

Ticks: Be aware or be very, very sorry.

John Hayes, writing in the PPG says: “Tick-borne diseases increasingly threaten the health of people in the United States,” the CDC said in a statement. “Improved understanding about reported tick-borne illnesses, expanding geographic ranges for ticks, and risk factors will help prevent and control tick-borne disease.”

Blame the weather, and COVID

Tick populations and the severity of tick attacks are generally determined by weather, ecological impacts on tick habitat and human behavior. Ticks survive winter by going dormant, latching onto a warm host or hiding in leaf litter. In Pennsylvania, warm, wet spring weather increased the abundance of wild plant life in 2020 and 2021. More food made it easy for bird and mammal mamas to reach top carrying capacity, as many gave birth to as many offspring as their bodies could produce. All that food increased the first-year survival of mammal and bird babies, creating an expanding smorgasbord for blood-sucking ticks. During the COVID-19 shutdowns of those years, Pennsylvanians discovered the outdoors were always open, giving ticks a plentiful bipedal target.

Ticks are efficient and effective vectors for viruses and microscopic parasites that cause human diseases. They are spread when ticks hitch a ride on a blood-rich food source. Chemicals in their saliva mask the sensation when they drive their mouthparts into a host. Saliva also contains the viral or biological material that transfers disease. Small critters like mice, voles and even reptiles and amphibians can carry ticks, but their ranges, too, are small. A thirsty tick on a white-tailed deer can ride for miles. Hang onto birds and a well-traveled tick can take a disease just about anywhere.

Lyme disease

John continues: “Ticks are present in all 50 states and the District of Columbia. Black-legged ticks range across the eastern United States and are the only species that carries Lyme disease, America’s most common vector-borne illness. With weather across North America expected to favor ticks in 2022, the CDC has warned of a likely increase in Lyme disease transmissions during the expected uptick in ticks.

A recent study based on insurance records found [about 476,000 people in the United States](#) are diagnosed and treated annually for Lyme disease. But the CDC reported the actual number of infections is probably much higher – many infected people are not tested and Lyme disease tests are often inaccurate. The report said although Lyme is underdiagnosed, it costs the U.S. health care system more than \$1.3 billion in direct medical costs, and estimated indirect medical costs are in the tens of billions.

In Pennsylvania, Lyme disease is present in all 67 counties, and in recent years the commonwealth has [led the nation in reported cases](#). Last month CDC's concerns about increased tick-related disease transmissions were echoed by the Pennsylvania Department of Health, Department of Environmental Protection and Department of Conservation and Natural Resources, as well as the Game Commission, Fish and Boat Commission and some county and local governments.

Dr. Denise Johnson, the [newly appointed secretary of the Department of Health](#), said at least one case of Lyme disease occurs for every 100 Pennsylvania residents.

“Lyme disease can cause flu-like symptoms and a rash in the early stages, but the infection could spread to joints, the heart and the nervous system if not addressed,” she said. “By learning where ticks live, seeking treatment if experiencing symptoms and following the best practices for prevention, we can avoid cases of Lyme disease and other tick-borne illnesses.”

Taking precautions

Hayes says; “Cindy Adams Dunn, DCNR secretary, urged people who enjoy outdoor recreation to ”learn about the threats posed by tick-borne diseases and take commonsense precautions.”

Tim Schaeffer, executive director at Fish and Boat, advised trout anglers to wear tick repellent clothing and keep a bottle of tick repellent spray in the tackle box. As the spring gobbler season begins, Bryan Burhans, Game Commission executive director, advised turkey hunters to treat clothing and gear with tick repellent, and to thoroughly check for ticks after returning from the field.

The common black-legged tick, sometimes called a deer tick, ranges across the eastern United States and is the most common tick species in Pennsylvania. In addition to Lyme disease, the black-legged tick can also carry pathogens including anaplasmosis and the rare but dangerous deer tick virus.

Patrick McDonnell, secretary of the state DEP, said “the prevalence of the very serious deer tick virus appears to be increasing in some tick populations.”

Danger zones

DEP’s Tick Surveillance and Testing Program found unusually high deer tick virus infection rates in adult tick samples recently taken at three Pennsylvania sites:

- Fisherman’s Paradise, a specially regulated 1.3-mile stretch of Spring Creek in Centre County, popular among fly and spin fishing anglers.
- Iroquois Trail, a 2-mile crushed stone bicycle and walking path in Wyoming County.
- Lawrence Township Recreational Park, a 23.4-acre community park in Clearfield County.

At each location, said DEP, the deer tick virus infection rate exceeded 80% of ticks sampled. The virus was present in 92% of ticks sampled at the community park. Before this year, the highest deer tick virus infection rate found at a single location in Pennsylvania was 11%. The highest infection rate reported nationally was around 25%.

Outside the hotspots, the statewide deer tick virus infection rate averages about 0.6% of ticks sampled. The virus has been confirmed in ticks at 15 Pennsylvania counties including Allegheny, Westmoreland and Washington.

Along with the black-legged tick, the American dog tick, groundhog tick and lone star tick are prevalent in Pennsylvania. DEP-funded testing conducted in Allegheny County in 2020 showed 25% of blacklegged ticks in the nymph stage of their two-year life cycle carried the pathogen that transfers Lyme disease and 50% of black-legged adults had it, rates consistent with statewide findings. The Allegheny County Health Department received more than 2,300 reports of Lyme disease in 2019, the most recent year for which data was available.

In Pittsburgh, as part of a five-year DEP tick-surveillance program, samples were taken at Schenley and Highland parks in 2018-19. In Schenley, 39% of black-legged ticks examined could transfer Lyme disease; 5.5% tested positive for the pathogen that carries anaplasmosis, another tick-borne disease. In Highland Park, 29% of ticks could pass Lyme disease, and none carried anaplasmosis.

Attempts to address the state's tick problem in the state legislature began in 2020. Weeks ago, the Health and Human Services Committee proposed a bill that would address the state's tick problem. Senate Bill 1188 would attempt to reduce tick-borne illnesses and improve treatment by improving education, awareness and medical responses to tick-borne diseases among healthcare professionals. It would increase public awareness, promote the availability of clinical tick testing and guarantee insurance coverage for testing and treatment. The bill was introduced to the full Senate April 12. On Tuesday, Sen. Michele Brooks, R-Greenville, announced that state funding had been secured for a multi-year tick mitigation study in Bucks, Crawford, Lehigh, Mercer, Monroe and Pike Counties.

Ticks that could make you sick

Black-legged tick

Black-legged tick(Smithsonian)

Anyone with the distinctive target-shaped skin rash of Lyme disease has been visited by a black-legged tick. Often called deer ticks, their range covers eastern United States. Lyme symptoms include fever, chills, headache, fatigue, muscle and joint aches and swollen lymph nodes. Black-legged ticks can also carry pathogens that cause Powassan disease (fever, headache, vomiting, weakness, seizures and swelling of membranes surrounding the brain or spinal cord), for which there are no vaccines or medical treatments. The ticks can carry anaplasmosis (fever, severe headache, muscle aches, chills, shaking or changes in mental status) and the rare but dangerous deer tick virus (fever, headache, vomiting, confusion, loss of coordination, difficulty in speaking and seizures).

American dog tick

American dog tick(Clements Pest Control)

JH: "Despite their name, the ticks frequently draw meals from other medium-sized mammals including cats, skunks, opossums and coyotes. They are commonly found where there is little tree cover, and the more aggressive females have a large white spot on the back of their dark brown bodies. Dog ticks are the primary vector for the bacterium causing Rocky Mountain

spotted fever, which can cause tick paralysis in canines and fever, headache, fatigue, anorexia, chest discomfort and sore throat in humans.

Groundhog (woodchuck) tick

Groundhog tick(CDC)

Preferring to bite skunks, squirrels, rabbits, raccoons, foxes and groundhogs, these ticks rarely attack humans. When they do, the host could become infected with the virus that causes Powassan disease.

Lonestar tick

Lonestar tick(CDC)

The larva, nymph and adult will aggressively feed on humans and animals including dogs and cats, which can bring them into the home. Human symptoms include moderate fever, chills, headache, muscle aches, joint pain, nausea, vomiting and a generally sick feeling.

No ticks allowed

Ticks are most active in spring and summer, but exposure can occur year round. They don't jump, they like to ambush their hosts in grassy, brushy or wooded areas, or step off and hitch a ride on another animal. Hiking, biking, camping, hunting, stream fishing and gardening can put people in contact with ticks. Many pick them up in their own yard or neighborhood. Practice smart tick deterrence.

- Avoid wooded and brushy areas with high grass and leaf litter, and walk in the center of trails.
- Before possible exposure to ticks, treat clothing and gear with products containing 0.5% permethrin. It deters ticks from boots, clothing and outdoors gear and remains active through several washings. Or purchase permethrin-treated clothing and gear.
- To deter ticks and other arachnids, use insect repellents registered as effective by the federal EPA. Those include DEET, picaridin, IR3535, 2-undecanone, oil of lemon eucalyptus (OLE) and para-menthane-diol (PMD).

Do not use products containing OLE, PMD or 100% DEET on children under 3 years old. Follow product instructions. Consult EPA's repellent [search tool](#).

Don't pick that tick

If it looks big and fat, it's filled with the host's blood. The U.S. Centers for Disease Control and Prevention say the only tool needed for removal is a set of fine-tipped tweezers, but several effective tick removal devices can often be found in the outdoors aisle.

- Never crush a tick. With tweezers, grab it as close to the skin surface as possible.
- Pull up with steady, even pressure. Twisting or jerking can cause the tick's mouthparts to break off in the skin. If it breaks, remove the mouthparts with tweezers or leave it alone and let the skin heal.
- Dispose of the live tick by dropping it in alcohol, placing it in a sealed bag or container, wrapping it tightly in tape or flushing it.
- After removal, thoroughly clean the bite area and your hands with rubbing alcohol or soap and water.

That's all that John Hayes has to say.