

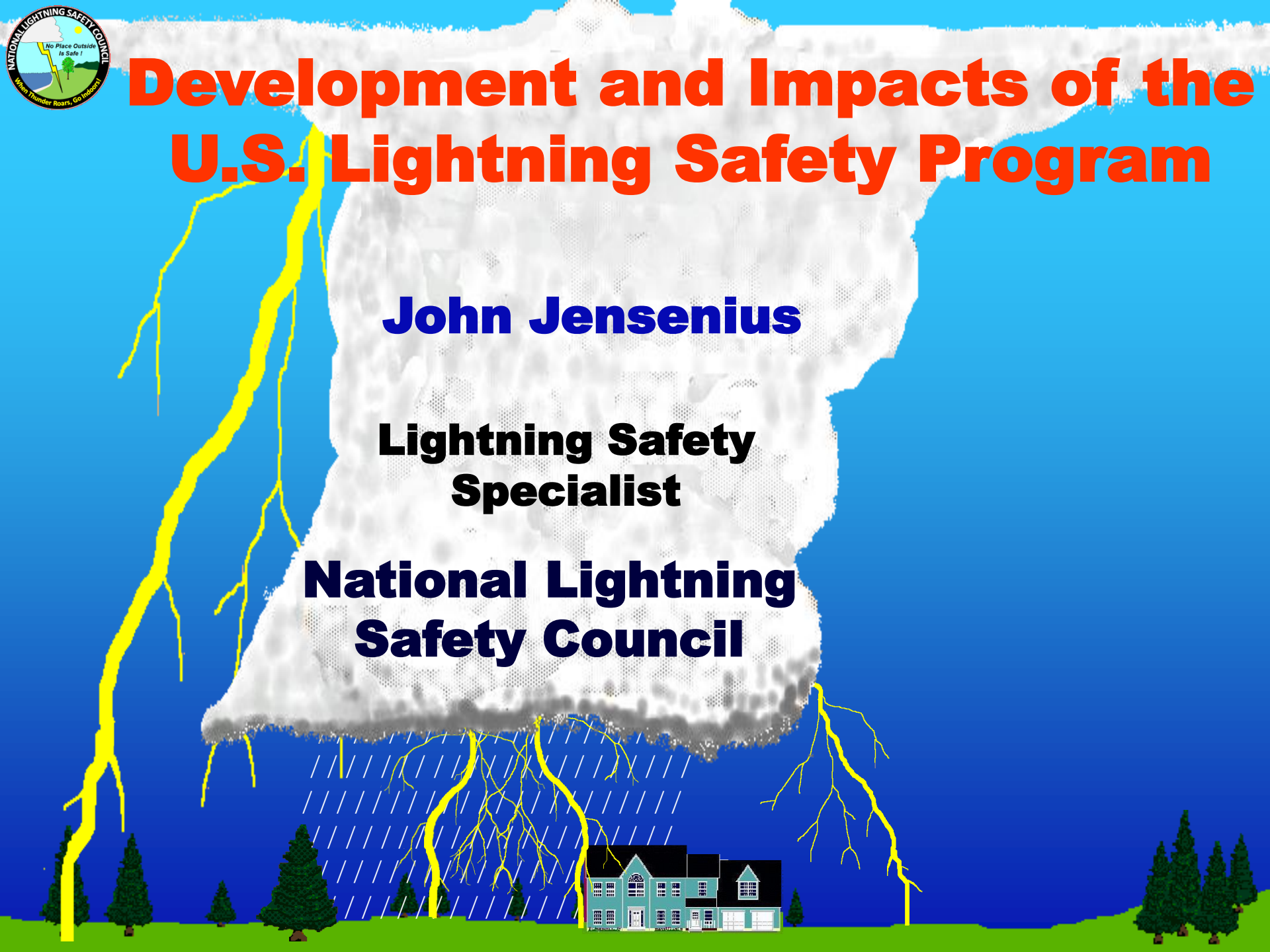


# Development and Impacts of the U.S. Lightning Safety Program

**John Jensenius**

**Lightning Safety  
Specialist**

**National Lightning  
Safety Council**



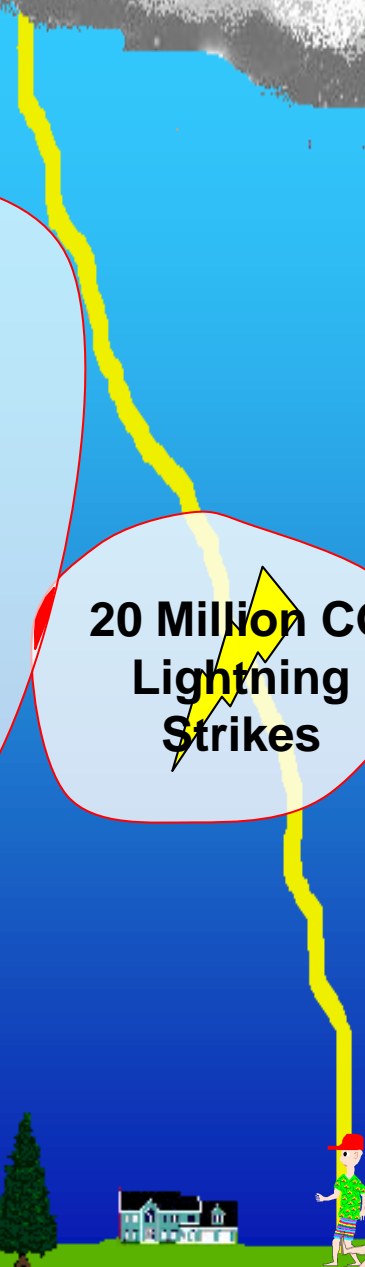
# The U.S. Problem



**331 Million  
People**



**20 Million CG  
Lightning  
Strikes**





# *Changing Behavior*



*Education*  
*Awareness*  
*By Example*





# *Education and Awareness*



*Build a team*

*Develop materials and messaging*

*Enlist partners*

*Distribute materials*

*Document incidents*

*Create database*

*Communicate*



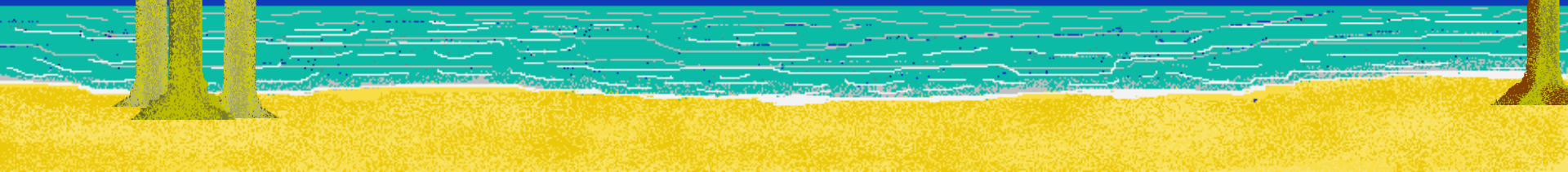




# *Build A Knowledgeable Team*



*Lightning Safety Specialists  
Lightning Specialist  
Medical Specialist  
Communication Specialists  
Media Specialist  
Government Official  
Lightning Survivor*





# *Develop Materials*



*Web Site*

*Science*

*Safety*

*Sports Safety*

*Property Protection*

*Awareness Week/Day*

*Brochures*

*Posters*

*Social media posts*

*Children's activities*





# Preparedness Materials

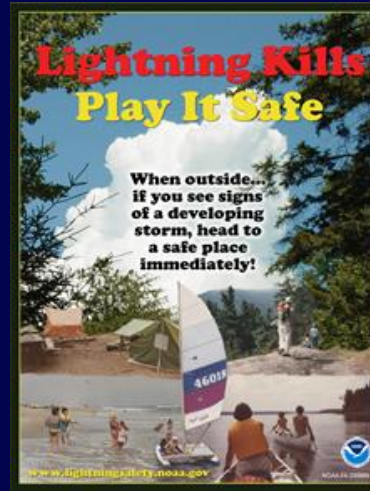
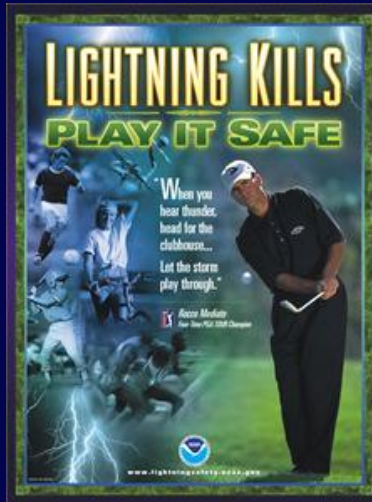
## Weather Safety: Lightning



**Lightning Safety for You and Your Family**



FEMA American Red Cross



**LIGHTNING KILLS Play It Safe!**

**Lightning Facts...**  
 No place outside is safe during a thunderstorm. Lightning kills more people annually than tornadoes or hurricanes.  
 If you hear thunder, you're likely within striking distance of the storm.

**Outdoors...**  
 Plan outdoor activities to avoid thunderstorms. Monitor weather conditions. If you hear thunder, get inside a substantial building immediately. If a substantial building is not available, get inside a hard-topped metal vehicle. Avoid open areas and stay away from isolated tall objects.

**Indoors...**  
 Avoid contact with any plumbing connected to electrical power, such as computers or appliances. Avoid contact with water or plumbing. Stay off corded phones. Stay away from windows and doors. Remain inside for 30 minutes after the last rumble of thunder is heard.

**If Someone Is Struck...**  
 Victims do not carry an electrical charge and may need immediate medical attention. Call 911 for help. Monitor the victim and begin CPR or AED, if necessary.

For more information, visit: [www.lightningsafety.noaa.gov](http://www.lightningsafety.noaa.gov)



## Seguridad del Tiempo: Relámpagos



**Seguridad para Usted y su Familia durante Relámpagos**



FEMA American Red Cross





# Preparedness Materials

**WHEN THUNDER ROARS GO INDOORS!**  
www.lightningsafety.com • lightning.org

**"Don't be a fool!  
Get out of  
the pool!"**

Learn the Lightning Lion says... Lightning can hurt you even before it rains!

When you hear thunder:

- Go indoors quickly.
- Head for a house, school or large building.
- If you can't get indoors, get in a hardtop car, bus or truck.
- Stay off phones, computers and video games.
- Never go under a tree!

Remember, a lightning protection system makes the building safer.

**LIFE GUARD**

Approved by these partners in lightning safety:

**WHEN THUNDER ROARS GO INDOORS!**  
www.lightningsafety.com • lightning.org

**"Don't be lame!  
End  
the game!"**

Learn the Lightning Lion says... Lightning can hurt you even before it rains!

When you hear thunder:

- Go indoors quickly.
- Head for a house, school or large building.
- If you can't get indoors, get in a hardtop car, bus or truck.
- Stay off phones, computers and video games.
- Never go under a tree!

Remember, a lightning protection system makes the building safer.

Approved by these partners in lightning safety:





# Preparedness Materials



## Leon the Lion's Lightning Safety Game



Guide Leon through the following activities by alerting him whether he is **Safe** or **Not Safe** during lightning.

[Review Rules](#)

[Play Game](#)

# When Thunder Roars, Go Indoors!



**STOP** all activities.

Seek shelter in a substantial building  
or hard-topped vehicle.

Wait 30 minutes after storm to  
resume activities.



[www.lightningsafety.noaa.gov](http://www.lightningsafety.noaa.gov)





# *Develop Messaging*



*What are the one or two most important messages that you want to convey?*





# General Messaging

*There Is No Place Outside That Is Safe When A Thunderstorm Is In The Area*

**WHEN THUNDER ROARS  
GO INDOORS!**

[lightningsafety.noaa.gov](http://lightningsafety.noaa.gov)





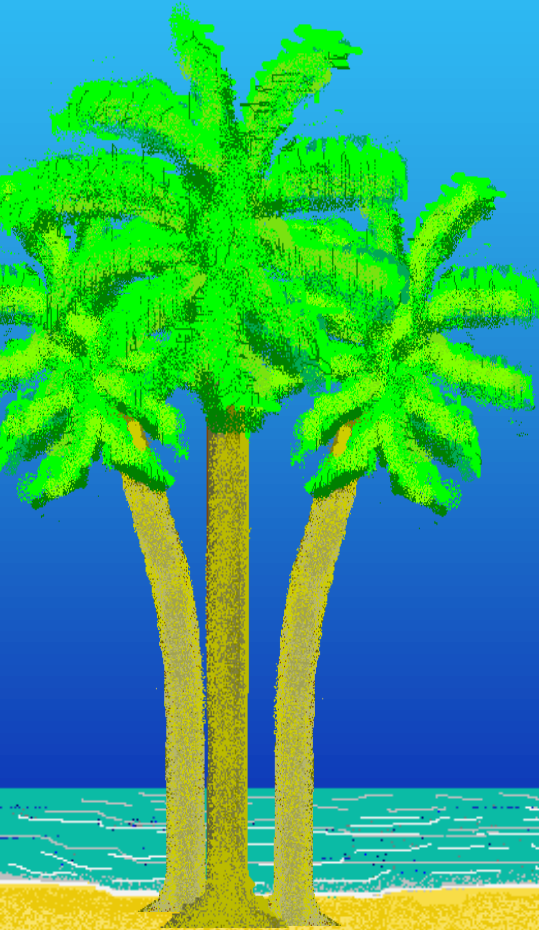
# Targeted Messaging



**Baseball:** With lightning, it's one strike and you're out!

**Soccer:** Don't get caught in striking distance!

**Golf:** If you hear thunder, head to the clubhouse. Let the storm play through.





# *Enlist Partners*



*Weather forecast offices*  
*Safety organizations*  
*Federal, State, and County gov't*  
*Sports organizations*  
*Outdoor organizations*  
*School organizations*  
*Broadcast and print media*





 **Little League** ONLINE 

PLAYERS | COACHES | PARENTS | UMPIRES | LEAGUE OFFICIALS | DISTRICT ADMINS | MEDIA | LICENSEES & SPONSORS

- Little League Home
- I'm Interested In...
- Subscribing to E-News
- Finding a Local League
- Starting a New League
- Summer Camp Jobs

**ASAP NEWS**

**Accidents Happen**  
Keep them from happening to you!

ASAP Safety Newsletters are available online. Each issue contains information on safety hazards, accident prevention, and first aid. The newsletters are available in both English and Spanish. For more information, visit our website at [www.littleleague.org](http://www.littleleague.org).

**ASAP Safety Newsletters Now Available Online!**  
Every issue of the ASAP Safety Program Newsletter, from October 1999

**5 Locations... One Focus... Baseball**  
[Click Here](#)



**Little League Mourns the Passing of Ed Pizek, Little League Foundation Trustee**  
Edward J. Pizek, who so loved his Polish heritage and recognized the need to nurture Poland's future generations that he facilitated the growth of Little League in the former Soviet Bloc country, passed away March 28 at his home in Fort Washington, Pa. He was 87. [More...](#)



**Keeping The Game Safe: NOAA Teams With Little League on Lightning Safety Awareness**  
March 2004 - When the thunder that Little Leaguers hear is not the roar of the crowd, it is time to get inside, because lightning may be close behind. That's why the NOAA National Weather Service is teaming up with Little League Baseball and Softball to provide valuable life-saving information regarding the dangers of lightning. [More...](#)



**Quick-thinking Little Leaguer rescues cousin from icy waters**  
WILLIAMSPORT, Pa. (March 19, 2004) - It's a rare feat indeed when a youngster will risk life and limb to help another like 11-year-old Belleville National Little Leaguer Angelo Domenick, Jr., did when he saved his 4-year-old cousin from drowning. [More...](#)



**Little League's Urban Initiative Program Sows Youthful Renewal with Field Dedications in Tampa and Atlanta**

» WORLD SERIES



» SHOP LITTLE LEAGUE!



» SUMMER CAMP



» LITTLE LEAGUE MUSEUM



» ABOUT OUR ORGANIZATION



HISTORY  
JOBS  
CONTACTS

» DIVISIONS    » PROGRAMS

» DATA CENTER LOGIN

LEAGUE / DISTRICT ID:



# Lightning Kills . . . Play It Safe



*A thunderstorm is approaching or nearby. Are conditions safe, or is it time to head for safety? Not wanting to appear overly cautious, many people wait far too long before reacting to this potentially deadly weather threat.*

is perceived as less or more serious, they often catch people by surprise.

Each year across the United States, thunderstorms produce an estimated 25 million cloud-to-ground flashes of lightning — each one of these flashes is a potential killer. According to the National Weather Service, on average 75 people are killed by lightning each year and hundreds more are injured, some suffering devastating neurological injuries that persist for the rest of their lives. A growing percentage of those struck are involved in outside recreational activities.

Officials responsible for sports events often lack adequate knowledge of thunderstorms and lightning to make educated decisions as to when to seek safety. With that knowledge, officials base their decisions on personal experience and, sometimes, on the desire to complete the activity. Due to the nature of lightning, personal experience can be misleading. While many people routinely put their lives in jeopardy when thunderstorms are nearby, few are actually struck by lightning. This results in a false sense of safety. Unfortunately, this false sense of safety has resulted in numerous lightning deaths and injuries during the past several decades because people made decisions that unknowingly put their lives or the lives of others at risk.

For organized outdoor activities, the National Weather Service recommends those who are engaged in lightning safety plan, and that they follow the plan without exception. The plan should give participants specific safety guidelines in order to eliminate errors in judgment.

Prior to an activity or event, organizers should consult the latest forecasts to determine the likelihood of thunderstorms. NOAA Weather Radio is a good source to up to date weather information. Once people start to arrive, the guidelines in the lightning safety plan should be followed. The information on page 5 outlines some considerations when creating a lightning safety plan.

## When should activities be stopped?

The sooner activities are stopped and people get to a safe place, the greater the level of safety. In general, a significant lightning threat exists outside from the base of a thunderstorm cloud about 6 to 10 miles. Therefore, people should move to a safe place when a thunderstorm is 30 to 10 miles away. Also, the plan's guidelines should account for the time it will take for everyone to get to a safe place. Here are some criteria that could be used to halt activities.

1. If lightning is observed. The ability to see lightning varies depending on the time of day, weather conditions, and obstructions such as trees, mountains, etc. In clear air, especially at night, lightning can be seen from storms more than 10 miles away provided that obstructions don't limit the view of the thunderstorm.

2. If thunder is heard. Thunder can usually be heard from a distance of about 10 miles, provided that there is no background noise. Traffic, wind, and precipitation may limit the ability to hear thunder less than 10 miles away. If you hear thunder, though, it is a safe bet that the storm is within 10 miles.

3. If the time between lightning and corresponding thunder is 30 seconds or less. This would indicate that the thunderstorm is 5 miles away or less. As with the previous two criteria, obstructions, weather, noise and other factors may limit the ability to use this criterion. In addition, a designated person must intelligently monitor any lightning.

In addition to any of the above criteria, activities should be halted if the sky looks threatening. Thunderstorms can develop directly over head if no storms may develop lightning just as they move into an area.

## Where should people go for safe shelter?

There is no place inside that is safe in or near a thunderstorm. Consequently, people need to stop what they are doing and go to a safe place immediately. Small outdoor buildings including dugouts, rain shelters, sheds, etc., are NOT SAFE.

Substantial buildings with wiring and plumbing provide the greatest amount of protection. Office buildings, schools, and homes are examples of buildings that would offer protection. Once inside, stay away from windows and doors and anything that conducts electricity such as corded phones, wiring, plumbing, and anything connected to these.

In the absence of a substantial building, a hard topped metal vehicle with the windows closed provides good protection. Groups should avoid contact with metal in the vehicle and, to the extent possible, move away from windows.

## When should activities be resumed?

Because electrical charges can linger in clouds after a thunderstorm has passed, experts agree that people should wait at least 30 minutes after the storm before resuming activities.

## Who should monitor the weather and who is responsible for making the decision to stop activities?

Lightning safety plans should specify that someone be designated to monitor the weather for lightning. The "lightning monitor" should not include the coaches, umpires, or referees, as they are not able to devote the attention needed to adequately monitor conditions. The "lightning monitor" must know the plan's guidelines and be empowered to ensure that these guidelines are followed.

## What should be done if someone is struck by lightning?

Most lightning strike victims survive a lightning strike. However, medical attention may be needed immediately — have someone call for medical help. Victims do not carry an electrical charge and should be attended to once. In many cases, the victim's heart and CPR breathing may have stopped and CPR may be needed to revive them. The victim should continue to be monitored until medical help arrives. Even minor respiratory problems could persist, or the victim could get into shock. If possible, move the victim to a safe place away from the threat of another lightning strike.

## For additional information:

The National Weather Service and NOAA have set up a web site that provides a wealth of information on lightning and lightning safety. The address is:

[www.lightning.sr.noaa.gov/](http://www.lightning.sr.noaa.gov/)

In addition, the National Collegiate Athletic Association has adopted a specific set of lightning safety recommendations used to minimize the athletic event. The recommendations can be found at:

[www.ncaa.org/sports/science/sports\\_medicine/booklet.pdf](http://www.ncaa.org/sports/science/sports_medicine/booklet.pdf)

For further information concerning lightning or weather safety, contact the nearest National Weather Service Office. The nearest office can be located on the following web site by clicking on the appropriate state:

[www.state-weather.gov/whats\\_new.htm](http://www.state-weather.gov/whats_new.htm)

More information on NOAA Weather Radio can be found at:

[www.nws.noaa.gov/oa/](http://www.nws.noaa.gov/oa/)

*Article By: John Savelle  
Warning Coordination Meteorologist  
National Weather Service*



# *Distribute Materials*



*Email*

*Website*

*Physical distribution  
at events*







# Lightning Safety Visors







# Lightning Safety Visors





# Documentation



*Track and document lightning incidents*

*Build an online database*

*Provide updates to partners*

*Look for “media hooks”*





All,

A 34-year-old man who was struck by lightning on Wednesday, July 8th, on the roof of a building in Evansville, Indiana, has succumbed to his injuries. He was reportedly working for a roofing contractor at the time of the incident.

<https://www.courierpress.com/story/news/2020/07/09/man-struck-lightning-evansville-berry-global-facility-efd/5405603002/>

<https://www.14news.com/2020/07/08/person-reportedly-struck-by-lightning-evansville/>

This is the first lightning fatality in Indiana since July 20th, 2019.

<http://lightningsafetycouncil.org/States/IN.pdf>

This is the 8th lightning fatality of the year in the U.S. Based on the past 10 years, the U.S. averages 12 lightning fatalities through July 12th.

Since 2006, there have now been 16 lightning fatalities attributed to roofing activities.

<http://lightningsafetycouncil.org/Activities/Roofing.pdf>

(List and demographics below, map and pictograph attached.)

John Jensenius  
Lightning Safety Specialist  
National Lightning Safety Council

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# *Analyze Your Data Yearly*

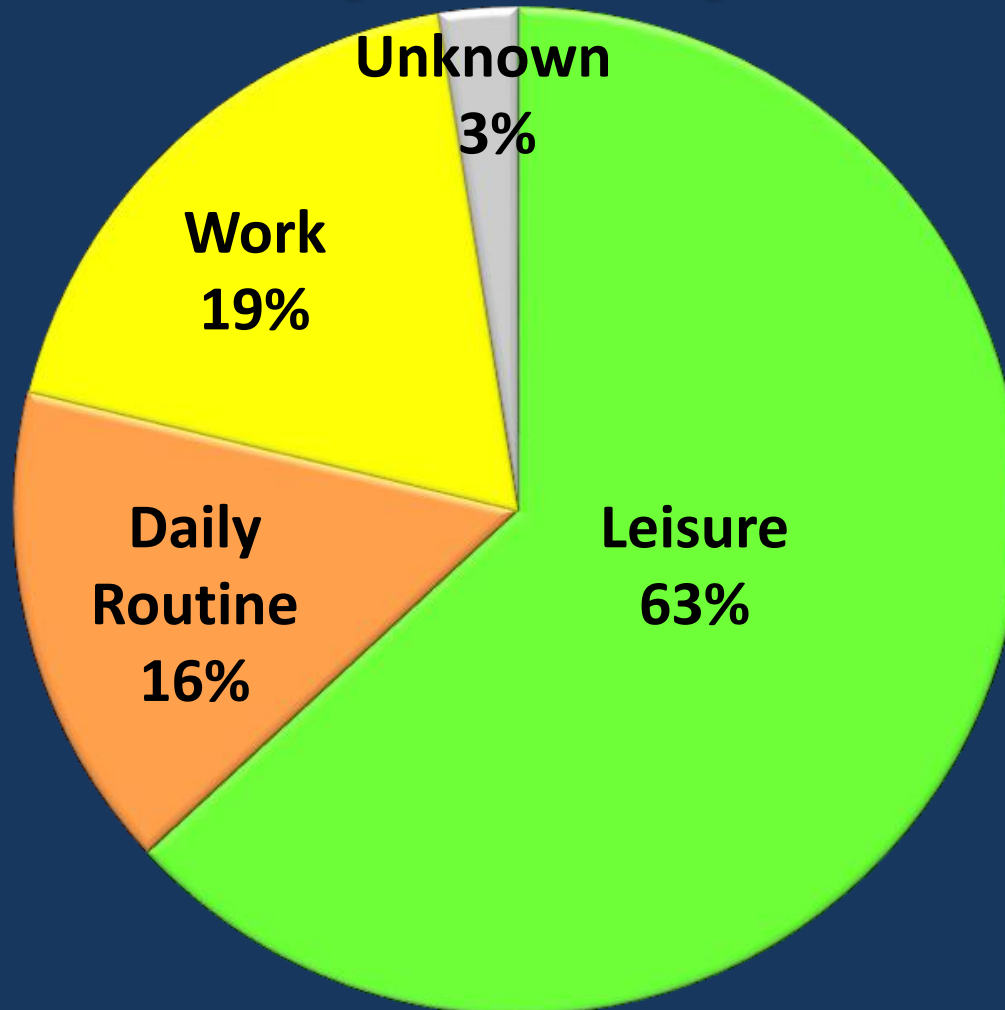


- Statistically analyze the data**
- Create simple graphs and charts**
- Provide updates to partners**
- Look for “media hooks”**





# Lightning Fatalities By Activity



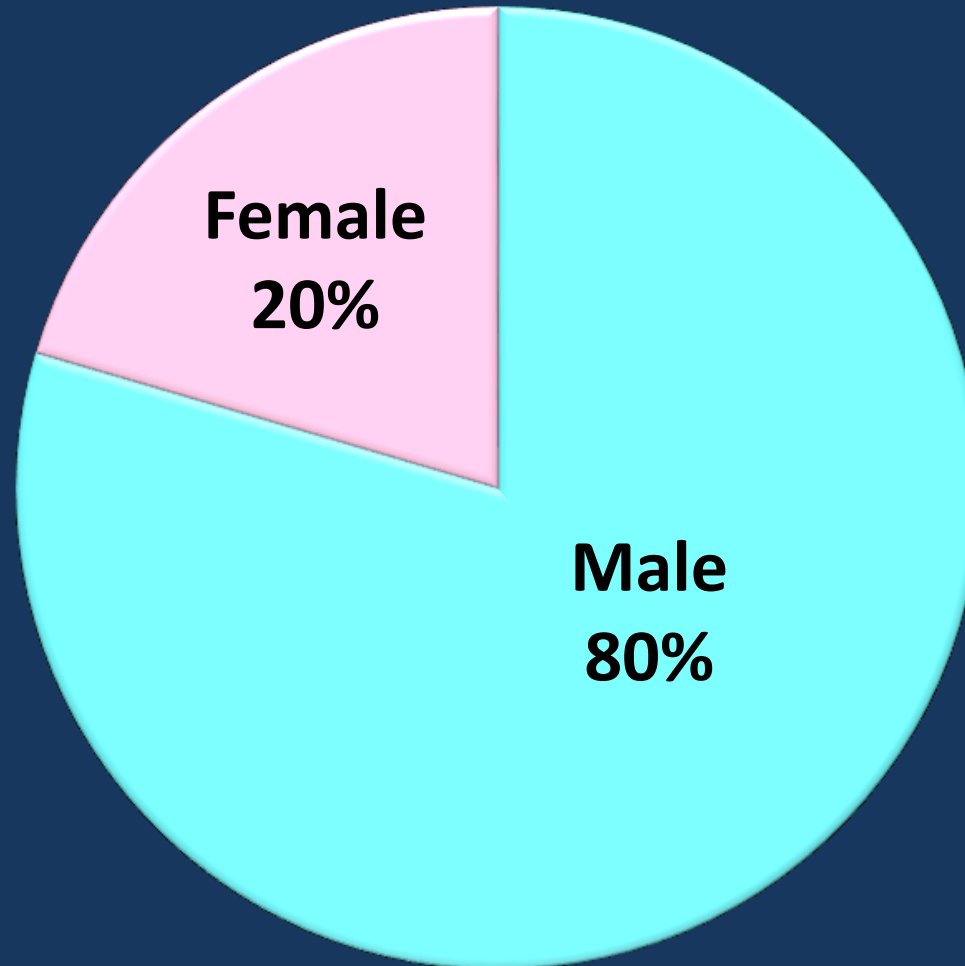
Based on 435 cases from 2006 through 2020

Compiled by  
John Jensenius





# Lightning Fatalities By Gender



Based on 435 cases from 2006 through 2020

Compiled by  
John Jensenius



# The Deadly Dozen

The twelve activities that contributed most to U.S. lightning fatalities between 2006 and 2020.

<u>Activity</u>	<u># of Deaths</u> ( <u>%</u> )
<u>Fishing</u>	40 ( 9% )
<u>Beach</u>	24 ( 6% )
<u>Camping</u>	22 ( 5% )
<u>Farming</u> or <u>Ranching</u>	21 ( 5% )
Riding <u>Bicycle</u> , <u>Motorcycle</u> , or <u>ATV</u>	19 ( 4% )
<u>Boating</u>	19 ( 4% )
<u>Social gathering</u>	17 ( 4% )
<u>Roofing</u>	16 ( 4% )
Headed to/from or waiting for vehicle	15 ( 3% )
<u>Yardwork</u>	15 ( 3% )
<u>Construction</u>	14 ( 3% )
<u>Soccer</u>	13 ( 3% )
<b>Total</b>	<b>235 (54%)</b>





# Lightning Fatality Lists By Activity

2006—2020

(click on activity for list)

**Note: Fatalities are listed based on the activity that put the victim at risk.**

## **LEISURE ACTIVITIES**

[Fishing](#)

[Beach activities](#)

[Camping](#)

[Boating](#)

[Riding motorcycles](#)

[Riding bicycles](#)

[Riding ATVs](#)

[Riding horses](#)

[Hiking](#)

[Going for a walk](#)

[Tourism](#)

[Social gathering](#)

[Golfing](#)

[Soccer](#)

[Running](#)

## **WORK**

[Roofing](#)

[Farming](#)

[Ranching](#)

[Commercial lawn care/landscaping](#)

[Construction](#)

## **AROUND THE HOME**

[Yardwork](#)

[Mowing lawn](#)

[Caring for animals](#)

[Playing](#)





# Farming Lightning Fatalities 2006-2020

Date	Day of Week	State	City	Age	Sex	Location	Activity	Name
5/16/2018	Wednesday	FL	Parkland	53	F	Farm	Working at produce farm	Maria Francisco Pascua
6/13/2016	Monday	FL	Manatee County	47	M	Farm	Loading truck	Fleuridor Kercizan
6/26/2015	Friday	MO	Seymour	30	M	Field	Cultivating field	Unknown
8/21/2013	Wednesday	KY	Madison County	25	M	In/near barn	Hanging tobacco	Scotty Elam, Jr.
8/21/2013	Wednesday	KY	Madison County	29	M	In/near Barn	Hanging tobacco	Bobby Lee Maggard
7/22/2013	Monday	GA	Bainbridge	21	M	Road	Had been working on farm	Mauselio Gomes
6/23/2012	Saturday	VT	Post Mills	16	M	Farm field	Harvesting squash	Connor Cook
8/8/2011	Monday	AR	Rector	71	M	Open field	Chopping cotton	William "Neil" Arnold
10/8/2009	Thursday	MO	Phillipsburg	40	M	Outside home	Checking on cows	Jesus Guadalupe Perez
2/5/2008	Tuesday	OH	Lewisville	60	M	Open field	Tending cows	Neil Christman
9/21/2007	Sunday	FL	Clewiston	49	M	Open field, vegetable farm	Walking back to van	Jose Manuel Perez
6/30/2007	Saturday	GA	Tifton	23	M	Under tree	Farming, taking shelter	Pablo Figueroa
6/26/2007	Tuesday	NC	Whitakers	21	M	Agricultural area	Leveling chicken house	Hugo Zamarripa Rodriguez



# Lightning Fatalities By State

2006—2020

(click on state name for list)

[Alabama](#)

Alaska - none

[American Samoa](#)

[Arizona](#)

[Arkansas](#)

[California](#)

[Colorado](#)

[Connecticut](#)

Delaware - none

[Florida](#)

[Gaum](#)

[Georgia](#)

Hawaii - none

[Idaho](#)

[Illinois](#)

[Indiana](#)

[Iowa](#)

[Kansas](#)

[Kentucky](#)

[Louisiana](#)

[Maine](#)

[Maryland](#)

[Massachusetts](#)

[Michigan](#)

[Minnesota](#)

[Mississippi](#)

[Missouri](#)

[Montana](#)

[Nebraska](#)

[Nevada](#)

New Hampshire - none

[New Jersey](#)

[New Mexico](#)

[New York](#)

[North Carolina](#)

[North Dakota](#)

[Ohio](#)

[Oklahoma](#)

[Oregon](#)

[Pennsylvania](#)

[Puerto Rico](#)

[Rhode Island](#)

[South Carolina](#)

[South Dakota](#)

[Tennessee](#)

[Texas](#)

[Utah](#)

[Vermont](#)

[Virginia](#)

[Washington](#)

Washington, D.C. - none

[West Virginia](#)

[Wisconsin](#)

[Wyoming](#)



# Puerto Rico Lightning Fatalities 2006-2020

Date	Day of Week	State	City	Age	Sex	Location	Activity	Name
9/5/2017	Tuesday	PR	Juana Díaz	63	M	Boat	Fishing	Roberto Collazo Porrata
6/27/2009	Saturday	PR	Moca	43	M	Outside home	Cutting lawn	Antonio Cruz Mangual
5/11/2006	Thursday	PR	Arecibo	30	M	Outside Open	Unknown	Unknown





# *Has It Worked ?*

*How have the average number of lightning deaths in the U.S. changed since we began our campaign in 2001 ?*





# Average Number of U.S. Lightning Fatalities

(averages listed for each year are based on the previous 10 years)





*For More Information*

*Visit The Web Sites*

[www.lightningsafetycouncil.org](http://www.lightningsafetycouncil.org)

[www.weather.gov/safety/lightning](http://www.weather.gov/safety/lightning)





# The End

John Jensenius

National  
Lightning Safety Council

