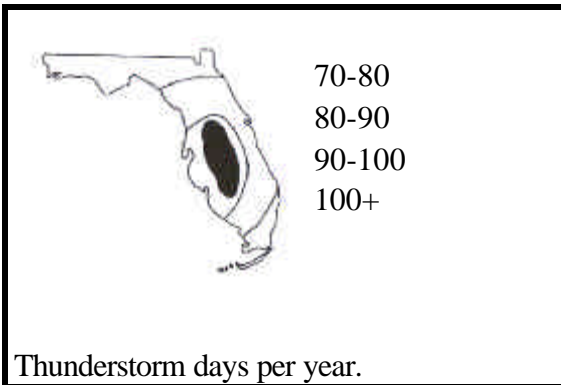


Agricultural Safety:

THUNDERSTORMS & LIGHTNING.

prepared by Joe Garofalo* and Carlos Balerdi*

Florida is the thunderstorm capital of the nation. A study by the National Oceanic and Atmospheric Administration shows that Fort Myers averages 100 days with lightning annually, the Tampa Bay area, 90, and Miami, 76. The so-called “lightning belt” in Florida is an area from between Orlando and Tampa south along the west coast to Fort Myers and east to Lake Okeechobee. One study revealed 120 days of thunderstorms occurred in one year within a 50-mile radius of Tampa.



FLORIDA STORMS.

Few Florida thunderstorms last more than two hours. They are attributed to hot, wet air close to the ground combined with an unstable atmosphere. An average lightning bolt lasts just a thousandth of a second, but packs around 30,000°F in a one-inch channel that can deliver a shock in the 6,000-25,000-ampere range. A recent study, however, revealed that Florida’s brand of lightning frequently packs a wallop of 45,000 amperes.

Researchers believe Florida lightning is particularly powerful because it is born of tall, more highly charged storm-cloud formations.

INJURY TO PEOPLE.

Our state has the national worst record of deaths by lightning, with storms occurring nearly every day from June to September, usually in the afternoon. In just one year, 1986, 10 people were killed in Florida by lightning, and another 37 were injured. In a study of lightning deaths between 1959 and 1992, Florida totaled 333 deaths due to lightning, with 981 persons injured.

Florida Lightning Deaths	
Location	Percentage
In an open field	27%
Under a tree	13%
On water	25%
Using heavy equipment	6%
On a golf course	3%
Unknown or unreported	25%

Lightning injuries to trees appears to be governed by the voltage of the charge, the moisture content of the tree, and the species of the tree. “Hot” bolts—those with temperatures above 25,000°F—will make an entire tree burst into flames. “Cold” lightning can make a tree explode, as it strikes at 20,000 miles per second.

Tall trees or those growing alone in open areas, and trees with roots in moist soils or those growing along water, are most likely to be struck.

Some species are more likely to be struck than others. The most commonly hit nationally are oak, pine, and maple. In South Florida you’re likely to see oaks, pines, and palms taking more strikes than other species. Experts point out that trees high in oil, such as birch and beech (not seen in Miami-Dade), are poor conductors of electricity. Oaks & pines have high starch contents, making them good conductors. Deep-rooted & decaying trees also appear more susceptible to lightning. Have you heard that “lightning doesn’t strike the same place twice”? Well, don’t believe it—some trees are known to have been hit by lightning up to seven times.

REDUCE YOUR RISK.

According to University of Florida lightning and safety experts, taking shelter from a storm under a large tree or a small shelter that is not protected from lightning makes you part of a lightning rod. You are in danger of being hit if you can see the lightning or hear the thunder. And the risk continues until at least 30 minutes after you stop seeing the flashes or hearing the thunder.

What should you do to reduce the risk of being struck? You should take shelter in a building with a floor, electrical wiring and plumbing. Or in a car with the windows rolled up. Lightning can enter through an open window.

PRECAUTIONS.

During a thunderstorm:

1. Avoid using electrical appliances, especially the telephone. Lightning can strike telephone lines and utility poles and the current may be carried through the wires.
2. Avoid water—whether it is in the shower, at the beach, or out on your boat. Water conducts electricity, and lightning tends to strike the highest point on a plain. Your boat or your body could be the highest point on a level area. If you are out on your boat, take extra precautions and head for a protected shoreline or marina if possible.

3. If you're outside, especially on a golf course, large lawn, ball field, or other open area, seek shelter anywhere but under trees. These are primary lightning targets. If no shelter is available, lie low in the deepest ground depression around.

4. Never hold onto any lightning attractants like golf clubs, metal tennis rackets, or fishing poles. Avoid proximity to other electrical conductors like lawnmowers, wire fences, clotheslines, or metal pipes.

5. If you're riding in a car, stay inside, but avoid touching any metal parts.

6. A tingling sensation or your hair standing out from your head may indicate a bolt is close to striking nearby. Immediately drop to the ground and lie flat.

7. Be aware of the lightning season--July to August is the peak period--and schedule outdoor activities for times other than the mid afternoon, when most thunderstorms occur.

8. In the event someone is struck by lightning, cardiopulmonary resuscitation (CPR) must be administered immediately.

Perhaps the one, best thing you can do, for yourself and others in your work crew, is to encourage everyone to get training in CPR. The experts tell us that up to 80% of lightning victims survive the strike, and their chances of recovering completely improve if CPR is administered.

The best advice, if it is at all possible, is to avoid working outside when thunder and lightning are prevalent. That advice, however, is hard to follow when you make your living in landscape maintenance, nursery production, row crops, or tropical fruit.

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Anonymous. 1998. Multi-agency recommendations for lightning safety. National Lightning Safety Inst., Louisville, CO. 6 pp.

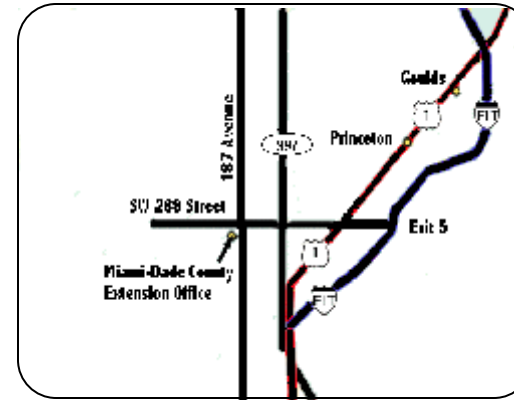
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MIAMI-DADE COUNTY PROGRAMS ARE OFFERED TO ALL PERSONS REGARDLESS OF RACE, AGE, DISABILITY, OR SEXUAL ORIENTATION. DISABLED INDIVIDUALS ARE REQUESTED TO NOTIFY PROGRAM AREA (305 248-3311) TWO WEEKS PRIOR TO PROGRAM IF AUXILIARY AIDES OR ASSISTANCE IS REQUIRED. DISABLED PARKING SPACE AND WHEELCHAIR RAMP AVAILABLE.

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