

# Asian Longhorned Tick, *Haemaphysalis longicornis*

**The Asian Longhorned tick is a recent invasive tick to Pennsylvania. This tick can be found on wildlife and on livestock. It is important to be aware of the presence of this tick and to implement prevention and control measures when necessary.**



Asian longhorned ticks can be found on deer and other wildlife, as well as livestock and companion animals.

The Asian longhorned tick is native to East and Central Asia where it thrives under temperate conditions. Originally reported in New Jersey in 2013, new specimens were identified in the fall of 2017 when a large population was found on sheep in Mercer County, New Jersey. They now have been identified on deer in New Jersey, cattle in Virginia and West Virginia, a dog in Arkansas, and in New York. In July, 2018 this tick was found on a white-tailed deer in Pennsylvania.

The Asian longhorned tick now is likely to be established in the United States and should be considered an invasive pest. It is important to be aware of the presence of this tick in Pennsylvania and to diligently scout for the Asian longhorned tick on companion animals and livestock.

## Biology

Information on the biology of Asian longhorned ticks is from its native range or Oceania where it also is invasive. Like ticks native to North America, Asian longhorned ticks have three life stages—larva, nymph, and adult—which utilize three separate hosts. In general, female ticks lay their eggs in late spring and early summer, depending on temperature and humidity. Larvae climb nearby vegetation and wait for a suitable host in late summer. A blood-fed tick will then drop off the host, overwinter, and molt into a nymph in the following spring. Nymphs again climb vegetation to seek a second host and blood feed. Dropping off a final time, the tick will molt into an adult and seek a final host mid-summer. After this blood meal, the adult female will drop off the host and produce up to 2,000 eggs over a two- to three-week period.



Asian longhorned ticks can congregate in high numbers on companion animals and livestock.

Although these ticks may exhibit either parthenogenic or sexual reproduction in their native range, the ticks found in North America are entirely parthenogenic, meaning populations consist entirely of females, and males are not required for reproduction.

It is unknown how the Asian longhorned tick will adapt to North American native wildlife and other animals, and which hosts will be important. In other areas of the world, juveniles are typically found on birds and smaller mammal species. Adults can be found on cattle, horses, deer, and sheep, and also have been found on humans, cats, dogs, pigs, goats, bears,



foxes, raccoons, and rabbits.

## Veterinary and medical concern

The Asian longhorned tick has been confirmed to transmit bovine theileriosis and *Babesia* spp. that causes infection in animals. Bovine theileriosis can reduce dairy production on cattle farms and occasionally kill calves. High numbers of ticks on animals can cause anemia. In addition to the above disease agents, Asian longhorned ticks have been confirmed in their native range to carry *Anaplasma* spp., *Ehrlichia* spp., and Powassan virus. There is evidence that this species is also a vector for Thrombocytopenia Syndrome Virus.

There have been no reports of infection in any of the ticks collected from the United States; however, it is unknown if this tick will be a competent vector of native pathogens.

## Prevention

Like native tick species, prevention using integrated approaches is the best way to protect animals and people from potential tick bites. Examining animals on a regular basis and conducting personal tick checks after being outside in tick habitat is critical and the simplest and best way to prevent potential disease transmission.

Pasture and lawn control measures—such as maintaining low grass height, controlling weeds and other brushy areas, and removing woody debris from pasture and lawn edges—can reduce tick-bite risk. Maintaining a 9-foot distance between pasture or lawn and wooded edge habitat can reduce the risk of tick contact. Perimeter applications of biopesticides, such as Met52™ or pyrethroid-based or carbamate insecticides can be applied by an individual in some cases in areas where ticks may be encountered. With some products, a professional pest-control applicator is required. Be sure to follow all label instructions and safety recommendations. Permethrin-treated clothing and DEET, picaridin, or IR3535 can be used as personal repellents. Whole-animal insecticide treatments, such as Permethrin™ II and Ultra Boss™, can be used for some livestock. Fipronil-based products or similar can be used for small companion animals. Consult your veterinarian for recommendations specific to your situation and animals.



Maintaining at least 9 feet between tick habitat and pasture or lawn can reduce tick encounter risk.



Cut back brush and other tall vegetation from fence lines.

## Identification



Adult Asian longhorned tick

Two species of *Haemaphysalis* ticks are native to the United States: *H. leporispalustris* (rabbit tick) and *H. chordeillis* (bird tick). These two species feed almost exclusively on their respective hosts. Asian longhorned ticks may be confused with these and other native species, but if they are identified on other hosts (cattle, deer, etc.), it is highly likely they are *H. longicornis*. Juveniles also may be confused with immature lone star ticks, which are found in the extreme southern and eastern parts of Pennsylvania.



Nymphs of the Asian longhorned tick (left) and lone star tick (right) showing similar characteristics but different mouthparts. Photo courtesy Graham Hickling

Adults are brown in color and approximately 0.1 inches long without markings or distinct coloration. Juveniles are small and may go unnoticed but may be present in unusually high numbers. Ticks have been observed feeding on ears, brisket,

back of neck, shoulders, inside of flanks, groin, armpits, and anus.

If Asian longhorned ticks are suspected, collect a few ticks from the animal if possible. Do not approach or attempt to collect ticks from wildlife. Ticks can be safely removed from companion animals or livestock by grasping ticks with fine-point tweezers close to the skin of the animal and gently and slowly pulling back until the tick releases. Preferably, place the tick in 70 percent ethanol and gather information, including where the tick was collected (street address or similar), what host it was collected from, and the date of collection, then ship it to one of the laboratories listed below, as appropriate. Alternatively, place specimens in a plastic bag and store in the freezer or ship immediately. Please do not submit images in lieu of specimens.

### Send specimens to

Pennsylvania State University Insect Identification Laboratory  
501 Agricultural Sciences and Industries Building University  
Park, PA 16802.

### Veterinarians can send specimens to

PennVet Diagnostic Laboratories Clinical Parasitology Lab  
3900 Delancey Street Philadelphia, PA 19104

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