Shade Tree News

Your source for weather information - tailored to your needs

A quarterly publication from Shade Tree Meteorology, LLC

April 2016 **Volume 2, Issue 1**

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- El Niño

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Data sources and Forensic Meteorology

New York State, in partnership with the Federal Emergency Management Agency (FEMA), the U.S. Department of Homeland Security, and the University at Albany are in the process of installing a mesonet of surface observation stations across New York State.

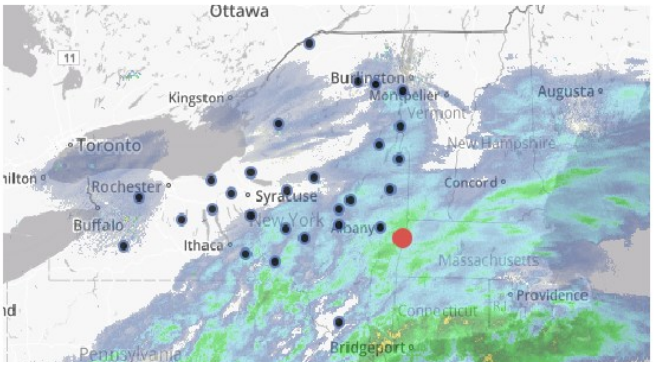

Fig. 1: NYS Mesonet stations and regional radar for April 4, 2016 (www.nysmesonet.org)

A mesonet, or mesoscale data network, is a collection of surface observation stations which provide a much finer resolution picture of surface conditions across a region. This can be particularly useful during rapidly changing weather conditions, especially in regions such as New York State which have widely varying terrain.

Many times during our forensic research, the data quality leaves something to be desired as we piece together a meteorological chronology. While the standard first-order Automated Surface Observing System (ASOS) sites can give as frequent as one-minute data, they are spread very far apart geographically and may or may not be representative of conditions at incident sites unless they occur in close proximity to an ASOS.

Cooperative observers and Community Collaborative Rain, Hail and Snow network (CoCoRaHS) sites, which we profiled in our last edition of Shade Tree News, are also at times an invaluable source of precipitation and temperature data. However, these sites only report once per day, generally in the morning.

With the NYS mesonet coming online during the next year, we will now have access to high frequency data at key points across New York State. This new data source also boasts cameras at each site, as well as high quality meteorological instrumentation. We expect this data to be an excellent source of information which will help us more accurately understand how the weather evolved over time in many cases across New York State. For more information visit http://www.nysmesonet.org.

News from NOAA: Winter 2015-16 Recap

At press time, upstate New York is currently in the midst of an early April snowstorm which will leave us with a widespread 3 to 6 inches of snowfall across the region. This is an unfamiliar site to many of us; the Albany International Airport received a measly 10.5 inches of snow through the end of March. With the snow from this storm the Airport is no longer in danger of setting the record for all-time least snowiest winter on record.

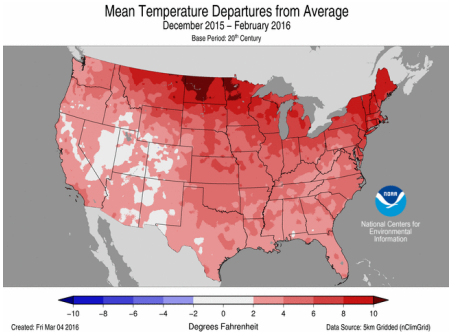

Fig. 2: Average temperature departure from normal for December 2015-February 2016 (www.ncdc.noaa.gov)

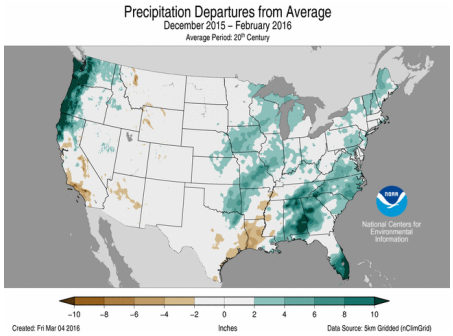

Fig. 3: Precipitation departure from normal for December 2015-February 2016 (www.ncdc.noaa.gov).

How did the rest of the country compare? The National Climatic Data Center (NCDC) reports that February 2016 snow cover across the continguous U.S. was the 13th smallest on record. Interestingly enough, Figure 3 shows that much of the northeast United States received near-normal precipitation in spite of the below-average snowfall at interior sites such as Buffalo and Albany, New York. Consistent with an El Niño winter, the southeast U.S. and Pacific Northwest received much above normal precipitation. However, NCDC reports that drought continues across much of California as February was relatively dry.

In terms of temperatures, much of the United States was above normal, with the highest temperature anomalies (departure from normal) found in the north-central United States.

"The National Climatic Data Center (NCDC) reports that February 2016 snow cover across the continguous U.S. was the 13th smallest on record"

Building a Weather-Ready Nation

http://www.nws.noaa.gov/com/weatherreadynation/spring_safety.html

The NOAA Weather Ready Nation Spring campaign began on March 1, 2016. There are numerous resources to ensure that you and your loved ones are prepared for the many types of hazardous weather that can occur during the active spring season. Heat, floods, lightning, high winds and tornadoes, and beach and boating hazards are all types of weather that can occur during the spring season as people resume many outdoor activities in the warm weather. Please be sure to visit the WRN website to learn how you and your loved ones can be prepared if you are in the path of severe weather this spring!

AMBASSADOR™ WRN WEATHER-READY NATION

Shade Tree Meteorology, LLC is proud to serve as a Weather-Ready Nation Ambassador

Hazardous Weather Preparedness

Do you know what to do if you are outside and lightning is occurring? Did you know that lightning can strike several miles away from thunderstorms?

NOAA reports that "in 2015, there were 26 lightning fatalities—five in Florida alone. 62% of fatalities were men. Lightning strikes the United States about 25 million times a year." (http://www.nws.noaa.gov/com/weatherreadynation/spring_safety.html)

The National Weather Service uses the slogan "When Thunder Roars, Go Indoors!" to remind people that lightning can strike anywhere, and no place outdoors is safe if you are hearing thunder.

If you hear thunder, the first safety precaution you should take is to find a sheltered or indoor location. Once inside, stay away from baths, showers, corded phones, windows, doors, and concrete floors and walls.

If there is no indoor or sheltered area available, you can reduce your risk by taking the following actions: stay away from elevated areas, make yourself as small as possible, stay away from isolated trees, bodies of water, and stay away from objects that conduct electricity. If there is a vehicle available, that is the safest place to be if you cannot find indoor shelter. Many more lightning safety resources for adults and children of all ages can be found through the National Weather Service at http://www.lightningsafety.noaa.gov/safety.shtml.

Fig. 4: Lightning near a stadium (http://www.lightningsafety.noaa.gov/index.shtml)

"in 2015, there were 26 lightning fatalities—five in Florida alone"

Did you know: Lightning

How does lightning form during a thunderstorm? Essentially, lightning is a giant electrical spark in the atmosphere, similar to the spark you might experience after walking across a carpeted room and touching a metal doorknob. The ground generally has a positive electrical charge, while updrafts and downdrafts containing various types of precipitation in a thunderstorm can create both positively and negatively charged areas in the storm. Generally, air is a very good insulator, however when the charge separation becomes too great, a discharge occurs and we see a lightning strike. Lightning can occur between positively and negatively charged areas of a cloud (intracloud), between clouds (cloud-to-cloud), or from negatively charged areas of the cloud to the ground (cloud-to-ground). Thunder occurs when the air immediately surrounding the lightning strike column is heated and expands. A shock wave is generated and proceeds through the atmosphere. When it reaches your ear, you hear thunder. Because light travels faster than sound, you see the lightning before you hear the thunder. The rule of thumb is that for every 5 seconds delay between the time you see the lightning and hear the thunder, the lightning strike is one mile away. Thus, a 10-second flash-to-bang delay means that the lightning struck two miles away...and you should take cover immediately!

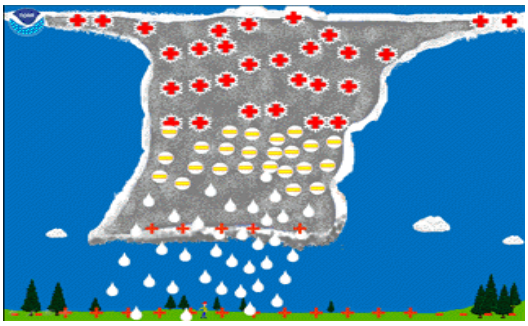

Fig. 5: Lightning formation in a thunderstorm (http://www.lightningsafety.noaa.gov/science/science-overview.shtml)

A Full-Service Forensic Meteorology Firm with a Team of Certified Consulting Meteorologists Specializing in Severe Weather Event Reconstruction

Shade Tree Meteorology, LLC

2766 Rosendale Road
Niskayuna, NY 12309

Phone: 518-831-9374
Fax: 518-374-7743
Email:
dick.westergard@shadetreemeteorology.com
alicia.wasula@shadetreemeteorology.com

Extensive experience issuing forecasts and radar-based severe weather warnings translates into exceptional skill at reconstructing weather events as an expert weather witness. Clear, non-technical (but scientifically sound) explanations of the what, where, when, and why in thunderstorm events, flooding events, and winter storm events have proven extremely useful to clients in pretrial and courtroom testimony.

Our associates' credentials include:

Four decades of experience as an operational weather observer, forecaster and forensic meteorologist

- Training and experience on every weather radar system ever used operationally by the U.S. government, which operates the largest weather radar network in the world
- Three decades of experience in storm damage assessment
- Three decades of public speaking and report writing on the topic of weather
- Two decades of weather warning program management experience, across three National Weather Service offices, serving parts of 9 states

Over a decade of experience as a researcher and teacher in the field of meteorology

- Conducting cutting edge research supporting operational forecasting and warning operations
- Teaching meteorology to students ranging from beginning to advanced
- Explaining complex meteorology clearly, to every audience

Weather information - tailored to your needs

WWW.SHADETREEMETEOROLOGY.COM

From the President's Desk

Spring is upon us, though this winter has been rather unusual. Seventy one degrees for Christmas, 81 degrees in early March and a start to April with 5 inches of snow and single digit temperatures. Clearly Mother Nature does not want us getting bored with the weather.

New cases continue to come in at a steady pace, but not so many as to diminish our capacity to accept new clients, so keep those referrals coming.

Thank you to all of our returning clients and a special thank you to the law firms who have reached out to us from across the country as our level of severe weather expertise has become better known.

A few reminders:
- We continue to maintain a completely digital case database, so we would appreciate digital rather than paper copies of any and all pertinent case documentation. If you must send us paper, we can digitize it for you at our usual hourly rate.
- On four occasions since 2007, attorneys representing two parties to the same case have contacted Shade Tree Meteorology seeking a weather expert. We would have no problem serving two parties to a case from a scientific standpoint because the weather is the weather and we provide all of the weather facts to our clients and leave it to them to incorporate those facts into their case. However, we have an adversarial court system, so the ethics of our system requires us to work only for a single party to any one case.
- Therefore, before we accept a new case we must do a conflict check to ensure that we are not already involved in your case via another party to the litigation. The easiest way to get us the information for the conflict check is to fill out the form at: http://www.shadetreemeteorology.com/forensicCaseConflictCheck.php and hit the submit button. That will display the information you have submitted and give you a chance to edit it. If it looks good, hit the green send button and we will have the information in minutes. We will run the conflict check and get back to you, often within minutes but always within two working days. If there is no conflict, the information on the conflict check form is also sufficient to get us started gathering data for your case, once we receive your retainer.
- If you need us to get started quickly, we also have a PayPal option for getting the retainer to us, and we can get started on your case the same day. If you are in a hurry, give us a call at 888-580-0747, so we can provide a case number and walk you through the electronic payment process.

As always, if you want to know all of the weather factors that may have affected your court case and have the details of those factors explained in terms that make complex meteorological science clearly understandable by all, call us at Shade Tree Meteorology.

Shade Tree Meteorology can also provide forecasts and weather radar over watch for your outdoor event. Keep us in mind for your firm's pool party or wilderness bonding outing.

Note:

If you would like to disseminate all or a portion of this newsletter, we request that you contact us and we would be happy to work with you.

Do you have a question you would like answered in an upcoming issue of "Shade Tree News"? Please let us know!

Shade Tree Meteorology, LLC is a solar powered, green business. Our grid connected photovoltaic array produces one-and-a-half times as much energy each year as the business uses.