



# The Microburst



Winter 2006/2007

## Skywarn Recognition Day

Submitted by Gary Conte, WFO OKX Warning Coordination Meteorologist

On behalf of the National Weather Service (NWS), we sincerely appreciate the effort and time contributed by ALL of our Skywarn volunteers in observing and relaying hazardous weather observations through the Skywarn Program. For an overview of Skywarn Recognition Day, visit this web page:

<http://www.crh.noaa.gov/hamradio/index.php>. The NWS Upton, NY Office was 1 of 107 NWS Offices that participated in the 8<sup>th</sup> Annual Skywarn Recognition Day: [http://www.crh.noaa.gov/hamradio/participating\\_offices.php](http://www.crh.noaa.gov/hamradio/participating_offices.php); a 24 hour event that started at 7 pm Friday December 1<sup>st</sup> and ended 7 pm Saturday December 2<sup>nd</sup> (there are 122 NWS Weather Forecast Offices across the country). A special THANKS goes to Walter Wenzel, our Suffolk County Skywarn Coordinator for planning and organizing local amateur radio participation here at our office, which was staffed for 24 consecutive hours.

We faced many weather challenges in participating in this year's event: As a strong low pressure system moved east to

northeast across Southern NY State, southwest winds gusted from 45 to 55 mph throughout the day, which impacted our antenna farm set-up. Because conditions were favorable for severe storms, the Storm Prediction Center placed the local area in a Moderate Risk for severe thunderstorms. This was later replaced with Severe Thunderstorm and Tornado Watches for the local area. Once again, our local Skywarn Team came to the rescue and activated our amateur radio station with the first issuance of the Severe Thunderstorm Watch. As we issued Severe Thunderstorm Warnings for parts of Northeast NJ, the lower Hudson Valley of NY, and NYC; spotter reports of downed trees and power lines followed. That's what our Skywarn Program is all about! GREAT TEAMWORK!! High winds during Friday evening created radio frequency interference that impacted our radio contacts. During the 24 hours, we did contact 13 other NWS stations, which earned the "Cumulonimbus Certificate." THANKS go to everyone that participated both within and outside our office.

## NOAA's 2006-07 Winter Weather Outlook

Submitted by Gary Conte

Climatologically, the winter season occurs from December 1<sup>st</sup> through February 28<sup>th</sup>. On the calendar, winter begins on Thursday December 21, 2006 and ends Tuesday March 20, 2007.

Winter weather brings periods of snow, sleet, freezing rain (ice), cold temperatures, and low wind chill temperatures. These hazardous elements occur even during "mild" winters. A light snowfall or freezing drizzle during our peak morning or evening commuter "rush" hours will create havoc. We must be prepared for a variety of hazardous winter weather that "will" occur.

The National Oceanic and Atmospheric Administration's (NOAA) final winter weather forecast was issued on November 16<sup>th</sup>:

<http://www.noaanews.noaa.gov/stories2006/s2742.htm>

This broad "brush" forecast for the U.S. considers the

### Inside This Edition of the Microburst

- Skywarn Recognition Day
- NOAA's 2006/2007 Winter Weather Outlook
- Winter Weather Safety Tips
- Snow Measuring
- Ready, SET, Go!
- Ramsey Weathers Excessive Heat Wave
- Severe Weather Reporting and Procedures

Continued on page 2

occurrence and forecast of a moderate El Nino along with Long Term Climate Trends. The North Atlantic Oscillation (NAO) which impacts weather patterns across the Northeast U.S. can not be accurately predicted more than 2 weeks in advance:

[http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/nao\\_index\\_mrf.shtml](http://www.cpc.ncep.noaa.gov/products/precip/CWlink/pna/nao_index_mrf.shtml)

When the NAO is in a "positive" phase, temperatures are much warmer than normal. In a "negative" phase, temperatures average near or below normal.

NOAA's forecast for our local area translates to mild temperatures

[http://www.weather.gov/climate/three\\_month.php?wfo=okx&site=305801&lead=1](http://www.weather.gov/climate/three_month.php?wfo=okx&site=305801&lead=1)

and near normal precipitation. Stay tuned to our latest forecasts and "prepare" for the hazards that even a mild winter will bring.

## Winter Weather Safety Tips

Submitted by Brian Ciemnecki, WFO OKX intern

With cool temperatures in the air, and winter right around the corner, its time to review some winter weather safety tips.

The first important step is to keep ahead of the storm. Monitor the national weather service via internet or NOAA weather radio for the latest watches, warnings or advisories. Other good sources of information include local TV, radio or newspaper.

When the national weather service begins to monitor a potential storm, they will issue an outlook. This outlook will discuss any winter storm conditions possible in the next 2 to 5 days. When an outlook is issued, people in the area at risk should stay tuned for further updates. As we get closer to the event, a watch will be issued. This watch will outline conditions possible in the next 36 to 48 hours. Within 24 hours of the event starting, the weather service will issue either a warning or an advisory. An advisory is issued when weather conditions are expected to cause significant inconveniences and may be hazardous. If you use common sense, these conditions should not be life threatening. If however, life threatening severe winter conditions occur or will occur in the next 24 hours, a warning will be issued.

When caught in a winter storm:

If you are outside:

Try to find shelter, try to remain dry and cover all exposed body parts.

If in a vehicle:

Stay in your vehicle (you could quickly become disoriented in wind driven snow and cold). Open the window for a little bit to get some fresh air, make sure you are visible to those outside of the car. Do not keep your car running continuously. Instead, conserve the heat your car will generate by allowing the car to run for 10 minutes (or as needed) out of every hour to prevent hypothermia. Tie a colored cloth (not white!) to your car. Make sure it will be visible to others, i.e. at the highest point of your car (like an antenna), so that when the snow piles up, the cloth will still be visible. You should also exercise; moving your arms, legs and fingers to keep blood circulating and keep warm. Carry a winter storm survival kit. This should include blankets, extra batteries, a flashlight, a shovel and a map.

If inside:

Remain inside where there is enough heat.

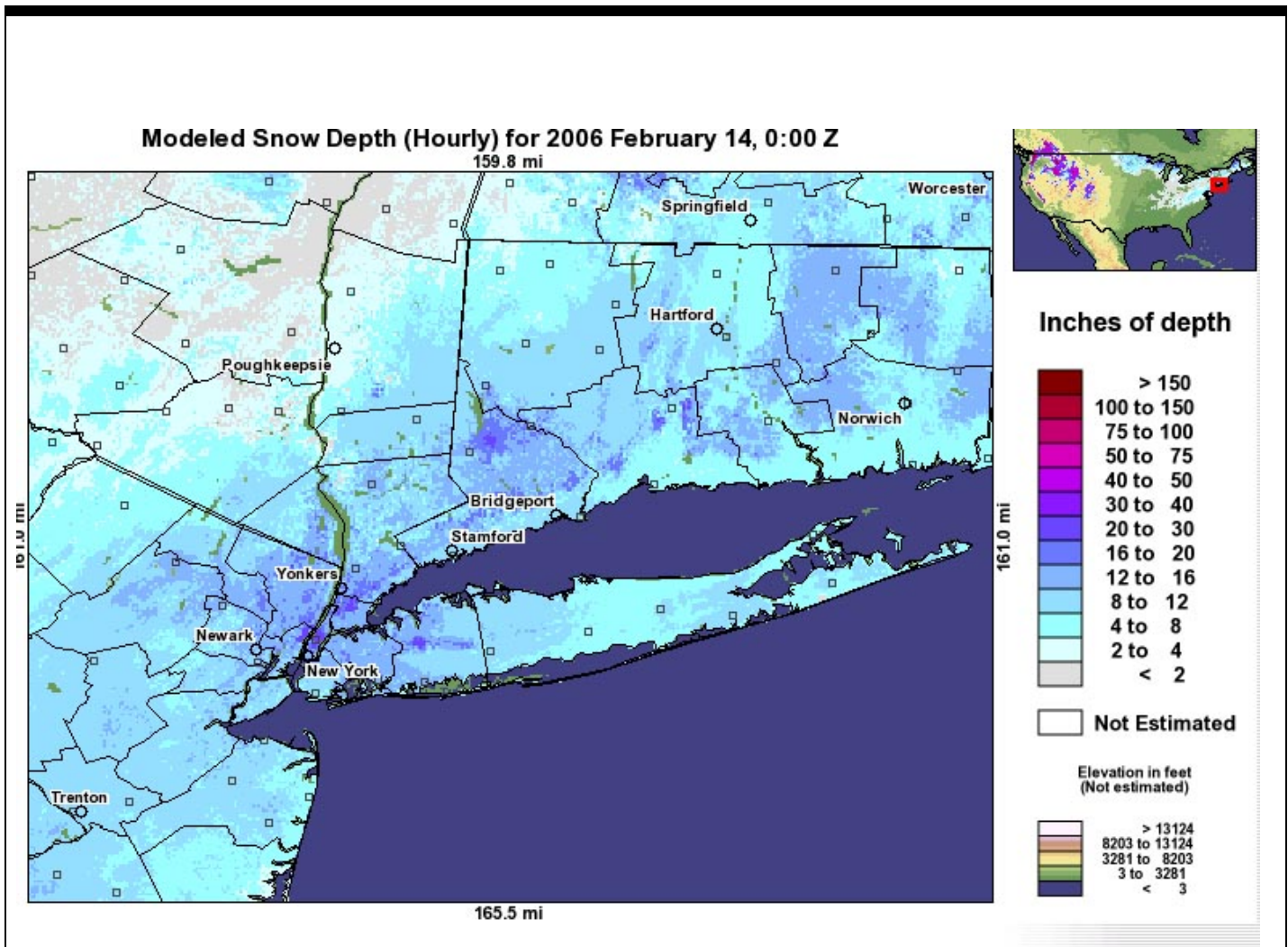
If there is no heat, you should close off any unneeded rooms and stuff towels or rags in any doors. Make sure you eat and drink. Food will provide your body with energy for producing its own heat. Drinking will keep fluids in your body to prevent dehydration.

## Snow Measuring

Submitted by Joe Pollina, WFO OKX student intern

Measuring snow seems simple enough...grab a ruler; stick it into the snow until it hits the ground, take the reading, and you are done, right? Well, believe it or not, measuring snow is a bit more involved than that. Careful attention to location, what exactly needs to be measured, the problem of melting, as well as other details will ensure more accurate snowfall measurements.

Why is it so important to measure snow? Think of snow in this sense: unmelted water, just waiting to enter rivers and streams when the temperature gets warm enough in the spring, or even during the January thaw. If there is a large amount of snow it can cause flooding during a quick warm up, especially if there is rain to add to it. Offices such as the River Forecast Centers and the National Operational Hydrologic Remote Sensing Center use snowfall data in models to gauge the potential for flooding as well as other meteorologically important information. Accurate snowfall measurements are also critical during winter storms, to help forecasters gauge the strength of a storm affecting the tri-state which in turn helps protect lives and property.



(The above image is generated by the National Operational Hydrologic Remote Sensing Center using snow depth reports)

Accurate measurement of snowfall is also important in climatology. Snowfall measurements are added to the continuous records that the National Weather Service has been keeping, in some cases for more than 130 years. With some records going back this far, it is easy to see that accurate snowfall measurement is important so that bad readings won't taint the integrity and continuity of the historical records.

The path to accurate readings begins when you prepare for the season. During the winter season, it is necessary to take the funnel and inner cylinder out of your 8-inch rain gauge (outer metal cylinder) because frozen precipitation often falls horizontally, especially during windy conditions. This will allow the rain gauge to better catch frozen precipitation. Also, check and fix any leaks in the 8 inch rain gauge.

Preparation for the season also entails snow boards. These are 3 ft. by 3 ft. boards painted white. There should be 2 boards. One board you use to measure snowfall usually every 6 hours during an event. This board gets wiped clean after every measurement. The other board is used to measure the daily snow depth. This measurement is done once a day, and the board NEVER gets wiped clean. The boards need to be placed in an open location and marked with a flag or some other means of locating the boards when it comes time to measure. Do not place boards in a wooded area or in north facing locations as these locations do not accurately represent snowfall or depth due to the protection of trees and shades. Try to find a location where the snow falls evenly and blowing and drifting of the snow is at a minimum. If you cannot find an area where this is minimized, then when it comes time to measuring, you will have to take multiple measurements (being careful to exclude the largest drifts), and take the average.

Ok, so now you are prepared to measure snow, but what exactly are you supposed to measure? There are 3 types of measurements that need to be recorded: new snowfall, snow depth, and liquid equivalent. New snowfall was briefly described earlier. You must record the depth of new snow and ice pellets to the nearest TENTH of an inch. This may be done at a MAXIMUM of once every 6 hours for a total of 4 measurements during a 24 hour period. To get the 24 hour snowfall total, add all 4 measurements. Again, after each measurement, wipe this board totally clean.

The second measurement is snow depth. You must record the depth of the snow and ice pellets to the nearest WHOLE inch. This is done once a day, usually at 12 GMT. This measurement can be a bit subjective when only part of the area is covered. For example, if in your judgment, 50% of the area is covered in snow, then record the measurement as normal, but then divide this by 1/2, since half the area is covered. If less than half the area is covered, then record it as a trace. If there is no snow on the exposed ground, but there is snow in wooded areas, then record it as "0". Remember, this board is NEVER wiped clean!

The last type of measurement is the liquid equivalent. This measurement gets done for BOTH new snowfall, and snow depth. For new snowfall, take the 8 inch rain gauge with the collected frozen precipitation inside. Take the inner cylinder, and fill it with enough warm water to melt the snow (remember to record the amount of warm water used). Pour this water into the 8 inch rain gauge to melt the snow. If there is still some unmelted snow, repeat the process, until all the snow is melted. Now, pour the contents from the 8 inch rain gauge into the smaller cylinder, being careful not to knock the cylinder over. If there is more than 2 inches of water, you will have to take multiple measurements until the 8 inch cylinder is emptied. When you are finished, add up all the measurements and subtract from it the amount of warm water you added. Record the measurement to the nearest HUNDREDTH of an inch. This figure is the liquid equivalent. You can think of the liquid equivalent in this aspect: if the snow was all rain, the liquid equivalent would be the amount of rain that fell.

For the water equivalent of the snow on the ground, you need to take a "core" sample. Take the 8 inch rain gauge to the site where the snow boards are located. Somewhere near the boards (at a location that has been undisturbed), take the rain gauge and turn it upside down, and place it down into the snow. Push the rain gauge as far down as it can go, being sure that it has pushed through to the ground (this means through any ice layers as well). This will carve out a core sample. When you lift the rain gauge to its upright position, the core sample may easily slide to the bottom, or it may fall apart. If it falls apart, collect what you can from what fell out, and place it into the rain gauge. Then, repeat the steps as stated above for measuring the liquid equivalent.

Melting snow may become a problem for measurement during the winter season, especially during the early and late months. If snow continually melts as it lands, and never accumulates to 0.1 inches, then record it as a trace, and record in your remarks that "snow melted as it landed." If snow squalls move through your area, such that after each squall, all the snow melts, you need to record each separate event, and add them up. For example, say you are taking readings every 6 hours, and during a 6 hour period, a squall moves through and dumps 1.8 inches. This snow then melts, and another squall moves through dumping 3.2 inches within the same 6 hour period. The total for the 6 hour period would be 5.0 inches. You should enter in your remarks, "snowfall melted during the OBS period."

There are other problems that may be encountered during the season. For example, it is unreasonable to assume that you will be available every 6 hours during a storm. If this is the case, you need to make a "best estimate" using the measurement at the time you finally make an observation, and knowledge of what took place during the past 24 hours. It is also possible to have someone who is near the station record the measurements for you. These observations need to be remarked as "snow amount based on estimate." Also, many people believe that freezing rain, or glaze, should be recorded as snow. This is not the case. Freezing rain should be recorded as rain, and the procedures for liquid equivalent should be followed when measuring freezing rain. Another problem that is often encountered is during a measurement. When sticking the measuring stick into the snow, people often encounter a frozen layer, which they think is the ground or board. When you measure, you must be certain that you are hitting the ground or board, and not a frozen layer. Also, be certain that the measuring stick is vertical, and not at an angle when measuring.

With accurate snowfall and snow depth information, we, the National Weather Service, will be able to better serve you, and help protect lives and property, but we can't do it without you, and our appreciation goes out to all that provide us with reports.

## Ready, SET, Go!

Submitted by Michael Adams, Bergen County SkyWarn Coordinator

"Hurricane Pluto, a Category 4 storm hit the Virginia Beach area this afternoon. Pluto was supposed to veer away from the coast after reaching the Outer Banks earlier this morning. Due to that track that had a high confidence level, no coastal evacuations in New Jersey were ordered. Numerous voluntary evacuations did occur, but data on shelter locations is not readily available. Local authorities expect the majority of evacuees went to friends and families outside the area to the west."

“Pluto’s current track has the Hurricane moving North and the center will pass just east of Harrisburg, Pennsylvania by 2000 hours. Forward speed is currently 25 miles an hour with an increase expected later this evening, along with a drop in intensity. Winds currently at 121 mph place Hurricane Pluto at a Category 3 storm (111-130 mph).”

With that Emergency Communications Exercise Bulletin, issued by the New Jersey State Police Office of Emergency Management, the 2006 Simulated Emergency Test (SET) kicked off at 8:00 AM, on Saturday, October 7. Dennis Dura, K2DCD, Assistant State RACES Officer, stated, “All further bulletins will be issued via 224.320 repeater, 147.570 simplex and around 3995, 75 meters, depending on qso’s. I thank you in advance for your participation”

Bergen County RACES Officer Jerry Jankowitz, NO2T, and Bergen County ARES DEC Matthew Ryffel, K2NUD, both members of the 10-70 Repeater Association, reported to the radio room at the recently-opened Community Center, in Fair Lawn, New Jersey. The East Coast DX Association was activated in Ridgewood, and Joyce Birmingham, KA2ANF, Hudson Division Vice-Director and George Sabbi, KC2GLG, NNJ SkyWarn DEC, made the WinLink 2000HF Radio System available.

The Ramsey Office of Emergency Management opened its Emergency Operations Center and Michael Adams, WA2MWT, OEM Coordinator, Bruce Greenwood, K3OEM, Deputy OEM Coordinator, Lou Janicek, N2CYY, RACES Officer, and Paul Hennion, KC2FMJ, Steve Adams, KC2GRW, Herb Van Den Houten, N2OPJ, and Peter Van Den Houten, K1VDH manned the radio room. Justin Mattes, KC2GIK, Woodcliff Lake RACES Officer, also came on the air. All are members of the 10-70 club.

A message from Robert Schroeder, N2HX, NJOEM RACES Officer, stated, “Based upon the exercise needs and propagation during the 0800-1300 time frame, NJ2EM will utilize other frequencies. Your county operations should utilize established frequencies according to your plan. Knowledge of surrounding county RACES and ARES frequencies will also be appropriate.”

“Twenty of twenty one counties in New Jersey participated,” observed Adams, also NNJ OEM DEC, The Red Cross (K2BAR) and the Salvation Army (SATURN) were players. We were told that through this exercise, we would be able to ascertain how things will work and how they would not work—so that they can be addressed and fixed. ‘Please don’t expect everything to go perfectly’.

“Anytime you have the Bergen County RACES Officer, Bergen County ARES District Emergency Coordinator, Bergen County SkyWarn Coordinator and the Bergen County National Traffic System (NTS) Manager working side-by-side, in a national exercise, you are in pretty good shape. I would think that the American Radio Relay League and the New Jersey Office of Emergency Management should be pretty happy with the DEC SET

Report.”

## RAMSEY WEATHERS EXCESSIVE HEAT WAVE

Submitted by Michael Adams

After exhausting their supply of adjectives and purposely-hyped hyperbole—to increase warning effectiveness, the National Weather Service’s forecast for Thursday, August 3<sup>rd</sup> simply began, “Blast Furnace Still on High for One Last Day.” The weather service’s office at the Brookhaven National Laboratories, in Upton, New York, spent most of the week stressing the dangerous health risks from high temperatures, oppressive humidity and sickening air stagnation and poor air quality.

The Ramsey Office of Emergency Management, which is the Bergen County headquarters for the weather service’s SkyWarn Spotter program, was in constant contact with Upton, looking for any relief in sight. There was none. “We contemplated sending out a Reverse 911 message,” commented OEM Coordinator Michael Adams, “But more than usual, everyone was ‘talking about the weather’ and seemed to have a pretty good grasp of the dangers associated with the stifling conditions.”

On Tuesday, there were four Emergency Medical Technicians (EMT’s) on-duty at the Emergency Operations Center, at the Ramsey Municipal Building. “At 4:00 PM, the Temperature was 95 degrees and the heat index was 113, so of course we got an ambulance call of a man suffering a heat stroke,” Adams said. Although the call turned out to be another medical condition, the crew struggled in the heat and humidity bringing the patient out of his home and transporting him to The Valley Hospital.

“When we entered the emergency room, there was an ice chest filled with chilled bottled water. After placing our patient in a treatment room, we helped ourselves. Water has rarely tasted so good,” Adams commented.

The Bergen County Office of Emergency Management opened a regional cooling center, at the Law and Public Safety Institute in Mahwah. Ramsey OEM notified the county that they would be using that facility and if any Ramsey residents sought relief there, Ramsey OEM would send personnel to assist the Red Cross in staffing it.

“Steve Goeller, one of our life members, who is an emergency room RN and EMT, and I went up there to check it out. The place was stocked with plenty of water, fruit and

other snacks. The Red Cross personnel reported that no one had checked-in. If we had manned it, we would have set-up ham radios for back-up communications.”

Tuesday afternoon, August 1, Adams met with Peter DelVecchio, Director of the Ramsey Wind Symphony, who was conducting a concert that evening at the gazebo, in Finch Park. “Although it was going to be a rock concert, with younger participants, it was going to last for two hours,” DelVecchio explained, “So we made the decision to move it indoors to The Adorno Fathers on Darlington Avenue, which turned out to be a wise decision.”

Ramsey OEM was also in contact with Michelle Damiani, Community Relations Representative for Rockland Electric. Severe summer weather traditionally leads to power problems, but Rockland Electric’s new sub-station on Ridge Road has increased their capabilities to handle heavy consumption loads. “With recent outages in Queens, New York, still fresh in everyone’s minds, we wanted to know if any problems were developing,” Adams said.

On Thursday afternoon, August 3, at 4:30 PM, the anticipated cold front moved through Ramsey, accompanied by a sudden downpour, fairly strong winds and cloud to ground lightning. Lightning struck a large tree and a house, causing smoke damage on the Franklin Turnpike, and the Ramsey Police Department, Fire Department and Rescue Squad were dispatched. The OEM’s Emergency Operations Center had been activated and the storm activity was forwarded to the National Weather Service.

The temperature dropped from 95 degrees to 78 degrees and the Heat Index went from 110 degrees to 83 degrees, in a matter of minutes. Although additional severe weather was predicted for later in the evening, the overnight period was relatively calm.

“As the Excessive Heat Advisory (could happen) turned to an Excessive Heat Watch (conditions are conducive) and then turned to an Excessive Heat Warning (it’s here), Ramsey residents resigned themselves to a very unpleasant and potentially dangerous week. With all of Ramsey’s public safety agencies on full alert and neighbors keeping an eye on each other, a record heat wave was allowed to run its course,” Adams concluded.

## Severe Weather Reporting and Procedures

Submitted by Kyle Struckman, WFO OKX student volunteer and Brian Clemnecki

Trained spotters remain a critical resource for reporting severe weather. Spotter reports provide an important public service by verifying tornadoes, severe hail, flooding and other weather events. This enhances the National Weather Service’s efforts to inform the public about dangerous weather.

Here is a list of events to report to the National Weather Service:

### CRITICAL PRIORITY:

When witnessing any of these events, call the local NWS 800 number immediately (800-226-0217):

- Any tornado, water spout or funnel cloud.
- Wall cloud, especially if you see any rotation associated with the cloud.
- Widespread wind damage to trees, power lines or structures.
- Flash flooding in streams, creeks and rivers, or if you see a dam break. Also report severe flooding in streets, cars or basements. Report significant short-term rain accumulations of greater than one inch an hour or greater than two inches in three hours in urban areas.
- Any deaths or injuries associated with hazardous weather.

### HIGH PRIORITY

When witnessing any of these events, call the local NWS 800 number or e-mail [okx.spotters@noaa.gov](mailto:okx.spotters@noaa.gov) .

- Hail the size of pennies (.75 inch) or larger
- Thunderstorm wind gusts to 58 mph or greater. Gusts of this magnitude can push over shallow rooted trees or damage chimneys and television/radio antennas.
- Flooding in poor-drainage urban areas that make roads impassable.
- Snowfall with a rate of 1 inch per hour or less.

### MODERATE PRIORITY

When witnessing any of these events, call the local NWS 800 number or e-mail [okx.spotters@noaa.gov](mailto:okx.spotters@noaa.gov) .

- Hail smaller than .75 inches (less than penny-size).
- Thunderstorm wind gusts between 40 and 57 mph.
- River and stream rises to near bank full.
- Total rainfall amounts in significant events.
- Snowfall reports when accumulations reach 2”, 4”, 6”, as well as total accumulation at the end of events.
- When precipitation type changes, i.e. from rain to snow.
- Freezing rain or drizzle.

- Ice jams.

More information is available in your Skywarn Spotters Guide. The guide contains the 800 number for the Upton, NY office as well as other offices in the northeast in case you're traveling when you spot severe weather.

Remember that the Weather Service highly recommends that you attend a skywarn spotter class every 3 years. If your Skywarn ID number starts with 01, 02, or 03 it is time to be re-trained.