



South Texas Weather Journal



NWS Corpus Christi, TX

Summer 2012 Edition

Special points of interest:

- Severe Weather Season 2012 most active season in 25 years!
- All about the wildfire on the Padre Island National Seashore
- Is the Drought Improving?
- Find out how to become a volunteer at the NWS WFO Corpus Christi, TX

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45th Anniversary of Hurricane Beulah John Metz — Warning Coordination Meteorologist

Beulah was the 2nd storm of the 1967 hurricane season in which there were only 6 named storms. However Beulah left its mark on Texas history as her slow storm motion produced record flooding and a prolific number of tornadoes. Beulah was a long track storm, developing just east of the Leeward Islands in the Caribbean on Sept 5, 1967, intensifying rapidly into a hurricane the next day. Beulah passed south of Hispaniola as a Category 4 hurricane with wind speeds of 150 mph. As she churned across the Caribbean, she weakened to a tropical storm while skirting south of Jamaica. But by the eleventh day she made her first direct impact, on the northern tip of the Yucatan Peninsula near Cozumel, as a Category 3 storm. She reemerged in the warm waters of the Gulf of Mexico, becoming a powerful Category 5 storm, with sustained winds of 160 mph. Beulah finally moved ashore in Mexico, just south of Brownsville Texas on Sept 20, 1967. Maximum wind gusts were measured at 136 mph in Brownville producing a storm surge of 18-20 feet north of where the center of the storm crossed the coast. Over 114 tornadoes were produced by the storm, mainly in the northeast quadrant over the Coastal Bend region.



Hurricane Beulah – September 1967

After landfall, Beulah moved slowly northward into the Coastal Bend and stalled. Rainfall totals of 15 to 25 inches were observed across much of the region. Local rivers including the Nueces and Frio peaked at levels never seen before, and many of those records still stand today, 45 years later.



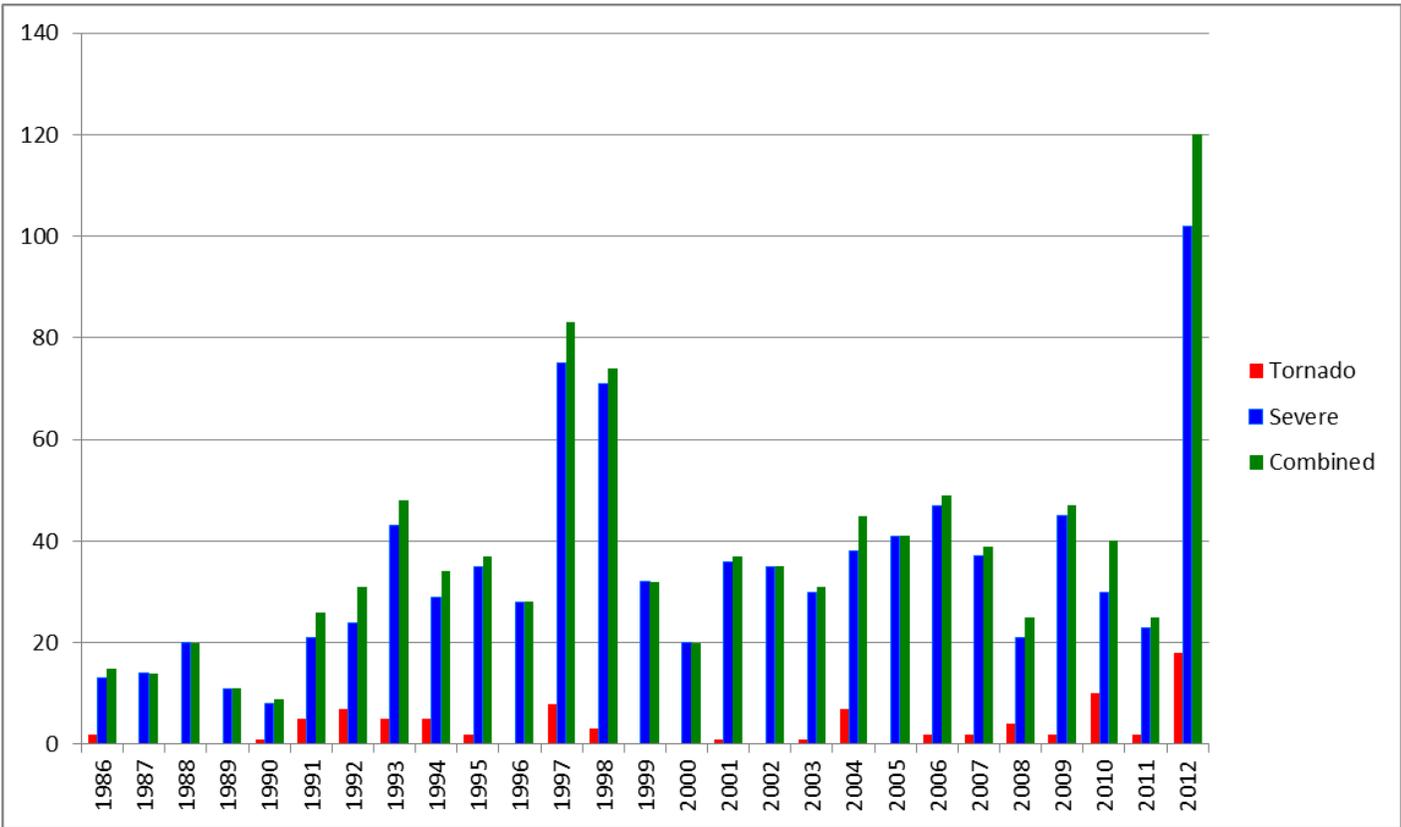
Beulah killed 58 people and produced \$217 million (1967 USD, \$1.43 billion 2012 USD) dollars in damage and her name was retired, never to be used to describe an Atlantic storm again.



A LOOK BACK

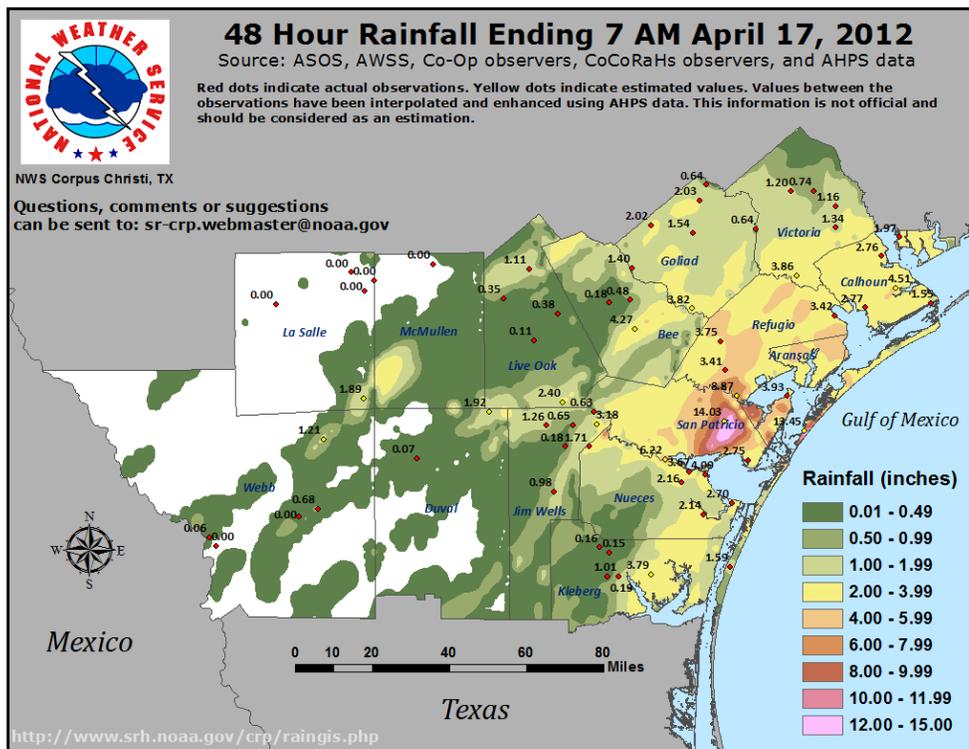
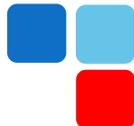
Severe Storms Slam South Texas Capping the Most Active Spring Season in 25 years John Metz — Warning Coordination Meteorologist

The 2012 Spring Severe Weather Season in South Texas was the most active season seen in the past 25 years, a period dating back to 1986 when the most detailed records have been kept. A total of 120 severe weather events were documented in 2012, including large hail, damaging thunderstorm winds, and tornadoes. This is nearly 3 times the average of the previous 25 year period in which approximately 40 events were documented on average each year. To warn local residents and help save lives and property, our office issued 142 Severe Thunderstorm and 55 Tornado Warnings in the spring 2012 season. Fortunately no lives were lost, but considerable property damage reaching into the millions of dollars did occur.



Spring Severe Storm Events (1986-2012)

One of the more notable severe weather events occurred on April 15-16, in which a cluster of storms strengthened right along the coast, producing devastating flooding in the Portland Area and several damaging tornadoes. Rainfall totals near 16 inches were observed between Portland and Bayside, causing significant flooding, especially in the town of Gregory, and in the rural communities about 5 miles south of Bayside. Hundreds of homes were flooded, and many families were displaced. In addition to the rainfall, a series of supercell thunderstorms spawned four tornadoes in the Portland, Gregory, and Ingleside communities. The strongest tornado, rated EF-1 on the Enhanced Fujita Tornado wind scale, produced damage to a dozen new homes in the Portland area. Winds estimated near 100 mph snapped trees, drove 4 x 4 posts through brick walls, shattered windows, moved vehicles, and tossed a trailer over a roof top.



April 15-16, 2012 Coastal Bend Heavy Rain and Tornado Event

The most significant severe weather event occurred on May 10. A series of powerful supercell thunderstorms ripped across South Texas, producing damaging straight line winds up to 80 mph and spawning over a dozen tornadoes in an 18 hour period. This number of tornadoes is a record for a single day in a non-tropical event for the South Texas region.

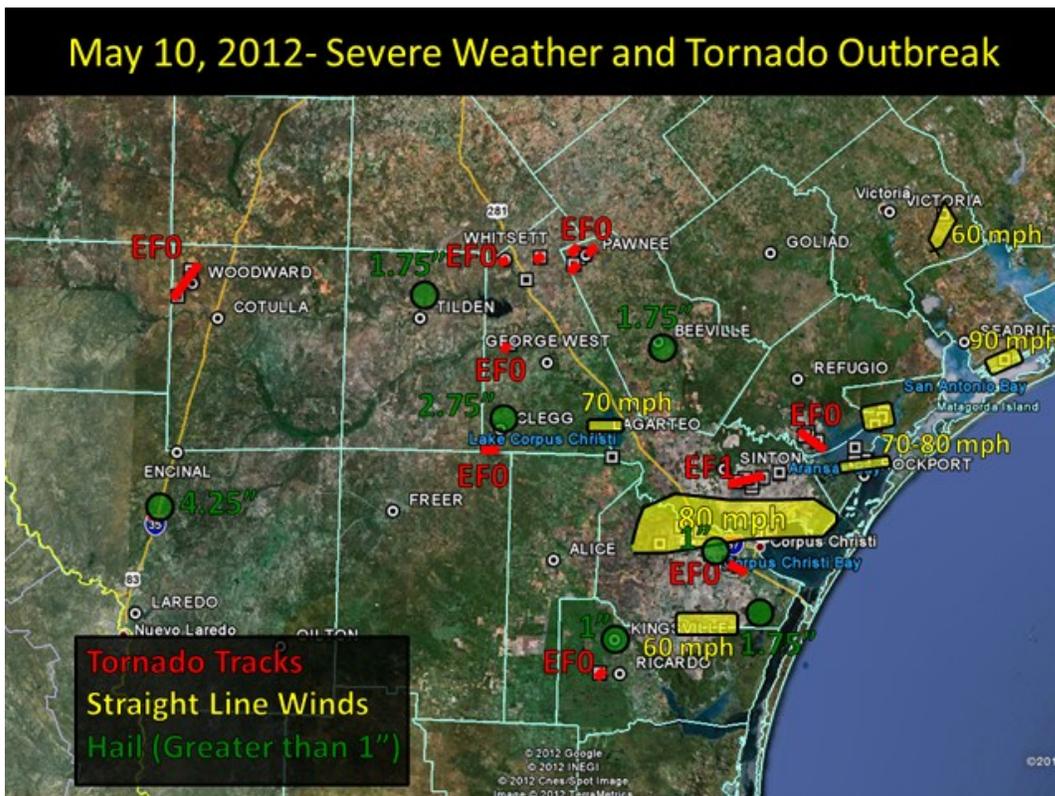
The first tornado touched down on an oil rig fracking sight in northwest LaSalle County, about 8 miles northwest of Cotulla, and injured two workers who were inside a recreational vehicle. Storm chasers spotted 7 other tornadoes in Live Oak and northern Bee counties, mainly over rural country. A DPS trooper observed another tornado just south of Kingsville near Ricardo. The strongest tornado destroyed a grain silo just

west of Taft. It then crossed highway 181 on its 9 mile journey through central San Patricio County, impacting a neighborhood to the north of the Taft, snapping telephone poles, and flipping an 18 wheeler. Other storms produced damaging straight line winds from Calallen to Portland, causing widespread tree damage and power outages which lasted 4 to 5 days in the Tuloosa areas.

All in all, it was an extremely busy season which dwarfed the previous two busy seasons of 1997 and 1998 in which 75 to 80 events were documented respectively. Despite the damages and suffering that many families experienced, we are grateful that no lives were lost.

Keep in mind that our secondary severe weather season occurs in the fall months of October and November. Volunteer storm spotters are a valuable resource to the NWS during severe weather events as they are our eyes in the field. If you are interested in becoming a storm spotter, please check the Skywarn page our website and either attend a class or take it

online. For more information: <http://www.srh.noaa.gov/crp/?n=skywarn>



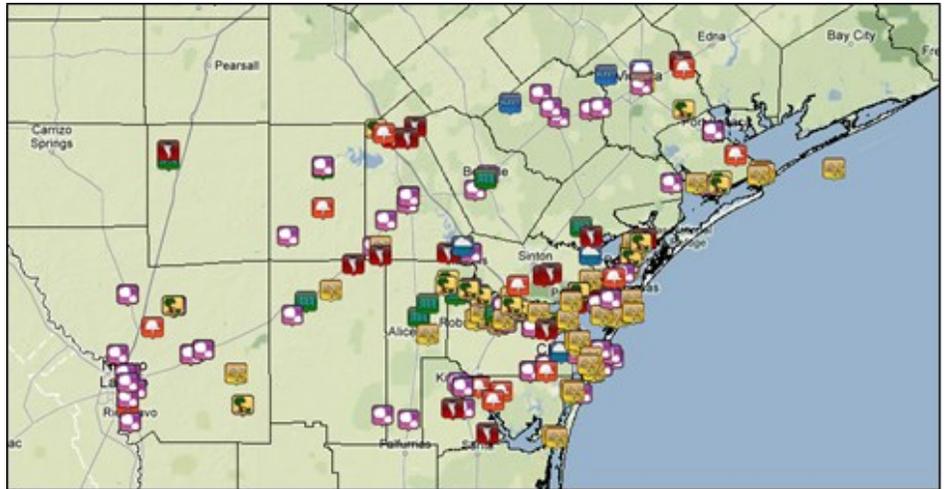


Decision Support Services During Severe Weather Season 2012

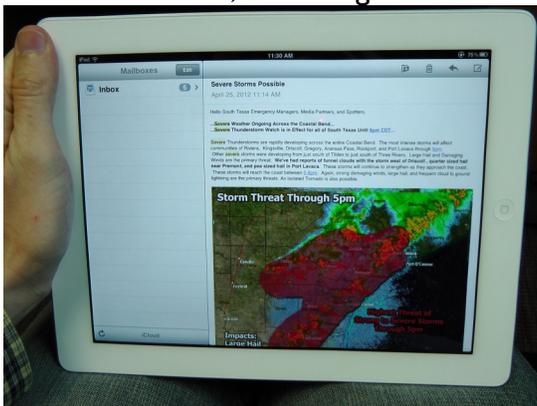
Scott Cordero — Meteorologist In Charge

The WFO Corpus Christi operational team has worked diligently to enhance decision support services (DSS). They provided a full spectrum of planning and implementation strategies to improve the local DSS program through the integration and adaptation of best practices, applying lessons learned from after action reviews, participating and planning in tabletop exercises, benchmarking emerging technologies, making recommendations for operational hardware/software infrastructure, and web dissemination / multimedia / graphic manipulation applications.

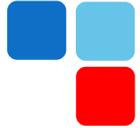
The National Weather Service in Corpus Christi ensured our South Texas communities would be prepared prior to each high impact inclement weather event during the Spring and early Summer of 2012. The operational team utilized an array of Internet-based communication tools available to staff and decision makers in emergency management, public safety, public health, education, transportation, and the media to provide a continuous stream of weather information, from the planning stages of each event, through the actual event, and in the post storm environment. Decision makers and stakeholders were often notified up to a week prior to the flash flooding and severe and tornadic events. WFO Corpus Christi provided information to community stakeholders to help them make decisions and to the public to obtain immediate, life-saving actions.



Severe Weather Reports (Jan-Jun 2012)



During the 2012 severe weather outbreaks, our staff provided wall to wall support to our partners. These services were in the form simple, easy to understand messages utilizing a combination of text and graphics. These messages were sent to our partners via the web in the form of Graphiccasts, daily video briefings, graphical e-mails, Wordpress blogging services, Facebook, and Twitter. In addition, and in advance of the more significant events, our staff hosted a series of Go to



Meeting conference calls, and specified the impending threat and impacts to the local area. Although we have been testing these services on an experimental basis for many years, enhanced training, regular meetings, and local workshops have allowed our staff to now provide these services on a consistent basis.



Often in advance of each severe weather event, our office would provide a heads up graphical e-mail to our partners. These e-mails reach an audience of several thousand people, including emergency managers, federal, state, and local officials, spotters, and the media. This same information was then posted on Wordpress, Facebook and Twitter. Our forecasters then produced video briefings, and made them available for viewing on our website and Facebook.

Recognizing that DSS services are an instrumental part of operations, the local WFO Team utilized the established DSS Desk for the high impact events of March 20, April 2, April 16, April 20, May 10, and June 26 where forecasters performed high impact DSS duties. The team has nurtured and cultivated the DSS program by invoking established DSS Desk protocol, and establishing the shift supervisor as the event coordinator for heightened situational and operational awareness.

These new services are in place to help our customers stay informed when hazardous weather threatens. The likes on our Facebook page continues to grow and now exceeds 2,100. The number of views to our Facebook reached 29,000 during one severe weather event. The shift toward shared, synergistic weather information among stakeholders who inform and protect persons in harm's way has been aided by the 21st century communication technology infusion made by WFO Corpus Christi.

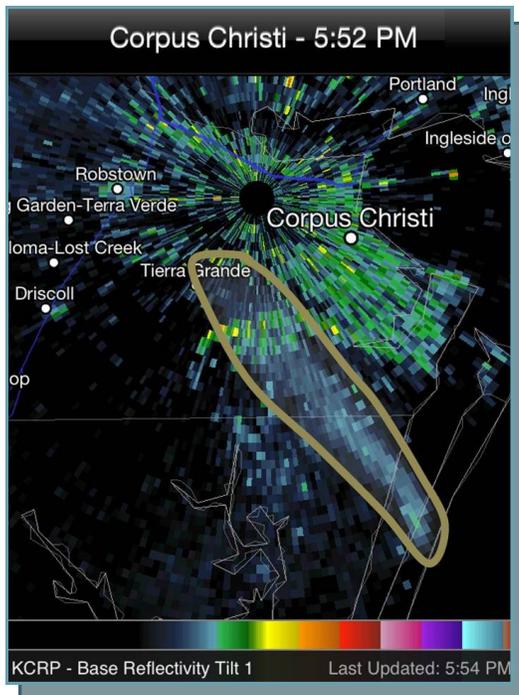
Innovative approaches to providing this information, from plain language confidence forecasts by trusted NWS employees to the technological tools that allow an increasingly diverse array of decision makers to better comprehend the information in order to act efficiently, is making a difference to communities across South Texas. The team's ability to anticipate and capitalize on infusing customers needs, capacity to visualize big goals, and efforts to respond in new and revolutionary ways has lead WFO Corpus Christi to enhance and improve its dissemination services. These service improvements furthered the NWS mission of saving lives and property.



NWS Corpus Christi Responds to Large Blaze on the Padre Island National Seashore

Jason Runyen — Lead Forecaster / Fire Weather Program Leader

On Saturday, July 14th a lightning strike sparked a wildfire on the Padre Island National Seashore (PINS). The wildfire quickly spread over the weekend to several thousand acres. Firefighters had a tough time battling the wildfire due to the drought-stressed fuels and weather conditions. The wildfire burned for three full days before firefighters gained the upper hand and contained the blaze. In all, nearly 13,000 acres (roughly 20 square miles) were burned on PINS, and at one point the fire was so big it could be seen on both satellite and radar.

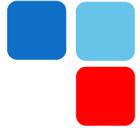


Above left, image from the NWS Corpus Christi radar capturing the smoke plume from the PINS Wildfire moving inland.

Above right, picture taken of the smoke column after the fire was 100% contained

Fortunately no structures were lost. Smoke from the fire did temporarily close the main park road to visitors. Smoke also impacted portions of Corpus Christi and Robstown during certain times of the day, noticeable by smell and by a haze in the sky.

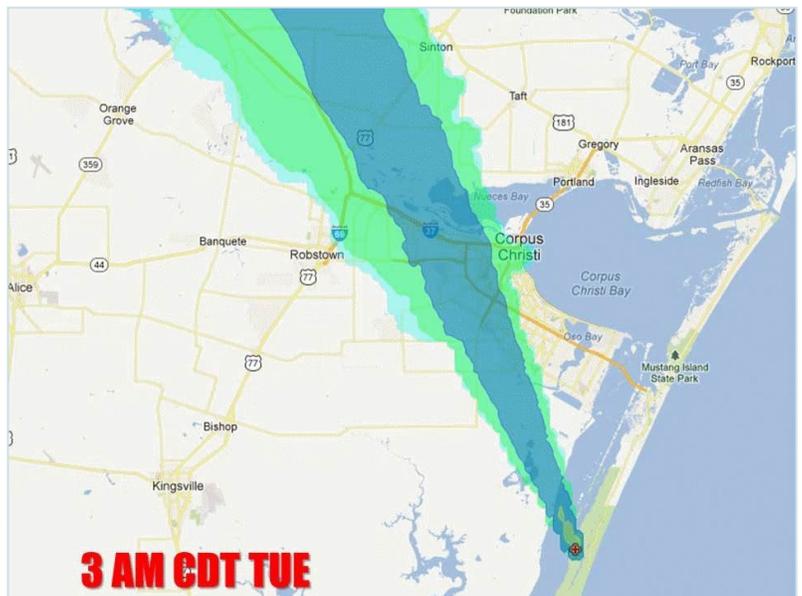
National Weather Service (NWS) Forecasters in Corpus Christi were quick to respond, providing firefighters forecasts on hourly changes in the weather. These forecasts enabled firefighters to plan the best tactics to fight the fire while remaining safe. Also, NWS Forecaster provided emergency managers across Nueces County forecasts on where the smoke plume would shift over the course of the three days.



Above, picture taken on the morning of July 17th from the Corpus Christi International Airport, looking east. Smoke from the PINS Wildfire is seen hanging just above the surface over Corpus Christi.

This is not the first wildfire on the PINS this year. Another wildfire on March 27th consumed roughly 2500 acres. This fire also did not destroy any structures, but did result in the smell of smoke in Corpus Christi.

Ongoing drought conditions have resulted in dry grass and brush conditions, resulting in periods of high fire danger across the region. These conditions are expected to persist through the remainder of the Summer and into the first half of the Fall. Residents are urged to exercise care with respect to all outdoor activities that could inadvertently cause wildfires. Avoid the use of welding or grinding equipment near weeds, grass, and dry brush. In addition, avoid parking vehicles in tall, dry grass and weeds that could be ignited. Do not toss cigarette butts on the ground.



Report wildfires quickly to the nearest fire department or law enforcement office. Above, NWS Forecast of where the smoke would impact during the early morning hours of July 17th



LOOKING AHEAD

Will El-Nino Come and End the Texas Drought?

Greg Wilk — Lead Forecaster

Slowly but surely, drought conditions are improving over most of Texas, including the Coastal Bend, Victoria Crossroads region, and Rio Grande Plains. This drought, which began in the fall of 2010, peaked in the fall of 2011, about the same time La Nina (cooler than normal waters over the Eastern Pacific) peaked. La Nina ended early in 2012, and more significant rainfall shortly followed. Some locations received heavy rainfall and even flash flooding during some of the more significant rainfall events. Some of the more notable heavy rainfall (and severe weather) events occurred on April 15th-16th, May 10th, and July 11th, where several locations received several inches of precipitation. So far this year, most of the heaviest precipitation has fallen over the northeastern portions of South Texas, usually east of Interstate 37. Farther south and west, rainfall has been less widespread during the past several months, although some significant rainfall has occurred from time to time (e.g. May 10th and July 27th). As a result, drought conditions have improved most notably over the northeastern areas of South Texas, but less notably farther south and west (See Figure 1).

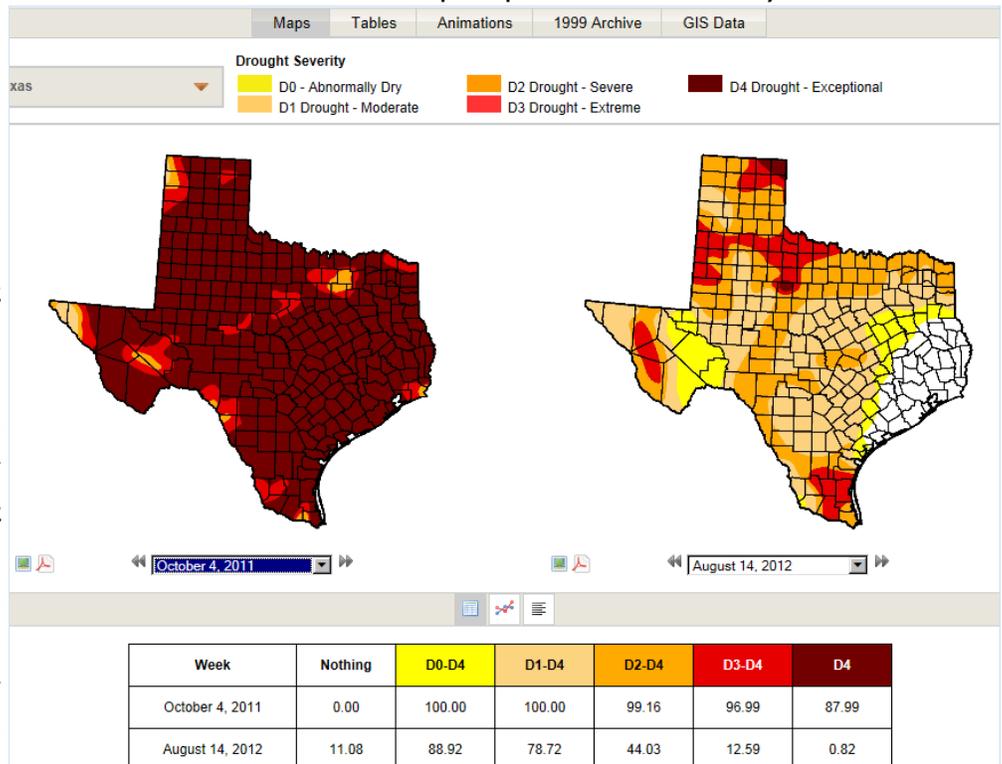
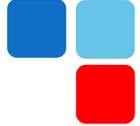


Figure 1: A comparison of drought conditions over Texas during the peak of La Nina in the Fall of 2011, and more recent drought conditions. Note that extreme Northeastern portions of South Texas are no longer in drought.

The Pacific La Nina ended in April 2012, as warmer and more neutral sea surface temperatures were observed. Water temperatures over the Eastern Pacific continue to warm and, at this time, are more than 0.5°C above normal. The Climate Prediction Center (<http://www.cpc.noaa.gov>) has issued an El-Nino Watch, which means that there is a 50% or higher probability that El-Nino conditions will develop within the next few months. Officially, an El-Nino episode begins when the three month average sea-surface temperature departure exceeds 0.5°C in the east-central equatorial Pacific (between 5°N-



5°S and 170°W-120°W). Climate model consensus shows that a weak to moderate El-Nino will likely develop before the end of September 2012.

So, how does an El-Nino impact South Texas climatologically? During El-Nino episodes, South Texas usually experiences above normal rainfall and below normal temperatures during the cool season (October through March). Looking at the Climate Prediction Center's seasonal rainfall outlook for October through December, there is a greater likelihood that South Texas will experience above normal rainfall (see Figure below).

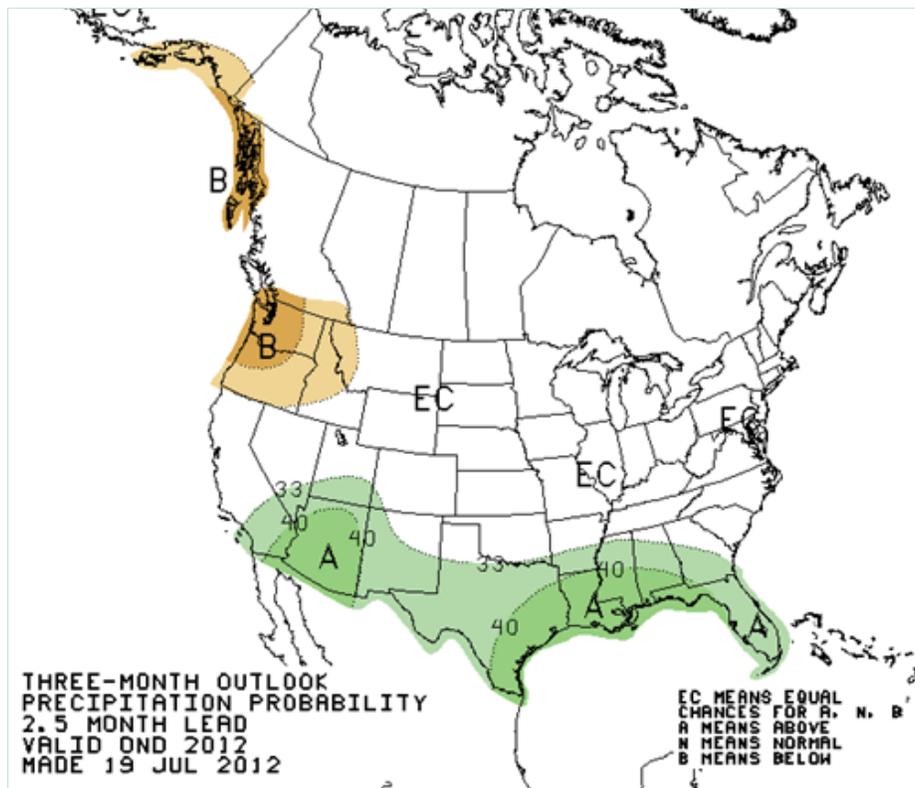


Figure 2.: Precipitation Probability Outlook October 2012 through December 2012.

In fact, seasonal outlooks out through the early spring of 2013 indicate a greater likelihood for above normal rainfall (and below normal temperatures). Therefore, if El-Nino does occur and the rainfall outlooks come to pass, South Texas will likely see the drought end. This would be great news not only for farmers and ranchers, but also would help to recharge the reservoir which maintain the water supply for South Texas residents.

Our Drought Page makes it easy to keep track of the latest drought conditions, as well as the long-term outlooks from the Climate Prediction Center. To visit our Drought Page, click on the thumbnail/icon "Drought Info" located near the bottom right of our homepage, or type: <http://www.srh.noaa.gov/crp/?n=drought>. Hopefully, South Texas will continue to experience drought relief, and end the most devastating drought in Texas history.



FORECASTING TOOLS

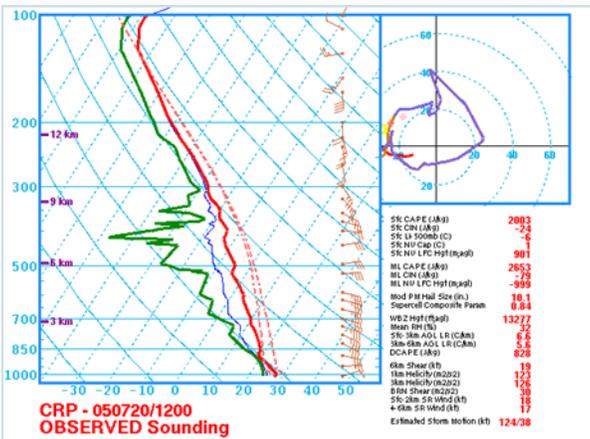
Upper Air Program

Lara Keys — Meteorologist Intern

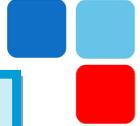
Every day, at over 100 National Weather Service locations across the United States, the Caribbean, and the Pacific, weather balloons are released into the air. These balloons are released twice a day, once at 00 and once at 12 UTC/GMT all across the country. That means that here at Corpus Christi balloons are launched at 5:00 AM and 5:00 PM CST or 6:00 AM and 6:00 PM CDT. Weather balloons are most often filled with hydrogen gas. When they start out at the surface they are six feet in diameter. As the balloon rises into the air it begins to expand because the pressure in the atmosphere decreases with height. By the time the balloon stretches out to where it pops, it is about 100,000 feet above the surface of the earth. Also, these



balloons can drift over 100 miles away from the point at which they are released. Weather balloons are very important to meteorologists because of the instrument attached to them called a radiosonde. Radiosondes are used to measure the pressure, temperature, and humidity in the atmosphere. They are also used to calculate wind speed and wind direction. Radiosondes look like small white rectangular packages and are attached to the weather balloon by a length of twine. While the weather balloon carries the radiosonde up through the air, the radiosonde continuously collects data and sends it back to a ground-tracking receiver. Since weather balloons are launched at the same time across the country, data from each individual radiosonde can be compiled into composite upper air maps of atmospheric conditions at different levels across the country. This data is used for analysis of current conditions and used in weather forecast models. Meteorologists also use the data collected by radiosondes to help identify and forecast the threat for severe weather and other hazardous conditions.



If you find a radiosonde after a balloon has popped, please follow the mailing instructions on the side panel of the radiosonde. Radiosondes that are returned are reconditioned and are able to be used again in the field.



Want to Become a Volunteer at NWS Corpus Christi?

Scott Cordero — Meteorologist In Charge

The Corpus Christi National Weather Service regularly provides opportunities for college students to gain valuable work experience as a volunteer. A number of current NWS employees participated in such a volunteer program when they were students, and remain grateful for the experience. For this reason, we understand how beneficial such programs can be and are eager to return the favor! Of course, the NWS benefits greatly from these programs as well. Not only do we gain additional help for a few months, but we also give potential future employees a running start toward a successful NWS career. When deciding which recent graduate to hire, a manager in the NWS places emphasis on actual NWS experience, and the positive recommendations that go with it.

We are always looking for bright, enthusiastic college students to volunteer. Each summer we bring several student volunteers into the office. We understand that student volunteers have many other commitments, including their academic work and perhaps actual paid employment. For this reason we are flexible about the specific hours that a student works as a volunteer, though we ask that student volunteers average at least 8 to 16 hours per week over the course of a summer. We recommend that students try to work at least part of their time during normal business hours, Monday through Friday. However, since many NWS employees work rotating shifts, students are encouraged to work a few shifts, as well, to obtain a better appreciation of life in the NWS, and to gain greater exposure to a wide variety of weather, work duties, and different forecaster experiences. The times are flexible; we try to work out a schedule that is convenient for all the volunteers. Most students start in mid to late May and continue through mid to late August. We prefer that students work on weekdays, but weekends are also possible.

Students will spend their work time on a variety of activities. This may include shadowing forecasters and other staff members, understanding and participating in NWS forecast and warning operations, editing or writing content for office webpages, working on various projects, visiting our radar and remote equipment sites, participating in storm damage surveys as needed, receiving science training, attending meetings with our customers, and various other tasks.

We interview prospective student interns during January and February, and make selections in early March. We hope for a diverse pool of applicants every year. We are looking for students who by the coming summer 2013 will have completed their junior year.

Students do not have to be studying meteorology/atmospheric science in order to be considered for a volunteer position at NWS Corpus Christi. We are also eager to host students with skills in Hydrology, Information Technology, Computer Science, Geographic Information Systems (GIS), Emergency Management, or other related fields.

If you are interested in becoming a student volunteer, contact Scott Cordero, Meteorologist-In-Charge (scott.cordero@noaa.gov) at the NWS Corpus Christi. Prepare and send a resume listing your previous work experience, your completed coursework, status as a U.S. citizen, and any other relevant information, such as computer and programming skills, significant class projects, volunteer and leadership activities, research experience, participation in student clubs, professor references, etc. You may be asked to visit our office or have an interview before acceptance as a volunteer.



The National Weather Service Forecast Office in Corpus Christi is now on both **Twitter** and **Facebook**! Both social media outlets will be used to post information about the daily weather forecast, severe/tropical weather threats, local storm reports, and much more! To follow us on Facebook, go to the following link and click “like”:

<http://www.facebook.com/US.NationalWeatherServiceCorpusChristi.gov>

To follow us on Twitter, you can either go to: <https://twitter.com/NWSCorpus> and click “follow” or simply add @NWSCorpus to your Twitter feeds.

Anyone who follows or likes us can also submit photographs and local weather reports to us. Be sure to use the hashtag #txwx if tweeting the report!



New Meteorologist Intern — Ian Blaylock

Ian Blaylock is the new meteorologist intern at the National Weather Service (NWS) Weather Forecast Office (WFO) in Corpus Christi, Texas. As a child, he was easily babysat by being sat in front of the 24/7 severe weather coverage that used to be shown on the Weather Channel -- an activity that probably impacted his subconscious in such a way that he felt compelled to become a meteorologist.

Ian graduated from the Western Kentucky University Honors College magna cum laude with a Bachelor of Science in Meteorology with a minor in Mathematics. While there, he spent 3 years working part-time in the Climate Research Lab, helping with data visualization and modeling, and completed a research thesis entitled "Long-Term Changes to the Frost-Free Season as a Function of Climatic Continentally".

From 2010 to 2011, Ian was a SCEP at the NWS WFO in Juneau, AK. While there, he spent much of his time putting together a graphical forecast product depicting meteorological conditions along the Haines and Klondike highways. He also put together a WES training module on the forecasting of the Taku Winds -- severe gravity-wave enhanced windstorms that affect the downtown Juneau/Douglas area. In his spare time, Ian enjoys going on bike rides, gardening, producing electronic music, and hanging out with his wife.



Meet the Newest Addition to the NWS Corpus Christi Office, Ian Blaylock!

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