



MIAMI-SOUTH FLORIDA

National Weather Service Forecast Office

<http://www.weather.gov/miami>



2020 Severe Weather Awareness Week

Monday, January 27th: Lightning Awareness Day

We'll start with some good news: lightning fatalities and injuries have decreased significantly over the last several decades (Figure 1). This is due in large part to greater education and awareness of the danger that lightning poses, as well as adequate safety measures, such as lightning detection systems, which are now commonplace at many parks, beaches, and public facilities across South Florida.

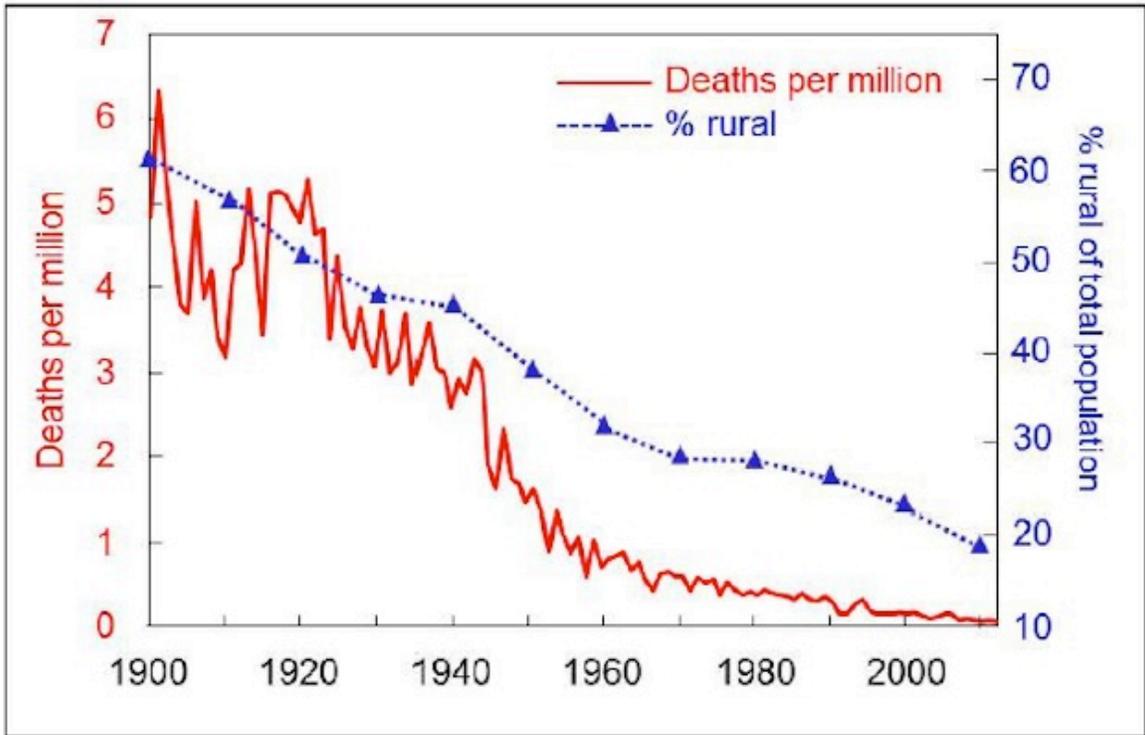


Figure 1: U.S. lightning fatalities in deaths per million since 1900. From Weather Underground. Credit: Ron Holle, updated from López and Holle 1998.

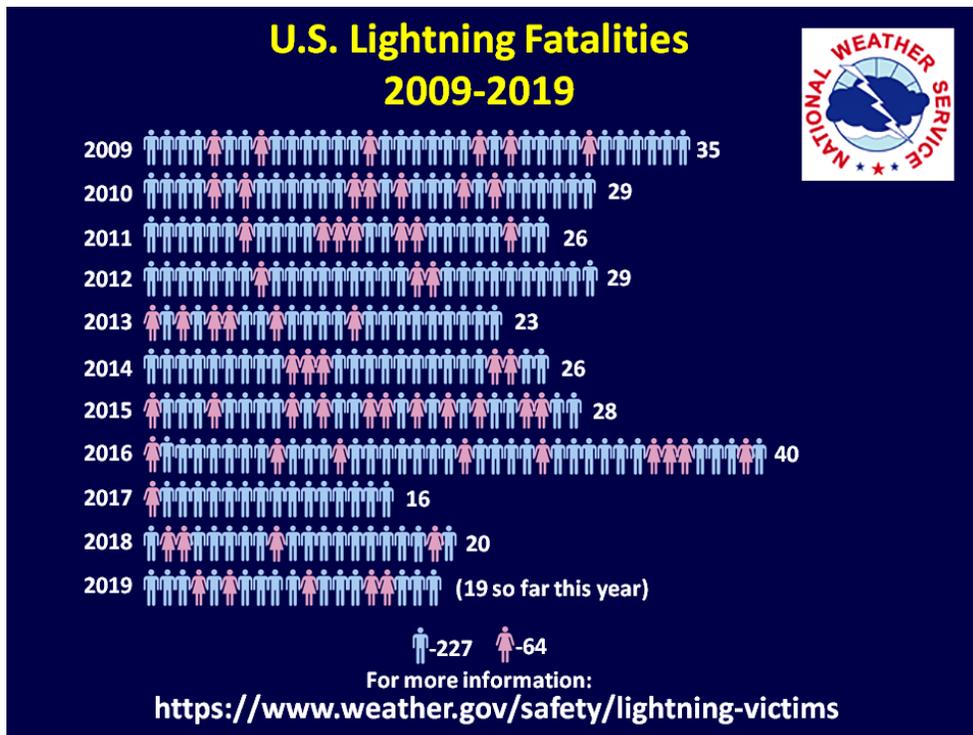


Figure 2: Annual Lightning Fatalities from 2009-2019.

NOTE: Data through September 14th, 2019. One additional lightning death occurred on September 28th in Kansas, for a total of 20 lightning fatalities in 2019

However, in 2019 a total of three (3) lightning-caused deaths were reported in Florida, one (1) of which occurred in South Florida. In fact, out of the contiguous United States, Florida and Texas tied for the most direct lightning fatalities in 2019. In 2018, three (3) lightning-caused deaths were also reported in Florida which is slightly more than the yearly average of two (2). In regards to total number of lightning-caused fatalities across the lower 48, 2019 had twenty (20) deaths, the same amount as in 2018 (Figure 2).

In South Florida alone, an additional nine (9) people suffered injuries as a direct result of lightning strikes with another three (3) reports of building/car damage due to lightning. Therefore, it is always critical to be aware that lightning is a present, year-round danger in South Florida, particularly during the summer months. Veritably, all nine (9) injuries and one (1) fatality occurred during the summer months of July and August. Flash density data from 2008 to 2017 continues the long-standing fact that Florida is the “lightning capital” of the United States (Figures 3 and 4). In an area so vulnerable to lightning such as South Florida, lightning safety needs to be a permanent part of our education and awareness efforts.

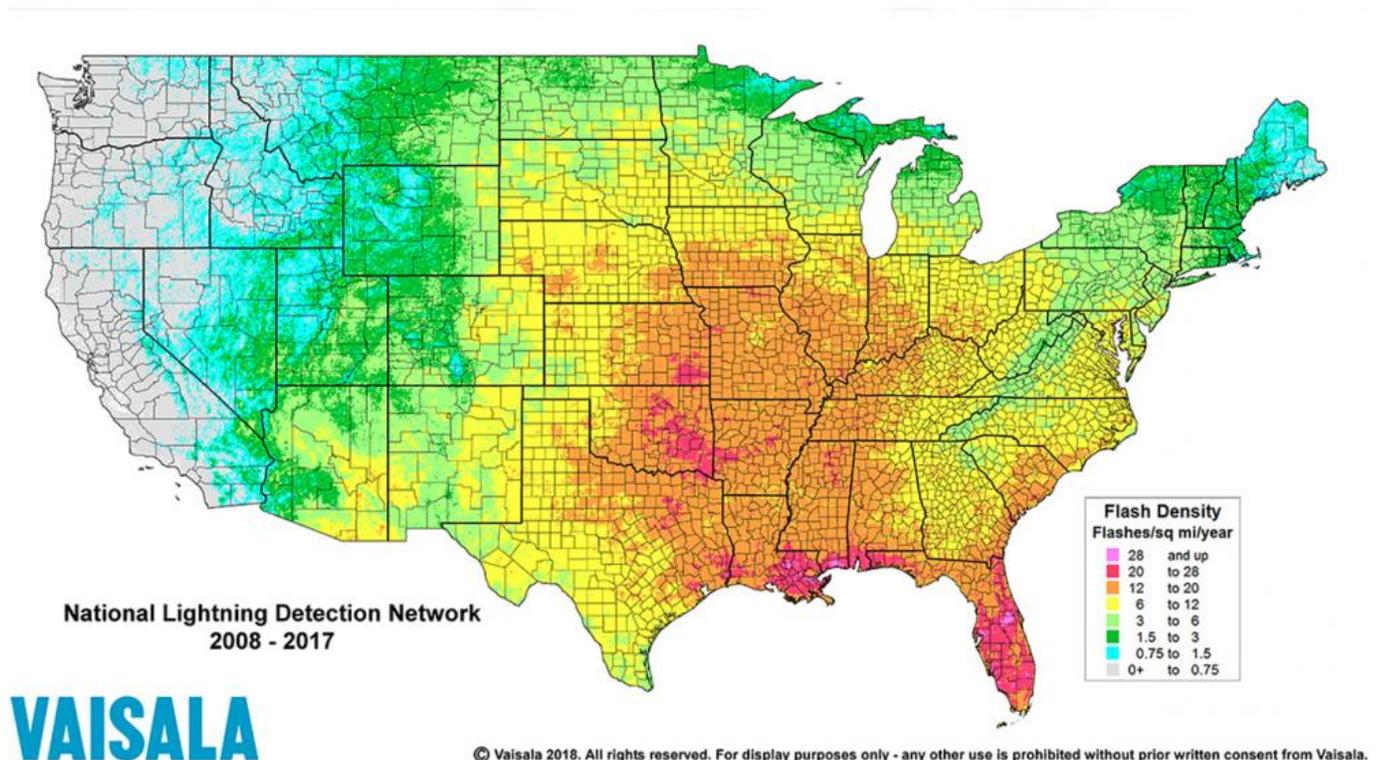


Figure 3: Annual Lightning Flash Density per Square Mile from 2008-2017, courtesy of Vaisala.

people in Florida are struck while near or on a body of water. Many others are struck while standing under trees. Other vulnerable locations are open areas with few trees such as construction sites, farms, ball fields, playgrounds, and golf courses. School-related activities also rate high in lightning vulnerability. These include walking to and from school and after-school events.

The large number of high-rise buildings in South Florida also puts construction workers and even residents in upper floors at a greater risk since tall objects are struck by lightning much more frequently than objects close to the ground.

According to the NWS Storm Data, over the last thirty (30) years (1989-2018), the United States has averaged 43 *reported* lightning-caused deaths per year. Only about ten percent (10%) of people struck by lightning are killed, leaving ninety percent (90%) with various degrees of disability. More recently, in the last ten (10) years (2009-2018), the United States has averaged 27 lightning fatalities (Figure 5) which corresponds to the aforementioned fact that lightning fatalities and injuries have decreased significantly over the last several decades (Figure 1) .

Odds of Becoming a Lightning Victim (based on averages for 2009-2018)			
Estimated U.S. population as of 2019			330,000,000
Average Number of Deaths Reported	27	Estimated number of Injuries	243
Odds of being struck in a given year (estimated total deaths + estimated injuries)			1/1,222,000
Odds of being struck in your lifetime (Est. 80 years)			1/15,300
Odds you will be affected by someone struck (10 people for every 1 struck)			1/1,530

Figure 5: Odds of Becoming a Lightning Victim.

DON'T JUST LOOK STRAIGHT UP

There are several myths about lightning that are important to dispel. One is that lightning only strikes when dark clouds are directly overhead and/or rain is falling. Several cases in the past few years have proven this to be false. Lightning commonly strikes several miles away from the heavy rain area of the thunderstorm, and in some cases can strike up to 10 miles away or more! South Florida's lightning-related death in 2019 is a classic example of a fast-developing summer thunderstorm in which the first reported strike a few miles away from the main part of the storm was the one which caused the death. This type of lightning is misleadingly referred to as "dry lightning" or

“bolts from the blue”, but they actually originate from the side of a thunderstorm cloud and are just as deadly as those that occur in the middle of a heavy downpour. Therefore, the greatest danger often comes with the first or last flash because that’s when people least expect lightning to strike. Remember that good ole simple saying **when thunder roars go indoors**? Keep it in the back of your mind! This is why it is so important to head indoors as soon as the first clap of thunder is heard. Darkening clouds are usually the first sign that lightning may strike nearby. Wait in a safe indoor location until 30 minutes after the last boom of thunder is heard or the all-clear signal is given at parks, beaches, and other public locations.



BE INFORMED. BE PREPARED

If planning to be outdoors, stay informed of the latest weather conditions by listening to NOAA Weather Radio or by monitoring the latest forecasts via TV, radio, personal computers, and/or mobile devices. Have a safe indoor location planned and be prepared to take shelter inside an enclosed building if a thunderstorm approaches or forms nearby.

Although the National Weather Service does not issue specific lightning warnings, routine products such as the [Hazardous Weather Outlook](#) and the [Surf Forecast](#) describe the daily lightning danger in South Florida on a scale ranging from none, to slight, to moderate, to high. When a storm producing excessive lightning is observed or is imminent, a Special Weather Statement/Significant Weather Advisory is issued to alert of its location. Checking these products before venturing outside can make the difference between life and death.

Remember, any thunderstorm can produce a lightning flash which can kill you and those nearby.

For further lightning information, as well as daily hazardous weather outlooks which indicate the threat of lightning over South Florida, as well as special weather statements, please visit the National Weather Service in Miami's website at www.weather.gov/southflorida.

For general lightning safety tips as well as educational material, please visit the National Weather Service lightning safety page at <https://www.weather.gov/safety/lightning>.