

Managing Common Tick Pests in Los Angeles County

Ticks are one of the most economically important groups of blood-sucking arthropod parasites of livestock, people, pets, and wildlife in the United States.

Ticks serve as reservoirs and vectors of many organisms pathogenic for humans and other animals. Tick-associated pathogens occurring in California cause diseases such as Q fever, Colorado tick fever, tularemia, tick-borne relapsing fever, Lyme disease, babesiosis, and ehrlichiosis. Other pathogens transmitted by ticks cause anaplasmosis in cattle and canine jaundice. Ticks do not burrow beneath the skin. They feed by inserting only their mouthparts into the host, and can cause direct harm by their bites, including irritation, anemia, toxemia, allergic sensitization, and paralysis.

Types of Ticks

Argasidae (soft-shelled ticks)



Ixodidae (hard-shelled ticks)



There are two types of ticks: the soft-shelled ticks in Family Argasidae, and the hard-shelled ticks in Family Ixodidae. Although there are numerous hard-shelled and soft-shelled ticks whose recognized ranges include Los Angeles County, there are only a few commonly encountered by the general population.

The biology of **soft-shelled ticks** differs significantly from the hard-shelled ticks. Some feed almost exclusively on rodents, while others are livestock pests associated primarily with cattle and chickens. Most are rapid feeders, residing in the nest or in close proximity to their host, feeding to repletion when the host returns to the nest or resting site. They also do not become as engorged as the hard-shelled ticks, and may attach and feed more than once during a single life stage. The relapsing fever tick is an example of a medically important soft-shelled tick, but it is seldom encountered by Los Angeles County residents.

Hard-shelled ticks are common and readily encountered in natural areas, but can also present significant problems when they infest pets, backyards, or the home environment. Understanding their life cycle can be an important factor in controlling an infestation.

After emerging from the egg, hard-shelled ticks go through three life stages: the very small six-legged larva, the slightly larger eight-legged nymph, and the eight-legged adult. The hard-shelled ticks commonly observed in Los Angeles County are also known as “three-host ticks”. This refers to their feeding behavior of attaching for several days to feed, then dropping off and reattaching to a new host during each life stage, taking only one blood meal from each host.

Most hard-shelled ticks mate while on the host. After feeding for the third time, often remaining attached for up to a week or more, the adult female drops to the ground and crawls to a protected site where she deposits a batch of up to several thousand eggs before dying. After mating, the male tick also dies.

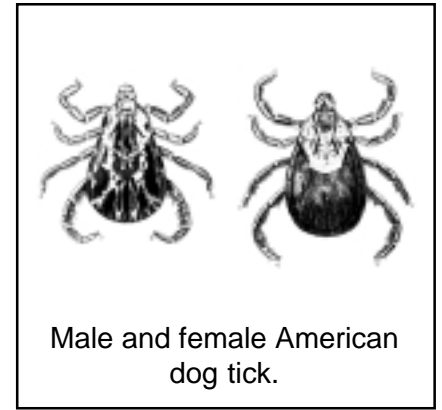
Many hard-shelled ticks seek hosts by a behavior known as “questing”. Questing ticks crawl up low vegetation where they await the passing of a potential host. When they perceive the proper stimuli, such as carbon dioxide, the ticks extend their front legs in an attempt to make physical contact with the passing host. If contact is made, the ticks then grasp the fur (or clothing) of the potential host and release their hold on the vegetation.

The **brown dog tick** is dark, shiny, and has no markings. It is important primarily as a blood sucking nuisance of dogs, and is the tick most commonly found in dog kennels. Although the available literature states it is almost exclusively a parasite of dogs and rarely attacks humans, data collected by the Los Angeles County Department of Health Services indicate it frequently feeds on humans in this county.

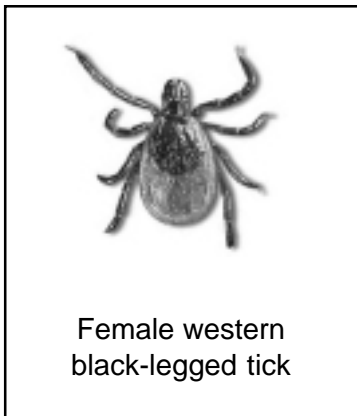


Female brown dog tick

The **American dog tick** and the closely related **Pacific coast tick** are brown with grey markings, and are found in open fields and other natural areas. The larvae and nymphs feed primarily on rodents and other small mammals, but the adults prefer larger animals and humans. The American dog tick is the most important vector of Rocky Mountain spotted fever in the eastern United States, can transmit the causal agent of tularemia, and occasionally causes tick paralysis. The Pacific coast tick has been found naturally infected with Colorado tick fever virus, and the causal agents of Q fever and tularemia. Although both ticks are considered to be medically important species in most parts of their range, their involvement in disease transmission cycles within Los Angeles County is minimal, and they are viewed primarily as nuisance pests.



The adult female **western black-legged tick** is small (2.6 mm), has a reddish-brown abdomen, a black shield and black legs. It is most often found in areas inhabited by deer or other large animals. Adult ticks feeding on man may produce painful lesions which are slow to heal and frequently scar. This tick is the recognized vector of Lyme disease, babesiosis, and ehrlichiosis in the western United States.



Managing a tick problem can be as simple as thoroughly checking yourself and your pet, and removing any attached ticks after walking in areas where ticks are found. Application of a flea and tick repellent to clothing before visiting such areas is also helpful.

If you observe ticks on your pet, purchase appropriate control materials such as sprays, dips, or spot application products, or take the animal to a groomer to have it professionally treated. Consult your veterinarian if you have questions about the various applications, or to begin a feed-through control program. To eliminate ticks observed in the home, thoroughly vacuum all areas frequented by pets, as well as carpets, furniture, floor length draperies, and all cracks and crevices around door jams, windows, and baseboards. Pesticides intended for use indoors with the word “ticks” on the label can be used. Apply the pesticide according to label directions.

The yard should also be treated. Purchase a pesticide intended for outdoor use that has the word “ticks” on the label. Apply the pesticide to all areas frequented by pets. Treat perimeter and structural walls, fences, ground covers and shrubbery to control questing ticks. Treat lawns, the joints and cracks in patios and driveways, the soil beneath ground covers, and other protected sites to control molting ticks and females that have dropped to the ground to lay eggs. Thoroughness is the key to managing a tick problem.

When walking or hiking in areas where ticks could be present, always walk in the center of trails and avoid brushing up against vegetation where questing ticks could be waiting. It is advisable to wear light-colored clothing to easily spot ticks, and tuck pants into socks or boots to prevent ticks from crawling beneath clothing. Tick repellents containing Deet can be used. Check both yourself and pets for ticks when you return home.

When removing embedded ticks, never use a topical application such as kerosene or Vaseline, or a hot match or cigarette to force the tick out. Instead, grasp the tick with fine tweezers as close to the skin as possible, and pull straight out with a steady, gentle force. After removing the tick, thoroughly wash and disinfect the bite site.

Although it is best to have any tick bite examined by a physician, this is especially true if a rash more than an inch wide appears at the site of the bite or in the general area. This could be what is frequently referred to as the “bull’s eye rash” or “erythema migrans”, a sign of Lyme disease. Additional information on Lyme disease can be obtained by contacting the Vector Management Program.

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