



# Skywarn Weather Spotter Training

## 2020 Spring Sessions



*When Thunder Roars - Head Indoors  
See a Flash – Dash Inside*

*#SpringSafety #SummerSafety  
Turn Around Don't Drown*





# Outline

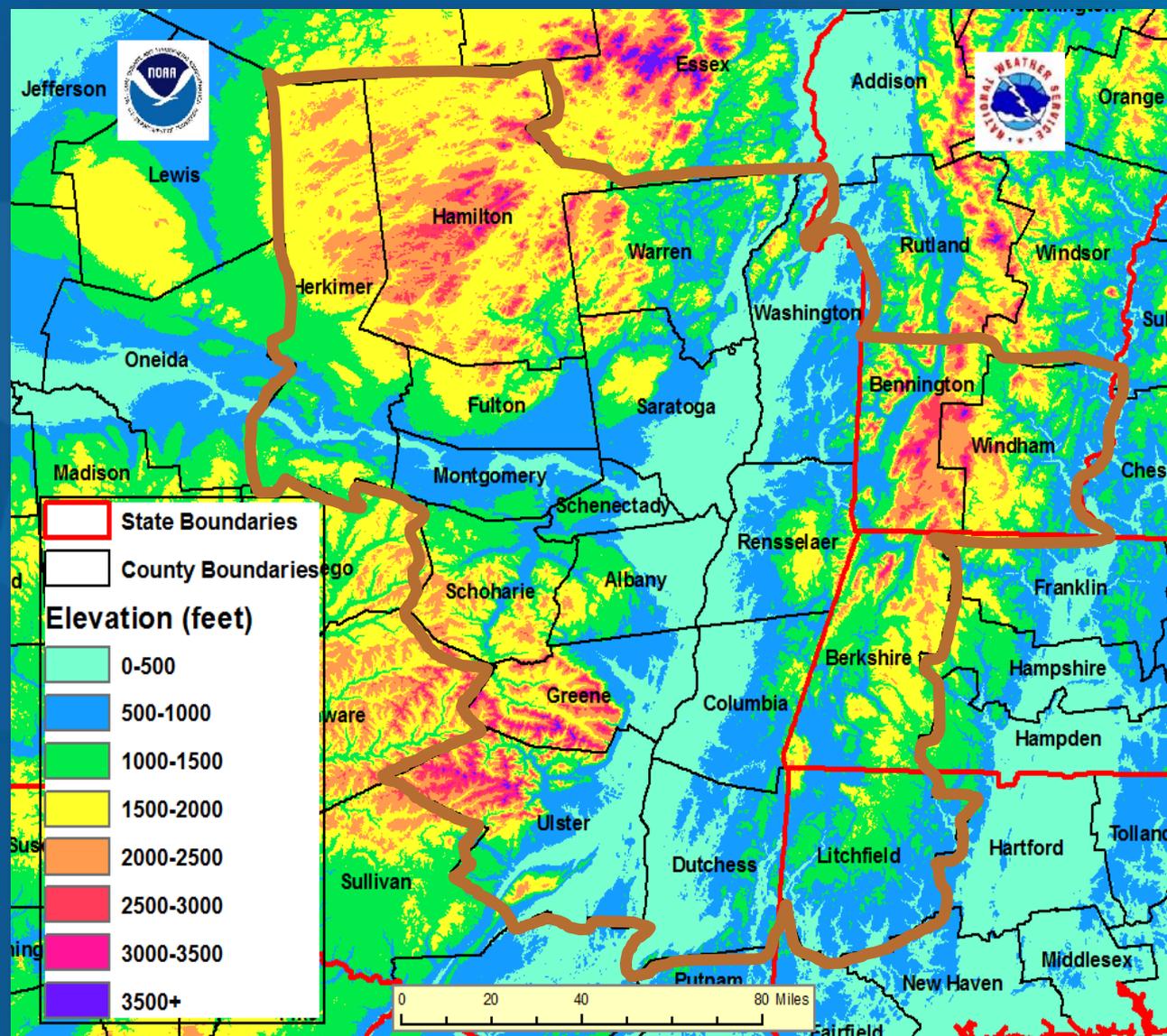
- I. Area of Responsibility
- II. Spotter Safety
- III. Severe Weather Information
- IV. Thunderstorm Development
- V. Lightning
- VI. Hail
- VII. Damaging Winds
- VIII. Cloud formations
- IX. Tornadoes
- X. Timeliness of Reports
- XI. Excessive Rainfall and Flooding
- XII. New York Mesonet
- XIII. CoCoRaHS
- XIV. QUIZ
- XV. Certificate





# Area of Responsibility

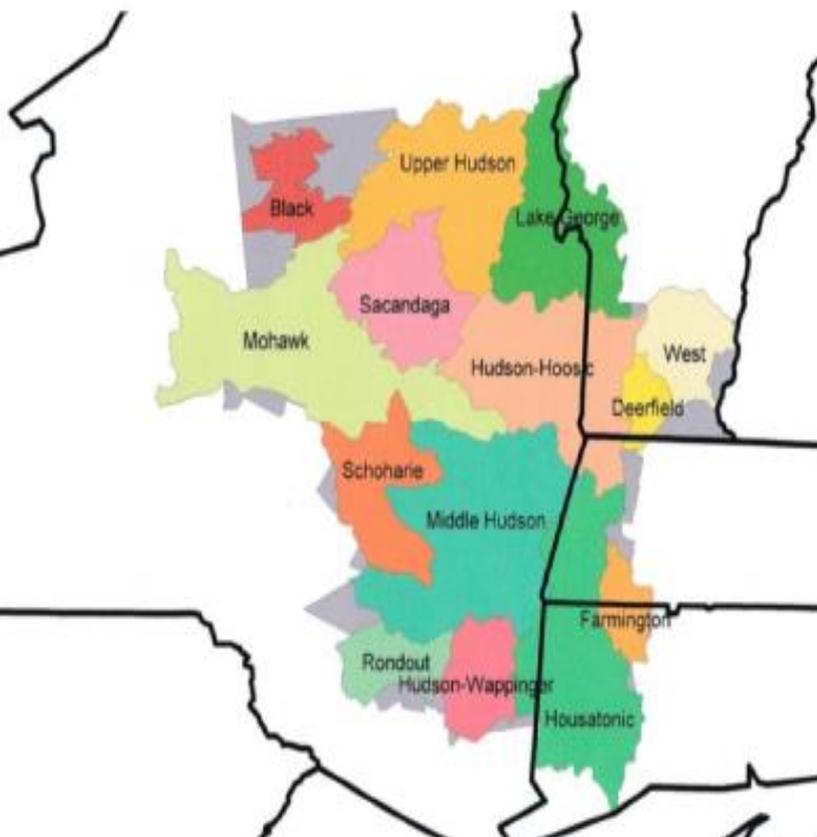
- 15 NY Counties
- 2 VT Counties
- 1 MA County
- 1 CT County
- 1/3 of our forecast area is at elevations of 1500 feet and above!





# Hydrologic Area of Responsibility

## Major River Basins in A



## NWS River Forecast Ce





# Skywarn Safety



- A**wareness
- C**ommunication
- E**scape routes
- S**afety zones



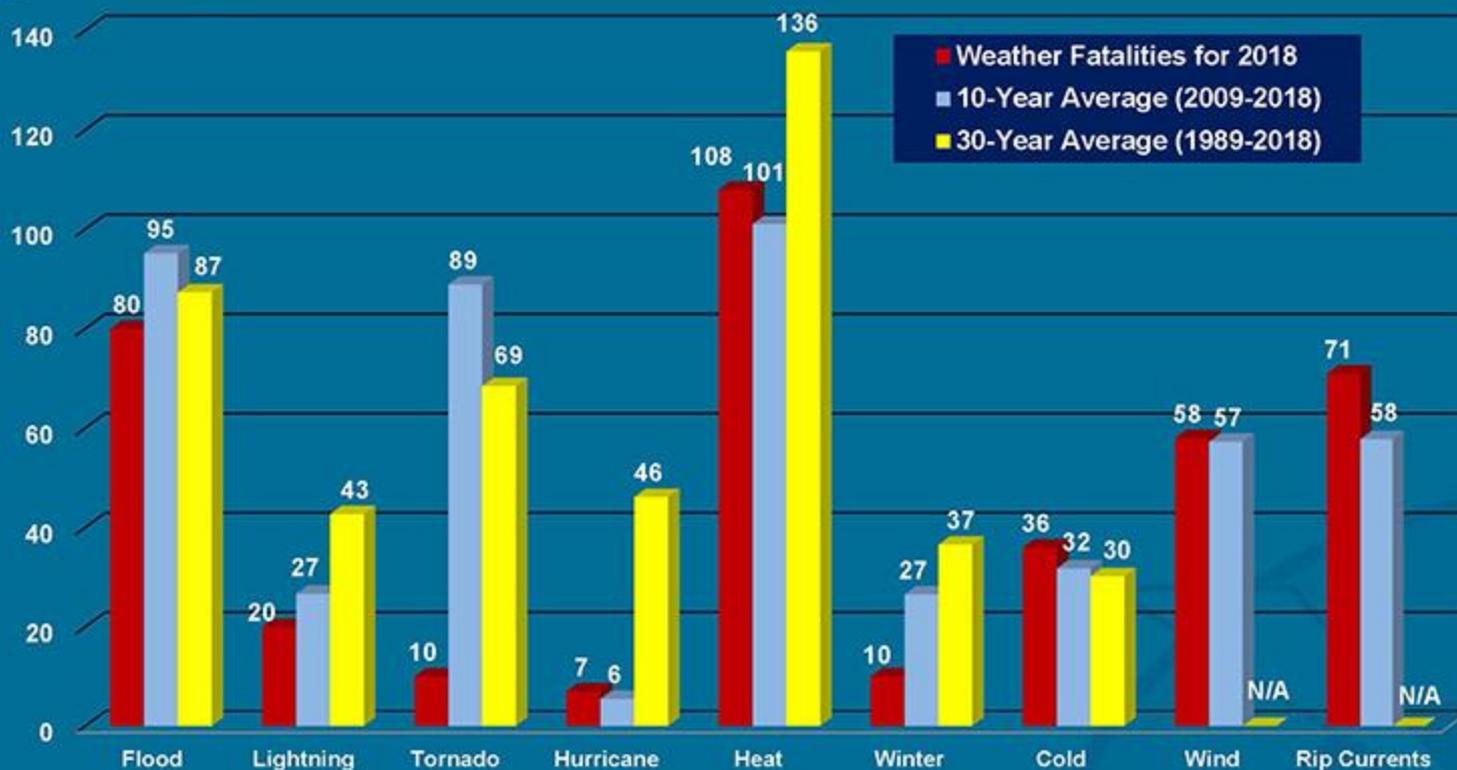
Your Safety is ALWAYS #1



# Skywarn Safety



## Weather Fatalities 2018





# Heat Safety

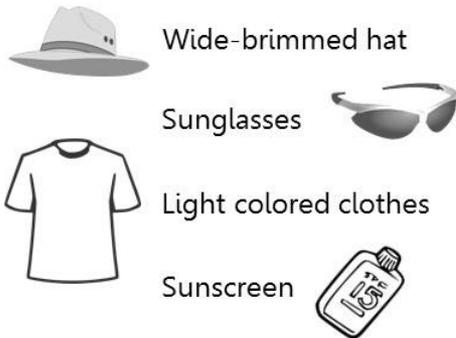
**Heat Index** = Temperature + Humidity

**Heat Advisory**  
Heat Index  $\geq 95^\circ$

**Excessive Heat Warning**  
Heat Index  $\geq 105^\circ\text{F}$



## Dress the Part



Wide-brimmed hat

Sunglasses

Light colored clothes

Sunscreen

**Weather-Ready Nation**  
National Oceanic and Atmospheric Administration

National Weather Service  
[weather.gov/heat](http://weather.gov/heat)



HEAT EXHAUSTION		OR	HEAT STROKE	
Faint or dizzy			Throbbing headache, confusion	
Excessive sweating			No sweating	
Cool, pale, clammy skin			Body temperature above 103° Red, hot, dry skin	
Nausea or vomiting			Nausea or vomiting	
Rapid, weak pulse			Rapid, strong pulse	
Muscle cramps			May lose consciousness	
<ul style="list-style-type: none"> <li>Get to a cooler, air conditioned place</li> <li>Drink water if fully conscious</li> <li>Take a cool shower or use cold compresses</li> </ul>			<p><b>CALL 9-1-1</b></p> <ul style="list-style-type: none"> <li>Move person to cooler place</li> <li>Cool using cool cloths or bath</li> <li>Do not give anything to drink</li> </ul>	





# What is a Skywarn Spotter?

**Observe**

**Report**

**Warning**

**Radar sees this.**

**Spotters see this!**

**Why trained storm spotters are essential for public safety!**



**Severe Thunderstorm Warning**

Valid Until  
2:45 PM EDT Tuesday  
April 9, 2019

**Threat Information**

- WIND**  
Up to 60 MPH
- HAIL**  
Nickel  
Sized Possible

**Potential Exposure**

Population: 197,853  
Schools: 59  
Hospitals: 4





# Skywarn Spotter Information Sheet



NATIONAL WEATHER SERVICE, NOAA  
ALBANY, NY  
SKIWARN INFORMATION SHEET



Report Severe Weather (Backup)	
Weather Spotter Field Guide	<a href="http://www.weather.gov/media/owlie/SGJune6-11(1).pdf">www.weather.gov/media/owlie/SGJune6-11(1).pdf</a>
Email	<a href="mailto:alb.stormreport@noaa.gov">alb.stormreport@noaa.gov</a>
NWS Albany	<a href="http://www.weather.gov/Albany">www.weather.gov/Albany</a>
Twitter	<a href="https://twitter.com/NWSAlbany">@NWSAlbany</a>
Facebook Page	<a href="https://www.facebook.com/NWSAlbany">https://www.facebook.com/NWSAlbany</a>
NOAA Weather Radio	<a href="https://www.weather.gov/nwr/">https://www.weather.gov/nwr/</a>
Storm Prediction Center	<a href="http://www.spc.noaa.gov">www.spc.noaa.gov</a>
NWS Online Weather School	<a href="http://www.weather.gov/jetstream">www.weather.gov/jetstream</a>
Weather Prediction Center	<a href="http://www.wpc.ncep.noaa.gov">www.wpc.ncep.noaa.gov</a>
River Flood Monitoring	<a href="http://water.weather.gov/ahps">water.weather.gov/ahps</a>
CoCoRaHS	<a href="http://www.cocorahs.org">www.cocorahs.org</a>
NWS Amateur Radio Frequency	Primary 146.64 MHz - Secondary 145.19 MHz

## IMPORTANT WEATHER TO REPORT

When you report, please give your location (including your county) and the time of the observation. Try to report as soon as possible after observing the event and, *remember your safety comes first!* Please concentrate on the following phenomena:

- SNOWFALL** After 1 inch of new snow, and then at 2 inches, 4 inches, and every 2 inches thereafter (e.g., 2, 4, 6, 9, 12, etc.). Then final storm total at the conclusion of the event.
- FREEZING RAIN** As soon as you observe the occurrence of freezing rain or freezing drizzle, especially if it starts to collect on objects. Call again if the ice accumulation exceeds 1/4 inch. (measure on flat surface)
- THUNDER SNOW** Location and time of occurrence
- WIND SPEEDS** Report wind speeds greater than 40 mph
- RAINFALL** Report when you receive one inch (and then at least every inch thereafter)
- FUNNEL CLOUD** A "rotating" appendage descending from the base of a cumulonimbus cloud, but not touching the ground. If possible, always look at the area beneath the funnel cloud for flying debris. If flying debris is observed, it is a tornado.
- TORNADO** Violently rotating column of air descending from a cumulonimbus cloud and touching the ground. Look for flying debris. If possible, report any injuries or fatalities
- HAIL** Report hail 0.75 or larger. Specify the diameter based on the hail scale (see other side)
- FLOODING** Report any flooding you observe, including basement, road, stream, creek, and ice jam flooding. Report the name of the stream/creek, road number/name (if applicable) and depth
- DAMAGE** Report all storm-related damage (large branches, fallen trees, structural damage, flood damage, etc.) Even if it is several days after the event.

## DEWPOINT SCALE

Degrees "F"	50-55	55-60	60-65	65-70	>70
Comfort Scale					

HAIL	Pea	Plain M&M	Penny	Nickel	Quarter	Half Dollar
Scale	0.25 in	0.50 in	0.75 in	0.88 in	1.00 in	1.25 in
HAIL	Golf Ball	Baseball	Softball			
Scale	1.75 in	2.75 in	4.00 in			

## ENHANCED FUJITA SCALE

EF0	65-85 mph
EF1	86-110 mph
EF2	111-135 mph
EF3	136-165 mph
EF4	166-200 mph
EF5	>200 mph

## ESTIMATED WIND SCALE

- 25-31 MPH.....Large branches in motion; whistling in telephone wires
- 32-38 MPH.....Entire trees in motion; slight difficulty walking against wind
- 39-54 MPH.....Twigs break off trees; wind generally impedes progress
- 55-72 MPH.....Damage to chimneys and TV antenna; large limbs/branches down
- 73-112 MPH.....Roof surfaces damaged; windows broken; light mobile homes moved or overturned; moving vehicles pushed off road
- 113-157 MPH.....Roofs torn off; weak buildings and mobile homes destroyed
- ≥158 MPH.....Severe damage; cars lifted completely off ground

## DEFINITIONS

- Severe Thunderstorm** A thunderstorm which produces hail to 1 inch in diameter or larger and/or wind gusts to 58 mph (50 kts) or greater
- Watch** Conditions are favorable for the weather event in or near the watch area
- Warning** The weather event is imminent or occurring in the warned area
- Advisory** The weather event will be an inconvenience. However, if caution is not exercised, it could become life-threatening (mostly during the winter months)
- Flash Flood** A flood caused by heavy rainfall in a short period of time, generally less than 6 hrs
- Flood** Inundation caused by heavy rain which generally takes greater than 6 hrs to occur
- Tornado** A violently rotating column of air which extends from a thunderstorm and it is in contact with the ground
- Funnel Cloud** A rotating, funnel-shaped cloud extending from the base of a thunderstorm and is not in contact with the ground
- Downburst** A strong downdraft with an outrush of damaging wind on or near the ground
  - Macroburst** - swath of damaging wind more than 2.5 miles wide
  - Microburst** - swath of damaging wind 2.5 miles wide or less

## SKYWARN FAQs

- SKYWARN Spotter recertification - every 2 years
- SKYWARN Spotter webpage - <https://www.weather.gov/aly/skywarn>



# Timeline of Severe Weather Products

Hazardous  
Weather  
Outlook

C  
wi

PRELIMINARY LOCAL STORM REPORT  
NATIONAL WEATHER SERVICE ALBANY NY  
326 PM EDT MON MAY 07 2018

..TIME...	...EVENT...	...CITY LOCATION...	...LAT.LON...
..DATE...	...MAG....	..COUNTY LOCATION..ST..	...SOURCE...
..REMARKS..			
0325 PM 05/07/2018	TSTM WND DMG ALBANY	1 SE COHOES NY	42.77N 73.70W COUNTY OFFICIAL

MULTIPLE TREES AND BRANCHES DOWN.

Report from  
you!



# Storm Prediction Center Outlooks

## Understanding Severe Thunderstorm Risk Categories

<p><b>THUNDERSTORMS</b> (no label)</p> <p>No severe* thunderstorms expected</p> <p>Lightning/flooding threats exist with <u>all</u> thunderstorms</p>	<p><b>1 - MARGINAL (MRGL)</b></p> <p>Isolated severe thunderstorms possible</p> <p>Limited in duration and/or coverage and/or intensity</p>		<p><b>3 - MODERATE (MDT)</b></p> <p>Widespread severe storms likely</p> <p>Long-lived, widespread and intense</p>	<p><b>5 - HIGH (HIGH)</b></p> <p>Widespread severe storms expected</p> <p>Long-lived, very widespread and particularly intense</p>

\* NWS defines a severe thunderstorm as measured wind of 58 mph or greater, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also based on the potential for hail.

...r, and/or a tornado. All thunderstorm categories imply lightning and the potential for flooding. Categories are also based on the potential for hail.



National Weather Service

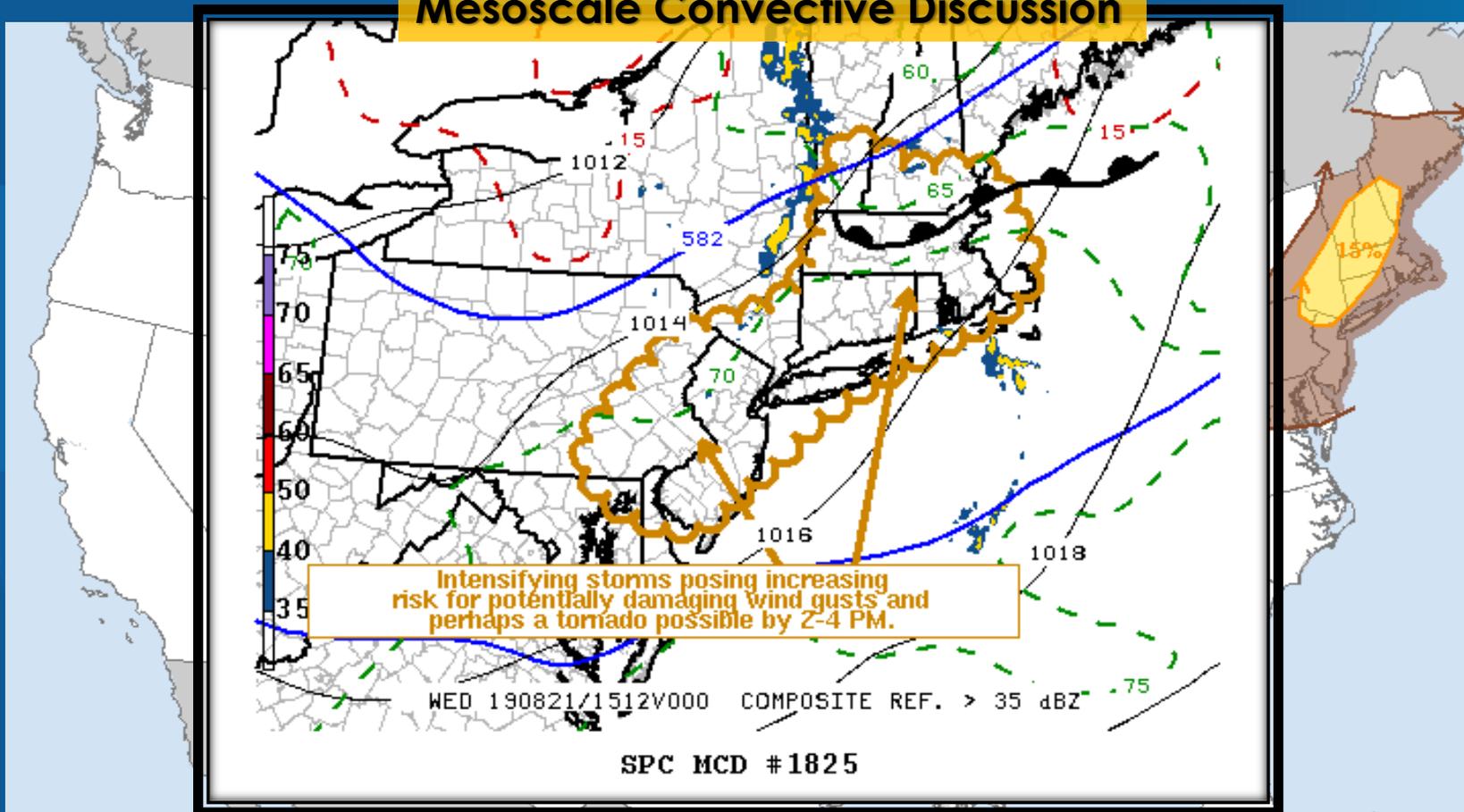
[www.spc.noaa.gov](http://www.spc.noaa.gov)





# Storm Prediction Center Outlooks

## Day 1 and Day 2 Outlooks Mesoscale Convective Discussion



Intensifying thunderstorms posing a risk for potentially damaging wind gusts and, perhaps, an isolated tornado or two, appear increasingly possible by 2-4 PM EDT. This could require the issuance of one or two severe weather watches.



SPC DAY 1 HAIL OUTLOOK

VALID: 1200Z Wed 08/21 - 1200Z Thu 08/22

FORECASTER MODEL

NOAA/NWS Storm Prediction Center, Norman, Oklahoma

15 30 45 60 Sig



# Watch vs Warning

## Watch

- Conditions are favorable for severe weather development over the coming **hours**.
- Remain Alert!



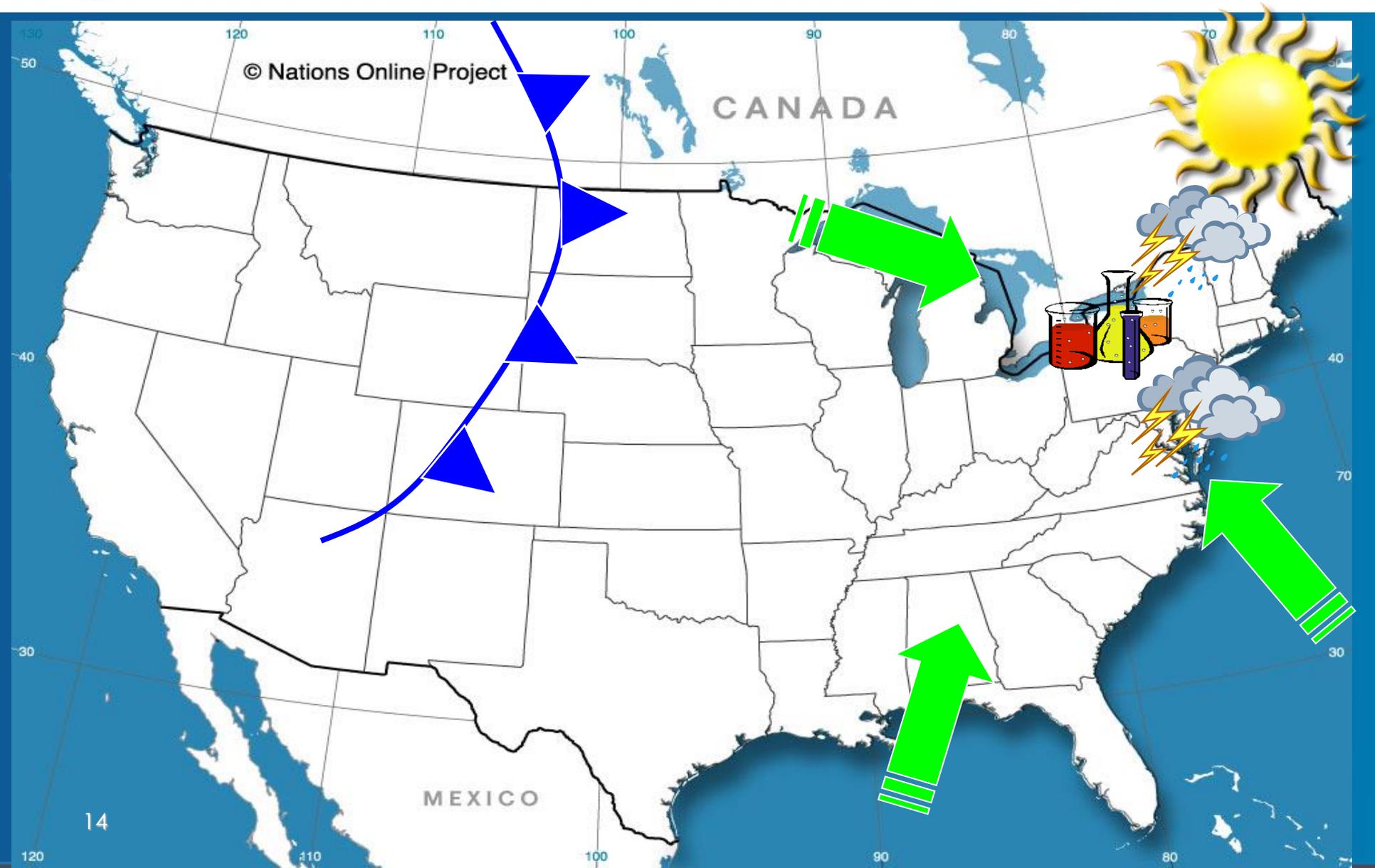
## Warning

- Severe weather is **imminent or ongoing**
- Take immediate action!**





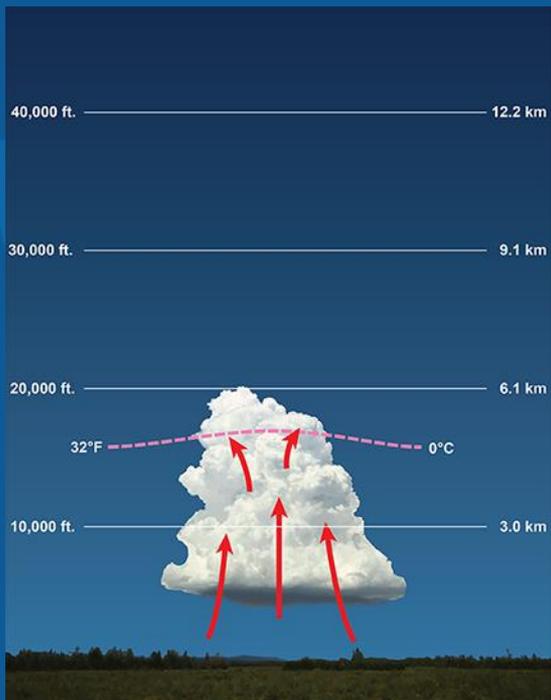
# Thunderstorm Development 101



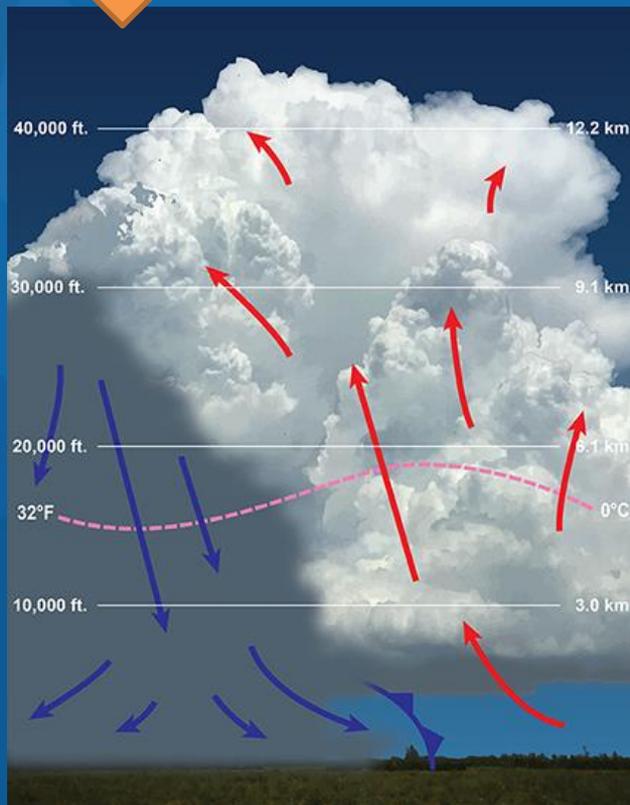


# Overview of Thunderstorm Development

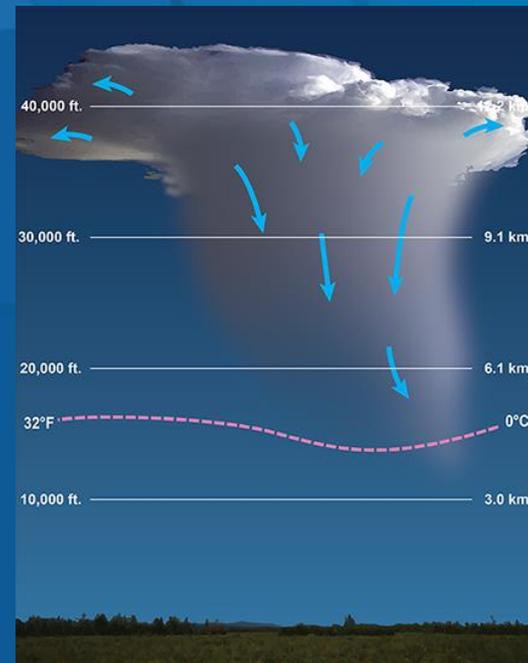
## Cumulus



## Mature Cumulonimbus



## Dissipating





# Lightning Safety

## Lightning

### Do's and Don'ts

#### Do

Go Inside When You Hear Thunder!

Find a Sturdy House, Building, Car With A Roof

Stay Indoors For at Least 30 Minutes After You Last Hear Thunder



#### Don't

Retreat to Dugouts, Sheds, Pavilions, Picnic Shelters or Other Small Structures

Use or Touch Electronics, Outlets, Corded Phones or Windows

Go Under or Near Tall Trees, Swim or Be Near Water, Stand Near Metal Objects



[weather.gov/lightning](http://weather.gov/lightning)

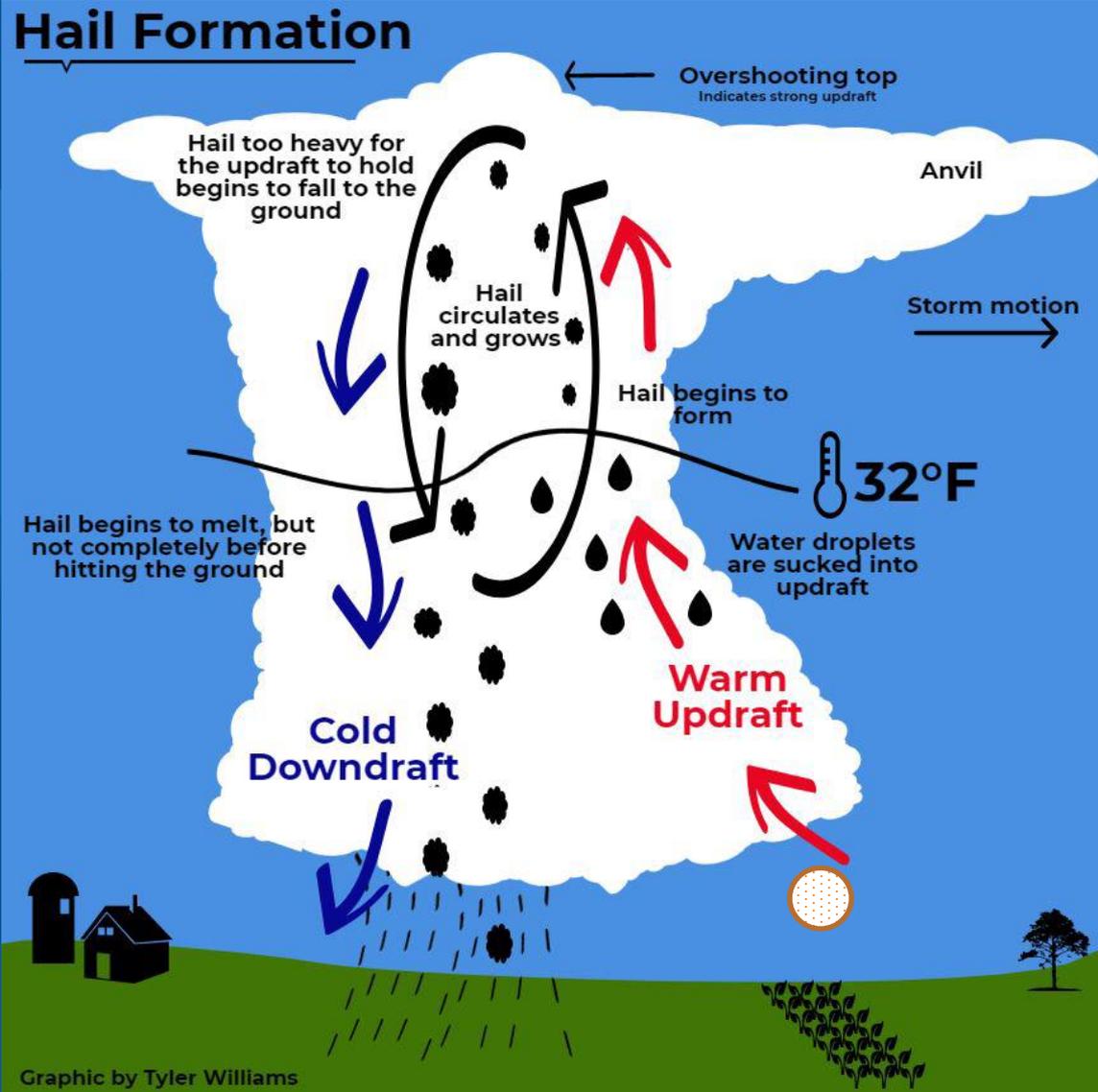


From Flash to Thunder:  
Count 5 seconds =  
1 mile away!

**Lightning Safety 30/30 rule**



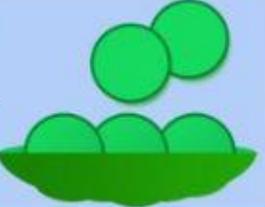
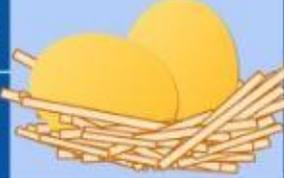
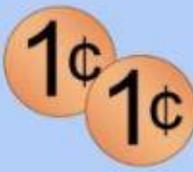
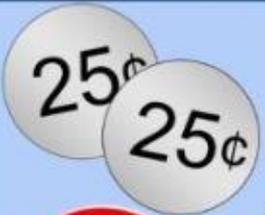
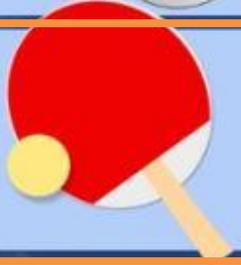
# Hail – Development & Formation



Graphic by Tyler Williams



# Hail – Description Table

0.25 inches		2.00 inches	
Pea		Hen Egg	
0.75 inches		2.50 inches	
Penny		Tennis Ball	
1.00 inches		2.75 inches	
Quarter		Baseball	
1.50 inches		3.80 inches	
Ping Pong Ball		Softball	
1.75 inches		4.50 inches	
Golf Ball		Grapefruit	

### Hail Sizes

- $< \frac{1}{4}''$  = BB
- $\frac{1}{4}''$  = Pea
- $\frac{7}{10}''$  = Dime
- $\frac{3}{4}''$  = Penny
- $\frac{7}{8}''$  = Nickel
- 1" = Quarter
- $1 \frac{1}{4}''$  =  $\frac{1}{2}$  Dollar
- $1 \frac{1}{2}''$  = Ping Pong Ball
- $1 \frac{3}{4}''$  = Golf Ball
- 2" = Hen Egg
- $2 \frac{1}{2}''$  = Tennis Ball
- $2 \frac{3}{4}''$  = Baseball
- 3" = Tea Cup
- 4" = Softball
- $4 \frac{1}{2}''$  = Grapefruit

*Measure along long axis!*



# Hail: May 15, 2018 Saugerties Supercell



**Many 2" diameter to baseball-size hail reports**



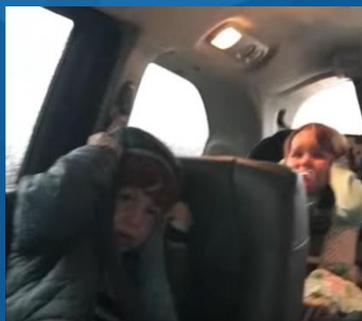
# What the Hail?!? – Vehicle Safety



**Stop driving. Stay out of culverts and lowland areas.**



**If you can see a safe place close-by to drive to (i.e. inside a garage, or under a service station awning), then get there quickly. Make sure you pull completely off the highway.**



Stephanie Vandewalker  
Golden, Colorado  
May 2017

**Do NOT leave the vehicle until it stops hailing. Your car will provide reasonable protection.**

**Cover your face and eyes. If possible, get onto the floor face down, or lay down on the seat with your back to the windows in a car.**



# Hail – Vivian, SD Record Hailstone

July 23, 2010



Vivian, SD hailstone measured 8" in diameter and weighed 1.9375 lbs

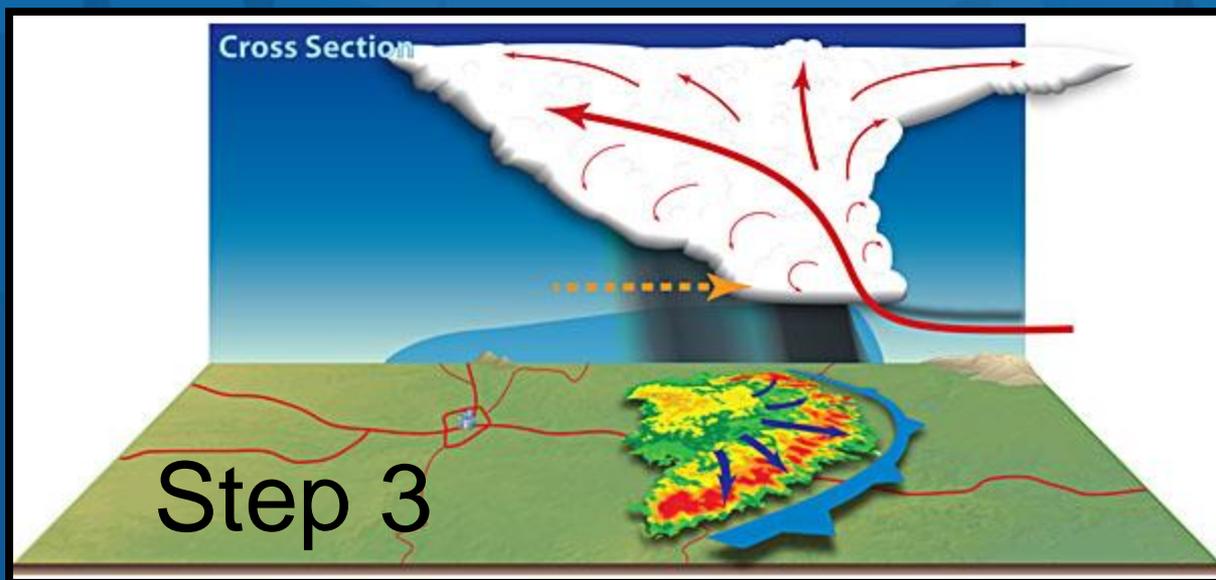
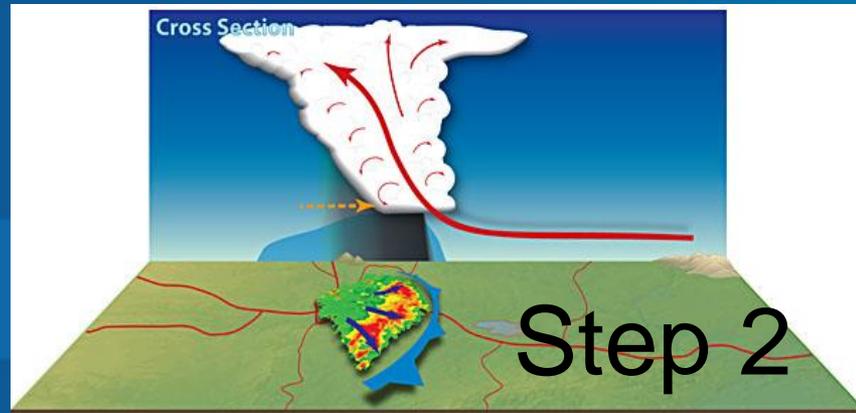
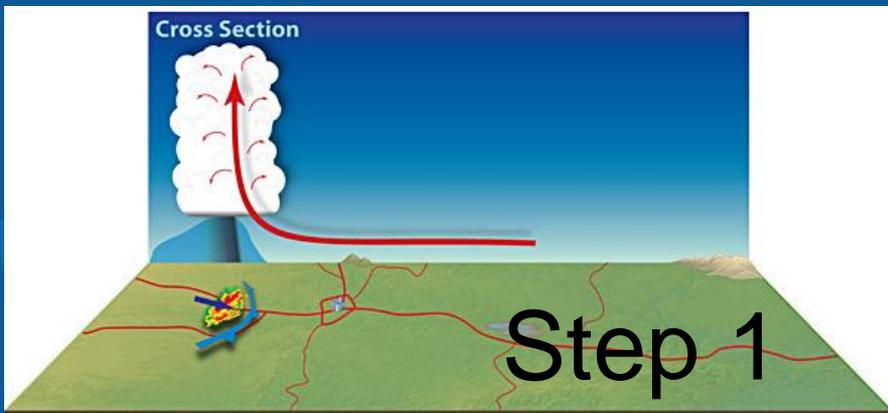


The hailstone had a circumference of 18.625 inches!!!

<https://www.weather.gov/abr/vivianhailstone>

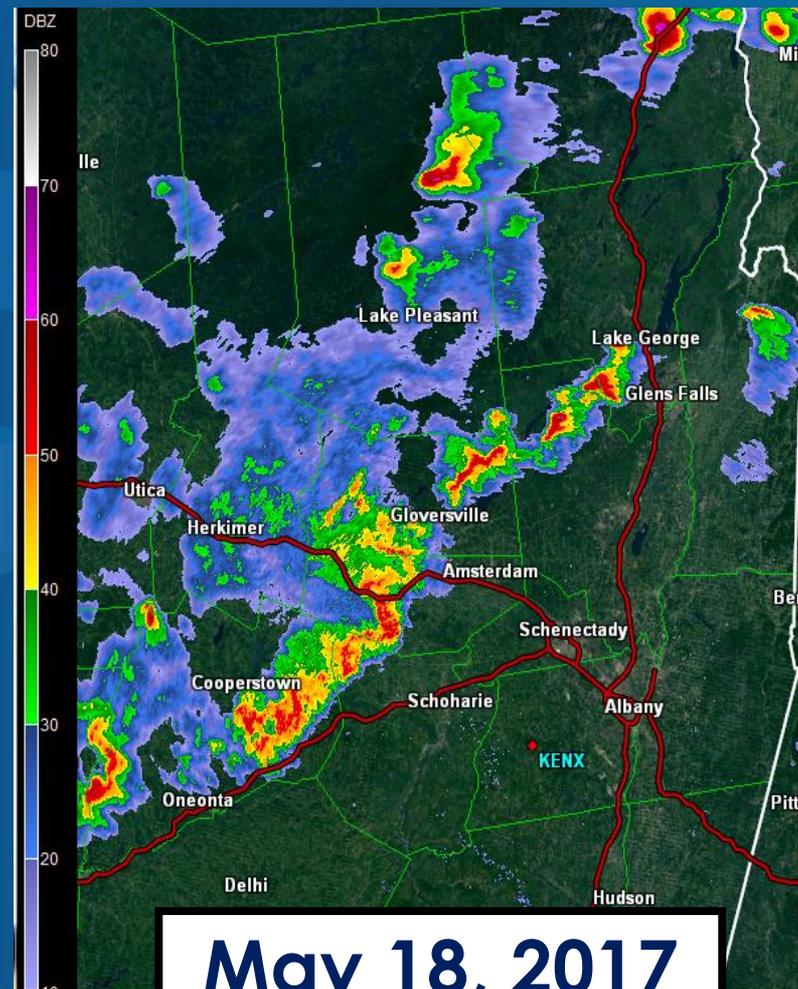


# Damaging Wind – How?



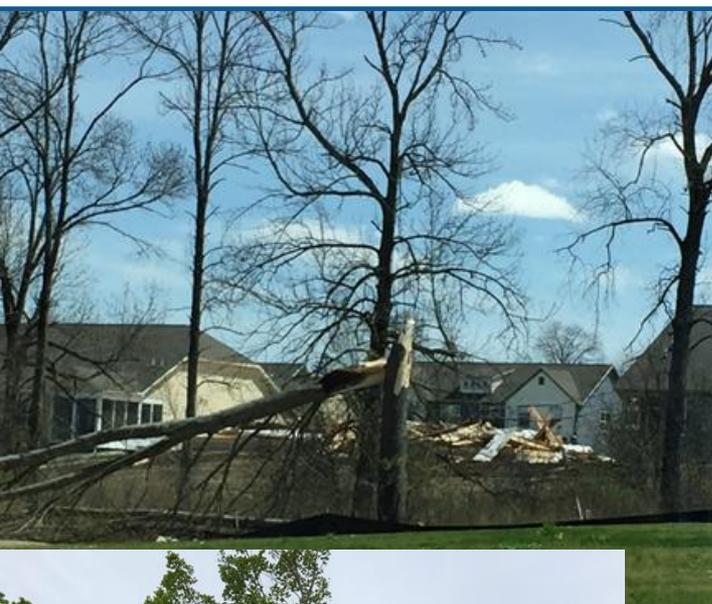


# Damaging Winds – Radar





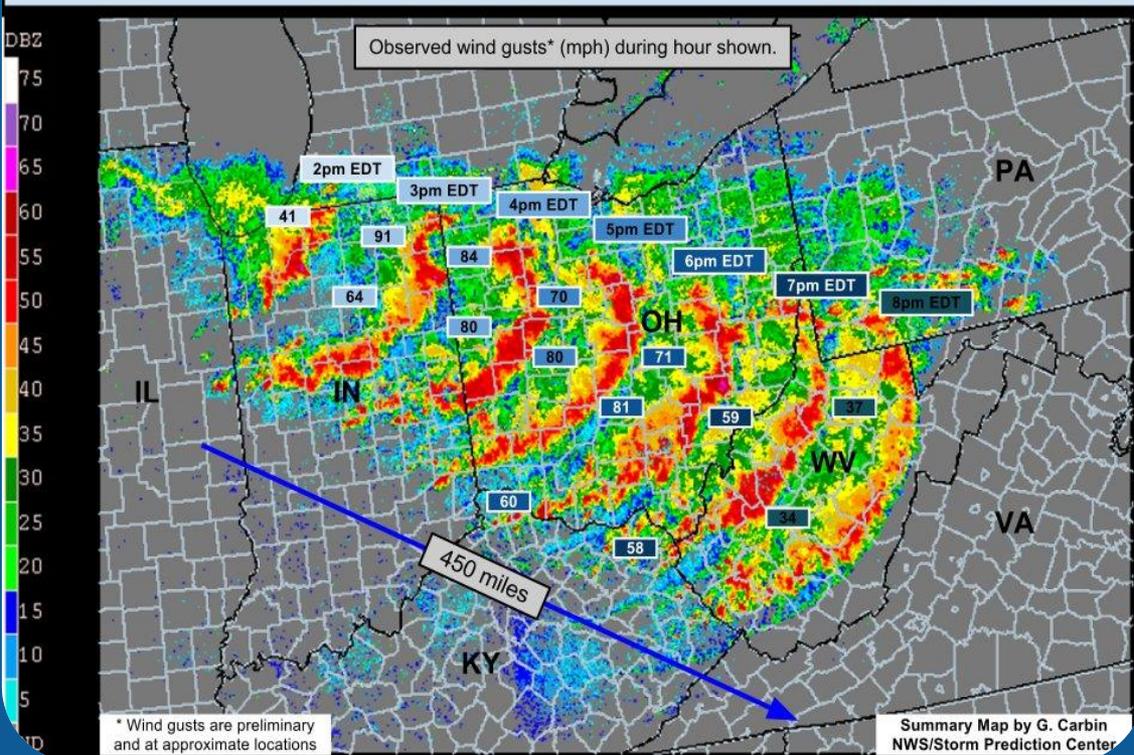
# Damaging Winds – May 2018





# Derechos

June 29, 2012 Midwest/Ohio Valley Derecho  
Radar Imagery Composite Summary 18-00 UTC  
~450 miles in 6 hours / Average Speed ~75 mph



## ***What is a Derecho?***

Widespread, long-lived wind storm made up of rapidly moving thunderstorms. Often can cover hundreds of miles & last multiple hours.



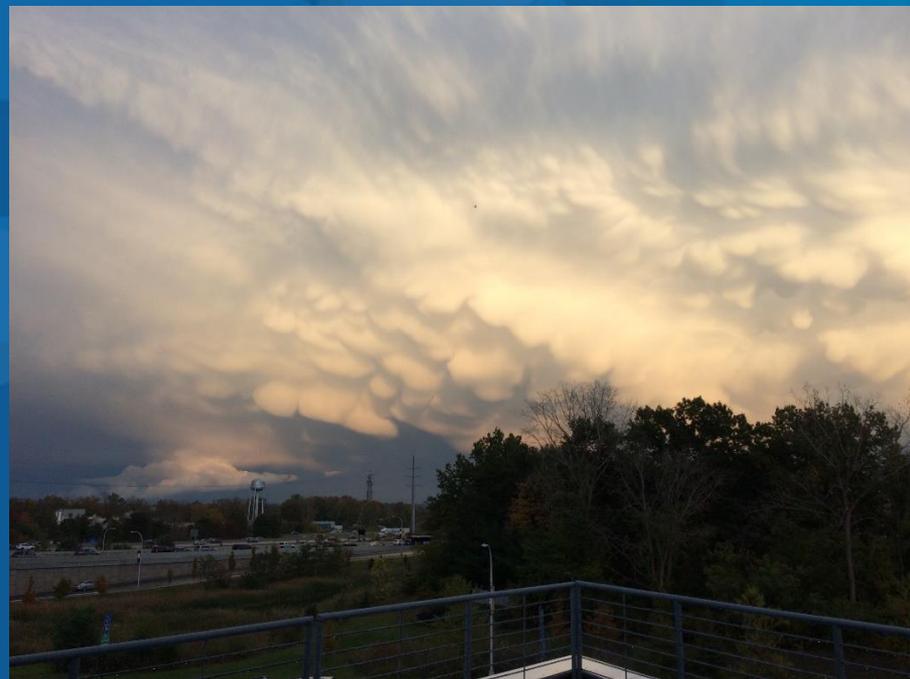
# Scud Clouds vs Mammatus

Scud Cloud  $\approx$  No Worries!

Mammatus – often associated  
with thunderstorms



Photo courtesy of  
NWS Jackson, KY



Mammatus outside NWS Albany  
office. Photo courtesy of NWS  
Meteorologist  
Christina Speciale



# Wall Cloud vs Shelf Cloud

Shelf Clouds occur with Squall Lines – straight line winds

Wall Clouds rotate – sometimes precursor to tornado

Covers Entire Horizon



Photo courtesy of  
<https://www.weather.gov/lmk/shelfcloudversusawallcloud>

Wall cloud near Cheyenne, WY.  
Photo courtesy of NWS  
Meteorologist Christina Speciale.



# Funnel Cloud vs Tornado

## Funnel Cloud



Must be Rotating

A photograph of a funnel cloud extending from a dark, stormy cloud base down towards the ground. A red double-headed arrow is drawn around the funnel, indicating its rotational motion.

Not Touching the Ground

## Tornado



Must be Rotating

Debris Visible

A photograph of a tornado touching the ground. A red double-headed arrow is drawn around the rotating column of air. Two black arrows point to the base of the tornado, where a cloud of dust and debris is visible.

In Contact with the Ground



# Tornado Formation



*Tornado Formation courtesy of National Geographic*



# Tornadoes

## TORNADO TERMINOLOGY



### Tornado Watch

Weather conditions could lead to the formation of severe storms and tornadoes. **BE PREPARED:** Know your safe location. Be ready to act quickly if a Warning is issued or you suspect a tornado is approaching.

### Tornado Warning

A tornado has been spotted or indicated by weather radar, meaning a tornado is occurring or expected soon. **TAKE ACTION:** There is imminent danger to life and property. Immediately seek refuge in the safest location possible.

### Tornado Emergency

An exceedingly rare situation with a severe threat to human life and catastrophic damage due to a confirmed violent tornado. **TAKE ACTION:** There is imminent danger to life and property. Immediately seek refuge in the safest location possible.





# Tornadoes

## TORNADOES AND ROAD SAFETY

### WHAT TO DO

Get off the road. The best option is to drive to a designated shelter, basement or safe room.

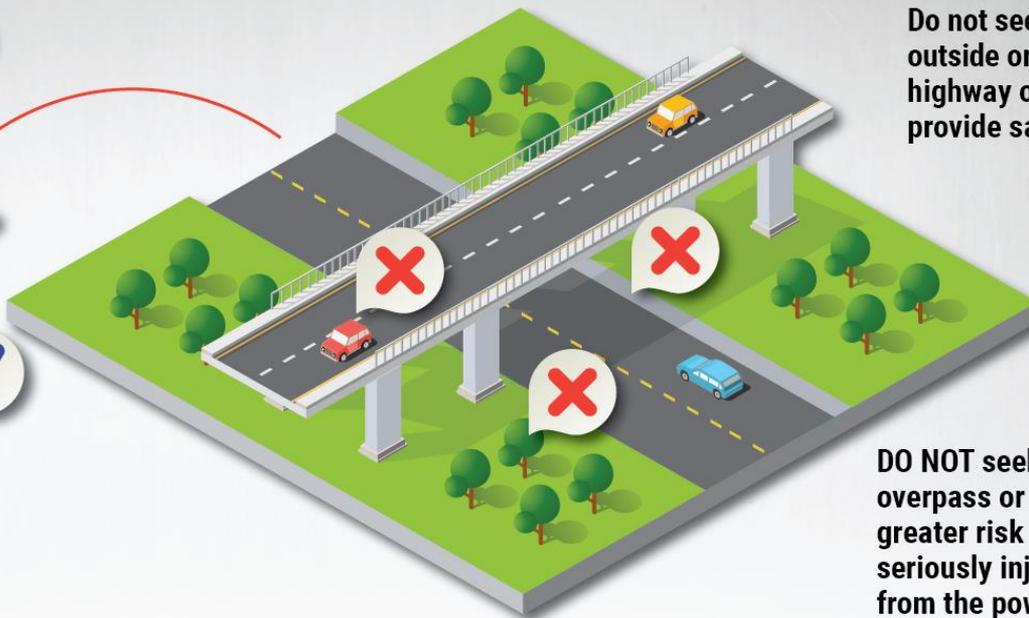


The next best option is a small, window-less room or hallway on the lowest floor of a sturdy building.



### WHAT NOT TO DO

Do not seek refuge in a vehicle, outside or under an overpass. A highway overpass does not provide safety from a tornado.



**DO NOT** seek shelter under an overpass or a tree. This puts you at greater risk of being killed or seriously injured by flying debris from the powerful tornadic winds.





# Tornado Sheltering

## Tornado Sheltering Guidelines

Seek the best available refuge area **immediately** when a Tornado Warning is issued.  
Your chance of surviving a tornado is excellent if you follow these guidelines.

### WORST OPTIONS

Mobile homes

Vehicles

Underneath a  
highway overpass

### BAD OPTIONS

Large open rooms  
like gymnasiums

Manufactured housing

### GOOD OPTIONS

Interior room  
of a well-constructed  
home or building

Basement

### BEST OPTIONS

Above or below ground  
Tornado Storm Shelter  
(NSSA/ICC 500 compliant)\*

Specifically-designed  
FEMA Safe Room\*

Find another option



Stay in place until all clear





# Tornado – May 15, 2018

PUBLIC INFORMATION STATEMENT  
NATIONAL WEATHER SERVICE ALBANY NY  
646 PM EDT Wed May 16 2018

...PUBLIC INFORMATION STATEMENT...

EF-1 Tornado Confirmed Near Saugerties, NY.

LOCATION...The tornado path started along Route 212 between Woodstock and Saugerties and moved east through the western and southern part of Saugerties before crossing the Hudson River and ending in Tivoli, NY, just south of the Clermont State Historic Site.

DATE...May 15, 2018

ESTIMATED TIME...2:29 PM EDT to 2:35 PM EDT

MAXIMUM EF SCALE RATING...EF1.

ESTIMATED MAXIMUM WIND SPEED...90 MPH.

ESTIMATED PATH WIDTH...0.1 miles or 528 feet.

PATH LENGTH...Approximately 5 miles.

BEGINNING LAT/LON...42.0812

ENDING LAT/LON...-74.0023

- \* FATALITIES...None.
- \* INJURIES...None.

\* THE INFORMATION IN THIS STATEMENT IS PRELIMINARY AND SUBJECT TO CHANGE PENDING FINAL REVIEW OF THE EVENT AND PUBLICATION IN NWS STORM DATA.

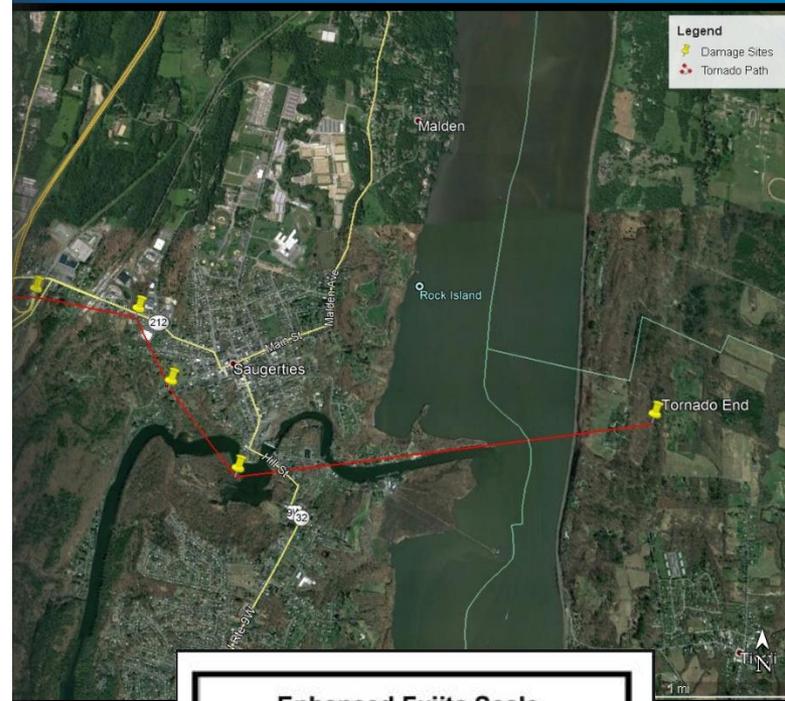
...SUMMARY...

The majority of the tornado damage was rated EF-0. The storm that produced the tornado also produced at least one microburst with winds up to 90 mph, which sheared and uprooted many large trees and sheared a few power poles. Most of the damage was indirect, from trees falling on homes, other structures and power lines.

Thanks to local and county emergency management for help with the damage survey.

SS

SND/CS



EF-0	65–85 mph winds
EF-1	86–110 mph
EF-2	111–135 mph
EF-3	136–165 mph
EF-4	166–200 mph
EF-5	>200 mph



# Severe Weather Safety Review

## SEVERE WEATHER

### HAZARDS



Over 280 fatalities occur each year in the U.S. from thunderstorm related hazards.

[weather.gov/safety](http://weather.gov/safety)

**TORNADO**  
Take shelter immediately in a sturdy structure



**LARGE HAIL**  
Move indoors away from windows



**SEVERE WIND**  
Move indoors away from windows



**FLOODING**  
Avoid rising creeks and water covered roads



**LIGHTNING**  
Move indoors if you hear thunder





# How to report: Who, What, When, Where

WHO you are (trained spotter)

WHAT are you reporting?

WHEN did it occur?

WHERE is the location of the damage?

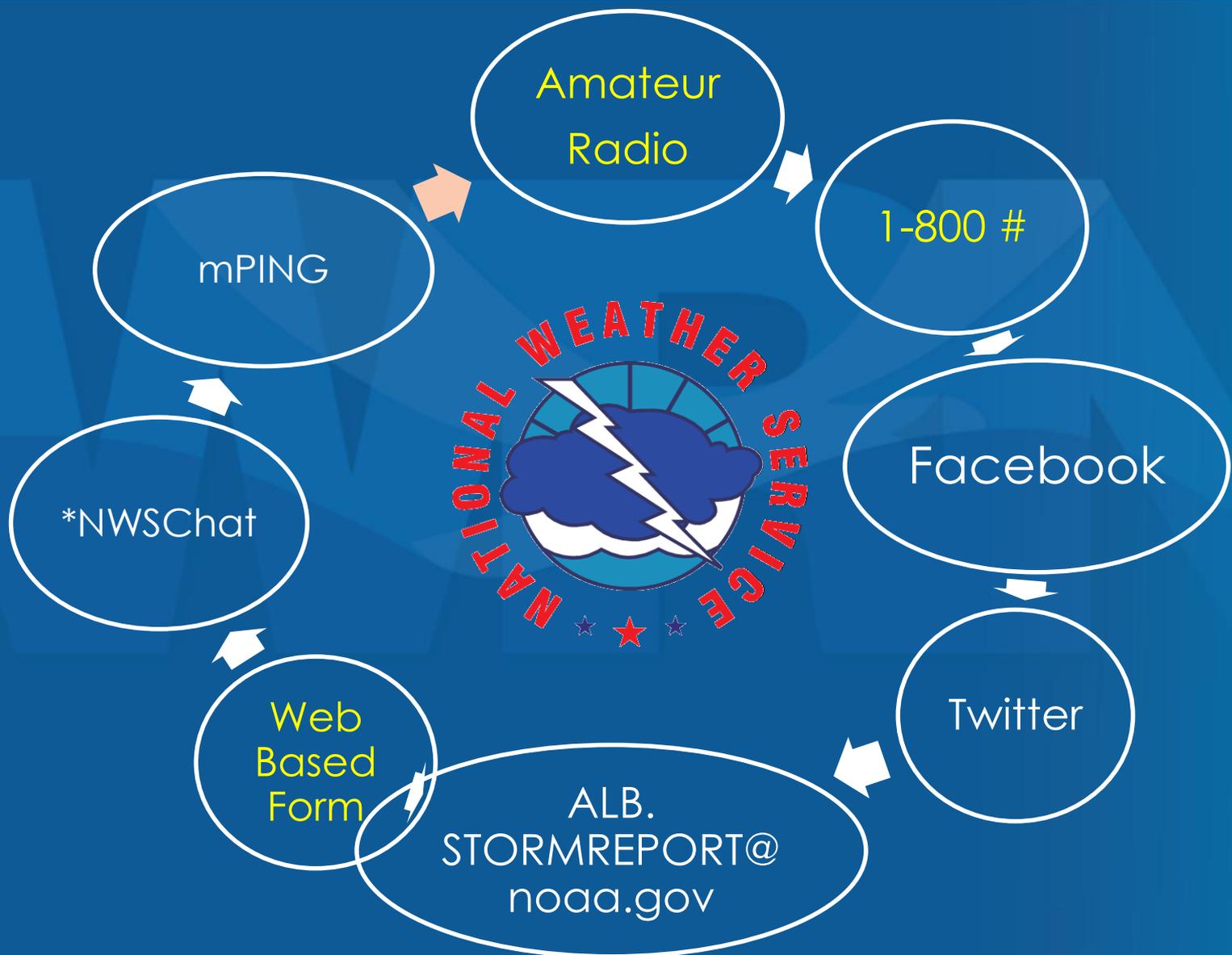


325 PM

Oak Ledge Lane  
Saugerties

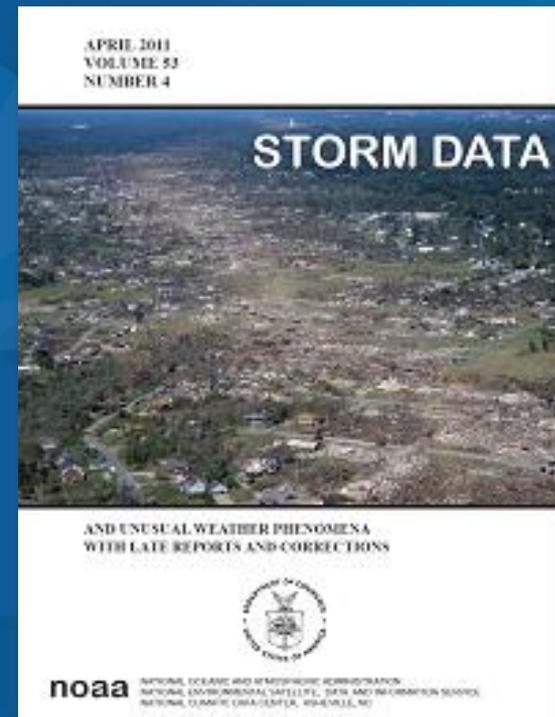


# How to Relay Your Report





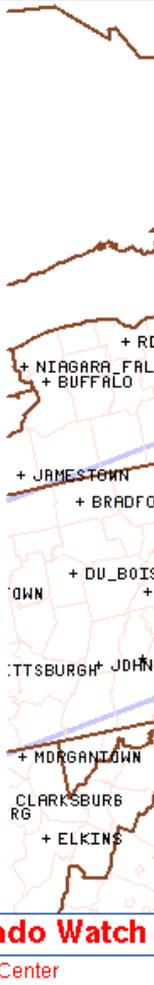
# FEMA and Your Data





# How it All Ties Together...

FLUS41 KALY 150852  
HWOALY



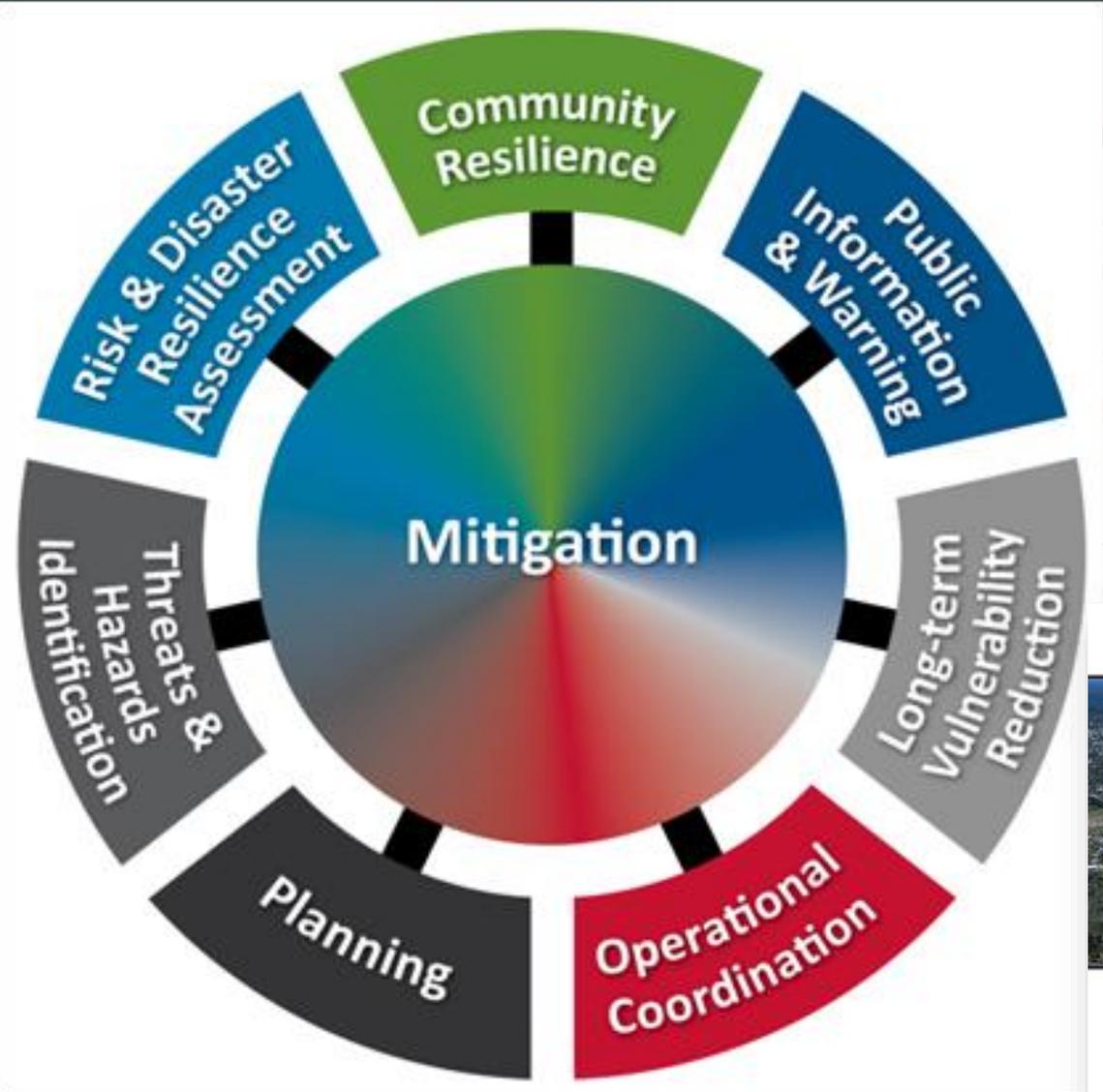
Threat I

Potentia



**Tornado Watch**  
Prediction Center

Spotter activation is n  
SS



Issued: 15 May 2018 at 1113 AM CDT



APRIL 2011  
VOLUME 53  
NUMBER 4

**STORM DATA**

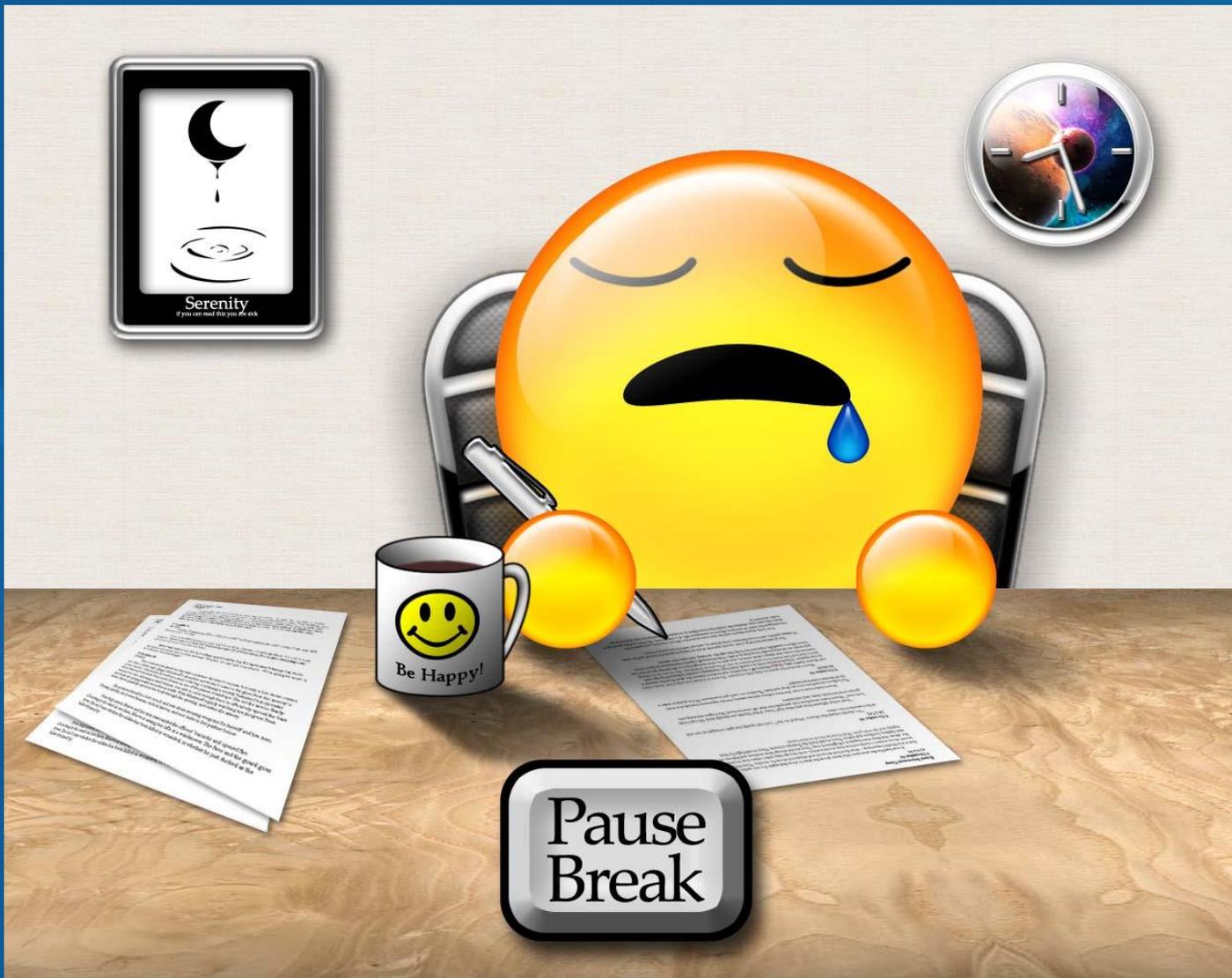


AND UNUSUAL WEATHER PHENOMENA  
WITH LATE REPORTS AND CORRECTIONS





# BREAK TIME





# Flood vs. Flash Flood

## Flood

-Any high flow, overflow, or inundation by water which causes or threatens damage



## Flash Flood

-A *rapid and extreme* flow of high water into a normally dry area, or a rapid water level rise in a stream or creek.

**-Requires immediate action to protect life and property!**





# Flooding

## Street/Poor Drainage Flooding



Usually dissipates shortly after heavy rain ends

## River Flooding



Usually continues until after river crests



# Flash Flooding

Heavy Rain

Impact Flooding



Don't underestimate the power of water!



6 inches of fast-moving water can knock over and carry away an adult.

12 inches of fast-moving water can carry away a small car.

18-24 inches of fast-moving water can carry away most large SUVs, vans and trucks.

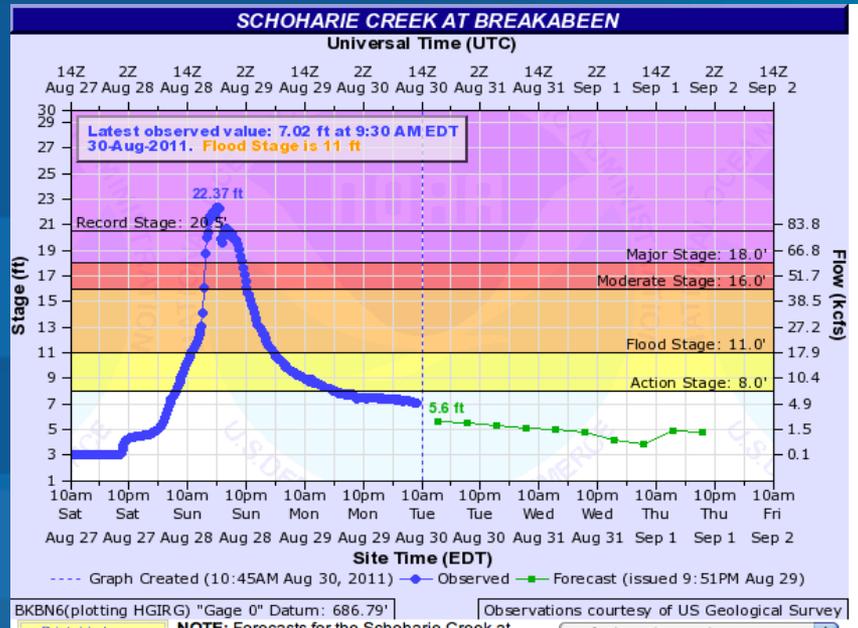
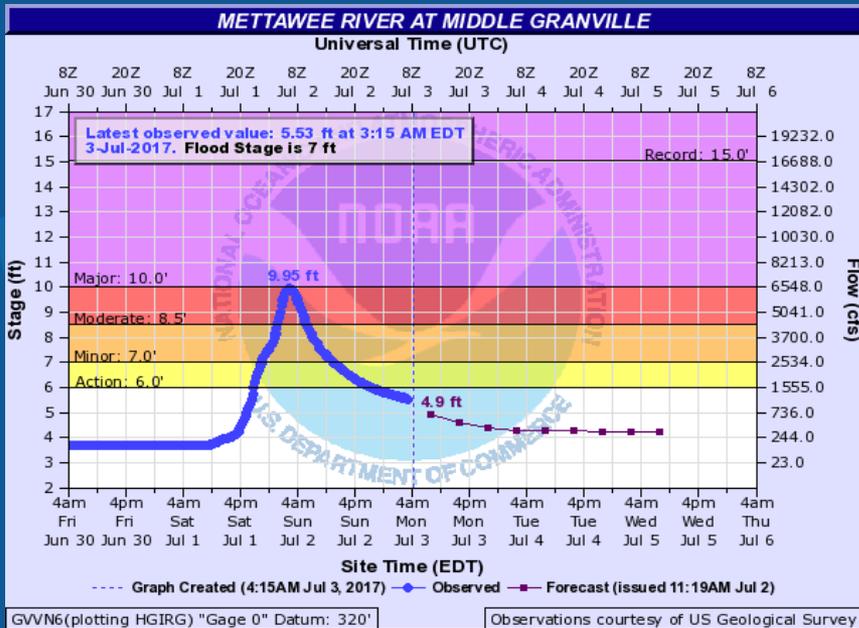


afternoon!

neighborhood streets



# River and Stream Flooding



Hoosick Falls Flooding Jul 2017



Tropical Storm Irene Aug 2011



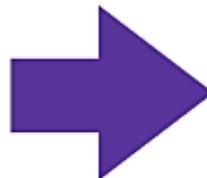
# Impact-Based Warnings

## NEW FLASH FLOOD WARNING FORMAT

Impact-based warnings contain hazard, source, and impact information, and additional damage threat tags. On the right is a sample impact-based warning.

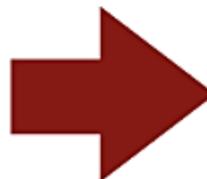
### Hazard, Source, and Impact Information

Each Flash Flood Warning (FFW) will contain individual lines that clearly state hazard, source, and impact information.



### Tags

Tags will appear at the bottom of FFWs and in Flash Flood Statements (FFSs), which provide supplemental information on active FFWs.



```
...FLASH FLOOD EMERGENCY FOR LIFE-THREATENING CATASTROPHIC FLOODING...  
The National Weather Service in League City has issued a  
  
* Flash Flood Warning for...  
  Northeastern Austin County in southeastern Texas...  
  
* Until 7:15 PM CDT.  
  
* At 1:19 PM CDT, Doppler radar indicated continued bands of rain and  
  thunderstorms across the area. Emergency management reported ongoing  
  water rescues. Rainfall rates of 2 to 3 inches per hour will persist  
  across the warned area.  
  
This is a FLASH FLOOD EMERGENCY FOR LIFE-THREATENING CATASTROPHIC  
FLOODING. This is a PARTICULARLY DANGEROUS SITUATION. SEEK HIGHER  
GROUND NOW!  
  
HAZARD...Life-threatening flash flooding caused by thunderstorms.  
  
SOURCE...Emergency management.  
  
IMPACT...Widespread, life-threatening flooding will continue and  
  perhaps worsen at some locations. Historic flooding is  
  expected to continue in the Houston metropolitan area through  
  the foreseeable future.  
  
* Some locations that will experience flooding include...  
  Pasadena, Pearland, League City, and Humble.  
  
PRECAUTIONARY/PREPAREDNESS ACTIONS...  
  
Move to higher ground now. This is an extremely dangerous and  
life-threatening situation. Do not attempt to travel unless you are  
fleeing an area subject to flooding or under an evacuation order.  
  
**  
LAT...LCN 2904 9515 2905 9527 2932 9536 2916 9543  
  
FLASH FLOOD...OBSERVED  
FLASH FLOOD DAMAGE THREAT...CATASTROPHIC  
EXPECTED RAINFALL...2-3 INCHES PER HOUR
```



# Flash Flooding

## Flash Flood: Ellicott City MD

July, 2016



**Credit: Branden Cromwell**



# October 31-November 1, 2019

Mohawk Valley: East Canada Creek Flooding Video  
Courtesy of Craig Adams





# October 31-November 1, 2019

## River flood damage in Herkimer County



1 fatality in Newport, Herkimer County due to flash flood (person swept away in flood waters)



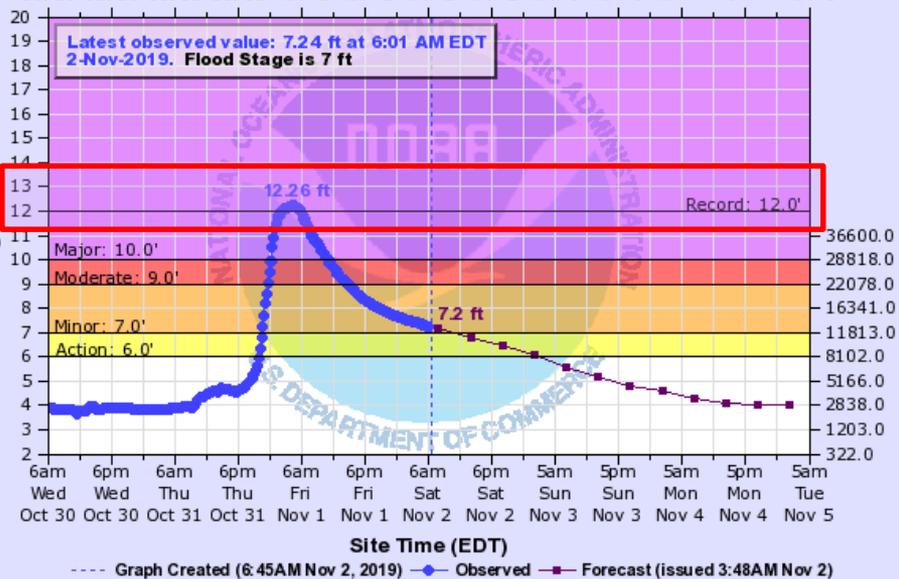


# Record Flooding

## SACANDAGA RIVER AT HOPE

Universal Time (UTC)

10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z  
 Oct 30 Oct 30 Oct 31 Oct 31 Nov 1 Nov 1 Nov 2 Nov 2 Nov 3 Nov 3 Nov 4 Nov 4 Nov 5

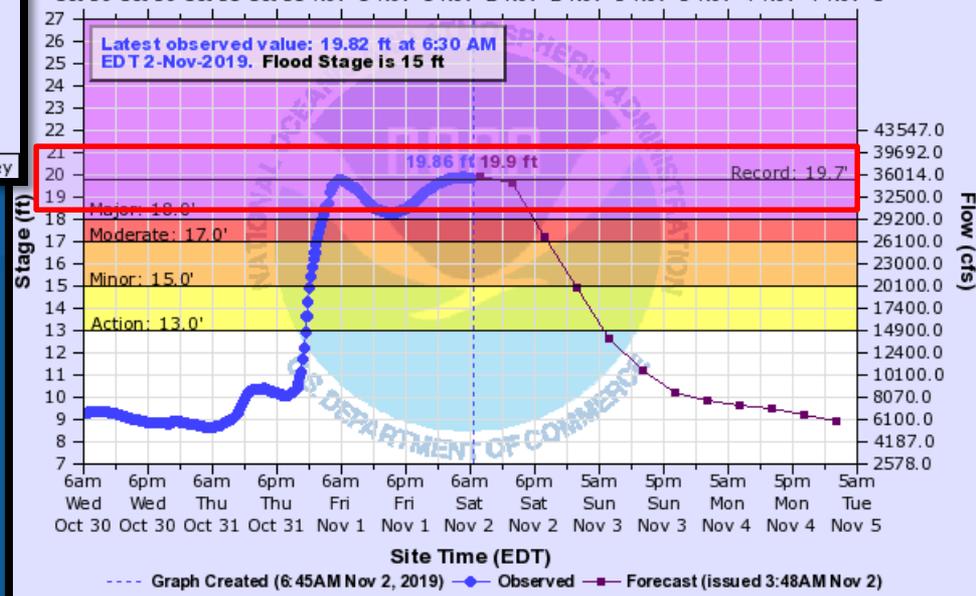


## Mohawk River at Little Falls

### MOHAWK RIVER AT LITTLE FALLS

Universal Time (UTC)

10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z 22Z 10Z  
 Oct 30 Oct 30 Oct 31 Oct 31 Nov 1 Nov 1 Nov 2 Nov 2 Nov 3 Nov 3 Nov 4 Nov 4 Nov 5



## Sacandaga River at Hope

LTLN6(plotting HGIRG) "Gage 0" Datum: 308.84'

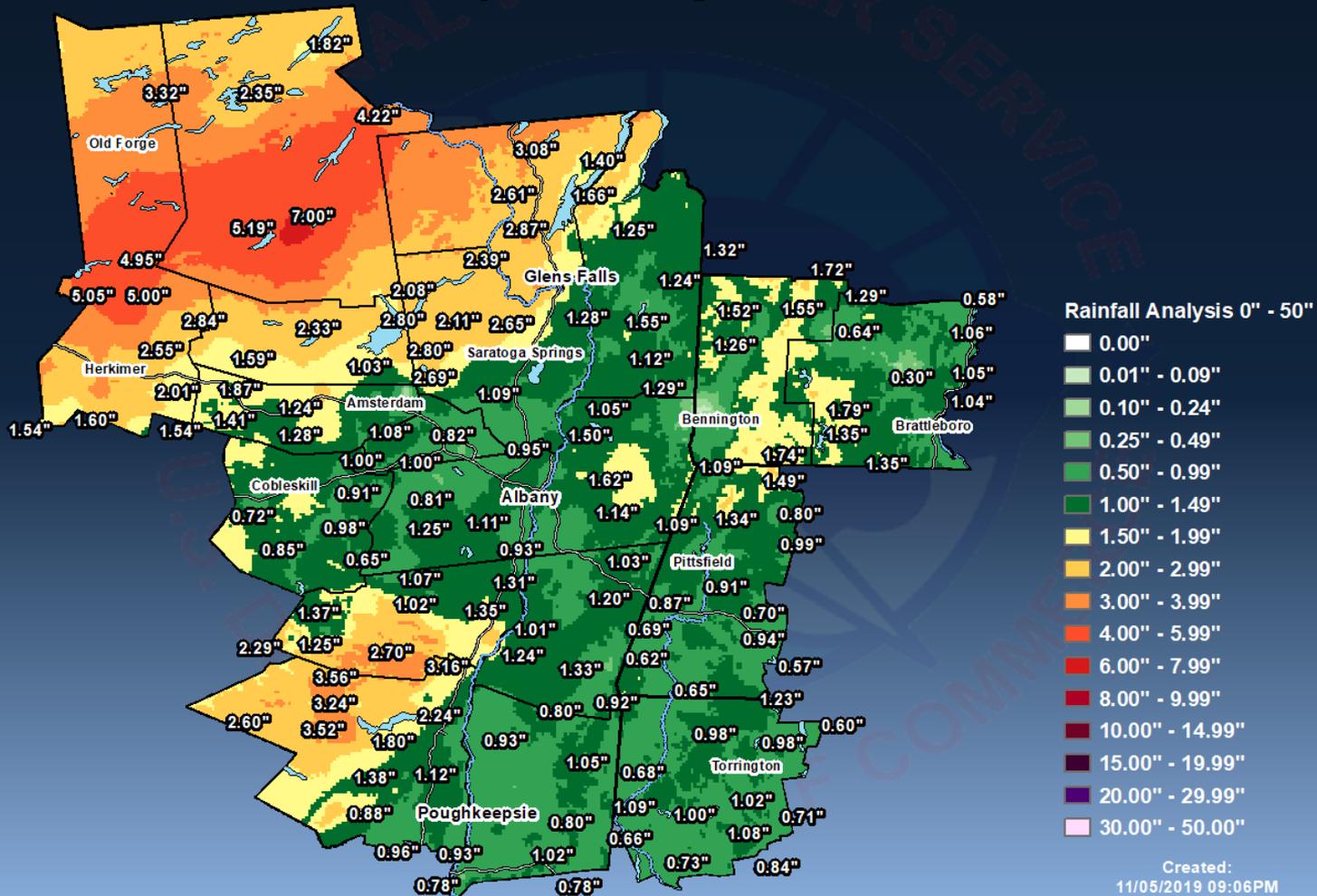
Observations courtesy of US Geological Survey



# October 31 - November 1, 2019

## National Weather Service Albany New York Rainfall Analysis 10/31/2019 08:00AM to 11/01/2019 08:00AM

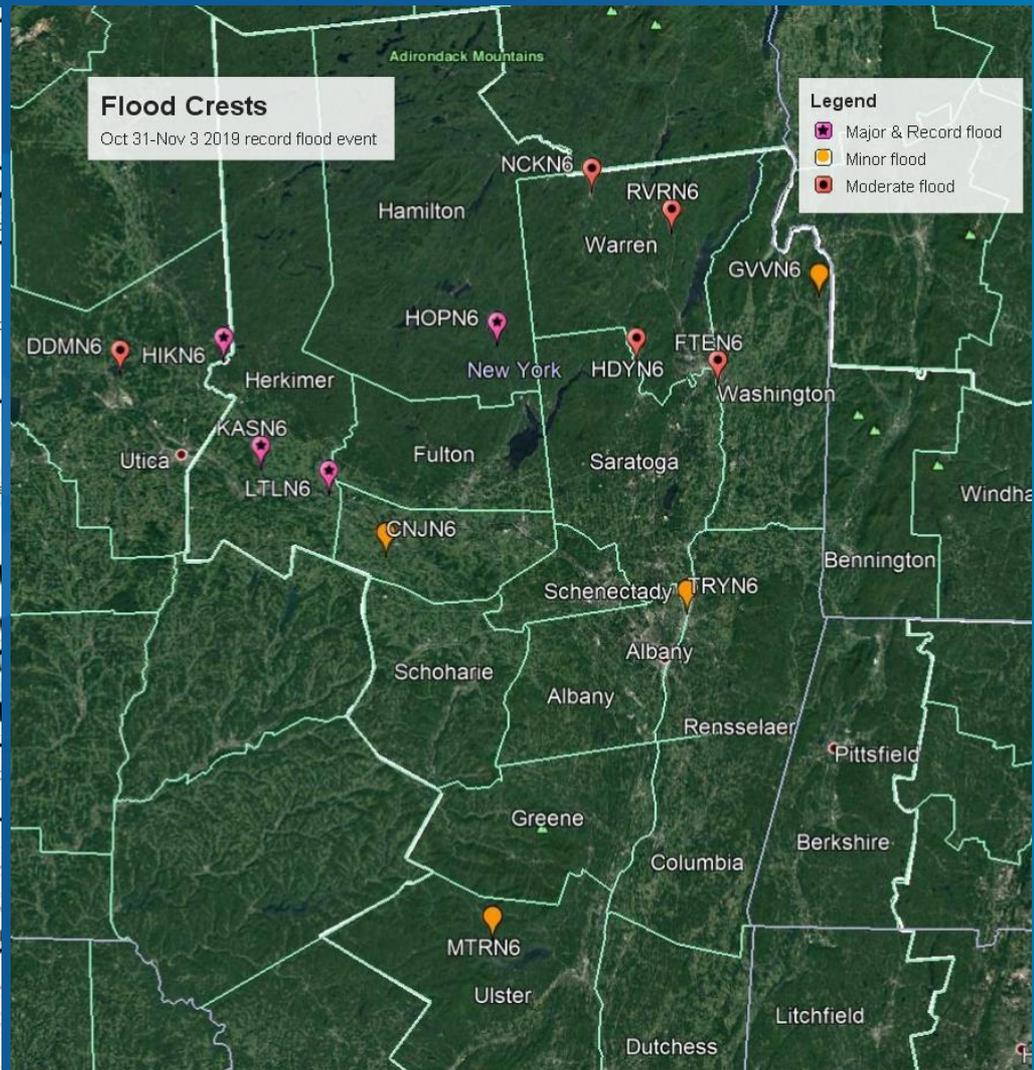
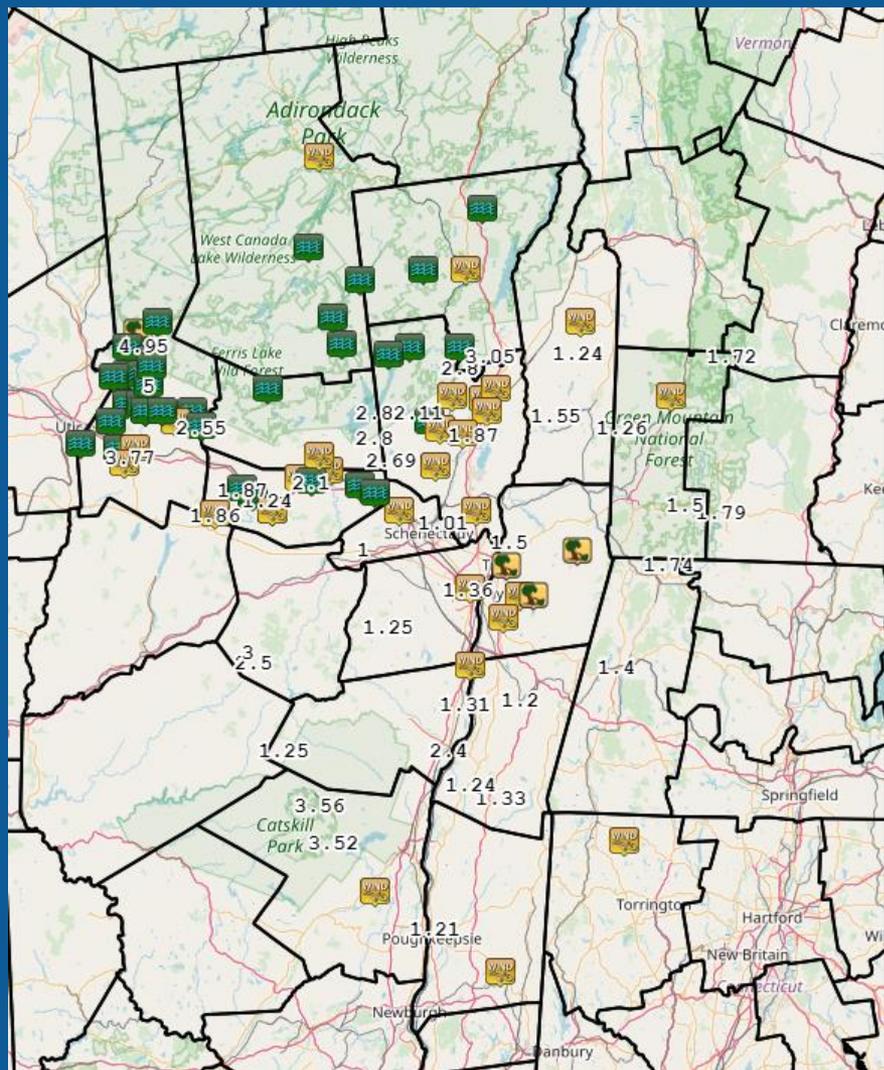
Analysis Data Source: Regional Observations



This is an experimental product. Care should be taken in using the data. Unofficial observations are plotted. Values at interpolated locations may not represent actual precipitation totals at that location.



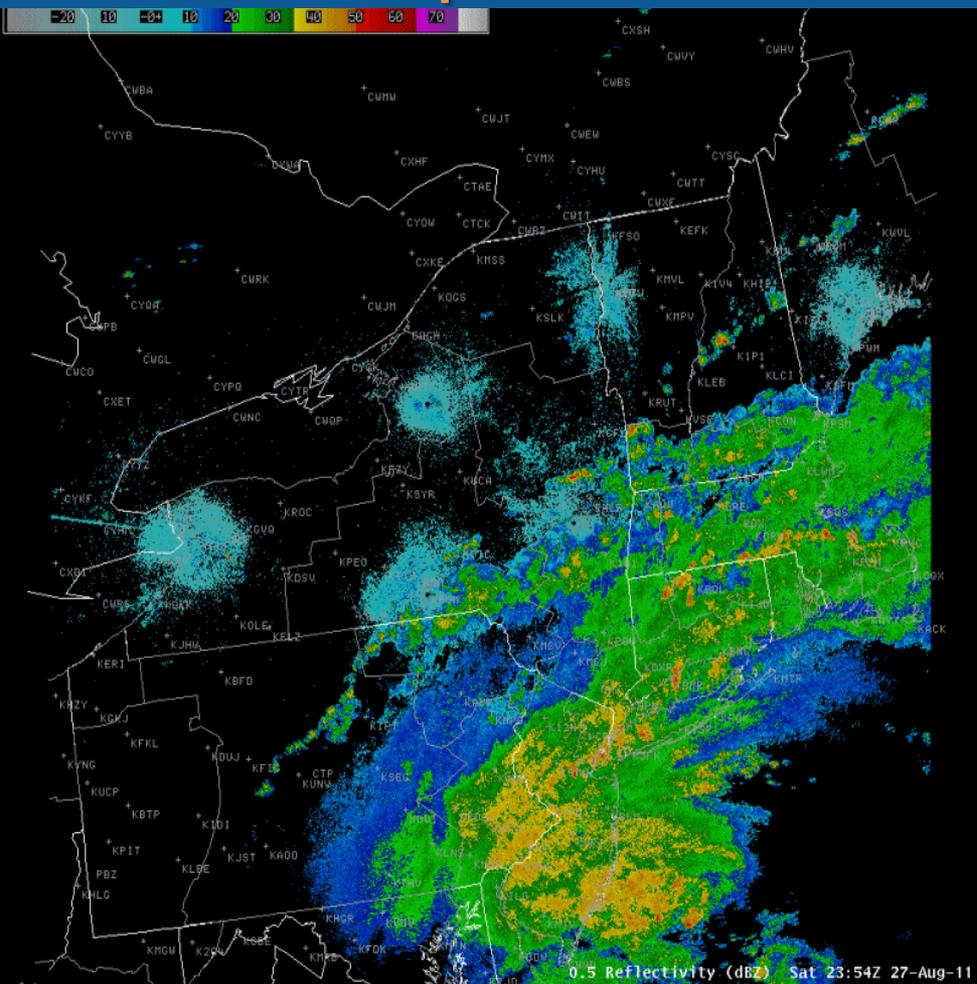
# Oct 31- Nov 1, 2019 Damage Reports





# Tropical Storm Impacts

## Tropical Storm Irene – August 2011



VT Route 4 After Irene





# Flooding – What to Report?

- Depth of water?
- Flowing/rising or standing?
- Are roads closed or impassible?
- Usual flood-prone spot, or not?
- Water flowing into buildings?
- Damage from flooding?



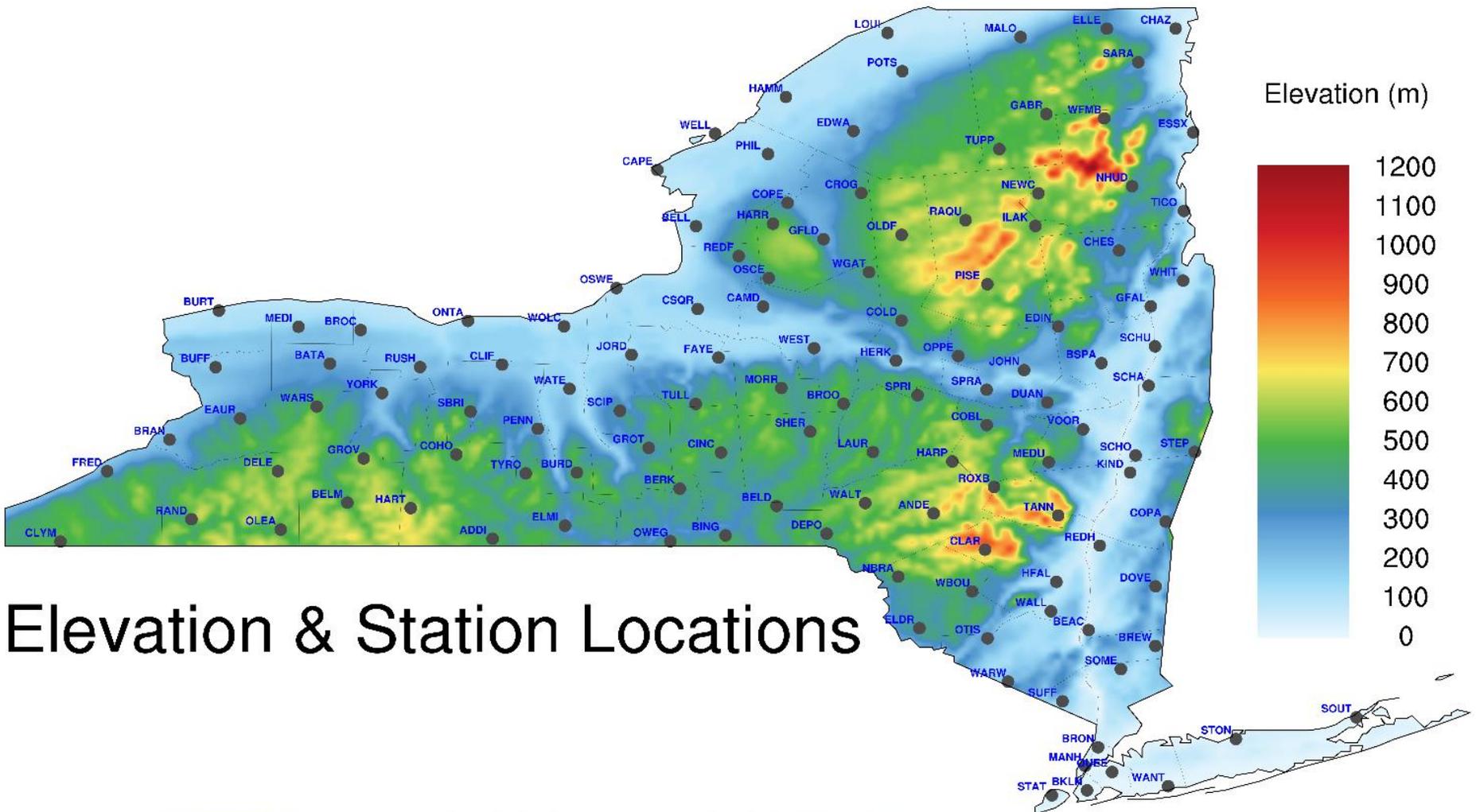


# NY Mesonet Introduction



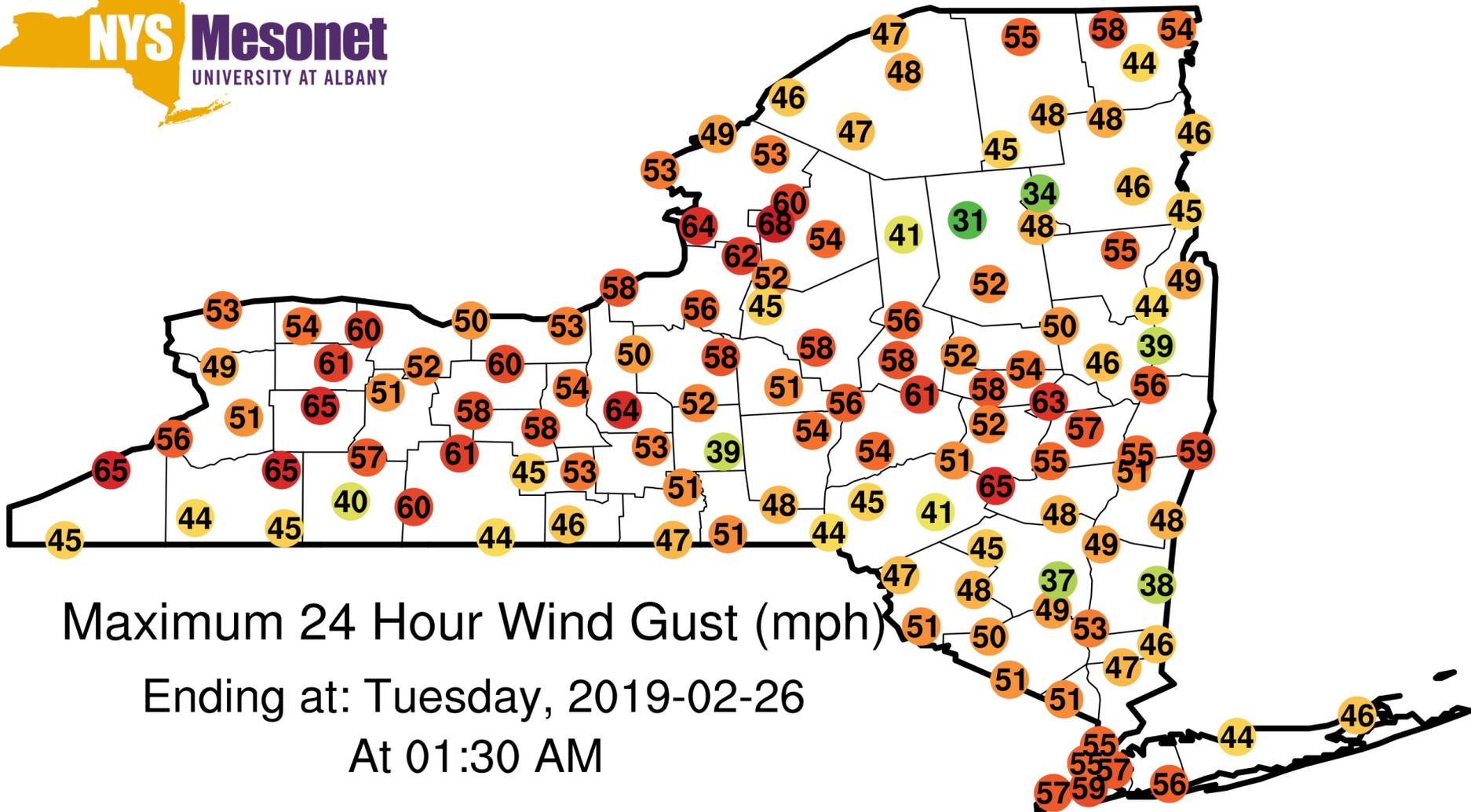


# NY Mesonet





# NY Mesonet





# Join CoCoRaHS!



## Wanted: Volunteer Rainfall Observers!

Join CoCoRaHS (Community Collaborative Rain, Hail and Snow Network)

### What is CoCoRaHS?

CoCoRaHS is a national grassroots, non-profit, community-based, high-density precipitation network ...

... made up of volunteers of all ages and backgrounds



... who take daily measurements of precipitation right in their own backyards

### Why is the CoCoRaHS data so useful?



Precipitation is important and highly variable

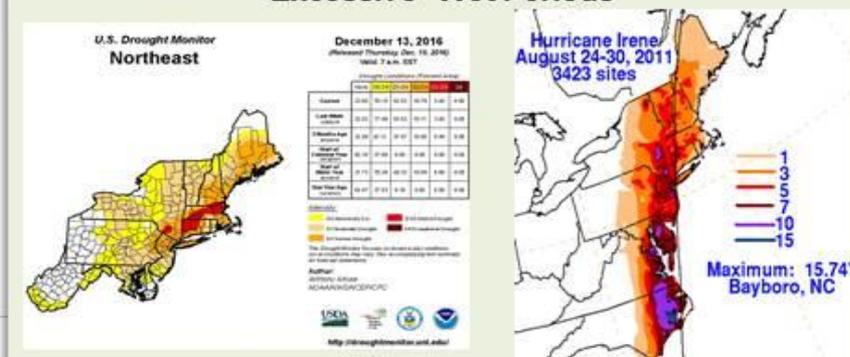
Data sources are few and rain gauges are far apart

CoCoRaHS data is useful for daily rainfall totals as well as the major rainfall events:

Improves Knowledge During Drought & Excessive Wet Periods

The image shows two screenshots of the CoCoRaHS website. The left screenshot displays a 'CoCoRaHS March Madness 2017' report for March 1-31, 2017, with a map of the United States showing precipitation totals. The right screenshot shows the 'My Data Entry: Daily Precipitation Report Form' with fields for station name, date, and observation type (Rain, Hail, Snow).

[www.CoCoRaHS.org](http://www.CoCoRaHS.org)





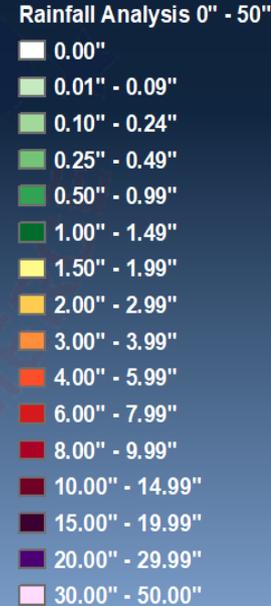
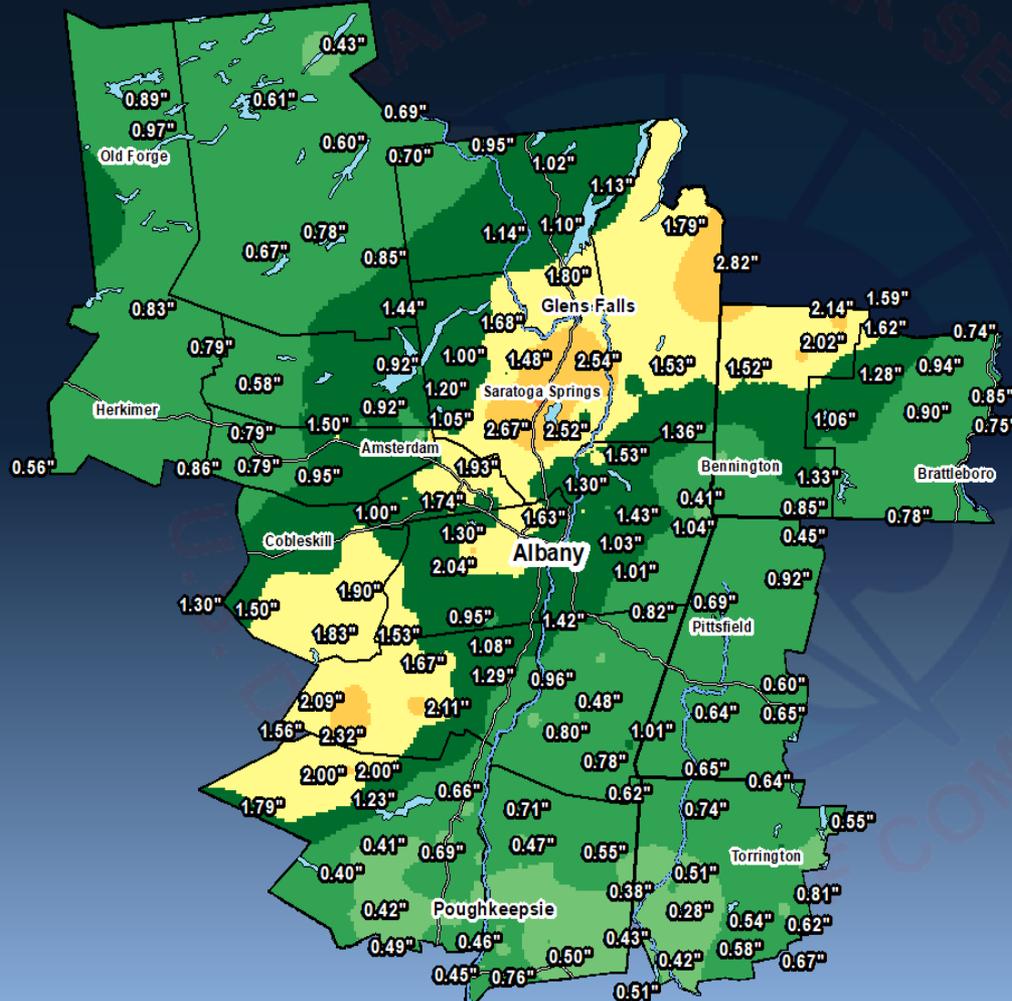
# Join CoCoRaHS!

Daily Precipitation (inches)  
New York 4/15/2019

Become a member  
at [www.cocorahs.org](http://www.cocorahs.org)

## National Weather Service Albany New York Preliminary Rainfall April 14-15, 2019

Analysis Data Source: Regional Observations



Created:  
04/15/2019 11:19AM

This is an experimental product. Care should be taken in using the data. Unofficial observations are plotted. Values at interpolated locations may not represent actual precipitation totals at that location.

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Skywarn™ Weather Spotter!

You did it!  
*Congratulations*



# Skywarn Spotter Information Sheet



NATIONAL WEATHER SERVICE, NOAA  
ALBANY, NY  
SKIWARN INFORMATION SHEET



Report Severe Weather (Backup)	
Weather Spotter Field Guide	<a href="http://www.weather.gov/media/owlie/SGJune6-11(1).pdf">www.weather.gov/media/owlie/SGJune6-11(1).pdf</a>
Email	<a href="mailto:alb.stormreport@noaa.gov">alb.stormreport@noaa.gov</a>
NWS Albany	<a href="http://www.weather.gov/Albany">www.weather.gov/Albany</a>
Twitter	<a href="https://twitter.com/NWSAlbany">@NWSAlbany</a>
Facebook Page	<a href="https://www.facebook.com/NWSAlbany">https://www.facebook.com/NWSAlbany</a>
NOAA Weather Radio	<a href="https://www.weather.gov/nwr/">https://www.weather.gov/nwr/</a>
Storm Prediction Center	<a href="http://www.spc.noaa.gov">www.spc.noaa.gov</a>
NWS Online Weather School	<a href="http://www.weather.gov/jetstream">www.weather.gov/jetstream</a>
Weather Prediction Center	<a href="http://www.wpc.ncep.noaa.gov">www.wpc.ncep.noaa.gov</a>
River Flood Monitoring	<a href="http://water.weather.gov/ahps">water.weather.gov/ahps</a>
CoCoRaHS	<a href="http://www.cocorahs.org">www.cocorahs.org</a>
NWS Amateur Radio Frequency	Primary 146.64 MHz - Secondary 145.19 MHz

## IMPORTANT WEATHER TO REPORT

When you report, please give your location (including your county) and the time of the observation. Try to report as soon as possible after observing the event and, *remember your safety comes first!* Please concentrate on the following phenomena:

- SNOWFALL** After 1 inch of new snow, and then at 2 inches, 4 inches, and every 2 inches thereafter (e.g., 2, 4, 6, 9, 12, etc.). Then final storm total at the conclusion of the event.
- FREEZING RAIN** As soon as you observe the occurrence of freezing rain or freezing drizzle, especially if it starts to collect on objects. Call again if the ice accumulation exceeds 1/4 inch. (measure on flat surface)
- THUNDER SNOW** Location and time of occurrence
- WIND SPEEDS** Report wind speeds greater than 40 mph
- RAINFALL** Report when you receive one inch (and then at least every inch thereafter)
- FUNNEL CLOUD** A "rotating" appendage descending from the base of a cumulonimbus cloud, but not touching the ground. If possible, always look at the area beneath the funnel cloud for flying debris. If flying debris is observed, it is a tornado.
- TORNADO** Violently rotating column of air descending from a cumulonimbus cloud and touching the ground. Look for flying debris. If possible, report any injuries or fatalities
- HAIL** Report hail 0.75 or larger. Specify the diameter based on the hail scale (see other side)
- FLOODING** Report any flooding you observe, including basement, road, stream, creek, and ice jam flooding. Report the name of the stream/creek, road number/name (if applicable) and depth
- DAMAGE** Report all storm-related damage (large branches, fallen trees, structural damage, flood damage, etc.) Even if it is several days after the event.

## DEWPOINT SCALE

Degrees "F"	50-55	55-60	60-65	65-70	>70
Comfort Scale					

HAIL	Pea	Plain M&M	Penny	Nickel	Quarter	Half Dollar
Scale	0.25 in	0.50 in	0.75 in	0.88 in	1.00 in	1.25 in
HAIL	Golf Ball	Baseball	Softball			
Scale	1.75 in	2.75 in	4.00 in			

## ENHANCED FUJITA SCALE

EF0	65-85 mph
EF1	86-110 mph
EF2	111-135 mph
EF3	136-165 mph
EF4	166-200 mph
EF5	>200 mph

## ESTIMATED WIND SCALE

- 25-31 MPH.....Large branches in motion; whistling in telephone wires
- 32-38 MPH.....Entire trees in motion; slight difficulty walking against wind
- 39-54 MPH.....Twigs break off trees; wind generally impedes progress
- 55-72 MPH.....Damage to chimneys and TV antenna; large limbs/branches down
- 73-112 MPH.....Roof surfaces damaged; windows broken; light mobile homes moved or overturned; moving vehicles pushed off road
- 113-157 MPH.....Roofs torn off; weak buildings and mobile homes destroyed
- ≥158 MPH.....Severe damage; cars lifted completely off ground

## DEFINITIONS

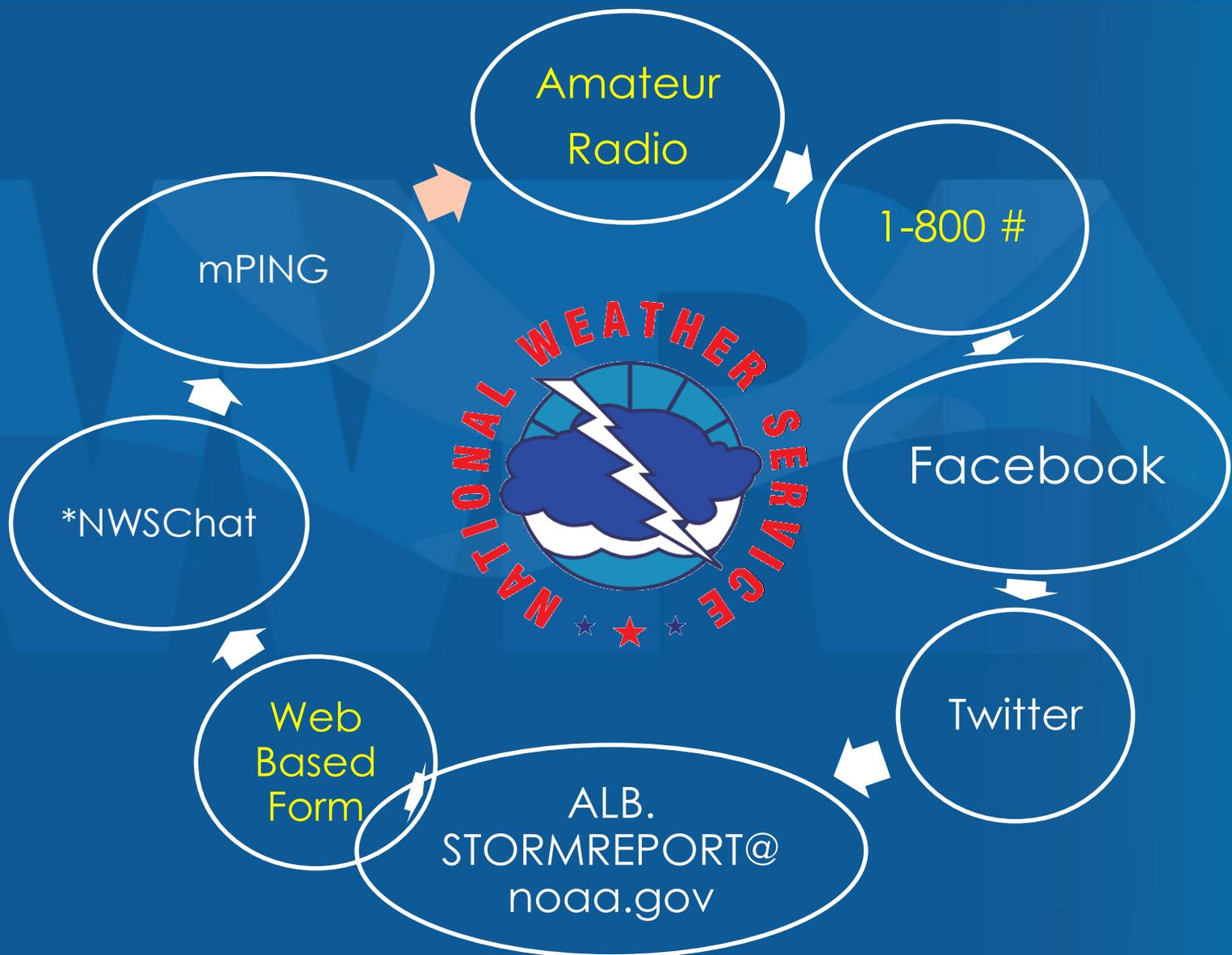
- Severe Thunderstorm** A thunderstorm which produces hail to 1 inch in diameter or larger and/or wind gusts to 58 mph (50 kts) or greater
- Watch** Conditions are favorable for the weather event in or near the watch area
- Warning** The weather event is imminent or occurring in the warned area
- Advisory** The weather event will be an inconvenience. However, if caution is not exercised, it could become life-threatening (mostly during the winter months)
- Flash Flood** A flood caused by heavy rainfall in a short period of time, generally less than 6 hrs
- Flood** Inundation caused by heavy rain which generally takes greater than 6 hrs to occur
- Tornado** A violently rotating column of air which extends from a thunderstorm and it is in contact with the ground
- Funnel Cloud** A rotating, funnel-shaped cloud extending from the base of a thunderstorm and is not in contact with the ground
- Downburst** A strong downdraft with an outrush of damaging wind on or near the ground
  - Macroburst** - swath of damaging wind more than 2.5 miles wide
  - Microburst** - swath of damaging wind 2.5 miles wide or less

## SKYWARN FAQs

- SKYWARN Spotter recertification - every 2 years
- SKYWARN Spotter webpage - <https://www.weather.gov/aly/skywarn>



# How to Relay Your Report





# Skywarn Weather Spotter Training

Alb.stormreport@noaa.gov

Thank You!



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



[NWSAlbany](https://www.facebook.com/NWSAlbany)



[@NWSAlbany](https://twitter.com/NWSAlbany)



[NWSAlbany](https://www.youtube.com/NWSAlbany)