NORTHEASTERN STORM BUSTER

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DEPARTMENTS

A SURVEY OF THE 31 MAY 2008 ULSTER COUNTY MICROBURST

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On Saturday, May 31st, 2008, an outbreak of severe thunderstorms occurred across eastern New York and western New England. The region was influenced by a southerly flow, which allowed warm, moist air to move northward into the region by the late morning hours. A cold front, and more specifically, its associated pre-frontal trough, was the focus for thunderstorm development during the late afternoon and evening hours. Convective parameters pointed toward a moderate severe weather event, as wind shear and enough instability would come together to produce a risk for severe storms.

The thunderstorm activity evolved into a squall line, which pressed southeastward across the eastern Catskills, Mid-Hudson Valley, Berkshires and Litchfield Hills. Primarily, these storms produced strong damaging wind gusts as portions of the squall line "bowed out". However, a few storms produced large hail, as well.

As the squall line dropped southward across northeastern Ulster County, New York around 5:30 p.m., a portion of the line produced a localized damaging downburst, known as a microburst. In a microburst, winds aloft are forced downward from a thunderstorm at a high velocity. As the winds rush to the surface at these high speeds, they fan out upon reaching the surface, producing a localized area of damage. This straight-line wind damage is different from a tornado in the fact that the destruction is laid out in a divergent pattern, as opposed to along a tornado track, which leaves damage in a convergent pattern.

On the morning after the event, Meteorologist Hugh W. Johnson IV and I traveled down to Ulster

County to view the damage, located primarily in southern portions of Glenerie, along the border of the Towns of Saugerties and Ulster. This portion of Ulster County is located within a valley along the Esopus Creek and Hudson River, just east of the Catskill Mountains. We had received reports of up to 50 trees down with damage to several structures, so it was necessary to view the damage to determine the exact cause. When we arrived in the area, it was apparent that a storm had impacted the region the evening before, as the road was covered in plenty of leaves and small twigs. Under instruction from Ulster County Emergency Manager Art Snyder, Hugh and I drove to the northern end of North Drive, where much of the more significant damage had occurred. Several large trees were completely uprooted, and other large limbs and branches were completely ripped off trees. A few trees had their tops sheared off, as well. Some of these trees and limbs fell on a porch, damaging it. Many of the trees also took down power poles and lines, so we had to be sure to carefully sidestep the wires along the roadway. Yet another large tree fell on a car, completely crushing it. One notable aspect of the damage was that every tree knocked over was pointing in an easterly direction, which made it apparent that the strong wind had come from the west. After speaking with several residents on North Drive, many noted how quickly the damaging winds had occurred. In under a minute, a large rush of air caused a great deal of destruction.

Next, Hugh and I surveyed the damage on Glenerie Blvd., which is the next street over from North Drive, to its west. This road experienced much of the same damage seen on North Drive. Large trees were completely uprooted, and several others had large limbs completely ripped off. A few of the homes on this street had damage due to trees falling through rooftops. As many residents were still without electric and phone service, repair crews were on the scene to fix the wires, so Hugh and I were careful to not get in the way of their work. We were able to talk to several more people, who reiterated the accounts of residents on North Drive. A few residents also remarked that small hail accompanied the wind, followed by a period of rainfall. Again, all the damage on this street was generally laying down in an easterly direction, helping to confirm the theory of strong straight-line wind damage.

Finally, we traveled about a mile or so eastward, across Route 9W to Old Stage Road. This road also had some tree damage, but much of it was already cleaned up by the time we got there. There wasn't any visible damage to any of the homes on this street. Again, the trees laid across the road in a west to east direction, giving further credit to the idea that a microburst produced the damage.

As a result of the survey and the extent of the damage, Hugh and I estimated maximum wind speeds of up to 80 mph with this particular microburst. The damage was confined to a small area, generally less than one square mile, between the Esopus Creek and Highway 9W in the Glenerie Park section of Glenerie.

This storm survey, the first of my career, was a very positive experience. Getting to witness actual storm damage, and speak with residents who experienced the storm, puts the human impact of thunderstorms into perspective, which is hard to realize when you're only viewing it on radar. Luckily, there were no deaths or injuries from this particular storm, and many of the residents recalled seeing our Severe Thunderstorm Warning, which was issued about 15 minutes before the microburst occurred. A few of these residents also commented on how excellent the timing of the warning was. Remember, a Severe Thunderstorm or Tornado Warning is only effective if you can hear it.

Damage to trees on North Blvd., taken on 1 June 2008.

SPRING OF '08: A SEE-SAW SEASON WHICH AVERAGED VERY CLOSE TO NORMAL

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The spring season in Albany started out very wet, but ended quite dry, with a very warm April, and somewhat cool March and May. The total precipitation for March was a whopping 6.20", the vast majority of it coming in the form of rain. There were a total of 20 days in March with precipitation, on 14 of which it was measurable. A tenth of an inch or more fell on 9 of these days, with 0.25" on 7 of those. A half an inch or greater fell on 5 of these. The one day that received an inch or more was the 5th, when 1.74" was received. This amount also shattered the daily record for the date of 0.99" from 1966. This was the only daily record of any kind for the month. The 6.20" monthly total for March made it the 3rd wettest March on record in Albany. It is also the 66th wettest month (any month) on record. Despite the high overall precipitation value for the month, only 5.9" of snow fell, with most of this, 4.3", occurring on the 28th, and the balance of the measurable amount, 1.6", coming on the 1st. Trace amounts fell on 11 other days. The monthly total is 5.0" below normal.

The average temperature for March of 33.8º was 1.2º below normal, the average high being 42.6º (1.9º below normal), and the average low being 25.0º, (0.4º below normal). The warmest day was the 26th, with a mean temperature of 42.5º, and the coldest day was the 2nd, with a mean temperature of 26.0º The warmest temperature recorded during the month was 52º, on the 26th, while the coldest was 15º, on the 30th. The lowest maximum temperature recorded was 32º, on the 29th; the highest minimum, 35º, on both the 19th and 31st. There were only 4 days during which the temperature failed to dip to freezing.

Albany's average wind speed for March was 9.2 mph, 0.7 mph below normal. The average wind speed on the windiest day, the 21st, was 20.4 mph, and the average for the calmest day, the 7th, was 2.6 mph. The peak wind was 39 mph from the west on the 9th. There were 14 clear, 10 partly cloudy and 7 cloudy days during the month, and dense fog occurred only on the 28th. There was sleet on the 4th and 31st, and freezing rain on the 4th and 5th.

The temperature was the stand-out feature in April. The average high temperature for the month was 63.7º, while the average low was 40.1º. This was 6.4º and 4.2º above normal, respectively. This resulted in a monthly mean of 51.9º, 5.3º above normal. This made April 2008 the 8th warmest April on record at Albany. The average high of 63.7º also made the month the 4th warmest April for mean maximum temperature. However, the 40.1º average low fell just short of cracking the Top 10 for warmest mean minimum April temperature. The warmest day was the 23rd, with a 66.0º mean, and the coolest day was the 2nd, with a 35.5º mean. The highest reading observed was 84º, on the 19th, while the coldest was 21º, on the 3rd. There were only 4 days in April during which the temperature dipped to freezing. The lowest maximum reading was 43º, on the 2nd, while the highest minimum reading for the month was 54º, on the 20th.

There was only a trace of snow in April, occurring on three different days, but for the 30th, it was enough to tie the daily record from 1990. This was also the date of the season's final snowfall. Normal snowfall for April is 2.9". Precipitation fell on only 10 days in April, all of it measurable. A tenth of an inch or more fell on 7 of these days, with 0.25" or more on 3 of those, and 0.50" or more on 2 of these. The 28th was the wet day, with 0.98". The total precipitation for April was 2.63", 0.62" below normal. The trace snowfall record from the 30th was the only daily record of any kind to be tied or broken in April.

There were 17 clear, 10 partly cloudy and 3 cloudy days in April. The average wind speed for the month was 7.9 mph, 1.5 mph below normal. The peak wind for the month was 32 mph from the west northwest on the 1st. The 2nd was the windiest day of the month, with a 17.4 mph average speed. The 17th was the calmest day, with an average speed of just 1.6 mph. Dense fog did not occur, and thunder was heard on the 1st.

May was noted for being a dry month. The monthly total precipitation was just 1.24", 2.43" below normal. Despite this fact, it rained on 5 more days during this month than the previous one…15. It was measurable on 10 days of the month, with a tenth of an inch or more having fallen on 6 of them. The wet day was the 4th, when 0.45" fell. Needless to say, there were no daily records. There was no snow in May, though normally Albany gets 0.1".

There was one daily temperature record tied in May, on the 1st, when the mercury dipped to 28º, tying the 1961 record low. This being the last day with a low temperature at or below freezing, Albany's growing season commenced. There were no other records of any

kind in May. The average high temperature for the month was 67.6º, 2.2º below normal, and the average low was 43.4º, 3.1º below normal. This resulted in a mean value of 55.5º, 2.6º below normal. The warm day was the 31st, with a 68.0º mean, and the cool day was the 1st, with a 44.0º mean. The highest reading for the month, 83º, occurred on the 26th, and the coldest reading, 28º, occurred on the 1st. The lowest maximum temperature recorded was 53º, on the 2nd, 3rd and 19th. The highest minimum was the 60º, on the 31st.

The average wind speed for May was 6.9 mph, 1.4 mph below normal. The peak wind was 26 mph, from the west northwest on the 8th and 19th, and the west on the 23rd. The 23rd was the windiest day, with an average speed of 13.0 mph, while the 5th was the calmest day, with an average speed of only 1.5 mph. There were 19 clear, 10 partly cloudy and 2 cloudy days during May. There was no dense fog, and thunder occurred on the 21st and 31st.

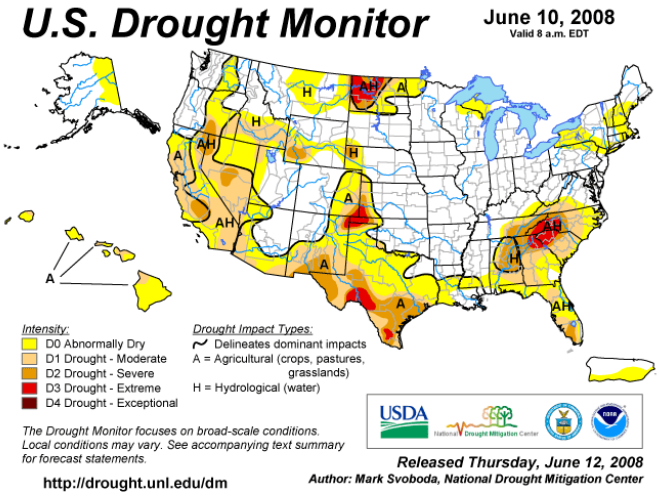
For the season, Albany ended up very close to normal. The average high temperature was 58.0º, 0.8º above normal, and the average low was 36.2º, 0.3º above normal. This resulted in a seasonal mean temperature of 47.1º, 0.5º above normal. Precipitation totaled 10.07", just 0.02" below normal. There were no new seasonal records.

NEW DROUGHT INFORMATION STATEMENT IN EFFECT JUNE 10, 2008

Steve DiRienzo
Senior Service Hydrologist, NWS Albany

Starting on June 10th, 2008, a new drought product was available from the National Weather Service (NWS). The Drought Information Statement is designed to provide reports on the current drought situation for any NWS Forecast Office's County Warning Area (CWA). Drought Information Statements will provide a summary of current drought severity, supporting data, impact information and forecasts so NWS partners and customers can focus drought mitigation efforts on areas having the greatest need.

An initial Drought Information Statement will be issued when the United States Drought Monitor indicates a drought intensity of 'D2' or worse in any part of a NWS Forecast Office CWA, or when a less severe criterion is reached but the statement is requested by other local or state agencies. The U.S. Drought Monitor can be found at: http://drought.unl.edu/dm/monitor.html. The following is the U.S. Drought Monitor map from June 10, 2008.



Once an initial Drought Information Statement has been issued, follow-up Drought Information Statements will be issued at least once a month. More frequent issuances of the statement will occur when drought conditions change, or when a local or regional criterion has been met.

The NWS has established a new identifier for the Drought Information Statement. The WMO header is AXUS71 KALY, and the product identifier is DGTALY. Users of NWS products must update their communication system directories to receive the new drought products. If you have questions about the new drought statements, please email me at Stephen.Dirienzo@noaa.gov.

WIRELESS WEATHER

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Technologies available in wireless devices continue to expand into new territory. The same holds true for the National Weather Service products and services themselves that are readily available on these

hand-held devices. Satellite pictures, radar images, life-saving watches and warnings, and weather forecasts are just a few examples of the weather information available on your wireless device. Be sure to have bookmarks for http://cell.weather.gov, http://mobile.weather.gov and http://www.weather.gov/albany, for access to this information. Also be sure to provide feedback about our wireless products via your wireless device at http://www.weather.gov/survey/nws-survey.php?code=cell, so that we can further enhance these web services, and provide them to you in a cost-effective manner.

Many 'smart' wireless devices have capabilities such as email and the taking of pictures. In addition, if you were unable to attend any of this year's SKYWARN training seminars, you may still send in storm reports. These particular wireless devices allow you to take pictures of hail or other damage, for example, and transmit them directly to the National Weather Service! ALB.STORMREPORT@noaa.gov is available for you to relay your information to our office.

With the expanding capabilities of wireless devices, RSS (**R**eally **S**imple **S**yndication) feeds are now another means of receiving information directly from your National Weather Service. The Storm Prediction Center issues daily convective outlooks along with discussions and weather watches. The National Hurricane Center has feeds from all publicly transmitted products. Even local National Weather Service Forecast Offices offer feeds. Be sure to check out http://www.weather.gov/rss/ and http://www.weather.gov/alerts/, and subscribe today, free of charge.

WCM Words

Raymond G. O'Keefe
NWS Albany Warning Coordination Meteorologist

Brian Frugis' first-hand account of his microburst storm survey reminds us that severe weather season is here. Skywarn spotter reports are a critical part of the NWS severe weather warning process. So, if you observe severe weather, remember to get that information to us as soon as it is safe to do so. When not reporting severe weather -- enjoy the summer!

From the Editor's Desk

Thus far, it's been a very interesting…and active…summer. Plenty of heat, severe weather and flooding…typical summer fare. We have four informative articles this round, beginning with a survey of a microburst event during the May 31 severe weather outbreak. This is followed by a recap of the spring climate season. Then, our Service Hydrologist introduces us to a new drought product. Finally, we introduce you to National Weather Service products available via wireless devices.

Some signs are pointing toward a hot summer. There are many activities to be enjoyed during this time of year. Always check on the weather forecast for the area you plan to be in before you plan your activities. On hot days, it's wise to plan to spend most of your time indoors. If outside, avoid overexertion, and drink plenty of liquids. On sunny days, have sun block on hand. Being safe is the best way to enjoy the summer!