



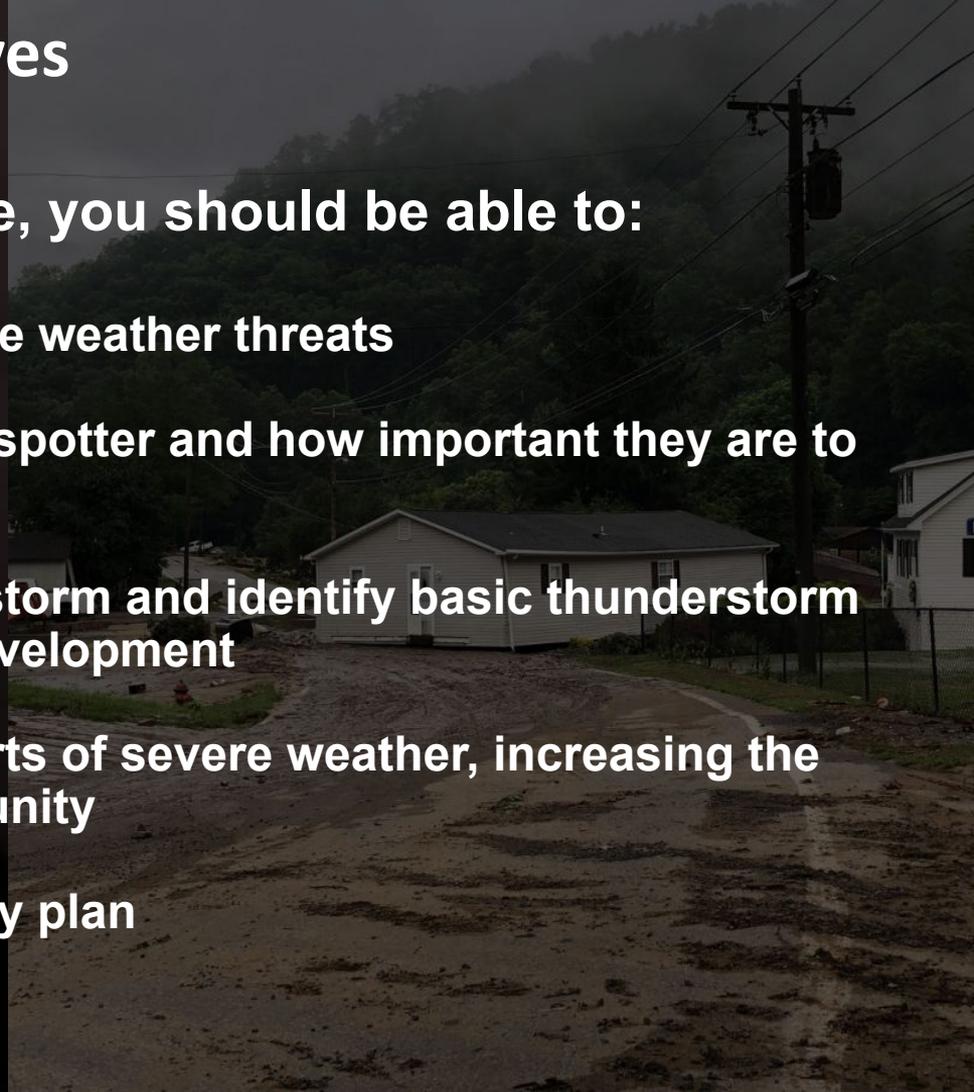
SKYWARN Weather Spotter Training



Spotter Training Objectives

At the conclusion of this course, you should be able to:

- Describe your community's severe weather threats**
- Understand the role of a weather spotter and how important they are to NWS operations**
- Properly define a severe thunderstorm and identify basic thunderstorm structure and clues to tornado development**
- Provide accurate and timely reports of severe weather, increasing the weather readiness of your community**
- Implement a severe weather safety plan**



Spotter Training Outline

Section 1: Lessons from the Past

- Tornado history and climatology

Section 2: The Role of the Weather Spotter

- National Weather Service – Who We Are and What We Do
- Why We Need Spotters?
- How and What to Report

Section 3: Thunderstorms

- Ingredients...Anatomy...and Varieties
- Severe Thunderstorm Spotting Concepts
- Cloud Identification

Section 4: Staying Safe in Severe Weather

- Outlooks, Watches and Warnings – Oh my!
- Severe Weather Risk Awareness Resources and Apps
- Safety Basics

Section 5: Winter Weather Spotting

Section 6: Review & Quiz





Tony Edwards

Warning Coordination Meteorologist

NOAA/National Weather Service

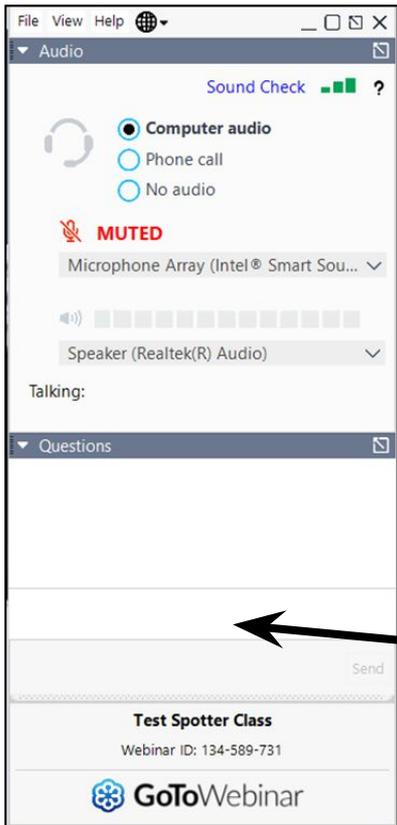
Charleston, WV

Tony.Edwards@noaa.gov

Warning Coordination Meteorologist serves as the principle interface between the Weather Forecast Office and the users of its products and services and leads the effort to insure their evaluation, adjustment and improvement.

Using GoToWebinar

You can change your audio settings and ask questions from your control panel.



If you can't hear me, you might need to check your audio settings.

Sometimes, the easiest thing to do is just dial in using the phone.

Click "Phone Call" here and dial in using the number provided.

If you have a question at anytime during the webinar, type your question in here and we will answer it.



If your control panel has minimized, it'll be on the far right side of your screen. Click on the  to expand the control panel.

Spotter Resources and Information

All webpages mentioned in this webinar, and additional spotter resources can be found at:
<https://www.weather.gov/rhx/weather-spotter>

Basic Weather Spotter Class

Basic Weather Spotter Class Slides (pdf)

Winter Weather Spotter Class

Winter Weather Spotter Class Slides (pdf)

Please complete the [Quiz](#) after watching the videos.

We will be notified after you have successfully completed the quiz (passing score of 70 required) and will follow up with additional information.

Additional Resources for Spotters

[Weather Spotter's Field Guide \(pdf\)](#)

[NOAA Cloud Chart \(pdf\)](#)

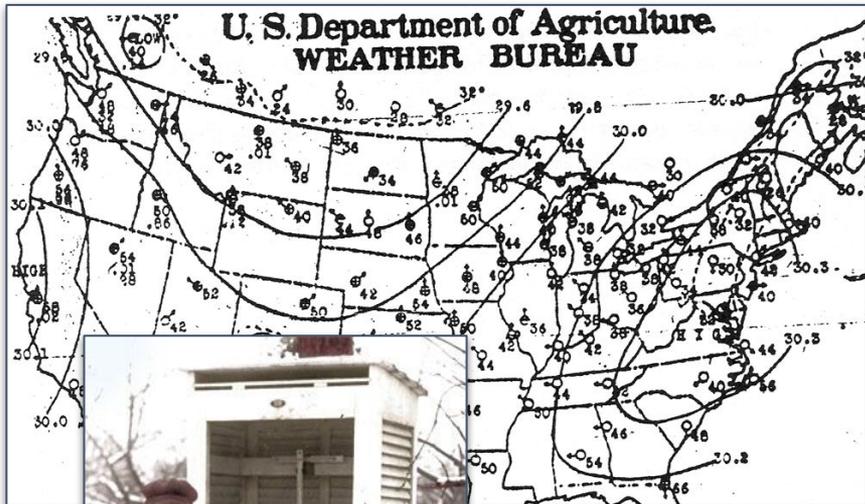
- Real-Time Severe Weather Information**
 - [Decision Support Self Briefing Page](#)
 - [Graphical Hazardous Weather Outlook](#)
 - [Rainfall Monitor](#)
 - [Enhanced Data Display](#)
 - [Storm Prediction Center](#)
- Reporting Resources/Apps**
 - [How and What to Report](#)
 - [Beaufort Wind Scale Reference](#)
 - [Hail Size Comparison Chart](#)
 - [CoCoRaHS Volunteer Weather Observer Network](#)
 - [mPING Crowdsourced Weather Reporting](#)
- Weather Safety Resources**
 - [NOAA Weather Radio Information](#)
 - [Weather Safety Information](#)
 - [Seasonal Safety Campaigns](#)
 - [Build a Disaster Kit](#)
- Severe Weather History**
 - [Weather Hazards Risk Assessment](#)
 - [Local Tornado History](#)
 - [Past Weather Event Summaries](#)
 - [U.S. Storm Events Database](#)
- Educational**
 - [JetStream - An Online School for Weather](#)
 - [NWS Publications and Brochures](#)
 - [SKYWARN@ Frequently Asked Questions](#)
 - [NWS Charleston, WV Watch, Warning and Advisory Criteria](#)

Let's Try a Quiz Question



Quiz Time...
Dohhhh!!!

Section 1: Lessons from the Past



Weather preparedness takes **AWARENESS**, **PLANNING** and **ACTION**.

Developing a good hazardous weather plan of action requires a basic understanding of the threats you may face.

Weather records for our region date back to the late 1800s and that history is full of:

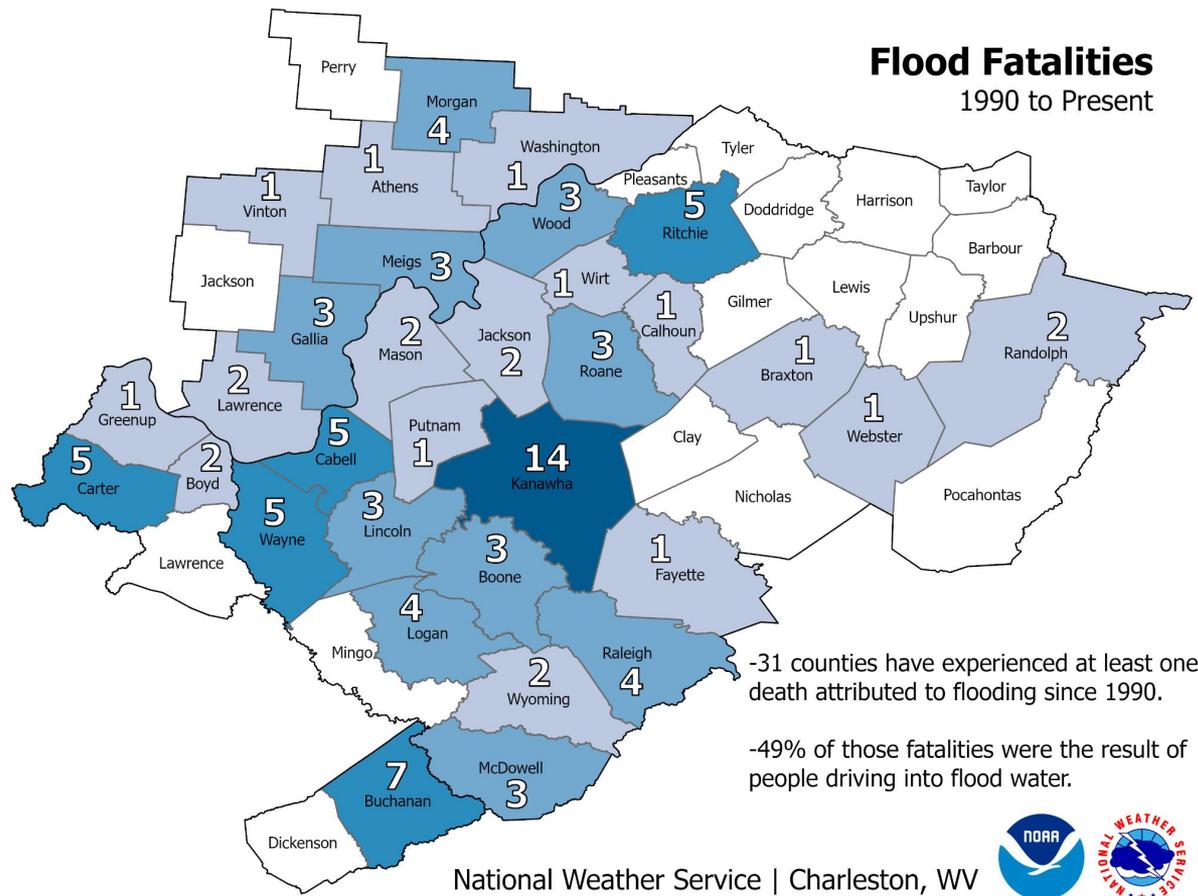
- Floods
- Severe thunderstorms
- Tornadoes
- Wildfires
- Crippling winter storms

Floods & Flash Floods



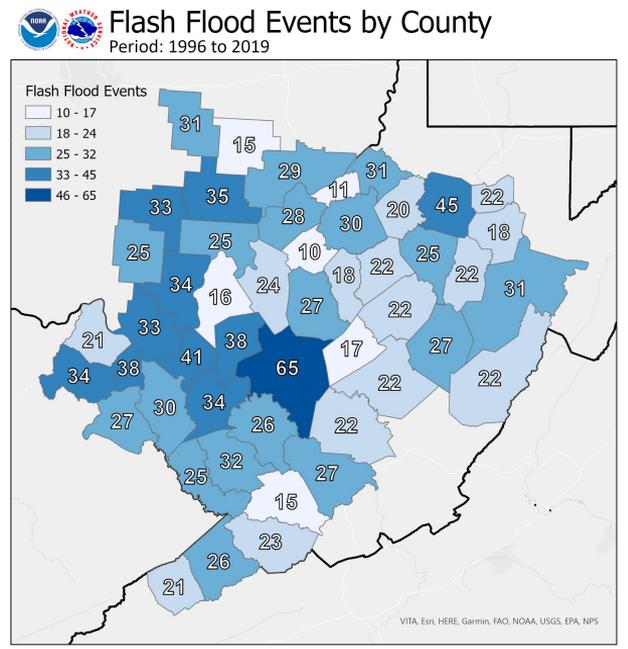
- Flash Flooding is our Region's Biggest Threat
- Flooding Kills More People Than Any Other Weather Type
- Most People Die Trying To Cross Flooded Roadways

Floods & Flash Floods



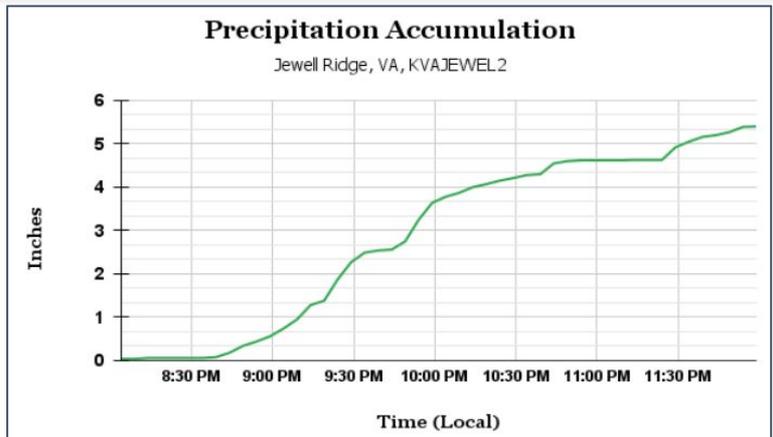
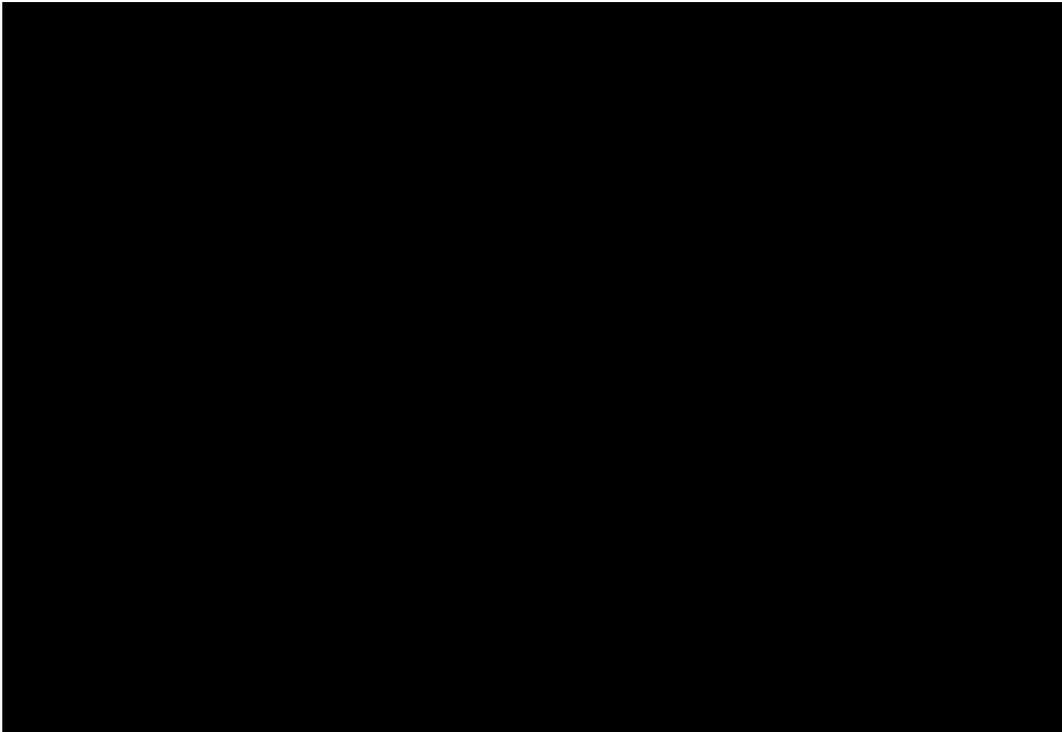
-31 counties have experienced at least one death attributed to flooding since 1990.

-49% of those fatalities were the result of people driving into flood water.



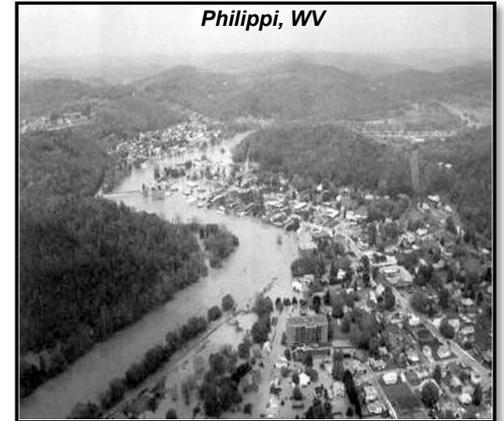
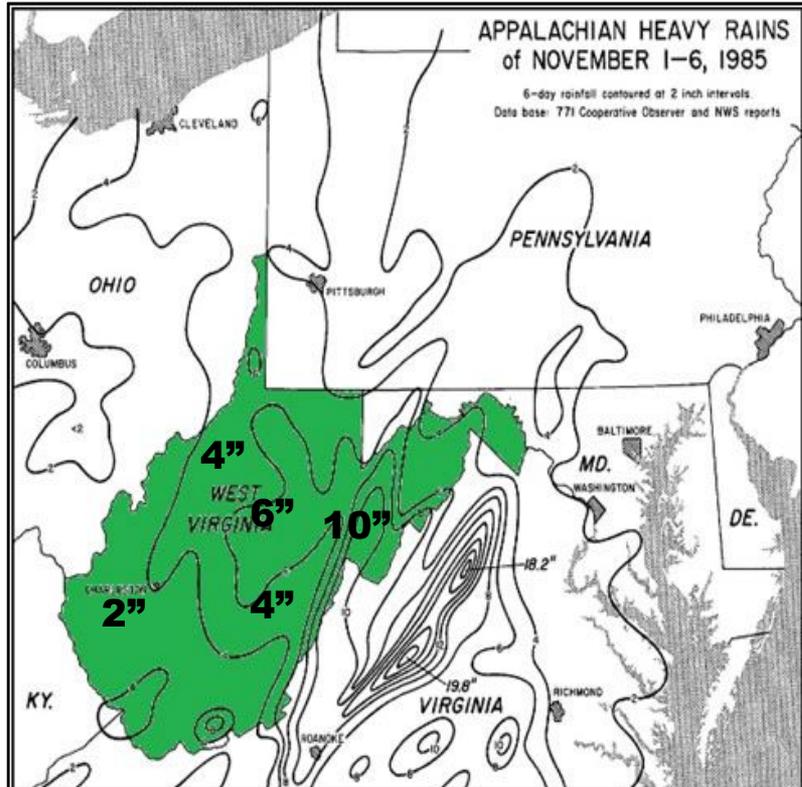
Floods & Flash Floods

During the evening of July 12, 2022 into the early morning of July 13, 2022, major flooding affected Buchanan and Tazewell County, VA.



Floods & Flash Floods

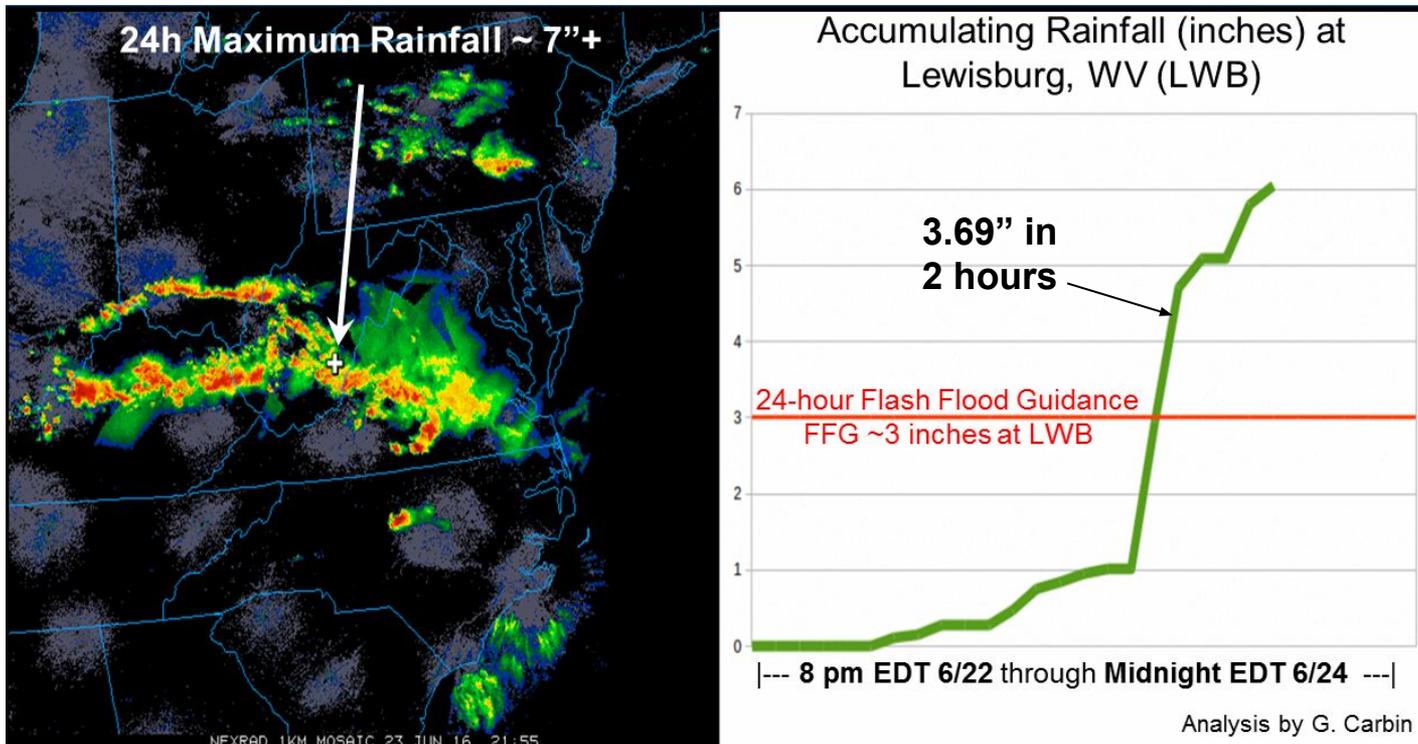
Election Day Floods of November 1985



- 3,500 homes/180 businesses destroyed
- 123 bridges damaged or destroyed
- \$570 million in damages
- 47 people killed

Floods & Flash Floods

Floods of June 2016



Floods & Flash Floods



White Sulphur Springs area



The EF Scale of Tornado Intensity

EF0 - EF1

- 65-110 mph
- Short-lived, track < 3 miles
- Develop quickly, occasionally without warning



EF2 - EF3

- 111-165 mph
- Track 10-15 miles
- Better detection

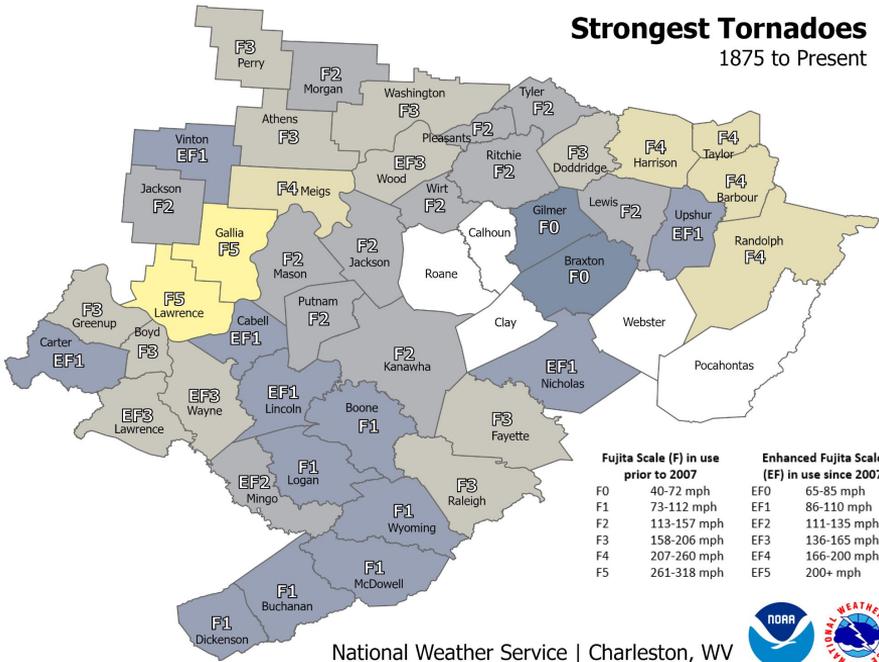


EF4 - EF5

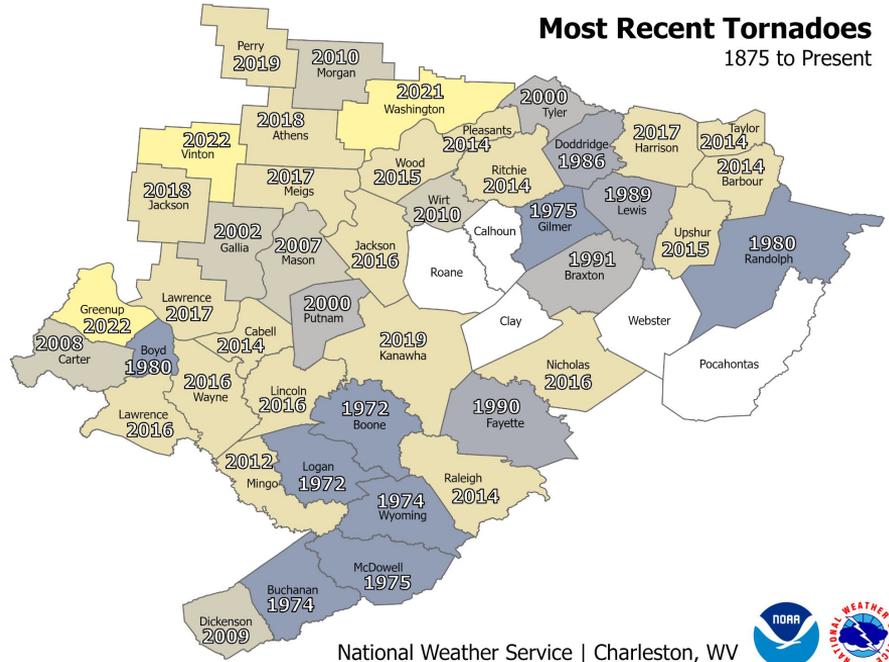
- 166-200+ mph
- Track 20-50 miles, can last up to an hour
- Develop from well organized supercell storms



Tornado History



National Weather Service | Charleston, WV

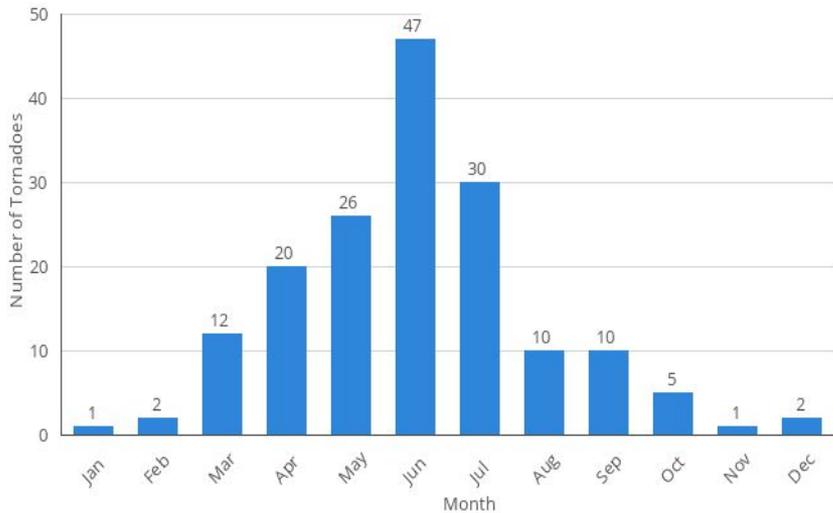


National Weather Service | Charleston, WV



Tornado History

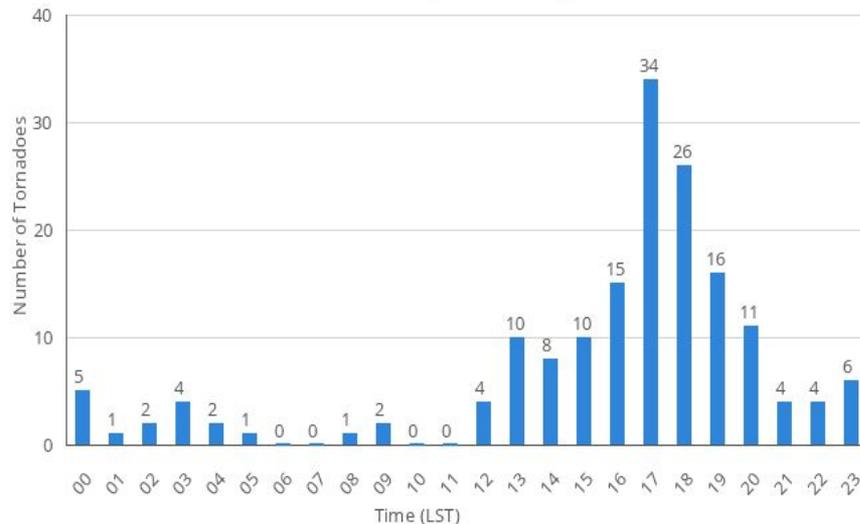
Total number of tornadoes by MONTH from 1875 to 2022



➔ Majority of tornadoes occur from April through July

➔ Majority of tornadoes occur from 2 pm through 9 pm

Total number of tornadoes by time of day from 1875 to 2022



Tornado History

Wheelersburg, OH Tornado

Portsmouth, OH – Photo Courtesy of
Portsmouth Public Library



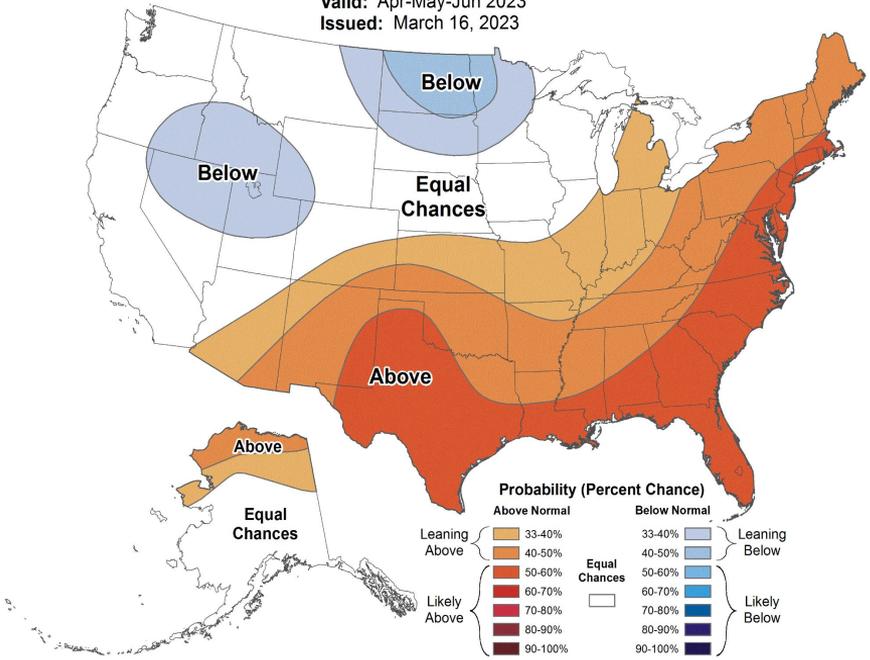
- F5 Tornado tracked 45 miles from Greenup, KY through Scioto, Lawrence and Gallia Counties, lifting in Gallipolis, just before crossing the Ohio River.
- Tornado was nearly a half mile wide at one point
- 7 people died in Scioto County, 108 total injuries.



Seasonal Temperature Outlook



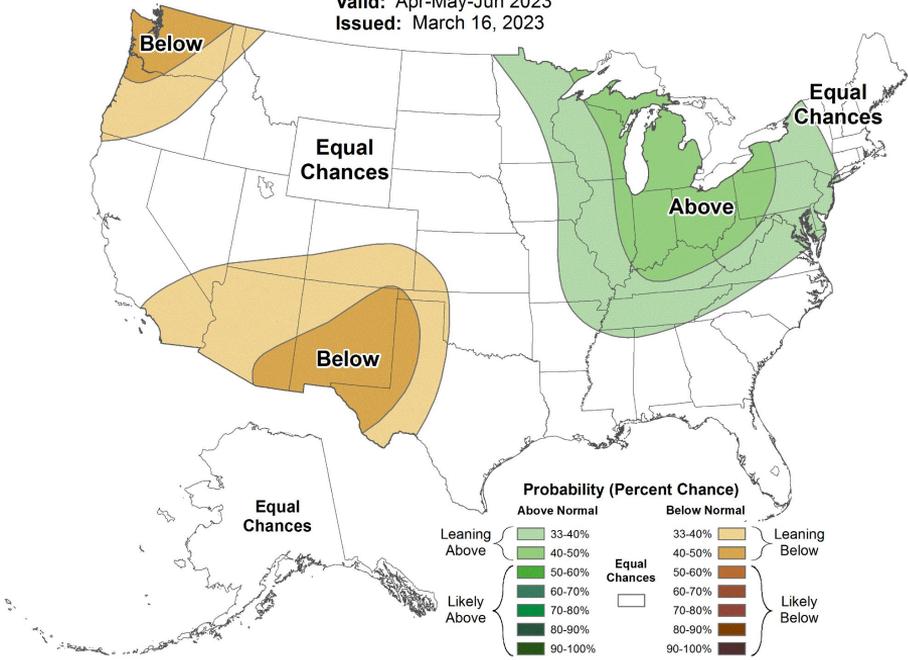
Valid: Apr-May-Jun 2023
 Issued: March 16, 2023




Seasonal Precipitation Outlook



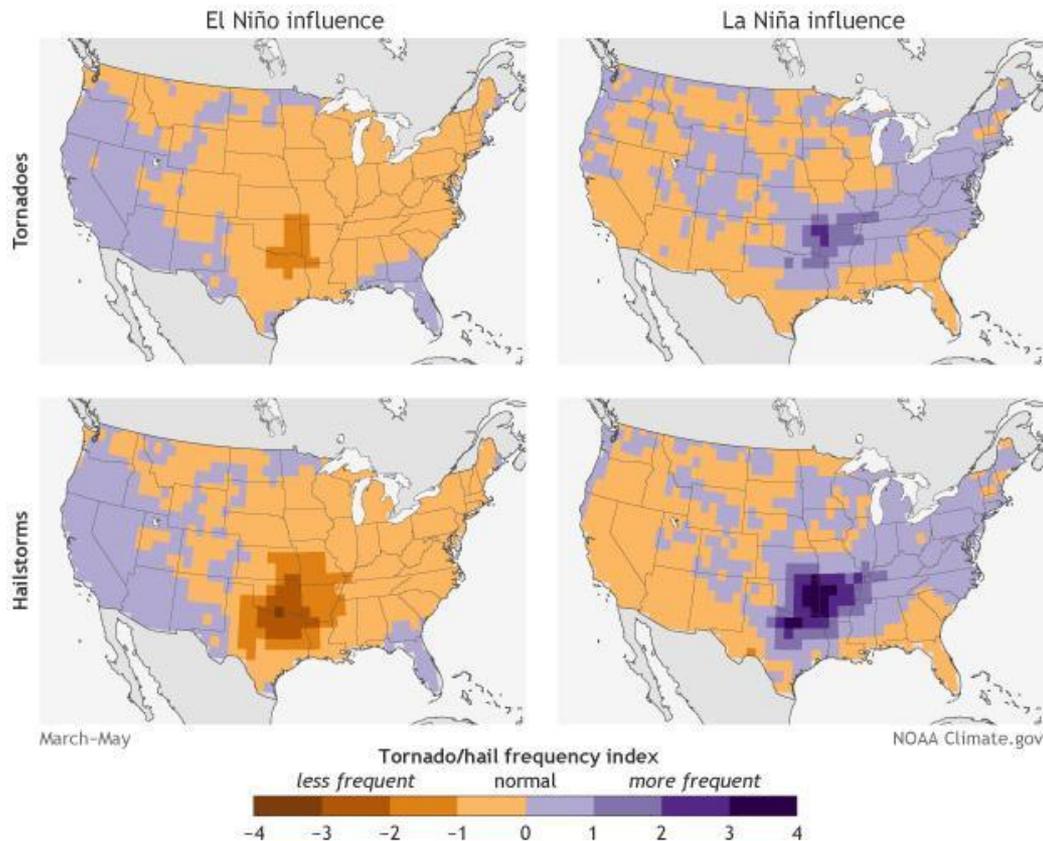
Valid: Apr-May-Jun 2023
 Issued: March 16, 2023



→ The seasonal outlook for April-May-June 2022 continues to favor **Above Normal** temperatures and **Above Normal** precipitation.

Increased Severe Thunderstorm Potential?

- There can be an increased probability of severe weather (hail and tornadoes) during the spring months following a La Nina winter.
- While increased probabilities are greatest in the southern Plains and lower Mississippi Valley, in general, springtime hail storms and tornadoes are more frequent across the Ohio Valley and central Appalachians.



Let's Try a Quiz Question



Quiz Time...
Dohhhh!!!

Safety is #1 Priority

Important: We Train Spotters, Not Chasers!



Terrain and Vegetation Seriously Limit Visibility in our Region Making Storm Chasing Very Dangerous Here.

Spotting = Telling Us What is Happening Where You Are

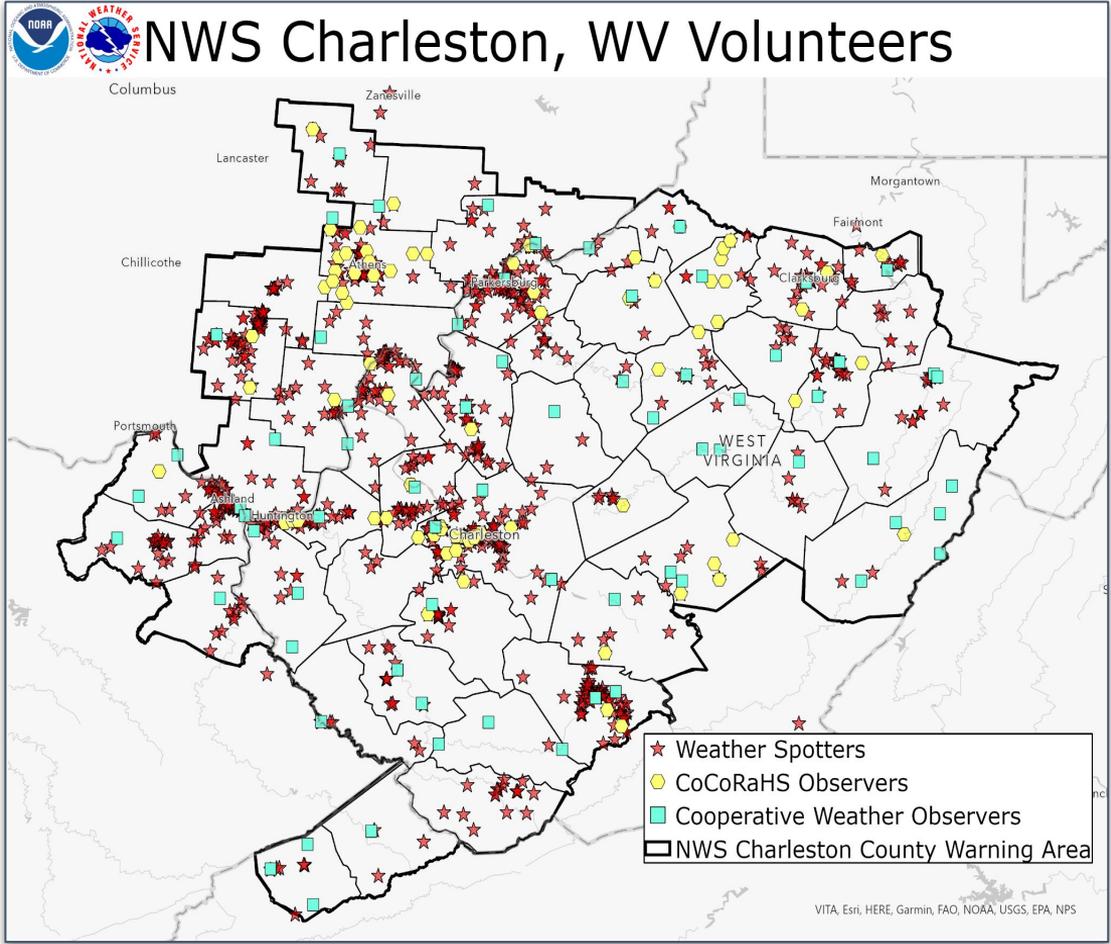


The National Weather Service



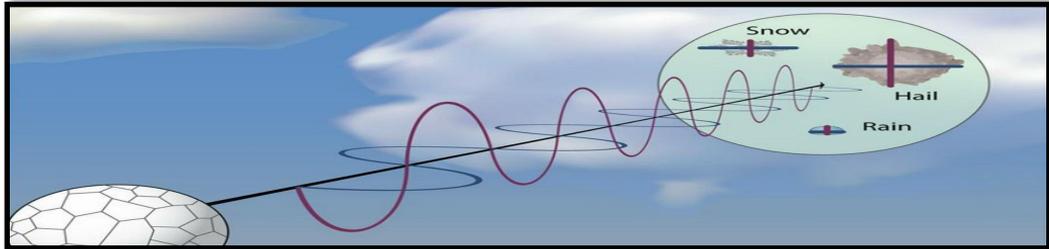
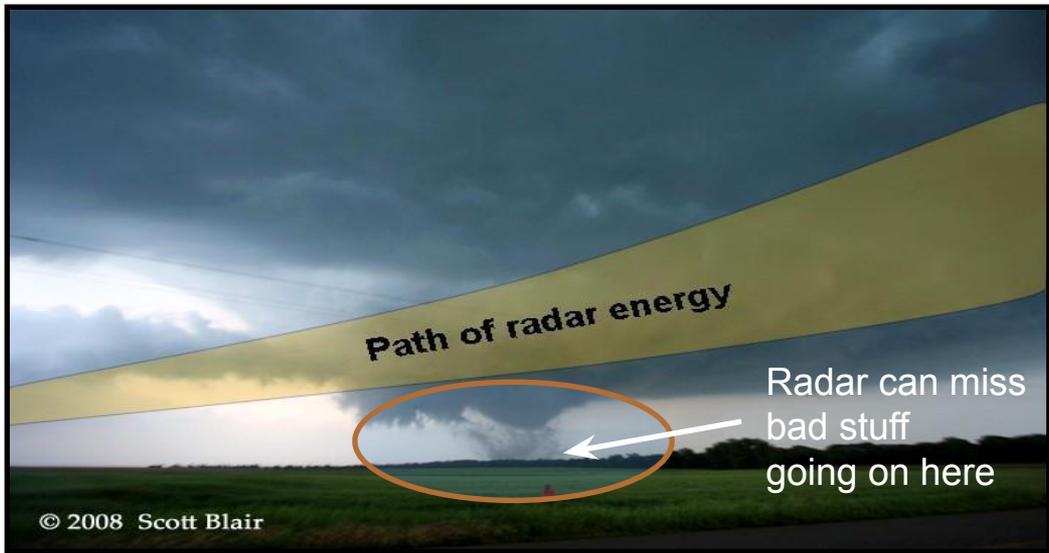
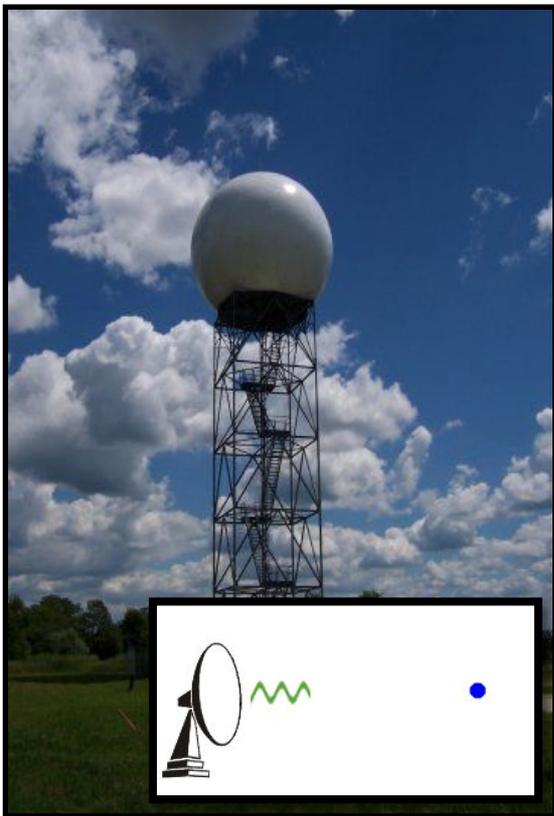
Our Mission

Provide weather, water and climate data, forecasts, warnings, and impact-based decision support services (IDSS) for the **protection of life and property** and the enhancement of the national economy.



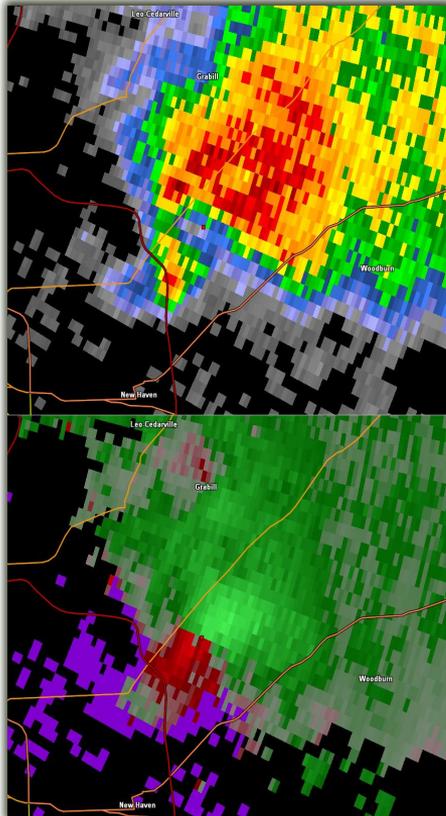
Why Do We Need Spotters?

Radar Beams Travel Up and Away



Why Do We Need Spotters?

What the Radar Gives Us Back



Reflectivity (dBZ)



Small Particles
Light Rain, Dust, Bugs

Big Particles
Hail, Big Rain Drops

Velocity (kts)



Speed Moving Away from Radar

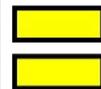
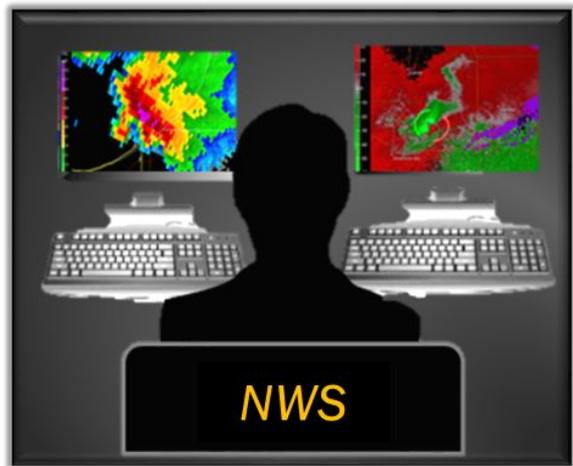


Speed Moving Toward Radar

Section 2: The Role of the Weather Spotter

**Your
Accurate
Reports**

- Verify What NWS Sees on Radar
- Add Credibility to NWS Warnings





How to Report



How To Report Severe Weather

Charleston, WV

Weather Forecast Office

[Weather.gov](#) > [Charleston, WV](#) > How To Report Severe Weather

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

How to Report

There are a variety of ways to report weather to the NWS office in Charleston, WV. By using the methods below, your severe weather reports will reach forecasters in real time. Please be sure to include the location of the weather event, e.g. 5 miles northwest of Charleston. You may also indicate if you are a trained spotter, a ham radio operator, a member of law enforcement, or other affiliation if applicable.



Submit Report

Use this Web Based Form: [Submit Report](#)



Spotter Hotline

[Trained weather spotters](#) can report significant weather conditions by calling the toll-free spotter hotline given to them as part of their training.



Facebook

Post information on our Facebook page: <https://www.facebook.com/NWSCharlestonWV>



Twitter

Send us a tweet: [@NWSCharlestonWV](#)



Email

Send us an email: rlx.ops@noaa.gov



Mobile App

Send reports from your location via a smartphone app: [MPing](#)

Tornado

Damaging Winds

Hail

Flooding

Heavy Rain

Snow

Freezing Rain/Icing

Strong Winds

Fog

Tornado

Tornado: A violently rotating column of air extending from a thunderstorm cloud to the ground. The Enhanced [Fujita](#) Tornado Intensity Scale is used to categorize tornadoes

Funnel Cloud: A condensation funnel extending from the base of a towering cumulus or cumulonimbus, associated with a rotating column of air that is not in contact with the ground (and hence different from a tornado). A condensation funnel is a tornado, not a funnel cloud, if either a) it is in contact with the ground or b) a debris cloud or dust whirl is visible beneath it.

View Reports

Most reports we receive are transmitted as Local Storm Reports and can be viewed at the following locations. Many reports are also stored in the official [NOAA Storm Events](#) database.



Local Storm Reports



Rainfall Reports (CoCoRaHS)

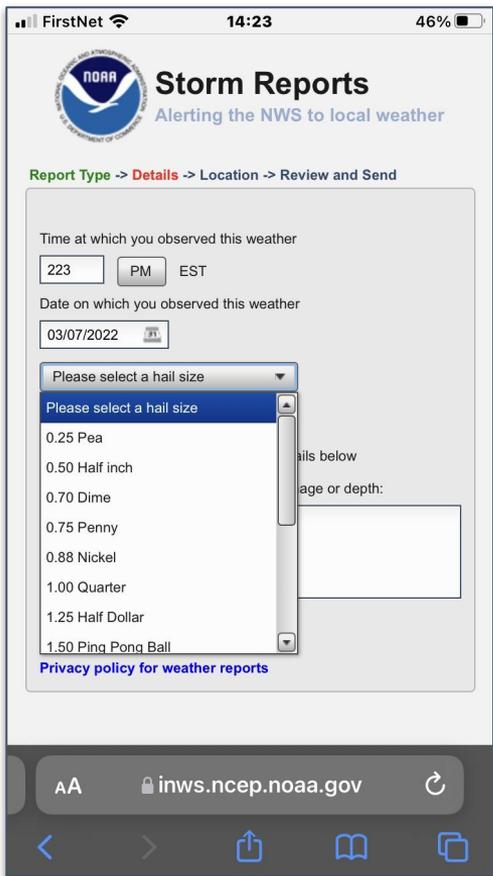


Snowfall Reports

www.weather.gov/rlx/reports

How to Report

Storm Report Form



- Available on PC and Mobile.
- Automatically routes your report to the appropriate NWS office
 - ◆ Great when traveling!
- Select “Trained Spotter” under Custom Groups

Weather Spotter Hotline



- Provided after registering.
- Tell us **Who - What - When - Where**
- Real-time reports are best but delayed reports are also extremely helpful!

How to Report

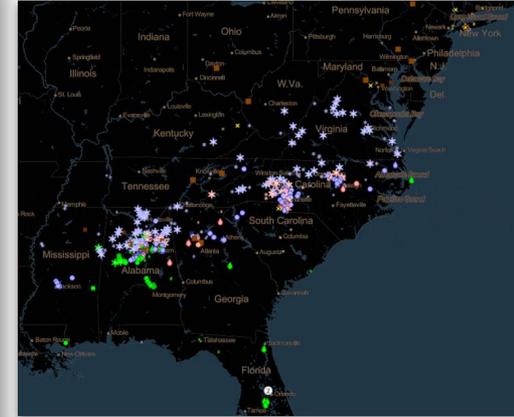
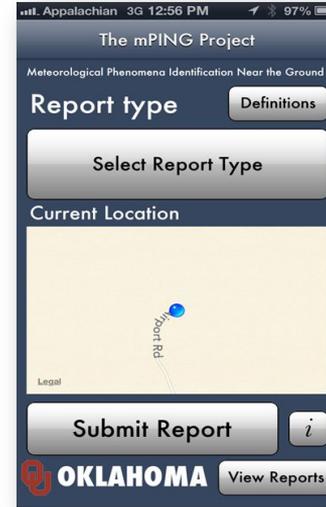
Social Media



- Follow/Like us at **NWSCharlestonWV**
- We monitor Facebook and Twitter for reports
- Pictures of damage/ weather event are great!
- **Be sure to post location of report!**



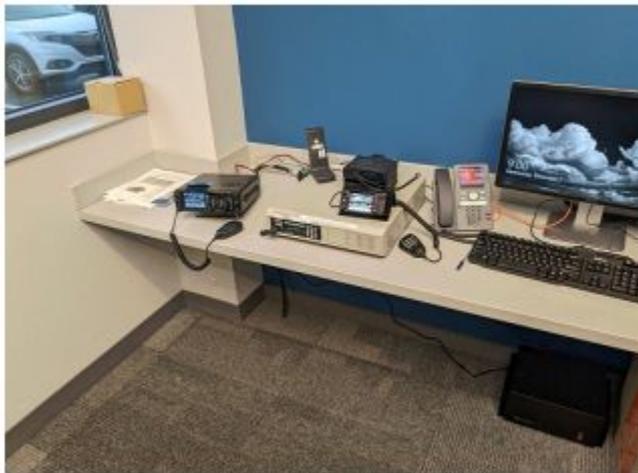
MPing App



- Search “mping” in your phones app store
- Your reports help are sent to us in real-time and help weather research!

How to Report

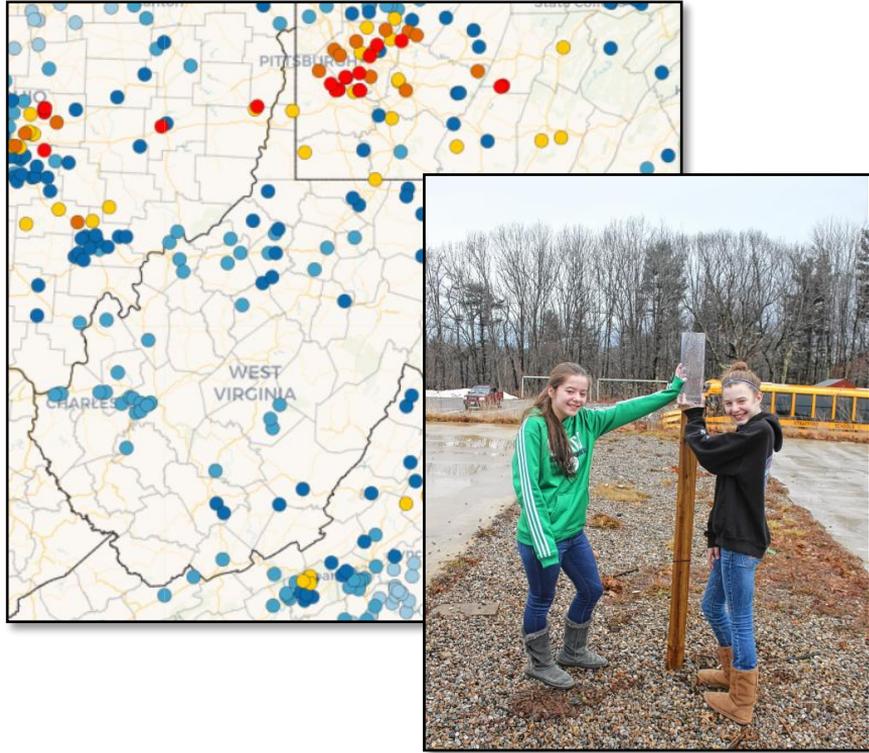
Radio Communications



- New equipment (2m/440 and HF) was installed in 2022 at NWS Charleston!
- We are working on building out relationships with Amateur Radio groups in our service area for relay of reports from SKYWARN Nets.
- NWS Talk Groups on SIRM Radio

How to Report

CoCoRaHS - Community Collaborative Rain, Hail and Snow Network



CoCoRaHS is a volunteer network of observers who measure precipitation from their backyard – or school yard. Any age can volunteer.

It only takes a few minutes a day to take and record the measurements.

Students collect measurements and report the data.

Compare your data with other observers and other schools.

Multi-day reports can be submitted on Monday to cover any weekend precipitation.

Lesson plans and activities for teachers

What to Report



Tornadoes
Funnel Clouds
Wall Clouds

Hail
Storm Damage
Flooding
Heavy Rainfall
Wind Damage
Winter Weather



Let's Try a Quiz Question



Quiz Time...
Dohhhh!!!

Reporting Hail



- Hail size gives indication of the strength of storm updraft
- Report any hail you see
 - ◆ MPing is a quick and easy way to do so!
- Report the largest size that you see

Reporting Wind

- People often overestimate wind speed
- Give an estimate about the time it occurred
- Tell us how thick the trees/ branches are
- Gauge tree health
 - ◆ Could point to sub-severe winds?
- Know your location!
 - ◆ City/State
 - ◆ Road/Intersection

Estimating Wind Speed



30 – 40 mph

Whole trees in motion



40 – 50 mph

Twigs & small branches breaking



50 – 58 mph

Branches and limbs breaking



58 – 75 mph

*Large trees downed or uprooted,
threshold of structural damage*



75+ mph

*Loss of roofing, extensive
structural damage, trees uprooted*

Let's Try a Quiz Question



Quiz Time...
Dohhhh!!!

Thunderstorms

National Weather Service Definition of a Severe Thunderstorm

Hail 1 inch or greater



Tornado



Wind 58 mph or more



Just FYI:

Less than 10% of thunderstorms are severe

Though Lightning is Always Extremely Dangerous...

The Amount of Lightning in a Thunderstorm Does Not Determine if a Thunderstorm is Severe

Lightning Safety

WHEN THUNDER ROARS GO INDOORS



Lightning Fatalities For Outdoor Sports

 40% SOCCER	 27% GOLF
 17% RUNNING	 10% BASEBALL
 3% FOOTBALL	 3% OTHER

weather.gov/lightning

step 1

Leave the field immediately



step 2

Seek shelter in an enclosed building or car

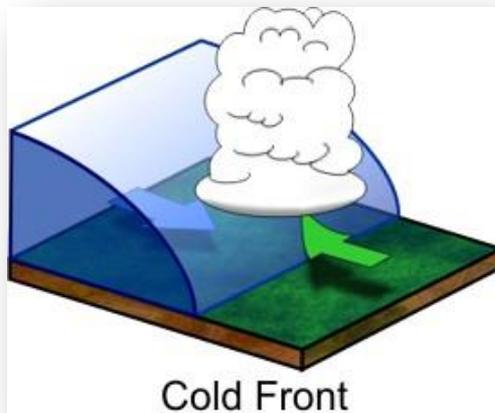


Wait 30 minutes after the last rumble of thunder to return outside

Thunderstorm Ingredients

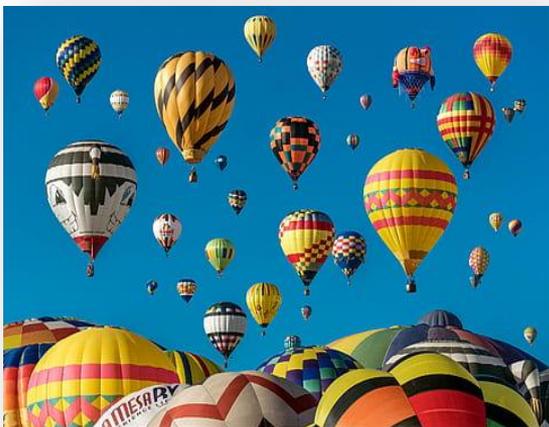


→ **Moisture**



→ **Lift**

- ◆ Cold front
- ◆ Warm front
- ◆ Orographic lift
- ◆ Other storms



→ **Instability**

- ◆ Cold air above layer of warm, moist air



→ **Wind Shear**

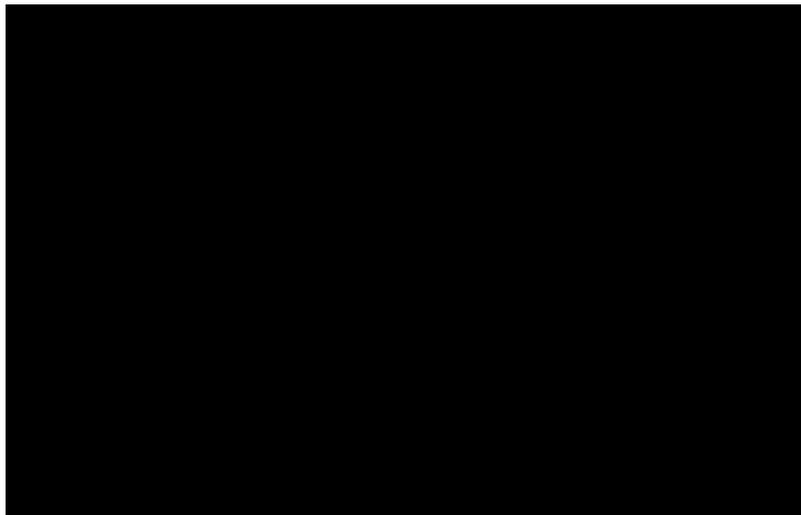
Thunderstorm Types

Single Cell Thunderstorms



- Typically non-severe
- Life cycle of <30 min
- May contain small hail and gusty winds

Multi-Cell Thunderstorms



- Can be severe
 - ◆ Downburst, straight-line winds
 - ◆ Flash flooding due to slow movement
- Small/medium sized hail and lightning

Downburst Winds

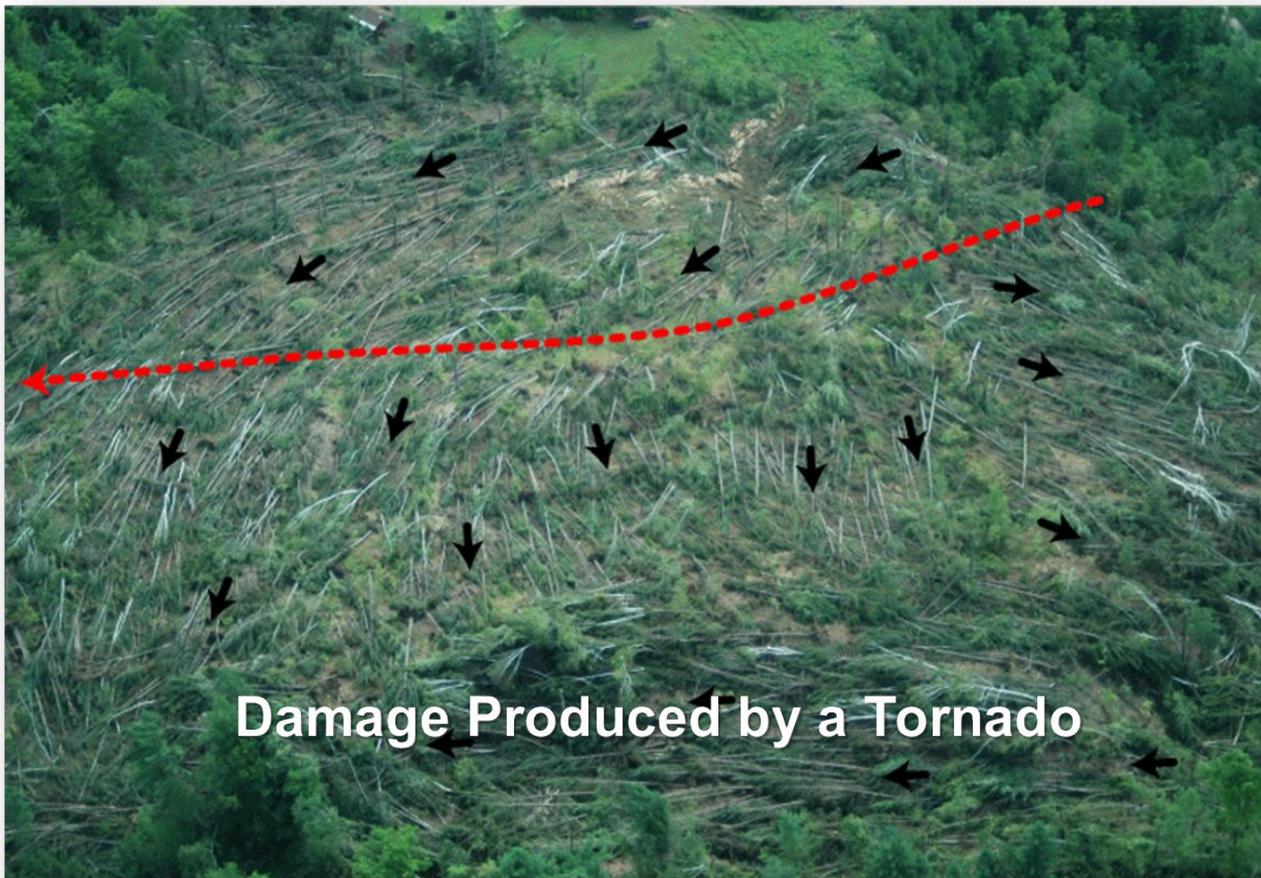


© 1991 William Bunting

- **Microburst:**
affecting an area less than 2.5 miles across.

- **Macroburst:**
affecting an area in excess of 2.5 miles across.

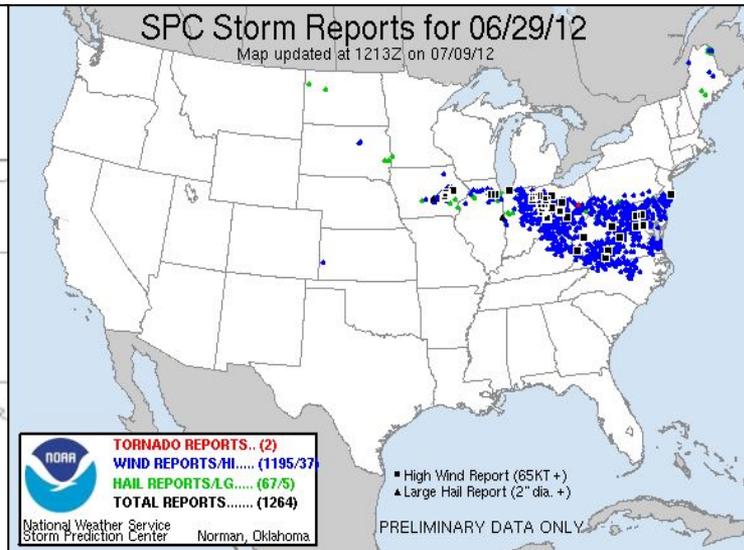
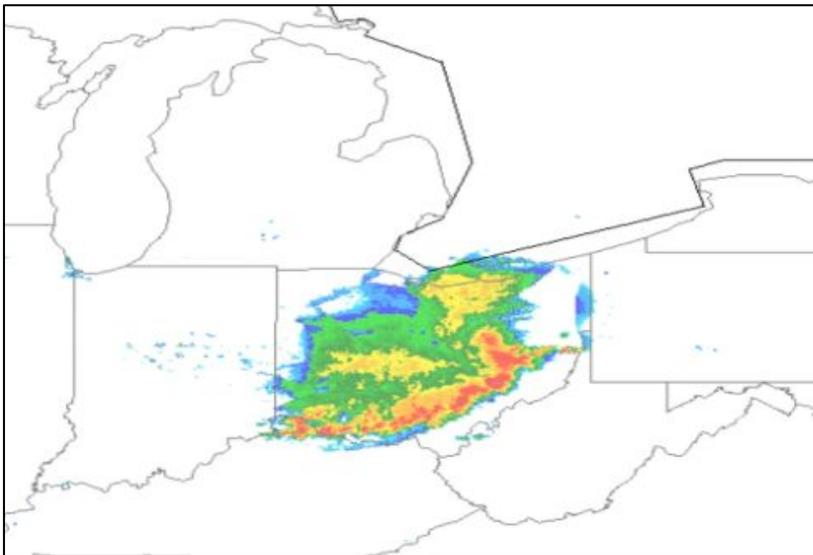
Downburst Winds



Damage Produced by a Tornado

Thunderstorm Types - Multi-Cell Squall Line

Derechos



Overall Severe Weather Threat Level: High

<p>Hail</p>	<p>Wind</p>
<p>Heavy Rain</p>	<p>Tornado</p>

Cloud Identification - Shelf Clouds

Multi-Cell Squall Lines - Shelf Clouds



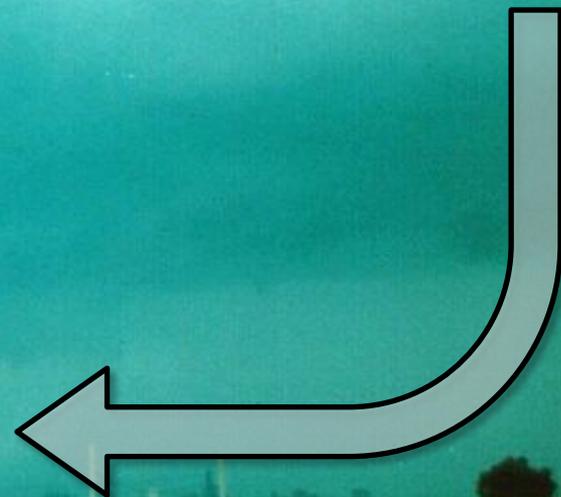
Video
Courtesy
Hunter Riddle

→ Shelf clouds are a warning of strong gusty winds approaching

Cloud Identification - Shelf Clouds

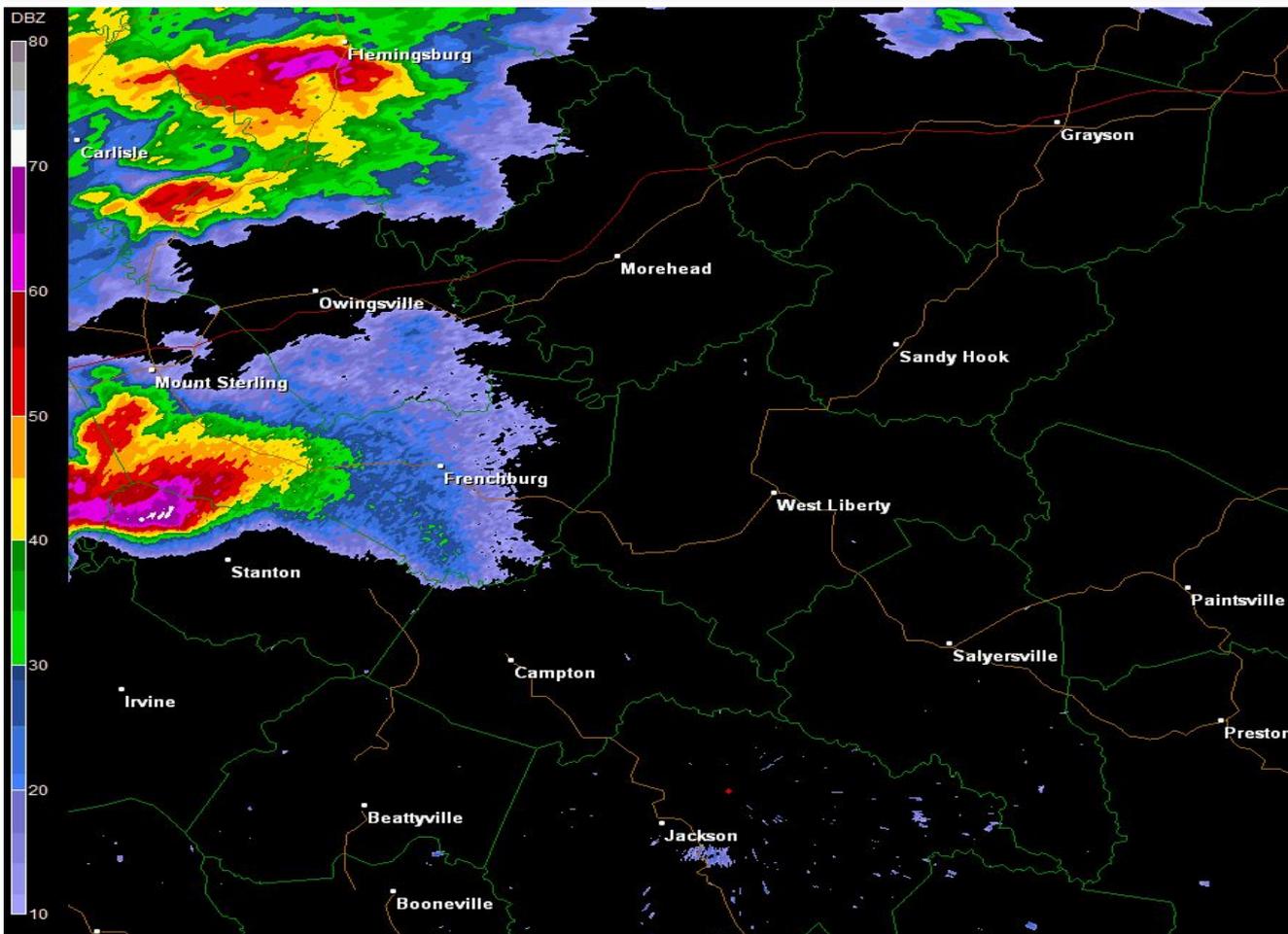
Multi-Cell Squall Lines - Shelf Clouds

Slopes Down and Away from the Rain



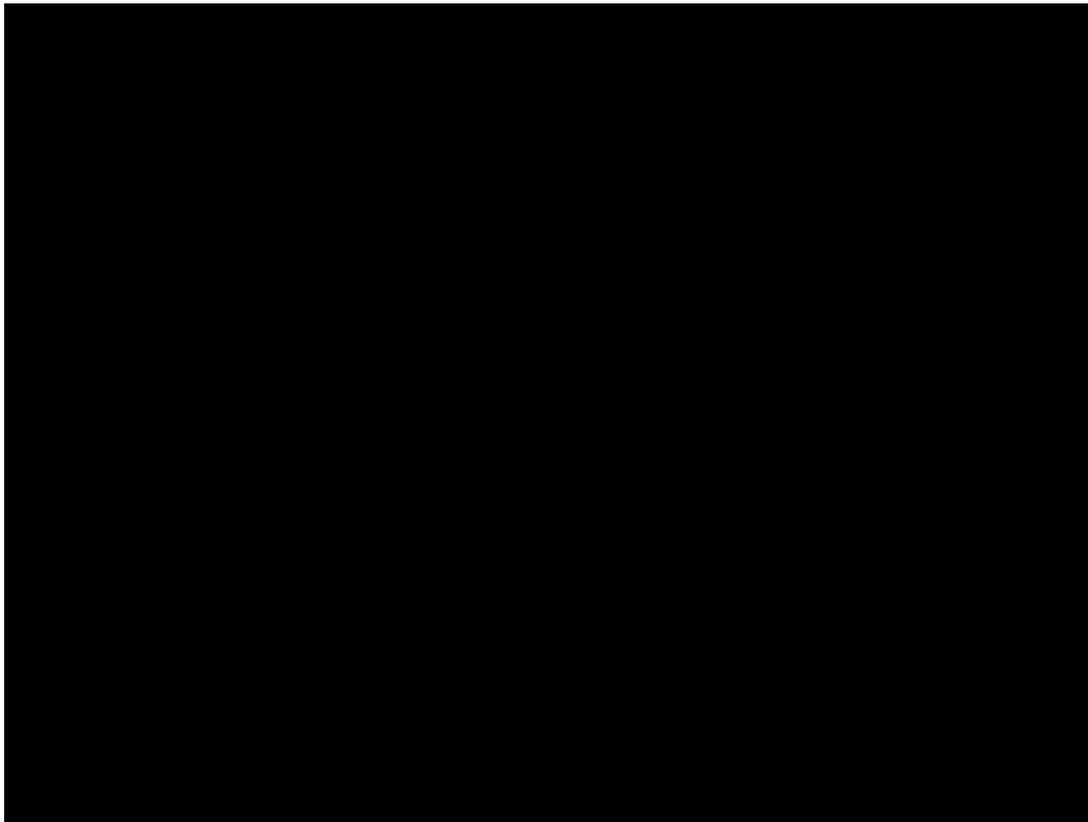
Associated With the Downdraft of a Thunderstorm

Thunderstorm Types - Supercells



Cloud Identification - Wall Cloud

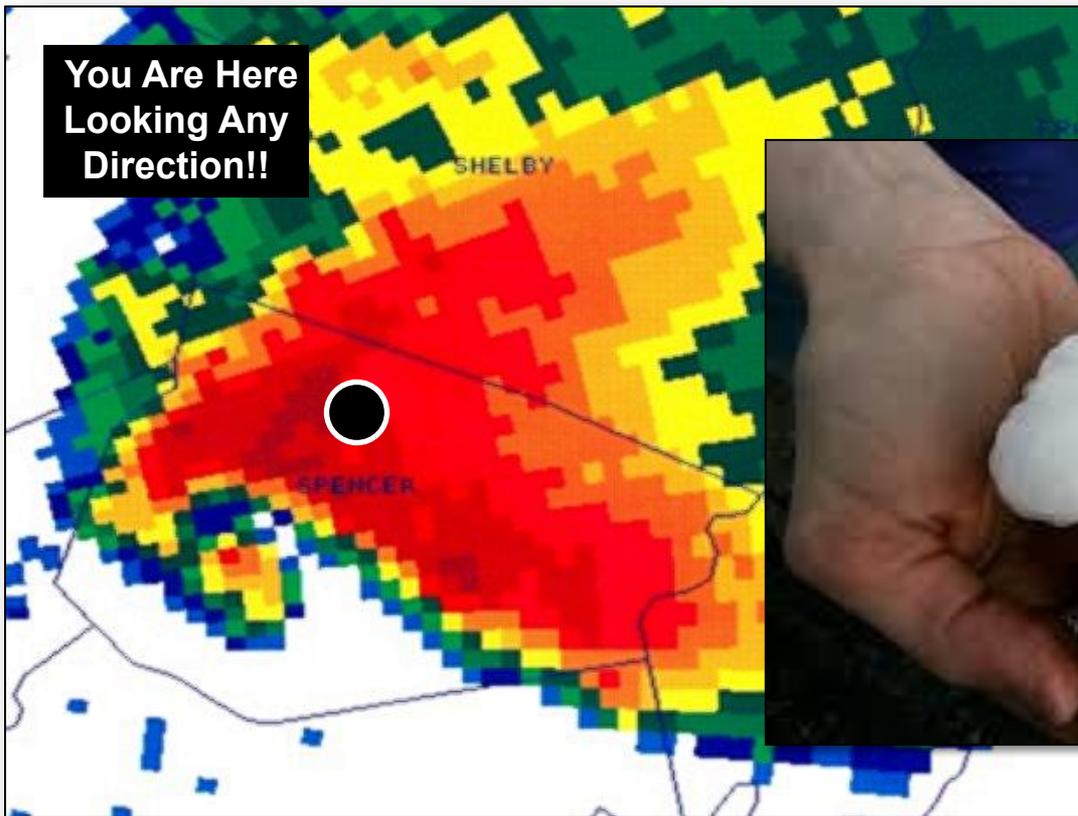
Super Cell Thunderstorms - Wall Clouds



- **Rotating** lowering of the thunderstorm updraft base
- Often precedes a funnel cloud or tornado

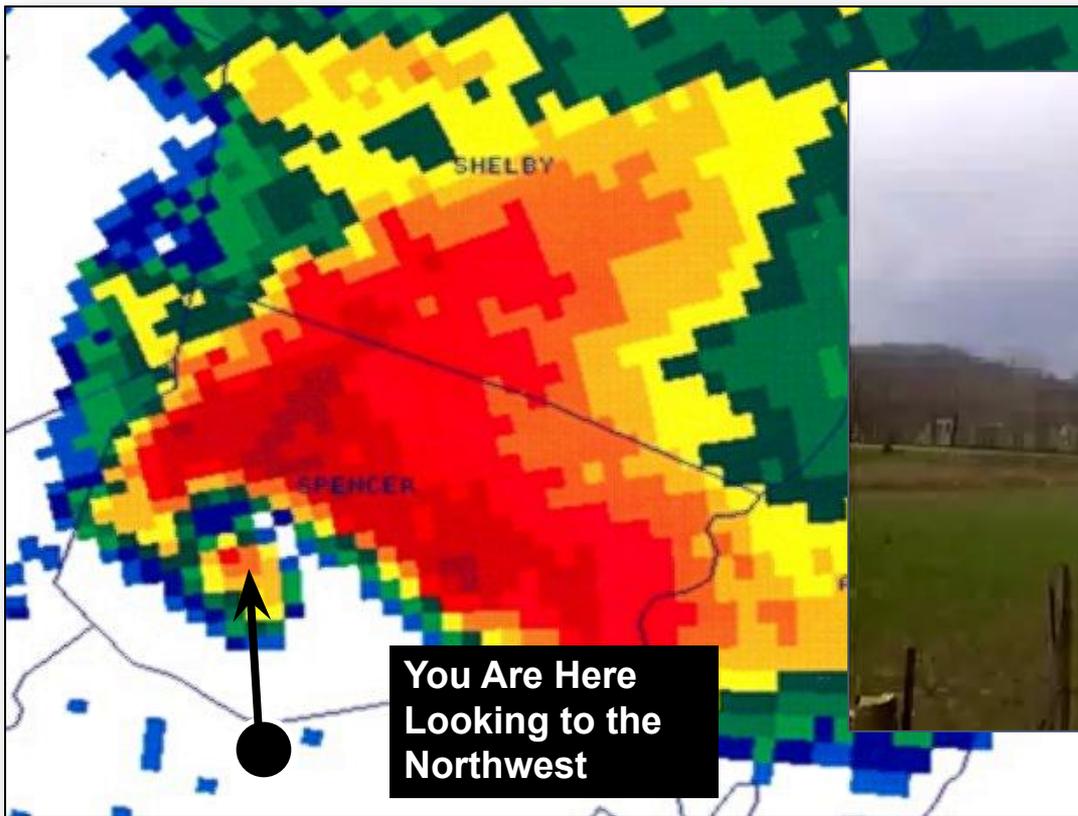
Thunderstorm Types - Supercells

Typical Radar Signature of a Super Cell



Thunderstorm Types - Supercells

Typical Radar Signature of a Super Cell



Cloud Identification - Funnel Cloud

Michael Burton – Nancy, KY



Funnel Clouds

- Funnel shaped cloud attached to the cloud base
- May or may not appear from a Wall Cloud
- **Rotation is visible**
- Has not touched down

Cloud Identification - Funnel Cloud

Think You See a Funnel Cloud?



Ask yourself two questions:

#1 Is it rotating?

If the answer is yes:

#2 Where's it pointing?

Cloud Identification - Scud Clouds / SLCs

Hint!

SCUD clouds look ragged, versus smooth like a rapidly rotating cloud

BEWARE!



- Harmless, ragged looking clouds
- Do NOT rotate
- Can move up and down, may look turbulent

Let's Try a Quiz Question



Quiz Time...
Dohhhh!!!

Section 4: Severe Weather Safety

Your Mobile Device Could Save Your Life

There are multiple ways to receive warnings at your fingertips

- text messaging service
- social media
- weather apps
- wireless emergency alerts - WEA
- mobile.weather.gov
- from your family and friends

mobile.weather.gov

Have multiple ways to get warnings

weather.gov

- INTERNET
- WIRELESS EMERGENCY ALERTS AND WEATHER APPS
- NOAA WEATHER RADIO
- LOCAL TV AND RADIO
- OUTDOOR SIRENS
- FROM YOUR FAMILY, FRIENDS, AND COWORKERS

Identify Shelter Locations Before the Storm!!!

When a Watch is Issued, Plan Your Day Around the Weather

When a Warning is Issued, Take Appropriate Action!!!

Severe Weather Risk Awareness

Outlook

Up to a Week Ahead

Be Aware!

Watch

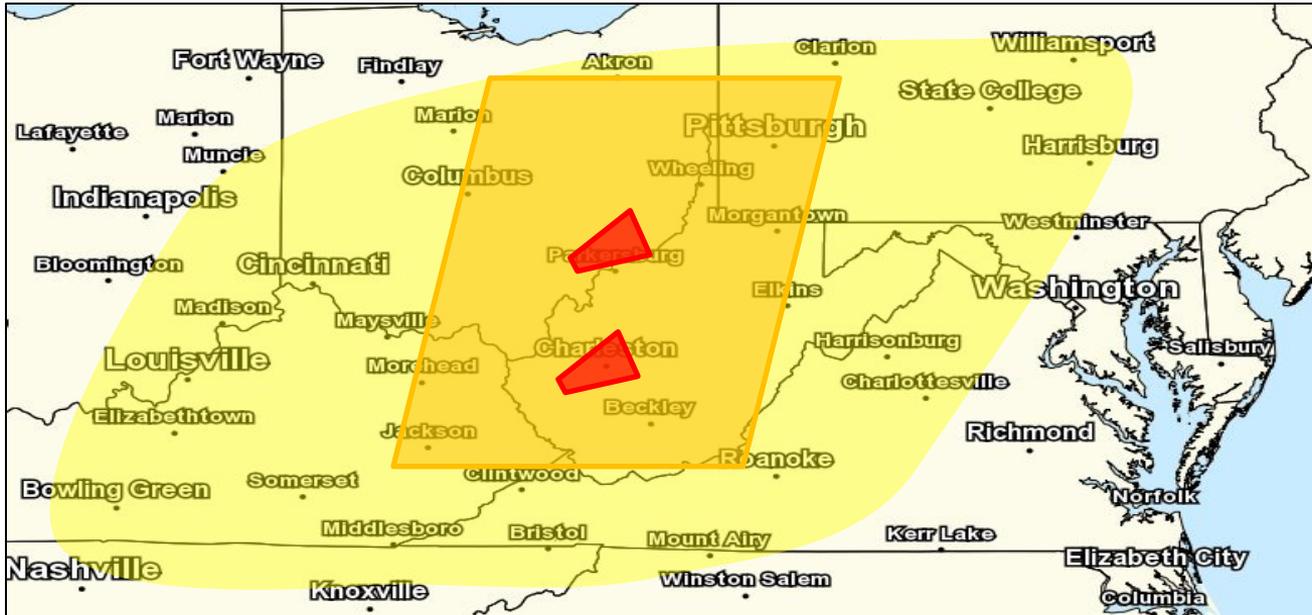
Threat Increased but Still
Several Hours Ahead

Get Prepared!

Warning

Severe Weather Imminent

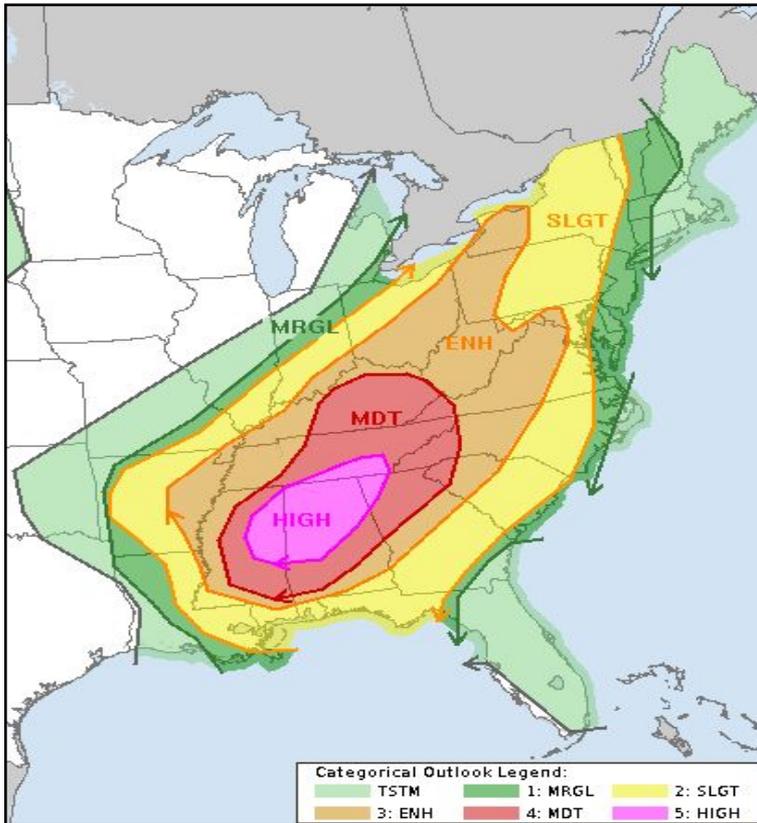
Take Action!



Severe Weather Risk Awareness

Storms Prediction Center (SPC)

www.spc.noaa.gov



Understanding Severe Thunderstorm Risk Categories

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
No severe* thunderstorms expected	Isolated severe thunderstorms possible	Scattered severe storms possible	Numerous severe storms possible	Widespread severe storms likely	Widespread severe storms expected
Lightning/flooding threats exist with <u>all</u> thunderstorms	Limited in duration and/or coverage and/or intensity	Short-lived and/or not widespread, isolated intense storms possible	More persistent and/or widespread, a few intense	Long-lived, widespread and intense	Long-lived, very widespread and particularly intense
<ul style="list-style-type: none"> • Winds to 40 mph • Small hail 	<ul style="list-style-type: none"> • Winds 40-60 mph • Hail up to 1" • Low tornado risk 	<ul style="list-style-type: none"> • One or two tornadoes • Reports of strong winds/wind damage • Hail ~1", isolated 2" 	<ul style="list-style-type: none"> • A few tornadoes • Several reports of wind damage • Damaging hail, 1 - 2" 	<ul style="list-style-type: none"> • Strong tornadoes • Widespread wind damage • Destructive hail, 2" + 	<ul style="list-style-type: none"> • Tornado outbreak • Derecho

* NWS defines a severe thunderstorm as measured wind gusts to at least 58 mph, and/or hail to at least one inch in diameter, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also tied to the probability of a severe weather event within 25 miles of your location.



National Weather Service

www.spc.noaa.gov



Chance of severe weather within 25 miles of a point



Severe Weather Risk Awareness

Getting Day-to-Day Weather Info

- weather.gov/charlestonwv
 - ◆ OR Weather.gov/[zipcode]
 - ◆ Graphics
 - ◆ “Point-and-Click” Forecast
- Mobile.weather.gov
- Facebook.com/NWSCharlestonWV
- Twitter.com/NWSCharlestonWV
- NOAA Weather Radio
- Local TV/Radio
- Reliable Apps and Websites

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

More Rain on the Way with Increased Flood Risk over the Coalfields and Southern Mountains
Periods of moderate to heavy rain are expected Thursday night and Friday. Rainfall amounts of 1 to 1.5 inches are higher amounts possible. This rain may cause a period of gusty winds today and tonight could sub.

NATIONAL WEATHER SERVICE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HOME FORECAST PAST WEATHER SAFETY INFORMATION EDUCATION NEWS SEARCH ABOUT

Go [Location] [Go]

View local forecast office: **Charleston, WV**

Hazardous Weather Conditions

- Hazardous Weather Outlook
- Severe Weather Forecast

Current conditions at **Charleston, Yeager Airport (KCRW)**
Lat: 38.25°N, Lon: 81.57°W, Elev: 56 ft

Light Snow Fog Mist **31°F** -1°C

Humidity 96%
Wind Speed w/ 9 mph
Barometer 30.09 in (1013.3 mb)
Dewpoint 30°F (-1°C)
Visibility 2.00 mi
Wind Chill 29°F (-1°C)
Last update 24 Jan 12:54 pm EST

Extended Forecast for Hurricane WV

This Afternoon	Tonight	Friday	Friday Night	Saturday	Saturday Night	Sunday
Partly Sunny kts	Mostly Cloudy then isolated Snow Showers	30% Light Chance Snow Showers then Sunny	Increasing Clouds	Mostly Cloudy	Mostly Cloudy then Slight Chance Snow Showers	30% 40% Rain/Snow then Chance Showers
High: 35°F	Low: 27°F	High: 25°F	Low: 18°F	High: 35°F	Low: 26°F	High: 35°F

Detailed Forecast

This Afternoon Partly sunny and freezing drizzle before 4pm. Cloudy with a high near 35. West wind around 9 mph.

Tonight Scattered furies between 5pm and midnight, then isolated snow showers after midnight. Mostly cloudy with a low around 22. West wind around 7 mph. Chance of precipitation is 20%.

Friday A slight chance of snow showers before 5am. Cloudy through mid morning, then gradual clearing, with a high near 25. West wind 15 to 15 mph. Chance of precipitation is 20%.

Friday Night Increasing clouds, with a low around 16. West wind around 5 mph becoming calm in the evening.

Saturday Mostly cloudy with a high near 35. Southeast wind 5 to 8 mph.

Saturday Night A slight chance of snow showers after 1am. Mostly cloudy with a low around 26. Chance of precipitation is 20%.

Sunday A chance of rain and snow showers between 11am and noon, then a chance of rain showers after noon. Mostly cloudy with a high near 38. Chance of precipitation is 40%.

Sunday Night A chance of rain showers, mixing with snow after 8pm, then gradually ending. Mostly cloudy with a low around 28. Chance of precipitation is 30%.

Monday Mostly cloudy with a high near 45.

Monday Night A chance of showers after 1am. Mostly cloudy with a low around 35. Chance of precipitation is 40%.

Tuesday Rain and snow showers likely. Cloudy with a high near 42. Chance of precipitation is 60%.

Tuesday Night A chance of snow showers. Mostly cloudy with a low around 15. Chance of precipitation is 30%.

Wednesday Partly sunny, with a high near 26.

Additional Forecasts and Information

Mobile App Interface:

FirstNet 12:44 43%

Hurricane WV

Current Conditions

Charleston, Yeager Airport
Updated: 8 Mar 11:54 am EST

39°F
Wind Vrbt 3 MPH
Dew Point 28°F
(65% RH)

Overcast

Forecast
8 Mar 11:54 am EST

This Afternoon Mostly Cloudy
Hi 49°F

Tonight 30% → 80%
Chance Rain then Rain
Lo 37°F

Wednesday 80%
Rain
Hi 49°F

Detailed Forecast

weather.gov

Severe Weather Risk Awareness

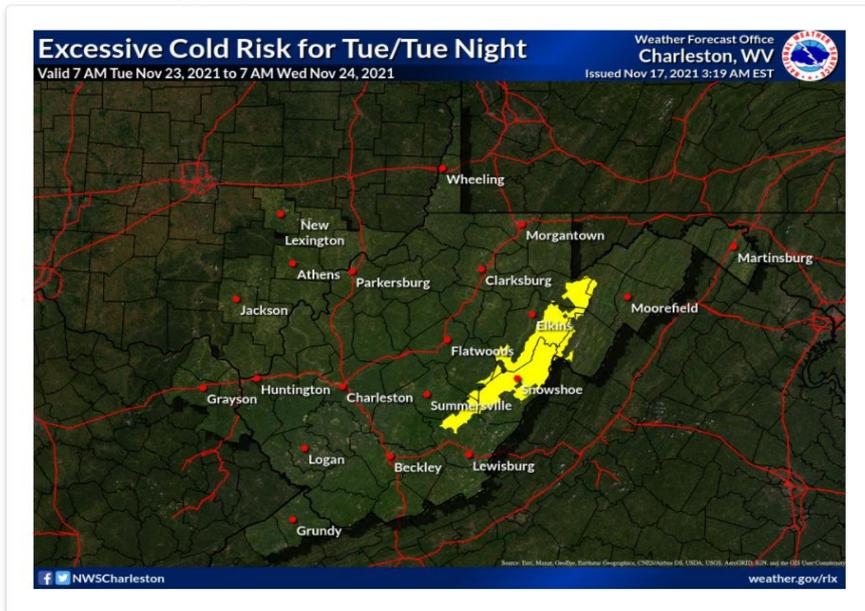
Graphical Hazardous Weather Outlook

www.weather.gov/erh/ghwo?wfo=rlx

Experimental Graphical Hazardous Weather Outlook

Weather Forecast Office Charleston, WV
Updated: November 17th 2021, 11:48:08 am

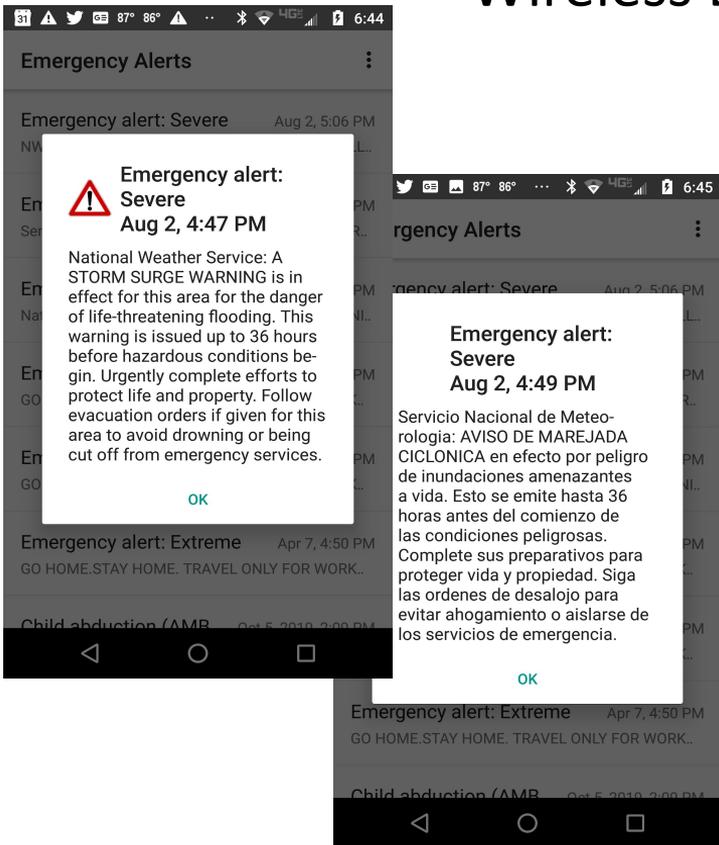
Select Zoom Area:



24 Hr Hazard Risks	Today	Thu	Fri	Sat	Sun	Mon	Tue
Severe Thunderstorm	■	■	■	■	■	■	■
Tornado	■	■					
Thunderstorm Wind	■	■					
Hail	■	■					
Lightning	■	■	■	■	■	■	■
Excessive Rainfall	■	■	■				
Wind	■	■	■	■	■	■	■
Fog	■	■	■	■			
Fire Weather	■	■	■	■	■	■	■
Excessive Cold	■	■	■	■	■	■	■
Ice Accumulation	■	■	■	■	■	■	■
Snow/Sleet	■	■	■	■	■	■	■

Severe Weather Alerts

Wireless Emergency Alerts (WEA)

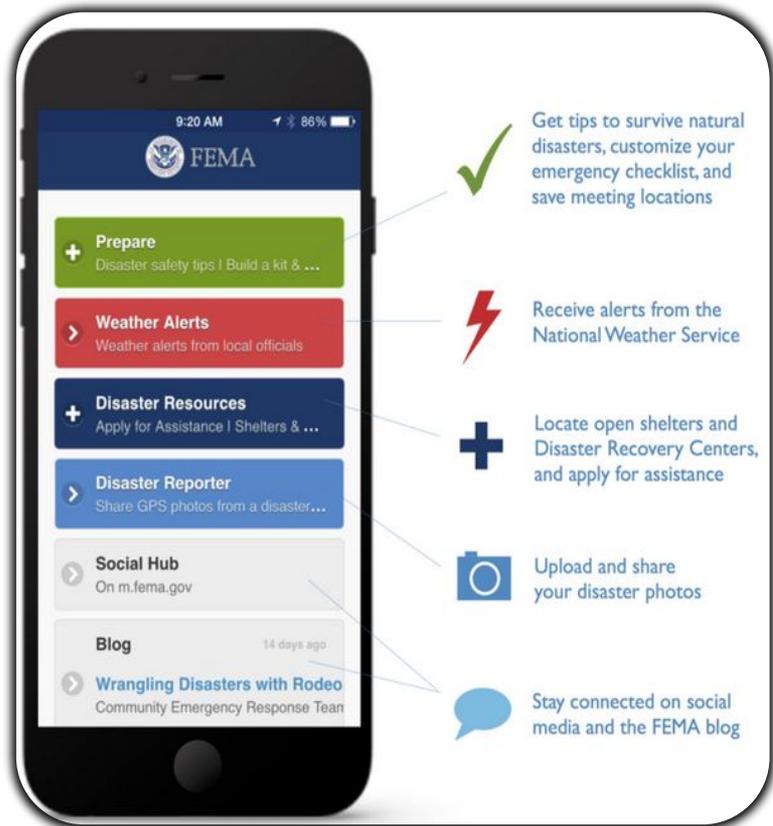


NWS WEA Activation Schedule	
Tornado Warning	<ul style="list-style-type: none"> - New warning - Threat is upgraded to catastrophic - Any additional updates with catastrophic
Flash Flood Warning	<ul style="list-style-type: none"> - New warning if threat tag is considerable or catastrophic - Threat is upgraded to considerable - Threat is upgraded to catastrophic
Severe Thunderstorm Warning	Activate for first occurrence (i.e. new or updated warning) of a <u>destructive threat</u>
Hurricane/Typhoon Warning	Activate for new warning
Storm Surge Warning	Activate for new warning
Extreme Wind Warning	Activate for new warning
Tsunami Warning	Activate for new warning
Dust Storm Warning	Activate for new warning.
Snow Squall Warning	Activate for new warning

- Provides basic alerting to most cell phones
- No app download needed
- “Bell ringer”



Smartphone Apps



→ FEMA

- ◆ ALL NWS alerts for up to 5 locations
- ◆ Android, Apple, and BlackBerry

→ Red Cross Apps

- ◆ Two apps with alerts and safety information (Android and Apple)
- ◆ Emergency App: 35 different severe weather and emergency alerts
- ◆ Tornado App: Tornado Watch and Warning Alerts
 - Audible siren for Tornado Warnings

Severe Weather Alerts

NOAA Weather Radio



- Programmable
- Battery backup during power outages
- Tone alerts for warnings when not in use



Emergency Kits

Do you have a **KIT?**



Preparedness means being equipped with the supplies you may need during an emergency or disaster.

Keep them in an emergency kit you can use at home or take with you in case of an evacuation.



Disaster Supply Kit

- ✓ Food and Water
- ✓ Battery Powered Weather Radio
- ✓ Flashlights and Batteries
- ✓ Cell Phone (With Charger or Spare Battery Pack)
- ✓ First Aid Kit
- ✓ Pair of Shoes
- ✓ List of Emergency Contacts
- ✓ Whistle to Signal for Help

ready.gov/kit

Tornado Safety



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

What If You Live in a Mobile Home?

- Don't wait for the warning...get out and go to a neighbor/relative's house with a basement as early as possible, or get into a storm shelter.
- Lie down in a ditch or culvert as a **last resort** but do not ride out a tornado in a mobile home.



Mobile Homes are Not Safe in a Tornado!!

Thunderstorm Safety



- Treat Severe Thunderstorm Warnings Seriously!
- Straight Line Winds Can Be As Destructive as a Tornado

Flood Safety

Don't underestimate the power of water!



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

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

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



Turn Around, Don't Drown!



- Water may be over a road you know very well...
- ...but under that water the road may have been washed away.

Reporting Flooding



→ Call 911 if lives are threatened!

→ Provide specific location information

- ◆ Roads
- ◆ Intersections
- ◆ Creek names

Let's Try Two Quiz Questions



Quiz Time...
Dohhhh!!!

Section 5: Winter Weather Spotting



What to Report



*** Snow, Sleet and Freezing Rain Amounts ***

✓ Intermediate reports during the storm and one final total at the end

- **Any Occurrence of Freezing Rain**
- **Changing Precipitation Types**
 - Rain – Freezing Rain – Snow – Etc

Report Precip
Type Easily Using
mPing App!



What to Report



Tornadoes



Funnel Clouds
Rotation?



What to Report



Wall Clouds



**Wind or Storm
Damage**

**Even if it
happened in
the recent past.**



What to Report



Hail
Largest Stone



Flooding
or
Heavy Rainfall



Further instructions will be provided in follow-up email in about one hour after this webinar completes.

**Or scan the
QR Code
now**

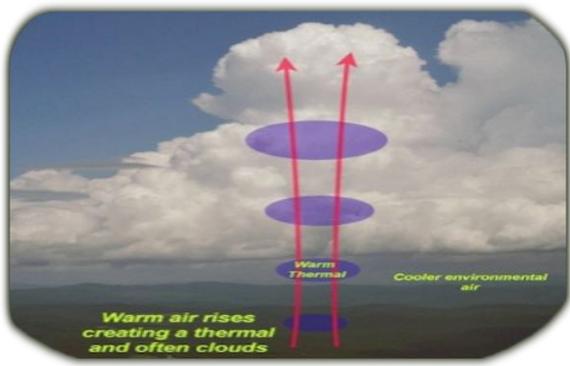


1. Complete online form to become a registered weather spotter for NWS Charleston.
 - Not in the NWS Charleston, WV forecast area? Contact your local NWS office and tell them you took our training - <https://www.weather.gov/stormready/contact>
2. After completing the online form, you will receive an email containing the Weather Spotter Hotline number. (This may take a couple of days, so be patient)
3. Provide feedback on the training by following the link in the email. It's optional and anonymous but your feedback is **very much appreciated!**

Additional Training Resources



[weather.gov/rlx/weather-spotter](https://www.weather.gov/rlx/weather-spotter)



[spotternetwork.org](https://www.spotternetwork.org)

JetStream - An Online School for Weather

JetStream's Topics

- The Atmosphere
- The Ocean
- Global Weather
- Clouds
- The Upper Air
- Upper Air Charts
- Forecasting Meteorology
- Forecasting
- Lightning
- Orientation
- Tropical Weather
- Coastal Weather
- Remote Sensing
- Thunderstorms
- The National Weather Service
- Appendix

About JetStream

The National Weather Service understands the critical value of real, accurate weather information. We know that information is power. It's power to save your life or the lives of your loved ones. Check the list below.

Contact Us

Steven Cooper
Regional Director
NWS Southern Region
Metromedia

Denise Cain
Regional Director
NWS Fort Worth, Texas

[Begin](#)

[weather.gov/jetstream](https://www.weather.gov/jetstream)

BE THE SHELTER AFTER THE STORM



Apply to be a Red Cross volunteer today!

Scan the QR code or visit www.redcross.org/volunteer



Katie.Thompson@redcross.org

(304) 962-7488



American Red Cross
Central Appalachia Region

Questions

Didn't get your question answered?

Ask us on social media!

Message, tweet, DM, etc.



[@NWSCharlestonWV](#)