



Shade Tree News

Your source for weather information - tailored to your needs

A quarterly publication from Shade Tree Meteorology, LLC

Inside this issue:

- Summer 2015 Outlook
- Boat and Beach Safety
- Rip Currents

Contents:

| | |
|---------------------------------|---|
| News from NOAA | 2 |
| Building a Weather-Ready Nation | 2 |
| Hazardous Weather Preparedness | 3 |
| Did you know? | 3 |
| From the President's Desk | 5 |

May 2015

Volume 1, Issue 2

Data sources and Forensic Meteorology

The National Oceanic and Atmospheric Administration (NOAA) operates and maintains several satellites which collect information about the Earth's atmosphere, oceans and land surface. One type of satellite, the Geostationary Orbiting Environmental Satellite, or GOES, orbits at an altitude of 22,300 miles above the earth. At this altitude, the satellite remains focused on a fixed point over the Earth's surface, and follows this point as the earth makes its once-per-day rotation. Hence, the GOES satellite provides a 'snapshot' from a fixed viewpoint over the earth roughly every 15 minutes.

There are numerous meteorological applications of satellite data. The temperature of the cloud tops can provide information about the cloud type and altitude. The satellite channel that detects water vapor quantities at mid-levels of the

atmosphere is useful for tracing the jet stream and large-scale weather patterns that are important in weather forecasting.

GOES satellite data also can be used looking at past events, as in forensic meteorology. Visible satellite imagery, which essentially

takes a picture of the earth from above, can be useful in cases where fog or cloud cover are at issue. Time evolution of fog (which by nature can be highly localized and vary widely in space and time) can be seen well during the day on a visible satellite image. Additionally, cases in which sun angle and cloud cover are key can also be understood by looking at satellite imagery. It is possible to determine the whether the clouds allowed sunlight to penetrate to the Earth's surface, or whether they were

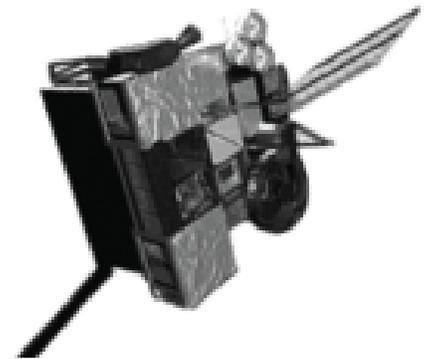


Fig. 1: NOAA Geostationary Orbiting Environmental Satellite (image courtesy of NOAA/NESDIS).

thick enough to obscure the sun completely. Satellite can also be used in conjunction with land-based radar data to determine the exact evolution of localized phenomena, such as severe thunderstorms which may result in flash flooding, hail, or wind damage.



News from NOAA: Summer 2015 Outlook

While many of us in the Northeast United States remember winter 2015 as abnormally cold (and snowy, particularly in the Boston area), spring has sprung as of this writing, and most trees are fully leafed-out as of early May 2015.

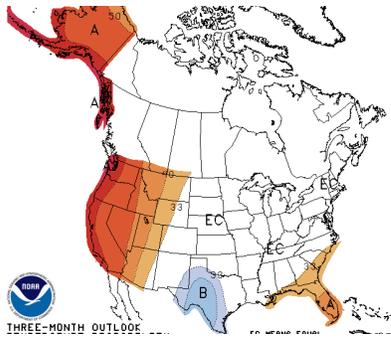


Fig. 2: Seasonal outlook for temperature for June, July and August 2015. (http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2).

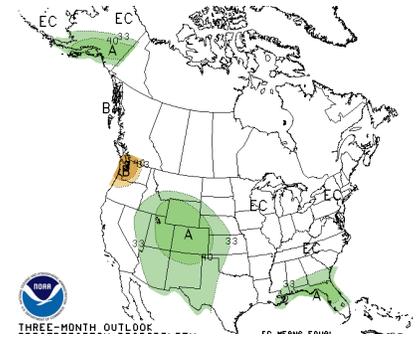


Fig. 3: Seasonal outlook for precipitation for June, July and August 2015 (http://www.cpc.ncep.noaa.gov/products/predictions/long_range/seasonal.php?lead=2

What will the summer have in store for the United States? For a fo

recast, we turn to the Climate Prediction Center, who provide longer-term and seasonal forecasts of both temperature and precipitation for the United States. Figure 2 shows that areas such as Alaska, areas west

of the Rockies, and the southeast of the Intermountain West, as well as the Pacific northwest and parts of the Southeast. Here in the Northeast, large-scale indices did not indicate a preference for either precipitation or temperature, as both were forecast as having equal chances (EC) of being above or below normal this summer.

the United States are forecast to have above normal temperatures during the summer. The only part of the U.S. which is expected to have below-normal temperatures is west Texas, where precipitation is also expected to be above normal. Above normal precipitation is also forecast for the Rockies and parts

“Hurricane season in the Atlantic Basin runs from June 1 through November 30”

Building a Weather-Ready Nation

Hurricane season in the Atlantic Basin runs from June 1 through November 30, although there are occasionally hurricanes that form earlier or later than these dates.

The National Hurricane Center (NHC) has a series of YouTube presentations as part of National Hurricane Preparedness week (May 24 through May 30, 2014). Among the topics to be discussed are: hurricane basics, hurricane hazards including storm surge, winds and inland flooding, hurricane forecasting, and how to prepare for and take action if a hurricane will be impacting your area.

Tropical disturbances begin their life cycle as a ‘Tropical Depression’, at which point they receive a number and are tracked by the NHC. After the winds exceed 35 mph, the storm gets a name and is known as a ‘Tropical Storm’. If

the winds exceed 74 mph, the storm is then called a ‘Hurricane’ and is ranked on an intensity scale from 1 to 5, 5 being the strongest. Names are drawn from a list, begin with A and continue through the alphabet, alternating male and female names.

Here in the Northeast United States, the primary hazard from storms which move up the East



Coast is inland flooding. Pay attention to Watches and Warnings issued for your area if a tropical storm or hurricane is forecast to impact your area. Remember: a watch means conditions are possible, while a warning means weather hazards are imminent or ongoing. For more information, visit <http://www.nhc.noaa.gov/prepare/>.



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

Hazardous Weather Preparedness

With the return of warmer weather, beach and boating season has begun. Beach and Boating Safety Week in New York State runs from May 16 through May 22.

Before you go boating, make sure your boat is stocked with all required and essential safety equipment and communications tools. Nearly 85% of those who drown while boating were not wearing a life jacket. Coast Guard-approved fire extinguishers are also required on boats where the engine or fuel system could create a fire hazard. It is also wise to have a working weather radio on board, or you can get your weather alerts sent directly to any text-ready cell phone.

While you are out, stay alert to changing weather conditions and plan accordingly. Stop all activities when lightning is occurring; remember lightning occur when rain is not occurring. Disconnect all electronic equipment during a thunderstorm, and lower or tie down

the antenna if it is not part of a <http://www.nws.noaa.gov/os/marine/safeboating/before.shtml> lightning protection system.

Other hazards that may occur while boating include windy conditions or rapid wind shifts, as well as fog. If inclement weather is expected, plan your marine activities accordingly so you have ample time to return to shore before inclement weather strikes.

Lastly, remember that boating while under the influence of drugs or alcohol is just as deadly as drinking and driving. The use of alcohol is involved in approximately one third of boating-related fatalities. The U.S. Coast Guard and every state have strict penalties for violation of boating while under the influence laws.

You can find much more information on safe boating practices and weather preparedness tips at the following websites:

The National Weather Service:

<http://www.nws.noaa.gov/os/marine/safeboating/index.shtml>

The National Safe Boating Council:

www.safeboatingcouncil.org/nsbc-grant-projects

The U.S. Coast Guard:

<http://www.uscgboating.org/>

Source: <http://www.nws.noaa.gov/os/marine/safeboating/before.shtml>



Source: <http://www.nws.noaa.gov/os/marine/safeboating/before.shtml>

“Nearly 85% of those who drown while boating were not wearing a life jacket.”

Did you know: Rip Currents

Rip currents are one of many wave hazards that can impact swimmers at many popular beach destinations. Rip currents are strong currents flowing away from shore. Certain coastline configurations, tide patterns and weather conditions can create situations where rip currents become strong enough to be a hazard to swimmers. A swimmer caught in an outbound rip current can quickly find themselves overwhelmed and unable to swim back to shore. If



<http://www.nws.noaa.gov/ripcurrents/>

you are caught in a rip current: relax, and swim parallel to shore until you are out of the current, then swim to shore at an angle away from the current. For more information visit:

<http://www.nws.noaa.gov/ripcurrents/>



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

**Weather information -
tailored to your needs**

WWW.SHADETREEMETEOROLOGY.COM

From the President's Desk

The big news from Shade Tree Meteorology this quarter is that, in an effort to improve our services to our clients, we have moved our email from our web hosting company to Gmail for business. Among other improvements, this change will allow us to securely provide relatively large data files electronically to our clients via the internet. Alicia's email address remains the same, but I have chosen to shorten my email address during the change process by dropping my last name. The best address to reach me is now dick@shadetreemeteorology.com

I would like to take this opportunity to ask our clients to help us in our efforts to be an environment friendly business. When it is time to send us case documentation, please use Google Drive or Drop Box to do that, or at least scan them to a CD and provide them in a digital format. Our case files are all archived in digital format, and when we receive paper copies it costs us time to scan them in. We do not have a clerical staff, so we will soon begin billing for our professional time for that work.

Those of you who have hired us to do forensic weather research know that each time a client brings us a new case we do a conflict check to ensure that we have not already been retained by another party to the case. Many of you are not aware that we have set up a quick online form for you to complete with the core facts of your case to facilitate that conflict check process. You can find it in the menu on our home page, and it can readily be filled out either on a computer or a smart phone.

We recently partnered with Tom Mortati of the Burke, Scolamiero, Mortati & Hurd law firm and Chris Mills of the Mills law firm to present a lunchtime CLE session on the history and current practice of forensic meteorology to members of the Capital District Trial Lawyers Association. We heard some positive feedback and would be happy to do other sessions on weather related topics. Drop us a line if there is a weather related question that you would like us to address in a future session.

As always, if you want a detailed analysis of the weather factors that may have affected your court case and have the details of those factors explained in a concise, understandable, yet scientifically sound manner, call us at Shade Tree Meteorology.

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.