



Basic SKYWARN Spotter Principles



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NWS Nashville
Lead Meteorologist*



@NWSNashville



US National Weather
Service Nashville



Outline



- About the National Weather Service
- Middle TN Severe Weather Climatology
- NWS Products
- Weather Safety Rules
- Thunderstorm Basics and Storms Features
- Reporting Severe Weather
- Questions and Advertisements



Who Are We?



Department of
Commerce

NOAA

National
Weather
Service

NESDIS

NOAA
Research

Ocean
Service

Fisheries

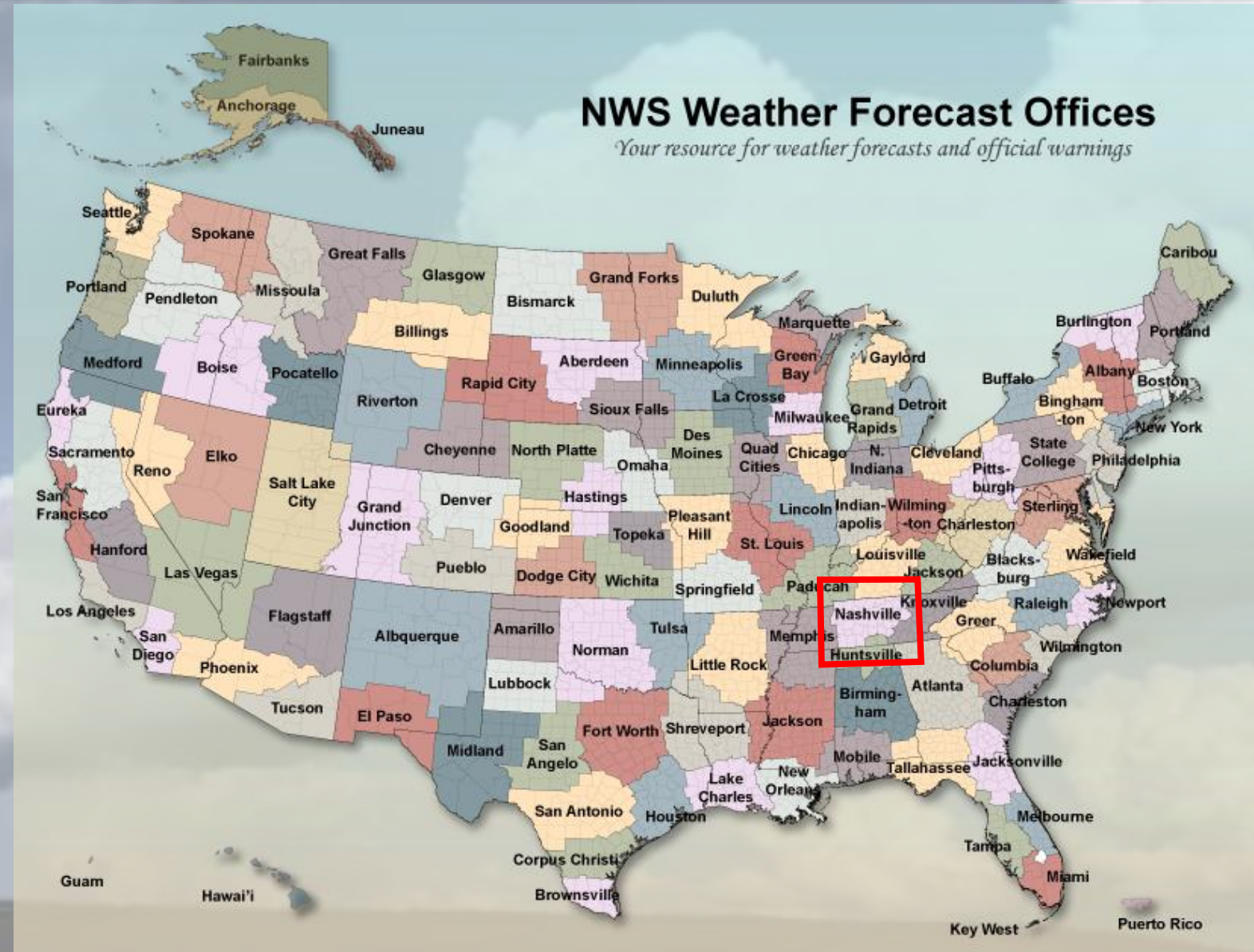
Marine and
Aviation
Operations



The National Weather Service



- 122 Local Weather Forecast Offices
- About 4800 employees
- National and Region Centers:
 - Storm Prediction Center
 - National Hurricane Center
 - Climate Prediction Center
 - National Water Center
 - River Forecast Centers
 - Center Weather Service Units





NWS Nashville County Warning Area





Local NWS Operations



8-12 people on duty Monday – Friday
2-3 meteorologists on the weekend and overnight
OPEN 24 HOURS A DAY, 7 DAYS A WEEK, 365 DAYS A YEAR



Local NWS Operations



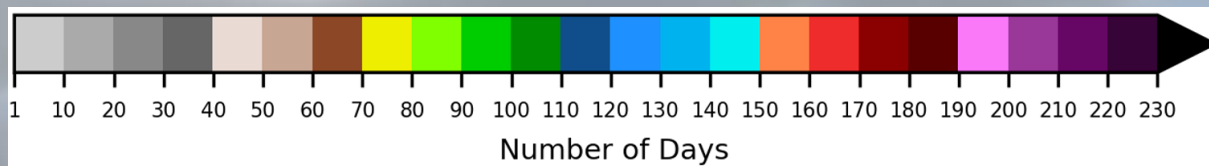
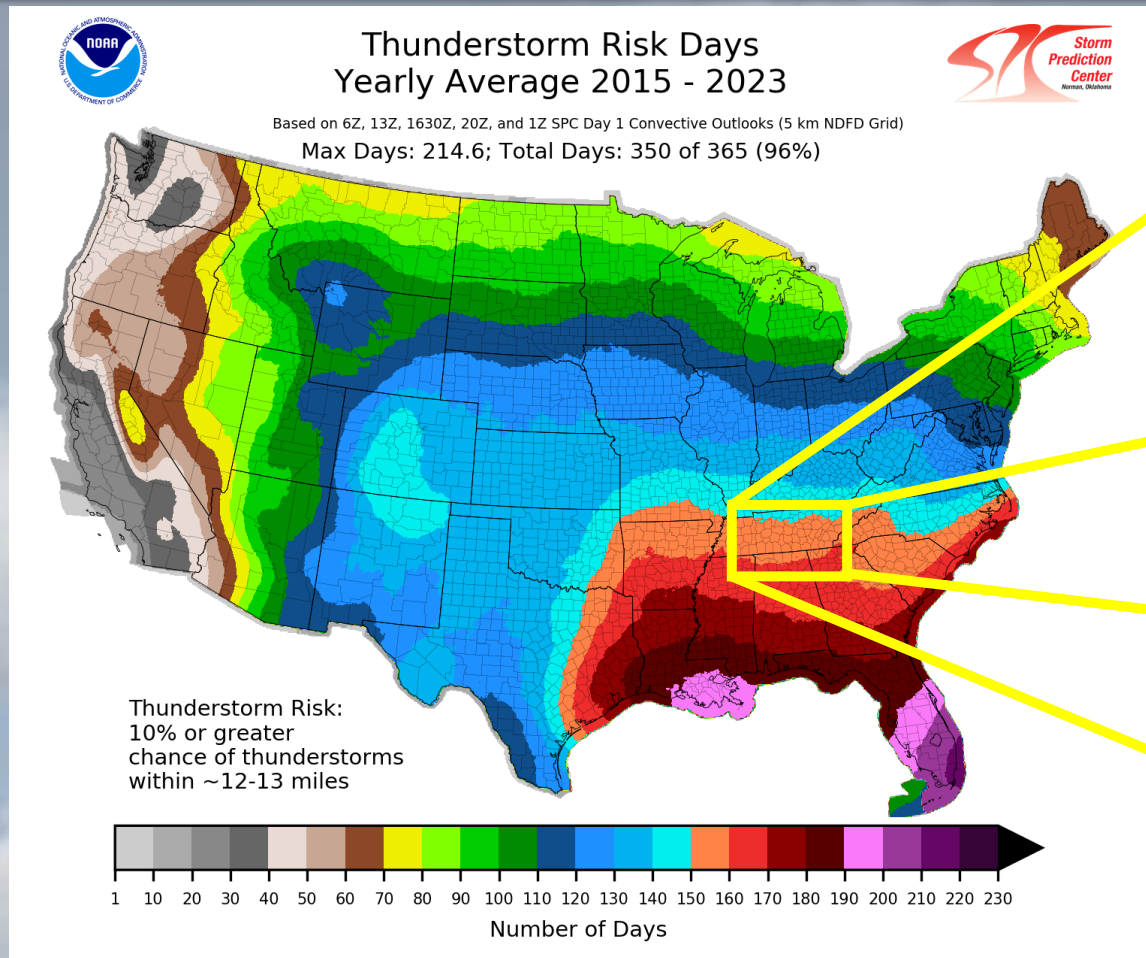
What do we do?

- Issue local forecasts and warnings
- Sole entity responsible for issuing watches, warnings, and advisories
- Create aviation forecasts for FAA, airports, airlines, private pilots, etc.
- Maintain internal and external equipment
- Conduct community outreach
- Provide expert advice to emergency operations centers (DSS)
- Train volunteer observers and public





Climatology

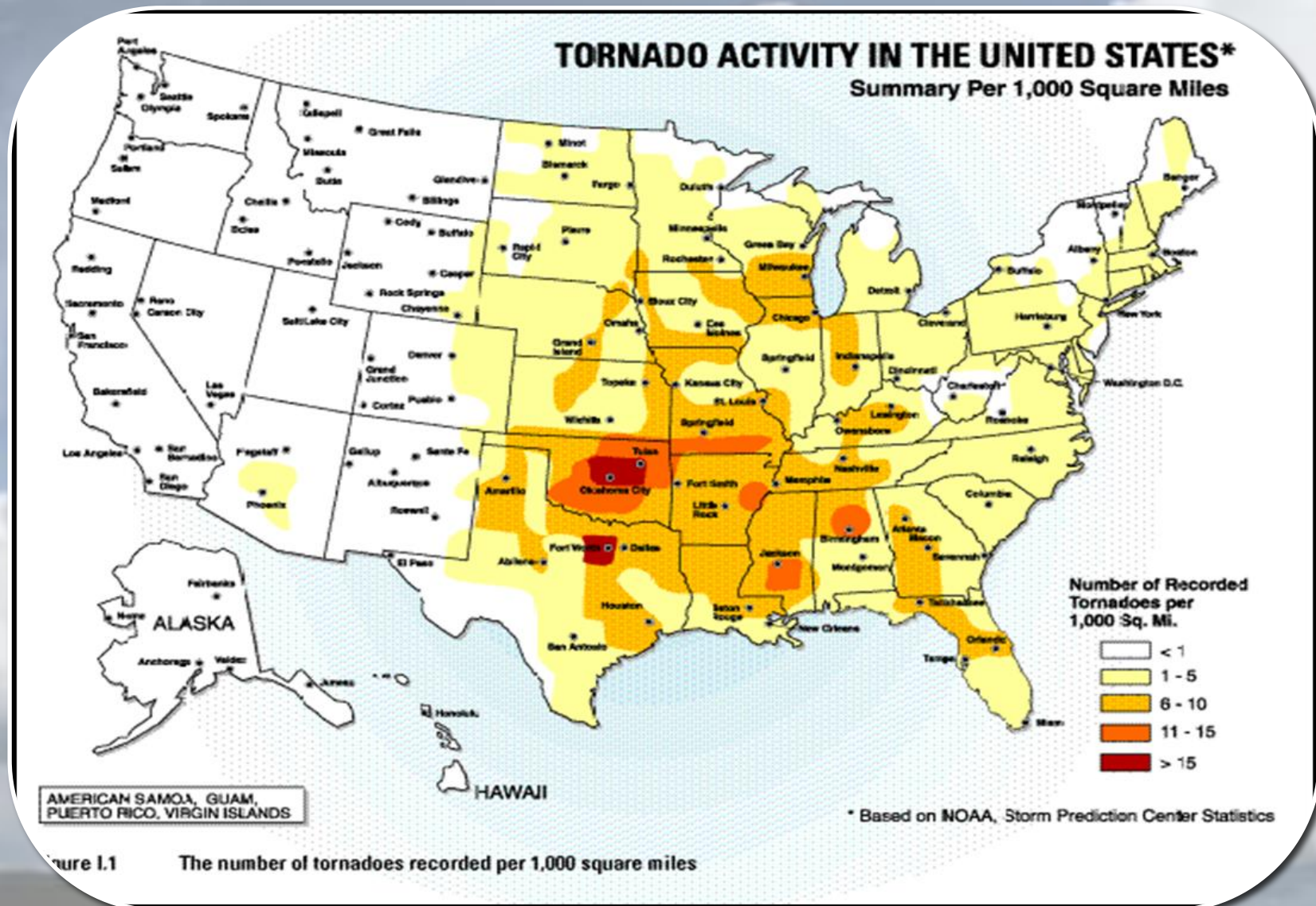


Middle TN has 140-160 days with thunderstorm risks every year!

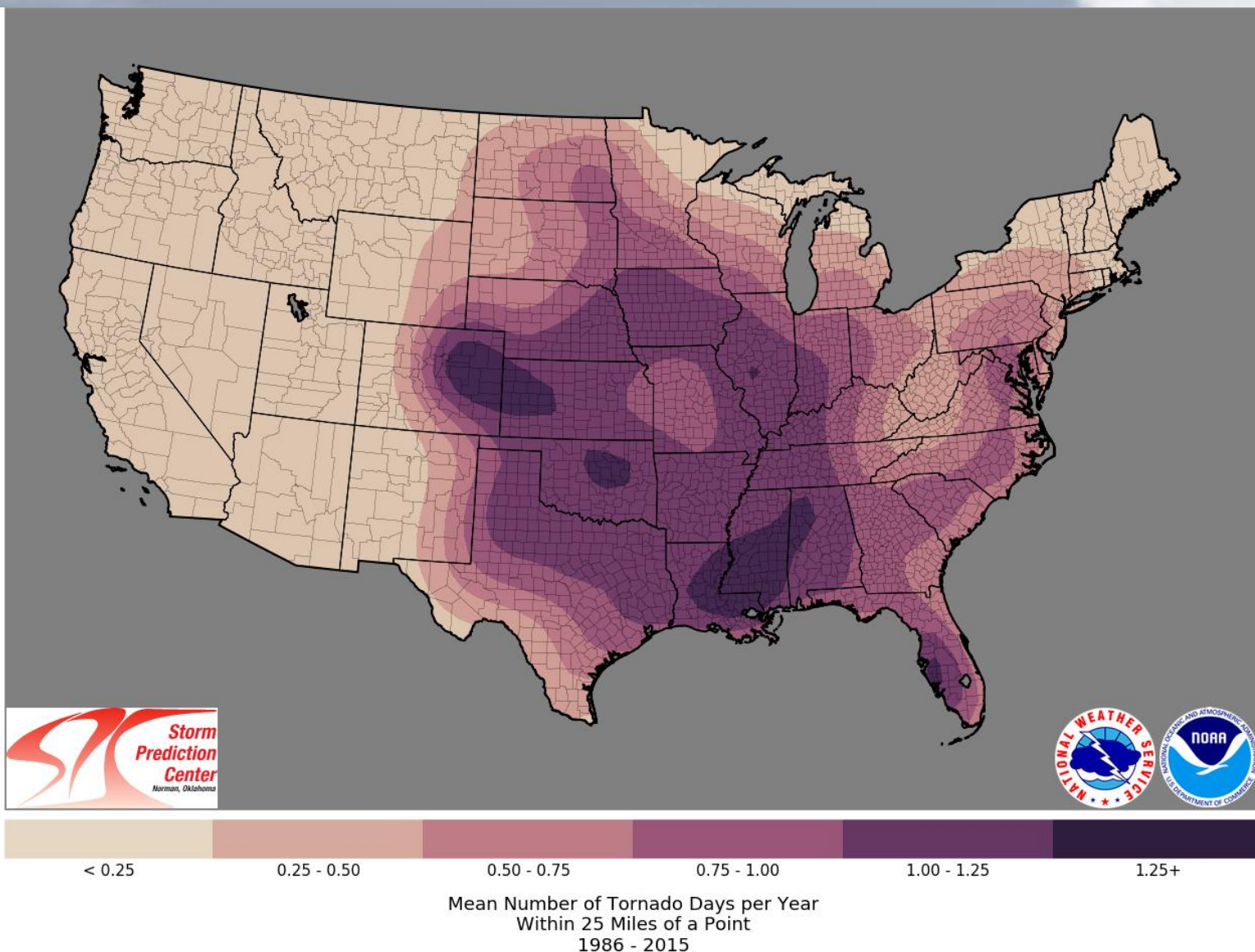
Climatology



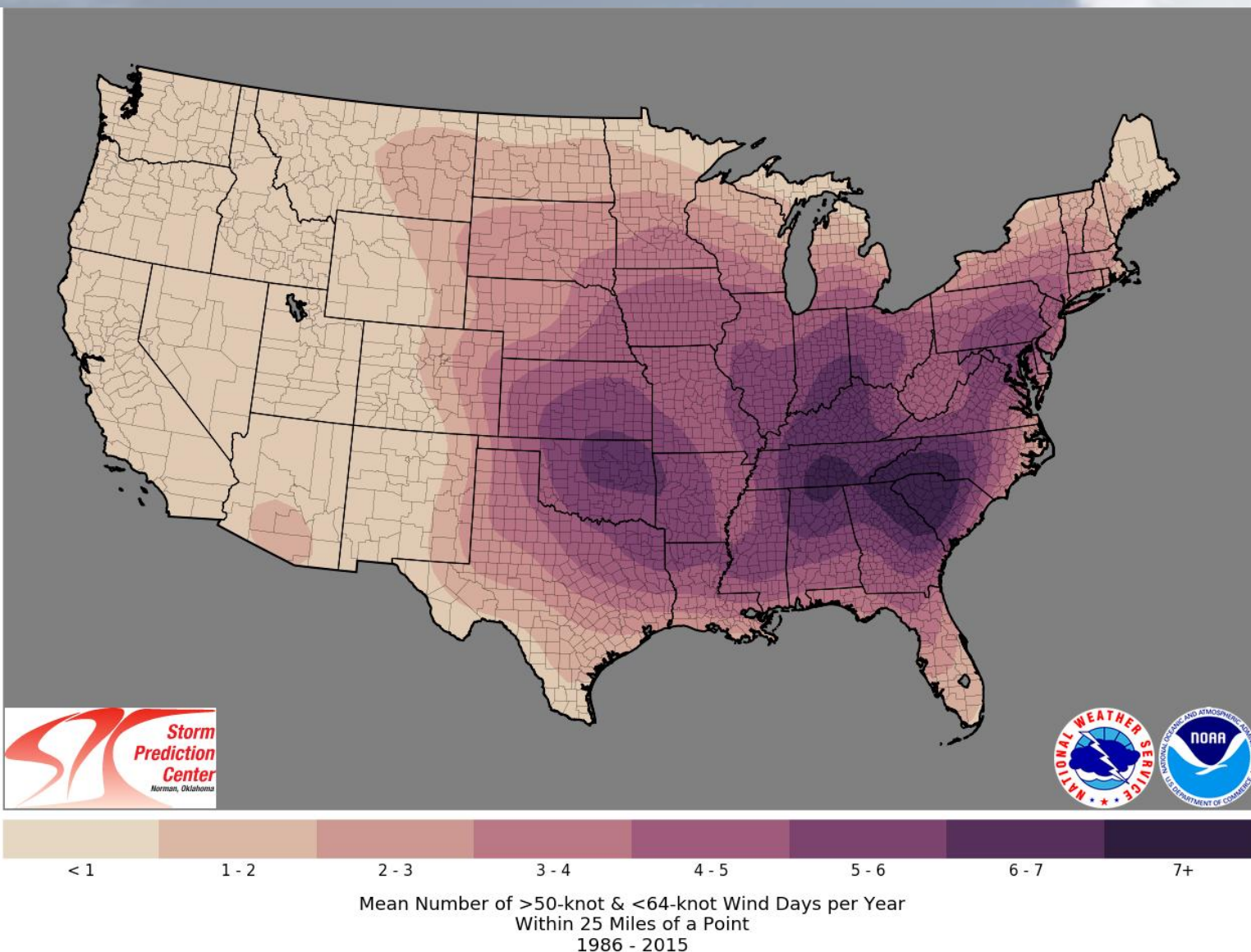
What do you think of when you hear “Tornado Alley”?



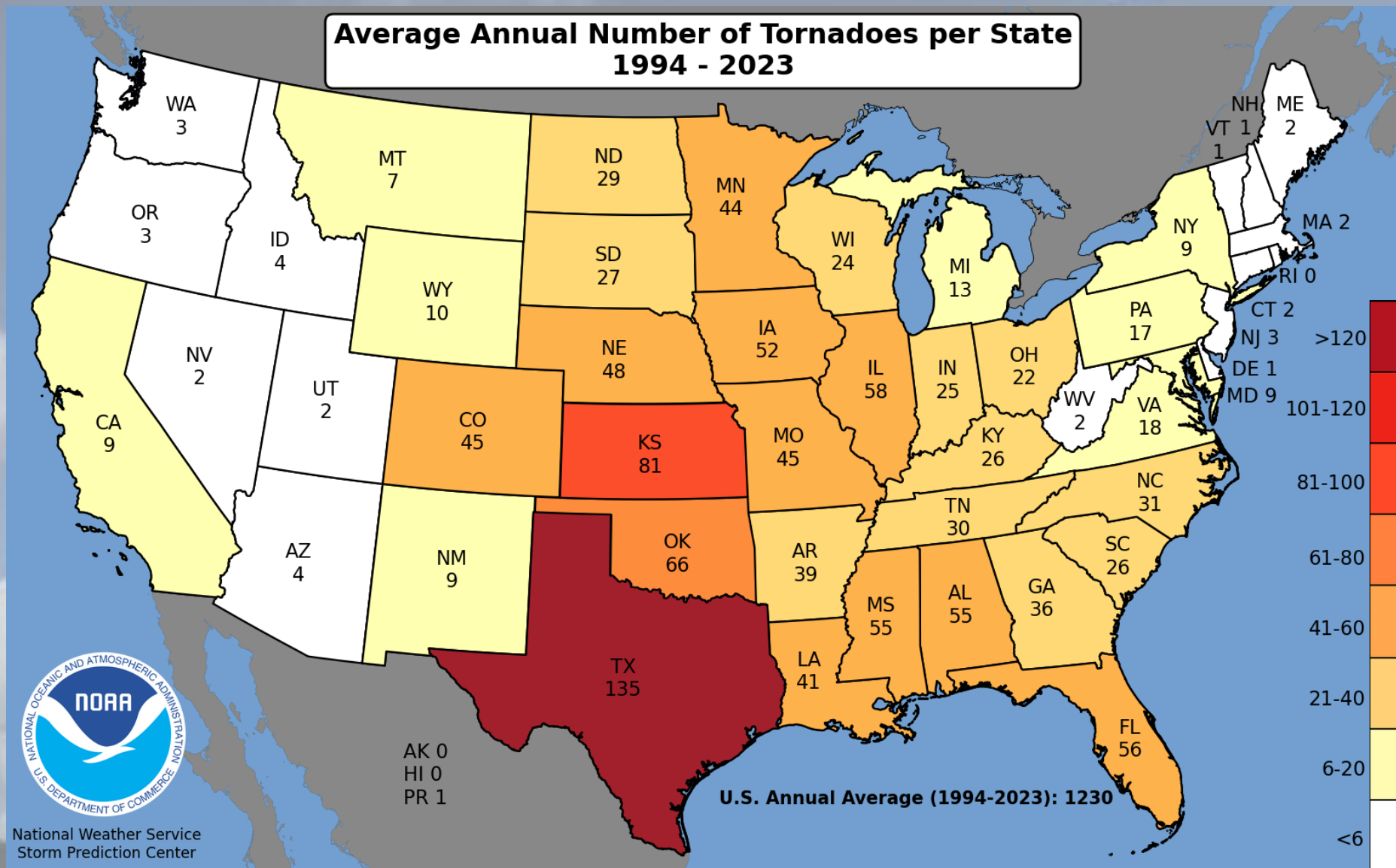
But where is the real
“tornado alley”?



How about
damaging winds?

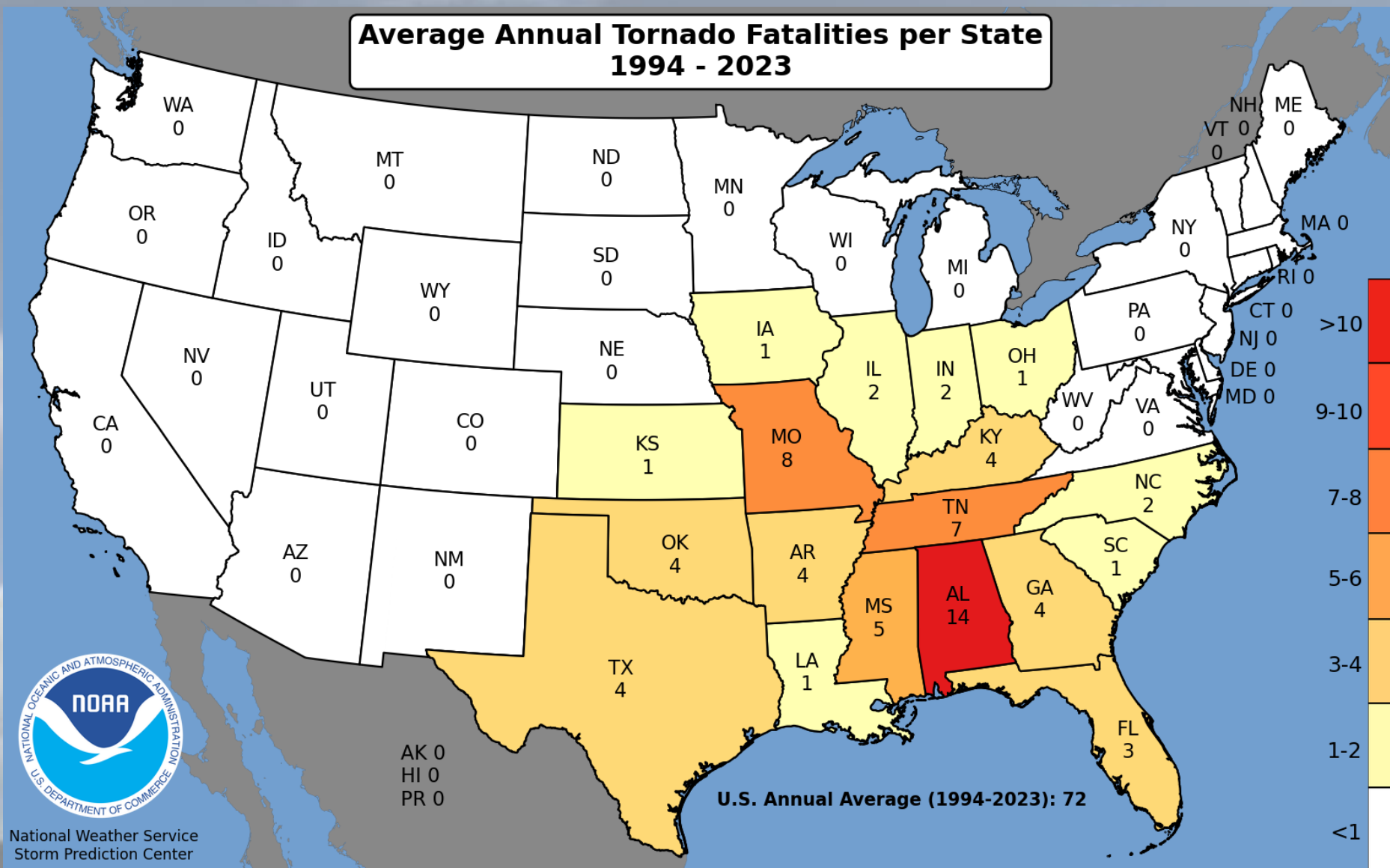


Climatology

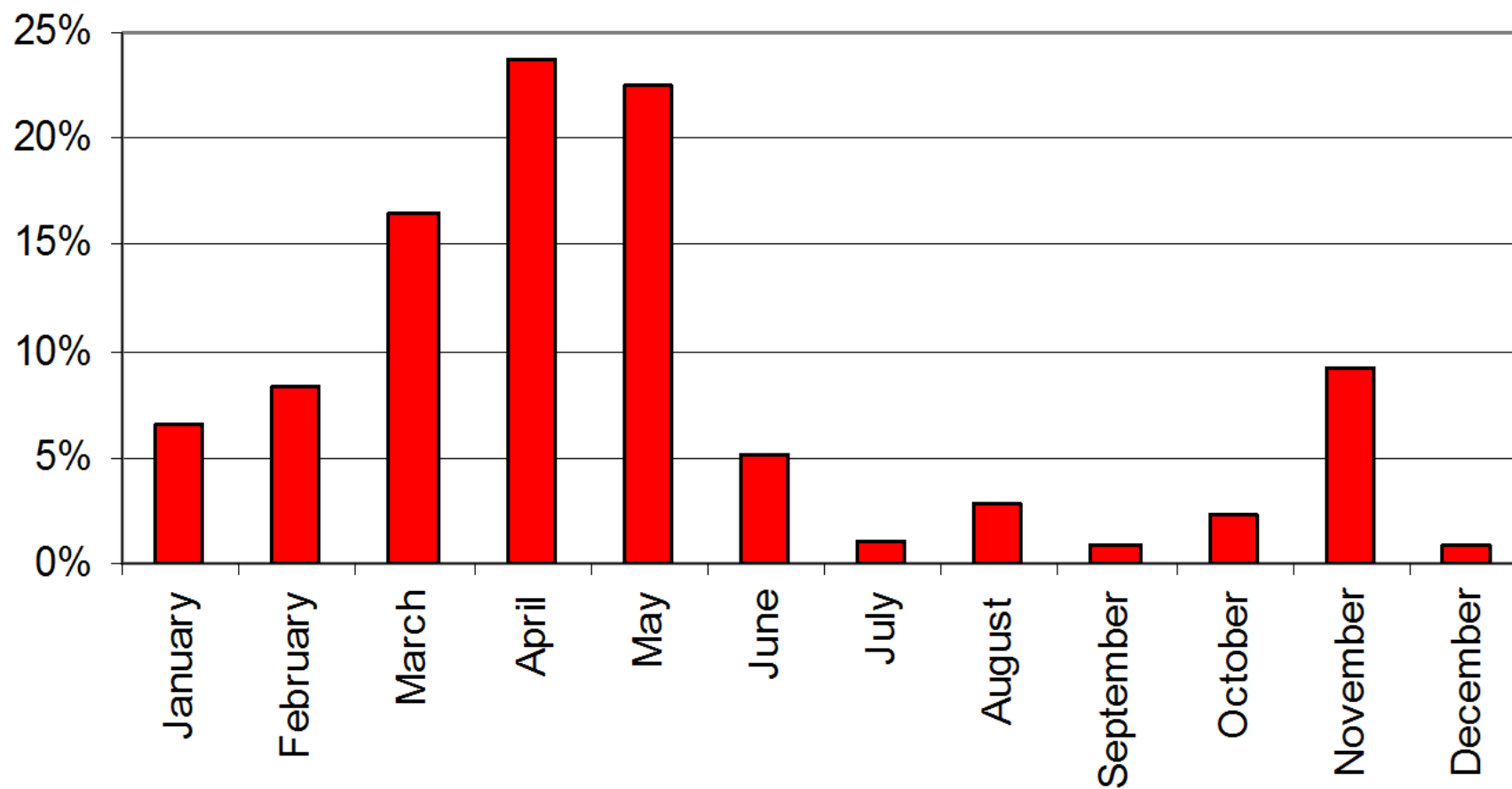




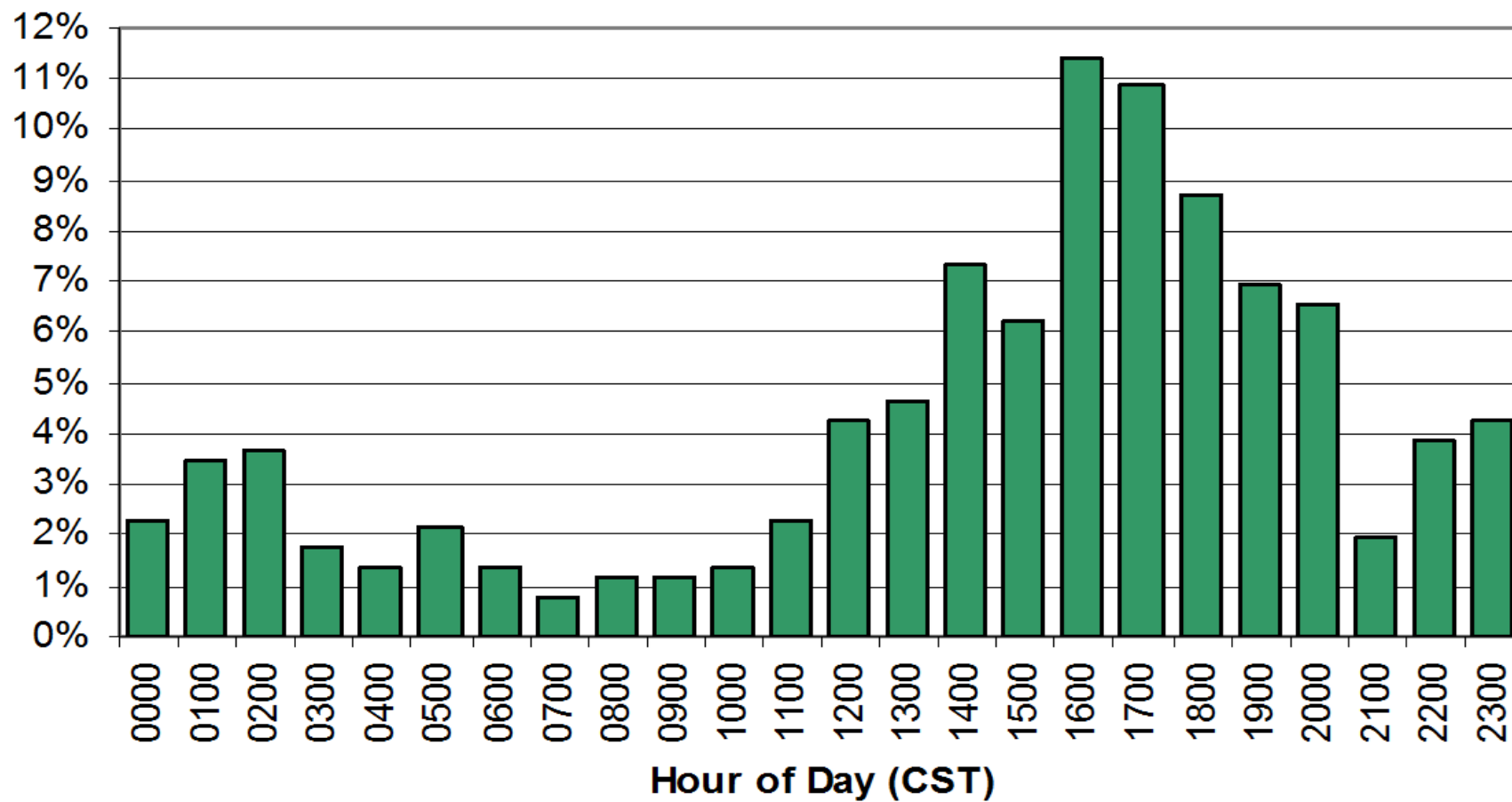
Climatology



Tornado Occurrences by Month



Tornado Occurrences by Hour of Day





NWS Products



NWS Watch, Warning, Advisory Periodic Table

500 TO Tornado Warning																			513 BZ Blizzard Warning				
511 SV Severe Thunderstorm Warning	511 SV Severe Thunderstorm Statement																			513 WW Winter Weather Advisory	513 WS Winter Storm Watch	513 WS Winter Storm Warning	513 BZ Blizzard Watch
512 TO Tornado Watch	512 SV Severe Thunderstorm Watch	<div><div><div>NWS Directive (Prefix 30-1*) (*WWB may be in multiple directives)</div><div>513</div><div>WW ← VTEC Phenomena or AWIPS ID</div><div>Winter Weather ← VTEC Phenomena Full Name</div><div>VTEC Significance → Advisory</div><div>Background color according to http://www.weather.gov/helpmap Text color is chosen to be most viewable</div><div>Questions/Comments? andrew.anoerge@noaa.gov</div></div></div>																		513 LE Lake Effect Snow Watch	513 LE Lake Effect Snow Advisory	513 LE Lake Effect Snow Warning	513 IS Ice Storm Warning
601 HU Hurricane Warning	601 HU Hurricane Watch																			601 TS Tropical Storm Warning	601 TS Tropical Storm Watch	601 TY Typhoon Warning	601 TY Typhoon Watch
900 FL Flood Warning	900 FL Flood Advisory	920 FL Arroyo and Small Stream Flood Advisory	920 FL Small Stream Flood Advisory	920 FL Urban and Small Stream Flood Advisory	920 FL Flood Watch	920 FL Flood Statement	920 HY Hydrologic Advisory	920 ESF Hydrologic Outlook	920 CF Coastal Flood Warning	920 CF Coastal Flood Advisory	920 CF Coastal Flood Watch	920 CF Coastal Flood Statement	920 LS Lakeshore Flood Warning	920 LS Lakeshore Flood Advisory	920 LS Lakeshore Flood Watch	920 LS Lakeshore Flood Statement	920 RP Rip Current Statement						
320 SU High Surf Warning	320 SU High Surf Advisory	320 BH Beach Hazard Statement	313 MA Special Marine Warning	314 MW Marine Weather Statement	315 AF Aurora Warning	315 AF Aurora Advisory	315 BW Brisk Wind Advisory	315 FG Dense Fog Advisory	315 SM Dense Smoke Advisory	315 ZY Freezing Spray Advisory	315 GL Gale Warning	315 GL Gale Watch	315 SE Hazardous Seas Warning	315 SE Hazardous Seas Watch	315 UP Heavy Freezing Spray Warning	315 UP Heavy Freezing Spray Watch	315 HF Hurricane Force Wind Warning						
315 HF Hurricane Force Wind Watch	315 LO Low Water Advisory	315 SC Small Craft Advisory	315 SC Small Craft for Hazardous Seas Advisory	315 RB Small Craft for Rough Bar Advisory	315 SI Small Craft for Winds Advisory	315 SR Storm Warning	315 SR Storm Watch	701 TS Tsunami Warning	701 TS Tsunami Advisory	701 IS Iceberg Warning	401 FW Fire Weather Warning	401 FW Fire Weather Watch	401 EX Extreme Fire Danger	517 HWO Hazardous Weather Outlook	517 NOW Short Term Forecast	517 SPS Special Weather Statement	519 AQ Air Quality Alert						
515 AS Air Stagnation Advisory	515 DU Blowing Dust Warning	515 DU Blowing Dust Advisory	515 EH Excessive Heat Warning	515 EH Excessive Heat Watch	515 EC Extreme Cold Warning	515 EC Extreme Cold Watch	515 FZ Freeze Warning	515 FZ Freeze Watch	515 ZF Freezing Fog Advisory	515 FR Frost Advisory	515 HZ Hard Freeze Warning	515 HZ Hard Freeze Watch	515 HT Heat Advisory	515 HW High Wind Warning	515 HW High Wind Watch	515 LW Lake Wind Advisory	515 WI Wind Advisory						
518 AV Avalanche Warning	518 AV Avalanche Advisory	518 AV Avalanche Watch	518 TOE 911 Telephone Outage	518 ADR Administrative Message	518 CAE Child Abduction Emergency	518 CDW Civil Danger Warning	518 CEM Civil Emergency Message	518 EQ Earthquake Warning	518 EVI Eviction Immediate	518 FR Fire Warning	518 HM Hazardous Materials Warning	518 LEW Law Enforcement Warning	518 LAE Local Area Emergency	518 NUW Nuclear Power Plant Warning	518 RH Radiological Hazard Warning	518 SP Shelter in Place Warning	518 VO Volcano Warning						



NWS Products



DISCUSSION

DAY 3 CONVECTIVE OUTLOOK
NWS STORM PREDICTION CENTER NORMAN OK
0227 AM CDT WED JUN 27 2012

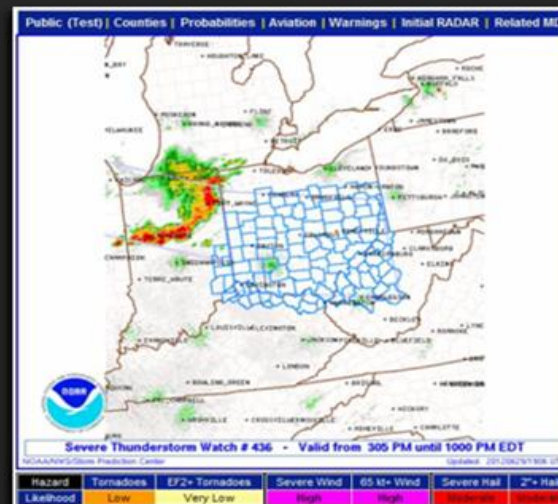
VALID 291200Z - 301200Z

...OH VALLEY/CNTRL APPALACHIAN HTNS/MID-ATLANTIC...
A WEST TO NORTHWEST FLOW PATTERN IS FORECAST ON FRIDAY FROM THE UPPER MIDWEST ESEAD ACROSS THE GREAT LAKES REGION INTO THE NERN STATES. AT THE SFC...A QUASI-STATIONARY FRONTAL BOUNDARY SHOULD BE IN PLACE FROM NEAR CHICAGO END TO THE MID-ATLANTIC WITH DENPOINTS SOUTH OF THE BOUNDARY FROM THE MID 60S TO AROUND 70 F. THE MOIST BOUNDARY LAYER SHOULD ALLOW FOR MODERATE TO STRONG DESTABILIZATION ACROSS A BROAD CORRIDOR BUT CONVECTIVE DEVELOPMENT SHOULD BE CONFINED TO THE FRONTAL BOUNDARY. FORECAST SOUNDINGS ALONG THE BOUNDARY AT 00Z/SAT IN THE OH VALLEY SHOW MLCAPE VALUES ABOVE 3000 J/KG WITH 40 TO 50 KT OF DEEP LAYER SHEAR SUGGESTING SUPERCCELLS WILL BE POSSIBLE. HOWEVER...THE MAGNITUDE OF THE SEVERE THREAT REMAINS UNCERTAIN DUE TO WARM AIR ALOFT AND A LACK OF LARGE-SCALE ASCENT. ANY STORM THAT CAN DEVELOP IN SPITE OF THESE LIMITING FACTORS COULD HAVE AN ISOLATED SEVERE THREAT LATE FRIDAY AFTERNOON.

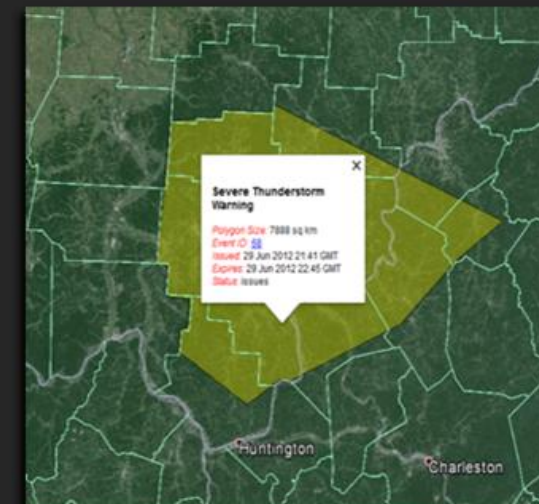
OUTLOOK



WATCH



WARNING



REGIONAL → LOCAL AREA → COUNTIES

ACTION: ask yourself if the forecast mentions possible hazardous weather in your area

ACTION: review your severe weather preparedness plans and monitor the forecast

ACTION: listen for warnings and be prepared to take action if a warning is issued

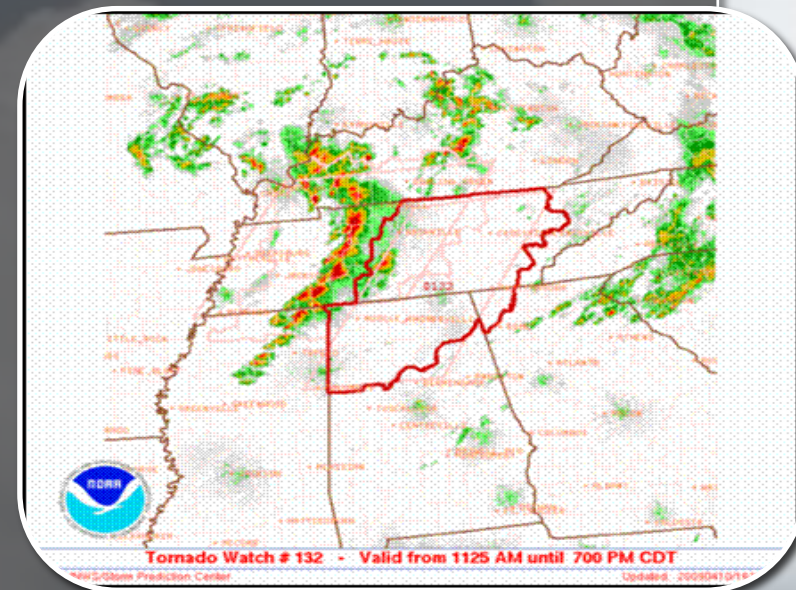
TAKE SHELTER NOW!

1 WEEK → 1 to 3 DAYS → HOURS → MINUTES

Watches

Tornado/Severe Thunderstorm/Flash Flood

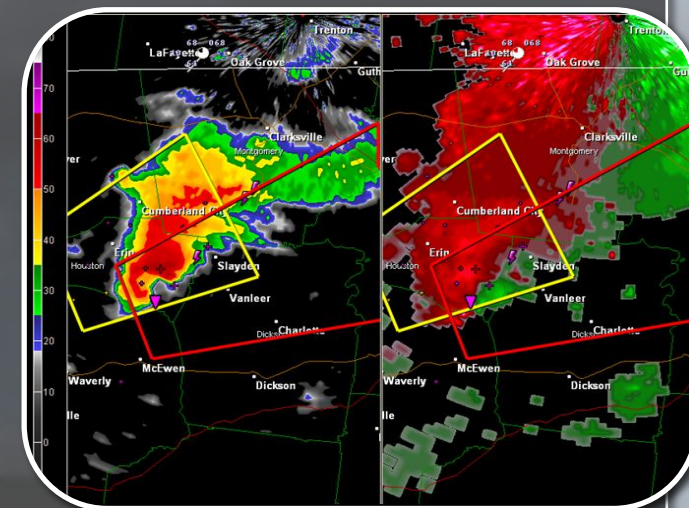
- Conditions are favorable
- Usually last 3 to 6 hours
- Watch the sky, be sure your NOAA Weather Radio is plugged in with fresh batteries



Warnings

Tornado/Severe Thunderstorm/Flash Flood

- Conditions are occurring or about to occur
- Issued by local NWS office, last 30-60 minutes
- Take Shelter if you go under a warning!



What is a Special Weather Statement (for strong storms)?

A thunderstorm that contains one or more of the following:

- Large amounts of cloud to ground lightning
- Winds of 30-58 mph
- Hail of 0.25" to 0.88" in diameter (pea to nickel-size)
- Rotation, but not strong enough to warrant Tornado Warning



Severe Thunderstorm Warning

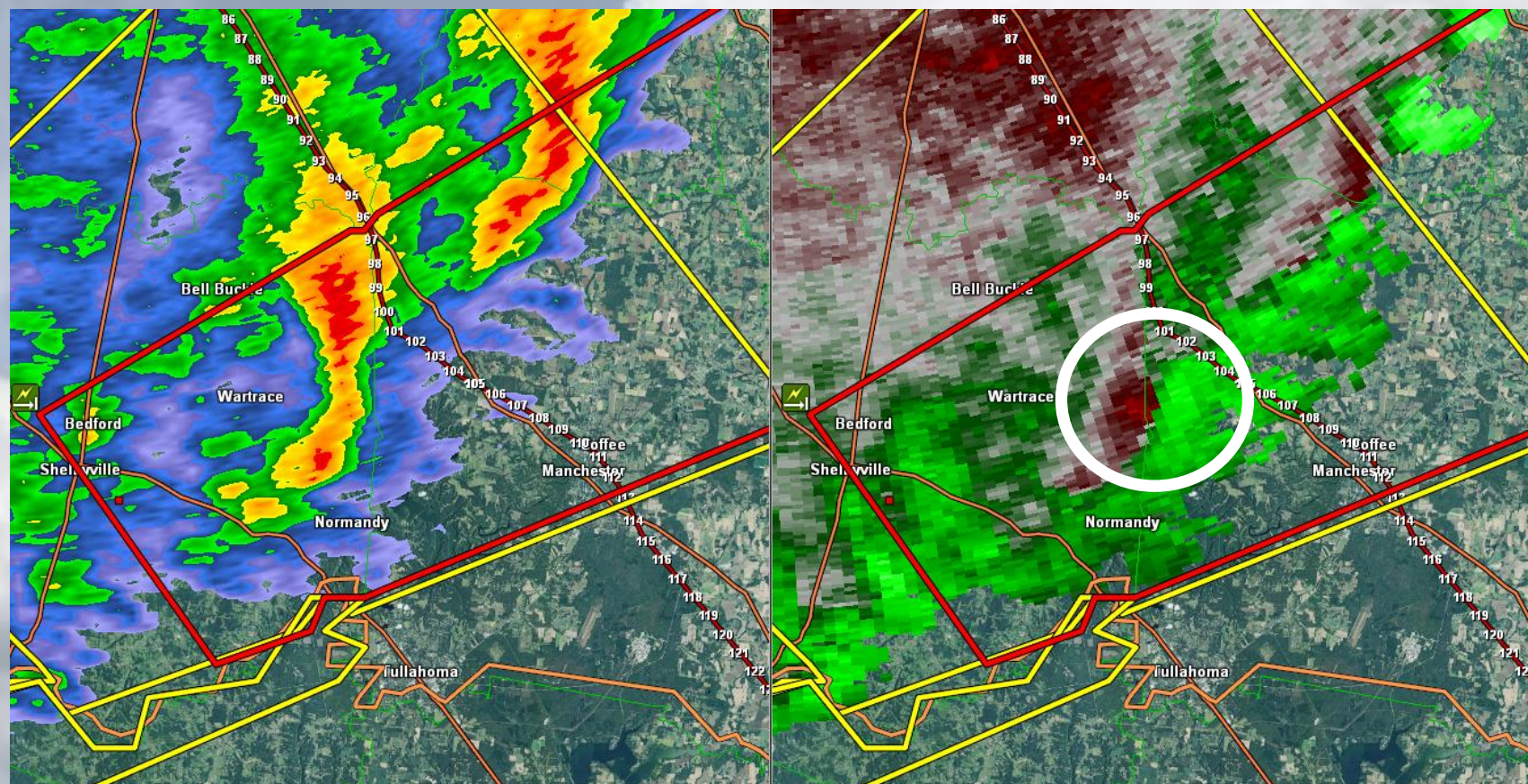
A severe thunderstorm contains one or more of the following:

- Winds of 58 mph or higher
- Hail of 1" in diameter or larger (quarter-size)
- Tornado



Tornado Warning: Radar Indicated

- Tornado is likely to develop or is already occurring

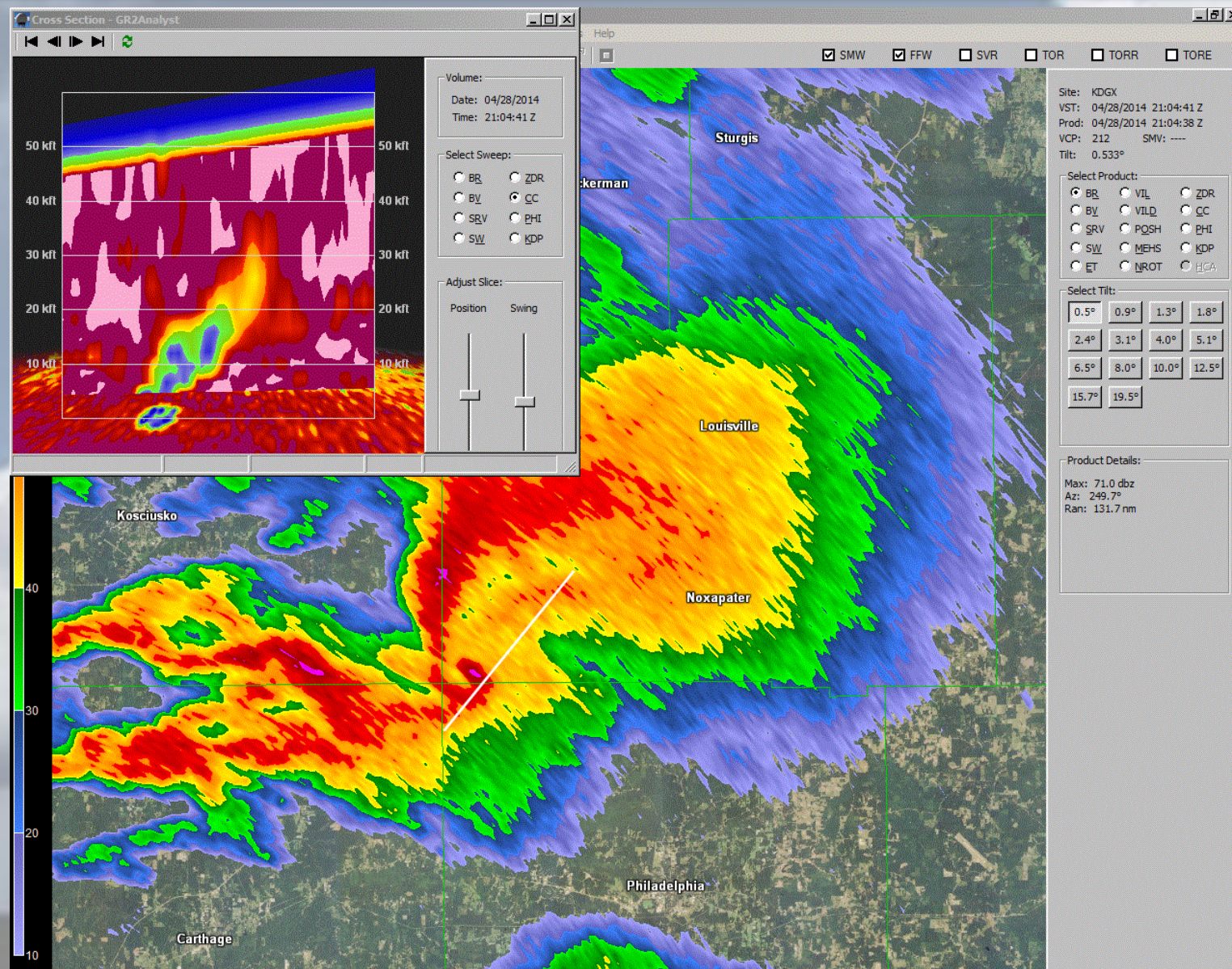




NWS Products



**Tornado
Warning:
Radar Confirmed**





NWS Products



Considerable- Confident of strong tornado (EF-2 – EF-3)

...A TORNADO WARNING REMAINS IN EFFECT UNTIL 645 PM CST FOR EAST CENTRAL PERRY...NORTHWESTERN LEWIS AND SOUTHWESTERN HICKMAN COUNTIES...

AT 629 PM CST...A CONFIRMED LARGE AND EXTREMELY DANGEROUS TORNADO WAS LOCATED 8 MILES NORTH OF HOHENWALD...MOVING NORTHEAST AT 70 MPH.

THIS IS A PARTICULARLY DANGEROUS SITUATION.

Catastrophic- Confident of violent tornado (EF-4 – EF-5)

...TORNADO EMERGENCY FOR HOLLY SPRINGS...

...A TORNADO WARNING REMAINS IN EFFECT UNTIL 445 PM CST FOR NORTHWESTERN LAFAYETTE...MARSHALL...SOUTHEASTERN TATE AND NORTHEASTERN PANOLA COUNTIES...

AT 416 PM CST...A CONFIRMED LARGE AND DESTRUCTIVE TORNADO WAS LOCATED NEAR MARIANNA...OR 8 MILES WEST OF WALL DOXEY STATE PARK...MOVING NORTHEAST AT 55 MPH.

TORNADO EMERGENCY FOR HOLLY SPRINGS. TAKE COVER NOW. THIS IS A PARTICULARLY DANGEROUS SITUATION.



NWS Products



Flood Advisory

Heavy rainfall resulting in:

- Minor ponding on roadways or localized flooding
- Rises on area creeks & rivers





NWS Products

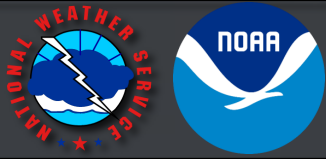


Flash Flood Warning

Heavy rainfall, typically from thunderstorms, resulting in:

- Significant flooding of roadways
- Cars stalling in flood waters
- Flooding of businesses & homes





Communicating Threats



Cell Phone Apps



Weather Radio

WEAs



TV/ Radio



Social Media



Communicating Threats



NOAA Weather Radio

- Fastest way to get warnings!
- Operates 24/7
- Program for just your county or multiple counties
- Available in most stores and online
- Have multiple ways to receive warnings!





Communicating Threats



Wireless Emergency Alerts

- Emergency messages sent by authorized government bodies through mobile carriers
- 360 character max
- Uses cell phone towers within a warning to broadcast
- Severe Thunderstorm WEAs only if 80+ mph winds and/or 2.75 inch hail expected

Warning Type
Tsunami
Tornado
Severe Thunderstorm
Extreme Wind
Hurricane
Typhoon
Flash Flood
Dust Storm
Blizzard
Ice Storm
Lake Effect Snow



Tornadoes

- Seek inside shelter in a basement or interior room on the lowest floor away from windows. *Put as many walls between you and outside as possible.*
- Go to designated shelter in office buildings, hotels, and shopping malls
- Find nearest available shelter in open country



Weather Safety Rules



Tornadoes: Schools

- Follow school tornado drills
- Go to interior hallways and small rooms away from windows
- Avoid large rooms like gymnasiums and cafeterias



Weather Safety Rules



Tornadoes: Mobile Homes

- Mobile homes are easily damaged and destroyed by tornadoes
- Can very easily be overturned
- If possible, abandon mobile homes for community shelter or sturdier building



Mobile Home vs Well Built
Structure both with EF-2 damage



Weather Safety Rules



Vehicles

- *Automobiles are not safe in tornadoes!*
- Abandon cars and trucks for a storm shelter or sturdy buildings if possible
- If sturdy shelter is not possible, get down in your car and cover your head or seek shelter in low lying ditch





Weather Safety Rules



Damaging Winds

- Take shelter inside a building away from glass
- If caught outdoors, stay away from trees and power lines

MILTON, Tenn. - A man was killed in Rutherford County when a tree fell on him during a thunderstorm.

The storm passed through the area around 6:12 p.m. bringing with it reports of hail and strong winds.

Fire Chief, Larry Farley, said the 64-year-old man was riding a ATV toward his house when a large hickory tree fell on top of him.



Weather Safety Rules



Large Hail

- Take shelter inside a building away from glass
- If in a vehicle, stay inside and wait for hail to end



Quarter to
Ping Pong Ball Hail



Lightning

- *When thunder roars, go indoors!*
- Take shelter inside a building or automobile
- Stay away from all wired electronics and plumbing



When Thunder Roars, Go Indoors!

STOP all activities.

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

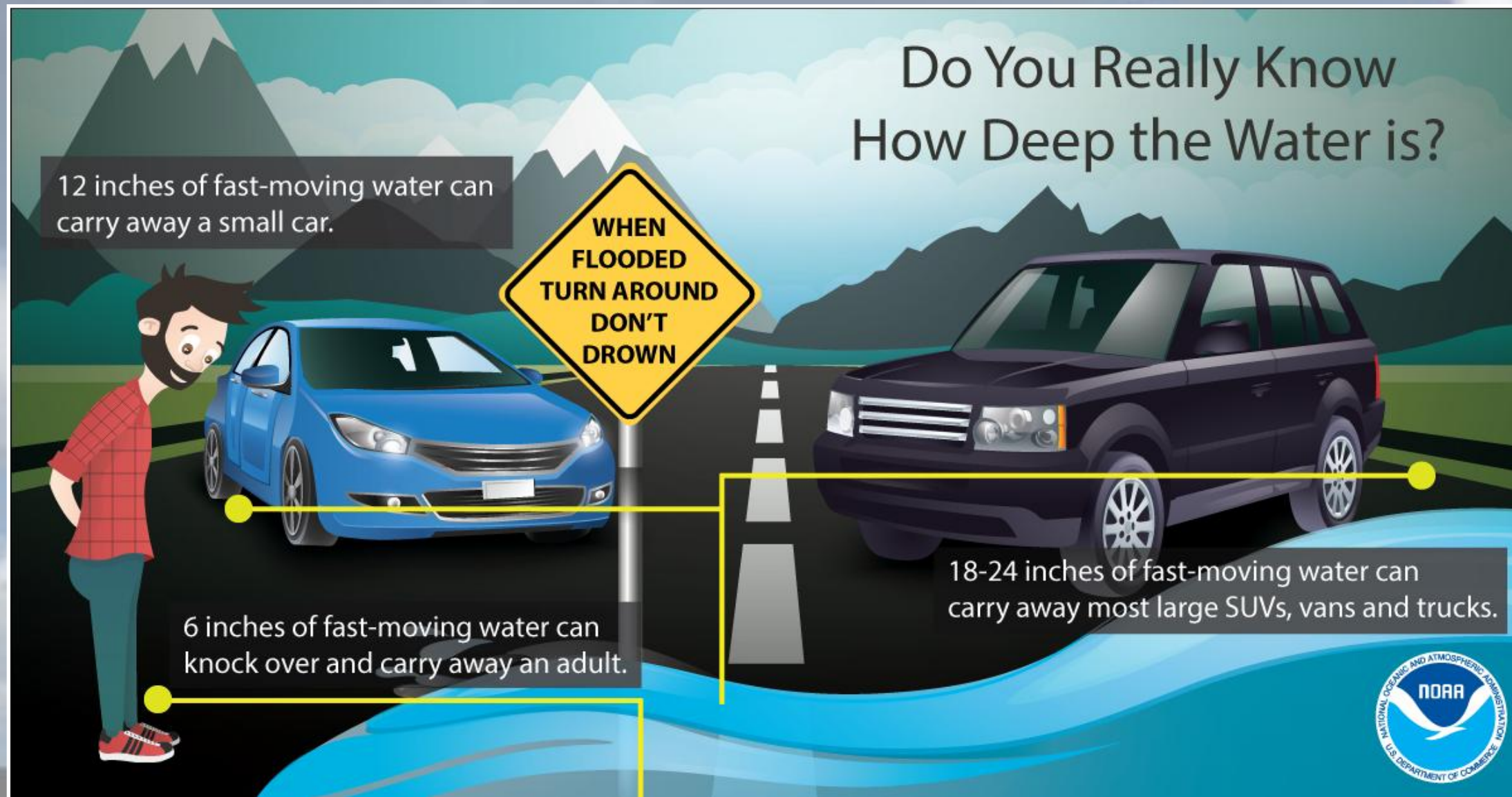
Wait 30 minutes after the storm to resume activities.



www.lightningsafety.noaa.gov



Weather Safety Rules



Weather Safety Rules



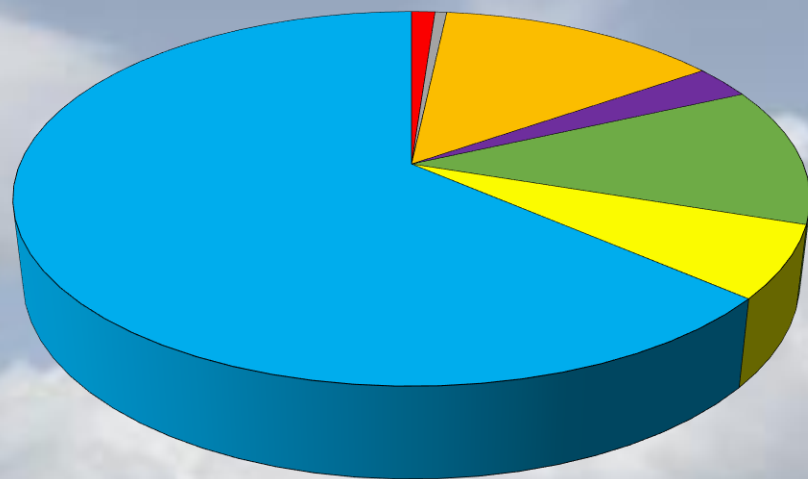
Flash Flooding

- Never drive around barricades – the water may be deeper than you think
- Don't cross flooded roadways – the road may not be there!



Flash Flooding: *The #1 weather-related killer*

2015 Flash Flood Fatalities
Activities of Victims

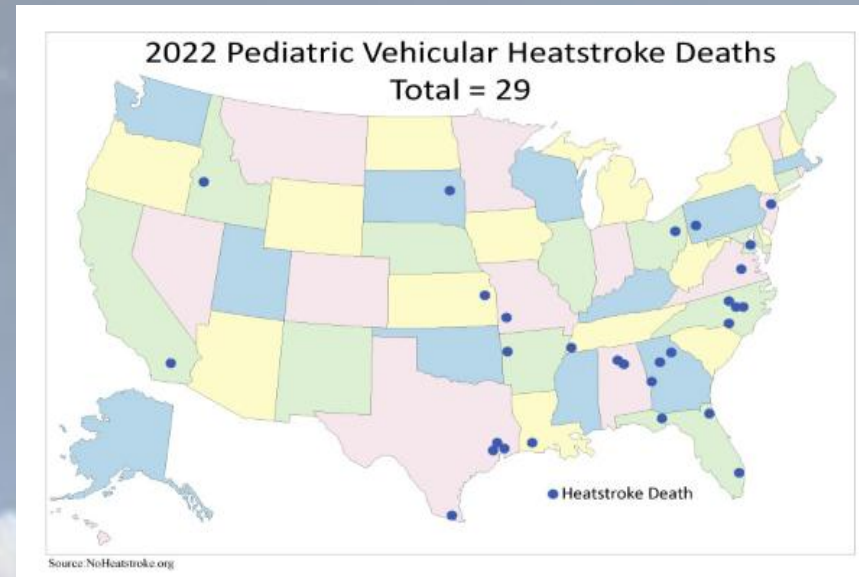


- Boating
- In Water
- Permanent Home
- Business
- Mobile Home
- Vehicle
- Camping
- Other



Heat

- Look before you lock
- Pets in cars / outdoors
- Elderly
- People with chronic health issues
- Pregnant women



Heat Exhaustion	Heat Stroke
<p>ACT FAST</p> <ul style="list-style-type: none"> • Move to a cooler area • Loosen clothing • Sip cool water • Seek medical help if symptoms don't improve 	<p>ACT FAST</p> <p>CALL 911</p> <ul style="list-style-type: none"> • Move person to a cooler area • Loosen clothing and remove extra layers • Cool with water or ice
<p>Dizziness</p> <p>Thirst</p> <p>Heavy Sweating</p> <p>Nausea</p> <p>Weakness</p>	<p>Confusion</p> <p>Dizziness</p> <p>Becomes Unconscious</p>
<p><i>Heat exhaustion can lead to heat stroke.</i></p>	
<p><i>Heat stroke can cause death or permanent disability if emergency treatment is not given.</i></p>	
<p>Stay Cool, Stay Hydrated, Stay Informed!</p>	

Cold / Winter

- Prepare: Emergency kit for your car
- Exposure kills: dress in layers and protect skin
- Driving: slow down and leave extra distance between vehicles

ICE & SNOW, TAKE IT SLOW

Each year in the U.S., there are over **1,000 deaths** and **100,000 injuries** due to vehicle crashes during winter weather.

DID YOU KNOW?



Clean off your vehicle before driving.
Flying snow from cars causes accidents.



Keep it slow, and don't use cruise control.
Roads can be slick even if they just look wet.



Leave extra distance between vehicles.
Stay especially far from snow plows.



weather.gov



DON'T FORGET YOUR PETS



Even with a natural fur coat, **winter can be deadly** for your pets unless proper care is given.



Keep them warm and dry,
and indoors whenever possible.



Provide plenty of food and water.
Dehydration is especially dangerous in winter.



When outside, keep them bundled up.
Limit outside time, and thoroughly clean (including paws) when bringing them in

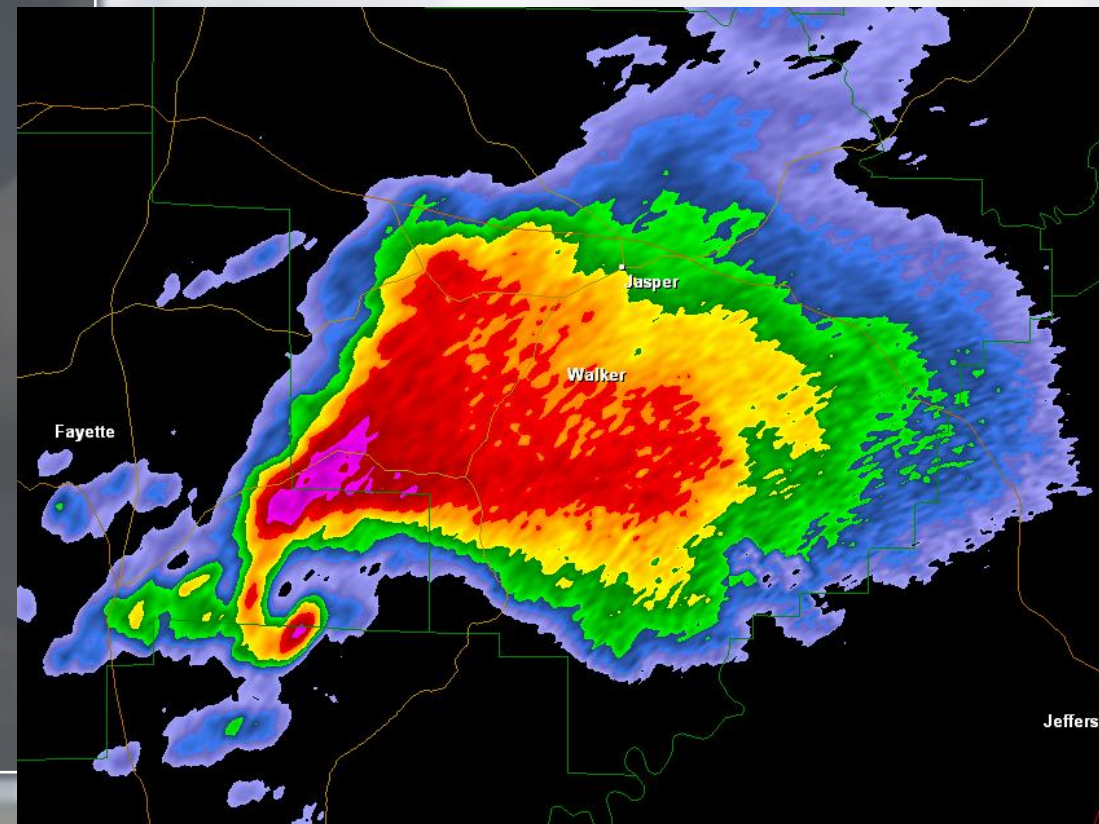


weather.gov

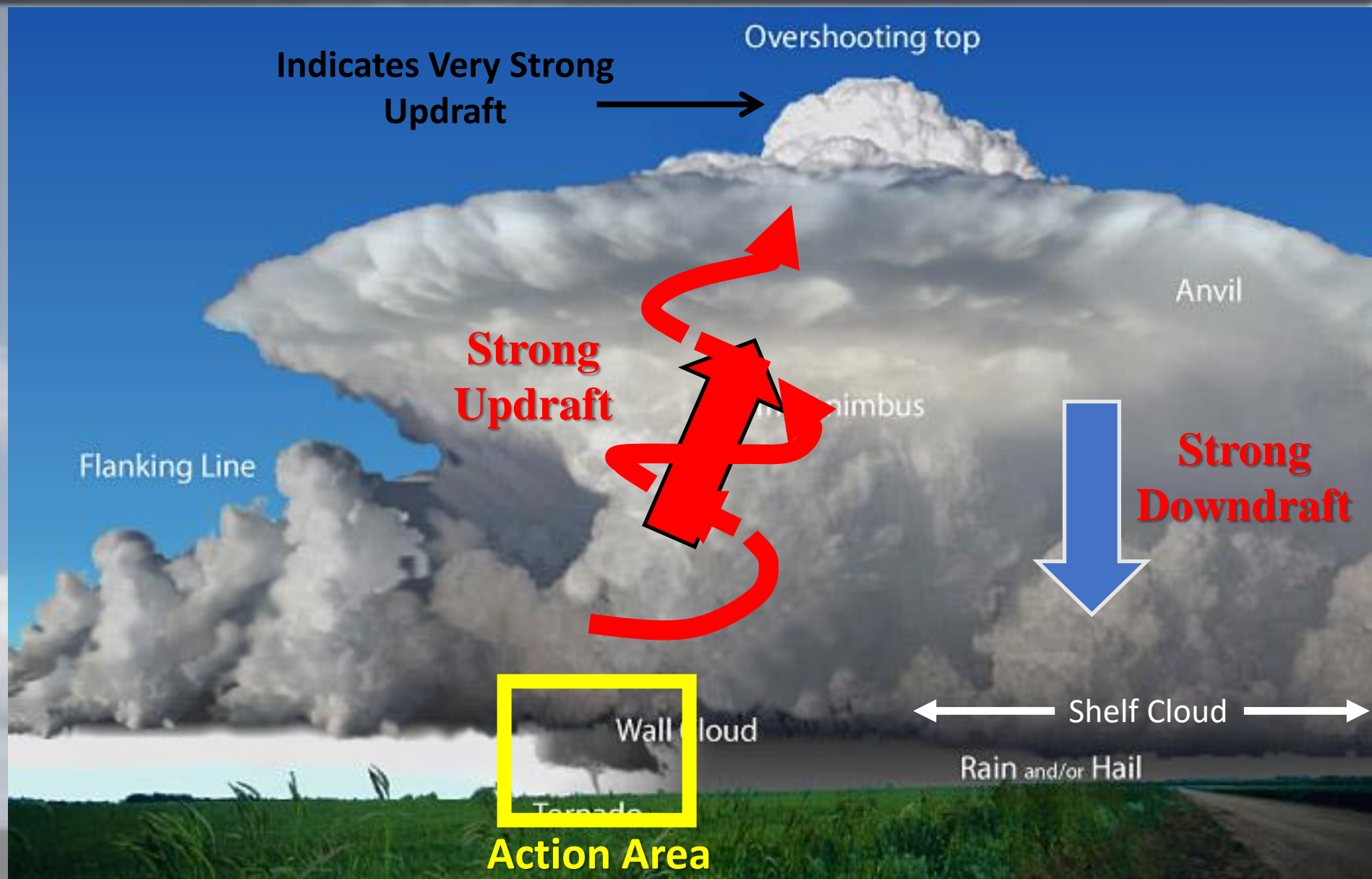


Supercell Thunderstorms

- Strongest and longest lasting type of thunderstorm
- Contains a rotating updraft called a mesocyclone
- High severe potential
- Can produce very large hail and the most violent tornadoes
- *Typically* move from southwest to northeast in Middle Tennessee



Thunderstorm Basics



Wall Cloud

- Lowering of the rain-free cloud base
- Appears due to lower pressure causing condensation
- Slopes down and towards the rain
- Tornadoes typically drop from wall clouds





Thunderstorm Basics



Wall Cloud: Checklist

- *Rotation*
- *Persistence*
- *Rising Motion*
- *Wall cloud does not always mean tornado!*



Shelf Cloud: Checklist

- Appears as wedge-shaped cloud
- Occurs on leading edge of a gust front
- Slopes downward away from rain/hail
- While mostly associated with squall line, can occur with any type of thunderstorm
- *Occupies large expanse of horizon*

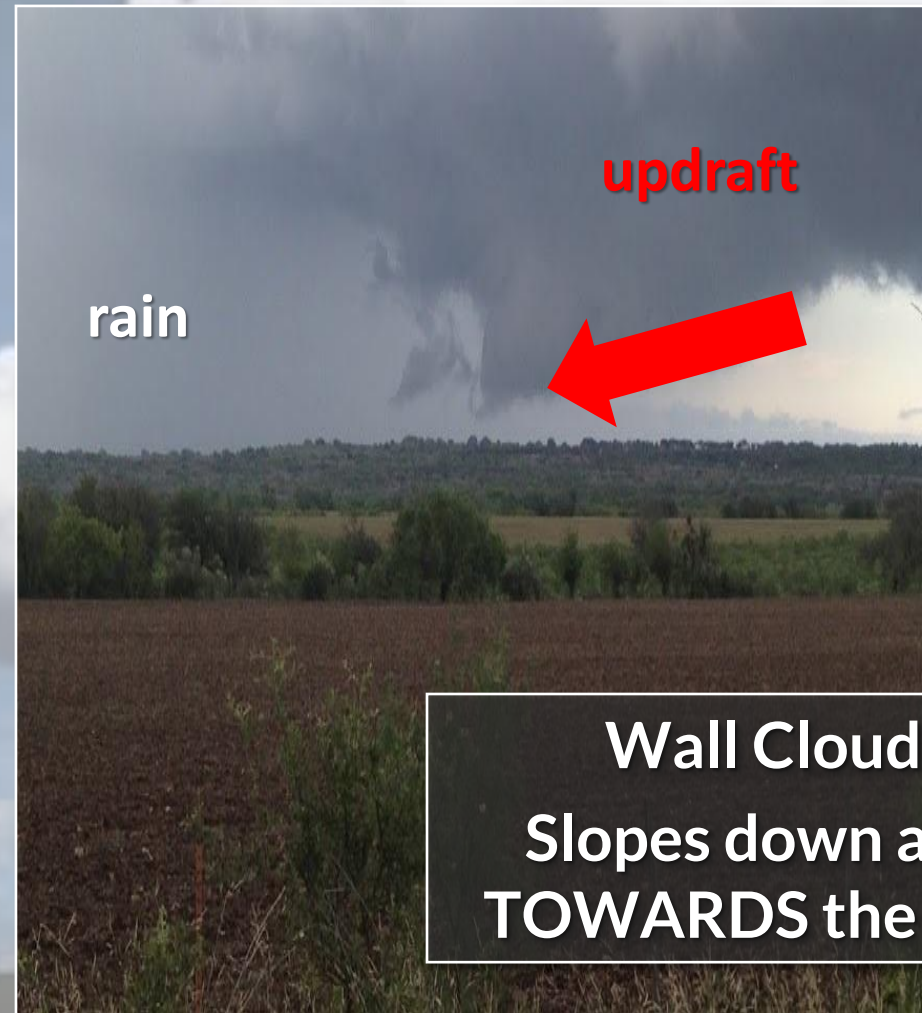
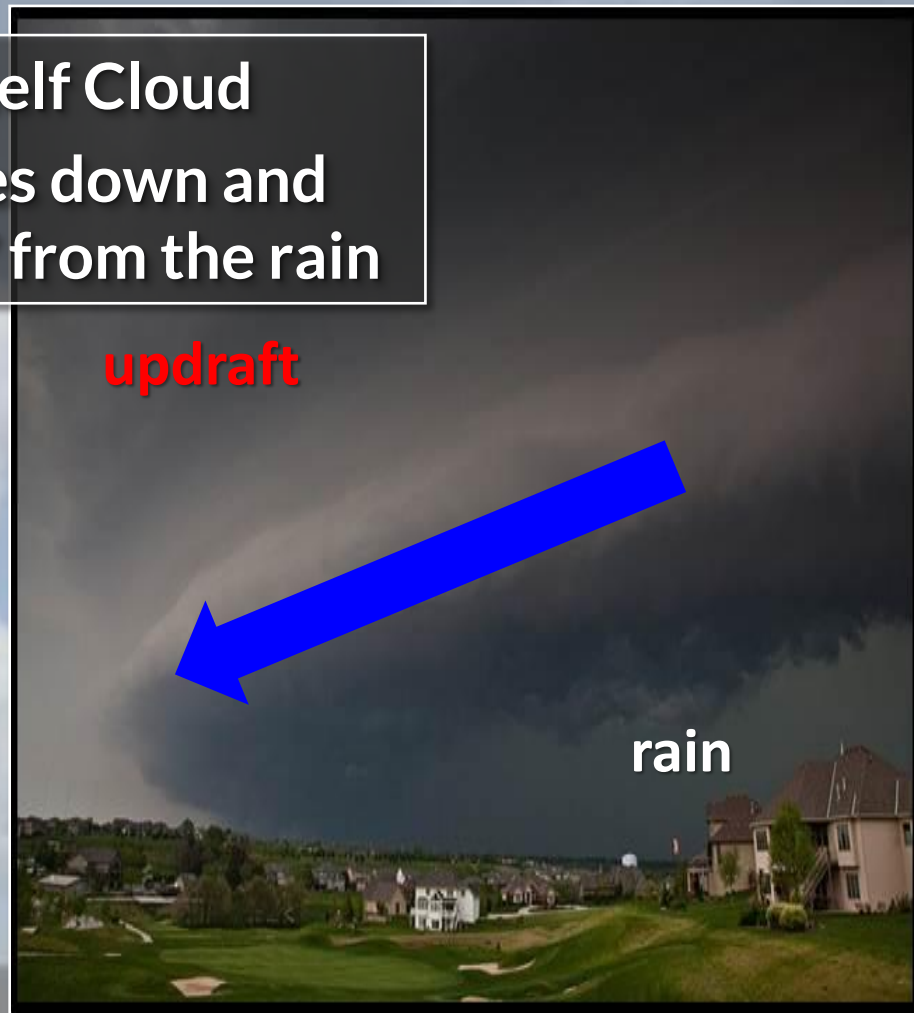


Thunderstorm Basics



Shelf Cloud or Wall Cloud?

Shelf Cloud
Slopes down and
AWAY from the rain



Wall Cloud
Slopes down and
TOWARDS the rain

Thunderstorm Basics



Funnel Cloud

- Typically forms from rotating wall cloud
- Watch for debris at the surface
- Debris under the funnel or visible contact with the ground makes it a tornado
- Attached to the cloud base



Thunderstorm Basics



Tornado

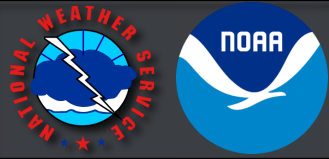
- *Definition: A violently rotating column of air in contact with the ground and extending from the base of a thunderstorm*
- Tornadoes are not always classic looking or well defined
- If you see a rotating wall cloud or funnel cloud, look for debris!



Scud Cloud

- Ominous-looking but harmless clouds
- Can occur with wall cloud or shelf cloud
- *No rotation*
- *No rapid vertical motion*
- *No inflow*





Testing Your Knowledge





Testing Your Knowledge





Testing Your Knowledge





Testing Your Knowledge





Testing Your Knowledge



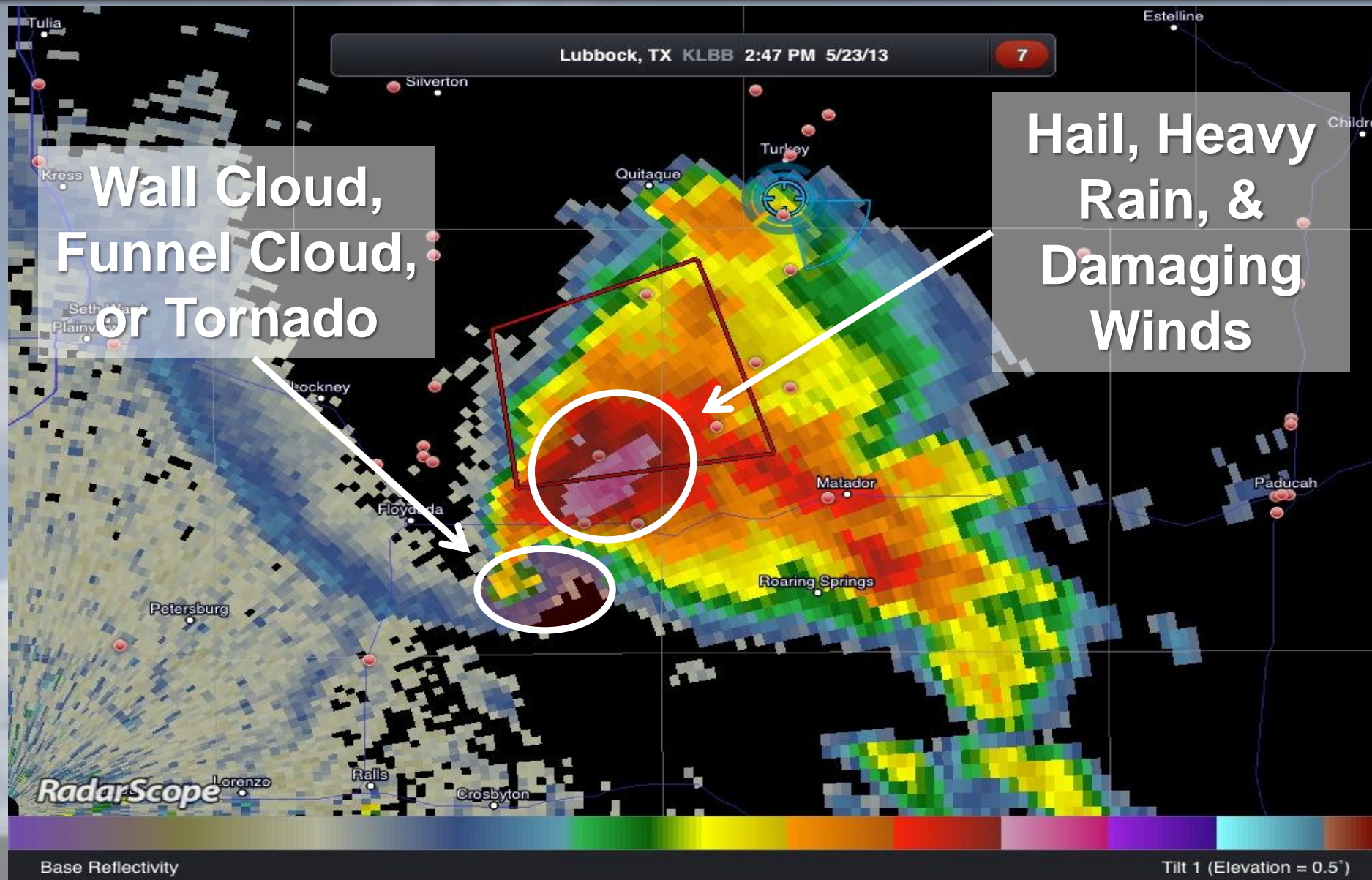


Testing Your Knowledge



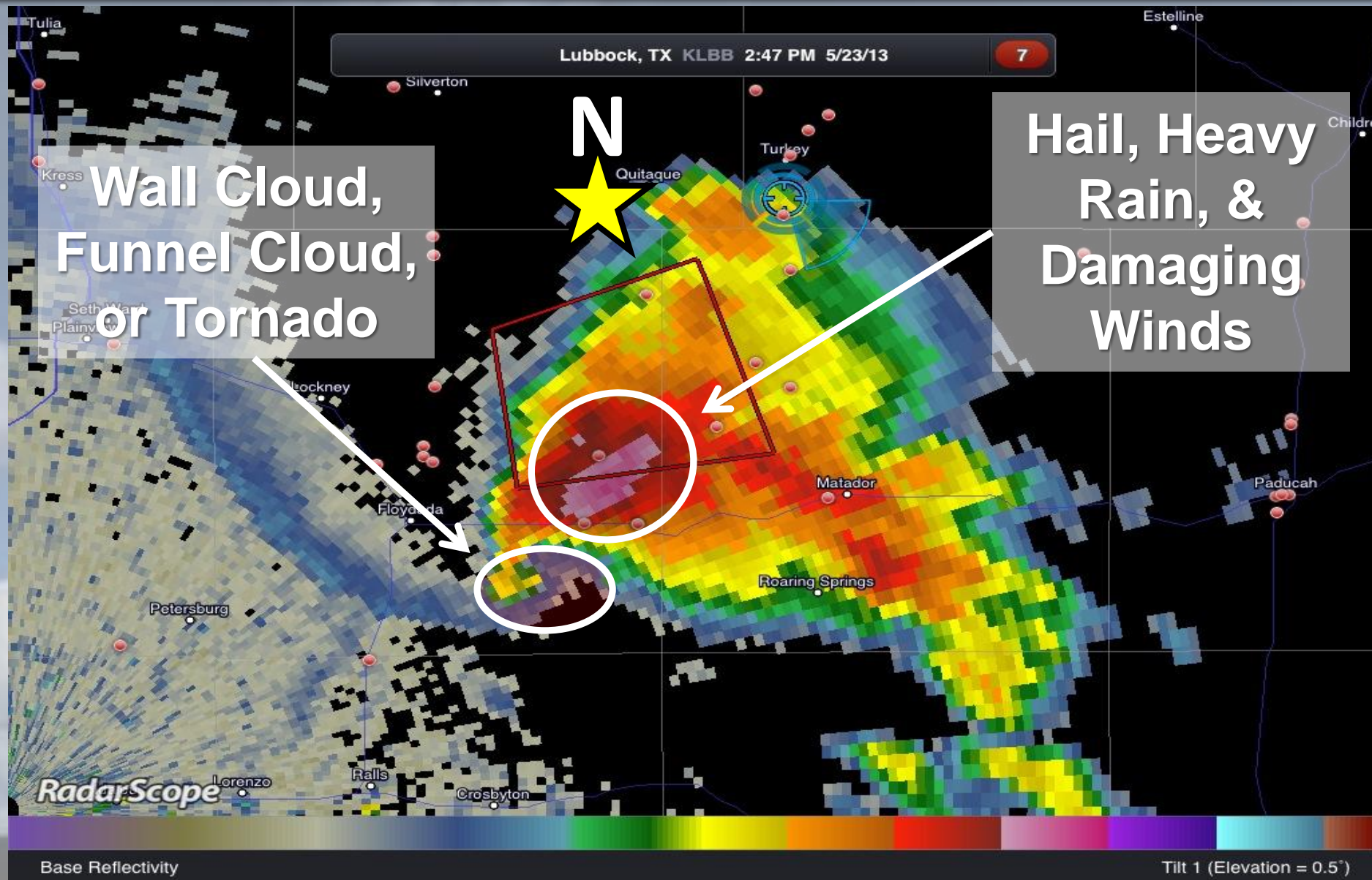


Your Location Relative to a Storm



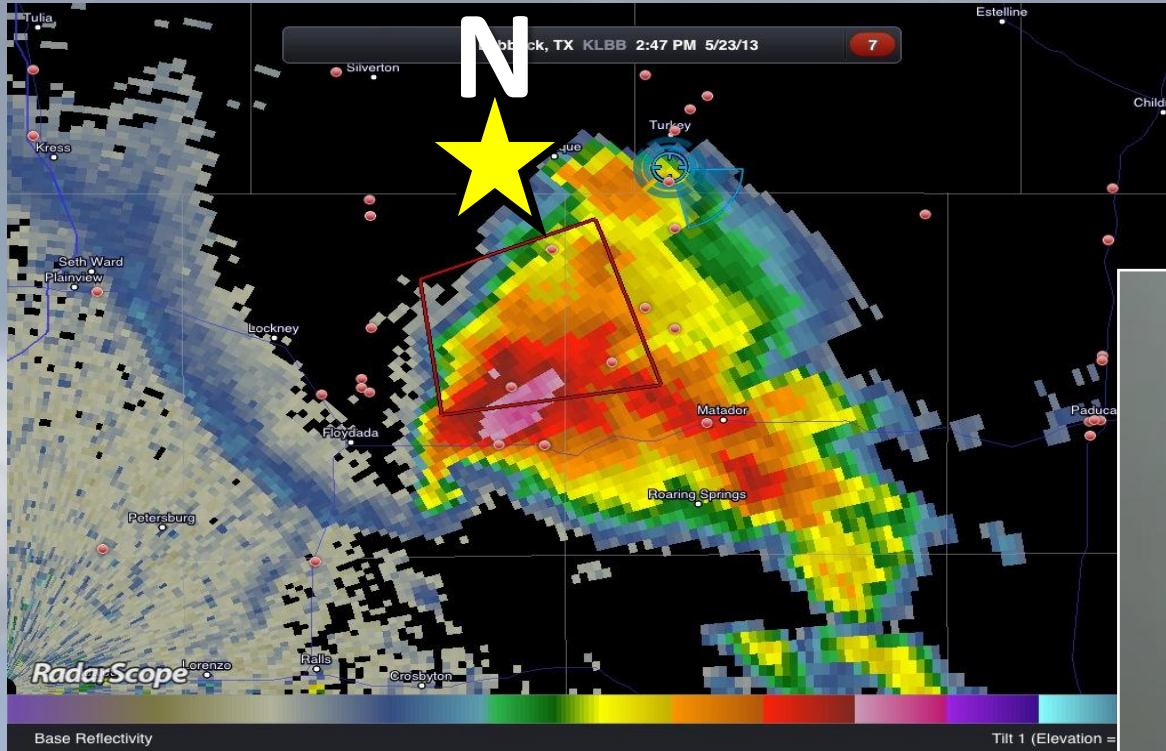


Your Location Relative to a Storm



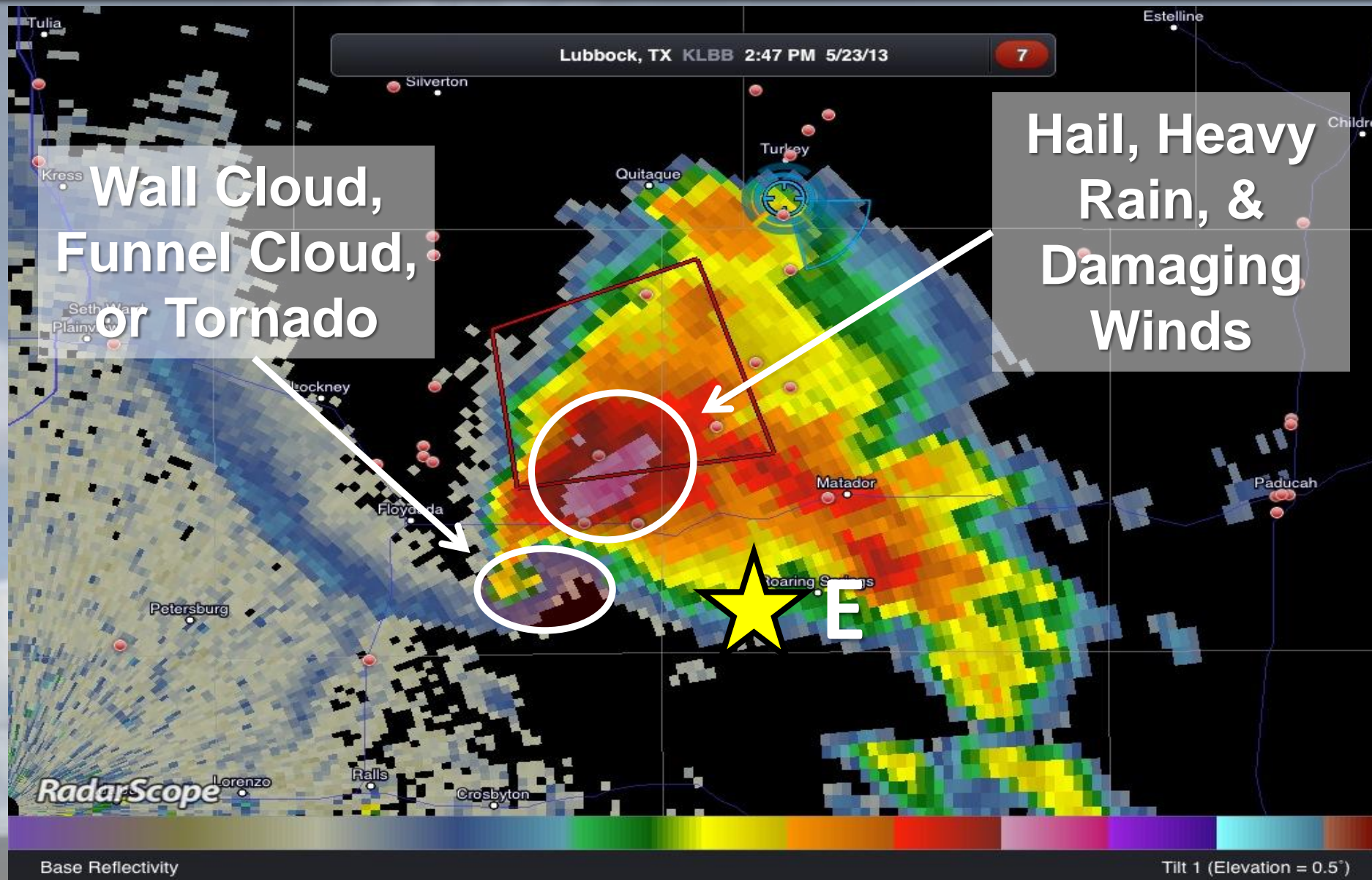


Your Location Relative to a Storm



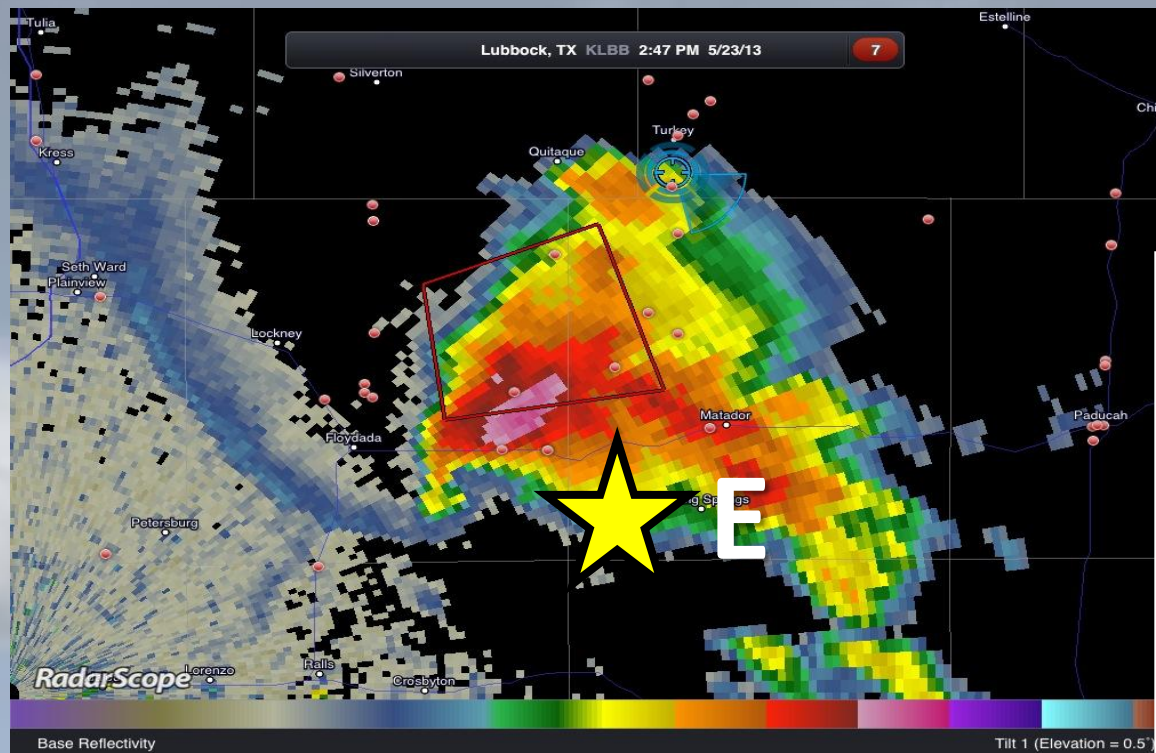


Your Location Relative to a Storm



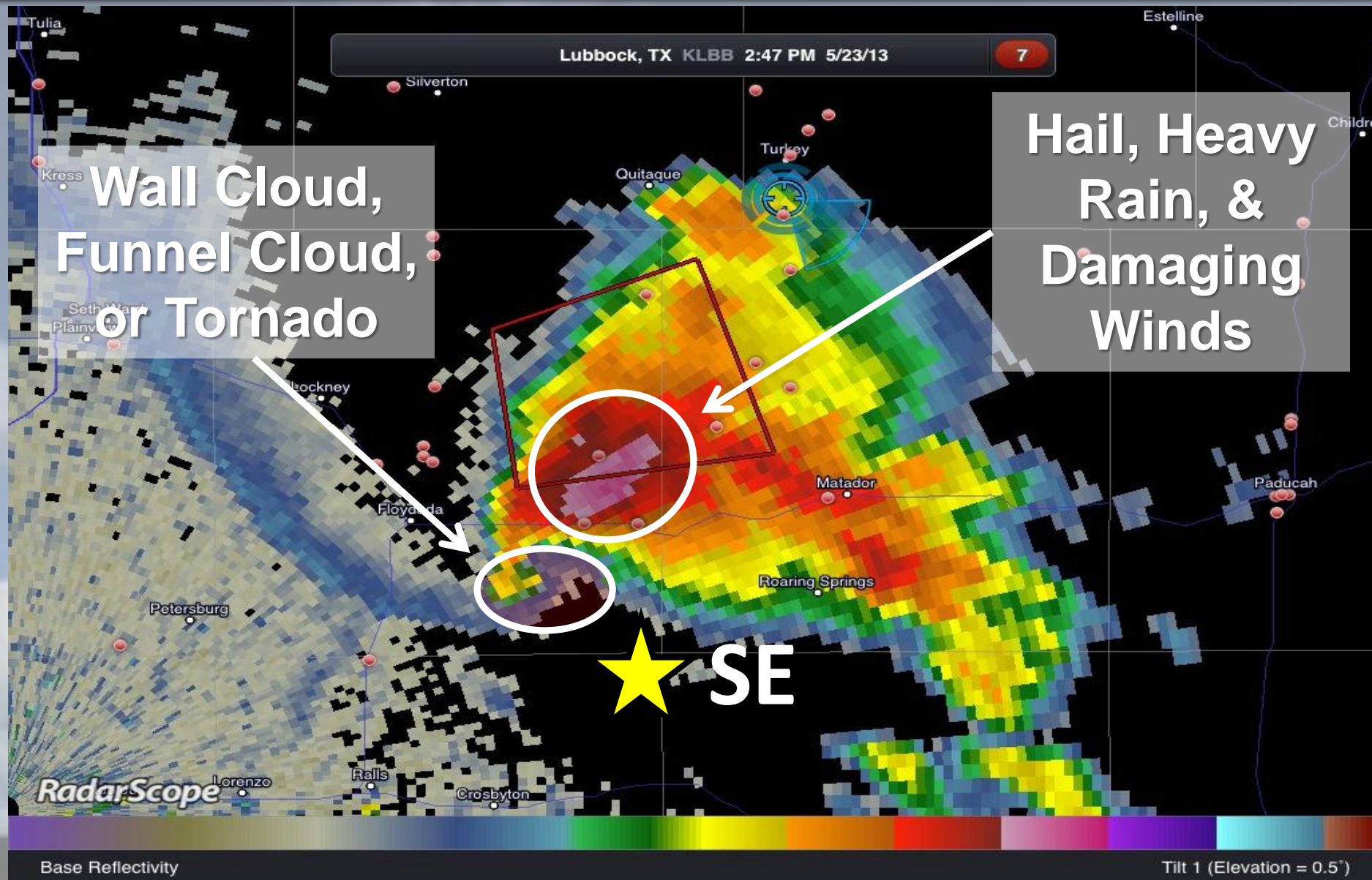


Your Location Relative to a Storm



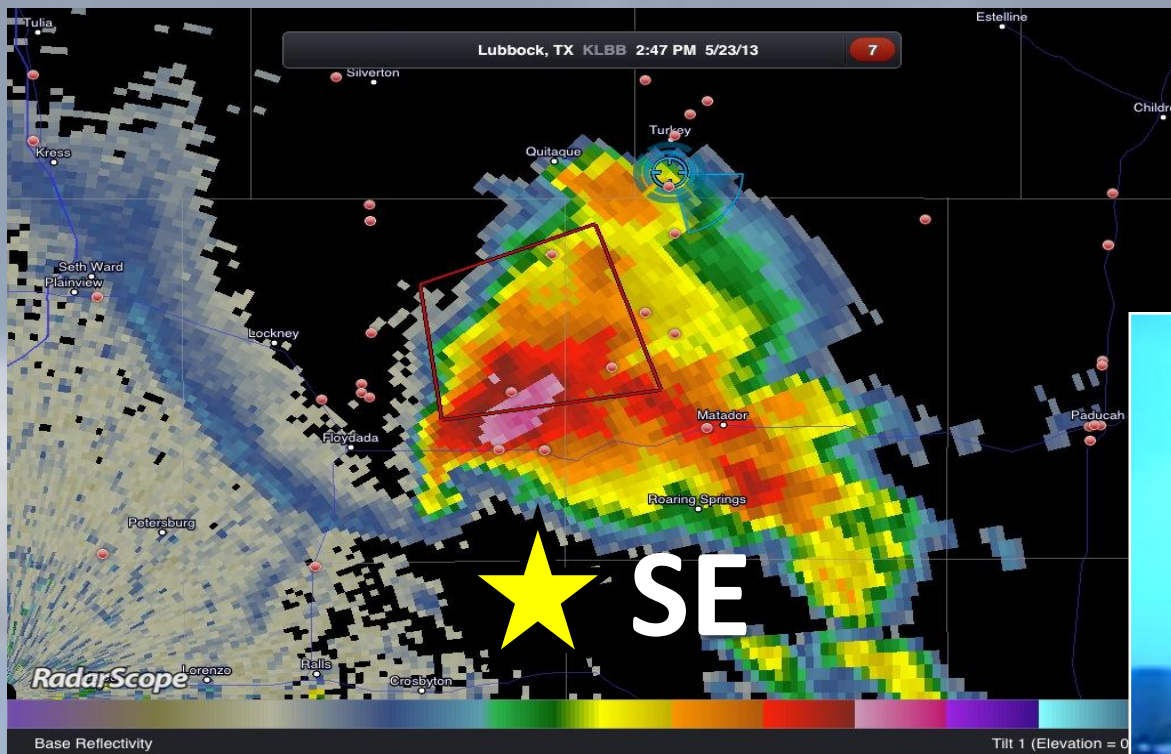


Your Location Relative to a Storm





Your Location Relative to a Storm





Reporting Severe Weather to NWS



NWS Needs To Know:

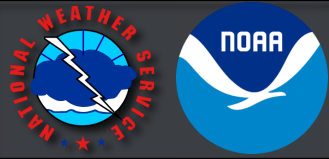
What
When
Where



What type of severe weather is occurring?

When did the severe weather occur?

Where was the severe weather?



What Severe Weather to Report



NWS needs reports of:

Flooding



Hail



Ice and Snow



High Winds & Wind Damage



Funnel Clouds and Tornadoes



Hail

- Report the largest size stone you see
- Compare to common objects



Penny	0.75 inches
Nickel	0.88 inches
Quarter	1.00 inches
Half Dollar	1.25 inches
Ping Pong Ball	1.50 inches
Golf Ball	1.75 inches
Hen Egg	2.00 inches
Tennis Ball	2.50 inches
Baseball	2.75 inches
Tea Cup	3.00 inches
Grapefruit	4.00 inches
Softball	4.50 inches



What Severe Weather to Report



What's wrong with this picture?





What Severe Weather to Report



Wind Damage and Estimates

- Wind damage is just as important as wind speed measurements
- Specify if gust is measured or estimated
- Most estimates are too high





What Severe Weather to Report



Flash Flooding

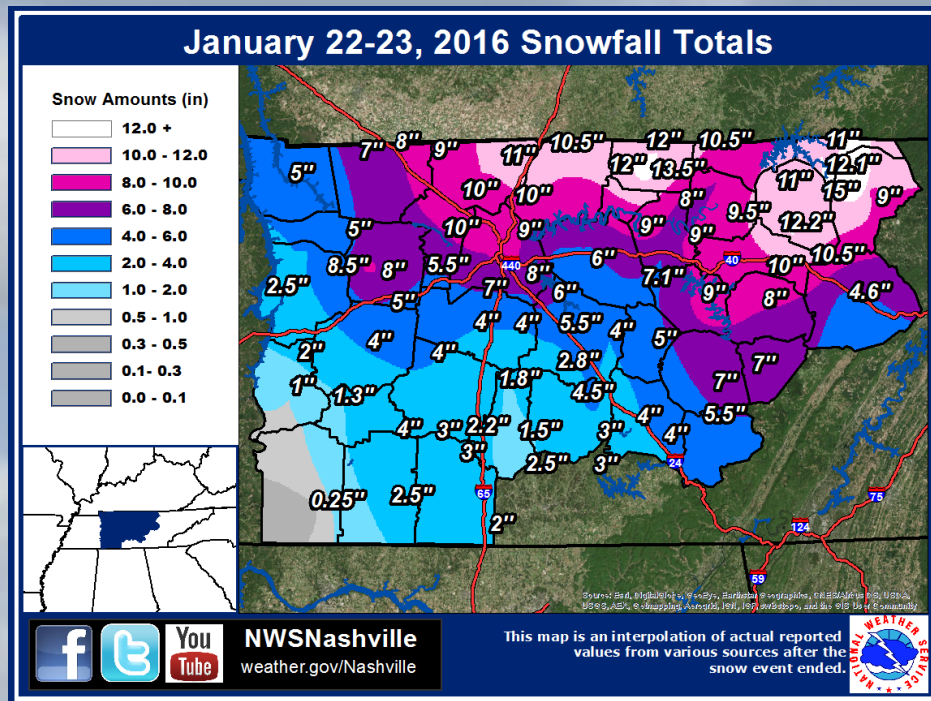




What Severe Weather to Report



Snowfall or Ice Accumulations



Reporting Location

- Be clear with your location using intersections or crossroads if at all possible
- Use caution with addresses on social media



Example: I'm on Couchville Pike about half a mile east of the intersection of Weakley Lane. There are trees down on powerlines and on the road.



How to Report Severe Weather



- Do not assume that if a warning is issued, the NWS knows for certain that severe weather has occurred. (we want to hear from you!)
- Never assume your report is not important.
- Do not exaggerate your report!



NWS Nashville



@NWSNashville



Social Media Reporting - Facebook



US National Weather Service Nashville Tennessee

Published by Nws Nashville

June 26 at 7:37 PM

Did you see any wind damage from today's storms, such as trees or power lines blown down? Be sure to let us know in the comments below, with a photo, time and location if possible. Thanks!



US National Weather Service Nashville Tennessee

Published by Nws Nashville

July 9 at 2:20 PM

*** CANCELED ***

After discussion with SPC, we've decided on a Middle TN. This watch technically goes until 11 pm. Counties will likely be cleared from the watch and focused on a time frame of now until 8 pm. Please

Tornado Watch until 11 pm CDT



US National Weather Service Nashville Tennessee

Published by Nws Nashville

June 30 at 5:02 AM

CANCELLED

Flash flood warning for parts of Robertson and Sumner Counties including the cities of White House, Millersville, and Shackle Island until 7 am.



NWS Nashville @NWSNashville · 26s

Flash Flood Warning including White House TN, Millersville TN and Shackle Island TN until 7:00 AM CDT



- Many times, we'll make a special post soliciting reports
- No need to wait! Post reports in any of our posts. We're monitoring them all!



Social Media Reporting – X (Twitter)



NWS Nashville @NWSNashville · Jun 26

Here's all the wind damage reports we've received so far today. If we missed yours, let us know! [#tspotter](#)



IEMBot OHX @iembot_ohx · Jun 26

Automated

OHX issu
previous
mesonet.



NWS Nashville @NWSNashville · Jul 17

Severe Thunderstorm Warning continues for McMinnville TN until 10:00 PM CDT



Severe Thunderstorm Warning

Valid Until
10:00 PM CDT Wednesday
July 17, 2024



Threat Information

WIND
Up to
60 MP

HAIL
Pea
Sized



NWS Nashville @NWSNashville · Jul 9

The Tornado Watch has been canceled for Middle Tennessee and is no longer in effect. Scattered storms will continue into the evening but the severe threat has diminished considerably.



NWS Nashville @NWSNashville · Jul 9

A tornado watch has been issued for parts of Illinois, Indiana, Kentucky, Ohio and Tennessee until 11 PM CDT

Tornado Watch

Valid Until
11:00 PM CDT Tuesday
July 9, 2024



- When posting on X, be sure to include **#tspotter**
- These reports can be easily filtered by our X brigade of folks helping us out
- Remember: what, where and when!



Social Media Reporting - Example





US National Weather Service Nashville Tennessee

Strong to severe thunderstorms are moving southward out of Kentucky into northern parts of Middle Tennessee this afternoon. Any reports of high winds or hail would be greatly appreciated!

2,384 Impressions · 0.08% Feedback

August 18 at 3:18pm · [Like](#) · [Comment](#)

  cool beans
August 18 at 4:07pm · [Like](#)

  Between 3:20pm and 3:40pm, wind gusts of
60+ miles an hour in Adams, TN
August 18 at 5:19pm · [Like](#)

Is this a good report?



Social Media Reporting - Example



Is this a good report?



Social Media Reporting - Example



• Jun 26



Wind damage. Large branches from tulip poplar tree on house. Fitzpatrick Road Donelson 1 mile from Percy Priest Dam.



1



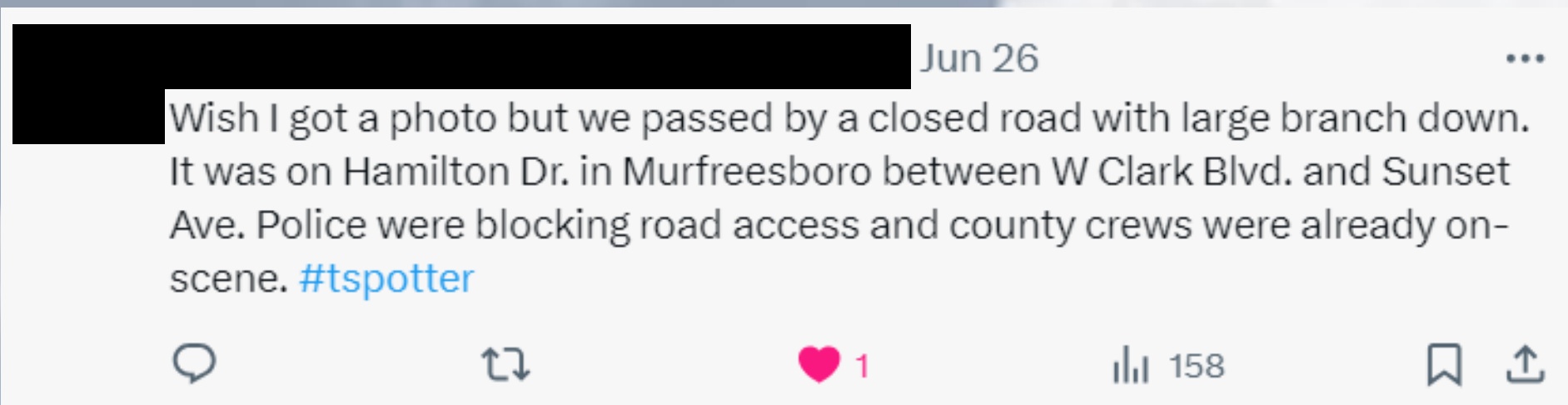
39



Is this a good report?



Social Media Reporting - Example



Is this a good report?



NWS Nashville Presents

Weather101

- Rip Currents
- Global Circulations
- Hurricanes
- The Basics
- NWS Damage Surveys
- Severe Storm Elements
- Satellites

- Tsunamis
- Flash Flooding
- METARs and Upper Air Patterns
- Upper Air Soundings
- The Radar
- Quasi-Linear Convective Systems
- Weather Models

weather.gov/ohx/weather101
No more than 1 hour classes with Q&A
Totally FREE!



CoCoRaHS



HELP WANTED | HELP WANTED | HELP WANTED

HELP WANTED

We're looking for precipitation reporters!



Learn more at cocorahs.org

 National Weather Service - Nashville, TN

WANTED



WANTED: CITIZEN SCIENTIST

Report the precipitation that falls in your own backyard!

Join CoCoRaHS at cocorahs.org

 National Weather Service - Nashville, TN

Join us at cocorahs.org



Questions?



Thank You for Attending!

Scott Unger

scott.unger@noaa.gov

615-754-8500

If you were not alone during this presentation, please send an email with the number of people in attendance