

How to Go Winter Camping and Backpacking

Camping or backpacking in the winter 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. Here's how to get started.

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 your winter adventure with friends who have expertise in different winter skills.

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 are closest?

Check the Weather forecast. Are conditions favorable?

Check the local road and trail conditions.

Leave a trip plan. Let others know where you'll be and when, when you'll return, vehicle information, names and contact information for participants in the group.

Make sure you don't forget to pack something important. Refer to the winter camping checklist for an overview of what to bring.

Be prepared for the unexpected. Always have extra food and Clothing just in case the weather changes or your trip has any unexpected detours.

Cold-weather Clothing

The simple rule of winter camping is to stay dry and warm. Carefully choose clothing layers that are moisture-wicking, quick-drying, insulating and waterproof, windproof, breathable. By adjusting your layers of clothing, 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. A few popular base layers include REI MTS, Patagonia Capilene, The North Face XTC and SmartWool products. For maximum thermal efficiency, the base layer should feel snug but not constricting. When snow camping, it's common to wear 2 base layers: a lightweight or midweight layer, then a thicker heavyweight layer. A zip T-neck is a versatile choice in cold weather.

The **middle layer** is your insulating layer. It also moves (wicks) moisture away from your body, but it is primarily designed to help you retain body heat. For snow camping, consider expedition-weight fleece or microfleece shirts, pants and jacket and/or a goose down jacket.

The **outer layer**, or shell, is your waterproof/windproof/breathable layer. Shells made of laminates such as Gore-Tex, eVent or REI Elements offer premium protection. Less expensive alternatives typically use polyurethane-coated fabrics that are equally waterproof but somewhat less breathable. Many are designed with core vents and underarm vents to help you expel 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

Depending on the snow/weather conditions, it's possible to get by with traditional hiking boots. However, most snow trekking is greatly enhanced by boots that are waterproof and insulating. These can be so-called winter boots

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." A warm hat is critical for snow camping. Consider windproof models such as those made of Gore WindStopper fabric.

Gloves and mittens: This is another must. Take extras, too, in case they get wet.

Gaiters: A must for deep snow, they help keep snow, rain and water out of your boots. They even add a bit of warmth. Be sure to use a waterproof/breathable model—they cost more but are designed for winter use.

Goggles and glasses: Always protect your eyes from sun and wind. There are different lens tints for various weather conditions.

Socks: your feet need a thin, snug layer next to the skin and a second layer over it, both made of merino wool or synthetic wicking fabrics. The thickness of your second sock is determined by your boot fit. An extra sock will not keep your feet warm if it makes your boots too tight and restricts circulation. Take extras.

Winter Gear Considerations

Backpacks

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

Rough guidelines for a 2- to 4-day winter backpacking trip:

Lightweight: minimum 4,000 cubic inch pack

Deluxe: approximately 5,000 cubic inch pack or larger.

Sleeping Bags

A sleeping bag helps retain your body heat to keep you warm, and keeping warm is essential to snow camping. Make sure you use a bag that's rated at least 10°F lower than the coldest temperature you expect to encounter. You can always vent the bag if you get too warm.

Bags are generally categorized as follows:

Bag Type	Comfort Rating (°F)
Summer Season	+35° and higher
3-Season Bag	+10° to +35°
Cold Weather	-10° to +10°
Winter/Extreme	-10° and lower

Cold- and winter-rated bags are supplied with generous amounts of goose down or synthetic insulation. Down is the most popular choice due to its superior warmth-to-weight ratio—just make sure to keep it dry (when wet, down loses much of its insulating ability). These bags are distinguished by their draft tubes behind the zippers, draft collars above the shoulders and hoods to help keep the heat in the bag.

Sleeping Bag Liner

Using a bag liner adds extra warmth, minimizes wear and helps keep your bag cleaner. The extra layer can add 8° to 15°F of warmth.

Sleeping Pads

These provide both cushioning and insulation. **For winter camping, be sure to use 2 pads** to help insulate your body from losing body heat on a cold surface such as snow. Pads are rated by R-value, the measurement of insulation, ranging between 1.0 and 8.0. The higher the R-value, the better it insulates.

Rules of thumb:

Use a closed-cell foam pad next to the ground and a self-inflating pad on top to get the best insulation from the cold ground. The foam pad also serves as insurance if the self-inflating pad gets punctured. A closed-cell pad is your warmest option. It is a thin, dense foam made of closed air cells that block water and stop air circulation. Self-inflating are a combination of open-cell and closed-cell foam. Open-cell foam pads have open air cells that absorb air and create more cushioning.

While a 3/4-length pad is fine for spring through fall backpacking, a full-length pad is recommended for winter use.

Ground Cloths

A ground cloth protects your tent from dirt and twigs, plus winter campers find that it deters any water that might seep from the snow through the tent floor. You can use any tarp as a ground cover.

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 devices inside your sleeping bag to keep them warm.

Route-finding in Winter

Excess snow or bad weather may hide the trail and/or your destination. Before heading out, make sure everyone in your group has a good map and route description. If using a GPS, program in lots of waypoints.

Study your map and plot your compass bearings in advance so you know what terrain to expect. Beware of simply following someone else's tracks, as this person may not know where he or she is going! Plan and follow a safe route. Avoid snow-covered rivers and lakes, snow bridges, You may need to vary your route somewhat

If you get lost:

- Stop and evaluate the situation.
- Stay calm.
- Check map and compass (and GPS, if available).
- Make yourself easy to find—visually and audibly.
- Stay together.

Making Camp in the Snow

Make sure you start your hike or drive early enough to reach your destination with time to spare. Give yourself time to relax, have a snack, cool down and put on extra clothing layers. You want plenty of time to be selective in finding the right camp spot and setting up your gear.

Winter campsite 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 be in the morning? 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 and no plant life. Always practice [Leave No Trace](#) camping ethics.

Types of Winter Shelters

Mountaineering (4-Season) Tents

For snow camping, you ideally want a "mountaineering tent" (also known as a "4-season tent") that's easy and quick to set up in frigid conditions. These tents are a bit heavier than 3-season backpacking tents but offer better protection against the elements.

Typical mountaineering tent features:

- Dome shape and an extra-strong pole structure to combat high winds and shed snow loads.
- Mostly solid fabric (instead of mesh) for more warmth and strength.
- Dual doors for easy access for 2 campers or for a sheltered entrance/exit in bad weather
- Extra guy lines for more stability in high winds
- A gear attic (a mesh shelf that hangs the ceiling) to stow gear and free up floor

space

Large vestibule(s) for wet-gear storage or a sheltered cooking area. Mountaineering tents employ either single-wall or double-wall construction. Each has its advantages

Single-wall	Double-wall
Lighter weight	Heavier and bulkier
Cooler than a double-wall	Warmer than a single-wall
Quick setup	Longer setup time
Cost more than a double-wall	Cost less than a single-wall
Potentially more condensation	Better ventilation, less condensation

Setup tips:

If it's windy, build a snow wall if possible. If it's not feasible to do so, then dig out the snow a couple of feet down for your tent and vestibule. This helps to reduce wind impact.

Pack down the snow before setting up your tent. Loose snow is more likely to be melted by your body heat and make it uncomfortable for sleeping.

Bivy Sack

Ultralight backpackers can opt to skip the tent and go with a bivy (short for [bivouac](#)) sack instead. A bivy sack keeps you and your sleeping bag dry and adds about 10°F of warmth to a bag. A bivy is simply a waterproof/breathable overbag for your sleeping bag that provides one of the lightest ways to protect yourself from the elements. A few models have mesh netting and poles that give tent-like protection around the head area. These are sometimes called bivy shelters.

Tip: There is no room to stow your gear in a bivy sack, so remember to bring a cover for your gear.

The Winter Kitchen

Your Stove

Liquid-fuel stoves are recommended for cold temperatures. White gas is readily available in North America. Before you leave home, always make sure your camp stove is working properly.

Other winter camping considerations: You may want a windscreen and heat exchanger to improve cooking performance. Keep in mind, too, that you'll use more fuel at higher elevations, and it takes extra fuel to melt water. Finally, bring a backup stove, just in case. The added benefit is that having 2 stoves speeds up the group-cooking process.

Camp Cooking Area

It's best to have a sheltered cooking spot which can be as simple as using your tent's vestibule. If you have the time and energy, dig a trench about 3 feet deep to create a cooking area that is sheltered from the wind. One of the joys of winter camping is the ability to build a kitchen, using your shovel to make a cooking surface, seats, table and even a storage cabinet. Use your imagination to make it as elaborate as

you'd like. Consider taking a foam sit-pad to use while cooking on the cold surface. It helps you stay a little warmer and drier.

Food Tips

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, there are many [energy foods](#), 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 drinks. 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 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 thermos 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—99°F to 104°F—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 did a good job hydrating!

Other symptoms of dehydration in extreme temperatures:

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

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; sodium chloride is effective but requires about 4 hours contact time.

Melting snow is a good option. Putting a little bit of water in the pot with the snow will help it melt faster.

Portable UV light systems offer another effective option.