

TO: Members of the House Health Committee

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SUBJECT: House Health Committee Public Hearing on Lyme Disease and Tick-Borne Illnesses

Deer ticks and other tick species are widespread in the Commonwealth of Pennsylvania and the geographic range of deer ticks continues to expand in the United States with the number of tick borne disease increasing at a record pace in recent years according to the CDC. Deer tick populations are in abundance in Pennsylvania due to a variety of reasons: deer populations, weather, small mammal populations, coyote range expansion into fox territory, urbanization and fragmentation of forests, and invasive plants such as Japanese barberry. The life cycle of the deer tick moves from small mammals to large mammals. Foxes prey heavily upon very small mammals, unlike the coyote. So, when coyote populations spread and displace foxes, small mammal populations increase. In addition, high densities of deer ensure that deer ticks always have an abundance of large mammals. Japanese barberry provides dense foliage and structure that is used as a hiding place for small mammals, and deer tick populations are higher in areas infested with barberry. In addition, a warming climate provides favorable living conditions for ticks and their hosts such as deer and small mammals.

Pesticide spraying of properties by the Commonwealth is not practicable because all areas where deer occur would have to be treated and it would be very expensive. Spraying can only be done by ground application and can only be done on a property-by-property basis by landowners hiring a pesticide applicator or conducting their own treatments. In addition, broad spectrum pesticides would kill a substantial number of non-target species if vast expanses are sprayed. Controlling just the deer tick population on any property is not a long-term solution because the causes of deer tick abundance would not be addressed. A property owner could have short-term relief if they implemented a spray program in their yard in conjunction with a system of tubes/traps that contain cotton balls with an insecticide. Small mammals enter the tubes and take the cotton balls and use them as nest material, thus exposing ticks to permethrin in the nest (<http://www.ticktubes.com/works.html>). This is a short-term solution because their property is still surrounded by vast acreages with deer, small mammals, and ticks.

Areas with lower, sustainable deer populations have been shown to have fewer deer ticks. Urban areas are especially vulnerable as deer hunting is generally not conducted often in these locations. However, open spaces in urban areas can be hunted using archery and deer populations can be lowered if landowners and communities grant permission.

Pre-scribed fires can also reduce deer tick populations, but only for the short term. Deer and small mammals will soon return to the site along with the deer ticks.

Prevention and awareness are key factors in stopping the transmission of Lyme disease to humans and should be the focal point of outreach and education efforts. But, even then people can still get a tick bite and Lyme disease. Tick bites are the #1 workers compensation issue in the Bureau of Forestry. Due to the nature of their work, DCNR field staff continually encounter ticks. So, assistance, like the rapid testing of ticks by the staff at the Tick Lab here at East Stroudsburg University is a big help in treating and preventing Lyme disease. People with tick borne diseases need access to rapid diagnosis and timely treatment.