

A strong point

Phones can fail. Knowing how to read a map is a key skill for hiking.

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Sarah Savage was alone in the woods and didn't know which way to turn. She had been eager to explore the Appalachian Trail when she moved to Pennsylvania and discovered that her house was near an access point. But not long after she took off from the trailhead, the path branched in different directions. She wasn't carrying a cellphone or a map. Nervous, she turned back.



“I was afraid of getting lost. I didn't know how to read a map or even that maps existed for where I was hiking,” said Savage, 49, who works in educational publishing.

But she liked the physical and emotional benefits of being out there, so she kept going back. She brought a map and followed the trail as best she could, yet she still felt apprehensive. “I had no sense of direction,” she said. “I wasn't paying attention to north, south, east or west.”

Navigating is a use-it-or-lose-it skill and one that few hikers, cyclists or walkers employ anymore because of their increased dependence on GPS units, Garmin computers, Google Earth and similar technologies. According to a 2015 Pew Research Center survey, nine of 10 smartphone owners use their device to get directions or for other location-based services, up from 74 percent in 2013. That heavy reliance on devices can give people a false sense of security.

In October 2015, a surveyor found the remains of Geraldine Largay, 66, who was hiking a section of the Appalachian Trail alone in the summer of 2013, stepped off the path and apparently became disoriented. She tried to use her cellphone to text for help, possibly causing further disorientation, especially if she was moving around while looking at her device instead of her surroundings. But she was in the dense woods of Maine, and she couldn't get a signal. She survived almost a month before dying of exposure and starvation.

Nobody knows how many U.S. hikers get lost each year, according to Robert J. Koester, an instructor for the Virginia Department of Emergency Management and the chief executive of dbS Productions, which conducts search-and-rescue training and publishes related information.

While a database that Koester created shows 24,000 formal search-and-rescue efforts a year, it's imprecise, he said, given that many hikers get lost for only a short time. "Many are able to eventually reorient themselves, or are lucky enough to stumble across someone else," he said. But for some hikers, the wrong turn proves deadly.

Preventing such tragedies is one reason that Stacy Boone teaches land navigation classes through her company, Step Outdoors, which works in southwest Colorado and northern New Mexico. Boone, who says she is a relative by marriage of the 18th-century explorer Daniel Boone, organizes wilderness trips to teach inexperienced hikers and backpackers how to use a map and compass. She has earned the Triple Crown of Hiking, an award given to people who have completed the Appalachian Trail, the Continental Divide Trail and the Pacific Crest Trail. She says that knowing how to follow a map while traversing a trail, how to orient a map north and how to set a bearing are critical skills that have helped her in forests, mountains, canyons, fields and deserts, no matter how many twists and turns she has taken.

People tend to panic when they're lost or think they're lost, Boone said. And panic leads to irrational behavior. Her first rule? Just stop. Drink water. Eat a snack. Doing so will help you calm down. It will also help you slow down.

"The classic behavior when you get lost is to speed up," said Jamie O'Donnell, a field instructor with the National Outdoor Leadership School, a nonprofit based in Wyoming. "People think, 'Oh, I need to work hard to get myself out of this.' In doing that, they often make the situation worse by hiking fast. They quit paying attention to terrain features."

Once you've stopped and replenished your body, you can think more clearly.

"Then and only then, pull out your map," Boone said.

That is, if you know how to use it. A map is nothing to dread or fear. A map is simply a bird's-eye-view representation, drawn to scale, of a particular area. Topographic maps, which hikers use, typically show major highways, trails, waterways, vegetation (such as forests and meadows) and contour lines that depict elevation. It's a low-tech version of what so many have come to depend on electronically.

Although many trail users frequently rely on electronic prompts to provide a sense of direction, a GPS device is not a magic box, O'Donnell said. It's important to understand its limitations.

“The GPS won’t tell you there is a mountain in the way or there is a huge river that won’t be safe to cross, but a map will,” he said. GPS units break. Batteries go dead. Phones get dropped in streams.

Also, “turn-by-turn GPS [navigation] in which you see only one route and are always going straight ahead” doesn’t teach people to situate themselves on a route, said Nora Newcombe, a cognitive psychologist at Temple University.

Newcombe and her team of researchers are studying why some individuals are more directionally challenged than others. Scientists know that specific types of brain cells — called place cells, grid cells and head-direction cells — support our sense of direction, but that doesn’t explain behavioral differences between one person and another, which is Newcombe’s focus. While answers are still unclear, “good navigators have better spatial working memories,” Newcombe said, and they anchor themselves in the wider world. For example, she said, they will think: “I was walking toward the lake and I turned left, and then I was walking parallel to the lake even though I couldn’t see it.”

Americans might keep their bearings better if they practiced the skill the way some other cultures do. For example, the Inuit in northern Canada place a high priority on staying oriented.

“For the Inuit in a traditional lifestyle, it’s a more challenging task due to the relative lack of stable landmarks,” Newcombe said. “Thus, they use other clues such as the prevailing wind direction as shown in the snow.”

To become a better navigator, pay attention to clues. Is the ground flat or sloped? Note the position of the sun in the sky. Keep an eye out for “handrails,” landmarks that parallel your course, such as a creek to one side. And remember: “Everything looks different when you spin your body and look backward,” O’Donnell said. “If you step off a trail to use the bathroom, turn back around and pick out some identifying markers, like a big oak tree that splits near the bottom.” You’ll know you need to pass it on the way back.

Visual clues can also help you stay safe and oriented on the trail. Some hikers set their trekking poles outside their tent at night pointing in the direction they’re supposed to go the next morning, Boone said, while others never hike alone. Some go so far as to place their pack on the side of the trail, tie a string to it and carry the string with them when going off to use the bathroom.

O’Donnell said that when he is in an area with lots of splits and turns, he’ll draw an arrow in the dirt at each junction in case he needs to backtrack. The arrows serve as a visual record if he gets confused or disoriented. He says he does this rarely, only when he needs to make a series of directional decisions prompted by many forks or other choices.

And hikers should always make a plan. “Let someone know you’re going out and when you’ll be back,” said Brian Schachter, an instructor at the Baltimore Chesapeake Bay Outward Bound School. “If you’re not back by that time, they know to contact authorities.”

While it’s smart for hikers to have an inReach or SPOT satellite emergency device — Boone, O’Donnell and Schachter all carry this piece of gear, which allows a user to trigger an SOS message from anywhere in the world — it’s still vital to know how to read a map.

“My concern is that when people get these devices, there’s an excuse to push the envelope because their confidence isn’t in their skills, it’s in their equipment,” Boone said.

Sarah Savage, the hiker who got turned around multiple times on her brief visits to the Appalachian Trail, continued hiking. She already knew about the cairns and ducks (man-made piles of rocks) and blazes (symbols) that mark trails, and through study and trial and error she figured out how to use a map to find her location when she crossed a road or reached a trail intersection. She

learned to estimate distances. She bought gear. As her knowledge increased, so did her confidence, and she began taking day hikes on well-marked paths. Day hikes gave way to weekend backpacking trips, which turned into hiking a section on the Appalachian Trail in Connecticut.

“I planned it to within an inch of its life,” she said. “I knew where I was starting, where I was ending, and where I was going to camp every single night.”

But she still relied on guidebook descriptions to follow her route. “I had no clue about topography or contour lines, so I never ever ventured off well-marked, obvious trails,” she said. When she began hiking out west where trails often vanished above the tree line, she relied on her boyfriend, who knew how to read maps.

“He would take the lead and I’d follow him.”

Frustrated with that, Savage decided to learn map-and-compass skills herself.

“I’m slow at it,” she said of the navigation exercises she practiced in one of Boone’s classes.

Savage may not be fast, but when she hiked a section of the Continental Divide Trail alone last year, she stayed the course — with the help of a map.