

# Camping Preparedness and Safety

**Mitchell Gaines**  
NWS Binghamton, NY





# Background



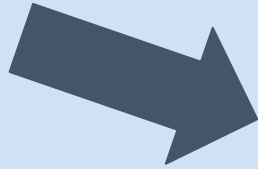
- **27 People died last year at Camp Mystic (Texas) due to flash flooding.**
- **Reaching out to summer camps to offer weather awareness information and training.**
- **This material is both in the video and PDF form. Feel free to distribute, or incorporate into onboarding/training for summer staff.**



# National Weather Service



Federal  
Agency



Parent  
Agency





# NWS Mission



“To provide weather, water and climate data, forecasts, warnings, and impact-based decision support services for the **protection of life and property** and the enhancement of the national economy.”



**NWS BINGHAMTON  
OFFICE**



# About Us



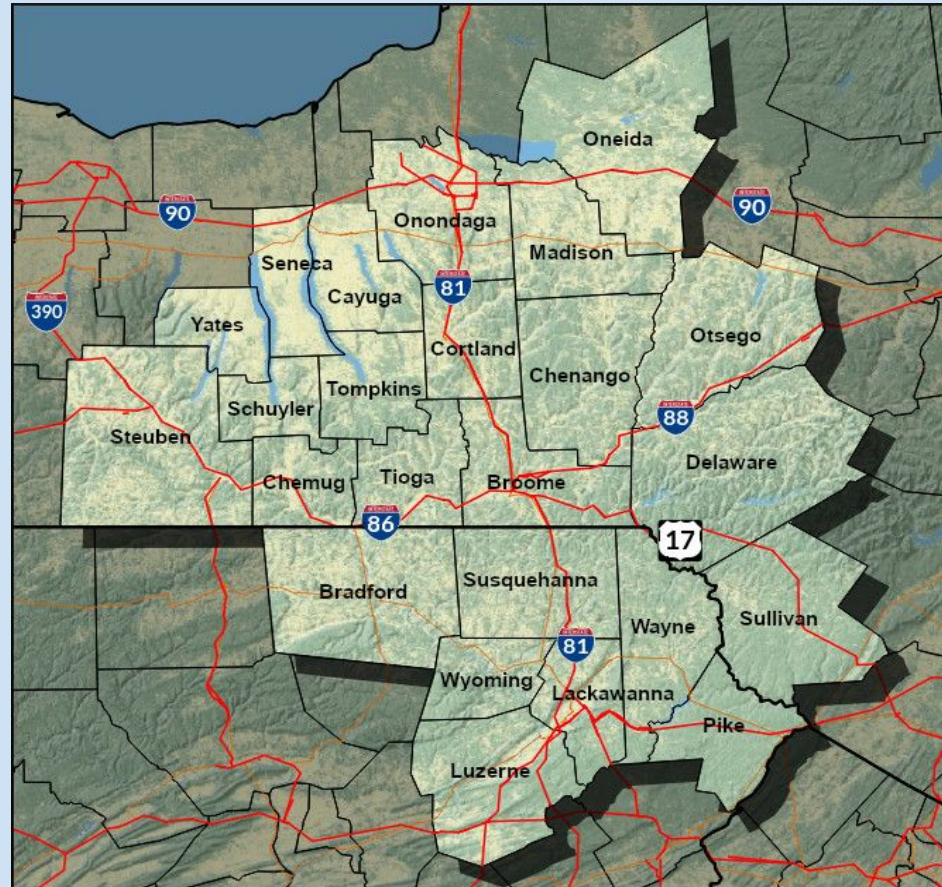
- Located near Greater Binghamton Airport
- Elevation ~1600 feet
- Staffed 24/7/365 - forecasters, electronic technicians/IT support, hydrologist, observations program leader, managers
- [weather.gov/bgm](https://weather.gov/bgm)

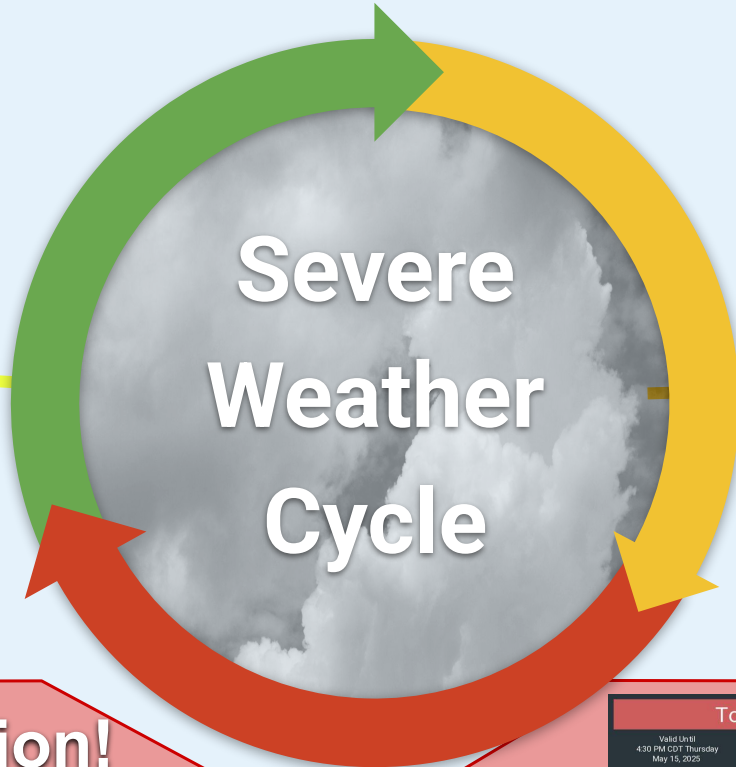


# County Warning Area



Forecast area covers roughly 2.5 million people.





## Plan Ahead

1-5 Day Outlooks



## Be Prepared

Watches - Hours

### Tornado Watch

Valid Until: 8:00 PM CDT Thursday, May 15, 2025

**Threat Information**

- TORNADOES**  
A Few Tornadoes Likely
- HAIL**  
Scattered Hail Up To Apple Size Likely
- WIND**  
Scattered Gusts Up To 70 MPH Likely

**Potential Exposure**

Population: 5,124,283  
Schools: 2083  
Hospitals: 117

## Take Action!

Warnings - Minutes

### Tornado Warning

Valid Until: 4:30 PM CDT Thursday, May 15, 2025

**Threat Information**

- TORNADO**  
Radar Indicated
- HAIL**  
Quarter Sized Possible

**Potential Exposure**

Population: 25,359  
Schools: 9  
Hospitals: 0

# Stage 1: Outlook

Review NWS Products and Services daily.

Typically issued several days out

Have a plan and know where to shelter in the event severe weather strikes. Make sure you have emergency supplies.

**Have a Plan!**

Daily

A circular diagram with a grey and white cloudy background. A large green arrow curves around the top and left sides of the circle, pointing towards the top right. The text "Severe Weather Cycle" is centered in the circle in a white, bold, sans-serif font.

Severe  
Weather  
Cycle

### Stage 1: Outlook

Review NWS Products and Services.

Have a plan and know where to shelter in the event severe weather strikes.  
Make sure you have emergency supplies.

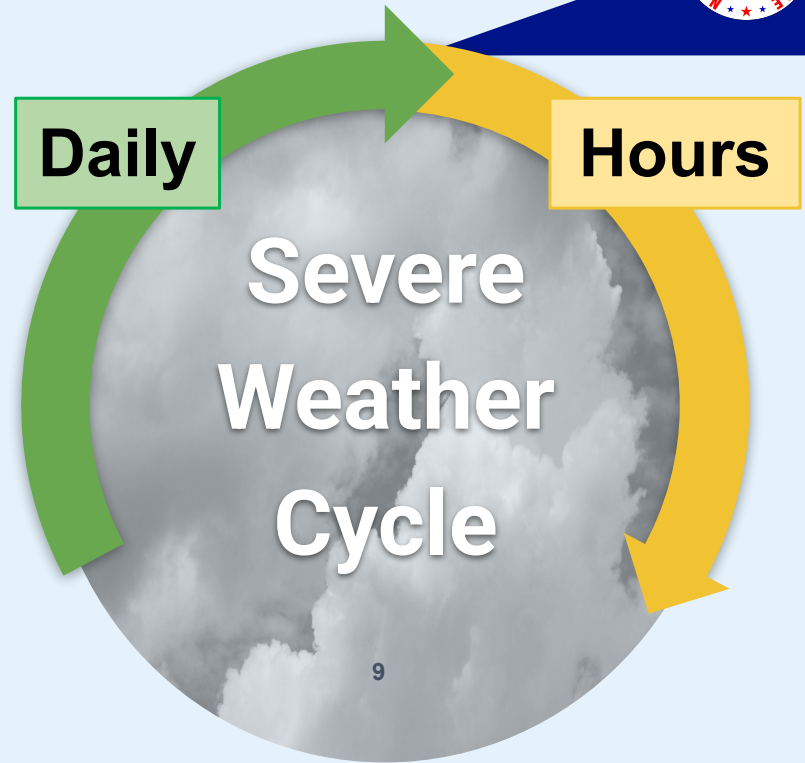
**Have a Plan!**

## Stage 2: Watch

Monitor Severe Weather Watches, NWS Graphical Forecasts, Radar.

Stay informed and monitor closely for warnings

**Be Prepared!**





### Stage 1: Outlook

Review NWS Products and Services.

Have a plan and know where to shelter in the event severe weather strikes. Make sure you have emergency supplies.

**Have a Plan!**

### Stage 2: Watch

Monitor SPC Mesoscale Discussions and Severe Weather Watches, NWS Graphical Forecasts, Radar.

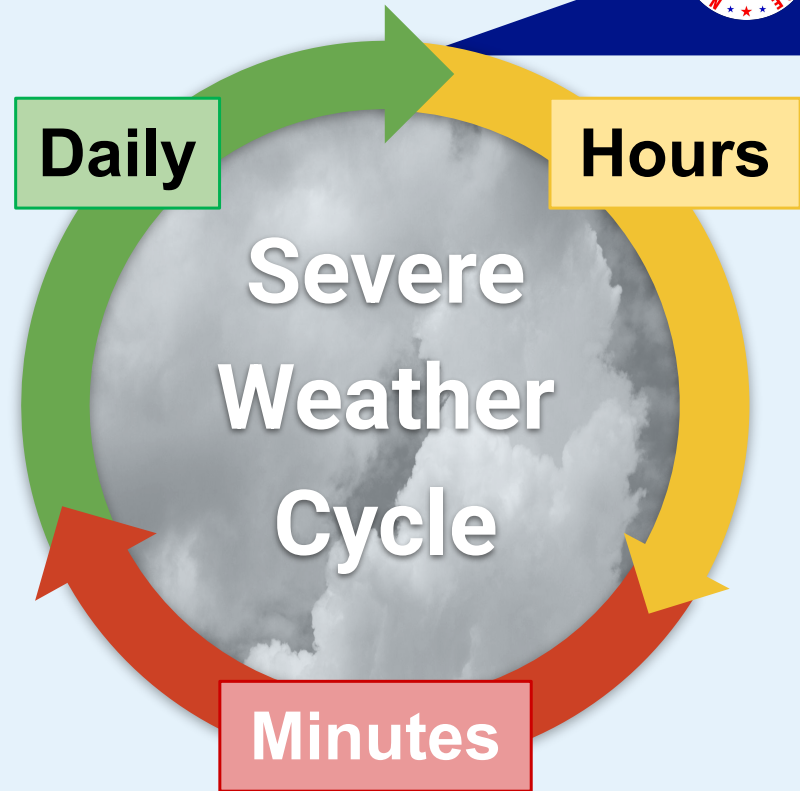
Stay informed and monitor closely for warnings

**Be Prepared!**

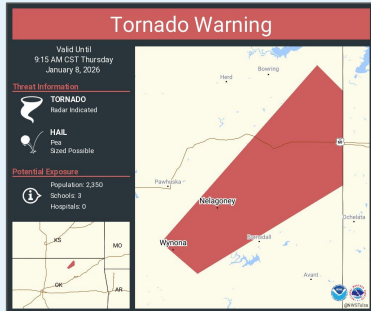
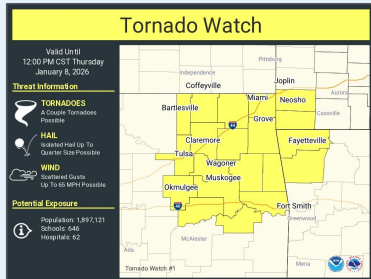
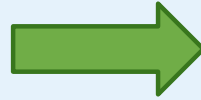
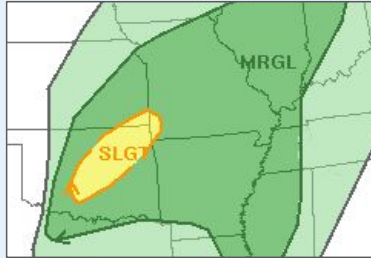
## Stage 3: Warning

When a Severe Thunderstorm Warning, Tornado Warning, or Flash Flood Warning is issued for your area, take shelter!

**Take action & seek shelter now!**



# NWS Watch vs Warning: Cupcake Analogy



## NWS Products in Cupcake Terms

# Outlook



thinking about making cupcakes...  
**it may happen**

# Watch



all the ingredients are there for cupcakes...  
**it is likely**

# Warning



the cupcake is there...  
**it is here**  
**TAKE ACTION**



# Ways To Get Weather Info



NWS websites are also a good source of forecast and warning information.

- [www.weather.gov](http://www.weather.gov); click on Northeast PA-Central NY or enter your city/zip into the searchbox + click go
- [NWS Binghamton “Weather Story” graphics](#), updated for main weather concerns at any given time
- [Weather Briefing page](#), when there is potential for weather hazards
- [Monitor Radar](#)

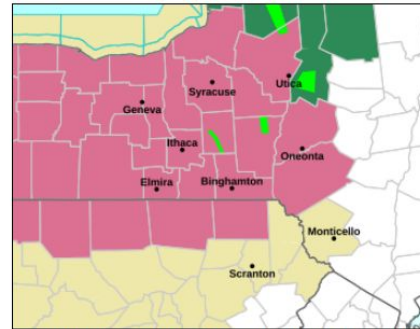
## NWS Forecast Office Binghamton, NY

[Weather.gov](http://Weather.gov) > Binghamton, NY

Binghamton, NY  
Weather Forecast Office

[Current Hazards](#) [Current Conditions](#) [Radar](#) [Forecasts](#) [Rivers and Lakes](#) [Climate and Past Weather](#) [Local Programs](#)

Click a location below for detailed forecast.



[Watches, Warnings & Advisories](#)



Flood Warning



Severe Thunderstorm Watch



Flood Watch



Hazardous Weather Outlook



Last Map Update: Tue, Mar 31, 2026 at 2:24:10 pm EDT

[Weather Story](#)



[Local Radar](#)



[Satellite](#)



# NWS Briefings When Hazardous Weather Threatens

When There Is A Risk For Severe Weather, Details Available At [www.weather.gov/bgm](http://www.weather.gov/bgm)

NATIONAL WEATHER SERVICE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Local forecast by "City, ST" or ZIP code  
Enter location ... Go  
Location Help

**News Headlines**

- 2026 SKYWARN Training Schedule
- Weather Safety Information
- See what we are talking about in the Weather Story

**STRONG TO SEVERE STORM POTENTIAL FOR TODAY (5/19)**  
Click to view briefing

MY FORECAST  
Greater Binghamton Airport NY

**NWS Forecast Office Binghamton, NY**  
Weather.gov > Binghamton, NY

Binghamton, NY  
Weather Forecast Office

Current Hazards Current Conditions Radar Forecasts Rivers and Lakes Climate and Past Weather Local Programs

Click a location below for detailed forecast.

**EXAMPLE FROM MAY 19, 2026**

Last Map Update: Tue, May 19, 2026 at 1:14:22 pm EDT

Watches, Warnings & Advisories

- Heat Advisory
- Small Craft Advisory
- Air Quality Alert
- Hazardous Weather Outlook

A Few Clouds  
81°F  
27°C  
Get Detailed info

This Afternoon  
40% Chance T-storms  
High: 87°F

Tonight  
Partly Cloudy  
Low: 64°F

5-Day Temperature Forecast

Weather Story Local Radar

**STRONG TO SEVERE STORM POTENTIAL FOR TODAY (5/19)**  
Click to view briefing

**Severe Thunderstorm Risk for Today (5/19/26)**  
May 19, 2026 9:49 AM  
Damaging wind gusts will be the potential hazard

**HIGHEST LOCAL RISK**  
2  
WHAT THIS MEANS:  
Scattered severe thunderstorms possible  
**Key Messages**

- Isolated to scattered strong to severe storms possible today, though confidence is low.
  - Main threats: Strong to damaging winds
- The expected timing is afternoon through late evening.

**POSSIBLE THREATS**  
LOCALLY DAMAGING WINDS

**Severe Weather Outlook Tuesday, May 19, 2026**

Highlighted Area: NWS Binghamton, NY  
Last Updated: May 19 2026 9:50 AM CDT  
Valid Until: May 20 2026 9:00 AM CDT

Legend:  
5 High Risk  
4 Moderate Risk  
3 Enhanced Risk  
2 Significant Risk  
1 Marginal Risk  
Thunderstorms

NONE 1 2 3 4 5 HIGH

National Oceanic and Atmospheric Administration  
U.S. Department of Commerce  
National Weather Service  
Binghamton, NY

- **When Briefing Issued:** Clickable Icon Appears At Top
- **When Threat Is Over:** Icon (and Briefing) Goes Away

Briefings can also still be found on the Weather Hazard Briefing Page itself.





# Weather Alerts



## WIRELESS EMERGENCY ALERTS

NWS Cleveland OH Safety Series

▶ ACTIVATED FOR TORNADOES, CONSIDERABLE/DESTRUCTIVE FLASH FLOODING, AND DESTRUCTIVE SEVERE THUNDERSTORMS



Be sure to have Wireless Emergency Alert (WEA) notifications turned **ON** for your mobile devices. This is typically accessed through Settings → Notifications. Be sure to have both Emergency Alerts and Public Safety Alerts **turned on**.



Be careful to **NOT** have your phone on silent or Do Not Disturb mode when severe weather is threatening. Depending on the exact carrier or device, you may not be audibly alerted with a WEA if either of those modes are active.



While WEA is very reliable, in the unlikely event of cell phone tower damage due to a storm, you may not receive the alert in time. Always have **AT LEAST 3 WAYS** to receive weather information.



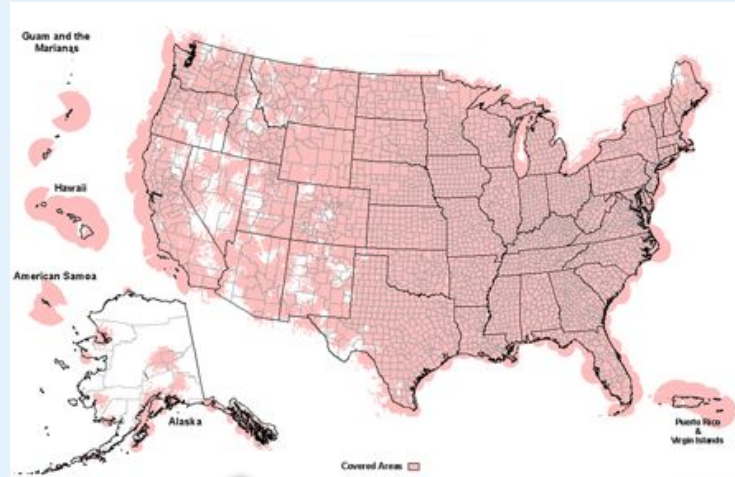
May we suggest a NOAA Weather Radio to be given to a friend or family member for their next birthday?





# NOAA Weather Radio (NWR)

- Not only get warnings, but the forecast too!
- Programmable, battery backup for power outages, tone alerts for warnings when on Standby.
- Your NOAA Weather Radio must have enabled alarms and within transmitter reach.
- You can purchase your own NOAA Weather Radio online or at many retailers.



To find your local frequency, visit [www.weather.gov/nwr/station\\_listing](http://www.weather.gov/nwr/station_listing)



# NOAA Weather Radio (NWR)





# IBWs

(Impact-Based Warnings)

No Specific Damage  
Threat Tag

Considerable Level  
Damage Threat Tag

Catastrophic/  
Destructive Level  
Damage Threat Tag

## Tornado Warnings

Weak, short-lived tornado  
Yes WEA = Wireless Emergency Alert



Strong, confirmed tornado  
Yes WEA = Wireless Emergency Alert



Strong, confirmed tornado  
impacting a populated area



## Severe Thunderstorm Warnings

60 mph wind and/or  
1" hail (quarter)

# No WEA

No Wireless Emergency Alert

70 mph wind and/or  
1.75" hail (golf ball)

# No WEA

No Wireless Emergency Alert

80 mph wind and/or  
2.75" hail (baseball)



## Flash Flood Warnings

Minor flash flooding

# No WEA

No Wireless Emergency Alert

More significant flash flooding  
Yes WEA = Wireless Emergency Alert



Devastating flash flooding





# Ways To Receive ALL Warnings



- Have **multiple ways** to receive warnings.
- Keep Wireless Emergency Alerts (WEA) turned ON. You never know when getting an urgent weather alert on your phone may save your life!
- But to get ALL Warnings (not only the WEA ones)... there are many weather apps out there, including for getting warnings, monitoring radar, and even lightning (Remember, ALL thunderstorms have that, whether or not severe). Pick your favorite(s)!

**Check with Emergency Management on any local alerting apps or services you can sign up!**

Have multiple ways to get warnings weather.gov

INTERNET

LOCAL TV AND RADIO

WIRELESS EMERGENCY ALERTS AND WEATHER APPS

NOAA WEATHER RADIO

18

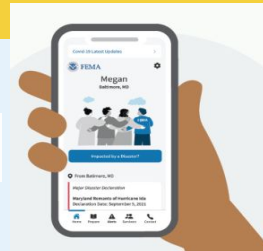
FROM YOUR FAMILY, FRIENDS, AND COWORKERS

**Prepare to protect your loved ones with expert tips and tools.** As extreme weather events increase, it's more important than ever to be prepared. The Emergency app helps you and your loved ones before, during, and after a disaster. Access short guides to help you prepare, receive National Weather Service alerts, view live weather maps, and find open Red Cross shelters and services near you. The Emergency app is free to all users, available in English and Spanish, and designed with accessibility in mind.



[Red Cross Emergency App](#)

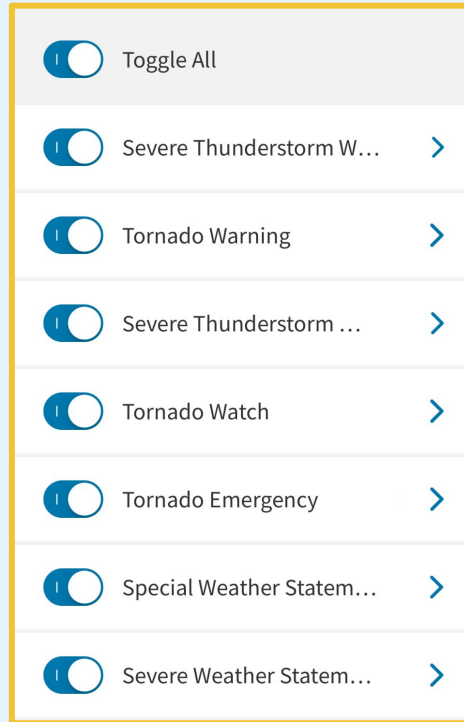
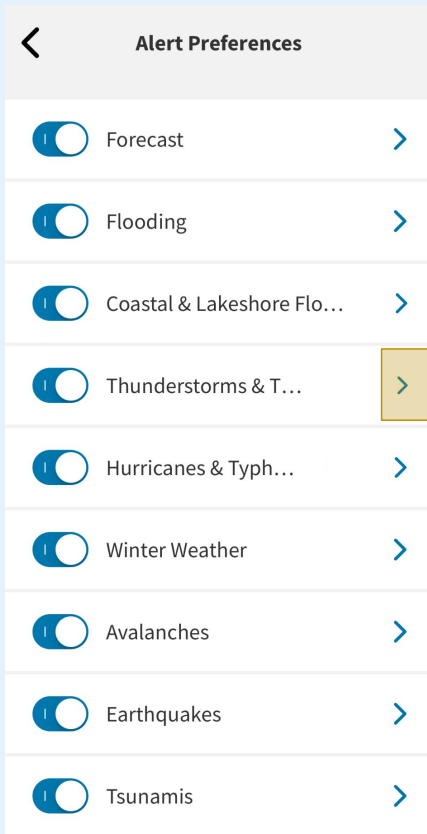
Or text: "GETEMERGENCY" to 90999



[FEMA App](#)



# FEMA Apps



- Get Weather Alerts from the NWS
- Disaster Resources
- Preparedness Tips

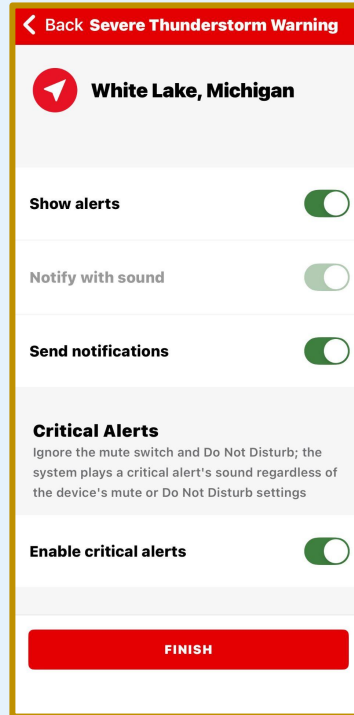
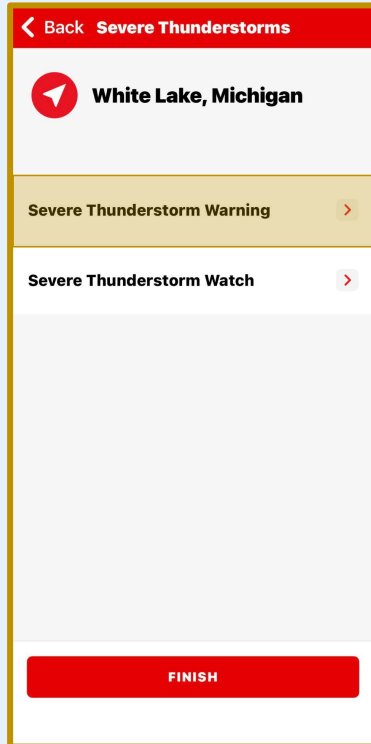
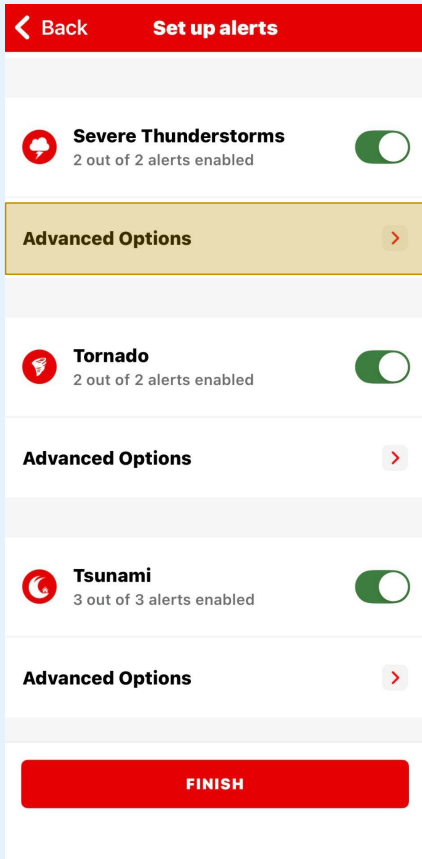


19

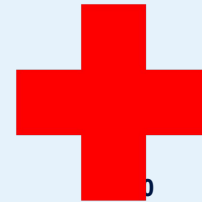
# FEMA



# Red Cross Apps



- Get Weather Alerts from the NWS
- Disaster Resources
- Preparedness Tips



**American  
Red Cross**



# Additional Resources



**Broadcast Meteorologists** - Break down the forecast before hazardous weather. Some go wall to wall during severe weather outbreaks. Great for very localized messaging!

**Live Streams (YouTube)** - Also great for localized messaging. Be sure you're following a trusted source.

**Smartphone Apps** - Different ways to package/present forecast data.

**Social Media** - Make sure you are following trusted sources!

**Private Meteorologists/Companies** - Can provide tailored information for specific locations.

**Main goal:**

Stay up to date on how the forecast and storms are evolving!



# Your Safety Is Important!



## PLAN

Plan for different scenarios.  
Know how you will receive warnings.

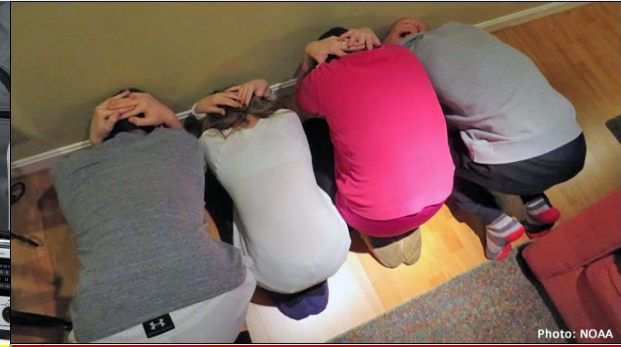
**PRACTICE!**



## PREPARE

Have more than one way to receive weather and warning information!

**STAY INFORMED!**



## ACT

Have multiple ways to receiving warnings.  
22

**DON'T HESITATE  
TAKE ACTION!**

# Tornado Safety - Good and Bad Options

## Tornado Sheltering Guidelines

Seek the best available refuge area **immediately** when a Tornado Warning is issued.  
Your chance of surviving a tornado is excellent if you follow these guidelines.

### WORST OPTIONS

Mobile homes  
Vehicles  
Underneath a highway overpass

### BAD OPTIONS

Large open rooms like gymnasiums  
Manufactured housing

### GOOD OPTIONS

Interior room of a well-constructed home or building  
Basement

### BEST OPTIONS








Above or below ground Tornado Storm Shelter (NSSA/ICC 500 compliant)\*  
Specifically-designed FEMA Safe Room\*

Find another option



Stay in place until all clear

Places that are NOT safe  
(*FIND ANOTHER OPTION*):

-  Under a tree
-  RVs/Campers
-  Vehicles
-  Camping tents
-  Underneath a highway overpass
-  Large open rooms
-  Mobile homes, manufactured housing



# Lightning Safety



If you can hear thunder or see lightning, you are at risk for being struck by lightning!

Take action immediately!



**When Thunder Roars, Go Indoors!**



**STOP all activities.**

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

Wait 30 minutes after the storm to resume activities.

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




# Lightning

## Do's and Don'ts

### Do

Go Inside When You Hear Thunder or See Lightning!

Find a Sturdy House, Building, Car With A Hard-Top Roof

Stay Indoors For at Least 30 Minutes After You Last Hear Thunder



### Don't

Retreat to Dugouts, Sheds, Pavilions, Picnic Shelters or Other Small Structures

Use or Touch Electronics, Outlets, or Corded Phones

Go Under or Near Tall Trees, Swim or Be Near Water, Be Near Metal Objects or Windows



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



# Lightning Safety



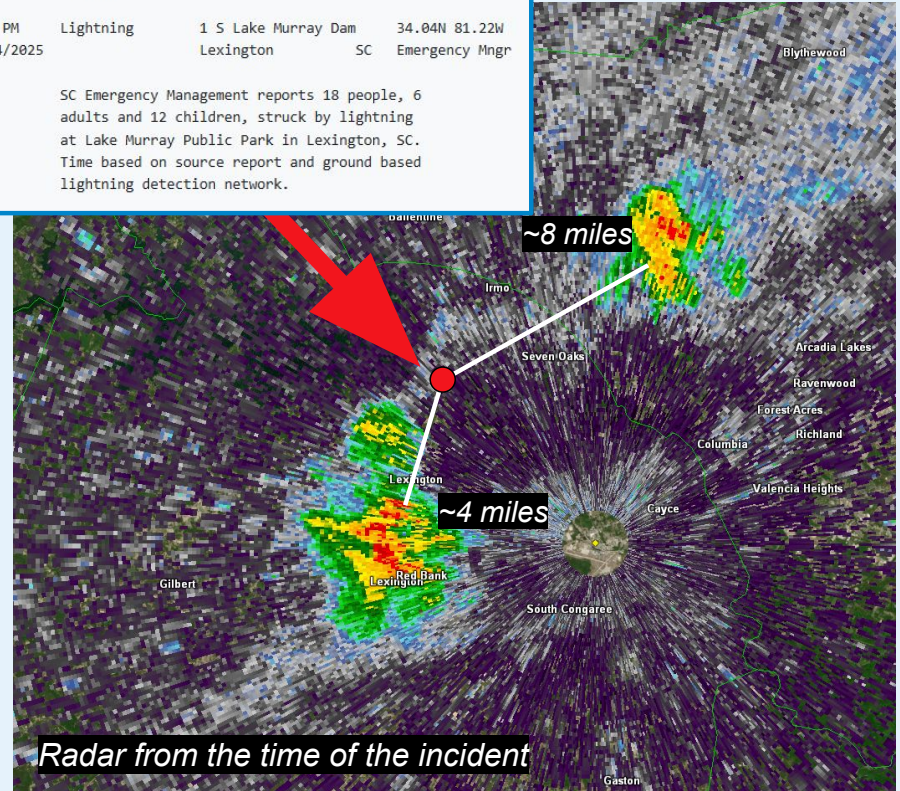
- If the sky looks threatening, find shelter!
- Lightning can strike 20+ miles away from a thunderstorm
- Wait 30 minutes after the last clap of thunder

Preliminary Local Storm Report  
National Weather Service Columbia SC  
608 PM EDT Tue Jun 24 2025

..TIME...	...EVENT...	...CITY LOCATION...	...LAT. LON...
..DATE...	...MAG....	...COUNTY LOCATION..ST..	...SOURCE....
..REMARKS..			

0443 PM	Lightning	1 S Lake Murray Dam	34.04N 81.22W
06/24/2025		Lexington	SC Emergency Mngr

SC Emergency Management reports 18 people, 6 adults and 12 children, struck by lightning at Lake Murray Public Park in Lexington, SC. Time based on source report and ground based lightning detection network.



**No place** outdoors is safe when thunderstorms are in the area!



**Bad Shelters**

Tents  
Porches  
Picnic Shelters  
Soft-topped Campers  
Open Garages



**OK Shelter**

Vehicle—metal top, windows up  
*Don't touch metal or lean on doors*



**Best Shelter**

Sturdy building — has plumbing and electricity  
*Don't touch anything plugged into outlets or plumbing*



**Radar from the time of the incident**



# Outdoor Recreational Safety

## Boating? Hiking? Camping? Outdoor Event?

- Know **BEFORE** you go and stay weather aware. If skies start to darken, do not wait! Seek shelter!
- Have a portable weather radio or an AM/FM radio to receive weather information and warnings, especially if you are out of cell phone coverage!
- Always know where safe shelter is and how long it will take you to get there!

**Your chance of being struck by lightning *greatly increases* when remaining outdoors during a thunderstorm.**

*Lightning can strike from up to 10 miles away.*

*When Thunder Roars, Go Indoors!*

*See a Flash, Dash Inside!*

Some of the activities people were doing when they were recently struck by lightning include:

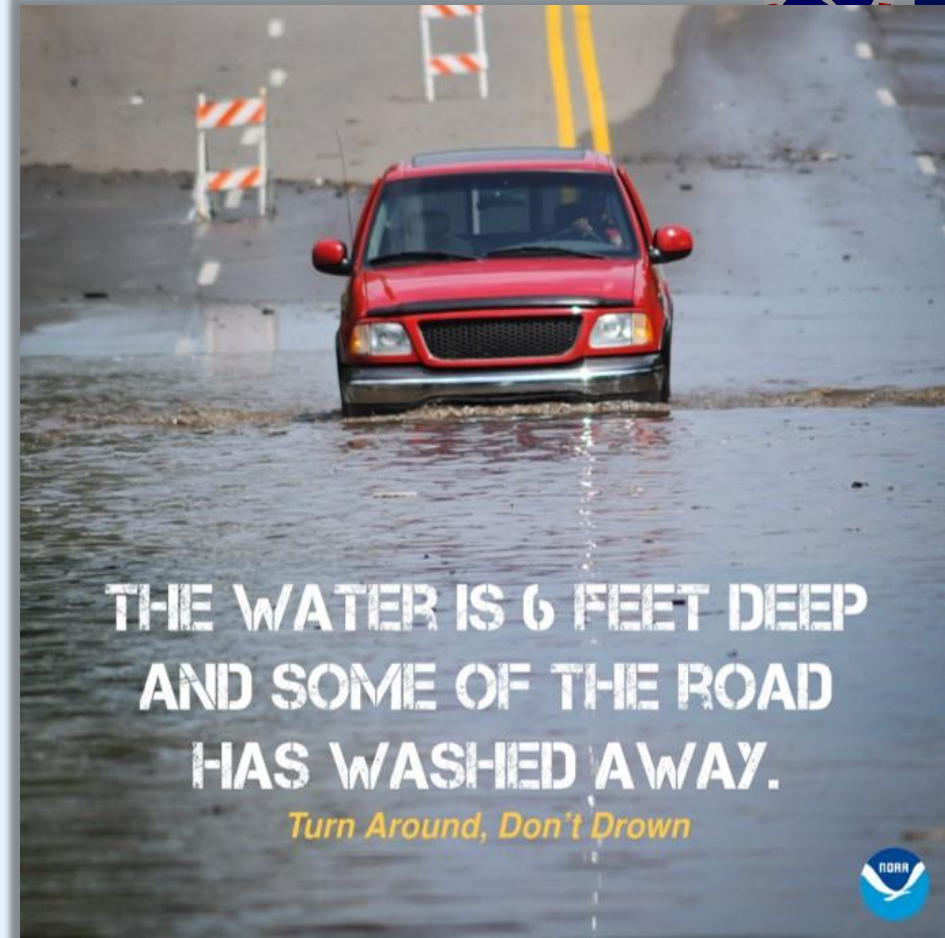
 Golfing	 Boating	 Running
 Grilling	 Walking	 Construction
 Riding	 Gardening	 Swimming

 [weather.gov](http://weather.gov)

**Your closest safe shelter may require you to track towards a storm moving your way. This may lead to less time for you to reach shelter, build that extra time into your plan!**

# Flash Flood Safety

- **Turn Around, Don't Drown**
  - 12" of water can float a car
  - 18" of water can float a truck or SUV
- Flooding is difficult to see at night
  - Many flood fatalities happen at night
  - Can conceal compromised roads underneath
- Do not let pets or children play in flood water, which could be contaminated.
- If camping, move away from streams, creeks, or rivers and seek higher ground!

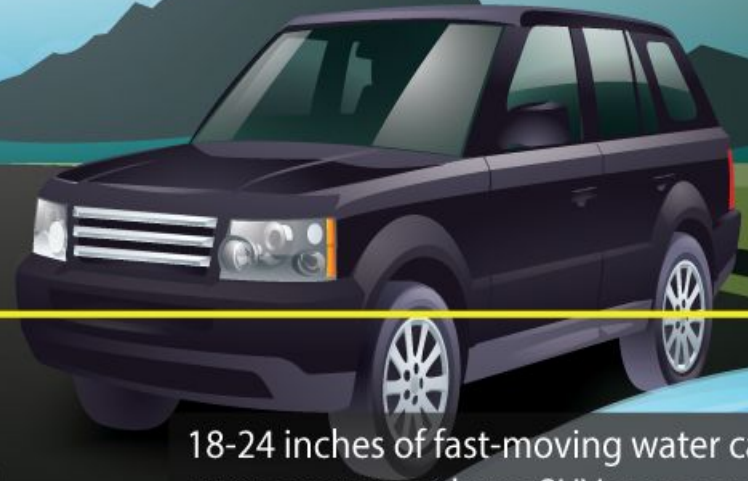


# Do You Really Know How Deep the Water is?

12 inches of fast-moving water can carry away a small car.



6 inches of fast-moving water can knock over and carry away an adult.



18-24 inches of fast-moving water can carry away most large SUVs, vans and trucks.



# Severe Wind Safety

## GET INSIDE AND AVOID WINDOWS!

- Assess your risk! Do you live near tall trees that are more vulnerable to strong winds?
- Are you in a structure that is more vulnerable to the wind?

During high winds **tree damage is expected.**

Stay safe by avoiding exterior rooms and vehicles while the winds are strong.

**You are not safe here.**



# Hail Safety

## GET INSIDE AND AVOID WINDOWS!

- Hail can fall at speeds of over 100 mph!
- Stay away from windows.
- Wind-driven hail is especially dangerous and destructive.



## Practice HEAT SAFETY Wherever You Are

Heat related deaths are preventable.  
Protect yourself and others from the  
impacts of heat waves.



### Job Sites

Stay hydrated and  
take breaks in the shade  
as often as possible.



### Indoors

Check up on the  
elderly, sick and those  
without AC.



### Vehicles

Never leave kids or  
pets unattended -  
LOOK before you LOCK



### Outdoors

Limit strenuous outdoor  
activities, find shade,  
and stay hydrated.



[weather.gov/heat](https://weather.gov/heat)

## Heat Impacts: *Vulnerable Populations*



### **PREGNANT**

Extreme heat events have been associated with adverse birth outcomes such as low birth weight, preterm birth, infant mortality, and congenital cataracts.



### **NEWBORNS**

Newborns are extra sensitive to heat because their ability to regulate body temperature is limited.



### **CHILDREN**

Young children and infants are particularly vulnerable to heat, as their bodies are less able to adapt to heat than adults. Those under four are especially vulnerable.



### **ELDERLY**

Older adults, especially those who have preexisting diseases, take certain medications, live alone or have limited mobility are at higher risk for heat illness.



### **CHRONIC ILLNESS**

People with chronic medical conditions are more likely to have a serious health problem during a heat wave.

# Air Quality and Health

Exposure to air pollutants such as particulate matter and ground-level ozone can cause:



Headaches



Difficulty breathing



Irritated eyes,  
sinuses



Chest pains,  
asthma attacks



Fatigue



Irritated throat,  
increased coughing

Poor air quality can be hazardous to anyone, and it can aggravate health problems such as asthma, heart disease, and lung disease.

Seniors, children and those with compromised immune systems are especially at risk.

weather.gov



# CAMPING SAFETY TIPS



## FLASH FLOODING

### Know Your Action

Avoid hiking in canyons  
Don't camp near streams or rivers



## HEAT

### Know Your Action

Remain hydrated/bring extra water  
Wear light, loose fitting clothing  
Use sunscreen  
Take breaks in shade



## LIGHTNING

### Know Your Action

Remain weather-ready  
If you hear thunder or see lightning...  
go immediately to an enclosed  
building or hard-topped vehicle.  
Avoid isolated tall trees or ridge tops.

## KNOW BEFORE YOU GO

Check the forecast at [weather.gov](https://www.weather.gov)  
Always pack for inclement weather,  
regardless of the forecast!



# BEWARE OF FLOODS WHEN CAMPING



*Heavy rain can quickly cause flash flooding. Use caution if camping near a stream, river, or in a low-lying area.*



**Stay informed.** Be able to get the forecast online or with a NOAA Weather Radio.



**Get to higher ground immediately** if alerted to flooding.



**Never walk or drive through floodwater.** It only takes 6 inches to knock you over and only 12 inches to sweep a car way.



weather.gov





# Hazards: Informational Safety Page

<https://www.weather.gov/safety/>



HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

## National Weather Service Safety Tips

[Weather.gov](#) > Safety

Safety  
National Program



Air Quality



Beach Hazards



Cold



Drought Safety



Floods



Fog



Heat



Hurricanes



Lightning



Rip Currents



Safe Boating



Space Weather



Sun (Ultraviolet)



Thunderstorms



Tornado



Tsunamis



Wildfire



Wind

**Thank You!**  
**For more resources or  
weather awareness training  
you can email  
Mitchell.Gaines@noaa.gov  
or Mark.Pellerito@noaa.gov**

