



# Basic SKYWARN Training



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## Section 1: NWS Background, Severe Weather Reporting, Severe Weather Safety

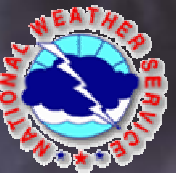
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National Weather Service, Wakefield VA  
<http://weather.noaa.gov/akq>





# Basic SKYWARN Training



- ▶ **The National Weather Service is:**
  - ▶ *A Federal Government Agency*
  - ▶ *Part of the Dept. of Commerce*
  - ▶ *Nat'l Oceanic and Atmospheric Admin. (NOAA) is our Parent Agency*
  - ▶ *A 5000 Employee Agency Dedicated to Saving Lives and Protecting Property*
- ▶ **WFO Wakefield is 1 of 122 local offices nationwide (including Puerto Rico & Guam)**





# Basic SKYWARN Training



## NWS Mission Statement

**“The National Weather Service <sup>TM</sup> (NWS) provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, **for the protection of life and property** and the enhancement of the national economy. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community.”**





# Basic SKYWARN Training



## National Weather Service in the Mid Atlantic Region



WFO Baltimore/Washington DC  
(703) 260-0107  
<http://weather.noaa.gov/wx>

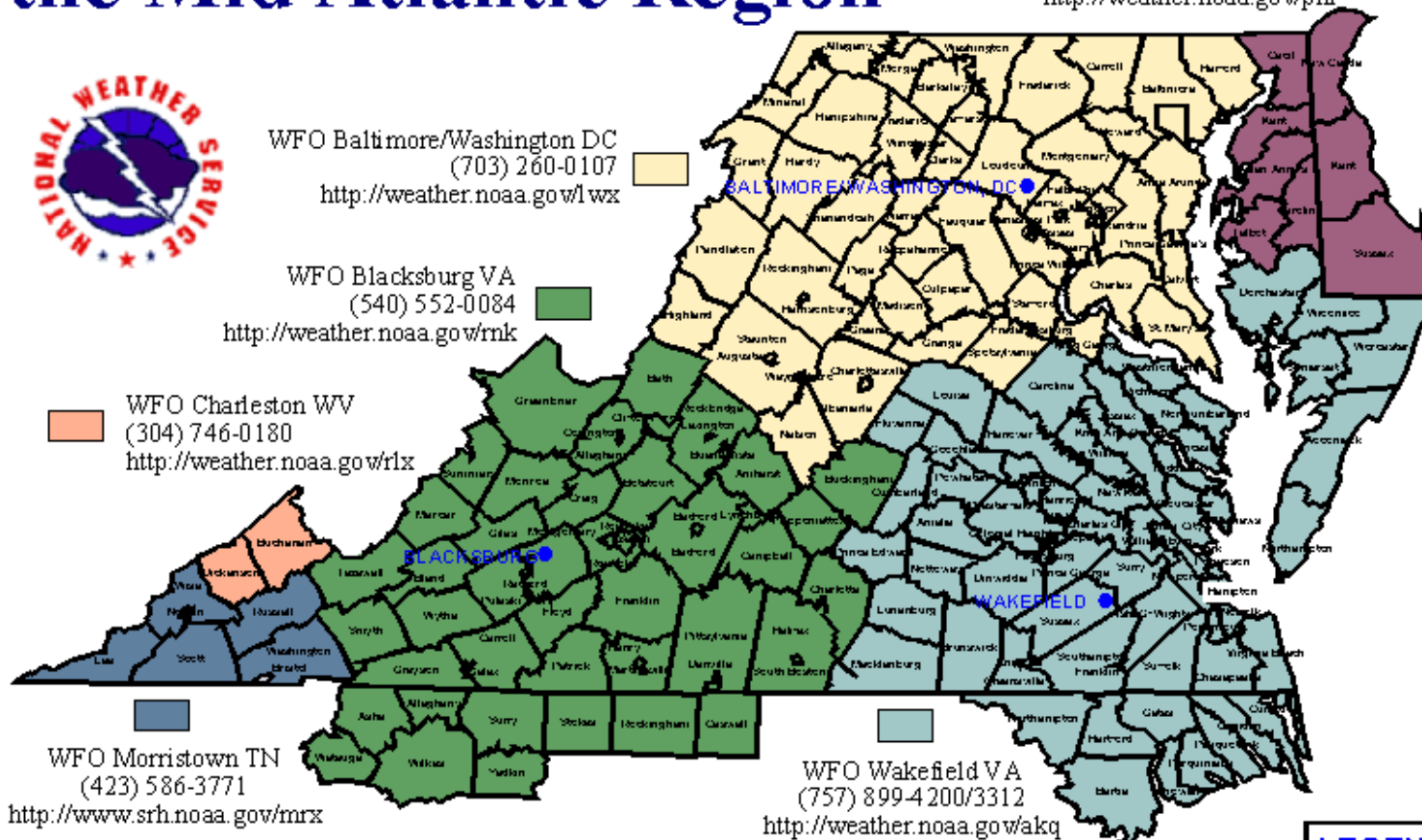
WFO Blacksburg VA  
(540) 552-0084  
<http://weather.noaa.gov/rnk>

WFO Charleston WV  
(304) 746-0180  
<http://weather.noaa.gov/rix>

WFO Morristown TN  
(423) 586-3771  
<http://www.srh.noaa.gov/mrx>

WFO Wakefield VA  
(757) 899-4200/3312  
<http://weather.noaa.gov/akq>

WFO Mt. Holly NJ  
(609) 261-6602  
<http://weather.noaa.gov/phi>



**LEGEND**  
● WFOs





# Basic SKYWARN Training



- **What is SKYWARN?**
  - *A loosely organized cadre of volunteers who provide ground truth severe weather information to the NWS, often in real-time*
  - *Every NWS office has a SKYWARN spotter group*
  - *Different modes of operation in different parts of the U.S.*
  - *Training provided by NWS*





# Basic SKYWARN Training



- **What is SKYWARN (contd)?**
  - *SKYWARN is year-round – Snow, thunderstorms, ice, hurricanes, tornadoes, etc.*
  - *Spotters have a means of contacting NWS with severe weather reports (phone, e-mail, amateur radio)*
  - *Anytime severe/significant weather occurs, we need spotters to provide us ground-truth info*





# Basic SKYWARN Training

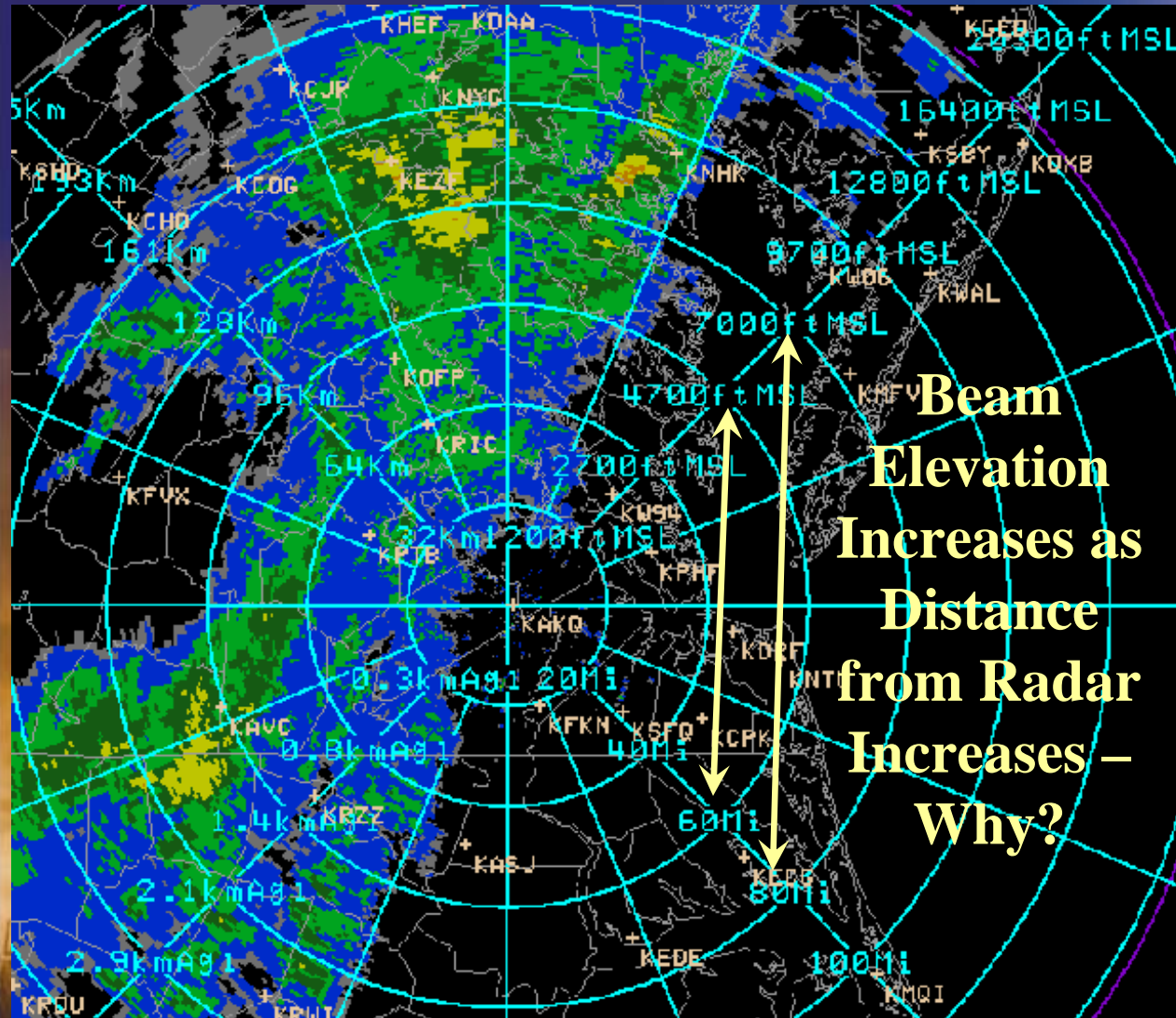


- **Why is SKYWARN needed?**
  - *Verification of warnings – NWS performance*
  - *Warning Decision Making Process*
  - *Quantifying magnitude of severe weather*
    - **Hail Size, Wind gusts, rainfall/snowfall amounts, etc.**
  - *Assessment of damage*
    - **Wind, Tornado, Flood, Hurricane/Storm Surge**
  - *Climatological Database (Storm Data)*
  - *Verification of Radar Data (Next Slide)*





# Basic SKYWARN Training



- Is Radar Depiction Accurate (Hail, Wind Tornado indications)?
- Is Phenomena Below Beam Level (hurricane tornadoes)?







# Basic SKYWARN Training



- **Why is SKYWARN needed?**
  - ***BOTTOM LINE – SKYWARN spotters help the NWS do its job BETTER!!***

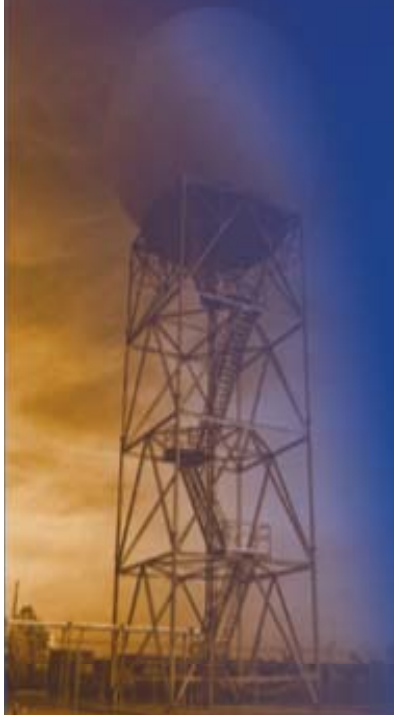




# Basic SKYWARN Training



What is the Definition  
of a *Severe*  
*Thunderstorm*?





# Basic SKYWARN Training



- **Severe Thunderstorm Definition**

- **2 parts – Hail and Wind**

- **Hail –  $\frac{3}{4}$  Inch in Diameter (penny size) or larger**





# Basic SKYWARN Training



- **Severe Thunderstorm Definition**
  - **2 parts – Hail and Wind**
  - **Wind – Sustained wind or wind gusts 58 mph (50 knots) or higher**
  - **Damage to Trees, Power lines, and/or Structures**
  - **Tornado Produced**



Church Creek, Md. – 4/28/2002



Near Hanover, Va. – March, 1997



**SKYWARN**



# Basic SKYWARN Training



## Making Good Severe Weather Reports

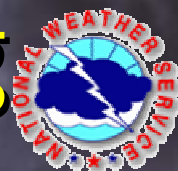
Answer 3 Basic Questions:

- 1). **What Happened?** Type and Magnitude of the Event
- 2). **When Did the Event Happen?** Also, event duration.
- 3). **Where Did the Event Happen?** Location Referenced to City/Town, Portion of County, Major Intersection
  - a). Lat/Lon info not yet able to be readily used.





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## Making Good Severe Weather Reports

### What Should Be Reported?

#### Severe Weather Reporting Criteria

##### *Thunderstorms and Hurricanes*

**Hail** - Pea Size or Larger

**Winds** - 50 mph or higher

- Trees, Branches, Power Lines Down
- Any Structural Damage



**Tornadoes**

**Funnel Clouds**

**Waterspouts**



**Flooding** - Ditches, Streets, Streams & Rivers.

ALSO, Coastal Flooding from High Tides



##### *Winter Weather*

**Snow** - Depth of 2" or more, or falling at a rate of 1" per hour or more

**Icing** - Any Ice Accumulation on Roads, Trees, etc.

Also, Lightning deaths/injuries and damage

John Partillo/The Tennessean





# Basic SKYWARN Training



## Making Good Severe Weather Reports

### How Can You Provide Reports?

## Reporting Severe Weather

**By Phone** - 800-737-8624 (severe weather only!)  
- 757-899-4200 (forecast info line)

**By E-Mail** - [akq-report@noaa.gov](mailto:akq-report@noaa.gov)

**By HAM Radio...Primary Net Controller is KO4RK - Joe**

- Use HAM Call Sign as primary ID
- AKQ HAM Station ID is WX4AKQ

#### HAM Radio Frequencies Used:

* Franklin VA 147.30	* Elizabeth City NC 146.655
* Richmond VA 145.43	* Williamsburg VA 146.76
* Chester VA 147.36	* Chesapeake VA 146.82
* Ahoskie VA 146.91	* Isle of Wight VA 147.195





# Basic SKYWARN Training



## Making Good Severe Weather Reports

### What Should Be Contained in Your Reports?

Type/Magnitude  
of Event (What)

Name/Spotter ID

Location  
of Event  
(Where)

Damage?  
(What)

Deaths/Injuries  
(What)

Time of  
Event  
(When)







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## Making Good Severe Weather Reports

### Some Additional Tips/Suggestions

Reported Events  
Should be on  
*Event List*

Report Event  
*ASAP*

Don't  
Assume We  
Know About  
the Event!!

Be *Factual*,  
*Avoid*  
*Speculation*





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## Making Good Severe Weather Reports

### Report Examples (Good and Bad)

This is Mark, MWOR044, I'm at Rt.13 and Rt. 113 in Pocomoke City. I'd like to report golfball size hail and wind gusts to 50 mph at this time.

*Is this a **good** or **bad** report? Why?*





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## Making Good Severe Weather Reports

### Report Examples (Good and Bad)

This is Jimmy, one of your Perquimans spotters, and it's pourin' rain and hailin' out here. Hail bigger than my thumb. Wind blowin' pretty bad, too.

*Is this a **good** or **bad** report? Why?*





# Basic SKYWARN Training



## Making Good Severe Weather Reports

### Report Examples (Good and Bad)

" Hi, this is Carol, spotter ID is VNOT062. I am 4 miles south of Crewe in Nottoway County, VA on route 49. However, I just drove past a swath of large trees down, and numerous branches were on the ground. The trees were lying in one direction; so it looks to be straight line wind damage."

*Is this a **good** or **bad** report? Why?*





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## Making Good Severe Weather Reports

### Report Examples (Good and Bad)

This is AI, and man are we having some kinda severe storm. Lightning like crazy, wind blowin' like I've never seen before, and hail poundin' on my roof. ...Say, am I going to be able to go fishing tomorrow?

*Is this a **good** or **bad** report? Why?*





# Severe Weather Safety – Watches vs. Warnings



- In all instances, **WARNINGS** are more important than watches
- **WATCH** – **ALERT** product – *Conditions are favorable* for the event to occur. Does not mean event **WILL** occur!
- **WARNING** - **ACTION** product – *Event imminent, occurring and heading your way, or high likelihood of occurring. Take appropriate action* to protect life & property!



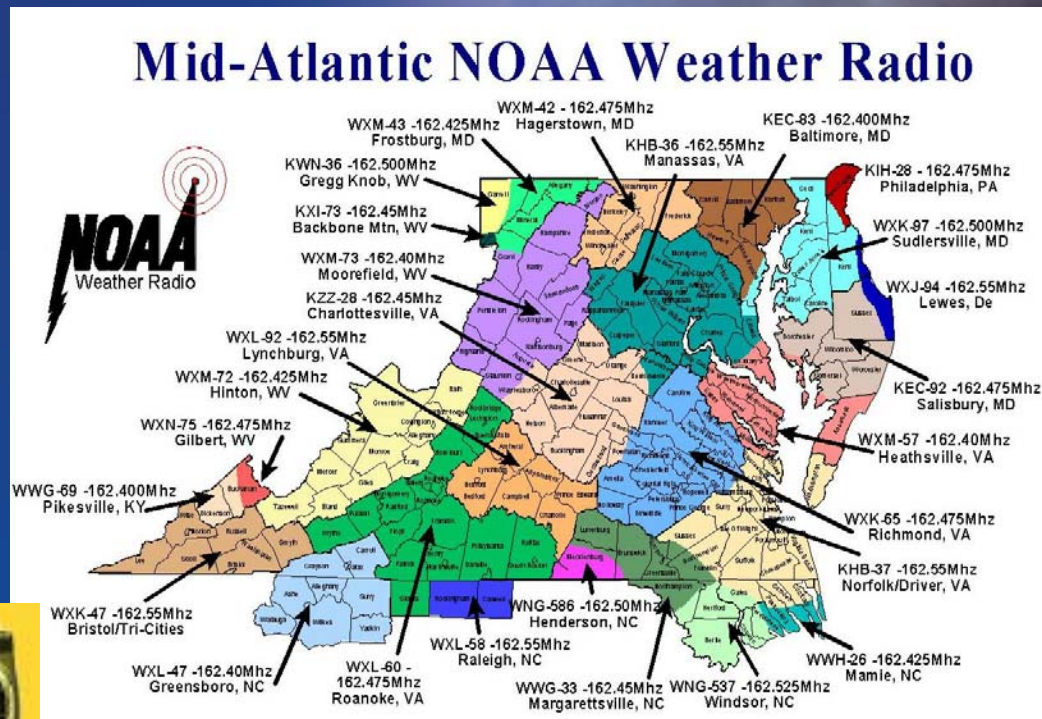


# Sources of Weather Info



## NOAA Weather Radio

- **24/7 Weather Broadcast**
- **IMMEDIATE** broadcast of Watches & Warnings
- Newer radios are programmable to local areas





# Sources of Weather Info



## The Internet

- Many Sites
- Text and Graphics
- Not as Useful for Obtaining Watches & Warnings Quickly

National Weather Service Forecast Office  
Wakefield, VA

Site Map News Organization Search  Go

Local forecast by "City, St or Zip"

Current Hazards  
Virginia  
North Carolina  
Maryland  
National Warnings  
Day 1 TSTM Outlook  
Hazardous Weather  
Day 2 TSTM Outlook  
Send a Storm Report

Current Conditions  
Observations  
Satellite Images  
Rivers  
Rivers & Lakes  
AHPS

Radar Imagery  
Wakefield VA Radar  
Nationwide

Forecasts  
Public Forecasts  
Graphic Forecasts  
PDA Users  
Tropical Weather  
Winter Weather  
Severe Weather

◆ **Top News of the Day Information** about the new National Weather Service web page design and comment area.

<a href="#">Local Items Archive</a>	<a href="#">Daily Hazardous Weather page</a>	<a href="#">The National Digital Forecast Database</a>	<a href="#">New Spot Fire Weather Forecast</a>	<a href="#">Daily RIP CURRENT Threat</a>
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**last updated 6/23/03 FOR: Map Links Changed**

**2003 Lightning Safety Awareness Week (June 22-28th)**

SKYWARN Spotters should activate based on display Map below showing severe weather Outlooks, Watches and Warnings.

**Quick Glimpse at the Weather** Wakefield, VA

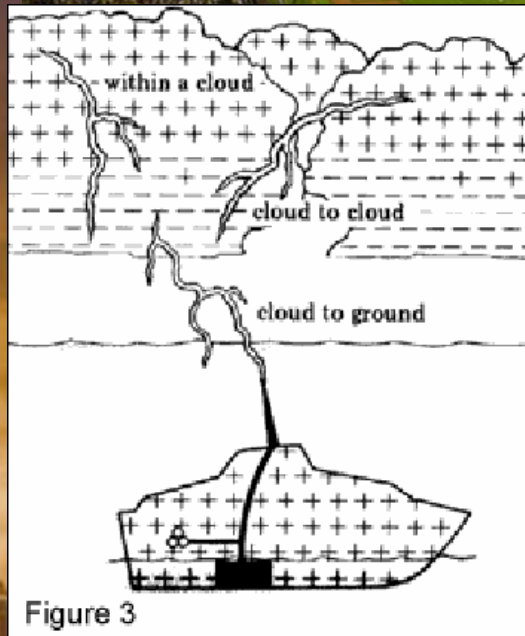
Click on map for forecasts, warnings, and observations for  
click here for the latest warning information. Click on the map for a forecast, warnings and advisories

Flood Statement	
Short Term Forecast	
Hazardous Weather Outlook	
Severe Weather Outlook	
Marine Weather Statement	





# Lightning Safety

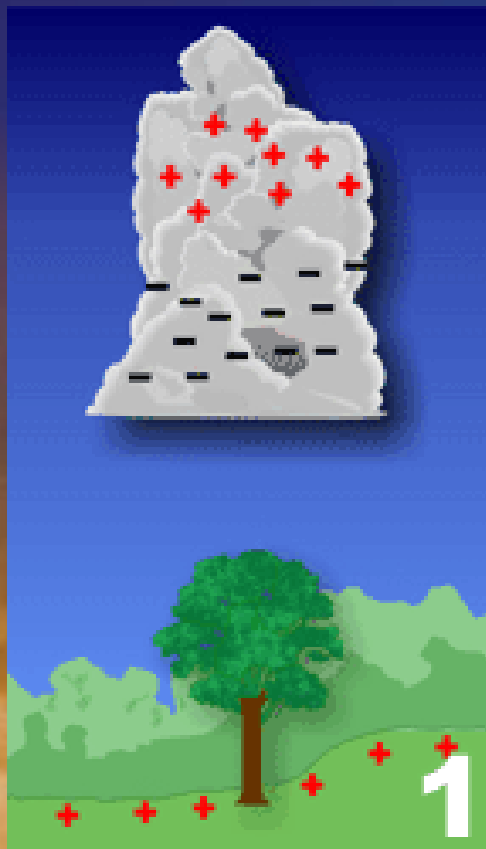




# Lightning Safety



## Lightning Strike Development



SKYWARN



# Lightning Safety



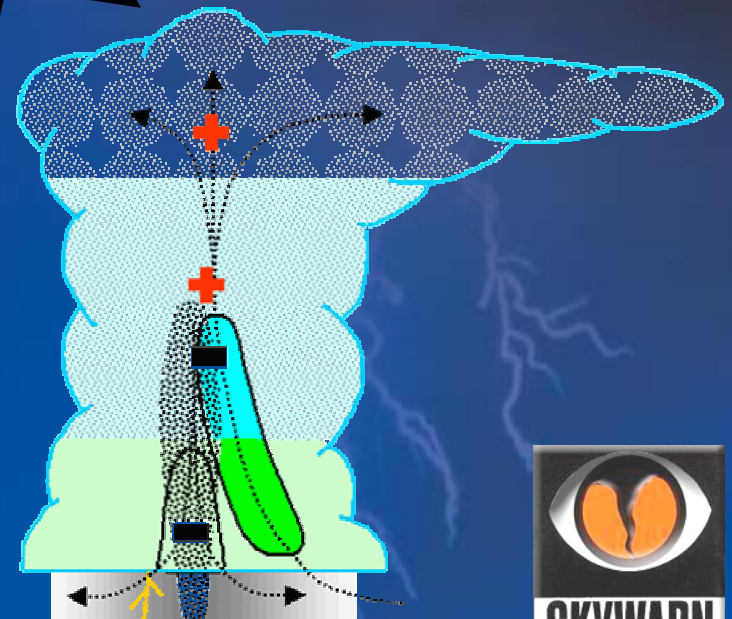
## Thunderstorm Electrification



**Ice AND Water** are Necessary for Lightning Development

Low CLWC	
High CLWC	
Low SC-CLWC	
High SC-CLWC	
Small ice only	
Large & small ice	

CLWC = Cloud Liquid Water Content





# Lightning Safety



- **BASIC RULE of Thumb** –  
Hear Thunder = Close  
Enough to be Struck
- **Seek Safe Shelter** –  
**Enclosed, Grounded Bldg.**
- **Non-Convertible  
Automobile** – **Windows  
Closed!**





# Lightning Safety



- **BASIC RULE of Thumb** –  
Hear Thunder = Close  
Enough to be Struck
- **If NO Shelter...**
  - **Get Away From Trees**
  - **Get as Low as Possible**
  - **Use Lightning Desperation Position**





# More Lightning Safety Rules



- **RULE of 5:** Count # of seconds between Flash & “Bang”. **Divide that Number by 5!**
- **30/30 Rule (NCAA):**
  - *If # of seconds between Flash and “Bang” is  $\leq 30$ , **Seek Shelter!** Stay until 30 minutes since last flash or “bang”*





# Tornado Safety Rules



- **BASIC RULE of Thumb** –  
“Go Low, Stay Low”
- **Seek Safe Shelter** –  
**Sturdy Bldg.**
  - *Lowest floor bathroom, closet or hallway*
  - *Crouch down*
  - *Use cushions, blankets, coats, etc. as protection from debris*





# Tornado Safety Rules



- **BASIC RULE of Thumb** – “Go Low, Stay Low”
- **If Outside** – Move to Shelter, if possible
- **NO Shelter & Outside**
  - *Get as Low as Possible*
  - *Use Ditch, if nearby*
  - *Crouch down or LIE down*
  - *Cover head with hands*





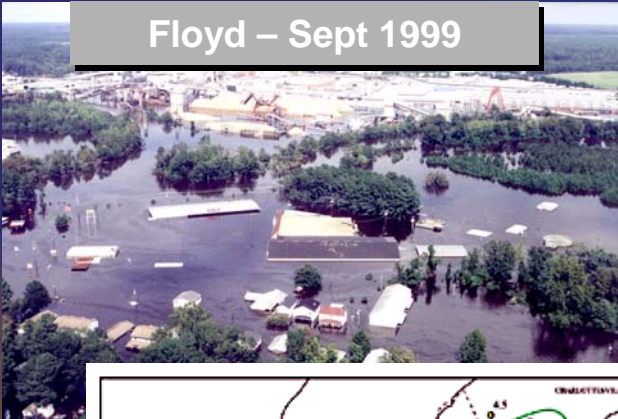


# Flash Flood Safety

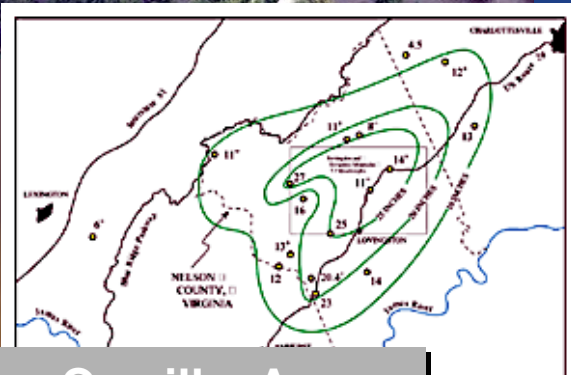


## Flooding = #1 Storm Related Killer

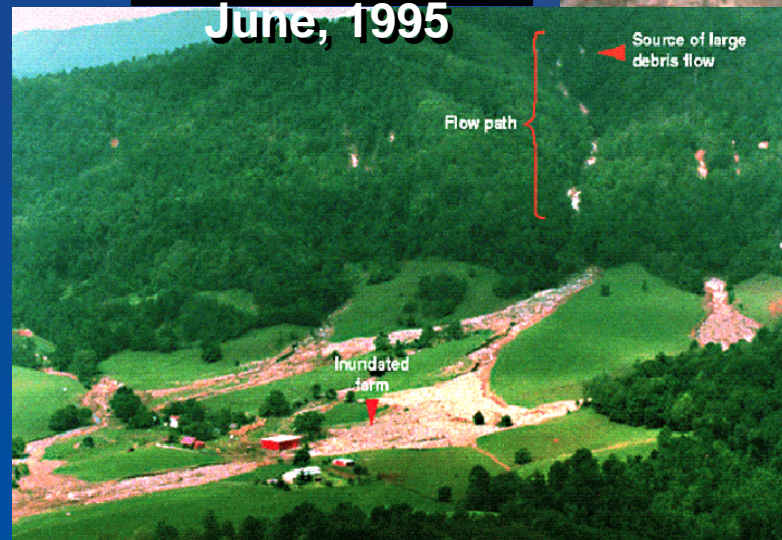
Floyd – Sept 1999



Madison county VA – June, 1995



Camille, Aug 1969





# Flash Flood Safety



- **Rule of Thumb #1 – Get to High Ground!!**
  - *Be Aware of Rapid Water Rises*
  - *EVACUATE if you feel threatened*
- **Rule of Thumb #2 – “Turn Around, Don’t Drown”**
  - *2/3 of flood deaths from people driving through flooded roads*
  - *65% of deaths in Floyd*
  - *Takes < 2 feet of moving water to “float” a vehicle and move it downstream (cars are NOT boats!)*

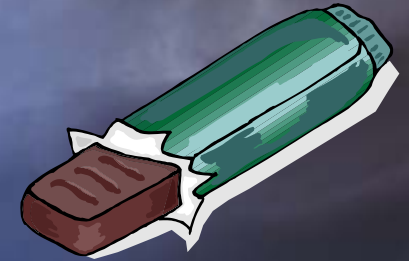




# Basic SKYWARN Training



End of Part 1



Let's Take a Break!!

