Bat Ticks
in Vermont

Bat tick, *Alectorobius kelleyi,* adult, female.
(length ~ 6mm)

Soft vs. Hard Ticks

Ticks are divided into two types: hard (Ixodid) and soft (Argasid). Hard ticks, such as deer ticks, *Ixodes scapularis*, have a hard shield on their top side (scutum); soft ticks do not.

Both hard and soft ticks can carry pathogens that cause human disease. Soft ticks of medical concern (*Ornithodoros* spp.) may transmit bacteria that causes relapsing fever (*Borrelia* spp.) primarily in the West/ Midwestern US.

Soft (Argasid)	Hard (Ixodid)
Found close to where their hosts live (burrows, nests, caves or human-made structures).	Found widely distributed across the landscape.
Survive well in dry conditions.	Generally need high humidity for survival.
Commonly associated with birds, rodents and bats.	Wide host range.
Long-lived (some species can live up to 20 yrs).	Short-lived (~ 1-3 yrs).
Seek hosts for feeding primarily at night.	Seek hosts for feeding during the day.
Attach to feed quickly and intermittently.	Attach to feed for a long period of time.

Bat Tick Facts

The bat tick, *Alectorobius kelleyi* (formerly *Carios kelleyi,*), is widely distributed across the US (32 states, including Vermont). Bat ticks are secretive and feed almost exclusively on bats. They usually remain in the vicinity of their bat hosts (attics, barns, etc.). Occasionally, one may wander off and accidentally bite a human or pet, especially when bat colonies are removed. Bat ticks can live a long time without a blood meal in cracks and crevices, enabling them to persist in the absence of bats. Infestations warranting management have been reported from the Midwest (i.e., Iowa and Kansas). Bat ticks can harbor disease-causing bacteria (i.e., *Rickettsia* spp., *Bartonella* spp., and relapsing fever, *Borrelia* spp.). However, it is unknown if these disease-causing pathogens are transmitted to humans by a bat tick bite. The likelihood for disease to humans is considered rare due to the elusive nature of bat ticks and their preference to feed on bats.

Life cycle: Bat ticks have four life stages: egg, larva, nymph and adult. Based on lab observations, they can complete their life cycle in 54-258 days depending on temperature. Adult females feed intermittently and become engorged in less than 2 hrs. They may lay ~ 40 eggs after each feeding. Larvae feed for an extended period (~3 wks to engorge). The 1st instar nymph doesn't feed, whereas the 2-4 nymphal instars feed rapidly and drop off in less than 2 hrs.

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Dealing with Bat Ticks

If you suspect you have bat ticks in your home, it is important to get them accurately identified by State or University personnel (left) before attempting to manage them. **To eliminate bat ticks, the bats that serve as the primary host must be located and managed.** This must be done carefully as the bats may be an endangered species (e.g., little brown bat, *Myotis lucifugus*, or northern long-eared bat, *Myotis septentrionalis*). Consult VT Fish & Wildlife or a professional nuisance wildlife control operator to assess bat abundance while considering best management practices for bat exclusion/eviction. Using glue traps to detect/trap ticks where bats may be present should be avoided. Sealing off all actual or potential bat entry points in and around a structure should prevent tick and future bat access to human inhabited areas.

If ticks are found, crack/crevice treatments can be made using approved pesticides where bat ticks hide. A pest control company should be consulted for guidance or to treat for ticks. Only pesticides registered in VT should be used following the instructions on the label. Care should be taken using products in enclosed spaces. Use of pesticides outside of label guidelines is against the law and could result in ineffective control of the target pest and pose risks to the user, pets, wildlife and the environment.

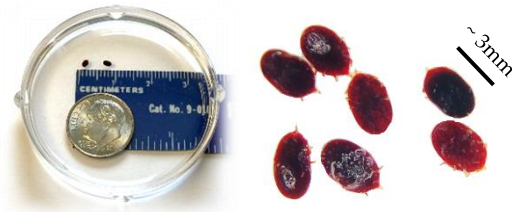
Additional Information

Bat Management

Vermont Fish & Wildlife Department. Got bats?

Vermont Fish & Wildlife Department. 2021. Nuisance Wildlife Control Operators in Vermont Conducting Bat Evictions/Exclusions.

Vermont Fish & Wildlife Department. Excluding Bats from Vermont Residences - A Guide to Best Management Practices.



Bat tick larvae (blood-filled) collected from bat.

Bat/Soft Ticks

Iowa State University Extension. 2021. Bat tick.

Raghavan, R., Harkin, K. 2018. Bat ticks. Kansas State Veterinary Diagnostic Laboratory.

Sullivan, C.F., Occi, J., Brennan, J., Robbins, R., Skinner, M., Bennett, A., Parker, B.L., Fonseca, D. 2022. First report of the bat tick *Carios kelleyi* (Acari: Ixodida: Argasidae) from Vermont, USA. J. Med. Entomol.

University of Minnesota Extension. 2019. Ticks: How to control ticks and prevent tickborne diseases – bat ticks.

University of Rhode Island, Tick Encounter. Bat tick.

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