

Cold Weather Camping

Cold weather camping as defined by BSA is "camping in weather where the average daily temperature is below 50 degrees Fahrenheit and conditions are cold, wet or windy."

TYPES OF COLD

- **Wet cold: 50° F to 14° F** The most dangerous. Wide temperature variations from melting during the day to freezing at night makes proper dressing difficult, and important. Damp conditions from melting snow or rain makes keeping dry difficult. These are the most common type of conditions our Troop is likely to encounter.
- **Dry cold: 14° F to -20° F** Ground is frozen and snow is dry and crystallized. Strong winds cause the most concern with keeping warm. Extra clothing layers and wind-proof outer garments should be added.
- **Arctic cold: below -20° F** Requires the most insulation and wind-proofing. Many materials change physical properties, becoming brittle. Only for the most experienced campers.

Clothing

Proper dress for cold weather camping is an absolute must for keeping warm and dry in order to have an enjoyable camping experience.

AVOID COTTON! Cotton holds onto moisture, keeping it close to the skin, and thereby losing all insulation value. Perspiration which would normally drip off the body is absorbed by the cotton keeping it close to the skin, further cooling the body. This could easily mean the difference between comfort and hypothermia. "Thermal" undershirts found at department stores are almost always 100% or 50% cotton. Go to the sports department and look for polypropylene. Most man-made fibers and wool will wick moisture away from the skin.

Layer like an onion to stay warm and comfortable.

For this system to work, it's imperative that each piece of clothing be sufficiently large so that every item can be worn at once, in any order, in the worst of conditions.

When you're active, wear only those layers needed to stay comfortable. As you cool down, add a layer. If you feel yourself heating up, simply remove a layer before you start to sweat.

Under Layer/Underwear

The innermost layer must wick perspiration from the skin and transport it to an adjacent, outer layer. For this to occur, the wicking layer must be very thin and in direct contact with the skin. Look for underwear tops and bottoms, face masks, liner socks, and liner gloves made from polypropylene, Capilene, Coolmax, Dryskin, Powerdry, Thermastat, and Thermax.

Insulating Layer

The middle, insulating layer traps air and restricts its circulation. This layer keeps you warm. Remember, several thin garments are warmer and more flexible than a single thick layer. It also makes it easier to regulate temperature if you get too warm by being able to remove some layers.

Since cotton and down are very poor insulators when wet, look for pants, shirts, sweaters, jackets, vests, socks, hats, and mittens made from wool; piles and fleeces such as Berber Pile, Borg Pile, Synchilla, and Polartec; and fiber fills such as Hollofil, Lamilite, Lite Loft, Microloft, Polarguard, Primaloft, Quallofil, Thermoloft, Thermolite, and Thinsulate.

A good replacement for the wool sweater might be a Polartec or similar fleece top. It has the added advantage of being lighter weight, something to consider when backpacking.

Outer Layer / Shell

The outer shell layer protects you from the wind, rain, and snow. For the upper body, a parka with a hood as well as wrist and waist closures is best. Pants with waist and ankle closures work well to protect the lower body.

Both of these garments should be sufficiently oversized so they'll fit over all of the insulating layers when they're worn at once in extremely cold weather.

Breathable, windproof shell garments are often constructed of Ripstop, Supplex, Taslan, Versatech, etc. Waterproof and breathable shells are typically made from Gore-Tex, the industry standard, or Avalite, Entrant, Extreme, Hely-Tech, Ultrex, etc.

Headgear

Always carry a thin polypropylene balaclava (or face mask) as well as two warm hats as you can lose from 50 to 70 percent of your body heat through an uncovered head.

Hands

To keep from losing what little heat reaches your hands, use a layered mitten system consisting of polypro glove liners, one or two insulating mittens, and mitten shells.

Get mittens with long cuffs. These keep hands much warmer than gloves. The cuffs should extend past the wrist. "Glomitts" are finger-less wool gloves with the finger part of a mitten attached to the back of the knuckles. Normally the mitten is over the fingers, but when it comes time to fiddle with the stove, or even light a match, the mitten part flips up and Velcro's to the back of the glove.

Under the mitten wear some type of thin acrylic knit gloves. You can either buy glove liners at some outdoor store or go to the women's section of some discount department store like Target. Look for the one-size fits all mini-gloves for around a buck. These work fine for a fraction of the cost of an "official" glove liner.

Footgear

To keep your feet warm, wear one or two pairs of thick insulating socks over a pair of polypro liner socks. Waterproof boots with thick, removable felt liners and one or two insoles are a good choice in cold weather.

No matter what type of footwear you use, make sure they don't fit too tight. If your feet lack wiggle room, remove a pair of socks. Adequate circulation is essential as tight footwear means cold feet.

Bedding

Natural fiber sleeping bags do not maintain their insulation properties when damp, down bags also fit here. A 3 to 4 pound synthetic bag will take care of most of your needs.

A mummy style bag is warmer than a rectangular, as there is less space for your body to heat. Also, most mummy bags have a hood to help protect your head.

If you only have a rectangular sleeping bag, bring an extra blanket to pack around your shoulders in the opening to keep air from getting in.

Do not sleep with your head under the covers. Doing so will increase the humidity in the bag that will reduce the insulation properties of the bag and increase dampness.

Remember to air out your sleeping bag and tent, when weather permits. Perspiration and breath condense in the tent at night and the water will reduce insulating properties of your bag.

Insulate yourself from the ground as much as possible to avoid cold spots at the shoulders and hips.

Use a sleeping pad of closed cell foam instead of an air mattress. 1/2-inch-thick, closed-cell foam pad is essential. Many experienced winter campers add a second 3/4-length pad for extremely cold temperatures. Stay away from any of those inflatable type, more suitable as floats in the pool. These allow air to move around under you and could actually help cool you off.

Use a ground cloth to keep ground moisture from your bag. Your body will warm up frozen ground to a point where moisture can become important.

A bag liner made from an old blanket, preferably wool, will greatly enhance the bag's warmth.

Hang your sleeping bag up or just lay it out, between trips, so the filling will not compress and lose its insulating properties.

Clothing for Sleeping

Always change into dry clothing before you go to bed. Put on dry clothing or pajamas before entering the sleeping bag. During colder periods, wear additional synthetic-insulated layers of clothing to extend the comfort range of your sleeping bag. Adding additional layers will only work if they fit loosely on you and in the bag itself.

Wear a hat to keep your head warm and reduce heat loss. Wear a loose fitting hooded pull over type sweatshirt to sleep in.

Cold feet make it difficult to sleep. Wear two pairs of thick, dry socks and a pair of thickly-insulated sleeping booties.

Put a hand warmer (in a sock) at the foot of your sleeping bag before getting into it.

Fill a canteen with hot water (not boiling) and place at foot of bag to keep warm. Be careful with plastic canteens and make sure it does not leak.

Before you get out of bed bring the clothes you plan to wear inside your bag and warm them up some before dressing.

Cold Weather Camping Supply List (Recommended)

Long Underwear - 2 Pairs, again it is highly recommend that long underwear be made of Polypropylene, Capilene or APT mesh to guarantee warmth and dryness. Cotton long underwear promotes wetness and should not be used.

Stockings - 3 Pair Stockings should either contain at least 50% wool, or be made of a synthetic fabric such as Polypropylene, One pair available at camp. No cotton socks are to be used on the trail.

Boots w/liners - 1 Pair Insulated boots with removable liners should be used. Sorels (or equivalent) or Military "Mickey Mouse Boots"

Pants - 1 Pair Wool pants are the preferred outerwear at camp. Blue jeans, sweat pants and other clothing made of cotton are not to be relied on for warmth, insulation or dryness, as they absorb and retain moisture.

Snow Pants - Insulated waterproof snow pants or a high quality nylon rainpants (preferably breathable). Must have either Wool Pants or Snow Pants

Shirts - 2 or 3 Shirts should be made of either a wool-blend or synthetic fabric - Polypropylene is preferred. No cottons.

Sweaters - 1 Sweaters should be loose fitting and made of either a wool-blend or synthetic fabric - Polypropylene is preferred. Sweaters made of Polar Fleece are excellent for winter camping and are highly recommended.

Mittens with Inserts - 2 Pair Minimum Leather mitten shells (choppers) with wool inserts (liners) or other sort of glove insert with mitten shell combo. Gloves alone do not warm fingers to the extent necessary for prolonged outdoor activity, however they do make better inserts.

Stocking Cap - 1 Wool hats are the most effective type of headgear for winter camping.

Parka - Insulated parkas and coats may be used. Please make sure that the cuffs are not made of elastic materials as they will constrict blood flow to fingers and promote frostbite. Outerwear should use zippers, rather than buttons, as they help to reduce wind penetrating the jacket. We recommend jackets with removable inner liners.

Flashlight - The smaller the better. Bring an extra set of alkaline batteries that can be carried in a coat or pants pocket for warmth. Batteries can fail in extreme cold.

Sunglasses (very highly recommended) - are necessary due to extreme snow reflection on sunny days.

Pocketknife and Matches - Matches should be waterproof or in a waterproof container.

Soap - Soaps should contain moisturizers to protect the skin from dryness in the winter environment.

Chapstick (lip balm) - Necessary to keep lips from chapping.

Rain Gear - Rain jackets and pants are necessary to remain dry when digging out snow shelters.

Scarf and Handkerchief - A scarf, preferably made of wool, is necessary to prevent cold air entering around the neck area.

Candy and Snacks - Hard wrapped candy and snacks are recommended. Foods containing chocolates and sugars make excellent snacks as they warm the body and provide quick energy. Ideas: chocolate chip cookies, nuts, GORP, candies, granola cereal or bars, etc.

Plastic Eating Gear - Plastic cups, bowls and silverware should be used, as they do not freeze to body parts.

Personal Sleeping Bag - Either one good to -20 degrees or 1 20 Degree Bag and a second bag to put the first one into.

FOOD

You need extra calories to keep your body warm, so leave your low-fat diet at home. Make sure you have lots of carbs.

- Oatmeal for breakfast and pasta for supper works well. Eggs and pancakes lose heat quickly and IMHO taste pretty bad cold, but bacon can be eaten cold. If you don't cook it too crispy then any leftovers (yeah right - leftovers of bacon?) can be snacked on during the day.
- Lunches could be pepperoni and cheese on crackers. Peanut butter on Syrian bread.
- Have plenty of snacks available. Granola bars, chocolate, and trail mix are great. Apples and oranges will turn into rocks, no matter what you keep them in.
- Melt butter in a pan and toast bagels or English muffins in the butter. There's a lot of energy there.
- Have plenty of hot chocolate. This will be drunk any time someone is in camp. If you've got to have coffee, use decaf. Caffeine is a diuretic and you'll need all the water you can get.
- Make sure everyone has plenty of water. Dehydration leads to hypothermia. But leave your pump/filters at home. They are pretty much useless when frozen and you could crack the filter element. Melt snow or boil water when you need to refill the bottles.
- Cooking meat doesn't seem to work very well. It's hard to keep a big frying pan hot enough to effectively brown any hamburger. If you've got to have meat in the spaghetti sauce, bring pepperoni and throw it in the sauce when heating that up.
- Instant soups will go like crazy. Use your insulated mug to eat this, and you won't need the hot chocolate for this meal/snack.

Other Cold Weather Camping Tips & Tricks

- To keep boots from freezing up overnight, lie them on their sides beneath your sleeping bag under your butt with the soles sticking out. Put one on each side of you and tie the laces together with a simple knot. There should be enough heat escaping there to keep the frost out, plus the placement will help keep you from rolling of your mat.
- Keep gloves, socks, and any of tomorrow's clothes as will comfortably fit inside the sleeping bag. Any other clothes, jacket, sweater, whatever doesn't fit, should be put under the bag. It's much more comfortable to dress in pre-heated clothes and the added insulation doesn't hurt.
- Keep at least one water bottle in the sleeping bag, if it will fit and not leak. If you can't, put it under your bag at the knees. All other water bottles that don't fit under your knees could be put in some of your extra wool socks. Also, heat the water up at night before you go to bed and put the filled bottles in your sleeping bag as you fulfill your nightly duties. Then when you get to bed, your bag will actually be warm.
- Don't forget the nightly duties. A full bladder requires more heat than an empty one, plus getting up at 2:00 AM in sub-zero weather is absolutely no fun.
- Carry and store water bottles upside down. Ice forms on the tops of bodies of water first, so this helps keep ice from forming around the mouth. If you're not carrying a water bottle, stick it in a spare sock or shove it in a snow bank, upside down, of course. Snow will insulate better than nothing.
- If you've got a self-inflating mattress don't roll it up with the valves closed. A frozen mattress valve is real hard to open.
- When standing around eating, cooking, or whatever, stand on your mattress pad. When sitting, sit on your pad.
- Keep active as much as possible. If you feel your feet freezing up, start getting the shakes, or if you see anybody else showing initial signs of hypothermia - go for a long, brisk walk/jog. Take the whole troop with you, because they may be feeling the same way, but are too "cool" (there's that pun again) to show it. Keep going until the signs go away.
- Go for a night hike or play an active game just before you crawl in the bag. After you get in the bag, take a mouthful of water and eat something fatty like cookies. This gets the furnace started and helps keep it going throughout the night.
- The standard 3-tub method of doing the dishes just doesn't work in the extreme cold. Heat up some water and pour this in individual bowls to melt the leftover bits and pieces of food. Soak your utensils in this. Then use a paper towel or even a snowball to scrub. Any cloth dishrag will freeze.
- Build a wind break outside your tent by piling up snow or leaves to a height sufficient to protect you when laying down.
- Exercise before bedding down to increase body heat. This will help to warm your bag quicker. Be careful not to start perspiring.

- Bring extra everything. Stoves and lanterns will fail. Water bottles will freeze and crack. Things, like scouts, just behave differently in the cold.

Cold weather camping references:

- OOPIK manual, No. 34040
- BSA Field manual
- BSA Snow Camping Venture manual
- <http://www.macscouter.com/KeepWarm>