



Lightning 101

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Lightning facts

Lightning is simply a gigantic spark of static electricity

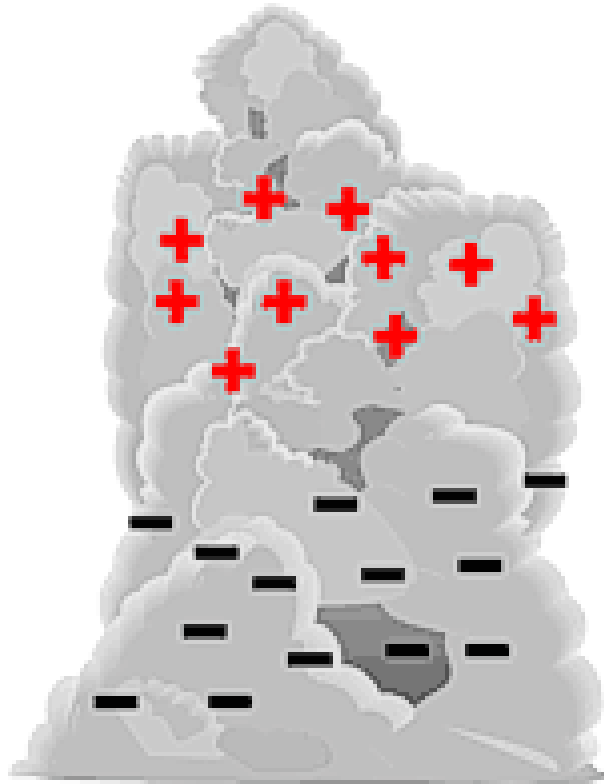
Lightning is the first thunderstorm hazard to arrive and the last to leave.

NC - 4th place in lightning fatalities per Lightning Safety Council.

The odds of being struck in your lifetime (estimated to be 80 years) are 1 in 15,300.

Lightning is the most common cause of wildfires. Each year, about 10,000 fires are started by lightning in the United States.

How lightning is created?

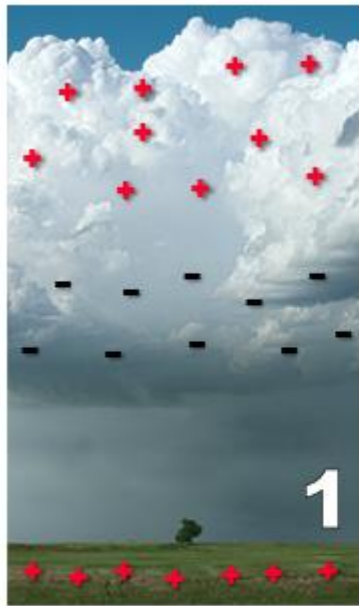


Charge separation in a thunderstorm



Electric field with a thunderstorm

How lightning develops between the cloud & the ground?



Thunderstorm gathers another pool of positively charged particles.



Negatively charged area in the storm will send out a charge.



Lightning channel develops

What is positive lightning?

A cloud-to-ground lightning stroke originating in the cirrus anvil or near the top of the thunderstorm, where positive charges reside

Can occur more than 25 miles away from the precipitation



NOAA Photo Library, NOAA Central Library; OAR/ERL/National Severe Storms Laboratory (NSSL)

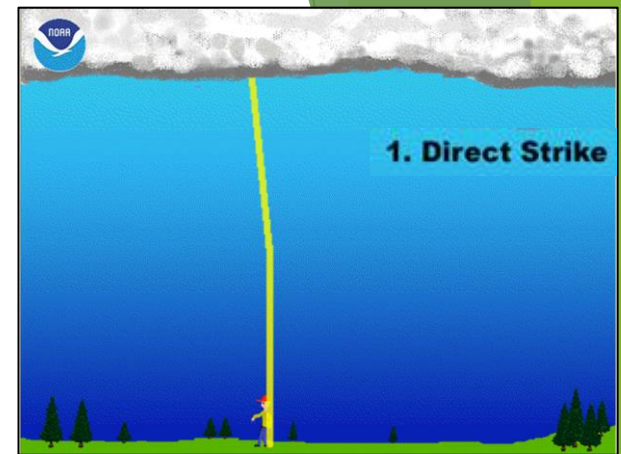
What is thunder?

“The channel of air through which lightning passes can be heated to 50,000° F-- *hotter than the surface of the sun!* The rapid heating and cooling of the air near the lightning channel causes a shock wave that results in the sound we know as “thunder”.”

--Thunderstorm, Tornadoes, Lightning - NOAA publication

Five Ways Lightning Strikes People

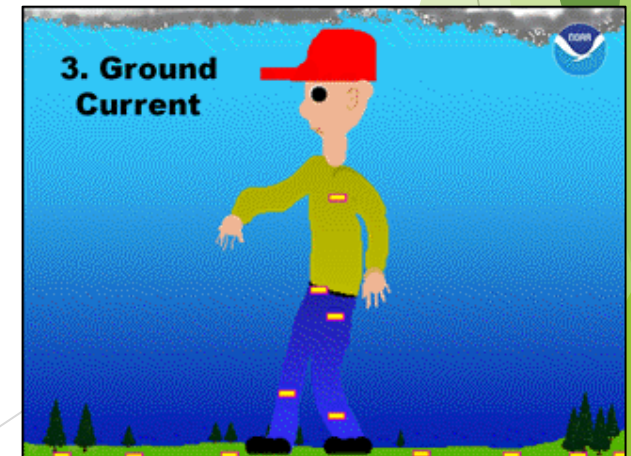
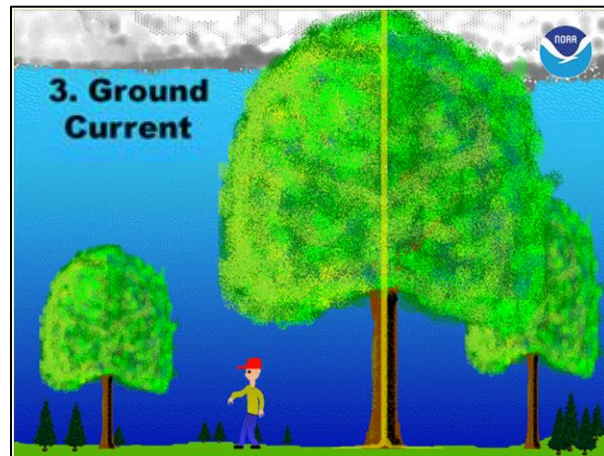
1. Direct Strike



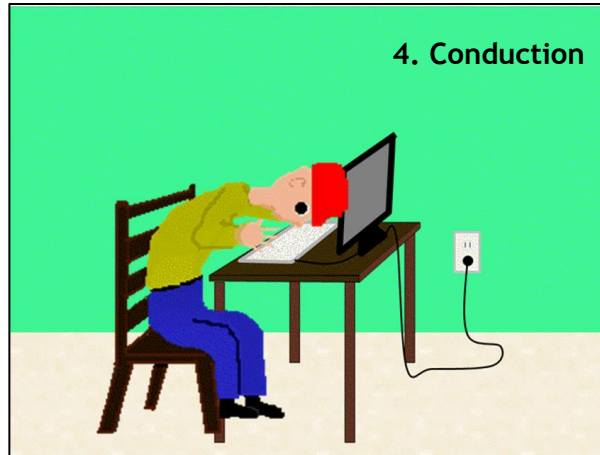
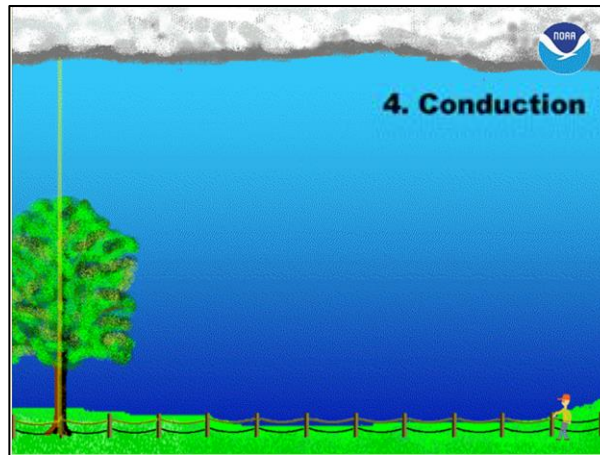
2. Side Flash



3. Ground Current



4. Conduction



5. Streamers



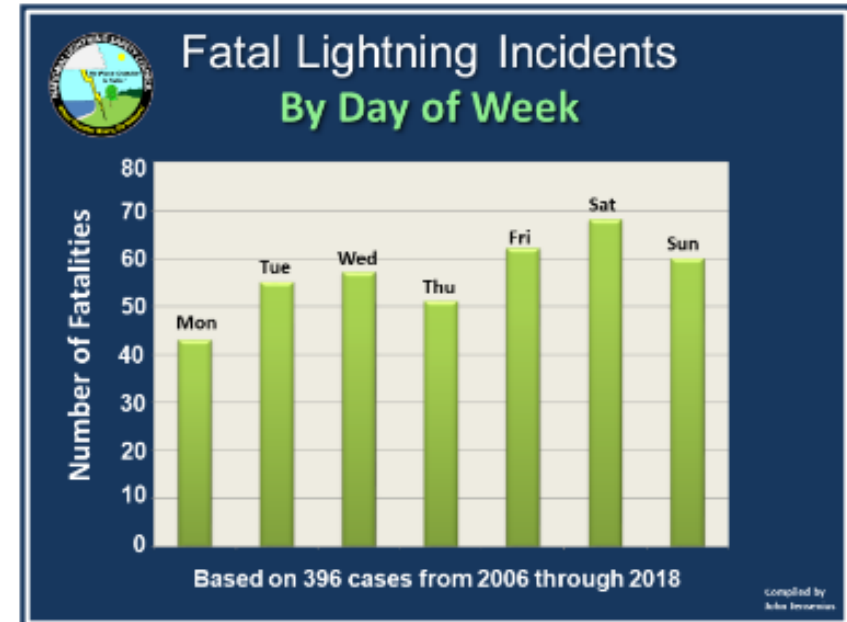
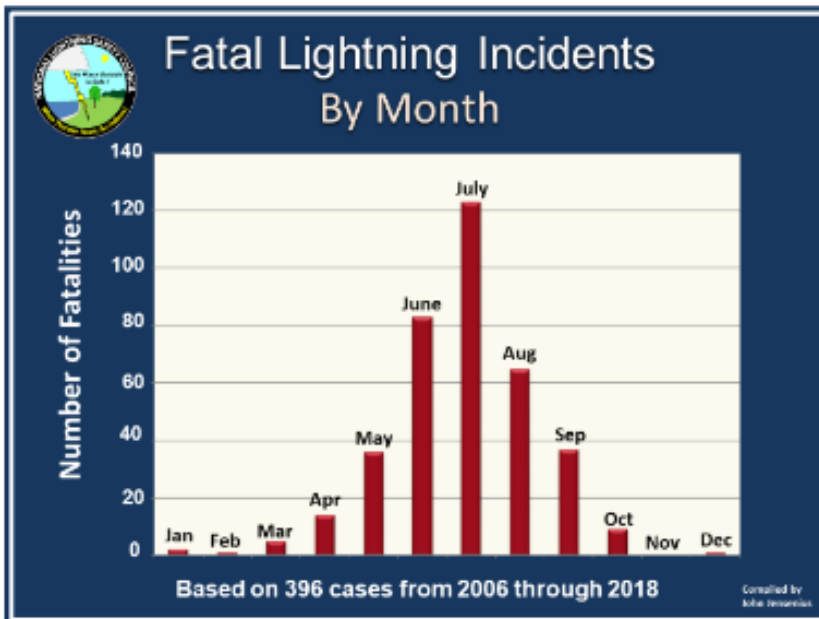
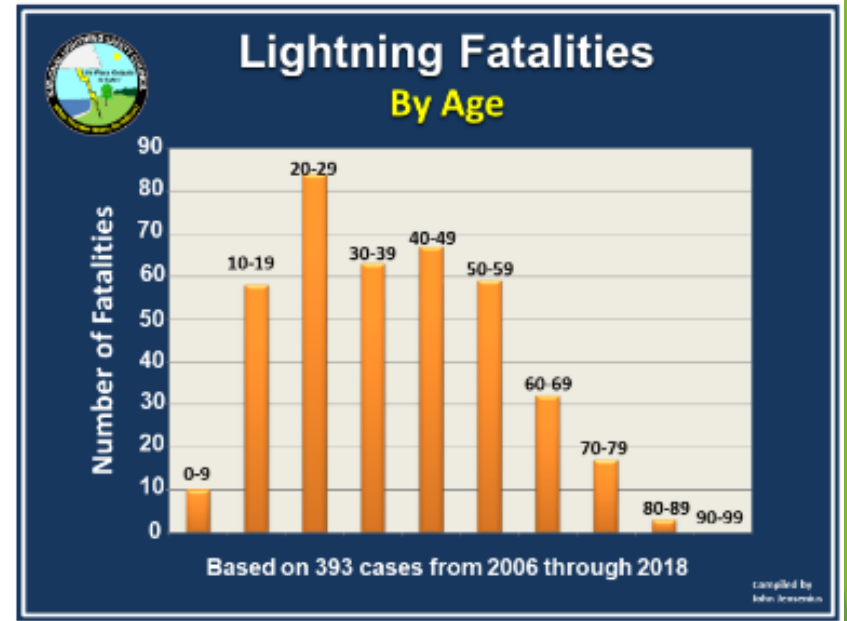
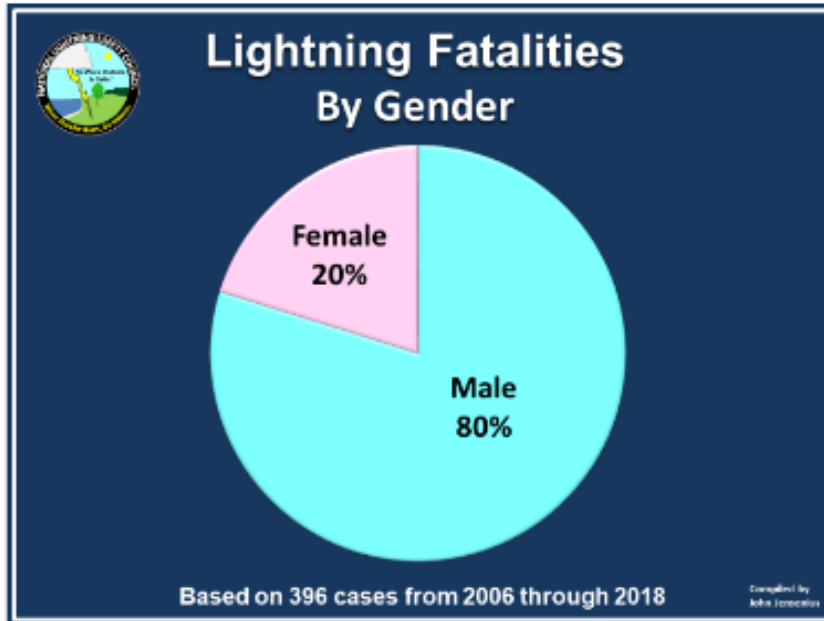
Only 10% of people struck by lightning are killed
90% may be left with various degrees of disability

IF SOMEONE IS STRUCK

Cardiac arrest is the immediate cause of death for those who die. Lightning victims do not carry an electrical charge and may need first aid immediately.

- ✓ Call for help. Call 9-1-1.
- ✓ Give first aid. Begin CPR if you are trained.
- ✓ Use an Automatic External Defibrillator if one is available. These units are lifesavers!
- ✓ Don't be a victim. If possible, move the victim to a safer place. Lightning CAN strike twice.

Analysis of lightning strike data by NWS reveals:





The Deadly Dozen

The twelve activities that contributed most to U.S. lightning fatalities between 2006 and 2019.

<u>Activity</u>	<u># of Deaths (%)</u>
Fishing	40 (10%)
Beach	25 (6%)
Camping	20 (5%)
Farming or ranching	19 (5%)
Boating	18 (4%)
Riding bike, motorcycle, or ATV	17 (4%)
Social gathering	17 (4%)
Walking to/from home	16 (4%)
Construction	16 (4%)
Roofing	13 (3%)
Soccer	12 (3%)
<u>Yardwork</u>	<u>12 (3%)</u>
Total	225 (54%)

Lightning Safety



- ▶ No place outside is safe.
- ▶ Seek safe shelter in an enclosed, grounded bldg.
- ▶ Tents, picnic pavilions, and porches are NOT good shelters.
- ▶ Stay inside until 30 minutes after the last rumble of thunder.



SKYWARN & lightning reports

Do NOT report lightning or excessive lightning to the NWS.
All thunderstorms have lightning.

The Raleigh NWS will accept reports of damage due to lightning.

Check with your served
NWS office to see
if they desire reports
of lightning damage.



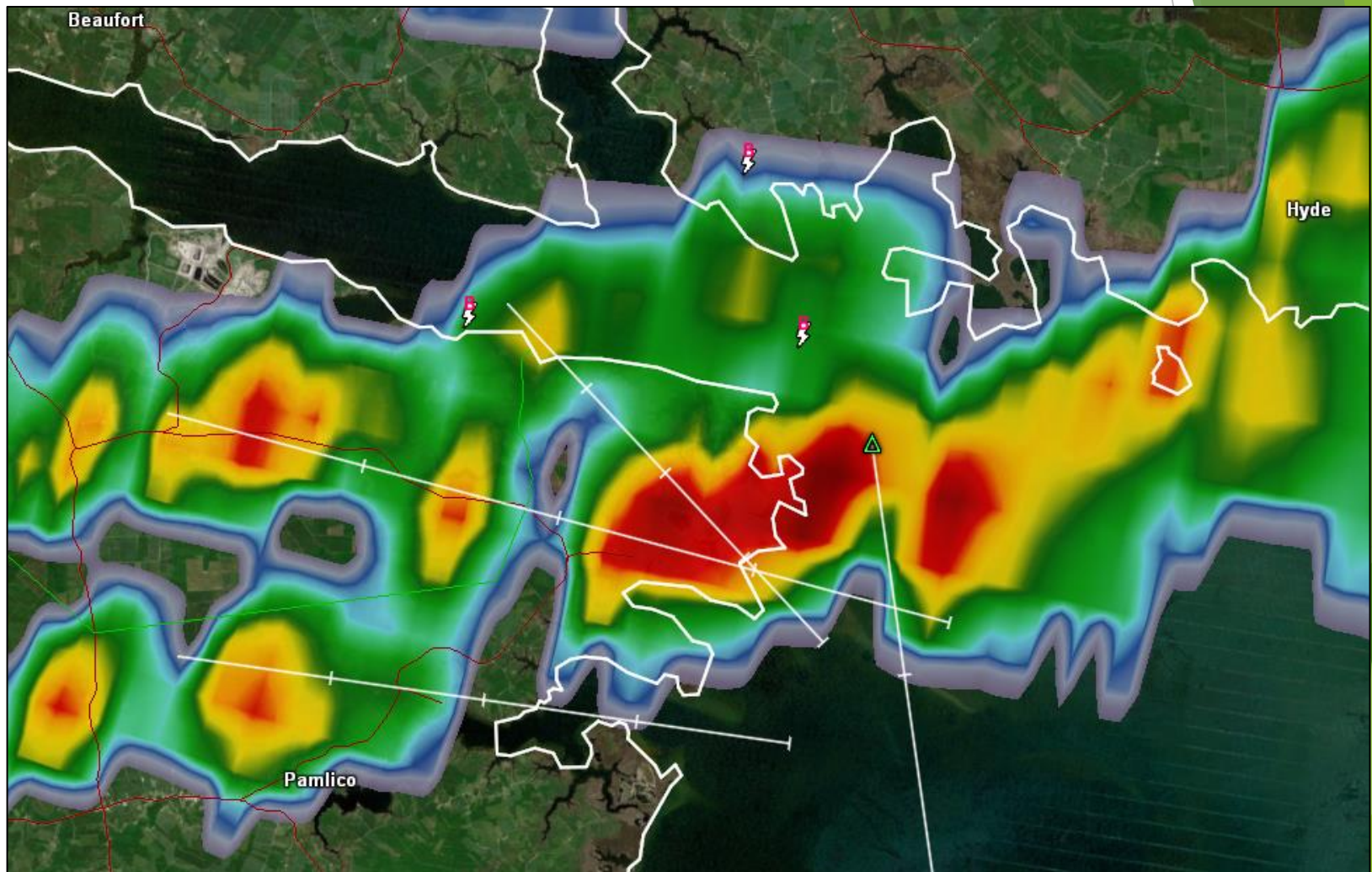
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Free lightning placefiles for GRLevel 3

<http://saratoga-weather.org/USA-blitzortung/placefile.txt>

or

<https://placefilenation.com/Placefiles/20lightning.php>



Questions?

Has anyone had a close encounter with lightning?