The Dangers of Lightning

Lightning is one of the most dangerous weather phenomena, causing more storm related deaths in the U.S. per year than hurricanes and tornados. Although many lightning strikes result in death, even more victims survive, usually with varying degrees of lifelong disability.

Over the last 30 years, an average of 62 lightning caused fatalities have been reported each year. Non-fatal injuries from lightning are estimated at around 600 per year.

Lightning is an intense electrical discharge of 100 million volts from a thunderstorm which can raise the air temperature in the lightning channel to 50,000 ^{o}F. Lightning strikes tend to cause injuries to the nervous system and brain as well as to the spine. The symptoms are numerous and debilitating, and include:

- Difficulty with short-term and long-term memory
- Distractibility
- Irritability
- Personality changes due to brain damage. Victims often withdraw from and are rejected by family, friends, and co-workers.
- Fatigue after only a few hours of work, likely due to the intense concentration required to accomplish tasks which used to be simple.
- Chronic and intense head and back pain
- Ringing in the ears
- Dizziness
- Nausea
- Vomiting
- Difficulty sleeping
- Seizures

Nearly all lightning victims are struck outdoors.

When thunder roars, go indoors!

Providing weather forecasts and warnings for the protection of life and property, and the enhancement of the national economy.

Sources for additional information

NOAA's National Weather Service

- NOAA Weather Radio: Receivers available at many electronics stores.

  Frequency of 162.400 MHz for Flagstaff

  Other tuning frequencies for AZ listed at

  www.wrh.noaa.gov/fgz/office/nwr-freq.php?wfo=fgz
- NWS Flagstaff webpage: weather.gov/flagstaff
- Recorded Weather Message for Flagstaff and surrounding area: (928) 774-3301

Lightning Safety

- www.lightningsafety.noaa.gov

NOAA's National Weather Service
Flagstaff Weather Forecast Office
P.O. Box 16057
Bellemont, AZ 86015-6057

http://weather.gov/flagstaff
(928)556-9161

Northern Arizona
Lightning
The underrated killer

Provided by the National Weather Service, Flagstaff, AZ

Your official local source for accurate and timely weather warnings and forecasts.

Forecasts, warnings, & weather information available on the web at:

http://weather.gov/flagstaff

Lightning in Arizona

Your chances of getting struck by lightning are one-in-a-million, so why worry about it, right? Actually, about two people per million are injured or killed by lightning in the U.S. each year, but ***you*** control your chances of being struck by lightning. Of those killed by lightning in the United States, **98%** were struck outdoors. As remarkable as that sounds, also consider that heavy rain, wind, and hail drive most folks indoors during a thunderstorm, and it becomes clear that your chances of being struck by lightning in any given thunderstorm go up hundreds or even thousands of times by being outdoors. In other words, **the very few people who remain outdoors during thunderstorms make up the overwhelming majority of lightning fatalities.**

Summer weather brings particularly dangerous situations to many recreationalists in northern Arizona. Some of the most popular hikes ascend the highest peaks in the state, including the San Francisco Peaks – also a favorite for summer thunderstorms and lightning! During the summer, upper level winds shift, drawing moisture northward from the Gulf of Mexico, Gulf of California, and northern Mexico into the Southwestern United States. This moisture combined with intense heating of the ground by the summer sun creates scattered thunderstorms on a near daily basis. Higher elevation areas heat the most rapidly, and tend to form the earliest and most numerous thunderstorms. In addition, isolated mountain peaks are struck by lightning most frequently as lightning tends to follow the shortest path between the parent thunderstorm and the earth.

To reduce your risk of being struck by lightning while enjoying the great outdoors of northern Arizona, plan ahead: check the weather forecast, keep an eye on the weather, and have an escape plan in case thunderstorms threaten. No outdoor activity is worth death or disability!

Photo courtesy National Lightning Safety Institute

Lightning is both:

Destructive

...and deadly

Photo courtesy Ruth Lyon-Bateman

Myths about Lightning

Myth: Lightning never strikes the same place twice.
Fact: Lightning strikes more frequently at tall isolated objects such as buildings, mountain peaks, and ridges. The Empire State building in New York City is struck by lightning an average of 25 times per year.

Myth: ***Lightning victims are electrified.***
Fact: Lightning victims do not carry a charge, are safe to touch, and may require life-saving CPR or rescue breathing.

Myth: ***Rubber tires protect you from lightning by insulating you from the ground.***
Fact: Lightning travels through miles of air, another good insulator. A few millimeters or even inches of rubber will not protect you from lightning. Convertible automobiles, motorcycles, and bicycles offer no protection from lightning. Only the metal surrounding hard-topped automobiles offers good protection from lightning by conducting electricity around the vehicle.

Myth: ***Lightning only strikes near the center of a thunderstorm.***
Fact: Lightning can strike up to 10 miles away from the center of a thunderstorm. Lightning can occur when storms are approaching, nearby, moving away, or developing overhead. If you can hear thunder, you are close enough to get struck, and the first thunder in a developing storm will be heard after the first strike.

Myth: ***A house is completely safe from lightning.***
Fact: A house is generally the best place for lightning safety, but avoid corded telephones, electrical appliances, wires, TV cables, and plumbing. Don't stand near a window or open door, and don't go out on a porch. An inside room is generally the best.

Myth: ***The Chance of being struck by lightning is 1-in-a-million.***
Fact: It is much higher outdoors, and much lower indoors!

Lightning Safety Tips

- Know the 30-30 rule: when you see lightning, if it takes **30 seconds** or less until you hear thunder, the storm is close enough to strike you. If you can't see the lightning, just hearing thunder means lightning is likely within striking range. Immediately go to a safer place. Wait **30 minutes** or more after hearing the last thunder before going back outside.
- If you absolutely cannot get to a safe building or vehicle, there are a few slightly less dangerous locations you can go to as a last resort:
- Below a highway overpass or a bridge (do not touch steel girders, and be alert for rapidly rising water)
- Directly below high tension electrical wires (but stay at least 50 feet away from large metal towers)
- If you feel your skin tingle or your hair stand on end, squat low to the ground and place your head between your knees. Make yourself the smallest target possible and minimize your contact with the ground.
- Check the weather forecast. If there is a chance of thunderstorms, adjust outdoor activities accordingly.

Camping and Hiking

- Know the weather patterns of the area. In the mountains, thunderstorms typically form in the late morning through afternoon, so plan on being down off the mountain well before noon. But remember, lightning can occur at any time of year, day or night!
- Have an escape plan to a safer place in case thunderstorms threaten. Absolutely avoid being on top of a mountain or ridge during a thunderstorm.
- Don't place your campsite in an open field on the top of a hill or on a ridge, or near tall isolated trees or other tall objects. A tent offers no protection from lightning.

On the Water

- If thunderstorms are forecast, don't go out on the water. Twenty-five percent of lightning fatalities occur on or near water.
- If you are out on the water and skies are threatening, get back to land and find a safe building or vehicle
- If you cannot get off the water, properly anchor the boat and get inside the cabin away from any metal surfaces. If there is no cabin, get as low as possible. Stay off the radio unless it is an absolute emergency.