



Virginia Working Landscapes (VWL) Field Safety Manual

VWL fieldwork is conducted on private working landscapes (i.e., hayfields, pastures, grasslands) within 16 counties in the Virginia Piedmont and Blue Ridge regions. While in the field, surveyors may encounter various field and safety hazards. This manual outlines several common field safety hazards but is not considered an exhaustive list.

Do not continue with a field survey if you feel your health or safety is threatened.

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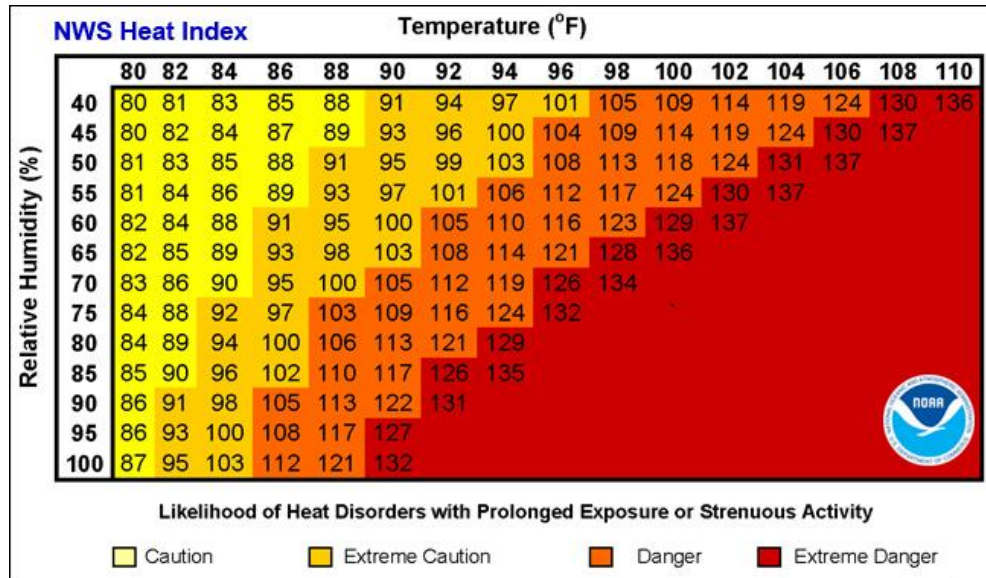
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1. Hot Weather Hazards

Walking through and surveying exposed grasslands during the warmer months of the year can lead to excessive heat/sun exposure and potentially heat exhaustion. Following the provided recommendations will help ensure that you and your survey partners stay safe while working in the field.

Tips for Preventing Heat Exhaustion and Excessive Sun Exposure

- Do not conduct a field survey if the heat index rises above 130 degrees (see diagram below)



Category	Heat Index	Possible heat disorders for people in high-risk groups
Extreme Danger	130°F or higher (54°C or higher)	Heat stroke or sunstroke likely.
Danger	105 - 129°F (41 - 54°C)	Sunstroke, muscle cramps, and/or heat exhaustion likely. Heatstroke possible with prolonged exposure and/or physical activity.
Extreme Caution	90 - 105°F (32 - 41°C)	Sunstroke, muscle cramps, and/or heat exhaustion possible with prolonged exposure and/or physical activity.
Caution	80 - 90°F (27 - 32°C)	Fatigue possible with prolonged exposure and/or physical activity.

- Protect yourself from the sun by wearing a wide-brimmed hat, sunglasses, and applying sunscreen of SPF 15+ 30-minutes prior to being outside. Continue to reapply according to product directions.
- Wear lightweight, loose-fitting long-sleeved shirts and pants.
- Drink plenty of fluids, regardless of how active you are. Do not wait until you are thirsty to drink. Avoid sugary drinks which cause a loss in body fluid and ice-cold drinks which can cause stomach cramps.

- Replace the salt and minerals you lose while sweating by drinking sports drinks or water with electrolyte powder.
- Pace yourself. Take a break in a cool, shady spot or in your car with the air conditioning on if you start to feel overheated.
- Stay informed by checking the temperature forecast before leaving for the field. Schedule surveys early to avoid the hottest parts of the day. Monitor for signs of heat exhaustion, and do not continue surveying if you become overheated.

Heat Exhaustion	Heat Stroke
<p>ACT FAST</p> <ul style="list-style-type: none"> • Move to a cooler area • Loosen clothing • Sip cool water • Seek medical help if symptoms don't improve 	<p>ACT FAST</p> <p>CALL 911</p> <ul style="list-style-type: none"> • Move person to a cooler area • Loosen clothing and remove extra layers • Cool with water or ice
<p><i>Dizziness</i></p> <p><i>Thirst</i></p> <p><i>Heavy Sweating</i></p> <p><i>Nausea</i></p> <p><i>Weakness</i></p>	<p><i>Confusion</i></p> <p><i>Dizziness</i></p> <p><i>Becomes Unconscious</i></p>
<p><i>Heat exhaustion can lead to heat stroke.</i></p>	<p><i>Heat stroke can cause death or permanent disability if emergency treatment is not given.</i></p>
<p>Stay Cool, Stay Hydrated, Stay Informed!</p>	

CDC

Symptoms and Treatment

If you or your survey partners have any of the symptoms listed below, immediately move to a cool place and loosen tight clothing. Cool body with wet cloths, misting, or fanning while slowly sipping water. **Get medical help immediately if vomiting occurs, symptoms last longer than 1 hour or get worse, or if confusion develops.**

Symptoms: Heavy sweating, weakness or tiredness, cool/pale/clammy skin, fast or weak pulse, muscle cramps, dizziness, nausea or vomiting, headache, or fainting.

HEAT STRESS/STROKE FIRST AID

- Move to a cool, shady area
- HEAT STROKE CALL 911!
- Cool down entire body
- Spray or shower with cold water
- Use a fan or move to a room with air conditioning
- Place cool wet towels or ice packs on neck, armpits and groin
- Remove excess clothing
- If conscious, give fluids (no caffeine or alcohol)
- DO NOT GIVE FLUIDS IF HEAT STROKE SUSPECTED
- Lie down with feet elevated

2. Biological Hazards

Tick Safety

Grasslands in Virginia are known to host multiple species of ticks. It is important to prepare appropriately before conducting surveys. Reducing exposure to ticks is the best defense against Lyme disease and other tick-borne illnesses.

Before You Go Outdoors

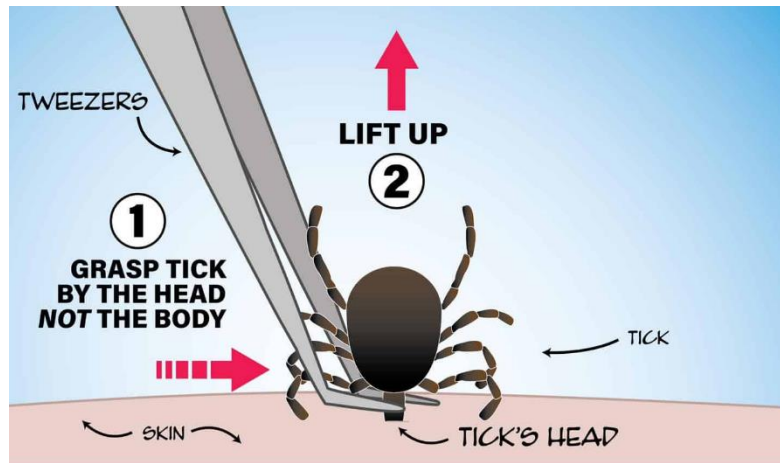
- Treat or buy clothing and gear with products containing 0.5% permethrin. Permethrin can be used to treat boots, clothing, and camping gear and will remain protective through several washings. Follow all directions carefully when using permethrin products.
- Utilize insect repellents and spray according to product instructions before entering fields. EPA-registered insect repellents: (<https://www.epa.gov/insect-repellents>)
- Wear long pants and pull socks over pants to prevent ticks from crawling underneath clothing.
- Recognize which ticks live in your area:
(https://www.cdc.gov/ticks/geographic_distribution.html)

After You Come Indoors

- Check for ticks and shower as soon as you are home. Inspect your entire body, including your head, groin, and underarms.
- Check your clothing for ticks. Heat can help kill ticks, either by placing clothes in a high heat dryer for 10 minutes or hanging clothes outside in the sun for 15 minutes. If the clothes require washing first, hot water is recommended. Cold and medium temperature water will not kill ticks.

Tick Removal

1. Use fine-tipped tweezers to grasp the tick as close to the skin's surface as possible. The key is to remove the tick as soon as possible. Avoid using nail polish, petroleum jelly, or heat to make the tick detach from the skin.
2. Pull upward with steady, even pressure. Do not twist or jerk the tick; this can cause the mouth parts to break off and remain in the skin. If the mouth parts remain in the skin and you are unable to remove them easily, leave them alone and let the skin heal.
3. After removing the tick, thoroughly clean the bite area and your hands with rubbing alcohol, an iodine scrub, or soap and water. **Save the tick** by placing it in the freezer in a Ziploc-style bag with the date of removal. Your medical provider may recommend having the tick tested if you develop any unusual symptoms.



Removing a tick with a pair of tweezers

TickSafety

Lyme Disease

If you find a Blacklegged (Deer) tick attached to your skin and are concerned about the potential of Lyme disease, save the tick in a Ziploc-style bag. Tick Testing is available at Ticksafety.com. Blacklegged (Deer) ticks are the only species of ticks in VA known to transmit Lyme disease.

If you get a tick bite and develop a fever, have chills/aches/pain, or a rash within a few weeks, contact your healthcare provider.

Farm Animals

While conducting research on private lands, you may come across wildlife, insects, farm animals, or plants that can pose safety hazards. Going into the field in groups is mandatory to help ensure safety in the field.

- The most common farm animals you will likely interact with are cattle and horses. Always follow landowner guidance when surveying in or moving through fields with animals in them. While most animals will leave you alone, be prepared to keep a safe distance while surveying.
- To determine a safe distance, fully extend your arm with your thumb up. If you can fully eclipse the animal, you are likely a safe distance away. (See image below)
- Give extra space to animals with young (i.e. cows with calves). **Never pass between an animal and its young.**
- Do not make loud noises or quick movements when walking near farm animals. Never cause an animal to feel cornered or feed animals while on surveys. Never stand directly behind the animal.

- If you ever feel uncomfortable when near an animal, calmly remove yourself from the area while keeping an eye on the animal. **Do not survey if you feel your safety is threatened!**



Wildlife

- The most common wildlife observed while on surveys are white-tailed deer, squirrels, groundhogs, red foxes, snakes, and raccoons. It's important to become familiar with these species.
- Never cause an animal to feel cornered or feed animals while on surveys. Always keep a safe distance away. To determine a safe distance, fully extend your arm with your thumb up. If you can fully eclipse the animal, you are likely a safe distance away.
- Never approach, touch, or feed a wild animal. If bitten by a wild animal, immediately wash the wound with soap and call a healthcare provider.
- [Rabies Prevention and Control](#)
 - Click the hyperlink above to learn what the CDC recommends for prevention and treatment of rabies.
- Black Bears:
 - Rarely observed in surveys. Give them a lot of space and back away slowly in the opposite direction. Keep bear spray accessible if you are in known bear areas.
 - If approached, make yourself look bigger and yell loudly. Only back away when the bear stops its approach. If the bear makes contact with you, fight back and do not play dead.

- **Venomous Snakes:**
 - The only venomous snakes in our survey region are Eastern Copperheads and Timber Rattlesnakes. While rarely observed during surveys, please keep a safe distance and do not disturb the snake. Most snake bites occur when people attempt to handle/kill the snake.
 - Avoid putting your hands or feet in places you can't see and wear thick footwear.
 - If bitten by a snake, you must seek immediate medical attention. Even bites from non-venomous snakes can cause infections.

Stinging Insects

- Wear insect repellent to protect against mosquitoes and ticks.
 - Mosquitoes can spread viruses like the West Nile Virus. Protect yourself using [these tips](#).
- Avoid walking near hives/nests of stinging insects like wasps, bees, and hornets.
- If you have a known allergy to stinging insects, please inform the VWL Survey Coordinator and ensure an Epi-pen is always with you during field work.
- If stung by an insect:
 - Move to safe area to avoid more stings, then remove any stingers.
 - If possible, wash the area and apply cold water or ice to reduce pain/swelling.
 - Apply anti-itch lotion or take an antihistamine to reduce itching.
- **Call 911 immediately if you have trouble breathing, swelling, dizziness, or vomiting.**

Poisonous Plants

- Be comfortable identifying poison ivy, poison oak, poison sumac, and poison hemlock (images on following pages)

Poison ivy (below) can grow as a single plant, a bush, or a vine on a tree. It has three leaflets that can vary in color and texture. The vines that grow on trees have hair-like roots. It can be found on a variety of sites.



ALA&M



ALA&M

Poison oak (below) often grows as a short shrub. It has three leaflets with wavy edges and fuzzy undersides. Leaf color may vary. It is most often found in dry sites.



OSU



OSU

Poison sumac (below) often grows as a tall shrub. It has 7-15 leaflets arranged in pairs with red stems. Leaf color may vary. It is most often found in wetlands.



ALA&M



UNH

Poison hemlock (below) is a tall, leafy weed. It has smooth, hollow stems covered in purple spots. The leaves are triangular and arranged in fern-like leaflets. Most often found in open areas including roadsides, pastures, and riversides.



UMN



UMN

- **When in doubt, don't touch!** Visit dof.virginia.gov/dont-pick-your-poison/ and <https://weedid.cals.vt.edu/profile/334> for more identification practice.
- Preparation:
 - Wear long sleeves, long pants tucked into boots, and impermeable gloves.
 - If prone to reactions, use IvyX Pre-Contact wipes before conducting field work.
- If Exposed During Survey:
 - Use IvyX Post-Contact wipes or Tecnu before driving home.
 - Once home, carefully remove all exposed clothes and wash skin in soap and cool water as soon as possible.
 - Wash exposed clothes and be sure to wash any surfaces that may have come into contact with you or the clothes.
- Treatment Tips:
 - Rash, blisters, and itch normally disappear in several weeks without any treatment.
 - Relieve itch by using wet compresses or applying over-the-counter (OTC) topical corticosteroid preparations.
 - Applying topical OTC skin protectants, such as zinc acetate, zinc carbonate, zinc oxide, and calamine dry the oozing and weeping of poison ivy, poison oak, and poison sumac.
 - **See a doctor if you have a temperature over 100°F, itching or rash gets worse, rash spreads to eyes/mouth/groin area, or you have difficulty breathing.**

3. Safely Navigating to Survey Assignments

Field Vehicle Safety

- Ensure your personal vehicle maintenance is up-to-date and has emergency first aid supplies. Make sure you always have enough gas to cover traveling to and from survey sites.
- Although surveys are conducted on private property, road maintenance is not consistent across all properties. Follow the survey site directions provided and **when in doubt, don't continue driving in poor road conditions** (i.e. muddy, bumpy, high vegetation, etc.). If you are unsure whether you should proceed, park your car in a safe area and walk to your designated survey point.
- There are often properties with limited-to-no cell service. Always arrive at survey sites with paper maps or pre-downloaded online maps.

General Field Safety Recommendations

- Many of our survey fields have fox dens or groundhog holes hidden by the tall grasses. Watch your footing while walking and go slowly in areas with limited visibility.
- Check the forecast and weather advisory notices. If there is a chance of thunderstorms or poor air quality, reschedule your surveys.
- If you feel sick, stay home and let the VWL Survey Coordinator know as soon as possible. Do not attend a survey if you are sick.
- Bring a First Aid Kit in the field with you that is well equipped. (blogs.cdc.gov/publichealthmatters/2021/05/first-aid-kits/)

4. Incident Reporting

- In the event of **emergency**, get to a safe place and **call 911!** If possible, notify the landowner and your survey partners for immediate assistance in the field.
- Any and all health or safety incidents that occur while conducting fieldwork for VWL must be reported immediately to the Survey Coordinator, regardless of severity. Please report them as soon as possible so Smithsonian staff can best provide support for volunteer surveyors in these situations.
- Survey Coordinator Contact Information:
 - Point of Contact: Erin Shibley
 - Phone Number: 540-635-0073
 - Email: ShibleyE@si.edu

5. Stay in Touch with VWL Staff

Please let us know when/where you will be while out in the field. Contact us once you are safely home from your survey(s). Your safety is the most important part of VWL fieldwork.

Do not survey if you feel your safety is threatened!

- Survey Coordinator Contact Information:
 - Point of Contact: Erin Shibley
 - Phone Number: 540-635-0073
 - Email: ShibleyE@si.edu
- Biodiversity Technician Contact Information:
 - Point of Contact: Christopher Rademacher
 - Email: rademachercj@si.edu
- Botany Technician Contact Information:
 - Point of Contact: Natalie Izlar
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