



Shade Tree News

Your source for weather information - tailored to your needs

A quarterly publication from Shade Tree Meteorology, LLC

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- Winter driving
- El Niño

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Data sources and Forensic Meteorology

CoCoRaHS may sound like a funny acronym, but the data network is one of the most often-used sources of surface data when forensic meteorologists reconstruct a past weather event. The Community Collaborative Hail, Rain and Snow network (CoCoRaHS) is a volunteer network of weather observers who measure precipitation once daily. The network originated at Colorado State University in 1998, and today is comprised of approximately 8,000 volunteers across the United States, Canada, Puerto Rico and the U.S. Virgin Islands. Many times an incident which is involved in litigation does not occur in close proximity to an Automated Surface Observing System (ASOS), which are often located at airports). While the ASOS network has the advantage of reporting at the hourly (or even 1- and 5-minute intervals), the locations of the ASOS sites are sparse, and frequently pre-

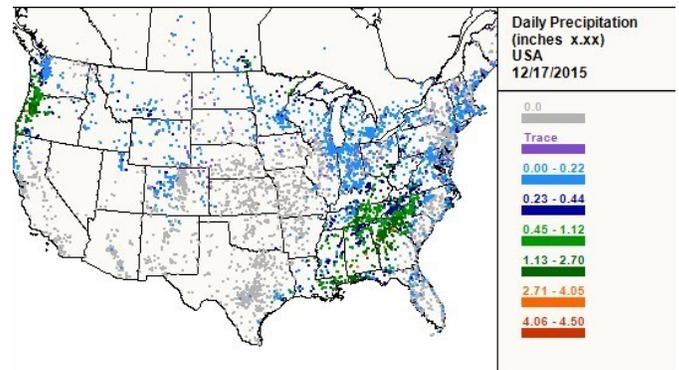


Fig. 1: Daily precipitation totals from CoCoRaHS sites across the nation (<http://www.cocorahs.org>) .

cipitation records are not representative of what occurred at the accident site. By nature of its volunteer, grass-roots structure, the CoCoRaHS data network covers portions of the United States which are less populated, such as mountainous regions and rural areas. Particularly in the Northeast U.S., where terrain can cause widely varying precipitation totals (and even variations in precipitation type during some storms), the hourly (or even 1- and 5-minute intervals), the locations of the ASOS sites are sparse, and frequently pre-

site of an incident which is not located nearby an ASOS site. By nature of its volunteer, CoCoRaHS data is quality controlled and is available freely from the National Climatic Data Center (NCDC). It may be certified should it be used at a trial.

mining what happened at the



News from NOAA: Summer 2015 Outlook

The Climate Prediction Center has issued its Winter 2015-2016 outlook. A strong El Niño episode in the tropical Pacific is expected to have a large impact on winter weather across the nation. The southeast U.S. is expected to be much cooler and wetter than normal, a pattern which is consistent with a strong El-Niño.



Fig. 2: Winter 2015-2016 Temperature Outlook (www.cpc.ncep.noaa.gov).



Fig. 3: Winter 2015-2016 Precipitation Outlook (www.cpc.ncep.noaa.gov).

In the Pacific Northwest and northern Plains, temperatures are expected to be warmer than normal and the intermountain west (Montana, Idaho, etc.) is forecast to be drier than normal. Here in the northeast, the teleconnections (or statistical relationships) to El Niño are somewhat weaker than other parts

of the country, but in general El Niño conditions in the Pacific tend to favor warmer than normal conditions. There is not a strong relationship to precipitation in the Northeast and El Niño, and thus the CPC is forecasting equal chances of above and below normal precipitation this winter. At press time, December across the

Northeast looks to finish out as one of the warmest on record with well below normal precipitation. There has been a marked lack of both cold air and storms moving up the Eastern Seaboard (nor'easters) thus far. Whether or not this warmer-than-normal pattern will hold through January and February remains to be seen.

“A strong El Niño episode in the tropical Pacific is expected to have a large impact on winter weather across the nation.”

Building a Weather-Ready Nation

Should the snow begin to fly this winter, the National Weather Service will help keep you prepared to stay ahead of the storm. New services have been added to the existing suite of National Weather Service products. Currently there is available a graphical snowfall probability forecast for days 1 through 3. Users can modify the graphic to determine the probability of various snowfall thresholds across the United States (http://www.wpc.ncep.noaa.gov/pwprof_d47/pwprof_medr.php). These longer range forecasts will allow users to plan for inclement weather at much longer time scales. Should you find yourself in need of a medium-range snowfall forecast, please visit the website. There is also a link to a user survey so that the National Weather Service can eval-

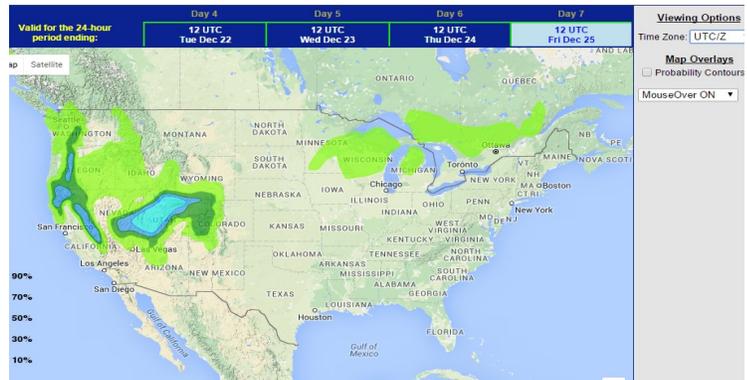


Fig. 4: Experimental day 7 snowfall probability forecast for Christmas Day 2015 (www.wpc.ncep.noaa.gov).



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

Hazardous Weather Preparedness

While we in the Northeast have not had to deal with much in the way of winter driving thus far this season, it is a near certainty that winter precipitation of some type will impact us over the next few months. Are you prepared for road travel in wintry weather? Review this list and find out.

1. Make sure your fuel tank is full before you head out, particularly on an extended road trip. Additionally, check to see that your windshield washer tank is full.
2. Make sure your car is up to date on maintenance and in good working order. In particular, it is important that tires, brakes and windshield wipers are functioning properly.
3. Do not drive through flooded areas. Ice and melting snow can quickly flood roadways just as easily as summer thunderstorms can. Remember: Turn Around, Don't Drown!

4. Prepare an emergency kit for your car which includes: cat litter or sand for traction, blankets, first aid kit, flashlights, jumper cables, and a shovel.
5. Review tips for driving in snow and ice such as those published by the National Traffic Safety Institute (NTSI,

<https://ntsi.com/quick-links/safety-articles/winter-driving/>).



Winter driving statistics (<http://www.wr.noaa.gov>)

“Are you prepared for road travel in wintry weather?”

Did you know: El Niño

El Niño is an oscillation in the ocean and the atmosphere which occurs periodically in the tropical Pacific Ocean. During an El Niño episode, waters in the tropical eastern Pacific Ocean run several degrees above normal (Fig. 5). During a La Niña episode, waters in the tropical eastern Pacific are much colder than normal. This oscillation is closely tied to the atmosphere and has impacts on weather circulations around the globe. In the United States,

storms tend to follow a southern storm track during an El Niño, leading to wetter than normal conditions in the Southwest and Southeast. The current forecast is for the warmer than normal El Niño conditions in the Pacific to persist through the winter, and gradually return to normal by spring or summer 2016 (http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensodisc.html).

ESDIS SST Anomaly (degrees C), 12/

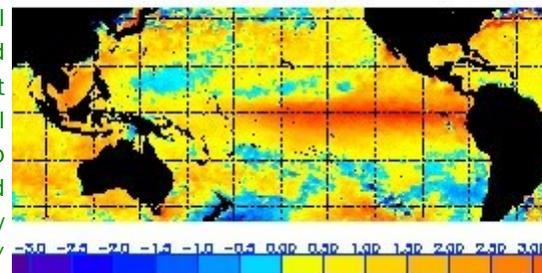


Fig. 5: Sea surface temperature anomalies for late December 2015 (www.elnino.noaa.gov)



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

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From the President's Desk

As we approach the end of 2015 Shade Tree Meteorology can look back on a successful year. We have worked on nearly 50 new cases and testified in a number of cases from previous years. Even better, we have had the privilege of working with several new out of state law firms on major severe weather related cases involving severe thunderstorms, hurricanes and flooding. With Alicia Wasula on the company payroll since January of 2015, we still have more capacity for new cases, 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 couple of reminders:

- We are now maintaining a completely digital case database, so we would appreciate digital rather than paper copies of any and all pertinent case documentation from our clients.
- The fastest way to get us the information to do a conflict check on any new case 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. Then we will run the conflict check and get back to you, often within minutes but always within two working days.
- 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.

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 overwatch for your outdoor event. Keep us in mind for your firm's pool party or wilderness bonding outing.

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

Note:

All articles contained in this newsletter are authored by our associates, and are the property of Shade Tree Meteorology, LLC, unless otherwise noted.

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.