NORTHEASTERN

STORMBUSTER

A Newsletter for Emergency Managers & Storm Spotters

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Evan L. Heller, Editor

AFTER A QUIET START, THE 2004 HURRICANE SEASON TURNS ACTIVE

by Kenneth LaPenta, Senior Meteorologist, NWS Albany

This past May, scientists from the Climate Prediction Center, the Hurricane Research Division and the National Hurricane Center predicted that the 2004 hurricane season would be an active one. They called for 12 to 15 tropical storms, with 6 to 8 of them becoming hurricanes. The forecast for an active season was based primarily on the ongoing active phase of the Atlantic multi-decadal signal, but also reflected expected warmer sea surface temperatures in the tropical Atlantic and Caribbean Sea than could be accounted for by the multi-decadal signal alone. The outlook also reflected the likelihood that ENSO-neutral conditions (no El Niño or La Niña) would continue through August, September and October, the peak months of the hurricane season. The update issued in August was similar, but there was some concern that developing weak El Niño conditions during the next few months might reduce activity.

The season, which began on June 1st, started slowly. There were no tropical storms or, even, tropical depressions (closed circulations with winds less than tropical storm force). July was quiet until the very end of the month when a tropical depression formed just off the South Carolina Coast. Since 1967, the first tropical depression of any given season had formed this late only twice. It should be noted that there is little correlation between early season activity and overall seasonal activity.

The quiet tropics changed in dramatic fashion in August, as eight tropical storms and hurricanes formed, a new record for the month! The depression that formed at the end of July became Alex on August 1st, and it became a hurricane just two days later, passing just east of Cape Hatteras, North Carolina on the 3rd, with winds of 100 mph. It moved northeast across the north Atlantic, reaching category 3 status.

Tropical Storm Bonnie formed several hundred miles east of the Lesser Antilles, weakened, and then regenerated as it moved into the Gulf of Mexico several days later. Bonnie turned northeastward with winds reaching 65 mph before it moved inland near Apalachicola, on the Florida panhandle.

Charley became a tropical depression on August 9th, just east of Barbados. It moved quickly across the Caribbean while strengthening, and passed just south of Jamaica on the 11th, as a hurricane. After crossing Cuba, Charley then turned north-northeastward toward the southwest coast of Florida, intensifying rapidly just prior to landfall. It made landfall near Captiva Island, Florida on the 13th, with sustained winds estimated near 145 mph. It then crossed the Florida Peninsula, and was still of hurricane intensity when it moved off the northeast coast of Florida near Daytona Beach. On the 14th, it came ashore again, in South Carolina, with 80 mph winds, and then weakened as it moved northeastward up the Atlantic Coast. Property damage may reach 13 to 15 billion dollars, which would make it the 2nd costliest storm in U.S. history. The remnants of both Bonnie and Charley threatened to bring heavy rain to eastern New York and western New England, but it stayed just far enough to our east to have any impact.

Danielle formed southeast of the Cape Verde Islands on the 13th, and moved through the central Atlantic with its highest winds reaching 105

mph. Tropical storm Earl moved through the eastern Caribbean, remaining weak and eventually dissipating. Then Frances formed in the eastern Atlantic on the 24th, and strengthened steadily into a category 4 storm as it approached the Bahamas a week later. The storm weakened to a category 2 storm but still pounded Florida from September 4th through the 6th. There was a great deal of damage, and, at one point, more than 5 million people were without power. The storm weakened as it moved northward through the eastern U.S., producing flooding rains in places, including the Northeast.

Gaston developed slowly from low pressure associated with a decaying frontal zone off the South Carolina Coast, by August 27th. It moved inland on the 29th in South Carolina, but produced serious flooding northward into Virginia. The storm re-strengthened as it passed off the Virginia coast, and then passed southeast of Cape Cod on the 30th. While Gaston was crossing North Carolina and Virginia, Hermine formed between Bermuda and the U.S. mainland. It remained rather weak as it crossed eastern Massachusetts early on the 31st. The tropics remained active as September began, with hurricane Ivan forming southwest of the Cape Verde Islands on the 2nd. It strengthened, and reached the western Caribbean on the 7th, causing significant damage on the island of Grenada. The storm reached category 5 status as it passed close to Jamaica. On the 15th, as StormBuster went to press, the hurricane had just moved into the Gulf of Mexico, packing maximum sustained winds of 160 mph, and taking aim on the U.S. Gulf coast.

Much of the information in this article came courtesy of the National Hurricane Center. For the latest on the 2004 hurricane season, you can visit their website at http://www.nhc.noaa.gov/ . The web page has a wealth of information about ongoing tropical systems, historical facts on past storms, and scientific information on hurricanes.

A WET SUMMER 2004 AT ALBANY

by Evan L. Heller, Meteorologist, NWS Albany

June kicked off the climatological Summer 2004 season with near normal temperatures and below normal precipitation.

Temperatures see-sawed between extremes throughout the month at Albany. Daytime highs were as much as 10 degrees below normal, beginning on the 1st, with the low maximum temperature for the month, 64°, and ending on the 6th, when this was repeated. The next day, the mercury climbed to 81°, and by the 9th, it was 93°, the maximum reading for the entire month. This was the only day during the entire season that the temperature reached the 90 degree mark. High temperatures the next three days were in only the lower 70s, after which time a gradual warm-up resulted in highs in the mid 80s on both the 15th and 16th. The high was 10 degrees lower the very next day, and climbed another 9 degrees the day after that. Over the balance of the month, daytime highs were in the 70s with just one exception, the 24th, when the mercury reached 84°. This was followed by one more big temperature drop the following day, when the high was 10 degrees lower. In general, low temperatures were a little less bouncy. They ranged anywhere from 45°, on both the 4th and 12th, to 68°, on the 15th. Even with the extremes, there were no daily temperature records of any kind in June, in fact, no temperature records of any kind for any month during the summer period. The highest daily average temperature for the month was 79.5°, on the 9th, and the lowest was 58.0°, on the 1st. The average high temperature for the month of 76.6° (0.9° below normal) plus the average low temperature for the month of 55.5° (0.5° above normal) resulted in an average temperature for June of 66.0°, a mere 0.3° below normal.

June precipitation totaled just 2.08", 1.66" below normal. The greatest one-day amount received was 0.55", on the 26th. There was precipitation during 14 days of the month, nine days on which it was measurable. 0.10" or more fell on 5 of those days, with just two of these days picking

up 0.50" or more. Thunderstorms occurred on the 1st and 9th, dense fog, on the 30th. There were 18 clear, 9 partly cloudy and 3 cloudy days.

The month of June was entirely free of any kind of daily or monthly temperature and precipitation records. In that sense, it was a very normal month, despite the precipitation shortfall of more than an inch and a half. The peak wind gust was 40 mph, from the west-northwest on the 9th.

July was a little more interesting, at least on the precipitation front. The daily temperature variations were much smoother than during the previous month. The highest temperature recorded was 88°, on the 22nd. The lowest maximum temperature recorded for the month was only 67°, on the 27th. This also helped make this date the coolest of the month, with an average temperature of 62.0°. The low temperature for the month was 56°, on the 25th, while the highest minimum was 73°, on the 31st, this being more than 5 degrees higher than for any other date in July. This also helped make the 31st the warmest day of the month, with a 79.0° average. The average high temperature for July was 79.7° (2.5° below normal), and the average low, 62.2° (2.2° above normal), resulting in a 70.9° average July temperature, which was a miniscule 0.2° below the normal.

There was precipitation on 19 days of the month, 15 days during which it was measurable, on 11 of which there was 0.10" or more. There was 0.50" or more on 6 of these days, on two of which there was 1.00" or more. The highest daily precipitation amount was 2.15", on the 27th. This broke the old record for the date of 1.84", established in 1978. The other date where precipitation totaled 1.00" or more was the 15th, when 1.25" was recorded. This was far short of a daily record for that date. The 7.20" total for this past July placed the month in the record books as the 5th wettest July of all-time at Albany, and the wettest since the beginning of official National Weather Service records in 1874. July 2004 now also stands as Albany's 20th wettest month since 1874. The total for July was a whopping 3.70" above the normal for the month. There were thunderstorms on the 1st, 5th, 8th, 14th and 19th, and there was dense fog on the 18th.

There were 16 clear, 9 partly cloudy and 6 cloudy days during July. The peak wind gust recorded was 32 mph, from the southwest on the 19th.

August would turn out to be even wetter than July, which had already more than made-up for the precipitation shortfall in June.

The high temperature range was almost identical to that of July. The high was 88°, on the 29th. With an average temperature of 58.5°, the coolest day of the month, the 6th, also had the lowest maximum temperature, 66°. But the low temperature for August was shared by the 8th and 22nd, when the mercury dipped to 49°. The highest minimum temperature was 71°, on the 28th. The highest average daily temperature was 79.0°, on the 28th. The average high temperature for August was 78.2° (1.5° below normal), the lowest, 60.4° (2.1° above normal), giving a mean of 69.3°, which was just 0.3° above normal, and which resulted in a very normal summer, temperature-wise.

Precipitation was another story. The total for August 2004 was 7.34", making it the 6th wettest August of all-time at Albany, the 2nd wettest if you omit pre-National Weather Service records, which date back to 1874. It also stands as the 17th all-time wettest month since 1874. The total is 3.66" above the normal for August. Precipitation fell during 18 days of the month, on 16 of which it was measurable. It totaled 0.10" or more during 11 days, on 6 of which it was 0.50" or more. Of these days, 1.00" or more fell twice. The greatest one day amount was a daily record for the date, 1.95", on the 15th. This broke the previous-held record of 1.62", established in 1911. There were thunderstorms on the 1st, 3rd, 12th, 16th, 20th, 28th and 30th, and dense fog on the 16th, 17th, 28th and 29th.

There were 13 clear and 18 partly cloudy days, and the peak wind was 29 mph, from the west-northwest on the 19th.

Summing up the Summer of 2004, the average high temperature was 78.2°, 1.6° below normal, and the average low was 59.4°, 1.6° above

normal, resulting in an average temperature for the month of 68.7°, which is just 0.1° below normal (not exactly normal due to rounding errors), but, essentially, right at normal. Precipitation over the three month period totaled 16.62", which is 5.70" above normal. This total places the Summer of 2004 at number 6 in the record books for 'wettest summers', number 2 since the beginning of National Weather Service records in 1874, in this case being surpassed by only 1975, and by just 0.12".

MESOEAST ON THE INTERNET

by Dave Zaff, Information Technology Officer, NWS Albany

Last fall, the Albany National Weather Service (NWS) office began a new project, collecting real-time surface observational data from a variety of new sources. This information, collectively called MesoEast, is now available in near real-time as a suite of graphics on the Albany NWS Internet page. The link is: http://www.erh.noaa.gov/er/aly/obs/mesoEast/.
MesoEast is a cooperative network of real-time weather observations from various NWS offices, and several agencies and commercial firms. The goal of MesoEast is to provide access to a comprehensive set of current weather observations for portions of the northeastern U.S. MesoEast data relies on weather observing networks that are managed by Federal, State and local agencies, as well as private firms. The page is updated every 15 minutes. Spotter data of measurable precipitation and snowfall is entered into a computer at the Forecast Office, and automatically plotted on an image graphic.

This project is modeled after the MesoWest project, and is set up jointly by the University of Utah and the NWS in Salt Lake City, Utah. Their original goal was to provide an enhanced network of observations for the 2002 Winter Olympics. The project evolved into a cooperative regional database of observations spanning the entire western half of the country.

MesoEast data will be capable of providing new graphics later this fall and winter, including, but not limited to, hourly snow and storm total snow accumulation, maximum and minimum temperatures, and maximum wind speeds and gusts.

INTERNET HYDROLOGIC RESOURCES

by Steve DiRienzo, Service Hydrologist, NWS Albany

The internet has become a great resource for obtaining weather and river information. This article is basically a laundry list of URLs I use routinely to check current and forecast weather and water conditions. This is by no means a complete list, but I think you'll find these links useful.

National Weather Service Forecast Office, Albany, New York.
http://www.erh.noaa.gov/er/aly/index.html
Here you can find warning, watch and advisory information, including flood watches and warnings, current and forecast conditions, and local radar and satellite data.

National Weather Service Advanced Hydrologic Prediction Service, Albany National Weather Service Forecast Office.
http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?aly
Here you can obtain current river flood status, river stages and stage forecasts, and observed and forecast precipitation for the Albany National Weather Service Forecast Office's Hydrologic Service Area. A backup URL would be:
http://waterdata.usgs.gov/nwis/rt
Just click on your state.

National Weather Service Hydrometeorological Prediction Center.
http://www.hpc.ncep.noaa.gov/qpf/94qwbg.gif
http://www.hpc.ncep.noaa.gov/qpf/98qwbg.gif
http://www.hpc.ncep.noaa.gov/qpf/99qwbg.gif

24-hour total precipitation forecasts for days 1-3 from today. This data may be adjusted slightly by the Northeast River Forecast Center before being used in the River Forecast Models. These forecasts are basin average totals. Locally higher amounts are possible.

National Weather Service Storm Prediction Center (SPC).
http://www.spc.noaa.gov/
Contains graphics of current severe weather watches, severe weather outlooks, and damage reports from the day's severe weather. It is also a great site for tornado pictures. The following graphic link from the SPC shows active watches and warnings, as well as damage reports:
http://www.spc.noaa.gov/products/wwa/wwa.gif

National Hurricane Center.
http://www.nhc.noaa.gov/
Source for official tropical storm and hurricane forecast tracks and strengths.

Lightning Data.
http://www.lightningstorm.com/tux/jsp/gpg/lex1/mapdisplay_free.jsp
Map graphic pinpointing lightning activity throughout the U.S.

National Weather Service Interactive Weather Information Network.
http://iwin.nws.noaa.gov/iwin/iwdspg1.html
Designed to keep the emergency manager up-to-date with all pertinent weather information. Just click on your state.

Albany National Weather Service Forecast Office Mesonet Project.
http://www.erh.noaa.gov/er/aly/obs/mesoEast/
A work in progress, but it will show a very high density of temperature, wind and precipitation observations across eastern New York and western New England.

Northeast River Forecast Center Monthly Water Supply Page.
http://www.erh.noaa.gov/nerfc/watersupply.shtml
Includes county precipitation and 'departure from normal' graphics.

Taunton, Massachusetts National Weather Service Climate Page.
http://www.erh.noaa.gov/box/dailystns.shtml
Has daily and monthly climate information (unofficial) for locations across the northeastern U.S. Includes daily and monthly precipitation, maximum and minimum temperatures, departures from normal, and cloud cover and wind speeds, as far back as 1997.

Albany, New York National Weather Service Climate Page.
http://www.erh.noaa.gov/er/aly/ClimateLocal.htm
Includes local climate data, normals and extremes, special climate data tables, historical holiday weather for Albany, and other climate links.

Hudson River Tide Predictor.
http://140.90.78.170/tides04/tab2ec2a.html
Includes locations from New York City to Troy.

Interactive Snow Information.
http://www.nohrsc.nws.gov/interactive/html/map.php?submit1=Refresh+screen&var=ssm_depth&dy=2002&dm=12&dd=25&dh=12&snap=1&o9=1&o11=1&o12=1&lbl=l&min_x=-77.867083333325&min_y=38.613334019974&max_x=-69.867083333326&max_y=46.613334019973&coord_x=-73.8670833333255&coord_y=42.6133340199735&metric=0&bgvar=dem&width=512&height=512&nw=512&nh=512&js=1&type=3&uc=0&mode=zoomin&omode=zoomin&ql=station&zf=2.0
Many snow-related parameters, including snow depth and snow water equivalent from the National Operational Hydrologic Remote Sensing Center.

Complete Sun and Moon Data for One Day.
http://aa.usno.navy.mil/data/docs/RS_OneDay.html

All this is just a small sample of what is available on the web. If there is any other specific information you need, please send me an email at Stephen.Dirienzo@noaa.gov. Happy surfing!

FALL 2004 ADVANCED SKYWARN SPOTTER TRAINING SESSIONS AND WINTER WEATHER WORKSHOPS

by John Quinlan, Skywarn Coordinator,
NWS Albany

10/18/04 1800-2000
WINDHAM COUNTY
TOWNSHEND, VT-GRACE COTTAGE HOSPITAL EMS TRAINING ROOM
185 GRAFTON RD. ON ROUTE 35

10/25/04 1900-2100
BERKSHIRE COUNTY
GREAT BARRINGTON, MA-MONUMENT MOUNTAIN REGIONAL HIGH SCHOOL CAFETERIA

10/26/04 1900-2100
ULSTER COUNTY
KINGSTON, NY-HOSE #5 FIRE HOUSE 830 ULSTER AVE.

10/27/04 1900-2100
ALBANY COUNTY
ALBANY, NY-CESTM 1ST FLOOR AUDITORIUM 251 FULLER RD.

11/1/04 1900-2100
GREENE COUNTY
CAIRO, NY-GREENE COUNTY OFFICE OF EMERGENCY PREPAREDNESS 25 VOLUNTEER DR.

11/4/04 1900-2100
MONTGOMERY COUNTY
FONDA, NY- COUNTY EMO COUNTY OFFICE BUILDING 64 BROADWAY

11/6/04 1000-NOON
BENNINGTON COUNTY
BENNINGTON, VT-BENNINGTON FREE LIBRARY ON 101 SILVER ST.

11/13/04 1000-NOON
WASHINGTON COUNTY
FORT EDWARD, NY-ROOM #1 IN THE BASEMENT OF BUILDING B WASHINGTON COUNTY MUNICIPAL CENTER 383 BROADWAY

11/15/04 1900-2100
DUTCHESS COUNTY
EAST FISHKILL, NY-EAST FISHKILL FIRE DISTRICT TRAINING BUILDING 2502 SR 52

Pre-registration is required for all Advanced SKYWARN Spotter Training sessions. The advanced sessions are open only to those who are current SKYWARN spotters. Please call 518-435-9580 to pre-register, then press "7" for SKYWARN spotter training. You will be asked to leave your name, a phone number and the session you are signing up for. You must use a touch-tone phone to pre-register, and once you have pre-registered, you will not receive a call back unless the session has been cancelled or the session is full. In addition, you may register via the internet by going to www.weather.gov, and clicking on eastern New York. This will take you to the National Weather Service in Albany. Simply click on the link for SKYWARN Registration.

WCM Words

by Ray O'Keefe, Warning Coordination Meteorologist, NWS Albany

StormBuster is a newsletter primarily for our trained SkyWarn spotters. Reader articles, or suggested topics, are always welcome. Do you have any ideas? Drop me an e-mail or a snail mail note.

With severe weather winding down, (but not necessarily over) and winter getting ready to take its punch at us, we need to be mindful of both summer and winter spotter reporting criteria.

During the Winter Season (November through April): (1) Snowfall of 4 inches or more in 24 hours; (2) Any freezing rain or drizzle; (3) One inch or more of rain in 4 hours or less; (4) Ice jams or flooding, including bankfull or near bankfull streams; (5) Damaging winds; and (6) Measured rainfall - 1.5 inches or more in 4 hours.

During the convective season, (May through October): (1) Tornadoes, water spouts, funnel clouds, wall clouds; (2) Damaging winds (58 mph or more); (3) Any hail; (4) Damaging lightning; (5) Flooding, including bankfull or near bankfull streams; (6) Measured rainfall - 1.5 inches or more in 4 hours.

Get your reports to the National Weather Service by the quickest means possible. Possible communications links include: Amateur Radio, the 800 number you were given at your training, and the "Severe Weather Report" form on the internet at: http://cstar.cestm.albany.edu:7775/main.htm

StormBuster is an exclusively electronic newsletter. If you or any of your friends who are spotters do not have home access to the web, let me know. I will try to find a local public access point where they can view StormBuster. If you or any of your friends who are spotters have any difficulties viewing this electronic version, please drop me an email: **Raymond.okeefe@noaa.gov**

From the Editor's Desk

by Evan L. Heller, Meteorologist, NWS Albany

You probably have noticed that we have added 'Northeastern' to the title of our publication. In addition, the title has been presented in dual-color mode. It is an attempt to improve the aesthetics of our publication. So, beginning with this issue of Northeastern StormBuster, the title will be in color against a background of a different color. The color combinations will change with each issue. We hope this will enhance your overall enjoyment of StormBuster.