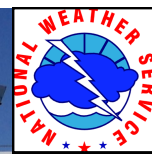


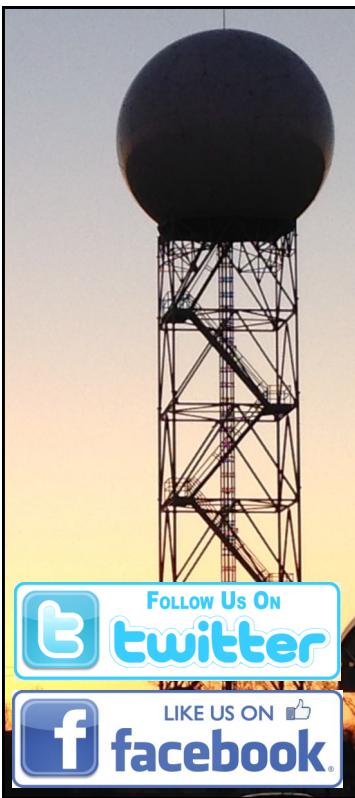
Sterling Reporter



Volume 18, Issue 1

National Weather Service Baltimore MD/Washington DC Forecast Office

Spring/Summer 2017



MIC's Corner

By, James E. Lee
Meteorologist in Charge

When people think of the National Weather Service Baltimore/Washington Weather Forecast Office, many probably focus on the products and services that our forecast staff creates, such as Tornado Warnings, Winter Storm Warnings, and our web-based point-and-click public and marine forecasts. However, there is another important office program that if it weren't present, our products and services would come to a halt. I am referring to our office's Electronics Program.

The Electronics Program plays a vital role in our office, and is managed by Electronic Systems Analyst Art Patrick. Art has three Electronic Technicians staff members: Mike Baldwin, Dave Eckberg, and Sam Trammel. The Electronics Program staff ensures that the office equipment, facilities, security, and grounds are maintained and working correctly and safely. Not only do they maintain equipment here at our office in Sterling, but they maintain weather equipment throughout the forecast area in Maryland, Virginia, West Virginia, and the District of Columbia. They maintain the Automated Surface Observation Systems at eight airports across the region, including the region's three main airports: Dulles International, Reagan National,

(continued next page)

Table of Contents

MIC's Corner	1
April 6 Tornadoes	1
Tropical Outlook	5
Summer Outlook	6
Winter Summary	8
Derecho 2012: 5 years later	9
Storm Ready	10
Weather Camp	11
Recent Marine Events	12
Spanish Outreach	16
Heat Criteria Changes	18
SKYWARN	19

April 6 Tornadoes by LWX Staff

A rather notable and significant outbreak of severe weather, including tornadoes, occurred during the afternoon hours of Thursday, April 6, 2017.

Before we get into the meteorological details of what happened on that day, let's first review the ingredients of severe weather:

NATIONAL WEATHER SERVICE
OCEANIC AND ATMOSPHERIC ADMINISTRATION

Preliminary
Damage Survey Results

Arlington VA to Washington DC	
Date	April 6 2017
Time (Local)	139 to 145 PM
EF Rating	EF-0
Est. Peak Winds	70 mph
Path Length	4.5 miles
Max Width	50 yards
Injuries/Deaths	1/0



MIC's Corner (continued) and BWI Marshall. They maintain NOAA Weather Radio Transmitters, rain gauges, and river gauges. They are experts in computer networks and administration, mechanical systems, upper air equipment, physical security. And if all of that is not enough, they also ensure that our local WSR-88D Weather Radar (KLWX) is up and running 24x7.

Speaking of the WSR-88D, our radar will be undergoing this month a Service Life Extension Program, which provides a technology refresh and depot level overhaul of subsystems to ensure the system can perform reliably for another 20 years. Included in the refresh and overhaul are modifications to the transmitter, signal processor, pedestal, and the radar equipment shelters. You may be wondering how this will impact the ability of our forecasters to monitor the skies for weather. Our area is supplemented by adjacent WSR-88D radars in New Jersey, Delaware, Pennsylvania, West Virginia, and Virginia. Additionally, we are fortunate to partner with the Federal Aviation Administration, thus our forecasters have access to the Terminal Doppler Weather Radars at Dulles, Reagan National, BWI Marshall, and Joint Base Andrews.

(continued on page 17)

April 6 Tornadoes (continued)

1) Lift

There needs to be some sort of lifting mechanism in the atmosphere. This is often a front, or a disturbance in the middle & upper levels of the atmosphere, or some combination of the two.

2) Moisture

There must be enough humidity in the atmosphere to create the clouds that will eventually grow into thunderstorms.

3) Instability (measured in units of CAPE, Convective Available Potential Energy)

In order for updrafts to grow into powerful thunderstorms, you need a lot of energy. This energy, or instability, is a crucial component for severe weather. Without it, air will only rise slowly, or sometimes not at all.

4) Wind shear

Strong winds (i.e., a strong jet stream) through all levels of the atmosphere help organize storms and tilt their updrafts away from their own rain-cooled air, which allows them to persist longer.

Wind shear is the change of wind speed and direction with height. The stronger it is, the stronger the overhead jet stream, and the higher the potential is for organized thunderstorms.

What happened on the 6th of April was an instance of what we often call a “high shear/low CAPE ” set-up. Using our ingredients above, that is low on #3, but with lots of #4.

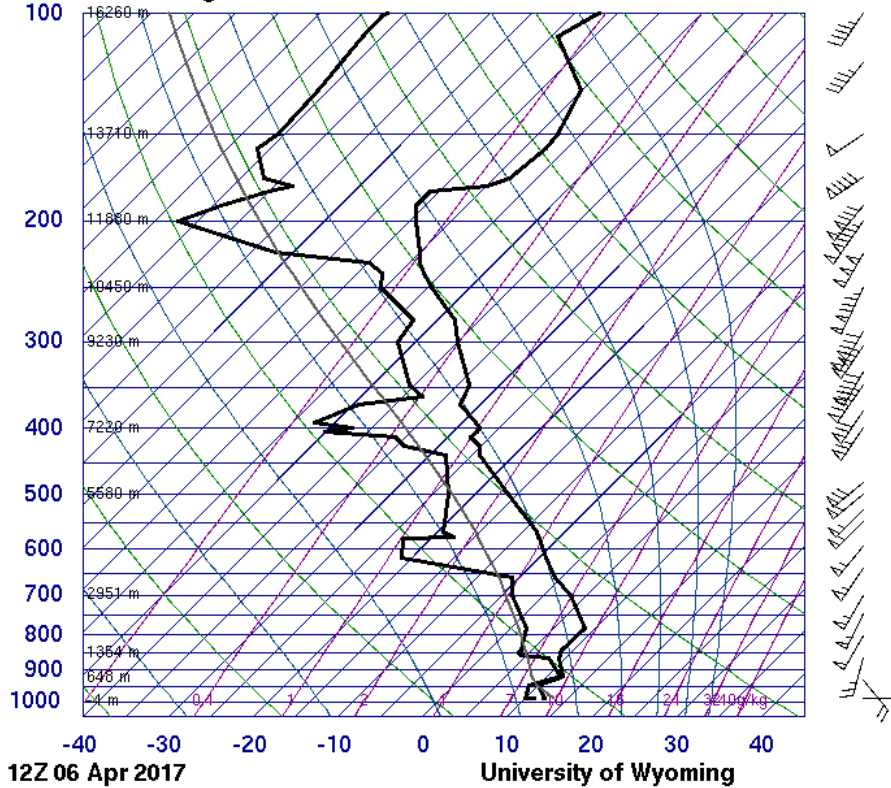
Let's check out all the ingredients from that day. We will use the morning weather balloon observation from our office near Dulles Airport on the next page. It measures how temperatures, humidity, and wind change with height.

Lift was about as strong as it could be in all levels of the atmosphere that day. There was a strong upper-level jet stream which acted like a chimney for storms that developed. As air parcels rushed away at upper levels, it forced air from underneath to rise. Meanwhile, strong “vorticity advection” was occurring in the mid-levels. It sounds fancy, but what this simply means is spin was increasing on a broad scale ahead of a strong trough of low pressure. This counter-clockwise spin also helps lift air parcels.

(continued next page)

April 6 Tornadoes (continued)

72403 IAD Sterling



Closer to ground level, a strong frontal zone was observed. This strong front helped lift the lower atmosphere along it as winds converged along the boundary.

Moisture was quite high for the time of year, and more than enough to support robust storms.

Instability was actually low that morning on the weather balloon observation (around several hundred Joules per kilogram, which classifies as weakly unstable). But abundant lift from the large scale system (front & jet stream together) was more than

enough to compensate. It is also important to note that the atmosphere was destabilizing as storms developed during the day.

Finally, wind shear was very strong that day. Just a few thousand feet above the surface, winds were whipping at 50-75 miles per hour, and increased to over 100 miles per hour at around 20,000 feet! There was also some turning of the winds with height - southeast winds at the surface, but southwest winds at several thousand feet. Not only did this add to storm organization, but it also helped storms to rotate. As the air in the thunderstorms rose, the southeasterly winds being ingested near the surface in essence collided with southwesterly winds aloft, like two cars colliding at an intersection.

The main line of severe storms was actually preceded by a relatively benign area of moderate rain and a few embedded thunderstorms during the mid-morning hours. Normally, this would lead to a cooler and more stable environment, not conducive for thunderstorms. But because of the strong dynamics aloft, the strong front, and breaks of sun to help destabilize the atmosphere, a line of thunderstorms developed over central Virginia around midday.

The cluster of thunderstorms quickly became organized into a QLCS, or quasi-linear convective system, as the favorable ingredients listed above began to act on the storms. For the most part, the cluster oriented itself in a straight line, with subsequent surges of straight line wind gusts descending out of the line in narrow channels or swaths at the surface. Based on damage reports received and radar data, it is estimated that some of these straight line wind gusts could have been well over 80 miles per hour.

But that wasn't all. Because of the volatility in the atmosphere and the background rotation (remember the southeast winds at the surface and southwest winds aloft),

(continued next page)

April 6 Tornadoes (continued) over half a dozen brief circulations developed at various times along the line as it moved. These circulations were of similar strength as the straight-line wind gusts in terms of wind speed; the only difference was that they were rotating.

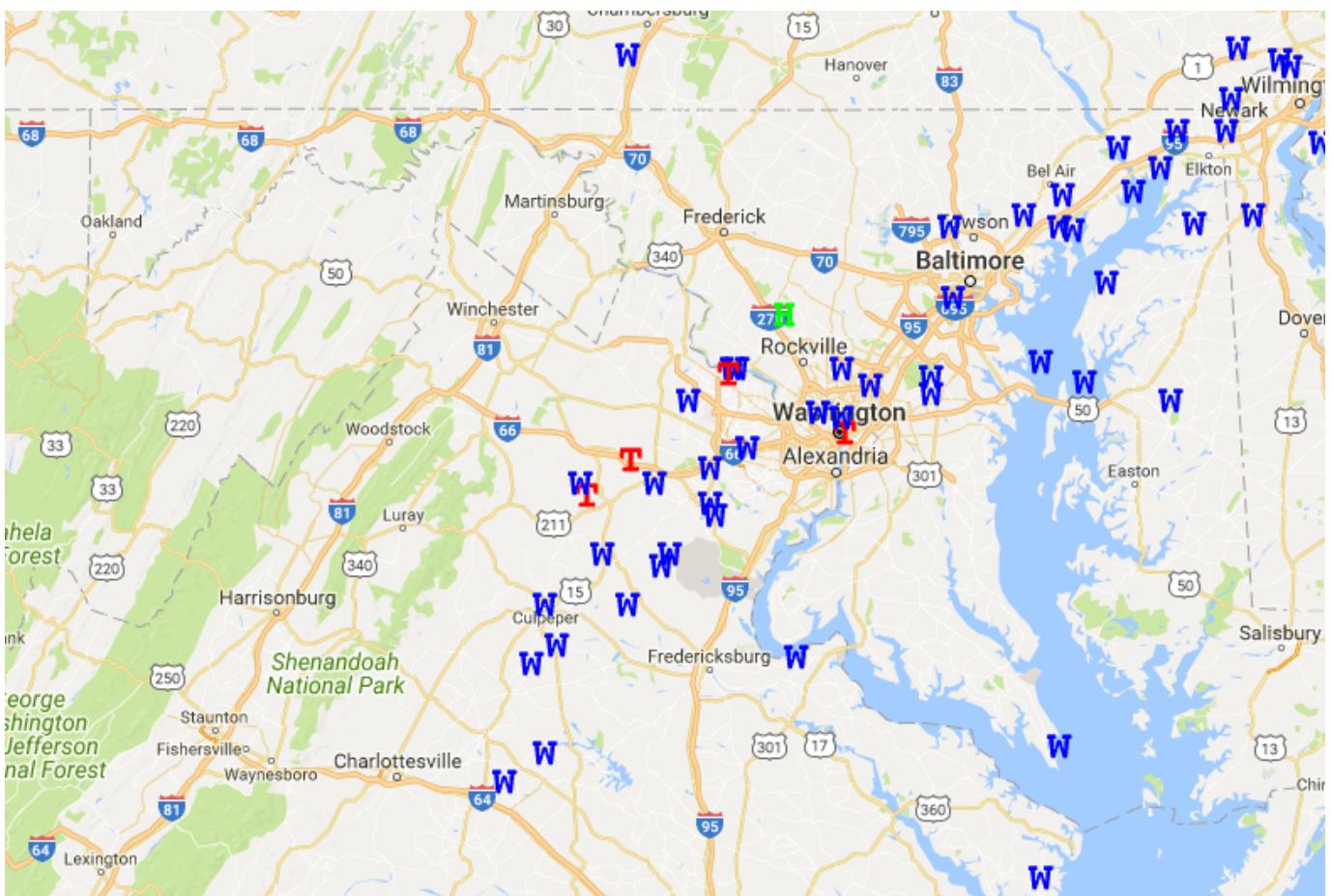
In a few short hours, the line swept through nearly all areas east of the Blue Ridge Mountains, spawning seven brief tornadoes, a plethora of damaging wind gusts, and left in its wake numerous swaths of downed trees, roof and siding damage, and power outages.

It was the first time this many tornadoes had touched down in the local area in one day since 2012.

As we surge forward through the rest of the severe weather season, keep in mind that damaging thunderstorm wind gusts from severe thunderstorms have nearly identical damage to weak tornadoes. The only difference between the two is the direction the air is moving. So both Severe Thunderstorm and Tornado Warnings should be met with similar action—get to shelter! This event was a perfect example of that.

For more information on individual tornadoes from that day, please visit:

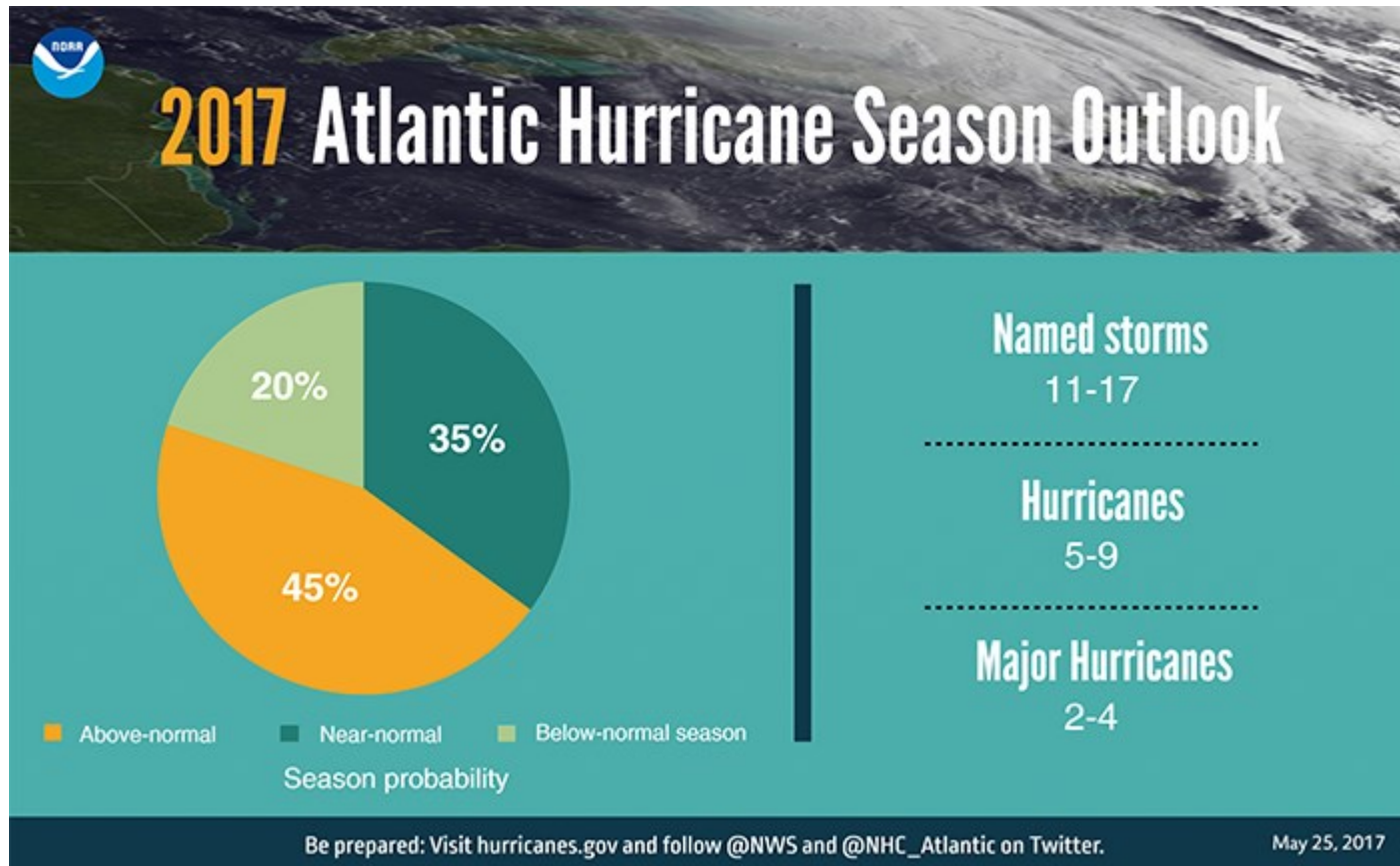
http://www.weather.gov/lwx/06Apr2017_Tornadoes



Above: an archive of storm reports from April 06 2017. Note: every individual report may not show up due to either delayed reports or limitations of how many reports can be displayed on the map at once.

Tropical Outlook

by Luis Rosa, Lead Forecaster



NOAA released its 2017 Atlantic hurricane season outlook in late May and is calling for a 45% chance of an above normal season, 35% chance of a near-normal season, and only a 20% chance of a below normal season. The outlook calls for 11 to 17 named storms to develop with 5 to 9 of those storms becoming hurricanes, and 2 to 4 of those hurricanes becoming major hurricanes or Category 3 or stronger in the Saffir-Simpson Hurricane Wind scale.

NOAA cited four main reasons influencing their forecast. First, ENSO neutral or weak El Niño conditions are anticipated during the peak months of the hurricane season (Aug-Sep-Oct). During El Niño years, the Atlantic basin tends to see fewer hurricanes due to increased vertical wind shear and anomalous sinking motion. Second, near to above average sea-surface temperatures (SSTs) are expected in the Main Development Region (MDR), the area that encompasses the tropical Atlantic to the western Caribbean Sea where most tropical storms and hurricanes form. Also, near-average to weaker-than-average vertical wind shear is expected in the same area. Lastly, near-average sea level pressures are expected in the MDR. These last three factors could enhance the amount of tropical cyclone activity this year in the Atlantic basin.

It is important for people living along the coast to have a hurricane disaster plan every year regardless of the amount of tropical cyclone activity forecast since it only takes one storm to make it a bad season. The ready.gov website has a wealth of information to help you better prepare for any type of weather threats.

Summer Outlook

by Dan Hofmann, Meteorologist

After a (very) mild winter across the Mid-Atlantic, spring has been quite a roller coaster ride. So what does this mean for the summer?

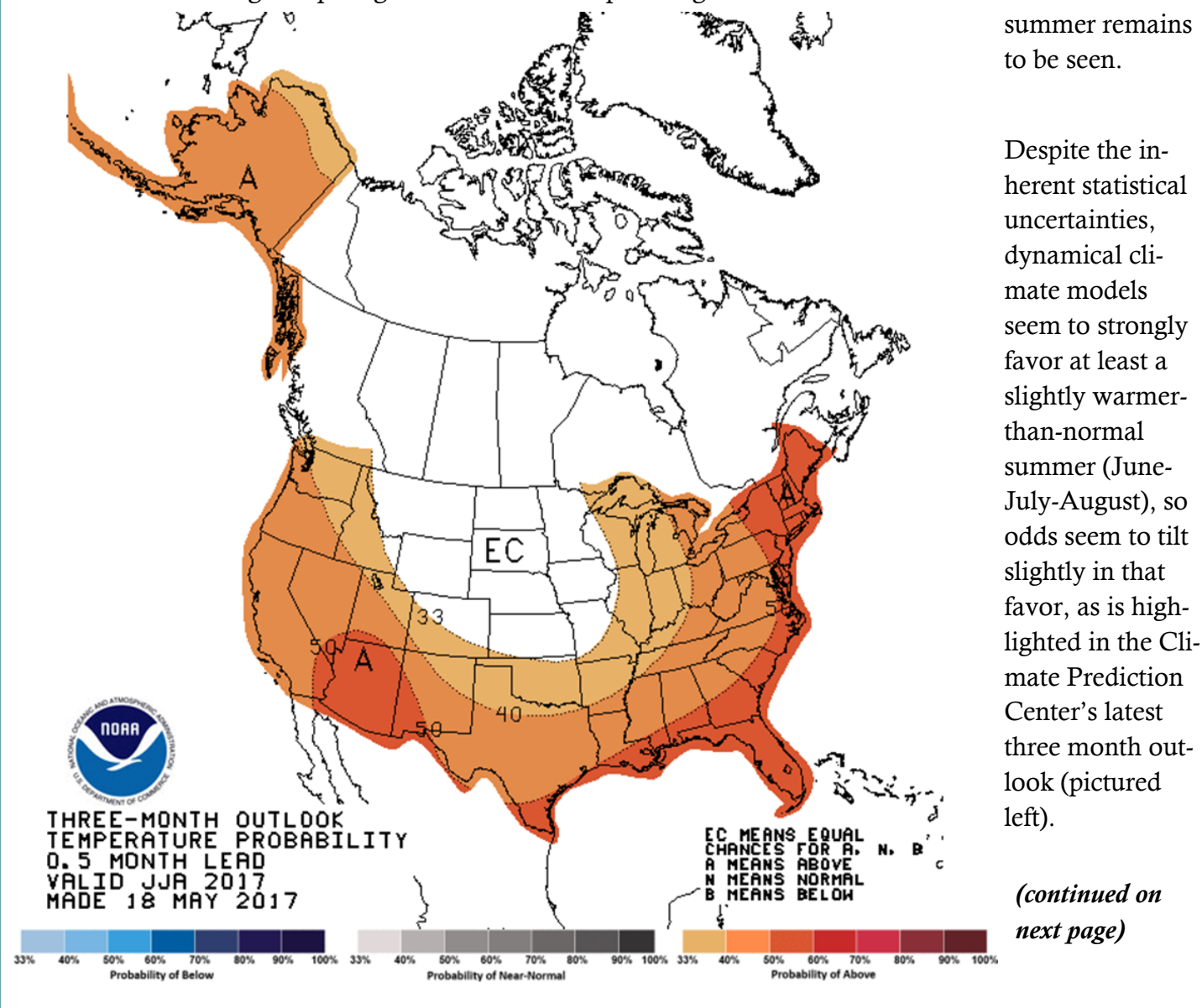
In short, we don't know. That's often the case for trying to forecast the summer season here, but it's even more uncertain this go-around. Here's why:

- 1) Typically, summers following a La Niña (we had a weak one this past winter) are often warmer and drier than normal. But, we may be headed back into an El Niño pattern (albeit weak).
- 2) One of the best predictors for long range forecasting is the El Niño-Southern Oscillation (ENSO). But it's predictability is lowest heading from spring into summer
- 3) The high variability this spring (record warm February followed by a March which was actually average cooler than February, then a record warm April followed by a variable May) suggests that there are strong competing forces in the atmosphere right now. Which one will win out for the summer remains to be seen.

summer remains to be seen.

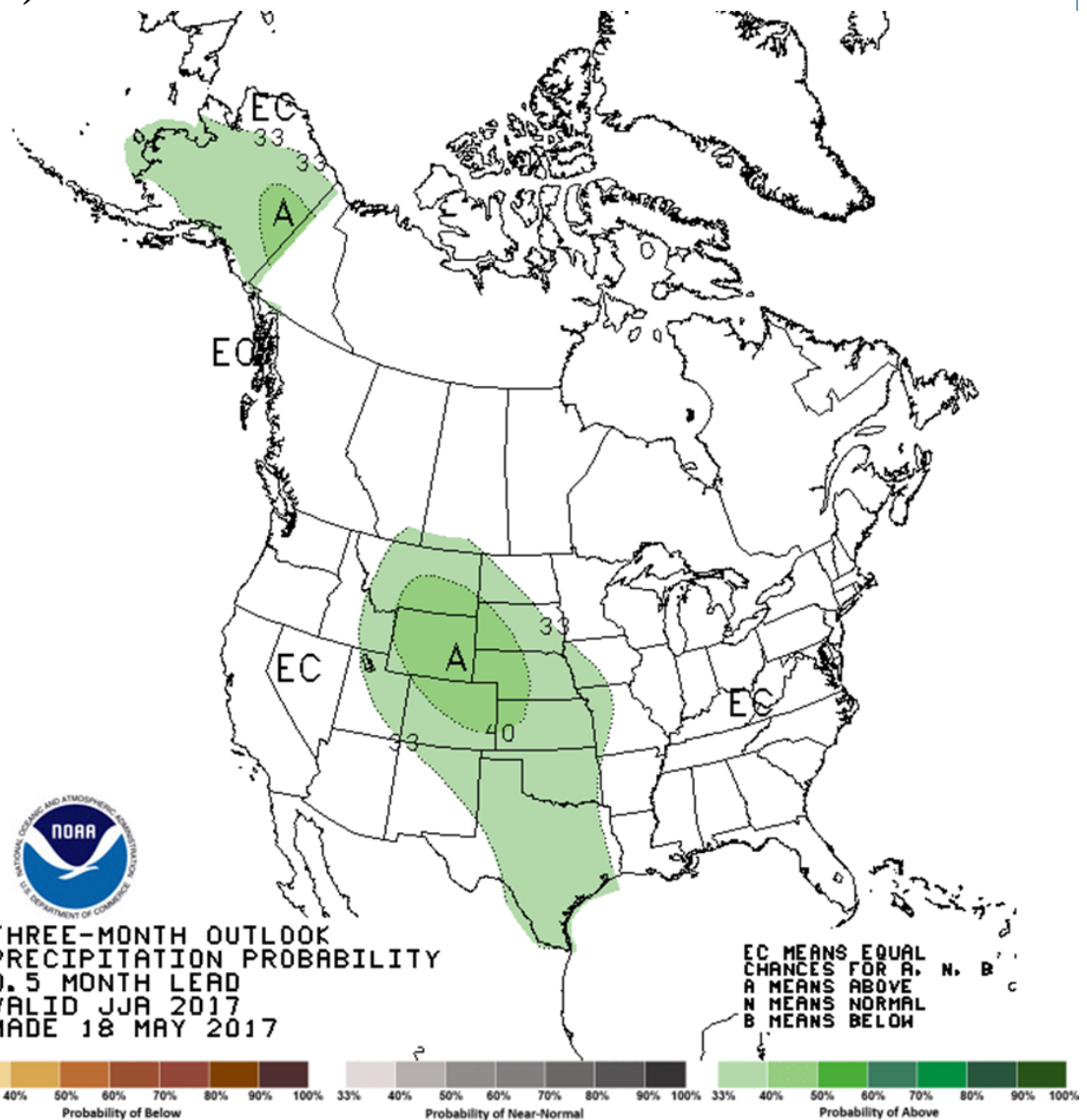
Despite the inherent statistical uncertainties, dynamical climate models seem to strongly favor at least a slightly warmer-than-normal summer (June-July-August), so odds seem to tilt slightly in that favor, as is highlighted in the Climate Prediction Center's latest three month outlook (pictured left).

(continued on next page)



Summer Outlook (continued)

The precipitation signal is always weak in the summer because it's driven largely by convection which is very localized and hard for models to resolve, even in the short term. As such, the Climate Prediction Center's precipitation outlook (pictured right) for the summer shows "EC" for Equal Chances (meaning odds are the same for seeing above, near or below normal precipitation this summer).



Another layer of uncertainty in the precipitation outlook is the prospect of tropical systems

(typically more of an impact in late summer). Of course, the details of where these may impact is also highly uncertain until a few days in advance. Please refer to the 2017 Tropical Weather Outlook for more information on predictions for the upcoming hurricane season.

As we head into summer and the weather gets warmer, regardless of where we are relative to normal, it is always important to remember heat and severe weather safety. We have already had our share of severe weather so far this year, so now is as good a time as ever to review summer weather safety tips:

Heat Safety: <http://www.nws.noaa.gov/os/heat/>
 Severe Weather Safety: <http://www.nws.noaa.gov/os/thunderstorm/>

Winter Summary

by Dan Hofmann, Meteorologist

This past winter was certainly not a fun one for snow lovers.

The winter months of December through February were characterized by a weak La Niña pattern, where the waters of the east-central tropical Pacific Ocean average cooler than normal. Historically, this often leads to a negative Pacific-North American Pattern (PNA), with troughing and cooler temperatures over the western United State and ridging and milder temperatures over the southeast. The North Atlantic Oscillation and Arctic Oscillations both averaged positive during the winter, further enhancing the milder weather pattern over the eastern United States, including the Mid-Atlantic.

The season began with a sixth straight warmer-than-normal December, though it probably felt relatively cool compared to last year’s record-shattering warm start to winter. January was even warmer, and February was warmer still (record warm in the Washington, D.C., area, in fact).

Average Temperature	Washington DC area	Baltimore MD area	Dulles VA
December	41.8° F (+2.1° F)	38.3° F (+1.7° F)	38.2° F (+1.6° F)
January	42.1° F (+6.1° F)	39.0° F (+6.3° F)	39.4° F (4 th warmest)
February	47.7° F (1 st warmest)	44.2° F (1 st warmest)	44.8° F (1 st warmest)
Winter	43.9° F (3 rd warmest)	40.5° F (8 th warmest)	40.8° F (1 st warmest)

The table above lists the average monthly temperature and average winter season temperature for our three first-order climate sites. If it ranked within the top 10 warmest, that is listed in parenthesis next to the average temperature. Otherwise, the departure from the 1981-2010 normal value is shown. Record warm values are highlighted in red.

Eight daily warm temperature records were set in the Washington, D.C., area this past winter (two in January and six in February). Seven daily warm temperature records were set in the Baltimore, Maryland, area (three in January and four in February). Fourteen daily warm temperature records were set at Washington Dulles International Airport (six in January and eight in February).

As would be expected, snowfall ranked pretty low relative to normal.

Total Snowfall	Washington DC area	Baltimore MD area	Dulles VA
November	None	None	Trace
December	Trace	Trace	Trace
January	1.4”	0.7”	1.0”
February	Trace	Trace	0.6”
March	2.0”	2.3”	5.7”
Annual	3.4” (tied for 9 th least)	3.0” (5 th least)	7.3” (-14.7”)

(continued on next page)

Winter Summary (continued)

The table on the previous page lists the total monthly snowfall for November through March. No snowfall was observed outside of this window this past season. As in the previous table, if it ranked within the top 10 least snowiest, that rank is noted in parenthesis. Otherwise, the departure from the 1981-2010 normal value is shown. For snowfall, these notes were only included for the season since month-to-month values are often quite variable.

There is no telling yet what next winter will bring, but long range climate models are hinting at a possible return of (weak) El Niño conditions. Historically speaking, El Niño (weak to moderate) is often more favorable for colder and snowier than normal conditions in the Mid-Atlantic, but it relies much more heavily on what happens over the Arctic which does not have much reliable predictability beyond a couple weeks in advance. So stay tuned!

Derecho 2012: 5 years later

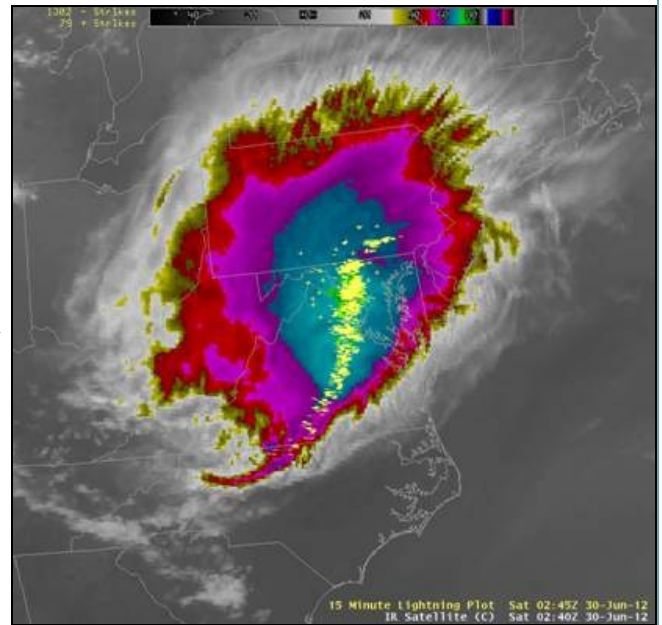
by Christopher Strong, Warning Coordination Meteorologist

The Midwest/Mid-Atlantic Derecho of late June of 2012 was an extraordinary event in our region's weather history. While squall lines of thunderstorms are common here, this line was an atmospheric bomb, releasing the tremendous amount of energy in the atmosphere on that record hot June day...and the fuse that triggered it was all the way back in Iowa.

During the day on June 29th, the big news story of the day was how hot it was. Record high temperatures were expected, and it ended up being the hottest day ever recorded in June for Washington, reaching 104 degrees that afternoon with a heat index near 115. Our office conducted numerous interviews with our area's media organizations talking about the record warmth, and how long it would last. While scattered thunderstorms were expected in the heat later that day, there was no significant feature in the atmosphere passing over us that day (such as a cold front) to focus the energy and cause undue alarm for organized, severe thunderstorms.

The seed for what became this highly destructive weather event occurred half-way across our country between Chicago, Illinois and Des Moines, Iowa late that morning. A complex of showers and thunderstorms that had been drifting northeast through Iowa got caught by the edge of the jet stream. That current of air high in the atmosphere extended from the High Plains through the Great Lakes to the Northeast U.S., and offered the perfect conduit to steer that cluster of storms quickly in our direction.

As the morning turned to afternoon, the area of showers and thunderstorms turned into a squall line as it moved to the east-southeast, fueled by the heat and humidity over the Midwest. In a more typical day, thunderstorms take the heat from near the hot ground and loft it high in the atmosphere in their updrafts. They replace it with downdrafts of colder air from a few miles up, high in the storm. On June 29th, the way the atmosphere was setup, not only did the excessive heat and humidity allow for extremely powerful updrafts and downdrafts in the storms, but the line of storms was traveling at just the right speed



(continued on page 15)

Storm Ready

Howard Silverman, Lead Forecaster

The core mission of the National Weather Service is to protect lives and property from hazardous weather. We do this by issuing Weather Watches, Warnings, and Advisories when needed. However, these statements don't accomplish our goal if those affected don't react to the message and get out of harm's way.

The Emergency Management community are our partners because we have a common goal: to keep residents safe. To that end, the National Weather Service developed the StormReady program in 1998 as a blueprint to assist county and city Emergency Managers in developing appropriate local safety programs. The program is unique in that it empowers local officials to proactively make smart investments to improve the odds of weather resilience for their communities. It also encourages localities to develop a formal hazardous weather plan and execute training exercises.

To be recognized as StormReady, a county must have multiple ways to receive weather information from the National Weather Service; redundant means of disseminating critical weather information to its citizens; the ability to continually monitor the weather; and a program in place to provide its citizens with the information and training necessary so that residents know how to respond if hazardous weather threatens.

Of the 46 counties and 12 independent cities in our service area, less than half are recognized as StormReady. Therefore, we are pleased to report that Carroll County Maryland joined the ranks of StormReady jurisdictions on September 21, 2016, and Anne Arundel County Maryland was recognized as StormReady on February 16, 2017.

We applaud the planners in these counties for taking the time and initiative to become StormReady. While it does not guarantee complete safety from hazardous weather, it does improve a community's readiness. Ultimately, that is our goal in our quest to become a Weather Ready Nation.



*Carroll County
Storm Ready
Ceremony
(pictured left)*

Left To Right: Scott Campbell, Director, Department of Public Safety; Douglas Brown, Emergency Management Coordinator, Department of Public Safety Commissioner Richard Rothschild: District 4, Commissioner Richard Weaver: District 2, Vice President, Chris Strong, Warning Coordination Meteorologist, National Weather Service: Baltimore/Washington Kendra Lindenberg, Emergency Management Fiscal/Planning Associate, Department of Public Safety, Commissioner Stephen Wantz: District 1, President Matthew Rodriguez, Emergency Management Planning Associate, Department of Public Safety, Commissioner Dennis Frazier: District 3, Secretary

(continued on next page)

Storm Ready (continued)

Pictured: Kevin Aftung, Director of OEM; Chrissy Calp, Lead Planner for OEM; Steven Schuh, County Executive; Chris Strong, NWS Baltimore / Washington.

Anne Arundel County Storm Ready Ceremony (pictured left)

Weather Camp

by Andrew Woodcock, Lead Forecaster

On May 25th NWS Sterling hosted its second edition of “Weather Camp” for college meteorology majors. This was an all-day event attended by students from Penn State, George Mason, Maryland, Millersville, Virginia Tech, Delaware, Frostburg State, Rutgers, and SUNY Albany. The intention was to show students the possible government jobs that would be available to them, and the paths that multiple presenters had taken to reach their goals.

Among the topics covered were financial benefits and retirement plans, the various types of offices in the National Weather Service, resume building, women in meteorology, Air Force meteorology, private meteorology companies as a path to the NWS, and tying the NWS to the community. Two particular highlights were when three former NWS student interns gave talks on how their past experiences influenced where they are today, and a tag team presentation by forecaster Matt Elliott, former Sterling student intern Katie Thomas, and California University of Pennsylvania professor Dr. Chad Kaufman on “the Masters Degree as a career path.”

Afterwards comments received included “thank you for putting the camp together because it was very informative and it provided me with some ideas for my career path” and “I thought you guys ran a very thorough and useful workshop for undergraduate students. Really impressed with the level of detail and career information you provided.”

Recent Marine Events

by Bryan Jackson, General Forecaster

The winter of 2016-17 was rather windy on the Chesapeake Bay. A total of 23 Gale Warnings were issued by our office from November to March. (Note: we are responsible for the MD portion of the Chesapeake Bay and the tidal Potomac River.)

Three of these gales made news headlines for their unfortunate and tragic impacts on boaters.



Saturday, November 19, 2016

A mainly dry cold front moved east across the area in the afternoon. The leading wind shift crossed the waters between 3 and 5pm. Gusts suddenly increased to 34 to 38 knots with the front. A Gale Warning for all of our waters was issued in the early morning of November 18, about 36 hours prior to the frontal passage. A striped bass fishing tournament was going on that day, and a boat carrying four men capsized before they could make it back to safety. Three of the four men perished.

Sunday, December 18, 2016

Another mainly dry cold front moved east across the area, crossing the waters between 1:40 and 4pm. Sudden wind gusts of 34 to 40 knots occurred with the front. A Gale Warning for all of our waters was issued in the afternoon of December 17, nearly 24 hours prior to the frontal passage. Sailing groups in both Annapolis and northern Virginia were caught in the winds with multiple capsizes and water rescues. No fatalities occurred that day.

Saturday, February 25, 2017

A powerful cold front approached from the west. Thunderstorms developed and reached the waters by 2pm. Gale force winds continued through 4pm. Winds of 35 to 40 knots occurred with the thunderstorms. There were several large hail and damaging wind reports in the region that afternoon. Also, an EF-1 tornado was confirmed near La Plata in Charles County, MD. A Gale Warning for all waters was issued in the afternoon of February 24, nearly 24 hours prior to the frontal passage. There was a fatality of a boater whose 16 foot skiff capsized on the tidal Patuxent River.

Each of these cases occurred on a weekend afternoon. Much above normal temperatures drew more people than usual to the water. The coupling of sudden onset gale force winds and low water temperatures made for a particularly dangerous situation for boaters.

(continued on next page)

Recent Marine Events (continued)

Regardless of the season, if you are navigating the waters, make sure to **1) know the weather forecast in advance**, and **2) have access to updates while out on the water**.

The best way to get updates on the water is through NOAA Weather Radio (NWR).

News generated by the gales garnered lots of attention in the regional boating and sailing community. We received several requests to do outreach from boating groups around the Chesapeake Bay area.

The Baltimore Boat Show is held annually at the Baltimore convention center during the winter. It primarily caters to power boats.

The 2017 Baltimore boat show was held January 26-29. We had a record 56 mariners fill out surveys at the show which provided us great insight into our mariners use the waters, what weather information they use, and what type of weather they pay most attention to.

The number one weather element of concern for mariners on the Chesapeake Bay is wind.



(continued on next page)

Recent Marine Events (continued)

The Bay Region Mariners Sailing Association invited us to speak with a group of Mid-Atlantic residents at their spring symposium on March 18 in Odessa, DE. Many of the Bay Region Mariners Sailing Association (BRMSA) live in Pennsylvania or New Jersey, but keep their sailboat in Rock Hall, MD. These boaters typically go for multiple day trips (as opposed to more local boaters who do a partial day).



The Seven Sailing Association had a group out sailing the day of the December 18 gale. Sailors were using small laser sailboats which do not have a motor. Therefore, the sailors were unable to sail back to shore before the cold front hit. Fortunately they were all wearing wet suits, so all 22 that went into the water were rescued. This group is much more weather aware after the incident and now posts a printed copy of the latest NWS forecast each day.

Also on December 18, sailboats out of the Washington Sailing Marina on Daingerfield Island, Virginia went out in the calm before the gale. Of particular note with the cold frontal passage was the poor presentation on in radar reflectivity of the squall. The velocity data, however, properly shows the wind shift and magnitude increase. I was able to talk to the Potomac River Sailing Group Association about maritime safety on April 5.

You may check out marine forecast and observations on this page: weather.gov/lwx/marine

Derecho 2012: 5 Year Later (continued)

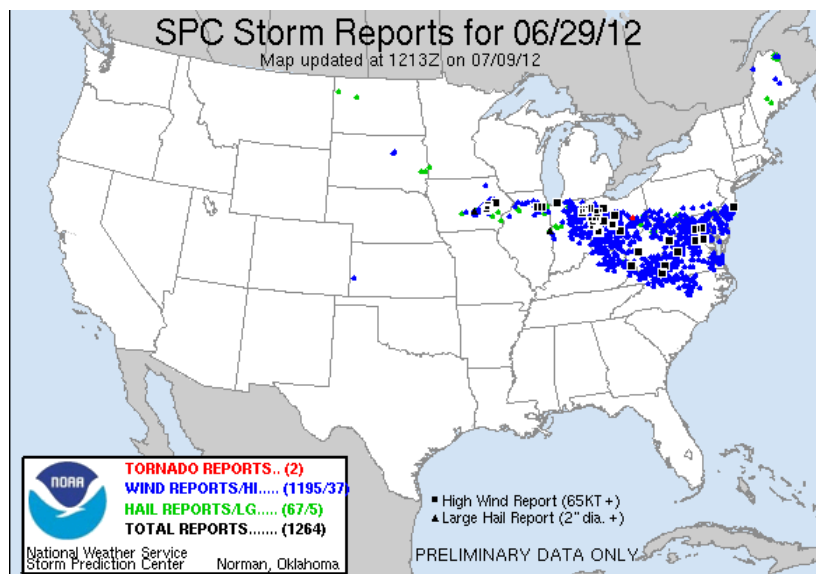
so that the cold air it was pushing to the ground never overtook the hot air that was rising into the storms. This steady-state allowed the storms to continually replenish themselves as they traveled hundreds of miles to the Atlantic Coast and beyond.

The power of the squall line that day was a direct result of the extreme heat and humidity that the storms traveled through that day. Everything in nature is a matter of scale, and while squall lines are common in summer here - this was the category 5 of squall lines (informally borrowing from our tornado & hurricane scales). While it is rare to have a squall line here as powerful and destructive as Derecho 2012 was, they do happen from time to time. Another, though not as devastating one, occurred in the Mid Atlantic in June 2008. Another occurred in July 1980. The Washington Post recently even uncovered an [article](#) from a similar event in Washington D.C. in 1954.

The storms passed through the Mid Atlantic between 8 P.M. and 1 A.M., leaving extensive wind damage from a 250 mile long gust front that packed 40+ mph wind gusts for nearly everyone, and extreme wind gusts of 70-90 mph in targeted locations. Between 6:30 - 7:30 P.M. that Friday evening, NWS Baltimore/Washington realized that the Appalachian Mountain range that often serves as a "weather divide" was not going to disrupt these storms, and the region was in jeopardy. Severe Thunderstorm Watches were raised, and statements were issued that included "major wind damage...due to wind gusts over 75 mph". Severe Thunderstorm Warnings soon followed, in advance of the line of storms that moved east to the Atlantic.

What was left in its wake was a power outage so extensive, it could be seen from weather satellites. Power was out for many days in some areas, as crews worked feverishly to repair what nature had destroyed. The heat continued, and many were left to suffer through it without the expected amenity of air conditioning - which became a real danger to some. Trees blocked roads, ATMs and gas stations were rendered useless without power, stoplights were dark, communications antennas (including those for cell phones) were degraded or inoperable.

It was an amazing display of nature's ability to take a simple cluster of showers and thunderstorms nearly a thousand miles away, and turn it into one of the "squall lines of record" for our region... a line of such destructive power that it decimated our infrastructure, and dramatically affected everyday life of nearly everyone in our region - Derecho 2012.



For a more detailed look at the event with many images & animations, check out [this exceptional article](#) written by our Science & Operations Officer, Steve Zubrick. Also, the NWS's Storm Prediction Center wrote [this thorough article](#) on the event from the national perspective.

LWX Increases Hispanic Community Outreach

By Isha M. Renta



With the addition of two Spanish speaking meteorologists to the office in the winter and spring 2015, the Diversity Program added a new goal for the next fiscal year: increase the local Spanish Outreach. We are happy to inform that the Hispanic community outreach has escalated greatly in the last 2 years. Here is a summary of the accomplishments so far:

Hispanic broadcast media participated in our winter and spring Media Workshops. A relationship was newly formed which led to special reports about the weather including interviews with our meteorologists

Isha Renta, Meteorologist, provided a radio interview in Spring 2015 with El Zol Radio, the most listened to Spanish radio station in the DC metro.

The NWS office Diversity team put together a Spanish website that can be found at weather.gov/Washington/espanol. The website includes Spanish weather forecasts and information regarding weather, safety and forecast operations.

Isha Renta, Meteorologist was interviewed by La Red Hispana, one of the largest Hispanic media networks in the United States. The interview included many topics including the field of meteorology and how to become a meteorologist as well as information about the National Weather Service and what we do

The Blizzard of January 2016 attracted local and international Hispanic media. Our meteorologists attended reporters on site, online and through the phone before, during and after the event. The Hispanic community was better informed because of it.

During the Open House hosted by our office in April 2016, we included a 30 minute Spanish talk titled *Weather en Español – Learn about our*

(continued on next page)

Spanish Outreach (continued)

products. This talk went over the office operations and the products we issue, hoping that the Hispanic community would learn what to expect from us and where to find them. We also included multiple brochures in Spanish.

In the summer 2016 we started collaborating with the National Spokesperson of the Federal Emergency Management Agency (FEMA), Daniel Llargues. He and his team have visited our office and outreach events, working together to keep the Hispanic community informed.

In December 2016 we hosted the first Hispanic Media Workshop that included broadcast and print. We discussed our operations and products and how they could use them. From that workshop several articles were published in the national newspaper *La Voz* and a special report was produced by Cesar Flores of *Univision*.

Lastly, we had Hispanic media presence during our Hurricane Awareness Tour event in May 2017.

Our collaborator from FEMA Daniel Llargues and our *Telemundo* partner Valeria Barriga assisted and interviewed one of our meteorologists for their report about the hurricane hunter aircrafts.

It has been a great start to increase our outreach to the Hispanic community. Our meteorologists have been able to talk about our products and services through different platform. We will continue to work to develop ideas to continue the support of this project. We look forward to the years ahead to see what else can be achieved. If you have any comments or questions about this program please contact isha.renta@noaa.gov.

MIC Corner (continued)

Even though our KLWX WSR-88D will be out for maintenance for a week, the skies are covered with our supplemental weather radars from around the region.

So a great big thanks to Art, Mike, Dave, and Sam in helping the Baltimore/Washington Weather Forecast Office fulfill its mission through an excellent Electronics Program.

Thanks for taking the time to read this issue of *The Sterling Reporter*. If you have any questions, please call me at 703-996-2200 (ext. 222), or email me at: James.E.Lee@noaa.gov.

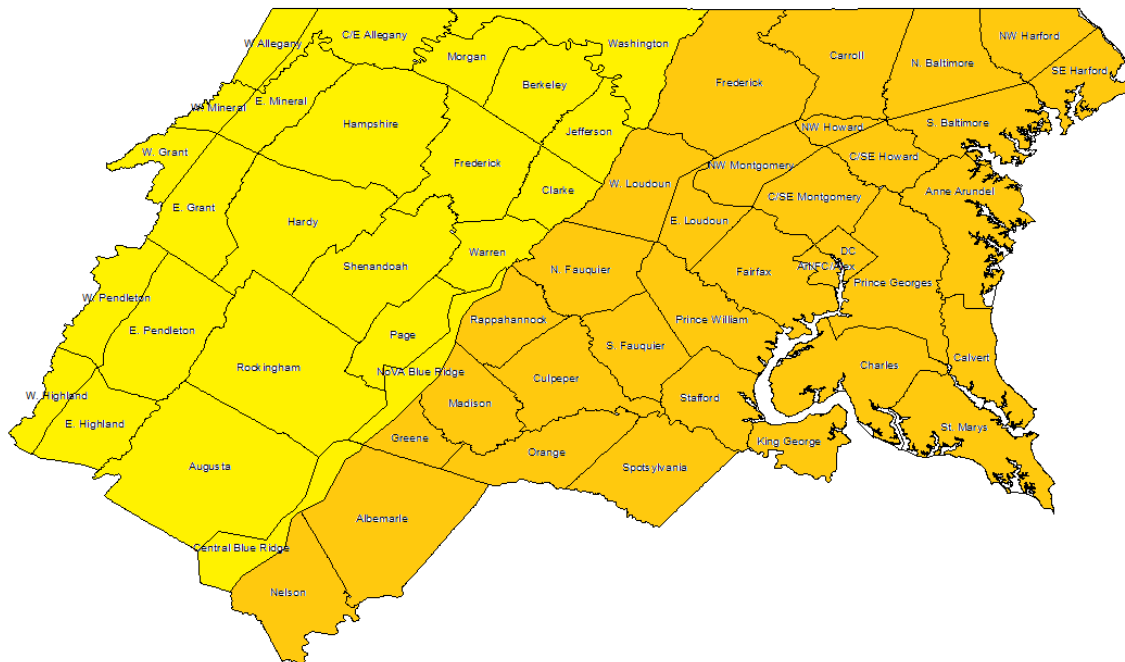




Changes to Heat Headline Criteria

by Ray Martin, Lead Forecaster

For the summer of 2017, our office has lowered the Heat Advisory and Heat Warning criteria for portions of western Maryland, northwestern Virginia and eastern West Virginia for the coming summer season. This is based on climatological studies, which indicate that the region west of the Blue Ridge in northern Virginia and west of the Catoctin Mountains in Maryland, along with all of eastern West Virginia, has a significantly reduced incidence of heat compared to the region further east. For example, the Martinsburg, West Virginia area has climatological normal heat indices approximately 5 degrees cooler than those experienced in Washington, DC. Thus, the old threshold of 105-109 degrees Fahrenheit for two or more consecutive hours has been lowered to 100-104 degrees Fahrenheit. Similarly, the Excessive Heat Warning criteria has been lowered from 110 degrees Fahrenheit or greater for two or more consecutive hours to 105 degrees Fahrenheit or greater for two or more consecutive hours. It is expected that this change will alert people sooner to impending heat threats and if acted upon, reduce the number of emergency department visits.

NEW Heat Advisory/Warning Criteria for 2017



-  **Advisory 100, Warning 105**
-  **Advisory 105, Warning 110**

SKYWARN®

Another Successful Year for the NWS Baltimore/Washington SKYWARN® Program

By Heather Sheffield Kenyon, General Forecaster

We wrapped up our last SKYWARN® class of the fiscal year in May, and what a year it has been. We taught 27 classes around our county warning area, from the West Virginia Highlands to southern Maryland. Classes included Basics I, Winter Storms, Convection, Flood and Tropical.

The SKYWARN® program is a national network of volunteer severe weather spotters. The spotters are trained by local National Weather Service Forecast Offices on how to spot severe thunderstorms, tornadoes, hail and flooding. In some parts of the country, like the Mid-Atlantic, spotters also report snowfall and ice accumulation.

Meteorologists from the National Weather Service Baltimore/Washington office went to counties and jurisdictions around the area to teach these two hour classes. We are so thankful for our hosts, most of them emergency managers and broadcast media to supply the space for us to teach the public about hazardous weather. We trained a little over 500 *new* spotters from Oct 2016 to May 2017. These new spotters will help the NWS better serve the community by spotting hazardous weather and reporting it to our forecast office. Many of our past spotters also came to our classes this season resulting in a total attendance for the fiscal year of over 850 new and past spotters. Thank you for your service!

If you are interested in becoming a storm spotter, take a class! We'll start classes back up in the fall. All classes are free and open to the public. One note, due to the high demand for classes, we cannot teach a class in every region every season. We try our best to schedule classes in places that did not see one the previous season. For more information about the SKYWARN® program and for a list of future classes, please visit www.weather.gov/lwx/skywarn

If you have misplaced your spotter ID or have never received your ID, please email lwx-report@noaa.gov.

Don't see a class by you? Scheduling is still taking place this fall so check www.weather.gov/skywarn for updates!



We need your Storm Reports!!

How to report:

Telephone: 1.800.253.7091

Amateur Radio: WX4LWX

Email: LWX-report@noaa.gov

Spring/Summer 2017

Editor in Chief:

Dan Hofmann

Contributors:

Luis Rosa
Howard Silverman
Andrew Woodcock
Heather Sheffield Kenyon
Chris Strong
Bryan Jackson
Isha Renta

Meteorologist-in-Charge:

James E. Lee

Photo Courtesy of Isha Renta



National Weather Service Baltimore MD/Washington DC

43858 Weather Service Road

Sterling, VA 20166

703.996.2200

