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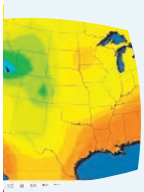

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ISSUE 9 | Winter | 2014-15

Tallahassee *topics*

NEWS AND NOTES FROM YOUR LOCAL NATIONAL WEATHER SERVICE OFFICE.

The National Weather Service (NWS) office in Tallahassee, FL provides weather, hydrologic, and climate forecasts and warnings for Southeast Alabama, Southwest & South Central Georgia, the Florida Panhandle and Big Bend, and the adjacent Gulf of Mexico coastal waters. Our primary mission is the protection of life and property and the enhancement of the local economy.

Autumn 2014 Severe Weather

By Mark Wool

Autumn was characterized by long stretches of dry weather. From September 17th to November 30th, there were only 11 days with measurable rain. However, there were three severe weather events this fall, including a rare mid-October event, and an equally unusual multi-day stretch of persistent rain in the run up to Thanksgiving. The lion's share of the rainfall that occurred across the region in October was associated with a severe weather event that occurred on October 13-14th. Tallahassee received 4.74 inches at the airport. There were many reports of damage to trees and power lines and a few reports of relatively minor structural damage. There were also five EF0 tornadoes suspected with this event. Four of them occurred in unpopulated sections of the Apalachicola National Forest, but were able to be confirmed using dual pol tornado debris signatures evident on the KTLH Doppler radar. The detailed reports from this event can be found via this link.

http://www.srh.noaa.gov/tae/?n=LSRTAE_101814

After roughly 33 days without measurable rain, another major severe weather event occurred on November 17th with three verified tornadoes. A NWS survey crew assessed EF2 damage to the Calhoun Correctional Institution southwest of Blountstown, FL. This was only the third EF2 or stronger tornado to hit the NWS Tallahassee forecast area since March 2007. A detailed report, including damage photos, a loop of radar data and a photo gallery, are available for this event via this link. A couple of photos are pictured below right.

http://www.srh.noaa.gov/tae/?n=event-20141117_blountstown_tornado

Just six days later, another severe weather event impacted the NWS Tallahassee forecast area. Numerous reports of straight-line wind damage were received during this event. Details can be found via this link.

http://www.srh.noaa.gov/tae/?n=LSRTAE_112314

There were another couple of severe storms the next day as well. In fact, the period from November 22-26 was very unsettled and resulted in the very unusual occurrence of the Tallahassee Regional Airport receiving greater than or equal to an inch and a half of of rain on four consecutive days. The 5-day total was 6.70 inches. Fortunately, the long stretch of dry weather preceding this event precluded any flooding concerns.

Employee Spotlight:
Jeff Fournier

Lead Forecaster since 2005

By Katie Moore & Jeff Fournier

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Q: What got you interested in meteorology?

A: I was 9 years old when my older brother taught me how to plot hurricane positions on a map. That same hurricane season, in early September, 1979, I tracked hurricane David across the tropical Atlantic, and then as it turned toward Florida. (I lived in northeast Florida at that time). The hurricane passed just offshore Amelia Island, but we still experienced strong winds and tremendous waves. For reasons that I don't understand, I was fascinated by the whole affair- not only with tracking the storm, but witnessing the wind and rain and waves. It was both frightening and interesting.

Q: How did you start working with the NWS?

A: I was fortunate enough to get a temporary job in the NWS during one of my summers off in college, and loved it. I was not able to get into the NWS immediately after graduating from F.S.U., so I got a job at a private weather company in New England. After a year or so, I got into the NWS.

Q: What is the best/worst part of your job?
A: The worst part of the job is the crazy hours. Having to bounce around frequently between night and day shifts can be hard on the body, and it makes family life more difficult. The best part of the job is making a successful forecast when that forecast is particularly challenging and impactful.

Q: You do a lot of work improving forecasting procedures for the office and creating local hi-res ensemble guidance. What's your biggest motivation for these improvements?

A: I hate making an inaccurate forecast. Ironically, I think making forecasts in the near-term (i.e. within 12 hours) is more difficult than forecasting several days out. I think it's because our customers expect a more detailed and accurate forecast, a more yes-or-no forecast instead of probabilities. It's not as easy as looking at a radar loop, seeing where the showers are upstream, then extrapolating this out in time. Weather is far more complex than this because the showers you see will soon dissipate as newer ones develop. High-resolution models can make these sorts of predictions. They are rarely correct on the exact timing and location, but they often provide a useful picture of how the weather will evolve over the next several hours. By taking an ensemble approach, that is, averaging the forecasts from several different models, we can get a much more detailed, accurate forecast of near term weather than we could using more "traditional" Numerical Weather Prediction models.

Q: What do see for the future of weather forecasting 5 to 10 years down the line?

A: I think that progress of high resolution modeling will slow some over the next 2 to 4 years. The spatial resolution we are currently using is in the 3 to 4 km range, which is just fine enough to model smaller scale features like squall lines. Some models are 1 km or better, but they take a very long time to run and are not practical. We also don't have a dense enough weather network to "capture" what's really occurring at such a fine scale. However, in the 5 to 10-year range, it seems safe to assume that computers will be much faster and have much more memory than the best computers of today. Bandwidth will also improve. Hopefully new breakthroughs in satellite sensors and radar, as well as weather information being shared on a neighborhood scale, will make 0.5 to 1 km resolution modelling a reality.

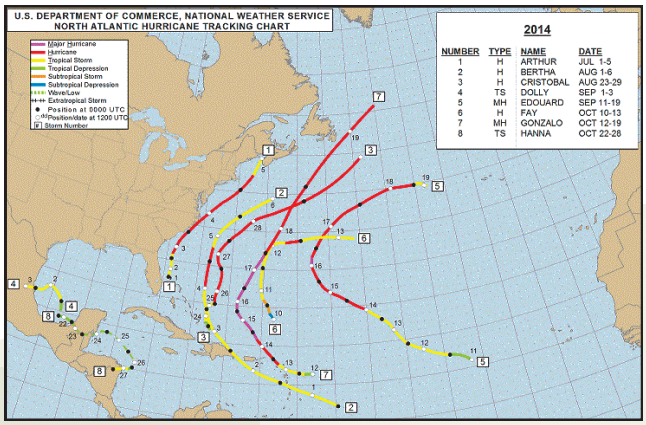
It's amazing to imagine a squall line is bearing down, and high-resolution radar data is constantly being fed into our powerful computer model. This model accurately reconstructs this squall line in great detail, and makes incredibly detailed forecasts of the squall line over the next 12 hours. Forecasters watch these simulations of the radar, as well as the actual radar data, and issue severe thunderstorm and tornado warnings 30 minutes or more in advance. The areas warned are much smaller than the ones we currently issue, reducing the number of people who need to take shelter. NWS warnings become so reliable that people respond to them with confidence, and injuries and fatalities become rare.

Q: What do you like to do when you're off duty?

A: My favorite hobby is playing my acoustic guitar. I particularly enjoy playing pre-war, authentic Piedmont and Delta style Blues. Recently I've rekindled my interest in bowling, now that my young daughter is learning how to bowl. I enjoy watching sports, particularly F.S.U. Football, the Jacksonville Jaguars, and the Atlanta Braves.

Hurricane Season Recap
By Tim Barry

The 2014 Atlantic Hurricane season officially ended on November 30th and was much quieter than average. There were only eight named storms which were the fewest since 1997. Six of the storms became hurricanes – two of them "major" with sustained winds of 111 mph or higher. Only one storm, Hurricane Arthur, made landfall in the United States. Arthur was a Category 2 hurricane with sustained winds of 100 mph as it grazed across the Outer Banks of North Carolina on July 3rd. Arthur was the strongest hurricane to make landfall in the U.S. since Hurricane Ike hit Texas in 2008. Another hurricane, Gonzalo, was the first Category 4 hurricane to form in the Atlantic Ocean since 2011 and caused extensive damage in Bermuda. Gonzalo was the worst storm to affect Bermuda since Hurricane Fabian in 2003. No major hurricane, Category 3 or higher, has made landfall in the U.S. since Wilma in 2005.



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This Quarter's Focus:

Coordinating with Neighboring Offices

By Katie Moore

The National Weather Service encompasses 122 weather forecast offices across the country. Providing weather forecasts and safety messages to our users requires coordination between offices. We have multiple methods of communication between the offices, and we frequently coordinate our forecasts with our immediate neighbors. Another instance where we interact with other offices is through a system of backups in case of an emergency.

We strive as an organization to provide consistent forecasts and safety messages between offices. To do this, we have open communication between offices to discuss our interpretations of the model data and what we see as the largest threats in particular areas. Primarily, we will use an online chatroom for this. In our Graphical Forecast Editor (GFE), we can see each other's forecast grids using an inter-site coordination (ISC) view. When we notice discrepancies in the forecast graphics between the offices, we can send a chat to individual offices or the group of surrounding offices. We then discuss the reasoning behind our forecasts and adjust toward a compromise. We also call neighboring offices via phone lines or via special state communication lines (on Southern Linc for Alabama or EMnet for Florida) for larger scale events, such as severe weather, winter weather, or tropical events. Phone conferences are also used to coordinate with national centers such as the Storm Prediction Center and the National Hurricane Center.

We also interact with other offices across the weather service by providing service backup. In the event of an emergency, for example an office loses power during a hurricane landfall, the office will call their primary backup office. During a backup, all products and services (grids, discussions, warnings, etc., even social media) will be provided by the backup office. Each office has three assigned backups- a primary, secondary, and tertiary. If the primary backup has an emergency as well, they will call their primary backup and the duties of the initial office will fall into the hands of their secondary backup. In the unlikely event that the secondary backup goes down as well, the third backup will then be in charge of the initial offices duties. The primary backup office for Tallahassee is Jacksonville. Our secondary backup office is Mobile, AL and the tertiary office is Houston, TX.

El Niño Update *By Mark Wool*

NOAA's Climate Prediction Center (CPC) continues the El Niño watch. As of December 1st, ENSO-neutral conditions continued across the equatorial Pacific. However, there was still a 65% likelihood that El Niño would be present during the northern hemisphere's winter and spring seasons. This represents an upward adjustment from last month's forecast indicating more confidence that El Niño will develop. Positive sea surface temperature anomalies continue across the equatorial Pacific Ocean.

As outlined in the previous two issues of *Tallahassee Topics*, there are well-established historical trends for what tends to happen in our area during an El Niño. El Niño typically features a more active southern jet stream in the winter months that produces wetter-than-normal conditions across much of the southern United States, including our area. Often, the increased cloud cover and precipitation results in slightly cooler than average daytime temperatures as well. The latest seasonal outlook from the CPC for the period of December-February does indeed call for an enhanced chance for above normal rainfall and below normal temperatures this winter.

Recent Office Changes

By Katie Moore

The Tallahassee NWS tries to get new volunteer students in from FSU as often as possible. After most of our previous set of volunteer students got paid intern positions in NWS offices across the country this summer, we had the opportunity to get a fresh face in the office. The volunteer program at our office is very rigorous and involves submitting a resume and a series of essay responses. The top candidates get interviewed. After selected, students learn about the forecast process and steadily gain more and more experience practicing and creating the forecast. More details are available in a previous issue. Molly Merrifield is our newest student volunteer, she is a senior in the FSU meteorology program.

We also host high school students as part of the externship program when there are students qualified and interested in meteorology. This year, we welcomed Cristina Pereda, a senior at Chiles High School. Cristina says, "when I began interning here in September, I was unsure of what the field of meteorology encompassed and wanted to learn about it. In the time I have been here, I have learned so much about how our weather works and how it is forecasted." She plans to pursue a career in meteorology in the future.

All of the offices in the NWS Southern Region have started a new, more collaborative long term (days 4-7) procedure. We all now start with a blend that includes WPC generated guidance, ECMWF forecast guidance, and GFS forecast guidance. For offices that have the BOIVerify program running (including Tallahassee), the blend incorporates bias correction of the guidance as well. This new procedure that the southern region offices are following also encourages more collaboration between the offices and results in a more seamless forecast.

Management-Admin Team

Jane Hollingsworth, MIC
WCM (Vacant)
SOO (Vacant)
Doug Sherrick, ESA
Chris Duggan, ASA
Toan Tran, ITO
Hydrologist (Vacant)

Lead Forecasters

(Vacant)
Mark Wool
Ken Gould
Jeff Fournier
Parks Camp

Journeyman Forecasters

Tim Barry
Kelly Godsey
Don Van Dyke
Alex Lamers
Donal Harrigan

HMTs

Jim Bolden, OPL

Interns

Katie Moore
Claudia (Jeanie) McDermott
Emma Weston

Electronic Technicians
Ron Eimiller
Clifton Bennett

Outreach Efforts

By Katie Moore

In October, the office gave a tour for the 5th and 6th grade classes of the Tallavana school, discussing weather safety, what we do, and showing a weather balloon. Our MIC, Jane Hollingsworth, attended a Georgia partners meeting that included all NWS offices covering the state of Georgia along with emergency managers, discussing ways we can improve our products.

In November, we had a booth at the North Florida Fair. From our office, Mark Wool, Katie Moore (pictured above), Emma Weston, Jeanie McDermott, Don Van Dyke, Wright Dobbs,and Molly Merrifield all helped out. We also had help from Braden Robinson, Trenton Turner, Jacob Carstens, Paxton Fell, and Lexi Birmingham, who are members of the local AMS/NWA chapter at FSU. The tornado machine (left) was once again very popular. Jeanie, who is our aviation focal point, also gave a presentation at the Florida Aviation Center about interpreting radar data for pilots. Kelly Godsey taught an online spotter course.

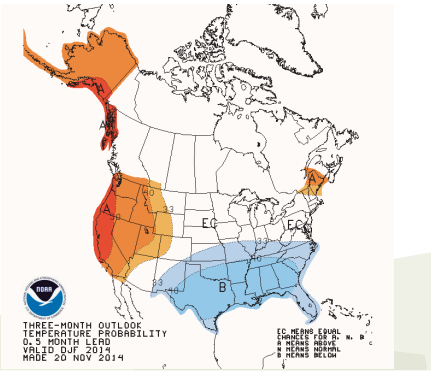
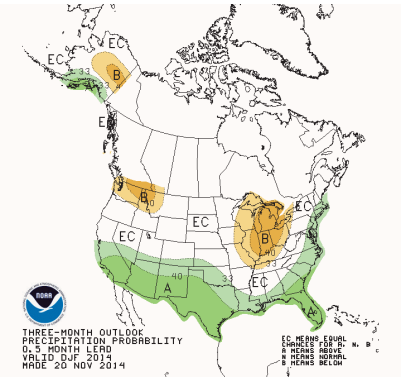
Climate Recap for Autumn

By Tim Barry

The climate for Tallahassee during the 3-month period of September through November, 2014 saw temperatures that were cooler than normal. The average temperature was 67.7 degrees, 1.6 below normal. The highest temperature recorded at the Tallahassee Regional Airport was 97 degrees on September 2nd and the lowest was 22 degrees on November 19th. There were six days when the minimum temperature dropped to 32 degrees or lower with the first occurrence on November 3rd. On average, Tallahassee experiences its first freeze on November 16th. There were two temperature records broken during the autumn season. A record high of 93 degrees was observed on October 11th and the low temperature of 22 degrees on November 19th established a new record low for that date. Also, Tallahassee just experienced its 3rd coldest November on record with an average monthly temperature of 54.3 degrees, which is 5.9 degrees below normal.

Autumn is climatologically Tallahassee's driest season with October and November being the 2nd and 4th driest months respectively. However, after the driest summer on record for Tallahassee, this past fall was much wetter than normal. We normally see 11.42" of rain from Sep – Nov, but this year we received 18.61". The wetter than normal fall season is very misleading because we went for long stretches with little or no rain in the months of October and November. In fact, 97% (4.72") of October's rain total fell in about a 12-hour period on the 14th, and also established a new daily rainfall record for that day. Then in November, 94% (6.52") of the monthly rain total fell in a four day period from the 22nd – 25th. Also of interest, the airport recorded at least 1.50" of rain in each of those four days which is something that had never happened before in any month in Tallahassee's recorded history. These two rain events in October and November were separated by a 38-day span that saw only 0.22" of rain and a stretch of 32 consecutive days from Oct. 15th – Nov. 16th with no rain reported at the airport. By the end of November, Tallahassee had already received more rain through the first 11 months (59.69") than what it normally sees in an entire year (59.23").

Outlook for Winter

By Tim Barry

Looking ahead to winter (December through February), the average of all the dynamical models continues to show a weak El Nino event developing and persisting through the winter and into the spring of 2015. The impact of El Nino on the southeast U.S. is for wetter and colder than normal conditions during the winter season. Likewise, the latest CPC outlook for this winter (pictured right) calls for an enhanced chance of experiencing below normal temperatures and above normal rainfall for the Tallahassee area. The average temperature for Tallahassee during winter is 53.0 degrees and the average rainfall is 13.09".