VECTOR-BORNE DISEASES (VBD) NEWSLETTER

2025 Edition: Stop the Spread

Vector-borne diseases are infectious diseases that are transmitted to humans and other animals by mosquitoes, ticks, fleas, rodents, and other animals.

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MOSQUITO-BORNE DISEASES
The Inside Scoop

We've all felt that itchy sting of a mosquito bite, but the real danger is what you can't see. Depending on the species of mosquito, they can be active during the day or night. When a mosquito feeds on an infected person or animal, it can pick up viruses or parasites such as those that cause West Nile, dengue, or malaria. The next time it bites, those germs can pass through the mosquito's saliva to another person. Any illness spread this way is called a mosquito-borne disease.

For more information on mosquitoes, visit https://www.cdc.gov/mosquitoes/about/index.html.

Common mosquito-borne diseases include West Nile virus, malaria, dengue, and chikungunya.

Clinical Diagnosis of Mosquito-borne Diseases

Symptoms and travel history should be considered when diagnosing and testing for mosquito-borne diseases. Symptoms of mosquito-borne diseases can vary depending on the specific illness and can be difficult to diagnose in the early stages since initial symptoms are often nonspecific.

Buzzed Alert: West Nile Edition

West Nile virus (WNV) is a disease that is primarily spread to people through the bite of an infected mosquito. It belongs to the flavivirus family, the same group that includes Zika and dengue viruses. Although it was first discovered in Uganda in 1937, WNV made its way to the United States in 1999, first appearing in New York City. It has since spread around the world and is now the most common mosquito-borne disease in the continental United States.

Most people who get infected with WNV don't feel sick at all. However, some develop flu-like symptoms, and in rare cases, the virus can cause serious illnesses like encephalitis (brain inflammation) or meningitis. These severe cases are more common in older adults and people with weakened immune systems. There is no vaccine or specific treatment for WNV in humans, which makes prevention and mosquito control especially important.

Understanding WNV is a key part of protecting yourself, your family, and your community during mosquito season. In fact, WNV cases rise during mosquito season, especially from July to September in most areas.

ALABAMA PUBLIC HEALTH

Alabama Department of Public Health
Infectious Diseases & Outbreaks Division
alabamapublichealth.gov/mosquito

HOW CAN YOU PROTECT YOURSELF?

1. Stop Mosquitoes from Breeding

- Dump standing water (buckets, flowerpots, birdbaths)
- Clean gutters regularly
- Cover rain barrels and trash bins

2. Use Protection When Outdoors

- Wear long sleeves and pants
- Use insect repellent (look for DEET, picaridin, or oil of lemon eucalyptus)
- Stay indoors at dawn and dusk when mosquitoes are most active
- Install screens on windows and doors

For more information on prevention, visit https://www.cdc.gov/mosquitoes/prevention.

PREVENTING MOSQUITO BITES WHILE TRAVELING

When traveling internationally, especially to tropical or subtropical regions where mosquito-borne diseases like malaria, dengue, Zika, or chikungunya are a concern, protecting yourself from mosquito bites is a key part of staying healthy. Mosquitoes can carry serious diseases and many of which have no vaccines or specific treatments. To reduce your risk:

- **Use insect repellent** with DEET, picaridin, IR3535, or oil of lemon eucalyptus.
- **Wear protective clothing,** such as long sleeves and pants, particularly in the early morning and evening when mosquitoes are most active.
- **Sleep under a mosquito net** if your accommodation lacks air conditioning or screened windows.
- **Stay in well-screened or air-conditioned rooms** whenever possible.
- **Eliminate standing water** around your lodging to reduce mosquito breeding sites.

These simple precautions can help ensure your trip is memorable for the right reasons.

COMMON MOSQUITOES IN ALABAMA

Aedes species

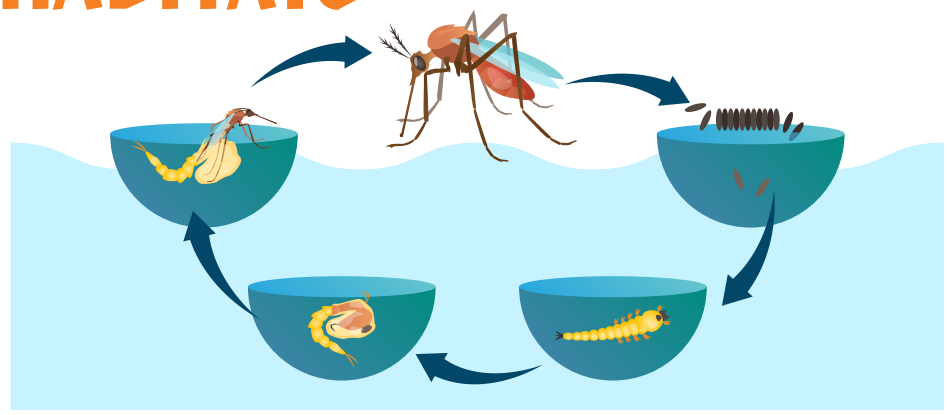
Culex species

Anopheles species

MOSQUITO LIFE CYCLE & BREEDING HABITATS

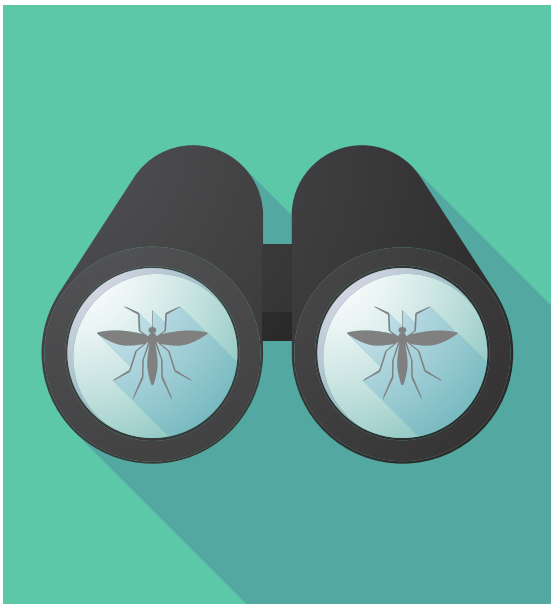
There are four life stages within the mosquito life cycle.

1. **Egg** – Lays on water surfaces or just above the waterline
2. **Larva** – Aquatic and actively feeds
3. **Pupa** – Non-feeding stage and develops into an adult mosquito
4. **Adult** – Emerges from water and begins seeking food and mates



WHY IS MOSQUITO SURVEILLANCE SO IMPORTANT?

Mosquito surveillance is important because it is a foundational tool in protecting communities from mosquito-borne diseases and responding swiftly to changing ecological and epidemiological conditions. It is very important to ensure there are disease prevention and control measures in place for serious mosquito-borne diseases, such as West Nile virus, dengue, and Eastern Equine Encephalitis. Surveillance will allow public health professionals to detect early signs of outbreaks, monitor virus activity in mosquito populations, and target control efforts effectively (e.g., spraying or larvicide use).

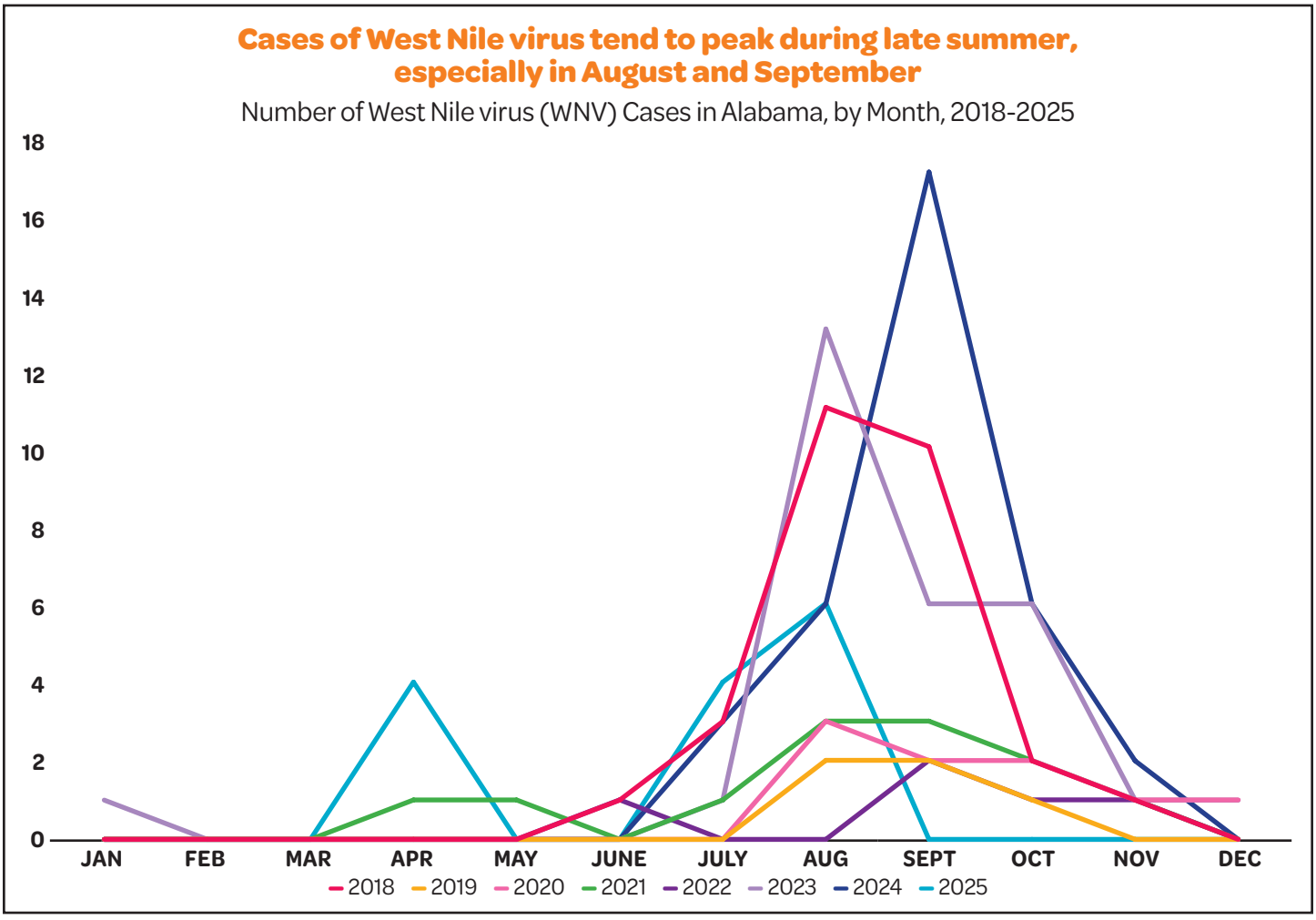


HUMAN SURVEILLANCE

Each year, West Nile virus (WNV) cases usually go up in late summer, especially in August and September. This happens because warm weather means more mosquitoes are around. In the spring, mosquitoes bite birds that may already have the virus. As summer goes on, the number of mosquitoes grows, and more of them carry the virus. With more infected mosquitoes, there's a greater chance that people can get sick, which makes it especially important to take simple precautions like using insect repellent, wearing long sleeves when outdoors, and getting rid of standing water around your home. Staying informed and prepared can go a long way in reducing the risk.

During the COVID-19 pandemic, WNV cases in Alabama were likely low due to a combination of factors. Reduced outdoor activity and travel limited human exposure to mosquitoes, while overwhelmed healthcare systems and diverted public health resources led to less testing and reporting.

The following chart below illustrates how West Nile virus activity increases during the late summer months.



**Case counts as of MMWR Week 35 (week ending on August 30, 2025)*

TICK-BORNE DISEASES
The Inside Scoop

Tick-borne diseases refers to any illness that is transmitted to humans or animals through the bite of an infected tick.

Ticks are small, blood-feeding arachnids that can carry a variety of pathogens, including bacteria, viruses, and parasites. When a tick attaches to a host and feeds, it can transmit these pathogens into the bloodstream, potentially leading to serious health issues.

Common tickborne diseases in the United States include **Lyme disease, anaplasmosis, ehrlichiosis, babesiosis,** and **spotted fever rickettsiosis.**

Early detection and medical intervention are crucial for some of these diseases, as they can cause severe or long-lasting effects, if not treated promptly. Preventive measures, such as avoiding tick-infested areas, using insect repellent, and performing regular tick checks, are important strategies for reducing the risk of infection.

Clinical Diagnosis of Tick-borne Diseases

Symptoms of tick-borne diseases can vary depending on the specific illness and can be difficult to diagnose in the early stages since initial symptoms are often nonspecific.

Visiting Your Healthcare Provider

If you think you may have a tick-borne disease, see your doctor immediately. He or she will evaluate your symptoms, exposure history, and test results to determine your best treatment course. Most tick-borne diseases are easily treated with antibiotics; early treatment can help you avoid serious complications, so it should not be delayed waiting on test results. If you find a tick on your body, carefully remove it, and place it in a sealed plastic bag. Store the bag in the freezer. Bring the tick with you when you visit your healthcare provider for identification and potential testing.

Tiny Terrors: Spotlight on Ticks

Spotted fever rickettsiosis (SFR) is the most common tick-borne disease in Alabama, which is caused by *Rickettsia* bacteria, with the most well-known being Rocky Mountain spotted fever (RMSF), first recognized in the early 1900s in the Rocky Mountain region of the United States. Initially, a highly fatal illness, RMSF became more manageable with the discovery of its bacterial cause and the development of antibiotic treatments like doxycycline. The disease is transmitted through the bite of infected ticks, such as the American dog tick and the brown dog tick. Symptoms typically appear within two weeks of a tick bite and often begin with fever, headache, nausea, and muscle aches. As the disease progresses, a spotted rash may develop, typically starting on the wrists and ankles and spreading to other parts of the body. If left untreated, SFR can lead to severe complications, including organ failure and death, highlighting the importance of early diagnosis and prompt antibiotic therapy.

TICK FUN FACT

Both adult male and female ticks can transmit diseases, but adult females and nymphs pose the greatest risk of transmitting diseases to humans. Adult females and nymphs tend to spend more time feeding, therefore posing the greatest risk of disease transmission.

WHY IS TICK SURVEILLANCE SO IMPORTANT?

Tick surveillance is essential for protecting public health because it helps track the presence, abundance, and geographic spread of tick species and the pathogens they carry. By monitoring ticks and testing them for diseases such as Lyme disease, spotted fever rickettsiosis, and ehrlichiosis, public health officials can identify areas of elevated risk and detect emerging threats early. Surveillance data also guide the development of targeted prevention and control strategies, such as public education campaigns, tick habitat management, and healthcare provider alerts. As environmental and climate changes influence tick populations and expand their ranges, ongoing surveillance is crucial for anticipating outbreaks, informing policy decisions, and reducing the burden of tick-borne diseases in both humans and animals.

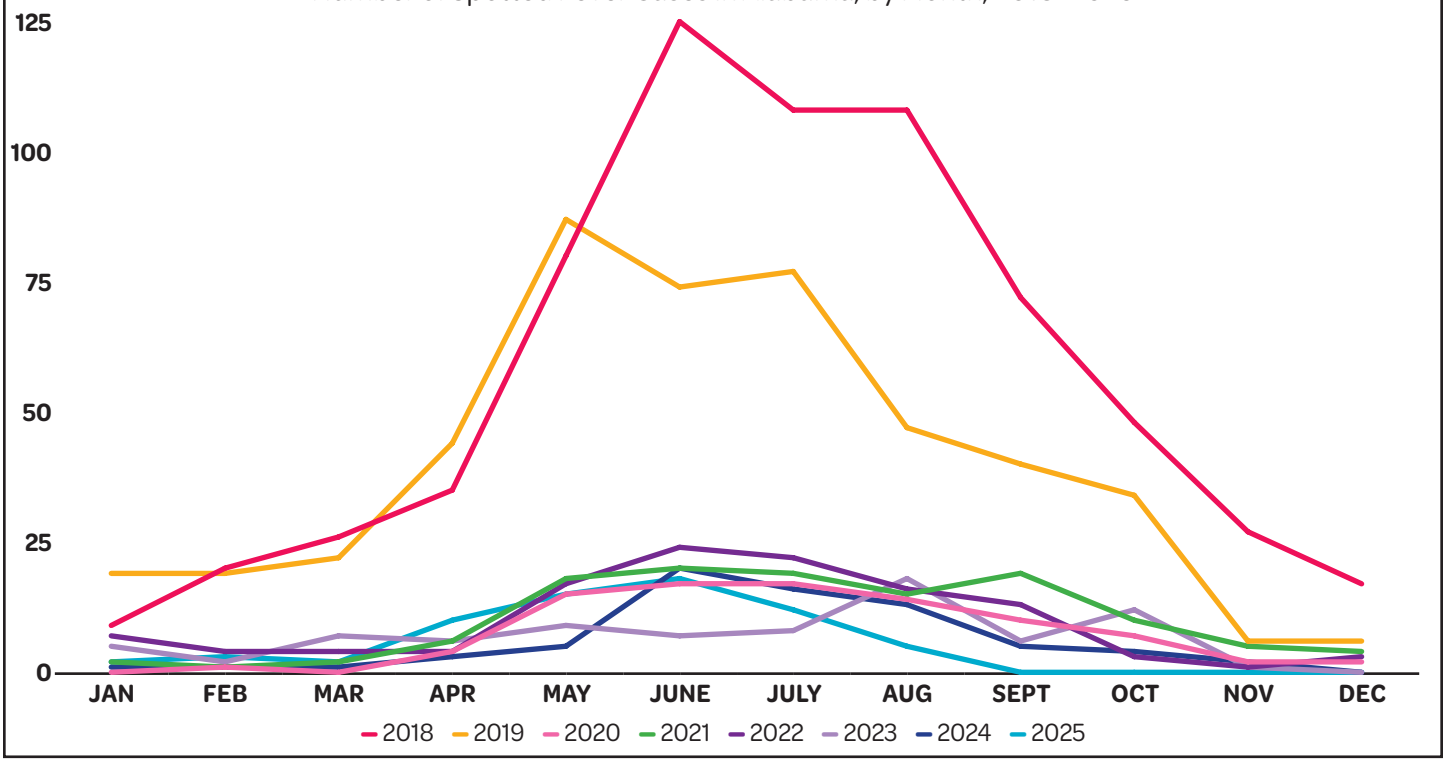
HUMAN SURVEILLANCE

Each year spotted fever cases tend to rise during the warmer months, with the highest activity usually occurring from May through August. This seasonal pattern reflects the increased presence of ticks and greater outdoor activity, both of which raise the chances of tick bites and disease transmission. Taking preventive steps such as using insect repellent, wearing protective clothing, and checking for ticks after spending time outdoors remains an important way to lower risk during peak months.

Beginning in 2020, the number of reported spotted fever cases in Alabama declined sharply compared to 2018 and 2019, when case counts were at their highest. While the seasonal summer increase is still noticeable, it has been much smaller in recent years. This decrease could be linked to several factors, including shifts in surveillance and reporting or changes in human activity during the COVID-19 pandemic. Regardless, the continued presence of summer cases highlights the need to stay alert and practice tick safety measures.

Spotted Fever Cases Tend to Peak During Late Spring and Summer, Especially from May through August

Number of Spotted Fever Cases in Alabama, by Month, 2018–2025



Case counts as of MMWR Week 35 (week ending on August 30, 2025)

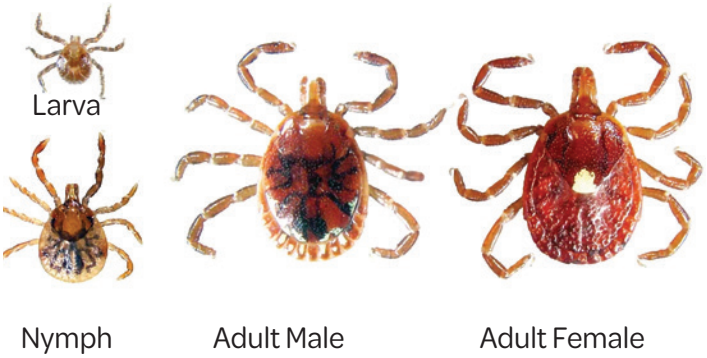
TICK SURVEILLANCE

Overview of Ticks in Alabama

Ixodes scapularis (Black-legged tick)

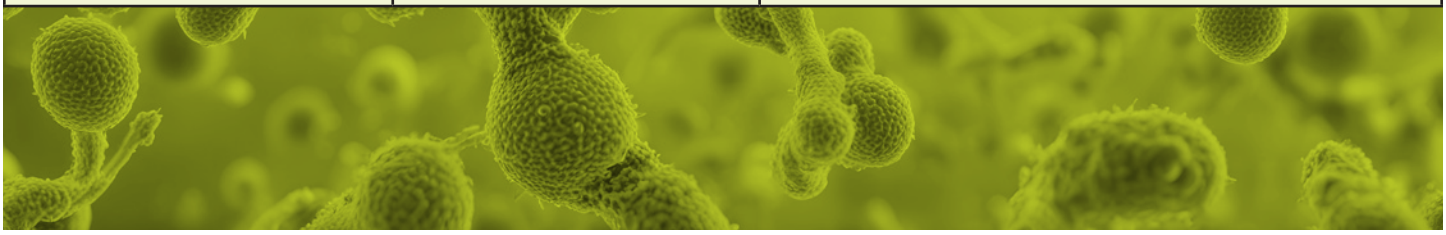
Dermacentor variabilis (American dog tick)

Amblyomma americanum (Lone star tick)



Amblyomma maculatum (Gulf Coast tick)

Scientific Name	Common Name	Disease/Pathogens Spread
Dermacentor variablilis	American dog tick, Wood tick	Tulermia, Rickettsia rickettsii, Ehrlichiosis
Ixodes scapularis	Black legged tick	Lyme disease, Borrelia burgdorferi, Borrelia mitamotoi, Babesiosis, Human Granulocytic Anaplasmosis
Amblyomma americanum	Lone star tick, Northeastern water tick, Turkey tick	Canine and human Ehrlichiosis, Tularemia, Southern tick-associated rash illness (STARI), Rickettsiosis, Theileriosis, Heartland virus, Bourbon virus, Lone star virus
Amblyomma maculatum	Gulf coast tick	Rickettsia rickettsii, Rickettsia parkeri



ALABAMA TICK SURVEILLANCE DATA

County	*Amblyomma americanum*	*Amblyomma maculatum*	*Dermacenttor variabilis*	*Ixodes scapularis*
Autauga	✔	●	✔	✔
Baldwin	●	●	●	✔
Barbour	●	●	●	✔
Bibb	✔	✔	✔	✔
Blount	✔	✔	✔	✔
Bullock	●	✔	✔	●
Butler	●	✔	●	●
Calhoun	✔	●	●	●
Chambers	✔	●	●	✔
Cherokee	✔	●	✔	●
Chilton	●	✔	●	●
Choctaw	✔	✔	●	✔
Clarke	✔	✔	●	●
Clay	✔	✔	●	●
Cleburne	✔	✔	✔	●
Coffee	●	●	✔	✔
Colbert	✔	●	✔	●
Conecuh	●	●	✔	●
Coosa	✔	✔	✔	✔
Covington	●	●	●	✔
Crenshaw	●	●	●	●
Cullman	✔	✔	✔	✔
Dale	✔	●	●	✔
Dallas	✔	✔	●	✔
DeKalb	✔	●	●	✔
Elmore	●	✔	✔	✔
Escambia	●	✔	✔	●
Etowah	●	●	✔	●
Fayette	●	●	✔	●
Franklin	●	●	✔	●
Geneva	●	●	✔	●
Greene	●	✔	✔	●
Hale	✔	✔	●	✔
Henry	✔	●	✔	●

County	*Amblyomma americanum*	*Amblyomma maculatum*	*Dermacenttor variabilis*	*Ixodes scapularis*
Houston	●	●	●	✔
Jackson	✔	✔	✔	✔
Jefferson	✔	✔	✔	✔
Lamar	●	✔	●	●
Lauderdale	✔	●	✔	●
Lawrence	✔	✔	✔	✔
Lee	✔	✔	●	✔
Limestone	✔	●	✔	✔
Lowndes	✔	●	●	●
Macon	✔	✔	●	✔
Madison	✔	✔	✔	✔
Marengo	●	✔	●	●
Marion	●	●	●	●
Marshall	✔	●	●	●
Mobile	✔	✔	✔	✔
Monroe	●	●	●	●
Montgomery	✔	✔	✔	✔
Morgan	✔	✔	✔	✔
Perry	✔	✔	●	✔
Pickens	✔	✔	✔	✔
Pike	●	●	●	✔
Randolph	✔	✔	●	●
Russell	●	●	●	●
Shelby	✔	✔	✔	●
St. Clair	✔	●	✔	✔
Sumter	✔	✔	✔	✔
Talladega	●	●	●	●
Tallapoosa	✔	●	●	✔
Tuscaloosa	✔	✔	✔	✔
Walker	●	●	●	●
Washington	●	✔	●	●
Wilcox	●	✔	●	●
Winston	✔	✔	✔	✔

*Counties in which the species was detected are marked with a check symbol.

Tick records include surveillance conducted by the ADPH Public Health Entomologist, the University of South Alabama, and community sourced observations submitted via the iNaturalist platform between 2022-2025.

Seasonal Activity and Habitats of AL Ticks			
Tick	**Active**	**Risk**	**Habitat**
Black-legged Tick	**Year-round,** peak in **spring and fall**	Cold-tolerant, active even in cooler months	Dense woodlands, leaf litter, shaded areas with high humidity
American Dog Tick	**Spring to early fall (March–September)**	Highest in warm months, often found on pets and humans	Grasslands, along forest edges, area with abundant wildlife
Lone Star Tick	**Early spring to late summer (March–August)**	Aggressive feeder, increasing distribution	Wooded areas, scrubland, areas with dense undergrowth
Gulf Coast Tick	**Late spring to fall (April–October)**	Thrives in hot climates, important in livestock health	Coastal plains, open grasslands, sandy soils

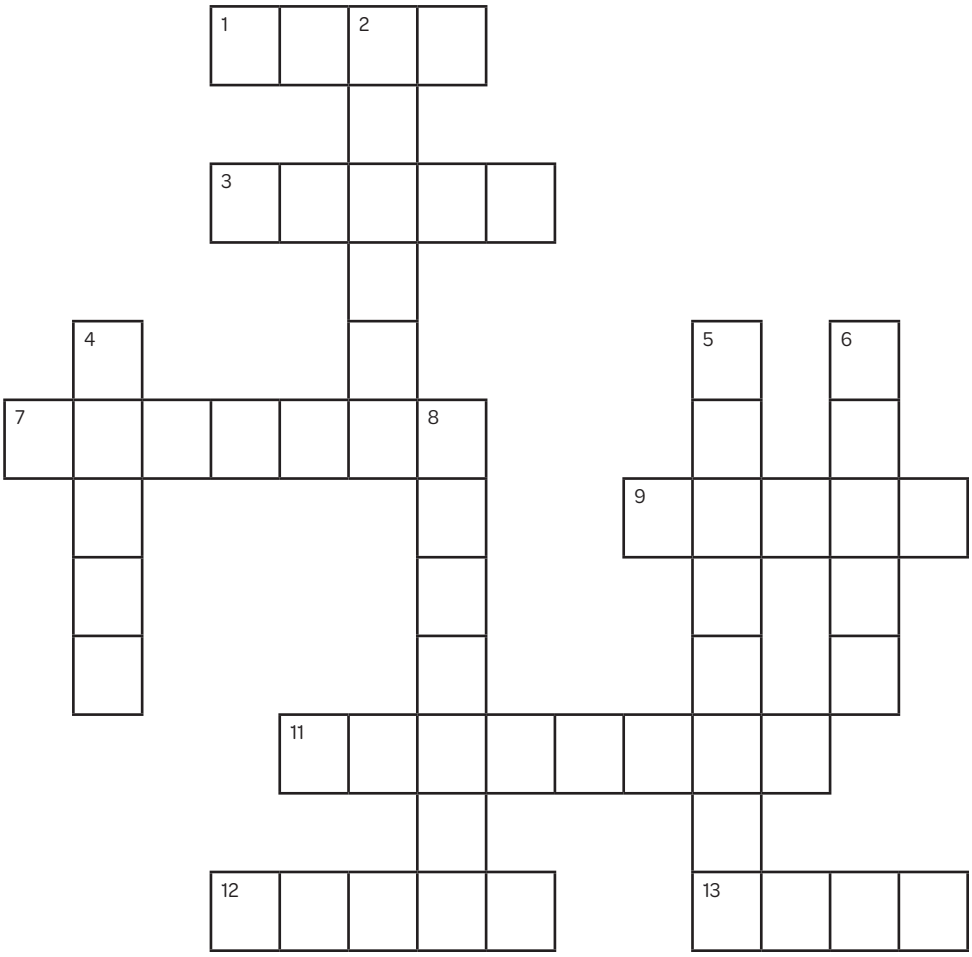
TEST YOUR KNOWLEDGE!

ACROSS

1. If a tick makes you sick, you may get one of these on your skin.
3. Ticks eat _____.
7. Never pull off a tick with your _____.
9. If a tick makes you sick, you may feel hot because of a _____.
11. Ticks can be so small, you might think they look like _____.
12. A place where ticks wait for people or animals.
13. After removing a tick, wash the bite with _____ and water.

DOWN

2. Take a bath or _____ to help remove ticks.
4. The number of legs a tick has.
5. Tool for removing ticks.
6. When you come indoors, always _____ for ticks.
8. Ticks are related to these web spinners.



TICK DEFENSE 101: GEAR UP & GO OUT SAFELY

Preventive measures, such as avoiding tick-infested areas, using insect repellent, and performing regular tick checks, are important strategies for reducing the risk of infection. Tick exposure can occur year-round, but ticks are most active during warmer months (April-September).

- ☐ Know where to expect ticks
- ☐ Treat clothing and gear
- ☐ Use Environmental Protection Agency (EPA)-registered insect repellents
- ☐ Avoid contact with ticks

For more prevention tips, visit
https://www.cdc.gov/ticks/prevention/index.html

If bitten by a tick, keep the tick and contact your healthcare provider. The tick can also be sent to the University of South Alabama for tick identification. For more information, visit
https://www.alabamapublichealth.gov/tick/index.html

Check your clothing and body for ticks after being outdoors in grassy, brushy, or wooded areas where ticks live!

Check these parts of your body and your child's body for ticks: