



## **DID YOU KNOW?**

Blacklegged ticks (BLTs) were first reported in Thunder Bay in 2005. BLTs transmit Lyme disease, a debilitating disease. BLTs are transported by migratory birds which carry the ticks from their usual warmer southern habitat to Thunder Bay. BLTs are able to survive the warmer winters that are now occurring in Thunder Bay because of climate change; therefore, BLT numbers have increased as indicated by passive surveillance (when ticks are submitted to the Thunder Bay District Health Unit by the public for identification). Only three BLTs were submitted in 2005; however, the number has increased to 93 BLTs in 2019. The first positive clinical case of locally acquired Lyme disease in humans in Thunder Bay was identified in 2019. The wood/dog tick is also found in Thunder Bay. The wood/dog tick cannot transmit Lyme disease. Wood/dog ticks are easily distinguished from BLTs because a wood/dog tick has white markings on the back and reddish legs whereas a BLT has no white markings and black legs.



## **Life Cycle:**

BLTs have three life stages and feed only once in each stage. Upon hatching, the first stage is not infected with Lyme disease. The tick must acquire Lyme disease from an infected host, usually a deer mouse<sup>1</sup>. Only the second and third (adult) stages can transmit Lyme disease. Deer mice, not deer, are the main reservoir for Lyme disease. BLTs are active anytime the temperature is above 4 ° C; therefore, the risk of acquiring Lyme disease occurs almost anytime between March and November in the Thunder Bay area. Adults are present in the population from the end of winter to early July and then again from early October to the beginning of winter. The second stage, which is very difficult to see, is present in the population throughout the year. The second stage is responsible for most Lyme disease cases.

## **Climate related mortality:**

BLTs overwinter under leaf litter in the forest. The greatest mortality experienced by BLTs is through winterkill. A cold winter with very little snow cover causes high mortality because of freezing, whereas a mild winter with deep snow cover prevents freezing<sup>2</sup>. Thunder Bay is experiencing more mild winters with snow cover adequate for the survival of BLTs; however, passive surveillance has shown that the number of BLTs submitted after a harsh winter drops by half or more. Recovery of the BLT population takes one or two years when mild conditions again prevail. A return to the climate experienced prior to 2000 would probably mean that BLTs could no longer survive in Thunder Bay.



*“The expansion of BLT population Thunder Bay is a consequence of climate change.”*



### Symptoms of Lyme disease:

A BLT must feed for more than 24 hours before transmitting Lyme disease. If you are infected you often, but not always, develop a bullseye rash.

Other symptoms may include fever, headache, muscle and joint pain and short term memory loss. Symptoms may occur as late as 30 days after the bite. Diagnosis and early treatment with an antibiotic typically cure Lyme disease. Late treatment of Lyme disease often leaves neurological damage, arthritis-like symptoms or “brain fog” which may be permanent.



Centers for Disease Control and Prevention, <http://phil.cdc.gov/phil/>



### WHAT CAN WE DO?

- When outdoors, wear light coloured clothing and tuck your pants into your socks and spray the area with a tick repellent.
- Do a tick check of you and your pet before going indoors.
- Wash your clothes, if necessary.
- If a tick is found attached to a body, grasp a tick near the head and gently pull it straight out. Submit the tick to the Thunder Bay District Health Unit for identification.



### TAKE ACTION NOW!

- *Communicate about climate change*
- *Encourage decision makers to take action*
- *Get involved with community initiatives*

### For further information:

- [Thunder Bay District Health Unit – Lyme Disease](#)
- [Government of Canada Lyme Disease Awareness Resources](#)
- [Centers for Disease Control and Prevention – Lyme Disease](#)
- [Looking at Lyme Podcast – Thunder Bay](#)

### REFERENCES:

- <sup>1</sup> <https://pubmed.ncbi.nlm.nih.gov/3985277/>
- <sup>2</sup> <https://www.canadianveterinarians.net/documents/ntam-Qanda>

### THIS RESOURCE IS BROUGHT TO YOU BY:

- CITIZENS UNITED FOR A SUSTAINABLE PLANET
- EARTHCARE – CITY OF THUNDER BAY
- ECOSUPERIOR ENVIRONMENTAL PROGRAMS
- ENVIRONMENT NORTH
- FRIDAYS FOR FUTURE – THUNDER BAY CHAPTER
- LAKEHEAD REGION CONSERVATION AUTHORITY
- LAKEHEAD UNIVERSITY – SOCIAL SCIENCES AND HUMANITIES
- RESEARCH COUNCIL
- MATAWA FIRST NATION MANAGEMENT – FOUR RIVERS ENVIRONMENTAL GROUP
- ONTARIO NATURE
- THUNDER BAY DISTRICT HEALTH UNIT – NORTHERN ONTARIO HEALTH AND CLIMATE CHANGE COLLABORATIVE

FOR SOURCES AND MORE INFORMATION, VISIT:  
**WWW.CLIMATECHANGETBAY.COM**