



# Are you ready for Winter Backpacking?

Presenter: Steph Keimig  
stephkeimig@gmail.com

Are you ready for winter backpacking?

**YES, Winter backpacking can be dangerous if not done properly.**

**However, when all is taken into account and you are prepared, it is one of the most enjoyable experiences ever! Heed warnings and be vigilant.**

My rule of thumb: if I have to ask myself more than two times, should I do this, the answer is automatically no! Regardless of my skill level and experience!

Most who perish had gone solo and ignored signs of arising issues that would compound to make insurmountable conditions they could not escape.

**BE PREPARED: Mentally, physically and with the proper gear**  
**Whenever possible go with another**  
**Remember, the mountains will be there another day**  
**Trust your gut instinct!**



## Making Camp in the Snow

### Site selection

- **Perhaps the biggest difference between summertime camping and winter camping is the possibility that you'll be camping on snow. When you reach your destination for the day, rather than immediately unpacking, take some time to find the right camp spot. Relax, have a snack, put on some warm clothing layers and examine the area for these things:**
  - Wind protection: A natural wind block, like a group of trees or a hill, can make your experience more comfortable.
  - Water source: Is there a good water source nearby, or will you need to melt snow/ice?
  - Avoid camping on vegetation: In patchy snow conditions, set up camp on the snow or an established campsite of bare ground.
  - Avalanche risk: Make sure you're not on or below a slope that could slide.
  - Hazard trees: Don't setup underneath unstable or damaged trees or limbs.
  - Privacy: It's nice to have some distance between you and other campers.
  - Where the sun will rise: A spot that offers exposure to sunrise will help you warm up faster.
  - Landmarks: Keep an eye out for landmarks to help you find the camp in the dark or a snowstorm.**



## Setting Up a Tent on Snow

Consolidating snow with snowshoes before setting up camp is a must or you will have potholes everywhere!

Consider wind direction

- Pack down the snow: Loose snow is more likely to be melted by your body and make it uncomfortable for sleeping. Before setting up your tent, walk around with your snowshoes or skis on your feet, or you can stomp around in your boots. Also make a path to bathroom and trail to avoid the need for snowshoes later. Do all this before you change into dry layers after the hike.
- Build a wall: If it's windy, build a snow wall around your tent 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. Don't completely seal up your tent though. It still needs to receive sufficient ventilation.
- Dig out your vestibule: You can dig out a bench underneath your tent's vestibule to create more space for stowing gear and to make it easier to get in and out of your tent, stretching legs can combat cramping.
- Use snow stakes: Standard tent stakes won't do much good in snow. Instead, bury stuff sacks filled with snow or use stakes designed for use in snow. Tent must be tautly pitched
- Stay away from sharps: Keep any item that could tear your tent well away from your shelter and do not bring them inside. This includes items like ice axes, crampons and ski edges. Ripping your tent on a stormy winter day can be disastrous.





Winter camping and backpacking have a much steeper learning curve than three season hiking and camping because you have to carry a lot more gear and learn so many new skills.

## Pit under your Tent's Front Vestibule



## 2. Bring at Least Two Stoves in Case one Fails: POT/MUG COZY

**Bring a small foam pad to sit on when you melt snow and cook or use one of your pads.**

Stoves can fail in winter. White Gas stoves can get gunked up and stop functioning if they're not cleaned properly or use dirty fuel. Canister stoves can also fail when it gets too cold for their fuel to vaporize. Your best bet is to bring multiple stoves when you go winter camping or backpacking in a group, preferably ones that share the same kind of fuel, so you have some redundancy in case a stove fails.

## 3. Wear Oven/Trash Bags Over Your Feet to Keep Your Socks/Boots Dry:

- **VAPOR BARRIERS**

**Sleep with your Boots or Boot Liners in your Sleeping Bag at Night  
Chemical warmers in campsite and overnight in boots**

- If your winter boots or bootliners have become damp during the day, you need to sleep with them in your sleeping bag to keep them from freezing at night. If your boots do freeze, you may not be able to use them again until they are thawed out.
- Same for hands/ Try Nitrile gloves: However there is potential issues with fingers becoming water logged and can damage skin. With anything new try this in cold conditions close to home before backpacking.



#### **4. Use Plastic Grocery Bags/small sandwich ziplocs as Snow Anchors Instead of Tent Stakes. Can also use snowshoes/branches/boulders/trees**

Use plastic grocery bags as snow anchors for your tent instead of carrying tent stakes. Fill them with snowballs and bury them so just their handles are showing above the surface of the snow. You can immediately guy out your tent with them without having to wait for them to harden up. The plastic bags are easy to remove in the morning and reuse. They're also super lightweight.

Worst case, make a snowball and compact into iceball and tie off cord around it and bury and compact well.

If below or at treeline use branches for deadmen, tie line off and make a trench perpendicular to line , set it and cover, then compact well.



## 5. Eat Boil-In-Bag Frozen Food instead of Dehydrated Camping Meals

Go for lightweight, but hardy options, high calorie: fat, protein, carb.

**THINK CALORIC DENSITY! CALORIES/WEIGHT**

ADD WATER ONLY OPTION IS GOOD, but there are few very appetizing products.

Make your own, but remember to consider fuel needs.

Couscous, butter, dried tomatoes, spinach, chicken powder, eat with cooked chicken.

Potato cheese broccoli soup/ stew & dumplings/Oatmeal with butter brown sugar, sliced almonds, raisins, dried milk/ boil in bag eggs bacon cheese in a croissant or tortilla or potato buds

The nice thing about cold weather is that you can carry prepared frozen meals and eat them instead of cooking a dehydrated meal which take a while to rehydrate in the winter. Boil-in-a-bag stew-like meals work well, like this Pulled Pork meal from Jack Daniels, available in most supermarkets. Freezedried meals rehydrate better than dehydrated.

Make a mylar pouch to rehydrate or tuck inside puffy layer to your belly.

Opt for the least moisture available for ready to eat meals = less weight!

Tip, use gallon Ziplocs to put dirty items from morning to home; no clean up.





## **6. Carry your Water Bottles in Insulated Pockets**

Place in ziploc freezer bag inside pack within insulation near back. Use one or two wide mouth nalgene and then flexible bottles are an option: platypus or Nalgene, but susceptible to sharps. Always place in ziplocs!

## **7. Carry Snacks in a Front Pocket so they're Easy to Eat Without Stopping.**

Clip a pocket or a small 16 ounce Nalgene /snack bottle or use a pill bottle: to the front of your backpack so you can snack without having to stop and get food out of your backpack. Winter backpacking takes an enormous amount of energy and you need to eat frequently to stay energized and warm.

## **8. Use Lithium Batteries instead of Alkaline Batteries in Winter**

Alkaline batteries perform very poorly below freezing and in cold weather because they are made with a water-based electrolyte solution. Lithium batteries on the other hand are much more powerful than alkaline batteries and function very well in cold weather, making them ideal for headlamps and other must-have electronics like GPS.

Bring cell bank for phone. Keep phone in airplane mode or off. Store inside near body or with chem warmer next too with insulation around it not direct, do not overheat. Make mylar pouch.



## Your Winter Kitchen

One of the joys of winter camping on snow is the ability to build your dream kitchen. Using your shovel, you can dig out and shape the snow to make a cooking surface, seats, tables and even a storage cabinet. Use your imagination to make it as elaborate as you'd like.

If you have a floorless tent or a tarp at home, you can bring either along to create a protected place to hang out while prepping food and eating meals. Set up the tent or tarp, then dig out the area below so you can stand up.

Remember that snow can be slippery when consolidated so set items well so they don't slide off. It also requires some effort so be



sure to go slowly to not sweat and wet out layers.



**Tips: cooking on whisperlites can be hot, use rocks to heighten above stove**

- Use a screen piece to take out food particles to take home

**Personal kit; use gladware lightweight.**



**BE OUTDO<sup>RS</sup>**  
APPALACHIAN MTN CLUB

## Food and Drink Tips for Winter Camping

Your body uses a lot of energy when you're trekking through cold, snowy landscapes. It's important to eat and hydrate well before, during and after your activity so you can keep your energy up and stay warm.

### Food and water recommendations

- Enjoy hot and simple meals: A hot meal while winter camping is especially gratifying, but try to keep your meals simple so you're not stuck cleaning lots of dishes in the cold. Consider calorie-dense foods that don't take much time to cook and look for one-pot options. Freeze-dried entrees and breakfast foods are also good choices.
- Take short lunch breaks: For lunch, simple sandwiches or quick-grab snacks and energy foods that provide protein, fats and carbohydrates are good. Try not to stop for long lunch breaks where you cool down. Instead, take short breaks to snack on food, or simply nibble while you're moving.
- Store food securely: Bears are typically in a deep slumber during wintertime, but there are other critters that will happily snack on your food if you leave it accessible. Stow your food securely, hang it from a tree using a stuff sack and rope. Some areas may have regulations for food storage; familiarize yourself with those before leaving home.
- Remember to drink: Stopping to drink water when it's cold out can feel like a major inconvenience, and you may not feel especially thirsty like you do on a hot summer day. To stay properly hydrated, it's important to make yourself sip water regularly throughout the day. At camp, making hot drinks, like herbal tea or hot chocolate, or sipping on soup are good ways to warm up and rehydrate as well as get needed calories.
- Use bottles: NO BLADDERS! To keep your water handy, you can use an insulated water bottle holder that attaches to the outside of your pack.





## Melting snow

During winter, many creeks and lakes are frozen solid or buried beneath feet of snow, which means you'll likely need to melt snow for drinking water.

### To melt snow:

- Designate an area for gathering clean, white snow.
- Light your stove.
- Put a little water in your pot, then add snow (adding water helps prevent scorching the snow, which can create an off-taste).
- As the snow melts, add more.

Melting ice is best but either way strain it before drinking if possible, USE COFFEE filter, screen or bandana. Designate one person to make water!

- It's best to fill all your bottles before you turn in for the night so they're ready to go for the next day.
- Store in snow, one foot in, MARK IT OFF! Or if no snow place in insulated holder or within your pack with insulating layers or inside your bag by feet but be sure to place in Ziploc. ALWAYS keep some water in your tent but insulated!







## Essential Gear for Winter Camping

The simple rule of winter camping is to stay dry and warm. Having the right gear for your trip can be critical to your enjoyment when you're out in the cold for extended periods. Practice with gear close to safety, go in the same conditions as backpack but car camping so you can try different options to know for certain what works & doesn't.

### Winter vs 3 Season Gear

The requisite gear for winter camping is with an emphasis on warmth, durability but as lightweight as possible. Here are some details on the key items:

**Tent:** It's important to have a shelter that's able to handle winter weather. When choosing a tent for winter camping, keep these things in mind:

- A typical 3-season backpacking tent can work if you're making camp below tree line and you're not anticipating especially stormy weather.
- For high winds and heavy snowfall, a 4-season tent is recommended. 4-season tents have sturdier poles and heavier fabrics than 3-season tents so they can withstand powerful gusts of wind and heavy snow loads. They also have less mesh and the rainflaps extend close to the ground to keep swirling snow from getting inside.
- You'll want some extra space. It's a good idea to get a tent that has room for one more person than will be sleeping in it if possible, especially if you have larger people (eg. a 3-person tent for two people.) This gives you room to stow gear inside away from the elements. You also do not want to be pushed up against sidewalls where condensation accumulates.
- Good Vestibules to store gear, use as a pee spot, cook under, put on boots....



**Backpacks:** Winter camping and backpacking requires extra gear and warmer, bulkier clothing, so you may need to use a larger pack than you typically do in the summertime. Pack as lightly as you can, but always make sure you're prepared for winter conditions. Rough guidelines for a 2- to 4-day trip:

- Lightweight: minimum 65-liter (3,967 cubic inch) pack.
- Deluxe: minimum 80-liter (5,000 cubic inch) pack.

If you plan on carrying skis or snowshoes, make sure your pack has lash points or is otherwise able to secure these large items.

**Sleeping Bag/QUILTS:** To ensure comfort on cold nights, it's a good idea to 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. To enjoy your trek you need sleep, sleeping cold makes for a long miserable night. You will not perish but you will be tired the next day for the hike out. Higher insulation level adds weight so decide what your puffy layers add to your overall insulation, but remember those layers must be dry to wear inside your bag.

**When choosing a sleeping bag, consider these things:**

- Cold-weather bags are supplied with generous amounts of goose down or synthetic insulation. Down is a 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).
- Winter 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.
- Use a liner bag or sea to summit reactor extreme liner (no zipper), BA King Quilt/Farrington-McKisson bag liner ¾ zip...
- Wear a HAT to sleep and a BUFF
- Good idea to spray exterior with waterproofing.



## Sleeping Pads

A sleeping pad provides essential insulation and cushioning. Here's some helpful information about sleeping pads:

- Use two pads: For winter camping, use two full-length pads to keep from losing body heat on snowy surfaces. Two closed cell pads are just fine but for more comfort, 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 in case the self-inflating pad gets punctured. Carry duct tape to repair (gorilla tape works well)
- Consider R-value: Pads are rated by R-value, the measurement of insulation, ranging from 1.0 and 8.0. The higher the R-value, the better it insulates. Pads designed for all-season or winter use usually have an R-value of about 4.0 or higher.

**Consider: BENEDRYL/ EARPLUGS**





## Types of Backpacking Stove

Most liquid-fuel stoves and some canister stoves are good options for winter camping.

- Liquid-fuel stoves run on white gas, which burns hot and clean and performs well in below-freezing temperatures. But, they tend to be heavier than canister stoves, and you typically have to prime them before you can cook. Some multi-fuel stoves can also run on unleaded auto gasoline, kerosene, jet fuel and/or diesel, making them a great choice for international travel.
- Canister stoves are lightweight, compact and quick to boil, but they don't all work well in cold weather. If you decide you want to use a canister stove for winter camping, make sure it has a built-in pressure regulator. In cold weather, canisters can depressurize and produce a weak flame. A pressure regulator helps combat this. Also, keeping your fuel canister warm by stowing it in your sleeping bag at night and in a jacket pocket when you're around camp and getting ready to cook can help stove performance. Heat chem packs help and cozies.

Canister stoves can become tippy so be sure to have a base if possible but most importantly try it out in cold conditions close to home.





## Stove tips:

- Bring a backup: You may want to bring a backup stove, just in case your primary stove malfunctions. Having a second stove can also speed up the group-cooking process.
- Bring extra fuel: Keep in mind that it takes extra fuel to melt snow for drinking water. And, you'll use more fuel at higher elevations.
- Make a base for your stove: Carve out an area in the snow. If you're using a liquid-fuel stove or a canister stove with a remote burner, the base will prevent your stove from sinking into the snow and becoming unstable as it heats up. Use a reflective material under the stove.
- Use mylar wrap for pot to heat up faster and retain heat of cooked food.
- Use rocks to raise pot over whisperlite to prevent scorching.
- Melting snow, add water to not burn the water.



## LAYERS

- **Base layer:** This is your underwear layer that goes next to skin. For winter camping, midweight long underwear is a good choice for all-around use. Lightweight is best for mild conditions and heavyweight for below-freezing temps. Look for fabrics like polyester or wool that wick perspiration away from your skin and dry quickly.
- **Middle layer:** This is your insulating layer that is primarily designed to help you retain body heat. In general, thicker (or puffier) equals warmer. For your upper body, most winter campers like to have a puffy down or synthetic insulated jacket. For your legs, fleece pants or heavyweight long underwear are good options, Learn more about insulation options in [Down vs. Synthetic: Which Insulation is Right for You?](#) Military puffy pants.
- **Outer layer:** Also called your shell layer, this is your waterproof/breathable defense against snow, sleet, rain and wind. In winter, it is important to have a fully waterproof jacket and pants rather than merely water resistant because if moisture penetrates your inner layers, you can get seriously chilled. However, these garments also need to be breathable so that perspiration wicked by your base layer can escape.

### **Accessories: These simple accessories can provide lots of comfort on cold days:**

- **Winter hat:** A basic wool or synthetic beanie had will work well. Make sure your hat covers your ears. If your face gets cold, consider a buff, available in different weights, synthetic or wool.
- **Gloves and mittens:** Fleece gloves provide basic warmth, but insulated gloves with waterproof/breathable shells are better. Mittens let your fingers share warmth, but you sacrifice a bit of dexterity. Whatever you choose, it's wise to take an extra pair along in case they get wet. Too tight will limit blood flow which will cause cold fingers even with great insulation.
- **Goggles and glasses:** Always protect your eyes from sun and wind. If you anticipate bright, sunny days, you'll want glasses or goggles with tinted lenses. Extended above treeline travel requires goggles.
- **Socks:** NO COTTON! The appropriate thickness of your socks is determined by your boot fit. An extra-thick sock will not keep your feet warm if it makes your boots too tight. Conditions also dictate sock thickness, layers.



## Footwear

- Waterproof and insulating boots are appropriate for winter hiking and backpacking. Using gaiters will keep snow out of your boots and they will add a bit of warmth.
- Preventing Cold Injuries While Winter Camping/blisters; treat hot spots fast!
- Frostbite (the freezing of tissue) and hypothermia (the result of your body's temperature dropping below normal) are real concerns while winter camping. To prevent them, you need to actively take care of yourself and your hiking partners. Here are a few ways:
  - **Stay warm**, don't get warm: By dressing appropriately, you can maintain a comfortable temperature, which is much simpler than trying to warm up after getting too cold.
  - Don't try to tough it out: If you feel your fingers or toes getting cold, stop and take the time to check and warm them up. Placing cold fingers in your armpits or inner thighs. Shoulder shrugs and clenching fists works well. Using hand & toe warmer packets is also effective.
  - Keep an eye on your friends: Regularly ask friends how they're doing and if you see pale spots on your friend's face or they're getting clumsy on the trail, make them stop and cover up exposed skin or add layers to core.
- **Use of VAPOR BARRIERS on your feet will prevent sweat from wetting out you socks and insulation of the boot. This allows your insulation to do its job. Practice on hikes with trash bags, two vegetable bags, bread bags, etc., to see what works best, use a thin liner sock or barefoot, practice!**



## Final Tips for Winter Camping

- Use chemical heaters in between two socks and place inside toes of boots. Eat food for warmth: Your body generates heat as it digests food, so if you're feeling cold try eating some food. Before you go to bed, have a little snack to keep your metabolism going & keep a candy bar nearby if you get cold in the middle of the night.
- Add even more ground insulation: Put your waterproof layers between your two sleeping pads to add a little extra insulation from the cold ground, or on sides to extend.
- Use your foam pad for more than sleeping: Use your foam sleeping pad to sit or stand on while you're cooking. It helps you stay a little warmer and drier. Cut a square of mylar air DYI Insulation.
- Fill floor space in your tent if alone: A bunch of empty floor space inside your tent will make it hard to warm up the interior space. Bring your backpack and other gear inside (avoid sharp items that could rip your tent, like crampons and axes) and place it around you on the floor of your tent to act as insulation against the cold ground.
- Exercise before bed: Crawling into your sleeping bag cold is a sure way to shiver all night long. Do 50 jumping jacks, jog in place or do a brisk short hike, just don't sweat. When your heart is pumping and you're feeling warm, get in your sleeping bag and zip it up tight.
- Pee when you need to: By emptying your bladder, your body needs to use a little less energy to stay warm. If the idea of getting out of your toasty warm sleeping bag in the middle of the night seems unbearable, use a pee bottle. Women can use a pee funnel to go into the bottle, but whatever you choose be sure it works! Use your vestibule vs inside your tent!



- Use a fleece top or any extra insulating top layer to use as foot sleeping bag put legs into arms.
- **Keep your boots inside:** Bringing your boots inside your tent will keep them a few degrees warmer than if you leave them outside. This will make them a bit more pleasant to put on in the morning.
  - If your boots have removable liners, keep them warm at night by putting them inside of your sleeping bag or wear them. The same is true for socks and boot insoles. Otherwise use chemical warmers under insole in toe and place toes under bag.
- **Use your body as a dryer:** If your gloves or socks get moist, put them on top of your base layer on your shoulders, in your armpits or tucked into your pants' waistband where your body heat will dry them while eating dinner.
- Waterproof breathable pants, opt for full length sipper version whenever possible, lined with a lightweight mess is nice and reinforced at knees, seat and ankles. You can wear alone or on super cold days wear a set of wool or synthetic thermals. In camp add an insulating puffy layer, you are essentially a walking sleeping bag. Do the same for you top layers, just be sure layer against skin is dry or you will stay chilled regardless of layers.
- Take some advil prior to sleeping/electrolyte. Always bring water in tent in case you awaken dehydrated!
- At Home: Store sleeping bag clean and opened up or in a very large laundry bag. Same goes for blow up pads, store blown up.





- Stow your bottles upside down: Water freezes from the top down, so by stowing bottles upside down, the bottle tops are less likely to freeze shut. Just make sure your bottles lids are screwed on correctly and won't leak.
- Start out with your batteries fully charged: Winter nights are long, so make sure your headlamp, GPS and cell phone 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).
- Keep electronics warm: Cold temps can zap battery power. When not in use, stow things like your headlamp, cell phone, GPS and extra batteries in your sleeping bag or a jacket pocket close to your body. MAKE A MYLAR CELL POUCH
- Secure your camp: Before you leave your camp for the day or go to sleep at night, make sure that anything that could easily be blown away or buried by snow is put away and secure. Prop your skis or snowshoes upright so they won't disappear under a blanket of snow and make sure things like your stove, shovel and water bottles are put away where you can find them.



## Leave No Trace (LNT)

Even in winter, it's important to follow Leave No Trace camping ethics. Here are some considerations for winter camping:

- Stay on deep snow cover when possible.
  - Camp 200 feet from a trail, water sources and other campers.
  - When camping on snow, pack out human waste and toilet paper in a plastic bag. Wherever possible you can dig a hole in the dirt about 8 inches deep, place a stick standing up to let others know it is a cathole.
  - If you're having a fire, use dead downed wood. Do not cut or break limbs off of live, dead or downed trees.
  - Be respectful of wildlife and view them from a distance.
- Winter is a vulnerable time for animals.



## REMEMBER

- Past performance is no guarantee of future results!
- Respect the Mountain! The most skilled and experienced people often get into trouble because they get too comfortable. Go with people you trust
- Don't become complacent



Enjoy!

