

Severe Weather Spotter Training 2025



National Weather Service Wakefield, Virginia

Severe Weather Spotter Line: **1-800-737-8624**

NWS Wakefield Webpage: **weather.gov/akq**

 **@NWSWakefieldVA**  **NWSWakefieldVA**

Department of Commerce

National Oceanic and Atmospheric Administration

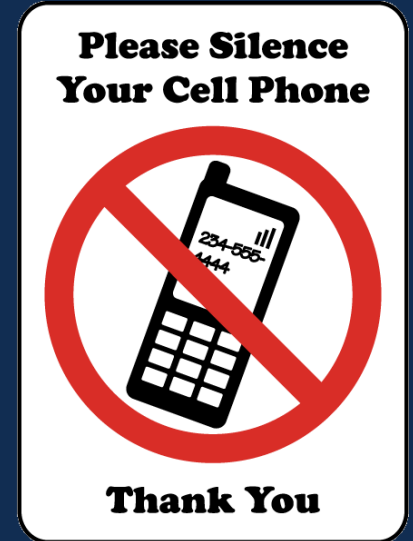
Office of Education



NOAA
EDUCATION

What Will Be Covered Today...

- The Role of A Spotter
- Identifying the Risk
- Watches, Warnings and Advisories
- T-Storm Meteorology / Types of Severe Weather
 - *Thunderstorm Formation*
 - *Straight-Line Winds*
 - *Hail*
 - *Flash Flooding*
 - *Wall Clouds/Funnel Clouds/Tornadoes*
- Reporting Procedures
- Spotter Safety



Part 1- The Role of a Spotter



Who Are NWS Storm Spotters?

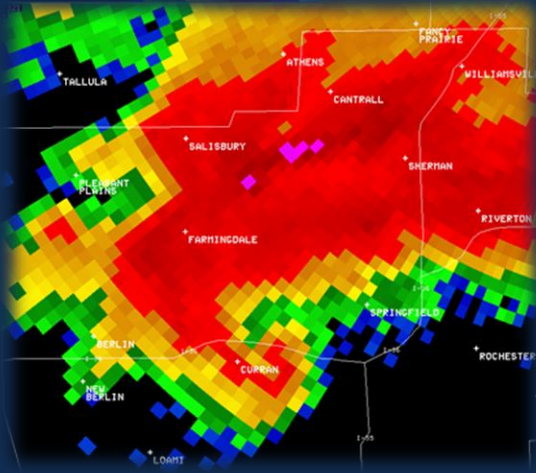


- Volunteers who report real-time severe weather reports to NWS
- Spotter information is crucial for the NWS to issue timely, accurate warnings
- Spotters can and do keep our communities safe during hazardous weather!

Why WE need YOU!

Why Spotters Are Needed

What we see:

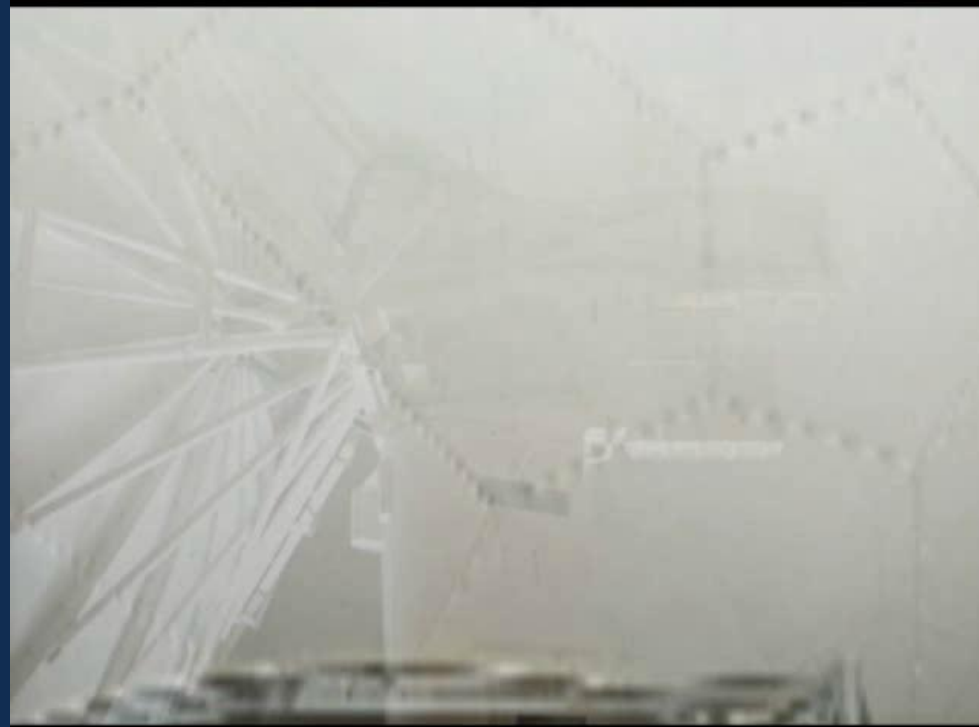


What you see:



- *The **ONLY** way for us to know is to get ground truth from spotter reports!*
- *Real-time verification adds credibility, enhances public response, and improves warning accuracy.*

NWS Radar – Operations



- **National Weather Service
WSR-88D Radar**

NWS Radar – Operations

NWS Doppler radar enables us to estimate:

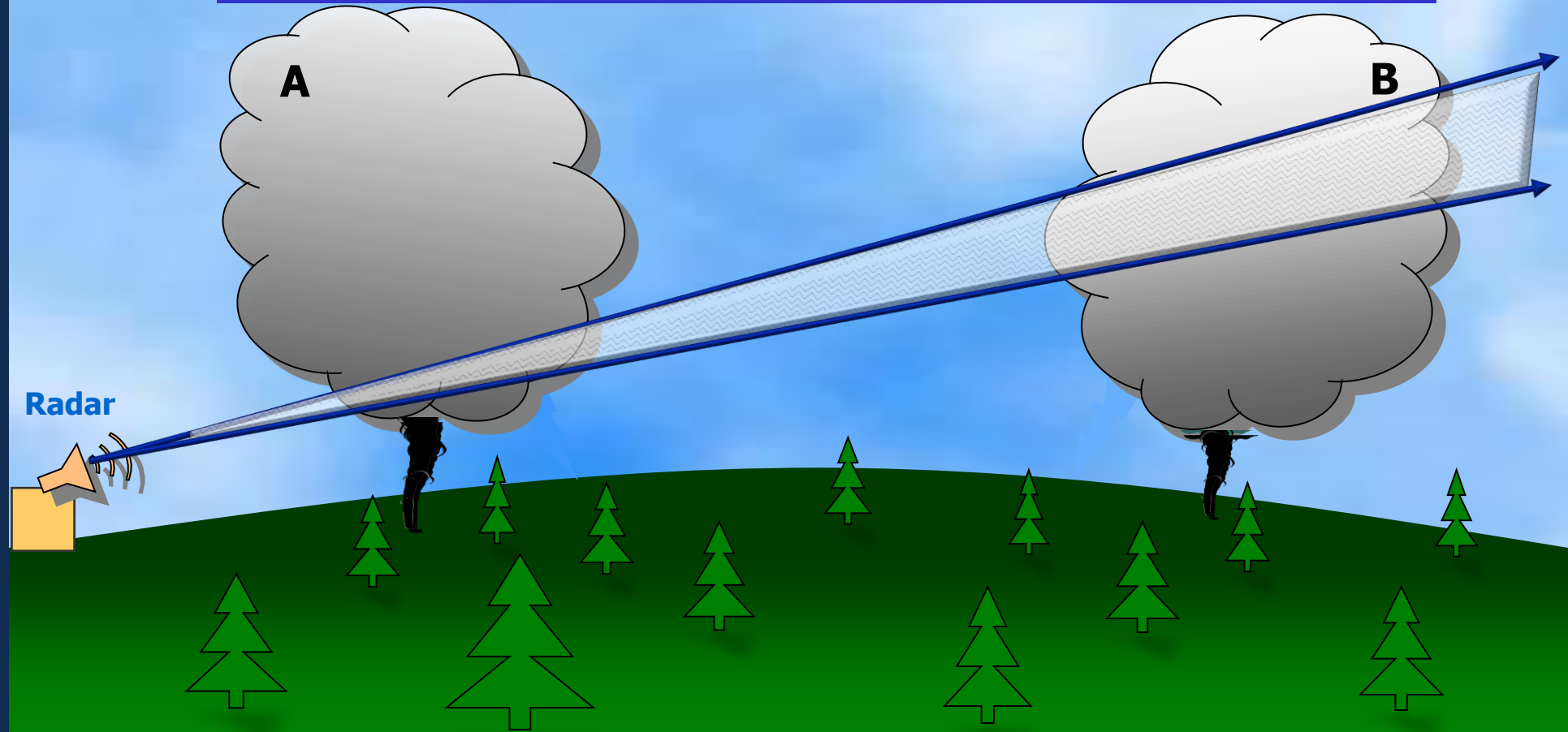
- Reflectivity (amount or strength of the signal)
- Velocity (direction in which the air is moving)



However, there are some significant limitations...

NWS Radar – Limitations

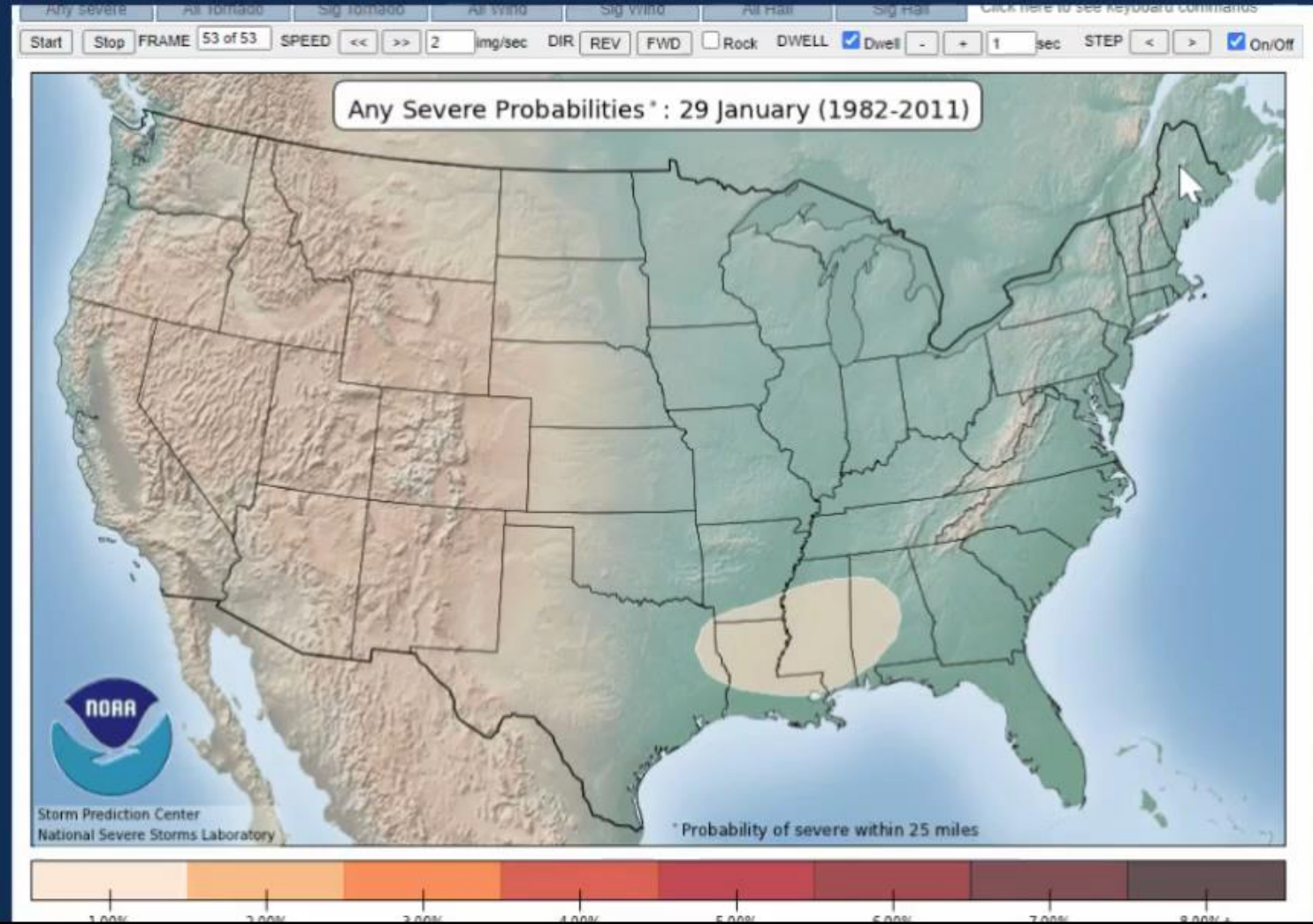
Radar beam cannot see the lower portion of storm *B*.
Resolution is poor at distances far from the radar.



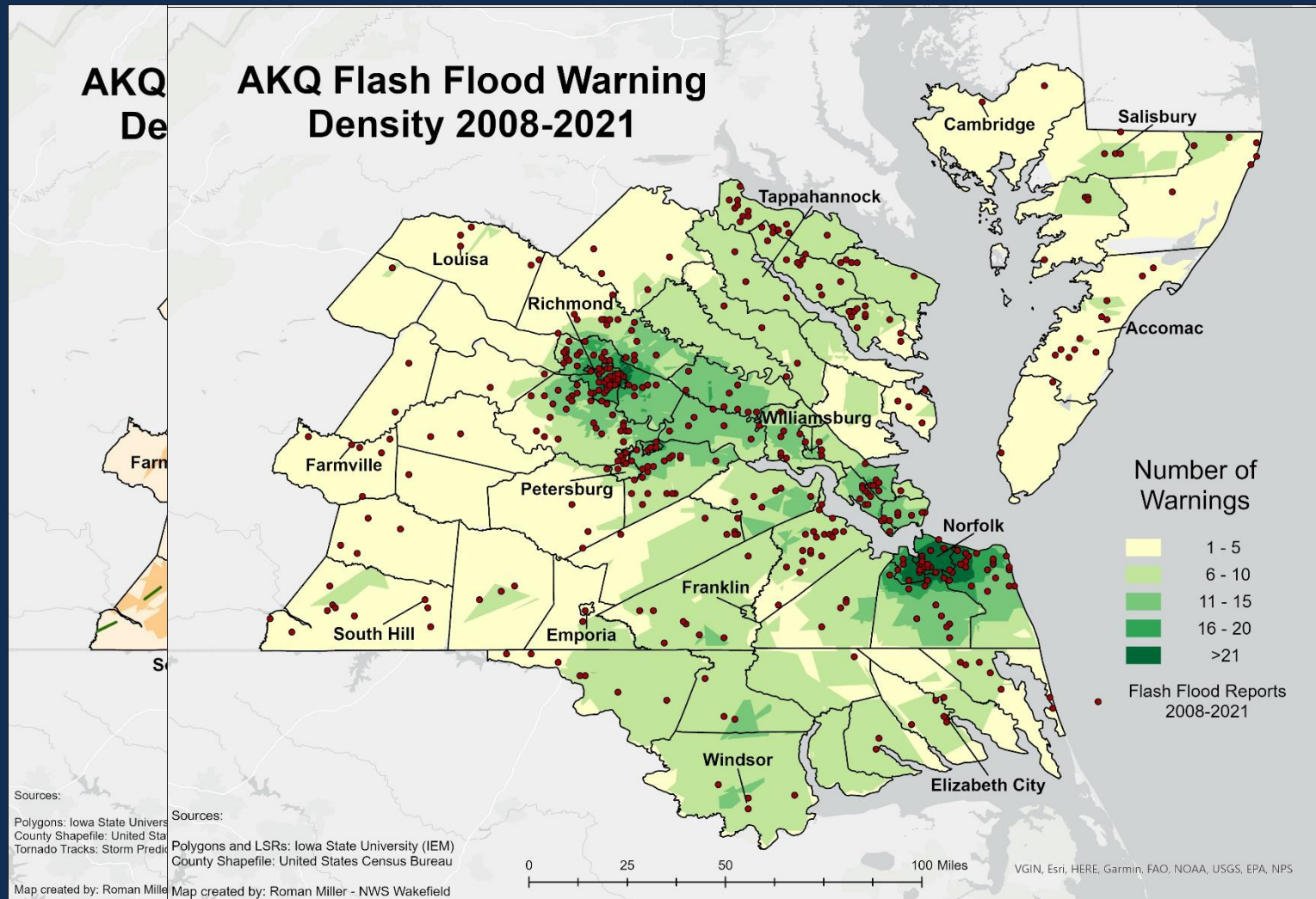
Spotters + NWS = Saved Lives!



Climatology



Climatology



Maps created by Roman Miller



Part 2- Identifying the Risk



Severe Weather Preparedness



Storm Prediction Center (SPC)

THUNDERSTORMS (no label)	1 - MARGINAL (MRGL)	2 - SLIGHT (SLGT)	3 - ENHANCED (ENH)	4 - MODERATE (MDT)	5 - HIGH (HIGH)
<p>No severe* thunderstorms expected</p>	<p>Isolated severe thunderstorms possible</p>	<p>Scattered severe storms possible</p>	<p>Numerous severe storms possible</p>	<p>Widespread severe storms likely</p>	<p>Widespread severe storms expected</p>
<p>Lightning/flooding threats exist with <u>all</u> thunderstorms</p>	<p>Limited in duration and/or coverage and/or intensity</p>	<p>Short-lived and/or not widespread, isolated intense storms possible</p>	<p>More persistent and/or widespread, a few intense</p>	<p>Long-lived, widespread and intense</p>	<p>Long-lived, very widespread and particularly intense</p>
					

STORM PLANNING TIMELINE

A few days out

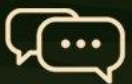
If the forecast calls for severe weather in a few days, start preparing now.



Make sure that you have emergency supplies



Know your safe places



Have a family communication plan

The day before

The day before, forecast accuracy continues to improve.



Adjust plans



Make sure your phone can receive WEAs



Ensure your shelter is clean and accessible

The day of

Remain vigilant and aware of any active Watches. A Warning may be issued at a moment's notice!



Remind your family of the communication plan



Know how to evacuate and/or get to safety from wherever you are



When a Warning is issued, you may only have seconds to take action!

Hazardous Product Definitions

- Weather.gov/Wakefield
- Always keep up with the latest forecasts, statements, and warnings...

- For safety
- For spotting
- For awareness



A screenshot of the NWS Forecast Office Wakefield, VA website. The page title is "NWS Forecast Office Wakefield, VA" and the location is "Wakefield, VA Weather Forecast Office". The page includes a navigation menu with links for "Current Hazards", "Current Conditions", "Radar", "Forecasts", "Rivers and Lakes", "Climate and Past Weather", and "Local Programs". A search bar is present with the text "City, ST" and "Enter Your City, ST or ZIP Code". Below the search bar is a "Get Weather" button. A map of the region is displayed with a legend for "Watches, Warnings & Advisories" including "Small Craft Advisory", "Hazardous Weather Outlook", and "Zoom Out". A grid of 18 icons is shown at the bottom, with "Briefings" and "SKYWARN" icons highlighted with red boxes. The "Briefings" icon shows a person at a computer, and the "SKYWARN" icon shows a stylized eye.

What are some ways we provide this information?



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Weather Story and Social Media Graphics

NWS Forecast Office Wakefield, VA

[Weather.gov](https://www.weather.gov/wakefield) > Wakefield, VA

Wakefield, VA

Weather Forecast Office

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

Severe Potential This Afternoon: LEVEL 3



Main Threats:



Damaging Winds



Isolated Tornadoes

Key Points

Updated: March 5, 2025 6:00 AM

What: Damaging Wind Gusts, A Few Tornadoes Possible

When: This Afternoon

Where: Entire Area, but highest threat is in the **Enhanced Risk** area.

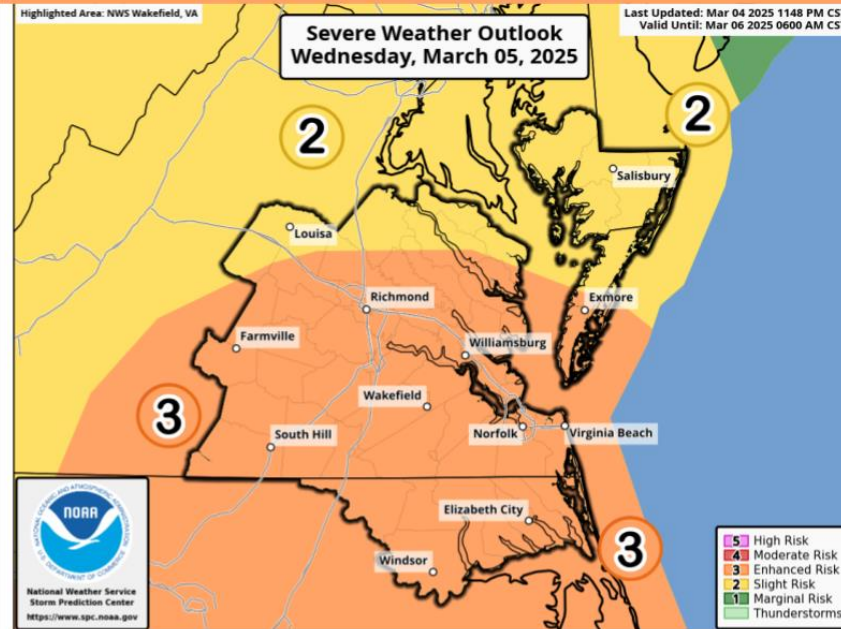
Actions

- Monitor the latest forecasts
- Make sure you can receive watches and warnings

An Enhanced Risk Means...

- High confidence in severe storms occurring.
- A few severe storms could be **significant***.

Significant defined as: Gusts at least 75 mph, and/or Tornado at least EF-2



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

National Weather Service
Wakefield, VA



Weather Story



Local Radar



Satellite



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Area Forecast Discussion (AFD)

- A bit more technical than HWO
- Gives our thought process that went into the forecast
- Storm timing, expected impacts, and probabilistic information is provided in the AFD

AREA FORECAST DISCUSSION
National Weather Service Wakefield VA
1128 AM EDT Fri May 27 2022

.SYNOPSIS...

Multiple rounds of showers and thunderstorms are likely this afternoon and evening as a cold front approaches from the west and eventually crosses the area tonight. High pressure settles into the region this weekend with dry weather returning.

&&

.NEAR TERM /THROUGH TONIGHT/...
As of 1100 AM EDT Friday...

The latest WX analysis indicates parent sfc low pressure over southern MI, with the upper low lagging back to the SW and clearly seen spinning across the OH Valley. A secondary area of low pressure/sfc troughing is pushing into the central Appalachians. The warm front has more or less washed out over the northern mid-Atlantic. Ongoing showers/tstms about to push into the I-95 corridor, with rain cooled airmass farther W over the piedmont for the time being. Best instability is present farther east w/ SPC mesoanalysis indicating a lot of CAPE (sfc-based values of 2000-3000 J/Kg). However, the airmass is very moist w/ very limited/weak lapse rates. Scattered showers have developed out ahead of the main line which brings into question how the line survives as it pushes E to the coast over the next few hrs (at least in terms of the severe threat). Heavy rain is expected in any storm and will be capable of 1-2" hourly rainfall amounts though most of the storms are likely to be short duration so have decided against a Flash Flood Watch as

handle a these rainfall amounts. 1 hr FFG is around 2" for most of the CWA with a corridor of 1-1.5" for the urban I-64 corridor from RIC to Hampton Roads. The threat for flash flooding will mainly be in the urban areas of Richmond and Hampton Roads or if storms train over a locations for more than an hour or two.

Large hail is not expected today given the warm moist air being pulled north over the region. Freezing levels will be above 12,000 ft today.

Hazardous Weather Outlook (HWO)

- Graphical HWO (gHWO) : Click “Graphical Hazards” at weather.gov/AKQ



Select Zoom Area: AKQ Auto Refresh Search Location: City, ST, Zip

Wind Risk for Thu/Thu Night Weather Forecast Office Wakefield, VA

24 Hr Hazard Risks

Risk Level	Category	Definition
	None	No Wind Risk
	Limited	Breezy conditions with 30 to 40 mph wind gusts could blow around unsecured items and result in hazardous driving conditions for high-profile vehicles.
	Elevated	Windy conditions with 40 to 50 mph wind gusts could damage outdoor items and result in hazardous driving conditions for high-profile vehicles.
	Significant	Very windy conditions with 50 to 60 mph wind gusts could blow down trees and cause isolated power outages.
	Extreme	Extremely windy conditions with wind gusts greater than 60 mph will damage numerous trees and cause widespread power outages.



	Fog	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Fire Weather	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Excessive Cold	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Ice Accumulation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Snow/Sleet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Coastal Flood	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Part 3 - Watches, Warnings & Advisories



Severe Thunderstorm Definition

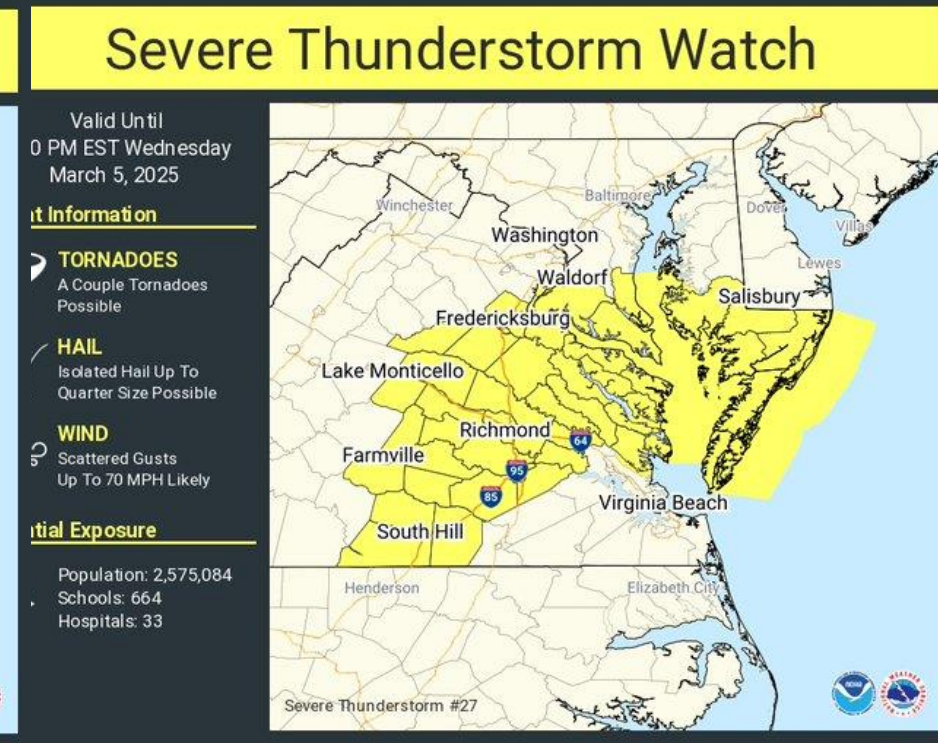
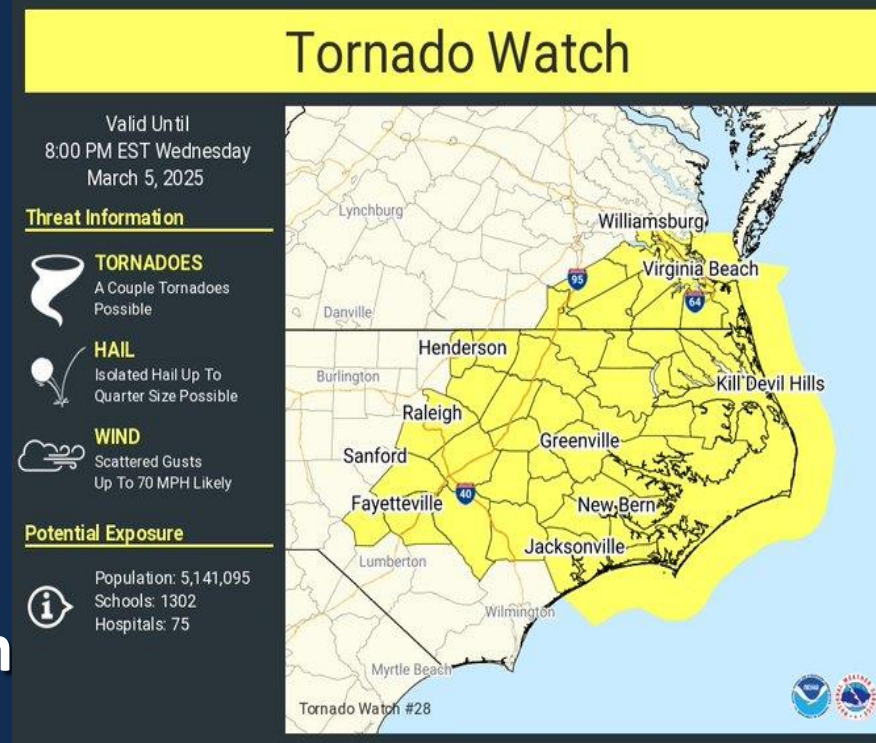
Severe Thunderstorm - A storm which produces:

- $\geq 1''$ hail - *and / or* -
- ≥ 58 mph gusts



Watch

- Conditions are favorable for hazardous weather in and near the watch area
- Issued by the Storm Prediction Center (SPC) in Norman, OK



Warning

- Expected weather event is imminent or occurring
- Warning polygons are based on area of highest threat

Tornado emergency may be issued in exceedingly rare instances!

Tornado Warning



Valid Until
12:30 PM EST Wednesday
March 5, 2025

Threat Information

- TORNADO**
Radar Indicated
- HAIL**
No Hail Expected

Potential Exposure

Population: 188,840
Schools: 33
Hospitals: 0



Severe Thunderstorm Warning

Valid Until
4:00 PM EST Wednesday
March 5, 2025


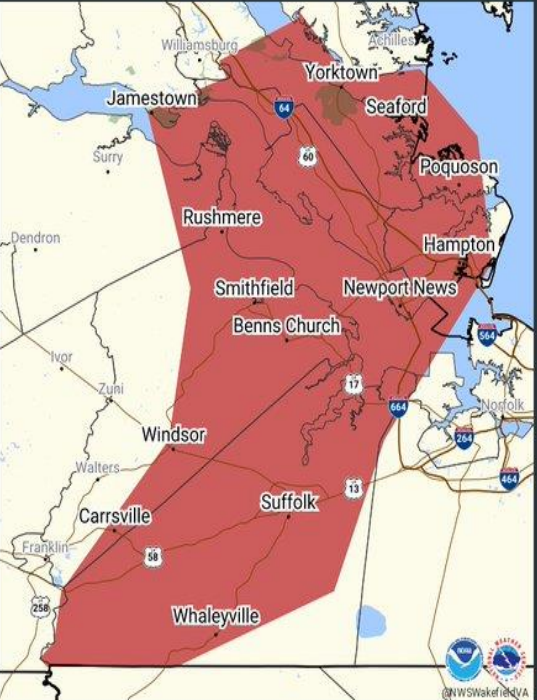
Threat Information

- WIND**
Up to 70 MPH
- HAIL**
Pea Sized Possible

*** A tornado is also possible ***



Potential Exposure

Population: 532,763
Schools: 148
Hospitals: 9



Put Simply...

WATCH VS WARNING

-  **WATCH:** We have the ingredients to make tacos.
-  **WARNING:** We're having tacos. **RIGHT NOW!**

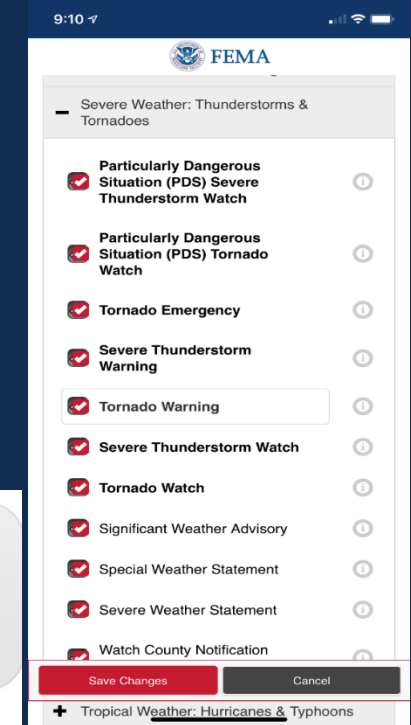
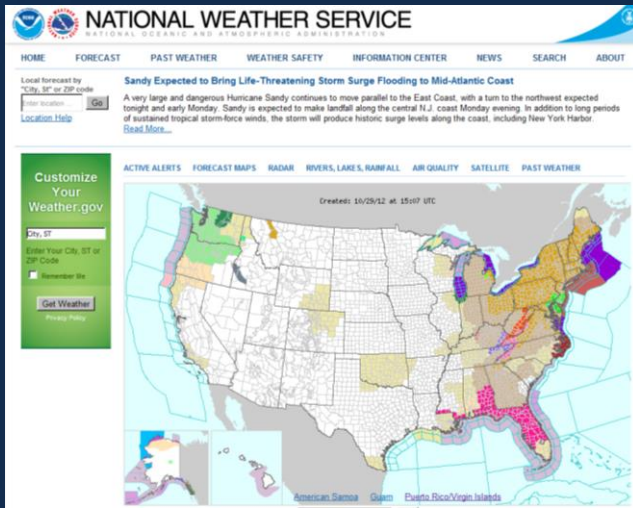


TACO WATCH



TACO WARNING

How do YOU receive Warnings?



How WEA messages look on your phone

➤ *Having Multiple ways of receiving warnings is ideal!*

- Wireless Emergency Alerts (WEA)
- Your Preferred TV/Radio Station(s)
- internet/Mobile Apps
- NOAA Weather Radio
- Weather Apps (FEMA App Shown Above)
- County Warning System (If Applicable)

Wireless Emergency Alerts

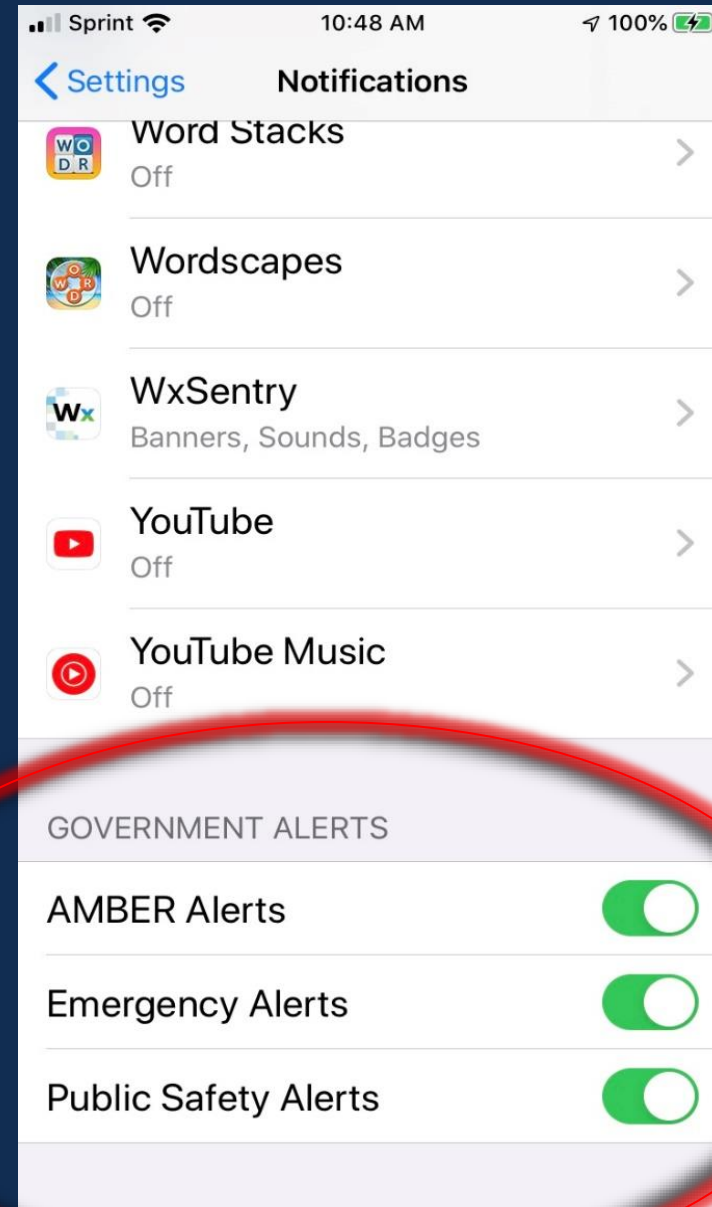


<https://www.ready.gov/alerts>

- Emergency messages sent by authorized government alerting authorities to your mobile device.
- Alerts can be sent to your mobile device without needing to download an app or subscribe to a service.
- Alert Types Include:
 - Extreme weather warnings
 - Local emergencies requiring evacuation or immediate action
 - AMBER Alerts
 - Presidential alerts during a National emergency

WEA Alerts

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



Part 4 – Thunderstorm Meteorology

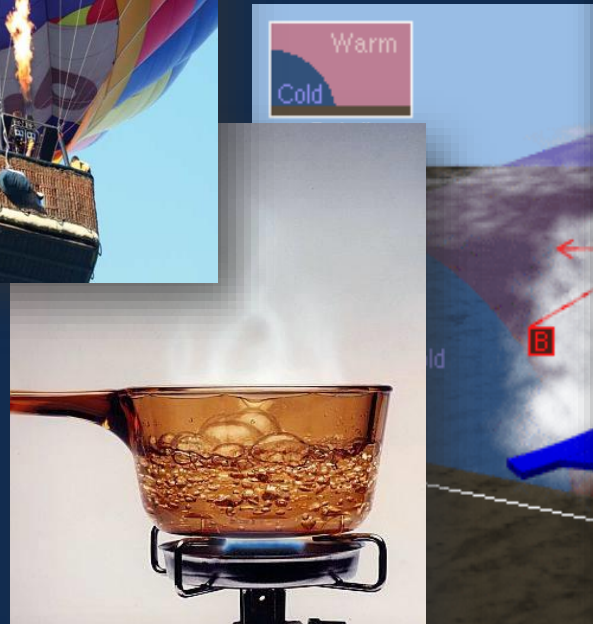


Severe Weather Ingredients and T-Storm Formation

When air is heated, it becomes lighter and **rises**. This is known as increasing **Instability**.

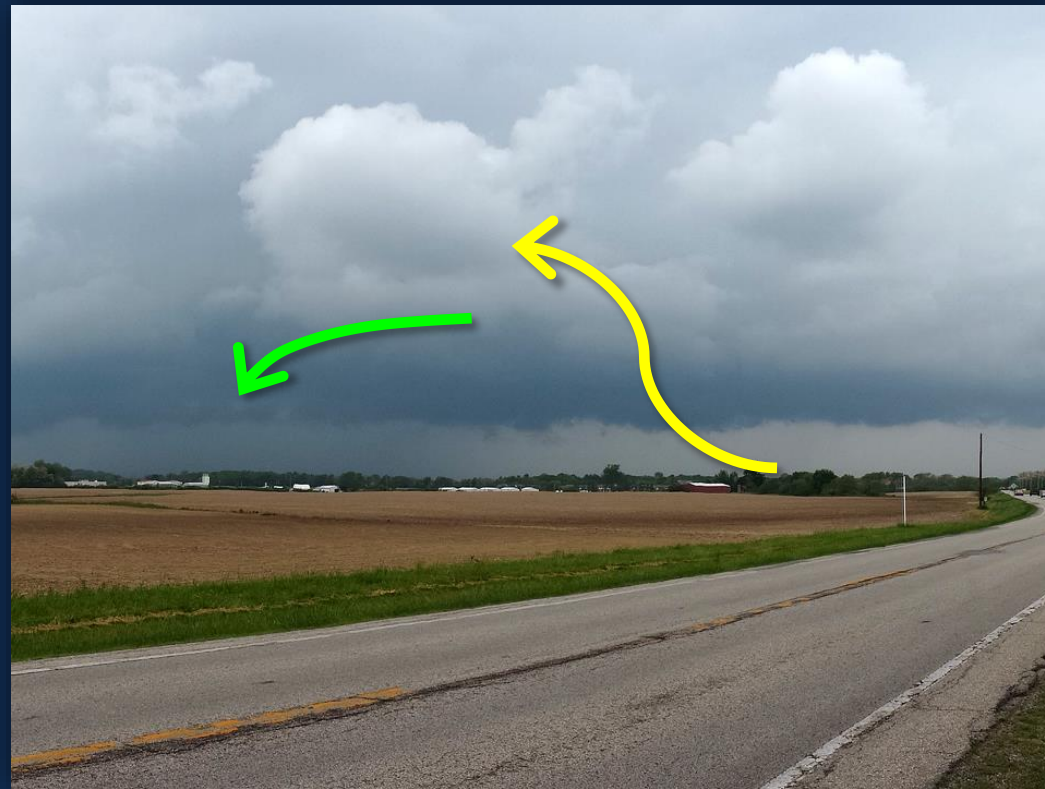
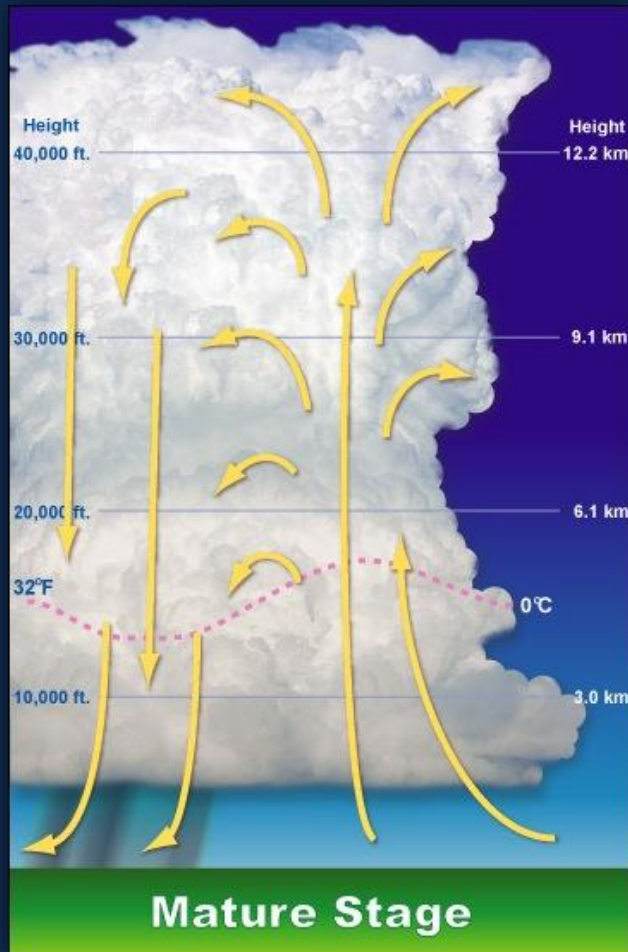
If enough **moisture** is present, this **lift** results in an increase in cloud cover and a developing **updraft** which can turn into a towering cumulus cloud.

A source of **lift** often acts to kick-start updraft and thunderstorm development. (Front, Sea Breeze, etc.)



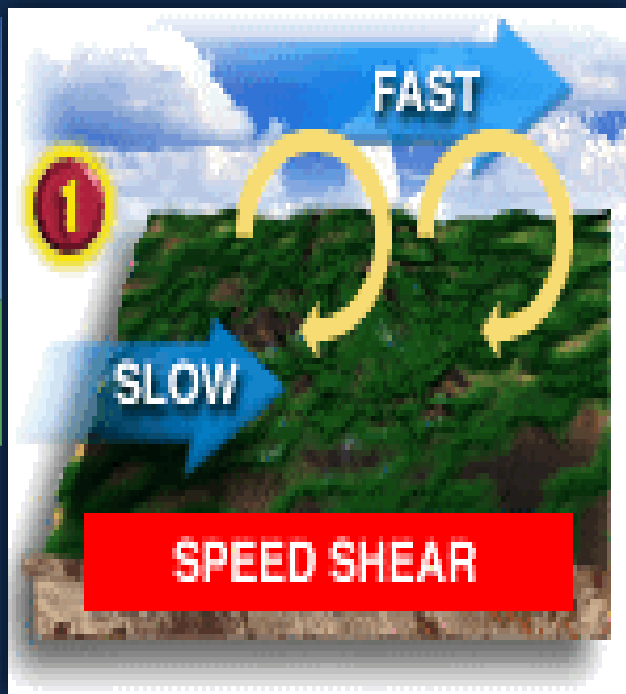
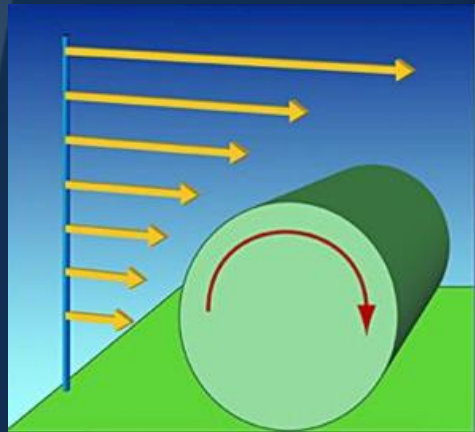
Mature Thunderstorm

- A fully developed thunderstorm will have a distinct **updraft** and **downdraft**



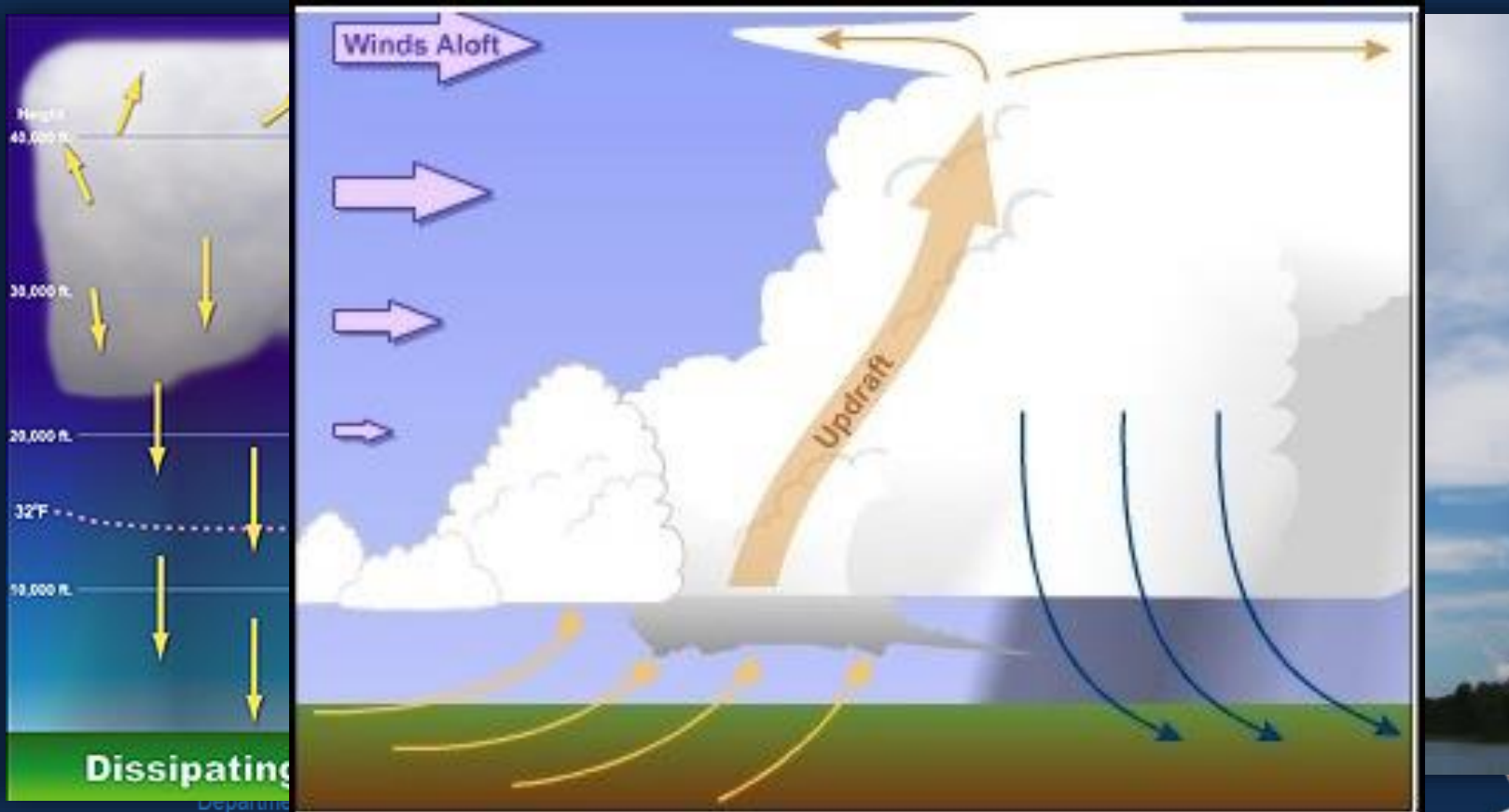
Importance of Wind Shear

- For a thunderstorm to survive, **wind shear** is needed to keep the updraft and downdraft separate.
- Can be described in terms of speed and direction



Importance of Wind Shear

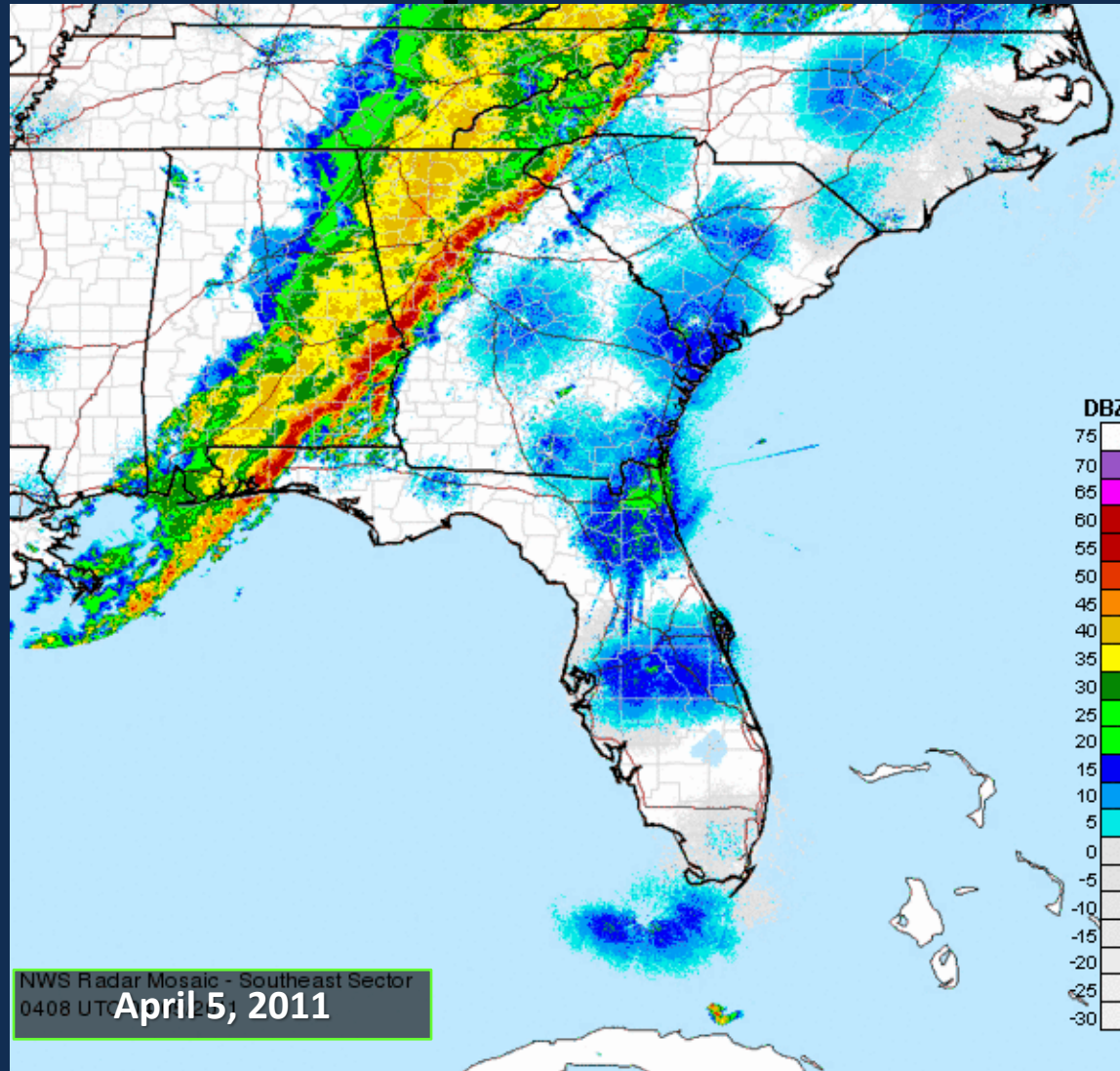
- For a thunderstorm to survive, **wind shear** is needed to keep the updraft and downdraft separate.
- Otherwise the storm collapses on itself and dies!



Types of Thunderstorms

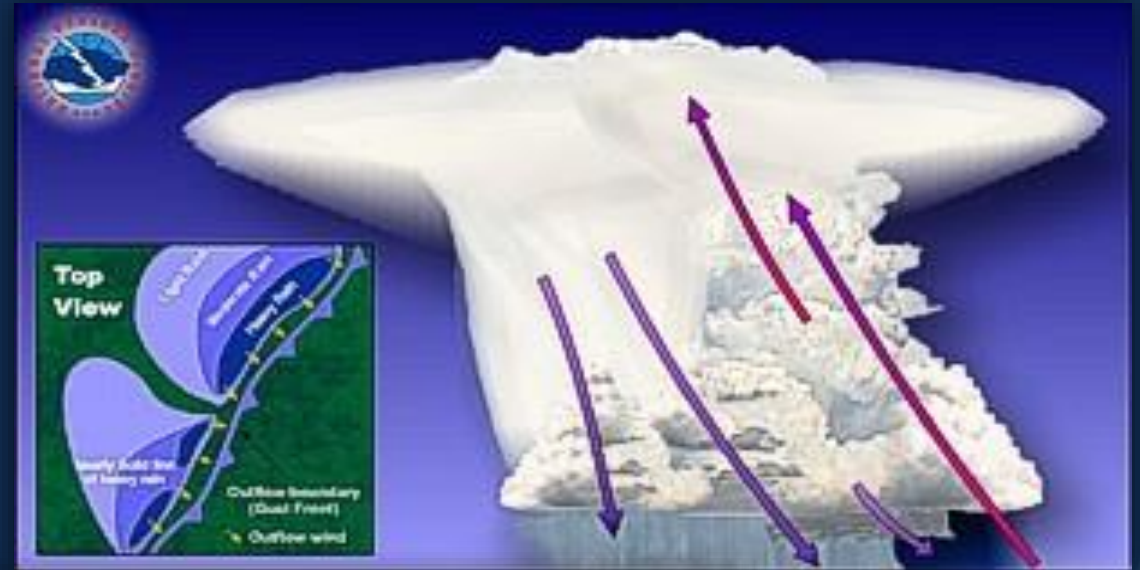


Squall Line

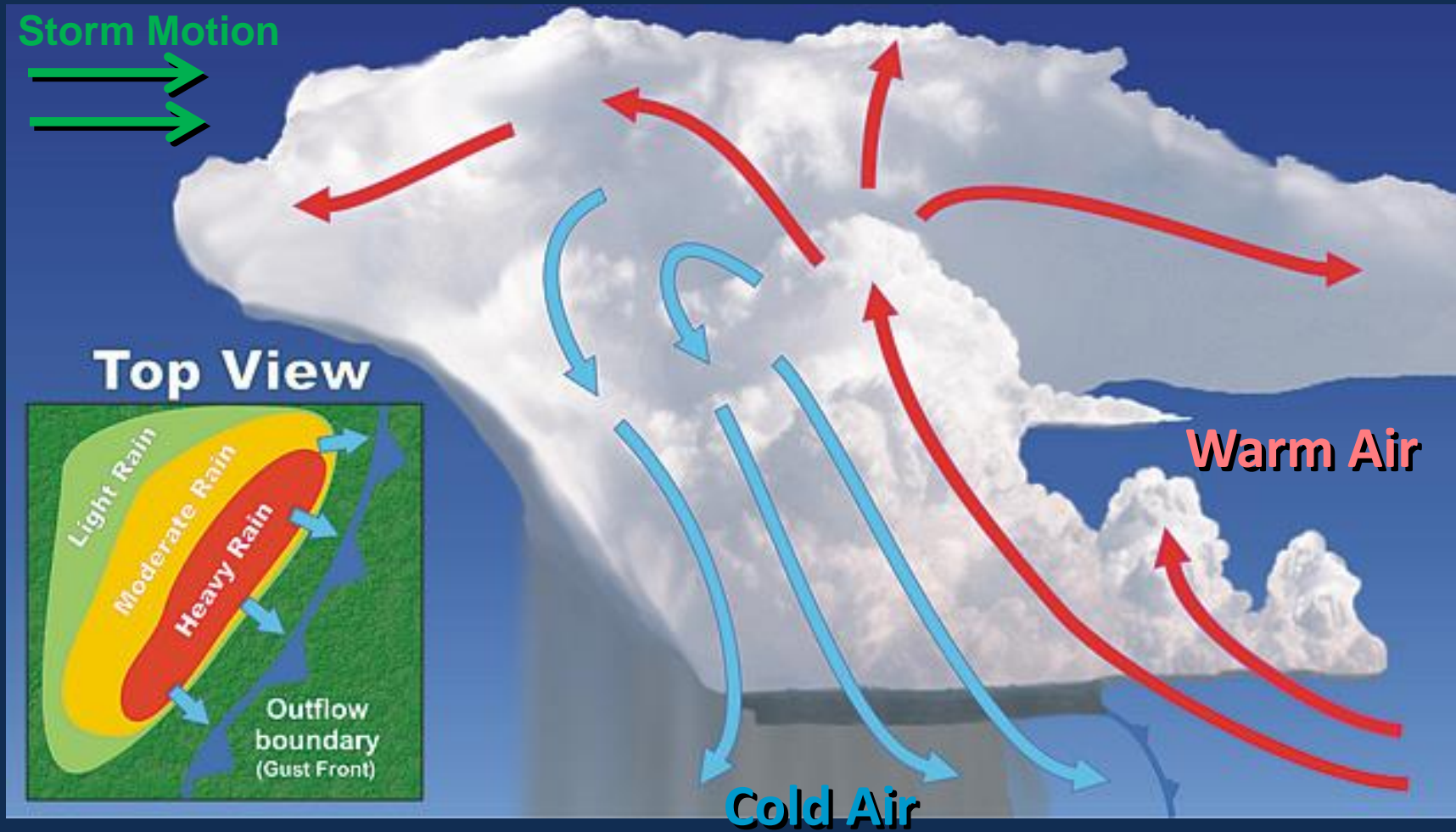


Squall Line

- Primary threat is damaging winds
- Often accompanied by a shelf cloud



Shelf Cloud



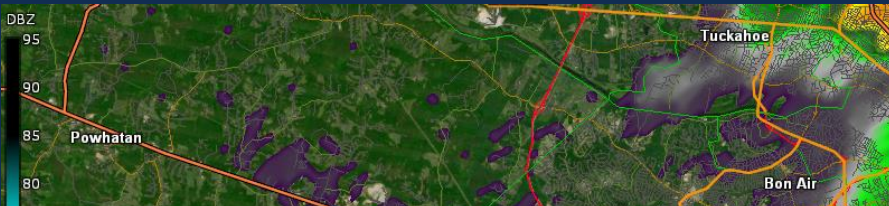
Strong winds often accompany the passage of a shelf cloud.

Squall Line and Gust Front



Shelf cloud forms with strong winds and rain-cooled air following closely behind

Supercell Thunderstorms

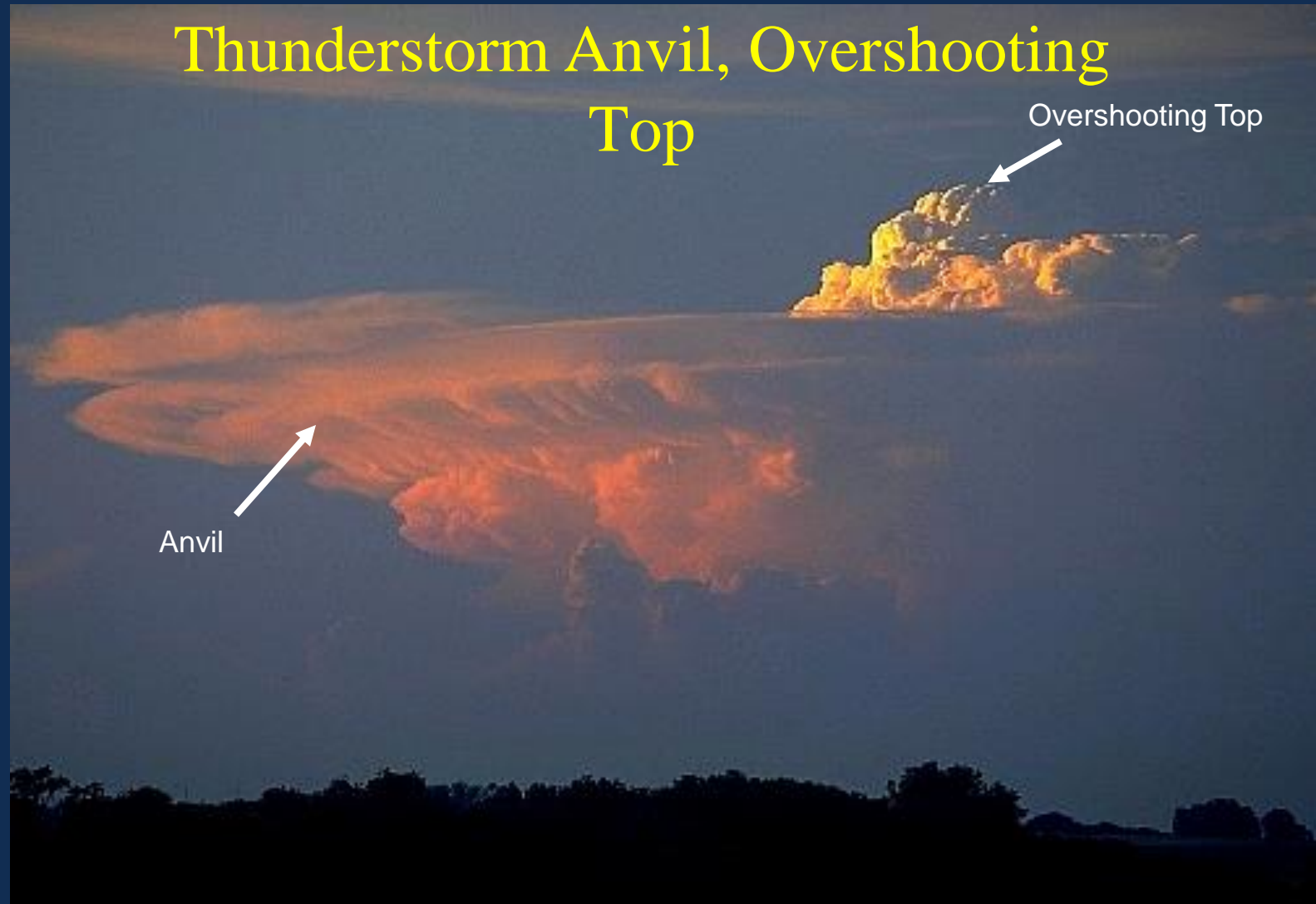


February 29, 2017

Spring Gr



Thunderstorm Anvil, Overshooting Top

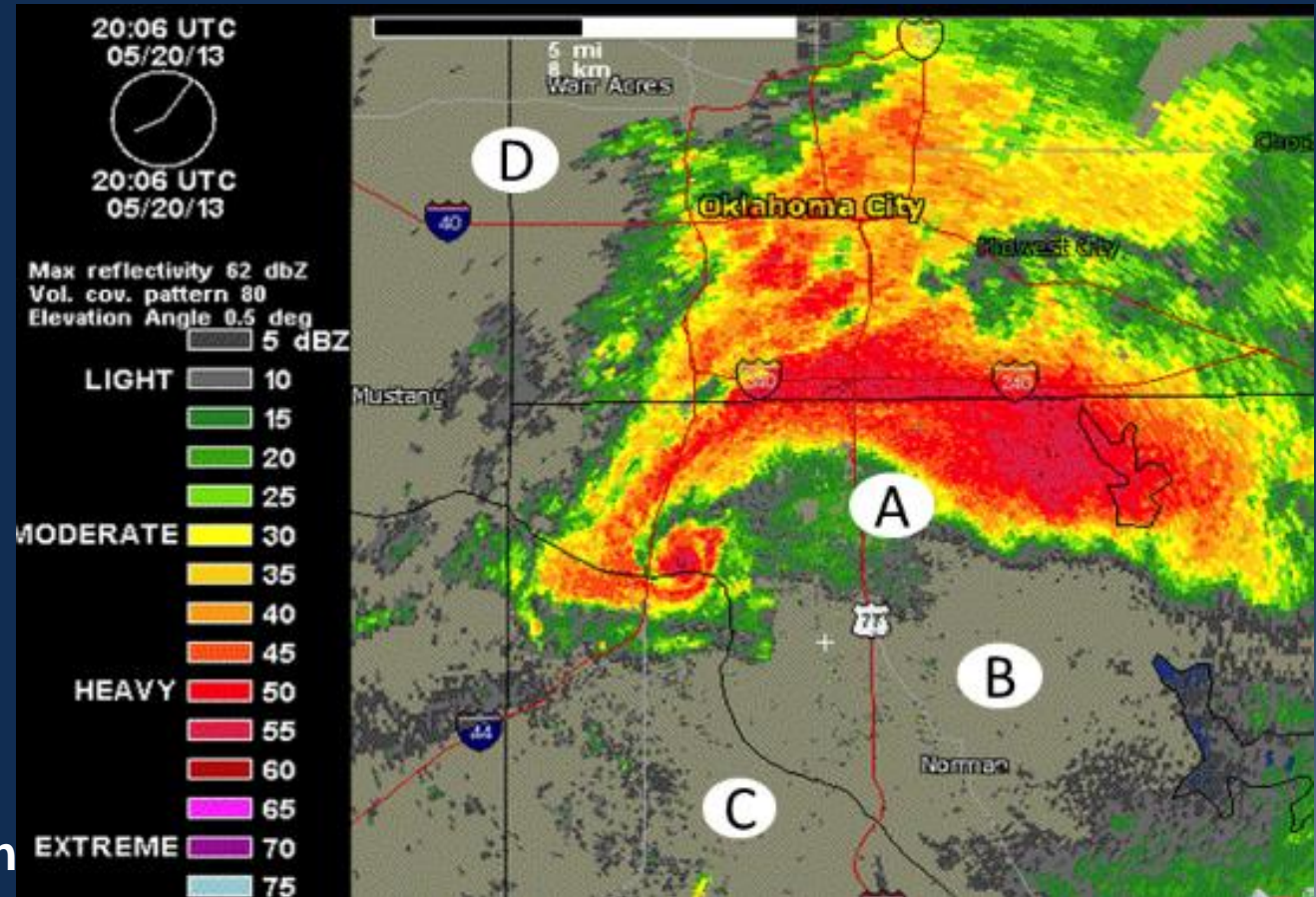


Anvil

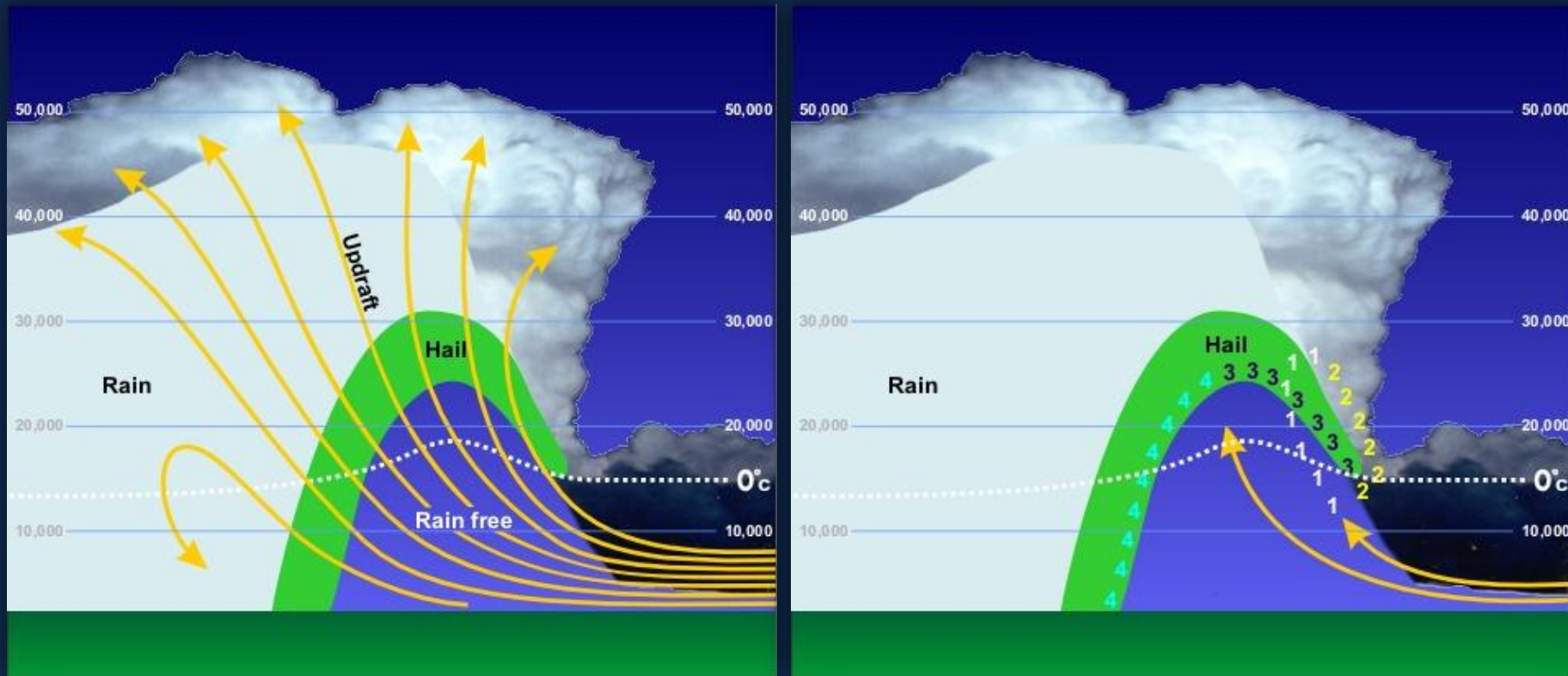
Overshooting Top

Supercell Thunderstorms

- Thunderstorm with presence of a mesocyclone (localized area of low pressure).
 - Rotation evident within updraft
- Found isolated from other storms, but can be embedded in Squall Lines
- Found in the warm sector of a low pressure system, can last for hours.
 - Large hail, damaging winds, torrential rainfall, and Cloud to Ground Lightning
- Differing view dependent upon location (point A-D)

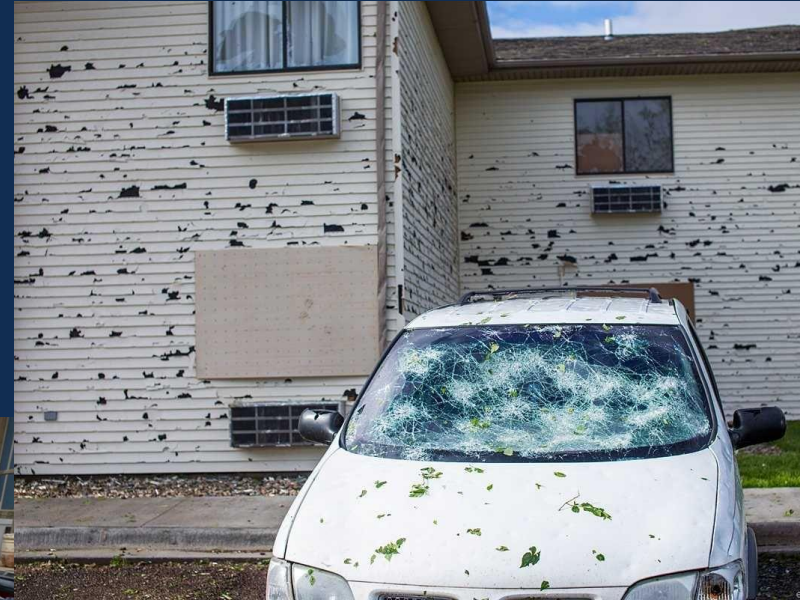


Hail



Stronger updraft → Bigger hail

Dangers of Hail

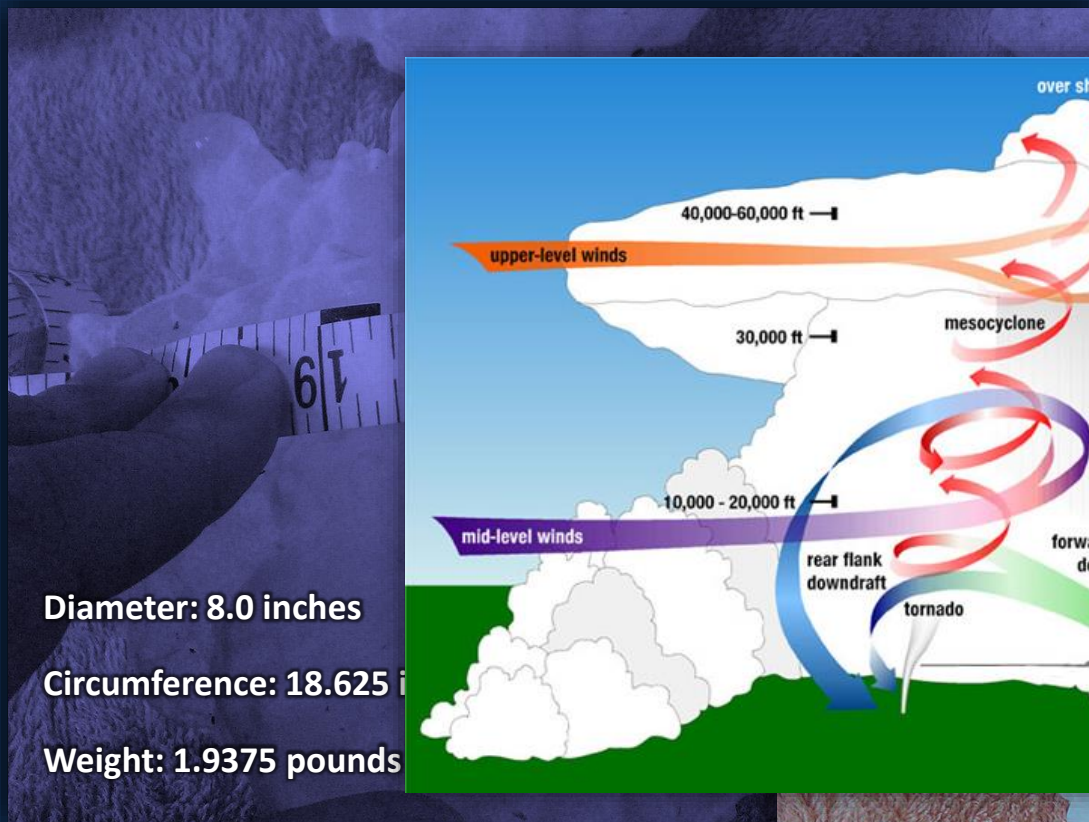


Hail can damage vehicles, crops, and structures and can also lead to hazardous driving conditions.

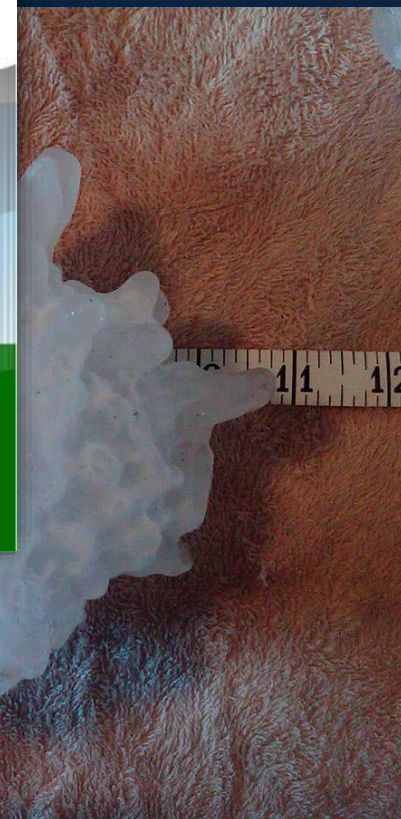
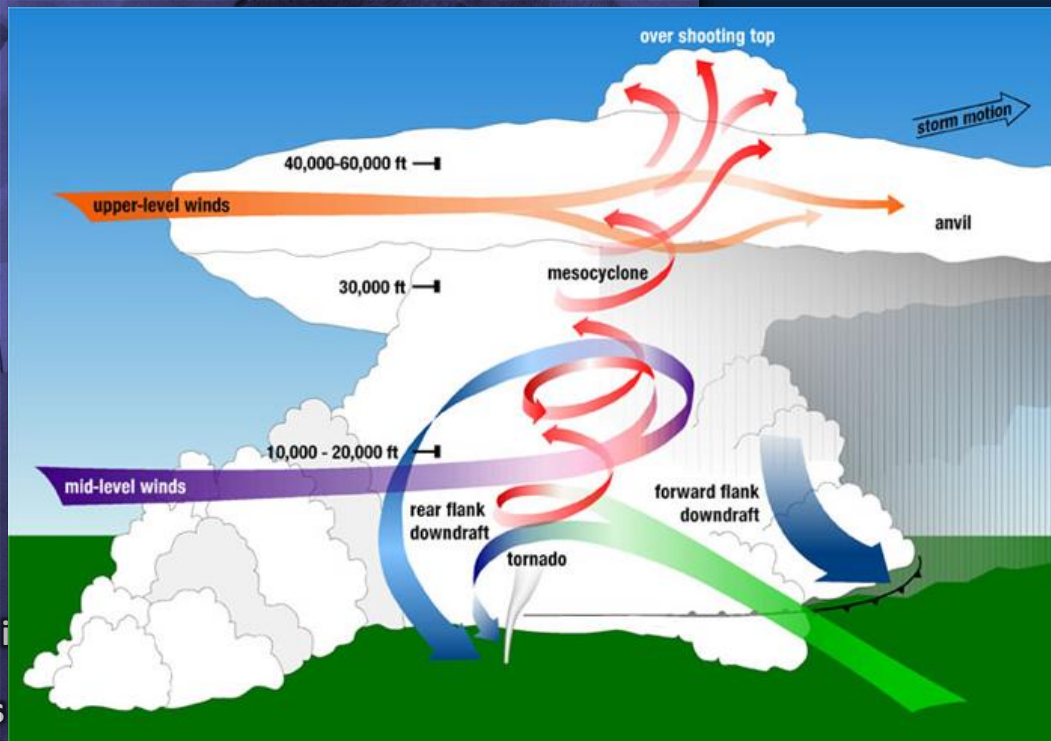


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Rotating Updrafts Can Produce Very Large Hail!



Diameter: 8.0 inches
Circumference: 18.625 inches
Weight: 1.9375 pounds



Vivian, SD
July 23, 2010

Dangers of Hail



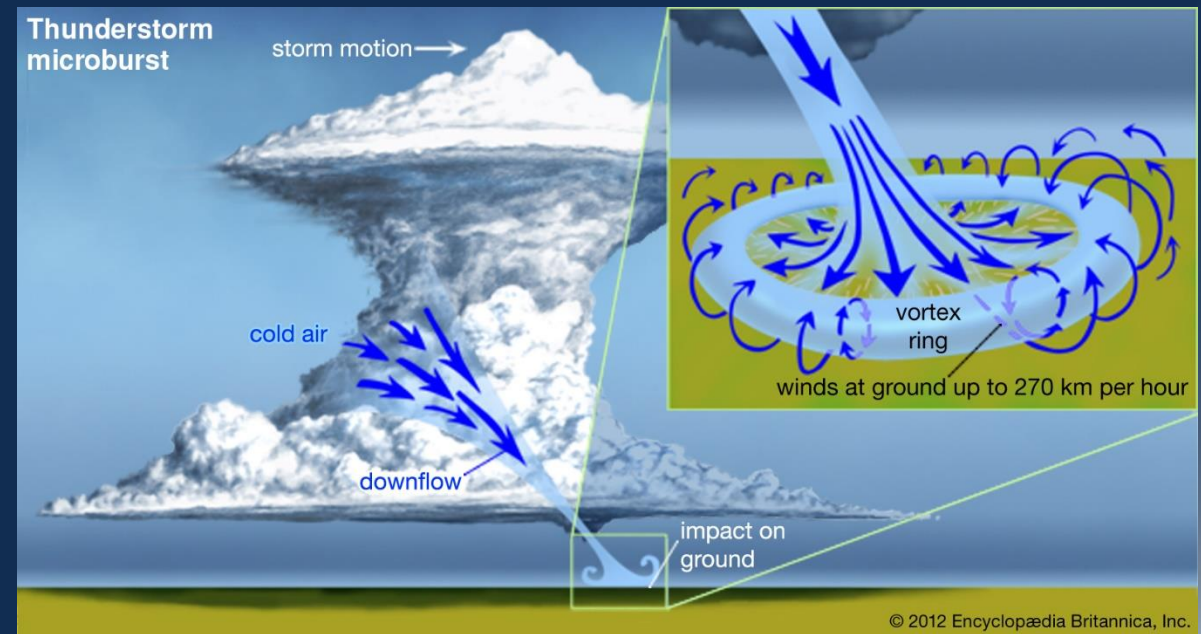
Hail is also dangerous to humans!

Damaging Wind



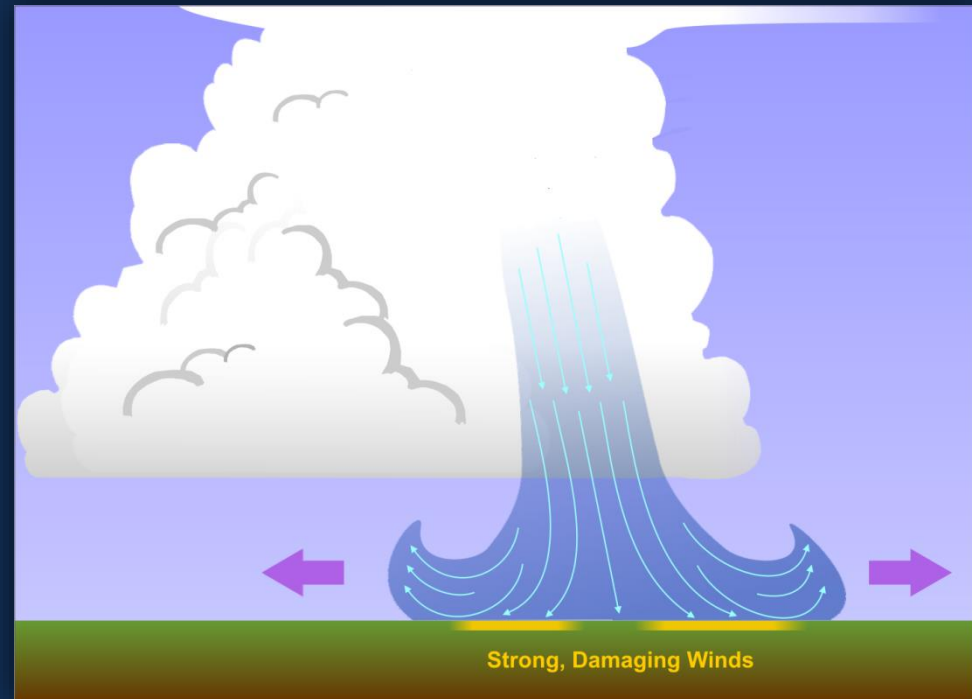
Straight Line Wind

- Refers to damaging wind not directly associated with tornadic circulation
- Result of the **outflow** from a thunderstorm, due to:
 - Downbursts
 - Squall Lines (gust fronts)



Downburst (Microburst)

- Area of strong winds produced within downdraft of a thunderstorm
- Typically affect small areas (usually < 5 miles in diameter)
- Can have wind speeds of 50 to 100 MPH



Downburst



Video courtesy WACH
Columbia, SC

The precipitation core (rain and hail) is displaced from the updraft and crashes to the ground.



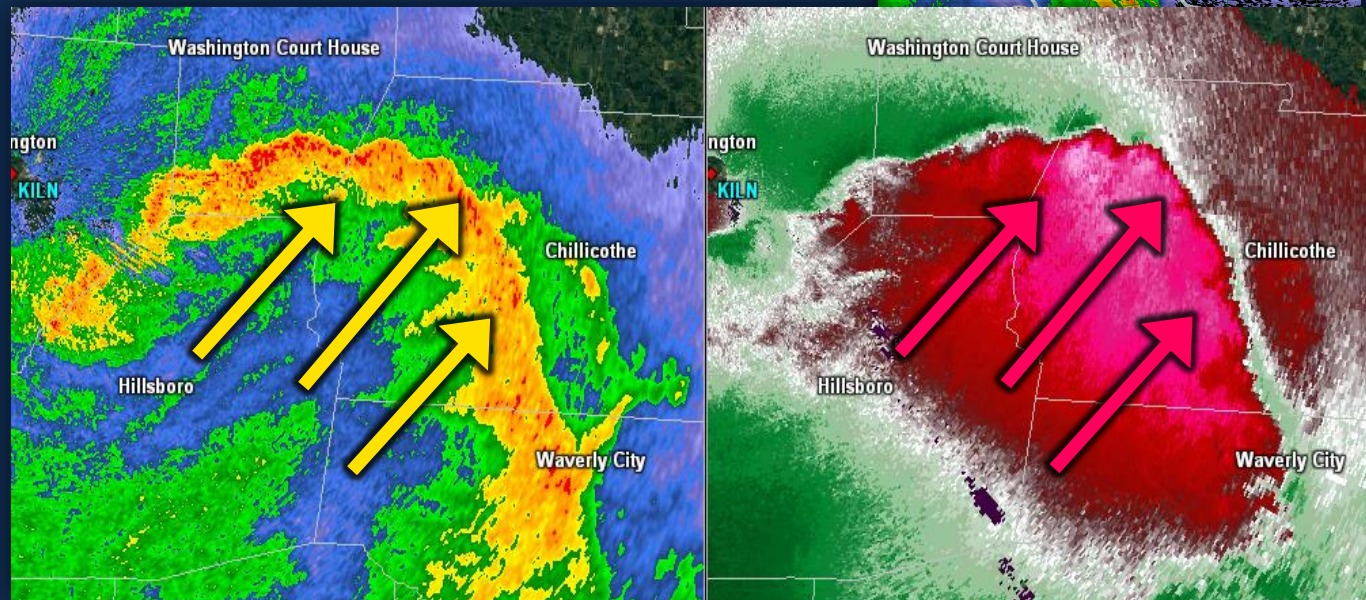
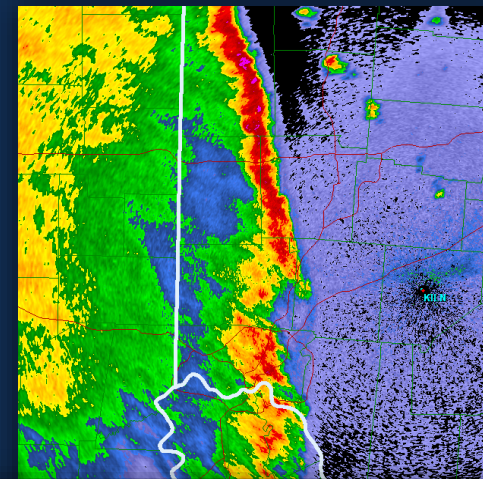
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Downburst Damage

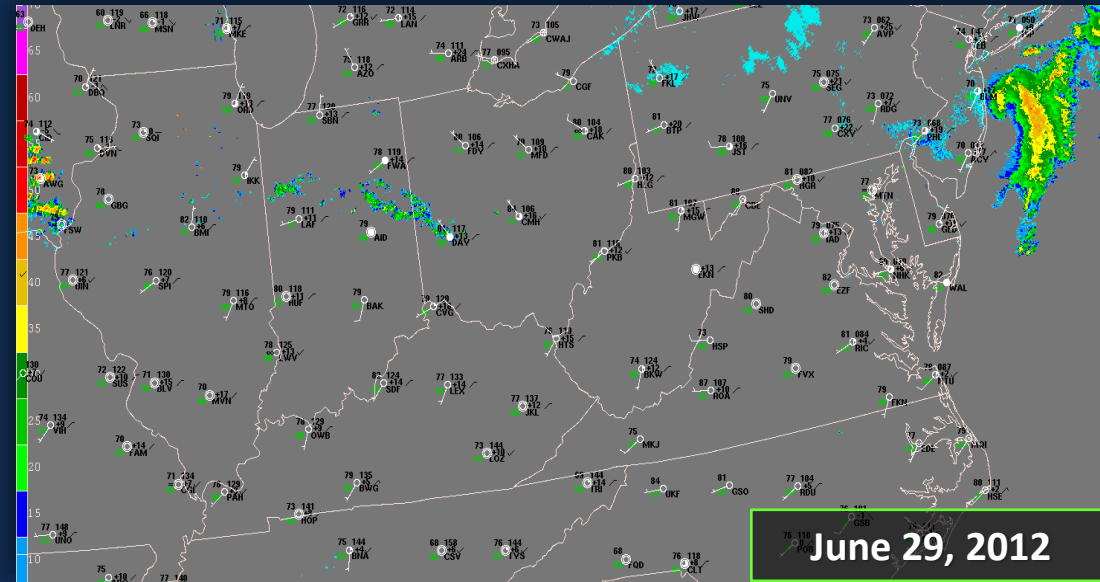
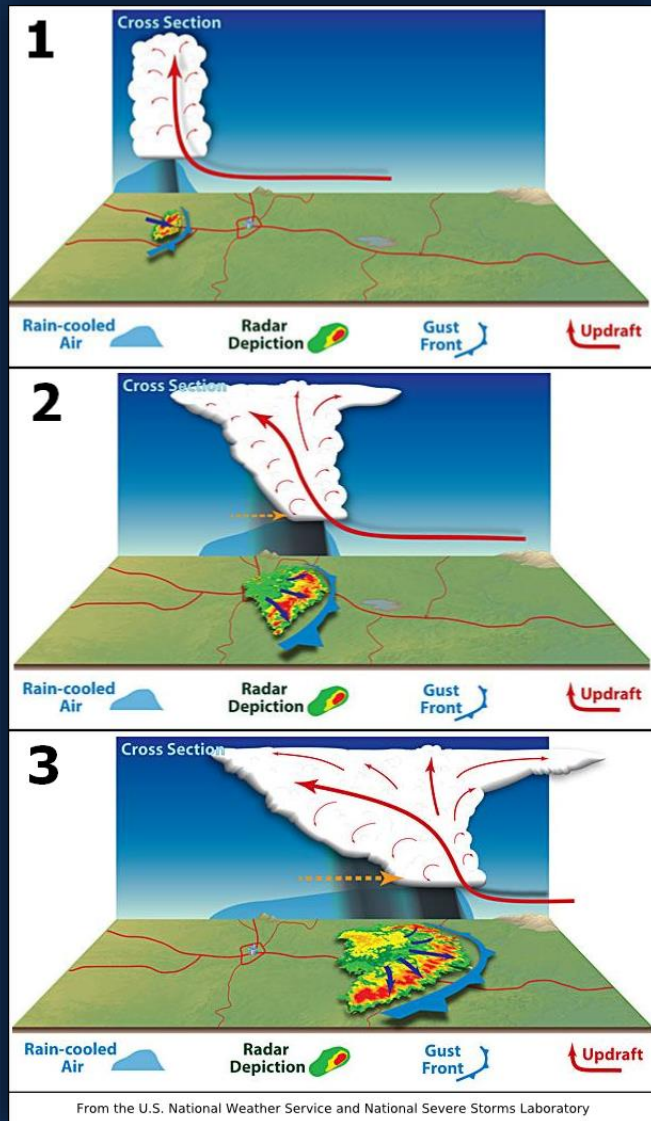


Squall Line Winds

- Squall lines move quickly and can produce damaging winds over a very large area.
- If gust front advances too far ahead of storms, winds will gradually weaken.
- **Bow echo:** area of enhanced winds, more significant damage



Derecho



- Long-lived, organized thunderstorm complex w/a damage swath \geq 240 miles
- Forms in unusually warm, moist air mass
- Widespread wind damage

Flash Flooding

- The most severe and dangerous type of flooding!
 - **Rapid rise** of water onto dry areas
 - Rushing water over roads, impacting travel
 - Water entering main levels of homes and businesses
 - Dam breaks



Flash Flooding

- In very rare cases, the NWS can issue a [Flash Flood Emergency](#)
- This would only be used in situations with an extremely high risk to life and property.



Ellicott City, MD
May 2018

On Sunday May 27, 2018, A series of thunderstorms produced over 9" of rain in 2 hours over northeast MD!

FLOOD WARNING

A Flood Warning is issued when flooding is **happening** or will happen soon. Some roads will be **flooded**.

Move to higher ground.

Never drive through flooded roads.

take action.

FLOOD WATCH

A Flood Watch is issued when flooding is possible.

Stay tuned to radio/TV, follow **weather.gov** and be ready to seek higher ground.

Learn more at **weather.gov/flood**.

be prepared.



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Urban/Small Stream Flooding

- May require **Flood Advisory**
 - ***Standing water on road / streams out of banks***
 - ***'Typical' flooding of underpasses or flood-prone areas***
- Not usually life-threatening



Flood Advisory

Valid Until
1:45 AM EDT Wednesday
September 30, 2020

Threat Information

Minor flooding
Flooding of highways,
streets and underpasses

Safety Information

Turn around, don't drown

weather.gov/akq Issued at: 10:43 PM EDT Tue Sep 29 2020 @NWSWakefieldVA

The graphic includes a map of the Richmond, VA area with a green shaded region indicating the flood advisory area. The map shows major roads and cities like Richmond, Sandston, Varina, Chester, Hopewell, and Prince George. A smaller inset map shows the location of the advisory area within the state of Virginia.

3 SIMPLE STEPS FOR FLASH FLOOD SAFETY

During a flood, water levels and the rate at which the water is flowing can quickly change. Remain aware and monitor local radio and television.



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

1 GET TO HIGHER GROUND

Get out of the areas subject to Flooding

2 DO NOT DRIVE INTO WATER

Do NOT drive or walk into flooded areas. It only takes 6" of water to knock you off your feet.

3 STAY INFORMED

Monitor local radar, television, weather radio, internet or social media for updates.



TORNADO



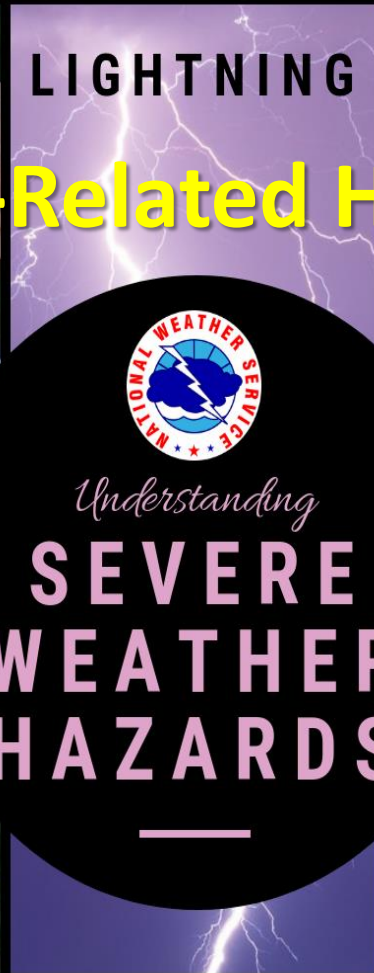
ACTION
Take shelter
immediately in a
sturdy structure

HAIL



ACTION
Move indoors away
from windows

LIGHTNING



ACTION
Move indoors if
you hear thunder

WIND



ACTION
Move indoors away
from windows

FLOODING



James Hobbs

ACTION
Avoid rising
creeks and water-
covered roads

Thunderstorm-Related Hazards / Safety






Understanding
**SEVERE
WEATHER
HAZARDS**




10 Minute Break



Enhanced Fujita Scale

Rating	Winds	Damage	Examples
EF0	Up to 85 mph	Minor	
EF1	86-110 mph	Moderate	
EF2	111-135 mph	Considerable	

Enhanced Fujita Scale

Rating	Winds	Damage	Examples
EF3	136-165 mph	Severe	
EF4	166-200 mph	Extreme	
EF5	> 200 mph	Incredible	

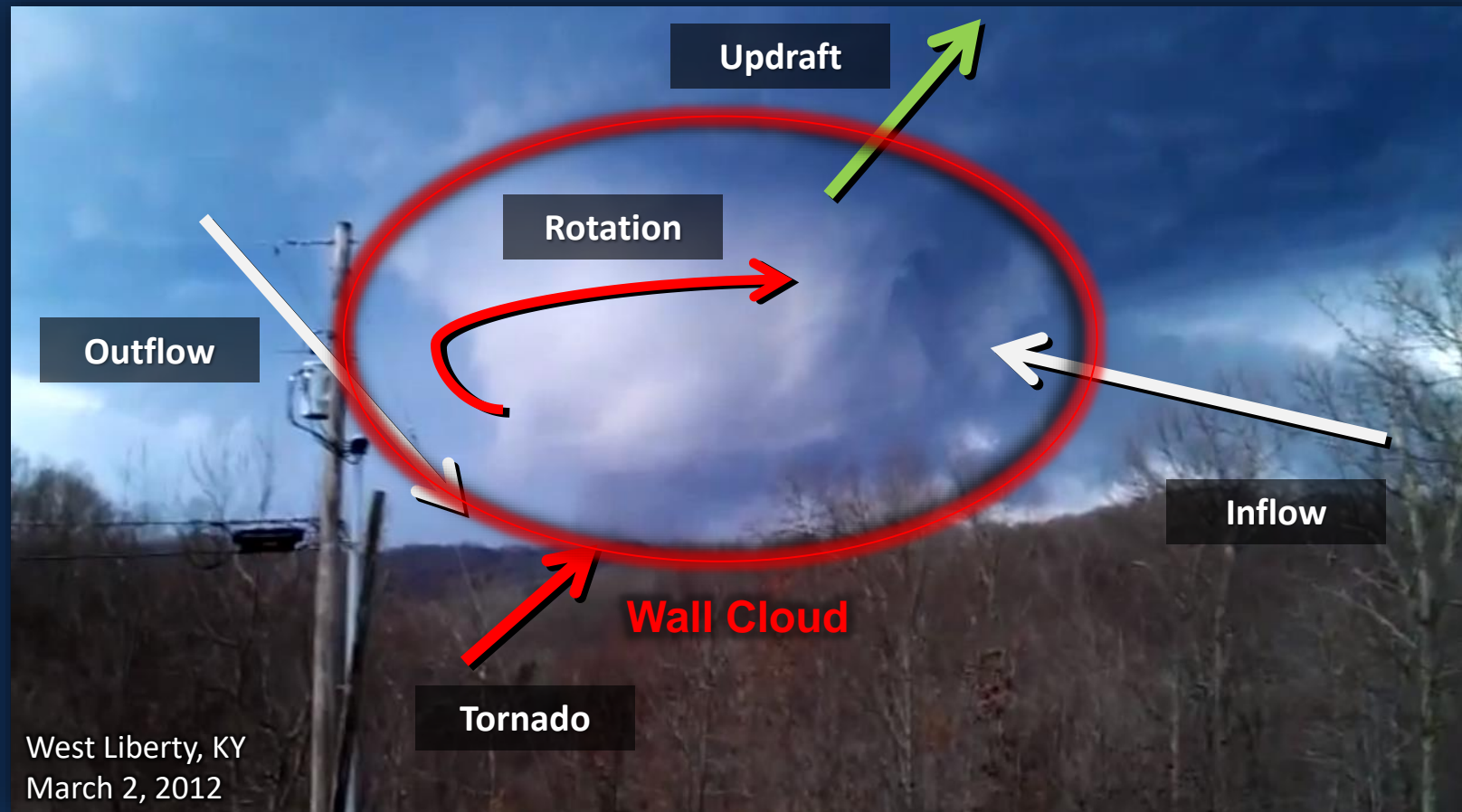
What Is A Wall Cloud?



Josh Weitzel
Palestine, OH
August 2009

- Isolated lowering of cloud base, usually at base of updraft
- Updraft ingests rain-cooled air, which condenses into cloud *pointing toward rain*
- Rotating wall cloud implies a rotating updraft
- Updraft + rotation = *watch for tornado!*

Wall Cloud / Supercell Diagram



**The wall cloud is the base of the updraft.
If the wall cloud is rotating, so is the updraft!**

Wall Cloud / Supercell Diagram



**The wall cloud is the base of the updraft.
If the wall cloud is rotating, so is the updraft!**

Keys to Spotting Wall Clouds

- #1) Sustained Upward Motion

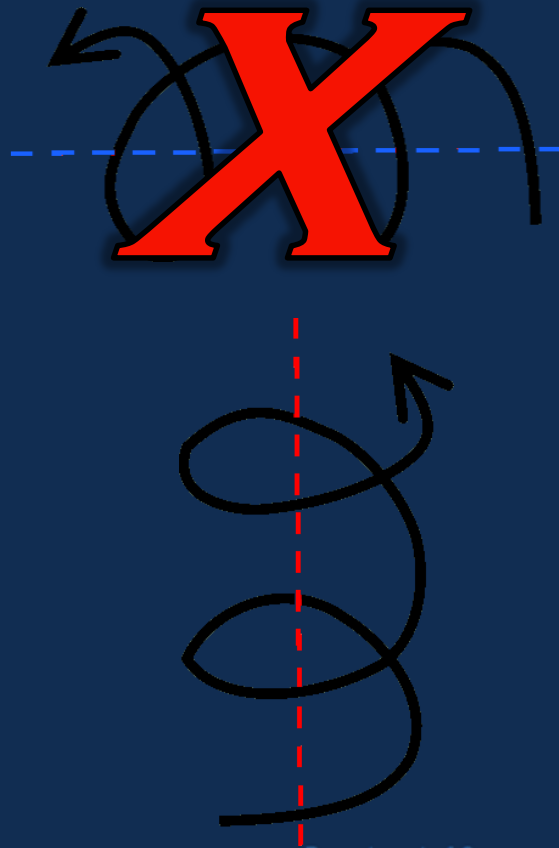
- #2) -----

- Is the feature persistent?
- Is it attached to the storm base?



Keys to Spotting Wall Clouds

- #1) Sustained Upward Motion
- #2) Vertical Axis of Rotation



Shelf Clouds vs. Wall Clouds

Shelf Clouds...

Slope **away from** precipitation

Indicate downdraft/outflow



Wall Clouds...

Slope **toward** precipitation

Indicate updraft/inflow



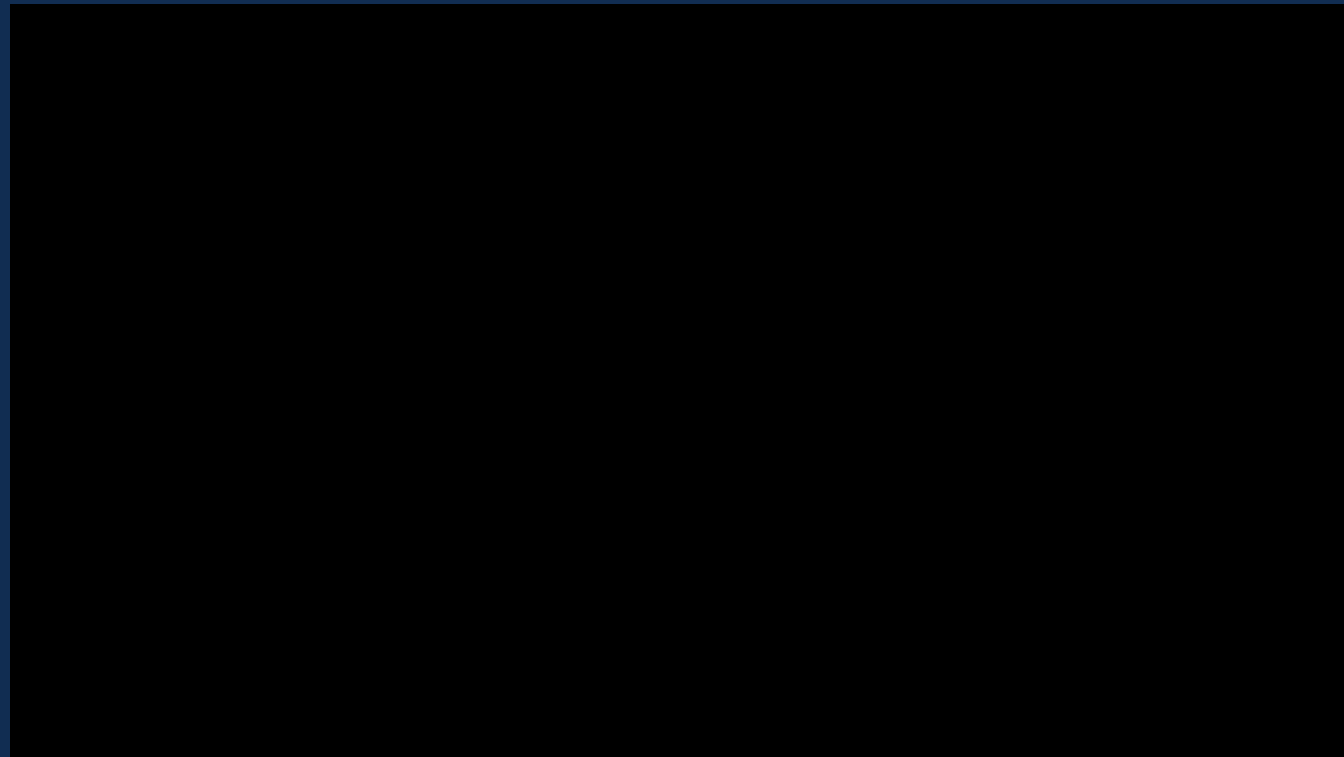
Funnel Cloud

- **Rotating** funnel-shaped cloud extending downward from thunderstorm base (often from wall cloud)
- ***Always*** attached to cloud base
- Does ***not*** reach the ground
- Exhibits rapid rotation and may be **laminar** or **smooth** in appearance (Striations)



Tornado

- **Rapidly rotating** column of air in contact with **cloud base** and **ground**
- Not all have visible funnel clouds; *look for dirt/debris swirling near ground*
- Always exhibit rapid rotation if spotted from up close



Spotting Tornadoes

- Smoothed funnel appearance implies rotation
- Laminar feature is likely a funnel cloud or tornado
- Some tornadoes are extremely skinny or “rope” like



Spotting Tornadoes

- Some funnel clouds and tornadoes are more ragged
- Always look for vertical motion and rotation!



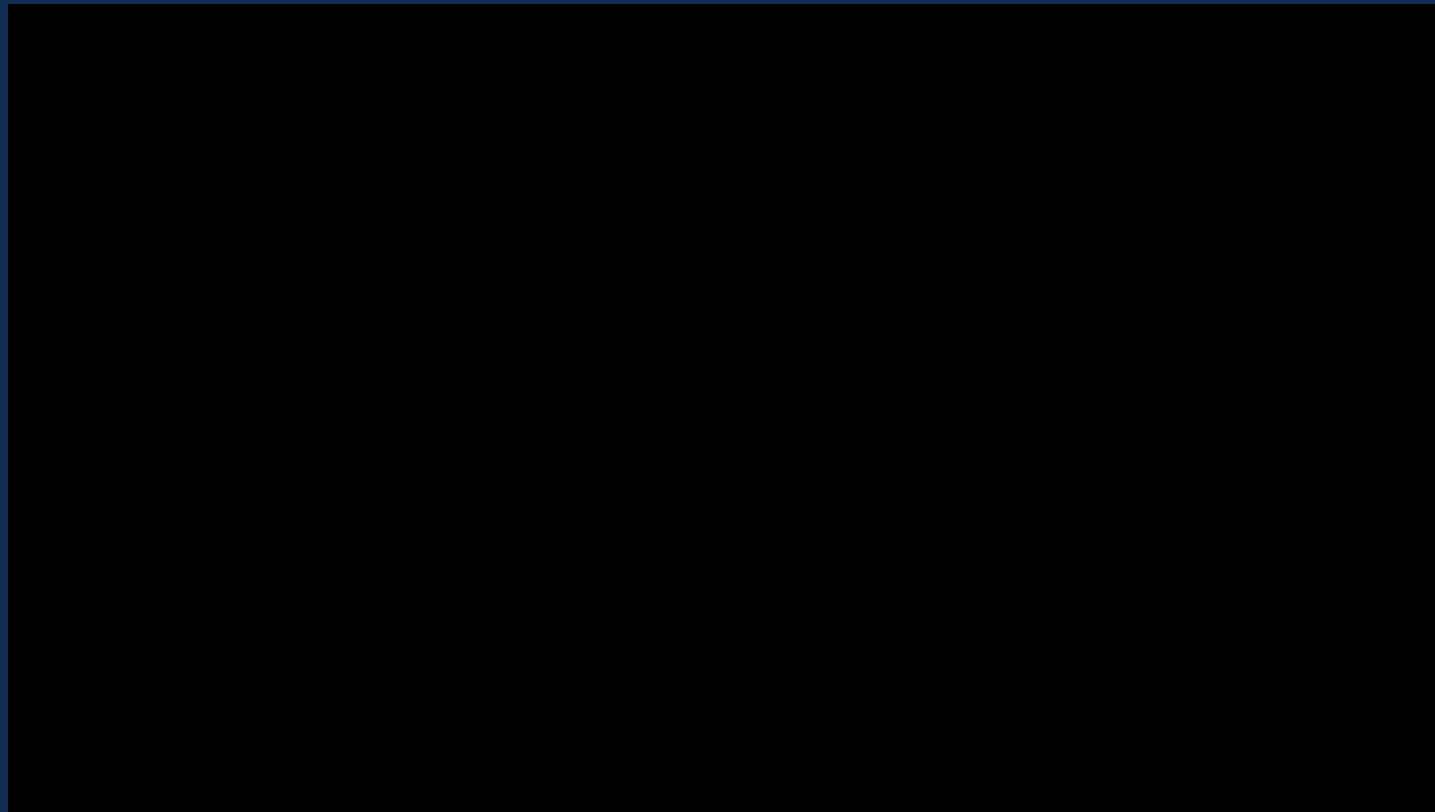
Spotting Tornadoes

If a ragged cloud does not exhibit **rotation** and **upward motion**, it is not a funnel cloud or tornado!



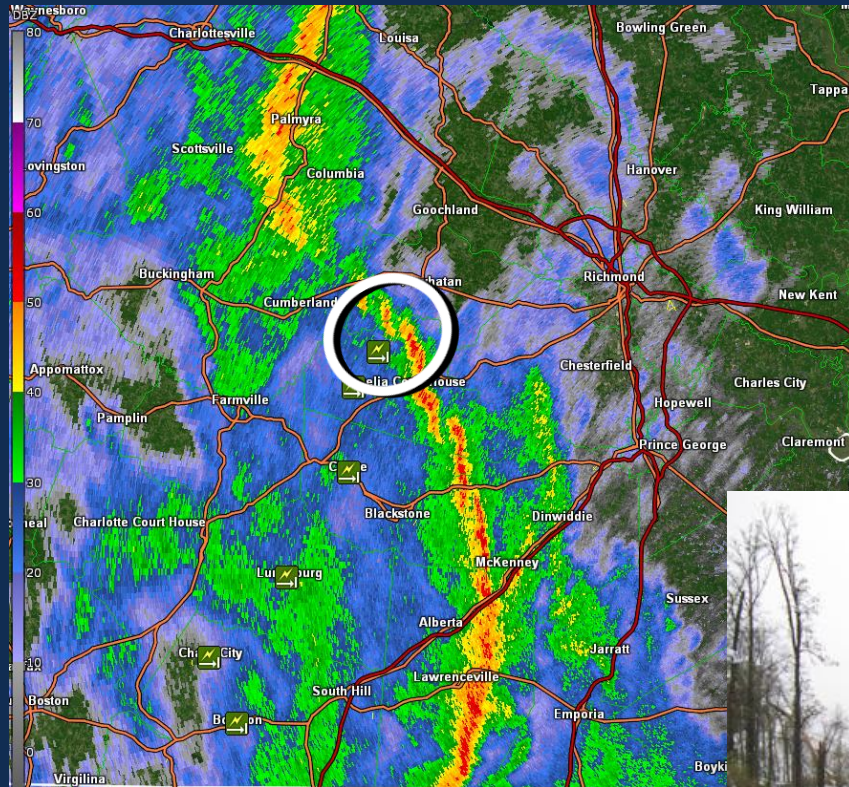
Spotting Tornadoes

- **Rapid rotation** and **rapid upward motion** originating from the ground indicates a tornado!
- If rotation can't be detected, look for rapid changes in shape.



NOAA
EDUCATION

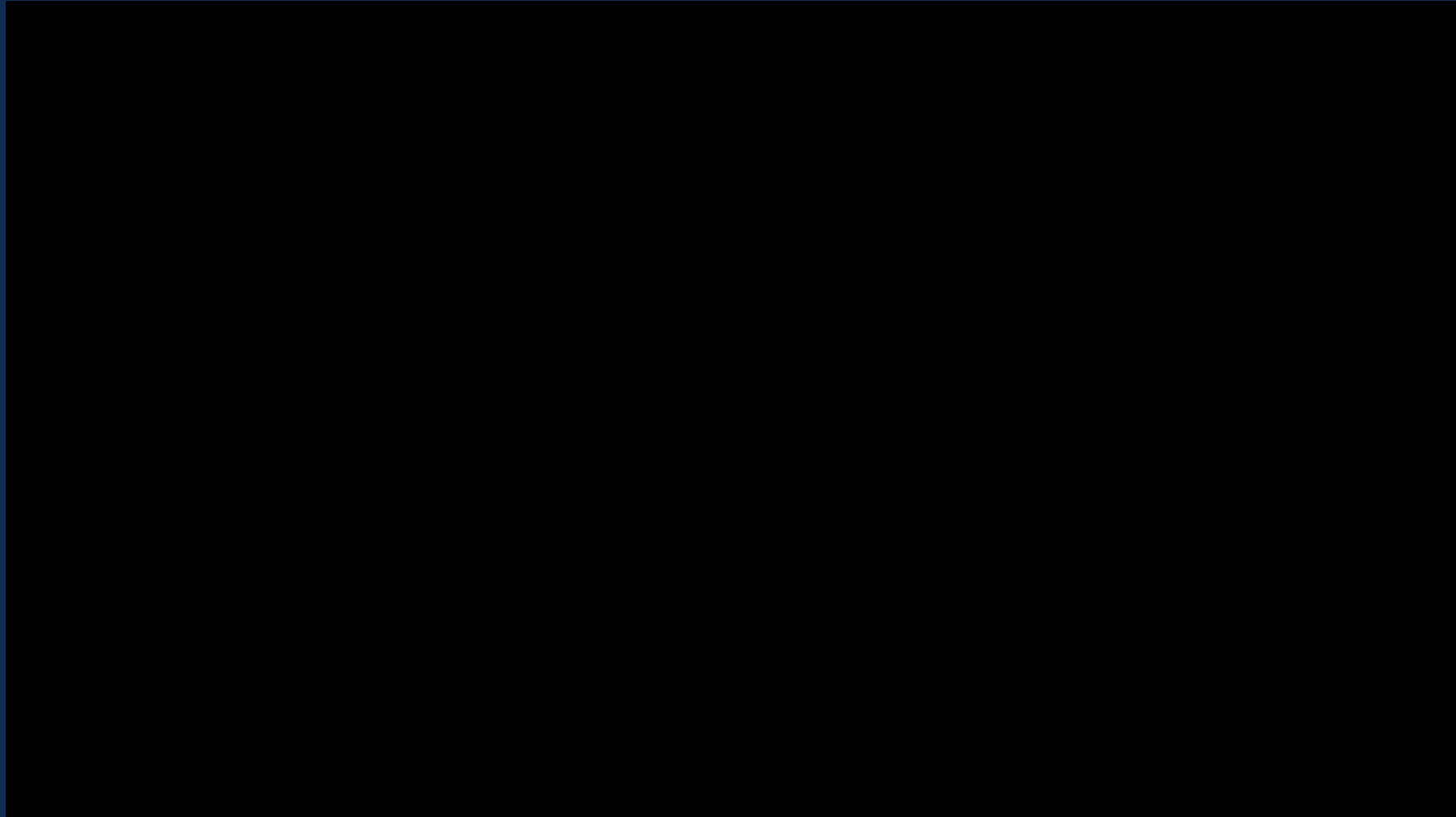
Squall Lines and Tornadoes



- Squall line tornadoes are usually weak and short-lived, but in rare cases can be EF2-EF3.
- These tornadoes move very quickly, and are frequently rain-wrapped. Because of this, they are **virtually impossible to spot.**



Rain-Wrapped Tornadoes



Uncertainties When Spotting

What do you do when it's not clear cut?



Report it!



??



Do not report it!

REPORT IT ANYWAY!

Better safe than sorry!

Reporting In Uncertain Situations

- Report what you see. Give specific details!
- Do not make assumptions!



~~*"I see a funnel cloud."*~~

"I see a POSSIBLE funnel cloud because..."

- *Appendage attached to storm base*
- *Has lasted past 5 minutes*
- *Too far away to see movement or rotation*

NWS Wakefield Operations



NWS Wakefield Operations



Yes, we offer tours!

Check out the local programs tab at weather.gov/Wakefield for more information!

Check our Youtube Channel!

- *Normally staffed by 2 to 4 meteorologists*
- *Can increase to more than 10 during severe weather*
- *We may only have a few people answering phones, so time may be of the essence!*

Part 5 — Reporting to NWS



How to Report – Logistics

- **Start with the basics...**
 - *Identify yourself as a spotter (no ID to memorize!)*
 - *Your exact location*
 - ✓ 5 miles west of City A
 - ✓ Near intersection of Route X and Road Y
 - ✓ Latitude and longitude coordinates appreciated but not required
 - ✓ If observing a cloud feature, in what direction are you looking?
 - *Exact time of event*
 - ✓ If ongoing or lengthy, provide start/end time
 - *The weather event...*



What to Report

- Hail (including size)
- Thunderstorm wind damage to trees, structures or measured wind gusts 40 mph or higher
- Tornadoes and/or waterspouts
- Flooding (roads impassable, hazardous; streams, creeks out of banks)
- Funnel clouds or wall clouds
- Storm damage from any of the above or from lightning
- Weather related injuries
- **Do not report lightning!**

If you report something significant, we'll want your contact info.



What to Report - Hail



How to Report Hail Size



Don't Compare Hail to Marbles!
Why? Not all Marbles are Alike in Size!



Measure Hail With Common Objects



Good Examples of Comparison



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

Report largest stone size



What to Report - Wind

- Wind speed estimates can be difficult and are prone to error.
- Severe wind or Power Lines Down = damage!
- **Measured** wind speeds provide the most accurate information.
- Determining what kind of winds caused the damage can be tough!
- **Just try to report the type(s) of wind damage that you observe.**



Reporting Wind Speed

Calm	Smoke rises vertically.
1-3 MPH	Wind motion visible in smoke.
4-7 MPH	Felt on skin. Leaves rustle.
8-12 MPH	Leaves/flags in constant motion.
13-18 MPH	Dust is raised. Small branches move.
19-24 MPH	Small trees sway.
25-31 MPH	Large branches move. Whistling heard in wires.
32-38 MPH	Trees in motion. Some difficulty walking.
39-46 MPH	Twigs broken. Cars veer on road.
47-54 MPH	Light structural damage - shingles blown off roof.
55-63 MPH	Tree damage possible. Light structural damage.
64-73 MPH	Tree and structural damage.
74-95 MPH	Considerable/widespread tree and structural damage.

Reporting wind speeds
can be tricky!

Use these physical clues
to help you determine
wind speed.

Report!

Time Of Event
Location
Speed
Duration

Methods for Reporting



Phone – 757-899-2415

Severe Weather Reports Only



Amateur Radio

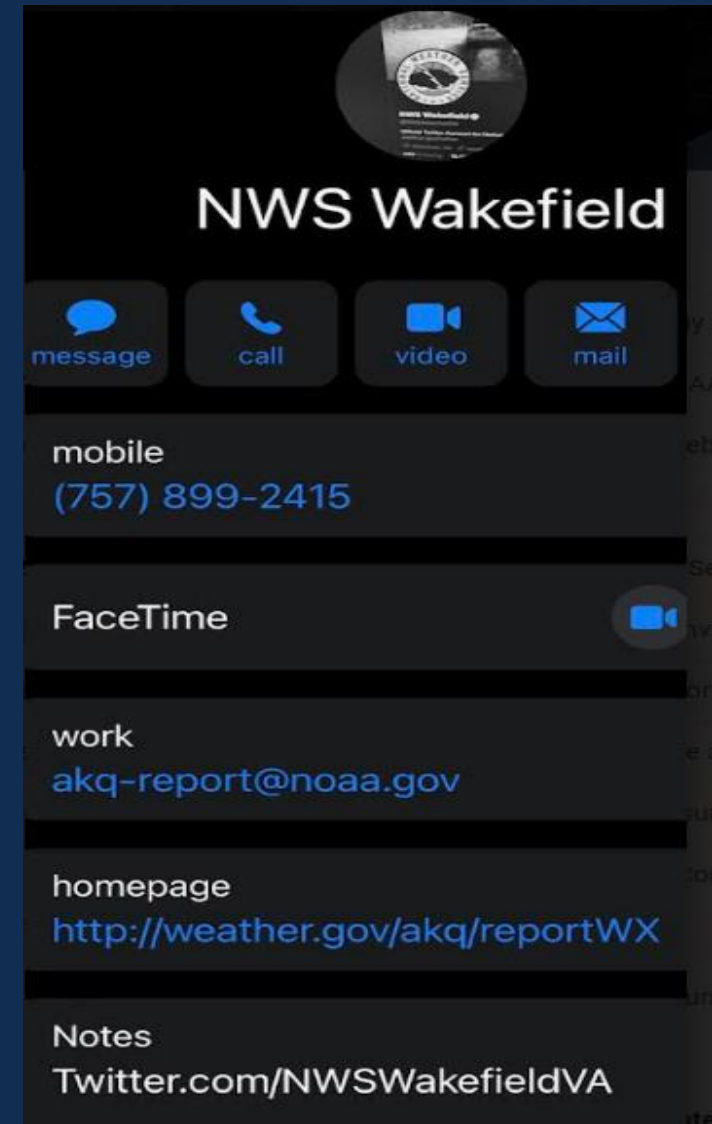


/NWSWakefieldVA



Email: akq-report@noaa.gov

Use social media/email for pictures of damage, cloud features!



We Need To Hear From You!

- We don't often "cold call" spotters for reports!
 - *Issuing warnings takes precedence*
 - *Don't know your exact location at time of storm*



Spotters + NWS = saved lives!

Amateur Radio



<http://www.wx4akq.org/>

- One-stop shop for all things SKYWARN & Amateur Radio
- Net Control frequencies and contact points
- Details on local training and policy
- Training Resources

SKYWARN desk at NWS Wakefield, Virginia

A Picture's Worth a Thousand Words!



Maria Jaws
Virginia Beach, VA

Be sure to identify yourself as a trained spotter when posting on social media!

Photos and video can be sent to us via email: akq-report@noaa.gov

...or submitted to...



Kyle Greer
Hampton, VA



Jeff Burley
Chesterfield, VA

Spotter Safety

- Your safety is of the utmost importance. There is no magic bubble to protect you!
- Maintaining Situational Awareness is key!
 - What is the storm motion?
 - Are you at a safe distance from it?
 - Are there other storms in the area?
 - Are you safe from lightning? Hail? Flooding?
 - Do you have an escape route? Place of shelter?
- Visibility often degraded around storms



Lightning Safety



Lightning Safety

Outdoors

- Avoid water, high ground, open spaces, tall objects, and metal objects.
- DO NOT shelter under small canopies or trees.
- Find indoor shelter or enclosed metal vehicle.
- Groups should spread out.

Indoors

- Avoid water, cords, plumbing.
- Stay away from doors and windows.
- Unplug and stay away from appliances.
- Refrain from using plugged in phones or laptops.
- Lightning can travel indoors (lines/pipes).



Brief Review...

How should this be reported?

- A. Tornado**
- B. Straight-line winds**
- C. Estimated 70 mph winds**
- D. A few trees snapped**
- E. Doesn't need to be reported**



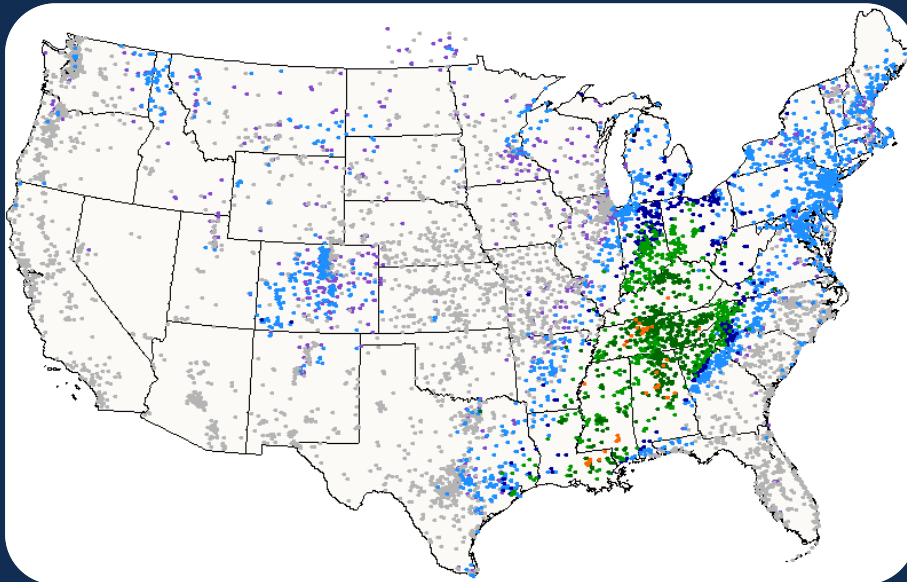
ANSWER: D

(Just report what kind of damage you observe!)

CoCoRaHS

(Community Collaborative Rain, Hail, and Snow Network)

- Rain, snow, and hail reports easily entered on the internet
- Data used both real time in warning events and afterwards to help improve forecasts and verification, and for research purposes

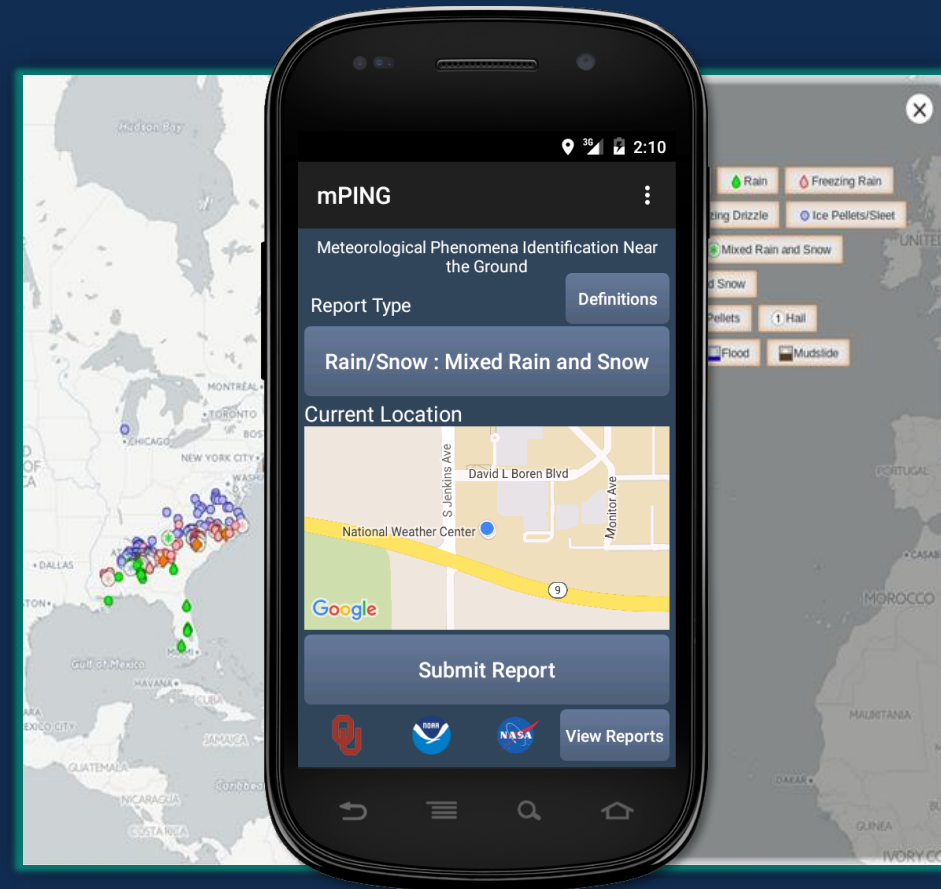


www.CoCoRaHS.org

Download the mPING App!

(Meteorological Phenomena Identification Near the Ground)

- Easily submit anonymous, real-time weather reports to NWS from any location with your mobile device!
- Precip type, flooding, hail, wind damage, etc.
- Reports plotted on interactive map available for anyone to view



mping.nssl.noaa.gov

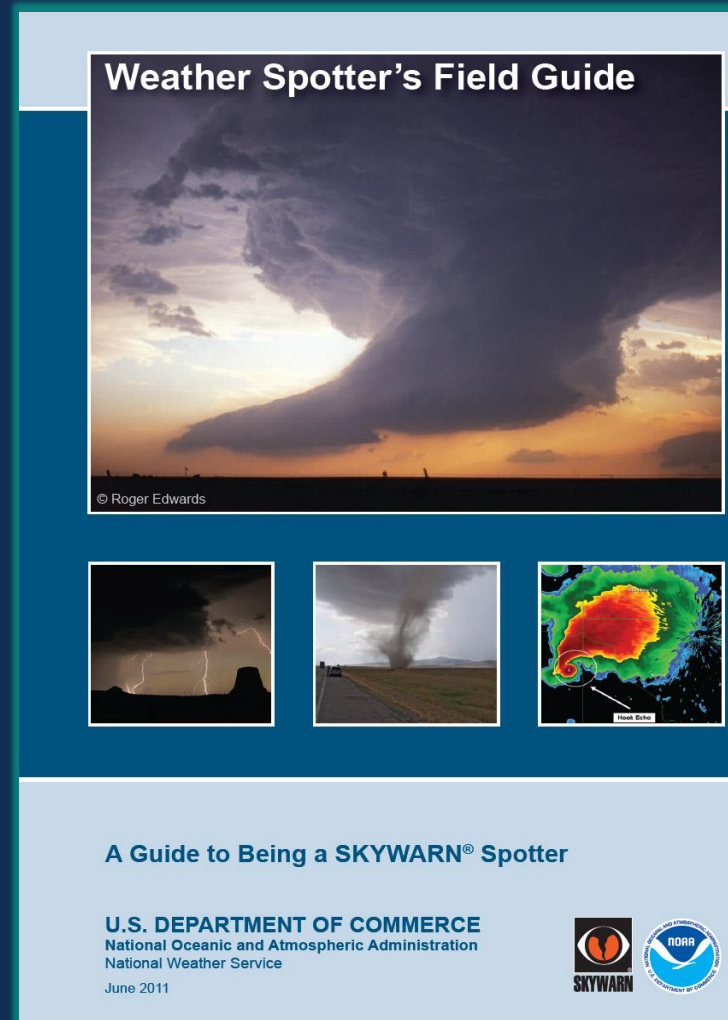


Publications

- Full-page Wakefield Spotter Guide contains summary of all the important topics covered in tonight's presentation
- Full-color Weather Spotter's Field Guide available via our spotter web page:

weather.gov/akq/skywarn

*Easy to download
onto your smart phone!*



Spotter Certificate



NWS Wakefield SKYWARN™

▼ Get Your Skywarn Certificate

Did you attend one of our training classes?
Enter your information below to receive your Spotter Certificate.

Note: We will NOT distribute this information outside our office.

<i>First Name</i>	<i>Last Name</i>
<input type="text"/>	<input type="text"/>
<i>Class Attended</i>	
<input type="text" value="-- Select the Skywarn class you attended --"/>	

► Skywarn Class Schedule

<https://www.weather.gov/akq/SkywarnCertificate>



Spotter Card

- Spotter cards are available online, if you so desire
- To create a card, click the link on our spotter webpage
- Remember the code and enter exactly the same:

2025Skywarn

NWS Wakefield SKYWARN Card
Wakefield, VA
Weather Forecast Office

City, ST
Enter Your City, ST or ZIP Code
Remember Me
Get Weather
Privacy Policy

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

Instructions for printing your Skywarn™ Card online

Note: You should have attended a recent NWS Skywarn™ class and received a passcode from your trainer. In the form below, enter your name as you want it to appear on the card, your training date, and the passcode. Amateur radio operators may optionally enter a call sign. Then, click on the Create Card button. A card with the information entered will appear below the form. Click the Printer-Friendly Version link to print the card. This card uses a background image, and some browsers don't print these images by default. Steps to enable these images in several different browsers are included below.

- **Internet Explorer** - Click the "File > Page Setup..." menu option. In the resulting "Page Setup" window, check the "Paper Options" section in the top left portion. There should be an option in this section labeled "Print Background Colors and Images", and it needs to be enabled.
- **Firefox** - Click the "File > Page Setup..." menu option. In the resulting "Page Setup" window, click the "Format & Options" tab. There should be an option in this section labeled "Print Background (colors & images)", and it needs to be enabled.
- **Chrome** - Click the "Print..." menu option. In the resulting window, there should be various settings on the left side. Click the "More settings" option toward the bottom. An option for "Background graphics" should appear along with other settings. The "Background graphics" option needs to be enabled.

If you have recently completed a Skywarn™ course and did not receive a password to generate your card, [please e-mail us](#). Include your name and the date of your training.

Your Name	Your Call Sign or spotter number (optional)	Your Training Date(Required) MM/DD/YYYY	Code	
NWS Wakefield		01/27/2018	2018Skywarn	Create Card

[Printer-Friendly Version](#)

National Weather Service
Wakefield, Virginia
SKYWARN Program

NWS Wakefield

Training Date: 01/27/2018

Report severe weather to the NWS: 757-899-2415
(limited number for severe weather reports only)

weather.gov/akq/skywarn

Spotter *Do's* and *Don'ts*

DO

- ✓ Brief yourself with the latest information
- ✓ Understand the importance of your report
- ✓ Keep safety your #1 priority
- ✓ Express uncertainties and detail in your report

DON'T

- Assume the NWS already knows what a storm is doing
- Put yourself in harm's way
- Withhold a storm report because of uncertainty
- Forget to pat yourself on the back...We appreciate your help!



Thank You For Participating!

Remember...we need to hear from you!
Your service helps us save lives.



weather.gov/akq

mobile.weather.gov

Follow Us On Social Media:



NWSWakefieldVA

Department of Commerce



@NWSWakefieldVA

National Oceanic and Atmospheric Administration

Office of Education



NOAA
EDUCATION

NATIONAL WEATHER SERVICE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



National Weather Service

Wakefield, VA

[Weather.gov/Wakefield](https://www.weather.gov/Wakefield)



NWSWakefieldVA



@NWSWakefieldVA

