



South Texas Weather Journal



Summer 2008 Edition

Corpus Christi, Texas

Weather Forecast Office

Near or Above Normal Atlantic Hurricane Season Predicted

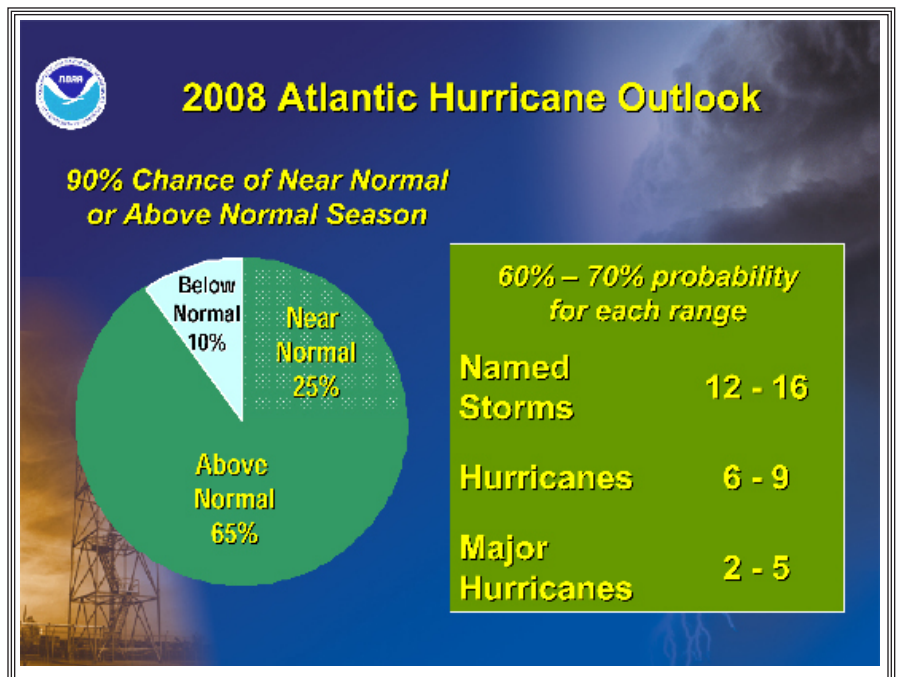
NOAA's Climate Prediction Center indicates climate conditions point to a near normal or above normal hurricane season in the Atlantic Basin this season. Their outlook calls for a 65 percent probability of an above normal season and a 25 percent probability of a near normal season. This means there is a 90 percent chance of a near or above normal season.

The climate patterns expected during this year's hurricane season have in past seasons produced a wide range of activity and have been associated with both near-normal and above-normal seasons. For 2008, the outlook indicates a 60 to 70 percent chance of 12 to 16 named storms, including 6 to 9 hurricanes and 2 to 5 major hurricanes (Category 3, 4 or 5 on the Saffir-Simpson Scale). An average season has 11 named storms, including six hurricanes for which two reach major status.

The science behind the outlook is rooted in the analysis and prediction of current and future global climate patterns as compared to previous seasons with similar conditions. "The main factors influencing this year's seasonal outlook are the continuing multi-decadal signal (the combination of ocean and atmospheric conditions that have spawned increased hurricane activity since 1995), and the anticipated lingering effects of La Niña," said Gerry Bell, Ph.D., lead seasonal hurricane forecaster at NOAA's Climate Prediction Center. "One of the expected oceanic conditions is a continuation since 1995 of warmer-than-normal temperatures in the eastern tropical Atlantic."

"The outlook is a general guide to the overall seasonal hurricane activity," said retired Navy Vice Adm. Conrad C. Lautenbacher, Ph.D., undersecretary of commerce for oceans and atmosphere and NOAA administrator. "It does not predict whether, where or when any of these storms may hit land. That is the job of the National Hurricane Center after a storm forms."

"Americans in hurricane-prone states must get serious and be prepared. Government - even with the federal, tribal, state and local governments working perfectly in sync - is not the entire answer. Everyone is part of the emergency management process," said FEMA Administrator R. David Paulison. "We must continue to develop a culture of preparedness in America in which every American takes personal responsibility for his or her own emergency preparedness."



A Look Back in History

A South Texas Hurricane History:

By Tim Tinsley - Senior Forecaster

Since 1851, 61 hurricanes have impacted the coastline of Texas. Only 12 hurricanes have made landfall over the Lower and Middle Texas Coasts as major hurricanes. Major hurricanes have sustained winds exceeding 110 mph. On the Saffir-Simpson scale, major hurricanes are a Category 3 or higher. No Category 5 hurricane has made landfall in Texas.

1875 - First Indianola: First major hurricane to strike Indianola produced wind gusts estimated to be up to 150 mph. A storm surge of 15 feet inundated the town. 176 people perished in the storm.

1886 - Second Indianola: The second hurricane to strike within 11 years dealt a fatal blow to the once thriving port of Indianola. This hurricane is the strongest to hit the Texas coast with a central pressure of 925 millibars and sustained winds of 155 mph.

1916 - Baffin Bay: Hurricane with estimated winds of 140 mph made landfall just south of Baffin Bay. Limited damage and small death toll created a false sense of security in Corpus Christi.

1919 - Corpus Christi: Hurricane with sustained winds of 125 mph devastates Corpus Christi. A storm surge of 16 feet killed 284 people, second only to the catastrophic 1900 Galveston hurricane. The death toll was likely underestimated, with fatalities probably between 600 and 1000 people.

1942 - Matagorda Bay: Large hurricane made landfall at Matagorda Bay with a storm surge of 14 feet at Port O'Connor. Sustained winds of 115 mph were recorded at Seadrift

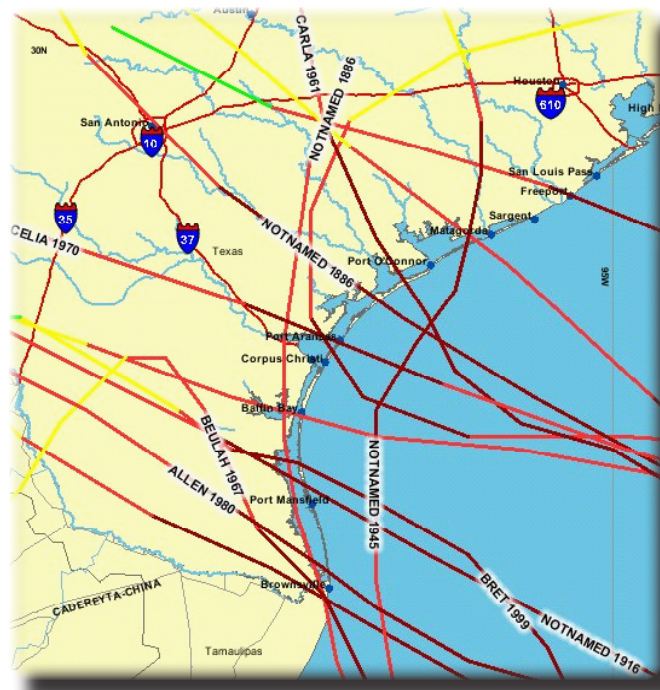
1961 - Carla: Last Category 4 hurricane to strike the Texas coast made landfall near Port Lavaca with gusts up to 170 mph. It produced a storm surge of 22 feet at Port Lavaca, the highest on record for Texas.

1967 - Beulah: Hurricane Beulah slowly weakened over the Brush Country of South Texas after making landfall just north of Brownsville. Excessive rains produced widespread flooding across South Texas and record flood levels on the Nueces, Frio, and San Antonio Rivers. Also, at least 115 tornadoes were recorded with Beulah across South Texas.

1970 - Celia: Hurricane Celia rapidly deepened before making landfall north of Corpus Christi. An unusual aspect of Celia was excessive wind gusting up to 170 mph in the northwest quadrant of the storm.

1980 - Allen: Large hurricane weakened before making landfall near Port Mansfield. Allen produced a storm surge of 9 feet at Corpus Christi and 34 tornadoes across South Texas.

1999 - Bret: Last major hurricane to make landfall in Texas moved inland between Baffin Bay and Port Mansfield. Rainfall amounts between 15 and 25 inches occurred over King Ranch.



A Look Back in History

South Texas Experiences Busy Wildfire Season

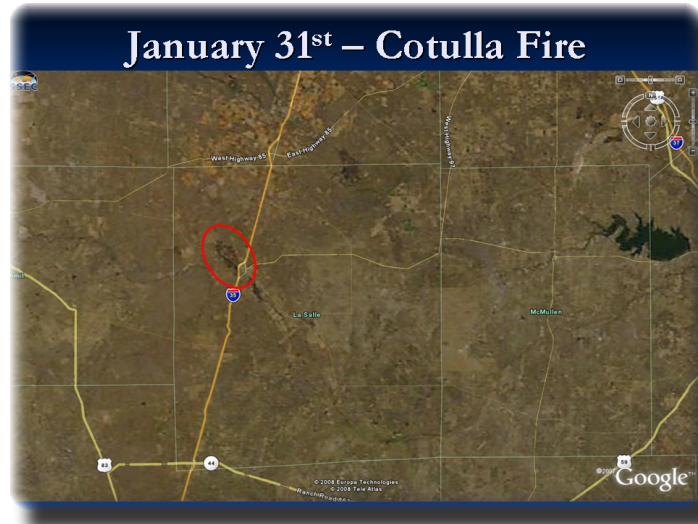
By Jason Runyen - Forecaster / Fire Weather Program Leader

Since January 1st 8,788 wildfires have burned nearly 1.3 million acres in Texas. Over 650 structures have been destroyed and nearly 14,000 others threatened. Just in South Texas alone, 81 wildfires have burned over 177,000 acres destroying 50 structures.

As South Texas emerges from a busy wildfire season many are left wondering why was this year so bad. The severity of the 2008 wildfire season in South Texas can be traced to the Summer of 2007. Record rainfall across much of the state last Summer brought welcome relief to many areas from the 2005-2006 drought. By the end of the 2007 Summer, it was green as far as the eye could see across South Texas due to the rainfall. Unfortunately, from October through December rainfall shut off across South Texas as La Niña conditions developed, and the overgrown grasses and brush from the summer began to dry. The combination of an abundance of available dry fuels and a warmer and drier than normal Winter and early Spring increased the potential for an active wildfire season in 2008. In addition, an exceptionally windy late Winter and early Spring added to the fire danger.

There were several extremely critical fire weather days from January through March, in which fire occurrences were greater and in which the fires themselves were larger and extremely difficult to control. These occurred on days in which the winds were sustained 30-40 mph, with gusts to 50 mph, and relative humidity values that dropped into the teens and single digits. Two of the more significant days were January 31st and March 18-19th. The 19,000 acre Cotulla Fire on January 31st destroyed seven homes and damaged nearly 30 others near Cotulla, as well as jumped Interstate 35. Several wildfires also occurred on March 18th-19th, the largest of which occurred in Deep South Texas. The Burns Ranch Fire burned over 25,000 acres in Starr, Brooks, and Hidalgo Counties, threatening the community of San Manuel and destroying two homes. The Encino Fire burned 3000 acres, threatening the town on Encino.

For the 15 counties WFO Corpus Christi covers in South Texas, 166 Red Flag Warnings were issued from January 1st through June 5th of 2008, and there have been 20 days in which Red Flag conditions have been observed.



Above: Burn scar from the Cotulla Fire circled in red.



Above: Burn scar from the Burns Ranch & Encino Fires circled in red.

A Look Ahead

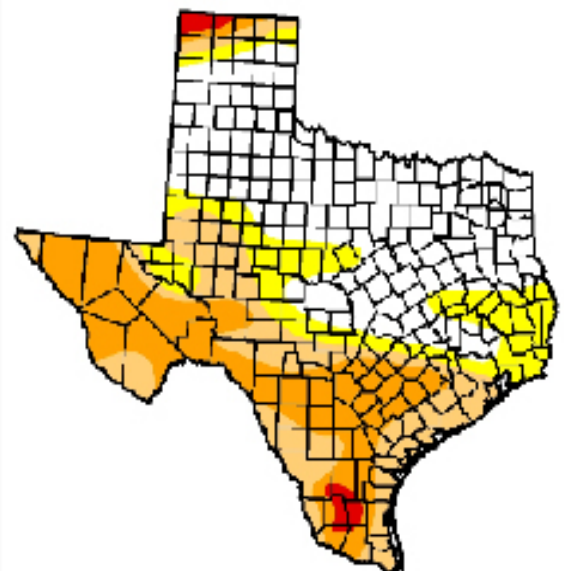
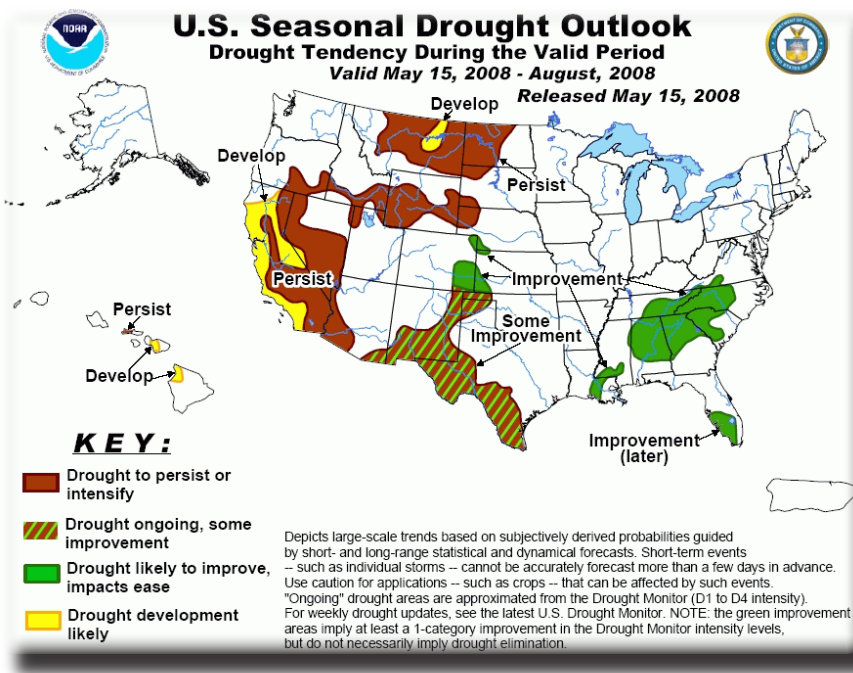
Drought Conditions Spread Across Remainder of South Texas Some Relief Expected During the Coming Months

By Greg Wilk – Senior Forecaster / Hyrdology Program Leader

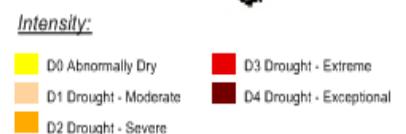
Most of South Texas has experienced below normal rainfall during 2008, as well as during the latter months of 2007. As explained in the spring 2008 edition of the South Texas Weather Journal, the usual effects from La Nina conditions (unusually cold ocean temperatures in the equatorial Pacific) over our area are below normal rainfall during the fall and winter seasons. Because of these rainfall deficits, much of South Texas has been in a drought for the past few months. Rainfall was so sparse over the Rio Grande Plains and Western Coastal Bend that extreme drought conditions existed west of an Alice to Oakville line, with exceptional drought conditions over most of Webb County, and portions of Duval and La Salle counties.

However, May brought some much needed rainfall over areas most stricken from the drought. Still, rainfall has been insufficient to totally alleviate the drought over South Texas and, in fact, drought conditions have spread eastward into the Victoria area. As of late May, the latest Drought Monitor (<http://www.drought.unl.edu/dm/monitor.html>) showed that while extreme drought conditions existed only over southern portions of Duval County and extreme southeastern Webb County (with exceptional drought conditions eliminated), moderate to severe drought conditions existed over the remainder of South Texas, including the Victoria area.

Fortunately, some relief from the drought is expected to occur over the next few months, as South Texas is expected to experience near normal rainfall through August. Part of the reason for the more optimistic precipitation forecast is that conditions over the Eastern Pacific are expected to transition from La Nina to neutral. Of course, forecasts can and do change as the months progress. Still, you can keep track of the latest drought conditions and forecasts for our area (as well its impacts and any restrictions or actions you need to take) by going to the web and typing: <http://www.srh.noaa.gov/data/CRP/ESFCRP>.



Left: Drought Outlook through August
Right: Drought Monitor for Texas on June 3rd



Science Spot

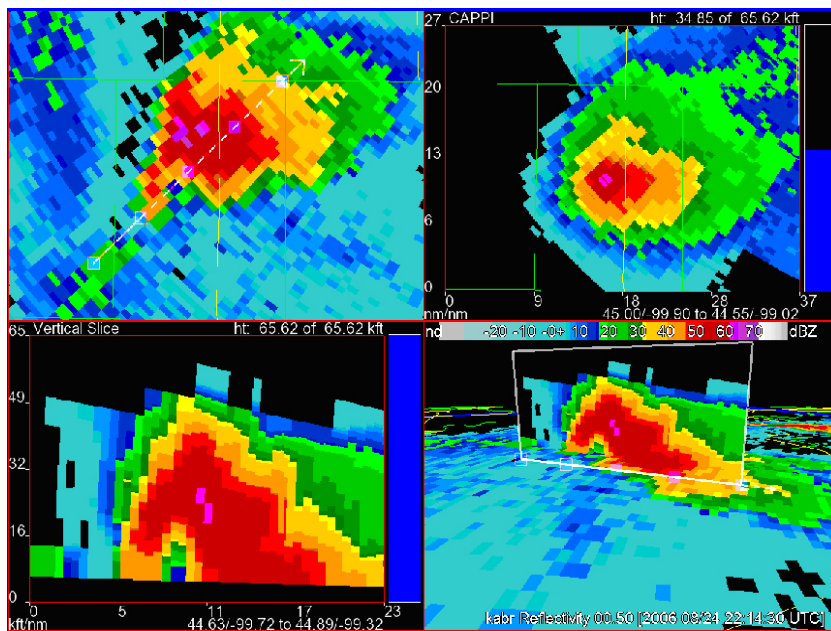
Cutting Edge Radar Tools Brought to WFO Corpus Christi

By Ron Morales – Science Operations Officer

Beginning in the spring of 2008, two new tools to interrogate severe storms using the Doppler radar (WSR-88D) became available to NWS offices across the country, including WFO Corpus Christi. These tools will make it easier for warning forecasters to assess the strength of storms on the Doppler radar.

The Four Dimensional StormCell Investigator (FSI)

The Four Dimensional Stormcell Investigator (FSI) will significantly help NWS meteorologists in the warning decision process. In summary, the FSI application will make it much easier for NWS meteorologist to discern the structure, size and strength of a storm, which will greatly assist in the warning process. In the four panel FSI display example below, the top left screen shows a horizontal view of the reflectivity data for a tornadic storm. Within this panel is also a dashed diagonal line, which can be moved to any



Above: An example of the FSI. The top left panel shows a horizontal/plan view of a Storm, the top right shows a Constant Altitude Plan Position Indicator (CAPPI) view, while the two bottom panels show vertical cross sections of the storm

location on the screen, and governs where a cross section of the storm will be taken. As the meteorologist moves this line, it automatically re-samples the Doppler data, simultaneously reconstructing a new cross-section. The top right panel displays the Constant Altitude Plan Position Indicator (CAPPI), and allows warning forecasters to select any height in the atmosphere to quickly assess where the strongest storms are located. Typically, stronger storms will have higher reflectivity values reaching higher in the atmosphere. The example below is a CAPPI at 35,000 feet. The bottom two panels show vertical cross sections of the storm. The bottom right panel can be tilted, turned and zoomed in/out in any direction, allowing the forecaster to "fly" around the storm. The bottom left panel is a static cross section. In this example, both cross sections clearly show a weaker reflectivity region below a stronger one, indicating a strong updraft. The FSI tool

can also display the velocity data of a storm in all four panels (not shown in this example). More detailed information on the FSI can be found at: <http://www.nws.noaa.gov/mdl/fsi/index.htm>

The Estimated Actual Velocity (EAV) Tool

Since Doppler radar can only detect the wind speed component directly toward or away from the radar (i.e. radial velocity), it samples wind speeds less than the full two dimensional wind speed. The Estimated Actual Velocity (EAV) tool helps to resolve the full wind speed by using the component of the wind that the radar operator thinks is the "true" wind direction of the full wind. It is anticipated that the EAV tool will provide more confidence in estimating the true wind velocity, leading to better warning decisions for severe storms. For more detailed information on the EAV tool see

<http://www.srh.noaa.gov/topics/attach/pdf/stsd07-03.pdf>

NWS Products

Hurricane Forecast Products

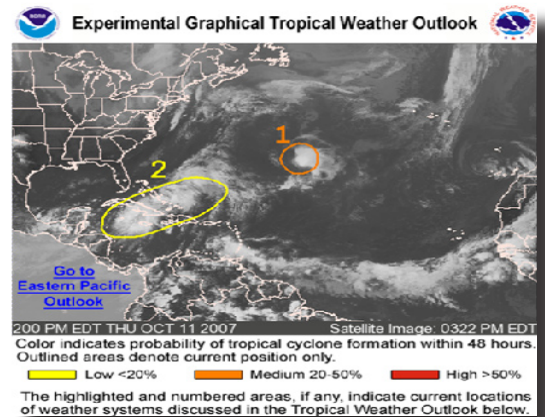
By John Metz – Warning Coordination Meteorologist

When a tropical cyclone develops, your National Weather Service prepares a suite of forecast products illustrating the tropical cyclones potential path, storm radius, probabilities of a landfall in your community, and impacts at landfall. Watches and warnings are issued once the cyclone is within 24-48 hours of landfall. How do you access this wealth of information? Just turn to the National Hurricane Center on the web at www.nhc.noaa.gov. Once a storm develops the NHC goes to work and produces a forecast 4 times a day at 10AM, 4PM, 10PM, and 4AM.

To obtain a summary of all tropical activity in the Atlantic Hurricane Basin, which includes the Atlantic Ocean, Caribbean Sea and Gulf of Mexico, you should turn to the New Graphical Tropical Weather Outlook product.

To identify a storm's location, intensity, and movement you should look to the Tropical Cyclone Public Advisory. Watches and Warnings will also be outlined in this product.

To learn about where the tropical cyclone may track in the next 3 to 5 days there are two primary products you should look for on the NHC website: The 5 day track forecast and 5 day cumulative wind speed probability product.



Above: Graphical Tropical Weather Outlook



Above: NHC's 5 Day Track Forecast

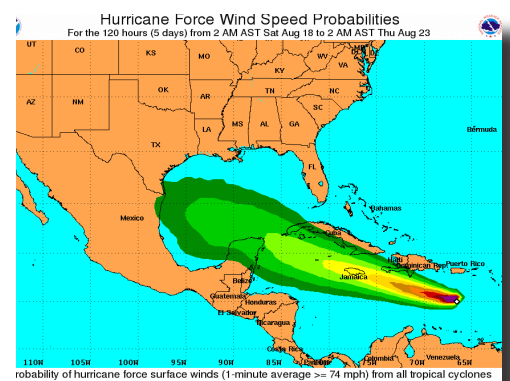
The 5 day cumulative wind speed probability product illustrates the potential storm track but also accounts for storm size and intensity. This product includes a percent probability that tropical storm or hurricane force winds could impact your location. Keep in mind at long ranges probabilities will be low, but that does not diminish your potential risk.

Once Watches and Warnings are posted, look to your local NWS for the latest Hurricane Local Statement. This product details and local impacts the storm will make on your community.

Hurricanes are potentially live changing events that we all must take seriously. Your NWS maintains a continuous weather watch and produces a wealth of forecast information so you can survive the storm.

The 5 day track forecast shows the NHC's best guess on where the center of the tropical cyclone is forecast to go in the next 5 days and includes an accompanying error cone. Two-thirds of the time the center of the tropical cyclone tracks within the white error cone. One-third of the time the center tracks outside the error cone. If your community is included in the error cone you should prepare as if the tropical cyclone could impact you directly. Be aware the 5 day track forecast tells you nothing about the size or intensity of the storm.

The 5 day cumulative wind speed probability product illustrates the potential storm

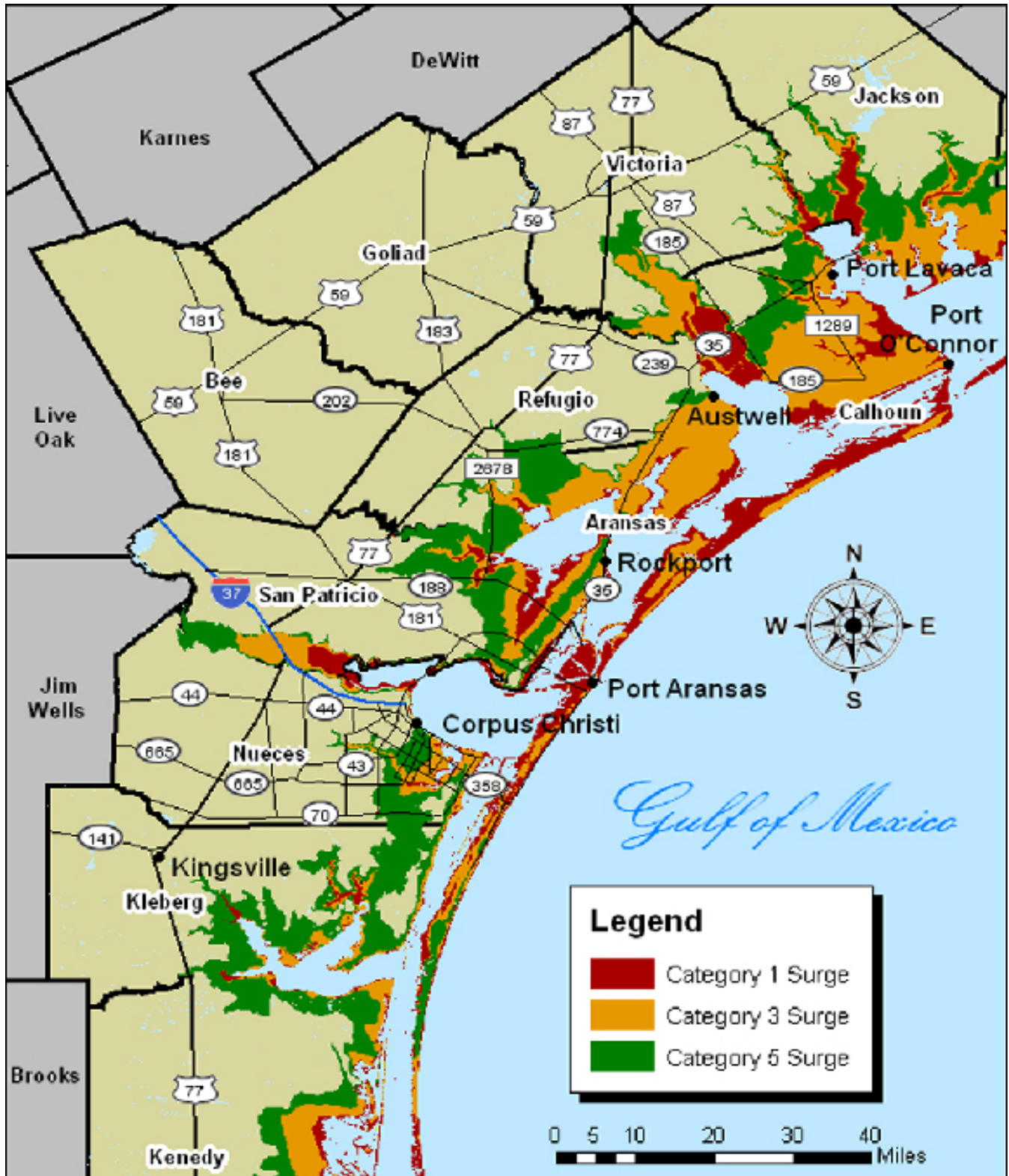


Above: NHC's 5 Day Cumulative Wind Speed Probability Product

NWS Products

South Texas Storm Inundation Map

Below is a map of storm surge inundation for South Texas. For high resolution maps of Corpus Christi, Portland, Rockport, Port O'Connor, and Port Lavaca please visit The Official Coastal Bend Hurricane Guide at www.weather.gov/corpuschristi.



The Coop Corner

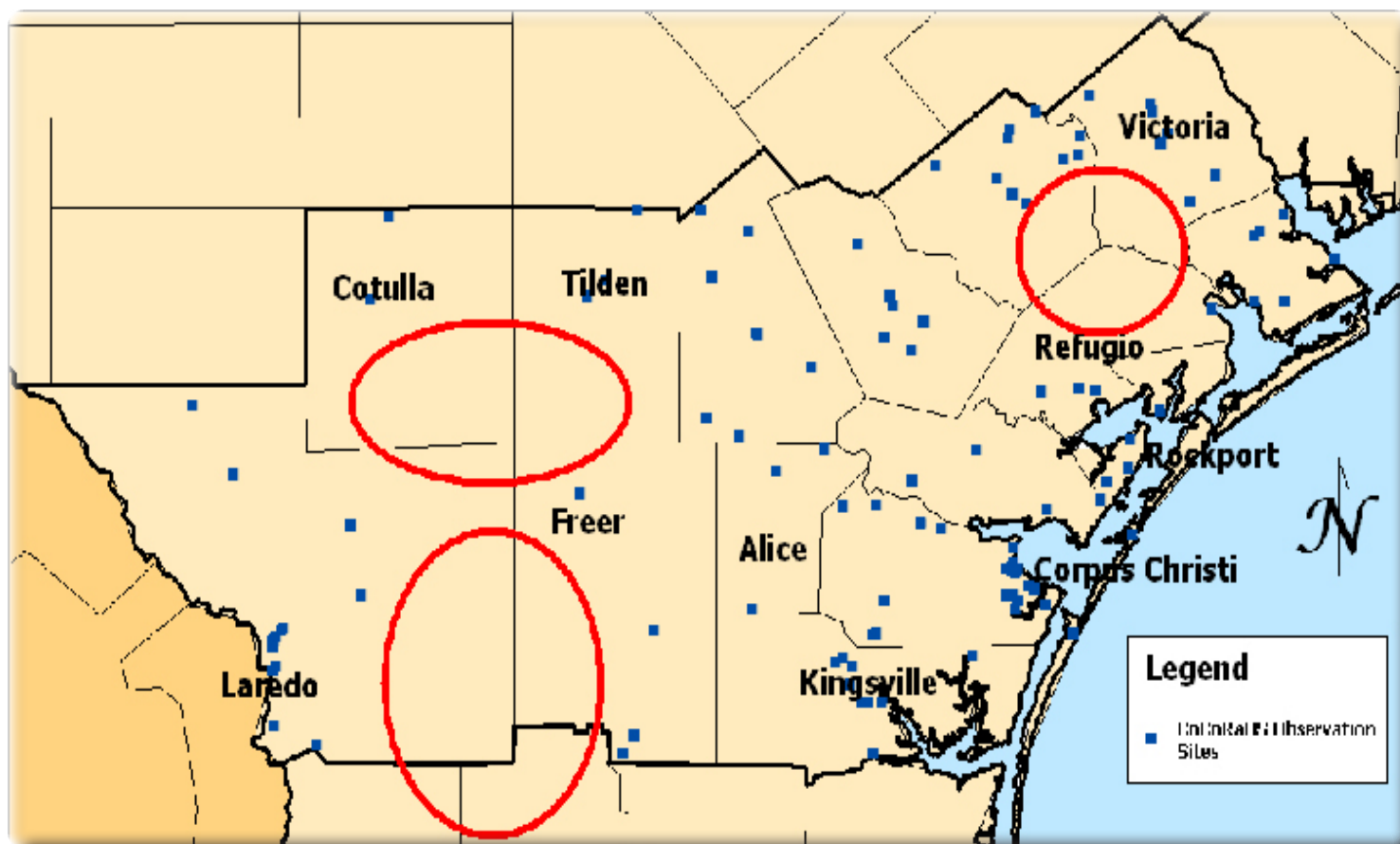
Call for more CoCoRaHS observers

By Tony Merriman - Forecaster / CoCoRaHS Coordinator

The South Texas CoCoRaHS rainfall network has over 110 observers! The National Weather Service in Corpus Christi would like to thank everybody who has joined and report their rainfall amounts. We really appreciate the time and effort you put into measuring and reporting your rainfall amounts. The data you supply is very valuable not only to meteorologists, but also to researchers.

We would like to continue to expand the network. If you have any friends or relatives who would like to participate, please tell them about the program and have them sign up. We really need observers in the areas circled in red on the map below. Once your friends or relatives fill out the application at the following website <http://www.cocorahs.org/Application.aspx>, they will receive a free rain gauge from the National Weather Service.

If you have any questions about the program, please email Tony Merriman at Tony.Merriman@noaa.gov. Thanks again for all your hard work and dedication! We at the National Weather Service really appreciate it!



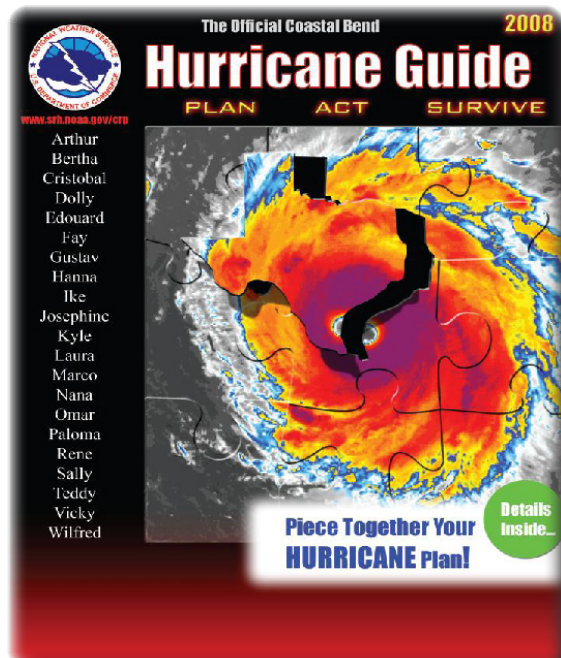
Above: Map of current CoCoRaHS Observers. Additional observers needed in areas circled in red.

Updates

The 2008 Official Coastal Bend Hurricane Guide

The 2008 edition of The Official Coastal Bend Hurricane Guide is now complete! In addition to all the necessary preparedness info, evacuation and returning home info, high detailed storm surge inundation maps, home and business preparedness info, and insurance info, the 2008 guide features articles on South Texas Hurricane History and Hurricanes and El Nino. In addition, bus evacuation information and maps are now included.

The year's guide can be viewed and downloaded from our website at www.weather.gov/corpuschristi. The guide will also be available at select retailers and businesses around South Texas in July.



Above: Cover of the 2008 Official Coastal Bend Hurricane Guide

Hurricane Hunters Visit Corpus Christi

By John Metz Warning Coordination Meteorologist

On April 14, 2008 the NOAA P-3 Hurricane Hunters were in Corpus Christi as a part of a 5 stop Hurricane Awareness Tour of the United States Gulf Coast. In addition to the 12 member flight crew, the new Director of the National Hurricane Center Bill Read, Southern Region Director Bill Proenza, and several hurricane specialists were in attendance. Over a dozen media outlets from across south Texas covered the event. Emergency Managers and local elected officials took part in the event as well and listened to the message of hurricane preparedness during a noon time luncheon.

Approximately 700 school children from nine schools in the coastal bend toured the aircraft. Not only did the students receive a message of hurricane preparedness but hopefully they were encouraged to stay in school and pursue an interest in science and technology. This event was hosted by the local NWS Forecast Office in partnership with the Corpus Christi Intl Airport and Signature Flight Support. Thanks to the Coastal Bend Chapter of the American Red Cross, Corpus Christi Fire Department, Naval Air Station Corpus Christi, Local Emergency Planning Committee, and local South Texas Amateur Radio Club this event was a huge success. The hurricane hunters will return to Corpus Christi in 2012. Mark your calendar if you'd like to take part in this once in a lifetime event.



Above: Bill Read, Director of the National Hurricane Center, is interviewed by local media during the NOAA P-3 Hurricane Hunter stop in Corpus Christi

Staff Spotlight

New Faces at NWS Corpus Christi

Two new interns will join NWS Corpus Christi this summer. Christina Barron will come on board in June and Jennifer Chase shortly after in July. Both will serve on the public service and upper air desk and you will likely talk to one of them or our two newest SCEPs (next page) when you call into NWS Corpus Christi. Welcome Christina and Jennifer!



Christina Barron

Christina Barron is a recent graduate from Texas A&M University with a Bachelors Degree in Meteorology. Coming from a family full of Longhorns, she had survived the last four years of taunting everytime Thanksgiving came around (although, a couple of times the taunting did die down for a short while...hmm, she wonders why). She grew up in the small town of Palestine located in East Texas and lived there her whole life. She loved weather for the longest time and by the sixth grade figured out what she wanted to do with the rest of her life: become a professional sky-diver. She's joking. She wanted to become a meteorologist and had her heart set on it, and she knew she would have to work hard for what she dreamed. While at Texas A&M, she had learned the meaning of pulling an all-nighter, how to survive on Ramen noodles and to always have quarters handy. She also met her best friends for life where they all helped each other during tough times, but created so many great moments that she will never forget. During her last years at Texas A&M, she was the WFO Austin/San Antonio SCEP student. Now that Christina has graduated, she am making her way as an Intern with the NWS Corpus Christi.



Jennifer Chase

Jennifer initially became interested in meteorology because of how much she enjoys weather-dependent sports. She is a professional kiteboarding instructor and she loves learning about how the sea-breeze forms. She also paraglides, surfs, snowboards, rock climbs, mountain bikes, and SCUBA dives, which have all helped spark her passion for this field. Other activities she enjoys include painting, drawing, playing Rugby and Lacrosse. Jennifer was on the UCLA Women's Rugby team for three years and the Lacrosse team for one year. She grew up in Lake Forest, Orange County, then she went to UCLA, where she is graduating from this June. Jennifer will joining the NWS Corpus Christi in July.



Staff Spotlight

NWS Corpus Christi Welcomes Newest SCEPs

Amanda Fanning and Beth Tilley are the NWS's newest SCEPs. In the SCEP program, the NWS teams up with a college or university to allow students the opportunity gain valuable work experience under the guidance and direction of a university. Full-time students alternate semesters between SCEP work with the NWS and attending classes at the university. College credit may be given for work with the NWS. To be eligible for the SCEP program, a student must be working toward a degree that would qualify them for full-time employment with the NWS upon graduation. Amanda and Beth will both be working at NWS Corpus Christi as they head into their senior years at Texas A&M. Welcome Amanda and Beth!

Amanda Fanning

Howdy! Amanda was born in St. Petersburg, Florida, where she lived for 14 years. She moved to Corpus Christi in June 2001 where she finished her last 3 years of high school at Mary Carroll High School. She participated in swimming and various clubs. She went into engineering at Texas A&M University and eventually wound up in radiological health engineering. Finally, after 2 years of that she saw the light and switched her major to meteorology! Amanda plans on graduating May 2009. Amanda is looking forward to an exciting summer at the NWS Corpus Christi in the Student Career Employment Placement Program.



Beth Tilley

Beth was born and raised in Corpus Christi, TX. She participated in volleyball, cross country, and track and graduated number 4 from King High School. Beth is also very involved in her church. She loves learning about God, singing, acting, taking pictures, and being active. Beth started out engineering at Texas A&M University, College Station. She enjoyed the math and physics courses, but not so much the engineering. While looking the school catalog for associated majors, she stumbled across meteorology and switched her major to meteorology. She will graduate in May 09. She loves meteorology courses and have been enjoying learning hands on during her time as a Student Career Employment Placement (SCEP) Program in Corpus Christi.

Office Departures

Audrey Flores was a student volunteer at the NWS Corpus Christi where she provided the staff with critical and historic hurricane history, including research on the 1919 hurricane that effected the Southern Coastal Bend. Audrey is currently employed as a Library Assistant III at Texas State University in San Marcos, Texas. However, she is originally from Corpus Christi, Texas, where she attended Texas A&M University-Corpus Christi. While at Texas A&M University-Corpus Christi, she received her Bachelors degree in history and her Masters degree in Environmental History. Her thesis titled, "Environmental History on the Texas Gulf Coast: The Disappearance of the Port Town of Indianola," investigated the manner in which urbanization and development overshadowed a person's perception of their natural surroundings. Today, she continues to explore other aspects concerning hurricanes and the Texas Coast.

NWS Corpus Christi Snapshots in the Community



Ella Barnes Elementary Science Day



Ella Barnes Elementary Science Day



NOAA P-3 Hurricane Hunter Tour at CC International Airport



Texas International Boat Show Weather Support



MK-III Weather Station Deployed at CCIA Triennial Exercise



NASA Scientist Presentation at WFO CRP on SPoRT Partnership



Corpus Christi Resident Captures Video of Tornado on March 6th Over the Pope Place Neighborhood



NWS CRP Meteorologists, C.C. Emergency Manager & CCPD Map Out Path of Tornado on March 6th



NWS CRP Meteorologists Capture Picture of Funnel Cloud Directly Over CC Intl Airport on March 6th

2008 Summer STWJ Team:

Jason Runyen, Fcstr
John Metz, WCM
Greg Wilk, Lead Fcstr
Scott Cordero, MIC

Ron Morales, SOO
Tim Tinsley, Lead Fcstr
Tony Merriman, Fcstr

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