the tick responsible for infecting people. Risk for Lyme disease thus depends on the production of ticks, for which deer are responsible; and infection of the immature ticks mainly upon mice. As we reduce risk for West Nile virus by reducing the breeding sources of mosquitoes, so too must we reduce the source of ticks if we hope to reduce the risk of Lyme disease.

Other options that have been suggested require extended funding commitments and/or have logistical, legal, or biological questions that remain to be answered. There is no question that deer reduction reduces deer tick density. Fewer deer ticks imply a significantly reduced burden on health systems, reduced costs, and less human anxiety and suffering. Deer reduction by hunting is the most likely intervention to be sustained by the community because it does not require private or public funding. Accordingly, the department of public health should be working hand in hand with the wildlife management agencies to promote such a longterm strategy to reduce risk of Connecticut residents acquiring Lyme disease.

The time to act is now. Those citizens who are burdened cannot wait for the perfect humane solution to the Lyme disease problem. Money is not going to fall from the trees to fund alternatives to deer reduction, particularly ones that are currently unproven. Deer reduction has been conclusively demonstrated to reduce the number of deer ticks. The State of Connecticut should act immediately to put in place a mechanism such that the next generation may be less burdened by the deer tick transmitted zoonoses.

Please let me know if you have further questions. I may be reached at 508-887-4236 or by email sam.telford@tufts.edu

Sincerely,



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