



# *2007 Spotter Training*

NOAA's  
National Weather Service  
Lincoln, IL





# Training Outline



- Review of 2006
- T-storm development
- T-storm types and hazards
- Tornadoes

- 
- EF Scale
  - Severe Weather Climate
  - Spotter Preparedness and Safety
  - Spotting Challenges
  - Spotter Reports

Video by Jeff Abell  
4/16/06 near Humboldt, IL (Coles Co.)



# Severe Weather in central and southeast IL – 2006

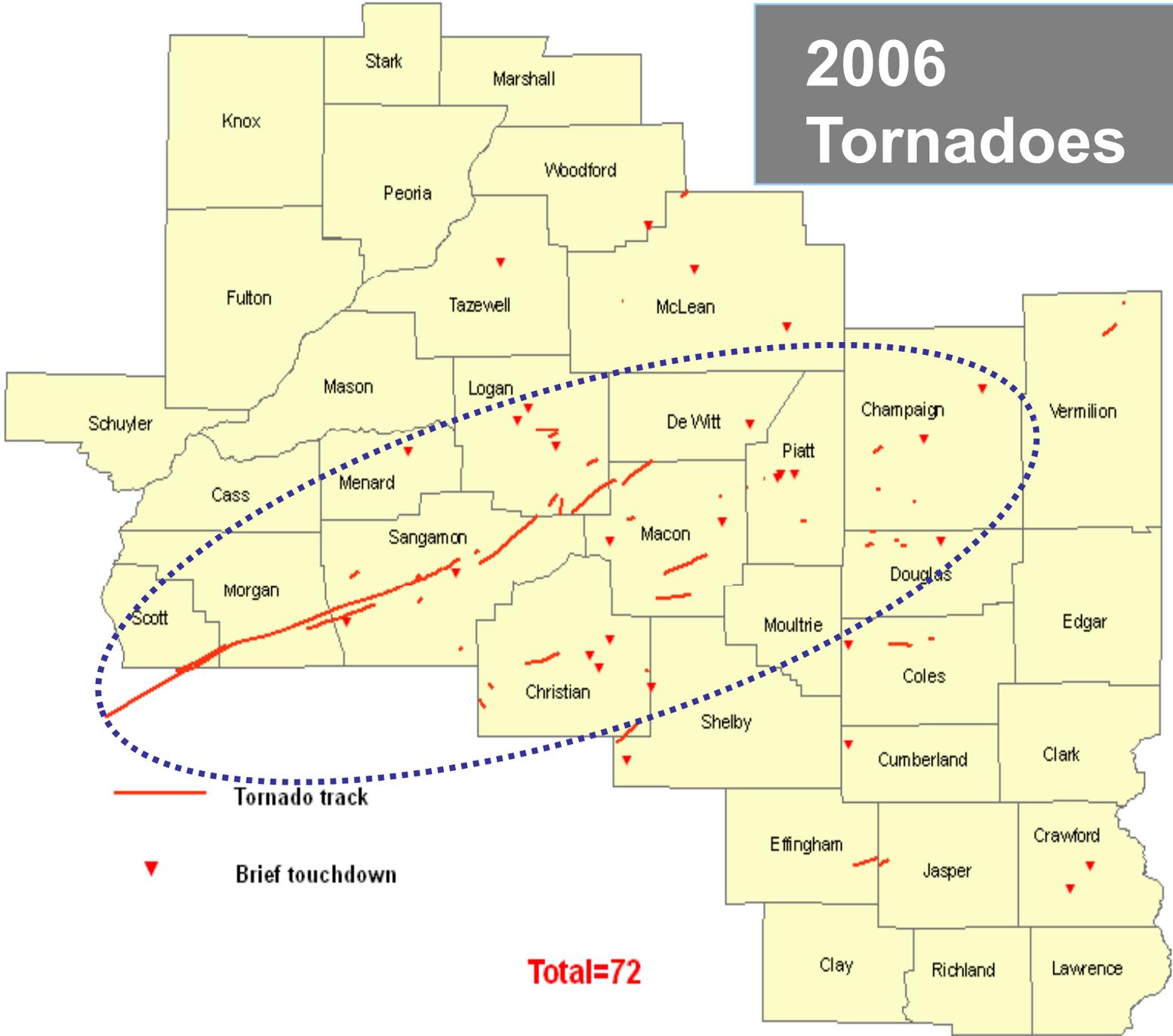


- A record number of tornadoes were reported

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  - **72 tornadoes in central & southeast IL** (broke the record of 63 set in 2003)
  - **124 in the state** (broke the record of 120 set in 2003)
    - 3 times the normal number!!
  - **21 tornadoes in IL in March**  
**60 tornadoes in IL in April**
    - Both months set new records

# 2006 Tornadoes





# Extreme Events – 2006



- **Strongest tornadoes – (8) F2s**
  - **March 12<sup>th</sup>** : 66 mile long track affected areas from Manchester/Murrayville to Springfield (Scott, Morgan and Sangamon Counties)
  - **March 12<sup>th</sup>**: Second Springfield tornado
  - **March 12<sup>th</sup>**: Between Dawson & Buffalo (Sangamon Co.)
  - **March 12<sup>th</sup>**: Two tornadoes south of Mt. Pulaski (Logan Co.)
  - **April 2<sup>nd</sup>**: **Near Macon** (Macon Co.)
  - **April 16<sup>th</sup>**: **Near Dieterich** (Effingham Co.)
  - **April 16<sup>th</sup>**: **Near Wheeler** (Jasper Co.)



# Extreme Events – 2006



- Damaging wind reports – **231**
    - HIGHEST WIND = 110 MPH (estimated)  
near **Oakley** (Macon Co.) at **5:10 P.M.** on **4/16/06**
      - Downburst wind damaged homes, garages, outbuildings, grain bins and trees
  - Large hail reports – **244**
    - LARGEST HAILSTONES = 3.00” (size of a large apple) from  
**Stanford to Normal** (McLean County) on **4/16/06**
      - Car and house windows broken, siding damaged
- AND  
near **St. David** (Fulton County) on **5/24/06**



# Extreme Events – 2006



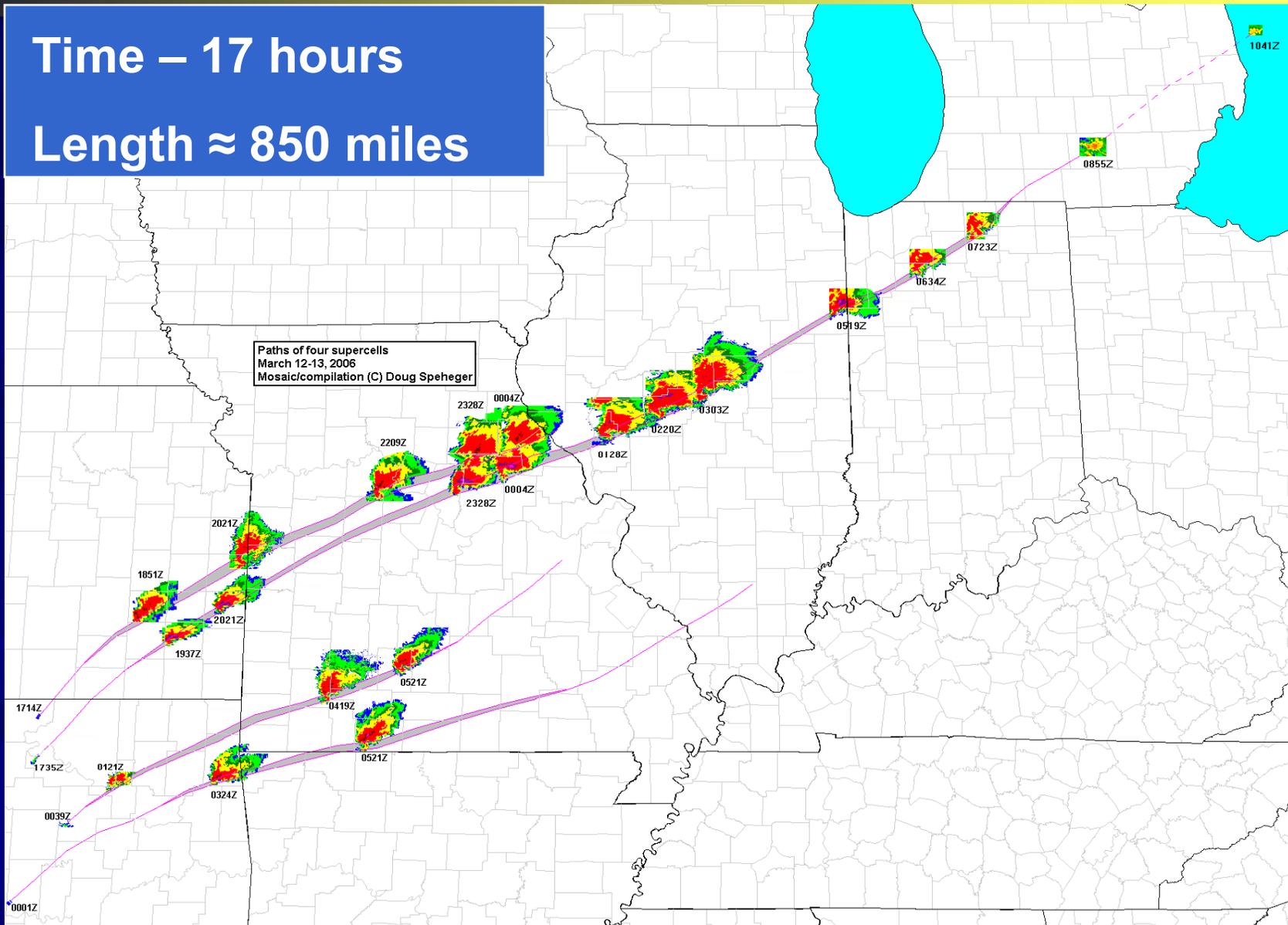
- March 12-13<sup>th</sup> 7:30 PM – 3:30 AM
  - 9 tornadoes
    - 5 had path lengths greater than 10 miles, including one that tracked 66 miles
    - 24 injuries, 0 fatalities
  - 16 damaging wind reports
  - 30 large hail reports
  - Property damages nearly \$200 million



# March 12 – Long Track Supercell

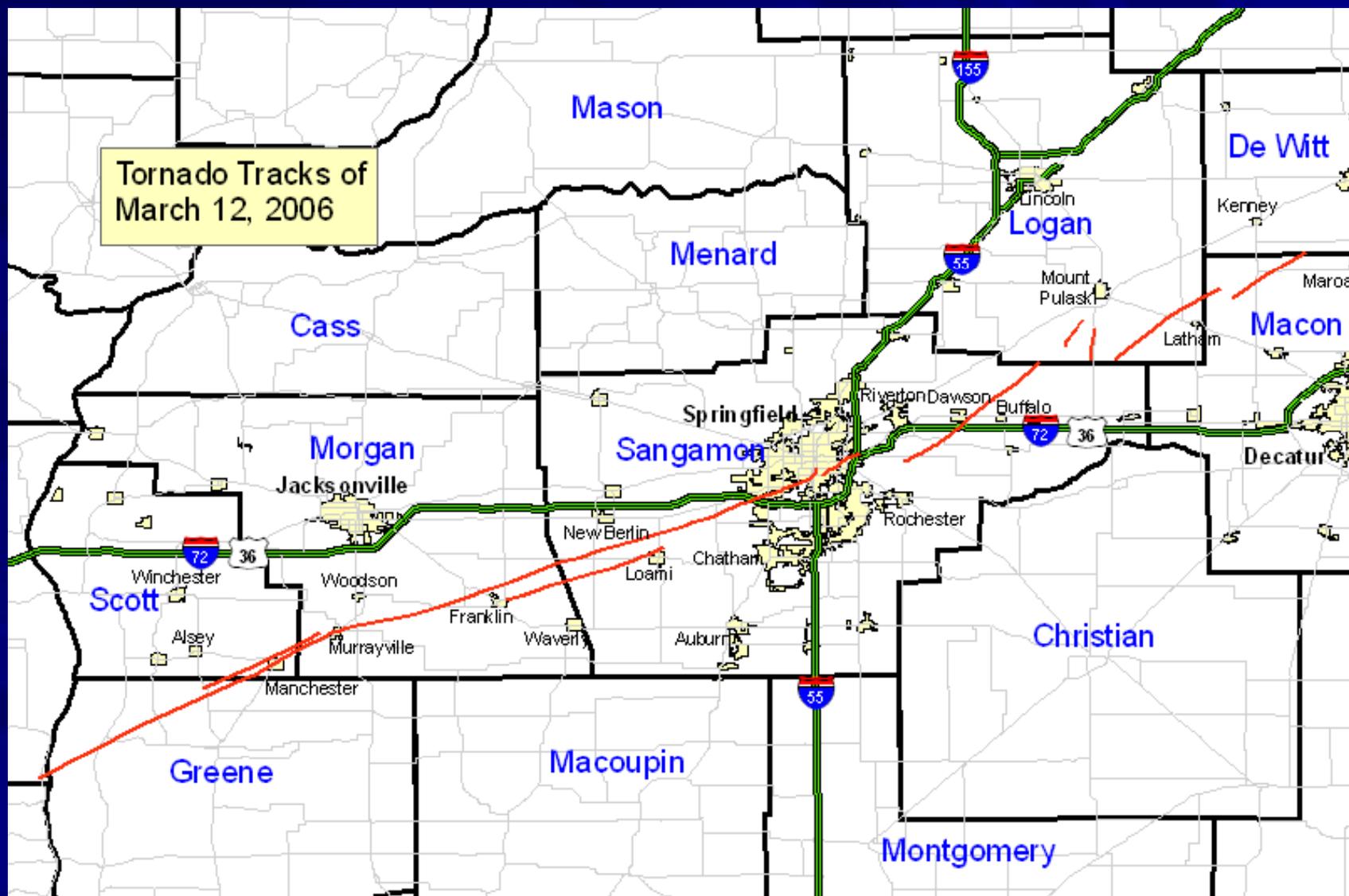


Time – 17 hours  
Length  $\approx$  850 miles



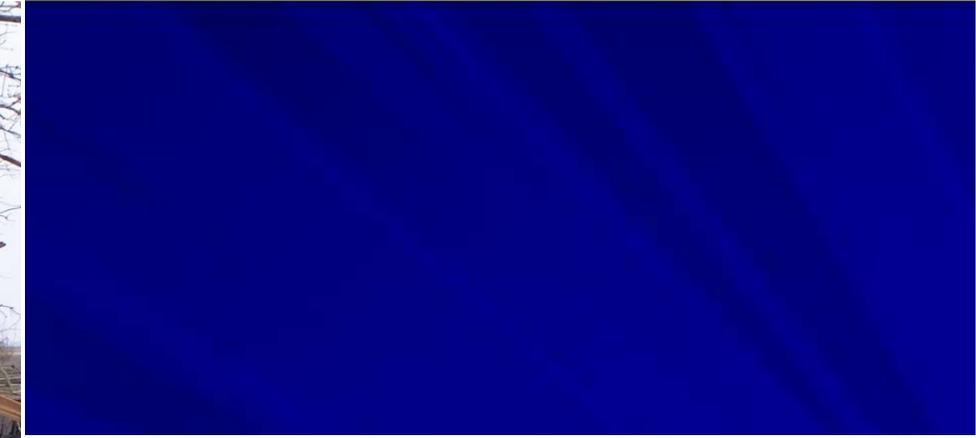


Tornado Tracks of  
March 12, 2006





# Morgan County Damage

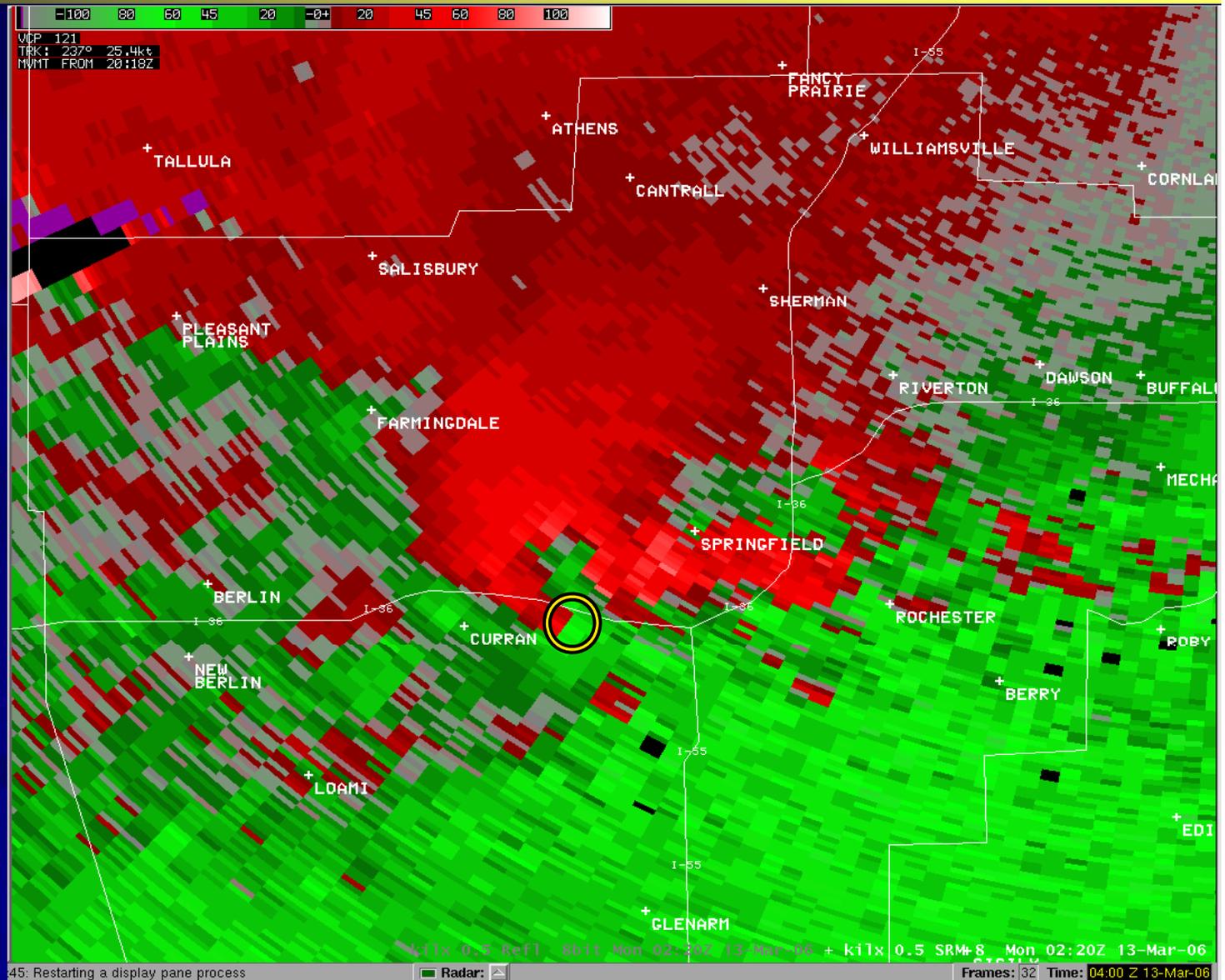




# Springfield Tornadoes 3/12/06



- 8:20 PM
- Tornado Crossing I-72 into southwest side of Springfield
- Moving NE at 45 mph





# Springfield Damage



03 13 2006



# Springfield Damage



Photo courtesy of the State Journal-Register



# Sangamon Co. Damage



Tornado blew home off foundation near Buffalo, IL



# March 12<sup>th</sup> supercell



Photo by Paul Hadfeld

Tornadic supercell in northern Sangamon/southern Logan Counties



# Logan & Macon County Damage



03 14 2006



Photo from Macon Co. EMA



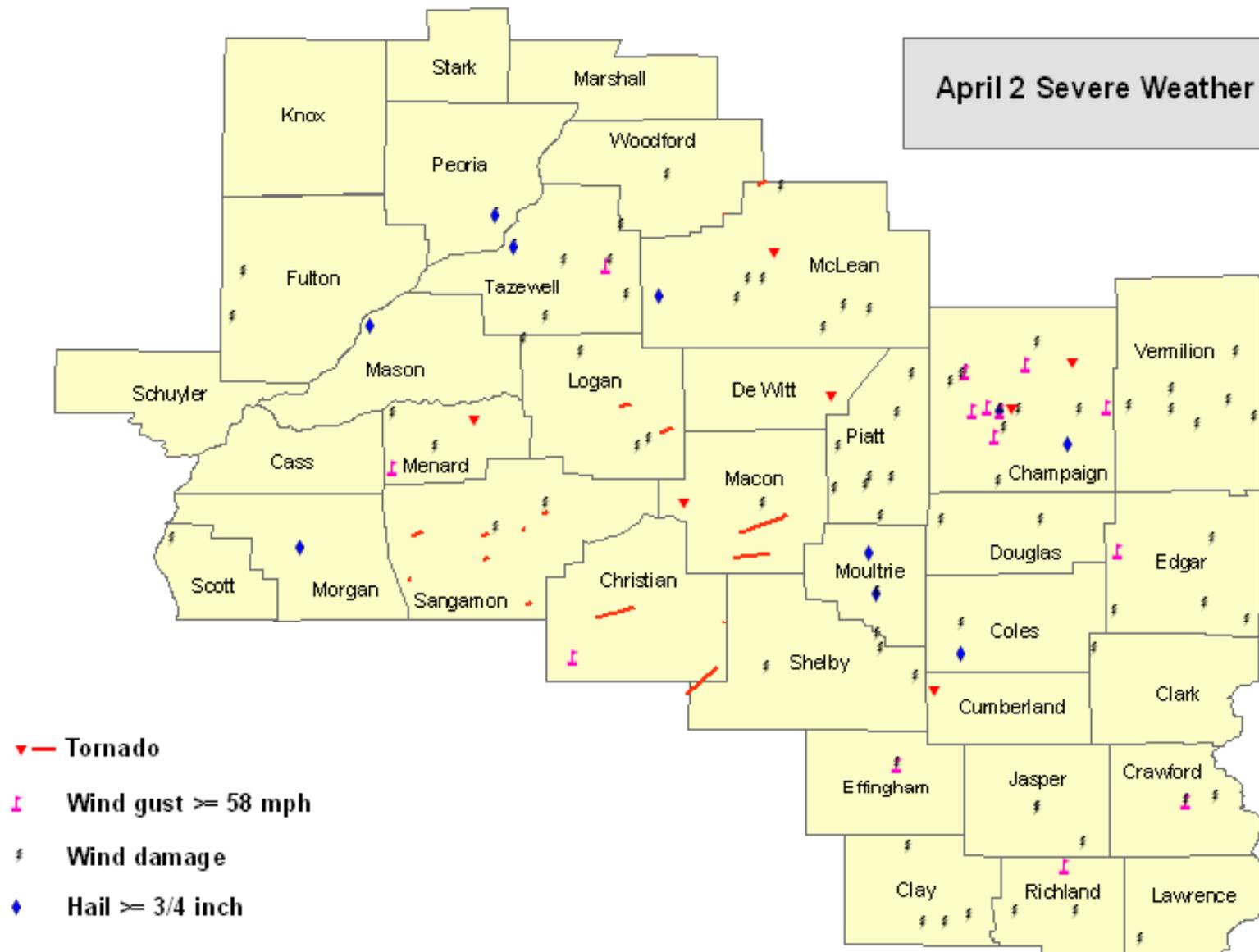
# Extreme Events – 2006



- April 2<sup>nd</sup> 5:35 PM – 7:45 PM
  - 26 tornadoes
    - 14 F0s, 11 F1s, 1 F2
    - 5 injuries, 0 fatalities
    - 2 tornadoes within the Springfield city limits
  - 37 damaging wind reports
  - 8 large hail reports
  - 36 tornadoes reported across Illinois
    - Second biggest outbreak in state history since 1950 (biggest was 41 tornadoes on 4/19/96)



## April 2 Severe Weather





# April 2<sup>nd</sup> Tornadoes



Photo by Mark Sefried  
Near Buffalo, IL



Photo by Mark Sefried  
Near New Berlin, IL





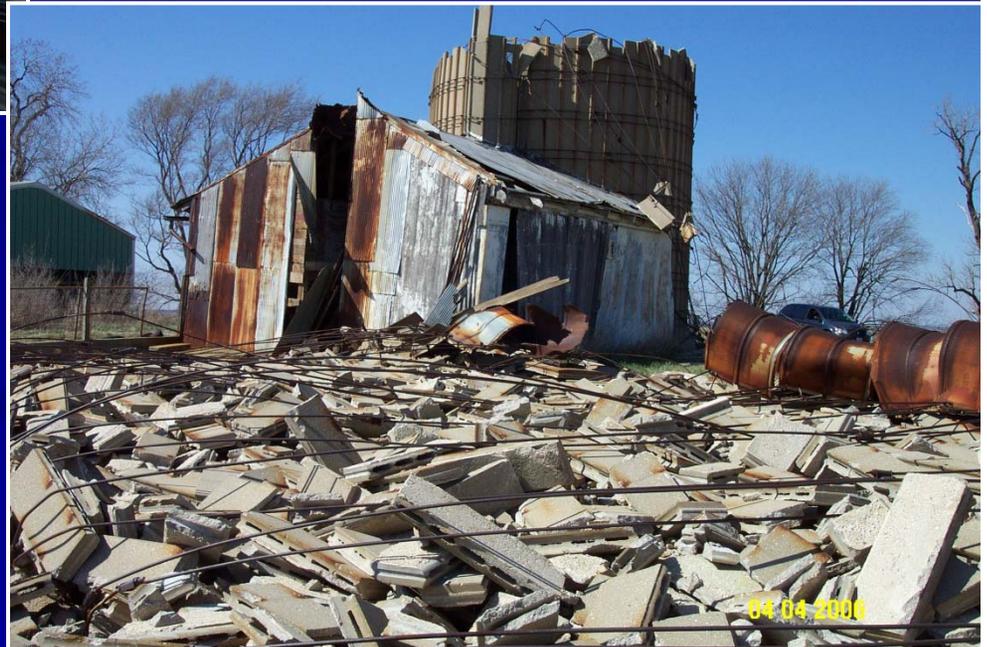
# Taylorville Tornado Damage





**F2 Tornado damage  
Macon, IL**

**75-80 mph wind damage  
Near San Jose, IL**





# Extreme Events – 2006



- April 16<sup>th</sup> (Easter Sunday) 1:45 PM – 8:25 PM
  - 10 tornadoes
    - 5 F0s, 3 F1s, 3 F2s
    - 0 injuries, 0 fatalities
  - 11 damaging wind reports
    - Wind over 100 mph in eastern Macon Co.
  - 33 large hail reports
    - Hail damage in western McLean Co.



# Easter Tornadoes



Photo by Jeff Abell  
Near Humboldt, IL (Coles Co.)



Photo by Alix Barlow  
East of Taylorville



# Easter Tornadoes



**Photo by Glenn Martin  
Near Dieterich, IL (Effingham Co.)**

**Photo by Scott Sparks  
West of Newton, IL (Jasper Co.)**





# Hail and Wind Damage



Photo by Mike Wilhelm  
Near Danvers, IL (McLean Co.)



Photo from Phil Anello  
Near Oakley, IL (Macon Co.)

4/16/06



# Extreme Events – 2006



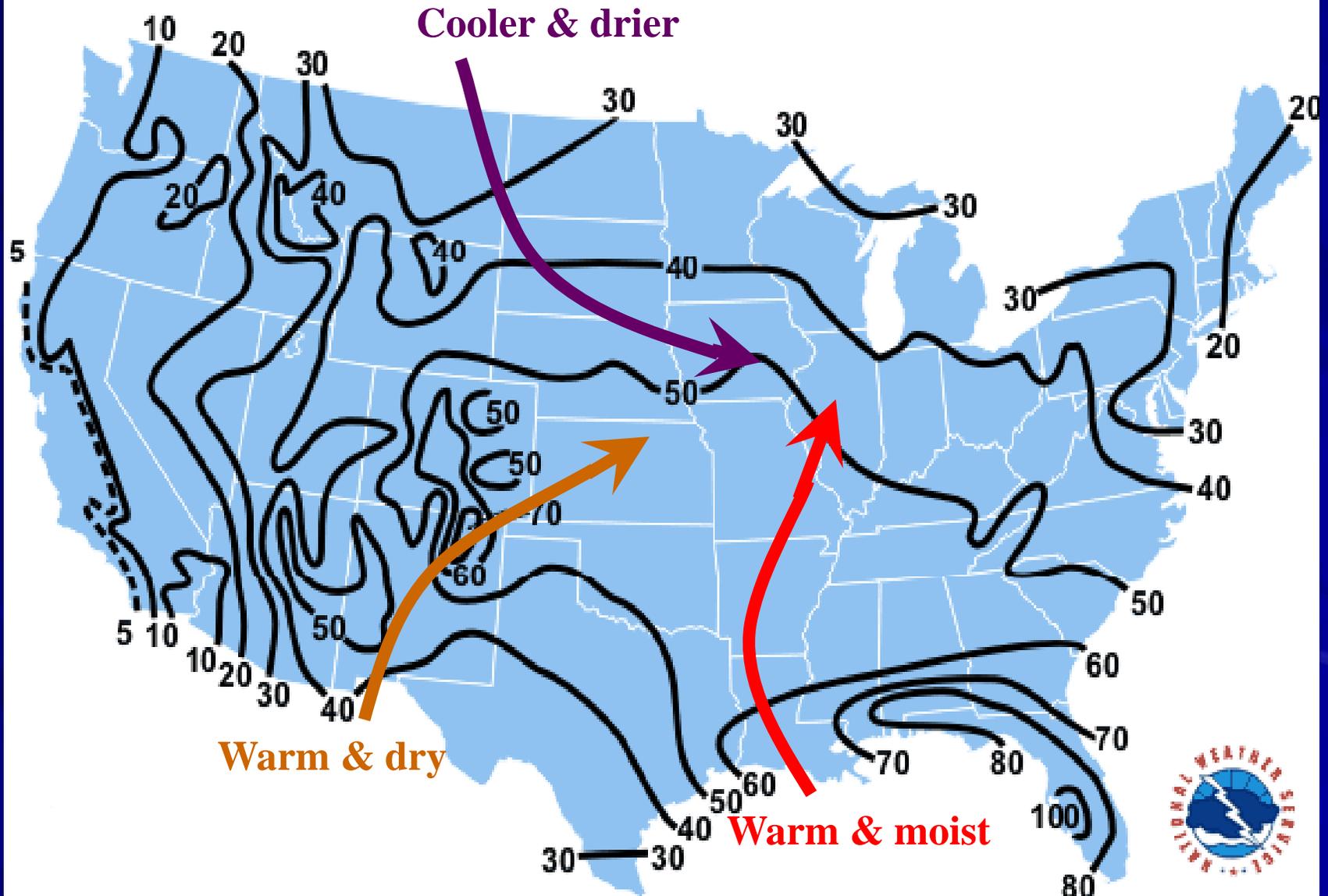
- July 19<sup>th</sup> Wind Storm 2:00 PM – 7:00 PM
  - 20 damaging wind reports
    - 60 – 70 mph winds with damage in 18 central IL counties
    - 1 injury reported in Springfield (tree fell on car)
    - Numerous reports of downed trees, power lines, and roof damage to homes



# Thunderstorm Development



# Thunderstorms in the United States





# Early in the process...



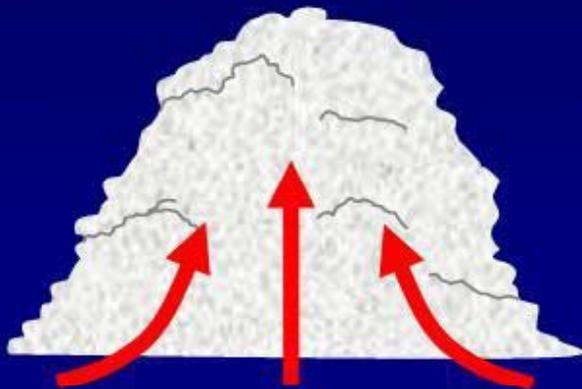
## ACCAS Clouds

- **Appear as “little castles”**
  - Indicate instability at the cloud level
- **These clouds usually mean thunderstorms, possibly strong or severe, can be expected later that day.**





# Thunderstorm Life Cycle

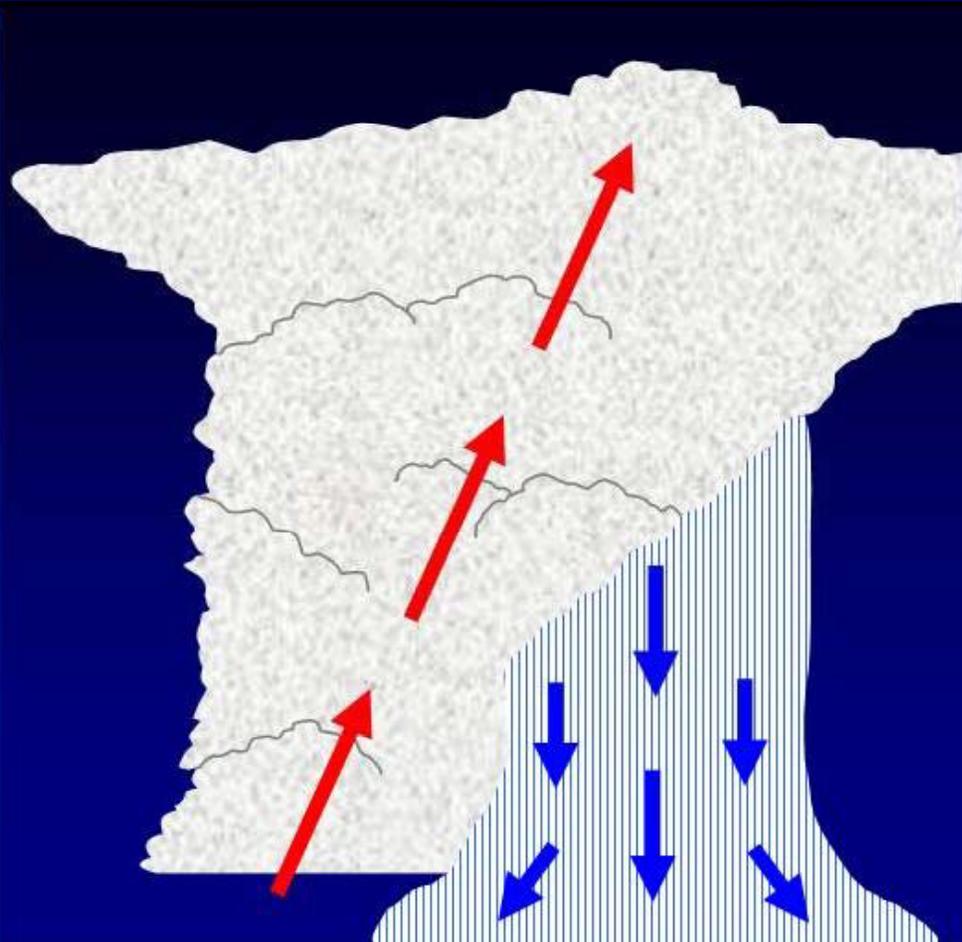


Cumulus Stage





# Thunderstorm Life Cycle



**Mature Stage**



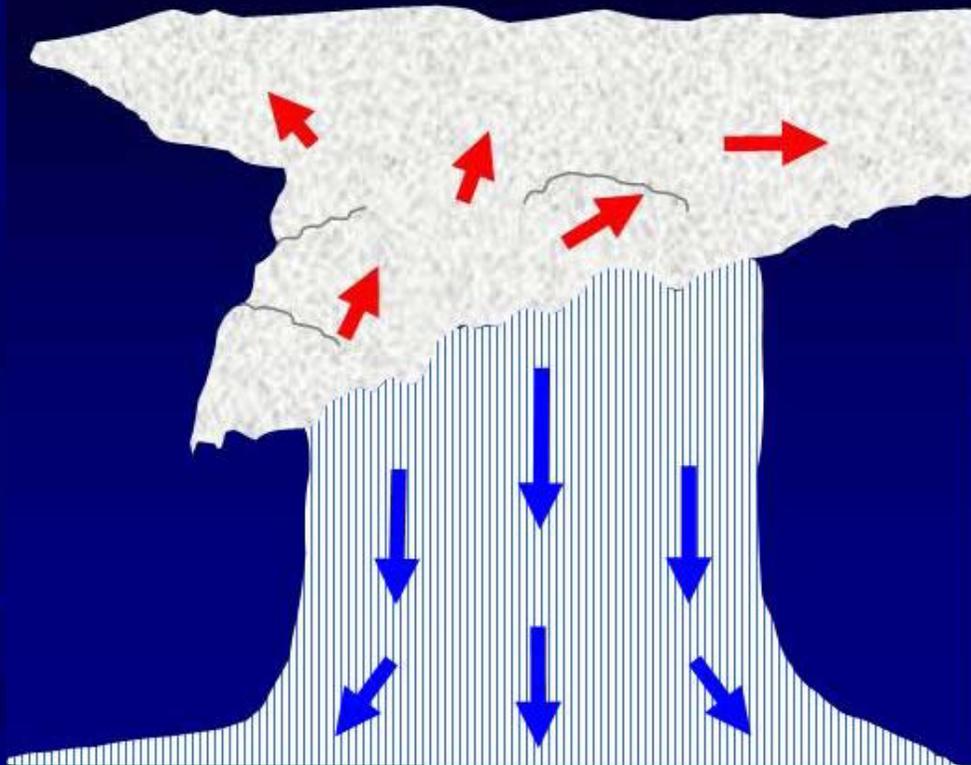
©2001 Chris Kridler  
skydiary.com



-- Photograph by Kevin Knupp --  
-- U. of Illinois Cloud Catalog --



# Thunderstorm Life Cycle



Dissipating Stage

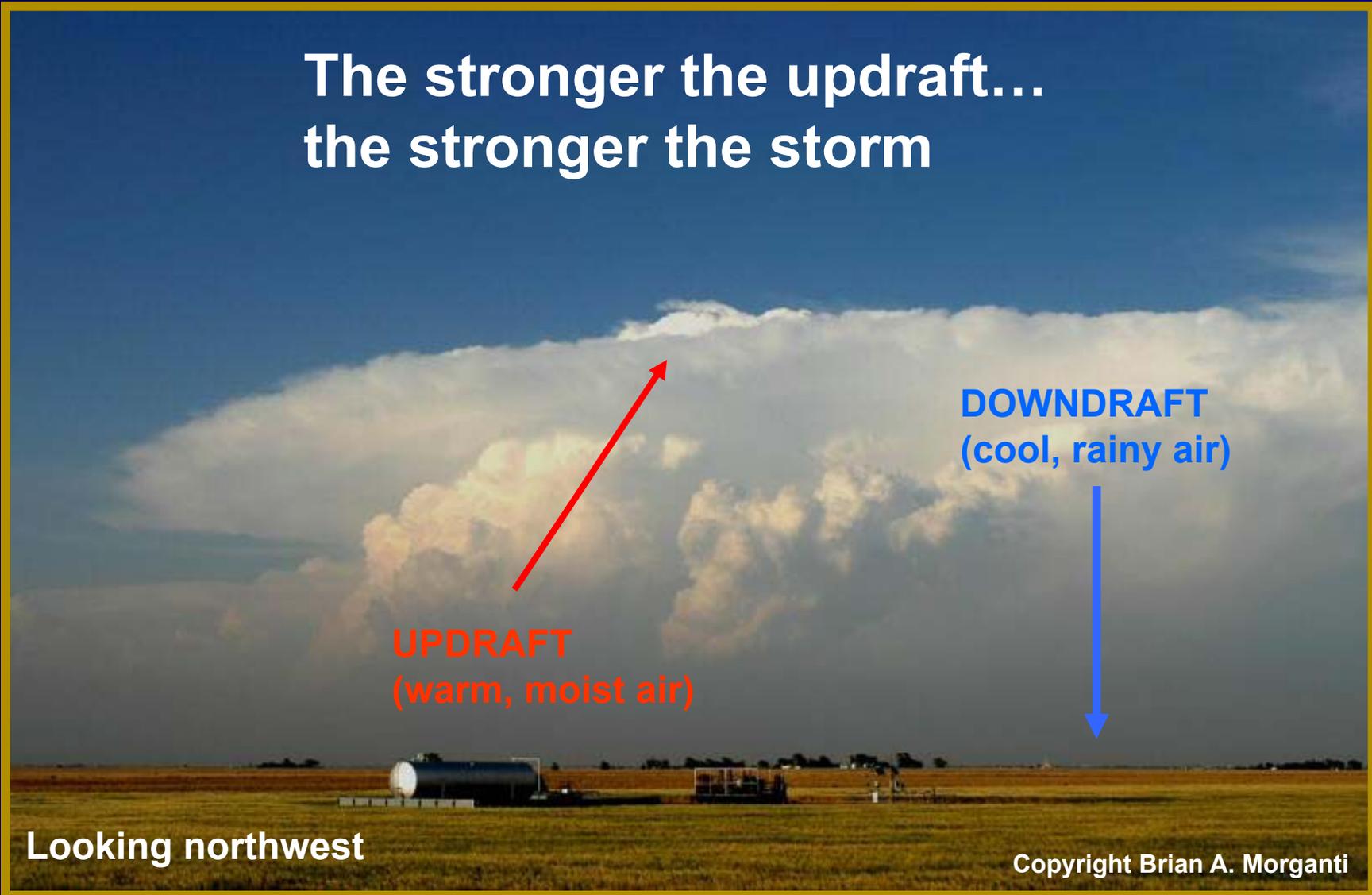




# Updraft/Downdraft



The stronger the updraft...  
the stronger the storm

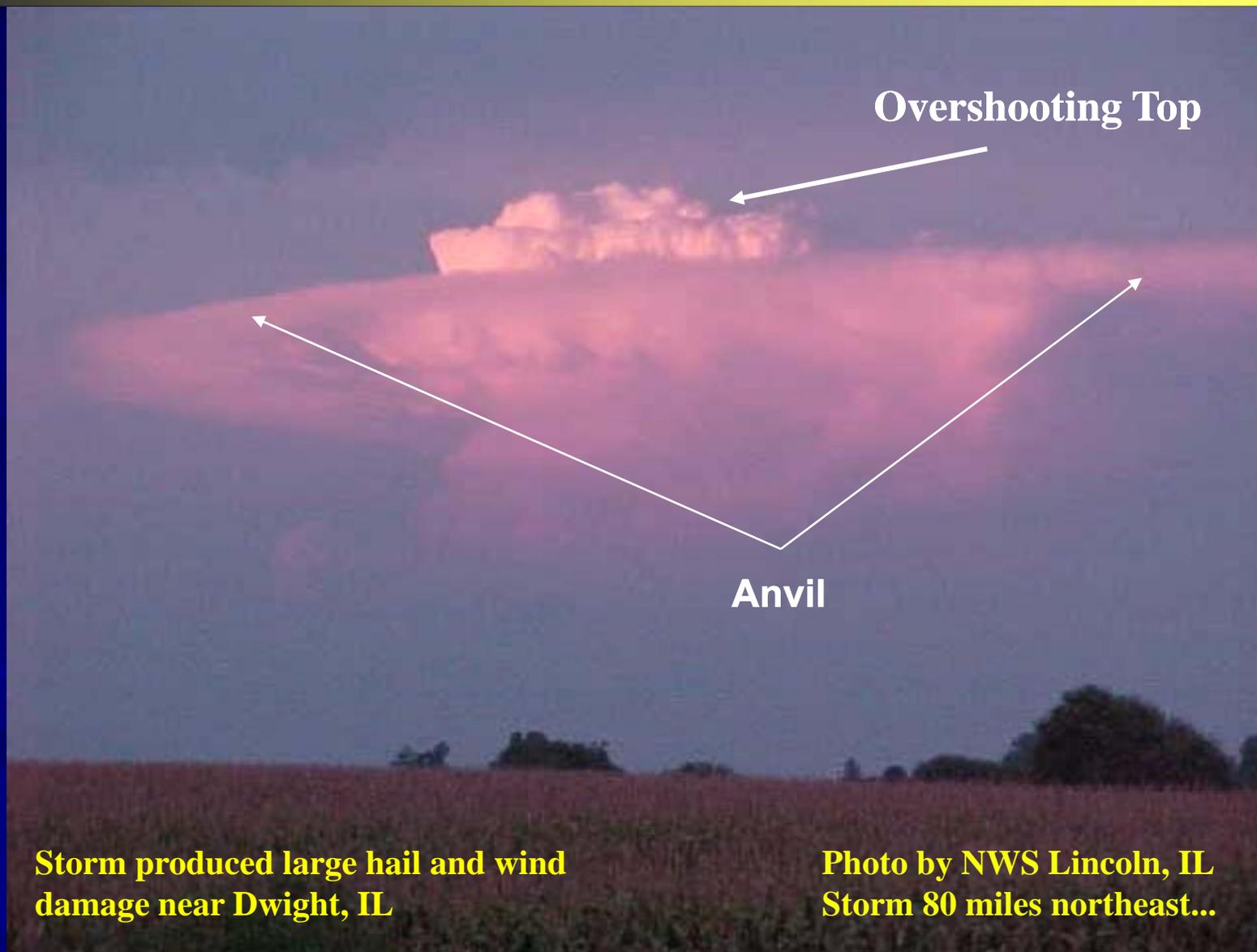


Looking northwest

Copyright Brian A. Morganti



# Severe Storm Cloud Features



Overshooting Top

Anvil

**Storm produced large hail and wind damage near Dwight, IL**

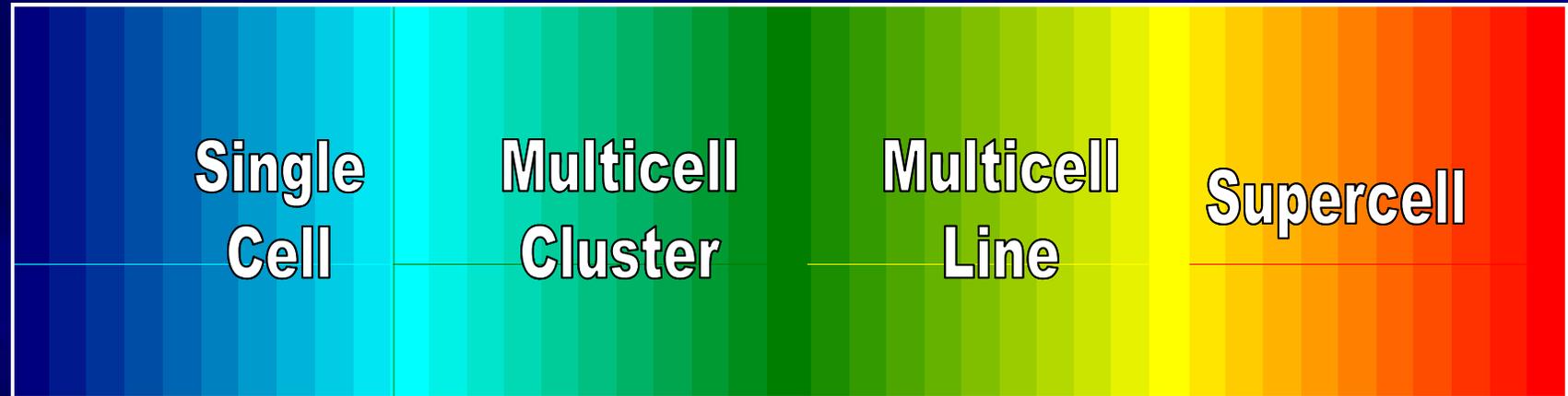
**Photo by NWS Lincoln, IL  
Storm 80 miles northeast...**



# Thunderstorm Types & Associated Hazards



# Thunderstorm Spectrum



**Slight  
Threat**

**Moderate  
Threat**

**Moderate  
Threat**

**High  
Threat!**

Hail/Wind

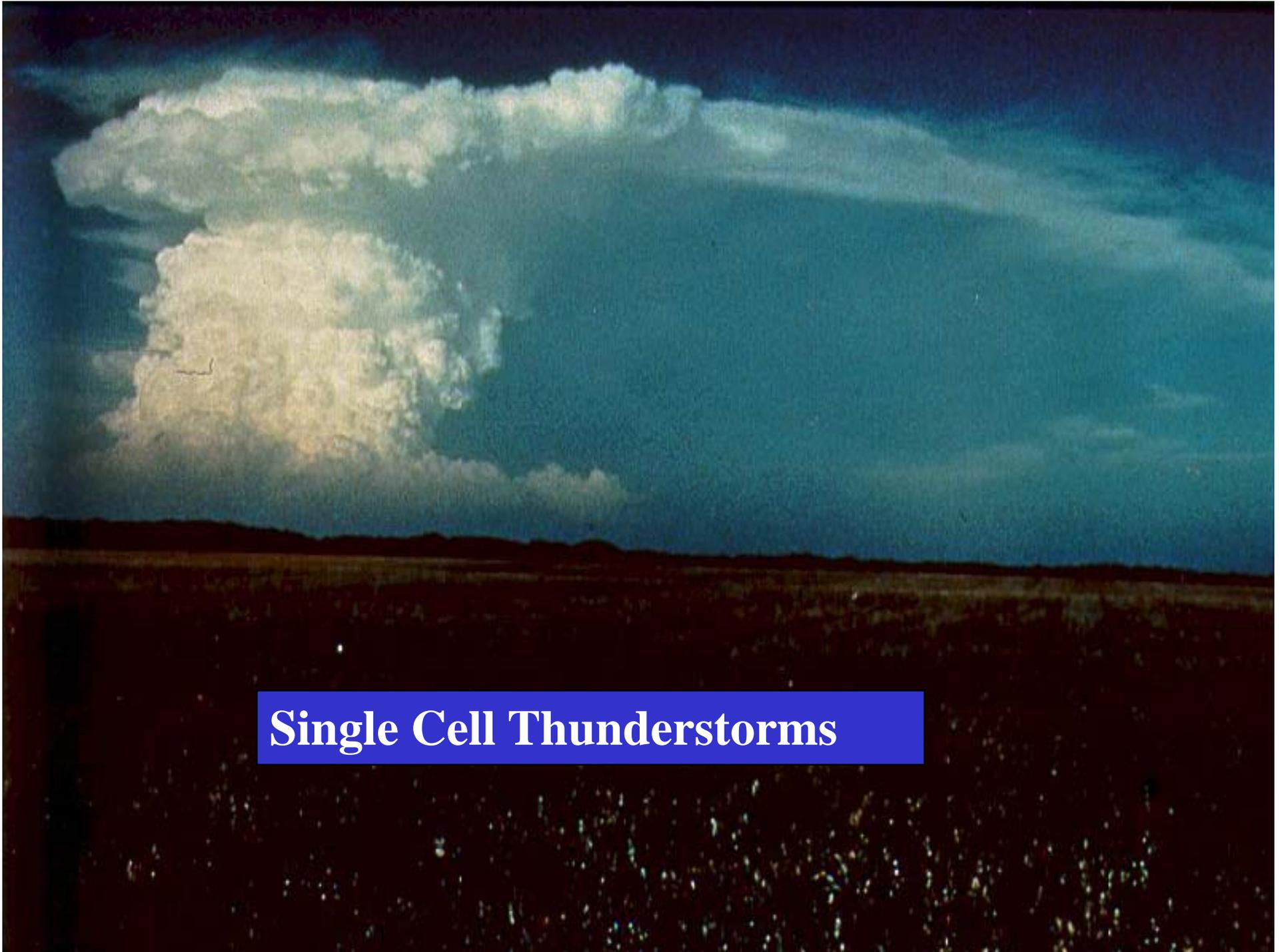
Hail/Wind/Flooding

High Wind

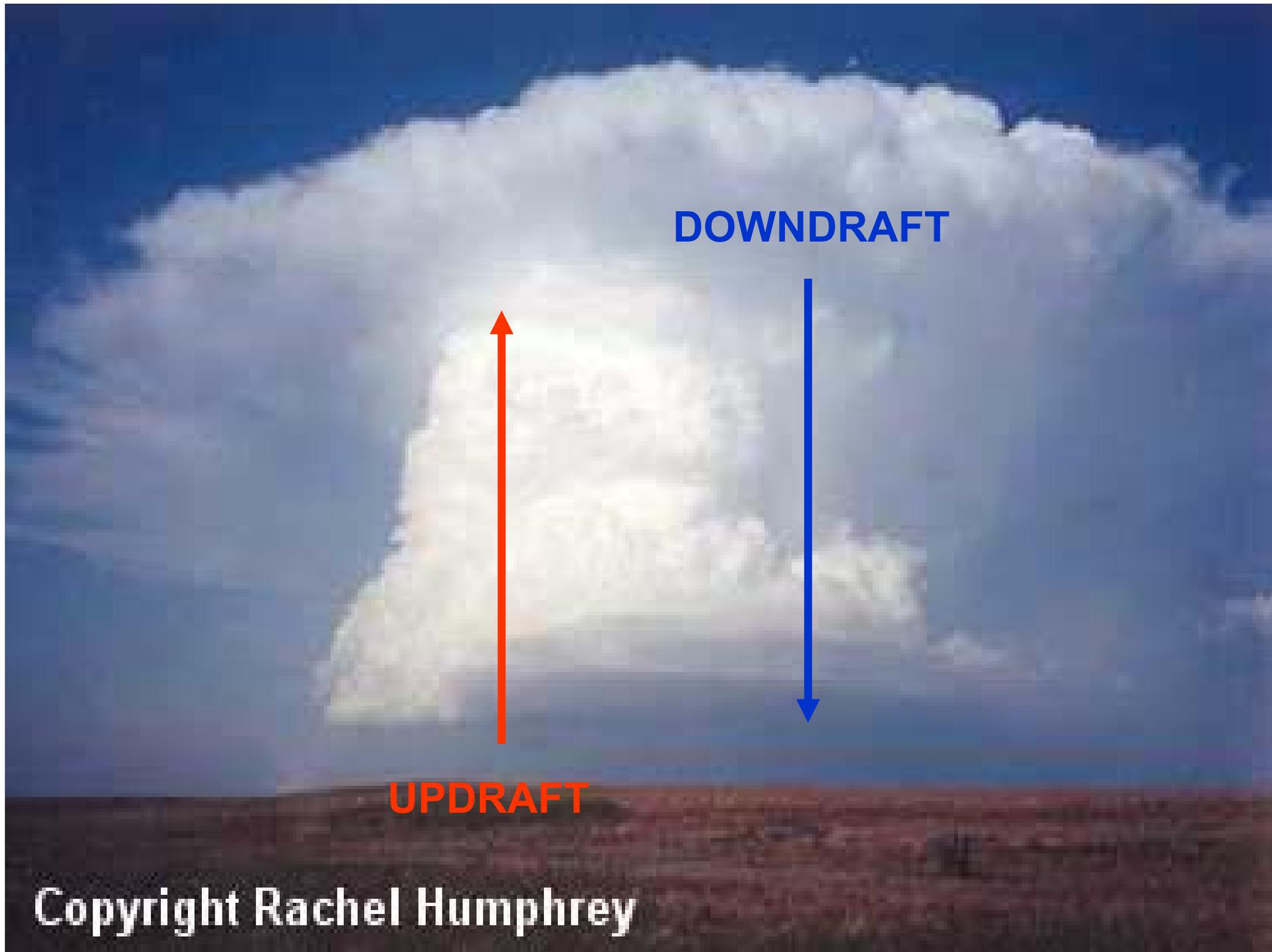
Wind/Hail/Tor/Flooding

Threat based on updraft strength

Storms frequently transition from one type of storm to another!



**Single Cell Thunderstorms**



**DOWNDRAFT**

**UPDRAFT**

**Copyright Rachel Humphrey**

# Single Cell Characteristics

- Severe weather:
  - **heavy downpours**
  - **brief, isolated downbursts**
  - **small hail**
- **Severe events can occur anywhere within the disorganized storm.**



# Multicell Thunderstorms



- Two Types
  - Clusters
  - Lines (Squall Lines)



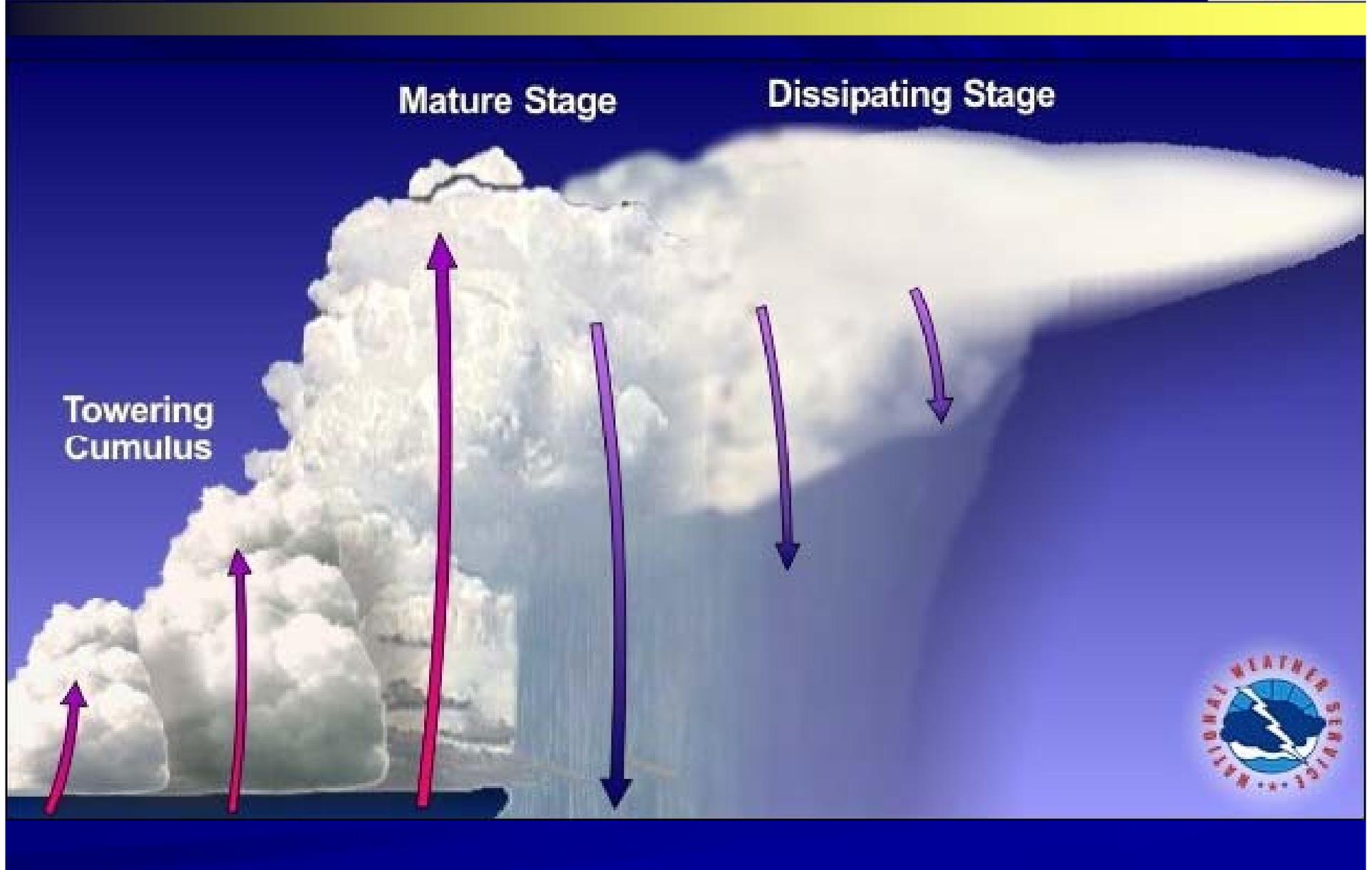
# Multicell Cluster Storms



Photos by Doug Long – Jasper County EMA



# Multicell Cluster



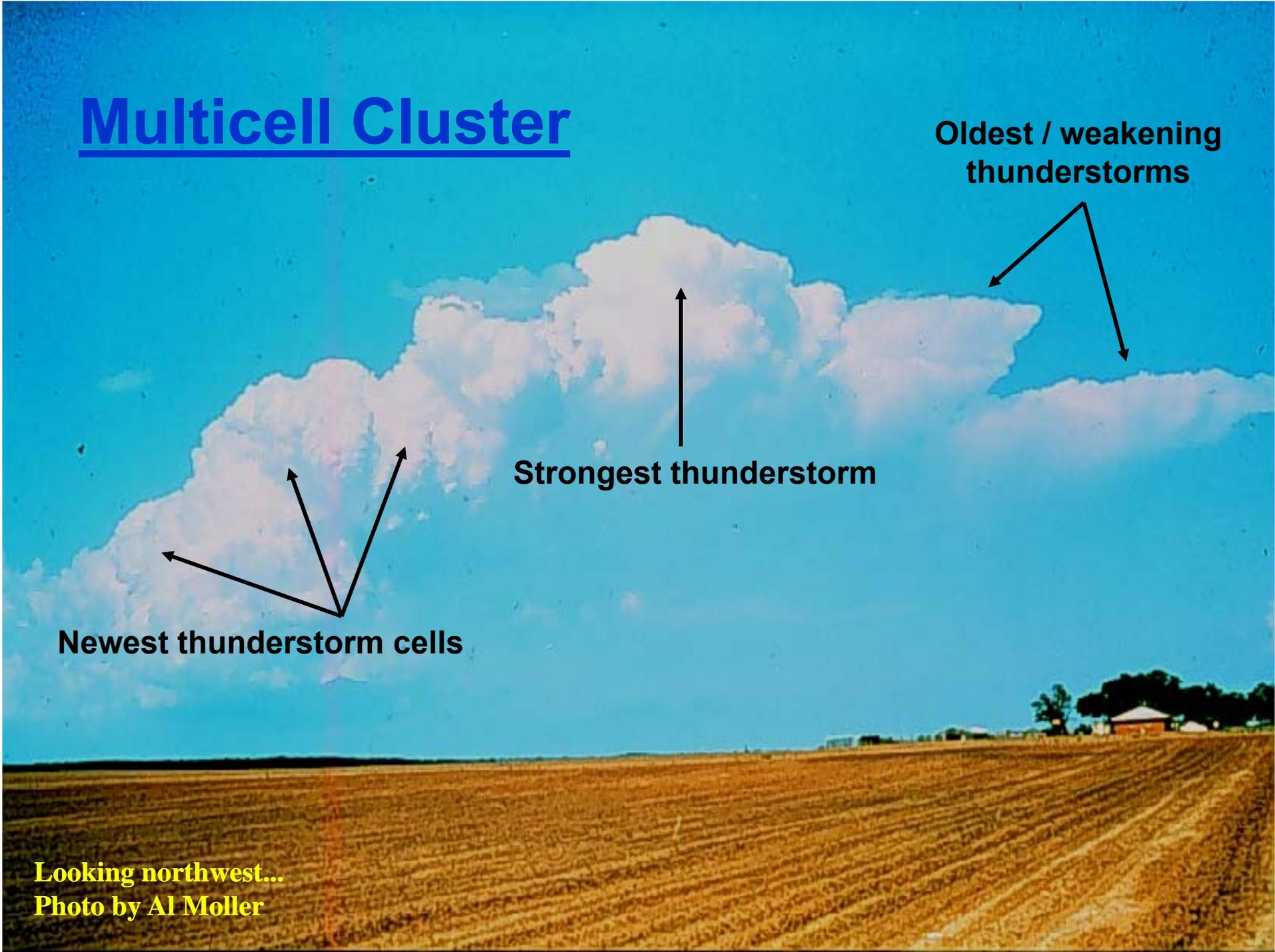
# Multicell Cluster

Oldest / weakening  
thunderstorms

Strongest thunderstorm

Newest thunderstorm cells

Looking northwest...  
Photo by Al Moller



# Multicell Cluster Characteristics

- Severe weather:
  - **damaging wind**
  - moderate size hail (<1.5")
  - flash floods
  - weak tornadoes
- Hot spot: the leading edge of the storm and/or the southwest flank.

# Squall Line



NWS Lincoln photo – June 15, 2004

**Storms organize into a linear structure**

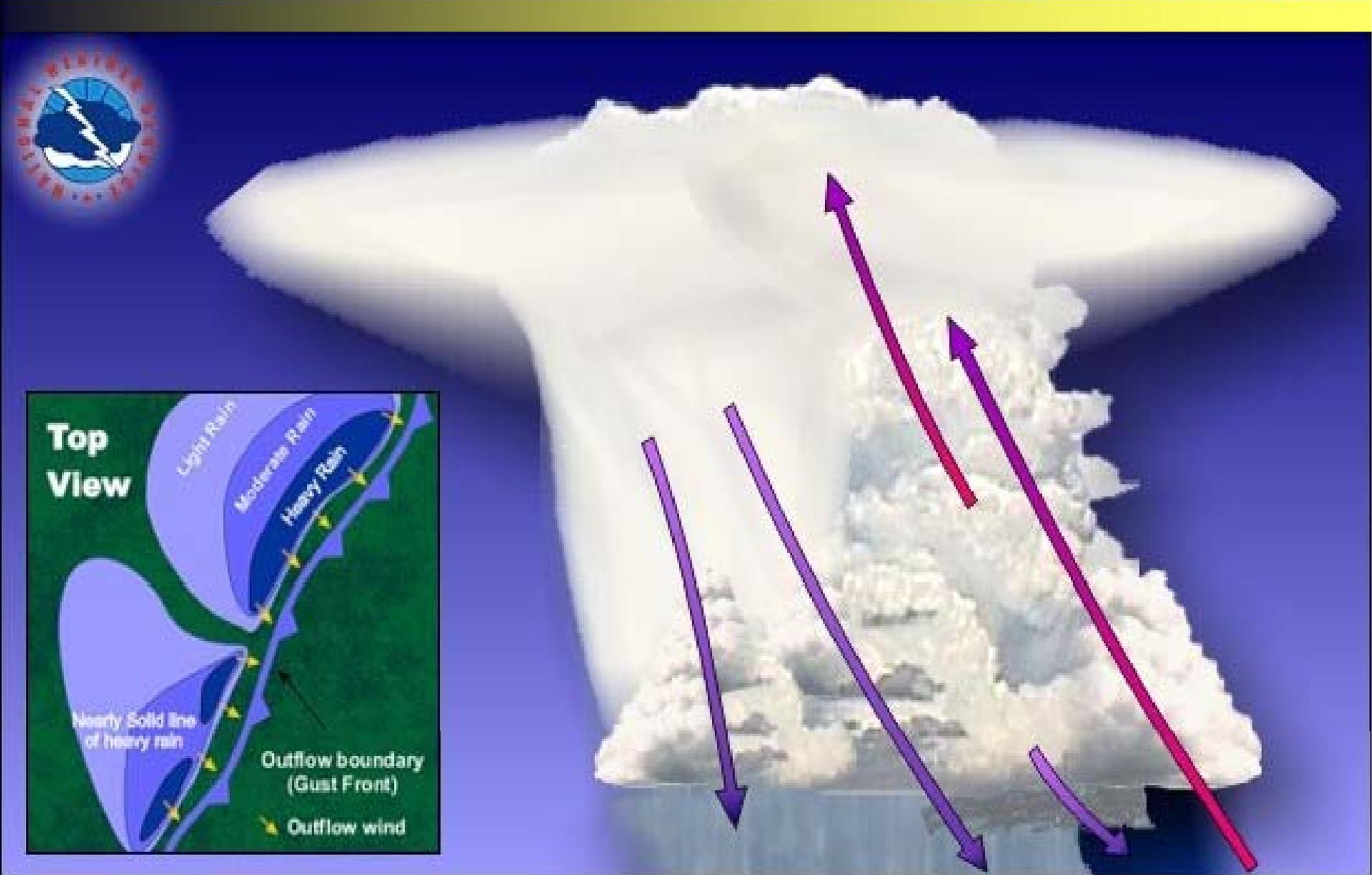
**Can be more than 100 miles long**

**Primary threat is damaging winds**

**Can also produce hail and weak tornadoes**



# Squall line





# Shelf Cloud

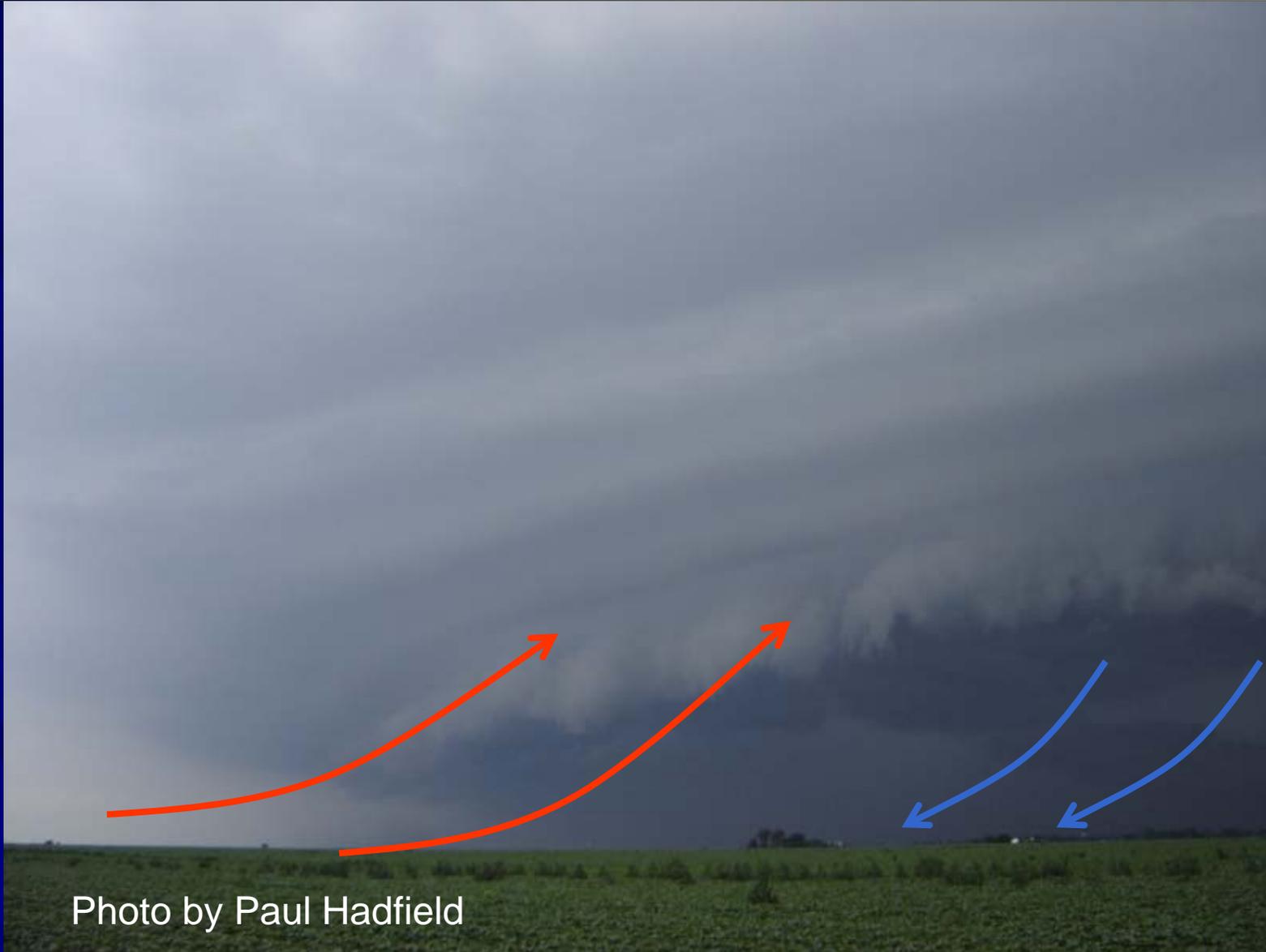


Photo by Paul Hadfield

# Squall Line

## Characteristics

- Severe Weather:
  - **damaging winds over 100 mph possible**
  - weak tornadoes
  - small to moderate hail
  - occasional flash floods
- Hot spot: At the leading edge



# Downbursts



Rain foot  
indicates  
strong  
downburst

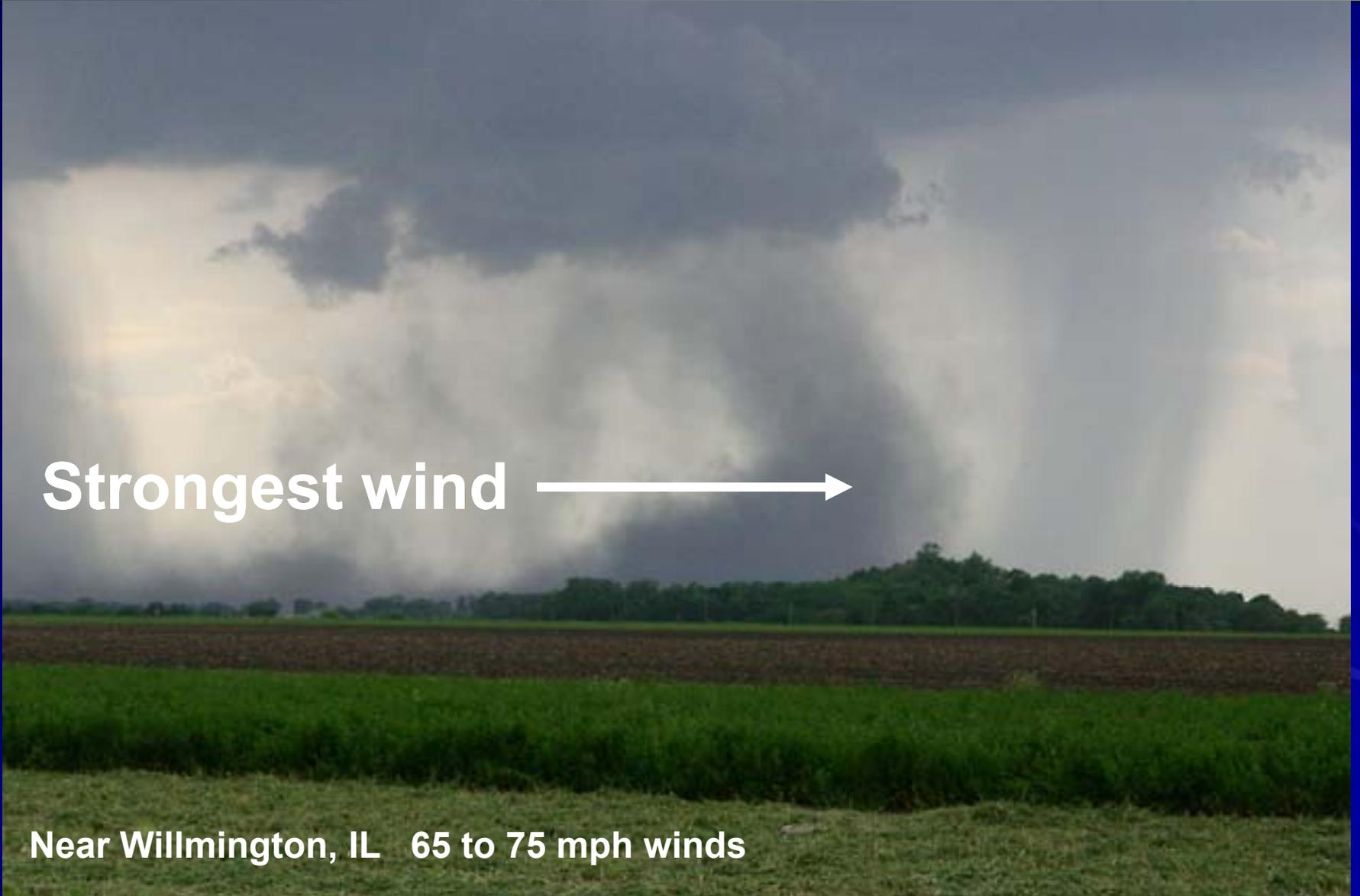


# Downburst sequence



Strongest wind →

Near Willmington, IL 65 to 75 mph winds



# Downburst Characteristics

- Severe Weather:
  - **Damaging winds over 100 mph possible**
  - **Damage similar to, or WORSE than a tornado**
  - **Can be associated with all types of thunderstorms**
    - **Most common with supercells**

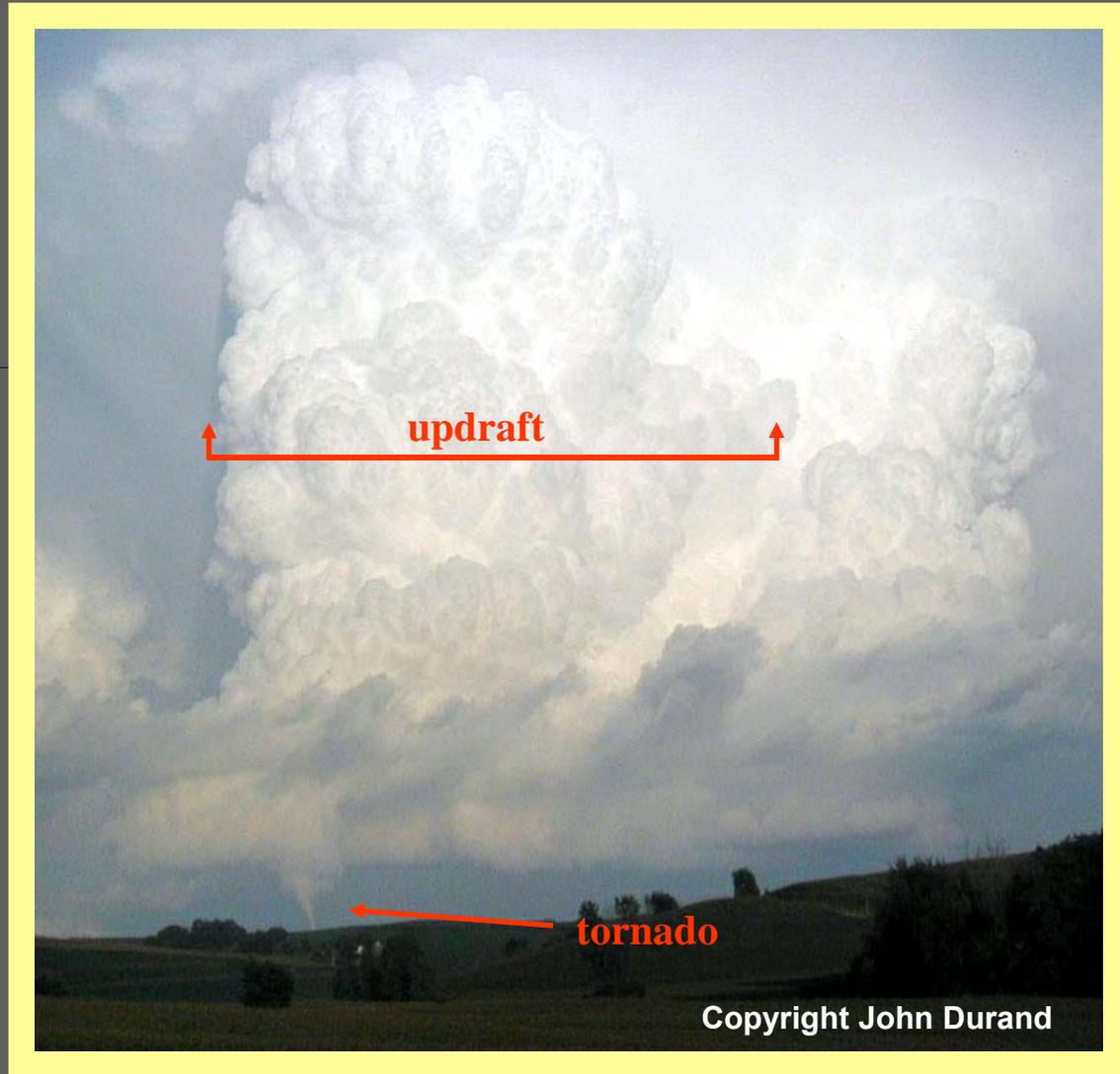


# Supercell Thunderstorm



Supercells are the *strongest and longest lasting* thunderstorm.

The storm has an intense, rotating updraft called a *mesocyclone*.





# Supercell Hazards



Significant Threat of **all types** of Severe Weather

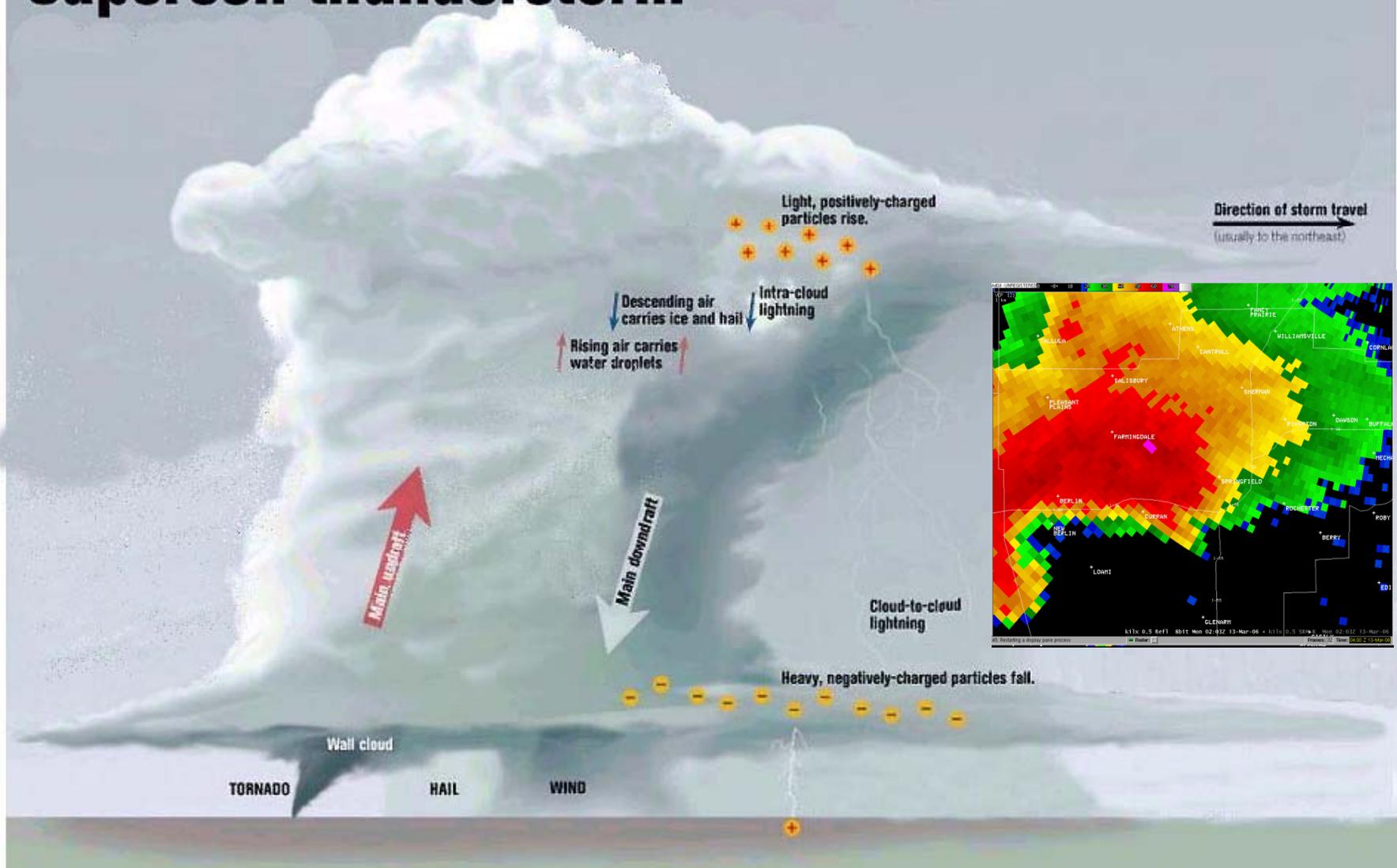




# Classic Supercell – Side View

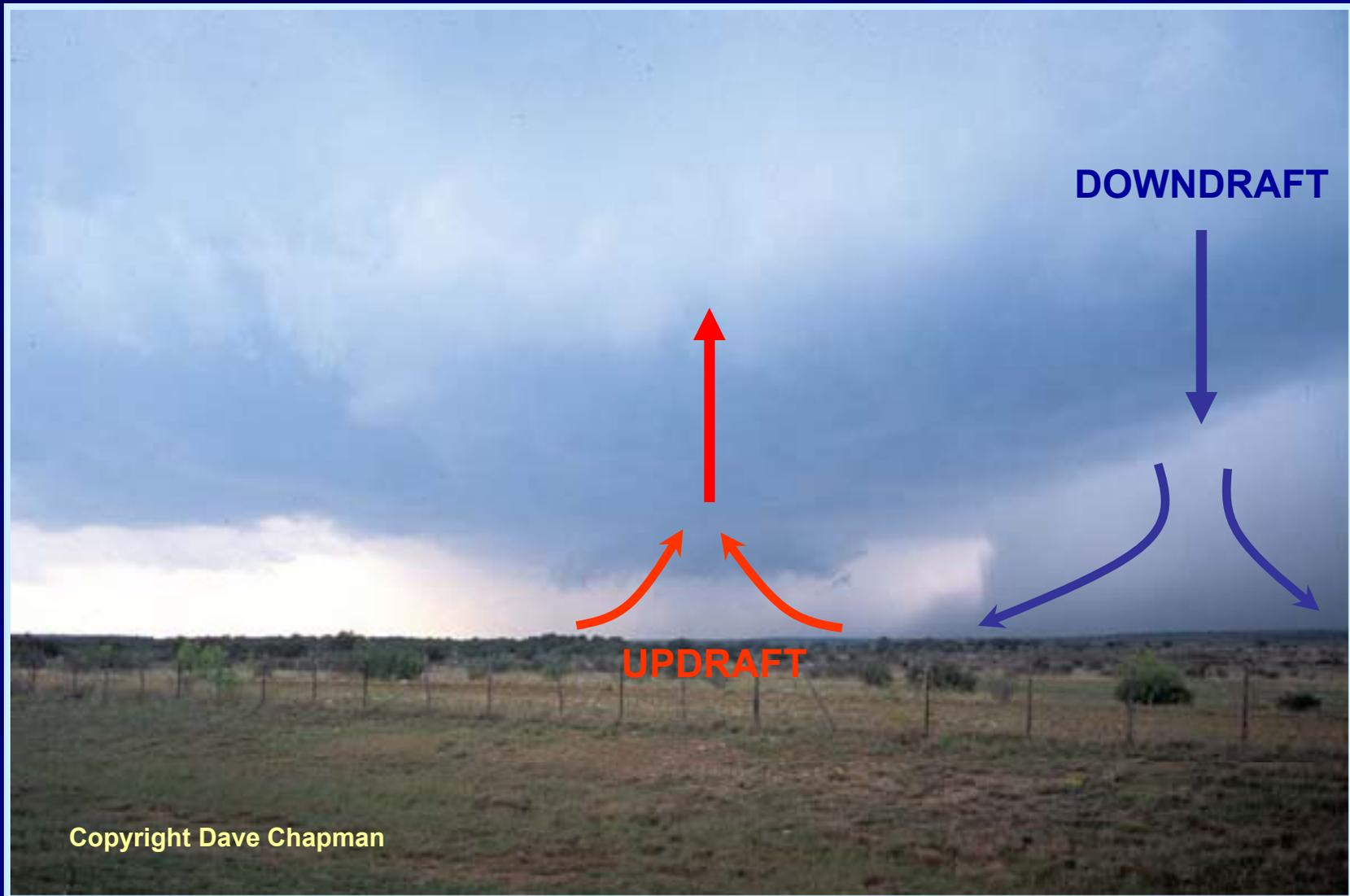


## Supercell thunderstorm





# Updraft/Downdraft - Supercell



Copyright Dave Chapman

# Classic Supercell

## Characteristics

- Severe Weather:

- **tornadoes**
- **damaging winds**
- **moderate to large hail**
- **occasional flash floods**

- Hot spots:

- Wind and hail – heavy precipitation shield
- Tornadoes and wind – typically in or near a rain-free, lowered cloud base.



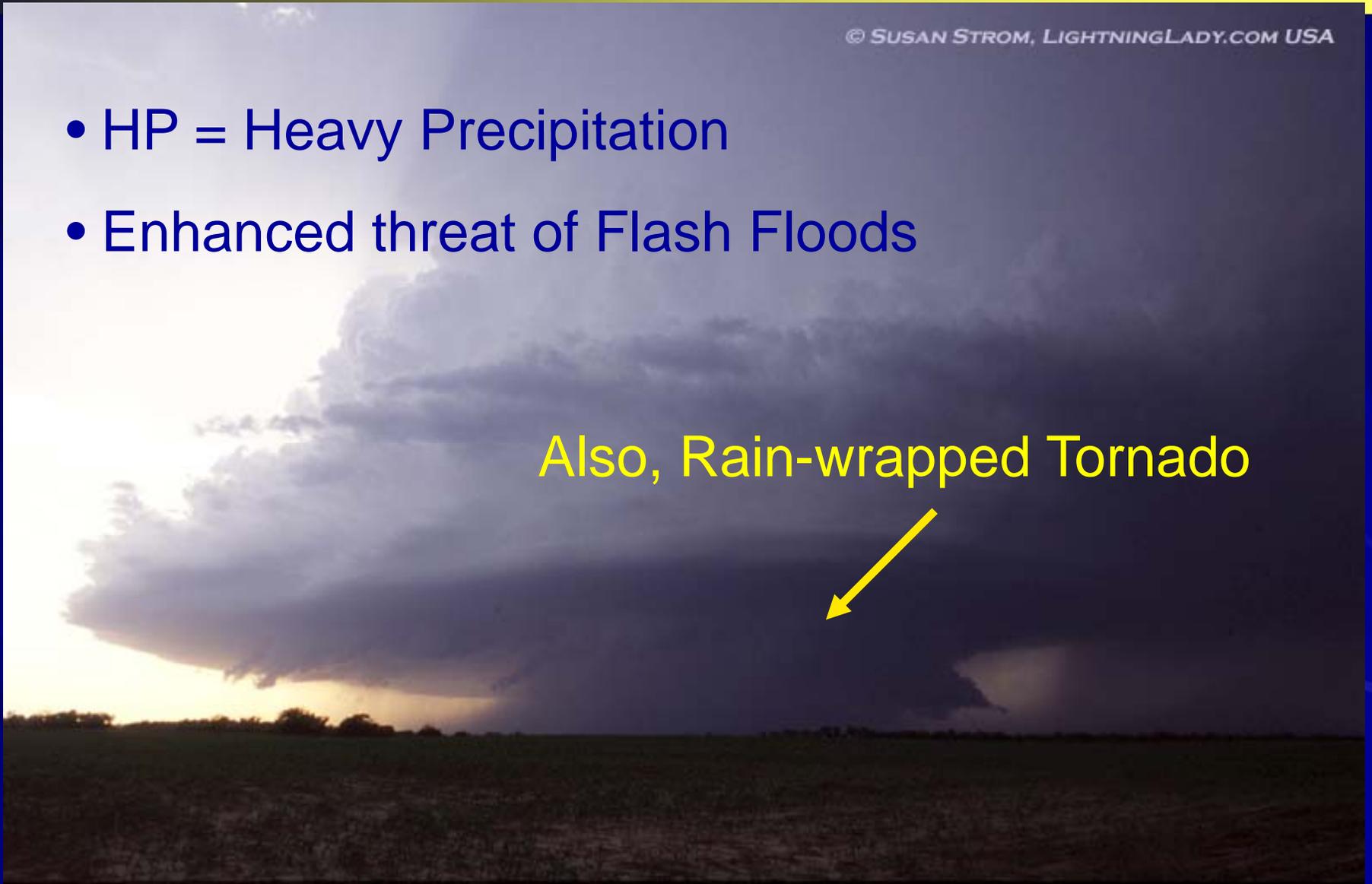
# HP Supercells



© SUSAN STROM, LIGHTNINGLADY.COM USA

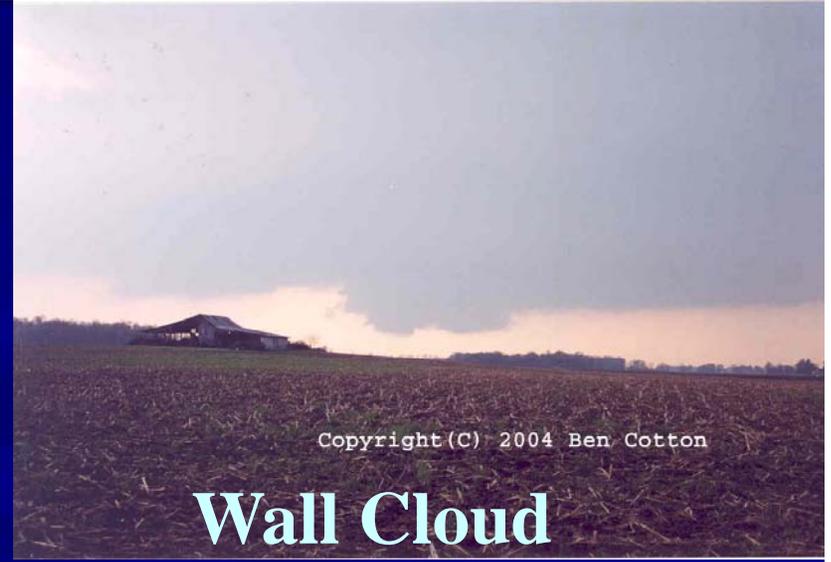
- HP = Heavy Precipitation
- Enhanced threat of Flash Floods

Also, Rain-wrapped Tornado





# SUPERCCELL Spotting...





# Mesocyclone

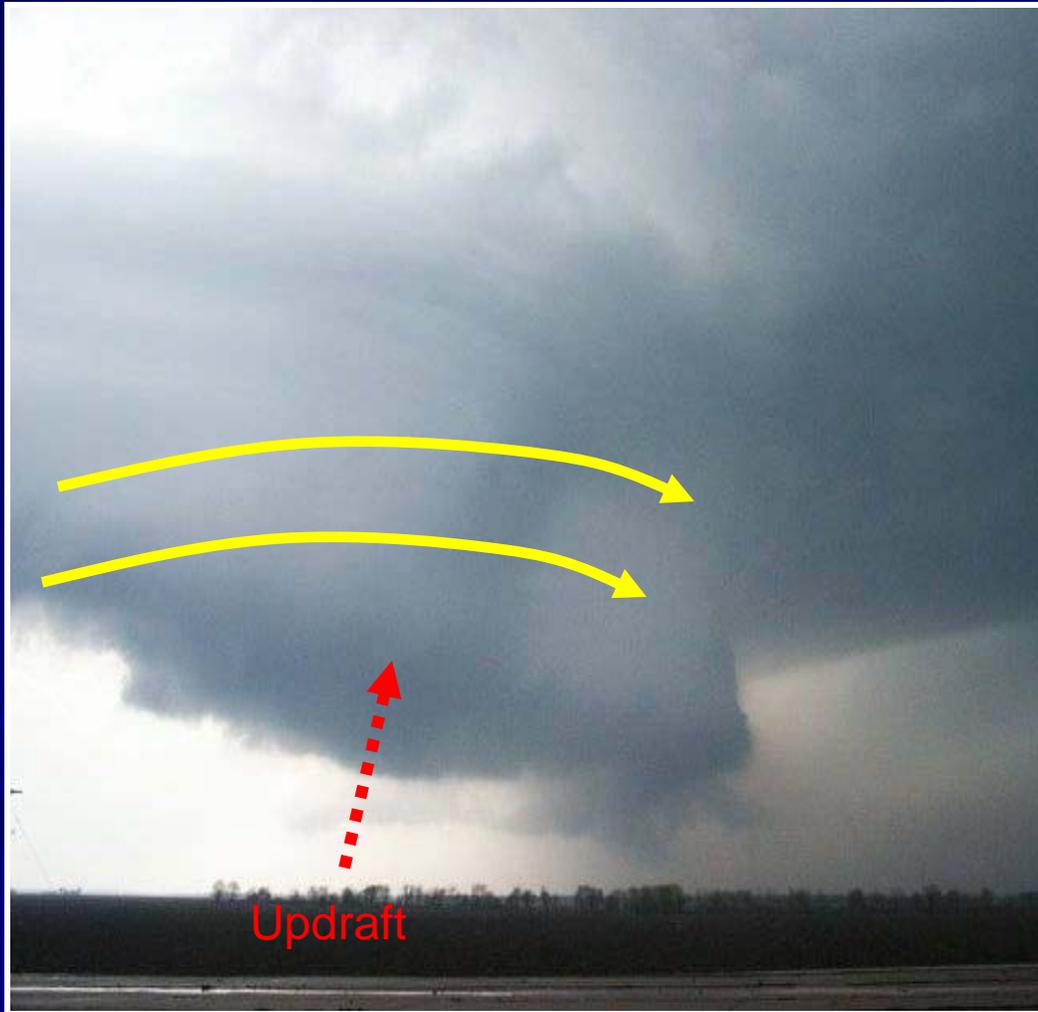


Photo by Mark Sefried

- **Cloud striations**
  - Signs of rotation in the updraft tower
  - Likely evidence of **mesocyclone** development
- **“Appearance” of rotation**



# Wall Clouds

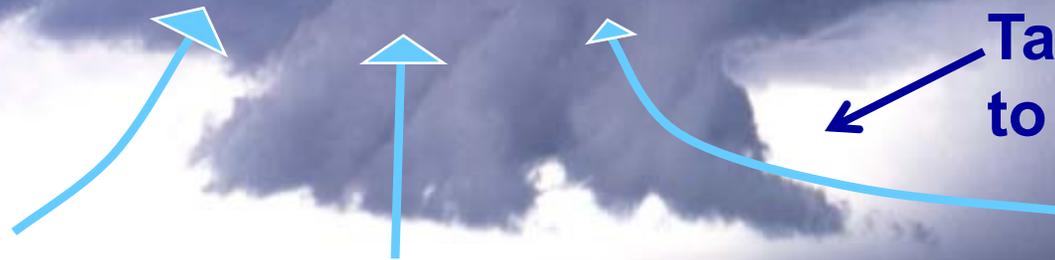


©1997 Roger Edwards

**Watch for PERSISTENT Rotation!!**

Attached to storm cloud

Rapid Vertical Motion



Tail Cloud – points to rain

Strong Inflow





# Funnel Clouds



- > A **rotating**, funnel-shaped cloud
- > Usually near the updraft (wall cloud)
- > Attached to the bottom of the cloud
- > Rapidly rotating and smooth in appearance
- > **Do not** reach ground



Photo by Patrick Bak



# Tornadoes



© 2004 Jim Bishop & Reed Timmer/Stormgasm.com



Copyright Jeff Piotrowski, Storm Productions, Inc.

# Tornado

**A violently rotating column of air extending from a cloud base to the ground.**



Near Chenoa, IL May 23, 2004

photo by marc lester



Photo by Martin Hobbs  
Near Secor, IL May 30, 2004

# Typical Supercell Tornado Life-Cycle



**Developing wall cloud – look here for rotation.**

**Looking northwest...**

Photo by Steve Smedley



**Wall cloud**

**Funnel cloud**

Brian Bill, Eureka IL, 7-13-04



**Debris**

Brian Bill, Eureka IL, 7-13-04



**Dissipating tornado**

# Tornadoes without a meso

## Landspout tornadoes

- Develop close to a front
- Often when the storm has just developed
- Usually light rain and little thunder
- Very short lived; dissipates as the storm and the rain increase in intensity

Landspout type tornado

Photo near Augusta, IL May 2, 2004

04 5 2



# 5/31/06 Landspouts



Photo from Stephanie Hudson  
Near Tuscola, IL



# 5/31/06 Landspouts



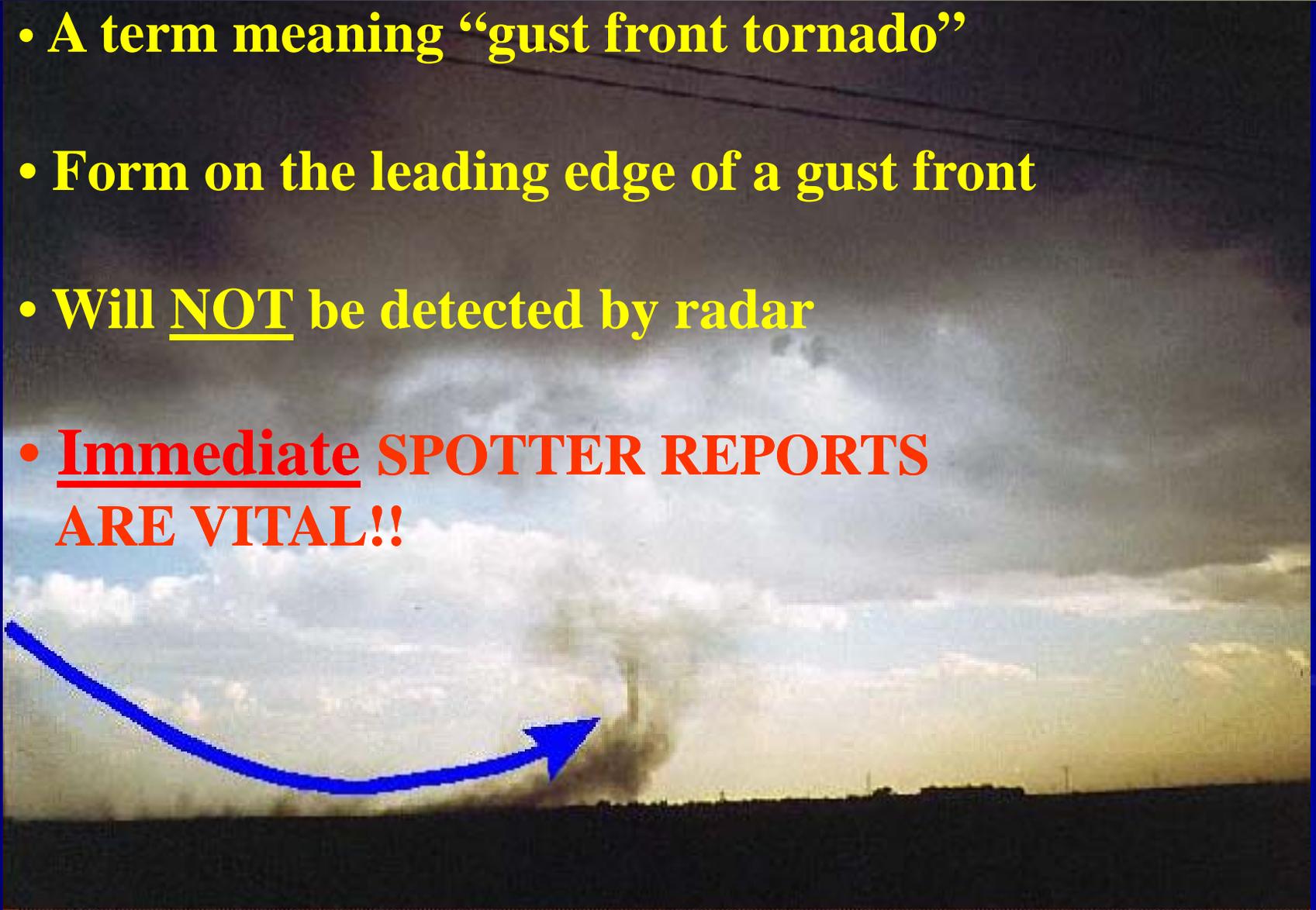
Photo courtesy of Champaign County EMA  
Near Ivesdale, IL



# Gustnado



- A term meaning “gust front tornado”
- Form on the leading edge of a gust front
- Will NOT be detected by radar
- Immediate SPOTTER REPORTS ARE VITAL!!





# The Enhanced Fujita Scale (EF)



# Why the EF – Scale ??



- F-Scale winds were too high – EF Scale winds are better estimates
- EF Scale – more types of construction; includes power poles & trees



- **BOTTOM LINE**

- No change in the description of the damage

- F2 = EF2, F3 = EF3, etc...

- The only change is to the estimated winds



# EF Scale vs. Fujita Scale Wind Speed Ranges

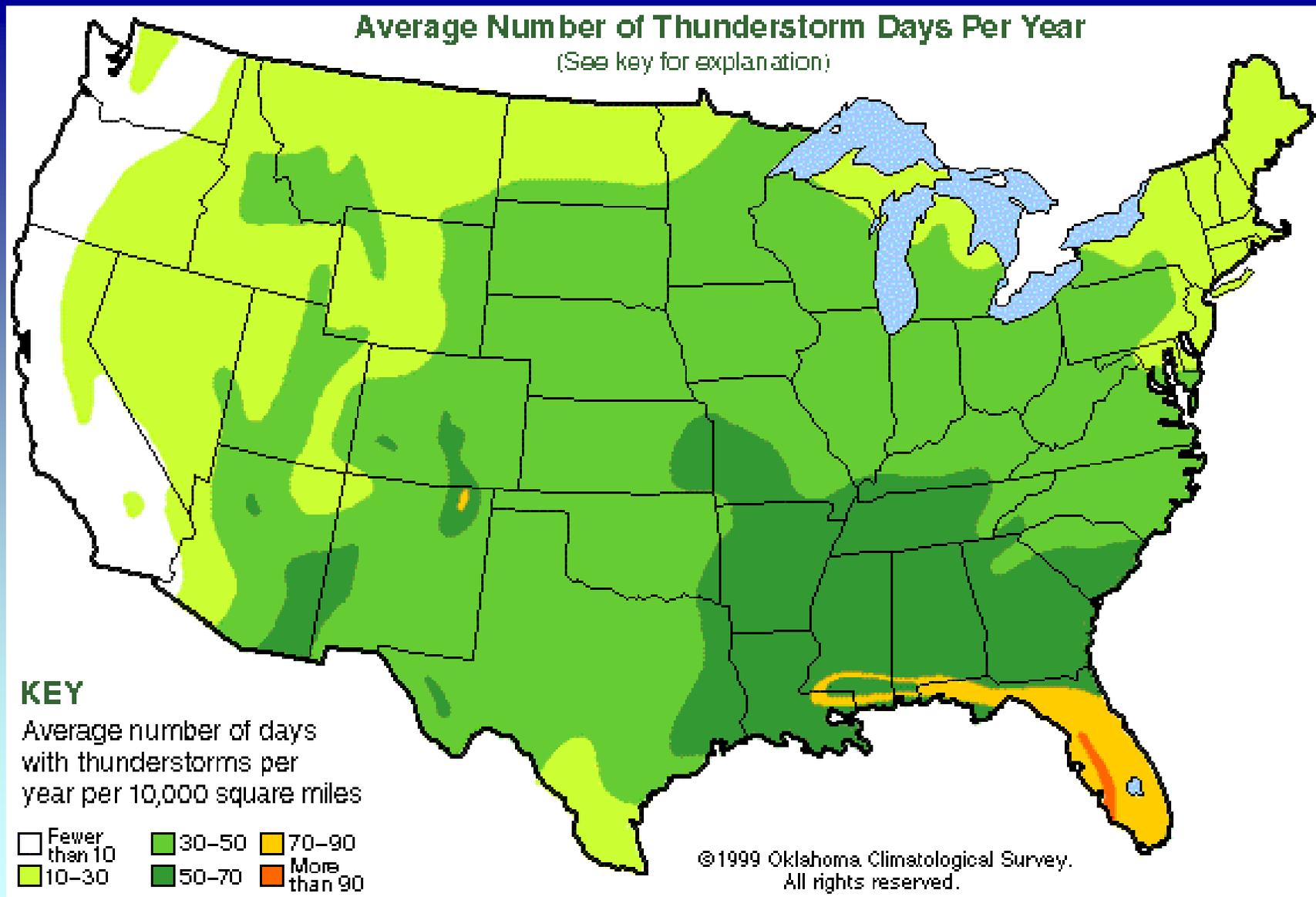


Fujita Scale wind mph		EF Scale wind mph	
	3-Second Gust		3-Second Gust
F0	45 - 78	EF0	≤ 85
F1	79 - 117	EF1	86 – 110
F2	118 - 161	EF2	110 – 135
F3	162 - 209	EF3	136 – 165
F4	210 - 261	EF4	166 – 200
F5	262 - 317	EF5	≥ 200

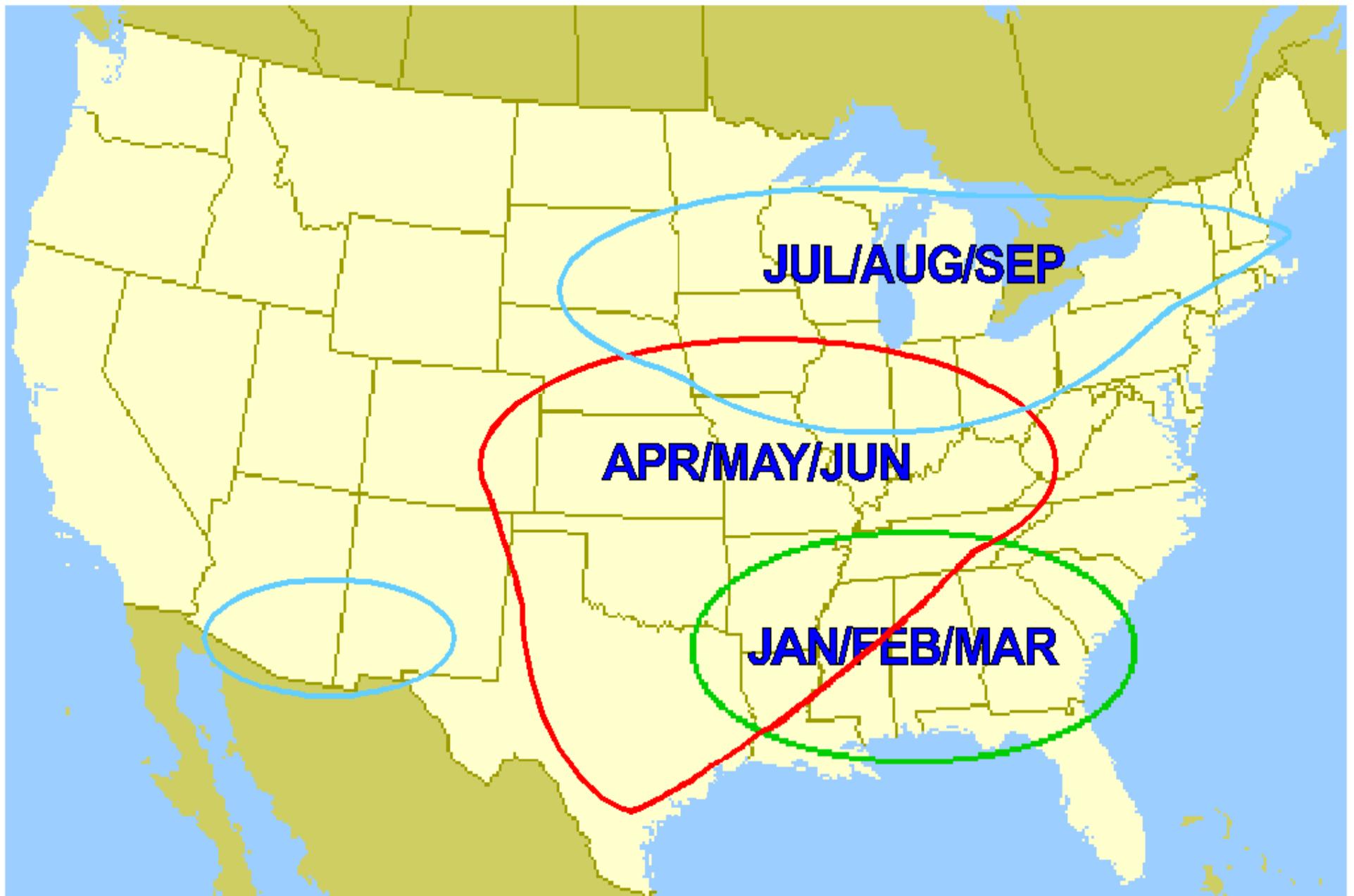


# Illinois Severe Weather Climatology

# Thunderstorms in the United States



# SEASONAL MARCH OF TORNADOES



# ILLINOIS TORNADOES

by month (1950-2006)

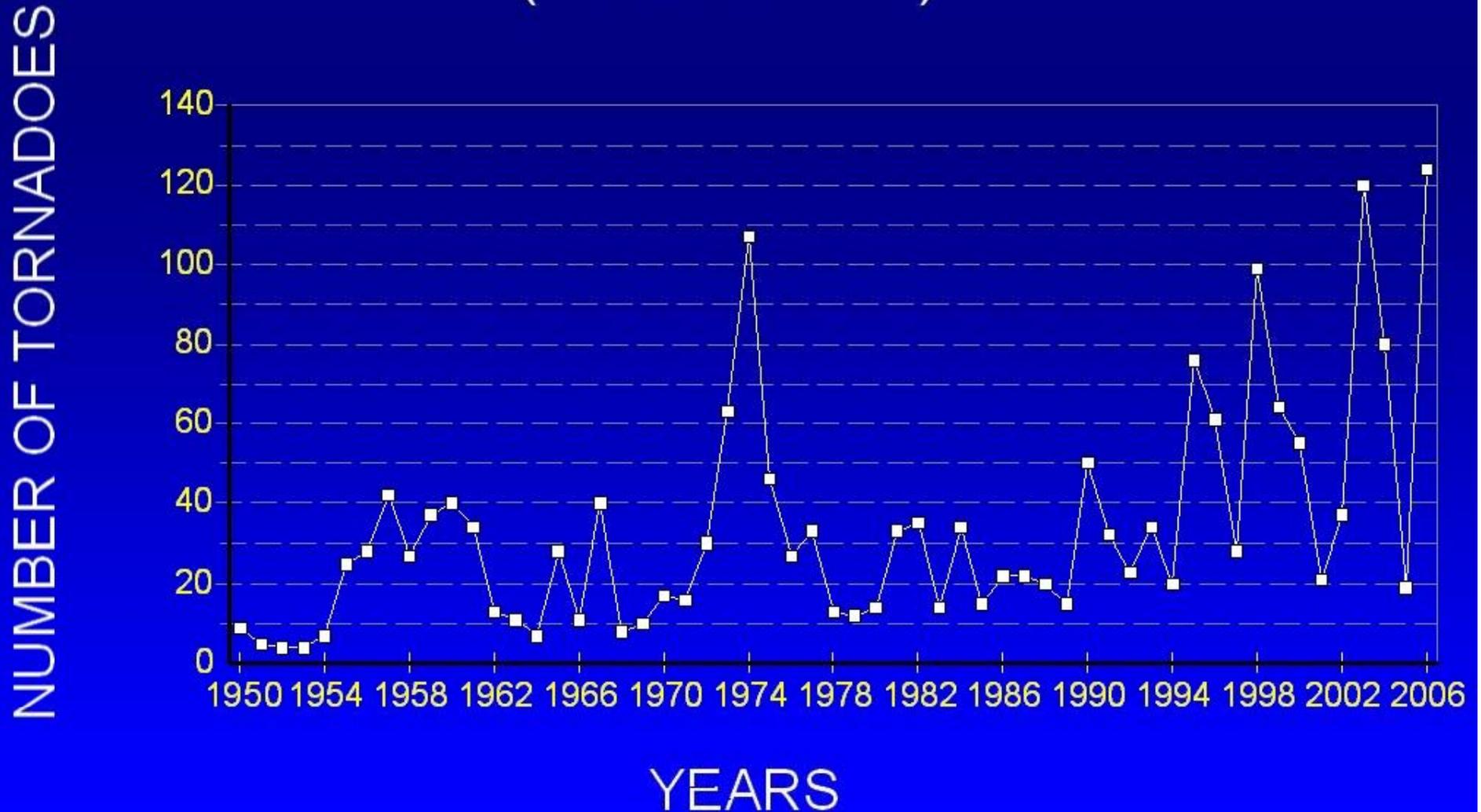
NUMBER OF TORNADOES



MONTHS

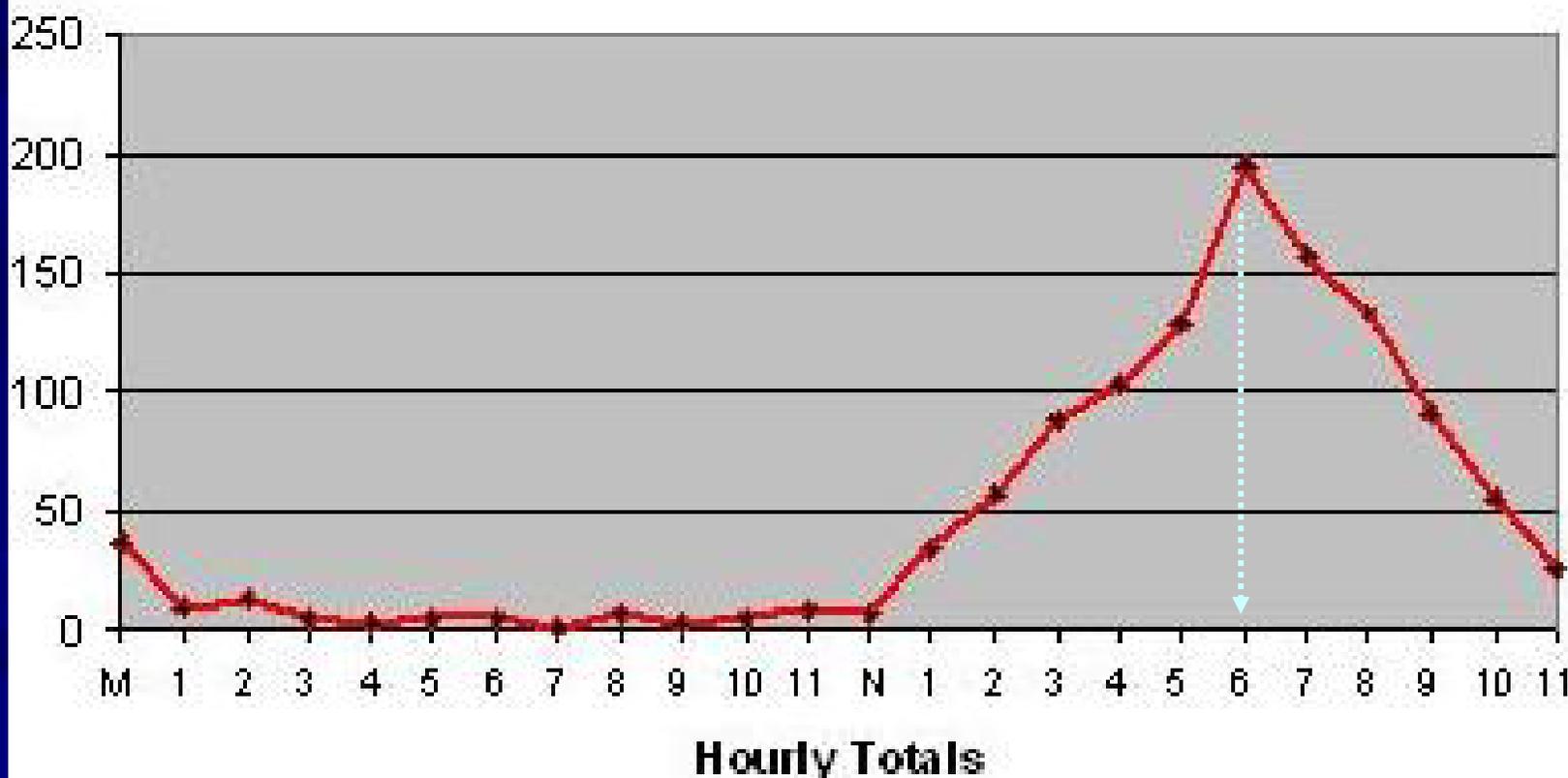
# ILLINOIS TORNADOES

(1950-2006)



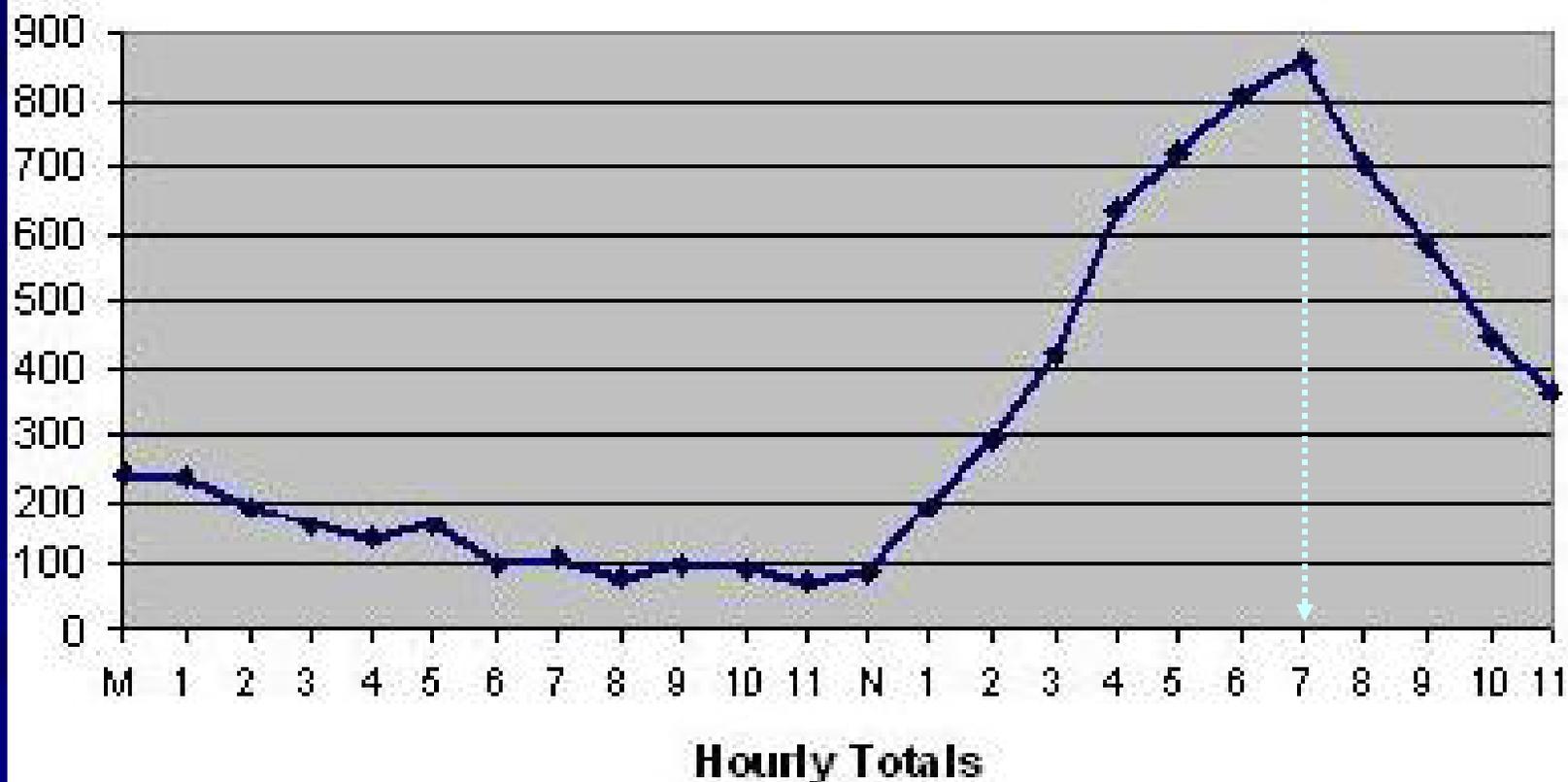


## Tornadoes vs. Time of Day (local time)



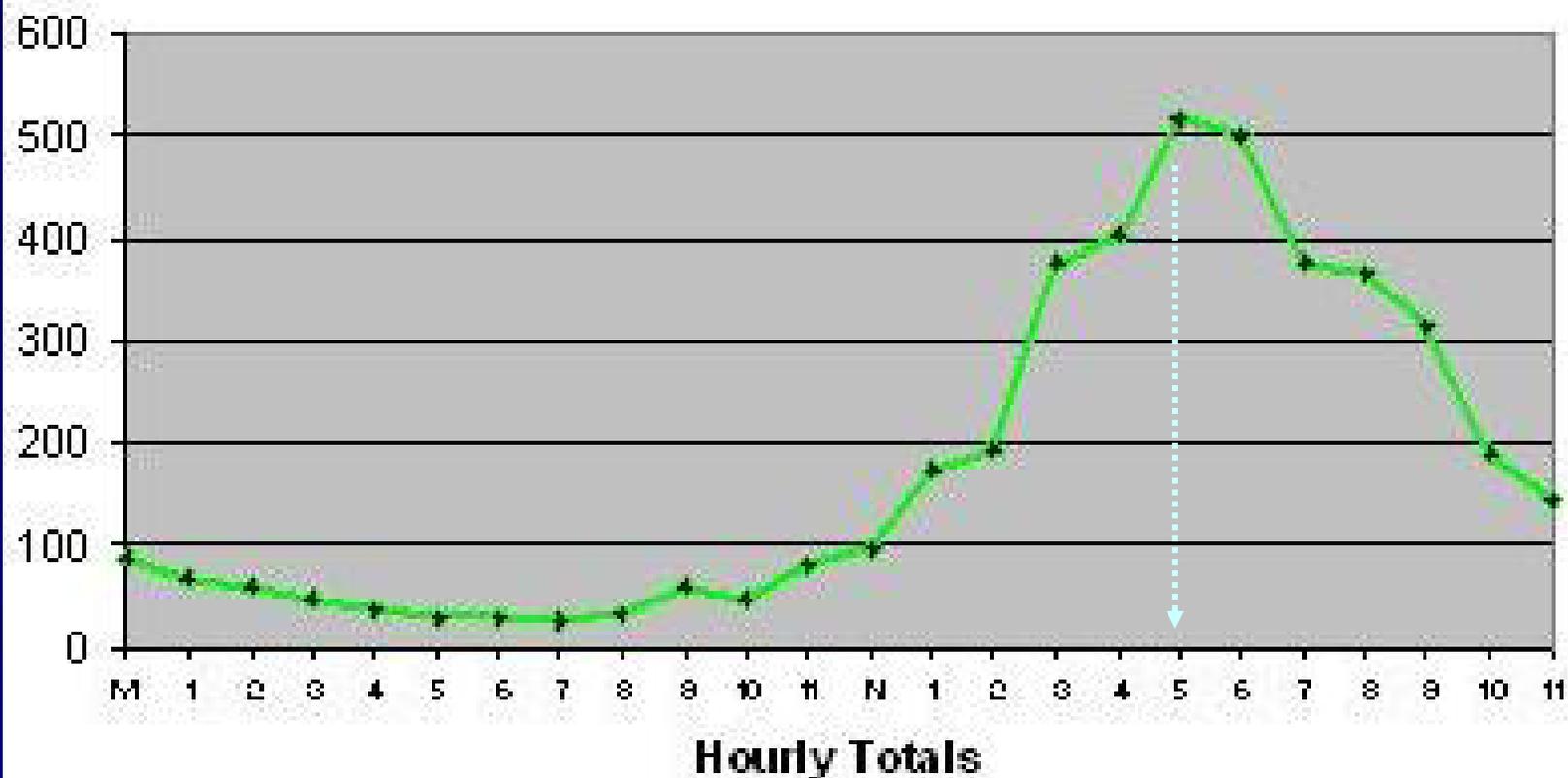


## Severe Wind vs. Time of Day (local time)



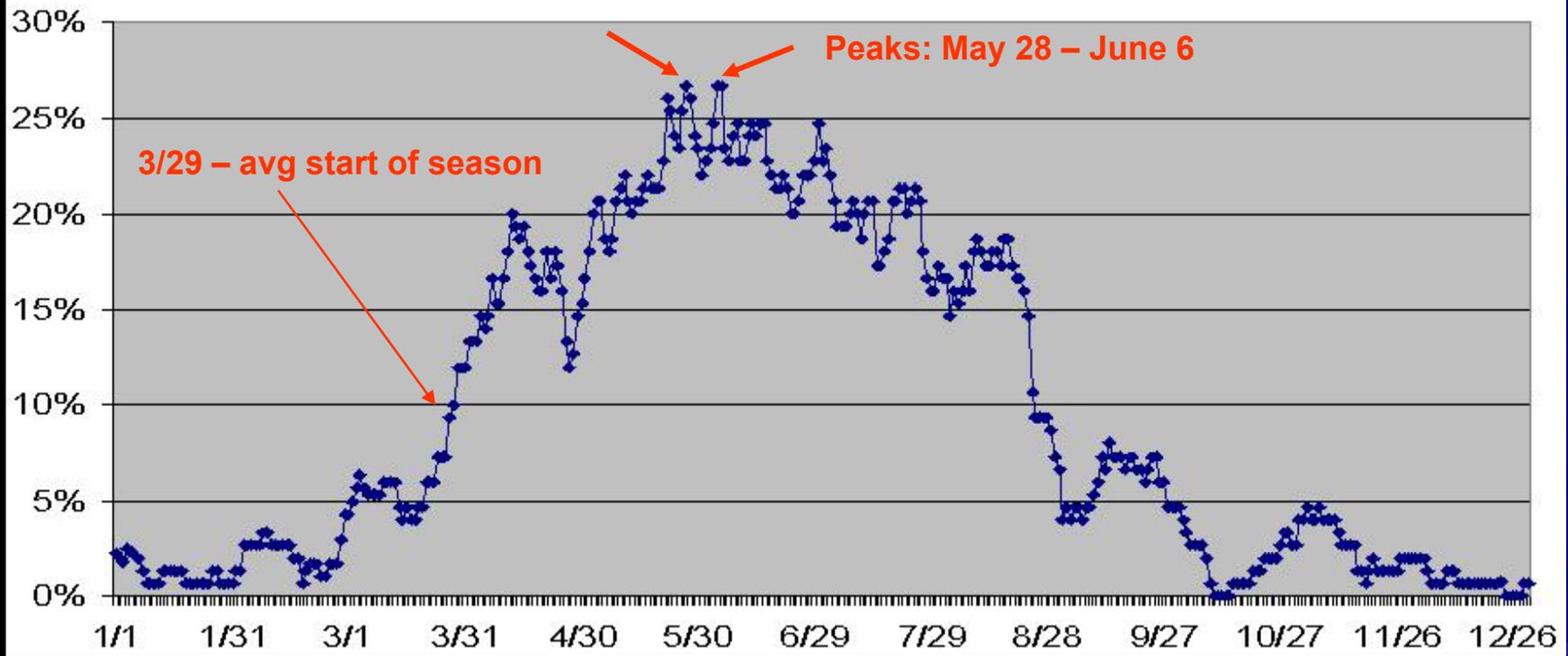


## Severe Hail vs. Time of Day (local time)





## Frequency of Severe Weather Reports by Calendar Date (1997-2006) WFO ILX



- Top five dates for severe weather reports in the last ten years:
  - \* Aug. 18<sup>th</sup>
  - \* Apr. 20<sup>th</sup>
  - \* May 31<sup>st</sup>
  - \* June 4<sup>th</sup>
  - \* July 9<sup>th</sup>
- No severe weather reports the last ten years: October 5<sup>th</sup> – 23<sup>rd</sup>



# Spotter Preparedness and Safety



# NWS Lincoln, IL Webpage

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



NOAA's National Weather Service Weather Forecast Office

## Central Illinois

[Home](#) [Site Map](#) [News](#) [Organization](#)

Local forecast by "City, St" or Zip Code

City, St

### Current Hazards

- Watches / Warnings
- Outlooks
- U.S. Hazards
- Hurricane Info
- Submit Storm Report
- Local Storm Report
- Spotter Briefing

### Current Conditions

- Observations
- Satellite Images
- Rivers & Lakes AHPS
- Precip Estimate
- Snow Cover
- IL Temp/Precip Maps
- Radar Imagery
- Local Radar
- Nationwide
- Southeast IL

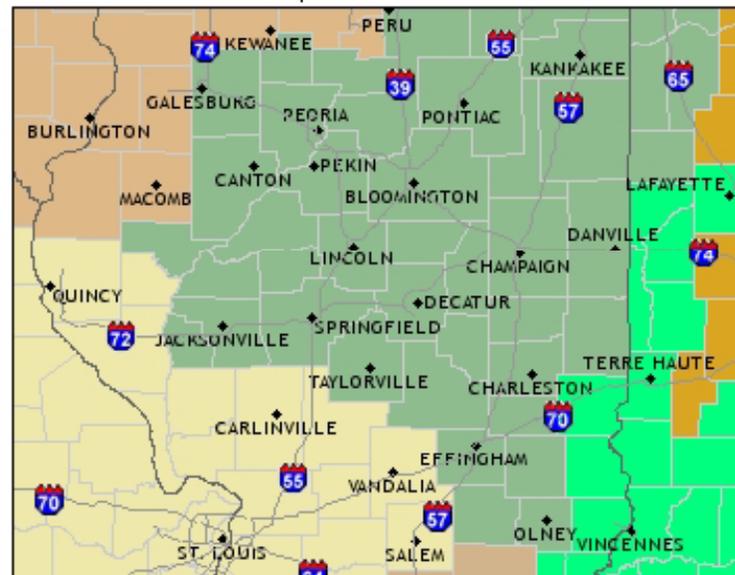
### Forecasts

- Local Area

### Top News of the Day

- Severe Weather Possible Today
- Spotter Training Schedule
- Review of Localized Heavy Snow of February 11
- Additional News Headlines

Click on the map below for the latest forecast.



Last map update: Thu, Feb 16th 2006 at 11:51:48 am CST

Read watches, warnings & advisories



High Wind Warning	
Winter Weather Advisory	
Wind Advisory	
Flood Statement	
Short Term Forecast	
Hazardous Weather Outlook	

Spotter Briefing page





# NWS Lincoln, IL Webpage

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



**Hazardous  
Weather  
Outlook**

**Storm  
Prediction  
Center  
Watches and  
Convective  
Outlooks**

## Pre-Storm Briefing

**Central Illinois Hazardous Weather Outlook**

**Storm Prediction Center (SPC)**

**Storm Watch**



Current Severe Weather Watches



Day 1 Convective Outlook



Day 2 Convective Outlook



Day 3 Convective Outlook

### Observation data:

- Current surface map
- Current temperature and dewpoint analysis (Univ. of IL)
- Lincoln upper-air sounding
- Davenport IA upper-air sounding
- National upper-air analysis (SPC)

### Model Analysis Data:

- SPC Composite Maps
- SPC Mesoanalysis Maps (centered on convective "hot-spots")
- National Center for Atmospheric Research weather data
- Environmental Modeling Center's severe weather graphics

# NWS Hazardous Weather Outlook

HAZARDOUS WEATHER OUTLOOK  
NATIONAL WEATHER SERVICE LINCOLN IL  
600 AM CST SUN MAR 12 2006

...SEVERE THUNDERSTORMS WITH TORNADOES ARE LIKELY TODAY...

THIS HAZARDOUS WEATHER OUTLOOK IS FOR CENTRAL ILLINOIS

## **.DAY ONE...TODAY AND TONIGHT**

THERE IS A HIGH RISK OF TORNADIC THUNDERSTORMS LATE THIS AFTERNOON INTO TONIGHT ACROSS CENTRAL ILLINOIS. TORNADOES...SOME POTENTIALLY STRONG...ALONG WITH DAMAGING WINDS AND VERY LARGE HAIL WILL BE THE PRIMARY THREATS.

## **.DAYS TWO THROUGH SEVEN...MONDAY THROUGH SATURDAY**

NO HAZARDOUS WEATHER IS EXPECTED AT THIS TIME.

## **.SPOTTER INFORMATION STATEMENT...**

SPOTTER ACTIVATION WILL LIKELY BE NEEDED BETWEEN 7 PM AND 3 AM THIS EVENING AND OVERNIGHT. A CONFERENCE CALL FOR EMERGENCY MANAGERS AND THE MEDIA WILL BE HELD AT NOON.



# NWS Lincoln, IL Webpage

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



## Current Situation



Current Mesoscale Discussions



Current Watches, Warnings and Advisories Nationwide



Current Lincoln Radar

**Adjacent Radars:** Chicago, Davenport, St. Louis, Evansville, Indianapolis

**Regional Sectors:** Midwest, Plains

## Latest Severe Weather Products issued by Our Office

- Tornado Warning
- Severe Thunderstorm Warning
- Flash Flood Warning
- Flash Flood Statement
- Local Storm Report
- Severe Weather Statement
- Special Weather Statement

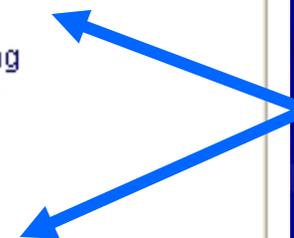
NWS Lincoln, IL is not responsible for the timeliness of the products available on the Internet.

**Alternate Site (NWS headquarters)**

**Radar**



**Warnings and Follow-up Statements**





# Watch vs. Warning



A WATCH is issued when *conditions* are *favorable* for the *development* of severe thunderstorms and/or tornadoes.

A WARNING is issued when:

- Severe weather is detected by radar,
- or*
- It is observed by spotters/public safety officials.



# Spotter Safety



# Weather Hazard Safety Tips



- **Lightning**
- **Flooding**
- **Thunderstorm Winds**
- **Hail**
- **Tornadoes**





# Lightning Safety



- **Lightning poses the greatest threat to spotters**
- **If you are close enough to hear the thunder, you are close enough to be struck by lightning !!**
- **If outdoors and no shelter is available, get into a vehicle**



# Lightning Safety



- **Stay away from trees and power poles**
- **Unplug electronics**
- **Cordless phones, cell phones, and handheld radios are okay to use – as long as you are in a safe shelter**

**Photo by Chris Novy**



# Lightning Safety



Photo by Chris Novy

## A Two Step Process...

1. If you hear thunder, go indoors or get into a vehicle immediately !
2. Stay indoors for 30 minutes after hearing the last clap of thunder.



# Flash Flooding

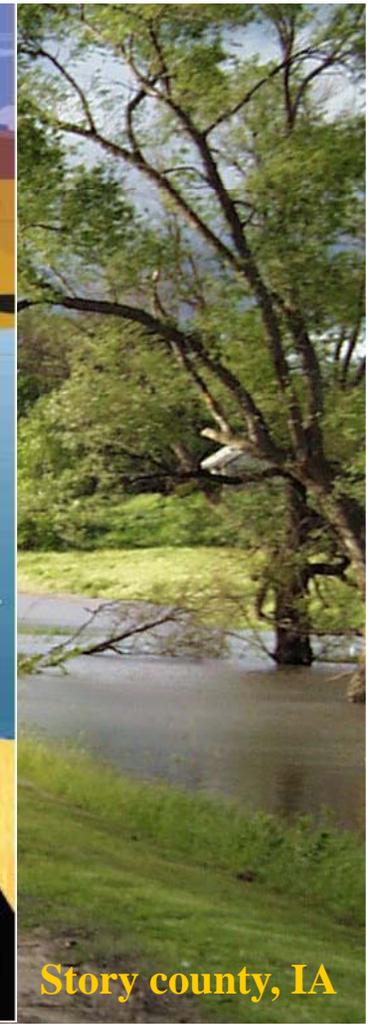


The National Weather Service says

**Turn Around Don't Drown**

Be safe when it comes to flooding.  
For important, life-saving safety rules, go to  
[www.srh.weather.gov](http://www.srh.weather.gov)

**FLASH** FEDERAL ALLIANCE FOR SAFE HOMES

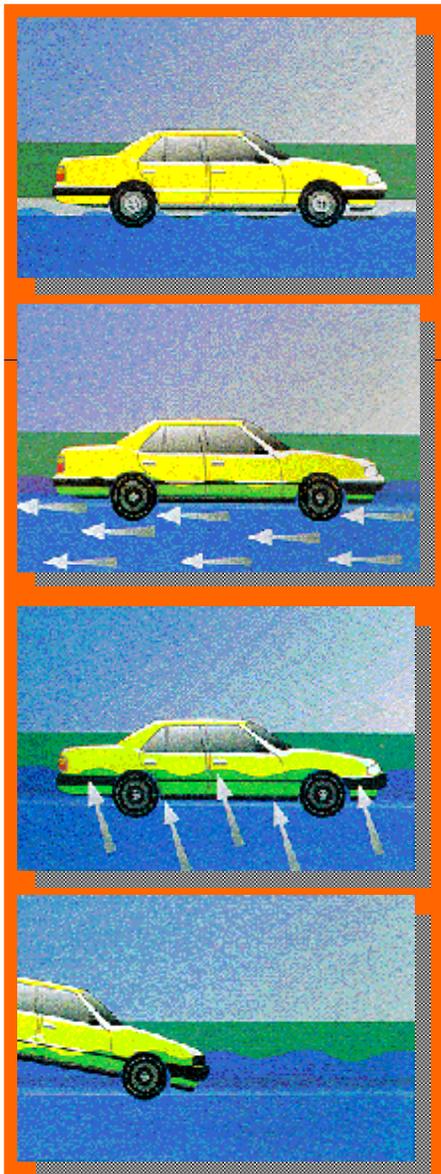


Story county, IA

**Never cross a water covered road, OR drive around a barricade!**

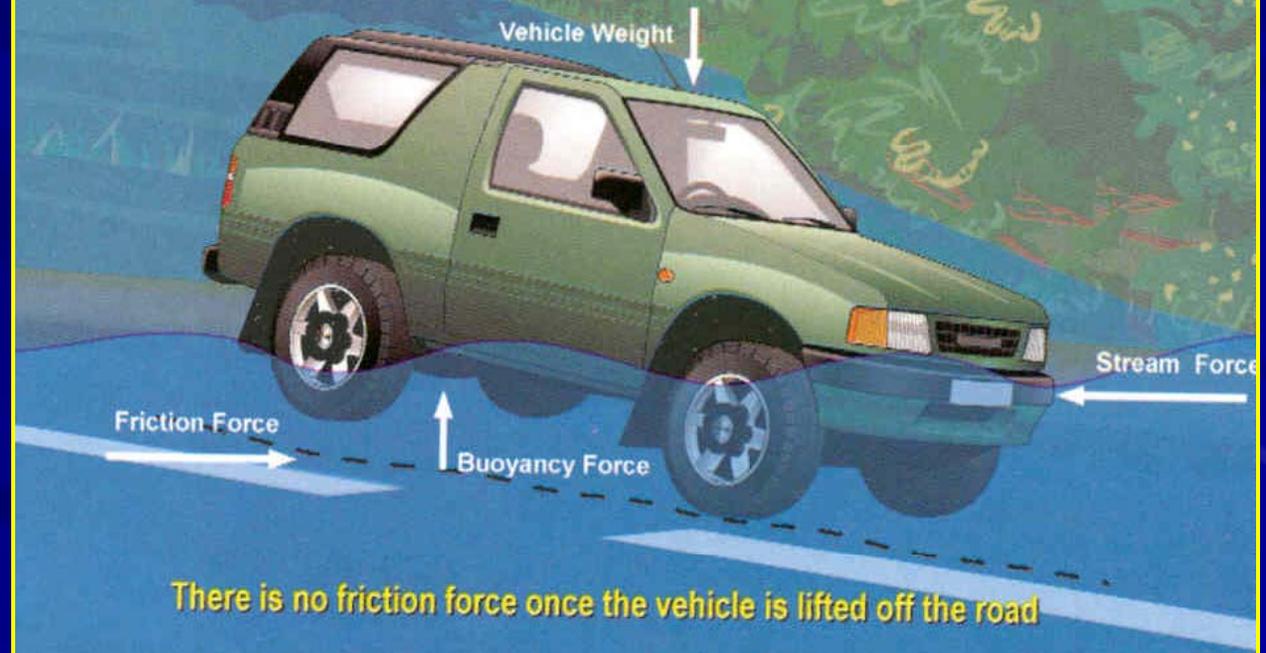


# Forces on Vehicles From High Water



## Forces on Vehicles From High Water

The car will be carried when:  
Buoyancy Force **Greater Than** Vehicle Weight



There is no friction force once the vehicle is lifted off the road

Nearly half of all flood fatalities are vehicle related



# Flooding Can Wash Roads Away



Heavy rainfall and flooding washed out a road in  
Mason County, MI on June 9, 2004.



# Thunderstorm Wind Safety



Winds can be as strong or stronger than many tornadoes. Flying debris causes the majority of injuries, so stay away from windows!

- If caught outdoors, move to a safe shelter quickly!
- If in your car, slow down and find a safe place to pull off (if possible, get out and go inside a building)





# Hail



Softball Anyone?



# Damage from wind driven hail





# Hail Safety



Large hail is seldom a threat to life but there have been reports of injuries

- If caught outdoors, move indoors away from windows
- If in your car, slow down and look for a place to pull off...but not under a bridge or underpass!
- Stay indoors, or in your vehicle !!



# Tornadoes



Photo by B. L. Heidenreich  
Marshall County – 4/20/04

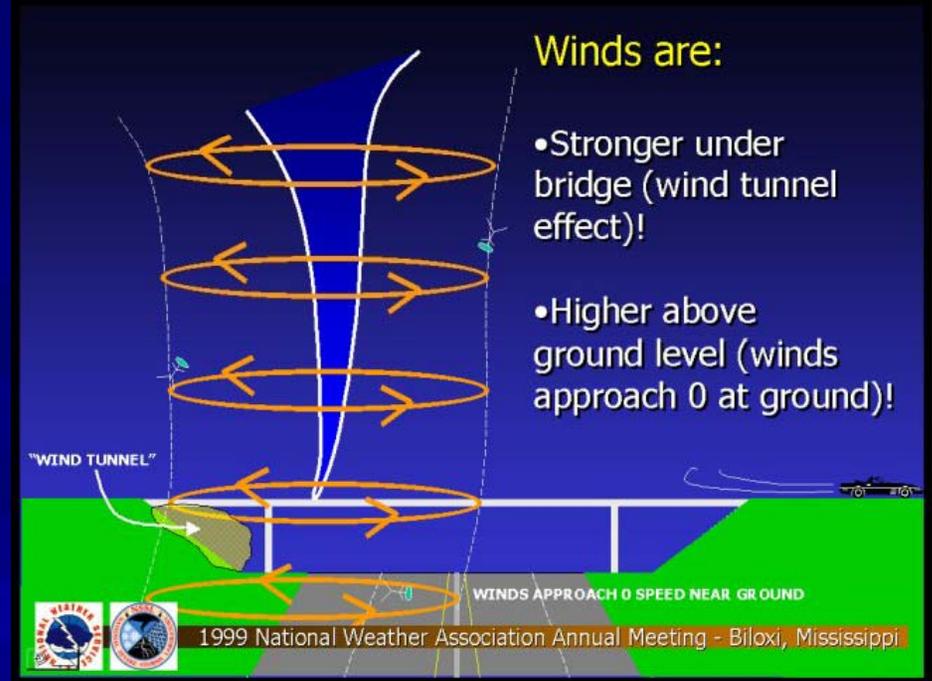


# Tornado Safety



**Tornadoes often occur very rapidly. Have a pre-designated shelter in mind before a storm strikes.**

- **Go to the lowest level of a building or your home and stay away from windows**
- **Put as many walls between you and the storm as possible**
- **Get out of automobiles and mobile homes and move to safe shelter**



**Underpasses should NOT be used as a place of shelter during a tornado !!**



# Safety for Mobile Spotters



- ◆ Go in pairs
- ◆ Park well off the road and not under electrical lines
- ◆ Let someone know your location
- ◆ Avoid dead ends
- ◆ Do not speed, especially on wet or hail covered roads





# Spotter Pitfalls



- Low Hanging Scud Clouds
- Blowing Dust Plumes
- Turbulent Motions on Shelf Clouds
- Narrow Rain Shafts

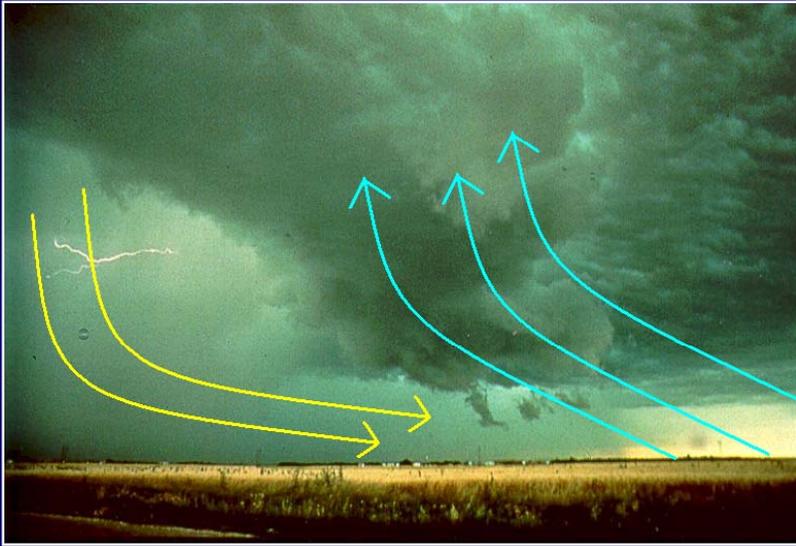
**All are commonly misinterpreted as tornadoes or storm-scale rotation...**

***What is a Spotter to do??***





# Shelf Cloud Pitfalls



© 1999 Roger Edwards



- Scud cloud fragments appear to “ride up” the shelf...
- Turbulent cloud motions often observed when shelf passes just overhead.
- Such motions are often mistakenly reported as “Rotation.”

*The Key here is to look for persistent rotation...*



# Shelf vs. Wall Clouds



*HP Supercell Wall Cloud*



Roger Edwards Photo

*Shelf Cloud*



(c)2004 Bill Doms

Bill Doms Photo

## Wall Clouds:

- *Maintain position with respect to rain area.*
- *Associated with Inflow.*
- *Often exhibit persistent rotation.*

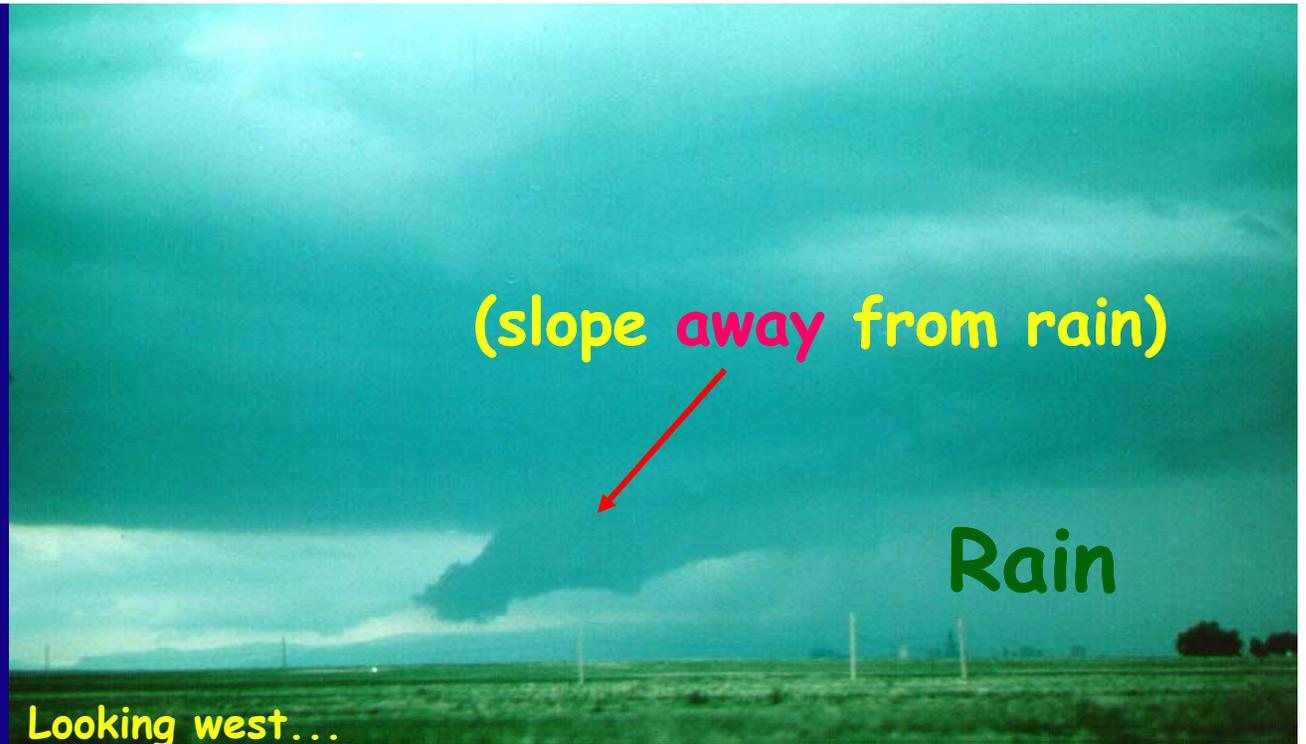
## Shelf Clouds:

- *Slope / move away from rain area...*
- *Associated with Outflow.*
- *Do not exhibit persistent rotation.*

Shelf Cloud

Vs.

Wall Cloud





# Safety Timeout



**A teal or blue-green tinge to the precipitation shield behind a shelf cloud can often be an indicator of hail.**

**Damaging Winds often occur just after a shelf cloud passes overhead.**

***Seek shelter when appropriate!***



# Thunderstorm Outflow



***Dust Lofted by Outflow Winds  
Possible Damaging Winds... but not a tornado!***



# Narrow Rain Shafts



- Narrow rain shafts... especially when backlit by the setting sun can often be mistaken for funnel clouds or tornadoes.
- Often observed under newly developing, or single cell storms.

*Watch for rotation and movement... narrow rain shafts often dissipate over the course of a few minutes.*

# Nighttime Spotting

**Mobile night spotting is NOT encouraged!! Safety must come first. Spot near a safe shelter. While looking at the nighttime sky or on the horizon:**

- **Watch for flashes produced by a tornado or damaging winds breaking power lines**
- **Utilize lightning to note storm structure and possible lower cloud base**
- **Know your directional relationship to the storm**



# Spotter Limitations



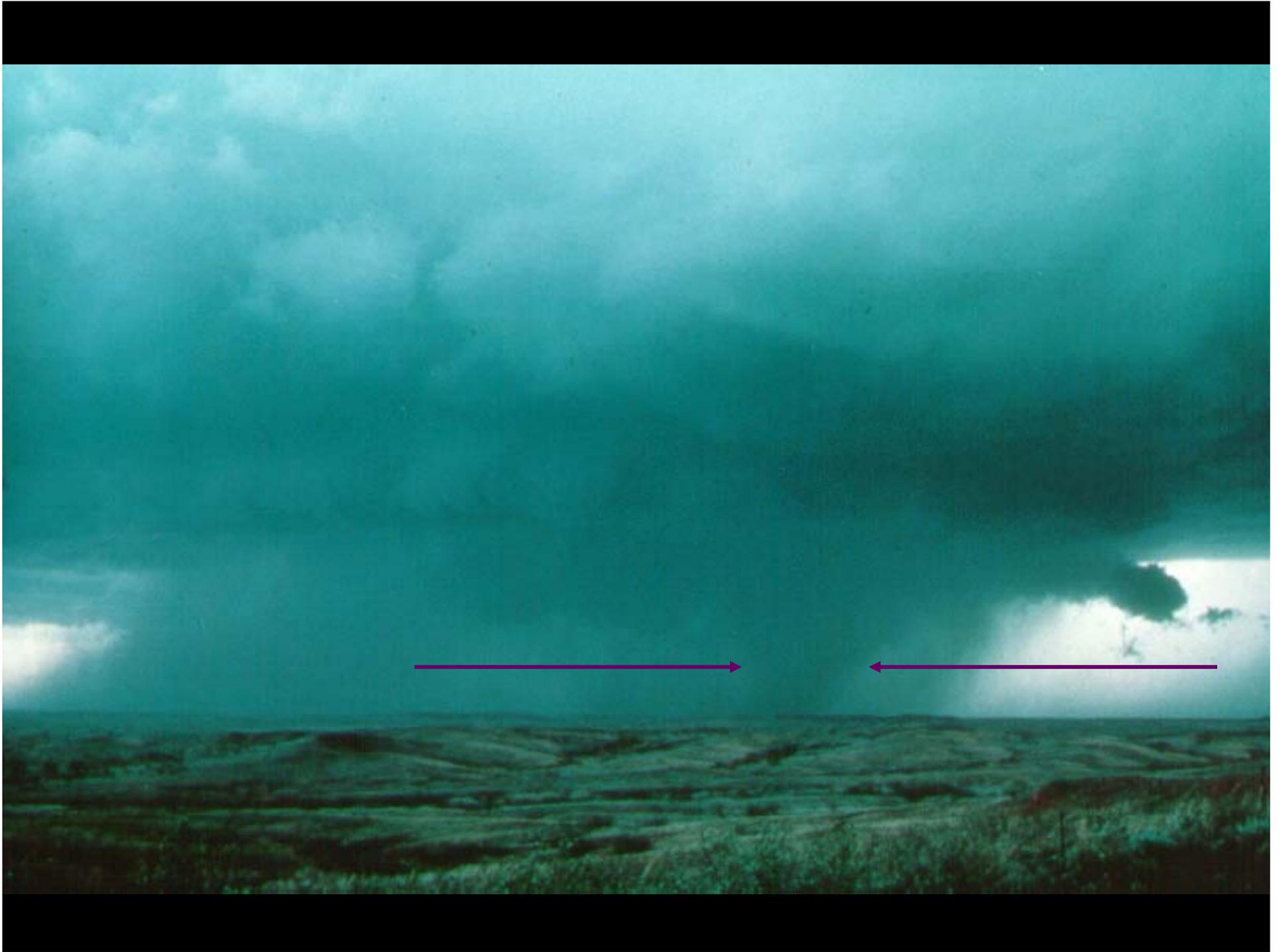
- Night spotting is **VERY** difficult
- Spotting “squall lines” is not encouraged
  - Wait until line passes – then report damage



# Spotter Limitations



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- Some “harmless” clouds can be incorrectly reported





# Spotter Limitations



- **Night spotting is VERY difficult**
- **Spotting “squall lines” is not encouraged**
  - Wait until line passes – then report damage
- **Tornadoes can be obscured by rain**
- **Some “harmless” clouds can be incorrectly reported**
- **Terrain, urban areas can block view**

Photo courtesy of Gregg Sparks  
Near Wheeler, IL 4/16/06





# Reporting Severe Weather



- Follow the reporting rules of your area !!
  - ✓ If normal reporting channels are not available, contact the NWS directly
    - You will be asked for your county spotter number or your name/location
    - Any reports we receive will be relayed to emergency managers.
- Use the “**TEL** Method”
  - ✓ **T**ime – **E**vent – **L**ocation

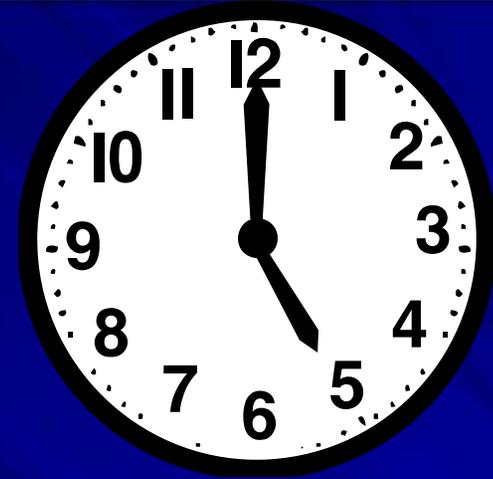


# Time and Location



## Time

Report the time the event occurred.



## Location

Report your position, AND the direction & distance of the feature.

Use well known roads or landmarks.



# Just the facts...



Do not assume that the NWS knows for certain that severe weather has occurred.

Never assume your report is unimportant.

**Do not exaggerate your report!**





# What to report



Photo by Steve Smedley



Photo by Kelly Lockhart



**If it spins...call it in!**



**If it spins...call it in!**

**Tornadoes, Funnel Clouds, Wall Clouds**



# What to report



**High Wind or Wind Damage**



# What to report



30-40 mph – whole trees in motion

40-55 mph – small branches break off

55-70 mph – roofing and doors of outbuildings damaged, large branches break off

70-100 mph – shingles and siding blown off, trees uprooted, power poles broken

100+ mph – roofs torn off, trailer houses completely destroyed



Copyright Mike Umscheid

## Wind Estimating



# What to report



Photo by Grace & Bill Johns

Pea	0.25 – 0.38''
Penny	0.75''
Nickel	0.88''
Quarter	1.00''
Ping Pong Ball	1.50''
Golfball	1.75''
Tennis Ball	2.50''
Large Apple	3.00''
Softball	4.00''



**NO marbles  
please !!**

**Hail size**



# What to report



Photo by George Garrett

## Flooding and Impacted Roads



# Remember...



- **Spotter reports** play a **critical** role in the warning process
- We need **real time** reports – the radar can not detect everything!!
- Your community, and neighboring locations are **depending on your information !!**