Reflecting on the implementation of a community-based, long-term tick surveillance program in Alaska

Micah Hahn
Assistant Professor, University of Alaska Anchorage
Institute for Circumpolar Health Studies
mbhahn@alaska.edu
Why do we care about ticks?
**Tick-borne diseases**

**Rocky Mountain spotted fever** is classically characterized by multiple spots around the location of the tick bite.

**Tularemia** is characterized by an ‘orange’ appearance around the location of the tick bite.

**Lyme disease** is classically characterized by a ‘bull’s-eye’ type rash.

From “Name that Disease #22”, Musing of a Biologist and Dog Lover, 2012. (http://musingsofabiologicalanddoglover.blogspot.com/2012/05/name-that-disease-22.html) in the public domain
*Dermacentor albipictus* (Winter tick or Moose tick)

From "Tick Species of Maine", The University of Maine, n.d. (https://extension.umaine.edu/ipm/tickid/maine-tick-species/winter-tick-or-moose-tick/) in the public domain.
But what about Alaska?
6 tick species historically present in Alaska

- **Haemaphysalis leporispalustris** (hare / rabbit tick)
- **Ixodes angustus** (squirrel / vole tick)
- **Ixodes auritulus**
- **Ixodes howelli** (bird ticks)
- **Ixodes signatus**
- **Ixodes uriae** (seabird ticks)

“Non-native” tick species in Alaska
Ticks That Can Carry Lyme Disease Are Spreading Across the US

By Mindy Weisberger  January 21, 2016  Health

Ticks Becoming Endemic In Iceland

Radio Sweden
Your best source of news from Sweden

Rising number of people picking up TBE-infection

Evidence for increasing densities and geographic ranges of tick species of public health significance other than *Ixodes scapularis* in Québec, Canada

Salima Gasmi, Catherine Bouchard, Nicholas H. Ogden, Ariane Adam-Poupard, Yann Pelcat, Erin E. Rees, François Milord, Patrick A. Leighton, Robbin L. Lindsay, Jules K. Koffi, Karine Thivierge

Published: August 22, 2018  •  https://doi.org/10.1371/journal.pone.0201924
How are these ticks getting to Alaska?
How are we tracking ticks in Alaska?
Funding and Partnerships
ALASKA
Submit-A-Tick program
ALASKA SUBMIT-A-TICK PROGRAM

In 2019, the Alaska Office of the State Veterinarian, in collaboration with the Alaska Department of Fish and Game and the University of Alaska, began the Alaska Submit-A-Tick Program. Through this program, individuals who find ticks on themselves, their family members, pets, or wildlife (e.g., hunted or trapped animals) can submit ticks for species identification and pathogen testing. Veterinarians, biologists, and other Alaskans who handle domestic animals and wildlife in the state are important resources for the monitoring program, and we welcome you to submit ticks.

Researchers are asking Alaskans to submit ticks to help determine which tick species are currently in the state. Tick submissions will also help us learn more about how ticks are being imported into Alaska so that we can create effective strategies to limit their introduction. Ticks can transmit bacteria, parasites, and viruses that can cause diseases in humans and wildlife. Pathogen testing allows us to assess tickborne disease risk in the state.

Which ticks have been found in Alaska?

The results of our tick surveillance program are now available. We periodically update these results as we receive ticks so check back for the latest information!

Submit-A-Tick!

It is only through the help and participation of people like you that this surveillance effort will be successful.

If you are interested in submitting a tick that you have found, follow the steps below.
DO WE HAVE TICKS IN ALASKA?

YES! Alaska is home to several kinds of ticks. Recently, several new kinds of ticks have been found on people and pets in the state. We need your help to learn more!

HOW CAN YOU HELP KEEP YOUR PETS AND FAMILY SAFE?

Learn how to identify ticks and search for them on yourself, your pets, and wildlife.

If traveling out of state with your pet, ask your veterinarian about tick and flea prevention.

HOW CAN YOU HELP PROTECT YOUR FAMILY, PETS, AND WILDLIFE?

If you find a tick, SUBMIT IT!

1. Put the tick in a clean container.
2. Download and fill out the Submit-A-Tick form from the website below.
3. Mail to the Office of the State Veterinarian.

CHECK THE EARS, NECK, JAW LINE, EYES, AND FEET OF HUNTED ANIMALS FOR TICKS.

Learn more about ticks in Alaska and the Alaska Submit-A-Tick Program

www.dec.alaska.gov/eh/vet/ticks

Questions?
Email: alaskaticks@alaska.edu

We ARE ON THE HUNT FOR TICKS!

Alaska is home to several kinds of ticks. Recently, several new kinds of ticks have been found on people and pets in the state. We need your help to learn more!

IF YOU FIND A TICK, SUBMIT IT!

1. Put the tick in a clean container.
2. Download and fill out the Submit-A-Tick form from the website below.
3. Mail to the Office of the State Veterinarian.

COMB THROUGH THE MAMMAL’S FUR WITH YOUR FINGERS TO FIND TICKS.

Learn more about ticks in Alaska and the Alaska Submit-A-Tick Program

www.dec.alaska.gov/eh/vet/ticks

Questions?
Email: alaskaticks@alaska.edu

UNIVERSITY OF ALASKA
ANCHORAGE

SUBMITTING A TICK
Calling all biologists!

Going out into the field? Want to help with active sampling?

When you submit ticks, we can learn what kinds of ticks are feeding on Alaskan wildlife and if they are carrying any pathogens.

Request a field kit today via uaa_alaskaticks@alaska.edu
WHERE TO CHECK YOUR PET FOR TICKS

IN AND AROUND THE EARS
AROUND THE TAIL
BETWEEN THE BACK LEGS
BETWEEN THE TOES
AROUND THE EYELIDS
UNDER THE COLLAR
UNDER THE FRONT LEGS
I took Ginger in to get her spring “do” today, and the groomer found a tick on her! If you are one of my NC friends, your response is likely “So what?” Trust me, that is not the response in Alaska! So next I need to send the tick to the Office of the State Veterinarian and tell them everywhere we’ve been in the last couple of weeks (GPS coordinates???) and where I think she picked up the tick. Feels like contact tracing for ticks!! I love living in a state where the State of Alaska Submit-A-Tick Form is actually a thing. 😊😊😊

Health

**More ticks are being reported in Alaska. Researchers want to know how dangerous they are.**

By Teagan Harton
Updated: July 26, 2018 Published: July 27, 2018

This tick was found on a dog in Anchorage this year. (Bill Roth / ADN)

A new research project will test ticks found in Alaska to see if the tiny, blood-sucking arachnids carry the pathogens that cause... Thanks for being an ADN.com reader.

Are there ticks in Alaska?

**Tick found on Cordova dog could be native to Alaska; UAA tick study underway**

By Emily Mesner – July 26, 2018

Ticks — and tick-borne risks — are creeping north to the Arctic as the climate warms

While some ticks are native to Alaska, new arrivals and warmer temperatures mean they pose a growing threat to humans and wildlife.
Data sharing

[Images and logos of the organizations involved in data sharing]
Areas for improvement

• Citizen science data come with limitations in accuracy / recall / completeness
• Relies on the participation of state agencies with limited resources
• Relies on volunteer efforts from academic partners
• Uncertainty regarding the organization of archived samples
Strengths

• University-state partnership supported the resources for initial start up while also providing a long-term home for the program
• Up front effort to develop the website and outreach materials enabled easy promotion of the program
• Overall, citizen science supported (and continues to support) an long-term, spatially-distributed dataset that we could not have accomplished through field work
• Provides a “big picture,” slow trickle of data → hypothesis generating!
To request tick posters or other outreach materials:

alaskaticks@alaska.edu

Alaska Submit-A-Tick Website

https://dec.alaska.gov/eh/vet/ticks/submit-a-tick

Micah Hahn
University of Alaska-Anchorage
Institute for Circumpolar Health Studies

mbhahn@alaska.edu

micahbhahn.wordpress.com