

Winter survival 101

School teaches tips for staying alive

Will Shoemaker
Times Staff Writer

Ever had an experience when you've had to make due in the backcountry with minimal supplies? If so, maybe during that time you even questioned whether you'd make it out of the situation alive.

Ford Church, 32, founder and executive director of the Cottonwood Institute in Denver, says when it comes to survival in winter, no one should consider venturing into the backcountry without knowing they're prepared to survive spending the night outside in the elements.

Church has been practicing and teaching wilderness survival skills in Colorado for 10 years.

Surviving the elements boils down to identifying and addressing priorities, or what Church calls the "general rule of threes."

They are: You can live about three minutes without oxygen, so, first and foremost, make sure you're breathing. You can live about three hours without shelter, especially in winter. And you can go about three days without water and three weeks without food.

"You're not going to start by thinking about traps and snares," Church says. "You're going to be

thinking about, 'how do I get out of the elements?'"

The most important piece for providing shelter a person should have on them — in theory, anyway — is clothing. That means making sure your gear is adequate for the conditions.

Secondly, in the winter, the most important tool for helping you make a shelter in the event one is necessary is a shovel — more specifically, a metal-bucket avalanche shovel.

Should the need arise, either a quinzhee or a "snow trench" will typically suffice for shelter. A quinzhee is a structure formed by piling up snow, letting it set and then digging out the inside. A snow trench, a little easier to construct but not quite as warm, can be made by tamping down an area, removing the snow from that area and fashioning a roof with whatever is available — branches, limbs, or, preferably, a tarp or poncho.

When making a snow shelter, Church urges not to attempt sleeping directly on the snow. Instead, pine boughs can create a necessary — albeit prickly — layer of insulation from the snow.

A tree well can provide shelter in more dire situations. Or, a lean-to could be constructed with a fire providing warmth on the open side. Of course, Church notes that unless it's possible to dig to ground level, fire in the winter can be a challenge.

If you're in a car, Church highly recommends staying in your

car. Car survival — obviously — offers a different set of circumstances than surviving the elements out of doors. With that, resources available are different.

For example, he recommends cutting the foam out of the backseat to create a space you can burrow into if staying warm is a priority. Or, the foam can be used to fashion a make-shift sleeping bag. A road flare could be used to start a fire, if necessary.

In car or out, water can be obtained by melting snow. And food, while lowest on the hierarchy of survival-situation needs, should still be carried at all times. Church likes candy or energy bars, because they pack well.

Twenty-three-year-old Chad Koch of Howard, Colo., recently became lost while hiking during a snow storm near Monarch Pass. He was able to survive sub-zero temperatures during the night by taking shelter in a campground restroom. However, his small Jack Russell Terrier "Snoopy" died due to exposure.

What'd Koch do right? "He found some shelter," Church notes, admitting that what he knew of the situation was limited to short news accounts. "The one thing I question was how his dog didn't make it. ... You would put that thing in your coat and share each other's body heat."

The closest real-life survival situation Church has experienced, he explains, came during a week-long trip into a remote area of the Grand Canyon. The group of



Cottonwood Institute instructor Christi Gubser demonstrates a textbook quinzhee snow shelter.
Photo courtesy Cottonwood Institute

three he was a part of had only a quart of water between them for an approximately 10-mile hike from the canyon's rim down to the river.

Luckily, the group made it to the river — where they filtered water — without becoming too dehydrated.

"It was a bone-head mistake," Church admits, "but just know-

Important winter survival kit contents

- In your pack:**
- avalanche shovel
 - emergency blanket, tarp or poncho
 - at least three methods for making fire (examples: lighter, strike-anywhere matches, flint and steel)
 - container to hold water
 - food
 - items to signal rescuers (example: whistle and signal mirror)

- In your car:**
- snow shovel
 - sleeping bag
 - container to hold water
 - road flare (for signaling rescuers or starting a fire)
 - food

The Cottonwood Institute offers free survival clinics through REI and affordable one or two-day survival workshops. For more information or to register for a course, call 303.447.1076 or visit: <http://www.CottonwoodInstitute.org>.

ing a few of these basic things can prevent these situations from happening."

(Will Shoemaker can be contacted at 970.641.1414 or will@gunnisontimes.com)

Avalanche

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focused on a much smaller area, said CBAC Executive Director Alan Bernholtz — who also serves as the mayor of Crested Butte.

He helped form the center in 2001 because the state's avalanche forecasting center — Colorado Avalanche Information Center (CAIC), which has four offices throughout the state — wasn't able to serve the Crested Butte area to the fullest. The weather patterns and snowpack around Crested Butte are quite different from other parts of Colorado, Bernholtz explained.

Prior to the avalanche center having formed in Crested Butte, CAIC was operating off of three zones in Colorado — the northern, central and southern mountains. "We didn't really fit into any of their weather patterns," Bernholtz said. "So that's when we just started doing it ourself."

CBAC forecasters still talk to CAIC on a near-daily basis, sharing information about conditions in other parts of the state. The local avalanche center currently employs five forecasters.

The day before forecasting, a CBAC forecaster is required to venture into the field and "see what's happening with the snow," Bernholtz said.

The following morning, that day's forecaster will arrive at the center by 5:30 a.m. — earlier if it's been snowing — and begin looking at the weather (temperatures, wind and precipitation) the area experienced during the night. The forecasters look specifically at "what's changed since the night before" when they analyzed conditions, said Steve



WSC student Stuart Slay demonstrates how to search with an avalanche transceiver while course instructor Lisa MacPherson looks on. Transceivers have the capability of both searching and sending a signal in the event a backcountry user is buried. They only work, however, if those users are wearing them.

Photos by Will Shoemaker

Banks, who's forecasted with the center for five years.

The forecaster will also look to see what kind of weather patterns other areas throughout the state are seeing.

"First thing I'm doing is putting together a mental model of what the weather looks like and how that's going to affect the snowpack for the day," Banks explained.

The center relies heavily on observations from other members of the backcountry community. That information is combined with what that day's forecaster saw in the field, weather data and input from other forecasters and local ski patrollers to create an analysis of the snowpack's stability.

How does one get into such a line of work?

Bernholtz, for one, recalled being "a young kid, 18 years old

who wanted to ski powder like anybody else." Through that yearning, he began exploring the backcountry and found a calling for himself. He started guiding and became interested in snow science.

Most of the forecasters work for Crested Butte Mountain Guides (CBMG), said Bernholtz, which assures that they have the knowledge necessary to accurately forecast.

CBAC's funding comes mostly through local donations, membership drives and a couple annual fundraisers. CBAC receives about \$3,000 annually from CAIC, out of an overall budget of \$28,000.

"We don't make a whole lot of money. We have a pretty small budget, but we're all happy to do it," said Bernholtz. "It's a service we all really enjoy doing."

As for this year, which has already seen one fatality near

The center

Observations for snowpack, weather and avalanches from Crested Butte-area backcountry users are extremely valuable to Crested Butte Avalanche Center forecasters. Recent observations can be sent to the center via a form on the Web site, at cbavalanchecenter.org, e-mailed to cbac@cbavalanchecenter.org or by calling 970.349.4022.

Recent observations by backcountry users can be viewed — along with daily reports — on the Web site. The site's home page is the center's basic avalanche and weather report for that day. Also included via the Web site are links for avalanche education, an archive of accident investigations and photos. The center is always seeking donations to allow the continuation of services now provided. CBAC's mailing address is PO Box 1061, Crested Butte, CO 81224.

Tips for venturing into the backcountry in winter

- check with avalanche forecast center in area for conditions
- talk with guide services or ski patrols for local information; ski and mountaineering shops sometimes have information they can pass on
- receive training and avalanche education; the more you know, the less the chance of getting caught.

Crested Butte, Bernholtz called it "more of a typical Colorado snowpack."

"We've gotten used to a really stable snowpack the last couple of years," he explained. "But right now we're dealing with some lingering instabilities that aren't going to go away very quickly — just like the rest of the country is."

Early season conditions created weak layers, resulting in a generally unstable snowpack. Across the West this year, three skiers have been caught and killed in avalanches while skiing *in-bounds* at resorts.

Bernholtz journeys four or five times a year to Silverton in the San Juans, teaching courses for both the ski area and the town's search and rescue team. Banks, too, is contracted to teach avalanche awareness through

Western State College's recreation department.

Avalanche courses are taught locally through CBMG.

Crested Butte resident Travis Scheefer said he uses the avalanche center's Web site on a near-daily basis. Even when he's not skiing, the site provides information so that when the weekend comes, he's informed and prepared.

The biggest advantage he sees is that the site can be a learning tool. "You can go on the site and look at the snowpack and learn how it's changing without having to go out in the backcountry and dig every day to learn how the snowpack changes over time," he explained.

(Will Shoemaker can be contacted at 970.641.1414 or will@gunnisontimes.com)