South Texas Weather Journal

NWS Corpus Christi, TX Summer 2014 Edition

Special points of interest:

- Did you know that typically the peak time for severe hail in South Texas is between 4:00 PM and 8:00 PM?
- Will El-Niño occur this year?
- Learn all about the new Potential Storm Surge Flooding maps.
- Gear up, the Hurricane Season is Here!

Inside this issue:

Area School Kids Get a Closer Look at the P-3 Hurricane Hunter Aircraft

On Monday, May 19, 2014, the P-3 Orion Hurricane Hunter Aircraft was on display at the Corpus Christi International Airport as part of the 2014 Gulf Coast Hurricane Awareness Tour.

Nearly 800 students from schools across the Coastal Bend had a once-in-a-lifetime opportunity to meet the flight crew and tour the aircraft that flies into the eye of hurricanes to provide cutting edge research and critical meteorological information necessary for hurricane forecasting.

Upon arrival, students were greeted by National Weather Service Meteorologists from the Corpus Christi office and given a briefing about the hurricanes hazards and forecasting, and the P-3 aircraft.

After the briefing, students boarded the P-3, visited with the flight crew, learned about the high tech aircraft, and asked numerous questions.

They then had an opportunity to visit with other static displays, such as the US Coast Guard Helicopter, NAS Corpus Christi Fire & Emergency Services Public Education Trailer, City of Corpus Christi fire truck and mobile command post, and the AEP bucket truck. All of these partners and static displays are put to the test during a hurricane landfall.

By: John Metz—WCM

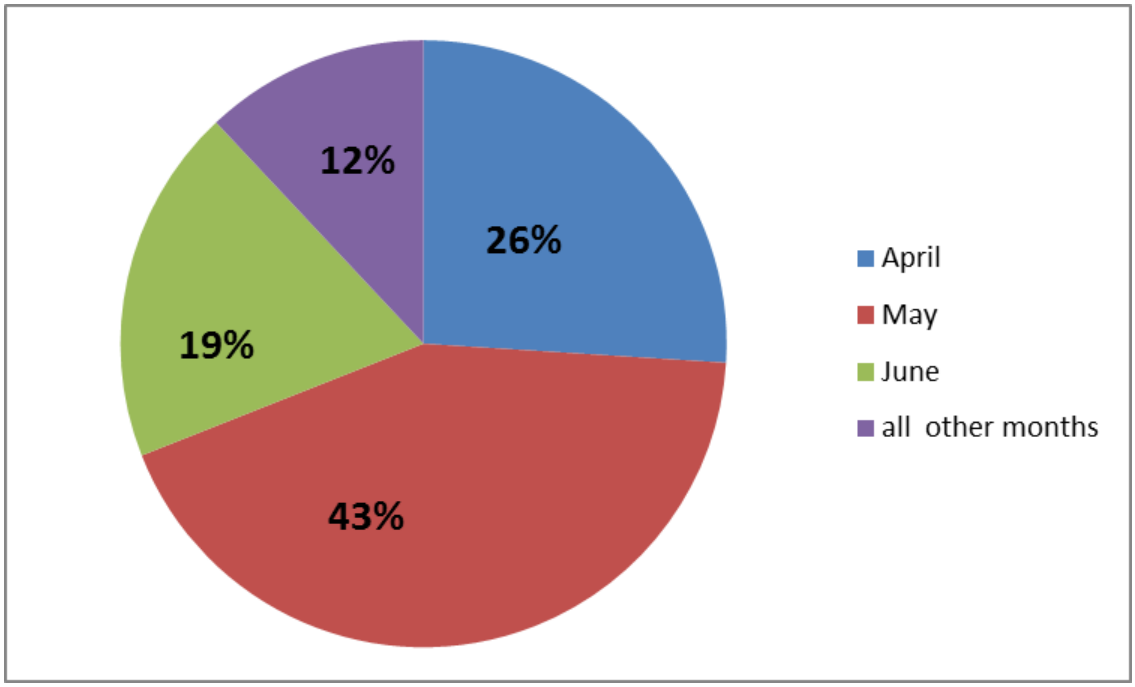
A LOOK BACK

South Texas Severe Hail and Wind Climatology

Juan Alanis—Student Volunteer

It has been a relatively quiet severe weather season across South Texas so far this spring. To date*, there have been 13 severe weather reports in our region, which is well below the average of 40 severe reports.

This year's activity included a severe thunderstorm on April 4th that moved through portions of Jim Wells County. The storm produced straight line winds of 65 to 70 mph and hail up to 2 inches in diameter and caused damage in the town of Orange Grove. Then on May 9th, a complex of thunderstorms moved into the Laredo area from Mexico. This storm produced wind gusts of 66 mph in Laredo. The high winds snapped trees and power lines and blew an 18-wheeler cargo truck on its side on a Laredo freeway overpass. The winds also damaged gas station canopies.

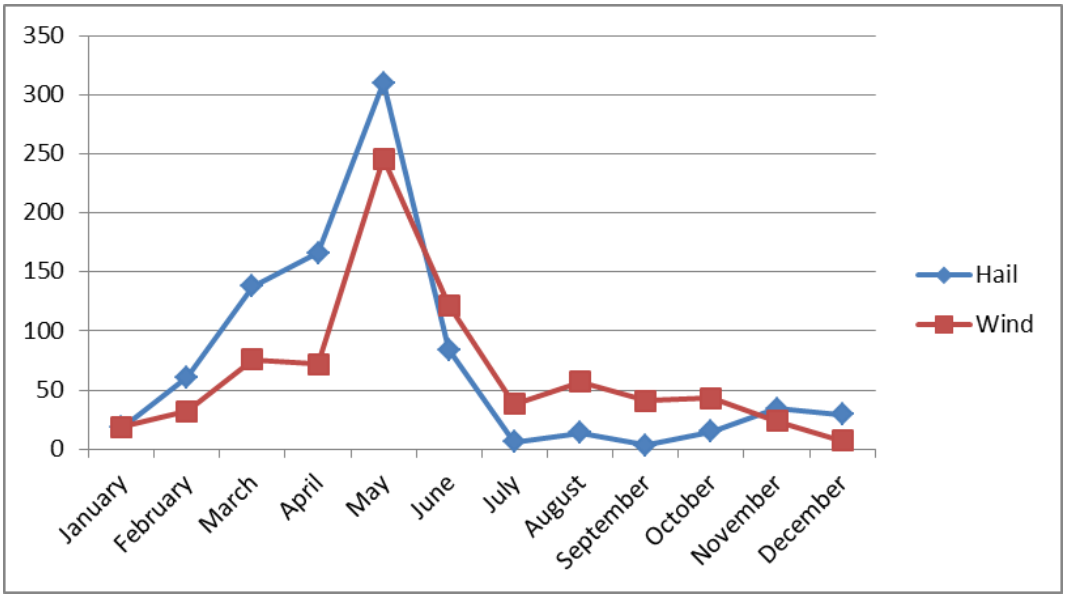


Percentage of reports of 2 inch hail or larger by month since 1955

The timing of these severe weather episodes is right on the mark climatologically speaking. A closer examination of local severe weather archives since 1955 shows that severe wind (winds of at least 58 mph or higher) and severe hail (hail of 1 inch diameter or larger; ¾ inch prior to 2010) are most likely to occur during the months of April, May, and June. Since 1955, there have been 878 reports of severe hail in our forecast region, with 54% of those occurring in the months of April and May. July was the least active month with only 6 hail reports since 1955. Severe wind reports are also most likely in the month of May, with nearly 33% of the year's total severe wind reports. June has the next highest percentage of reports with 17%. December is the least active month for severe winds.

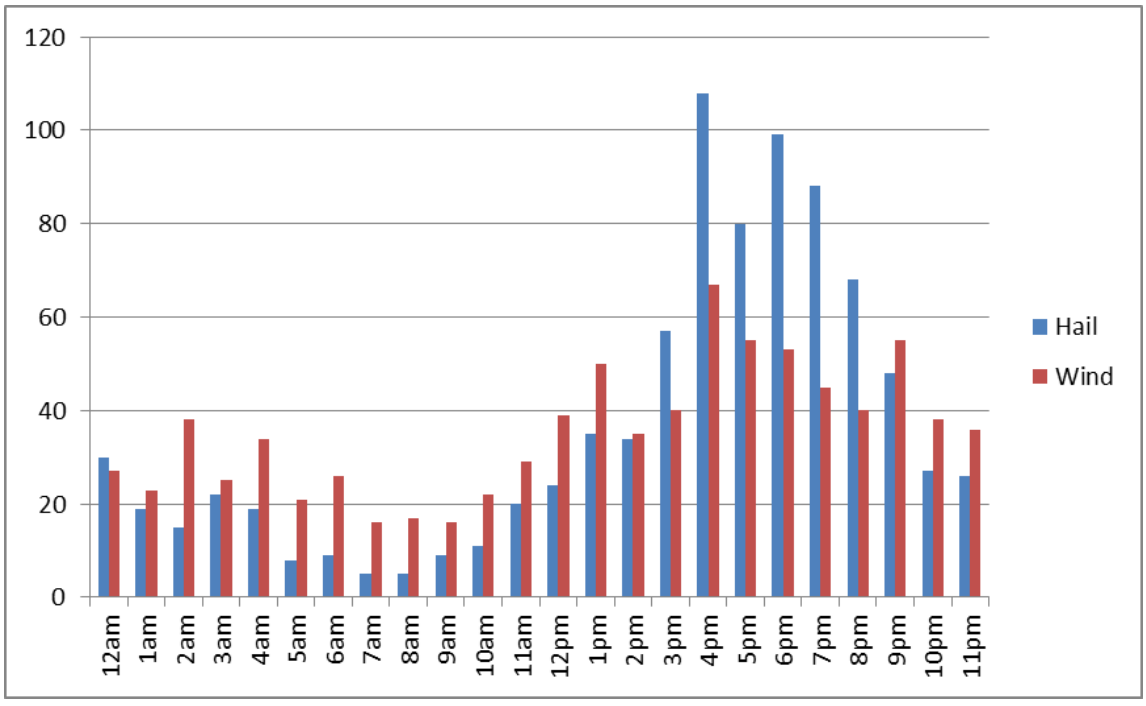
**Study period valid through May 10, 2014*

A further analysis of the archives reveals that very large hail (2 inch diameter or larger) is most likely to occur in the months of April and May. From 1955 to 2012, there were a total of 39 reports of very large hail, with nearly 70% of these large hail reports occurring in April and May. These large hail stones have been concentrated in specific counties. Webb and Jim Wells counties experienced 10 very large hail reports since 1955 while Duval and Victoria Counties experienced 4 such reports.



Severe weather reports by month since 1955.

While the large majority of severe weather reports occur in April, May and June, it must be stressed that no month of the year or time of day is immune from severe hail or severe wind. Severe hail and severe wind have occurred every hour of the day. The late afternoon hours from 4:00 PM to 8:00 PM are typically the peak time for severe hail in South Texas. The overnight and morning hours are locally the least active for severe weather. The April 4th, 2014 Orange Grove storm is the most recent case of severe weather outside the "typical" hours, as 2 inch hail struck at 4:00 AM. Severe wind reports are more evenly distributed than severe hail and typically peak between 1:00 PM and 9:00 PM.



Severe weather reports by hour since 1955

LOOKING AHEAD

El Niño Watch in Effect: Will El-Niño Occur (And End the South Texas Drought) or Will There Be A Repeat of 2012?

Greg Wilk—Lead Forecaster

In the equatorial Pacific Ocean, sea water temperatures are expected to warm to above normal levels over the next several months. Because of this, the Climate Prediction Center (CPC) has issued an El-Niño Watch. Officially, an El-Niño 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) for five consecutive three-month (running average) intervals. CPC says that there is a 65% chance that El-Niño conditions will develop this summer, with the probability of El-Niño occurring increasing to nearly 80 percent by the end of 2014.

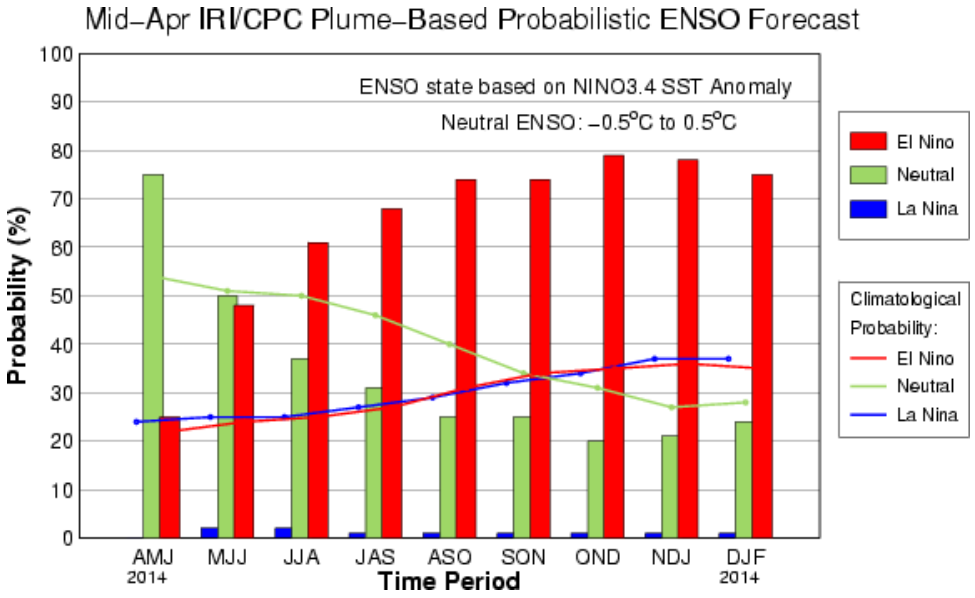


Figure 1: Probability of El-Niño (in red), La Nina (in blue), and Neutral conditions (green) occurring in each three month period. Note that the El-Niño probability exceeds 60% during the June-July-August (JJA) time period, and to near 80% by the end of the year (OND/October-November-December).

Climatologically, an El-Niño will provide above normal rainfall during the late fall and winter, as more upper level storm systems tend to impact South Texas. On the other hand, an El-Niño event during the summer months tends to curtail organized tropical activity in the Atlantic Basin, since upper level winds tend to be stronger during El-Niño. Thus, rainfall could become less frequent (and below normal) during El -Niño summers. For South Texas, the best case scenario (at least concerning rainfall accumulations) would be for El-Niño to develop sometime in mid or late September and continue through the first few months of 2015. This scenario would provide the best chance for above normal rainfall over South Texas during the upcoming fall and winter. In fact, seasonal outlooks through the winter of 2015 bear this out (see Figure 2).

The fact that an El-Niño Watch is in effect does not mean that an El-Niño (and above normal rainfall) is

inevitable. Similar to a the meaning of a watch for severe weather or flooding, an El-Niño watch means that conditions are favorable for the development of El-Niño over the next several months (and not that El-Niño is imminent or occurring). If and when El-Niño occurs, CPC will issue an El-Niño Advisory, indicating the strength of the event (weak, moderate or strong), and the forecast duration of the event.

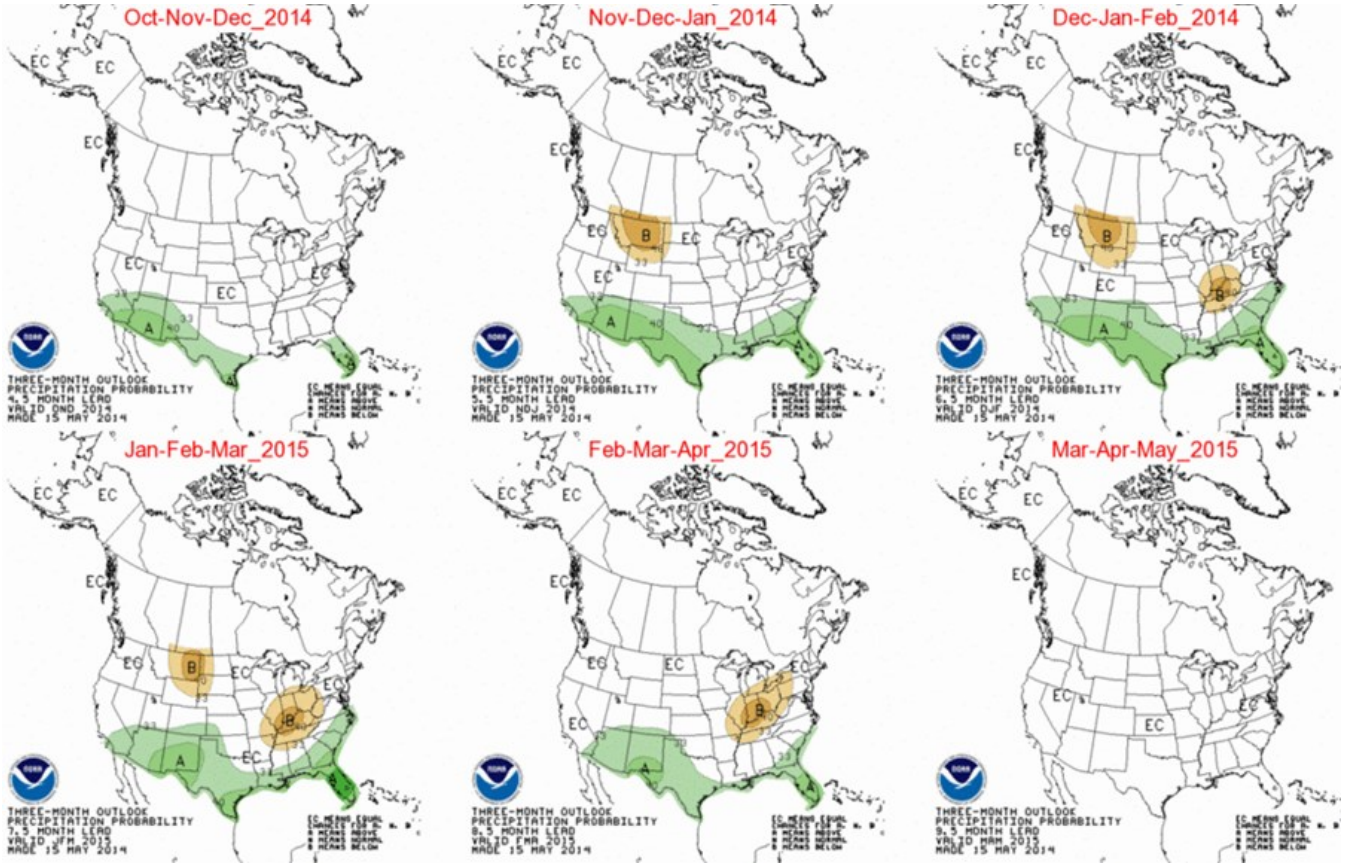


Figure 2: Seasonal rainfall outlooks for the periods October-November-December 2014 through March-April-May 2015. The green on the map indicates areas with a greater likelihood for above normal rainfall during the specific three month interval.

You may recall that an El-Niño Watch was issued by CPC in June 2012, with El-Niño conditions expected to develop by the late summer or early fall of 2012. Rainfall outlooks for the end of 2012 and the beginning of 2013 were predicting a greater likelihood for above normal rainfall over South Texas. Eventually, equatorial Pacific sea surface temperatures (SSTs) rose above the +0.5 °C for one three month interval (September-October-November), but did not meet the three month or more criterion needed for an official El-Niño event. By December 2012, ENSO (El-Niño/Southern Oscillation) neutral conditions were observed, and the watch was cancelled. Unfortunately, rainfall over South Texas from August 2012 through April 2013 was well below normal (when El-Niño conditions were expected).

So what is the moral of the story? South Texas residents should not assume that above normal rainfall is coming because an El-Niño watch is in effect. Long-term outlooks calling for above normal rainfall are not a guarantee that above normal rainfall will occur. Hopefully, what occurred during 2012 does not happen in 2014, and South Texas receives above normal rainfall by the end of the year, finally ending the long-term drought which has plagued the area since 2011.

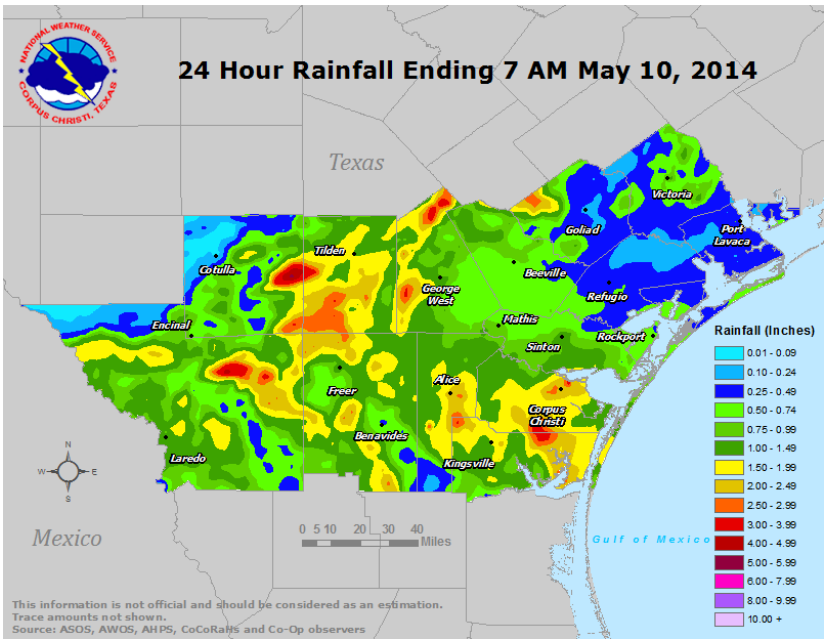
ON THE WEB

Graphical Weather Review

Mike Buchanan—Science and Operations Officer

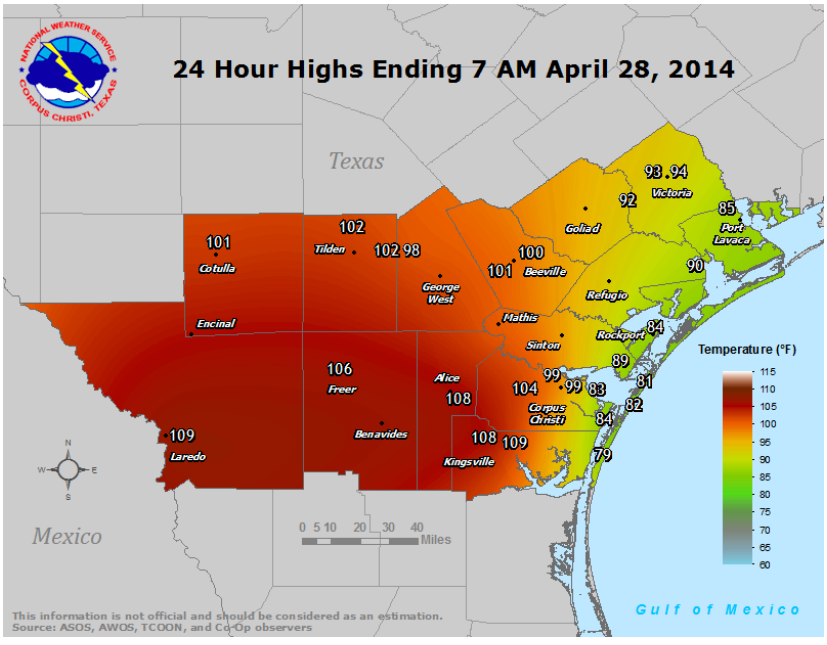
On February 5, 2014, an experimental web page called *"Graphical Weather Review"* was launched. The web page was the result of many months of hard work by the GIS Team at the National Weather Service in Corpus Christi. The URL is as follows:

http://www.srh.noaa.gov/crp/graphicalweather.php



The web page depicts 24-hour observed rainfall amounts, 24-hour observed high temperatures, and 24-hour observed low temperatures ending at 700 AM local time. Static PNG images and KMZ files are available on the web page. An archive of observed rainfall images (accessible via a drop-down Calendar interface) goes back as far as October 24, 2011. The archive of observed temperatures goes back as far as August 13, 2013.

The merging of local rain gauge reports and AHPS rainfall data serves as the main sources of observed rainfall data that go into the production of the rainfall maps. ASOS, AWOS, TCOON and Cooperative observations are all merged to form the basis for the temperature maps. Multiple requests for this data to be packaged as a Web Map Service (WMS) have been made and will be looked at in the future.



The procedures to produce monthly observed rainfall, monthly observed departure from normal rainfall, and monthly observed percent of normal rainfall will be finalized this summer. These graphics will also be accompanied by monthly normal rainfall maps for comparison purposes. Also, the same previously mentioned rainfall data will be forthcoming for a yearly time frame. Stay tuned!

How High will the Tidal Surge Rise at My House During a Landfalling Hurricane?

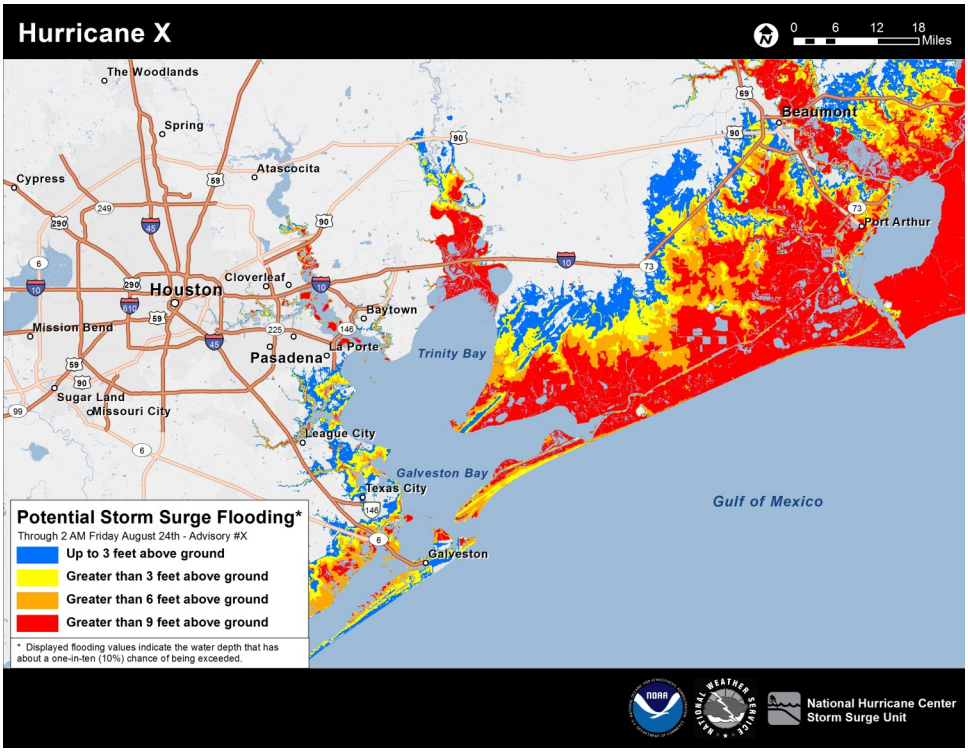
John Metz—Warning Coordination Meteorologist

Storm Surge is the rise in tide on the leading edge of a hurricane, and is often the greatest threat to life and property. This large dome of water is driven ashore when the tropical cyclone makes landfall. The combined force of the heavy weight of the water and wind driven waves can tear coastal structures apart. Unfortunately, many people do not understand Storm Surge and the threat it represents.

Starting in 2014, the National Hurricane Center (NHC) will issue a product called the Potential Storm Surge Flooding map. This map will more clearly illustrate areas where storm surge is possible for a given storm.

Developed over several years the map will show:

- Land areas where storm surge could occur based on the latest NHC Forecast.
- How high above ground the water could reach in those areas.
- NHC will update the map every six hours in association with each full forecast advisory package.



The map will typically be issued when a hurricane or tropical storm watch is first issued for any portion of the Gulf or East Coast of the United States, or approximately 48 hours before the anticipated onset of tropical storm force winds. The map represents a reasonable estimate of worst-case scenario flooding of normally dry land at particular locations due to storm surge. Keep in mind however, that there is still a 1-in-10 chance that the storm surge flooding, at any particular location, could be higher than the values shown on the map.

Hopefully this new map won't be needed this season, but if it is, you be better informed on the potential impacts at your location!

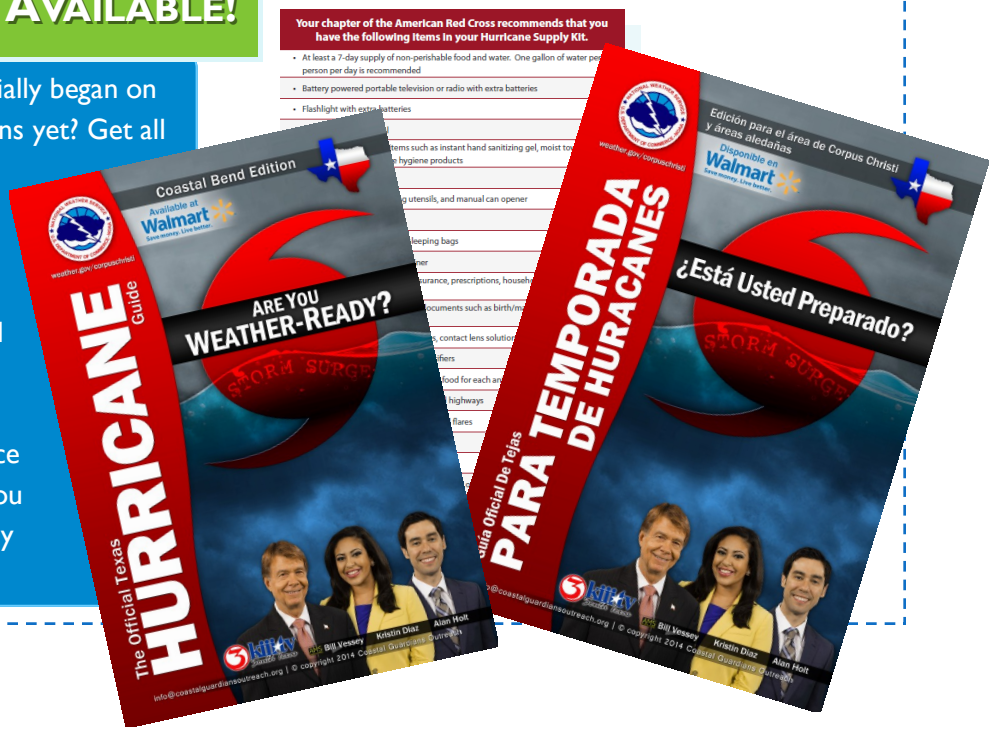
EVENTS, OUTREACH, & MORE

Local School Children Participate in the 2014 National Weather Service "Be Prepared" Hurricane Art Contest

The National Weather Service in Corpus Christi recently sponsored it's 2nd annual "Be Prepared" Hurricane Art Contest for local 4th and 5th grade kids. The top five finalists, including the winner, were all presented with awards by meteorologists Bill Vessey and Jason Runyen in a ceremony at the USS Lexington. The winner's drawing is featured in this year's version of the 2014 Coastal Bend Edition of the Official Texas Hurricane Guide. Congratulations to these five students!

HURRICANE GUIDES NOW AVAILABLE!

The 2014 Atlantic Hurricane Season officially began on June 1st! Have you made your preparations yet? Get all the key information you need to know about putting together your hurricane supply kit, insurance tips, setting your evacuation plan, local storm surge maps, and much more in the 2014 Coastal Bend Edition of the Official Texas Hurricane Guide. You can pick up one of these free guides in English or Spanish from our office or at local area Walmarts. Plan now so you can take action before it is too late. It only takes one!



HURRICANE SEASON IS HERE! Schedule Your Hurricane Talk Today!

A total of 63 hurricanes have struck the Texas coast alone since 1851. That is an average of one nearly every three years! No place along the coast is immune to being struck by a tropical system. Schedule your Hurricane Preparedness talk today for your community, group, or club to learn more about Texas hurricane history, threats and safety tips, and what actions you need to take before, during, and after a hurricane! Contact NWS Warning Coordination Meteorologist John Metz for more information on scheduling this talk today! Plan, Prepare, Act!

Email: John.Metz@noaa.gov
Phone: 361-289-0959 ext. 223

Hurricane Celia 1970

STAFF SPOTLIGHT

Lead Forecaster Jason Runyen Departs from NWS WFO Corpus Christi

NWS WFO Corpus Christi will be losing a valuable staff member as lead forecaster Jason Runyen transfers to WFO San Antonio to serve as a lead forecaster. Jason first came to Corpus Christi (from the Lubbock office as an intern) in February 2003 as a journeyman forecaster. He was later promoted to a senior forecaster position in January 2011. His excellent leadership qualities, tremendous work ethic, and utmost service to this agency and our customers and partners are just some of Jason's legacy at this office. He always excelled with a high level of professionalism over the years in programs which he led such as Fire Weather, DSS, SKYWARN, Storm Data, Outreach, Severe Weather, Foundational Training, Storm Survey, and Union Steward. Jason will be making this move with his wife, Dorothy, later this month. Jason will be greatly missed at our office, but we wish him the best as he makes his new home to our north.

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