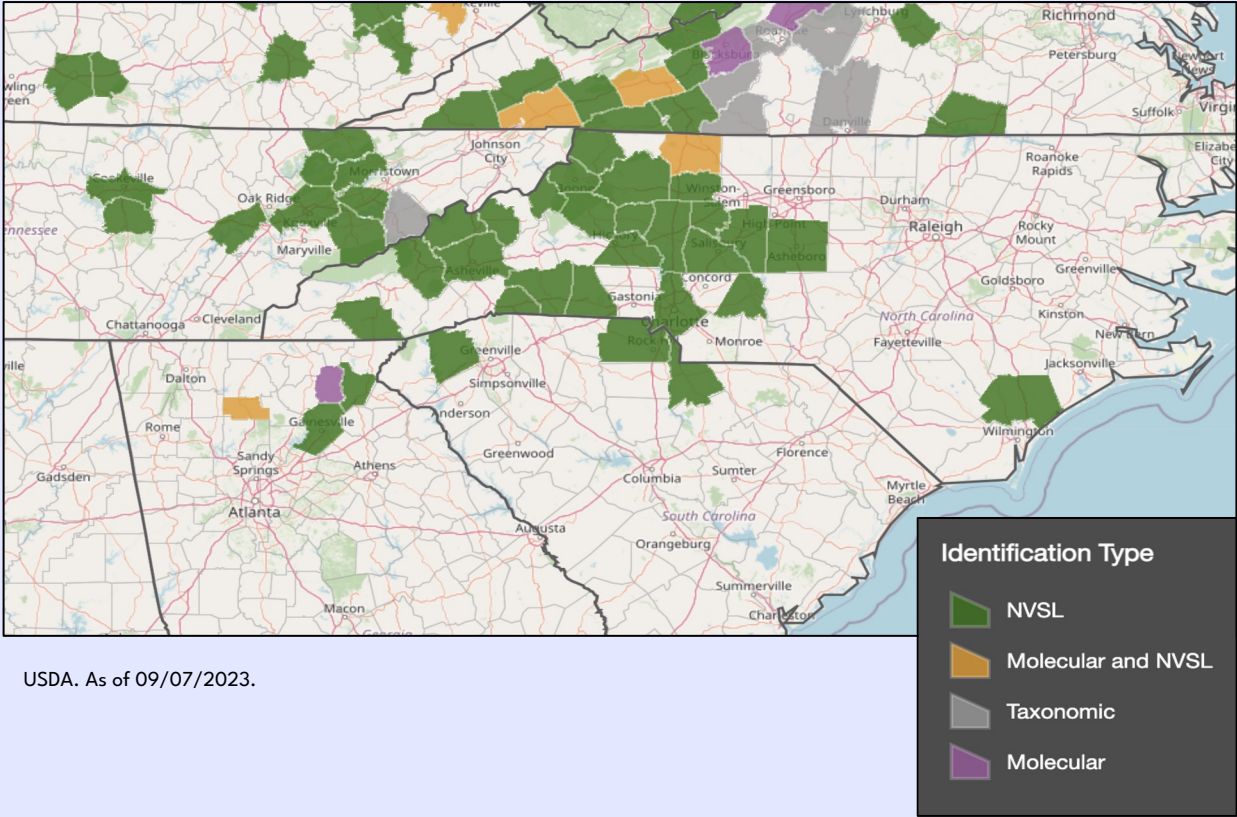


Asian Longhorned Tick, *Haemaphysalis longicornis*, infesting wildlife areas in Georgia, USA.



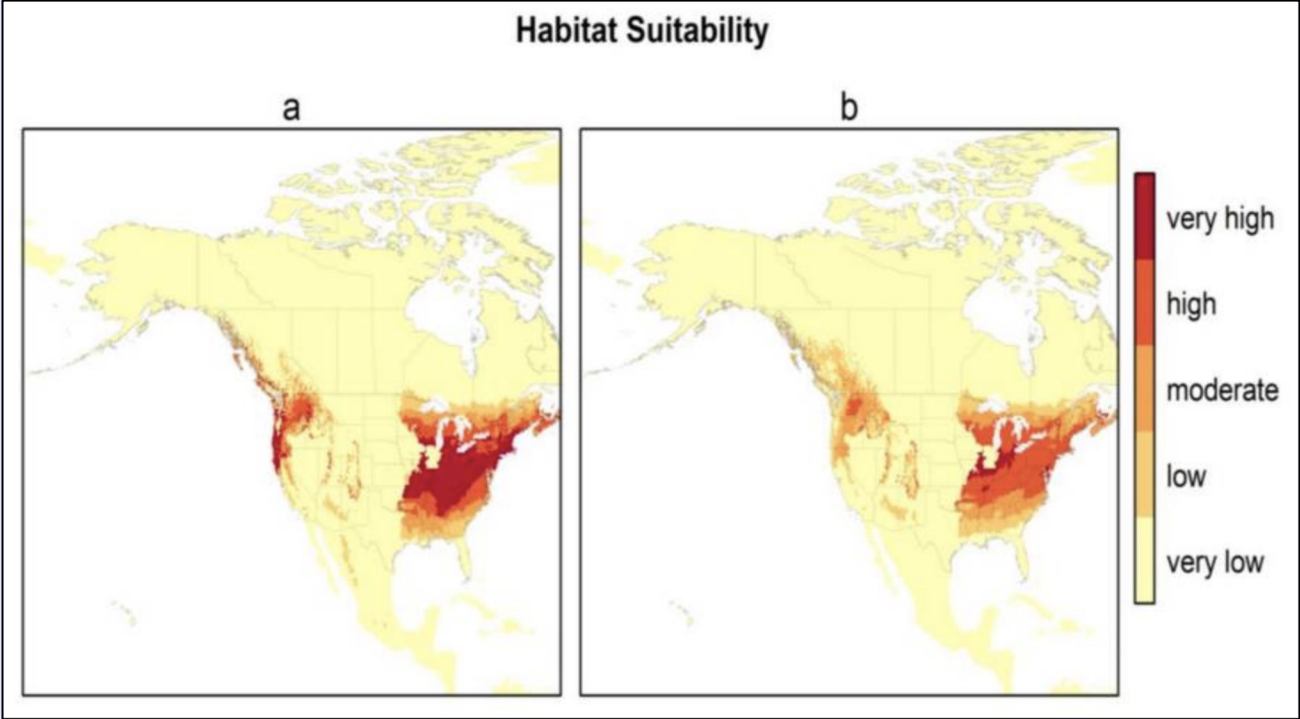
Eleanor Fausett, Oscar D. Kirstein, Stephanie Bellman, Audrey Long, Isabella Roeske, Chun Cheng, Anne Piantadosi, Tavis K. Anderson, Gonzalo M. Vazquez-Prokopec

Context



USDA. As of 09/07/2023.

Context



Namgyal et al. (2020)

H. longicornis introduction

Endemic

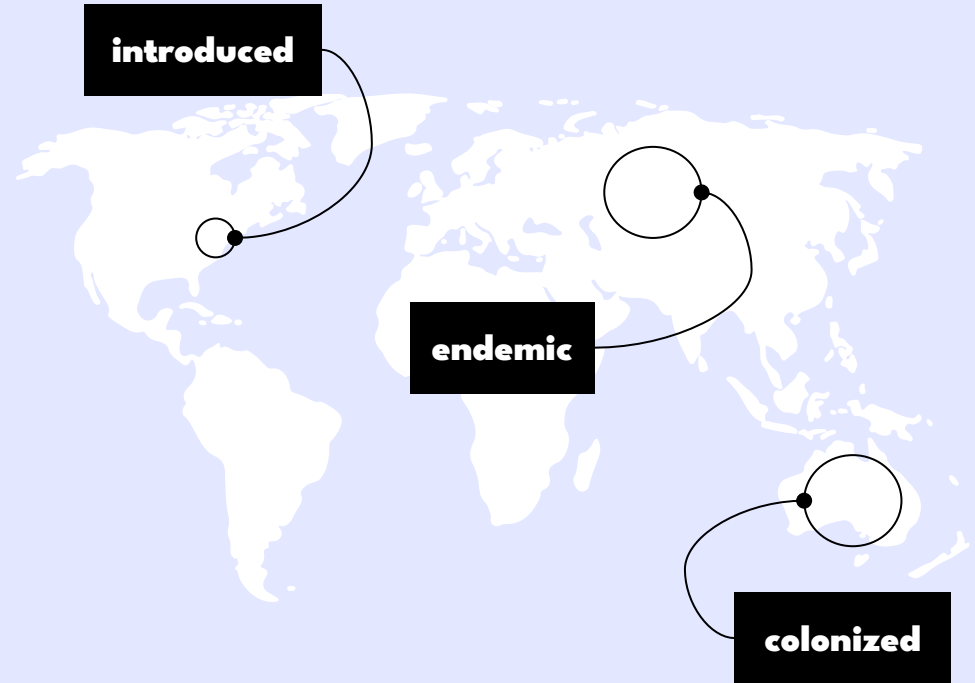
East Asia

Colonized

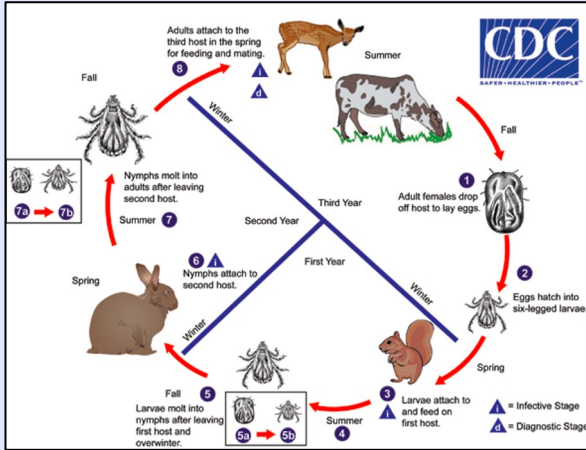
Australia, New Zealand, and
other Pacific Islands

Introduced

United States, 2010



H. longicornis context



01

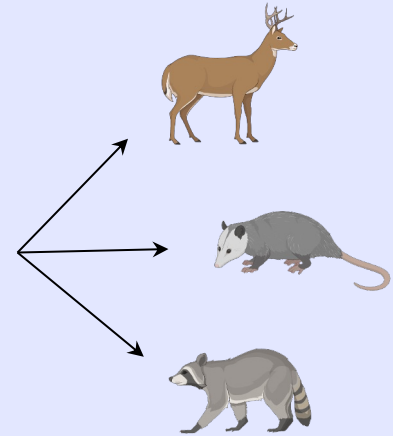
• Three-host tick

02

• Feed on over 30 different hosts

03

• Reproduce parthenogenetically and sexually



***H. longicornis* implications**

Severe Fever with Thrombocytopenia Syndrome

Dabie bandavirus

***Rickettsia
japonica***

Japanese spotted fever

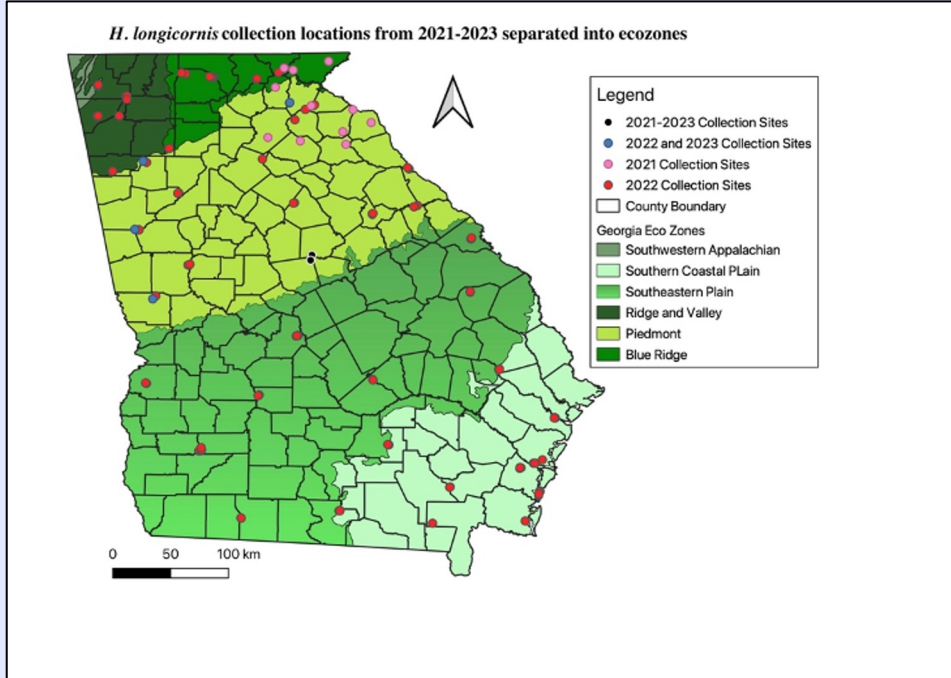
Theileria orientalis

Cattle Parasite

**Heartland
virus**

First ID'd in *Amblyomma
americanum* in 2019

H. longicornis surveys



2021

12 locations across NE Georgia

2022

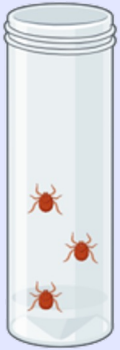
46 Wildlife Management Areas and State Parks

2023

5 sites from 2022 with the highest density of ticks



H. longicornis processing



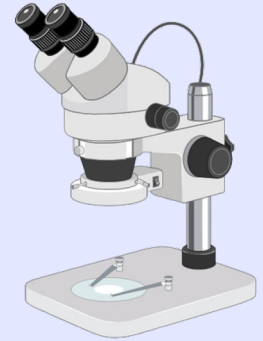
3% hydrogen
peroxide



bleach

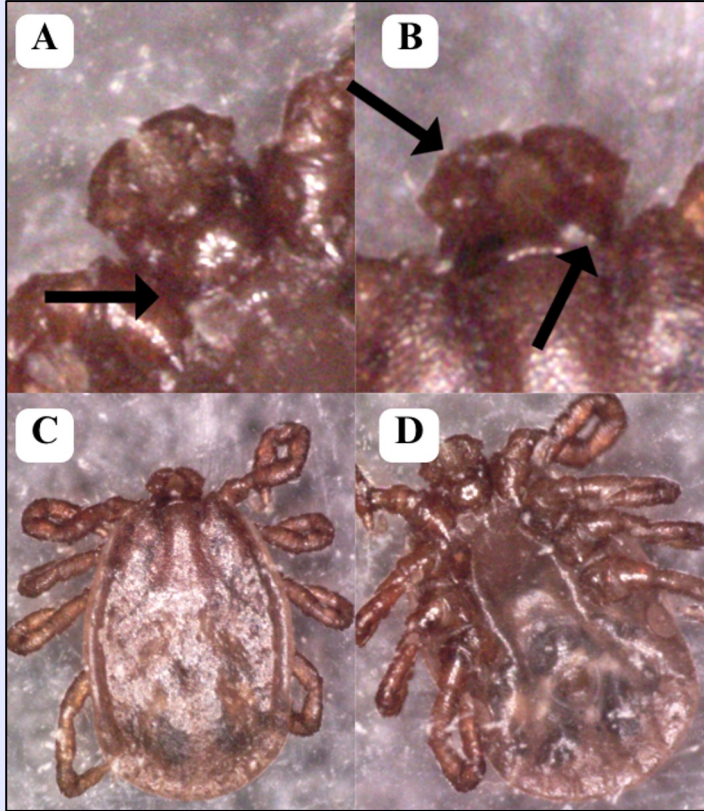


distilled water



species
identification

H. longicornis morphological identification



A

Lateral margins of ventral basis capitula straight

B

Lateral margins of dorsal basis capitula straight and hypostomal dental formula 3/3

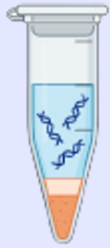
C

Full dorsal view of a nymph *H. longicornis*

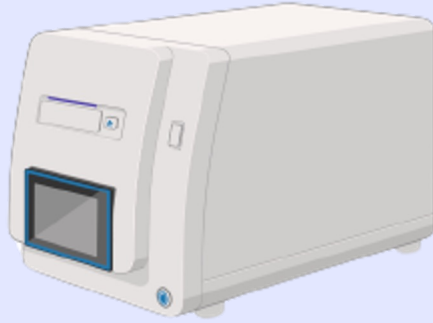
D

Full ventral view of a nymph *H. longicornis*

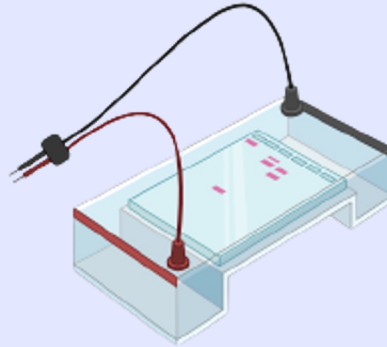
H. longicornis processing



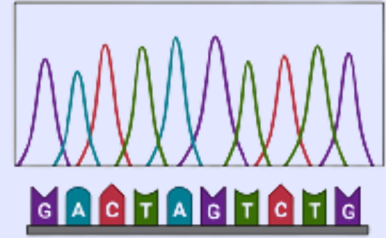
DNA
extraction



conventional
PCR

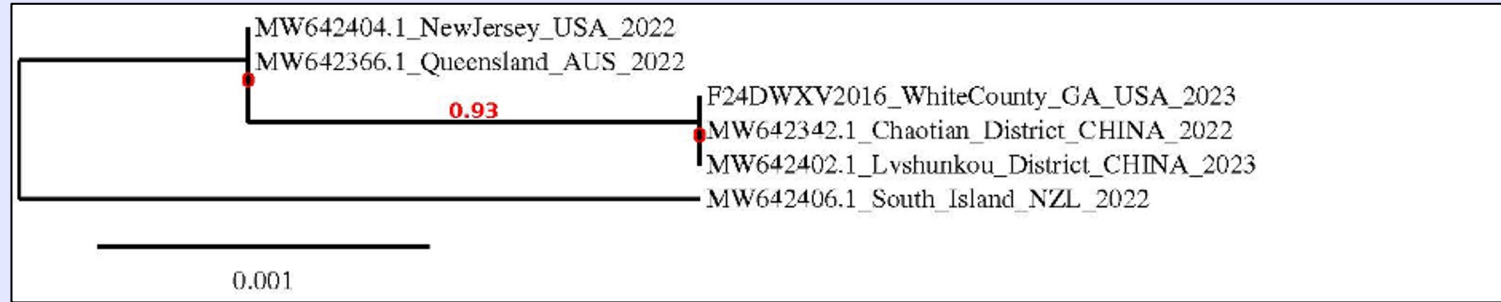


2% agarose
gel



Sanger
sequencing

H. longicornis phylogenetic tree

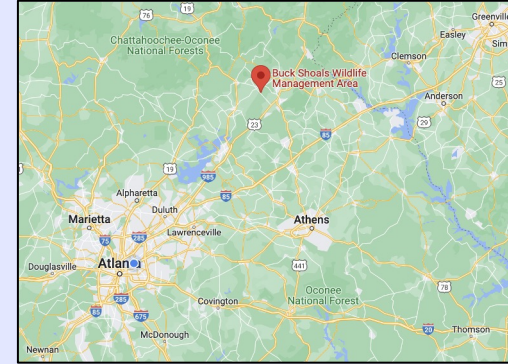


Phylogenetic tree for *Haemaphysalis longicornis* species cytochrome c oxidase subunit I (COX1) gene collected in this study with reference genes identified using genetic similarity. Specimens are named with their BLAST ID number, location of origin, and year of collection.

2021-2023 survey totals

Species	Stage	2021	2022	2023
<i>Haemaphysalis longicornis</i>	Nymph	0	3	67
<i>Amblyomma maculatum</i>	Adult	19	13	14
<i>Dermacentor variabilis</i>	Adult	100	54	19
<i>Amblyomma americanum</i>	Adult	1984	600	1109
<i>Amblyomma americanum</i>	Nymph	5584	2708	8974
<i>Ixodes scapularis</i>	Adult	0	66	64
<i>Ixodes species</i>	Nymph	0	0	8
TOTAL		7687	3444	10255

Buck Shoals Wildlife Management Area



White
County,
GA

- Deciduous forest w/ primary overstory species being white oak, tulip poplar, and scarlet oak
 - Ground cover primarily muscadine and English ivy with vast amounts of uncovered ground
-

Discussion



01

● First evidence of *H. longicornis* in Georgia's native ecosystem

02

● Rapid increase in collection between 2021 and 2023

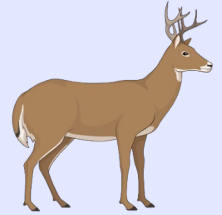
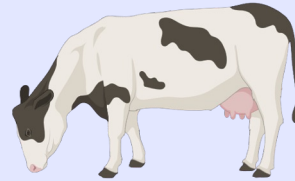
03

● Genetic differences between Georgia and New Jersey

Prevention

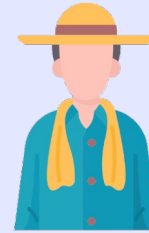
Livestock & domestic pets

Complete regular tick treatments



People

After working outside, do a quick tick check for all life stages



Wildlife

Maintain significant distance b/w lawn or pastures and wooded areas



Need ID?



For more information
iroeske@emory.edu

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- Undergraduate and graduate students from Environmental Sciences Department at Emory University who collaborated in field activities: **Leah Aeschleman, Tim Walsh, Josie Pilchik, and Emma Cahalan.**
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- For further questions, please reach out to **efausett@ucsd.edu**.



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