

# Weather Spotter Training

## National Weather Service Salt Lake City



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

# Spotter Registration Form



**NOAA/National Weather Service  
Weather Forecast Office Salt Lake City, UT**

# Today's Training Topics

- **Definitions of important weather terminology and extreme weather criteria**
- **How to identify significant weather features and events**
- **What information the spotter is to report and how to report it**
- **Ways to receive weather information before and during extreme weather events**
- **Spotter Safety**



**Near Grantsville, UT - September 4, 2007**

# Safety First!

## The NWS will not ask you to storm chase, and this is not a storm chasing course.

- The environment in and around severe storms is a dangerous place. Even though tornadoes are an obvious danger, other life-threatening thunderstorm hazards, such as lightning and flash floods can be just as deadly.
- Spotter reports are vital to your community and the National Weather Service **BUT NOT** at the expense of your life or the lives of others. **Your safety, and those around you, is to be your number one priority! We mean this!**
- Before venturing out, be aware of the hazards of thunderstorms and the recommended practices to minimize your risk. Never put yourself in harms way. Do not drive over obstructions or flooded roads. If driving, don't look at your phone's weather app or other information. Pull safely to the side of the road then investigate the situation and make your report, if necessary. And remember...

**ALWAYS OBEY federal, state, and local laws and directives from public safety officials.**



# SKYWARN (Severe Weather) Spotters

## Why are you critical to NWS operations?

- **Help overcome Doppler Radar limitations**
  - Extreme terrain leads to less than optimal radar coverage
  - Radar doesn't 'see' below cloud base
  - Radar is good at indicating circulations (mesocyclones), but most circulations are not associated with a tornado
- **Provide ground truth, which can help motivate people downstream to take action to protect lives and property**
  - Ground truth reports included in warnings heighten public awareness, add credibility to warnings, and allow forecasters to have confidence in warning decisions
- **Ground truth can be correlated with radar signatures *prior to, during, and after* severe weather to aid in warning decisions**
  - We archive severe weather events for research and verification and use a Weather Event Simulator for training with past weather events

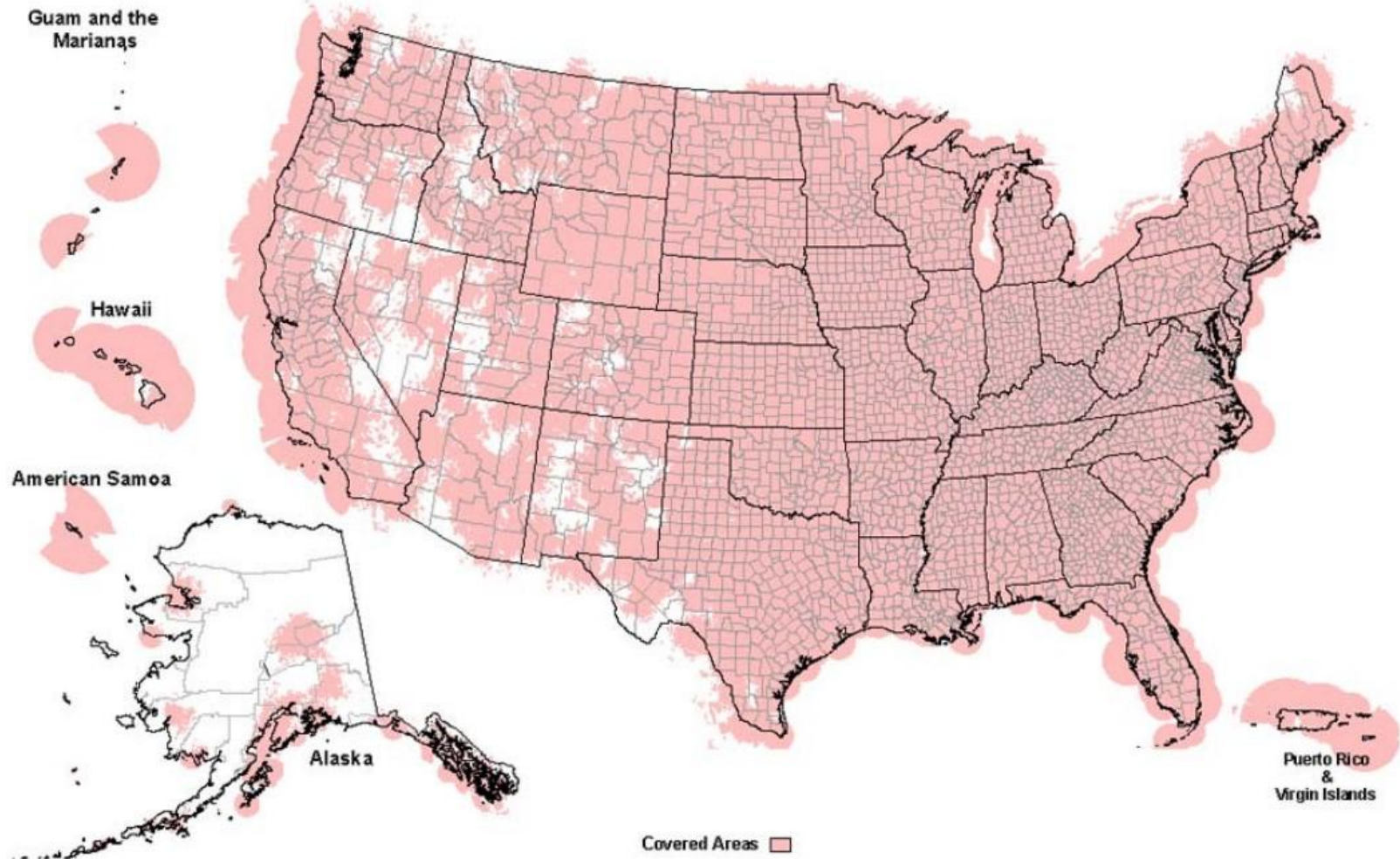
# Radar Coverage Limitations

## WSR-88D Bottom-of-Beam Coverage Below 10,000 ft Above Ground Level (AGL)

Analysis produced by the NOAA/NWS/Radar Operations Center



# NWR Radio Coverage





# Utah NWR Radio Coverage

## NWR Utah Station Listing

[FAQ](#)[View Outages](#)[Report Outages](#)[Find My Station](#)

**DEGRADED**  
**OUT OF SERVICE**

- Indicates transmitter is experiencing a temporary degradation of service.
- Indicates transmitter is temporarily out of service.

[State Selection for Station Listing](#)

This information was current on: Mon, 24 Mar 2025 20:01:54 GMT

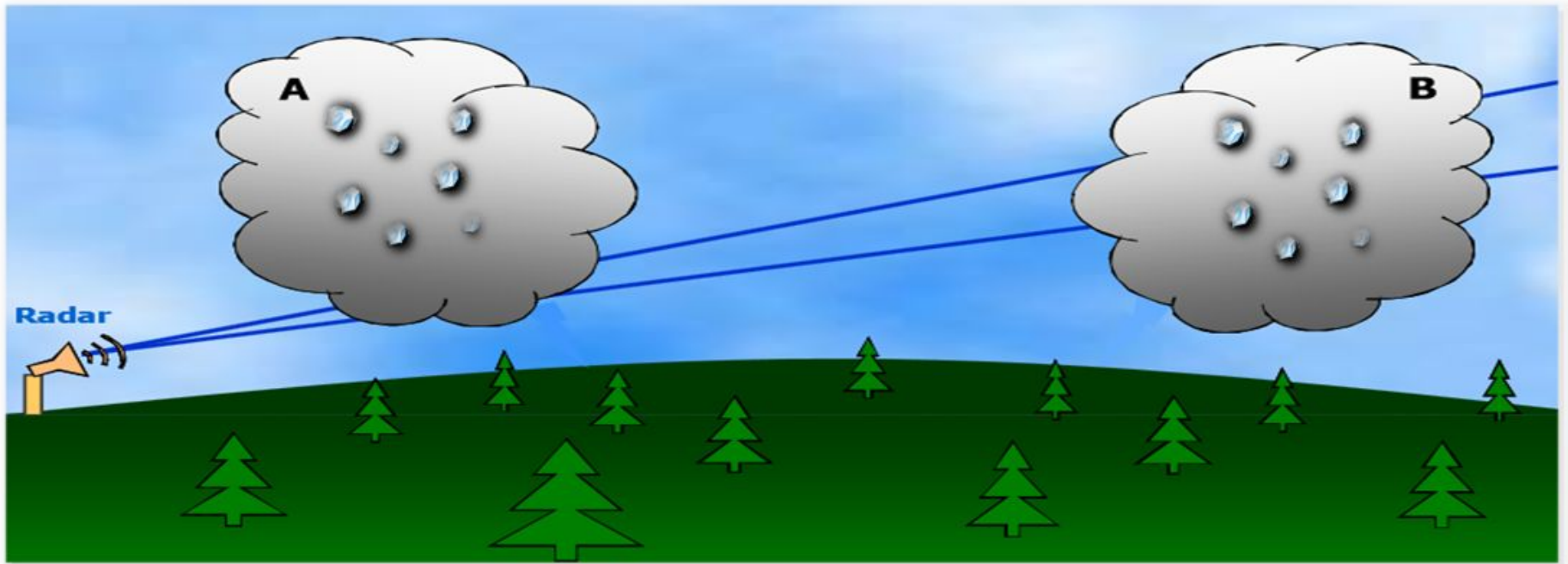
CALL SIGN	SITE NAME	FREQUENCY	STATUS	WFO
<a href="#">KEC78</a>	Salt Lake City	162.550	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">KJY60</a>	Coalville/ Park City	162.475	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">KJY61</a>	Escalante	162.425	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">KJY79</a>	Tabiona	162.550	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">KXI30</a>	Wendover	162.475	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WNG556</a>	Moab	162.475	NORMAL	<a href="#">Grand Junction CO</a>
<a href="#">WNG594</a>	Manti	162.425	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WNG669</a>	Castle Dale	162.500	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WNG687</a>	Monticello	162.450	NORMAL	<a href="#">Grand Junction CO</a>
<a href="#">WWF46</a>	Tooele (South Mountain)	162.450	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WWF47</a>	Tooele (Vernon Hills)	162.525	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WWF51</a>	St. George	162.475	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WXL63</a>	Bear Lake	162.500	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WXM22</a>	Logan	162.400	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WXM23</a>	Vernal	162.400	NORMAL	<a href="#">Grand Junction CO</a>
<a href="#">WXM24</a>	Milford/Cedar City	162.400	NORMAL	<a href="#">Salt Lake City UT</a>
<a href="#">WXM89</a>	Lake Powell	162.550	NORMAL	<a href="#">Salt Lake City UT</a>

<https://www.weather.gov/slc/nwr>

<https://www.weather.gov/nwr/>

# Radar Coverage Limitations

As distance from the radar increases, beam height increases. Therefore we cannot sample lower levels of distant storms



# About Weather Forecast Office Salt Lake City, UT

**24/7 operations**

**25 Utah counties, plus  
Uinta County,  
Wyoming**

**2nd largest County  
Warning Area in 48  
contiguous states**



## Mission Statement

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



# Severe Thunderstorms/Tornadoes



Photo courtesy KSL

## **West Jordan Microburst**

**August 5, 2013**

**37 large transmission poles and 4 smaller distribution poles**

**3,000 customers lost power**

**State Route 111 closed**

**\$300,000 dollars damage**

# Severe Thunderstorms/Tornadoes



## **Duchesne County Tornado**

**June 19, 2022**

**Enhanced Fujita (EF) Scale – EF2**

**Track length - 2.08 miles**

**Max width - .50 miles**

# Severe Thunderstorms/Tornadoes



## **Riverdale/Washington Terrace/South Ogden Tornado**

**September 22, 2016**

**Enhanced Fujita (EF) Scale - EF1**

**Track length – nearly 3 miles**

**Max width - approximately 50 yards**

**5 injuries**

**Total damage - \$2,000,000**



# Severe Thunderstorms/Tornadoes



## **Panguitch Tornado**

**September 22, 2016**

**Enhanced Fujita (EF) Scale – EF1**

**Track length - three-quarters of a mile**

**Max width - 25 yards**

**Total damage - \$300,000**

# Floods/Flash Floods



**2024 flood fatalities**  
**182 in the United States**  
**2 in Utah**

**Utah flood fatalities since 1950: 63**

# Floods/Flash Floods



**Capitol Reef National Park**  
**June 23, 2022**  
**60 people stranded**  
**Several vehicles washed away**  
**\$110,000 in vehicle damage**



# Floods/Flash Floods



**Goblin Valley State Park - Little Wild Horse**  
**May 11, 2020**  
**2 fatalities**

# Floods/Flash Floods



Photo courtesy Scott G Winterton, Deseret News

## **Hildale Flash Flood**

**September 14, 2015**

**13 fatalities**

**3 injuries**

**Total damage - \$750,000**



# Floods/Flash Floods



Photo courtesy Kristen McPeck, KUTV

## Draper Flash Flood

August 3, 2023

**428 residences damaged - \$11,255,765**

**11 businesses damaged - \$844,235**

**City infrastructure damages - \$4,000,000**

# Lightning



**July 5, 2011 - Utah County**

**2024 lightning fatalities**

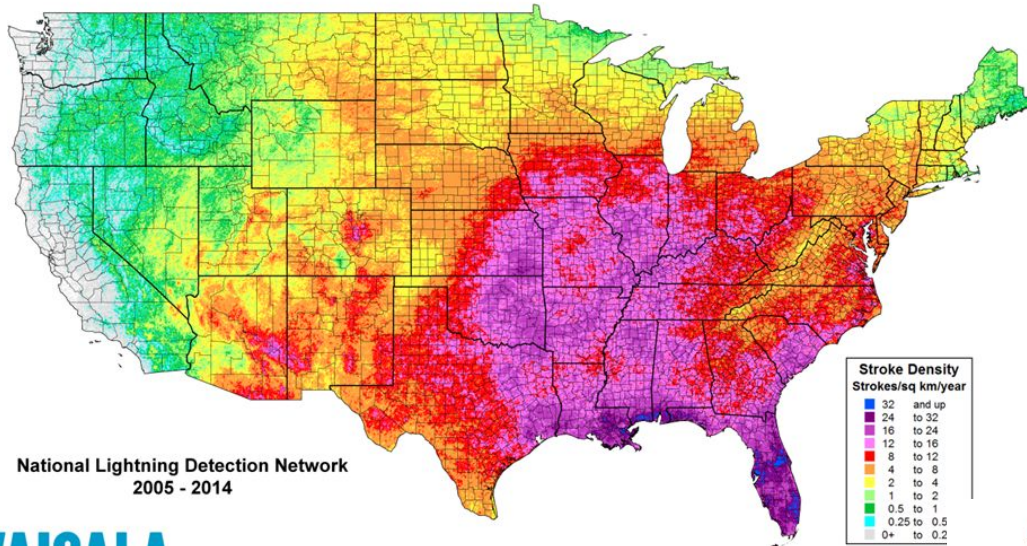
**12 fatalities in the United States**

**1 fatality in Utah**

**Utah lightning fatalities since 1950:**

**68 fatalities**

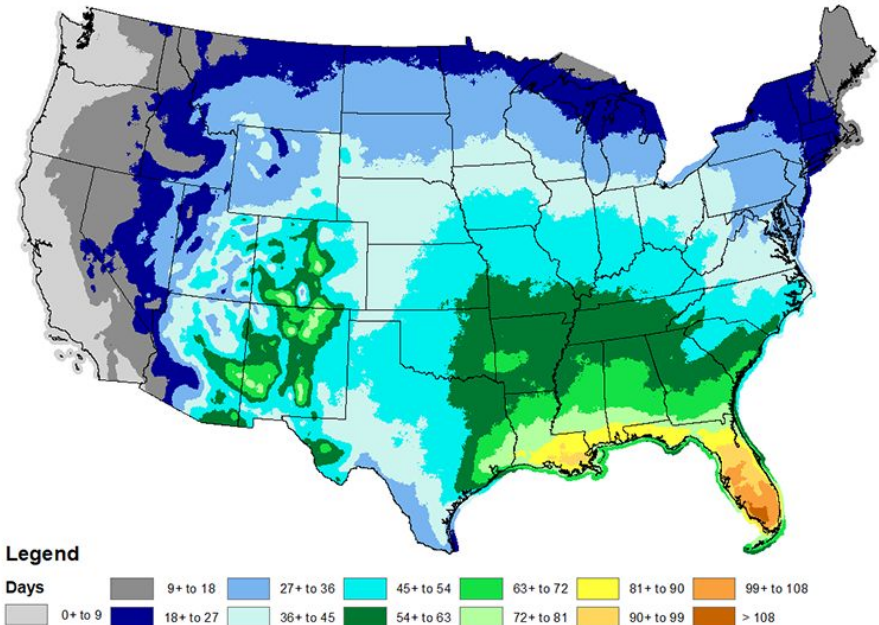
# Lightning Climatology



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## Strike Frequency

## Number of Storms per Year Annual Mean Thunderstorm Days (1993-2018)





# Windstorms

## Wasatch Front Downslope Windstorm

September 8, 2020



Photo courtesy Jeffrey D. Allred, Deseret News

**99 mph wind gust in Farmington**

**1 Fatality and 16 injuries**

**Estimated 81 million dollars in damages**

**50 semi trailers overturned**

**Nearly 200,000 power outages**

**Interstate closures**

**School closures**



# Windstorms

## Wasatch Front Downslope Windstorm

December 1, 2011

### Farmington

Photo courtesy Deseret News



**102 mph wind gust  
recorded in Centerville**

**\$4 million damage to  
public infrastructure**

**\$78 million damage to  
insured property**

### Centerville

Photo courtesy Deseret News



**50,000 homes and  
businesses without  
power**

**Interstate closures**

**School closures**

# Winter Storms

Photo courtesy Raval Call Deseret News



**Salt Lake City International Airport**

## **Wasatch Front Ice Storm**

**January 24, 2013**

**.09 inches of freezing rain**

**557 reported accidents**

**300 injuries**

**Salt Lake City International Airport  
closed operations**



**I-80 - Salt Lake City**

Photo courtesy Kristin Murphy Deseret News

# Reporting...What We Want to Hear About

**Don't assume we already know it's happening!**

- **Tornadoes, Funnel Clouds, and Wall Clouds**
- **Flooding/flash flooding and/or rapidly rising water**
- **Strong and/or damaging winds**
- **Hail**
- **Wildland fires**
- **Snowfall, snow depth, and freezing rain**
- **Marine-related weather events**

**Continue to monitor and report!**

# When You Report

## 4 Ws – who, what, when, and where

- **Identify yourself as a trained spotter (who)**
- **Describe severe weather feature (what)**
- **Provide exact time feature was spotted (when)**
  - This may or may not be the current time of your call
- **Be as specific as possible with location (where)**
  - Reference distance and direction from nearest city
  - Use interstate, state, or county road information
  - Reference marina, or other navigational information

**Continue to monitor and report!**

# Reporting Options

**Severe Weather Spotter Line:  
800-882-1432 x1**

**Storm Reports  
mPING app**

**E-mail  
[utah.spotter@noaa.gov](mailto:utah.spotter@noaa.gov)**

**Facebook/X  
[@NWSSaltLakeCity](#)  
[#utwx](#)**



# CoCoRaHS Precipitation Reporting

- Report rain, hail, and snow
- Visit CoCoRaHS home page at <http://www.cocorahs.org>
  - Registration
  - View observations

## Contact

Mike Seaman

Senior Forecaster

[mike.seaman@noaa.gov](mailto:mike.seaman@noaa.gov)





# Meteorological Phenomena Identification Near the Ground (mPING)

- NOAA/National Severe Storms Laboratory, University of Oklahoma, and the Cooperative Institute for Mesoscale Meteorological Studies
- Submit weather observations and view reports
- Report through mPING app, available on iTunes and Google Play
- mPING page at <http://mping.nssl.noaa.gov> or mPING app



# **Citizen Weather Observer Program (CWOP) Automated Weather Stations**

- **America's Weather Industry automated weather stations**
  - **Precipitation, temperature, relative humidity, wind speed and direction, among other sensors**
  - **Collaborate with WFO SLC on site selection**
  - **Information shareable via MesoWest**
  - **More information can be accessed online at <https://www.weather.gov/cle/CWOP>**
  - **[https://madis.ncep.noaa.gov/cwop\\_signup.shtml](https://madis.ncep.noaa.gov/cwop_signup.shtml)**

# Anticipating Severe Weather

## Situational Awareness # 1 - Be aware of your environment!





# Anticipating Severe Weather

- **Utilize WFO Salt Lake City web services**  
**<http://weather.gov/saltlakecity>**
  - **Text and graphical services**
    - Dynamically generated forecasts
    - Hazardous Weather Outlook
    - Watches, warnings, and advisories
  - **YouTube briefings**
  - **Weather Story**
  - **Social media**
  - **Radar imagery**
- **NOAA Weather Radio All Hazards**
- **Local media sources**

# Forecasting - Outlooks and Watches

- Outlooks issued from the Storm Prediction Center
- Watches are issued by the Storm Prediction Center after collaboration with local offices

Current time (in UTC/GMT/Zulu): 01:20:11 Site Map Organization About Us Mobile Feedback Local Forecast by ZIP/...

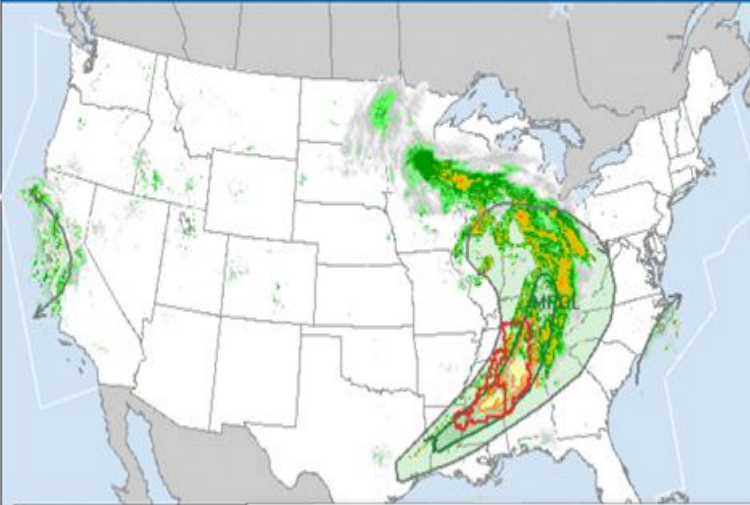
## Storm Prediction Center

NOAA / National Weather Service

HOME NEWS SPC PRODUCTS WEATHER INFO FORECAST TOOLS RESEARCH OUTREACH NWS/NCEP Search SPC...

**A Slight Risk of Severe Thunderstorms is Forecast Today and/or Tonight**  
Severe thunderstorms with an isolated tornado threat, wind damage and hail will continue to be possible across parts of the Southeast and Tennessee Valley this evening into the overnight period.  
» For additional details, see the latest [Day 1 Convective Outlook](#).

**Overview** Conv. Outlook Watches MDs Storm Reports Mesoanalysis Fire Hazards



**All Products** Watches MDs Outlooks Fire

**Mesoscale Discussion 0177**  
– Concerning: FREEZING RAIN  
– Issued: 8 minutes ago


**Day 1 Convective Outlook**  
– Categorical Risk: Slight  
– Issued: 20 minutes ago

**Mesoscale Discussion 0176**  
– Concerning: WINTER MIXED PRECIPITATION  
– Issued: 03/09/2019 at 2359Z

**Day 3-8 Fire Weather Outlook**  
– Categorical Risk: No Areas

**SPC Activity Chart**  
20190309/2328  
National Weather Service Storm Prediction Center Norman, MO

Hazard	Sat (03/09)	Sun (03/10)
Severe	Enhanced	Marginal
Fire	Elevated	No Critical



Department of Commerce | National Weather Service  
weather.gov

# Forecasting - Warnings

WFUS55 KPIH 080007

TORPIH

IDC011-019-023-080030-

/O.NEW.KPIH.TO.W.0001.180408T0007Z-180408T0030Z/



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.

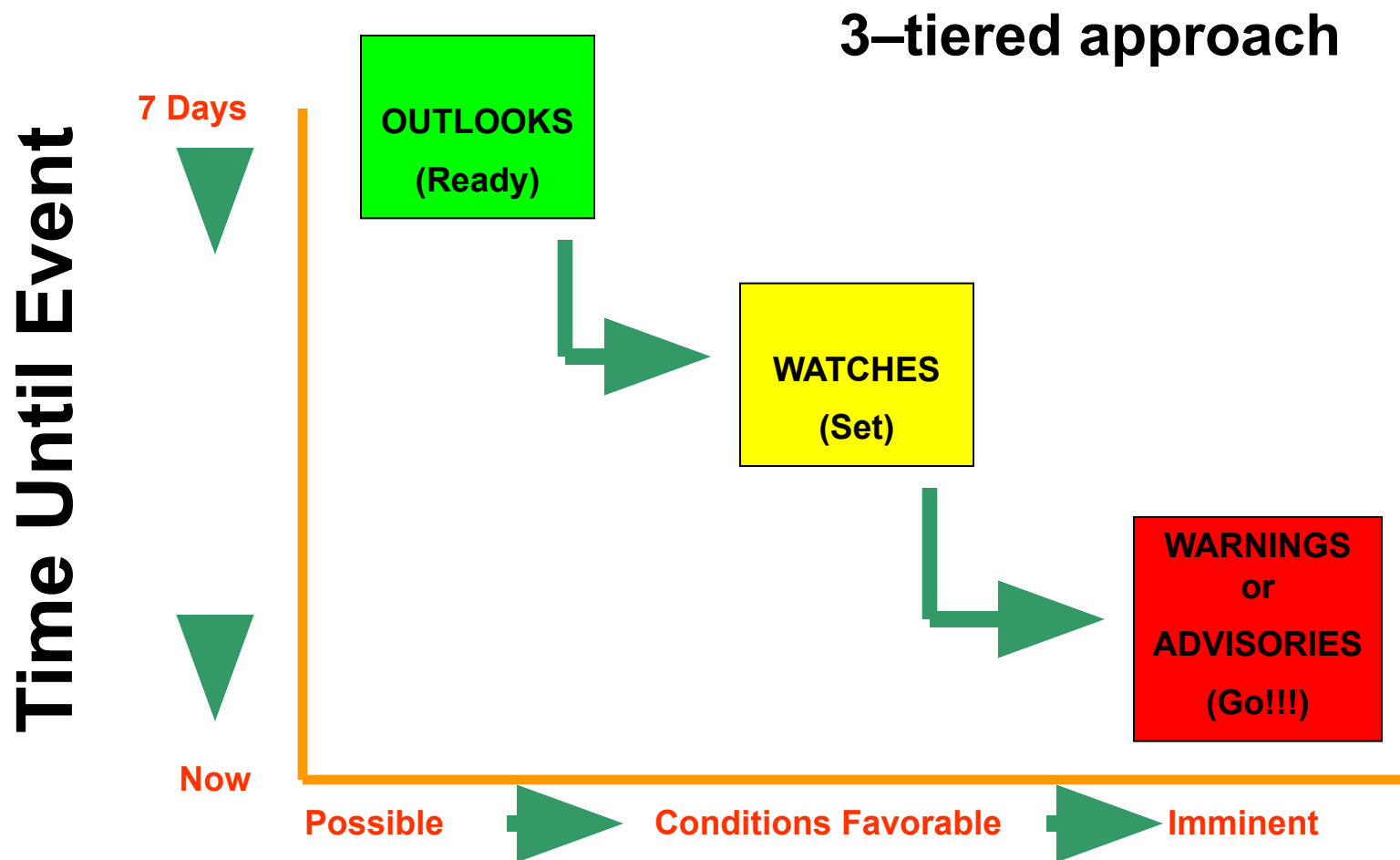
Departm

NV &&

weather.gov



# Ready...Set...Go!!!



# Severe Weather Terms

## What to look and listen for...be Informed

- **Watch** Issued when conditions are favorable for a particular severe weather hazard to develop during the next several hours. Plan, prepare, and be aware.
- **Warning** Issued when a particular severe weather hazard is either imminent or occurring, and poses a significant risk to life and/or property. Immediate action is necessary to protect life and/or property.
- **Advisory** – A low-impact event is imminent or occurring, which may result in inconvenience or nuisance weather conditions - primarily impacting travel. Reasonable precautions will prevent injury or property damage.

# What Makes a Thunderstorm Severe?

- Tornado
- Winds at least 58 mph or reports of wind damage
- Hail at least 1 inch in diameter

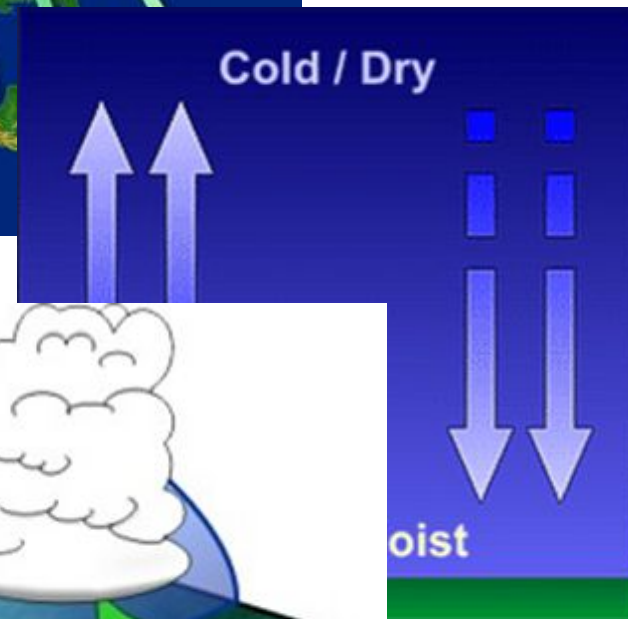
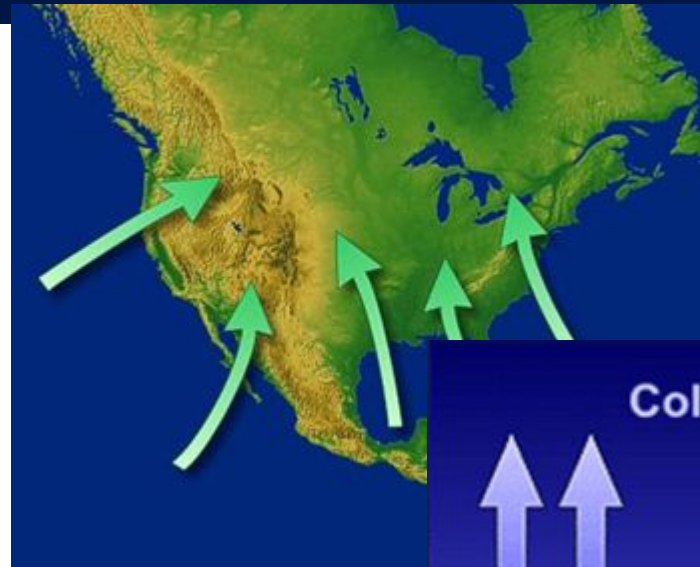


Roosevelt , UT- July 19 2008



# Thunderstorm Ingredients

- **Moisture** - Preferably in the lower to mid levels of the atmosphere.
- **Lift** - Agent which lifts moist unstable air, which starts the thunderstorm (fronts, boundaries).
- **Instability** - Ability for air to accelerate upward or downward when started up or down.



Cold Front

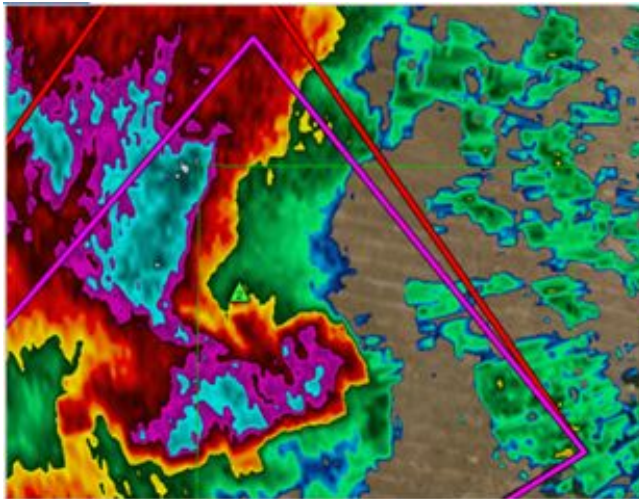
# Types of Thunderstorms



**Single-cell**



**Multi-cell**



**Supercell**



**Squall Line**

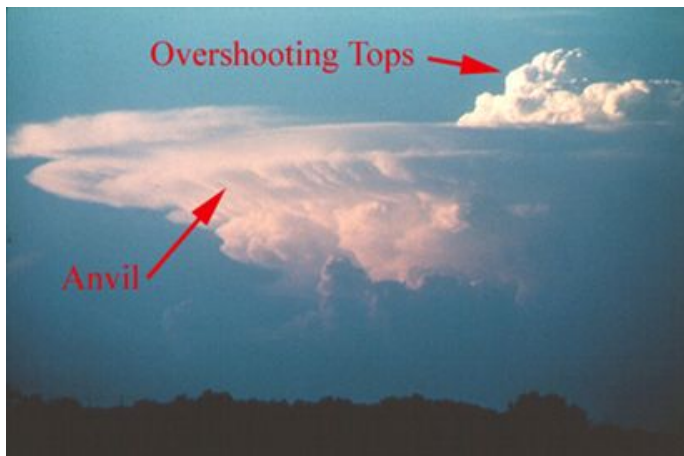
# Types of Thunderstorms



**Single-cell**



**Multi-cell**



**Supercell**

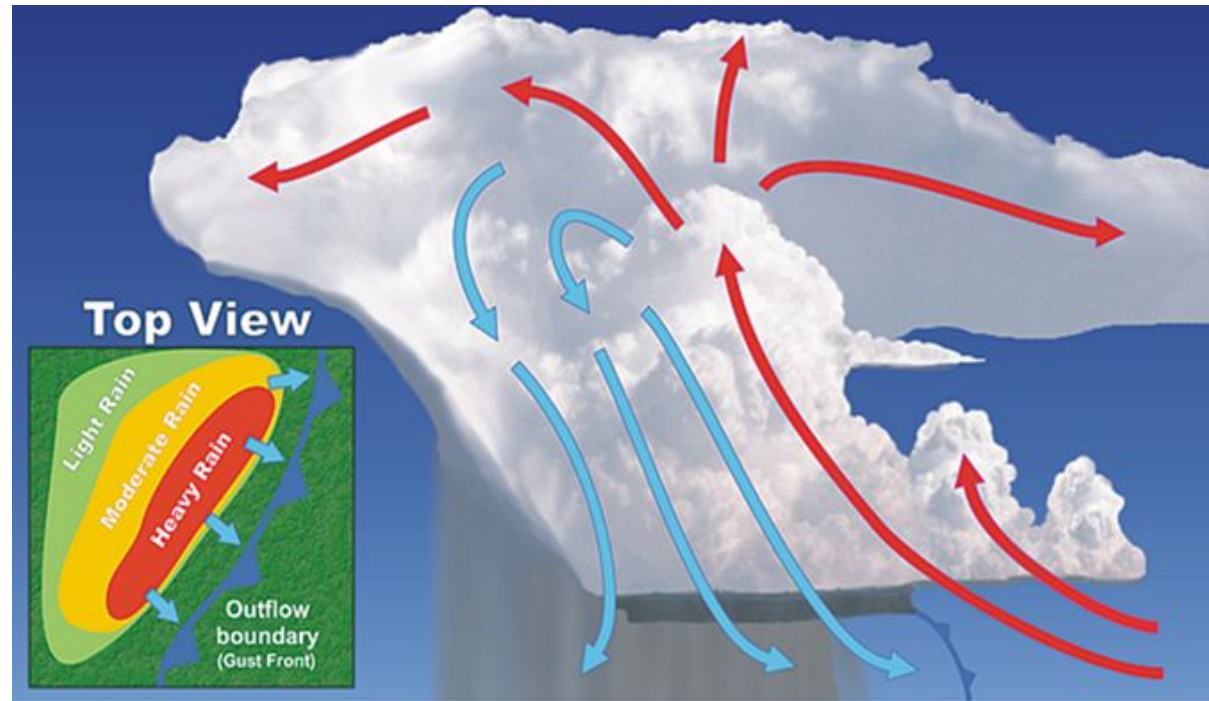


**Squall Line**



# Thunderstorm Structure

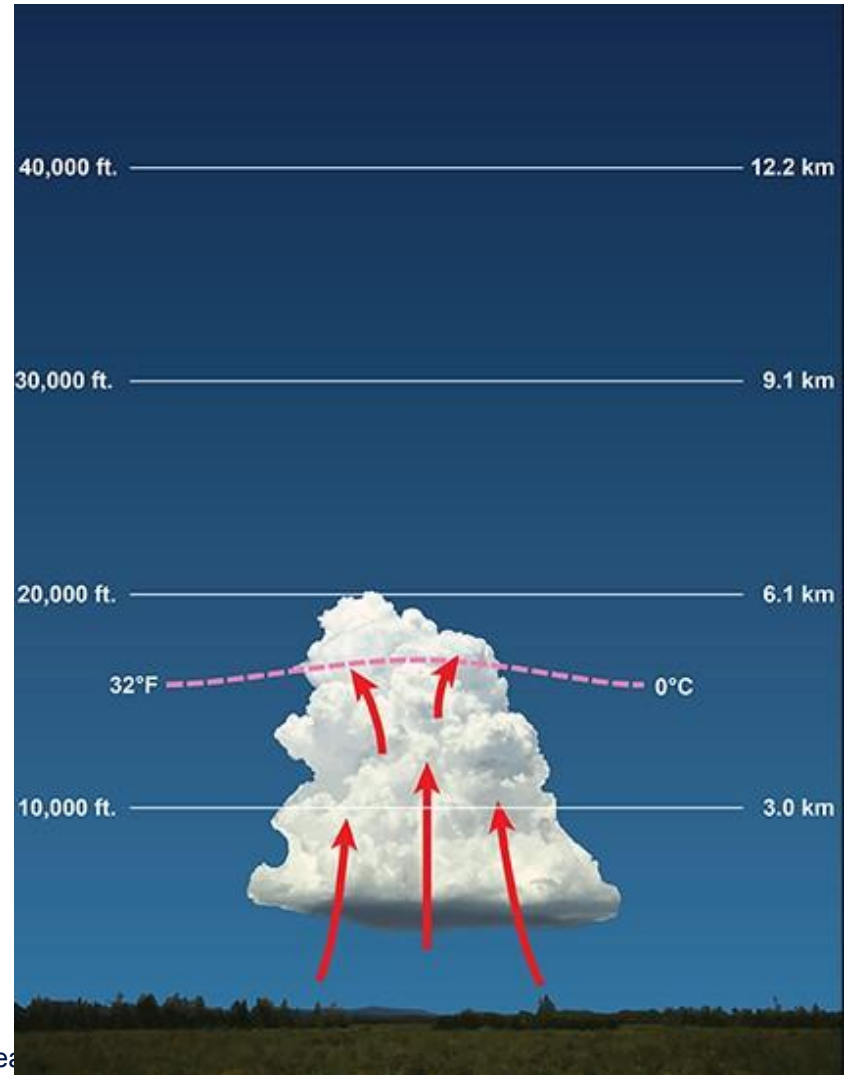
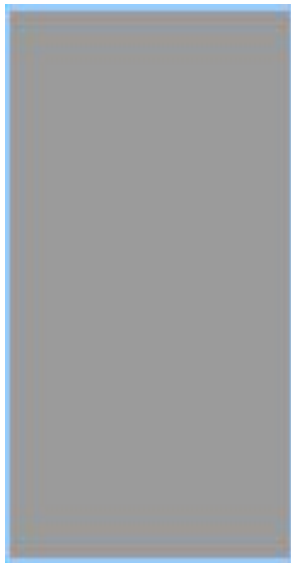
- **Updraft** - A small-scale column of rising air. If the air is sufficiently moist and unstable, then moisture condenses to become a cumulonimbus cloud, signaling the initial development of a thunderstorm
- **Downdraft** - A small-scale column of air that rapidly sinks to the ground within a thunderstorm
- A fully-developed thunderstorm will have a distinct updraft and downdraft



# Thunderstorm Life Cycle

## Towering Cumulus - Developing

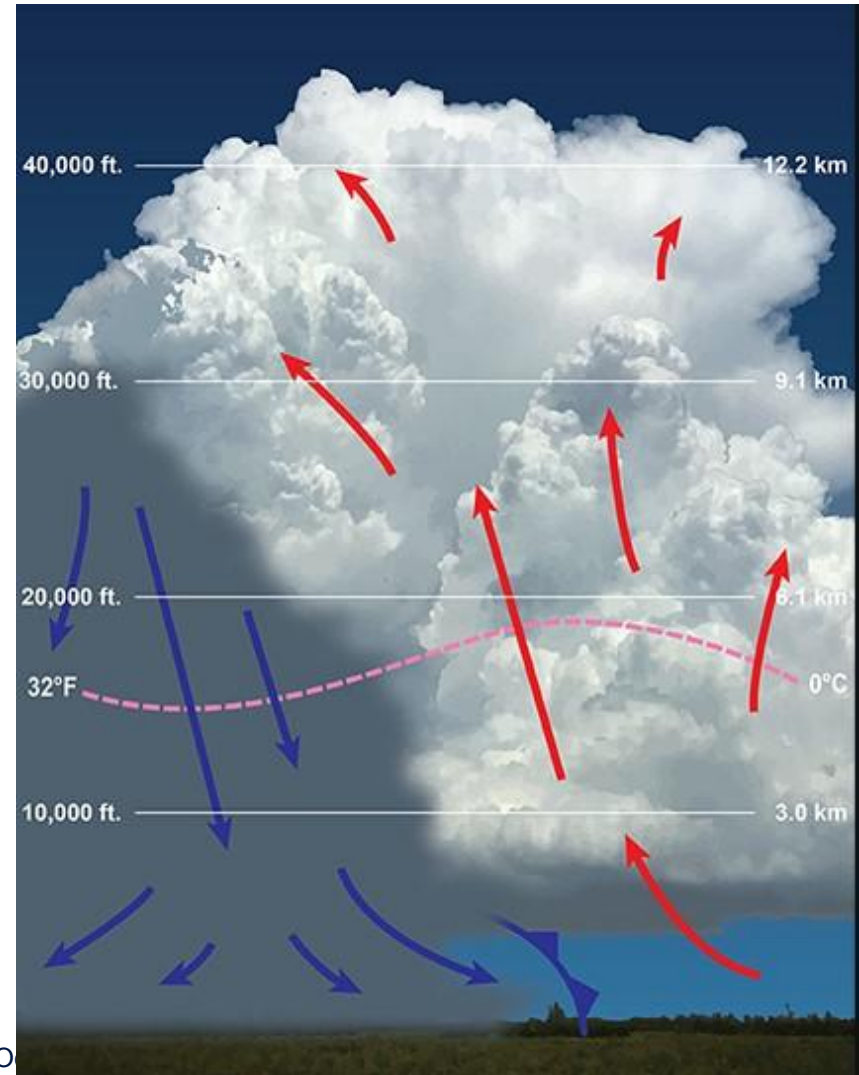
- Towering, billowy bright white clouds
- Dominated by updraft – rising air
- Lasts 10-15 minutes
- Little rain, but lightning possible



# Thunderstorm Life Cycle

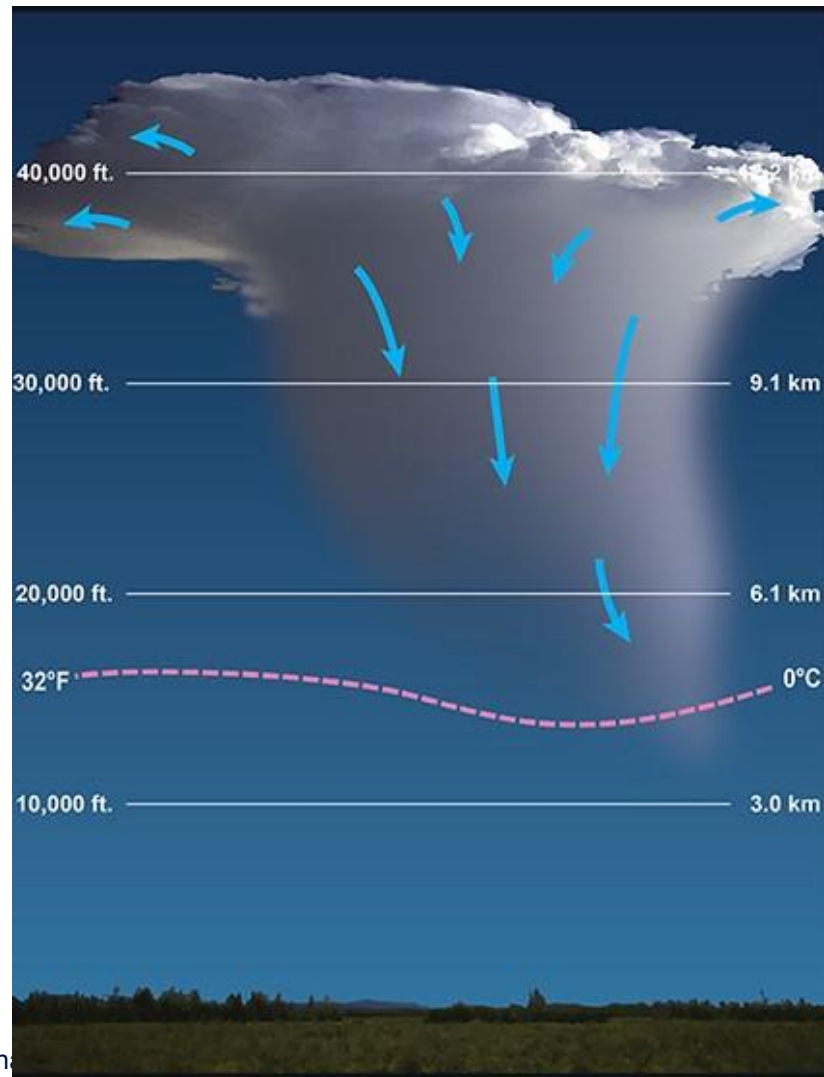
## Mature Stage

- The weather stage
  - Hail, heavy rain, lightning, strong winds, tornadoes
  - Anvil at storm top
  - Rising air/falling rain (updraft/downdraft)
- Typically lasts 10-20 minutes



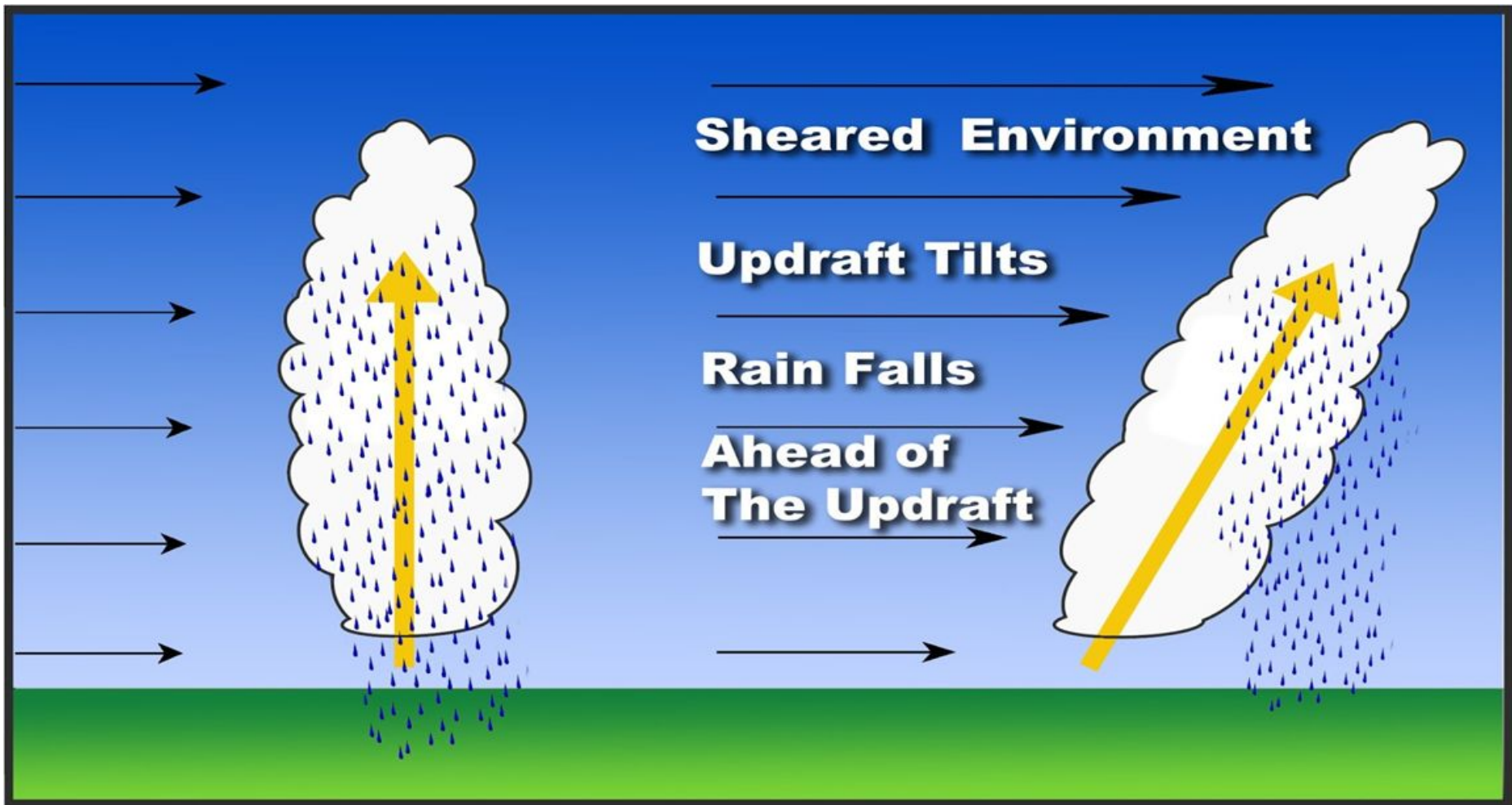
## Dissipating Stage

- Tall, billowy updraft shrinking
- Mostly descending air
- Rainfall intensity decreases
- Strong wind and hail still possible from some storms
- Lightning can still be quite frequent
- Lifespan is 45-50 minutes

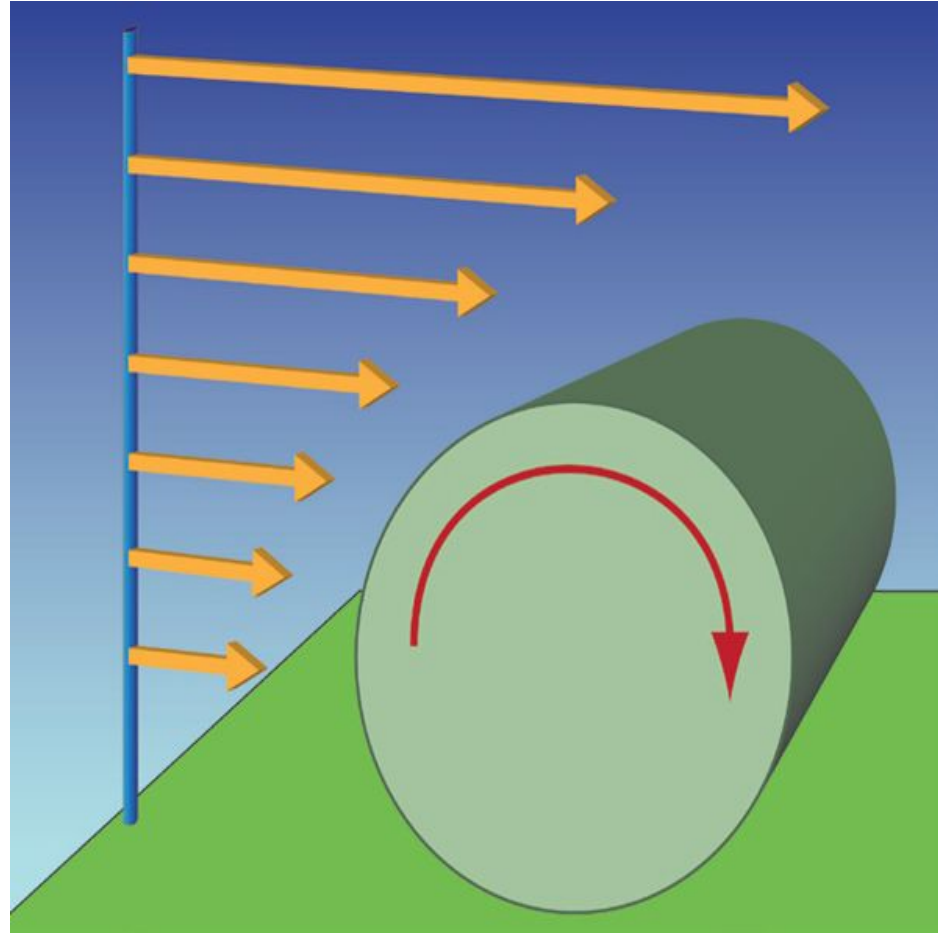




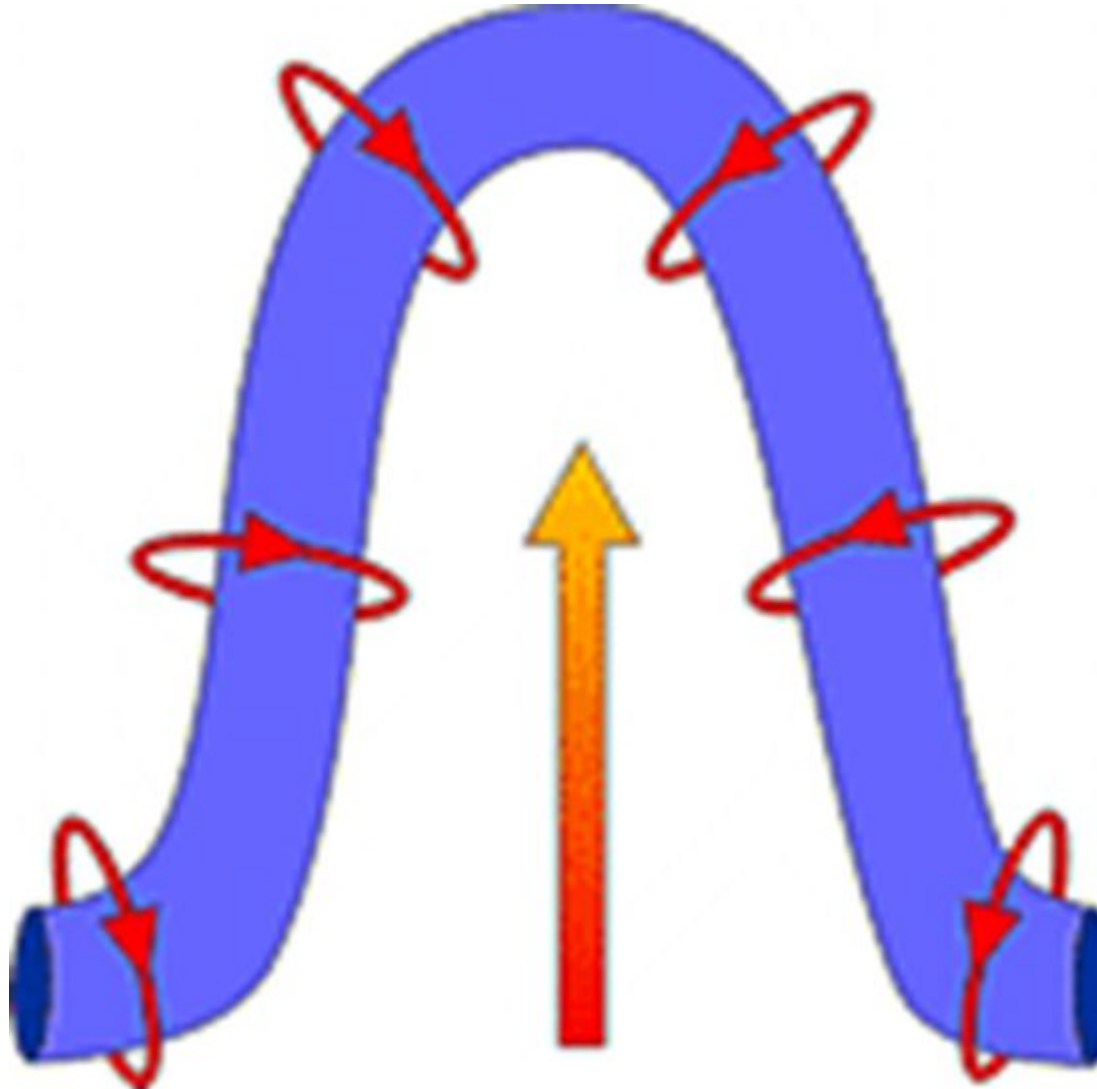
# Role of Wind Shear



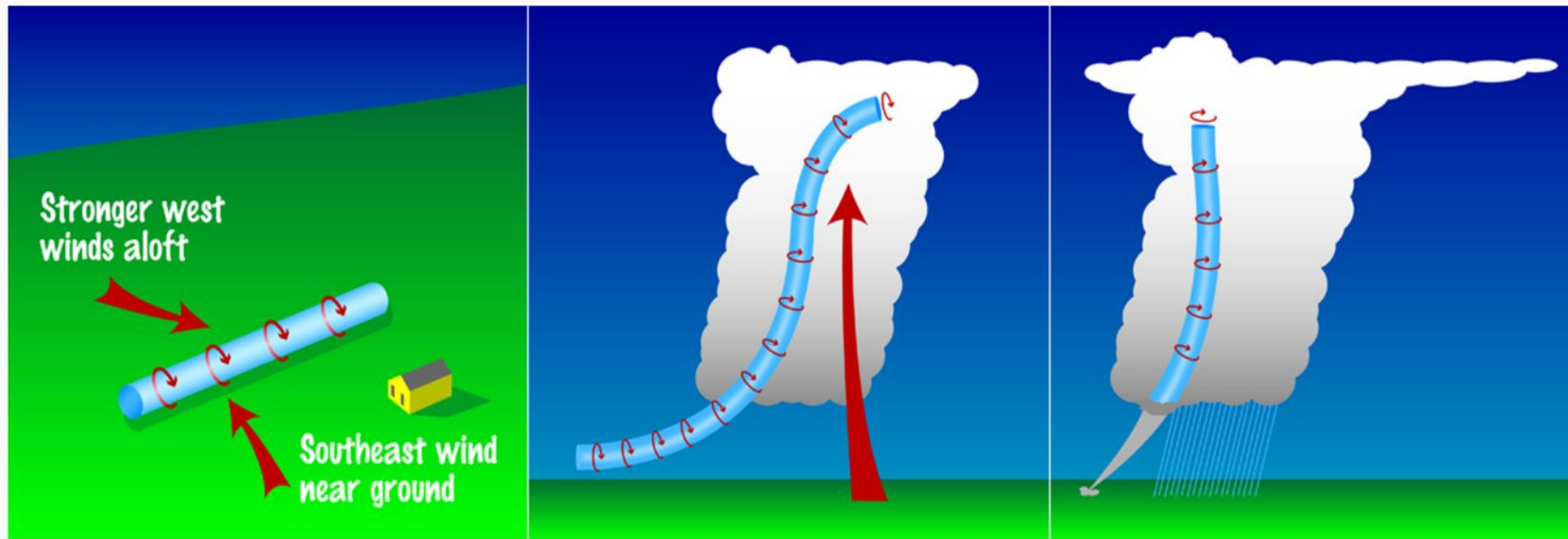
# Role of Wind Shear



# Updraft Tilted in the Vertical



# Role of Wind Shear



cloud. When a tornado forms in a thundercloud, it is called a supercell. A supercell is a big



# Observing Upper Level Storm Clues

## Viewed 30-40 miles from storm

- **Overshooting Top**
  - Dome-like bubble of cloud extending above anvil and persisting for >10 minutes
  - Indicates strong updraft
- **Anvil characteristics**
  - Thick, cumuliform anvil with sharp, well-defined edges
  - ‘Bubbling’ look

# Intensity Clues - Anvil



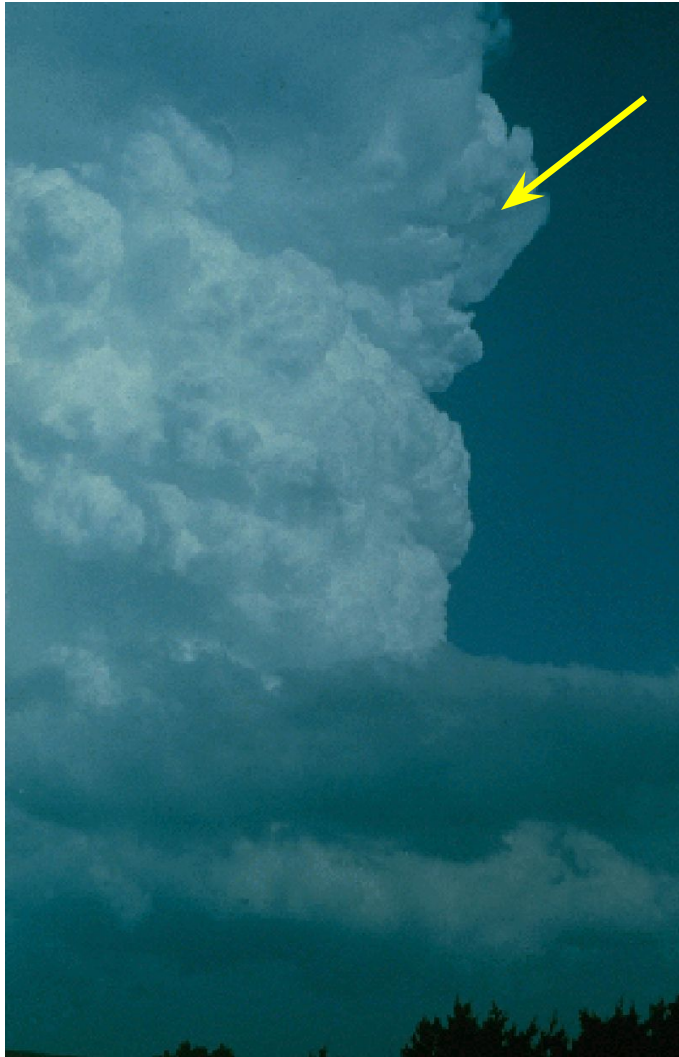
**Well defined anvil**

**Wispy anvil**



# Intensity Clues - Updraft

**Viewed 10-20 miles from the storm**



## **Strong updraft**

**Hard cauliflower appearance**

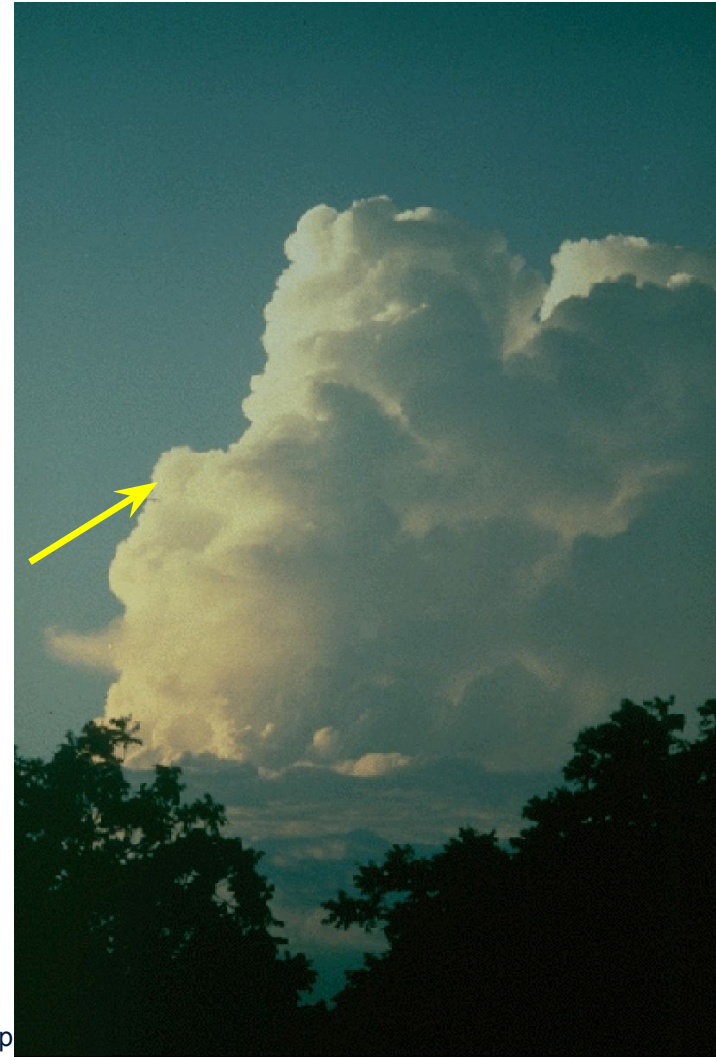
**Vertically upright**

## **Weak updraft**

**Soft, mushy appearance**

**Vertically tilted**

**Sunlight shining through**





# Observing Low Level Storm Clues

**Viewed within 10 miles of storm**

- **Wind clues**

- Shelf Cloud/Roll Cloud
- Downburst

- **Hail clues**

- White hail shaft
- Greenish tint to sky



- **Tornadoes, Funnel Clouds, and Wall Clouds**

- Rain-Free Base (Low, flat cloud base with little visible precipitation falling and updraft towers above)
- Wall Cloud (Isolated lowering of rain-free base, rotating, and usually near the north side of the updraft)

# Fundamental Definitions - Shelf Cloud



- **Shelf Cloud – Low level, *horizontal*, wedge shaped cloud, occurring on leading edge of a thunderstorm (Wind, rain, and hail may follow, but may not be severe)**

# Fundamental Definitions - Microburst

- **Microburst – An intense downdraft from a thunderstorm with an outrush of damaging wind**
- **Winds can exceed 100 mph**





# Reporting Winds/Wind Damage

- **Use Beaufort Scale to estimate wind speeds**
  - ~50 MPH - Slight structural damage and large branches may break
  - ~60 MPH - Moderate structural and tree damage
  - ~ 70 MPH - Heavy to severe structural and tree damage
- **Report immediately:**
  - Wind damage
  - 50+ mph winds



**Salt Lake County - September 4, 2007**

**Measure wind speeds when possible!**

# Hail Clues

- **Look for**
  - White hail shafts/streamers
  - Greenish tint to sky



**Southern Utah - October 2006**



- **Report any size hail**

# Measure the Hail

## United States Record Hail (circumference) Aurora, NE - June 22, 2003





# Measure the Hail

**United States Record Hail (weight and diameter) Vivian SD - July 23, 2010**



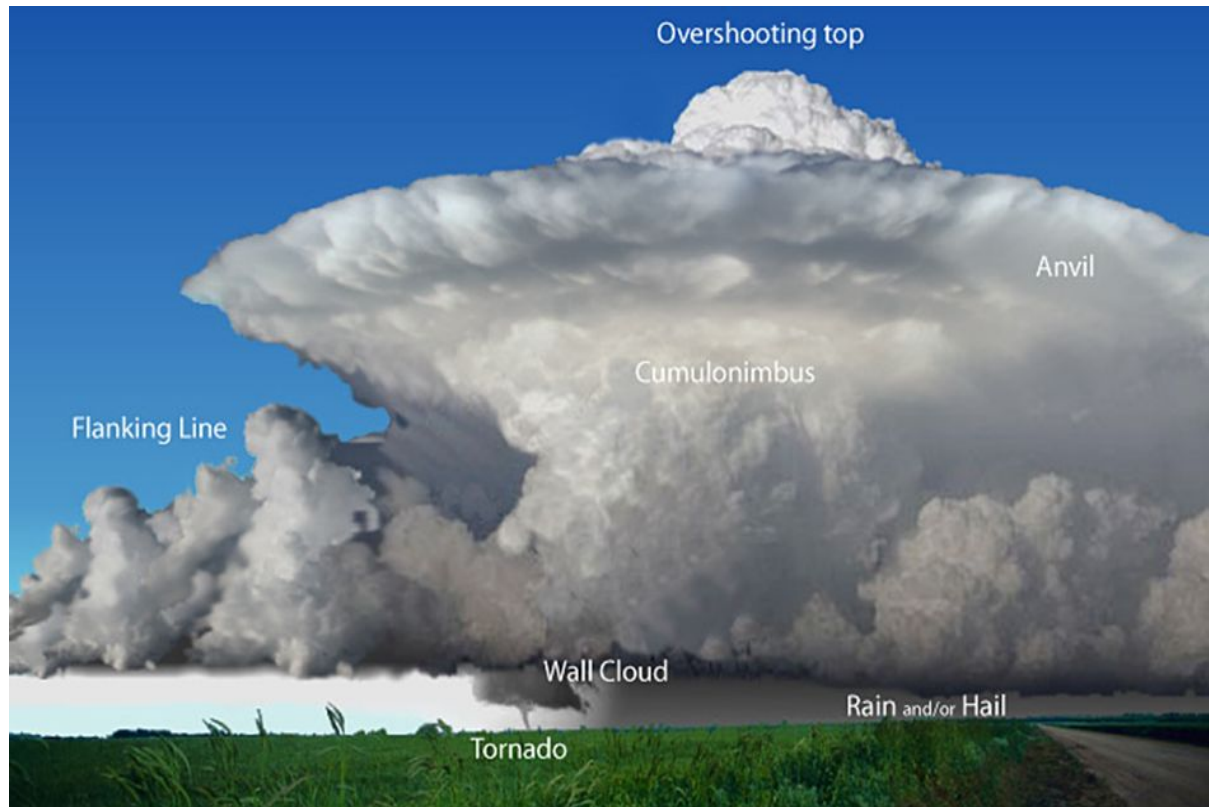


# Do Not Report “Marble Size Hail”



# A Closer Look

## Supercells, Tornadoes, Funnel Clouds, and Wall Clouds



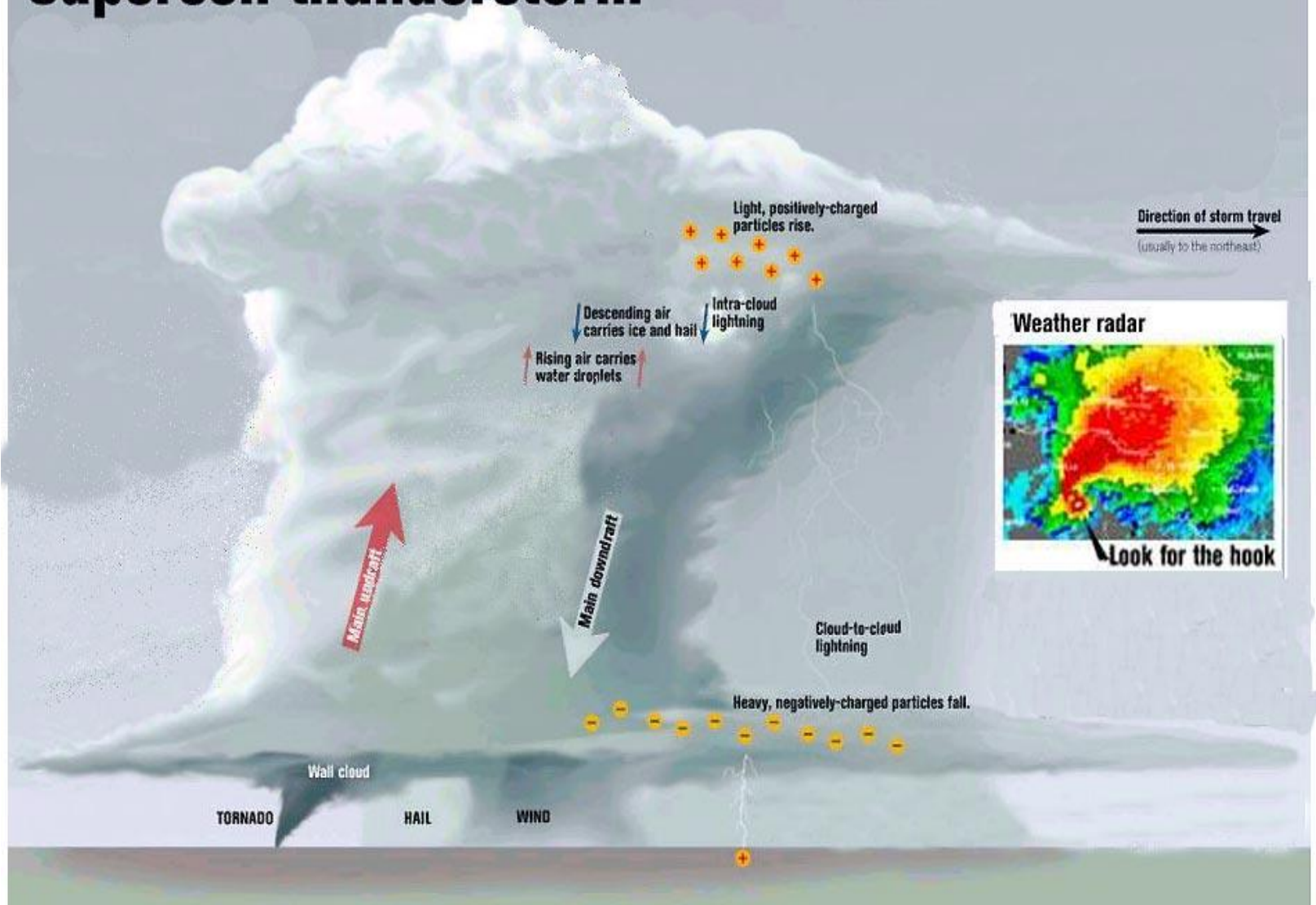
# Fundamental Definitions – Supercell Thunderstorm

- **Supercell – A thunderstorm with a persistent rotating updraft**
- **Almost always severe with large hail, damaging winds, and tornadoes**



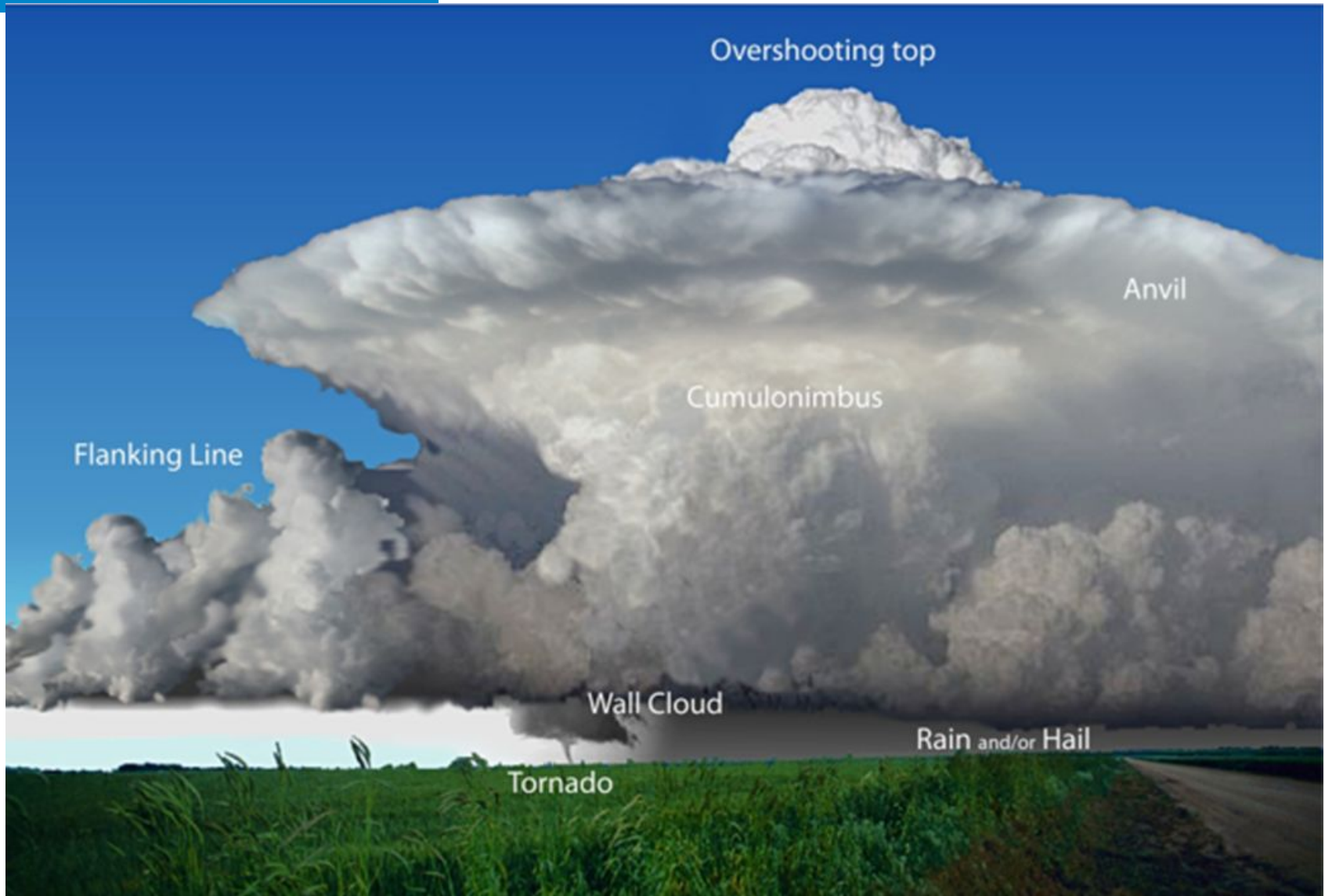
# Supercell Depiction

## Supercell thunderstorm





# Supercell Depiction – Second Look



# Fundamental Definitions - Mesocyclone

- **Mesocyclone – A storm-scale region of rotation within the updraft region of a supercell thunderstorm**



# Fundamental Definitions – Wall Cloud

- **Wall Cloud** - An isolated lowering under a rain-free cumulonimbus cloud base, resembles a pedestal.
- **Persistent (5-10 minutes) and often rotating**
- **Can precede funnel cloud and tornado formation**

Near Ogden, UT - August 2008



# Shelf Clouds vs. Wall Clouds

## Shelf Clouds



- Suggest downdraft/outflow
- Move away from precipitation areas
- Horizontally orientated and can extend for miles, may 'roll' like a rolling pin

## Wall Clouds



- Suggest updraft/inflow
- Maintain position with respect to precipitation
- Isolated, vertically orientated, *and rotating, like a spinning skater*

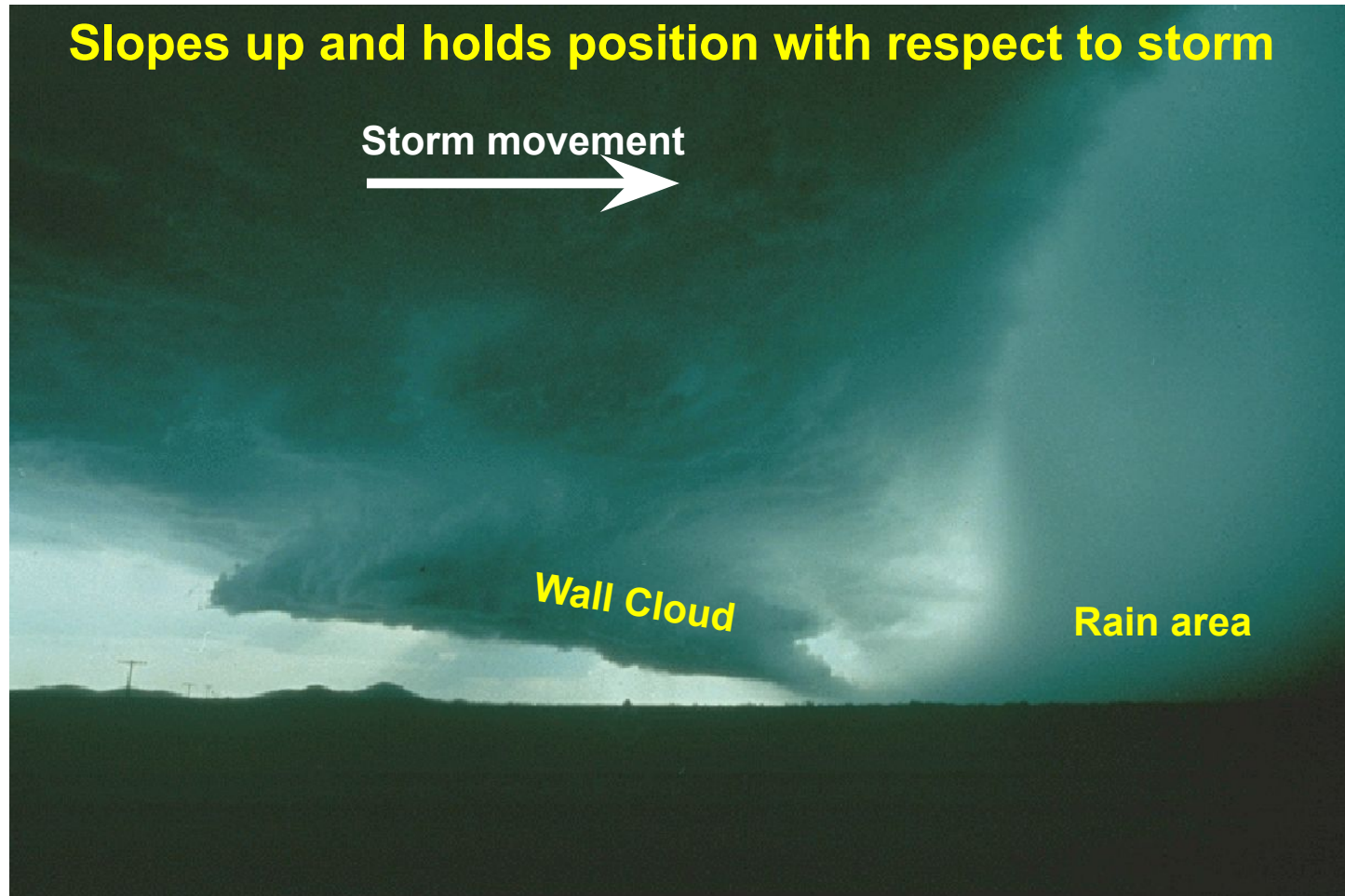


# Shelf Cloud



**The Shelf Cloud is the leading edge of gusty winds**

# Wall Cloud



**The wall cloud does not move away from the rain**

# Fundamental Definitions – Funnel Cloud

- **Funnel Cloud** - A violently rotating column of air, extending downward from the base of a thunderstorm that does not reach the ground
- No circulation is seen on the surface



# Fundamental Definitions - Tornado

**Tornado - A violently rotating column of air extending from the base of a severe thunderstorm to the ground**



**Salt Lake City Tornado, 1999**



# Funnel Cloud and Initial Tornado



# Look-alikes

## Don't Be Fooled!

- **Scud Clouds** - Ragged edge clouds that do not rotate and are located below the main cloud base...may move up and into cloud base under an updraft



- **Virga** - Rain falling from clouds, but evaporating before reaching the ground...NO rotation, but can imply microburst winds



# Night Severe Weather Spotting

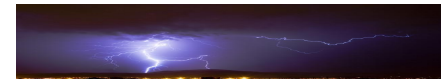
## What to look and listen for

- Utilize illumination provided by lightning
- If experiencing large hail, you are near the portion of a storm where a tornado may form
- Search horizon for bright flashes of light from power lines and transformers being hit by a tornado



Herriman, UT - 2007

- Listen for a loud roaring sound (not present with all tornadoes and may be from straight line winds)



# Lightning Safety

- Monitor NOAA Weather Radio All Hazards, your favorite news source, and/or NWS web sites for vital weather information
- Keep an eye on the sky and listen for the sound of thunder

**If you can hear thunder, go to a safe shelter immediately!**

- If you can't get to a safe shelter, stay away from trees and other tall objects
- Avoid leaning against vehicles
- Get out of or off the water

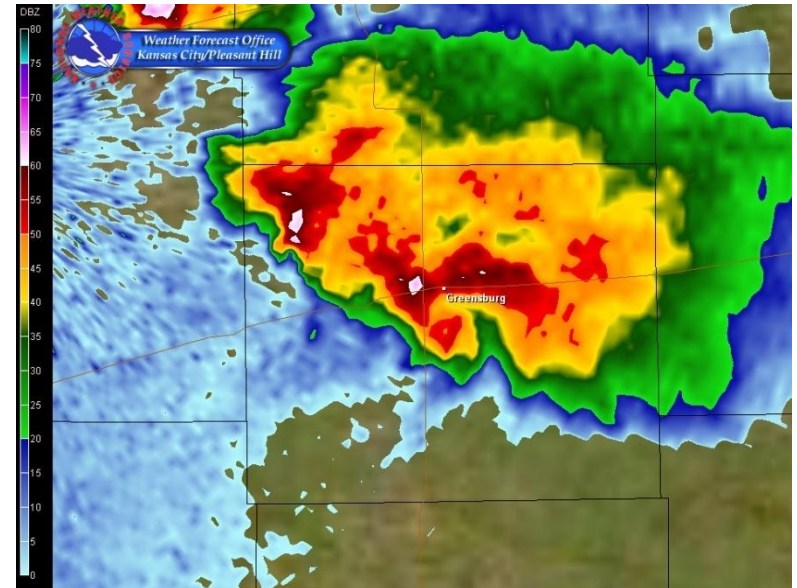




# Radar Interpretation 101

Reflectivity - **Hot colors**  
= more intense echoes

Greensburg, KS EF-5 May 4, 2007



Velocity - **Warm colors**  
indicate winds directed  
away from radar and  
**cool colors** winds  
directed toward radar

# Flooding/Flash Flooding



**Lower Enterprise Dam**  
**January 13, 2005**

# Flooding/Flash Flooding Terms

## What to watch for

- Hazardous Weather Outlooks/Special Weather Statements
- Flash Flood Potential Rating
- Watches
- Warnings
- Advisories



# Flooding/Flash Flooding Reporting

## **Report the following immediately:**

- **Flooding or rapidly rising water**
- **Unusually high or flowing faster than normal**
- **Water approaching bank-full stage or nearing roads/structures**
- **Inch or more of rainfall observed in a short duration (less in steep/rocky terrain or in burn areas)**
- **Any flooding observed**
- **Debris flows or rock slides**



# Marine Weather



Photo courtesy David Rankin

**Navajo Generating Station**

# Marine Weather Terms

## What to watch for

- **Special Weather Statements**
- **Watches**
- **Warnings**
- **Advisories**

Photo courtesy David Rankin



**Wahweap Bay and Warm Creek Bay**

# Fire Weather



**Salt Creek Fire – July 2007**

# Fire Weather Terms

## What to watch for

- Hazardous Weather Outlooks
- **Watches**
- **Warnings**





# Wildland Fires



**Brian Head Fire**  
**June 17-July 28, 2017**  
**71,673 acres**  
**13 homes destroyed**  
**Estimated cost - \$36.6 million**



# Wildland Fires



## Dollar Ridge Fire

**July 1, 2018-August 31, 2018**

**68,869 acres**

**74 homes destroyed**

**\$25 million in property damage**

**\$18 million in suppression costs**

**1,100 people evacuated**



# Wildland Fires



## **Bald Mountain Fire/Pole Creek Fire**

**August 24, 2018-October 2, 2018/September 6, 2018-October 7, 2018**

**18,620 acres/102,190 acres**

**\$23.8 million in suppression costs**

**6,000 people evacuated**



# Debris Flows



Photo courtesy Sheriff David Boren,  
Duchesne County



Photo courtesy Duchesne County Sheriff's Office

**Debris flow from Dollar Ridge Fire Burn Scar  
Duchesne County  
July 22, 2018**

**Camelot Resort - 30 adults/13 children rescued  
Timber Canyon - Dozen people rescued  
\$150,000 in damage**



# Winter Weather



**Elk Point Avalanche**

# Winter Weather Terms



**Cedar City Doppler Radar  
Blowhard Mountain**

- **Special Weather Statements**
- **Watches**
- **Warnings**
- **Advisories**

# Snow Squall Warnings



**A snow squall is an intense, but limited duration, period of moderate to heavy snowfall, often accompanied by strong, gusty surface winds and possibly lightning.**

- **Snow Squall Warning (WEA and non-WEA)**  
Main discriminator is the presence of a flash-freeze
- **Winter Special Weather Statement**

# Winter Weather Reporting

**Report the following:**

- **Snowfall accumulations**
  - How much total snow fell (period of time)
  - When snow began/ended
  - When snow total reached warning level
- **Snow depth**
- **Freezing rain accumulation**
- **Precipitation type changes**

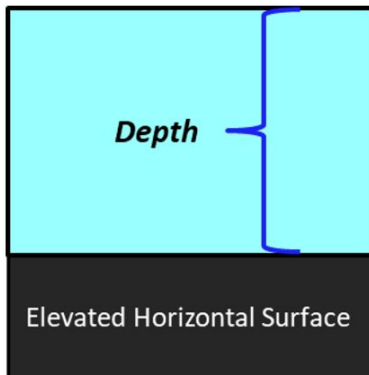




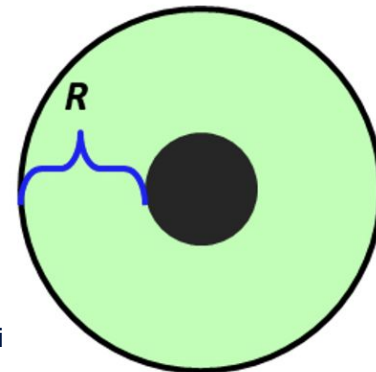
# Flat Ice Measurements vs. Radial Ice Measurements

- Flat ice is measured on an elevated horizontal surface, such as a sidewalk or deck
- Radial ice is measured on an elevated horizontal surface, such as a tree branch
- **All reported ice accumulations should be reported as radial**

Flat Surface Ice



Radial Surface Ice



# Safety - ACES

- **Awareness**
- **Communication**
- **Escape Routes**
- **Safe Zones**

# Decision Support/Community Engagement

- **Weather-Ready Nation Ambassador**
  - <https://www.weather.gov/wrn/amb-tou>
- **NWS National Seasonal Safety Campaign**
  - Infographics sent to you if WRN Ambassador
  - <https://www.weather.gov/safetycampaign>



# Share Your Information!

**Severe Weather Spotter Line:  
800-882-1432 x1**

**Storm Reports  
<https://inws.ncep.noaa.gov/report>**

**Spotter Reports Email:  
[utah.spotter@noaa.gov](mailto:utah.spotter@noaa.gov)**

**Facebook/X  
[@NWSSaltLakeCity](#)  
[#utwx](#)**



# Additional Training

- **SKYWARN® Spotter Training**
  - Role of the Skywarn Spotter
  - Skywarn Spotter Convective Basics
- Available at  
[https://www.meted.ucar.edu/training\\_course.php?id=23](https://www.meted.ucar.edu/training_course.php?id=23)
- The COMET® Program - MetEd



# Web Resources

**National Weather Service Weather Forecast Office Salt Lake City, UT**  
**[www.weather.gov/saltlakecity](http://www.weather.gov/saltlakecity)**

**Weather Spotter Page**  
**[www.weather.gov/slc/spotter](http://www.weather.gov/slc/spotter)**