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## PRESS RELEASE

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## THE FIRST EVIDENCE OF THE INVASIVE LONGHORNED TICK INFECTION WITH EHRLICHIOSIS PATHOGEN IN THE UNITED STATES

**New Haven, CT** – The Connecticut Agricultural Experiment Station (CAES) reports the first evidence of the invasive longhorned tick (*Haemaphysalis longicornis*) infection with *Ehrlichia chaffeensis* in the U.S. This finding, which was published in the *Emerging Infectious Diseases* journal, is based on collaborative field and laboratory investigations by the CAES and USDA scientists.

Since its initial discovery in the U.S. in August 2017, the longhorned tick has expanded into at least 21 states, primarily in the east and northeast (including Connecticut), as well as the District of Columbia (Fig. 1). This tick, which is invasive in Australia, New Zealand, and a number of Pacific Islands, is native to eastern Asia and thrives in warm, humid environments. According to environmental suitability models, this tick will spread throughout the eastern U.S., presumably helped by its capacity for parthenogenetic (without a male) reproduction and unrestricted feeding.

*Ehrlichia chaffeensis* is a Gram-negative bacterium mostly spread by the lone star tick (*Amblyomma americanum*), frequently infects monocytes (a type of white blood cell), and causes human monocytic ehrlichiosis (HME). Symptoms of HME can start with a sudden high fever, headache, muscle aches, chills, and a general feeling of weakness and fatigue within a few weeks after initial infection. In some individuals, symptoms may progress to include nausea, vomiting, diarrhea, weight loss, and/or confusion. If not treated quickly, HME can lead to life-threatening symptoms, such as kidney failure and respiratory insufficiency in some cases. There is no vaccine to prevent ehrlichiosis. The illness can be prevented by preventing tick bites, preventing ticks on your pets, and preventing ticks in your yard.

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Between 2001 and 2019, the number of HME cases increased from 142 to 2,093, a roughly 15-fold rise. Only two HME disease cases were recorded in Connecticut between 2008 and 2018; however, 28 cases were reported from the state between 2019 and 2023. There is strong evidence that the number of HME cases is underreported, as is the case with other tickborne diseases, and a rise in disease cases is expected due to recent range expansion of the lone star tick, especially in the northeastern U.S.

“The first fully engorged human-parasitizing longhorned tick specimen was recorded by the CAES in 2018 from Fairfield, Connecticut, and the first populations of the tick were reported from this county in 2020. Since then, populations of longhorned ticks have expanded into a number of towns in Fairfield and New Haven Counties. Additionally, individual tick specimens have been collected from New London and other counties,” said Dr. Goudarz Molaei, a research scientist and medical entomologist who also directs the CAES Passive Tick and Tick-Borne Disease Surveillance Program (aka Tick Testing Laboratory).

The longhorned tick is a three-host species that feeds on a broad range of vertebrate hosts. It can pose a serious risk to both domestic and wild animals, especially livestock. Although there are accounts of human tick bites and the tick has been collected from over 40 mammalian and bird species in the U.S., it is unclear how often this species will infest humans.

In its native and invasive range, the longhorned tick is known to transmit a wide variety of pathogens. Researchers have found evidence of infection in field-collected specimens in the U.S. with pathogens that cause Lyme disease, anaplasmosis, babesiosis, Bourbon virus disease, and theileriosis; however, it is still unknown if the tick can spread many of these disease agents. Additionally, partial blood feeding in host-seeking longhorned ticks has been seen; this could result in the spread of pathogens (like *E. chaffeensis*) as the tick attempts to finish a blood meal after partially feeding on an infected host during the same life stage.

The recent introduction of the longhorned tick and other invasive ticks into Connecticut and the U.S., their ability to establish populations and expand their geographic range, and their potential to transmit pathogens are of significant public and veterinary health concern. Raising public awareness of the dangers posed by invasive tick vectors and newly emerging tick-borne illnesses is crucial. “A rigorous program in mitigating risks should include expanded tick surveillance programs, strict measures to inspect animals, plants, and other imported materials at ports of entry, accurate and proper identification of exotic ticks and pathogens, effective eradication and prevention measures, and the ability to test exotic ticks for both native and nonnative pathogens,” added Dr. Molaei, an associate professor adjunct the Yale School of Public Health.

Detailed information about the CAES Tick Testing Laboratory, personal protection measures, tick control measures, the longhorned ticks, ehrlichiosis and other tickborne diseases can be found at the following websites:

<https://portal.ct.gov/CAES/Tick-Office/Tick-Office/Information-on-Submitting-Ticks>

<https://www.cdc.gov/ticks/prevention/index.html>

<https://www.cdc.gov/ticks/about/index.html>

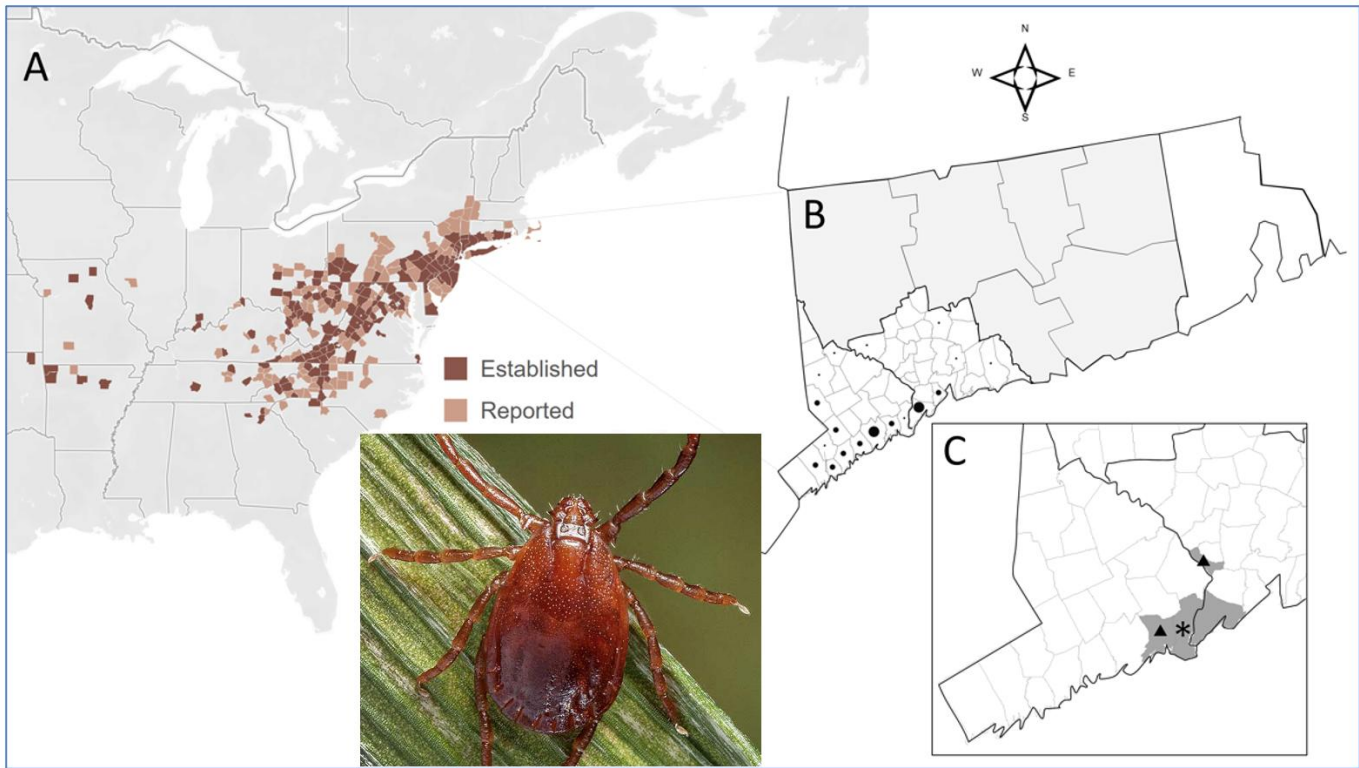
<https://stacks.cdc.gov/view/cdc/77833>

<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/asian-longhorned/asian-longhorned-tick-what-you-need-know>

<https://www.aphis.usda.gov/livestock-poultry-disease/cattle/ticks/asian-longhorned>

<https://www.neregionalvectorcenter.com/asian-longhorned-tick>

<https://cals.cornell.edu/integrated-pest-management/outreach-education/whats-bugging-you/longhorned-tick>



**Figure 1.** (A) States with established population(s) or reported occurrence of *Haemaphysalis longicornis*. (B) Specimens removed from Connecticut residents and submitted to the Connecticut Agricultural Experiment Station-Tick Testing Laboratory (1, 2–5, and >5 shown as proportionately increasing dots). (C) Known established populations in the state (shaded in gray), location of specimen found positive with *Ehrlichia chaffeensis* (asterisk), and location of specimens found positive with *Borrelia burgdorferi* (triangles).



Adult Female

Nymph

Larva

**Figure 2.** Different Life Stages of the Longhorned Tick