TETON COUNTY
WEED & PEST
DISTRICT

Passive Tick Surveillance

STANDARD OPERATING PROCEDURE

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TETON COUNTY WEED & PEST DISTRICT | 7575 SOUTH US HWY 89, JACKSON, WY, 83001

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Overview

Active tick surveillance is conducted when a surveyor actively goes out into the field to collect ticks through a quantitative, standardized method. Passive tick surveillance on the other hand, includes the submission of ticks to our lab from the public and partners that come across ticks via chance encounter, such as those that may try to attach to a person or pet while on a hike or during field work. This standard operating procedure (SOP) provides detailed information on collecting and submitting ticks to the Teton County Weed & Pest (TCWP) laboratory through the passive surveillance mechanism. **Ticks submitted to us are for tick ecology research purposes only. We are not a diagnostic lab and cannot test any ticks that have bitten people who are seeking tick infection information.** Any and all ticks can be submitted to us, but we will only record information on blood engorged ticks and will not test them for pathogens.

Both active and passive tick surveillance are instrumental in helping us collect information on ticks of medical and veterinary importance in the state of Wyoming, including tick species richness, diversity, abundance, phenology, distribution, as well as tick-borne pathogen presence and prevalence. Currently, much of that information is not available in Wyoming and that is why we have initiated this surveillance program.

Tick-borne diseases that are known to occur in Wyoming include: Colorado Tick Fever, Rocky Mountain Spotted Fever, Tick-Borne Relapsing Fever, Tick-Borne Paralysis, Tularemia, and Q Fever. We have very limited information on Wyoming tick infection rates with tick-borne pathogens, but our laboratory is set up to begin testing ticks for such disease-causing pathogens as part of our program.

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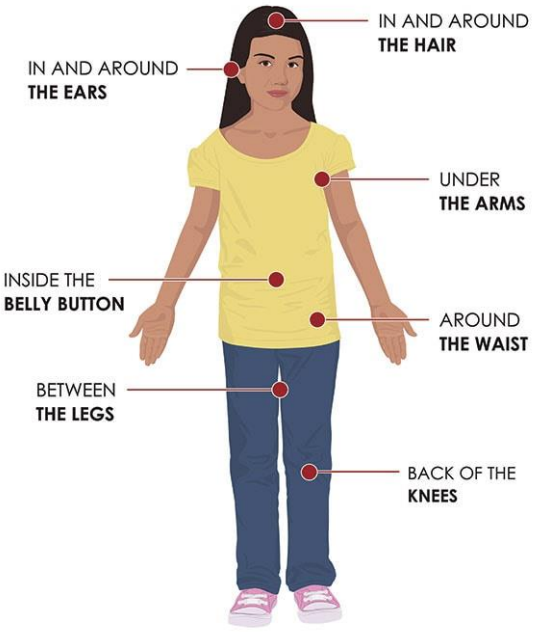
Tick Safety in the Field

Safety practices are important to help protect you from tick bites while recreating. Checking that you have all the PPE you need and recalling the safety practices should be your first step every time before going into nature.

- **Repellent:** before going into the field, use an Environmental Protection Agency (EPA)-registered tick repellent containing DEET, picaridin, IR3535, Oil of Lemon Eucalyptus (OLE), para-menthane-diol (PMD), or 2-undecanone. You may also use 0.5% permethrin on your clothing only, no skin applications. Always follow product instructions.

- **Tucked in long-sleeves and pants:** lightweight, light-colored long-sleeved shirts and pants should be worn. Light colors facilitate the detection of any crawling ticks, and lightweight fabrics in the summer prevent overheating. Long pants should always be tucked into long socks, and long-sleeved shirts should be tucked in at the waist. Ticks do not burrow well so tucking in your clothing helps prevent them from reaching the skin.

- **Tick checks:** while recreating, you should regularly inspect for ticks on your clothes and skin, especially areas of the body in the picture below. If an attached tick is discovered, promptly remove it by grasping the tick with forceps as close to the skin as possible and pull tick steadily backward until removed. Once back at your vehicle and ready to leave, conduct another tick check before getting in your vehicle.



- **Shower:** once home, conduct another **thorough tick check** paying particular attention to more cryptic areas such as backs of knees, armpits, hairline, groin, belly button, and behind the ears. Promptly take a shower to dislodge any crawling ticks. If you do not shower when you return home, still be sure to perform a thorough tick check.

- **Wash or dry clothing:** once home, all clothing from the field should be either washed + dried, or placed directly into the dryer on high heat for at least 10 minutes. This will kill any remaining ticks not detected during a tick check. Items like hats or boots that won't take well to washing can go straight into the dryer, or any items like permethrin-treated clothing that you don't wish to wash can also be put directly in the dryer.

Tick Identification

The most common tick of medical and veterinary significance you are likely to encounter in Wyoming is the Rocky Mountain Wood Tick (*Dermacentor andersoni*).

Distinguishing features of ticks are a flat, oval shaped, reddish-brown body with **eight legs** on the nymphs and adults, and **six legs** on the larvae which are quite small (size of a poppy seed).

Collection & Storage of Ticks in the Field

Ideally, we receive live ticks as this is best for pathogen testing. During passive surveillance, an easy way to collect and store ticks is to adhere any ticks encountered onto clear packing tape and then firmly attach the tape to a piece of cardstock, cardboard, or index card (see picture). Alternatively, tape can be folded in on itself.

They will remain alive under the tape for a short period of time and can be easily put in an envelope and mailed. Alternatively, a double bagged Ziplock bag or small vial will work but they are more prone to drying out and dying with more air around them, so a *slightly* damp tissue or some leaves or blades of grass inside can help keep them alive.

If possible, try to collect as much information as you can for any ticks submitted to our lab. At the very minimum: date and location. This is very helpful for our data collection efforts. See the following page for an example data sheet.

Submitting Ticks & Data Sheet to the TCWP Laboratory

Upon collection, tick samples can be either mailed to or dropped off along with any data sheets at the address below. Ideally, ticks are submitted within a few days of collection to give them the best chance of arriving alive at our laboratory. Testing live ticks gives us the best chance of accurately detecting pathogens.

Submit ticks within a few days (if possible) via mail or in-person at the TCWP office in Jackson:

Teton County Weed & Pest District
ATTN: Mikenna Smith / Laboratory
7575 South US Hwy 89
Jackson, WY 83001

Passive Tick Surveillance Data Sheet

Here is an example data sheet that can be used:

Name of Collector / Entity	
Location (e.g. trail, butte, canyon, etc.). More detailed the better	
Latitude	
Longitude	
Date Collected	
Habitat Type (sagebrush, grassland, forest, etc.)	
Activity Type (hiking, horse-back riding, field work, etc.)	
Embedded? Y / N	
If Embedded: Host Type (e.g. human, dog, horse, etc.)	
Travelled outside of state in last 30 days? Y/N	
Other notes	