

# Rocky Mountain News

## Survival imperative? Shelter a must

*Knowing how to build one might help save your life*

**By Janet Reese, Special to the News  
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Would you survive overnight if you became lost in the mountains?

In April, a Steamboat Springs man set out alone on a half-day ski tour. After a pleasant three miles, his right ski punched through the snow and he went down hard, breaking his leg. Stranded in the wilderness, his survival instincts and training kicked in. He fashioned insulating beds of pine boughs, where he spent the nights shivering. He survived eight nights, with the temperature as low as 23 degrees, before he was rescued.

A solo hiker summited Mount Bierstadt, a 14,000-foot peak, on snowshoes in February and became disoriented in a snowstorm on his descent. Realizing he was lost, he relied on his survival training and waited for rescue. He built a small fire and a snow cave to keep warm and stay alive. He was rescued after surviving two nights in high-altitude, subzero cold and freezing wind.

In November, a snowboarder skied out of bounds at Keystone Resort and found himself lost in heavy woods with snow up to his waist. After the first night sitting on a log, he gathered pine branches to make a bed and shelter, where he spent the next two nights, during which the temperature dipped to as low as five degrees. Searchers rescued him after the third night.

A day of fun in the mountains turned into a harrowing fight for survival for these outdoor enthusiasts. They all made mistakes, but with basic survival skills and minimal shelters, they saved their lives.

Knowing how to build an overnight shelter is one of the most important skills when venturing into the wilderness, especially in the winter.

"Survival begins with the 'Three Ps:' Prior planning and preparation," said Nick Weighton, wilderness survival instructor for the Colorado Mountain Club and Snow Operations Training Center LLC.

"Prior to your trip, consider the aspects of survival, have a rescue plan and tell someone where you'll be hiking and when you'll return. Include survival tools and supplies in your pack and know how to use them to build a shelter. Applying the Three Ps greatly increases one's chances of surviving an extreme situation."

Weighton gave these tips.

**Q.** What equipment should you carry in your backpack to build a simple shelter?

**A.** While the best assurance is to carry a bivy tent, a ready-to-use shelter, hikers can build natural shelters using basic gear. A bivy tent can give you an immediate solution for less extreme situations, but it might not be enough protection in heavy snowfall, strong winds or extreme temperatures.

When working with natural materials, a few simple items will greatly increase your ability to construct a shelter in the winter. They are a cutting tool, shovel, tarp, cord and ground pad. These five basic items cost less than \$50, weigh only a few pounds and can make a tremendous difference in surviving.

**Q.** What are the options for shelters if you have to stay out overnight in the backcountry?



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Comfort isn't a priority when you are faced with a survival situation, but the shelter you build should be sturdy and well-anchored to bear the brunt of strong wind, heavy snow or rain.

**A.** If you are below treeline in a forested area and have the five survival items listed above, you can construct any one of several shelters using natural materials. It's a matter of deciding what you think is the most feasible shelter. A tree tent or log hut are possibilities with or without snow present. Snow trenches or snow caves can be constructed if there is adequate snow.

If you are above treeline, try to descend into a forest, or at least a place offering natural windbreaks. If that's not possible and you're carrying sufficient gear, you can dig snow trenches using cord or rope for rafters and covering it with a tarp and a layer of snow. You might be able to dig a snow cave if the snow is deep enough and not too icy. Building a rock wall shelter with a tarp roof might be feasible if exposed rocks are accessible. Avoid building shelters on ridges where high winds and colder temperatures are likely. Build on the downwind, or leeward, side, if possible.

**Q.** How do you build a shelter?

**A.** In any survival event, first stop, think, then take action. Thinking involves evaluating the situation and making a plan based on the resources, terrain, weather, time of day and the abilities of the hikers. Resources include your gear and natural materials. Pick an acceptable shelter area within a short distance. Look for natural windbreaks, and build slightly uphill from trough areas where cold air will settle or flow down during the night. Then decide on what you think is the most feasible shelter for the situation.

In a survival situation, being comfortable isn't a priority. Making it through the night is your goal. Your shelter should be sturdy and well-anchored to withstand strong wind, heavy snowfall or rain. Make it large enough to adequately hold one or two people. The entrance should be just large enough for a person to crawl through and then closed with tarps, logs, pine boughs, snow blocks or a pack after getting in.

When building shelters, let your imagination and engineering spirit run wild. There is no limit to the possibilities, and you are not restricted to any specific shelter. Build whatever suits the situation, and modify a shelter as you see fit.

## Five essentials for shelter building

**The following five items apply strictly to shelter building. Additional clothing and equipment are needed for winter survival.**

- Cutting tool (9-inch foldout saw, hunting knife or small hatchet) for cutting trees and pine boughs for insulating floors, walls and roofs.
- Lightweight shovel for clearing snow or digging a snow trench or snow cave.
- Tarp (5 feet-by-7 feet minimum) for use in building a shelter or wrapping around a person. Tarps are useful for closing the entrance of a shelter, transporting pine boughs and reflecting body heat. Bright-colored tarps can be used for signaling. Tarps with grommets make it easier to attach cords. Gold foil "space blankets" are poor for building shelters because they tear easily. They are very good for wrapping around a person to reflect body heat, "flagging" your location and signaling by reflecting the sun.
- Brightly colored parachute cord - 75 feet to 100 feet - for lashing parts of a shelter, bundling materials to drag back to a site, anchoring signal devices in trees or a clearing, repairing clothing or equipment and many other uses.
- Closed-cell foam pad for insulating the floor of a shelter or insulating an injured person from the ground or snow. Air mattresses are not recommended, because they can lose some of their insulating ability when the air inside becomes chilled.
- Resources for winter shelter building

Colorado Mountain Club, Golden, [www.cmc.org](http://www.cmc.org)

Snow Operations Training Center, LLC, Sedalia, [www.safetyoneinc.com](http://www.safetyoneinc.com)

Colorado Mountain School, Estes Park and Boulder, [www.cmschool.com](http://www.cmschool.com)

AlpenQuest, Colorado Springs, [www.alpenquest.com](http://www.alpenquest.com)

Wilderness Survival Institute, Loveland, [www.wisesurvival.com](http://www.wisesurvival.com)

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