Emerging and Exotic Ticks in Connecticut

Lone Star and Asian Longhorned Ticks

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Since the emergence of the blacklegged tick, *Ixodes scapularis*, and discovery of Lyme disease in Connecticut in the 1970s, the principal ticks of concern to Connecticut residents have been the blacklegged tick and the long present American dog tick, *Dermacentor variabilis* (not pictured). The blacklegged tick is the vector for human pathogens that cause Lyme disease, babesiosis, anaplasmosis, hard-tick relapsing fever, and Powassan viral encephalitis. While Lyme disease is the principal vector-borne disease in Connecticut and the United States, other tick-borne illnesses accounted for 28% of all U.S. cases reported to the Centers for Disease Control and Prevention in 2018. Recently, we have seen the distribution of some native southeastern tick species expand to northern latitudes in the United States; the lone star tick, *Amblyomma americanum*, and the Gulf Coast tick, *Amblyomma maculatum*; and the establishment of an exotic, invasive tick species, the Asian longhorned tick, *Haemaphysalis longicornis*.

The exotic Asian longhorned tick is a fairly new resident to Connecticut. It was first detected in New Jersey in 2017 and has spread to 14 eastern states. This tick can reproduce without males (parthenogenesis) and quickly build up large populations.

The lone star tick is an aggressive human-biting tick and the vector for human disease pathogens that cause ehrlichiosis, tularemia, rickettsiosis, Heartland virus disease, southern tick-associated rash illness, red meat allergy, and, likely, Bourbon virus disease. This tick began to show up on Long Island, New York, in the early 1990s and established populations have now been documented across most of Long Island, Fairfield and New Haven Counties in Connecticut, coastal Rhode Island, and on Cape Cod and the Islands. The first well-established breeding population of lone star ticks was discovered on Manresa Island in South Norwalk in 2017 (*Connecticut Wildlife*, September/October 2017). Researchers from the Connecticut Agricultural Experiment Station (CAES) and the DEEP Wildlife Division began tagging deer, sampling ticks, and successfully treating the deer for ticks through a self-feeding station called a 4-poster at Manresa Island from 2018 through 2020 (*Connecticut Wildlife*, November/December 2018). Smaller numbers of lone star ticks have been recovered from sample sites in all four southern Connecticut counties as part of a

(Above) Established populations of the lone star tick have been documented in Fairfield and New Haven Counties in Connecticut (female pictured).

(Right) The blacklegged tick is the vector for human pathogens that cause Lyme disease, babesiosis, anaplasmosis, hard-tick relapsing fever, and Powassan viral encephalitis (female pictured).

(Below) The Gulf Coast tick was detected in coastal Fairfield County in August 2020, the first report of a population of this tick in New England (female pictured).

tick surveillance program begun by CAES in 2019.

The Gulf Coast tick was detected in coastal Fairfield County in August 2020, the first report of a population of this tick in New England. Originally distributed in southeastern states along the Gulf and Atlantic Coasts, this tick has expanded its range north to Virginia, Maryland, and Delaware. While historically a livestock pest, this tick feeds readily on humans and is the vector for *Rickettsia parkeri* that causes a milder form of spotted fever rickettsiosis.

The exotic Asian longhorned tick was first detected on a sheep at a New Jersey farm in 2017 and since then has been found in 14 eastern states, including Connecticut. Native to eastern China and Russia, the Koreas, and Japan, it was introduced into Australia and New Zealand around the turn of the twentieth century where it is a major livestock pest. It is a vector for several human and livestock pathogens in its native range, including severe fever with thrombocytopenia (low levels of blood platelets) in humans. This tick can reproduce without males (parthenogenesis) and quickly build up large populations.

Another exotic tick species, the red sheep tick, *Haemaphysalis punctata*, has been found on Block Island, Rhode Island. Native to Europe, this tick is primarily a parasite of sheep and cattle, but also occurs on numerous other hosts and occasionally on humans. It is a known vector for a number of animal and human pathogens.

The immature stages of these four tick species parasitize a diversity of bird and mammal species while the adult ticks attack domestic animals and larger mammals like white-tailed deer. Warming temperatures, particularly in winter, may lead to the continued expansion in the range and abundance of these ticks. These new tick species will become an increasing human and animal health concern for Connecticut residents as populations expand and become further established in the state.