Gulf Coast Tick Established in Salem County

The Gulf Coast tick (Amblyomma maculatum) is primarily found in coastal areas in the southeastern and mid-Atlantic states, as well as parts of southern Arizona. In New Jersey, Salem County Mosquito Control found an established Gulf Coast tick population for the first time in July 2022. Previously, the ticks have been detected in Atlantic, Cumberland, and Warren counties, but not enough ticks were found to indicate an established population. Neighboring states including New York, Maryland, Pennsylvania, Delaware, and Connecticut have established populations of this tick.

Gulf Coast ticks feed on a variety of birds and mammals and will readily bite humans. Adult ticks can transmit *Rickettsia parkeri* rickettsiosis, a form of spotted fever, to humans. *R. parkeri* rickettsiosis is characteristically less severe than Rocky Mountain Spotted Fever (RMSF) and almost always associated with an eschar (lesion) at the site of tick attachment. Several days after an eschar appears, fever, headache, rash (sparse maculopapular or...
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Papulovesicular eruptions on the trunk and extremities, and muscle aches can develop. It is important to note that R. parkeri rickettsiosis can be difficult to distinguish from RMSF and other spotted fever, especially during early stages of these diseases. Eschars are uncommonly identified in persons with RMSF.

The detection of an established population of Gulf Coast ticks in Salem County occurred as part of the New Jersey statewide tick surveillance program, which began in fall of 2021. A single Gulf Coast tick was collected by Brandon Musnoff (Mosquito Identification Specialist) of Salem County Mosquito Control (one of the NJDOH county tick surveillance partners) on June 27th, and informed NJDOH staff of the discovery. On July 1st, Musnoff and James Ooci (microbiologist) from NJDOH Public Health and Environmental Laboratories found additional Gulf Coast ticks in the area. Subsequent collections by James Ooci, Mervin Cuadera (Epidemiologist/Entomologist), Matthew Birney and Lara Zipperer (Field Environmental Specialists) from the NJDOH Infectious and Zoonotic Disease Program confirmed the establishment of this tick species. The ticks were collected through field drags and flagging, in which a one square meter white cloth is dragged across the top of the vegetation and regularly checked for the presence of ticks, and dry ice-baited traps. This same site was used as part of the 2018 NJ Tick Blitz, although only a few dog ticks and lone star ticks were documented then. After collection, ticks were submitted to CDC Rickettsial Zoonoses Branch for testing. Collections in neighboring...
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counties are underway to determine the geographic distribution of this newly established tick.

Lara Zipperer collecting a tick from her dog and placing it into ethanol.

In 2018, Rutgers University Center of Vector Biology (RUCVB) organized the first New Jersey Tick Blitz, a one-day collection effort to obtain the first New Jersey statewide snapshot of the American dog tick and assess the interest and proficiency of existing NJ agencies to provide state-wide standardized tick surveillance. Each of the 21 counties were represented, and collections yielded useful data on the tick establishment status of tick species of interest, such as the American dog tick, lonestar tick, and Asian long-horned tick. Goals of the statewide tick surveillance program include generating tick risk indexes (a measure of how likely someone will get bitten by an infected tick) across the state, providing updates on the establishment status for current and emerging ticks of public health concern, and using data collected to direct public health action. The program aims to inform areas of concern, prioritize where educational outreach is necessary, prioritize tick control activities, allow metrics to evaluate impact of tick control efforts, direct educational and prevention campaigns during times of highest risk, and identify habitats within communities that support tick populations.

More Information/Resources:
1. Tick Surveillance as a Public Health Tool (cdc.gov)
2. Spotted Fever Group Rickettsiosis (Including Rocky Mountain Spotted Fever) (nj.gov)