

# THE LONGHORNED TICK

## INTRODUCTION

The longhorned tick, also called the East Asian tick, *Haemaphysalis longicornis*, is not native to the United States. It was first found in the U.S. in New Jersey on a sheep, but identification of archived samples of ticks have shown it may have been in the U.S. as early as 2013.

As of August 2018, the tick has been reported in eight states, including NJ, VA, WV, AR, NC, NY, MD and PA. The tick is native to eastern Asia, but is a threat to livestock in other countries where it has been introduced, such as New Zealand and Australia. The longhorned tick will bite humans and has shown the potential to spread disease to humans in its native country; however, no disease pathogens have been found in longhorned ticks in the United States thus far.

## DESCRIPTION

Longhorned ticks are a species of hard ticks in the family Ixodidae. They are small in size and the adults are approximately 3 to 4 mm

in length when not fed. They are dark brown in color without distinct ornamentation on their bodies. Immature ticks of this species are incredibly small, about 2 mm, and may be hard to detect. Two similar species from the genus *Haemaphysalis* are native to the United States and may be mistaken for the longhorned tick; however, the native species feed primarily on birds and rabbits, thus *Haemaphysalis* ticks feeding on other hosts like cattle, sheep or deer would most likely be *H. longicornis*.

## BIOLOGY AND BEHAVIOR

The longhorned tick is native to Central and East Asia where it thrives in temperate climates. In China, this species has been found to survive colder temperatures, which may allow this species to spread throughout cooler climates in the United States. The longhorned tick prefers moist conditions and resides in thick, grassy vegetation and meadows close to forests.

The lifecycle of the longhorned tick consists of three different life stages—larva, nymph and adult. Each life stage takes a blood meal but will drop off the host before molting into the next life stage, therefore each life stage utilizes a different host for development.

The female tick lays her eggs in late spring/early summer and when the larvae emerge they will climb vegetation and seek a host in late summer months. Once the larvae take a blood meal, they drop off the host and overwinter in their current form. The following year, the molted nymph will take a blood meal in the spring and then molt into its final adult stage mid-summer. A female tick can produce up to 2,000 eggs during the summer in just a two to three-week period.

This species is parthenogenic, meaning that males are not required for reproduction. Females can self-fertilize, thus entire populations of longhorned ticks are female in their non-native range. This unique feature



©J. LOCCI, RUTGERS CENTER FOR VECTOR BIOLOGY

Longhorned tick, *Haemaphysalis longicornis*, adult and nymph



Longhorned tick female with eggs

makes this species more of a threat to livestock because it permits the ticks to increase to substantial numbers quickly. High density populations cause severe problems for livestock and other wildlife from excessive feeding, leading to blood loss and potentially death. Furthermore, the fact that this species uses three hosts for development could also exacerbate difficulties with management and eradication in some environments.

### MEDICAL CONCERNS AND DISEASE TRANSMISSION

The longhorned tick is a major threat to livestock and cattle and will cling to hosts in high numbers, causing significant blood loss with the potential threat of disease spread. These ticks transmit bovine theileriosis and babesiosis infection to animals that can result in reduced dairy production, anemia, and in severe cases, lead to death.

The longhorned tick is known to carry several human diseases in its native regions of Asia. These vectored diseases and pathogens include Anaplasmosis, Ehrlichiosis, Rickettsiosis, Powassan virus, as well as Thrombocytopenia Syndrome Virus. As of now, there have been no reports of infection in ticks collected in the United States and it's unknown if this tick species will vector any native pathogens in the United States.

### PREVENTION AND MANAGEMENT

Standard tick management practices should be implemented to prevent and treat for

longhorned ticks. Landscape management around structures can go a long way in providing a tick-free zone near buildings, but applications of pesticides may be necessary to provide full protection. Tick checks of yourself and animals should occur each time you come indoors after being outside, as well as applications of repellents or pesticides when necessary.

Pets can be a source of ticks, especially if the client has pets that live indoors but spend a lot of their time outdoors. Ticks may bite a pet and alternatively hang onto the fur and drop off when the pet comes indoors. Ticks have been reported surviving several days indoors in humidity above 65 percent. Tick prevention should be used on pets, so clients should consult with a veterinarian on recommended products for tick control.

Landscape management can provide substantial tick prevention to a home and should be implemented as part of an integrated pest management strategy around buildings. There is a strong correlation between landscape features and tick abundance. High risk areas for ticks include the perimeter area around yards with dense vegetation, wooded lots, and the unmaintained areas between the yard and forested areas. Limiting suitable environments for ticks and wildlife that may carry ticks is highly effective for tick management.

There are several practices customers can implement to reduce tick populations around a structure:

- Keep bushes trimmed and grass cut low around the house to minimize tick habitats around your yard.
- Reduce vegetation in the lawn and keep areas open to sunlight.
- Rake or blow leaf litter and plant debris from areas that are highly traveled by people.
- Introduce hardscape (patios, decks, paths) into the landscape to reduce vegetation and areas that could harbor ticks.
- Restrict use of groundcover only to areas where people do not frequent.
- Keep play areas (swing sets, playgrounds) away from woodland areas and in sunlit areas if possible.

Personal protection from ticks should be considered when outdoors by applying an EPA registered repellent. The U.S. Centers for Disease Control and Prevention (CDC) recommends repellent products with the active ingredients DEET, picaridin, IR3535, and oil of lemon eucalyptus. When applying a repellent, special attention should be paid to shoes, socks and the bottom of pants legs where ticks would most likely attach. Permethrin treated clothing can also help to prevent ticks from biting. If a client wishes to use a permethrin spray, it should only be applied to clothing and not directly to the skin. Allow the clothing to dry before wearing and spray in an open, ventilated area. Always read and follow label instructions when applying a pesticide, including repellents.

When outside, wear protective clothing that covers arms and legs. Wear light-colored clothing to more easily see ticks and also tuck pants into socks to prevent them from climbing underneath clothing. If a customer has been outdoors, especially in wooded or grassy areas, recommend they do a full body check on themselves for ticks when returning inside. If a tick is present on the body, remove it immediately using tweezers near the bite site. Pull the tick straight upward with even pressure until it is removed from the skin. ●

### SELECTED REFERENCES

- Zhuang, Lu, et al. "Transmission of Severe Fever with Thrombocytopenia Syndrome Virus by *Haemaphysalis longicornis* Ticks, China." *Emerging infectious diseases* 24.5 (2018): 868.
- Dellinger, Theresa A., and Eric R. Day. "Longhorned Tick." (2018). [https://pubs.ext.vt.edu/content/dam/pubs\\_ext\\_vt\\_edu/ENTO/ento-282/ENTO-282.pdf](https://pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/ENTO/ento-282/ENTO-282.pdf).
- Rainey, Tadhg, et al. "Discovery of *Haemaphysalis longicornis* (Ixodida: Ixodidae) Parasitizing a Sheep in New Jersey, United States." *Journal of medical entomology* 55.3 (2018): 757-759.