



# South Texas Weather Journal



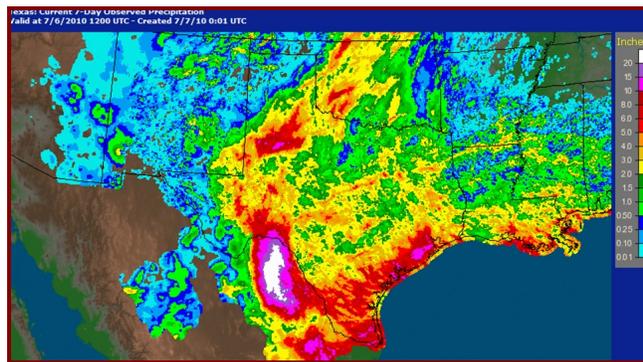
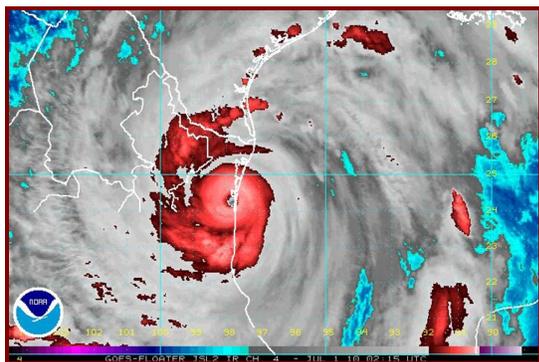
NWS Corpus Christi, TX

2010 Fall Edition

## Wettest Water Year on Record for South Texas and New Flood Crest on the Oso Creek

By Alex Tardy - Science and Operations Officer

The water year, defined as October 1, 2009 through September 30, 2010, was the wettest on record for Corpus Christi and much of South Texas. Corpus Christi International Airport recorded 52.53 inches. Heavy rains began in September 2009, following the record drought and heat wave. There were many significant rain events during the winter of 2009-10 including: 12 inches in Rockport on November 20<sup>th</sup>; 6 to 8 inches on the Coast January 14-15<sup>th</sup>; widespread heavy rain February 4-5<sup>th</sup>; 22 inches in Calliham; 5 to 8 inches in Orange Grove and Alice between April 12-17; widespread 5 inches in the city of Victoria on May 14<sup>th</sup>; several inches of rain from Hurricane Alex and Tropical Depression #2 between June 29<sup>th</sup> and July 9<sup>th</sup>; Tropical Storm Hermine from September 6 to 7<sup>th</sup>; and finally 6 to 10 inches of rain in Corpus Christi which produced record flooding on Oso Creek.



(Left) Hurricane Alex making landfall in northern Mexico on June 30, 2010. Alex was the strongest Atlantic Basin hurricane in the month of June since 1966 and the first since 1995.

(Right) One week rainfall through July 6, 2010. Remnants of Hurricane Alex brought 10 to 20 inches of rain to Mexico and resulted in historical flooding on the Rio Grande.

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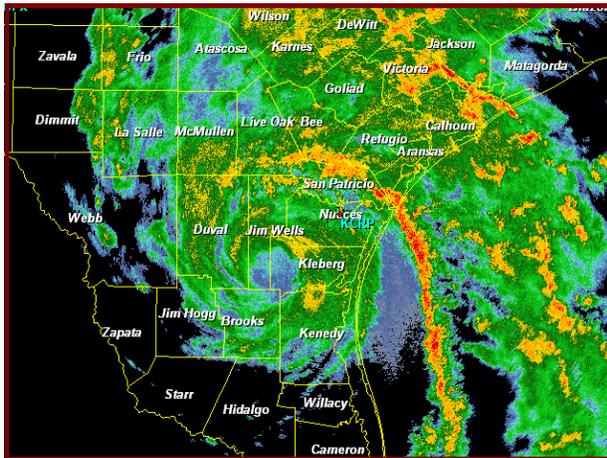
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The heavy rain was beneficial to the water supply system, filling Lake Corpus Christi by April and near 90 percent capacity at Choke Canyon reservoir. The heavy rain delayed some crop planting during the late winter, but resulted in successful cotton and sorghum crop by late summer. Unfortunately, the torrential rains in April and September 2010 resulted in fatalities when automobiles were swept into swift flowing waters. Flash flood related fatalities are the number one weather related deaths in Texas, other than from tropical cyclones. The National Weather Service continues its campaign of "Turn Around Don't Drown".

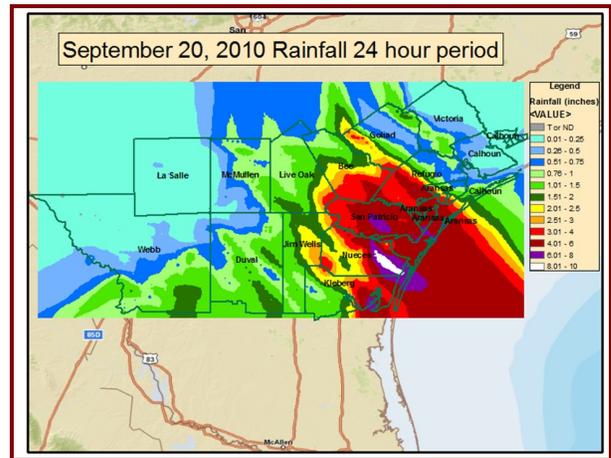
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# RECORD RAINFALL (CONTINUED)



(Above) Radar image of Tropical Storm Hermine passing west of Corpus Christi on September 7, 2010.



(Above) 24 hour rainfall valid at 7 am CDT September 20, 2010. Map courtesy of Andrew Kennedy and Jaclyn Jackson's GIS collaboration project with Del Mar College. Moisture well north of Hurricane Karl brought torrential rain to the Coastal Bend.

The excessive rain in Corpus Christi between September 19 and 20<sup>th</sup> 2010, resulted in major urban flooding and a new record crest level on the Oso Creek at 30.63 feet on September 20<sup>th</sup>. This surpasses levels from major flooding with Hurricane Allen in 1980 and thunderstorms in 2004. Total rainfall for the month of September at Corpus Christi was 15.86 inches, shy of the 20 inches that occurred in 1967, largely from Hurricane Beulah. Ironically, the month of October was the driest on record for Corpus Christi, Laredo and Victoria when all 3 sites measured 0.01 inches or less!

### Historical Crests on Oso Creek

- (1) 30.63 ft on 09/20/2010
- (2) 29.37 ft on 08/10/1980
- (3) 28.40 ft on 04/26/2004
- (4) 26.50 ft on 10/13/1997
- (5) 25.82 ft on 04/03/1997
- (6) 25.65 ft on 07/05/2007

### September Highest Total Precipitation (inches) Years: 1850-2010

- (1) 20.33 9/30/1967
- (2) 15.89 9/30/1928
- (3) 15.86 9/30/2010
- (4) 14.54 9/30/1951
- (5) 13.80 9/30/1922

### Highest Total Precipitation (inches) Days: 10/1 - 9/30 water year Years: 1850-2010

- (1) 52.53 9/30/2010
- (2) 49.21 9/30/1889
- (3) 46.70 9/30/1992
- (4) 45.47 9/30/1961
- (5) 44.94 9/30/1970



(Above) Record flooding of Oso Creek on September 20, 2010.



(Above) Vehicles traveling through high water at the intersection of Holly Rd and Crosstown Expressway on September 20, 2010.



# A LOOK AHEAD

## Could Another Drought be on the Way?

By Matt Grantham - Meteorologist Intern

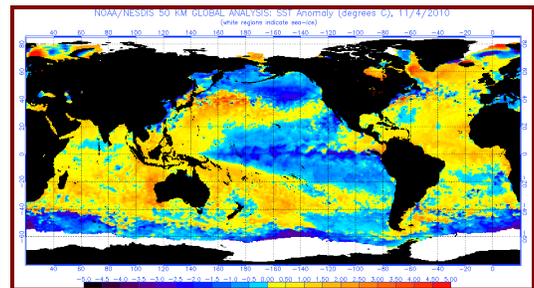
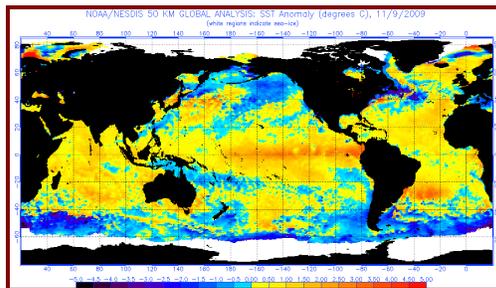
On the heels of a moderate to strong El Nino last winter, there has been a recent dramatic shift towards cooler sea surface temperatures across the equatorial Pacific Ocean. La Nina developed during the summer of 2010, and this episode is already more intense than the previous one which reached its peak in January 2008. The impacts from the La Nina of 2007-2008 were very pronounced across South Texas, and there is a high chance that similar conditions will prevail this winter.

So what is La Nina? La Nina is characterized by cooler than normal water temperatures across the equatorial Pacific Ocean. This occurs when unusually strong easterly trade winds push warmer water into the western Pacific. This allows the cold Humboldt Current to flow westward from the coast of western South America. These conditions usually develop and strengthen during the summer, reach a peak in December or January, and last through the early spring. The atmospheric response to this change is not instantaneous and may take several months to occur. The most pronounced effects on the weather pattern across the United States are noted during the winter.

November 2009

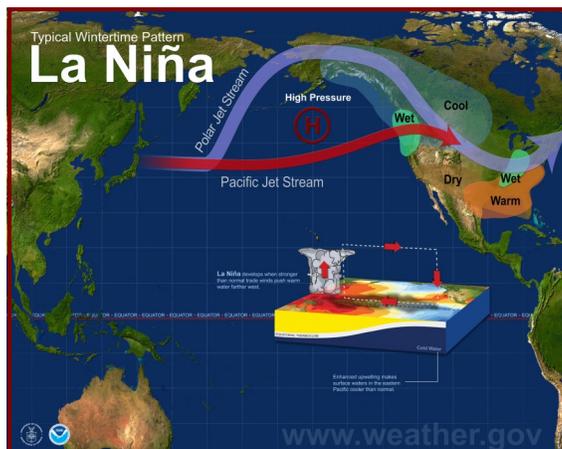
November 2010

(Right) Sea surface temperature anomalies from November 2009 compared to November 2010. Note the large blue area across the equatorial Pacific representing much cooler than normal water temperatures and La Nina conditions.



What are the typical impacts of La Nina on the weather pattern? For South Texas, La Nina normally produces effects that are opposite of those seen during El Nino. A strong and active sub-tropical jet stream takes shape during El Nino and brings enhanced clouds and precipitation to South Texas and other southern states. With La Nina, the southern jet stream is effectively shut off, and the Pacific jet stream shifts to the north over Washington and southern Canada. Storm systems are less likely to affect South Texas in this type of pattern where the jet stream displaced far to the north. As a result, warmer and drier than normal conditions are likely to prevail during the winter.

For the winter of 2010-2011, the forecast for South Texas includes warm and dry weather. With a strong La Nina already in place, confidence is higher than average in the winter forecast. The previous La Nina, observed in the winter of 2007-2008, led to the start of an extreme drought across South Texas. As quickly as El Nino alleviated the drought during the first half of 2010, drought conditions are forming once again. La Nina has taken a firm hold on the pattern, and there is a good chance that South Texas will be in another drought for at least the first half of 2011.



(Left) Typical La Nina Wintertime Pattern.

(Below) 2010-2011 NOAA Winter Temperature and Precipitation Outlook.





# FIRE WEATHER

## Active Fire Season Expected Across South Texas

By Jason Runyen - Journeyman Forecaster

There is growing concern about the potential severity of the upcoming winter and spring fire season across South Texas. After the winter and spring of 2009/2010 saw a break in active fires due to wet conditions, it is likely we will see an active upcoming fire season, peaking during the early spring of 2011. This will likely include days in which fire behavior becomes critical to possibly extreme.

The cause of concern includes increased fuel loading across the region and La Niña conditions that will persist into early 2011. The increased fuel loading, especially with finer grasses, is the result of above normal rainfall across South Texas in 2010. In particular the months of April, June, July and September saw precipitation well over 200% of normal across much of the region. The increased loading provides a continuous coverage of finer fuels across the surface that makes it easier for fires to spread. Fire intensities can also be expected to increase with above normal loading, and exhibit a higher resistance to control requiring additional resources for effective containment.

Increasing the concern are La Niña conditions that have developed and will persist through the winter months and into early 2011. This favors drier and warmer conditions through early spring over South Texas, allowing fuels to continue to dry through the late fall and become dormant over the winter. Many frontal passages during the early Spring could remain dry, with low relative humidity and gusty winds behind them, weather conditions that favor critical fire behavior with dry fuels.

The National Weather Service will issue Red Flag Warnings on days in which low relative humidity and gusty winds combine with dry fuels to support a high fire danger. On average, the peak of the Red Flag season across South Texas usually occurs between February and April.

Considering the active fire seasons that resulted from the La Niña winters of 2006, 2008, and 2009, it is likely that 2011 will be similar to those years.

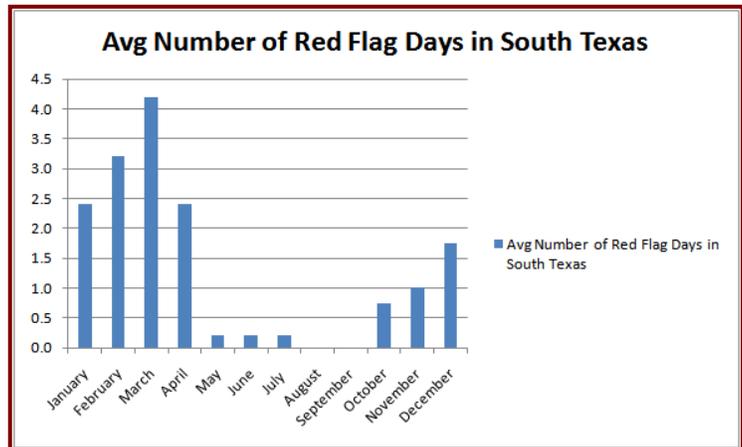
Critical fire danger and fire weather thresholds can be monitored from the Texas Forest Service's Predictive Services Web Page at:

<http://ticc.tamu.edu/index.html>.

National Weather Service Fire Weather forecasts for South Texas can be monitored at:

<http://www.srh.noaa.gov/crp/?n=firewx>

*(Right) Burn scar from a wildfire that occurred on April 2, 2009. Over 30 homes were destroyed in Lagarto, near Lake Corpus Christi.*



*(Above) Average number of Red Flag days in South Texas per month.*



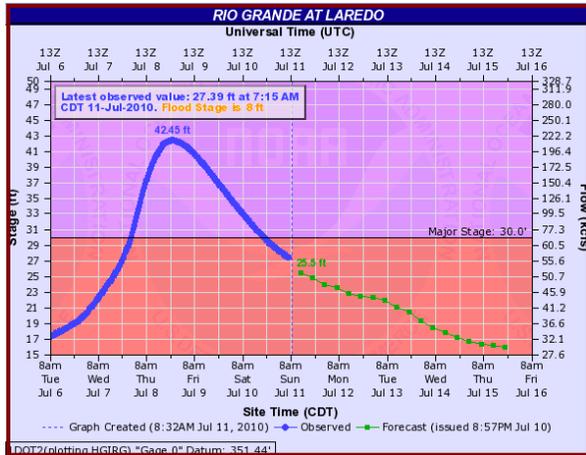


# RIO GRANDE FLOODING

## Historic Flooding on the Rio Grande at Laredo

By John Metz - Warning Coordination Meteorologist

The remnants of Hurricane Alex brought a large area of 10 to 20 inches of rain to the upper Rio Grande basin and mountains from July 1 to July 5, 2010. The Rio Grande Valley of Mexico and Texas also received widespread rainfall amounts of 3 to 7 inches, contributing to the inflow to the Rio Grande. During the period July 8 to 9, 2010 another tropical cyclone, Depression Number 2, brought additional significant rainfall to South Texas and the Rio Grande Basin, but its contribution was much less significant.



The excessive rainfall inundated the tributaries to the Rio Grande and resulted in large releases to the water storage system. A large flood wave was tracked from Del Rio to Eagle Pass and set new record river crest levels when it reached Columbia Bridge and Laredo between July 8 and 9th. The Rio Grande crest of 42.45 feet surpassed the 35-foot reading recorded after Tropical Storm Charley in August 1998 and the 39-foot flood crest of late June 1971, both of which many long-time residents recall as major flooding. The all-time record at Laredo is 62.48 feet recorded on January 1, 1965. At Columbia Bridge, a preliminary crest of 49.46 feet occurred July 8th.

Excessive runoff from the rainfall caused interior Mexico and International Boundary and Water Commission (IBWC) reservoirs to conduct significant releases. The pool elevation at Amistad Dam rose over 15 feet, which was 12 feet above conservation pool levels. This reservoir began releasing 35,000 cubic feet per second, the largest release from the dam since 1974.

*(Above) Observed river stage from the Rio Grande at Laredo.*

The city of Laredo issued mandatory evacuation orders for several subdivisions along Chacon and Quail Creeks due to backwater effect from the Rio Grande. Other evacuations ordered included La Posada Hotel, Los Martinez and Cheyenne subdivision, Masterson Road, Allen street, Ventura and Vidaurri by Riverbanks. Road closures included Bridge 1, Columbia bridge, Meadow bridge, SH-359 at Ejido, US-83 at SH-359 and the Three Points area. At the peak of the flood all roads out of Nuevo-Laredo were closed.



*(Above) Flooding in downtown Laredo on July 8, 2010.*



*(Above) Flooding on Rio Grande River on July 8, 2010.*

# COOP CORNER

## Laredo Cooperative Observer Receives Holm Award

By Doug Vogelsang - Observing Program Leader

Richard “Heatwave” Berler was a recipient of the Holm Award during the 2009-2010 selection period. Mr. Berler has been the Cooperative Observer in Laredo, Texas for the past 25 years.

This award was named in honor of John Campanius Holm, a Lutheran minister who was the first person known to have taken systematic weather observations in 1644 and 1645 in the American Colonies. Each year, 25 Cooperative Observers nationwide are honored with the John Campanius Holm Award for outstanding accomplishments in the field of cooperative observations.

Known to most people simply as “Heatwave”, Mr. Berler has consistently provided the National Weather Service with accurate and legible observations for two and a half decades. Mr. Berler has taken observations under extreme heat conditions, during flooding situations, as well as severe weather events that included large hail and damaging winds.

While being the “premier” on-camera meteorologist for the Rio Grande Plains in Laredo, Texas for KGNS-TV (an NBC affiliate), Mr. Berler is always the first one to report to duty at the news station to inform the public of hazardous or extreme weather conditions that are occurring, or is expected to occur. Mr. Berler has reported live and on camera during these dangerous events for over two decades.

In addition to his COOP duties, Mr. Berler has submitted studies to the National Weather Service in Corpus Christi with comparisons from the COOP data and the Laredo Airport data. The impeccable attention to detail, as well as the accuracy of these studies is mind boggling. He represents a person truly dedicated to his efforts to support the National Weather Service with the best data possible.

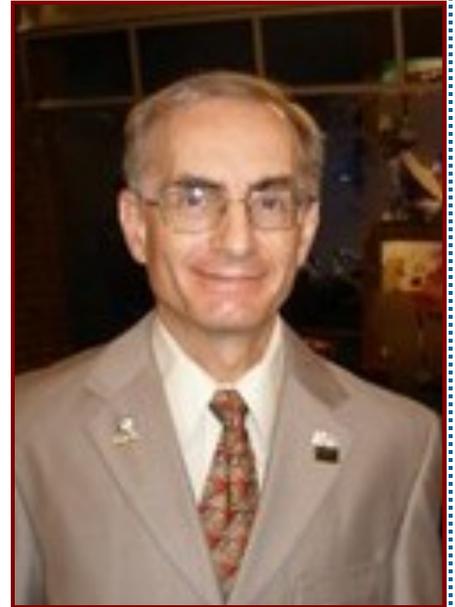
“Heatwave” understands the importance of keeping the weather equipment in good running order. When visits are conducted at his station, the equipment is always clean, and free of dirt or spider webs.

Mr. Berler has gone “beyond the call of duty” to gather information from other agencies, report accurate data in a timely matter, and save the lives and property of the citizens in his viewing area.

Mr. Berler is the “main weather source” for the community of Laredo and the surrounding area. He is “well respected” around the region, due in part to his unselfish acts and considerable knowledge of the weather. He provides the opportunity for the citizens to ask questions about the weather, as well as supplying the community with a wealth of weather-related information.

Mr. Berler is known for his kindness, generosity, and willingness to help others. He routinely gives talks to the community and schools on weather related subjects. In addition, Mr. Berler has been responsible for coordinating events that educate and enhance the community that are not weather related, such as fundraisers, non-profit promotions, and other social affairs.

Thank you “Heatwave” for a job well done!!!



*(Above) Meteorologist Richard “Heatwave” Berler*

*Photo courtesy: KGNS-TV Laredo, TX*



# NEW PRODUCT

## New Laredo Daily Climate Product

By Christina Barron - Meteorologist Intern

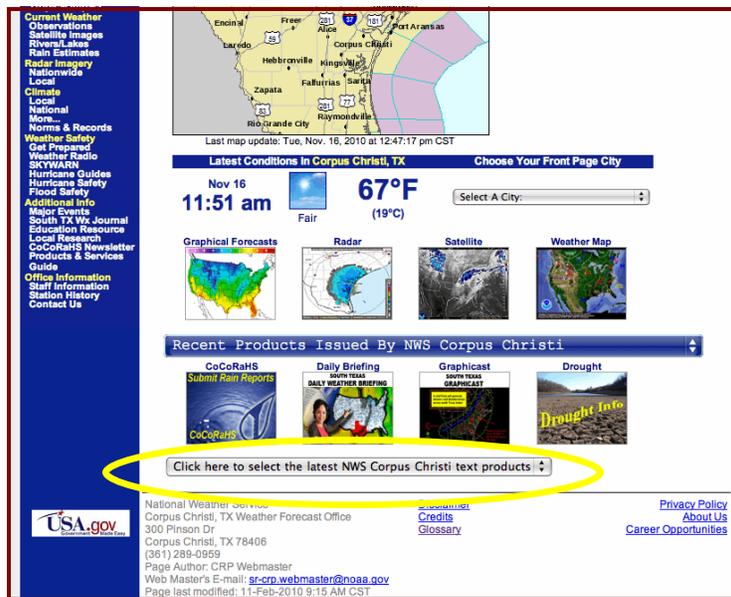
On October 1, 2010, the National Weather Service in Corpus Christi began issuing daily climate products for the city of Laredo. With the help of local meteorology guru, Richard “Heatwave” Berler, the NWS has been able to collect over 100 years of climatological data for Laredo to include records of heat waves, freezes, and rainfall amounts. This data has been compiled to also calculate Laredo’s daily and monthly normal temperatures and normal precipitation accumulation.

The daily product for Laredo will be issued twice daily, once in the morning for the previous day’s data, and once in the afternoon for the current day’s data. A monthly summary is also in development to give an overview of the previous month, however, this product is still in its beginning steps. All of this data has been quality controlled, but the new products will continue to remain preliminary and unofficial. The instrumentation that will be used to collect daily data is not under the control nor the maintenance of the National Weather Service.

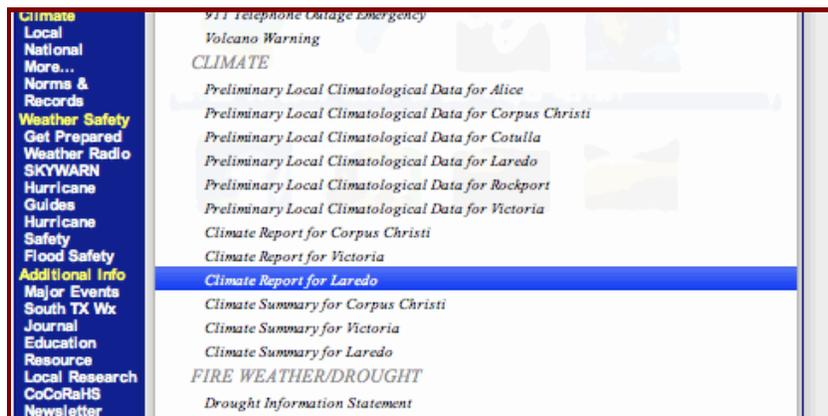
To find the products on the NWS Corpus Christi website:

Scroll to the bottom of the NWS Corpus Christi main web page

Click in the scroll box labeled “Click here to select the latest NWS Corpus Christi text products”



Under the CLIMATE section, click *Climate Report for Laredo*





# STAFF SPOTLIGHT

## Departure of Tony Merriman

By Scott Cordero - Meteorologist In Charge



Tony Merriman was a General Forecaster at the National Weather Service Office in Corpus Christi. He was promoted to a Lead Forecaster in Bismarck, North Dakota. In Tony's new position he will conduct a weather watch which involves interpretation of Doppler radar data and satellite imagery and the analysis of other meteorological and hydrologic data. He will provide weather advice and guidance to emergency managers at local and state levels during severe and hazardous weather situations. As a Lead Forecaster, Mr. Merriman will lead and coordinate WFO staff efforts and provide direction, guidance, instructions, and assistance to the shift staff.

Tony Merriman was the South Texas CoCoRaHS regional coordinator and was also a General Forecaster at the National Weather Service Corpus Christi Forecast Office. CoCoRaHS is a grassroots volunteer network of backyard weather observers of all ages and backgrounds working together to measure and map precipitation (rain, hail and snow) in their local communities. Tony was also instrumental in foundational training of new forecasters, interns and students that worked or volunteers at the office. Tony also worked with GIS graphic manipulation and utilization was a linchpin for Cooperative Observer Program. The National Weather Service (NWS) Cooperative Observer Program (COOP) is truly the Nation's weather and climate observing network of, by and for the people. Tony worked closely with South Texas volunteers to take temperature and rainfall observations on farms, in urban and suburban areas, in cities and on seashores.

Tony is originally from northern Indiana where he became interested in weather at age 5 when a tornado passed a few miles north of his house. Tony attended college at Indiana University in Bloomington, Indiana. During his time in college, he was an intern at WKJG-TV (now WISE-TV) in Fort Wayne and worked at the Northern Indiana National Weather Service Forecast Office. He graduated with a Bachelor of Science degree in Geography with a concentration in Atmospheric Science and a Minor in Mathematics.

Tony joined the National Weather Service Forecast Office in Corpus Christi in 2004, three months before the historic Christmas Eve snow event. He was an intern for a year and a half and was then promoted to a general forecaster in 2006. He became the South Texas CoCoRaHS regional coordinator during the summer of 2007 and left the region with over 250 observers within the South Texas region.

## Departure of Alex Tardy

By Scott Cordero - Meteorologist In Charge



The National Weather Service in Corpus Christi bids farewell and the best on a new adventure for our Science and Operations Officer, Alex Tardy. Alex served as the Science and Operations Officer from August 2008 to November 2010. Alex was in charge of facilitating meteorological training at the National Weather Service forecast office in Corpus Christi. He led the science and technology infusion to advance operational forecasting and the NWS goals for warning information. Alex was also highly involved with local research and collaborating with other agencies and universities on projects that may bring new procedures, applications and techniques to the operational environment. Alex is the science representative for the office and routinely gives presentations to a wide range of groups for preparedness or educational purposes.

Alex is departing our office for our nation's left coast to the beautiful climate of San Diego California in his new position as Warning Coordination Meteorologist. In his new position, Alex will serve as the principal interface between the National Weather Service in San Diego and Southern California partners who regularly utilize our agency's products and services. He will lead the effort to ensure their evaluation, adjustment, and improvement. Alex will be fully responsible for planning, coordinating, and carrying out area-wide public awareness programs designed to educate the public to ensure the mitigation of death, injury and property damage or loss caused by severe natural hydrometeorological events. He will also lead and coordinate the staff's efforts by providing direction, guidance, instructions, and assistance in the conduct of weather service operations.

Alex was born in Vermont and grew up in a rural town near Waterbury. Winters are long in Vermont, and alpine skiing is a great way to enjoy it. His interest in weather began as a skier in the volatile Vermont climate during his teens. Alex started his career in the NWS as an Intern at a network radar site in Volens, VA. There he operated a WSR-74S conventional radar which soon was replaced by Doppler. He then transferred to Burlington, VT where he finished his internship, developed as a forecaster and initiated research projects. Alex was then promoted to the weather forecast office in Sacramento, CA as a Journey Forecaster. Alex completed many research projects and papers in Sacramento and spent much of his free time in the Sierra Nevada on the ski slopes or enjoying the outdoors. Alex met his wife in Sacramento and was promoted to a Lead Forecaster in Salt Lake City. He had many focal point duties as a Journey and Senior Forecaster including those related to AWIPS, WSR-88D, and local modeling and research. Alex enjoyed the best skiing and snow in the country while living next to the Wasatch Range and also started a family. Alex left the snowy Wasatch Range for the moist, warm climate of the Coastal Bend.

Most of his free time is now spent raising two young kids, but he still finds time to enjoy the outdoors with the family, travel occasionally and making a skiing trips. Alex considers the weather a hobby and typically observes and follows it during his free time.

[www.weather.gov/corpuschristi](http://www.weather.gov/corpuschristi)

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