

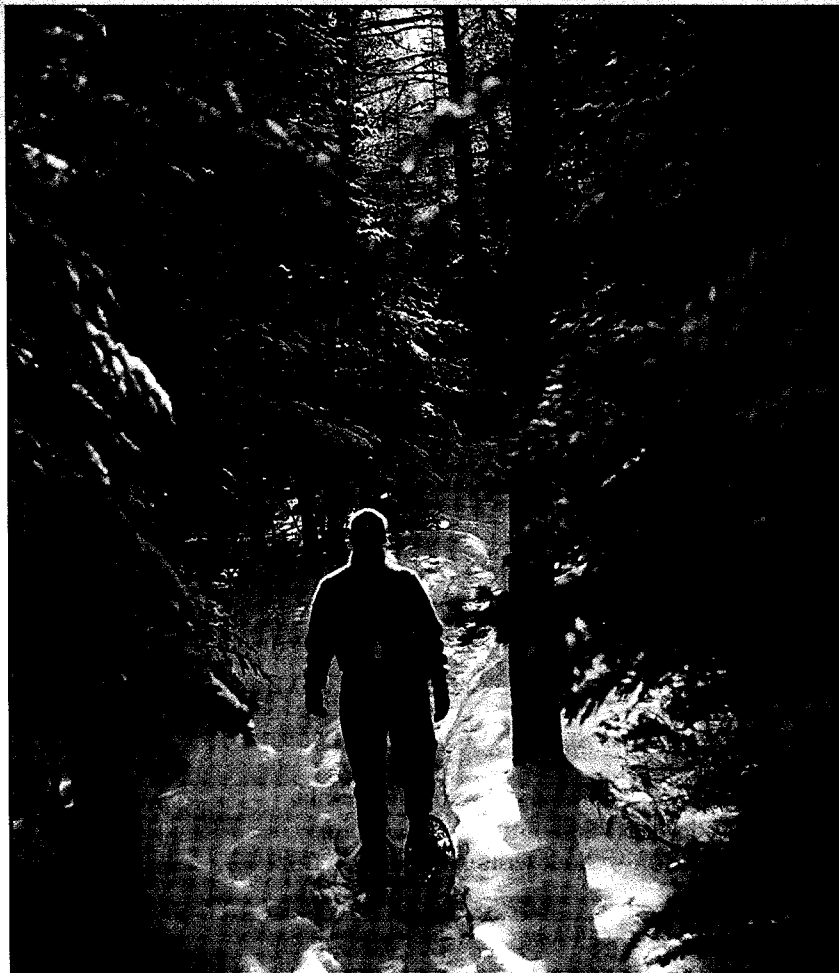
# Camping in Winter— Comfort in the Cold

by Tim Bates

“You’re crazy! Tonight is supposed to be the coldest night in Minnesota history and you want to sleep out in it? You’ll freeze!”, my wife said to me as I ventured out into the snow hut (called a quinzhee) I built in the back yard. Maybe it was an outing to prove my ability to comfortably stay outside when much of the population was complaining about the bitter cold. Or maybe I just wanted to enjoy the solitude that a quinzhee can provide. In hindsight, I am not sure what was my motivation, but I do know that I was very warm and I did sleep well.

It was February 2, 1996 when the temperature in Duluth dipped to -49 degrees. (It hit -60 degrees in Embarass, MN where in the morning they were shattering wieners to show how cold it was.) Despite such cold temperatures, I was too warm most of the night! How can a person stay warm at those extreme temperatures? Many cultures spend much of their year in such extremes. Winter camping is becoming more and more popular and there are a number of simple strategies that can be used to stay warm and comfortable when out enjoying the cold weather.

The often asked question is not how to stay comfortable, rather, why go out at all? Winter is viewed by many as being a time of adversity and along with it the corresponding



Tom Szendrey

When winter camping, day trips on snowshoes or skis are a great way to explore the snowbound woods.

complaining. You have heard it—the negative comment about a pending snow or the gripe about the cold. Yet, winter is a time of profound beauty and solitude. A time in which one can enjoy the awe and majesty of the north country without interruption of others (or mosquitos and black flies). Working with the cold conditions of winter brings us back to our ancestors and their skills for dealing with harsh conditions. Winter camping is an ideal way to connect and reconnect with the

natural world.

What is it about winter that creates a challenge for winter camping? The obvious answer is that it is colder. But, that is only one of the hurdles we must deal with. The others being the problem of getting wet (typically from sweat, but also from melted snow) and dehydration. Inattention to any of these could lead to frostbite and/or hypothermia.

When considering the essentials to staying warm through the night when sleeping out or even while par-



Erin Wieland

A quinzee hut can be a cozy shelter when winter temperatures drop well below freezing.

ticipating in daytime activities, the most basic element to keeping you warm is what you eat. This is often referred to as “stoking the fire”. If I want my wood stove at home to burn all night, I’ll load it up with good hardwood such as oak or maple rather than pine. Yet, if I want quick heat, I would use the pine instead of the oak. Like the stove, we humans need a variety of fuels for different conditions. So, the oak firewood is equated to foods that are high in fat and pine is equated to foods high in simple sugars. So, if we want to keep warm for a long time, eat foods rich in fats for dinner before crawling into the sleeping bag. On some bitter cold trips, I’ve gone so far as eating sticks of butter or slurping down squeeze margarine, which has kept me toasty warm for many hours. If you wake up in the middle of the night and are cold, gobble up a candy bar for

quick warmth (though this, like the pine firewood, will not last too long). Many people don’t want to go to the extreme of gobbling up butter to stay warm. To avoid this, plan your food appropriately with enough calories to keep you warm. Some of this planning comes as a result of trial and error. Since everyone’s body metabolizes differently, you have to learn what works for you.

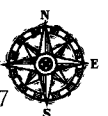
Along with eating high calorie, high fat foods to keep warm while camping out, it is essential that you take in a sufficient amount of water. This need is different for everyone, but a general rule (unless you are taking vitamins) is to keep your urine fairly clear in color. If it is not, you need to start drinking water. The challenges with water in the winter is 1) keeping it liquid and 2) a person’s lack of thirst.

One method to keep water liquid is to keep a thermos of hot water

that is refilled regularly from heating water (melted from snow or from a hole in a lake) on the campstove or fire. Another is to place your liquid water near your body while you are physically active—the heat generated from the activity will keep the water thawed.

To overcome the lack of thirst, force yourself to drink regularly, even though you may not feel thirsty. If you start getting a headache, you are likely becoming dehydrated—drink up. Alcohol is not an option for hydration. It actually makes matters much worse: it furthers dehydration and increases heat loss.

Bates’ basic rule: There is no bad weather, just bad clothing. Clothing is the next level of care for keeping comfortable. During the day, numerous layers of clothes should be worn and adjusted to keep the body warm, but not to the point of sweat-



ing—sweat and moisture are major enemies to keeping warm.

I like to break clothing needs into a number of major parts: head, hands and feet; upper body; lower body. The key for all of these is to have a “wicking” layer next to the skin, which pulls moisture (sweat) away from direct contact with your skin, thus reducing the cooling effect of evaporation. The next layer, depending on the conditions, should be an insulating layer. The type and thickness is based on a number of factors, including your individual metabolism, comfort, temperature conditions, and cost. Traditionally this insulating layer has been wool, which still is accessible at a low cost through military surplus. This is usually what I use, primarily because of durability and low cost. Another option is what is known as pile or fleece, also marketed under a variety of manufactured names. These synthetic materials are very good, insulate when wet, and often wick moisture.

The final layer is a wind blocking layer. Many materials work well. It is important to avoid those materials that do not allow moisture to pass through them, like coated rain gear. It is helpful, though, that your wind shell pants have waterproof knees and seat to protect those areas when kneeling or sitting.

When sleeping, similar principles to clothing apply. Wear a wicking layer of long underwear (preferably one different than your day time wicking layer). Multiple sleeping bags also may be in order for the insulating layers. On my coldest-night-on-record venture, I used three sleeping bags, all of which were synthetic. If you are going out for just one night, goose down or synthetic filling are equally qualified. For more extended outings, synthetic bags are better. This is because they will still have some insulative value when wet...and they will get wet

from perspiration as a result of your body's metabolism. Once a down bag gets wet, it's virtually useless.

Underneath the sleeping bag, an insulating layer is essential. Some type of closed cell foam or self-inflating mattress works best. You may even need to use two layers. It is not uncommon for a mattress, when used on the ground, to be warmed by body heat, melt the snow in the ground, then re-freeze, thus freezing the mattress to the ground (or freezing your tent to the ground). Coated nylon materials peel off the ground easier than closed cell foam.

Shelters for winter camping come in a wide array of options. The warmest of the options is the Athapaskan snow shelter called a quinzhee hut. As a kid I called them snow forts. At that time, we just burrowed into a snowbank that was created by shoveling the driveway and thought they were great hideouts. They work so well because the dead air spaces found in the snow help insulate these shelters. It is not uncommon for these to warm up above freezing on even the coldest day just from body heat and ground heat. But, they do have many drawbacks. Many people feel too confined and claustrophobic in these huts. Also, when bumped, snow may slough off and fall on your sleeping bag, getting it a little wet. In addition, these huts are a lot of work, and during construction, you will get wet. As a kid, it was no concern to get wet. I just went in the house to dry off. When winter camping, that's not possible.

To build a quinzhee hut that will sleep 2-3 people, start by mounding up a pile of snow that is about eight feet in diameter and about six feet high. It is easiest to use a shovel for this task, but in a pinch, many people have used snowshoes. Once mounded, find 20 or so small twigs and branches and break them all off at

approximately 10-inch lengths. Poke these into the mound of snow all over, perpendicular to the surface. These will act as thickness markers when shoveling out the inside. Now let the snow set at least two hours. This allows time for the snow crystals to increase their bonding strength through a process called destructive metamorphism. In warmer temperatures this process is much quicker than in very cold temperatures. If you are building a shelter in temperatures well below zero, it would be more appropriate to wait up to four hours (or more).

The process of digging out is fairly simple, just start tunneling into the mound (put the door away from the wind). After getting in beyond the reach of a shovel, it is helpful to have someone else remove the snow from behind you (sometimes a sled helps in this process: just dig the snow onto the sled). The digger can use a shovel, or often easier is a big cook pot, to dig until hitting the sticks that were poked in earlier—thus, the walls will all be 10 inches thick. At this point the digger can get fancy by making shelves and candle holders, creating a nice and comfortable living environment.

More commonly, people think of tents as a winter shelter, but they also have their drawbacks. First is in set-up. If a tent needs stakes, an alternative, such as tying into trees, is necessary. Frozen ground and aluminum stakes do not work well together. If the tent does not have extensive ventilation, then moisture from breathing may condense on the ceiling, then with the slightest bump a rain of ice crystals will come falling down onto the sleeping bags. Therefore it is essential to keep doors and windows open to allow for ventilation.

More and more people are returning back to some of the more traditional winter camping shelters of the canvas wall tent, which can be heat-

ed by a small wood fired heater. This often can be a very luxurious way to spend time camping in the winter compared to other shelters. Cooking on the wood heater, and the warmth it generates, make for a cozy environment. Unfortunately, this type of shelter is fairly heavy and large, usually only transported by dogsled, sled or snowmobile.


Many other shelters could be used, including a tarp strung between trees to keep off falling snow, a trench in the snow to be protected from the wind, or just sleeping under the stars.

The last item to consider is the one most people think of first: fire. Fire should be used for psychological warmth rather than physical warmth. It is a poor provider of heat for bodies and should not be expected to keep you comfortable. It does, however, make for an enjoyable focal point when the sun has set at 4 p.m. and there is not much to do around

camp except sit around the fire and enjoy good conversation.

Developing the skills for comfortable winter camping transfer over to everyday life. If you gain a greater understanding of how to keep your body warm while camping, you are more likely to be able to deal with the cold while going to work or shoveling the driveway. Winter is a wonderful time to be out exploring and learning about our natural world. The call of the chickadee and the track of the fox await those who venture out. □

Tim Bates is the Coordinator of Environmental Education with the University of Minnesota Duluth Outdoor Program, where he helps people develop the skills to enjoy the outdoors and take care of our natural environment.




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