

Cold Weather Shelters

By Kevin Estela



A modified quincee with evergreen boughs supporting the weight of the loose snow. Snow conditions are not always ideal and a set time is sometimes required to achieve the best snow for this type of shelter.

Tell a friend or co-worker you are going camping in the winter and they will likely shoot you some odd looks. They might ask you “Why would you want to do that?” or “What are you trying to prove?” Maybe they’re right in criticizing your actions because after all, who in their right mind would want to spend a night in the woods in freezing temperatures when a warm bed and hot shower are readily available at home? It is easier for them to insult your interests than challenge their own abilities. I’m a firm believer that if people have to ask you why you like what you do, they will never understand.

Winter camping is a natural extension of

fairer weather outings offering an extended camping season with the right equipment. But even without all the fancy equipment, a well-educated outdoorsman can be prepared to face winter’s harsh realities in stride. Considering winter is the season when the

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Avoid sweating or getting wet while making snow shelters. Perspiration can be a killer. Shed layers and brush off snow whenever possible.



Students during a winter survival course busy at work building a winter snow trench shelter.

days are shortest, you will likely spend most of your time around your camp. If this sounds appealing to you, continue reading to learn how to make a proper shelter and better prepare yourself for a winter's night out.

There are only 4 types of universal shelters.

- 1.) Open Shelter with Fire
- 2.) Open Shelter without Fire
- 3.) Closed Shelter with Fire
- 4.) Closed Shelter without Fire

For purposes of explanation, open refers to a shelter with at least one side open to the elements and closed means a shelter where the occupant is surrounded by protective walls of some sort. Fire can be described literally as an open flame such as a

campfire or as broadly as a heat source including space heaters and camp stoves. While warmer climates give the outdoorsman flexibility to select any type of shelter, the winter outdoors enthusiast must be more selective. Complicating the decision making process is one more consideration. Is there snow or is it a snowless winter shelter? As you will find out, snow is an extremely valuable resource and



The author at home in his snow shelter. On this trip, temps dipped below zero and yet the inside of the shelter was probably in the balmy double digit teens.



A snow shovel and a sleeping pad are all that is needed to build comforts found at home. In this case, a snow chair with side table to hold coffee and cigars.



The Author's friend Mike inside of his heated Tipi.



A winter poncho shelter. Paired with a good sleeping bag, a poncho will keep precipitation off of you. Make sure to construct it high enough to avoid condensation but low enough to keep the snow off.

camping in the snow is easier than winter camping without it. If your trip is a planned outing, you have the luxury of carrying all that you need with you. If you are spending an unexpected night in the woods, you must work harder to make it through the night. In either case, a night in the winter woods doesn't have to be a bad experience. Here are some pointers (in no particular order) to help your sheltercraft skills.

What shelter gear is recommended for winter nights in the woods?

You don't need a \$600 expedition tent and a \$1000 goose down bag for winter camping. Look at what causes heat loss. Radiation, respiration, evaporation, conduction, and convection are the 5 ways to go from 98.6 degrees to stiff in no time. Conduction heat loss is minimized by a good closed foam pad. I prefer closed foam as it insulates better and cannot deflate. If a ground pad isn't available, make sure to use ample 18" to 24" of evergreen boughs to protect you from the ground. Remember, your thick bedding will compress under weight. Err on the side of using too much rather than not enough. If nothing else, remove your pack and use the foam

padding as a seat. It is better than sitting on the ground.

As for warmth and protection from convection winds, I'm partial to wool insulation. Wool retains insulation properties when wet and tightly woven wool blocks the wind. The tradeoff is weight but considering wool sheds water and snow doesn't easily collect on the fibers, I'm willing to make a concession. Wool blankets are great for the home but I prefer a good quality winter sleeping bag like those from Wiggy's. I use a 20 degree bag mated with their overbag to give me protection down to -20 degrees. With just good clothing, a sleeping bag and an insulating pad, I'm prepared for most winter camping trips.

The only other gear I recommend at the bare minimum is a large square tarp of 10'x10' minimum. Winter campers don't complain about insects and no tent with mesh netting is required to keep the skeeters at bay. Winter campers usually (notice I won't say never) won't have to worry about rain as precipitation since most everything is in frozen form (except for freezing rain.) Unless you are camping in an established lean-to along a trail like the AT, you will want something covering you. Many of my best winter camping trips were spent under nothing more than a poncho shelter. The larger tarp is recommended to keep drift snow from blowing in. The tarp can be rigged in a variety of ways to protect you from the prevailing wind and yet be open enough to take in the beauty of the outdoors.

Once you experience the outdoors with the

most basic equipment, you can splurge on the more exotic winter camping items like a dedicated 4 season tent or heated tipi. Don't be surprised if your camping buddies call you "soft" for getting one. Then again, don't forget to rub it in when all they want to do is feed little rounds of wood into your heated shelter's packable wood burning stove as they escape the cold. I use a heated tipi on extended winter trips out of necessity. You see, as you perspire in your sleeping bag, the moisture is trapped in the filament. You must regularly dry out your bag or it will lose its loft. I'd rather get a good night's sleep to be there for my students than have to explain why their instructor is cold and groggy.

What materials are on hand?

If you aren't fortunate to have a commercial winter shelter like a tent or tipi, you will be forced to fend for yourself with what is at hand. Hopefully you chose to carry enough clothing to bivouac in knowing your clothing is your first line of defense when it comes to shelter. Even if you didn't prepare thoroughly ahead of time, you can still survive the night. If you have snow, you have one of the best insulation materials out there. Snow is mostly air. Don't believe me? Melt a pot of snow and watch how little water you get out of it. If you don't have snow, at least you can see where the wood is around you for a good roaring fire. Maybe you have both snow and wood. You can build a wind break around the perimeter of your camp, light a small fire and sit close to it. You will need to become a human rotisserie but at least you will stay warm. Lack of organic matter to build the proven debris hut or lean to does not mean you can't incorporate the same



An efficient titanium box stove inside of a shelter requires plenty of wood. Pile it up next to your stove to dry it out while it is running.



A Quincee is like an igloo except it is made without the use of blocked snow. A large pile is mounded up and hollowed out. So simple, a child (like this one) could do it.

design into a winter setting. The popular summer debris hut may be impossible to build with all the leaves frozen to the ground and covered under 6' of snow. I've used minimal evergreen boughs as support for a snow shelter with snow acting as the main insulation. Lack of snow does not mean a wind break can't be constructed using bark.

With snow, the outdoorsman can create a quincee or snow shelter. This is not to be confused with an igloo. An igloo is constructed of blocks of snow that lock together into a dome. A quincee is a mound of snow that is hollowed out. I've spent many nights in quincees and can attest to their warmth (approximately 20 degrees warmer inside) and their sound proof attributes. I have had to wake up students and friends inside quincees as the general noises heard in the morning around camp and the morning sun are muffled and blotted out from inside. You will sleep well in an enclosed snow shelter and you'll find the snowy walls a sanctuary from the howling winds or your loud and obnoxious friends.

Another effective snow shelter that is faster to build than a quincee but doesn't offer as much room is the snow trench. A coffin (morbid image, sorry!) sized hole is cut into the snow layer. Boughs are placed in the bottom and a system of ridges goes over the top. The top is then covered in snow. This isn't going to be the most comfortable shelter but it will be warm. With any survival shelter, but especially winter shelters, you want as little dead air



The glow of a stove inside of a shelter is hypnotic. In single digit temps, the stove enables the inside of the shelter to reach 50's or 60's in temperature a foot off the ground.

space as possible to maximize how your body will heat it up.

How much time do you have?

I've watched students build winter natural shelters relatively quickly and by quick I mean in hours, not minutes. This is a process and one that takes serious time. For obvious reasons it is easier to build a shelter during daytime hours than night. With a shortened day, your normal "cut off" time to decide when to hunker down for the night will need to move from say 4pm to 12 noon. You will also need time to collect wood and insulation materials. All of this takes time. Know when sunset will be before you go out. Don't get surprised by it. It only takes one experience getting caught with little or no time in the outdoors to inspire you to be prepared ahead of time.

One of the biggest mistakes students have made in the past is rushing and sweating. Winter shelters are effective means to combat the cold but become less effective if you spend a night in them in sweat-drenched clothes. Peel layers off as you scurry about collecting materials. Don't make the mistake of building a shelter that requires you to stay dry to stay warm. If you do find yourself getting sweaty, dry yourself in front of a fire. Even if you can't bring the fire into the shelter with you, warm yourself prior to entering it.

A final consideration about the time needed to build a winter shelter is this; the act of building it is what keeps you alive. Assuming you do start late and decide to build in the dark, you may find yourself moving about, generating heat and staying

alive because you're staying active. Rather than sitting down, getting cold and potentially freezing, your actions are keeping you alive. Your actions are more important than the shelter you're building in the first place.

What luxuries can improve a night in a winter shelter?

I always tell students to take steps to increase their survivability. In shelter making, always improve it. Make it better, stronger or more comfortable any chance you can get. Try to squeak out an extra 15 minutes of sleep by making it better each day. There are some items one can have on hand that make the night in a shelter easier on the body.

One of these items is a pee bottle. Rather than leaving the comfort of a snowy shelter, have a pee bottle handy. Don't let it freeze as you'll find yourself carrying around a "urinecicle" and disgustingly waiting for it to thaw before cleaning it. Put the sealed bottle in your sleeping bag with you and make the most of the heat you generated. Wrap some type of textured tape around the bottle to keep it from being mistaken for your usual water bottle.

Shelters are more easily built with man-sized tools. Sure, I can build a snow shelter with my canteen cup as a hand shovel/trowel but I would much rather have a full-sized collapsible shovel like my Voile. I can use the small Swiss Army Knife saw to cut branches or use a large 36" bow saw. Maximize your caloric output by working with the best tools. Don't work harder, work smarter.

One small addition to any winter shelter is a small candle. For inside a tent, a small candle can take the frost off the nylon walls and raise the



Always remember to insulate against conduction cooling. Here, the author is standing on a camp chair during a winter camping trip. If nothing else, you can use your pack to insulate from the ground.



temperature slightly. In a quincee, a candle can help crystallize the walls and smooth out the interior. Also, given the length of the day and the 16 hour nights, a little light is a great companion to have.

I truly believe winter camping makes you appreciate warm weather camping more. I will never say winter camping is easy. Instead, I will say it is challenging and rewarding. After your first cold weather camping trip, you will never take for granted a summer night that only dips down into the 50's. Properly construct a good winter shelter and you will thoroughly enjoy the experience. Camping is usually associated with sunny weather, kids roasting marshmallows in t-shirts and open vistas with healthy looking models sporting the latest in yuppie wear promoting overpriced sporks. Learn to build shelters in any condition and try winter camping once. You'll broaden your horizons, develop an appreciation for this time of year, and improve your overall woodmanship and survival skills.

An effective heater can be made out of an old coffee can, a roll of toilet paper, and an entire bottle of rubbing alcohol.



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