

*Guide to Working
Safely Outdoors*
on the
**Green Mountain and
Finger Lakes
National Forests**

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Driving On Roads

General Driving

1. Always conduct a pre-operation maintenance and safety check on your vehicle before leaving your work station.
2. Always wear your seat belt. If you are a vehicle operator, you are responsible for ensuring that all passengers are buckled up, too.
3. Be constantly vigilant - ready to react to sudden emergencies.
4. Do not allow yourself to be distracted while you drive. Do not eat, drink, use the two-way radio or cell phone while driving. Pull off the road and stop to do these things or have someone else drive.
5. Do not tailgate: maintain at least four seconds of travel time between you and the vehicle ahead. Increase that distance by one second for each additional hazard such as dust, darkness, rain.

Driving on gravel roads

“Washboard” road conditions can cause a vehicle to careen out of control if travel speed is too fast or shocks/struts are worn. Washboards are ripple across the road surface caused by repeated vehicle tire slippage in gravel. Washboards are especially common on hills.

Loose or hard packed gravel surfaces can reduce the effectiveness of your vehicles brakes - especially for vehicles equipped with ABS brakes.

Dust from dry gravel roads can obscure vision.

Vehicles in front can eject stones rearward impacting your vehicle.

Other operators frequently drive too fast on narrow mountain roads.

Animals often cross roads in front of vehicles – day or night.

Gravel roads are periodically graded leaving a temporary berm of loose gravel in the road and reduced width travel lanes.

After being graded, gravel roads can be slippery due to loose gravel.

Hazard abatement actions:

1. Check vehicle condition – lights, shock/struts before leaving work station.
2. Keep your travel speed down.
3. Be especially cautious on road curves with reduced sight distance by slowing down to anticipate oncoming vehicles on the wrong side of the road.
4. Slow down before hitting washboards.

5. Use four-wheel drive if available when traveling uphill on gravel roads. Using four-wheel drive reduces road wear and tear and minimizes fishtailing caused by loose gravel and washboards.
6. Drive with your headlights on day or night.
7. Watch ahead for animals, especially along edges of roads.
8. If you encounter a section of road that is being graded, slow down. If it is necessary to cross the berm of gravel in the road, do so very slowly to avoid damaging critical underside parts of your vehicle. Do not travel straddling the gravel berm due to the likelihood that there may be potentially damaging rocks buried in the berm.
9. Keep your speed down on recently graded roads.

Driving During Winter

Ice or snow can cause roads to become extremely slippery. On steep grades, this can result in loss of vehicle control. Driving too fast for the conditions can result in the same.

Road conditions can vary widely, even on the same trip over the same roads. An open stretch of road on a sunny day may have melting conditions with water on the surface, whereas shaded portions of the same road will remain icy. The open, sunny roads will freeze again as evening temperatures drop, creating the possibility of black ice. Be vigilant to the road surface, and these changes due to time of day, cloud cover, and precipitation.

As the snow melts and roads thaw, shoulders can become very soft. Driving onto and soft shoulder could cause vehicle to be pulled off road into ditches or over embankments.

Snow surfaces and low sun angles can reduce your ability to see under certain circumstances.

Snow removal, salting, and sanding trucks take much more road width and move slower than other vehicles and can create clouds of blowing snow that reduce visibility.

Hazard abatement actions:

1. Ensure that your vehicle has a snow shovel, tire chains (upon request and if allowed by vehicle manufacturer), jumper cables, first aid kit, or other tools necessary in case of emergency.
2. Always sign out with a specific itinerary and expected return time.
3. Reduce travel speed to allow for increased stopping distances caused by snow or ice covered surfaces.
4. Know before you go:
 - a. Know what kind of braking system with which your vehicle is equipped.
 - b. Learn how to react to skids with the type of braking system in your vehicle.
5. Ensure that your vehicle radio is in working order or that you have alternative means of communication.
6. Wear sunglasses and sun visor as necessary to deal with glare.
7. Do not pass snow removal, salting, and sanding vehicles unless they pull over to allow such. Keep right to allow safe passage of such oncoming vehicles.
8. If you'll be travelling in areas with poor communications or on lesser travelled roads away from state highways or high traffic town roads, carry a blanket or sleeping bag in the vehicle and take extra food and fluids.

Extended Travel

Falling asleep while driving could result in your driving off the road or out of your lane into oncoming traffic causing a major crash with potentially serious injuries or death to you or occupants of your or other vehicles or major vehicle collision damage. Driving alone over long distances and in bad weather conditions can be extremely tiring. Drowsiness and possible vehicle crash are a strong likelihood.

Drowsy driving is a contributing factor in 22% of car crashes and near mishaps.

Hazard abatement actions:

- Recognize the symptoms of drowsy driving:
 - Yawning
 - Inability to keep eyes open and head raised
 - Not remembering last few miles, missing signs
 - Drifting out of lane, hitting rumble strips, accidentally tailgating
- Avoid drowsy driving:
 - Get sufficient rest on an ongoing basis.
 - Do not work longer than 12 hours per shift
 - If driver is prone to drowsiness, a second person must accompany him/her.
 - Avoid taking medications that can cause drowsiness if you will need to drive. If you have taken such medications, do not drive!
 - Methods that **are** effective at preventing sleep related crashes listed from most to least effective:
 1. **Engage in conversation with a passenger.**
 2. Take a 10-20 minute nap break if feeling drowsy.
 3. Drink coffee (delayed effect, short duration, and less effective than 1 & 2).

Use personal eye motion monitors, head tilt monitors, or vehicle drift sensors if other measures cannot be implemented effectively and drowsiness while driving continues to be an issue.

Stopping to stretch or exercise briefly, turning up the radio, or opening windows **are not effective** at preventing sleep related vehicle crashes.

- Follow established work/rest policy. **Only 10 hours/day may be spent driving, with breaks every 2 hours.**
- Do not exceed a shift length of more than 12 hours in any work day.
- Take a break of at least 30 minutes not less than once every 6 hours worked.
- ***If you know you are prone to sleepiness while driving, notify your supervisor.***
- Maintain good eating and sleeping habits and drink plenty of water. Don't overexert before driving.
- If fatigued, do not continue to drive. Pull over and take a nap.

Visitor Contacts In Remote Settings

Assaults or conflicts with other Forest visitors or random acts of violence from them could result in you being seriously injured or killed.

- Pay attention to information/emails distributed from law enforcement about visitors on the Forest with a dangerous or violent history, where they have been seen, and when. Get a description of the person(s) and the license plate and the type of vehicle they are driving.
- Inform someone of your work plans. Check in with the designated office daily, particularly if working alone.
- Listen for the Alarm. We often receive subtle, internal warnings about an unsafe act before an incident occurs. Tune in to this warning, often manifested as an uneasy feeling or idea that something is wrong. Avoid hurrying, or being preoccupied in compliance/enforcement situations. Do not make contact with individuals if you are uneasy about the situation.
- Try to be intentional about your actions, you may feel intimidated, but act in control. Keep cool. If the person you are speaking to is angry, listen-don't react.
- Refer those who disagree with FS policy to your District Ranger or Forest Supervisor.
- When in doubt, quickly and quietly leave the area and seek help if a dangerous situation is suspected. You may have to take an alternate route out requiring a vehicle pickup or leave some camping gear for retrieval at a later time.
- Consider the implications for personal safety when deciding whether to wear a Forest Service uniform and/or drive a Forest Service marked vehicle. Remove your uniform shirt and any other agency identification if this strategic for your safety.
- Learn the warning signs of a potential assault. Avoid dangerous situations and hostile visitors.
- Avoid confrontations. Don't antagonize a potential assailant. Know when and how to escape.
- Avoid contact situations where alcohol and/or drugs are present whenever possible. When camping, make your visitor contacts in the late afternoon or early evening before visitor contacts with alcohol or drug use is accelerated.
- When visiting campsites, make your entrance known with a greeting, cough or whistling so as not to startle campers with illegal substances or weapons. Introduce yourself and make a positive impression in your conversation.
- Keep your space and watch out for violent dogs. Some campsites will have dogs resting quietly at their campsite that will bite and are restrained only by a rope.
- Recognize that any unknown visitor could be dangerous.
- Make your camp a secret. Keep camps well hidden from trails, trailheads, or other occupied areas. Visitors may try and find you to make you deal with loud drug and alcohol related parties beyond your scope of authority and safety.
- Watch for suspicious behaviors. If such behavior is noticed, leave the area. Don't take chances.
- If working alone and interacting with visitors, pretend that a partner is nearby. If a person approaches and looks angry or threatening use your radio to alert dispatch or the district office. Even if you are in an area where you can not transmit, you can give the impression that you are in radio contact.

- Make sure your radio (or cell phone) has sufficient power and/or carry additional battery clamshell. Make sure your radio is fully charged before leaving the office and carry fully charged extra batteries.
- Know how to get help quickly. Call or text 911 or radio for assistance. In poor coverage areas you can sometimes get out using texting when you can't get out with a phone call. Place office contact information (ie front desk, law enforcement, supervisor) in cell phone for quick retrieval.
- Be particularly watchful when entering and exiting trailhead parking areas or concentrated use areas. Look the area over for unknown persons or disturbances.
- Never get into a private vehicle. If you are stranded radio for help, stay in your vehicle until help arrives.
- If you meet individuals on isolated roads, stay in your vehicle, let them approach you.

Heat Stress

Introduction

Heat stress is caused by a number of interacting factors, including environmental conditions, clothing, workload, and the individual characteristics of the worker. Because heat stress is a significant hazard in hot work environments and individuals react differently to heat, regular monitoring and other preventive precautions are vital. Factors that may make someone susceptible to heat stress include the following:

Environmental:

Air temperature; humidity; radiant heat from the sun and other sources, conductive heat sources, such as the ground, air movement, workload severity and duration, protective clothing; and PPE.

Personal:

Individuals vary in their susceptibility to heat stress. Factors that may predispose someone to heat stress include: Dehydration, overweight, lack of physical fitness, lack of acclimatization; medications, use of alcohol or drugs, water consumption, caffeine consumption, and medical conditions such as hypertension, infection, sunburn, diarrhea, chronic disease.

Monitoring

The incidence of heat stress depends on a variety of factors so all employees, especially those who wear protective equipment, should be monitored.

It is important to understand the common signs and symptoms of heat illness to recognize it in oneself and others and know how to respond. As part of the training, identify different types of heat illness and

common signs and symptoms as well as procedures for contacting emergency medical services.

Heat Disorders

- Fatigue — occurs more quickly during exertion in hot conditions because of the body's natural cooling methods.
- Heat rash — occurs when sweat ducts become plugged.
- Fainting — occurs when the brain doesn't get an adequate blood supply.
- Heat cramps — occur in tired muscles when the worker sweats profusely and drinks large quantities of water.
- Heat exhaustion — can result when a person has lost large amounts of fluid by sweating.
- Heat stroke — occurs when the body's temperature regulatory system fails and sweating has become inadequate to remove excess body heat.

Prevention

Preventing heat stress is important because once someone suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat injuries. To avoid heat stress, management should:

Prior to hot weather, train staff on heat stress protocols.

On a day anticipated to be hot, humid, or both, take first RH and temperature reading by mid to late morning. If Heat Index reaches Pink zone (Danger) or Red zone (Extreme Danger) on the National Weather Service Heat Index Chart below, contact people working outdoors to give them that information.

If the next day's weather is anticipated to reach the Danger or Extreme Danger zone, begin implementing the precautions (such as altered work schedules) prior to that day.

General guidelines:¹

- Be aware of and alert to heat related illnesses as described above.
- Do not do strenuous work if you have signs of illness, such as fever, diarrhea or extreme fatigue. These can decrease your body's exercise heat tolerance. If you suddenly fall ill during exercise in the heat, slow down or stop.
- Ensure that workers are physically fit for the work.
- Urge workers to maintain normal weight levels.
- Maintain hydration by drinking water periodically throughout the day (flavoring water with citrus flavors or extracts enhances palatability). Encourage worker to drink small quantities frequently totaling up to one liter per hour when doing arduous work on high heat index days.

Ways to adjust work on high heat index days

¹ High mid-day heat indices do not necessarily mean one cannot work. However, adjustments in the normal routine are

1. Wear light, loose-fitting, breathable clothing.
2. Acclimate: reduce workload and/or duration of physical exertion during the first two weeks of heat exposure to allow gradual acclimatization. Reduce the pace physical demands of the work.
3. Mandate work slowdowns if needed.
4. Allow intermittent hydration, cool-off, and recovery breaks of no less than five minutes in cool recovery or shaded rest areas. Higher heat indices may require longer or more frequent breaks.
5. Use the buddy system (work in pairs) when working in hot conditions. Use relief workers and rotate personnel on different job functions. Add additional personnel to work teams.
6. Schedule more arduous work or work in direct sun during early morning when the Heat Index is lower, then switch to work in more shaded area or less arduous work.
7. Alter the daily work schedule. Instead of working in the field to the end of the day, return to home base early and set up equipment and vehicle for the following day or to do administrative work late to allow an early start the following day if the weather is forecast to be hot or humid.
8. Curtail or suspend arduous physical work when conditions are Extreme Danger (see Heat Stress Index chart below).

Determine Heat Index in a location that is similar to the environment where employees are working, i.e., the nearest office should take readings for a particular geographic area.

warranted and recommended to reduce the risk of adverse heat stress effects.

Heat Index – Heat Stress

How to determine heat stress Index:

Find the temperature on the left hand side, and then move to the right until you find the column for the relative humidity that you measure with your psychrometer. That number will be the temperature that it will "feel" like. For example, a temperature of 95°F and relative humidity of 50% will "feel" like 107°.

NOTE: Depending on intensity of sunlight and season, **add 10° F when protective clothing is worn and add 10° F when in direct sunlight.**

Heat Index Chart															
Temperature (°F) vs. Relative Humidity															
Relative Humidity (measured)															
Temperature (°F)	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%
115	111	115	120	127	135	143	151								
110	105	108	112	117	123	130	137	143	151						
105	100	102	105	109	113	118	123	129	135	142	149				
100	95	97	99	101	104	107	110	115	120	126	132	136	144		
95	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136
90	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113
85	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97
80	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86
75	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78

Heat Index/Heat Disorders	
Heat Index	Possible heat disorders for people in higher risk groups
130 or higher -Extreme Danger	Heatstroke/sunstroke highly likely with continued exposure.
105-130 -Danger	Sunstroke, heat cramps or heat exhaustion likely, and heat stroke possible with prolonged exposure and/or physical activity.
90-105	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
80-90	Fatigue possible with prolonged exposure and/or physical activity.

Source: [National Weather Service](#)



Article: <https://www.mayoclinic.org/diseases-conditions/hypothermia/symptoms-causes/syc-20352682>

Hypothermia

Introduction

Hypothermia occurs when more heat escapes from your body than your body can produce. Signs and symptoms of hypothermia may include gradual loss of mental and physical abilities. Severe hypothermia can lead to death.

For most people, hypothermia isn't a serious risk. Still, each year nearly 700 people in the United States die of hypothermia. Prolonged exposure to cold air or cold water temperatures are common causes.

When you're outdoors enjoying such activities as camping, hunting, fishing, boating and skiing, be aware of weather conditions and whether you or others with you are wet and cold. If you get cold and wet, move indoors and get warm and dry early — before you develop hypothermia.

Signs and symptoms

Hypothermia usually occurs gradually. Often, people aren't aware that they need help, much less medical attention.

Common signs to look for are **shivering**, which is your body's attempt to generate heat through muscle activity, and the "**-umbles**":

- Stumbles
- Mumbles
- Fumbles
- Grumbles

These behaviors may be a result of changes in consciousness and motor coordination caused by hypothermia. Other hypothermia symptoms may include:

- Slurred speech
- Abnormally slow rate of breathing
- Cold, pale skin

- Fatigue, lethargy or apathy

The severity of hypothermia can vary, depending on how low your core body temperature goes. Severe hypothermia eventually leads to cardiac and respiratory failure, then death.

Causes

Unlike other warm-blooded animals that have a layer of fur or blubber to keep them warm, you need an extra layer of clothing to keep you warm when it's cold outside. Without that extra layer of clothing, more heat escapes from your body than your body can produce. If too much heat escapes, the result is hypothermia. Exposure to cold water and certain medical conditions also can cause hypothermia.

Your normal core body temperature is usually right around 98.6 F. In hypothermia, your body fails to maintain a normal temperature. **An internal body temperature of 95 F or lower signals hypothermia.**

The cause of hypothermia usually is extended exposure to cold temperatures or a cool, damp environment. Other contributing causes include inadequate clothing and neglecting to adequately cover your extremities, particularly your head — a disproportionate amount of heat is lost through your head.

Hypothermia in milder weather

Hypothermia can happen not just in cold winter weather, when there are low temperatures or low wind chill factors, but under milder conditions as well. A rain shower that soaks you to the skin on a cool day can lead to hypothermia if you don't move inside to warm up and dry off. If you stay outside, evaporation of the water from your skin further cools your body, lowering your internal temperature. A wind blowing over the wet parts of your body greatly increases evaporation and cooling.

An accidental fall into cold water is especially likely to lead to hypothermia. Hypothermia may develop within minutes of being exposed to cold water, or it may take several hours, depending on the water temperature. Water doesn't have to be icy cold to cause hypothermia. Your body loses heat more quickly in water than in air. Any water temperature lower than your body temperature causes your body to lose at least some heat.

Risk factors

Being in extreme cold, wearing wet clothes — especially in the presence of wind — and being in cold water can all play a part in increasing your chances of hypothermia. In addition, other factors make you more vulnerable:

- **Exhaustion.** Your tolerance for cold diminishes when you are fatigued.

- **Advanced age.** People age 65 and older are especially vulnerable because they may have other illnesses or take medications that can interfere with the body's ability to regulate temperature.
- **Very young age.** Children usually lose heat faster than adults do. Children have a larger head-to-body ratio than adults do, making them more prone to heat loss through the head. Children may also ignore the cold because they're having too much fun to think about it. And they may not have the judgment to dress properly in cold weather or to get out of the cold when they feel cold. Infants may have a special problem with the cold because they have less efficient mechanisms for generating heat.
- **Mental problems. People with a mental illness, dementia or other conditions that interfere with judgment may not dress appropriately for the weather or understand the risk of cold weather. People with dementia may wander from home or get lost easily, making them more likely to be stranded outside in cold or wet weather.**
- **Alcohol and drug use.** Alcohol may make your body feel warm inside, but it causes your blood vessels to expand, resulting in more rapid heat loss from the surface of your skin. The body's natural shivering response is diminished in people who've been drinking alcohol. In addition, the use of alcohol or recreational drugs can affect your judgment about the need to get inside or wear warm clothes in cold weather conditions. If a person is intoxicated and passes out in cold weather, he or she is likely to develop hypothermia.
- **Certain medical conditions.** Some health disorders affect your body's ability to regulate body temperature. Examples include an underactive thyroid (hypothyroidism), poor nutrition or anorexia nervosa, diabetes, stroke, severe arthritis, Parkinson's disease, trauma, and spinal cord injuries.
- **Water conditions.** Factors contributing to your risk of hypothermia in cold water include the temperature of the water and the length of time you spend in it. Rescue time is crucial when a person accidentally falls into cold water. Chances of survival are affected by how cold the water is: The colder the water, the less the chance of survival.

Water temperature	Time until exhaustion or unconsciousness	Expected time of survival in the water
Under 32 F (icy waters)	Less than 15 minutes	Less than 15 to 45 minutes
32.5 to 40 F (Lake Superior in spring)	15 to 30 minutes	30 to 90 minutes
40 to 50 F (Maine coastal waters in spring)	30 to 60 minutes	1 to 3 hours

50 to 60 F (Central Pacific coastal waters year-round)	1 to 2 hours	1 to 6 hours
60 to 70 F (Gulf of Mexico in winter)	2 to 7 hours	2 to 40 hours
70 to 80 F (Gulf of Mexico in spring and fall)	3 to 12 hours	3 hours to indefinite
More than 80 F (Key West coastal waters in summer)	Indefinite	Indefinite

Source: United States Search and Rescue Task Force

When to seek medical advice

The signs and symptoms of the person suffering from exposure to the cold are the strongest indicators of hypothermia. Seek immediate medical care for any person who has been exposed to cold air or water and who is shivering, appears disoriented, shows a lack of coordination, has cold and pale skin, appears tired, and is slurring speech. Try to keep the person warm and dry, preferably indoors or at least out of the wind, until help arrives.

Complications

People who develop hypothermia because of exposure to cold weather or cold water are also vulnerable to other cold-related injuries, including:

- Freezing of body tissues (frostbite)
- Decay and death of tissue resulting from an interruption in blood flow (gangrene)

The lower your core body temperature, the greater your chance of complications and permanent damage.

Treatment

Seek immediate medical attention for anyone who appears to have hypothermia. Until medical help is available, follow these hypothermia treatment guidelines for caring for someone who is affected.

What to do

- **Move the person out of the cold.** Preventing additional heat loss is crucial. If you're unable to move the person out of the cold, shield the person from the cold and wind as best you can.

- **Remove wet clothing.** If the person is wearing wet clothing, remove it and replace it with a dry covering. Cover the person's head. Try not to move the person too much. Cut away clothing if you need to.
- **Insulate the person's body from the cold ground.** Lay the person faceup on a blanket or other warm surface.
- **Monitor breathing.** A person with severe hypothermia may appear unconscious, with no apparent signs of a pulse or breathing. If the person's breathing has stopped or appears dangerously low or shallow, begin cardiopulmonary resuscitation (CPR) immediately if you're trained.
- **Share body heat.** To warm the person's body, remove your clothing and lie next to the person, making skin-to-skin contact. Then cover both of your bodies with a blanket.
- **Provide warm beverages.** If the affected person is alert and is able to swallow, have the person drink a warm, nonalcoholic beverage to help warm the body.

What not to do

- **Don't apply direct heat.** Don't use hot water, a heating pad or a heating lamp to warm the person. Instead, apply warm compresses to the neck, chest wall and groin. Don't attempt to warm the arms and legs. Heat applied to the arms and legs forces cold blood back toward the heart, lungs and brain, causing the core body temperature to drop. This can be fatal.
- **Don't massage or rub the person.** Handle people with hypothermia gently because they're at risk of cardiac arrest.
- **Don't provide alcoholic beverages.** Alcohol lowers the body's ability to retain heat.

What a doctor may do

A doctor will be able to take steps to warm the body from the inside out, if necessary. One method may involve giving the person warm fluids intravenously.

In severe cases of hypothermia, a process called hemodialysis may restore normal body temperatures quickly. Hemodialysis is a medical procedure that removes extra fluid, chemicals and wastes from the blood by filtering the blood through an artificial kidney. It's often used in people with kidney failure. In a hypothermia situation, the blood is removed purely to warm it rapidly outside the body and then have it returned to the body.

Prevention

For people most at risk of hypothermia — people who are older, who have mental or physical impairments, or who are homeless — community outreach programs and medical and social support services can be of great help. Identifying and checking in on vulnerable people and groups, avoiding prolonged exposure to the cold, and ensuring

adequate heating are good steps to take toward hypothermia prevention. Monitoring bracelets may provide assistance for people who have a tendency to wander from home.

Avoid excessive alcohol consumption and the use of illegal substances, because these may increase your risk of hypothermia. Also, don't drink alcohol and operate a boat or other watercraft. Alcohol can impair your ability to navigate the waters, increasing your risk of an accident and of falling into cold water.

Staying healthy in cold weather

Before you or your children step out into cold air, remember the advice that follows with the simple acronym COLD — cover, overexertion, layers, dry:

Before you or your children step out into cold air, remember the advice that follows with the simple acronym COLD — cover, overexertion, layers, dry:

- **Cover.** Wear a hat or other protective covering to prevent body heat from escaping from your head, face and neck. Cover your hands with mittens instead of gloves.
- **Overexertion.** Avoid activities that would cause you to sweat a lot. The combination of wet clothing and cold weather can cause you to lose body heat more quickly.
- **Layers.** Wear loose fitting, layered, lightweight clothing. Outer clothing made of tightly woven, water-repellent material is best for wind protection. Wool, silk or polypropylene inner layers hold body heat better than cotton does.
- **Dry.** Stay as dry as possible. Get out of wet clothing as soon as possible. Be especially careful to keep your hands and feet dry, as it's easy for snow to get into mittens and boots.

During cold-weather months, keep emergency supplies in your car in case you get stranded. Supplies may include several blankets, matches, candles and some foodstuffs, such as granola bars or crackers. A cell phone also can come in handy. If your car is stuck in a snowbank, be careful about leaving the engine running, because infiltration of carbon monoxide inside the car may pose a silent danger.

Cold-water cautions

Water doesn't have to be extremely cold to cause hypothermia. Any water that's colder than body temperature causes heat loss. Water that's colder than 70 F can quickly begin to cause hypothermia. The following tips may increase your survival time in cold water, if you accidentally fall in:

- **Wear a life jacket.** If you plan to ride in a watercraft, wear a life jacket. A life jacket can help you stay alive longer in cold water by allowing you to float without using energy and providing some insulation.

- **Don't panic.** If you're unable to swim to safety, stay calm. Unnecessary movements require you to exert extra energy and lose body heat.
 - **Position your body to minimize heat loss.** Use a body position known as the heat escape lessening position (HELP) to reduce heat loss while you wait for assistance. Hold your knees to your chest to protect the trunk of your body. If you're wearing a life jacket that turns your face down in this position, bring your legs tightly together, your arms to your sides and your head back.
 - **Huddle with others.** If you've fallen into cold water with other people, keep warm by facing each other in a tight circle.
 - **Don't remove your clothing.** Buckle, button and zip up your clothes. Cover your head if you have a hood. The layer of water between your clothing and your body will be warmed and help insulate you.
 - **Don't attempt to swim unless you're close to safety.** Unless a boat, another person or a life jacket is close by, stay put. Swimming expends extra energy, lowers body temperature and can shorten survival time.
-

Exposure to Ionizing Radiation (sun)

Exposure to ionizing radiation (sun) can result in severe skin burns and greatly increase the likelihood that you will contract any one of several types of variety of skin cancers.

Hazard abatement actions:

- Cover up. Wear a hat with an encompassing rim that preferably covers your ears, neck and face. Wear a long sleeve shirt (with sleeves rolled down and a collar turned up in the sun). Wear long pants and use a bandana to provide additional cover.
- Use a strong sun block - SPF 75. Apply lower SPF rated lotions several times per day.
- Use protective lip balm.
- Wear only high-quality sunglasses that filter out 100% of UV A, B, and C radiation with amber, gold, or brown lens to filter HEV (High Energy Violet).
- Seek cover when exposure is not necessary. Take breaks in the shade.

Navigating in the Backcountry

Hazard abatement actions:

1. Sign out using local sign-out policy. Ensure someone knows your itinerary. Leave map showing where you will be.
2. Establish set check in times that make sense for your unit and your situation and number of people and risk involved.
3. Identify anyone in party with special medical conditions/needs related to mission safety/risk. Persons who have known allergies to insect stings should inform the other party members of such allergies and, based upon their doctor's advice, be prepared to deal with their own medical emergencies.
4. Identify anyone in party with emergency medical training and medical first aid kit available
5. Be able to describe your location to emergency medical responders. Share this information with your local office.
6. Carry a combination of radio, cell phone, and satellite GPS tracking devices (ie.SPOT, InReach) to meet communication needs and spare batteries, or travel with someone who does. Realize there may not be radio or cell coverage everywhere across the Forests. Ask your Supervisor about gaps in radio, cell, or satellite coverage before going to the field.
7. Carry first aid & survival kit (flashlight or headlamp, waterproof matches or other fire starter, insulated space blanket, water purification tablets, energy bars, tick removal tweezers, signal whistle) and have knowledge & training to use them.
8. Carry map and compass with mirror for signaling, and be proficient in their use. If using Smartphone, or other GPS to guide you, take spare batteries for the device.
9. Check for hazards like snags, poison ivy, loose boulders and bees when you rest.

Walking On Slippery, Steep, or Rough Ground Conditions

Uneven Ground, steep slopes, rocks, roots, moss, muddy/wet or frozen/icy conditions

Hazards:

Slippery or icy conditions lead to slips and falls with potentially serious impact injuries such as broken bones, cuts requiring surgery or stitches, head injuries, concussions, dislocated knees or shoulders, broken or sprained ankles or wrists, severe pain or infection from blisters.

Injuries due to fatigue

Hazard abatement actions:

1. Be in shape for the work. Become job ready by starting physical conditioning at least 8 weeks prior to commencing work on rough ground or trails. Focus on **enhancing balance, leg and ankle strength, and aerobic conditioning**.
2. Know your own strengths and weaknesses and stay within your limits.
3. When you take a break and as you move through the day—"look up, look down, look all around". Maintain good situational awareness with your changing surroundings.
4. If ground, trail, or other walking surface conditions pose a slip/fall hazard due to ice or packed snow, wear supplemental traction devices such as crampons, Stabilicers, Kahtoola, Microspikes, YakTrax or similar over-the-boot devices for all workers.
5. When walking on snow, Choose metal frame snowshoes with built-in traction claws instead of wooden snowshoes. Metal frame models offer superior traction and can "bridge" gaps and holes without fear of breakage. Never walk on frozen beaver ponds or any body of water larger than a small brook.
6. Wear properly fitted footwear (closed toe boots) with ankle support & traction tread. Steel toed boots not good for long distance hiking. Higher tops help to keep rocks and debris out of your boots.
7. Personnel assigned to Wildland fires must wear a minimum of 8-inch high, lace-type exterior leather work boots with melt-resistant lug soles. The 8-inch height requirement is measured from the bottom of the heel to the top of the boot. Hiking boots are not acceptable.
8. Wear good quality boot socks with wicking liner socks (carry extra). Consider using cushioned "air pillow" style insoles in work boot when on feet for extended periods.
9. On longer hikes, carry moleskin and apply it at the first sign of a "hotspot" on feet. Do not wait until a blister has formed!
10. Carry tools on downhill side of body so you can discard them quickly if you slip or trip.
11. Do not hike alone in remote areas during winter or where access by emergency services is difficult.
12. Look ahead – see the trail (don't step on what you can step over)
13. Do not hold branches for people following you.
14. To avoid branches slapping you in the face or eyes, stay at least 10 feet behind the person in front of you.
15. ***Plan your footsteps carefully, take each step mindfully, and look where you are stepping. If you must look up or around, stop first.***

16. On steep ascents and descents, walk in a zig-zag pattern across the slope, carefully placing feet and resting often to avoid tripping. Use a stout staff, be mindful to stay balanced.
17. Step over or walk around rocks or logs; slippery rocks and rotten logs have caused a number of falls with broken bones, surgery, or major gashes requiring stitches. Veteran field worker state: "*Stepping on rocks and logs requires more energy than walking around them, therefore causing you to become fatigued sooner.*" Fatigue increases the likelihood of falls.
18. On steep ground do not rely upon grabbing small trees and brush to pull you uphill or to slow your descent downhill.
19. Do not run.
20. Be alert for crevices and holes that can trip you or break your ankle especially on stony or bouldery ground. This is a common condition so be alert in stony or bouldery terrain.
21. Don't cross streams jumping on rocks. Find a place to cross in shallow water. Use a staff or trekking pole to test and support. Don't work near, cross, or ford streams on days with rain/thunderstorms forecast.
22. Use trekking poles if needed especially when carrying loads in excess of 25 lbs. Trekking poles can increase safety for some people by helping maintain balance and secure footing. They can help reduce the stress on knees and thighs. They also may improve endurance, help relieve tension in back muscles, and reduce stress to the spine.
23. Inform others of travel plans including routes, destinations, duration, and names of people in group with contact information for emergency notifications.
24. Be physically fit for the anticipated hike. Be informed prior to trip of level of difficulty and probable hazards.

Water-Borne Pathogens

Surface water is often if not usually contaminated by pathogens such as E-Coli, Fecal coliform (often from animals), Giardia, Cryptosporidium, amoebic organisms, Toxoplasma, Clostridium botulinum.

You can become very ill from drinking untreated surfaces water or ingesting it by brushing teeth, eating with dinnerware washed in untreated water, or cooking with insufficiently treated contaminated waters.

Serious intestinal infections leave you in higher risk for secondary life threatening or lifelong debilitating health issues such as kidney failure, reactive arthritis or Guillain-Barré Syndrome

Hazard abatement actions:

1. Don't swim in beaver ponds.
2. Never drink, brush teeth, or wash dishes and hands with natural surface waters even if they look pristine. Swimming in or using untreated natural water can cause severe intestinal diseases with possible long-term severe side effects.
3. Carry your own water from a potable source or;
4. Filter native water using a portable filter with an "absolute" pore size of 1 micron or smaller. Look for the NSF trademark plus the words "cyst reduction" or "cyst removal" on the product label information or;
 - a. Strain out debris then boil it at a rolling boil for 5 minutes or;
 - b. Treat native water with:
 - i. **Tincture of Iodine:** Add five drops of 2 percent U.S.P. Tincture to each quart of clear water. For cloudy water add ten drops and let stand for at least 30 minutes.
 - ii. **Iodine Tablets:** Follow directions on package, or use one tablet for each quart of water to be purified when directions are not available.

Chlorine Bleach: Follow directions on the label, if given, or, if strength of bleach is unknown, add 10 drops per quart of water. Double for cloudy or colored water. Wait 30 minutes or more before drinking.

Lyme Disease – Tick Exposure Control

Working in wooded areas, low-growing grassland, and the sandy soil areas, Deer ticks resting on low-lying brush could 'catch a ride' on you or your pet as you rub past.

Hazard abatement actions:

http://www.cdc.gov/ncidod/dvbid/Lyme/Prevention/ld_Prevention_Avoid.htm

1. Avoid tick infested areas, when possible. Avoid short-cuts through heavily wooded, tick-infested areas. Use caution when you are entering tick-infested areas. Stay in the center of paths, avoid sitting on the ground, and conduct frequent tick-checks.
2. Wear light-colored clothing. This allows you to more easily see ticks on your clothing and gives you the opportunity to remove them before they can attach to your skin and feed.
3. Wear a long-sleeved shirt and long pants to reduce the skin area exposed to ticks. Tuck your shirt into your pants and pants into your socks to keep the ticks on the outside of your clothing and thwarts their efforts to crawl onto your skin.
4. Use EPA-approved tick repellents or get your uniform treated with “Insect Shield”.
5. Conduct frequent tick-checks including a visual inspection of the clothing and exposed skin, followed by a naked, full-body examination in a private location. Be sure to check the scalp, behind and in the ears, and behind any joints.
6. Check your pets too. Pets can bring ticks in from outside and put you and your family at risk for infection. They can also be infected with Lyme disease.

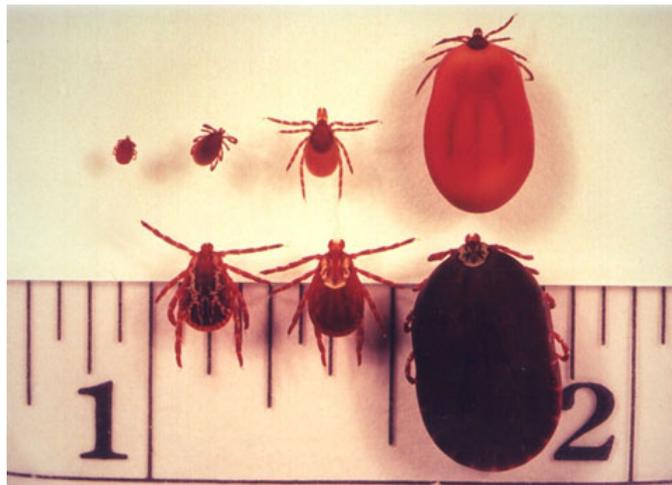


Photo 1 - Deer ticks appear in the top row and dog ticks in the bottom row.

<https://www.cdc.gov/ticks/index.html>



Figure 1 – Deer ticks

7. Immediately remove any attached ticks. Ticks have special mouthparts that enable them to stay firmly attached. Use tweezers to remove a tick. Grab the tick as close to where it is attached to your skin as possible and pull slowly and strongly. Never grab or squeeze its body. (See image below.) Ticks that have been attached for some time often will swell up to many times their normal size. Once you've removed the tick, put some antibiotic ointment on the spot and watch the area for several days.



Figure 2 – Technique for Removing ticks

8. Time is Important: Most experts think that a tick has to be embedded at least 24 hours before there's much danger of it giving you a disease. The sooner you get the tick off the better. Symptoms of exposure may include:
- a. A skin rash, often resembling a bulls-eye, that can develop 3 to 30 days after the bite.
 - b. Fever
 - c. Headache
 - d. Muscle pain
 - e. Stiff neck
 - f. Swelling of knees and other large joints

http://www.cdc.gov/ncidod/dvbid/Lyme/ld_humandisease_symptoms.htm

9. If you find a tick on yourself, follow this protocol:

This protocol is for the Eastern Region (Region 9)

TICK BITES – What to Do : <https://usdagcc.sharepoint.com/sites/fs-r09-safety/SitePages/Ticks.aspx#tick-reporting-protocol>

IT IS IMPERATIVE For Employees to Keep Accurate Records

1. Keep a log of all ticks bites.
2. If an employee has a tick that is attached or embedded, then the employee can choose to seek medical attention at the Emergency Room to remove the tick.
3. *Process for Examination and/or Treatment (CA-16) for Traumatic Injuries (CA-1) is as follows:*
 1. Injured employee seeks medical treatment and notifies supervisor.
 2. Employee may be treated at any hospital emergency room, as they are required to provide treatment, even without advance guarantee of payment.
 3. When seeking medical treatment from an Urgent Care Clinic or a privately owned medical facility, ensure the medical provider accepts Federal Workers' Compensation through the Department of Labor; otherwise the injured employee will be responsible for all costs associated with medical treatment.
 4. During business hours, requests for emergency medical authorizations shall be made through the Contact Center @ 877-372-7248, Option "2" for HRM.
 5. In accordance with 20 CFR§10.300(b), supervisor and/or personnel representing the agency may provide verbal authorization for examination and/or treatment. Supervisor/representative who provides verbal authorization for medical treatment has up to 48 hours or the next business day to contact FS Worker's Compensation via ASC-HRM Contact Center @ 877-372-7248, Option "2" for HRM.
 6. (Note – Publication CA-810 refers to "supervisors" as being authorized to issue CA-16's. This is a generic reference to a government agency. Within the Forest Service, only ASC- HRM

Workers' Compensation (WC) group has authority to issue the CA-16.)

7. Be sure to advise the Contact Center representative that you have a request for authorization for medical treatment and you need to be transferred to the WC Section. Your call will be transferred after required information is gathered.
4. The employee will have to document this incident in e-Safety and fill out a CA-1. Attach the Tick Exposure Log to the report in e-Safety.
5. If an employee chooses to get tested for tick borne illnesses, then they would absorb the cost. If the test comes back positive for any tick borne illnesses, the employee then files a CA-2 in e-Safety as this is considered an illness, not a traumatic injury. Attach the Tick Exposure Log to the report in e-Safety.
6. Both cases described above, will be processed through ASC-HRM Worker's Compensation and then sent to the Department of Labor Office of Worker's Compensation (DOL-OWCP), to determine eligibility.



Bull's Eye Rash (Erythema migrans)

Mosquito Borne Diseases

Protect yourself and your family!

- Avoid mosquito bites.
- •Wear protective clothing like long-sleeved shirts and long pants while outside.
- •Limit outdoor activity at dawn and dusk when mosquitoes are most active.
- Use insect repellent on clothing and exposed skin according to the manufacturer's recommendations (do not apply repellent to skin under clothing). Consider getting your Forest Service uniforms treated with “Insect Shield” a process that imbeds the permethrin into your uniform and allows for 70 washes before needing retreatment. Forest Service will pay if you get it budgeted in advance. See a Forest Safety Team rep for more info.

Tell mosquitoes to buzz off!

Don't let mosquitoes breed around home or work facilities:

- Eliminate standing water from flower pots, barrels, used tires, swimming pool covers, clogged roof gutters. Turn over, cover, or remove equipment such as tarps, buckets, barrels, wheel barrows and containers that accumulate water. Discard tires, buckets, cans, and containers in the area. Place drain holes in containers that collect water and cannot be discarded. Remove debris—leaves, twigs, trash—from ditches. Fill in or drain ruts and other areas that accumulate water.
- Change water twice a week in bird baths, wading pools and outside animal water dishes and troughs.
- Install or repair screens on windows and doors to keep mosquitoes out.

Support disease tracking activities.

In Vermont, call 1-800-913-1139 for the West Nile Virus/ EEE Hotline

- Use repellents containing no more than 50 percent DEET on adults
- Use repellents containing less than 10 percent DEET on children age 3 and older
- Products containing Picaridin and oil of lemon eucalyptus are also effective.

Links:

<https://www.healthvermont.gov/disease-control/tickborne-diseases/information-ticks-vermont>

https://www.health.ny.gov/diseases/west_nile_virus/

<https://www.cdc.gov/niosh/topics/outdoor/mosquito-borne/default.html>

Stinging Insects (Bees)

Being stung by insects such as bees can lead to life threatening anaphylactic shock especially in remote areas where emergency medical response is difficult and may not happen for a long time.

Hazard abatement actions:

Preparation:

- Alert your Supervisor and other crew members if you know you are allergic to bee stings. Wear a Medic-Alert bracelet or neck chain stating your allergy.
- Be prepared by carrying appropriate medication to deal with bee stings in a remote setting. You will need to deal with your own life threatening situations when you are in the backcountry. This might include carrying an antihistamine or a medication prescribed by a doctor such as an Epi-pen.

To reduce the risk of being stung:

- Wear light-colored, smooth-finished clothing.
- Avoid perfumed soaps, shampoos, and deodorants. Don't wear cologne or perfume. Avoid bananas and banana-scented toiletries.
- Wear clean clothing and bathe daily. Sweat angers bees.
- Cover the body as much as possible with clothing.
- Avoid flowering plants.
- Check for new nests during the warmer hours of the day during July, August and September. Bees are very active then.
- Keep areas clean. Social wasps thrive in places where humans discard food, so clean up picnic tables, grills and other outdoor eating areas.
- If a single stinging insect is flying around, remain still or lie face down on the ground. The face is the most likely place for a bee or wasp to sting. Swinging or swatting at an insect may cause it to sting.
- If a bee comes inside your vehicle, stop the car slowly, and open all the windows.

If you are stung:

- If you are attacked by several stinging insects at the same time, run to get away from them. Bees release a chemical when they sting. This alerts other bees to the intruder. More bees often follow. Go indoors or jump into water. Outdoors, a shaded area is better than an open area to get away from the insects.
- Have someone stay with the victim to be sure that they do not have an allergic reaction.
- Wash the site with soap and water.
- Gently scrape stinger off if one is present. The stinger can be removed using 4x4-inch gauze wiped over the area or by scraping a fingernail over the area. Never squeeze the stinger or use tweezers. It will cause more venom to go into the skin and injure the muscle.
- Apply ice to reduce the swelling.
- Do not scratch the sting. This will cause the site to swell and itch more, and increase the chance of infection.

There are several signs of an allergic reaction to bee stings. Look for swelling that moves to other parts of the body, especially the face or neck. Check for difficulty in breathing, wheezing, dizziness or a drop in blood pressure. Get the person immediate medical care if any of these signs are present. It is normal for the area that has been stung to hurt, have a hard swollen lump, get red and itch. There are kits available to reduce the pain of an insect sting. They are a valuable addition to a first aid kit.

Spider bites: First aid

Only a few spiders are dangerous to humans. Two that are present in the contiguous United States and more common in the Southern states are the black widow spider and the brown recluse spider. Both prefer warm climates and dark, dry places where flies are plentiful. They often live in dry, littered, undisturbed areas, such as closets, woodpiles and under sinks.

Black widow spider

The female black widow gives the more serious bite, but its bite is rarely lethal. You can identify this spider by the red hourglass marking on its belly. The bite feels like a pinprick. You may not even know you've been bitten. At first you may notice only slight swelling and faint red marks. Within a few hours, though, intense pain and stiffness begin. Other signs and symptoms of a black widow spider bite include:

- Chills
- Fever
- Nausea
- Severe abdominal pain

Brown recluse spider

You can identify this spider by the violin-shaped marking on its top. The bite produces a mild stinging, followed by local redness and intense pain within eight hours. A fluid-filled blister forms at the site and then sloughs off to leave a deep, enlarging ulcer. Reactions from a brown recluse spider bite vary from a mild fever and rash to nausea and listlessness. On rare occasions death results, more often in children.

If bitten by a spider:

Clean the site of the spider bite well with soap and water. Apply a cool compress over the spider bite location. Aspirin or acetaminophen (Tylenol, others) may be used to relieve minor signs and symptoms in adults. Don't give aspirin to children. Give children acetaminophen instead. Treatment in a medical facility may be necessary for children under 6 years old and for adults with severe signs and symptoms.

If bitten by a brown recluse or black widow spider:

- If possible, make a positive identification. If the spider bite is on an arm or a leg, tie a snug bandage above the bite to help slow or halt the venom's spread. Ensure that the bandage is not so tight as to cut off circulation in the arm or the leg.
- Use a cold cloth at the spider bite location. Apply a cloth dampened with cold water or filled with ice.
- Seek immediate medical attention. Treatment for the bite of a black widow may require an antivenom medication. Doctors may treat a brown recluse spider bite with corticosteroids.



The black widow spider is known for the red hourglass marking on its belly.



The brown recluse spider is known for the violin-shaped marking on its top.

Lightning and Thunderstorms

You can be struck by lightning especially when working on ridges, hilltops, near tall metal objects (such as towers) or while working in open field.

Hazard abatement actions:

During a thunderstorm:

- Seek safe shelter when you first hear thunder, see dark threatening clouds developing overhead or lightning. Count the seconds between the time you see lightning and hear the thunder. Get a spot forecast and practice the “30 30 rule” when electrical storms threaten your fieldwork or campsite area: take shelter when you can count 30 seconds or less between lightning and thunder. Remain sheltered for 30 minutes after the last thunder.
- Discard metal tools, backpacks with metal frames, and electrical devices during an electrical storm and other metal objects.
- Do not handle flammable materials such as stove fuel in open containers.
- Stay in your vehicle unless it is metal-tracked, has a nonmetal top, or has an open top.
- Get out of boats and away from ponds, streams, and lakes.
- Take shelter in a building or find a cave, ditch, tunnel, canyon, or head-high clumps of trees. When there is no shelter, avoid tall objects such as lone trees. Move to a valley, ravine, or other low area. If you are in a forest, stay near a lower stand of trees. A tent offers NO protection from lightning.
- If you are in relatively open country, drop to your knees, bend forward with your hands resting on your knees, and keep a distance of twice the height of the nearest tree between you and the tree. Keep your feet together.
- Avoid grouping people together; keep people at least 15 feet apart.
- Stay away from wire fences, utility lines, electrically conductive objects, and railroad tracks.
- Avoid parking lots, tops of ridges, hilltops, wide-open spaces, ledges, out-crops of rocks, and sheds or shelters in exposed locations.
- Avoid ridge lines, hill tops, open spaces, rock outcrops, large trees, and other likely lightning targets.
- Do not use radio or other electrical devices during an electrical storm.
- **If your hair stands on end or your skin tingles, a lightning strike may be imminent. People struck by lightning may get an electrical shock and burns but carry no residual electrical charge and can be touched safely. Victims of a lightning strike may suffer respiratory and/or cardiac arrest. Administer CPR immediately if needed and first aid as required.**

Rabies

Most wild animals will avoid you but they can become aggressive if you or your vehicle approach too closely.

Hazard abatement actions:

- Stay away from wild animals even if they are cute and appear friendly.
- If you work with animals known to carry rabies, obtain rabies immunizations provided by your employer.
- Wash animal bite wounds or exposures to animal saliva with soap and water and seek medical attention immediately.
- Report exposures in eSafety.
- Vaccinate your pets against rabies.
- Call 1-800-4-RABIES with suspected rabies cases.

Encounters with Domestic Dogs

Dogs can attack you causing large lacerations and related puncture wounds that need medical attention. Dogs do not have to be leashed outside developed recreation sites. Often, dogs are found running way ahead of their owners on trails and are aggressive with growling, barking, and biting intentions.

- Give these dogs space.
- Never try to reach for a dog's collar or pat a strange dog even if the owner insists the dog has never bitten anyone "before".
- Ask an aggressive dog owner of a dog that runs ahead to leash their dog while on the trail.
- Never feed a dog on the trail as it is likely to follow you and become lost.
- Dogs with radio collars are used to track bears. Hunters are likely to be following these dogs so proper clothing visibility or announcing your presence may be required.
- If two dogs begin to fight, do not reach your hands or other body parts into the mêlée'; in all likelihood, you will be bitten in the process.

Black Bear Encounters

You Encounter a Bear While in a Natural Setting

(<https://vtfishandwildlife.com/learn-more/living-with-wildlife/living-with-black-bears/if-you-encounter-a-bear>)

Scan the area (look and listen) for other bears. Avoid getting between a mother bear (sow) and her cubs.

When the bear is unaware of your presence:

- **Quietly back away from the bear and leave the area.**
- **DO NOT approach the bear.**

When the bear is aware of your presence and is uninterested:

- **Quietly back away from the bear and leave the area.**
- **DO NOT approach the bear.**

When the bear is curious and continues to look in your direction, smells the air, or slowly approaches:

- **Talk in a calm voice while slowly backing away from the bear.**
- **Avoid making eye contact with the bear.**
- **DO NOT approach the bear.**

If the bear is defensive it may:

- **Make vocalizations which can include huffing and jaw popping.**
- **Retreat up a tree.**
- **Swat at the ground or tree.**
- **Lower its head with ears flattened, and sways back and forth.**

When the bear is defensive:

- **Begin repeating “Hey bear” in a calm voice.**
- **Back away and leave the area.**

If the bear continues to be defensive or becomes aggressive it may:

- **Approach you.**
- **Begin to follow you.**
- **Charge you.**

When the bear is aggressive:

- **Make yourself look bigger by putting your arms above your head. Continue to repeat “Hey bear” in a calm voice. Back away and leave the area.**
- **If it continues to follow you, stand your ground, make yourself look bigger, shout at the bear, and threaten the bear with whatever is at hand (bang a stick on the ground, clap your hands). Back away and leave the area.**
- **If charged, stand your ground, and talk to the bear in a calm voice. If the bear makes contact with you, fight back using anything you have (e.g. stick, binoculars, etc.).**

Moose Encounters

Moose often travel on human trails and are common in VT. People have been charged, stomped, kicked, and trampled to death by moose.

Hazard abatement actions:

- Moose are not generally aggressive, but at certain times of the year they can be dangerous. In the fall, when bull moose are in rut, they can be aggressive and may charge. Cow moose may be protective of young calves. Use good judgment when you are viewing wildlife.
- Be aware of signs that a moose is nervous or uncomfortable with your presence. A moose on the defense will often display certain behaviors: lick its lips, raise the hair on its neck (hackles) and flatten its ears. Moose can kick with both their front and back feet.
- If a moose does charge you, get behind a tree or brush.
- If you can't put anything between you and the moose, run away.

Dangerous Plants

Exposure to certain plants, including NNIP (non-native invasive plants) could result in serious allergic reactions or other serious reactions, such as photodermatitis. Those best known for causing health problems are listed here: poison ivy, poison oak, and poison sumac; giant hogweed and some other parsley family members, such as wild chervil and wild parsnip. Keep in mind that all parts of these plants (roots, stems, leaves, flowers, fruits, and even bare stems in winter) can cause a reaction.

The oil that causes the reaction in poison ivy, oak, and sumac is called urushiol. Even a small amount of urushiol can cause a severe reaction in some people. How much oil gets on the skin, the sensitivity of the person who contacted the plants, and how quickly it is washed off may affect the severity of the symptoms. Urushiol oils from different plants vary slightly chemically from each other and occasionally individuals can be allergic to one and not the other. Not everyone has an allergic reaction the first time he or she comes in contact with the plant. The body does develop an immune response on first contact that builds each time a person is exposed. Usually, repeated exposures result in increasingly severe reactions (immune responses). A few people appear to be immune but, in fact, may react only to large amounts of urushiol.



Poison ivy leaf shape is highly variable. The vine can sprawl across the ground, climb a tree, or appear shrub-like.



Photographs by 1) Marilyn S. Chase; 2) Joseph LaForest, University of Georgia, Bugwood.org; and 3) Terry S. Price, Georgia Forestry Commission, Bugwood.org.

Giant hogweed plants exude a clear watery sap that contains a compound called a glucoside which sensitizes the skin to ultraviolet radiation. Combined with exposure to sunlight, this compound can cause severe skin irritations, burns, and large watery blisters, sometimes requiring hospitalization. The scars left behind can be permanent. Other parsley plant family members, such as wild chervil and wild parsnip, make cause similar reactions, although usually not as severe.



Giant hogweed is a large herbaceous perennial plant that, when flowering, is generally taller than the people encountering it. The burn caused by plant can be severe; shown here, the left leg of a person lying down. Photographs from the USDA APHIS PPQ Archive, USDA APHIS PPQ, Bugwood.org



Plants with thorns can cause punctures that lead to local infections or systemic blood infections requiring hospitalization. Sap from tree of heaven (NNIP) can cause dermatitis, and in rare instances can also cause inflammation of the cardiac muscle or gastrointestinal problems, if it enters the body through a cut in the skin. Other plants may not be known to be dangerous, but it possible that repeated handling of plants (e.g. during manual control of NNIP such as garlic mustard) could result in the discovery that some can cause problems previously unknown.

Hazard abatement actions:

1. Learn to recognize these plants so that you can avoid them.
2. Avoid contact with them by wearing clothing that covers the skin, including gloves, when working in the field in places where you might come in contact with them. For poison ivy, oak, and sumac, a protective lotion (e.g., Ivy Block Lotion) may also work. Eye protection is also necessary if intentionally handling the plants (e.g., hand-pulling wild chervil or digging up giant hogweed), or walking through a thicket of plants with thorns, such as blackberries.
3. If you are going to engage in controlling NNIP:
 - a. Do not handle giant hogweed, wild chervil, or tree of heaven unless fully covered with protective clothing and gear, including gloves and eye protection. Potential harm from wild chervil is substantially less than from giant hogweed, and not all people are sensitive to it.
 - b. Wear gloves to avoid repeated skin contact, even with plants not known to cause problems.

4. Do not burn poison ivy, poison oak, poison sumac, or giant hogweed; if you must burn them, do not breathe in the smoke from burning them. Inhaling smoke from burning these plants can cause a severe internal reaction.
5. If you know or even suspect exposure, or your skin has been punctured by a plant thorn, wash as described for different plants:
 - a. Poison ivy, oak, and sumac: use a soap that specifically neutralizes urushiol, the plant oil that causes the reaction (regular soap and water will simply spread the urushiol on your skin). Tecnu and Zanafel are products readily available in drugstores that does this. Follow all product directions. Clean contaminated clothing and gear, as well.
 - b. Giant hogweed, wild chervil, wild parsnip, and possibly other parsley family members: wash with soap and water as soon as possible and prior to exposing skin to sunlight.
 - c. Clean puncture sites with antimicrobial wipes or liquid.
6. Learn to recognize the symptoms of exposure to dangerous plants, and seek treatment.
 - a. The usual symptoms of the rash caused by poison ivy, oak, and sumac are:
 - i. Itchy skin where you came in contact with the plant.
 - ii. Red streaks or lines where the plant brushed against the skin, or general redness.
 - iii. Small bumps or larger raised areas (hives).
 - iv. Blisters filled with fluid that sometimes leaks out.
 - b. Serious symptom of a reaction to poison ivy, oak, or sumac may include:
 - i. Swelling (edema) of the face, mouth, neck, genitals, or eyelids, sometimes to the point of being unable to open eyes.
 - ii. Widespread, large blisters that ooze large amounts of fluid.
 - iii. Toxic vapor from burned poison ivy, oak, and sumac can injure the lungs and windpipe (trachea) if inhaled.
 - c. After skin contact with giant hogweed, people often develop severe burns to the affected areas resulting in blistering and painful dermatitis. Blisters can later develop into purplish or blackened scars. Other parsley family plants (e.g. wild chervil or wild parsnip) may cause similar reactions, although not usually as severe.
 - d. After a puncture from a plant thorn, seek medical attention if swelling or redness develops.

Poison oak (below) is a western species that may be encountered on fire assignments (photograph by David J. Moorhead, University of Georgia, Bugwood.org). Poison sumac (right) is a wetland shrub occasionally encountered in the east (photograph by James H. Miller & Ted Bodner, Southern Weed Science Society, Bugwood.org).



Wild parsnip has umbels of yellow flowers (photograph by Leslie J. Mehrhoff, University of Connecticut, Bugwood.org) and a distinctive leaf (photograph from the Ohio State Weed Lab Archive, The Ohio State University, Bugwood.org.).



Tree of heaven leaves can be up to 3 three feet long, consist of many leaflets with a distinctive notch at their base (Leslie J. Mehrhoff, University of Connecticut, Bugwood.org) and their fruits form colorful clusters (photograph by Chuck Barger, University of Georgia, Bugwood.org).



Wild chervil inflorescences are very similar to those of several related species; infestations are common along roadsides and woods edges (photographs by Leslie J. Mehrhoff, University of Connecticut, Bugwood.org).

Additional learning:

1. Identify poison ivy with help from the following website: <http://www.poison-ivy.org/>
2. Learn how to tell giant hogweed from similar species at the Penn State Extension Service website: http://nyis.info/invasive_species/giant-hogweed/
3. Learn more about poison ivy, poison oak, and poison sumac by reading the online USDA FS Technology and Development publication about them, and also from the Penn State Extension Service website:
 - a. <http://fswb.mtdc.wo.fs.fed.us/pubs/htmlpubs/htm07672313/#fig02>
 - b. <https://extension.psu.edu/poison-ivy>

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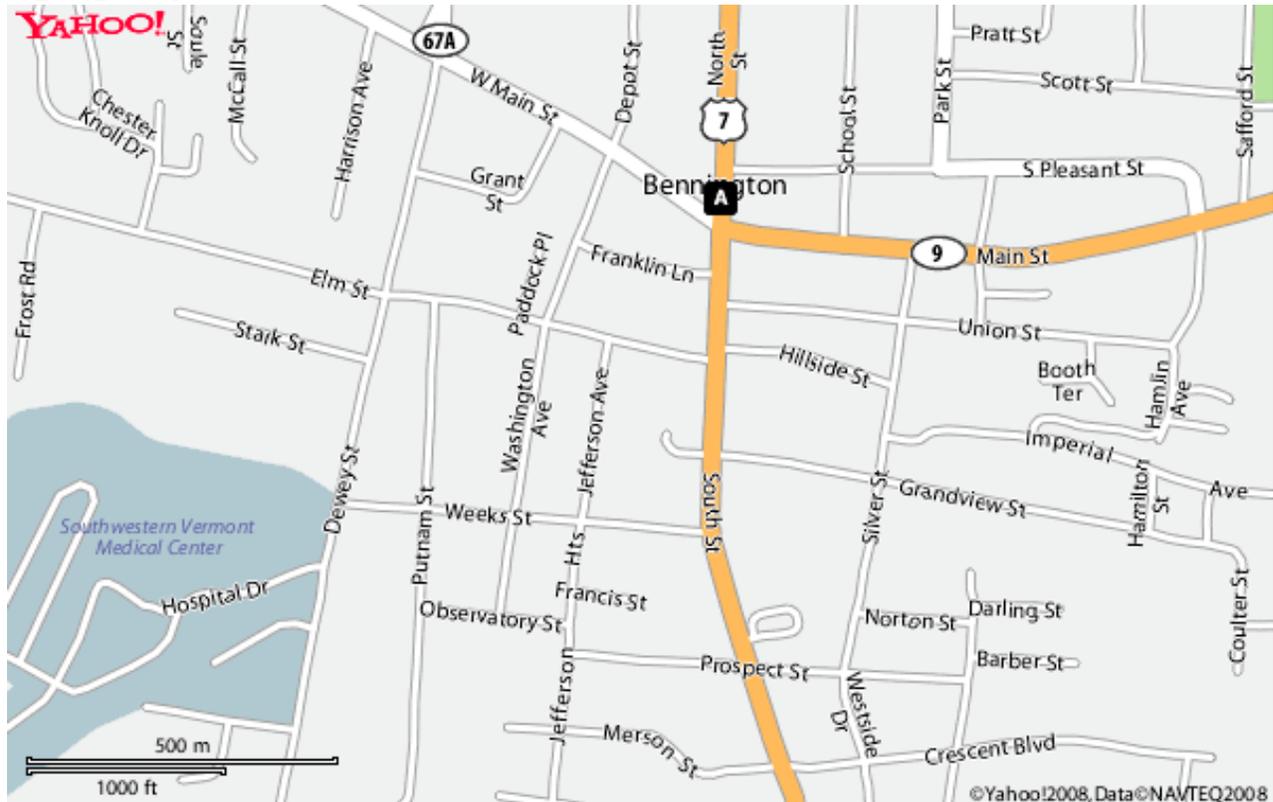
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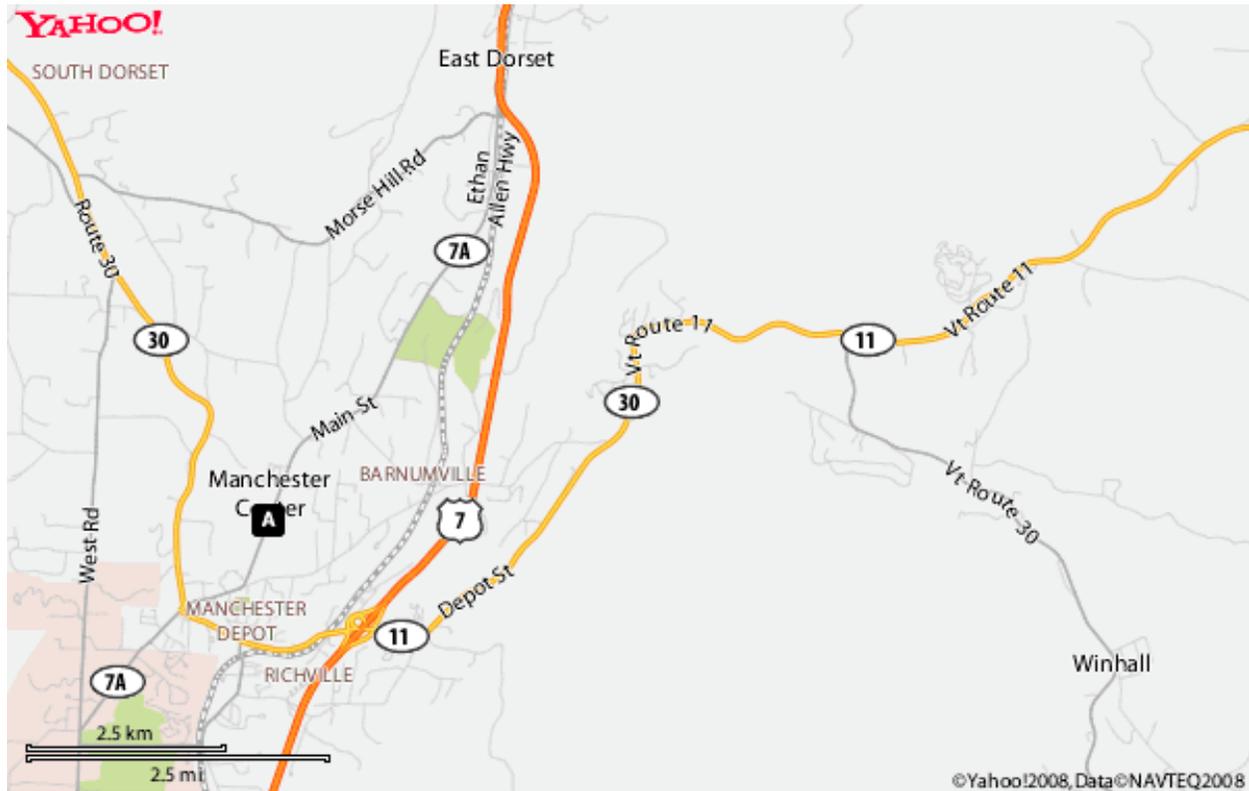
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Manchester District

Southwestern Vermont Medical Center
100 Hospital Drive
Bennington, VT
802-442-6361



Northshire Med Center (located at A)
5957 Main St. Manchester Ctr., VT
802-362-4440



Mountain Valley Med Clinic (at A)
Rte 11
Londonderry, VT
802-824-6901



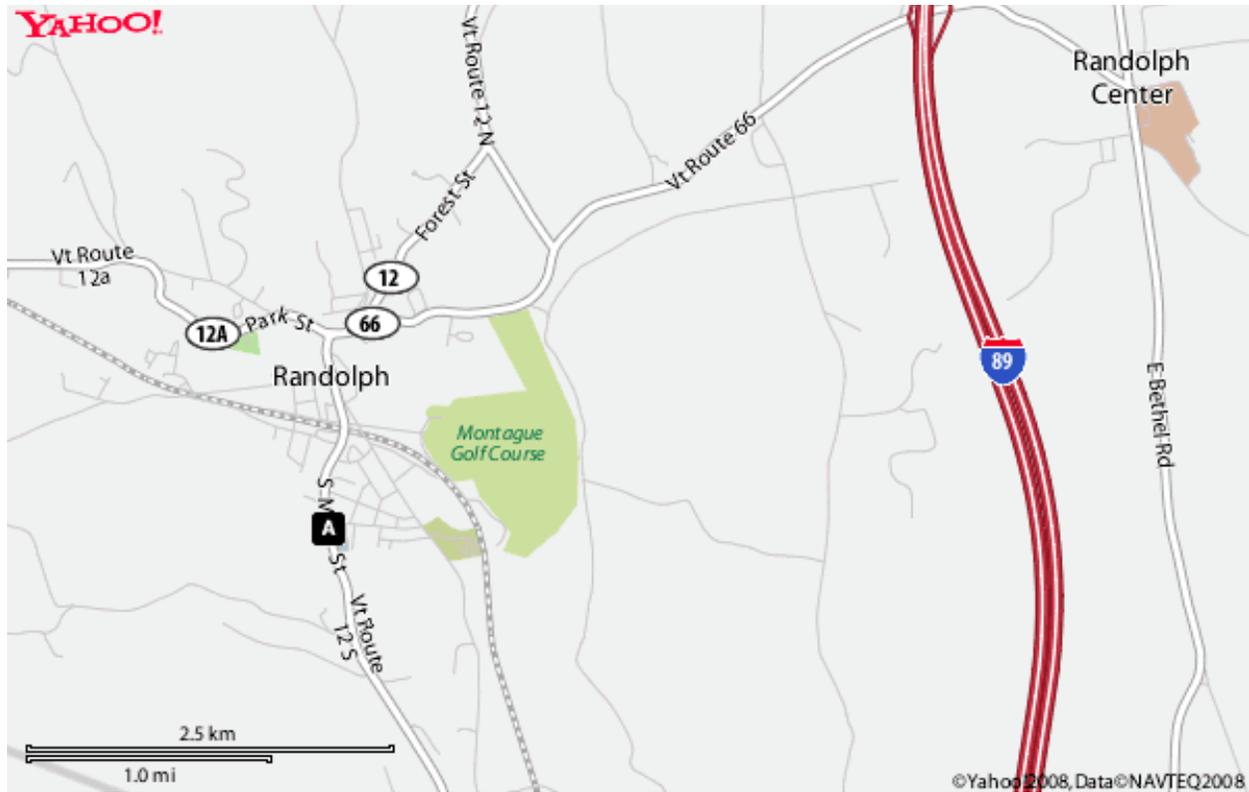
Middlebury District

Porter Hospital
115 Porter Dr.
Middlebury, VT
802-388-4701



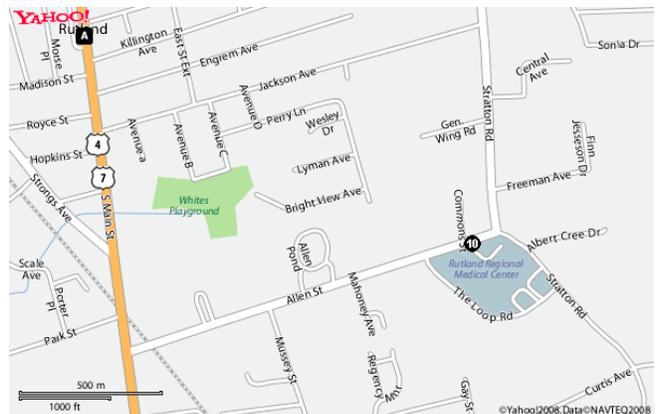
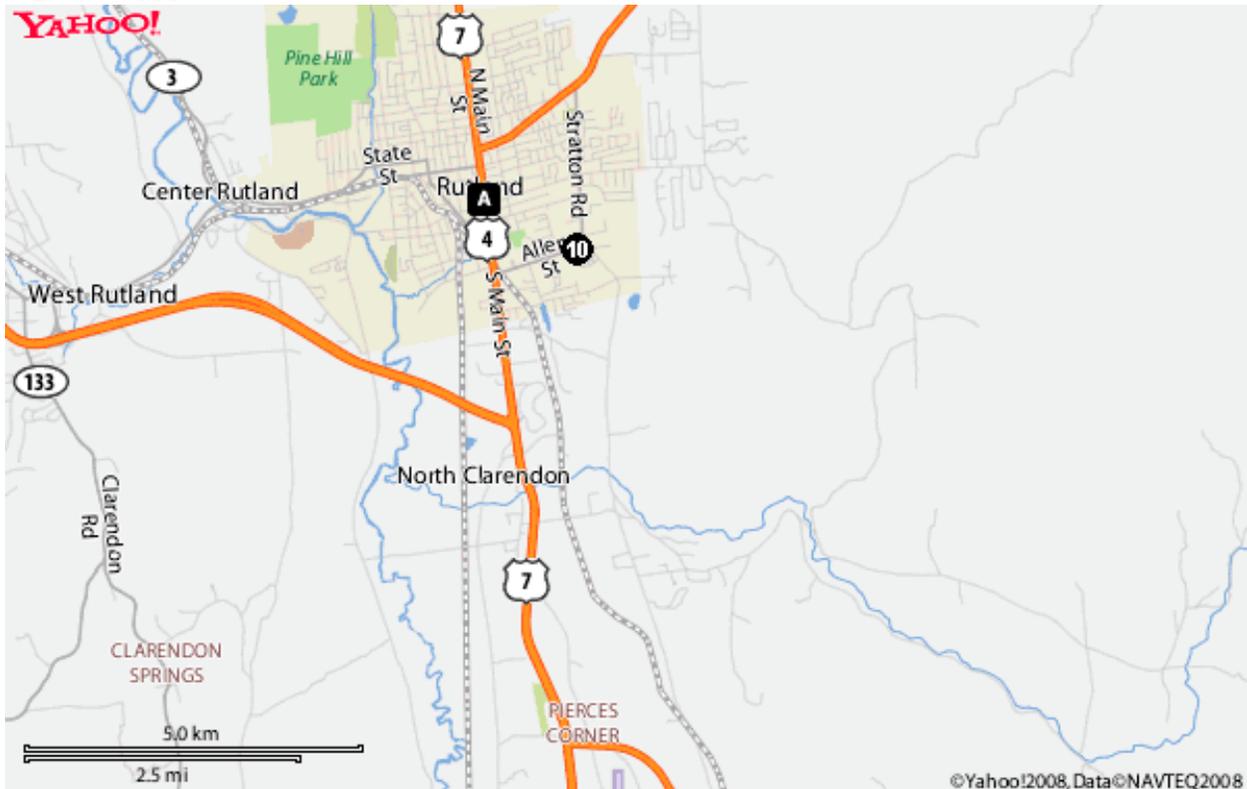
Rochester District

Gifford Medical Center (at A)
44 South Main St, Randolph, VT
802-728-4441



Central to GMNF

Rutland Regional Med Center
160 Allen St.
Rutland, VT
802-775-7111



Hector District

Schuyler Hospital (at A)
220 Steuben St.
Montour Falls, NY
607-535-4645

