

## FOLLOWING THE WARPATH: Water Canyon

US 60 climbs out of the Rio Grande valley at Socorro and heads west, roughly following the old wagon road to Magdalena. About 6 miles southwest of Socorro look sharp for a turnoff to the left to the [Box Recreation Area](#).



**The cliffs on either side of this box canyon challenge technical rock climbers, but it's also a nice spot to stop for lunch and a hike.**

I've heard that there are two graves along the road dating from Nana's raid, but have never seen them. There's a shrine off the highway, the site of a mysterious and notorious murder a few years ago, but I don't know what the shrine itself commemorates. A little way past the abandoned Water Canyon roadhouse, look for a turnoff south to Water Canyon Campground.



**The upper end of Water Canyon opens out into a grassy meadow. At one time there was a live stream flowing most of the year, and the Forest Service campground was situated in the canyon bottom. The campground has since been moved up onto the side of the canyon, presumably to preserve the meadow and allow wildlife access to the water.**



**About ½ mile higher up the side of the canyon, above the designated campground, there's a pretty little shelf just off the road with great views all 'round.**

Across from the Water Canyon campground a narrow and twisting dirt road climbs up to New Mexico Tech's [Langmuir Lab](#) on South Baldy. I spent one memorable summer night camped in Water Canyon when it must have been like Frankenstein's castle up in the lab. Only a light sprinkle of rain fell on me as I watched a steady procession of thunderstorms roll down the next canyon, blasting the intervening ridge with a spectacular lightning display as they continued on down into the Rio Grande Valley.

I resolved to research lightning when I get back home, and here's what I learned:

Lightning is a channel of electrical charge, called a stepped leader that zigzags downward in roughly 50-yard segments in a forked pattern. This step leader is invisible to the human eye, and shoots to the ground in less time than it takes to blink. As it nears the ground, the charged step leader is attracted to a channel of opposite charge reaching up, a streamer, normally through something tall, such as a tree, house, or telephone pole. When these two paths meet, a return stroke zips back up to the sky. It happens so fast - in about one-millionth of a second - the human eye doesn't see the actual formation of the stroke. A bright return stroke travels about 60,000 miles per second back towards the cloud. A flash consists of one or perhaps as many as 20 return strokes. We see lightning flicker when the process rapidly repeats itself several times along the same path. The actual diameter of a lightning channel is one-to-two inches.

A cloud flash is lightning that occurs inside the cloud, travels from one part of a cloud to another, or from the cloud to the air.

killed or injured during a given year is one in 240,000; lifetime odds 1 in 3000. Over the years 1997-2011, New Mexico ranked 25<sup>th</sup> in the country in cloud-to-ground flashes per square mile. There has not been a lightning fatality in NM since Aug. 30, 2009 (a 61-year-old man struck while hunting near Quemado)

Cloud-to-ground lightning can kill or injure by direct or indirect means. The lightning current can branch off to a person from a tree, fence, pole, or other tall object. It is not known if all people are killed who are directly struck by the flash itself.

Direct strikes are not as common as the other ways people are struck by lightning, but are the most deadly. In most direct strikes, a portion of the current moves along and just over the skin surface (called flashover) and a portion moves through the body--usually through the cardiovascular and/or nervous systems. The heat produced when lightning moves over the skin can produce burns, but the current moving through the body is of greatest concern. Lightning can have 100 million to 1 billion volts, and contains billions of watts.

Most **direct strikes** occur to victims in open areas. Lightning USUALLY strikes the tallest object, because it is the easiest path for the lightning to take.

A **side flash** (also called a side splash) occurs when lightning strikes a taller object near the victim and a portion of the current jumps to the victim. In essence, the person acts as a "short circuit" for some of energy in the discharge. Side flashes generally occur when the victim is within a foot or two of the object struck. Most often, side flash victims have taken shelter under a tree to avoid rain or hail.

When lightning strikes a tree or other object, much of the energy travels outward from the strike in and along the ground surface. This is known as the **ground current**. Anyone outside near a lightning strike is potentially a victim of ground current. Because the ground current affects a large area, it causes most lightning deaths and injuries.

Metal does not attract lightning, but it provides a path for the lightning to follow. Whether inside or outside, anyone in contact with anything connected to metal wires, plumbing, or metal surfaces that extend outside is at risk.

A "Bolt from the Blue" is a cloud-to-ground flash which typically comes out of the back side of the thunderstorm cloud, travels a relatively large distance in clear air and then angles down and strikes the ground. These flashes can travel 25 miles away from the thunderstorm, and are especially dangerous because they appear to come from clear sky.

*There is little you can do to substantially reduce your risk outside in a thunderstorm. The only completely safe action is to get inside a safe building or vehicle when you first hear thunder, see lightning or observe threatening clouds developing overhead. Stay inside until 30 minutes after you hear the last clap of thunder. Do **not** shelter under trees.*

These actions may *slightly* reduce your risk:

- Avoid open fields, the top of a hill or a ridge top.
- Stay away from tall, isolated trees or other tall objects. stay near a lower stand of trees.
- If you are camping in an open area, set up camp in a valley, ravine or other low area. Remember, a tent offers NO protection from lightning.
- Stay away from water, wet items (such as ropes) and metal objects (such as fences and poles). Water and metal are excellent conductors of electricity.

<http://www.nssl.noaa.gov/education/svrwx101/lightning/faq/>

<http://www.lightningsafety.noaa.gov/survivors.html>