

Welcome to the THIRD year of the BiTeRS program!

We have some exciting additions to the program this year. In California, we are now accepting ticks from the public. This means that anyone can submit ticks for identification and pathogen testing. Identification and testing is FREE, but the submitter will need to pay for shipping (shipping and collection supplies are still free for our program partners.)

In Arizona, the Great Arizona Tick Check is underway, and is also accepting ticks from the public. Go to <https://extension.arizona.edu/great-arizona-tick-check> for more information!

Tick of the Month: *Haemaphysalis longicornis*



Haemaphysalis longicornis is also known as the Asian longhorned tick. It is an invasive species that has been recently introduced to North America. It was first found on a sheep in New Jersey in 2017, and since then has spread throughout the east coast and Midwest of the United States. It has NOT yet been found in Arizona or California. However, the tick can be transported on pets, livestock, or in materials used for livestock.

One reason the longhorned tick has been able to spread so rapidly is that it is parthenogenetic, meaning that a female tick does not need to mate with a male to produce offspring. So far in the United States, the tick has caused issues because of the diseases it can spread to livestock, especially cattle. Studies in the laboratory indicate that it can carry Rocky Mountain spotted fever, although infected ticks haven't been found so far and no cases have been associated with the tick.

We don't know if the longhorned tick will invade in California or Arizona, but as part of BiTeRS we're keeping a lookout for it!

Warm Weather Means More Ticks

It's spring! In our temperate regions, this means *Dermacentor* species are showing up on pets and people. As the weather continues to get warmer, brown dog ticks will start to increase. Collect them for ID and testing if you can!

If you are hearing reports of large numbers of ticks in your area, let us know.

Publication Alert!

A new article, entitled "A forty year review of Rocky Mountain spotted fever cases in California shows clinical and epidemiologic changes" by A. Kjemtrup et al was published on September 15, 2022 in PLOS Neglected Tropical Diseases. The article summarizes how the pattern of RMSF cases have shifted from northern California to southern California, and reviews the changes that have led to this, including the brown dog tick becoming the primary vector in the state. The article is open access, meaning it is available to anyone for no charge, at <https://doi.org/10.1371/journal.pntd.0010738>.

BiTeRS Results: The First Two Years

Prevalence of *Rickettsia* species in ticks from the Southwestern US 2021-2022

11.94%



In the first two years of BiTeRS, five species of ticks and at least 6 species of *Rickettsia* bacteria were identified. The counties/regions where samples were obtained are pictured to the lower left and county-specific tick data to the right.

Rickettsial species identified:

- R. massiliae*
- R. montanensis*
- R. tarasevichiae*
- R. rhipicephali*
- Endosymbionts and other *Rickettsia* species

Tick Submissions and <i>Rickettsia</i> results for the BiTeRS Program 2021 - 2022			
State/County/Species	Negative	Positive	Grand Total
AZ	490	54	545
Maricopa County	10		10
R. SANGUINEUS	10		10
Northern Arizona Counties	310	29	339
R. SANGUINEUS	267	29	296
Pima County	22	24	46
Argas (soft tick)	22	24	46
Pinal County	19		19
R. SANGUINEUS	19		19
Yuma County	128	1	129
R. SANGUINEUS	128	1	129
CA	278	51	334
Imperial County	10		10
R. SANGUINEUS	10		10
San Diego County	268	51	324
D. SIMILIS	161	21	187
I. PACIFICUS	6	20	26
O. MEGNINI	2		2
R. SANGUINEUS	99	10	109
Grand Total	768	105	879

In the BiTeRS Spotlight



This month, we are happy to introduce Kathleen Walker, the BiTeRS lead for Arizona! Kathleen is an associate professor and Cooperative Extension specialist in Entomology at the University of Arizona. Her research is focused on mosquito and tick vectors that live around human homes, like the brown dog tick and the Zika vector mosquito *Aedes aegypti*. In addition to collaborating with BiTeRS, she is organizing a citizen science survey of Arizona ticks – The Great Arizona Tick Check!

Tick Training Available for YOUR Organization

Do you wish that you knew more about ticks or tick-borne diseases? Does your organization or workplace have tick-related concerns? We can help! BiTeRS offers:

- Tick collection team: We come to you, collect your ticks, and test them for diseases!
- Tick education: Courses customized to your needs, location, and tick-related concerns
- Assistance setting up tick surveillance plans

Contact us to discuss options!

Questions? Comments? Want more information? Contact us at Calticks@pacvec.us (California) or AZTicks@pacvec.us (Arizona)

Visit our webpage at

<https://pacvec.us/biters/>

We're adding content regularly. What tick related info would you like to see on the website? Let us know!

