**Winter Camping**

**Sleep Warm: Session 1**

Night should be your time to rest and recharge for the next day of adventures, but if you’re cold, there’s just no way you can get the rest you need. If you tend to have trouble sleeping warm on backcountry trips, here are some tips to help you stay cozy at night:

Go to bed with a hot water bottle. A hot water bottle in your sleeping bag can stay warm for hours and help you sleep soundly when it’s well below freezing in your tent. Fill up your hard plastic bottle with hot water and go to bed with it between your legs so it hits your femoral artery. If the bottle is too hot to the touch at first, wrap one of your layers around it and then place it between your legs. If you are sleeping in a hammock, you can tie a ridge line above your hammock to support the bottle.

If you’re camping in an area where bears or other wildlife aren’t an issue, keep a few snacks inside your tent, and if you wake up cold, eat a candy bar to get your metabolism going. Your body will generate heat while it is digesting the food.

If you wake up cold, pee. When your bladder is full, your body is expending energy keeping that liquid warm. If you empty it out, your body needs to expend a little less energy to stay warm. It also helps you go back to sleep because the thought of needing to pee won’t distract you from some much-needed rest. If it’s too cold to get outside your tent to pee, use a collapsible pee bottle.

Get an extra-warm sleeping bag. If you’re someone who runs cold, you may need to spend the cash to get an extra-warm bag. Most sleeping bag temperature ratings are based on the temperature at which the bag will keep you functioning, but not necessarily comfortable. So if you run cold and are expecting a 15-degree night, consider a 0-degree bag.

If you want to add to the warmth of your sleeping, You can use a sleeping bag liner inside the bag. You can also use a reflective emergency blanket over the top of the sleeping bag. It will keep your body temperature reflected down under the blanket. There are also emergency bivy sacks that you can put your entire sleeping bag into.

Stuff extra gear under your sleeping pad. Sometimes sleeping warm is just a matter of getting more of a buffer between you and the ground. Consider bringing two sleeping pads—one foam and one inflatable—and put the foam one on the bottom and the inflatable between the foam and your sleeping bag. You can also place other flattish pieces of gear between your sleeping pad and the ground.

When you select your campsite for a tent, try to find an area that has dry leaves or pine needles. You can put these under your tent for an extra layer of insulation. Always try to find dry ground to set up your tent. Dry ground stays warmer than damp or wet ground.

A smaller tent is better than a larger tent. The smaller space will stay warmer from your body heat that does escape from the sleeping bag. It Is also better to have two bodies in the tent rather than one. You will generate more body heat to warm the inside of the tent. If you are hiking with a dog, bring the dog into the tent. They will be an extra body heat generator.

Bring a towel, long underwear and dry socks that you will use only for sleeping. Before you get into your sleeping bag, take off you’re a pants and dry off with the towel. You may not think you sweat very much in the winter, but you will be a little damp. dry off and put on dry clothes and you will sleep better.

Put the clothes you are planning on wearing the next day in your sleeping bag overnight. When you get up in the morning you will not be changing into cold clothes.

Before you go to sleep, do a little light exercise. Don't do enough to start sweating, but a little exercise will warm your body up. 10 situps or pushups will do the trick.

Before you get into your sleeping bag, fluff the insulation up a little. The extra loft helps to provide more insulation.

If you are sleeping in a hammock, a sleeping bag only will not do the trick. When you lay in the sleeping bag, the bottom will compress and lose all of its insulation properties. This is called frozen butt hang. You can use a foam pad in the hammock to provide insulation. You can also hang and under quilt underneath the hammock for insulation. You can then use your sleeping bag as a regular quilt over the top. You can also add an additional layer of insulation by hanging a reflective emergency blanket over the ridge line.

Tie your tarp down tight over your hammock. There will be less area for the wind to blow in and also help trap the heat inside like the smaller tent.

## **Cold-weather Clothing: Session 2**

The simple rule of winter camping is to stay dry and warm. Choose clothing layers that wick moisture, dry quickly, insulate and are waterproof and breathable. By adjusting these layers, you can regulate the amount of warmth you need. The 3 basic layers:

The **base layer** is basically your underwear—the layer next to your skin. Synthetic and merino wool fabrics work best (avoid cotton). They wick perspiration away from your skin to outer layers so it can evaporate. They dry quickly so you spend minimal time in wet clothing. When snow camping, it's common to wear 2 base layers: a lightweight or midweight layer, then a thicker heavyweight layer. Cotton loses all of its insulating properties when it gets wet. It is also much heavier when wet and it takes a long time to dry. Stay away from cotton clothing, especially if you know you will be in a wet climate.

The **middle layer** is your insulating layer. It is primarily designed to help you retain body heat. For snow camping, consider heavy fleece or microfleece shirts, pants and jacket and/or a goose down jacket. Down is the best bet for maximum insulation and it packs down very well into a small stuff sack to fit into your backpack when you are not using it.

The **outer layer**, or shell, is your waterproof/windproof/breathable layer. Laminates such as Gore-Tex offer premium protection. Less expensive alternatives use polyurethane-coated fabrics that are equally waterproof but somewhat less breathable. Look for core vents and underarm vents that release excess heat and moisture.

**Tip:** If you take a break, put on a layer so you don't cool off too much. Your body will have to work harder to warm up again.

### Boots

While it may be possible to get by with traditional hiking boots, most snow trekking is greatly enhanced by winter or mountaineering boots that are waterproof and insulating. Leather boots also work very well for winter camping. They are usually waterproof and insulate better than regular hiking boots. You always want to make sure you are wearing a waterproof boot.

**Tip:** Warm up socks and boot insoles by keeping them in the sleeping bag next to you.

### Key Winter Accessories

* **Hats:** You lose a significant percentage of your body heat through the top of your head. Follow the old mountaineering adage: "If your feet are cold, put on a hat." Consider windproof models such as those made of Gore-tex or other water proof materials.
* Balaclava: This a hood that covers your head, neck and face. This a great garment to wear when you sleep.
* **Gloves and mittens:** Another must. Take extras, too, in case they get wet. Try to get a water proof glove like you would use when skiing.
* **Gaiters:** A must for deep snow, they help keep snow and water out of your boots. They even add a bit of warmth. Be sure to use a waterproof/breathable model designed for winter use.
* **Goggles and glasses:** Always protect your eyes from sun and wind. There are different lens tints for various weather conditions. Googles are great for vey windy cold consditions
* **Socks:** Wear a thin, snug layer next to your skin and a second layer over it, both made of merino wool or a synthetic fabric. The thickness of your second sock is determined by your boot fit. An extra-thick sock will not keep your feet warm if it makes your boots too tight. Take extras. If they get wet, put them in the sleeping bag next to you to dry.

Taking care of your weather resistant clothing:

Gore-tex and other weather resistant materials need to be clean to be most effective. Try to keep mud and dirt off of these fabrics. The clean them, you should **not** use regular detergent like normal laundry. Try to wash these items in a detergent made for weather resistant fabrics. Nikwax makes a detergent that you can was these clothes in that will not damage the weather resistant properties. They also have another formula that can wash any clothes in that will give them a little more weather proofing. It is called TX Direct. They also make a spray to help waterproof leather boots.

You can also spray your clothes, tarps, tents, sleeping backs hats, shoes and gloves with a weather resistant coating like silicone water-guard.

The most important thing you want to remember about dressing for winter camping is that you want to stay dry and warm. If you plan this out ahead of time, you will have a much more comfortable trip.

**Winter Camping and Backpacking Tips: Session 3**

Camping or backpacking in the snow appeals to anyone who enjoys the beauty and peacefulness of a pristine winter wonderland. There are no bugs or crowds, and who doesn't enjoy playing in the snow? With a little preparation, you also might be surprised at how comfortable it can be.

Pre-Trip Planning: Winter outings offer different challenges than summer camping. You must be prepared for more severe weather and shorter daylight hours by having extra gear and additional skills. Before you leave home, have a plan.

* Don't go alone. Share the trip with a few friends who have expertise in different winter skills (snow shelters, route finding, snow travel, etc.).
* Study maps and research the area. How long will it take to get there and set up camp? If something goes wrong, what emergency services (i.e., medical, search & rescue) are closest?
* Talk to people who have been there and can give you pointers. Search online for people that have hiked the trails you will be taking.
* Check the weather forecast. Are conditions favorable? The [NOAA-NWS](http://www.nws.noaa.gov/) Web site offers detailed backcountry forecasts.
* Check the local road and trail conditions.
* Recognize and avoid avalanche areas. Check the local avalanche forecast and don't go if avalanche danger is high. Keep in mind that avalanche forecasts may be general and not accurate for specific areas. If you are on or near any slope greater than 20°, your group should have formal avalanche training.
* Leave a trip plan. Let others know where you'll be, when you'll be there, when you'll return, vehicle information and names and contact number for participants in your group.
* Make sure everyone in the group has the same plans, expectations, turnaround times and goals.
* Don't forget to pack something important. Use a checklist and check over it several times before you leave. (Mr. Russell forgot his hammock a couple of years ago on the winter backpacking trip. Luckily, another Scout had brought an extra tent that he borrowed.)
* Carry some cash for unexpected fees or emergencies.
* Be prepared for the unexpected. Always have extra food and clothing just in case the weather changes, you get lost or your trip makes any unexpected detours.

Make sure you always backpack with the 10 essentials. A must for any backcountry travel, the "Ten Essentials" are especially important for your comfort and safety in winter.

* Navigation
* Sun protection
* Insulation (extra clothing)
* Illumination
* First-aid supplies
* Fire
* Repair kit and tools
* Nutrition (extra food)
* Hydration (extra water)
* Emergency shelter

### **Backpack**

Winter backpacking requires extra gear, so consider a high-volume pack. Pack as lightly as you can, but always make sure you're prepared for winter conditions.

### **Lighting and Batteries**

Winter nights are long, so make sure your headlamp and flashlight batteries are new or fully charged before an excursion and always take extras. Lithium batteries perform well in cold weather, but they can overpower some devices like headlamps. Check your product's manual for compatibility. Alkaline batteries are inexpensive and should work in any device, but they drain at a faster rate.

**Tip:** Cold temperatures decrease battery life. Store your batteries and battery-operated equipment in your sleeping bag if the temperatures are below freezing overnight.

**Crampons:** These provide traction when walking on snowfields, climbing on technical terrain or ascending waterfalls or rocks that have ice. These will slip over your boots and be carried in your pack when not needed.

**Tip:** Regardless of your means of travel, have each member of your party take turns being the one to break trail in deep snow

**Trekking Poles:** These will keep you balance while hiking and also can be used help you if start to fall. You always want to stay upright and dry during the winter.

## **Making Camp in the Snow**

Make sure you reach your destination with plenty of daylight to spare. Relax, have a snack, cool down and put on extra clothing layers. Take time to find the right camp spot and set up your gear. Considerations:

* Is there natural wind protection?
* Is there a good water source nearby—or will you need to melt snow?
* Is the site free of avalanche danger?
* Is it reasonably safe from falling trees and branches?
* Does it give privacy to and from other campers?
* Are there landmarks to help you find the camp in the dark or a snowstorm?
* Where will the sun rise? A sunny spot will help you warm up faster.

In patchy snow conditions, set up camp on the snow or an established campsite of bare ground (no plant life). Always follow [Leave No Trace](http://www.lnt.org/) camping ethics.

### Backpacking Stove

Liquid-fuel stoves (rather than canisters) are recommended for cold temperatures. White gas is readily available in North America, Australia and New Zealand. For other countries, consider a multifuel stove that allows you to burn auto gas as well. Before you leave home, make sure your camp stove is working properly.

### Food Tips

Be sure to eat before, during and after your activity to keep your energy up and help your body recover.

Proteins, fats and carbohydrates all provide energy.

* Proteins (meats, dairy and eggs) help build muscles and body tissue.
* Fats (nuts and meats) are used primarily for energy.
* Carbohydrates (cereals, legumes, vegetables, fruits, breads and candy) also provide energy.

During your activity, consume some of the many [energy foods](http://www.rei.com/c/energy-food-and-drinks), performance beverages and snacks available. Consider food that does not take much cook time or clean up. Look for one-pot meals or, better yet, buy some freeze-dried entrees and breakfast foods—just add hot water in the pouch and pack the garbage out. No dirty dishes!

Avoid caffeine. Caffeine restricts blood flow and cools your extremities.

**Tip:** To stay warmer, don't stop for long lunches where you cool down and then need to put on more layers. Instead, take short breaks to snack on food, or simply nibble while you're moving.

## **Cold-weather Health Concerns**

### **Hypothermia**

This is the body's temperature decreasing due to exposure to the cold conditions. It can be life threatening. A person can become hypothermic without even noticing it.

Symptoms:

* Shivering.
* Slurred speech.
* Non-communication.
* Lethargy.

Prevention:

* Stay warm.
* Stay dry.
* Stay hydrated.
* Eat well.

Remedies:

* Put on dry clothing.
* Eat and drink warm foods and fluids.
* Put the person in a sleeping bag pre-warmed by another person—a hypothermic person doesn't have enough heat to warm the bag.
* Put warm water in bottles and place them in the sleeping bag with the person.
* Use another person to warm the hypothermic person.
* In severe cases, careful evacuation to a medical facility is required.

**Tip:** Carry a small vacuum bottle with a hot drink or soup—it'll warm you up when you're getting cold.

### **Frostbite**

This happens in cold-weather conditions. Frostbite is a freezing of the tissues usually on the fingers, toes, nose or face. It is a result of heat being lost faster than the blood can circulate. In severe cases, appendages may have to be amputated.

**Tip:** Use chemical heat packs to help stay warm and to avoid getting frostbite.

Symptoms:

* Numbness to an area.
* Loss of sensitivity to touch.
* Tingling that feels like burning.
* Shivering.
* Skin appears red and then white-to-purple.

Prevention:

* Don't put yourself in that position. You don't have to reach a summit, your health and well-being are more important.
* Be aware of your body signals.
* Stay warm and dry.

Remedies:

* Place the cold/frostbitten appendages against warm skin, such as your feet against a companion's stomach or armpits, or your fingers in your own armpits.
* Use warm water—99ºF to 104ºF—on the afflicted area.
* Do not use fire to thaw area—speedy relief can increase the injury.
* Do not rub because the abrasive action could damage tissue more.
* Evacuate to a medical facility.

### **Dehydration**

Even when the temperature is low, you can still get dehydrated and that's not good for your kidneys, heart or brain. So drink plenty of water—even if you're not thirsty. Drink before you become thirsty.

**Tip:** Keep the fluids flowing in freezing weather with an insulated reservoir and tubing. In extreme cold, leave the reservoir at home and use a water bottle cover for your bottle. Turn the bottle upside down. (Water freezes from the top down, so by turning it right-side up you'll be able to unscrew the cap and drink.)

A good way to determine if you're drinking enough is to check the color of your urine. If it's dark, you are dehydrated. If it's pale in color, you're doing a good job hydrating!

Other symptoms of dehydration in extreme temperatures:

* Increased heart rate.
* Dry mouth.
* Dizziness.
* Muscle cramps.
* Confusion.
* Weakness.

For treating water:

* Water filters do not work in sub-freezing weather—the filter and seals freeze.
* Chemical water treatments take longer to work in cold water, so allow extra time. Keep in mind that iodine is not effective against cryptosporidium and should not be used.
* Melting snow is a good option. Putting a little bit of water in the pot with the snow will help it melt faster.

### **Altitude Sickness**

Altitude sickness is a result of being in a low air pressure at a high altitude. Symptoms include nausea, severe headache, dizziness, insomnia, shortness of breath, lethargy, body ache and not wanting to eat. The remedy: Descend to a lower elevation for a few days.

**Tip:** Make a camp base and acclimatize for a few days before climbing higher. One strategy—don't ascend more than 1,000' a day.

## **Sanitation in the Snow**

As with any backcountry trip, you should always practice good hygiene habits.

* Camp at least 200' from a trail, water sources and other campers.
* Pack out toilet paper. A plastic zipper-style bag works great for this.
* At lower elevations, you can dig a hole in the dirt about 8" deep, bury feces and put a rock on top to deter animals from digging it up.