Asian Longhorned Tick

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BACKGROUND

The Asian longhorned tick (*Haemophysalis longicorns* Neumann; alternative names include Asian longhorned tick, Asian tick, bush tick, New Zealand cattle tick) is a species of hard tick in the family Ixodidae. It is native to eastern China, Japan, the Russian Far East and Korea. It has also established in Australia, New Zealand and several Pacific islands, where it is considered a severe exotic pest of livestock. In late 2017, the United States Department of Agriculture's National Veterinary Services Laboratories (NVSL) confirmed the presence of the Asian longhorned tick in the United States. These ticks were first identified in New Jersey, but have since been found in archival samples from West Virginia as far back as 2010. The origin of the tick in the US remains unknown. Some possible routes of entry include entering on domestic pets, horses, livestock or humans. The real impact of the introduction of this tick into the US is not clear at this time, but animal health officials are concerned about potential detrimental impacts on livestock and wildlife.

IDENTIFICATION

Asian longhorned ticks are light brown and do not have distinctive markings on their scutum (back). The adult female grows to about 10mm (0.4 in) in length when bloodfed and has a large spur on its basal palpal segment, which is a portion of the mouthpart. Males are rare and as of printing have not been found in the US. Immature lifestages are very small: nymphs are about the size of a poppy seed and larvae are even smaller.

IC: Centers for Disease Control and Prevention

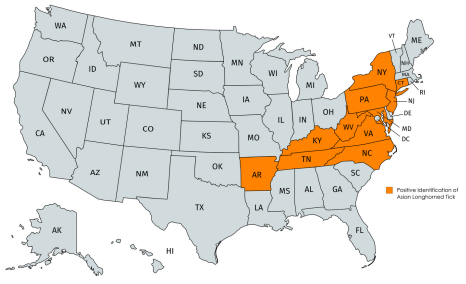
IMPACT

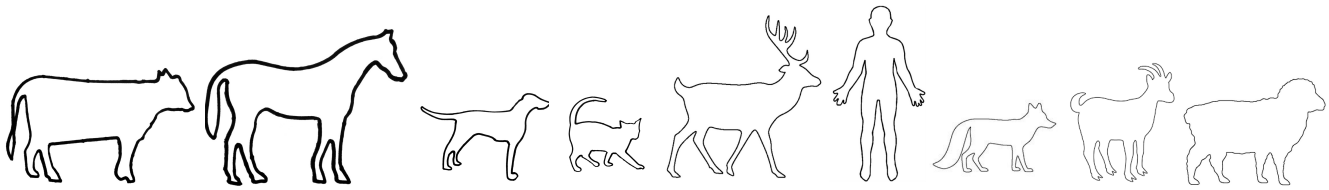
At present, the establishment of these ticks in the US is uncertain, but there is great concern amongst animal health officials about the potential impacts on livestock and wildlife. This tick can feed in large populations (known as a tick mass) on warm-blooded host animals which can lead to reduced growth, animal production, and in severe cases sufficient blood loss can result in death.

Outside of the US, these ticks have been shown to carry the causative agents for anaplasmosis, babesiosis, ehrlichiosis, theileriosis, and rickettsiosis, as well as several viruses. However, to date, no infectious agents have been identified in the Asian longhorned ticks found in the US.

UNITED STATES GEOGRAPHIC DISTRIBUTION

By early 2019, Asian longhorned ticks had been detected in AR, CT, KY, MD, NJ, NY, NC, PA, VA and WV (indicated in orange). A travel-associated case was identified in NH. In May 2019, the Tennessee Department of Agriculture announced that Asian longhorned ticks had been found in Roane and Union counties.





SPECIES AFFECTED

Thus far, 17 different mammal species and one avian species have been infested with Asian longhorned ticks. Mammals include sheep, goats, dogs, cats, horses, elk, cattle, deer, opossums, raccoons, foxes and humans. The single avian species was a hawk, which is also a predator to mammals. This list continues to grow as more tick surveys are conducted in the infested areas.

DETAILS MATTER

A very similar species, the rabbit tick (*Haemaphysalis leporispalustris)*, is native to the US and is commonly found on wild rabbits and hares. That tick is not known to cause problems for other species, including humans. The Asian longhorned tick is easily misidentified or confused with the rabbit tick, so anyone suspecting the presence of non-native Asian longhorned ticks is encouraged to collect specimens for identification by appropriately trained personnel. The most commonly encountered ticks in Tennessee include the Lone Star tick and the American dog tick, while Gulf Coast tick and Blacklegged ticks are also found.

LIFE CYCLE

The Asian longhorned tick is a three-host tick indicating it will feed on a different host for each life stage. Dispersal is likely linked to its hosts' ability to disperse. Additionally, this tick is parthenogenic meaning it can reproduce without mating with a male. It is very likely that translocation of a single tick is sufficient to start a new population. After each bloodmeal, the tick falls off its host and either develops to the next life stage or, if it is an adult female, will lay its eggs under the leaf litter. A single female can lay between 2,000 and 4,000 eggs. Larvae then hatch from the eggs and find a host of their own. After feeding, the 6-legged larvae drop back into the leaf litter, and molt into 8-legged nymphs. The nymphs must then find a new host for a blood meal. Once fed they fall back into the leaf litter and molt into 8-legged adults. In general, nymphs will be most active in the spring, adults in the summer, and larvae in the fall. In some locations, however, all three life stages may be active in the same season and can develop from egg to adult in 6 months.

UNDERSIDE OF A NYMPH AND ADULT FEMALE ASIAN LONGHORNED TICK

IC: Centers for Disease Control and Prevention

DID YOU KNOW?

Asian longhorned ticks are commonly found along forest edges, trails and clearings.

IC: Graham Hickling

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Protection and Removal Strategies

PROTECT YOURSELF AND OTHERS

Being outdoors puts you at risk of encountering many different tick species. Apply EPA-approved tick repellent to your skin (epa.gov/insect-repellents) and wear permethrin-treated clothing to avoid ticks. In heavily infested tick areas, it is advisable to use appropriately labeled permethrin products on clothing and shoes. When applying permethrin to clothing, it is important to ensure the product is dry before wearing permethrin-treated clothing. Always follow directions on the label.

Stick to the middle of trails and avoid dense brush. Ticks can be carried indoors on you, your clothing and your gear, so inspect yourself and clothing when finished with outdoor activities. Examine yourself and children for ticks, making sure to check where clothing fits tightly to the body (tops of socks, waistline, etc.), as well as hairlines, ears, underarms, belly buttons, arms, legs and all other areas of the skin. Place your worn clothing in a dryer for 10 minutes on high heat to kill any ticks prior to washing. Take a shower soon after returning indoors to remove crawling ticks and to repeat your tick inspection.

PROTECT LIVESTOCK AND PETS

Standard tick treatment regimens should be effective against the Asian longhorned tick, as this tick is currently susceptible to permethrin. Animal health officials recommend livestock and pet owners consult with their veterinarian to determine the best tick prevention program for their animals. Additionally, environmental control measures are recommended. For livestock owners these include keeping grass and weeds trimmed and clearing overgrown brush in pastures and yards. For pet owners, walking in the middle of trails and encouraging pets to avoid exploring dense brush while on walks is recommended.

SAFELY REMOVE EMBEDDED TICKS

Using tweezers, remove the tick by grabbing the mouthparts which are at the attachment site. Be sure to pull with a steady pressure and pull straight, being careful to not twist the tick (very similar to removing a bee's stinger). Once removed, place the tick into a sealable bag and with a permanent marker write the date, address, and either the name of the person or breed of the animal onto the bag. Note, each tick-infested bag should be associated with a single date and host animal. The bag should then be stored in your freezer to kill the tick. Keep the tick in the freezer for several months in case disease symptoms develop or the tick needs to be identified. If symptoms develop, you can take the tick with you to your doctor or veterinarian for identification that may aid in disease diagnosis. Removing ticks helps prevent pathogen transmission.


IC: Rochon; Univ. of Manitoba

Step 1: Go as close to the skin as possible with tweezers and grasp the tick firmly.


IC: Rochon; Univ. of Manitoba

Step 2: Pull straight up with constant steady pressure. Do not jerk or twist.

ADDITIONAL RESOURCES

tn.gov/agriculture/news/2019/5/24/invasive-tick-detected-in-tennessee.html

cdc.gov/ticks/longhorned-tick/index.html

invasivespeciesinfo.gov/profile/asian-longhorned-tick

fonseca-lab.com/research/global-health-the-tick-that-binds-us-all

cdc.gov/ticks/avoid/on_people.html

REFERENCES

Heath, A. C. G. 2016. Biology, ecology and distribution of the tick, *Haemaphysalis longicornis* Neumann (Acari: Ixodidae) in New Zealand. N. Z. Vet. J. 64: 10–20.

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