

Picture this: It's a beautiful, early summer morning in the Sausal Creek Watershed; the light is streaming through the redwoods in Joaquin Miller Park, and reflecting off the water trickling down through the canyon into Dimond Park. It's a perfect day for a hike. You get everyone dressed and ready for a family walk, and grab the leash for the dog, and then you remember – it's tick season (May-July)! Should you cancel your plans to hike in the watershed? Absolutely not! While newly-published studies show a greater prevalence of Lyme disease in the ticks found in Northern California than previously assumed, as long as you have a knowledge of tick behavior and take the proper precautions, there is no need to avoid our local parks.

Oak woodlands are well known to harbor ticks, but did you know that ticks are also found in great numbers in our coastal regions? Local public radio station KQED recently ran a piece on their morning program, Forum, about a new study that found a surprising number of western black-legged ticks (*Ixodes pacificus*) in areas that have no obvious host candidates, such as coastal chaparral habitat. These ticks can harbor several pathogens, but there are three that were found in larger numbers: Lyme disease (caused by *Borrelia burgdorferi*), infections with *Borrelia miyamotoi*, and human granulocytic anaplasmosis (caused by *Anaplasma phagocytophilum*)¹.

To understand how these ticks can harbor these pathogens, it's important to understand their life-cycle. Ticks have three life stages – larvae, nymph, and adult – but only the nymph and adult stages feed on an animal host. Mostly, people are infected by ticks in the nymph stage, as they are so small (the size of a poppy seed!) that we tend not to catch them on our bodies. Nymphs also carry the Lyme bacteria more often than the adults because of an interesting biological quirk in California; ticks most commonly feed on western fence lizards, and the lizard's blood actually clears the infection from the tick! This means that most adult ticks have had the infection cleared from their bodies, and cannot transmit it.

Studies in California show that western blacklegged nymphs are most commonly found in leaf litter, downed logs, tree trunks, and mossy rocks², another good reason to stay on the trail! The most common time to find active ticks is in spring and early summer, when nymphs are most active, and we tend to have higher humidity.

The best way to avoid tick bites is to wear long pants. When you come home from your walk, perform a 'tick check' by looking over your entire body; pay special attention to creases or hidden places such as your armpit or hairline. Time is of the essence; it actually takes at least 24 hours after a bite before the Lyme bacteria start swimming out in tick's saliva³. To remove a tick that has already latched on, use pointy-nose tweezers and grasp the head of the tick as closely to your own skin as possible. Pull straight up – do not twist or jerk. Do not use Vaseline, a swab soaked in soap, or try to burn the tick. These strategies take longer than tweezers removal and it's important to remove the tick as soon as possible. Do not worry if the mouth parts stay

¹ Salkeld, et al., 2021

² KQED Forum, 2021

³ Quirós, 2018

behind when you pull out the tick, as they do not transmit disease; it's the active saliva that does.

Save the tick that you remove from your body. Place it in a small zip-lock bag along with a moistened bit of paper towel or napkin, and contact your local vector control district to have the tick identified⁴. If it is indeed a western black-legged tick, there are laboratories that can test the tick (usually for a small fee) to see if it harbors Lyme disease.

The Sausal Creek Watershed is a wonderful place to walk and explore, from headwaters of the upper watershed in Joaquin Miller Park, to its mouth that drains into the Bay at Fruitvale Bridge Park. There's no need to be afraid of ticks, even in their more active spring or early summer period. With awareness, proper preparation, knowledge of tick behavior, and tips to remove them if they do bite, continue to explore and seek refuge in the watershed.

References

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⁴ Alameda County Government Vector Control