National Wildlife Health Center
Wildlife Health Bulletin 2018-03

Haemaphysalis longicornis Detected in the United States

To: **Natural Resource/Conservation Managers**
From: **Dr. Jonathan Sleeman, Center Director, USGS National Wildlife Health Center**
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The USGS National Wildlife Health Center (NWHC) is providing this report for situational awareness to Tribal, State and Federal wildlife health partners regarding confirmation of the presence of the exotic tick *Haemaphysalis longicornis* (longhorned tick) in several states. Please distribute to your respective agency staff and local partners as necessary.

Haemaphysalis longicornis is native to East Asia (Japan, China, Korea, and the former USSR) but has established invasive populations in Australia, New Zealand and several Pacific islands. Additional infestations with *H. longicornis* have now been confirmed in four states, including Benton County, Arkansas; Hunterdon, Union, Middlesex, and Mercer Counties, New Jersey; Warren and Albemarle Counties, Virginia; and Hardy County, West Virginia. Multiple affected and surrounding states are increasing passive and active surveillance efforts, animal and pathogen testing, and education, outreach, and training. Currently the full extent of the tick's presence in North America is unknown.

Three life-stages of *H. longicornis*. Adult female (left), partially engorged nymph (center) and larvae (right). Scale is in millimeters. Photo credit: Jim Occi, Rutgers University. (https://fonseca-lab.com/research/global-health-the-tick-that-binds-us-all/)

In the United States, infestations of *H. longicornis* were thought to have first occurred in May 2017. However, subsequent review of archived samples from a dog in Union County, New Jersey indicated initial infestation in 2013. These infestations are of concern to domestic animal, public, and wildlife health in North America.

Haemaphysalis longicornis is a pest of livestock and can cause severe infestations leading to weakness, decreased production and growth, exsanguination, and death. Outside of the United States, the tick species has been found to carry *Anaplasma*, *Ehrlichia*, and *Borrelia* spp. and studies suggest that it can also transmit Oriental spotted fever caused by *Rickettsia japonica*, cattle theileriosis caused by *Theileria orientalis*, and Severe Fever with Thrombocytopenia Syndrome caused by a bunyavirus. However, the potential for this species to carry these tick-borne pathogens in the United States is not yet known. Additionally, *H. longicornis* can be parthenogenetic (i.e., able to reproduce without a male).

Worldwide, *H. longicornis* has been found on a wide range of domestic animal, livestock, and wildlife hosts including both avian and mammalian species. In the United States, hosts to date have included: dog, cow, goat, sheep, horse, white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*). Additionally, in both invasive and native populations outside the United States, previous reports describe *H. longicornis* parasitizing humans.

Currently the USGS National Wildlife Health Center is conducting the following actions in response to these findings:

1) The NWHC is reviewing tick samples from parasitology laboratory archives to confirm if there are any *H. longicornis* ticks in the collection. If *H. longicornis* is found, collaboration with partners to confirm identification and screen for vector-borne pathogens will be pursued.
2) At necropsy, the NWHC will begin to more systematically collect ticks from carcasses (both mammals and birds) from diagnostic submissions for future identification.

Collectively, efforts of the NWHC and others will provide baseline information necessary to conduct risk prioritization and potential management response for this invasive species. Additional updates will be provided as warranted.

Human Health Considerations:

In order to prevent bites from ticks, the Centers for Disease Control and Prevention (CDC) encourages the following precautions:

- Avoid contact with ticks, which may reside in grass, brush, and wooded areas;
- Apply insect repellents registered by the Environmental Protection Agency that contain DEET, picardin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone;
- Treat clothing and other materials with 0.5% permethrin;
- Check your body, clothing, gear, and animals for ticks after being outdoors; and
- Shower soon after being outdoors.

Please visit the CDC website for additional guidance on:

- Tick bite prevention: https://www.cdc.gov/ticks/avoid/on_people.html
- Tick removal: https://www.cdc.gov/ticks/tickbornediseases/tick-bites-prevention.html

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Disease Investigation Services:
Wildlife agencies are encouraged to monitor for wildlife morbidity and mortality events and contact the NWHC Epidemiology Team at NWHC-EPI@USGS.GOV or (608)270-2480 for technical assistance or if you wish to submit diagnostic samples. Wildlife management agencies that investigate morbidity and mortality events independently or in collaboration with other diagnostic laboratories are strongly encouraged to report these events to the NWHC using our reporting form (Wildlife Mortality Reporting and Diagnostic Services Request Worksheet). To increase situational awareness of wildlife disease events occurring on the national landscape, NWHC will display any relevant information on WHISPers, a Wildlife Health Information Sharing Partnership website.

Further information regarding the epidemiological and diagnostics services we provide can be found at http://www.nwhc.usgs.gov/services/.

If you have any questions or concerns regarding the scientific and technical services we provide, please do not hesitate to contact NWHC Director Jonathan Sleeman at 608-270-2401, jsleeman@usgs.gov.

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