

Longhorned Tick, a New Invasive Tick in the United States

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The longhorned tick, *Haemaphysalis longicornis*, also known as Asian longhorned tick, cattle tick or bush tick, native to East Asia, is a recent invasive tick species in the United States. It is important to be on the lookout for this tick in Arizona.

The first confirmed appearance of this tick species in the United States occurred on sheep in New Jersey during 2017. To date, the tick has been confirmed in 8 states, including Arkansas, Maryland, New Jersey, New York, North Carolina, Pennsylvania, Virginia and West Virginia, and the suburbs of New York City. This tick species appears to be highly adaptive to a broad range of climates, from tropical to temperate, and utilizes an extremely broad range of host animals.

Within farms, it is found on cattle, horses, sheep, pigs, and poultry. Wild animals can support and move ticks across significant geographic ranges. The ticks have been found on bears, deer, foxes, opossum, raccoons, hares, rabbits, ferrets, rats, and various birds. It has also been found on in-home pets including cats and dogs.

Biology

The longhorned tick is a three-host tick, meaning it requires three different hosts to complete its development through larval, nymph and adult life stages. The tick can reproduce sexually, or through an asexual process called parthenogenesis, meaning female ticks can reproduce without a male. The longhorned ticks found in the United States have all been parthenogenic. Therefore a single fed female tick can produce a whole population by herself.



The longhorned tick, after feeding (left) and before feeding (right).
New Jersey Department of Agriculture.



An adult female longhorned tick, unfed, about 2.3 mm long.
James Gathany/Centers for Disease Control and Prevention.



Three longhorned ticks are shown: from left, a fully engorged female, a partial engorged female, and an engorged nymph.
Jim Occi/Rutgers University.



Longhorned ticks are pictured on a U.S. dime. The smaller tick (left) is a nymph, the larger one (right) is an adult female.
James Gathany/Centers for Disease Control and Prevention.

Generally, female longhorned ticks lay eggs in late spring and early summer. After hatching from an egg, a larva seeks a host in late summer, consumes a blood meal, then drops off the host to overwinter. The following spring it molts into a nymph, which seeks a second host and feeds on blood, drops off a second time, and molts into an adult. An adult seeks a final host in mid-summer and feeds again. The adult female then drops off the host and lays up to 2,000 eggs over a period of 2-3 weeks.

Veterinary and medical concern

The longhorned tick is an established livestock pest in New Zealand and Australia, known to transmit a parasite called *Theileria annulata* that causes theileriosis disease in cattle. Prominent symptoms in livestock include fever, anemia, weakness, abortion, difficulty breathing, increased heart rate, and lymph node enlargement. The tick has been associated with several other pathogens known to cause human illness. Disease causing pathogens have not yet been found in longhorned ticks in the United States. However, severe ectoparasitism of livestock in the United States has been documented, and feeding effects and blood loss can cause significant impacts on the health of livestock.

This new arrival is considered to be a great threat to livestock. The tick is an aggressive biter that frequently builds dense infestations on domestic hosts such as livestock. These infestations may cause great stress to animals, reduce livestock growth and production, and exsanguination, or serious blood loss.

Human disease causing pathogens such as *Borrelia burgdorferi* (Lyme spirochetes), spotted fever group rickettsiae, *Ehrlichia chaffeensis*, and *Anaplasma bovis* have been detected in longhorned tick populations in other countries. It has also been associated with Russian spring-summer encephalitis, Powassan virus, Khasan virus, tick-borne encephalitis virus, Japanese spotted fever, and severe fever with thrombocytopenia syndrome, although pathogens causing disease in humans have not so far been detected in the longhorned tick in the United States. At this moment, public health experts are concerned, but not alarmed.

Prevention

Like native tick species, prevention using integrated pest management (IPM) is the best way to protect animals and people from potential tick bites.

- Examine animals on a regular basis and conduct daily personal tick checks after working with infested animals or being outside in tick infested areas.
- Use personal repellents containing DEET, picaridin, IR3535, or Oil of Lemon Eucalyptus. Check this guide to choose a repellent: <https://www.epa.gov/insect-repellents>. Properly apply repellents and follow the use directions carefully.
- Wear permethrin-treated clothing when you are outdoors for extended periods of time in areas at high risk for tick-borne disease transmission.
- Consult your veterinarian for recommendations specific to your situation and animals.

A PDF of this publication is available online at <http://cals.arizona.edu/apmc/docs/longhorned-tick.pdf>



The longhorned tick can be found on deer and other wildlife, as well as livestock and in-home pets.



Longhorned ticks can congregate in large numbers on livestock and companion animals. Tadhg Rainey.

If you suspect that you have found a longhorned tick, please collect a few ticks and send them for identification. Preferably, preserve the specimen in ethanol or rubbing alcohol (70% or greater is best) and gather information, including where the tick was collected, what host species it was collected from and the date of collection. Ship samples to the University of Arizona Insect Diagnostic Clinic <https://cals.arizona.edu/ento/content/insect-id>. For more information, contact lucyli@email.arizona.edu.

Sources, further information:

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