Dermacentor albipictus

BIO 110-OA3 – Spring 2026

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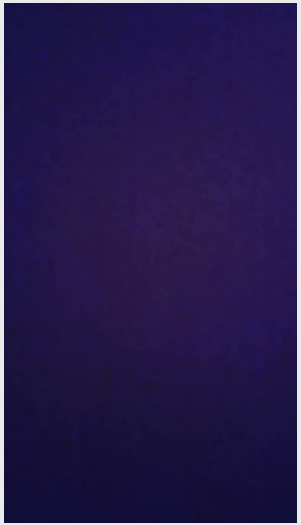
Chenery, E. S., N. Jane Harms, Fenton, H., Mandrak, N. E., & Molnár, P. K. (2023). Revealing large-scale parasite ranges: An integrated spatiotemporal database and multisource analysis of the winter tick. *Ecosphere (Washington, D.C.)*, *14*(1). https://doi.org/10.1002/ecs2.4376

Revealing Large-Scale Parasite Ranges

Species: Range and Organism

- *Dermacentor albipictus* (Winter tick)
- Found across North America
- Lives in forests & grasslands
- Parasitic species

(Elliotty, 2026)



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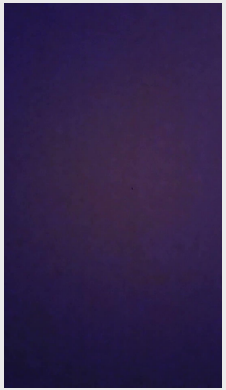
Species: Lifestyle

- Feeds on blood.
- Hosts: moose, deer, elk.
- Lives in one host.
- Impacts the health of host.

(dalebro, 2026).

(Cirian, 2025).

The winter tick's life span is strongly influenced by its environment, which is why regions of North America that include bigger mammals let these parasites thrive. In the summer, the larvae hatches and between the switch into summer to fall, the larva attaches itself to a host and feeds until maturity (adult winter tick) (Chenery et al. 2023)



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Chenery et al., 2023; GBIF, n.d., NatureServe, n.d.

Research Purpose (Intro)

Why scientists wanted to conduct the study? (Intro).

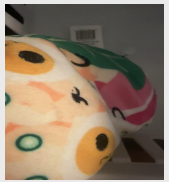
- The researchers conducted the study in the first place because of the growing concern of climate change and how it will expand parasites: *Dermacentor albipictus*. Scientist however, have struggled gathering reliable evidence and data for the winter tick's mobilization, which in the span of 1869-2020, is an immense amount of time in the spreading and effects winter ticks. Lastly, if there is a suspected infestation of ticks, winter ticks are suspected, due to the decline of morality rates in moose.

Scientist's focus:

- Figure out and track where the winter ticks are spreading
- Understand there patterns of movement over time

Symptoms according to Chenery et al. (2023):

- "Hair loss"
- "emaciation and reduced reproductive capacity to higher mortality in young."
- Anemia



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Research Purpose (Hypothesis)

Hypothesis: Winter tick populations are increasing and expanding due to environmental changes such as:

- **Climate** - Climate change increases the reproduction and survival rates of winter ticks.
- **Geographic** - Due to their inhabit and thrive off of common mammals, for example deer, as deer migrate and move from different regions of North America, they expand new areas for the winter ticks to begin their reproduce.
- **Time -** Seasons

Both images (Hereinthewild, 2022).

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Method

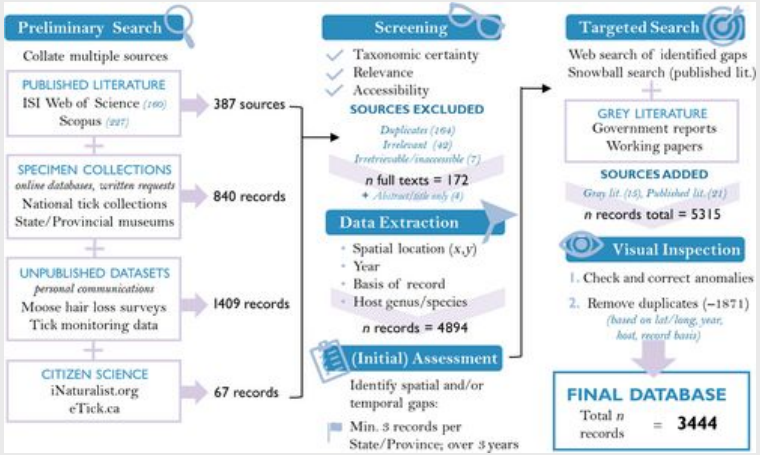
Researchers used:

- A large database combining multiple sources of contained data
- Observational studies
- Historical records

Looking at:

- Location of the winter ticks
- Time past and the change that occurred

(Amandahorning, 2025).



(Chenery et al. 2023).

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Taxonomy/Conservation Status

Taxonomy: According to NatureServe (2023) the status is G5 (Secure).The taxonomy hierarchy for *Dermacentor albipictus,* is:

Kingdom: Animalia

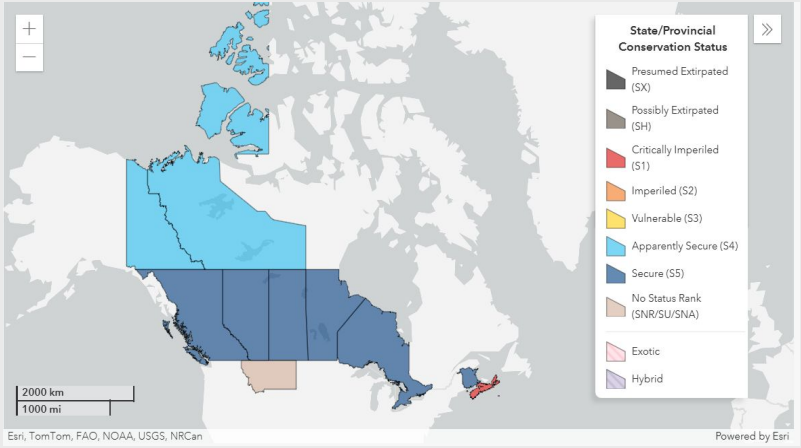
Phylum: Arthropoda

Class: Arachnida

Order: Ixodidae (Hard ticks)

Family: Ixodidae

Genus: *Dermacentor*



(NatureServe, n.d).

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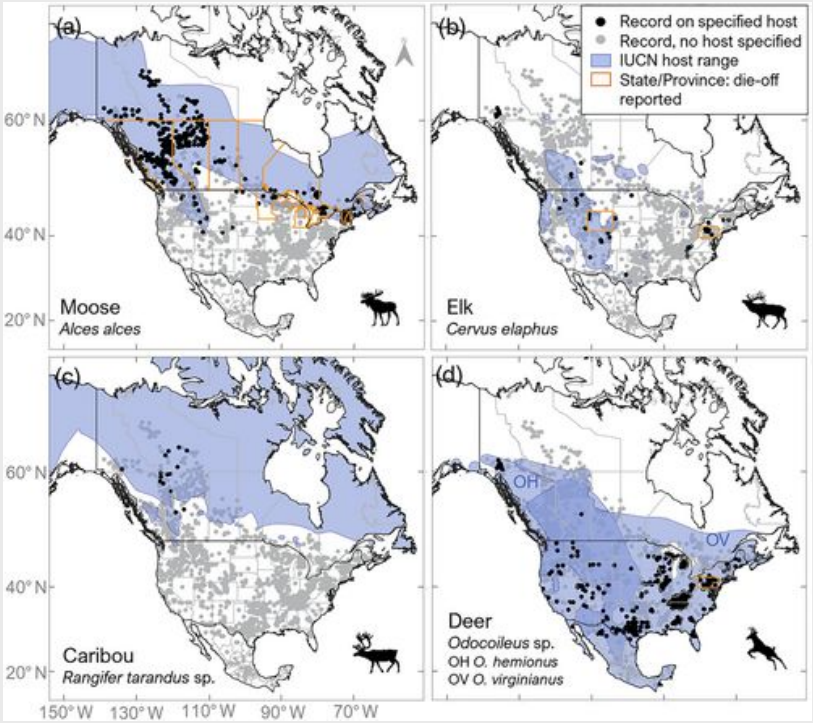
Discussion 1

Discussion: Scientist conclude in their study that there was ways in overcoming the limitations in conducting their research, such as: filling the data gaps between 1869-2020, organizing the data collection, and focusing and improving their long term studies and monitoring of the winter tick. All of these collectively point out the value it came into conducting a purposeful and reliable study.



(Chenery et al. 2023).

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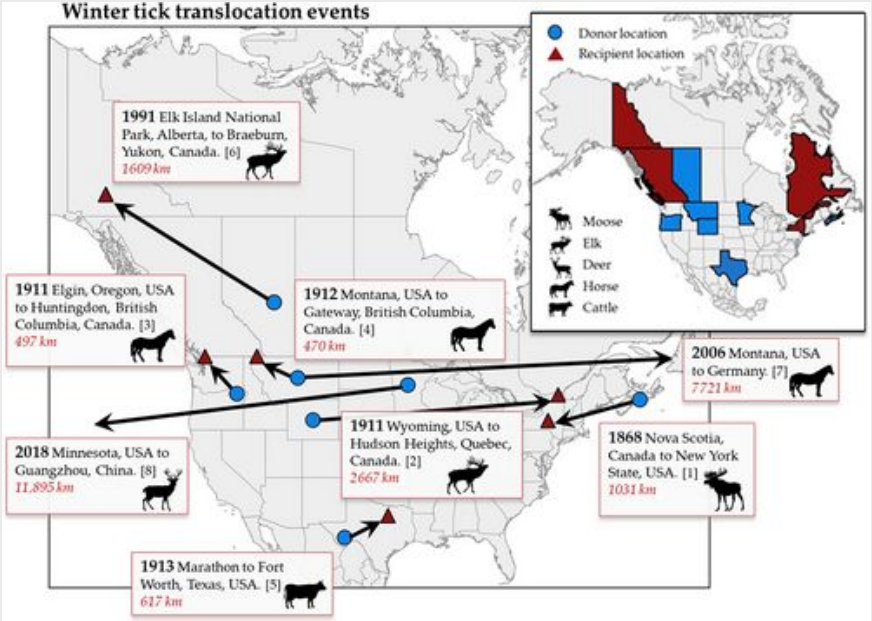
Discussion 1.2

High winter tick numbers can lead to:

- Severe blood loss
- Hair loss Also known as ghost moose
- Weaken or kill animals (hosts)

Observations of experiment:

- How climate change impacts ecosystems
- The importance of wildlife management and conservation



(Chenery et al. 2023).

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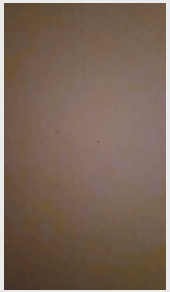
Specifics

Specifics: Scientist used “outdated” and modern data (1869-2020) to supervise the mobilization of the winter ticks. Scientists found that they’re spread across 16.5°N to 66.2° N latitude. This means that the winter ticks were found in northeastern U.S. and parts of Canada.



(Serinatour, 2025).

Chenery et al. (2023)

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Results

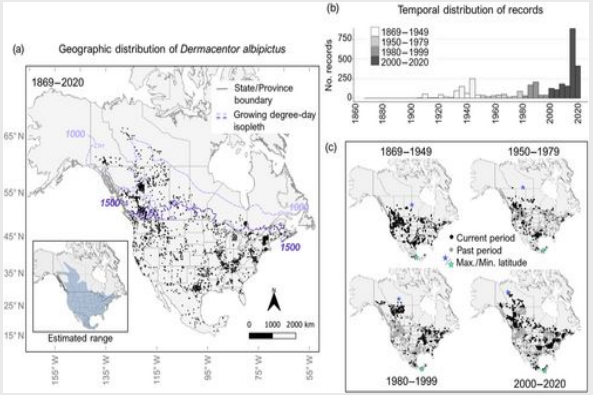
What the scientists found:

- They found that the ticks are expanding into new and different areas
- They also found that the ticks are more common in northern regions

Reason for the increase in population:

- The cause of warmer winters, effects the increase in survival rates for winter ticks. (Climate Change)
- Host species migrating/moving, spreading the ticks.

From the variables, the moose and elk populations are heavily affected by the winter ticks due to the location of their habitat.



(Chenery et al. 2023).

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Conclusion

Conclusion Notes:

- Winter ticks are spreading very quickly
- Climate change plays an important role in these changes

This research can help:

- Predict the future and how the ticks could affect it
- Protect the affected and harmed spices

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Chenery et al. (2023)

References

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