

# 2026 Central Indiana Spotter Talk

NWS Indianapolis



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

# Why Are We Here?

## Why Spotters? Ground Truth and Timely Reports!

People react when they **KNOW** a tornado is on the ground!

Reports are most valuable **as the storm is happening**.  
This help us with warning decisions, and adds credibility to them.

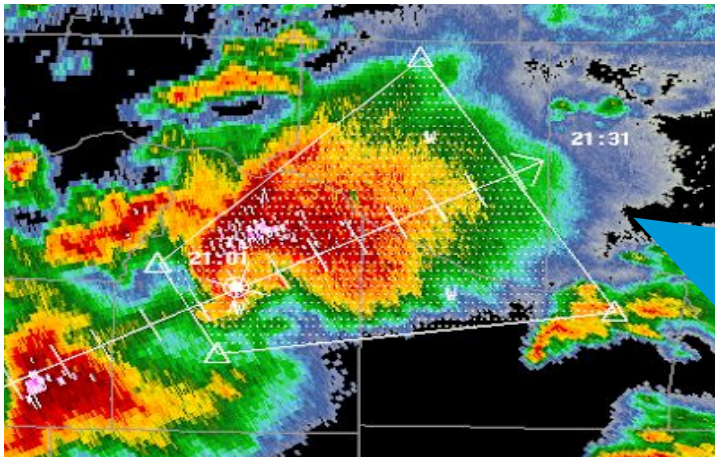
- Spotters are our eyes and ears
- Your report makes a difference in the warning process.
- People react faster when warnings are supported by reliable ground truth
- You are serving the Warning Team, Your Community, and Neighboring Counties

**We Need You to Report!!**

# The Role of the Spotter

## The spotter needs to...

- Recognize features associated with severe weather
- Report severe weather in **real time**.
- Help us communicate & educate weather hazards in your community



# The Role of the Spotter

## Spotters are...

- Critical to NWS Warning Operations!
- Our eyes and ears on the ground
- Help verify and supply information about what is happening at your location
- Your report **makes a difference** in the warning process
- People **react** faster when warnings are supported by reliable ground truth



# About the National Weather Service

## NWS Mission:

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 Vision:

A **Weather-Ready Nation**: Society is **prepared for and responds to** weather, water, and climate-dependent events.

# Map of NWS County Warning Areas



Federal Government



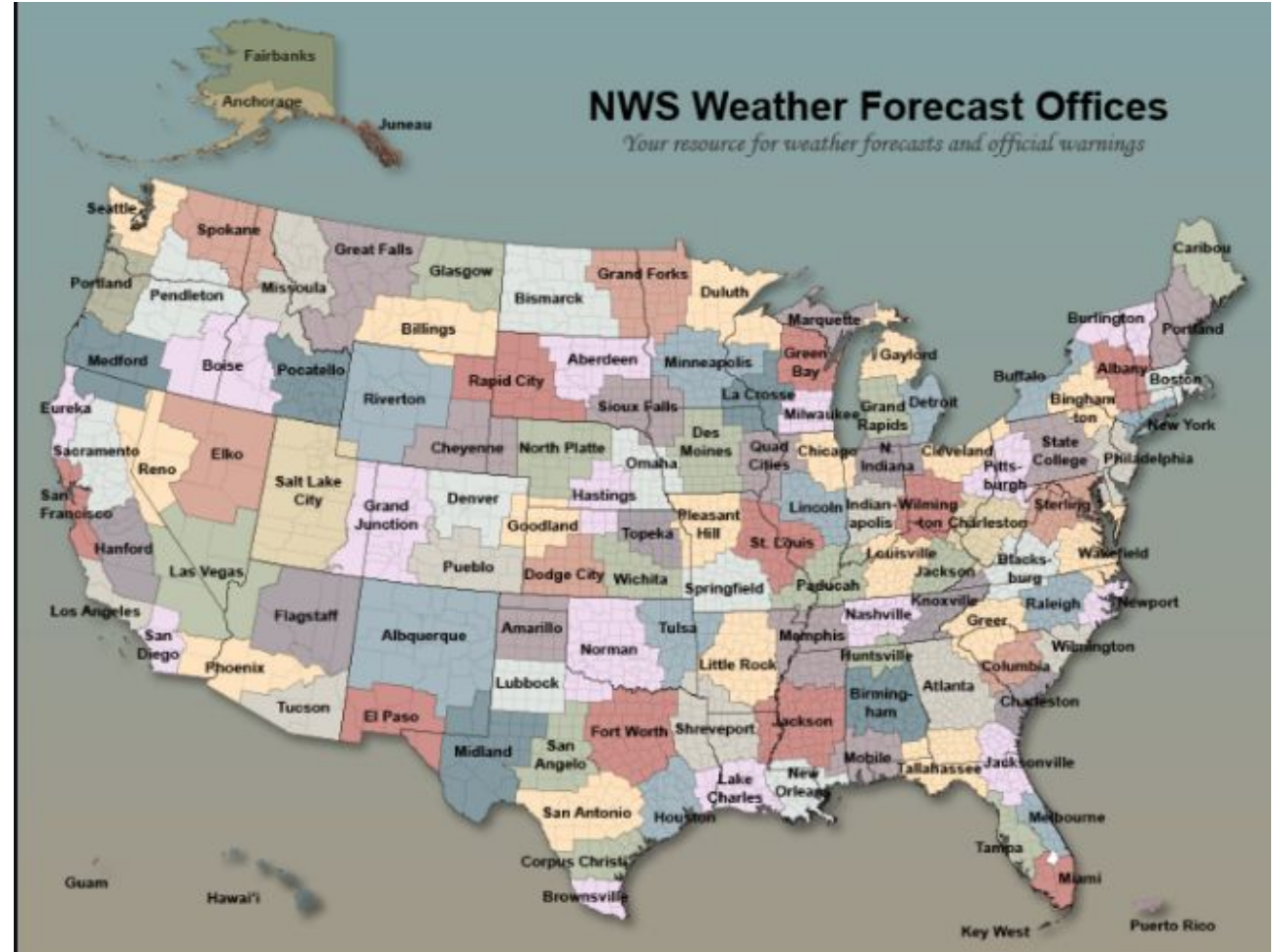
Department of Commerce



National Oceanic and Atmospheric Administration



National Weather Service



*There are 122 NWS offices across the United States, each NWS office has its own area of responsibility.*

# NWS Indianapolis Website



## NWS Forecast Office Indianapolis, IN

[Weather.gov](https://www.weather.gov) > Indianapolis, IN

Indianapolis, IN  
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](#)



[Special Weather Statement](#)



[Hazardous Weather Outlook](#)



Last Map Update: Tue, Jan 13, 2026 at 3:32:46 pm EST

URL: [www.weather.gov/ind](https://www.weather.gov/ind)

URL: [www.weather.gov/ind/indwxbrief](https://www.weather.gov/ind/indwxbrief)



# DISCLAIMER!

## SPOTTING SEVERE WEATHER CAN BE DANGEROUS!

Your safety is more important  
than a report.

The National Weather Service does  
not condone, endorse, or recommend  
chasing severe weather.

**The majority of our reports come in  
from people reporting from their home!**

# Situational Awareness Tools



# Plan Ahead

1-7 Day Outlooks



# Severe Weather Cycle

# 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

Tornado Watch #251

This complex block contains a 'Tornado Watch' alert. It includes a title bar, validity information, threat details for tornadoes, hail, and wind, and potential exposure statistics. A map of the Twin Cities area is shown with a yellow watch overlay covering a large portion of the region.

# 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: 25,355  
Schools: 9  
Hospitals: 0

This complex block contains a 'Tornado Warning' alert. It includes a title bar, validity information, threat details for a tornado and hail, and potential exposure statistics. A map of the Lake Delton area is shown with a red warning overlay covering a specific region.

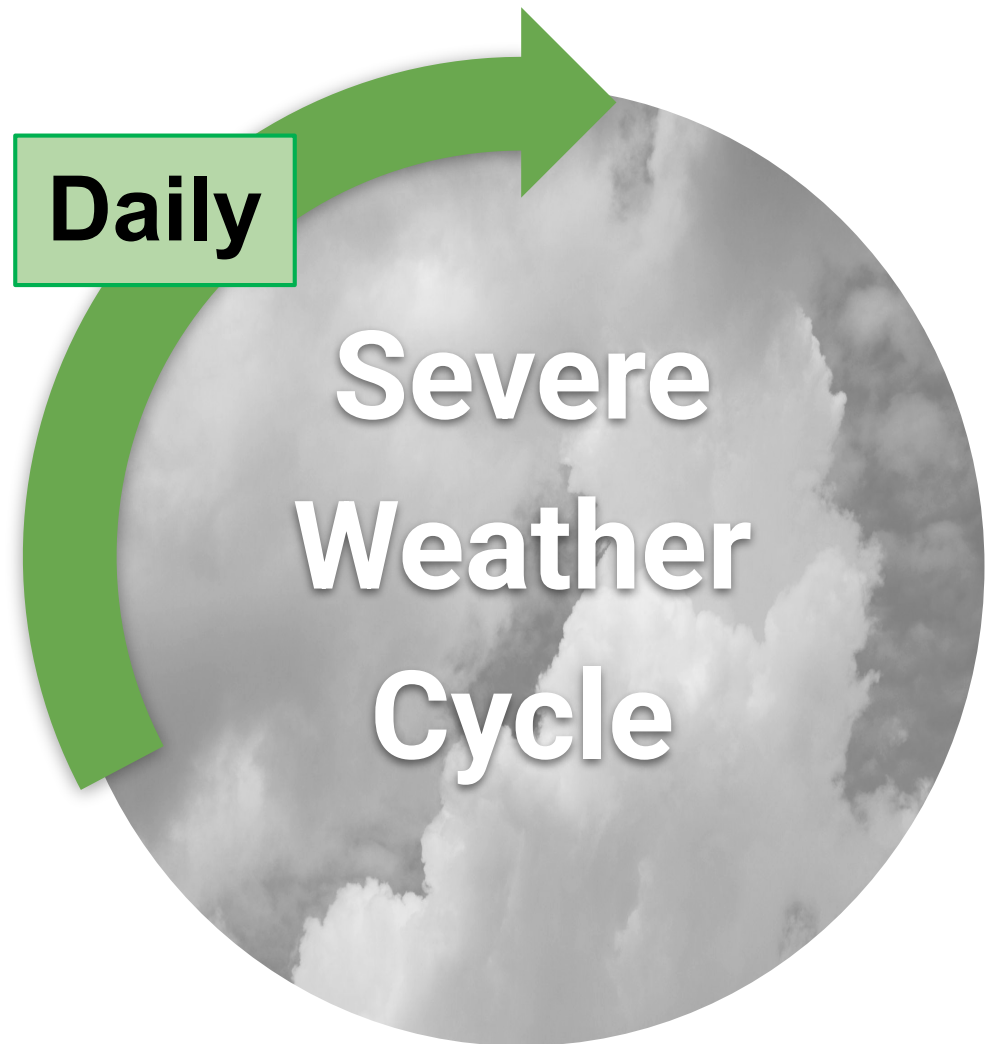
# Stage 1: Outlook

Review NWS Products and Services daily.

Typically issued several days out.

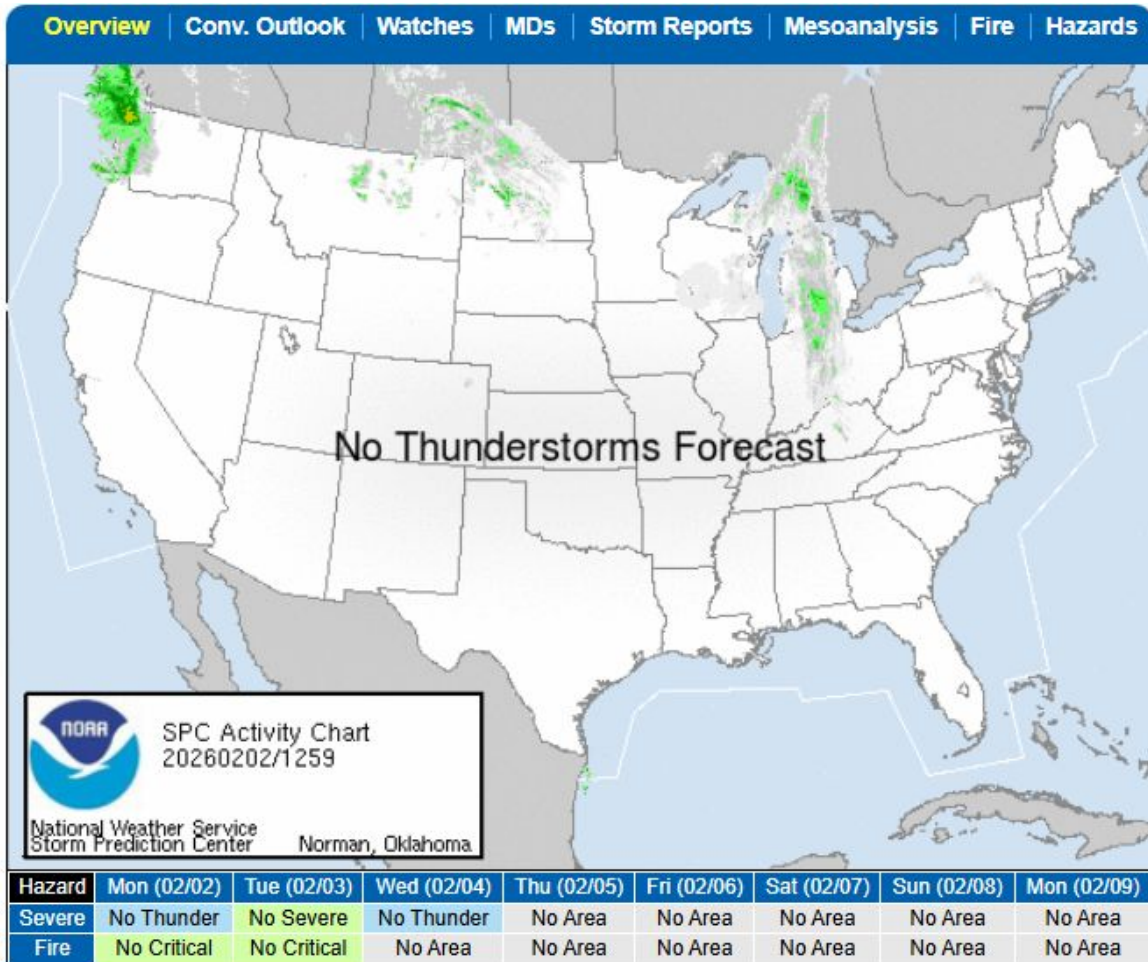
Have a plan and know where to shelter in the event severe weather strikes. Make sure you have emergency supplies.

**Have a Plan!**

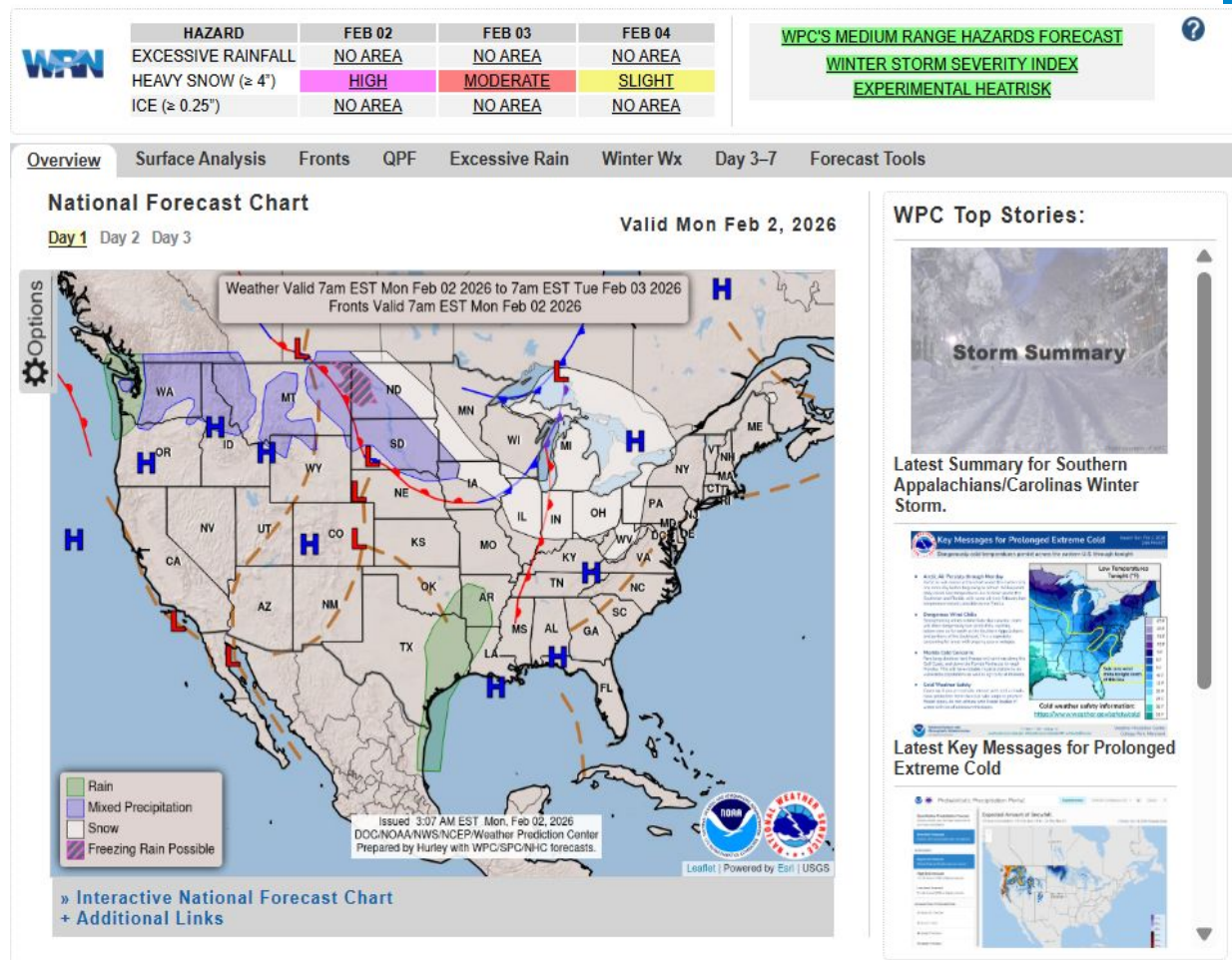


# NWS National Centers







## Storm Prediction Center



## Weather Prediction Center



# Understanding Severe Weather Outlooks

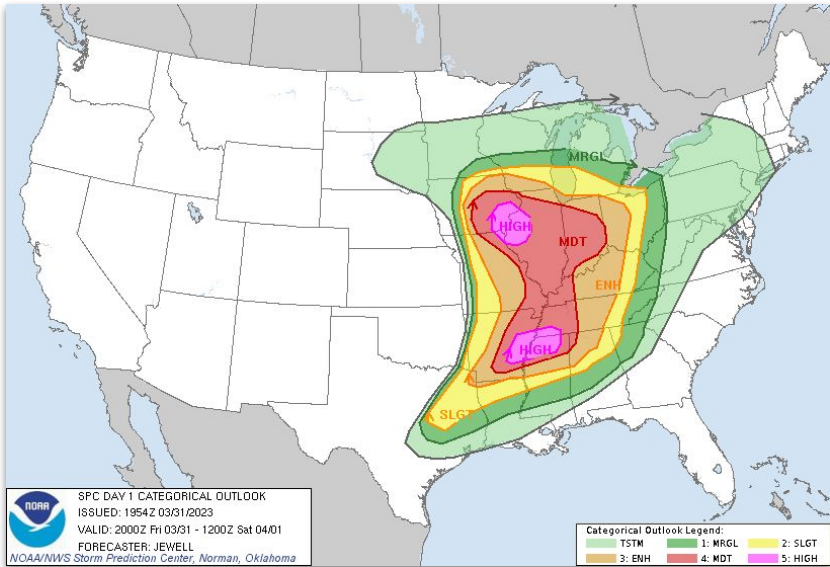
LEVEL	CATEGORY	DETAILS	SUMMARY	How many severe storms are possible?	How bad could the worst storms be?	DEFINITIONS
	General Thunderstorm	Although severe weather is not expected, <i>all</i> thunderstorms can produce deadly lightning, gusty winds, and small hail.	No severe thunderstorms expected		Similar to storms your area experiences many times per year	<b>Severe Storm</b>  Any storm that contains at least one of the following:
<b>1</b>	<b>Marginal (MRGL)</b>	Some storms could be capable of damaging winds and severe hail. Localized tornado threat could develop.	Isolated severe storms possible		Similar to storms your area may experience several times per year	<b>Wind gusts of at least 58 mph</b> . <b>Hail at least one inch in diameter</b> . <b>Tornado</b>
<b>2</b>	<b>Slight (SLGT)</b>	Increased confidence that some storms will contain damaging winds, severe hail, and/or tornado potential. <i>A few severe storms could be significant</i>	Isolated to scattered severe storms expected		Similar to storms your area may experience a few times per year	
<b>3</b>	<b>Enhanced (ENH)</b>	High confidence that several storms will contain damaging winds, severe hail, and/or tornadoes. <i>Several severe storms could be significant</i>	Scattered to numerous severe storms expected		Similar to intense storms your area may only experience once or twice per year	<b>Significant Severe</b>  Any of the following hazards:
<b>4</b>	<b>Moderate (MDT)</b>	High confidence that many storms will contain damaging winds, severe hail, and/or tornadoes. <i>Several severe storms likely to be significant</i>	Scattered to numerous severe storms expected		Similar to intense storms your area may only experience once per year or less	<b>Wind gusts of at least 75 mph</b> . <b>Hail at least two inches in diameter</b> .
<b>5</b>	<b>High (HIGH)</b>	High confidence that an outbreak of storms will contain tornadoes, damaging winds, and/or severe hail. <i>Tornado outbreak and/or widespread damaging winds</i>	Numerous severe storms expected		Very intense storms your area may only experience once or twice in a lifetime	<b>Tornado of at least EF-2 rating</b>

spc.noaa.gov | weather.gov

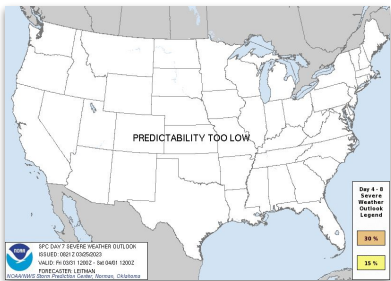
Increasing coverage and intensity of severe weather

# Storm Prediction Center Outlooks

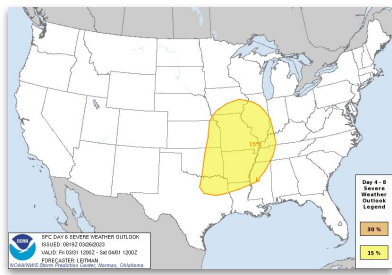
[www.spc.noaa.gov](http://www.spc.noaa.gov)



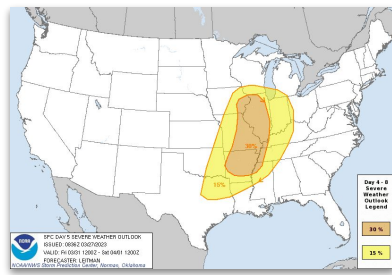
Level	Category Name	General Description	Frequency At or above
1/5	"Marginal"	Isolated Severe Storm	~35 times a year
2/5	"Slight"	A Few Severe Storms	~15 times a year
3/5	"Enhanced"	Numerous Severe storms	~2 times a year
4/5	"Moderate"	Severe Weather Outbreak	~1 every 2 years
5/5	"High"	Deadly Tornado Outbreak or Derecho	Once every 5-10 years



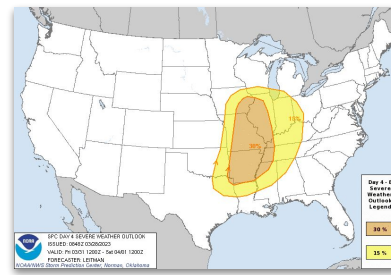
Day 7



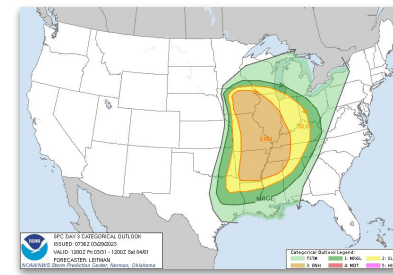
Day 6



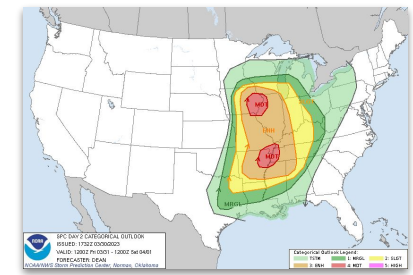
Day 5



Day 4

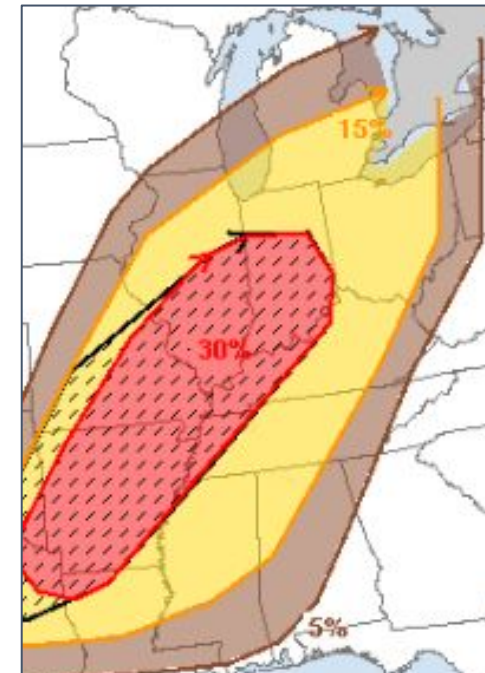
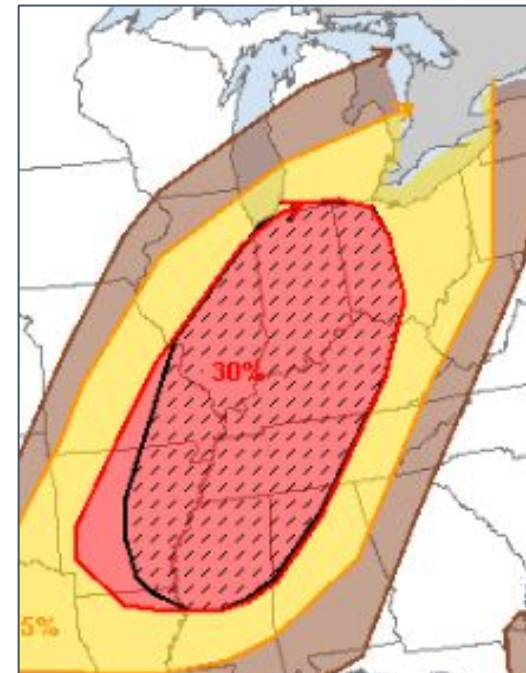
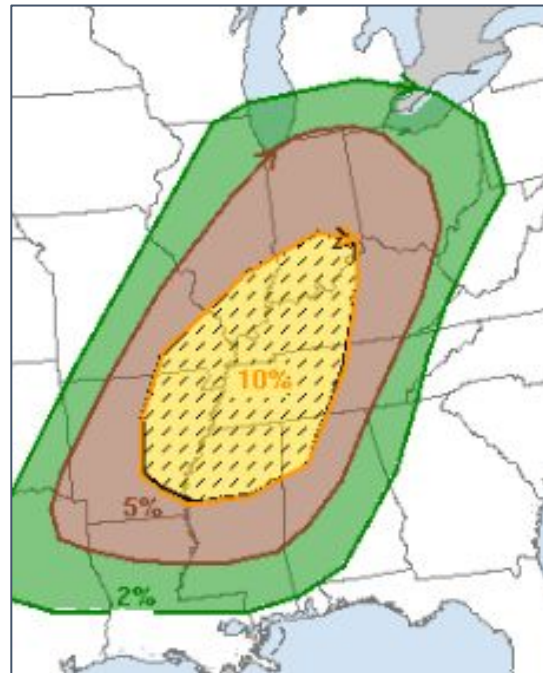
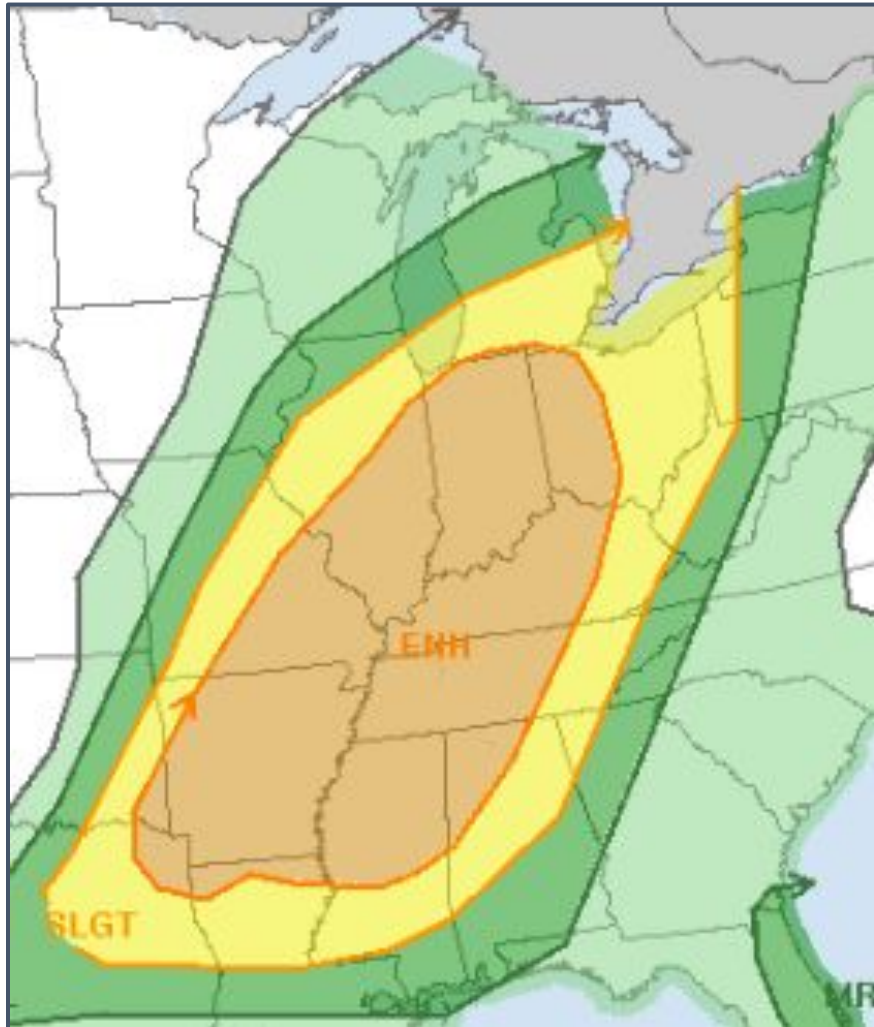


Day 3



Day 2

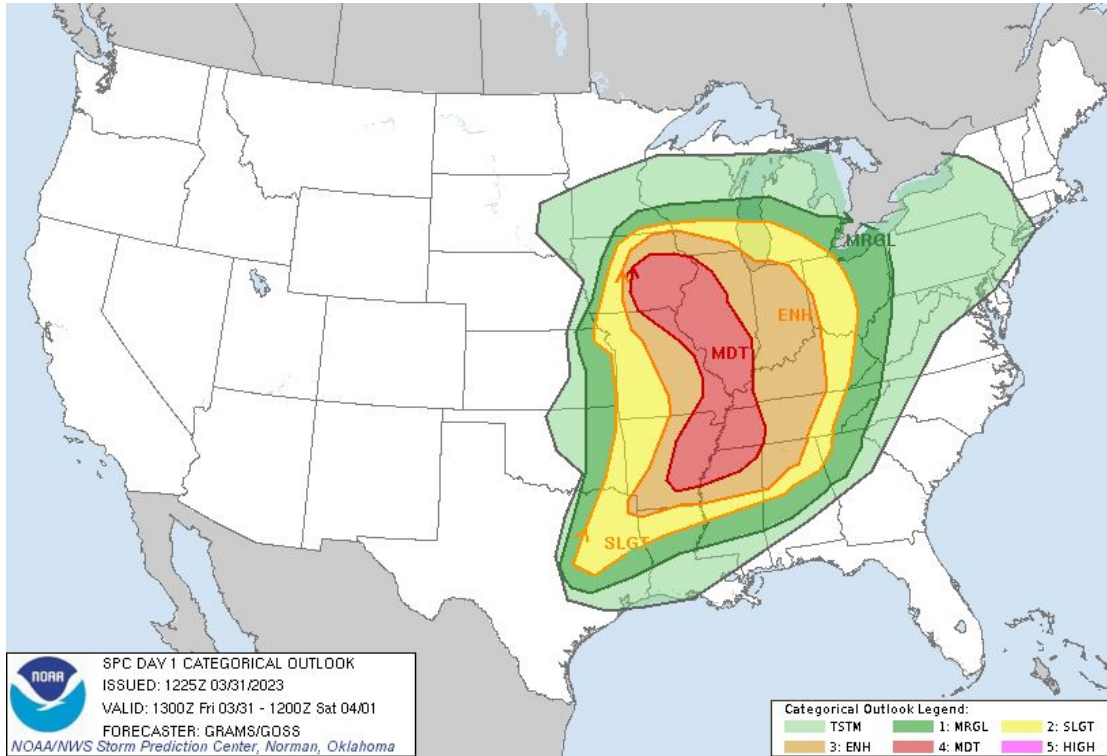
# Day 1 & Day 2 Hazard Specific Probabilities



## Probabilities for tornadoes, damaging winds, and large hail

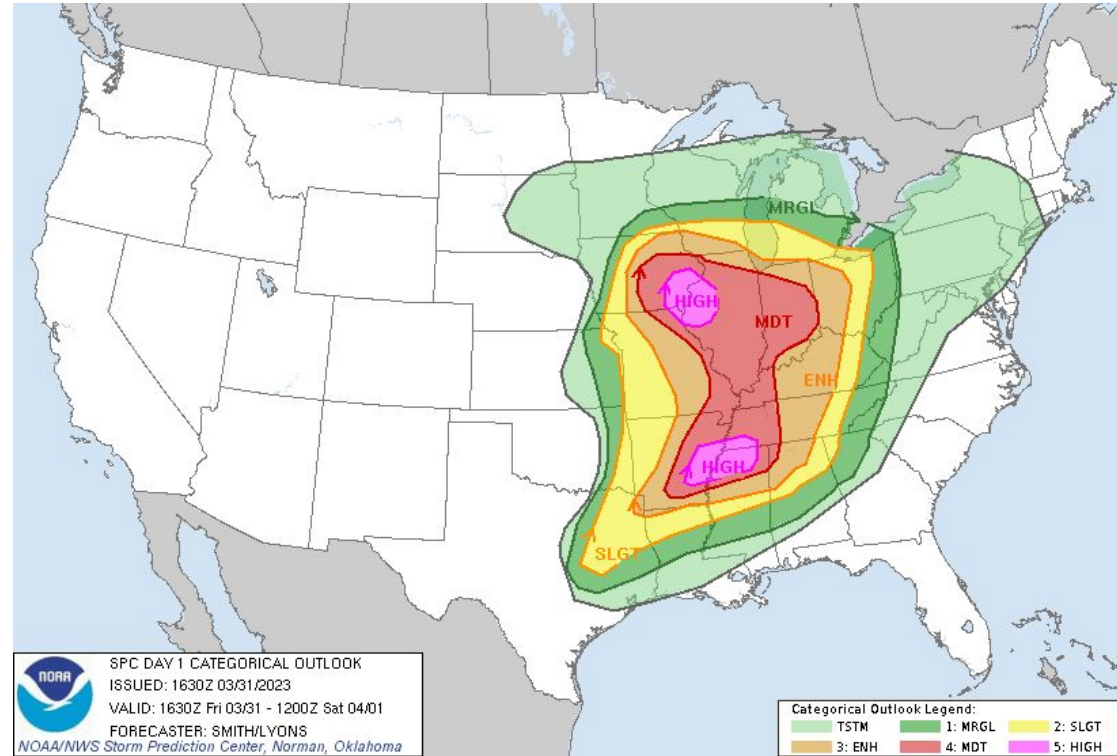
- Likelihood of the hazard to occur within 25 miles of a point
- Hatched areas denote higher confidence in high-end severe weather

# Outlooks CAN Change the DAY OF an Event



9 AM, March 31st, 2023

- Large area outlooks for severe weather across the Midwest and Mid-Mississippi Regions.
- Large area under Enhanced and Moderate Risks



4:30 PM, March 31st, 2023

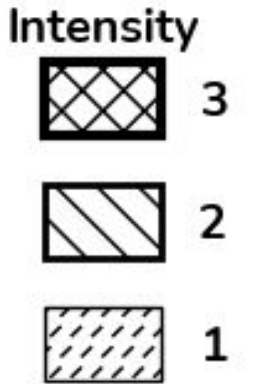
- Moderate and Enhanced Risk further east across Indiana, Kentucky, Tennessee, and Ohio.
- Introduction of High Risk Areas in Iowa, Illinois, Missouri, Arkansas, Tennessee, and Mississippi

# New: Conditional Intensities in SPC Outlooks

**Key Change:** You no longer need a 10% or greater probability area to highlight significant severe potential.

**Methodology:** Intensity forecasts are now based on storm environment and storm mode.

**Definition:** These intensities are conditional, meaning: “If a tornado occurs, what is the probability it will be EF2+/EF3+/EF4+?”



# Conditional Intensity Outlooks Summary

**New Conditional Intensity Scheme not limited to 10% or greater coverage of unconditional probability areas:**

**Multiple Intensity Tiers:**

**Intensity Level <1:** Mostly Weak Tornadoes

**Intensity Level 1 :** Max expected EF2+

**Intensity Level 2 :** Max expected EF3+

**Intensity Level 3 :** Max expected EF4+

**Driven by Storm Environment and Convective Mode:**

**Intensity Level 2+ tornado** only in high-end environments with supercells

**Intensity Level 2+ wind** only with an organized MCS

**Intensity Level 2+ hail** only with supercells

# Weather Prediction Center Excessive Rainfall Outlooks

## No Area/Label

Flash floods are generally not expected.

## 1 - MARGINAL (MRGL)

Isolated flash floods possible

Localized and primarily affecting places that can experience rapid runoff with heavy rainfall.

## 2- SLIGHT (SLGT)

Scattered flash floods possible

Mainly localized. Most vulnerable are urban areas, roads, small streams and washes.

Isolated significant flash floods possible.

## 3- MODERATE (MDT)

Numerous flash floods likely

Numerous flash flooding events with significant events possible. Many streams may flood, potentially affecting larger rivers.

## 4- HIGH (HIGH)

Widespread flash floods expected

Severe, widespread flash flooding. Areas that don't normally experience flash flooding, could.

Lives and property in greater danger.

Flash flooding near me?

Flash Flooding

NO Flash Flooding

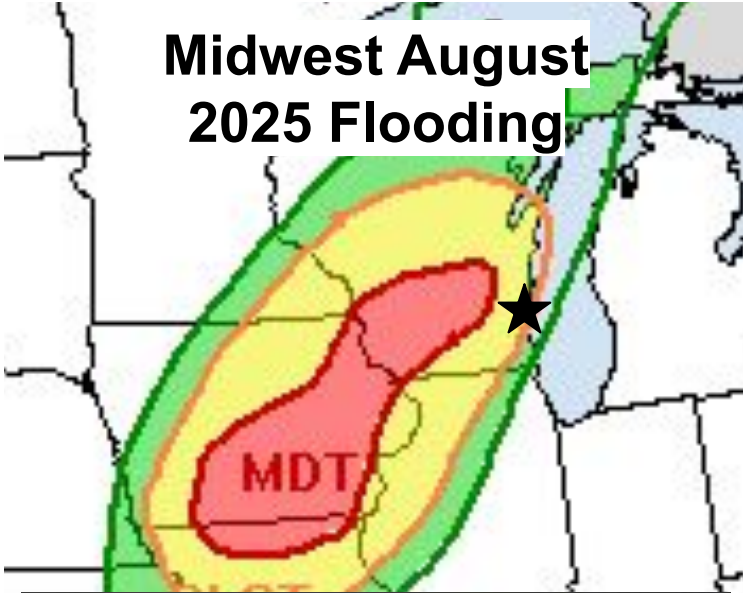


**Increasing coverage and rarity of flash flooding**



WEATHER PREDICTION CENTER

# Excessive Rainfall Outlook Examples



Level	Category Name	General Description	Frequency
1/4	“Marginal”	Isolated Flash Flooding	~25 times a year
2/4	“Slight”	Scattered Flash Flooding	~8 times a year
3/4	“Moderate”	Numerous Flash Floods Likely	~1 every 5-10 years
4/4	“High”	Deadly, Widespread Flash Flooding Expected	Rare

[www.wpc.ncep.noaa.gov](http://www.wpc.ncep.noaa.gov)

# Local NWS Weather Stories

## Step 1: Assessment

Local forecast by "City, St" or ZIP code  
Enter location ...   
[Location Help](#)

**News Headlines**


- 2026 Central Indiana Spotter Training Sessions (Updated January 16)
- 2025 Annual Central Indiana Weather Summary

**MY FORECAST**  
Indianapolis IN

**NWS Forecast Office Indianapolis, IN**  
[Weather.gov](#) > Indianapolis, IN  
Indianapolis, IN  
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

- Cold Weather Advisory
- Hazardous Weather Outlook

Zoom Out

A Few Clouds  
**11°F**  
-12°C [Get Detailed Info](#)

Tonight  
Partly Cloudy  
Low: 6°F

Tuesday  
Sunny  
High: 27°F

[change location](#)

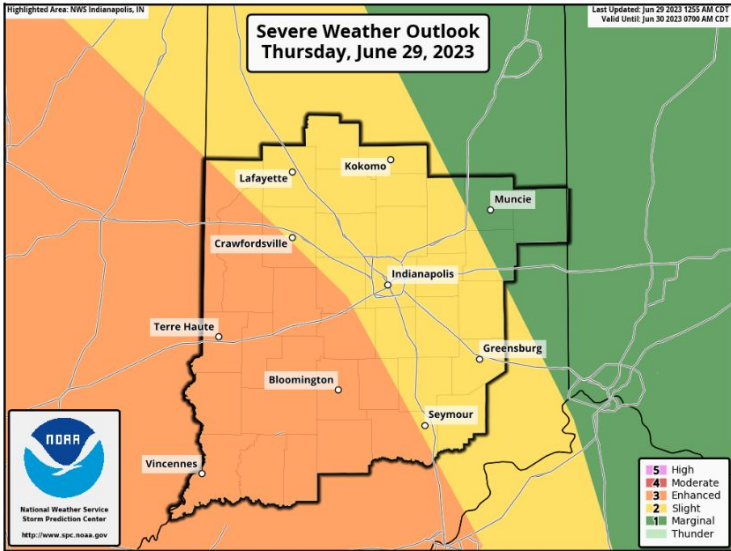
**Enhanced Risk Today** June 29, 2023 4:50 AM

**Timing**  
Several rounds today

**Actions**  
Severe weather possible Have a plan of action ready now ahead of potential severe weather

**Severe Threats**

- Tornado: Lo Med HI
- Hail: Lo Med HI
- Wind: Lo Med HI
- Flooding: Lo Med HI



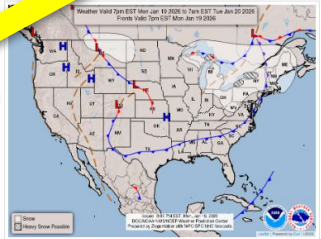
Highlighted Area: NWS Indianapolis, IN  
Severe Weather Outlook Thursday, June 29, 2023  
Last Updated: Jun 29 2023 12:55 AM CDT  
Valid Until: Jun 29 2023 9:00 AM CDT

**National Weather Service**  
Indianapolis, IN

**Cold Weather Advisory through 9 AM Tuesday** Jun 19, 2026 8:40 AM

**Details:**  
Wind Chills as low as -15° this morning, as low as -10° tomorrow morning

**Actions:**  
Wear multiple layers of clothing if outdoors or driving  
Bring Pets Indoors and Check on Elderly



**Weather Story** **Weather Map** **Local Radar**

Forecast graphics are also available on our Facebook and X pages.

# Hazardous Weather Outlook (HWO)

## Step 1: Assessment

### NWS Forecast Office Indianapolis, IN

[Weather.gov](http://Weather.gov) > Indianapolis, IN

### Indianapolis, IN

Weather Forecast Office

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

Experimental  
Graphical  
Hazardous  
Weather Outlook

Storm and  
Precipitation  
Reports

Outlooks

Submit a Storm  
Report

Experimental  
HeatRisk

Information below for detailed forecast.



[Watches,  
Warnings &  
Advisories](#)

There are no watches,  
warnings, or advisories at this  
time.



Last Map Update: Thu, Feb 5, 2026 at 12:36:09 am EST

Hazardous Weather Outlook  
National Weather Service Indianapolis IN  
208 PM EST Wed Feb 4 2026

INZ021-028>031-035>049-051>057-060>065-067>072-051915-  
Carroll-Warren-Tippecanoe-Clinton-Howard-Fountain-Montgomery-Boone-  
Tipton-Hamilton-Madison-Delaware-Randolph-Vermillion-Parke-Putnam-  
Hendricks-Marion-Hancock-Henry-Vigo-Clay-Owen-Morgan-Johnson-Shelby-  
Rush-Sullivan-Greene-Monroe-Brown-Bartholomew-Decatur-Knox-Daviess-  
Martin-Lawrence-Jackson-Jennings-  
208 PM EST Wed Feb 4 2026

This hazardous weather outlook is for central Indiana.

.DAY ONE...Through Tonight.

No hazardous weather is expected at this time.

.DAYS TWO THROUGH SEVEN...Thursday through Tuesday.

Snow showers are possible late Thursday into Friday. Light  
accumulations will be possible across the northeastern portions of  
central Indiana.

.SPOTTER INFORMATION STATEMENT...

Spotter activation is not expected at this time.

&&

More information, along with other weather, hydrological and climate  
information can be found at <http://weather.gov/ind>

\$\$

# NWS Forecast Discussions

## Step 1: Assessment

MY FORECAST  
Chicago O'Hare  
International Airport IL

**76°F**  
24°C

Today  
Sunny  
High: 85°F

Tonight  
Clear  
Low: 66°F

**NWS Forecast Office Chicago, IL**  
Weather.gov > Chicago, IL

Chicago, IL  
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

- Fire Weather
- Activity Planner
- Hourly Forecasts
- Winter Weather
- Forecast Discussion
- Experimental Heat Risk

Last Map Update: Sat, Aug 31, 2024 at 10:38:29 am CDT

Five Day Forecast  
August 31, 2024  
6:30 AM

Day	High	Low
Sat	77-83	58-67
Sun	72-80	48-63
Mon	71-75	49-59
Tue	74-78	50-61
Wed	77-83	56-66

Weather Story Weather Map Local Radar

### Area Forecast Discussion

National Weather Service Chicago/Romeoville, IL  
546 PM CDT Mon Jul 15 2024

#### .KEY MESSAGES...

- Strong to severe thunderstorms expected late this afternoon into tonight. Locally heavy rainfall possible, which could lead to additional flooding.
- Additional thunderstorm chances continue Tuesday, mainly south of I-80/east of I-55.
- Pattern breaks by Wednesday, with dry weather and seasonable temperature and humidity through the weekend.

&&

#### .MESOSCALE...

Issued at 546 PM CDT Mon Jul 15 2024

Explosive severe thunderstorm development has taken place across Iowa, with storm tops exceeding 65kft. Special soundings from DVN and ILX both show extreme instability and moderate deep layer shear, though sufficient shear to support storm scale organization in light of the extreme instability.

Already seeing signs of amalgamating cold pools/downrafts with convection over Iowa with radar showing some developing rear inflow jets. The evolution of the convection so far continues to fit the expectations for today with evolution to QLCS well underway. As cold pool strengthens, would anticipate a QLCS to begin accelerating eastward with increasing damaging wind threat as storms approach and cross the Mississippi River.

Strengthening low level jet this evening over northern Illinois

## 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.

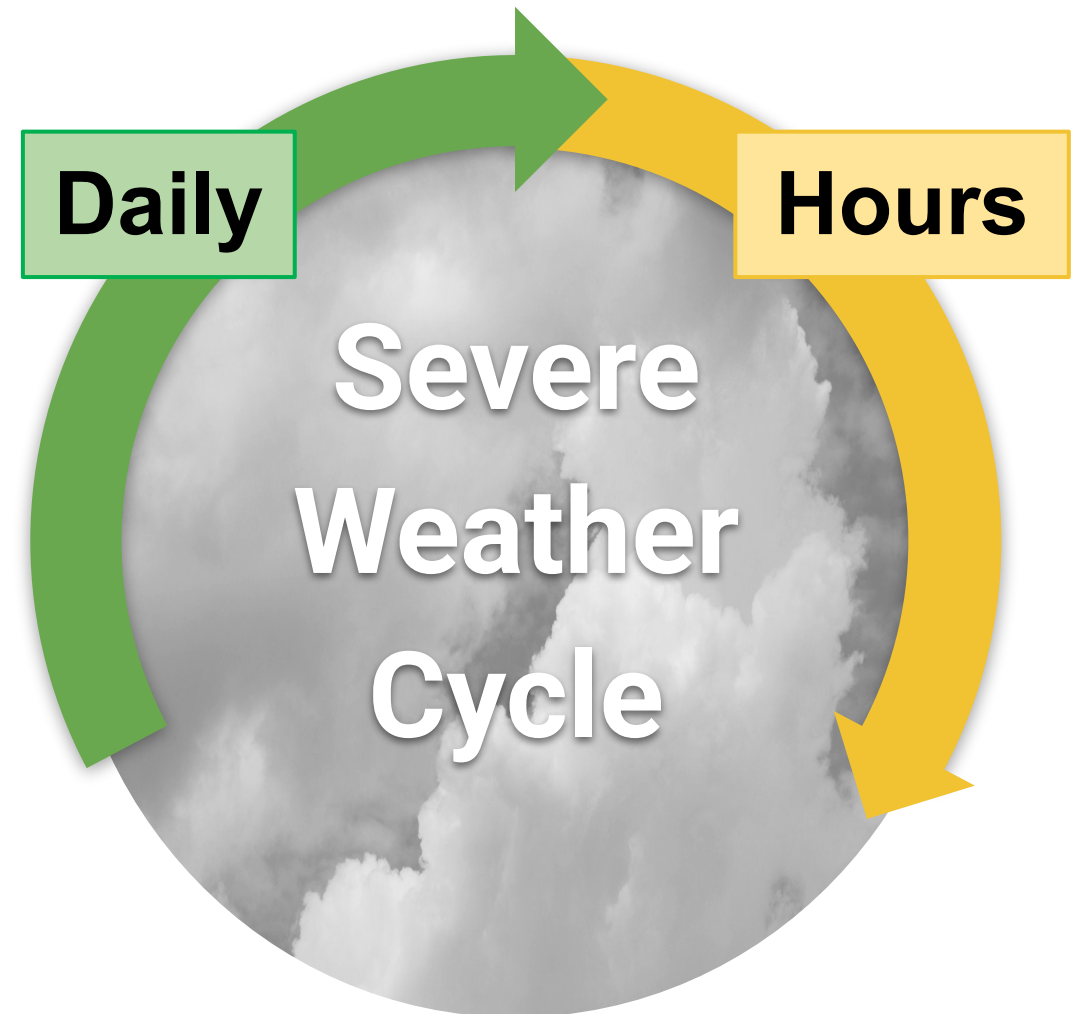
**Have a Plan!**

## Stage 2: Watch

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

Stay informed and monitor closely for warnings.

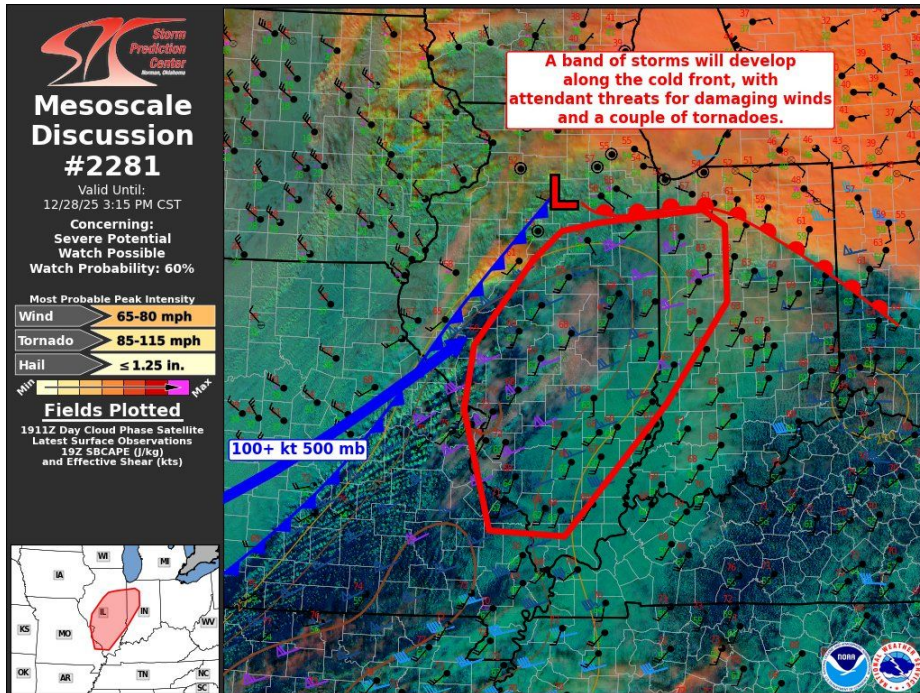
**Be Prepared!**



# Ingredients Are Coming Into Place!

## Step 2: Monitor Mode - Storm Prediction Center Products

### Mesoscale Discussions



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

### Severe Thunderstorm or Tornado Watches



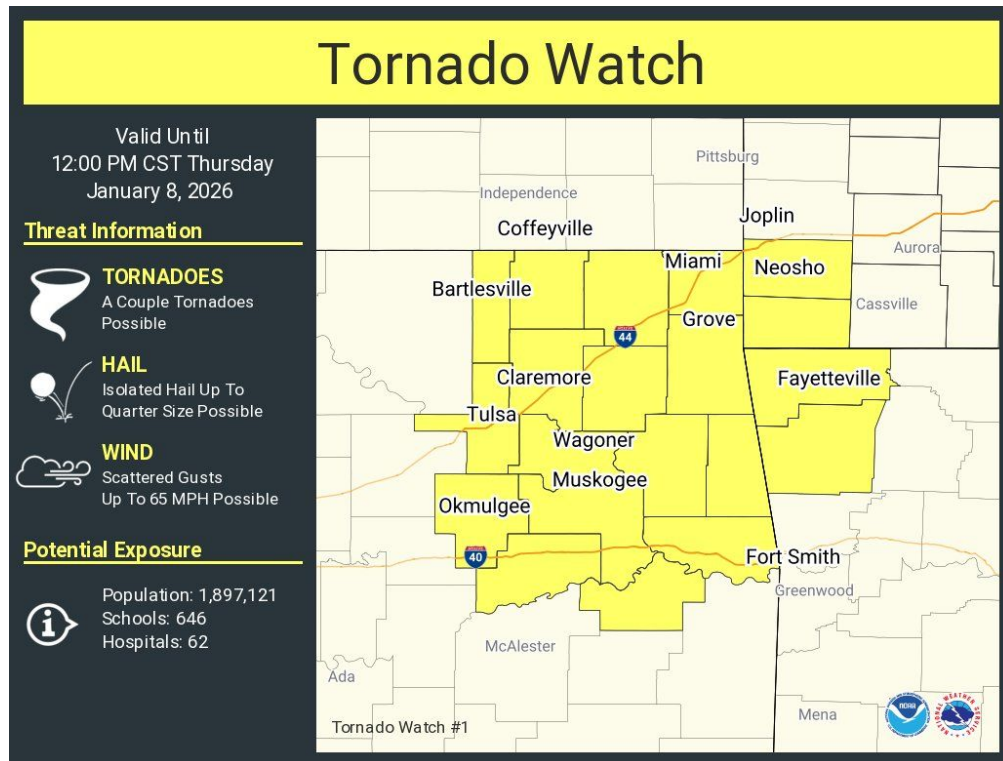
[spc.noaa.gov](http://spc.noaa.gov)  
Weather Radio, Apps

# Understanding Watch vs Warning

## Step 2: Monitor Mode

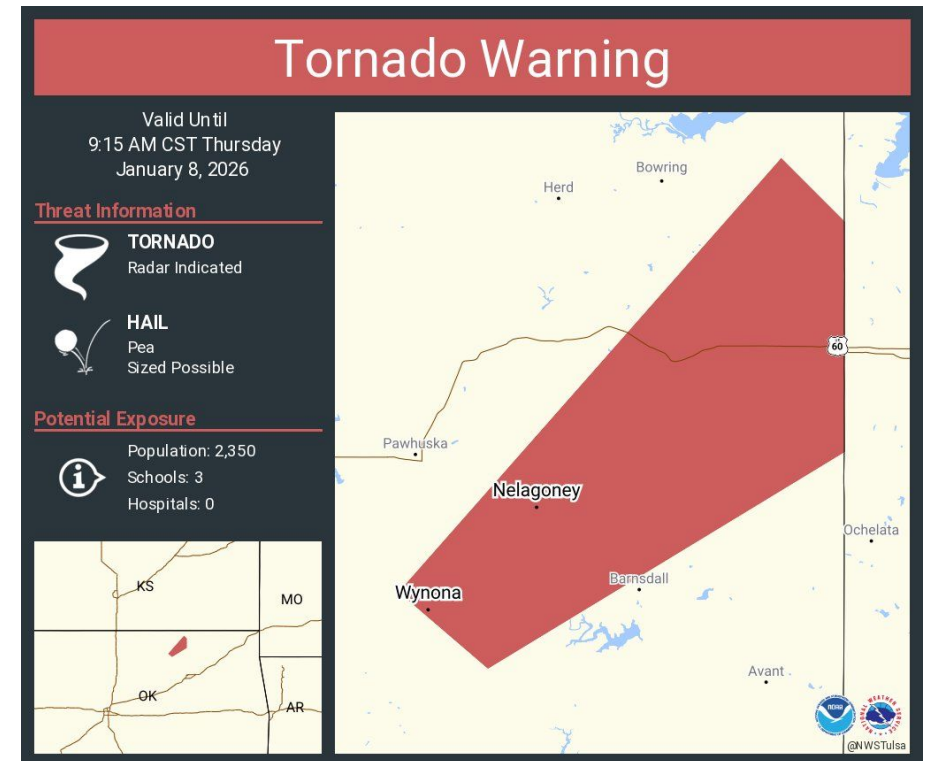
### WATCH

**Be Prepared.** The ingredients are present for severe weather.



### WARNING

**Take action!** Severe weather is moving into your area!



# NWS Watch vs Warning: Cupcake Analogy

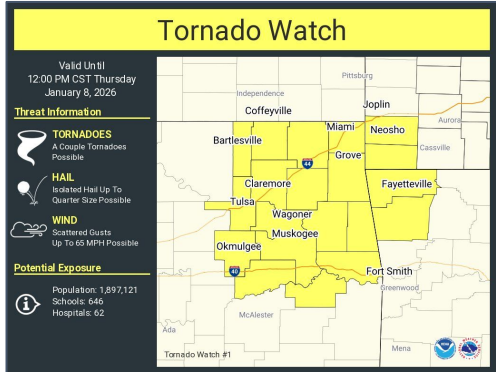


## NWS Products in Cupcake Terms

**Outlook**



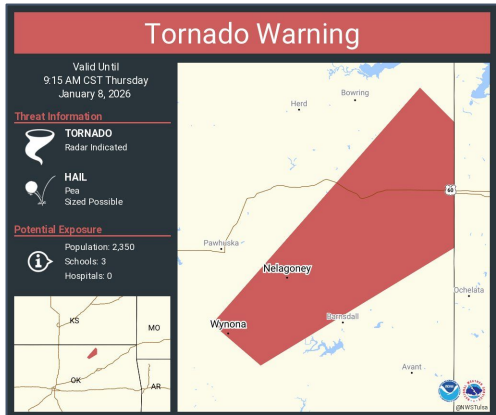
thinking about making cupcakes...  
**it may happen**



**Watch**



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



**Warning**



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

# Types of Convective Watches

## Severe Thunderstorm Watch

- **Primary Hazards:** Damaging Wind Gusts and Large Hail
- **Additional Hazards:** Flash Flooding, Tornadoes



## Tornado Watch

- **Primary Hazards:** Tornadoes
- **Additional Hazards:** Damaging Wind Gusts, Large Hail, Flash Flooding



## Flood Watch

- Can be issued for River Flooding, Long-fused flooding, Flash flooding
- Water flowing over roadways
- A rapid, life/property threatening rise in water

# Graphical Forecasts & Social Media Updates

## Severe Line of Thunderstorms

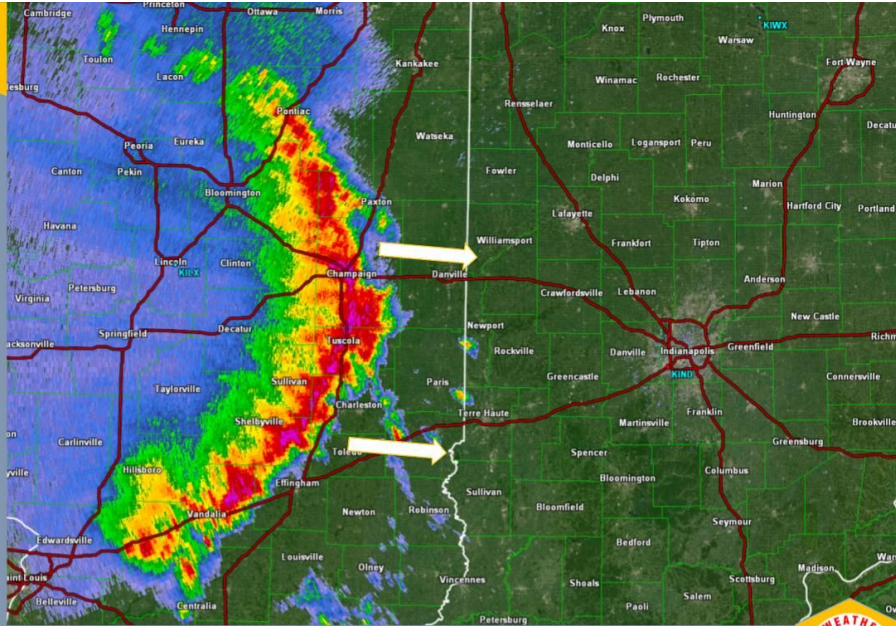
**WHAT:**  
Strong to Severe Thunderstorms Arrive Shortly in Western Indiana

**HAZARDS:**

- Wing Gusts 60-75 MPH
- Isolated Large Hail
- Isolated Tornadoes
- Heavy Rain and Flooding

**ACTIONS:**  
Review your safety plan before a warning is issued. Be ready to take action if necessary.

Radar Image: 2:25 PM



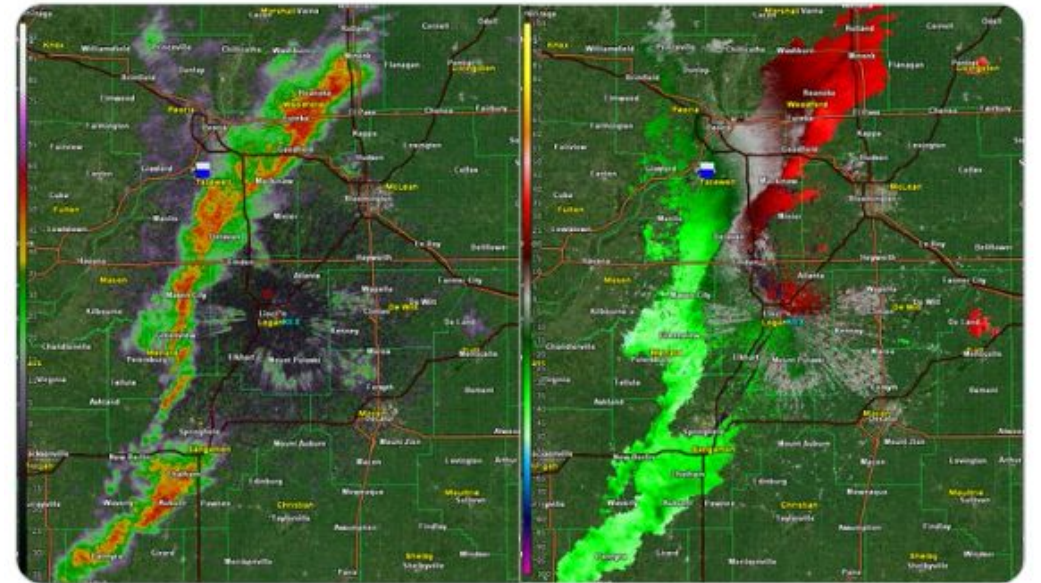
**THUNDERSTORM GRAPHICAST**

weather.gov/ind

@NWSIndianapolis



Radar time 2:11 PM CST... The line of storms is advancing east ahead of the cold front. We are monitoring for any areas of intensification and the possible need for a severe thunderstorm warning or a tornado warning. Be weather aware & know your safety plan in case of a warning!

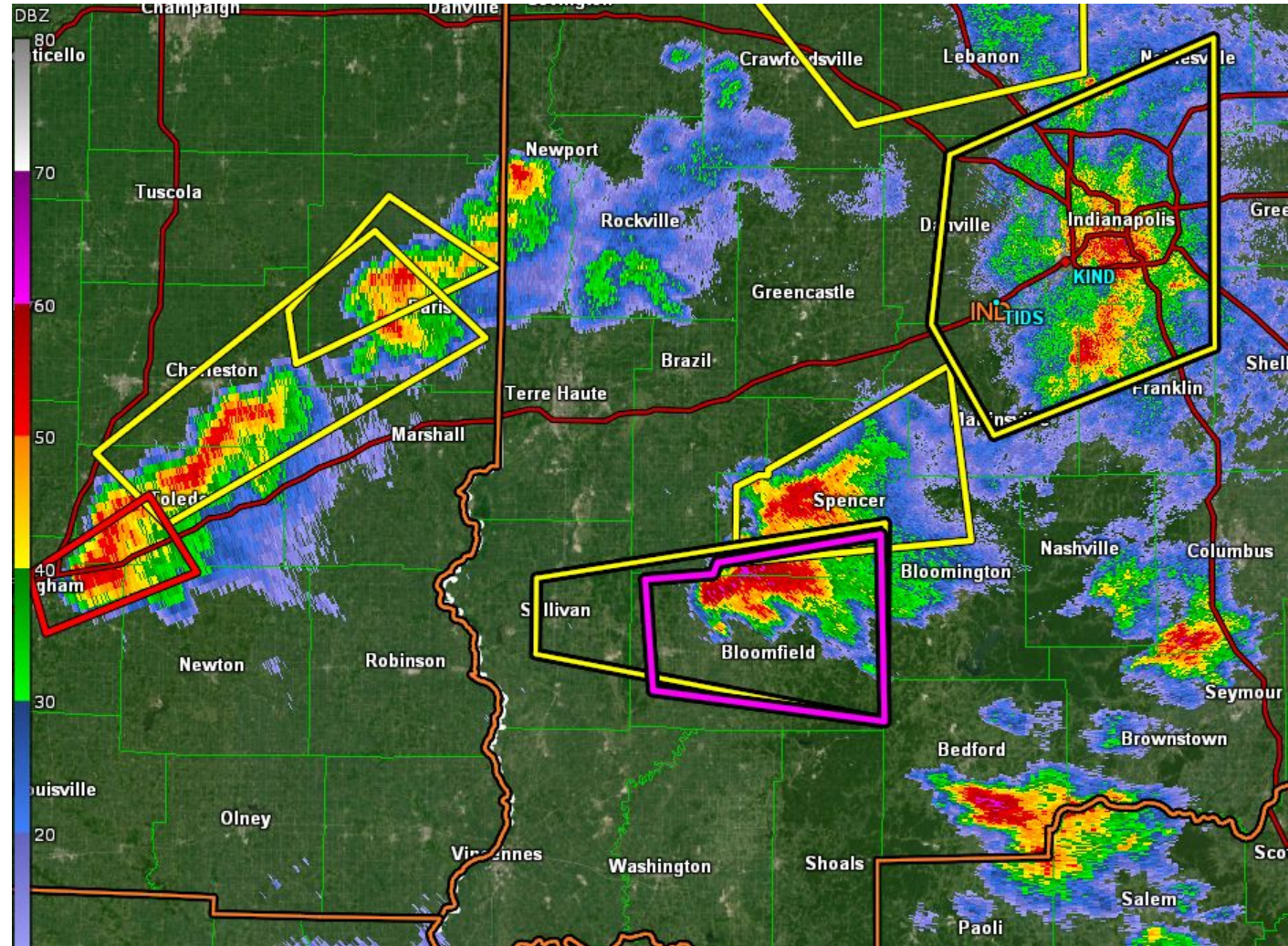


3:14 PM · Dec 28, 2025 · 1,360 Views

Local NWS Office Websites, Facebook, X, Apps

# Radar Data

- The majority of radar data is transmitted from NWS Offices.
- Apps and websites pull from our feed. Use what works best for your needs!
- It is ideal if you can:
  - Plot your location
  - Plot warnings
  - Animate



### 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.

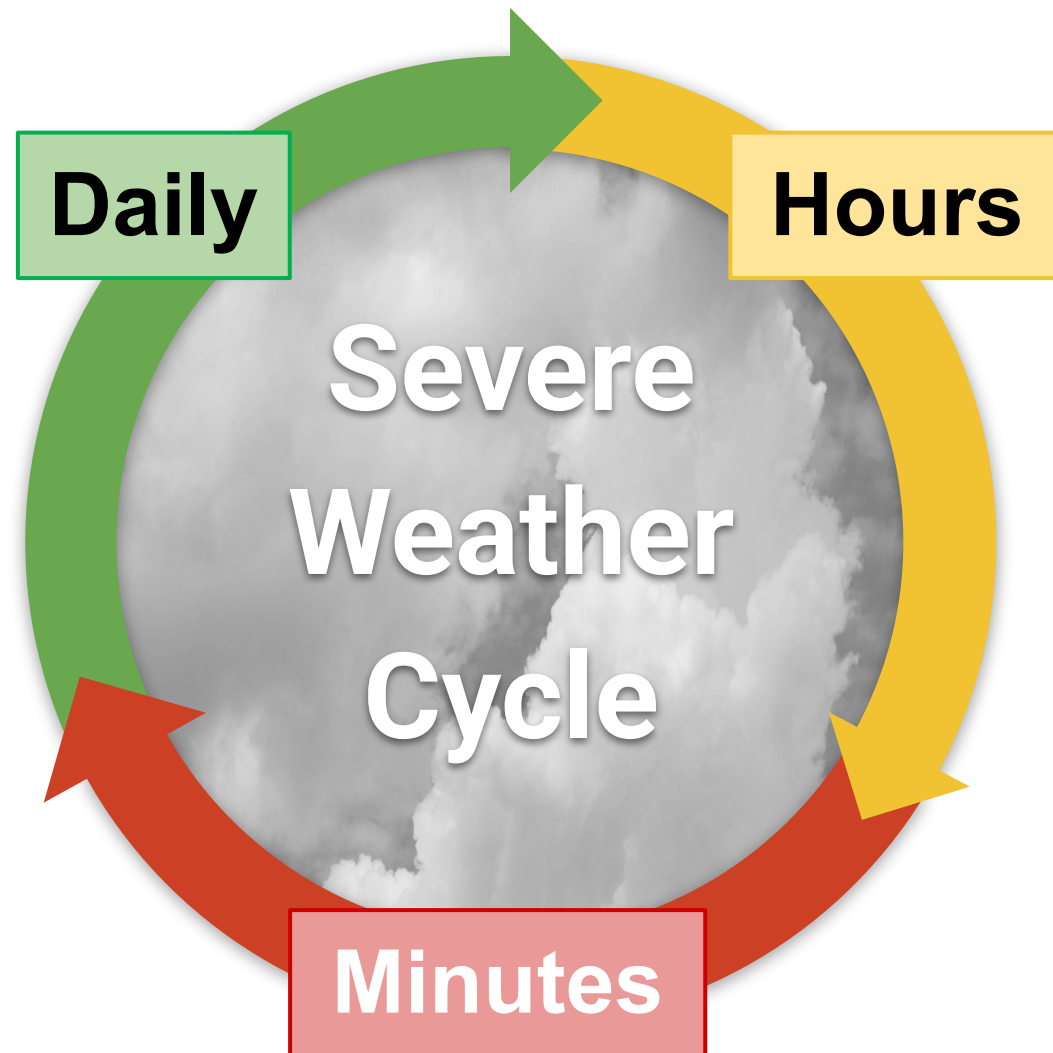
Stay informed and monitor closely for warnings.

**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!**



# Time To Take ACTION!

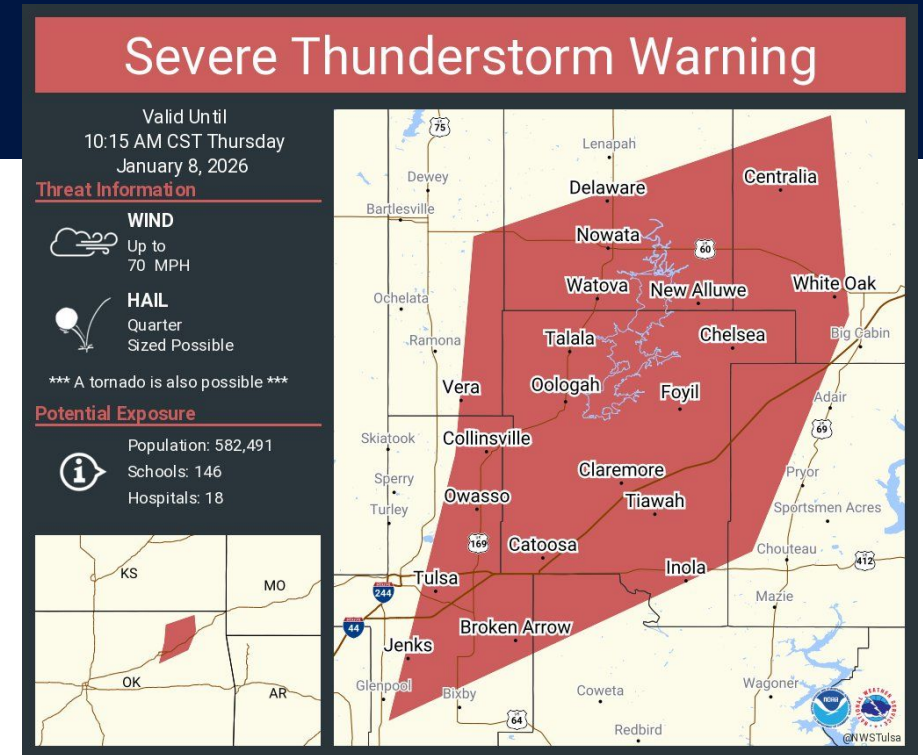
NOAA Weather in Focus Photo Contest 2015  
Stuart McDaniel



## When Skies Turn Threatening

Especially if you're outdoors, if you see signs of thunderstorms approaching, you hear thunder, or see lightning, seek shelter!

**Don't wait until the storm is on top of you to take action!**



## When Warnings Are Issued

Plan **BEFORE** severe weather and have multiple ways to receive warnings!

**Local NWS Office Websites**  
**Local Media (Radio and TV)**  
**NOAA Weather Radio, Phone Apps**

# Understanding NWS Warnings

## Severe Thunderstorm Warning

- T-Storm Wind Gusts  $\geq$  58 mph & or:
- Hail  $\geq$  1" Diameter



## Tornado Warning

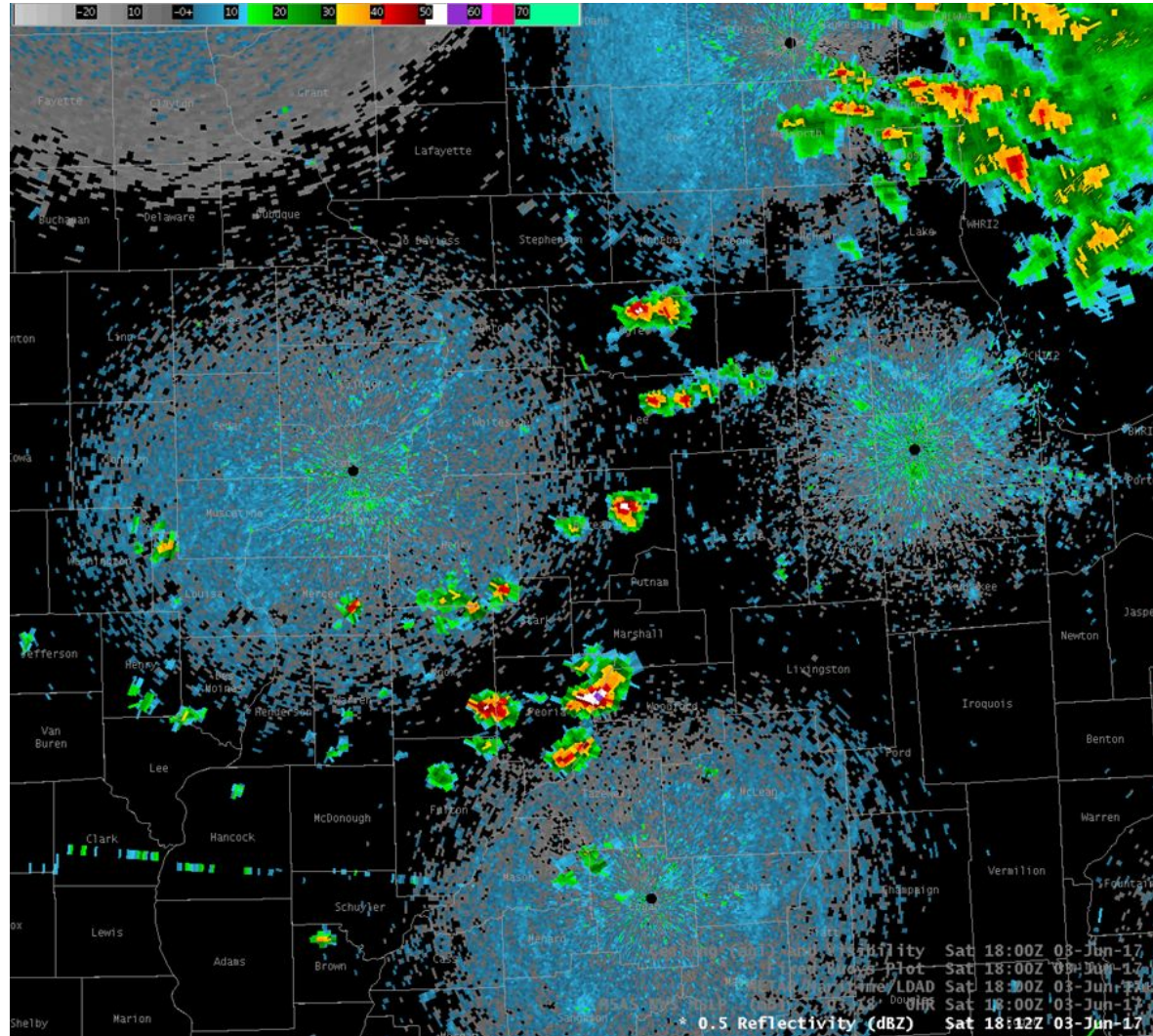
- Doppler Radar Indicated Rotation
- Confirmed Reports of a Tornado



## Flood or Flash Flood Warning

- 6" or more of water over roadways (esp. flowing)
- A rapid, life/property threatening rise in water

# Warning, But No Watch?



## This does happen sometimes...

- Single Cell or “Pulse” Storms
- Environment is **marginal** for severe weather development or the threat is **very limited in coverage**.
- Small-scale boundaries interacting with thunderstorm updrafts can lead to brief tornadoes, even on days when tornadoes are NOT forecast.

# IBWs

## Tornado Warnings

## Severe Thunderstorm Warnings

## Flash Flood Warnings

No Damage  
Threat Tag

Weak, short-lived tornado

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

Minor flash flooding



**No  
WEA**

**No  
WEA**

Considerable  
Damage Threat Tag

Strong, confirmed tornado

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

More significant flash flooding



**No  
WEA**



Catastrophic/  
Destructive  
Damage Threat Tag

Strong, confirmed tornado  
impacting a populated area

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

Devastating flash flooding



# Where to look...

All warnings will be accompanied by a text product with information specific to the warning.

- Hazard - What is/might occur?
- Source - Who reported it?
- Impact - Expected extent of damage

Scroll to the bottom of the product:

- Has it been observed?
- What IBW category is it?
- Any additional threat?

***NOTE: Red boxes will not appear in the actual text product. Boxes highlight information for presentation purposes.***

```
903
WFUS53 KFSD 050022
TORFSD
IAC035-050100-
/O.NEW.KFSD.TO.W.0020.131005T0022Z-131005T0100Z/
```

```
BULLETIN - EAS ACTIVATION REQUESTED
TORNADO WARNING
NATIONAL WEATHER SERVICE SIOUX FALLS SD
722 PM CDT FRI OCT 4 2013
```

```
...TORNADO EMERGENCY FOR WASHTA...
```

```
THE NATIONAL WEATHER SERVICE IN SIOUX FALLS HAS ISSUED A
```

```
* TORNADO WARNING FOR...
  CHEROKEE COUNTY IN NORTHWEST IOWA...
```

```
* UNTIL 800 PM CDT
```

```
* AT 720 PM CDT...A LARGE AND EXTREMELY DANGEROUS TORNADO WAS
  LOCATED NEAR WASHTA...AND MOVING NORTHEAST AT 30 MPH.
```

```
THIS IS A TORNADO EMERGENCY FOR WASHTA. TAKE COVER NOW. THIS
IS A PARTICULARLY DANGEROUS SITUATION.
```

```
THIS IS A PARTICULARLY DANGEROUS SITUATION.
```

```
HAZARD...DAMAGING TORNADO.
```

```
SOURCE...EMERGENCY MANAGEMENT CONFIRMED TORNADO.
```

```
IMPACT...YOU ARE IN A LIFE THREATENING SITUATION. FLYING
  DEBRIS MAY BE DEADLY TO THOSE CAUGHT WITHOUT SHELTER.
  MOBILE HOMES WILL BE DESTROYED. CONSIDERABLE DAMAGE
  TO HOMES...BUSINESSES AND VEHICLES IS LIKELY AND
  COMPLETE DESTRUCTION IS POSSIBLE.
```

```
* THE TORNADO WILL BE NEAR...
  QUIMBY AROUND 730 PM CDT.
  CHEROKEE AROUND 745 PM CDT.
  AURELIA AROUND 750 PM CDT.
```

```
PRECAUTIONARY/PREPAREDNESS ACTIONS...
```

```
HEAVY RAINFALL MAY HIDE THIS TORNADO. DO NOT WAIT TO SEE OR HEAR
THE TORNADO. TAKE COVER NOW.
```

```
&&
LAT...LON 4259 9585 4291 9565 4291 9550 4283 9538
  4269 9539 4256 9569 4256 9577
TIME...MOT...LOC 0023Z 225DEG 27KT 4260 9567
```

```
TORNADO...OBSERVED
TORNADO DAMAGE THREAT...CATASTROPHIC
HAIL...1.50IN
```

```
$$
```

# Wireless Emergency Alerts (WEA)



**WEAs** are emergency messages sent by authorized government alerting authorities, like the National Weather Service.

Alerts are sent automatically to WEA-capable phones when storms or flash flooding reach a certain threshold.

**It is important to keep these alerts enabled on your cell phone! You never know when it may save your life.**



## **Emergency Alert**

National Weather Service: **TORNADO WARNING** in this area until 6:30 PM CST. Take shelter now in a basement or an interior room on the lowest floor of a sturdy building. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris. Check media.

## **Additional Details**

To repeat, a large, extremely dangerous and potentially deadly tornado is on the ground. To protect your life, **TAKE COVER NOW!** Move to a basement or an interior room on the lowest floor of a sturdy building. Avoid windows. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris.

# Ways To Receive Warnings

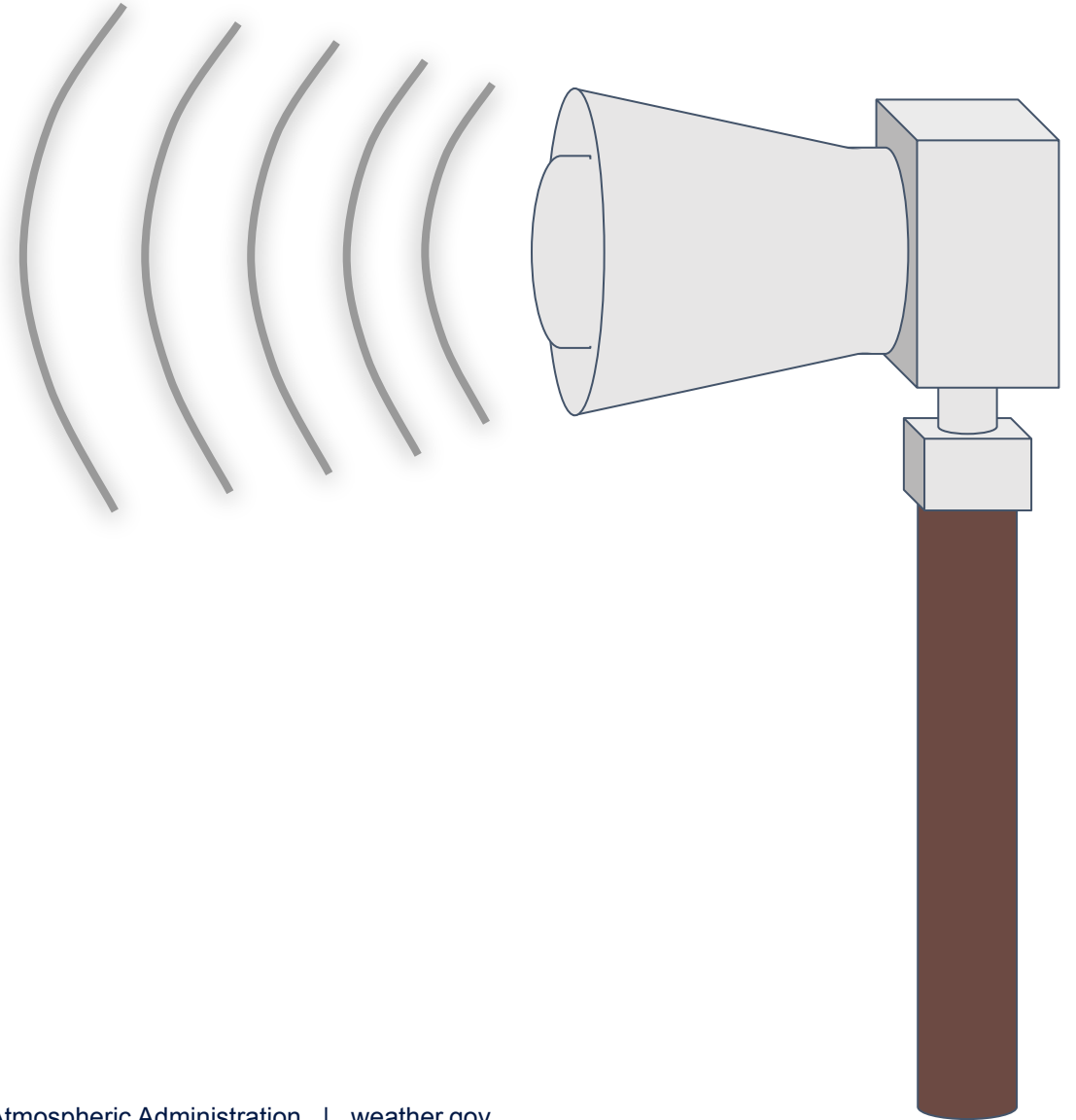
- Have **multiple ways** to receive notice of severe thunderstorm watch or warnings before severe weather arrives.
- Keep Wireless Emergency Alerts turn ON. You never know when getting an urgent weather alert on your phone may save your life!
- This includes having a way to wake you up in the middle of the night!
- Do NOT rely on the outdoor warning sirens if you are INSIDE.



# Outdoor Warning Sirens

- Meant to alert people who are outdoors of severe weather.
- Not intended to wake you.
- Policies for sounding sirens varies by jurisdiction.
- Check with local communities or county officials for local guidelines.

**Do not rely on outdoor warning sirens as your way to get critical severe weather warnings!**



# FEMA & Red Cross Apps

**Your Mobile Device Could Save Your Life**

There are multiple ways to **receive warnings** at your fingertips

text messaging service

social media

weather apps

from your family and friends

wireless emergency alerts - WEA

mobile.weather.gov



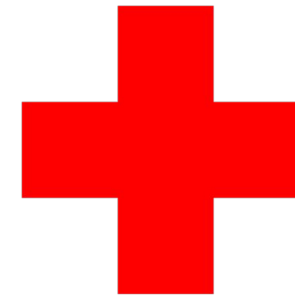
mobile.weather.gov



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



**FEMA**



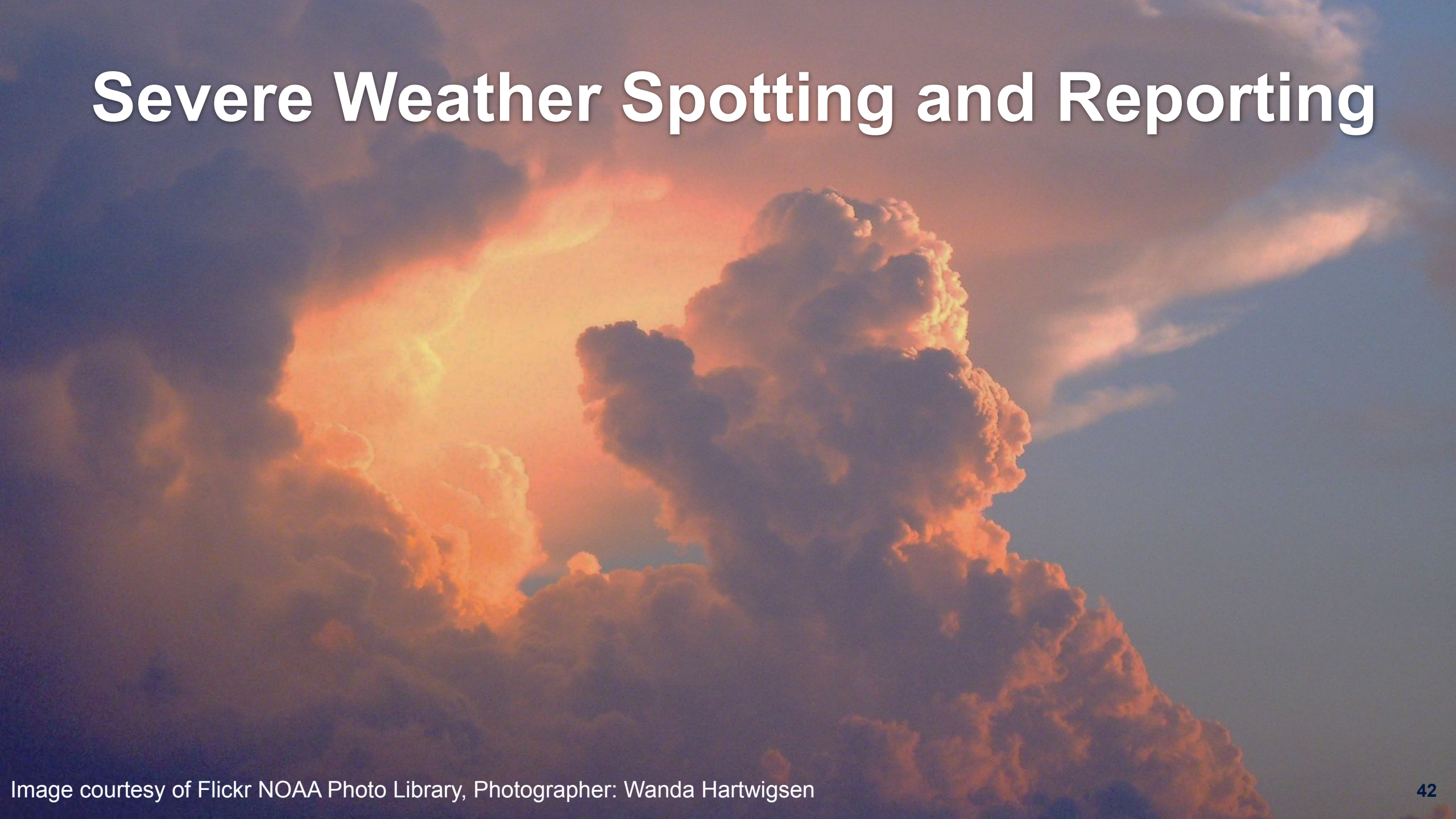
**American Red Cross**

# NOAA Weather Radio (NWR)

- 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 this website at [www.weather.gov/nwr/station\\_listing](http://www.weather.gov/nwr/station_listing)

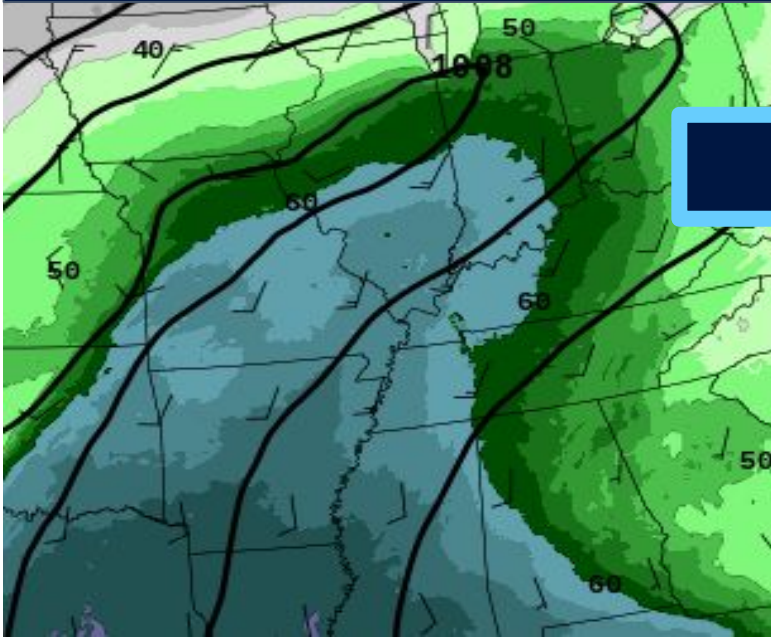


# Severe Weather Spotting and Reporting

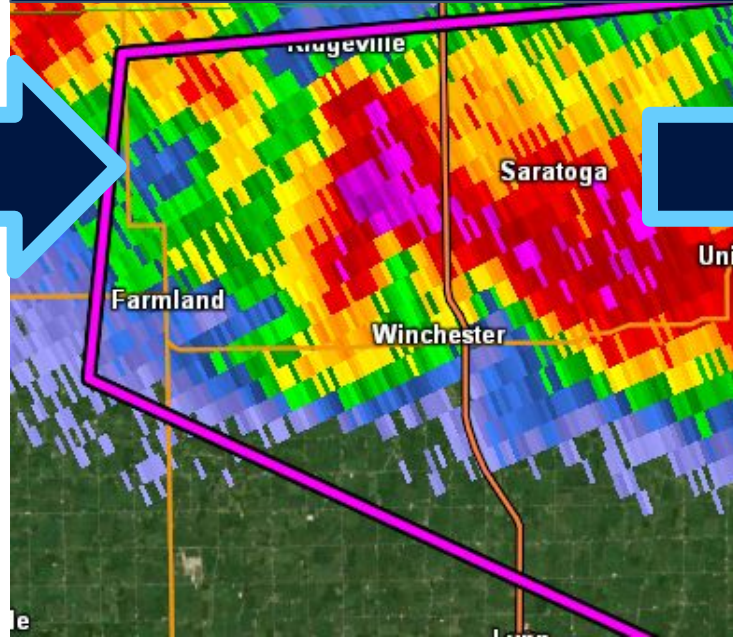


# The Warning Process

## Environment



## Radar



## Reports



**Trained spotters report tornado just west of Winchester**

# Timely, Accurate Warnings

# Timely, Accurate Warnings

## Initial Tornado Warning 7:39pm

The National Weather Service in Indianapolis has issued a

- \* Tornado Warning for...  
East central Delaware County in east central Indiana...  
Randolph County in east central Indiana...
- \* Until 830 PM EDT.
- \* At 739 PM EDT, a severe thunderstorm capable of producing a tornado was located near Muncie, moving east at 40 mph.

HAZARD...Tornado and baseball size hail.

SOURCE...Radar indicated rotation.

IMPACT...Flying debris will be dangerous to those caught without shelter. Mobile homes will be damaged or destroyed. Damage to roofs, windows, and vehicles will occur. Tree damage is likely.

- \* This dangerous storm will be near...  
Parker City and Farmland around 745 PM EDT.  
Winchester around 755 PM EDT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

TAKE COVER NOW! Move to a basement or an interior room on the lowest floor of a sturdy building. Avoid windows. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris.

Tornadoes are extremely difficult to see and confirm at night. Do not wait to see or hear the tornado. TAKE COVER NOW!

## Updated Tornado Warning 7:56pm

...A TORNADO WARNING REMAINS IN EFFECT UNTIL 830 PM EDT FOR CENTRAL RANDOLPH COUNTY...

At 756 PM EDT, a confirmed tornado was located near Winchester, or 16 miles southeast of Dunkirk, moving east at 40 mph.

HAZARD...Damaging tornado and tennis ball size hail.

SOURCE...Weather spotters confirmed tornado. At 745 PM EDT, damage to trees and homes was reported near Selma in eastern Delaware County.

IMPACT...Flying debris will be dangerous to those caught without shelter. Mobile homes will be damaged or destroyed. Damage to roofs, windows, and vehicles will occur. Tree damage is likely.

This tornado will be near...  
Winchester around 800 PM EDT.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

To repeat, a tornado is on the ground. TAKE COVER NOW! Move to a basement or an interior room on the lowest floor of a sturdy building. Avoid windows. If you are outdoors, in a mobile home, or in a vehicle, move to the closest substantial shelter and protect yourself from flying debris.

Tornadoes are extremely difficult to see and confirm at night. Do not wait to see or hear the tornado. TAKE COVER NOW!

# Credibility & Response

Date	3/14/2024
Time (Local)	7:50 PM EDT
EF Rating	EF-3
Est. Peak Winds	165 mph
Path Length	17.14 miles
Max Width	700 yards
Injuries/Deaths	37/1

## Summary:

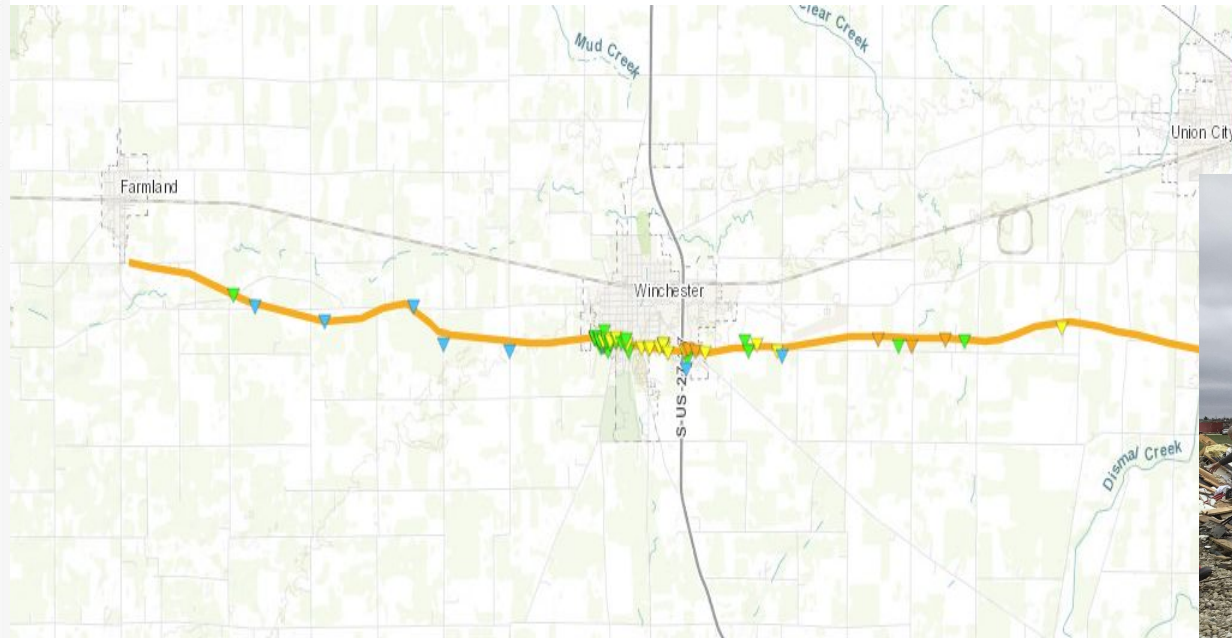
Multiple intense supercells impacted the north-central and northeastern portions of central Indiana during the late afternoon and evening of Thursday March 14 2024. The storms produced multiple reports of large to very large hail, and two tornadoes one in Delaware county and another longer track across Randolph and into Ohio.

This tornado continued beyond the listed end point below at the state line into western Ohio (information about the tornado in western Ohio will be available from NWS Wilmington OH).

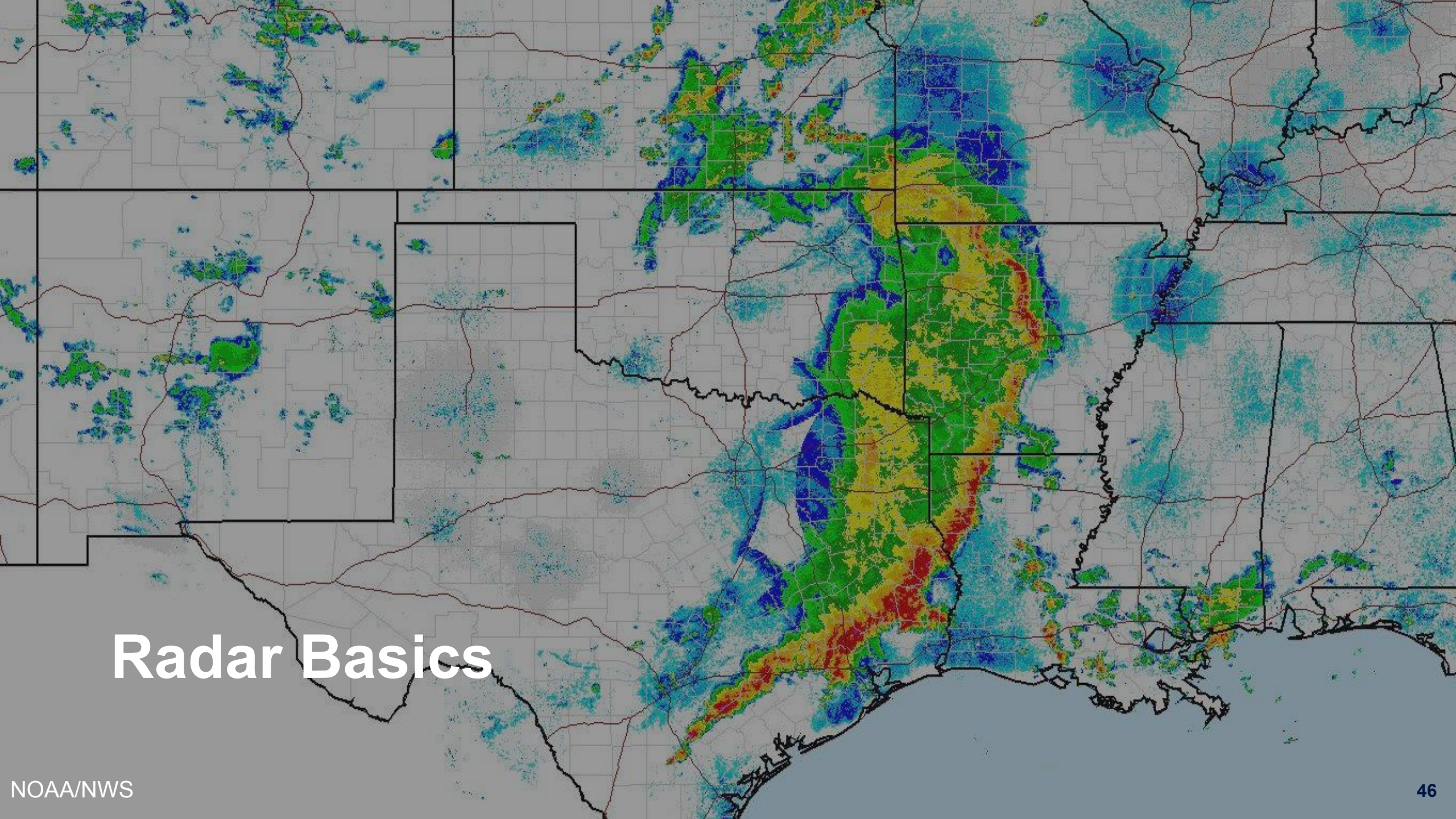
The tornado redeveloped in open area south of Farmland and moved towards Winchester, bending or snapping numerous utility poles along State Road 32. Also, a large blade on one of the wind turbines in the area was badly damaged.

As the tornado entered Winchester, it severely damaged many homes and snapped and uprooted trees in a west-to-east path through Winchester. There was clear evidence of the tornado's rotational circulation, with uprooted trees pointed to the east on the immediate south side of the tornado, and to the northwest on the immediate north side of the tornado. The damage pattern also indicated the possibility of small multiple vortices rotating around the main vortex. In the residential core of the town, the maximum intensity of the tornado was estimated around 130 mph or high-end EF2 strength.

The greatest damage in Winchester occurred on the east side of town at the Taco Bell, as the anchored building was destroyed, as was a church immediately east of the restaurant. In this concentrated area, the NWS Team estimated maximum winds of 155-165 mph, or high-end EF3 damage. Maximum path width in Winchester was estimated at up to 0.4 mile or 700 yards.



**Not only are you helping the warning process, but your reports may help someone TAKE ACTION!**



# Radar Basics

# Radar Basics

- The NWS has approximately 160 WSR-88D radars positioned across the country
- Weather radars analyze the position and shape of objects in the atmosphere through emitting radio waves
- When a radio wave encounters an object, such as a hydrometeor, the signal is returned and processed to the radar
- A collection of these “return” signals can be composed into an image of reflectivity, or velocity, among other products



# Reflectivity and Velocity

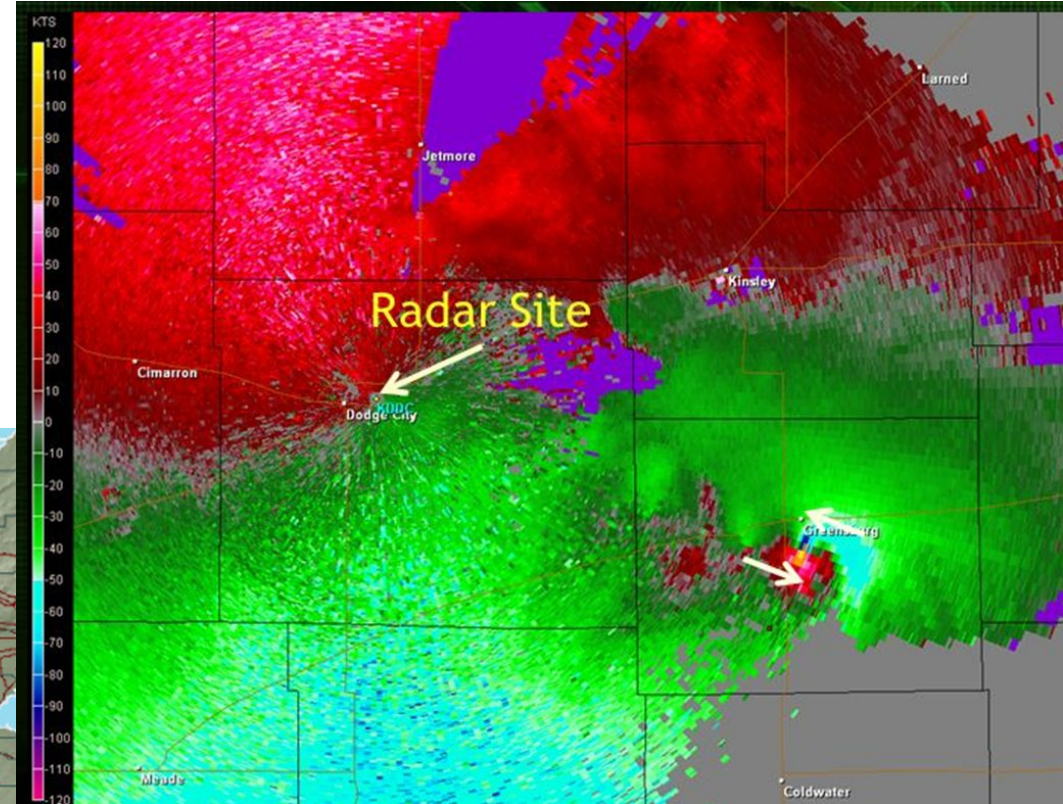
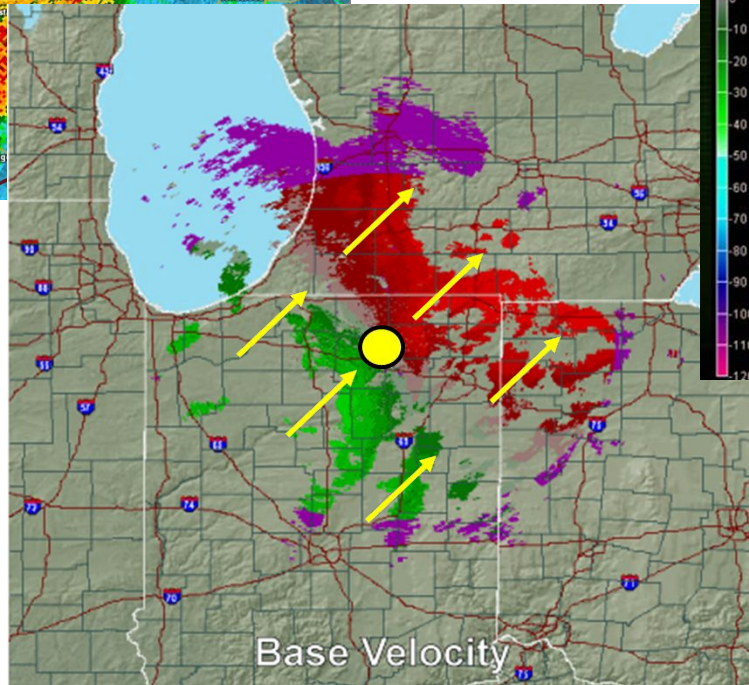
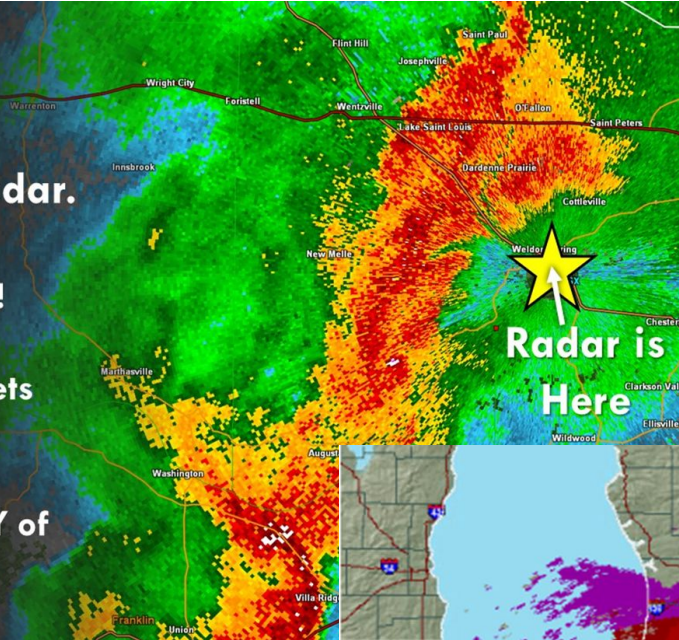
## Reflectivity

How much energy is reflected back to the radar.

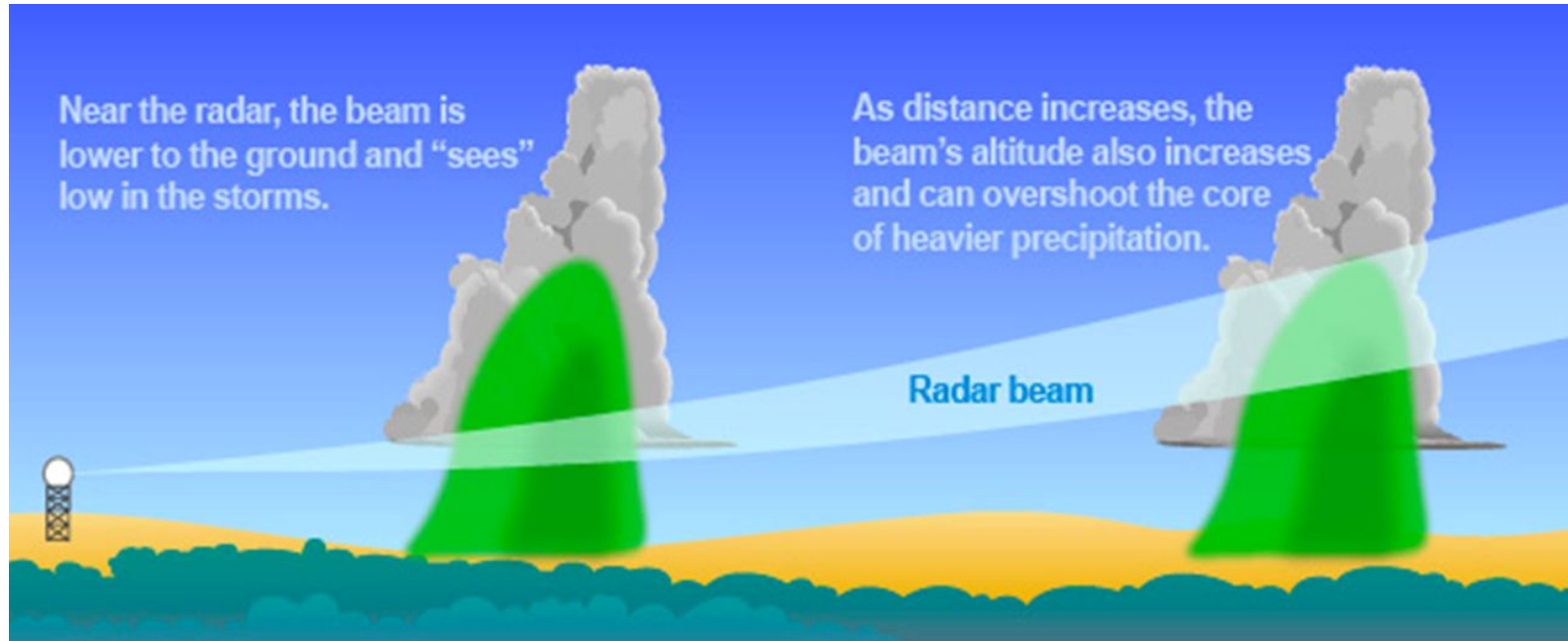
Lots of factors influence this!

- Size of targets
- Density or number of targets
- Type of target

Tells us about the **INTENSITY** of precipitation.

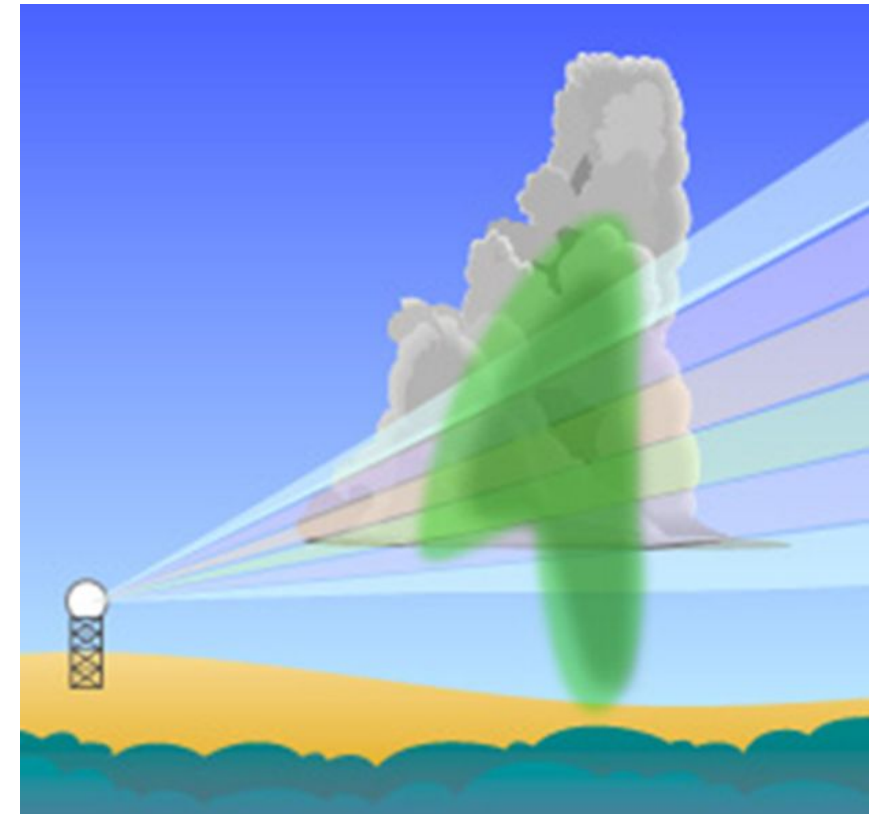


# Radar Limitations



As the beam gets further away from the radar, it gets broader and scans higher up in the atmosphere, “**overshooting**” the important parts of distant storms.

Strong storms far away from the radar may look weaker than they really are.

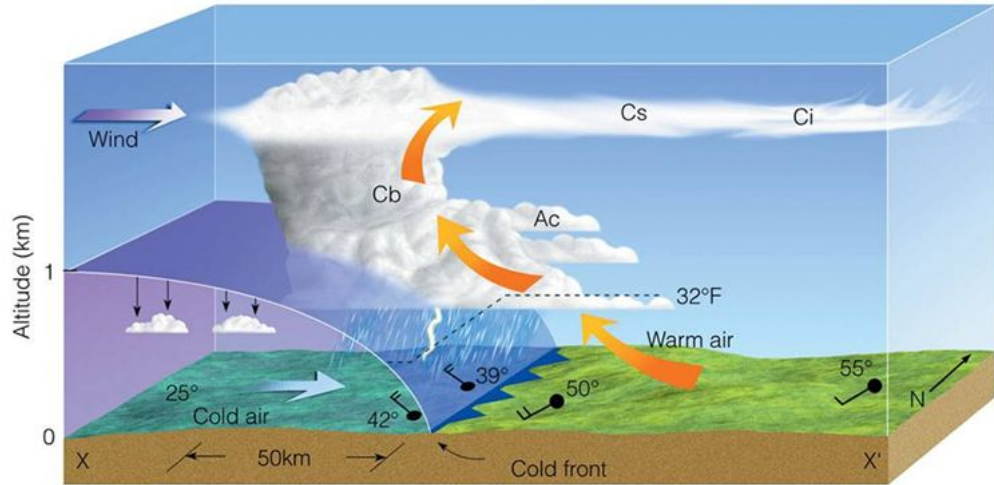


The WSR-88D scans across multiple elevation angles to sample as much of the atmosphere as possible.



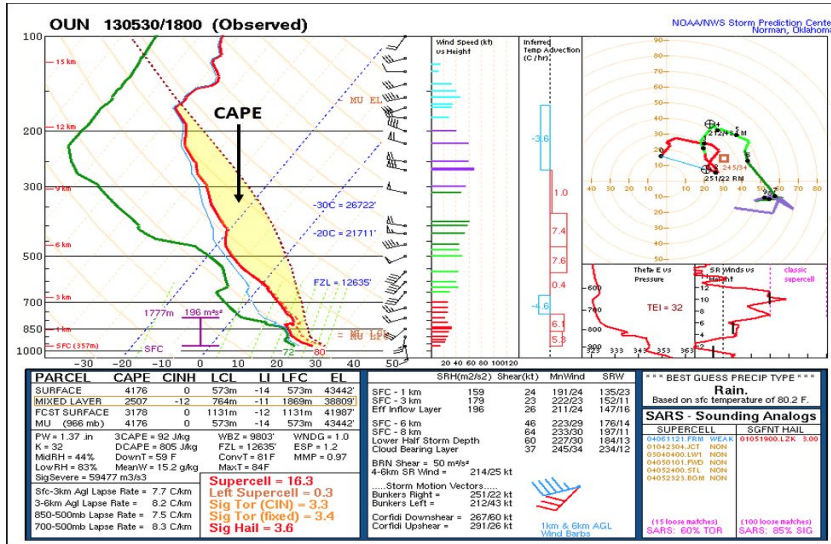
# Severe Weather Basics

# Moisture, Instability and Lift



© 2007 Thomson Higher Education

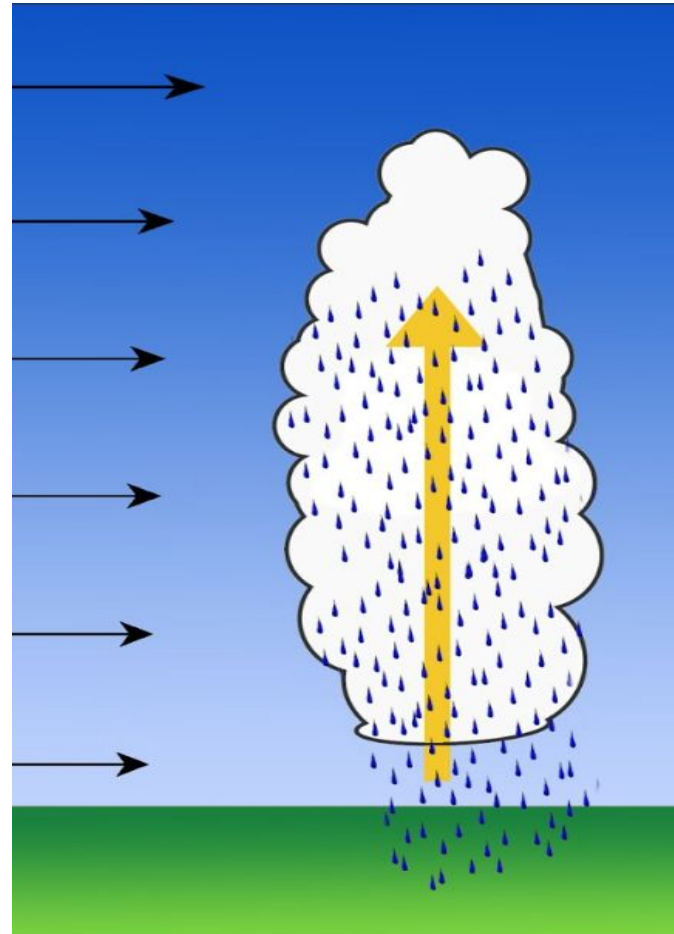
- **Moisture** - Surface dew points are a measure of moisture and very important for thunderstorm development
- **Instability** - Warm, moist air at the surface. Cooler, drier air aloft
  - The atmosphere is UNSTABLE and air will rise more easily on its own or helped by a front (CAPE)
- **Lifting mechanism or “Trigger”**
  - Warm/cold fronts, outflow boundaries from other storms, jet stream, terrain



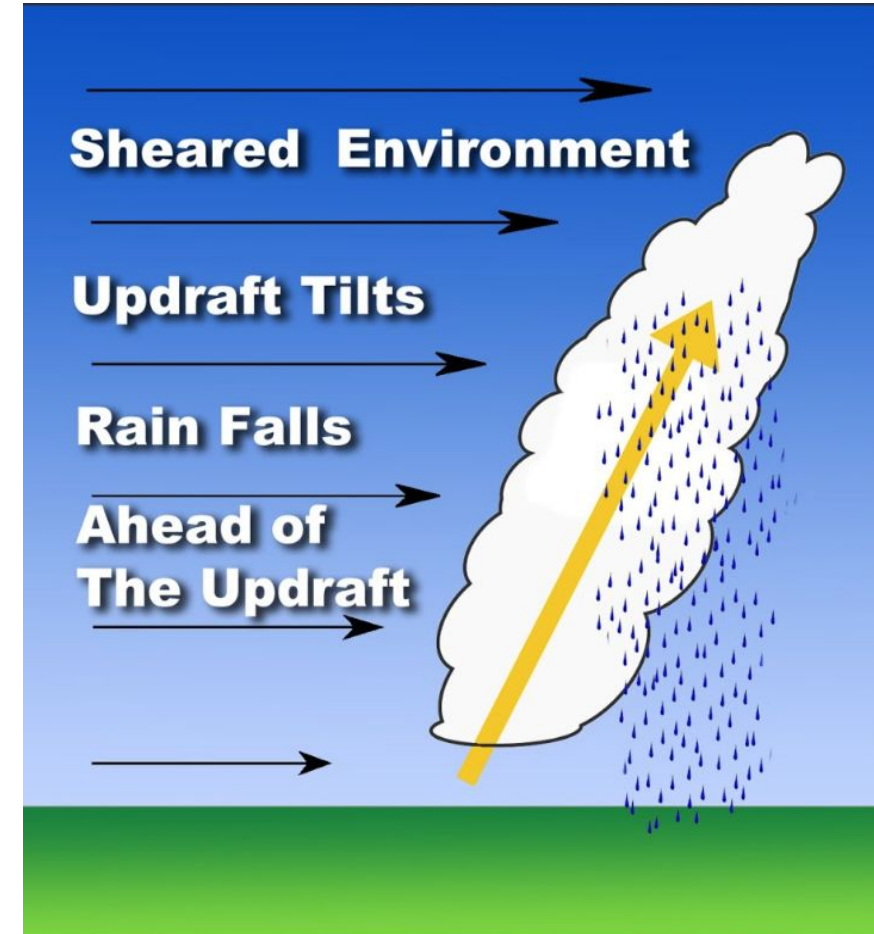
# Wind Shear & Severe Storms

- Wind shear describes how the wind changes in speed and/or direction with height.
- Storms can form without shear, but storm organization and severity depend on it.
- More wind shear allows a thunderstorm's updraft and downdraft to remain separated, thus it lives longer.
- Wind shear can also enhance rotation within the thunderstorm, which can eventually lead to the development of a tornado.

Short-lived, Weak Shear

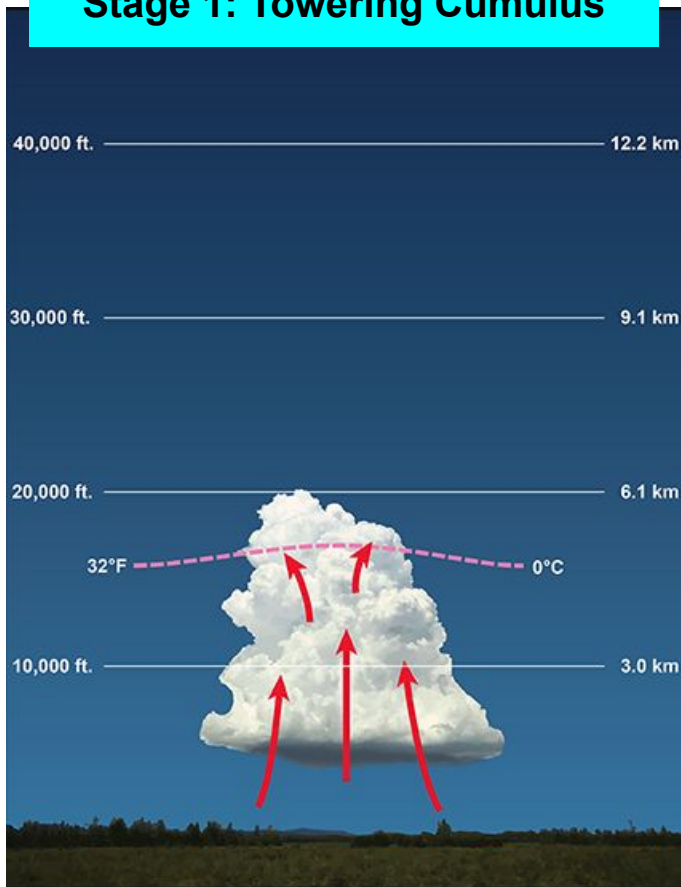


Long-lived, Increased Shear

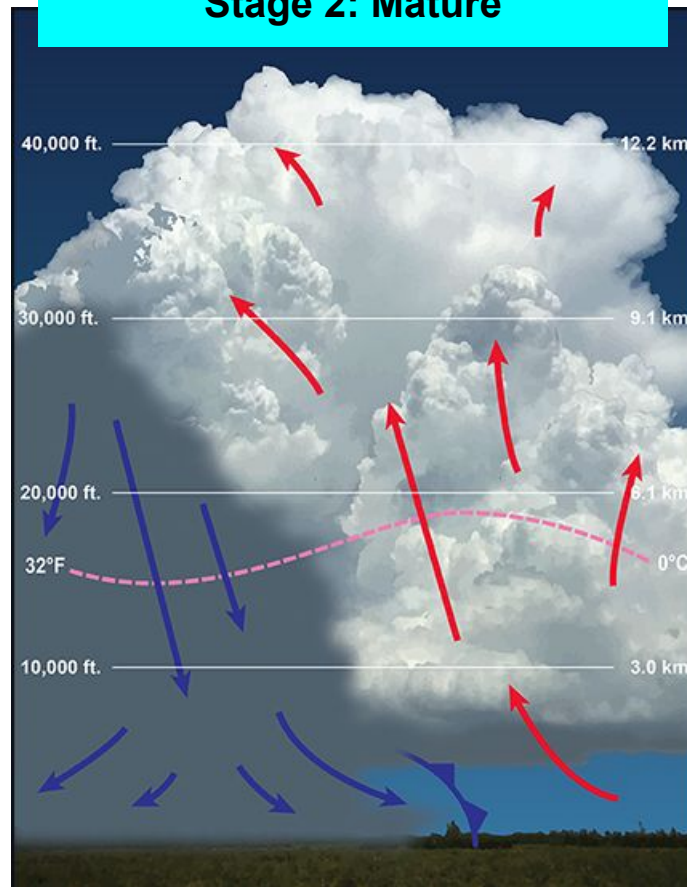


# Thunderstorm Evolution

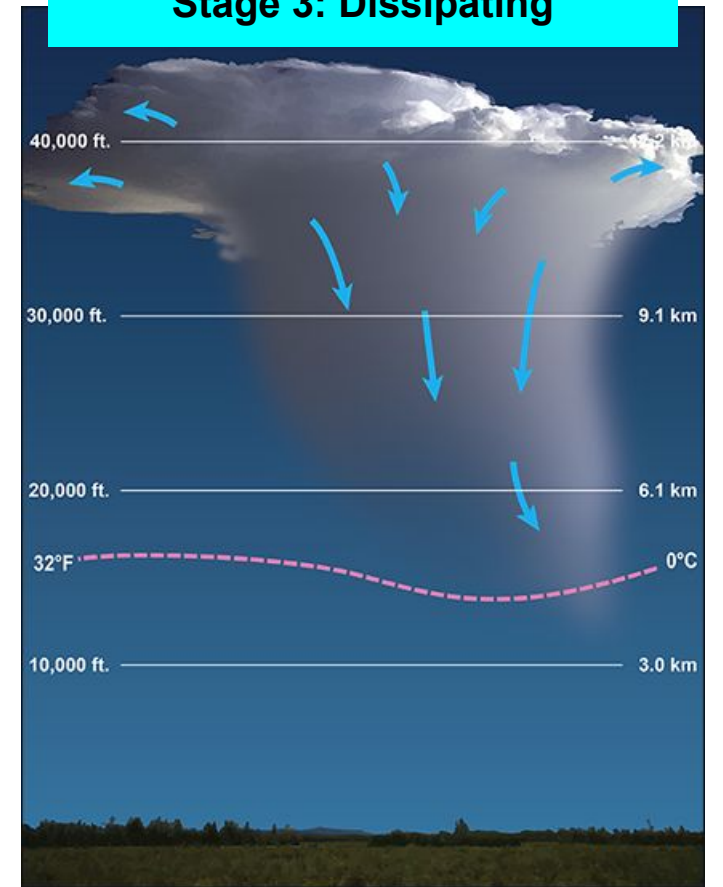
## Stage 1: Towering Cumulus



## Stage 2: Mature



## Stage 3: Dissipating

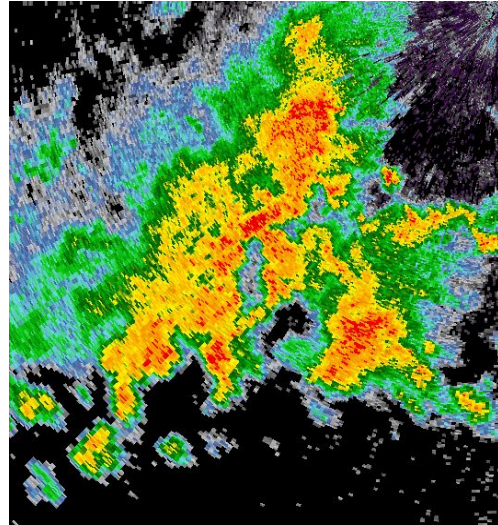


# Types of Thunderstorms

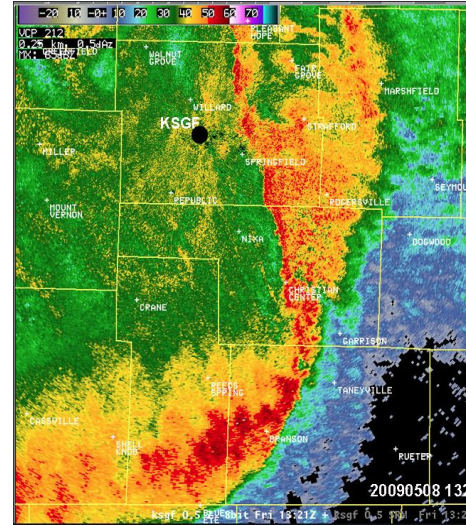
## Single Cell



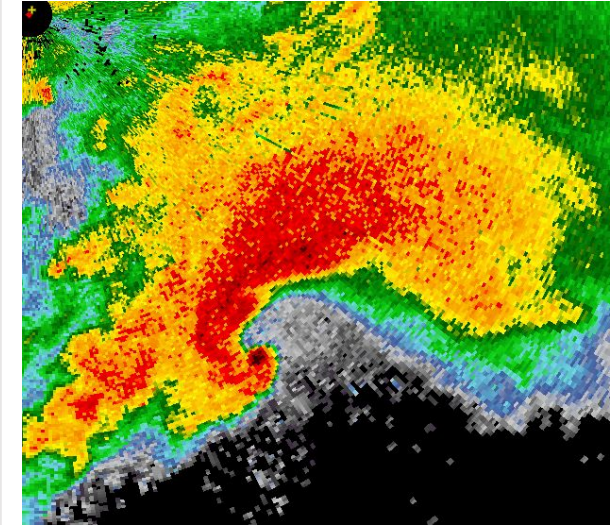
## Multicell Clusters



## Squall Line | Bow Echo



## Supercell



Increasing Severity



Lightning  
Microbursts  
Brief heavy rain  
Small hail

Heavy Rain and Flash Flooding  
Lightning  
Damaging winds  
Brief spin-up tornadoes

Heavy Rain and Flash Flooding  
Lightning  
Damaging winds  
Brief spin-up tornadoes  
**\*\*Embedded significant damaging wind potential\*\***

Heavy rain & Flash flooding  
Lightning  
Large hail  
Damaging winds  
Tornadoes  
**\*\*Significant severe weather potential\*\***

# Identifying Severe Weather

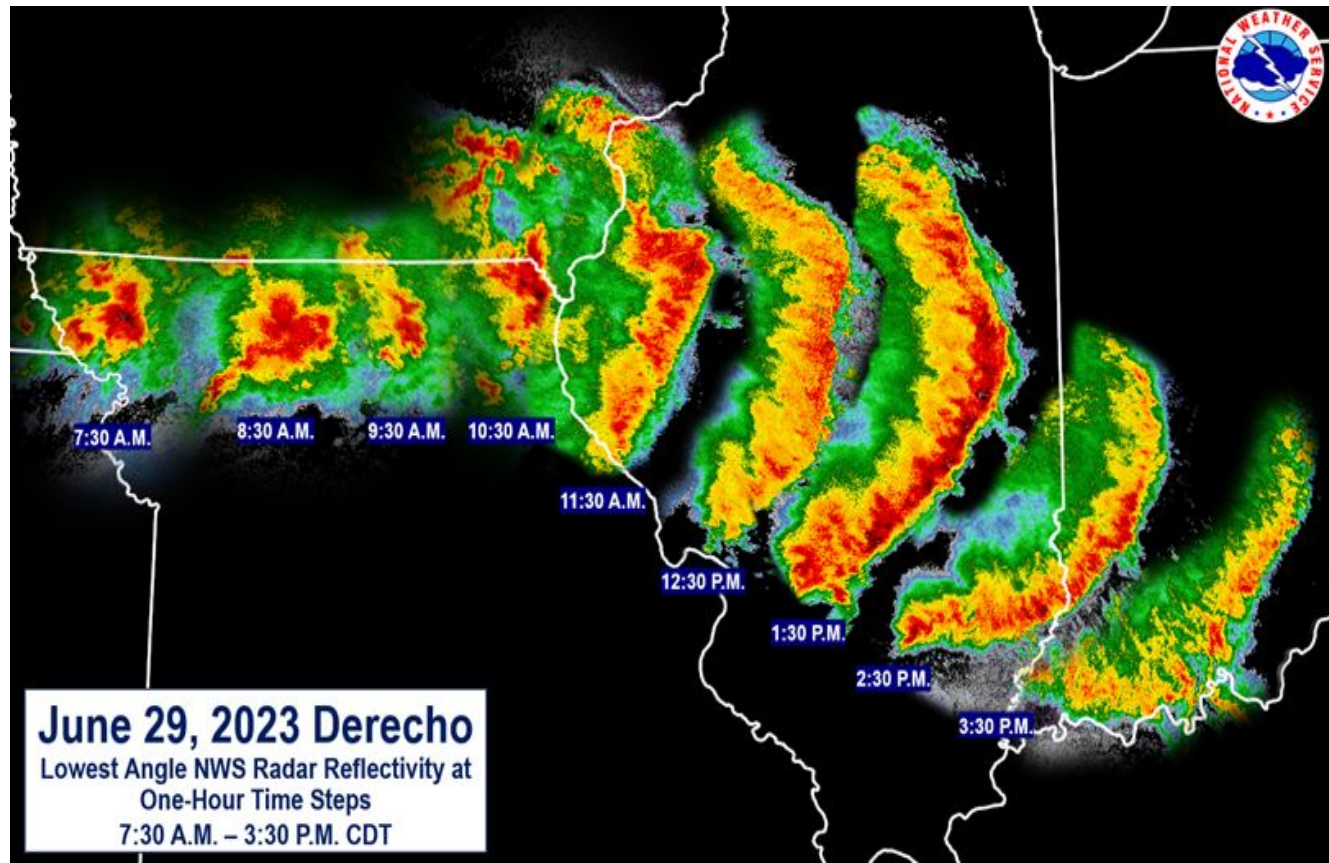
## Types of Thunderstorms



- Single Cell Thunderstorms
  - Most common in the summertime as pop-up thunderstorms, these can move in any direction and be short-lived
  - Main threats with these storms include:
    - Lightning
    - Microbursts (Localized areas of strong winds)
    - Brief heavy rain
    - Small hail

# Identifying Severe Weather

## Types of Thunderstorms



- Multi-Cell Thunderstorms
  - Other names include Squall Lines or Quasi-Linear Convective System (QLCS), Bow Echoes or Derechos
  - These lines of storms can stretch for hundreds of miles
  - Main threats include:
    - Heavy rain and flooding
    - Lightning
    - Damaging winds
    - Brief spin-up tornadoes

# Shelf Clouds

- Spectacular, elongated and ominous, shelf clouds are typically confused with tornado development
- Fortunately, there is an easy way to distinguish a shelf cloud from a tornado-forming wall cloud -> Shelf clouds span the entire horizon
- The thunderstorm complexes they identify with feature straight-line wind gusts or downbursts



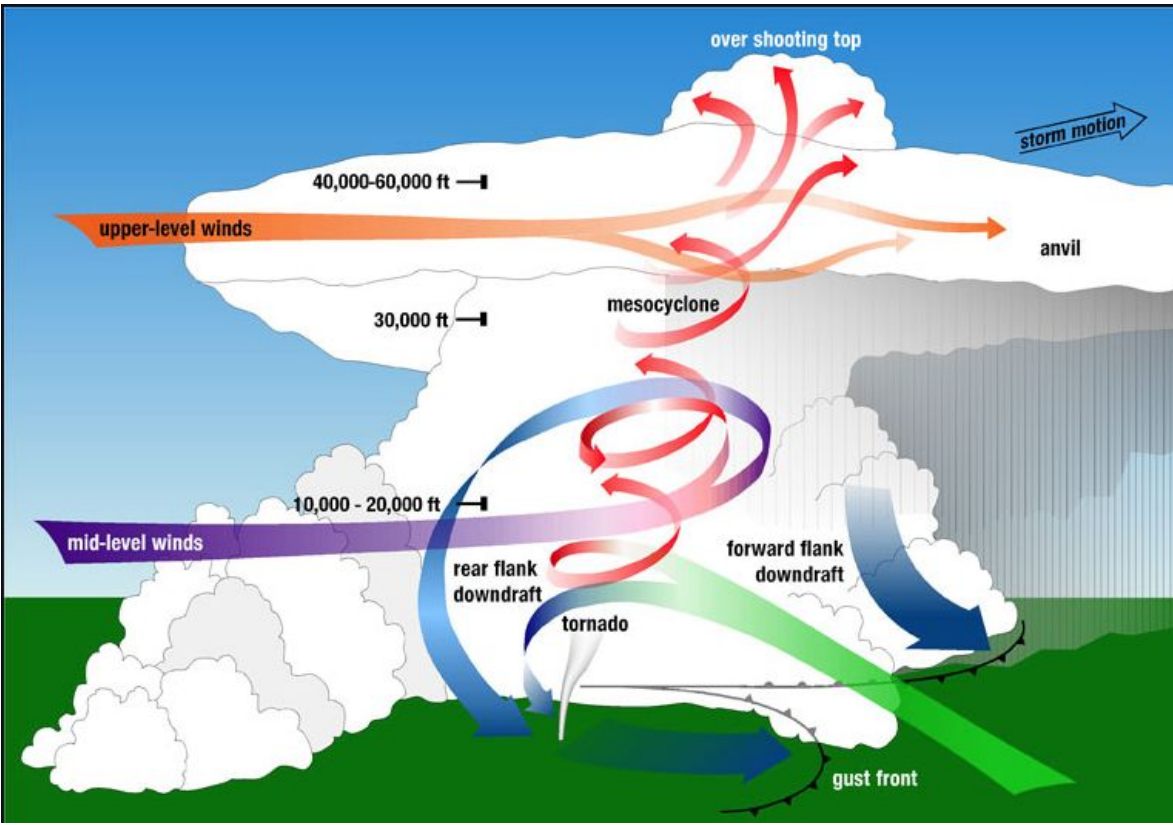
# Microbursts

- The most common hazard associated with thunderstorms is wind
- Sometimes a large pool of air associated with the downdraft can violently cascade to the ground, this is called a microburst
- Microbursts winds flow in the same direction and cause straight-line wind damage. This is different from wind that flows in a circular pattern with tornadoes
- Can cause significant, localized damage.



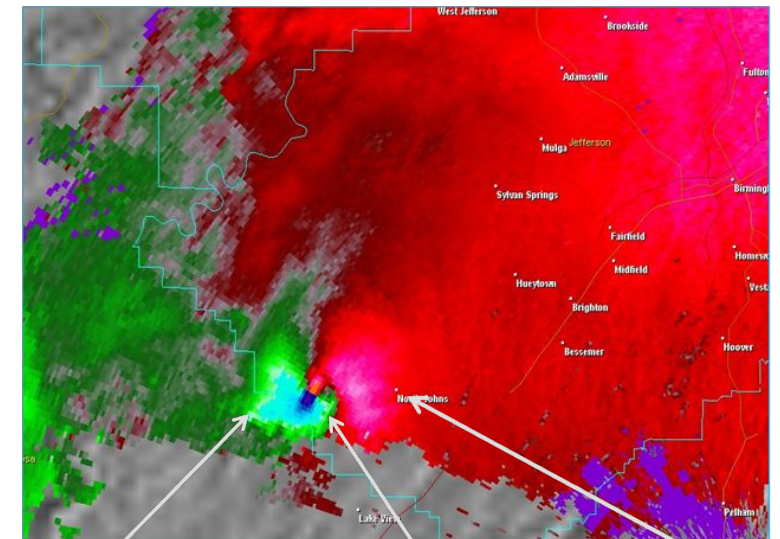
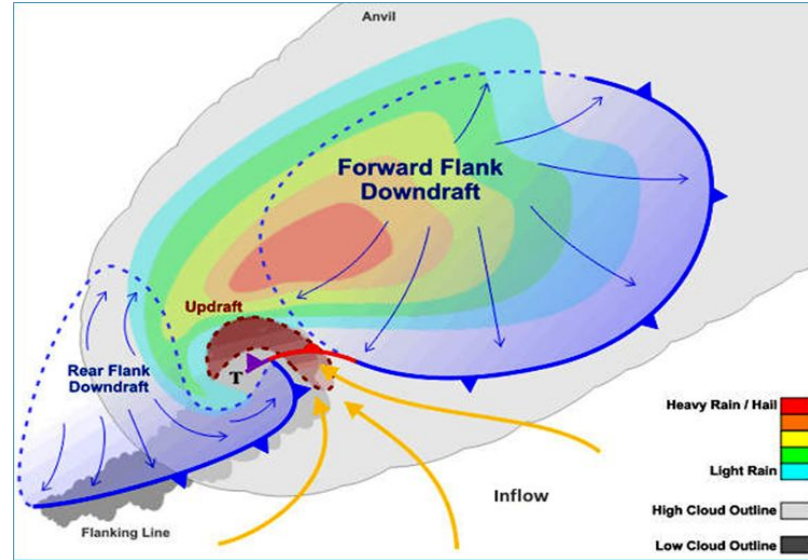
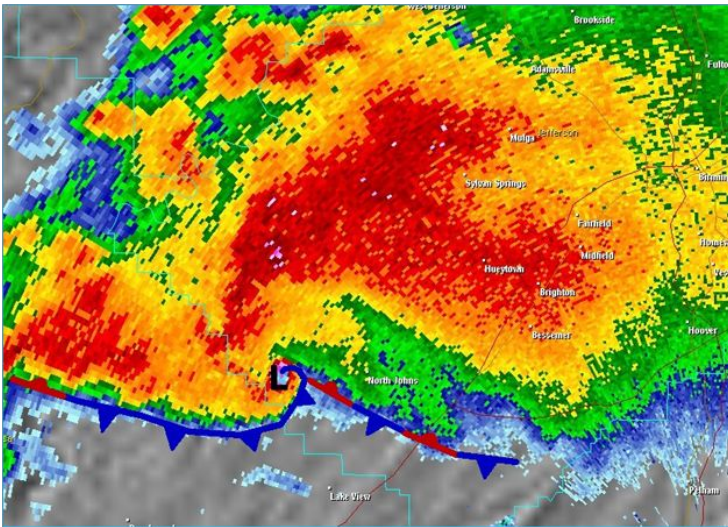
# Identifying Severe Weather

## Types of Thunderstorms



- Supercell Thunderstorms
  - Most common in the Plains and Central U.S. but can occur in other parts of the country
  - Main threats:
    - Heavy rain
    - Flash flooding
    - Lightning
    - Large hail
    - Damaging winds
    - Tornadoes

# Supercell Structure with Radar



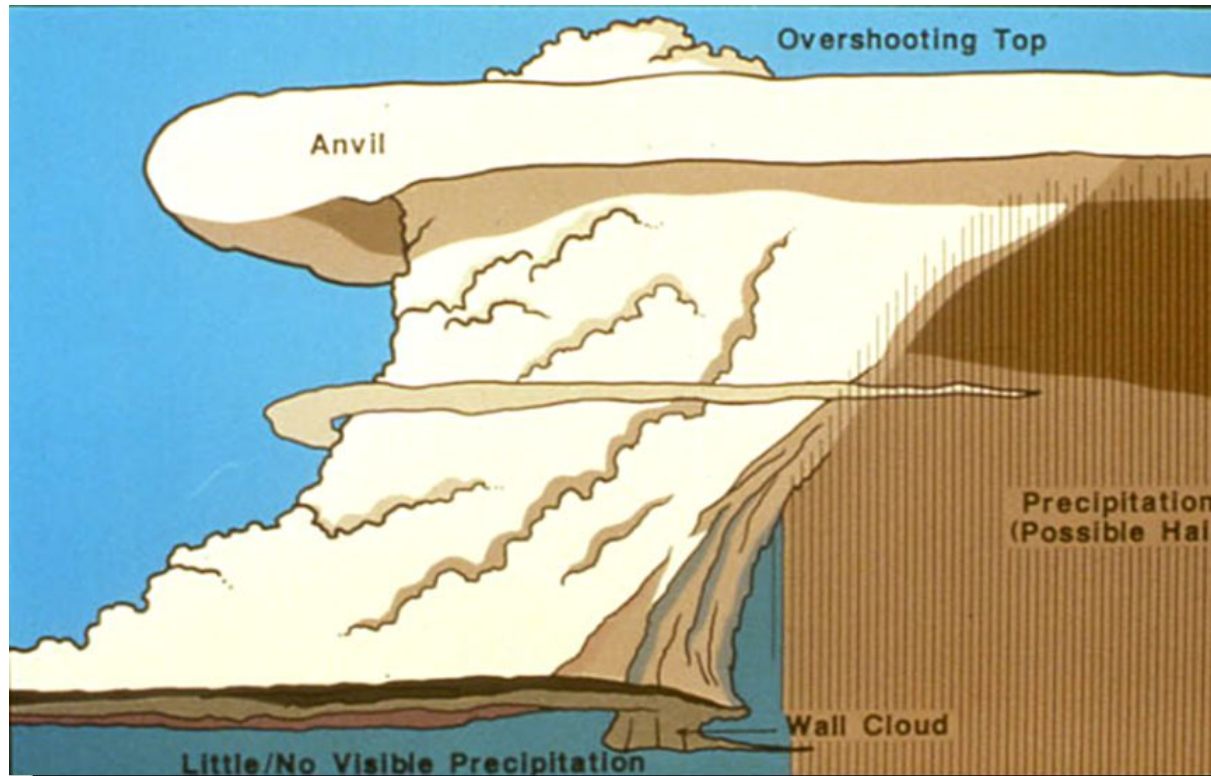
RFD wrapping around mesocyclone on back side of storm

Low-level mesocyclone/tornado location

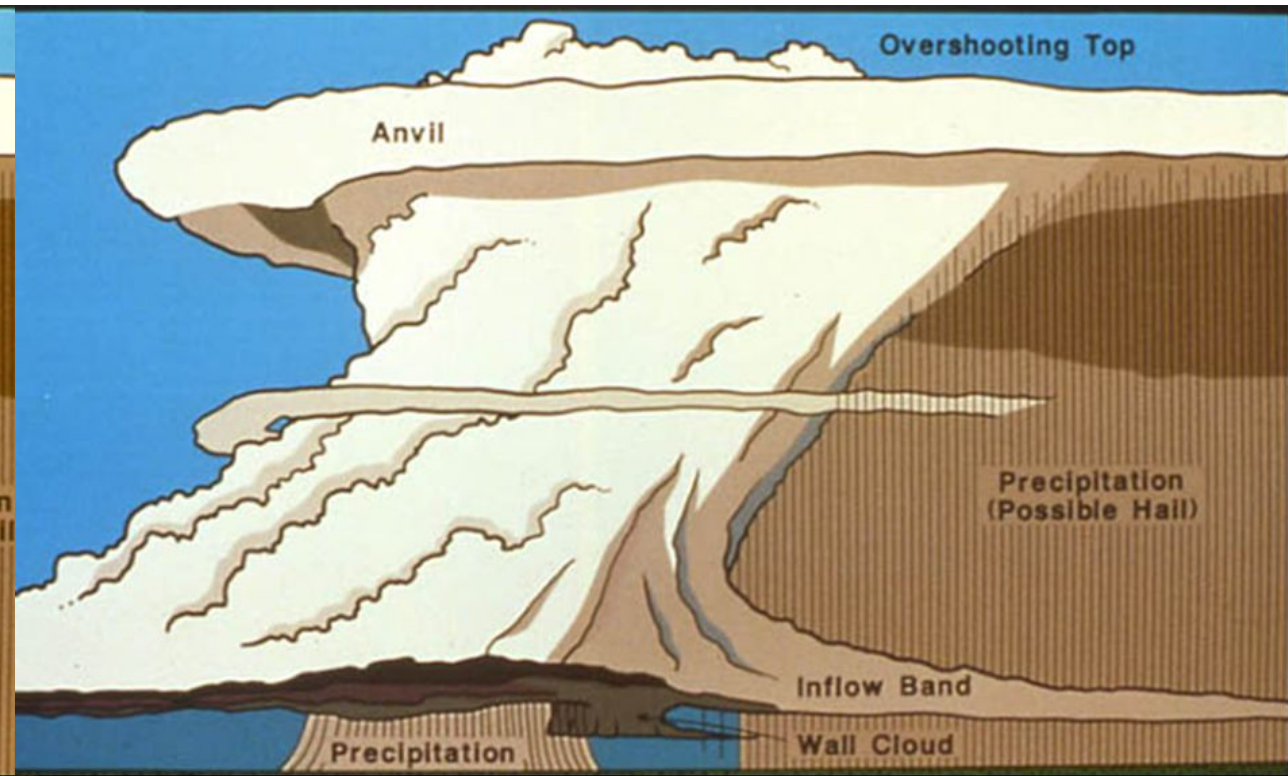
SR inflow into updraft

# Supercells: Classic vs The HP

## Classic Supercell



## High Precipitation Supercell





# Wall Clouds



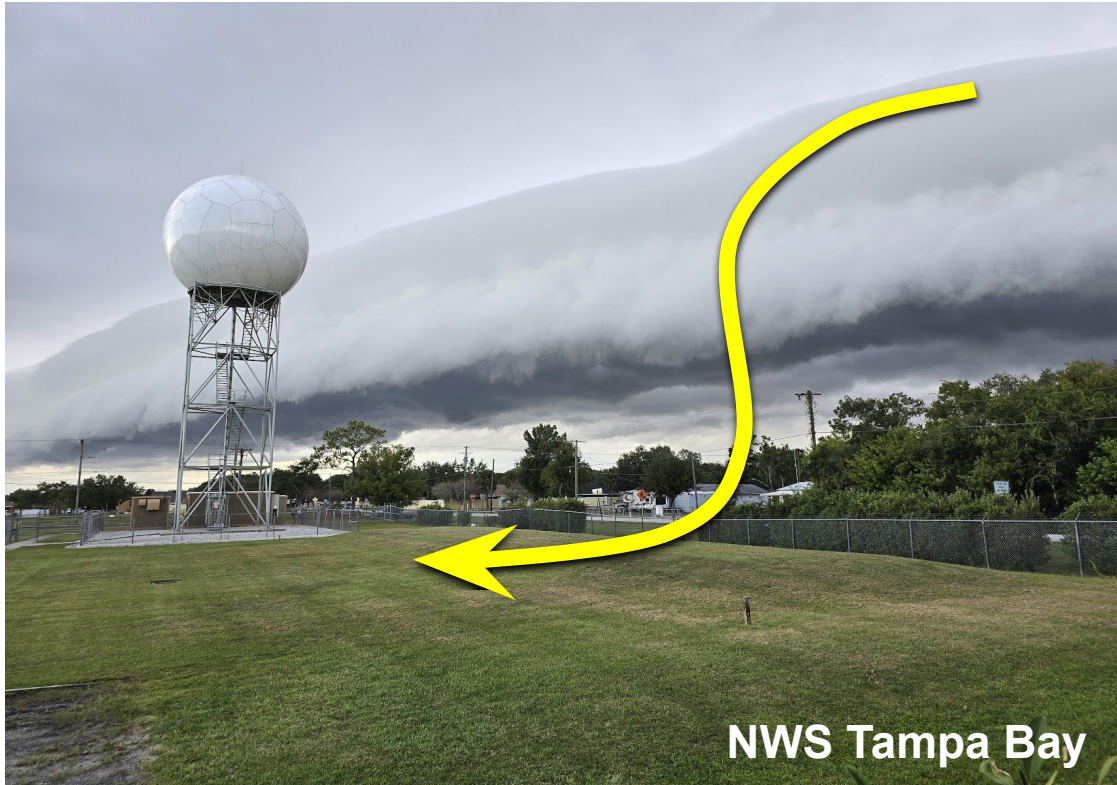
**Look for rotation!**

- Wall clouds rotate around a vertical axis, and appear more compact than shelf clouds
- May be smooth or ragged, tail points towards rain shaft
- Wall clouds can be easy to miss
- Often, wall clouds are associated with supercell thunderstorms
- They may be rain wrapped and impossible to see
- Sometimes, wall clouds exist under a rain-free cloud base

# Shelf Cloud and Wall Cloud

## Shelf Cloud

- Wind flows **OUT** of the storm
- Moves away from storm
- Often detached from storms
- Slopes down and away from rain



## Wall Cloud

- Wind flows **INTO** the storm
- Attached to the storm
- Moves with the storm
- Slopes down and toward rain



# Funnel Clouds

- Prior to tornado formation, a funnel cloud will lower from the base of the wall cloud
- Funnel clouds are rotating, condensed columns of air that do not touch the ground
- Often cone shaped and smooth looking
- Once rotation is observed on the ground, it is a tornado



# Tornadoes

- Violently rotating columns of air attached to a thunderstorms base AND in contact with the ground
- Often visible as a funnel shaped cloud, but not always
- Usually less than a few hundred yards wide, last a few minutes and have a path of a mile or less
- Look for debris near the ground



# Nighttime or Rain Wrapped Tornadoes

**EXTREMELY DANGEROUS!**

**USE EXTREME CAUTION  
WHEN REPORTING AND  
BE READY TO SEEK  
SHELTER IMMEDIATELY.**

**YOU ARE RELYING  
MOSTLY ON LIGHTNING  
AND POWER FLASHES.**



# Tornado vs Landspout

## Tornado

Form on severe weather days

Rotating updraft, rotation **builds down** to the surface

**Often stronger,  
more  
destructive**



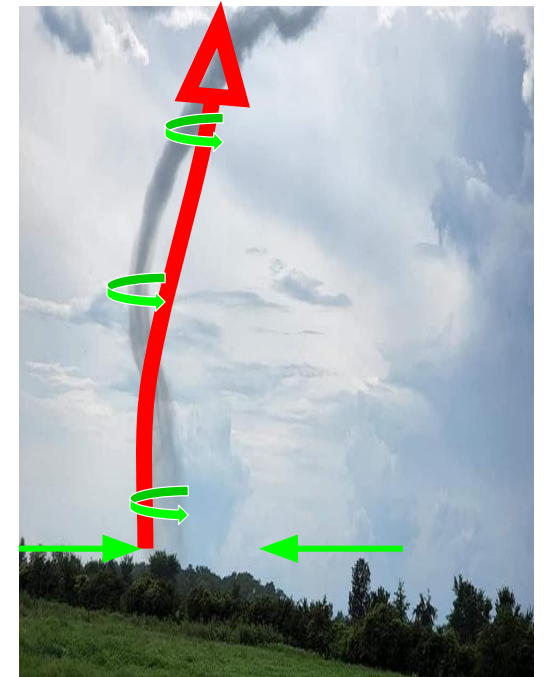
## Landspout

Can form on days when severe weather is not expected

Ground level rotation grows **vertically** towards cloud base

**Not as strong,  
often less  
destructive**

**Difficult to detect  
on radar**



# Don't Be Fooled!

## Scud

© 2000 Tim Marshall



**Action:** no action required. Be prepared to shelter indoors from rain and lightning

- Cloud fragments near the base of a thunderstorm that appear wind-torn and ragged
- May be moving slowly, but not rotating
- Often associated with gust fronts in general thunderstorms
- Are not necessarily associated with severe weather

## Gustnado



**Action:** seek shelter if nearby, report to NWS, monitor weather closely

- Originates within the outflow boundary of a thunderstorm
- Spins up from the ground, rather than connecting to the thunderstorm's mesocyclone or updraft
- Typically brief, weak, and shallow

## Dust Devil



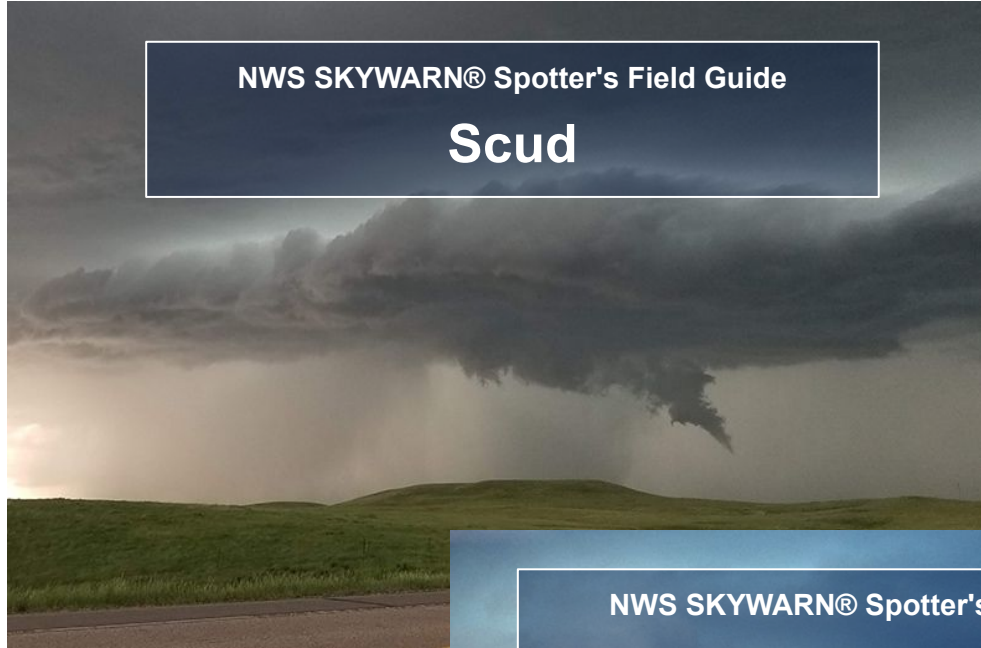
**Action:** seek shelter to be safe, report to NWS, monitor closely

- Dust, dirt or sand raised from the ground in the form of a whirling column of air
- Rotation is typically a result of strong surface heating and temperature gradients on sunny days
- Typically brief and weak but heights can extend several hundred feet

# Tornado or Funnel Cloud Imposters!

NWS SKYWARN® Spotter's Field Guide

**Scud**



NWS SKYWARN® Spotter's Field Guide

**Tail Cloud**



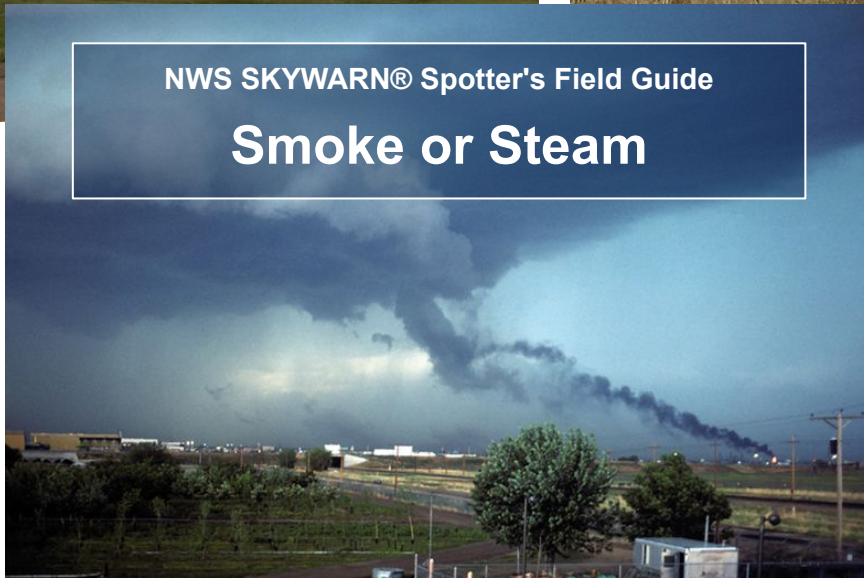
NOAA Weather in Focus Photo Contest  
2015 | Jeff Stillman

**Rain Shaft**



NWS SKYWARN® Spotter's Field Guide

**Smoke or Steam**



NWS SKYWARN®  
Spotter's Field Guide

**Cloud  
Formations**



# Reporting Severe Weather

The background of the slide is a photograph of a dramatic sky. Large, dark, billowing clouds are illuminated from below, creating a fiery orange and yellow glow. The sky transitions from a deep blue on the right to a darker, almost black on the left. The overall mood is intense and powerful.

# What do we want to know about?



## Tornadoes

- Any tornado
- Funnel clouds
- Rotating wall cloud
- Waterspouts
- Landspouts



## Hail

- Any hail
- Diameter (largest) of hail



## Wind

- Measured wind speed, if possible
- Estimated wind speed, if possible



## Flooding

- Washed out roads
- The behavior of the water
- Any known impacts
- Rain amounts & duration

**Report damage that occurs with any of these events, if you can do so SAFELY.**

# Is there anything you should *not* report?



## Lightning

- All thunderstorms produce lightning, regardless of severity.



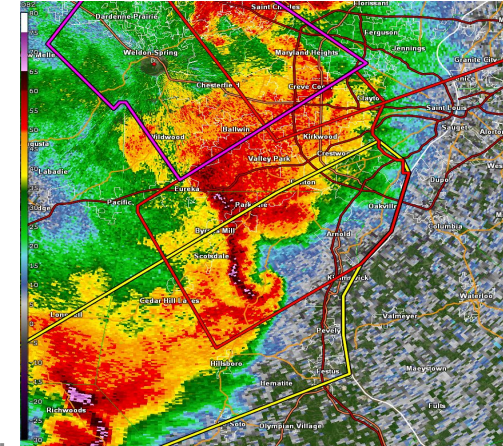
## Light Rain

- Lighter rain is common and is not severe

I'm not home to verify, but I heard from a neighbor....

## Secondhand Reports

- Only tell us what you know or can verify
- **Few exceptions\***
  - 911 Dispatch
  - Amateur Radio



## Radar Info

- **If you see it on radar, we do too**

# Reporting Severe Weather

**Uncertainty is okay!** If you're not sure what you're seeing, watch it for a while and describe it to us the best you can. (We may ask questions to help you).

- If you show 10 meteorologists the same storm, they may not all agree on what they see.
- It's better to be uncertain than to overstate and be incorrect!

**We want to hear from you!** Don't assume that if a warning is issued, the NWS knows for certain that severe weather is occurring.

- Your report may tell us a storm isn't severe after all!

# Reporting Wall Clouds

## What to look for

- Near the region of the updraft
- Lowering of the cloud base

## What to watch for

- Is the feature persistent?
- Is it rotating?

**Wall clouds do not always result in a tornado (or funnel cloud)**



**Report wall clouds and keep us posted on any changes!**

# Reporting Tornadoes

## Three Questions To Ask...

1. Is the feature rotating about vertical axis?
2. Is the rotation connected to the cloud base?
3. Can you see dust or debris on the ground?

Yes

Yes

Yes

**Report it to the NWS!**

## What to watch for...

- Persistent Rotation
- Upward Motion
- Smooth Structure



# Reporting Funnel Clouds

## Three Questions To Ask...

1. Is the feature rotating about vertical axis?
2. Is the rotation connected to the cloud base?
3. Can you see dust or debris on the ground?

Yes

Yes

No

## What to watch for...

- Upward motion
- Persistent rotation
- Smooth structure

**Report it to the NWS!**



Leia Otterstatter (NOAA/CIWRO)

# Straight-Line Damaging Winds

- While it is the most common severe weather hazard, it is the **MOST** challenging to report on. **Estimating the wind is hard!**
- Does the impact of the wind match what you are estimating for speed?
- If you have wind damage, report what you see and **only if you can do so safely!**

## Estimating Wind Speed



**32 – 38 mph**

*Whole trees in motion*



**39 – 46 mph**

*Twigs & small branches breaking*



**47 – 54 mph**

*Some structural damage (shingles blown off), Large branches breaking*



**55 – 65 mph**

*Structural damage (Parts of roofs blown off), Trees uprooted*



**66+ mph**

*Widespread structural damage  
Whole roof removed, walls blown in*

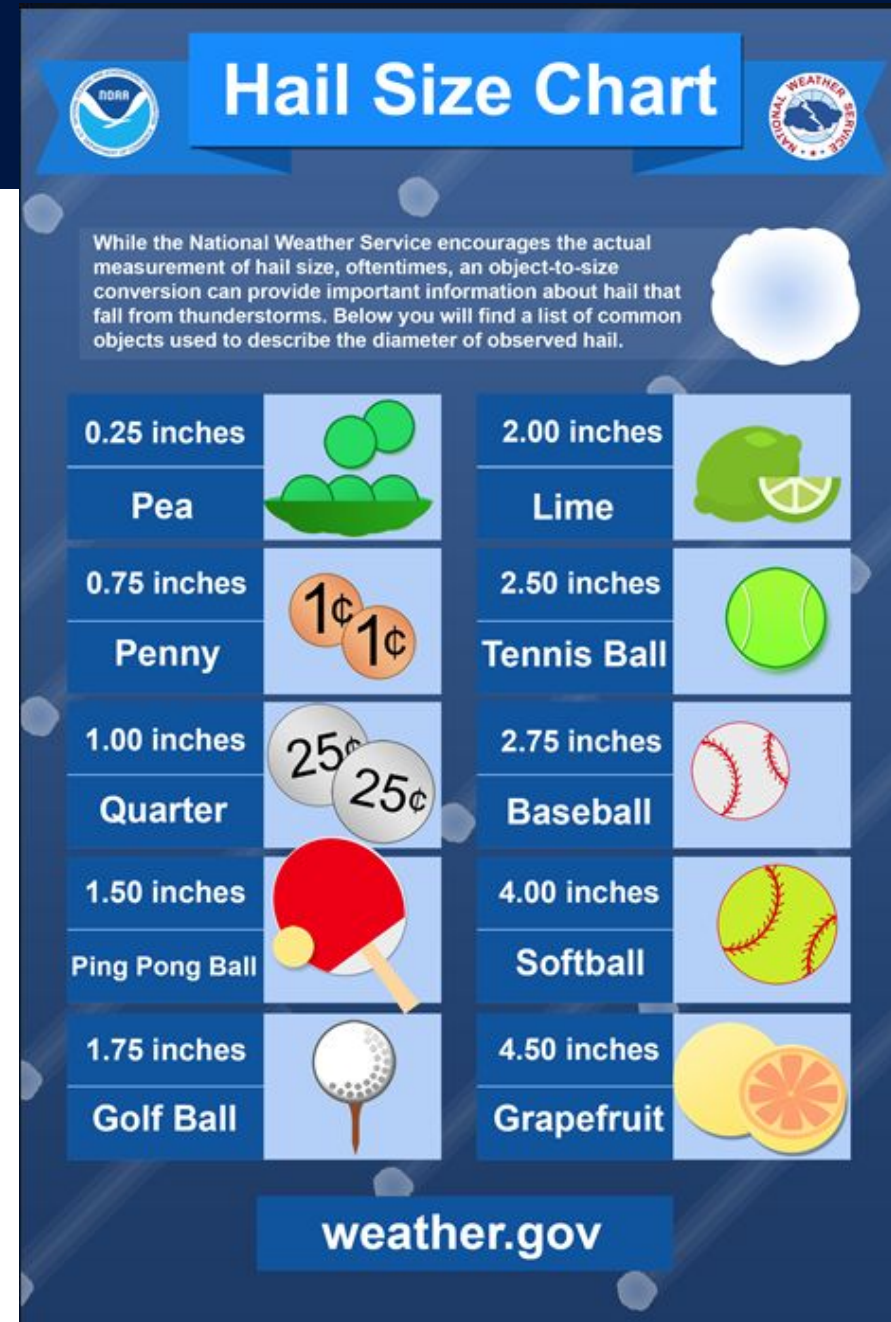
# Reporting Wind Damage

- Tree Damage
  - Extent of damage
  - Uprooted or snapped
  - Height, diameter, general size
  - Health of tree or limbs. Look for signs of rot
- Utility lines or poles down
- Outbuildings or vehicles overturned
- Loss of roofing materials, siding, windows, etc
- Any other significant wind or damage noted



# Reporting and Measuring Hail

- When reporting hail, avoid using ambiguous terms like “marbles” as a description for hail size
- Report diameter of largest stone
- Use this list to help identify as best as you can which object on the chart most closely resembles the size of the hail
- Protect yourself, stay indoors until safe!



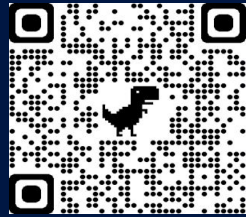
# Reporting Flooding

- Rainfall measurements
  - Amount and duration
  - Collaborate what's on radar
- **Closed/washed out roadways**
  - **Do not go searching for them!**
- Behavior of the water
  - Standing water
  - Flowing or rushing water
  - Approximate depth
- Impacts
  - Stranded vehicles
  - Underpasses or ditches filling up
  - Ongoing water rescues



**Example:** Numerous vehicles stranded in feet of standing flood waters near the intersection of Frederick Miller Way and Highway 175 in Milwaukee. Water is up the tops of the vehicles and the highway underpass is completely filled with water.

# How To Report to NWS Indianapolis



**Direct Phone Call**  
**(Fastest!)**  
**(800) 499-2133**

**DO NOT SHARE**  
**FOR SPOTTERS ONLY**

Urgent Reports  
Tornadoes, large  
hail, damaging  
winds, flooding



**Storm Reports**  
Alerting the NWS to local weather

**mPING**

crowdsourcing weather reports

**Desktop/Mobile**  
**mPing app**

**Not for tornadoes!**

[inws.ncep.noaa.gov/report](https://inws.ncep.noaa.gov/report)  
[mping.nssl.noaa.gov](https://mping.nssl.noaa.gov)

Use geolocation  
Bookmark it



**Social Media**

X - **@NWSIndianapolis** and  
Facebook - **US National**  
**Weather Service Indianapolis**

Pictures help



**E-Mail**

[nws.indianapolis@noaa.gov](mailto:nws.indianapolis@noaa.gov)

Great for pictures  
and videos

# Social Media



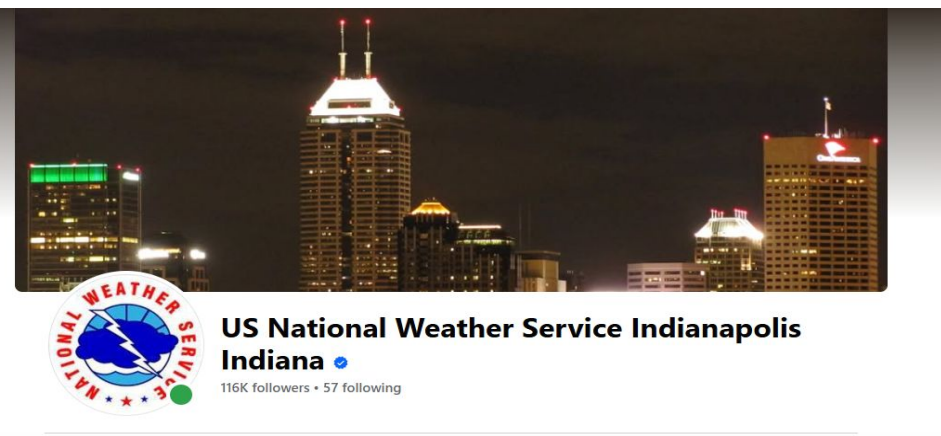
- Most valuable form of social media for storm reports.
- Real-time reports and allows us to see your photos.
- Gives us the ability to tweet you back and get more information.



- Content may vary from office to office.
- May post pre-event information, real-time radar imagery and photos, and post event request for damage/ reports.



- Use will vary from office to office.
- Some may provide pre-recorded weather briefings.
- Some may have educational content available.



## NWSIndianapolis

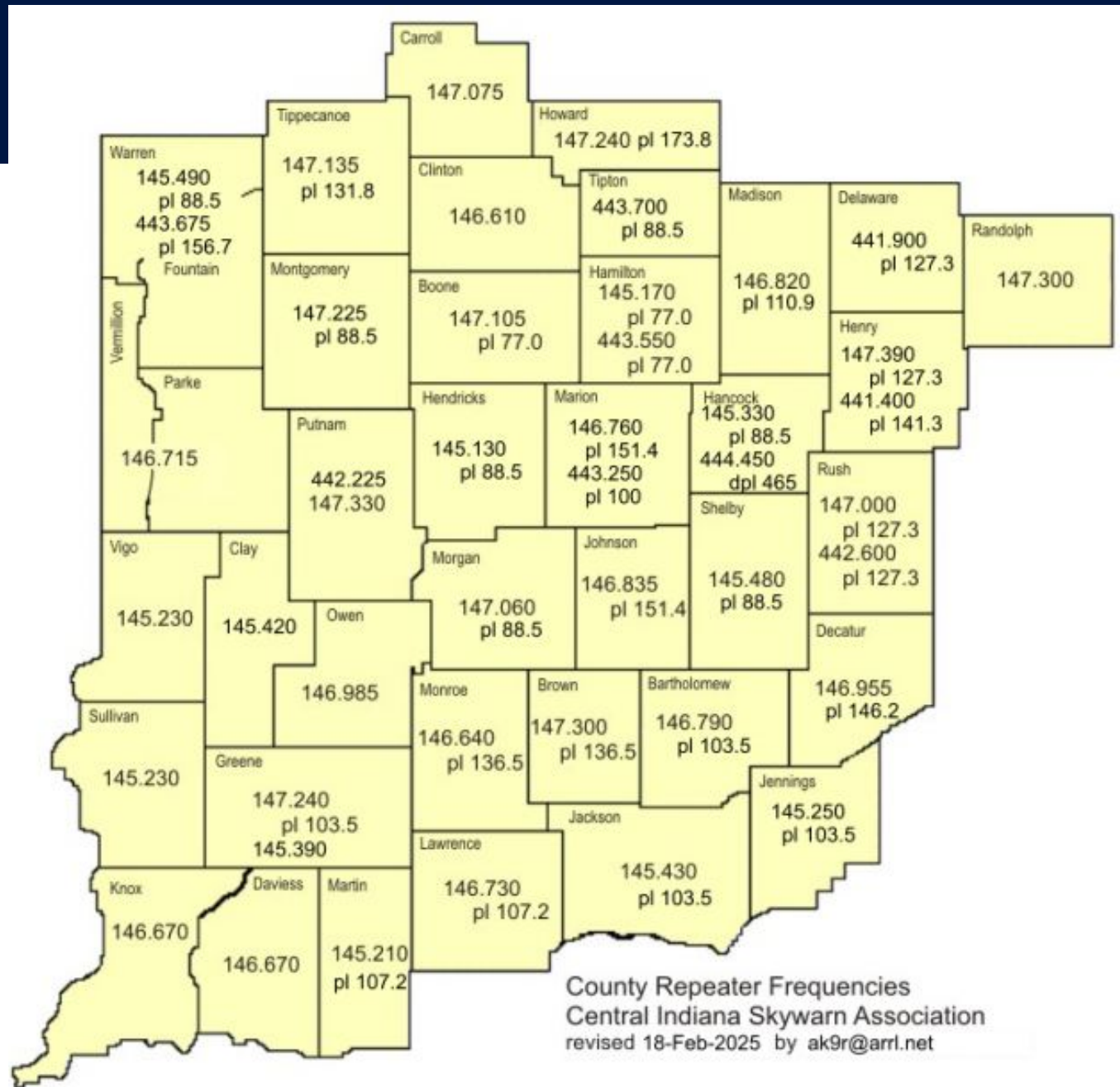
@NWSIndianapolis · 577 subscribers · 118 videos

National Weather Service ...more

[crh.noaa.gov/ind](https://www.crh.noaa.gov/ind) and 2 more links



# Amateur Radio



County Repeater Frequencies  
Central Indiana Skywarn Association  
revised 18-Feb-2025 by ak9r@arrl.net

# Reporting Severe Weather

**WHO**

you are.

**WHAT**

you are reporting.

**WHEN**

did the event occur?

**WHERE**

did the event occur?

*If the time and location of your report are miscommunicated, it won't match up with radar. This may lead us to discount your report!*

# Reporting Severe Weather

## WHO

Hi, I'm a trained weather spotter.

## WHAT

We just had damaging winds occur. There are two tree limbs about 12" in diameter down on my street.

## WHEN

The damaging winds happened at about 3:30 PM, 5 minutes ago.

## WHERE

I'm located near the intersection of US Route 36 and Ronald Reagan Pkwy in Avon.



**After the Storm**

# Post-Event Data Collection & Analysis



Take damaging thunderstorm winds as seriously as a tornado - **some of our fiercest thunderstorms do worse damage than most tornadoes!**


# Tornado Ratings and Damage Assessments



Winchester, IN

- Unlike hurricanes, tornadoes are not given a rating until after the storm is over
- The NWS will conduct a storm survey to assess the damage
- Think of it as Forensic Meteorology:
  - Radar Data
  - Damage
  - Eyewitnesses
- Tornadoes are rated on the Enhanced Fujita Scale (EF) based on wind speed and damage

# Tornado Rating - Enhanced Fujita (EF) Scale

EF0	EF1	EF2	EF3	EF4	EF5
68-85 MPH	86-110 MPH	111-135 MPH	136-165 MPH	166-200 MPH	200+ MPH
<b>Weak</b> Minor to Moderate Damage		<b>Strong</b> Considerable to Severe Damage		<b>Violent</b> Devastating Damage	
 NWS St Louis					

Sometimes, EF0/EF1 damage looks similar to straight-line winds.  
**Always report any damage you see!**

# Severe Weather Safety



# Safety First!



# 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.

**DON'T HESITATE  
TAKE ACTION!**

# Tornado Safety At Home

## Know where to go!

- Basement or lowest level.
- Put as many walls between you and the outside as possible - avoid windows!
- Get under a sturdy object.
- Cover yourself with blankets, pillows and/or items that will provide a cushioned barrier between you and flying objects.



# 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

PHOTO: U.S. Air Force -Tech. Sgt. Bradley C. Church

\*Recommended by FEMA



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

# 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?



# 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.



# 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!



# Flash Flood Safety



Man caught in flash flooding in Allen County, KY



Zac Henson / LSM

- No matter the type of warning, flash flooding can be life-threatening!
- Not only does driving through flooded roadways place your life in danger, it also places first responders in harm's way.
- Flooding causes more fatalities each year than any other thunderstorm hazard, and more than half of all flood related drownings involve a vehicle

# Final Thoughts

- A PDF version of these slides with speaker notes and other resources are available on our Spotter Webpage
  - <https://www.weather.gov/ind/spotter>
- Central Indiana Skywarn Spotters DO NOT receive spotter ID numbers
- You are a volunteer, not “certified” or “official”. You cannot break laws or use this training as an excuse for unlawful acts
- Your safety is top priority, do not put yourself in harms way

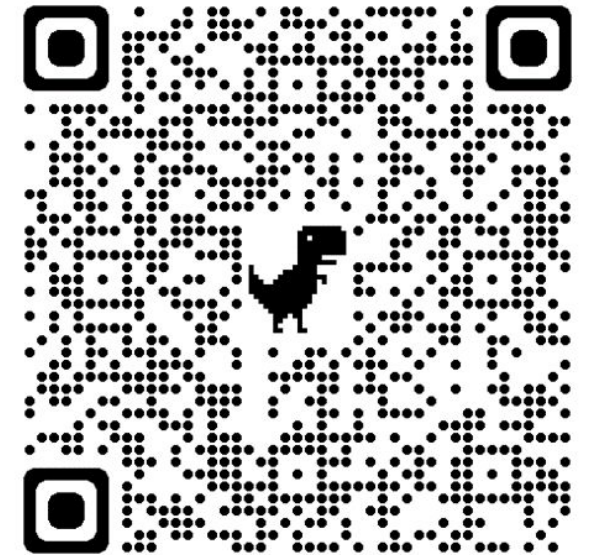


# Register as a Trained NWS Skywarn Spotter

- To register with NWS Indianapolis as a trained spotter, update your training record, or to update your contact information, please fill out this online form:

<https://forms.gle/oeCeSRdSQPPXRj98>

- Your information will be added to our internal spotter database and will not be shared with anyone
- This form is also available on the spotter webpage: [www.weather.gov/ind/spotter](http://www.weather.gov/ind/spotter)



# Find us at:



US National Weather Service  
Indianapolis Indiana



@NWSIndianapolis



@NWSIndianapolis

[nws.indianapolis@noaa.gov](mailto:nws.indianapolis@noaa.gov)

