

Deer Culling is not Effective for Reducing Lyme Disease Risk

- “Deer tick” is an incorrect common name for the “blacklegged tick”, *Ixodes scapularis*, or *I. scapularis*, which perpetuates the incorrect notion that deer are the essential hosts for this tick.
- Ticks have to feed on an infected vertebrate host to get and transmit the bacteria that causes Lyme disease, *Borrelia burgdorferi*; these hosts, also called wildlife reservoirs, vary in their effectiveness for transmitting Lyme.
- Deer are inefficient reservoirs – they are much less likely than other hosts to transmit a bacterial infection to feeding ticks and thus, are believed to play an important role in *reducing* the incidence of Lyme disease.
- White-footed mice are the most efficient wildlife reservoirs of *B. burgdorferi*; which means that they’re the mammal most likely to transmit a bacterial infection to feeding ticks (who can then transmit Lyme disease to people).
- Deer abundance does not regulate or predict the abundance of ticks; other important factors are involved. Ticks have 2-year complex life cycles during which they can use various host species.
- In general, deer culls merely produce *temporary declines* in tick populations, as ticks feed on other – more efficient - hosts (tick populations will increase even if the deer population decreases).
 - Over 125 vertebrate species serve as effective hosts for nymphs
 - At least 27 species of mammals serve as effective hosts for adult ticks
- Studies reveal that the proportion of immature ticks infected with Lyme disease bacteria is likely to increase during the several years following a coordinated effort to reduce the deer population or to exclude deer by fencing (exclosures have varying effects on tick populations depending on the size of the exclosure).
- 4-poster devices, which use two pairs of posts with vertical rollers on either side of a bait trough filled with corn to deliver insecticide to whitetail deer in an attempt to control tick populations, show that blacklegged ticks are not specialized to deer. Treating deer should be more effective than killing them because ticks will seek alternate hosts if deer are missing and those alternate hosts will be more effective at transmitting disease.
- “Bait boxes” for mice and other small mammals use fipronil, also used in Frontline spot treatments for cats and dogs; this approach has been shown to reduce tick burdens on mice and abundance of questing nymph ticks – and, even more importantly -a reduction in tick infection with *B. burgdorferi*
- Human behavior, knowledge, and attitudes (human use of habitats and of protective measures) can affect cases of Lyme – prevention is critical.

From “Lyme Disease – The Ecology of a Complex System” by Richard S. Ostfeld