



# Ticks in a changing environment

## FAST FACTS

- Ticks can be found in **many environments**, but are commonly found in wooded areas with leaf litter, tall grassy areas, shrub layers and along forest edges.
- Ticks can infect humans with pathogens that can lead to illnesses such as Lyme disease, anaplasmosis, and Babesiosis, among others.
- The number of places where ticks can survive and thrive in Canada is growing due to climate change, animal migration, deforestation and urbanization.
- Landscapes can be designed and managed to minimize tick and animal host (e.g., deer and rodents) habitats.



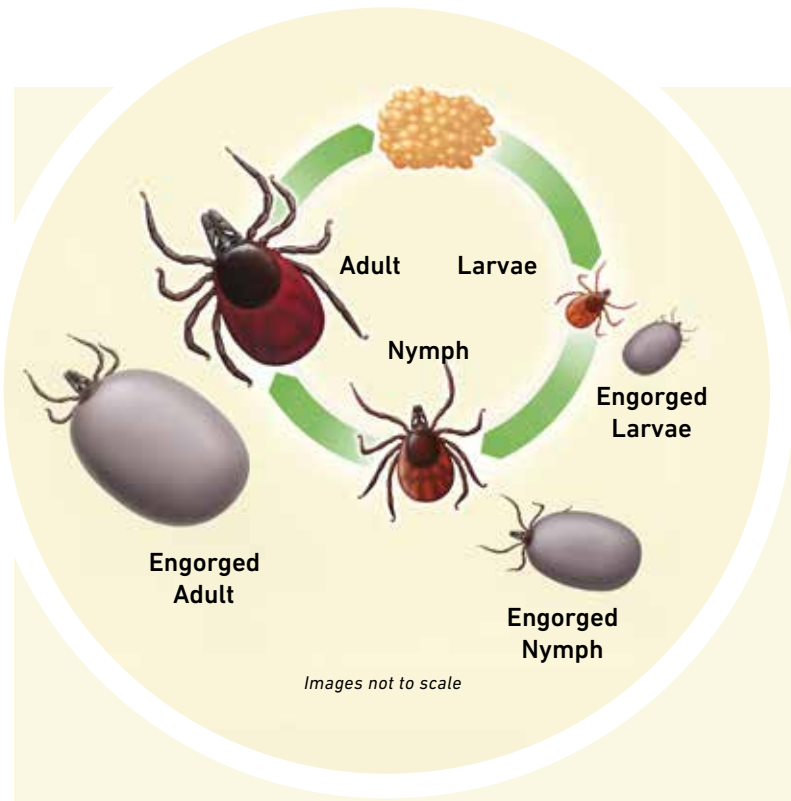
National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

May 2023

[www.ncceh.ca](http://www.ncceh.ca)

# TICK LIFE CYCLE AND HABITAT



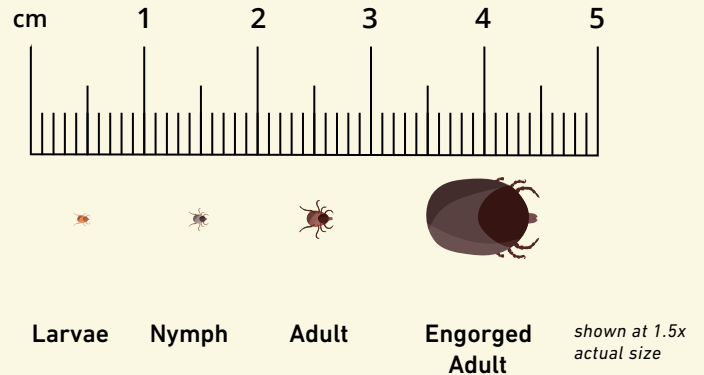
Images not to scale

Ticks are small arthropods. They are slow moving and their bodies have a flat tear drop shape. They go through 3 life stages:

**Larvae** | 6-legged, become engorged after feeding

**Nymph** | 8-legged, become engorged after feeding

**Adult** | 8-legged, become engorged after feeding



## Tick species and habitats

SPECIES / COMMON NAME	TYPICAL RANGE*	HABITAT PREFERENCES
<i>Ixodes scapularis</i> Blacklegged tick	East of Rocky Mountains	Prefer high moisture areas; often found in leaf litter and under forest canopy.
<i>Ixodes pacificus</i> Western blacklegged tick	West of Rocky Mountains	
<i>Dermacentor variabilis</i> American dog tick	Eastern Canada <i>Eastern AB and SK, MB, ON, QB, NB, NS</i>	Prefer drier environments; often found in grass and shrubs.
<i>Dermacentor andersoni</i> Rocky mountain wood tick	Western Canada <i>BC, AB, SK</i>	
<i>Amblyomma americanum</i> Lone Star	Canada wide	Often found in wooded areas and leaf litter.

\* This table represents available research as of 2023. Surveillance is limited in many areas and this information could be an underrepresentation of the actual presence of tick species in a particular area. The range of tick species will also change with climate change.

## The range of ticks is expanding

- It is estimated that the range of ticks will expand northwards by 35-55 km per year.
- Increasing ambient temperature and high relative humidity can increase tick population and activity.



National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

[www.nccch.ca](http://www.nccch.ca)

# BE PREPARED WHEN OUTDOORS

## Take action: minimize your risk of tick encounters



### Outdoor

- Avoid high-risk areas with high grass and leaf litter.
- Walk on cleared trails.
- Wear light-coloured clothing covering arms and legs (to easily spot ticks on clothing).
- Tuck clothing (e.g. pants into socks, shirt into pants).
- Wear closed-toed shoes to create a barrier for skin.
- Conduct regular checks for crawling ticks.
- Apply insect repellents approved in Canada.\*
- Wear permethrin-treated clothing. In Canada, this is approved for those over the age of 16. Permethrin sprays and liquids for treating one's own clothes are not approved in Canada.

### Returning indoors

- Check clothing and gear for unattached ticks.
- Change from your outdoor clothes and put them in the dryer, on high heat, for at least 10 minutes to kill ticks.
- Take a shower/bath to rinse unattached ticks.
- Thoroughly check yourself and pets for tick(s). You should check your whole body as ticks can attach anywhere.
- Pay close attention to your head, hairline, behind your ears, waist, belly button, between the legs, and behind your knees. A hand-held mirror is helpful to see all body parts.
- Promptly remove tick(s) using a fine point tweezers, grasping ticks neck at a 90-degree angle. Wash the area with soap and water.
- Keep tick in a jar with moist cotton ball, submit to your health provider for testing. See this instructional video: [shorturl.at/hmrJK](https://shorturl.at/hmrJK)

### \* INSECT REPELLENTS APPROVED IN CANADA

As of 2023, there are two approved personal insect repellents: DEET and Icaridin.

#### DEET

The approved concentration varies according to age:

> 12 years of age	30% DEET
2 – 12 years	10% DEET up to three times a day
6 months – 2 years	10% DEET once a day.
< 6 months	Not recommended for infants under 6 months, use mosquito net instead.

#### Icaridin

Products containing up to 20% icaridin (also known as picaridin) are safe for children 6 months and older.

### Be a citizen scientist!

Encounter a tick? Submit a photo with date and location to [www.etick.ca](https://www.etick.ca) for no-cost identification by a professional. This helps to map tick species to a geographical area and time of year and track changes over time.



National Collaborating Centre  
for Environmental Health

Centre de collaboration nationale  
en santé environnementale

This document can be cited as: National Collaborating Centre for Environmental Health. **Ticks in a changing environment [fact sheet]**. Vancouver, BC: NCEH; 2023 May. Available from: <https://shorturl.at/fixQR>



Scan the QR for more  
information about this project.

