

STORMBUSTER

A Newsletter for Emergency Managers & Storm Spotters

Fall Edition, 2002



Summer 2002: A Weather See-Saw

by Evan Heller and Hugh Johnson

June 2002 was a roller coaster of a month in Albany. Temperatures were near normal, with precipitation above normal. The month started out a little above normal but quickly turned cooler. A high of 83° on the 1st was followed by a high of just 68° the very next day. It warmed back to 81° on the 5th...but the high was again just 68° the very next day. Widespread thunderstorms accompanied the warmth on the 5th. There was widespread damage including that resulting from lightning fires. A relatively weak tornado touched down in Salisbury, Litchfield County, Connecticut, doing damage to just a small area of forest grove. Two other tornadoes touched down, in both North Bennington and Windham in Vermont. The latter was the most significant of the three, causing major damage to trees, homes and automobiles. A good portion of the month's rainfall...1.70" ...fell on the 5th and 6th. Things warmed up again...to a high of 80° by the 9th. The 10th was five degrees cooler, but the mercury shot right back up to 89° the next day, triggering more thunderstorms. This was followed by the biggest cooling trend of the summer season. High temperatures were lower each successive day until the 15th, when the high was just 58°, just one degree shy of a record. More thunderstorms affected Albany on the 16th and, with small hail, on the 17th. From mainly Albany and points south, these storms, many with strong, gusty winds, deposited hail as large as one and three-quarter inches, resulting in significant widespread damage. One of the thunderstorms spawned a weak afternoon tornado in Lanesville, Litchfield County, Connecticut. There was a gradual warming trend through mid-month, and by the start of true summer, highs were back into the 80s. After a high of just 74° on the 22nd, mercuries were back into the 80s, where they would stay the remainder of the month. The last ten days saw average temperatures at or above normal. There was just one 90+ day, on the 26th, when the mercury

topped out at 93°. The lowest temperature recorded during June was 41 degrees on the morning of the 4th. This was also the coolest day of both the month and the season, with the average temperature being 56.5 degrees. There were lows in the upper 40s two other days, while the balmiest low was 68°, having occurred on both the 23rd and the 27th. Despite the heat of the day, this reading fell well short of the record. The only daily record for the month came on the 27th, when 1.10" of precipitation fell in thunderstorms. This was one of only two days with more than an inch of rain. Measurable rainfall days numbered 18. Albany had more thunderstorms on the 23rd, and from the 25th to the 28th, which produced some significant damage in the Greater Capital Region, or caused power outages, on all but the 28th. Despite the mild end to the month, the see-sawing temperatures the rest of June resulted in the average temperature for the month being 66.8°, just a half a degree above normal. Precipitation for the month totaled 5.45", 1.71" above normal.

July 2002 was a very dry month. In fact, it was the fourth driest July on record here at Albany, with rainfall totaling just 0.84". And this, coupled with above normal temperatures, took its toll on area farmer's crops as well as homeowner's lawns, not to mention the reservoirs. Measurable precipitation occurred only seven days during the month, but it was fairly spaced throughout the month. The highest daily rainfall value was just 0.31", on the 23rd. There were a total of eight 90+ degree days. Three consecutive days of 90+ high temperatures occurred from the 2nd to the 4th, a mini heat wave. 93° was the high for the month, occurring twice, on the 2nd, and again on the 4th. The coolest high temperature occurred on the 26th, when it was 72°. The coolest day overall was the 11th, with an average temperature of 62.0°. The lowest temperature recorded, 49°, was also on that day, and was repeated the following day. The high minimum temperature was a balmy 72°, on the 3rd. Even with the lack of rain for the month,

thunderstorms occurred in Albany on the 4th, 19th, 23rd and 28th. Those on the 23rd resulted in major damage from Albany on south. Dutchess and Litchfield Counties were hardest hit, with some customers left without power. A tree planted by Samuel Morse in 1860 was amongst the flora destroyed. Other storms affecting Saratoga, Washington and Berkshire counties on the 18th produced 3/4" hail or brought trees down. Lightning struck two people in Fulton County on the 9th, and there was minor storm damage at a campsite. Despite the average monthly temperature of 73.4° being 2.3° above normal, there were 10 days which were clearly cooler than normal. The warmest day overall was the 3rd, with an average temperature of 82.0°. Despite its heat and dryness, there were no daily records set during the month of July. But July 2002 not only winds up being in a 3-way tie for 43rd all-time hottest month of any kind in Albany, it is also tied for 58th driest. This is amongst over 1,540 months of records. A layer of smoke originating in Quebec blanketed the sky over the Albany area, blotting out much of the sun's power from the 5th through the 7th.

August 2002 ended up being almost as warm as July was. More importantly, it was wetter than July. This month was highlighted by a heat-wave of 90+ degree high temperatures stretching from the 11th to the 16th. The hottest reading of the year was realized during this time when the mercury topped out at 96° on the 14th. There were nine 90+ degree days this month, one more than in July. The hottest day of the month, however, was actually the 15th, as the average temperature was 82.5°. This was also the hottest day of the season. The highest low temperature for both the month and the season also occurred on this date, and it broke a 14-year-old daily record. It was an uncomfortably muggy 74°. On the other side of the coin, there were a couple of unusually cool days during the month, which narrowly kept this month from cracking the Top 10 list of warmest Augusts. Widespread rainy weather kept high temperatures down in the 60s on both the 24th and 29th. The high was only 65° on the 24th. The month's low temperature of 52° occurred on the 9th. This was also the coolest day of the month, the average temperature being 60.0°. Four consecutive days with rain, from the 14th to the 17th, resulted in over an inch and a half being dumped on Albany. Just prior to that, there was a virtually dry period of 11 days, with no measurable precipitation. The only rainfall day of over one inch occurred on the 29th...two full months since the last one. 1.07" fell at the Albany airport. Another

significant rainfall of 0.69" on the 24th, plus some smaller amounts scattered about the rest of the month, brought the total for the month to 3.85", 0.17" above normal. There were ten days with measurable rainfall. The average temperature for the month was 72.9°, 3.9° above normal, putting it in a 4-way tie for 60th hottest month of any kind at Albany. Thunderstorms occurred during just 5 days during the month in Albany, 7 days throughout the region. Storm-related damage was mostly localized and fairly minor, but some amount of damage was reported for each of the 7 days. The Albany area was most affected by back to back days of storms on the 14th and 15th, which produced hail, and brought down numerous trees and power lines both days. A severe thunderstorm wind gust of 68 mph was recorded at the Albany airport on the 14th.

Summing up summer, the average temperature was 71.0°, 2.2° above normal, and the total precipitation amount of 10.14" was just 0.78" below normal.

ENSO 2002 Update

by Thomas A. Wasula

El Niño/Southern Oscillation (ENSO) is an ocean-atmospheric phenomenon that can impact global weather. ENSO continues to strengthen over the central and eastern Pacific in early September. El Niño is the abnormal equatorial warming of Pacific Ocean water near the International Date Line and eastward to the coasts of Ecuador and Peru. The current anomalously warm water over the central and eastern Pacific has been in place for over 6 months.

When an El Niño occurs, the surface air pressure over the western Pacific near northern Indonesia and Australia significantly increases, while the pressure over the southeastern Pacific dramatically decreases. When an El Niño terminates, the pressure difference between these two geographic regions changes to the opposite direction. The seesaw atmospheric pressure pattern between the eastern and western Pacific is called Southern Oscillation (SO). The seesaw pressure reversal impacts the trade winds. The northeast and southeast trade winds are much weaker than normal and may even reverse direction during ENSO. This allows the warm water that builds up in the western Pacific to slide on eastward along the equator to the eastern Pacific. The current ENSO has been rated as a weak to moderate episode so far, and it is not quite like the strong episode that occurred in 1997-98. Strong episodes can cause chaotic weather patterns in different parts of the world.

The National Oceanic and Atmospheric Administration's (NOAA's) Climate Prediction Center (CPC) has forecast the ENSO to persist into early 2003. The sea surface temperature anomalies continue to be the most significant, since the 1997-98 event. NOAA has classified this warm event based on the mean Southern Oscillation Index (SOI) data for April-May-June as a weak warm (ENSO) period. Drier than average conditions were observed across parts of Southeast Asia including India and Indonesia during the month of July. This is common in ENSO episodes. CPC expects that drought-like conditions will persist across Indonesia and parts of eastern Australia for the next several months. Scientists aren't convinced that the ENSO has reached its peak intensity yet. However, it appears that this event will not be as strong as the 1997-98 event and the impact will be somewhat less.

El Niño is expected to continue to impact the Atlantic Hurricane Season. NOAA, as of early August, anticipates 7 to 10 tropical storms with 4 to 6 developing into hurricanes. One to three of those hurricanes could develop into a major one classified as a Category 3 or higher on the Saffir-Simpson Hurricane Scale. The Atlantic hurricane season climatologically peaks in mid-August through October. The forecasted overall total of hurricanes and tropical storms places the season in a normal to below normal category. As of early September, only five tropical storms and no hurricanes have occurred in the Atlantic Ocean basin.

ENSOs have a variable impact on weather in the Northeast. A few ENSO winters have produced heavy snowfall and precipitation, while some others have produced the opposite effect.

The Southeast and Mid-Atlantic states tend to have cooler and wetter winters due to an active subtropical jet stream during ENSOs. The 1997-98 ENSO produced an anomalously warm winter across portions of eastern New York and western New England. Research studies have shown winters to be warmer than normal during ENSOs across the northern United States and Canada.

Several studies have shown that ENSO produced near normal snowfall for the Northeast, most specifically for Albany and other portions of eastern New York and Western New England. Research based on nearly a dozen strong ENSO December-January-February (DJF) events have shown temperatures to be slightly above normal across most of the Northeast, except across northern New England and northern New York where temperatures were above normal. Precipitation

for the same collection of events from DJF is typically near normal. Even though the temperatures for the core of the winter came out above normal, it doesn't mean snow events or snowfall will be suppressed in the Northeast. It is not surprising that CPC has forecasted slightly above normal temperatures for the 2002-03 DJF period across the Northeast and near climatological normal amounts of precipitation. Only time will tell how chaotic in nature the weather will be this winter for the Northeast and the world due to the 2002 ENSO.

For more information, please view the following web-sites.

<http://www.cpc.noaa.gov> <http://www.pmel.noaa.gov>
<http://www.cdc.noaa.gov>

Coming soon - forecast for AnyTown, USA

by Glenn Wiley

The National Weather Service is in the midst of a transition from text based forecast products to graphical grid based products. Our current 28 forecast zones in eastern New York and western New England has been split into approximately 2,500 equal area grid blocks. (each 5 x 5 km or about 3 x 3 mi) The small area of each grid block, about the size of many small towns, allows for a very specific forecast of weather parameters. The most prominent differences show over areas of rapid terrain change. In addition to the smaller forecast areas, we have changed the common 12 hour forecast interval, (i.e. TODAY... TONIGHT...) to a 3 hour interval. In time, grid based forecast graphics will feature weather, precipitation amount, temperature, dewpoint, wind and sky cover on a 2.5 km x 2.5 km grid at a one to three hour time step. The National Weather Service expects that by the fall of 2003 a composite mosaic of the entire United States will be available for all forecast parameters. Imagine - clicking on a grid point for AnyTownUSA, for 3 pm tomorrow - and getting the latest forecast for where you live!

To check out our new experimental grids go to:
<http://www.erh.noaa.gov/er/aly/gfe/gridded.html>

WCM Words

by Dick Westergard

ID cards for spotters trained in Spring of 2002 were mailed out in mid August. If you attended a Spring session, and do not yet have your ID card, please drop me an e-mail. The new cards have the date of training on them, so you can always check to see that you have not gone more than two years since your last training session. If you go five years without a refresher, your name will be purged from our spotter database.

SkyWarn Spotter recognition day will again be celebrated on the first Saturday in December. This year, that is Saturday the 7th. The Albany office traditionally hosts several Amateur Radio operators for this event, including mobile units which set up in our parking lot. Contact Steve Pertgen, our Data Acquisition Program Manager if you would like to be involved in this year's observance.

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.

As the hurricane season, (June through November) peaks, a reminder of precipitation reporting criteria:

- 1) Measured rainfall - 1.5 inches or more in 4 hours.
- 2) Flooding, including bankfull or near bankfull streams. 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 "SevereWeather Report" form on the internet at: <http://cstar.cestm.albany.edu:7775/main.htm>

Due to the high cost of printing and mailing hard copies, StormBuster is now primarily an electronic newsletter. If you, or any of your friends who are spotters, have any difficulties viewing this electronic version, please drop me an e-mail. For those who have requested it, we will continue a very limited quarterly StormBuster mailing via USPS, for now. If you are reading a hard copy, but are able to access the electronic version, please drop me an e-mail. The electronic version is on line at:

<http://www.erh.noaa.gov/aly/special.htm#stormbuster>

E-Mail: RICHARD.WESTERGARD@noaa.gov

National Weather Service Forecast Office
251 Fuller Road, Suite B-300
Albany, NY 12203-3640

StormBuster is a publication for Emergency Management Officials and Skywarn Spotters in the Albany, New York National Weather Service Forecast Office County Warning Area. For all of your weather information needs, visit our homepage at: <http://www.erh.noaa.gov/aly/>