# South Vexes Weather Journal

WEATHER STATES

Spring 2009 Edition

Corpus Christi, Texas

Weather Forecast Office

# **Drought Conditions Worsen Over South Texas**

### Victoria Area and Northeastern Coastal Bend Now in Exceptional Drought Status

By Greg Wilk-Senior Forecaster / Hydrology Program Leader

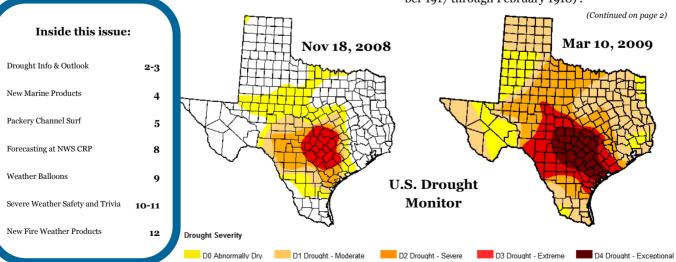
Most of South Texas has not experienced above normal rainfall since August 2008, with some coastal locations near Corpus Christi not receiving above normal rainfall since July 2008 (when Hurricane Dolly made landfall). However, what has made things worse is that rainfall has been well below normal, especially since November where more than half of the region received no more than 25 percent of their normal rainfall (and nearly all locations obtained no more than 50 percent of their normal precipitation).

The lack of rainfall, combined with warmer than normal temperatures through most of the period, has resulted in drought conditions worsening and spreading farther south and west. As of early March, exceptional drought conditions (the highest level of drought) now encompass all of Goliad, Victoria and Calhoun counties, and much of Refugio and Aransas Counties. Extreme drought conditions have pushed farther south and west, and now include Corpus Christi, Beeville, Sinton and

George West. The only area not yet in drought is the southwestern third of Webb County, including the city of Laredo. Thus, the drought has not only spread south and west since autumn, but worsened (to see how much the drought has spread, go to <a href="http://www.drought.unl.edu/dm/archive.html">http://www.drought.unl.edu/dm/archive.html</a> and select a previous date and the latest date for the Drought Monitor product).

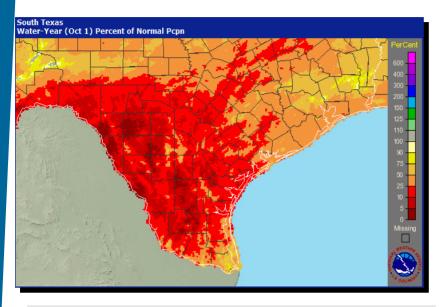
To indicate just how dry these past several months have been, climate records have indicated that from September 1 2008 through February 28 2009, the city of

Victoria has received only 4.79 inches of precipitation, which is the least amount of rain received on record for this six month period (normal rainfall at Victoria is 18.85 inches). Similarly, Corpus Christi received only 4.88 inches during this six month interval (normal rainfall is 15.92 inches), ranking it as the fourth driest September through February period on record (the lowest was 2.42 inches from September 1917 through February 1918).



# South Texas Weather Journal

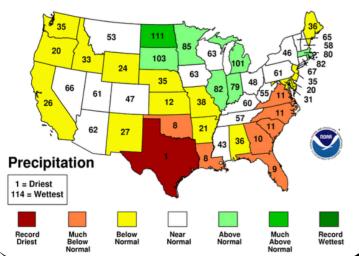
# A LOOK BACK



Above: Percent Normal Rainfall for South Texas from Oct 1 2008 through Mar 11 2009

# Dec 2008-Feb 2009 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA



Above: Texas experienced their driest winter on record

(Continued from page 1)

The return of La Nina conditions over the Eastern Pacific Ocean has played a major role in the extremely dry weather observed over South Texas. La Nina conditions (abnormally cool waters over the Eastern Pacific) generally result in above normal temperatures and below normal rainfall for South Texas. Although there are indications that the La Nina pattern is weakening (if not going away), the prospects for the drought to end look bleak. The rainfall outlook from March through May indicate the likelihood for below normal rainfall, with drought conditions likely to persist and spread.

To keep up on the latest drought situation over South Texas, you can visit our new Drought Page on our website. Simply go homepage our http:// www.srh.noaa.gov/crp/, click on the "Drought Info" icon near the bottom right of the page (taking you to http:// www.srh.noaa.gov/crp/drought.html). On this page, you will find the latest Drought Information Statement for the Corpus Christi area of responsibility, the latest Drought Monitor and Drought Outlook products, as well as many useful links. This page will keep you informed not only on the current drought in South Texas but also for on-going droughts across the United States.

### Top 4 Driest Winters on Record for Victoria (Dec 1–Feb 28)

2009: 0.74"

1962: 1.31"

1971: 1.71"

1956: 2.31"

### Top 4 Driest Winters on Record for Corpus Christi (Dec 1-Feb 28)

1918: 0.58"

2009: 0.60"

1952: 0.63"

1996: 0.64"



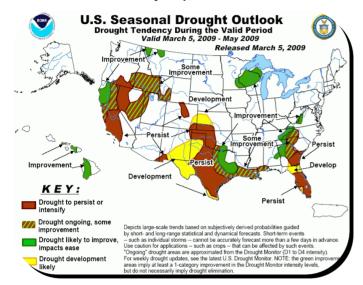
Page 3

# A LOOK AHEAD

### **Dry Conditions to Continue Through the Spring**

Source: Climate Prediction Center

The National Weather Service's Climate Prediction Center is calling for greater than normal chances for a drier and warmer Spring across South Texas. Thus, drought conditions are forecasted to persist through the Spring. With La Nina conditions forecasted to weaken or end completely, chances for a wetter summer will finally be equal to those of a drier summer.



Average Precipitation Jan-May

Victoria: 14.82"

Corpus Christi: 10.73"

Laredo: 6.90"

Average Spring Temperatures

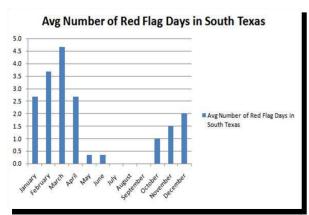
Average Highs in April range from near 80 in Victoria to near 90 in Laredo. Lows in April average in the Low 60s.

# 2009 Fire Season Remains Active

By Jason Runyen-Forecaster / Fire Weather Program Leader

The drought continues to cause widespread concerns about wildfires around the state, including right here in South Texas. As of March 11th, over 65,000 acres have been burned across Texas in 2009 due to wildfires. Over 14,000 of those acres have occurred right here in South and Deep South Texas. The fire danger threat will continue through the Spring due to the drought-stressed vegetation, along with the dry, windy conditions that can occur this time of year.

The NWS issues Red Flag Warnings for days in which weather conditions, when combined with fuel dryness, support a critical fire danger threat. South Texas typically experiences a peak in Red Flag days during the late Winter and early Spring.





Above: View of the 5000 acre-Polaris WildFire on Padre Island on December 7, 2008

Left: View from the Corpus Christi International Airport of the 1500 acre Griffen-Sorenson Wildfire in rural San Patricio County on December 14th, 2008.



# **MARINER'S PORT**

### **New Marine Page and Forecast Launched**

By Mike Gittinger-Senior Forecaster / Marine Program Leader

### New Standardized Marine Web

**Pages:** The new marine web page is part of a National Weather Service project to standardize the Marine Web Pages of all the NWS offices. Thus far the "Marine Weather Portal" (as it is known) stretches from the Carolinas to South Texas. The new format makes it easier for our customers to find the same marine information for any area of interest along the Gulf and Southeast Atlantic Coasts. The new web page provides marine advisories and warnings in effect for the area, links to local marine observations, and a forecast tab that allows you to access the Marine Point and Click Forecasts which is discussed below, information

### **Marine Point and Click Forecast:**

cently the point and click technology has been expanded and is now available for the marine areas. This forecast can be accessed by clicking on the forecast tab of the marine web page and then clicking on a point on the map. This will provide a forecast for the exact point clicked on a 4 KM resolution from the National Digital Forecast Database (NDFD), which is a graphical forecast database

National Weather Service Forecast Office

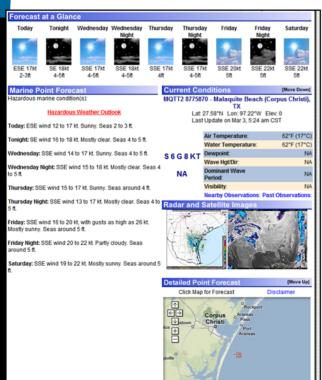
Corpus Christi, TX Marine Weather

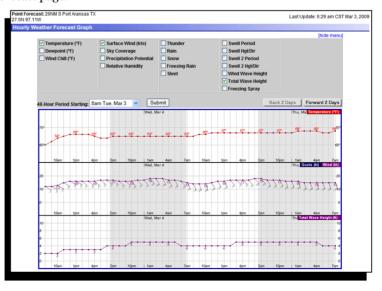
Forecast for the forecast of the

Above: New Marine Weather Web Page for NWS Corpus Christi

maintained by all NWS forecast offices across the country. Under the "Additional Forecast and Information" section, you will also find a link to Hourly Weather Graphics. This link will show hourly forecasts for various weather elements for the point chosen thereby providing great detail in exact trends expected throughout the day. If you still wish to view the legacy

zone forecast for a larger area of interest, you can click on the map on our front page, or once the point and click page has opened, you can select the zone forecast link under the "Additional Forecast and Information" section below the map on the lower right hand portion of the forecast page.





Above: Hourly Weather Graph Left: Point and Click Forecast



# **SURF ZONE**

# **Surfs Up at Packery Channel!**

By Jennifer Chase-Intern / Avid Local Kiteboarder

Although few in the United States realize it, the Gulf Coast can have some pretty big surf, with Packery Channel being one of the best surf spots along the entire Gulf Coast. A good surf season along our coast is similar to rain; some years we are lucky enough to get a good season, and other years there may only be a few good days, if any, at all. But all surfers would agree that this season has been especially good, and although there are many factors associated with this, the existence of the Channel, strong wind days, and effects from last season's hurricanes have definitely helped make Packery Channel one of the best surf spots on the Gulf

Gulf swell is different from other typical surf spots. Along most beaches in the United States, a strong wind usually ruins the structure of the waves. This general rule is reversed in the Gulf Coast, where the primary force that generates waves is wind. Wind pushes energy across the surface of the water for long distances before that energy finally reaches the coast. Our winter season has been especially dry. Associated with dry weather are strong winds. Wind is the engine that causes waves to be able to form. The waves take a particular shape and size due to the bathymetry (depth and structure) of the ocean floor, so as the depth of the ocean decreases, the waves begin to form. These waves generally increase in size as they approach shore, but their size

and shape is greatly influenced by the shape of

the ocean floor.

The sandbars that form near our coast play an important role in the quality of the surf. The sawing action of the wind helps shape the sandbars. The wind direction has been especially side-shore this

past season, which creates a strong longshore current. This current is the driving force behind the movement of the sand; it can both create and destroy a sandbar. Sandbars can also form or be destroyed by big storms from the storm's associated high winds. Many surfers have agreed that Hurricane Dolly changed the structure of our sandbars, and improved the quality of the waves, at least for this season.

Although they can become quite large, a drawback to wind-powered waves is that they can be very choppy and rough. The construction of the Packery Channel jetty has helped improve the situation for surfers. "The presence of a large jetty blocks the wind...which makes for cleaner surf," says long-time surfer Tippy Kelley.

next to it so that these waves can form a cleaner break. The presence of a jetty also drastically alters the shape of the shore-line and the bathymetry of the ocean. It can form and destroy sandbars. Packery Channel interrupts the natural flow of the longshore current along our beach, so on one side of the jetty sand builds up while on the other side, the beach is eroding. This has defined underwater surface structure and has allowed the waves to be much better for surfers. The overall presence of the jetty has had a positive effect on our surf, at least for this season.

The jetty creates a shadow, protecting the waves

Top: Aerial view of Packery Channel, Bottom: Intern Jennifer Chase KiteBoarding near Packery Channel

### **Experimental Surf Zone Forecast Launched**

By Mike Gittinger-Senior Forecaster / Marine Program Leader

This is a new tabular forecast taken from the forecast graphics (NDFD) along beach areas from near Corpus Christi to Port Aransas. Frequent beach goers and surfers know conditions, and especially temperatures, can vary greatly at the beaches from areas just inland due to the affects of the waters of the Gulf of Mexico. This product is designed to capture more accurately conditions expected at local beaches and also provides additional information useful to surfers and beach goers regarding rip currents risk, UV index, wave action and tides. The forecast is transmitted daily around 6 am and is available on our web page in the marine section.



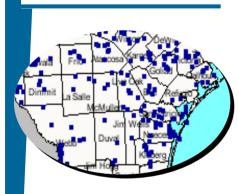


# **COOP CORNER**

### CoCoRaHS March Madness 2009!

By Tony Merriman-Forecaster / CoCoRaHS Coordinator

The South Texas CoCoRaHS rainfall network now has over 145 observers!



Greetings South Texas CoCoRaHS observers! We experienced great recruiting and expansion in 2008 and during the early months of 2009. The South Texas CoCoRaHS rainfall network now has over 145 observers! The National Weather Service in Corpus Christi would like to thank everybody who has joined and report their rainfall amounts, especially those entering 0.00" of rainfall when it does not rain. The reports of 0.00" of rainfall data are very valuable in monitoring the worsening drought conditions across the region.

We have been challenged by CoCoRaHS National Headquarters to see which state can recruit the most observers during March 2009. Texas performed well during March Madness in 2008. We tied for second place with Illinois with each state recruiting 83 new observers. South Carolina won March Madness 2008 with 122 new observers. Let's see if we can knock

South Carolina out of first place and win the title of most observers recruited for March Madness 2009!

If you have any friends or relatives who would like to participate, please tell them about the program and have them sign up. Once your friends or relatives fill out the application at the following website <a href="http://www.cocorahs.org/Application.aspx">http://www.cocorahs.org/Application.aspx</a>, 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 <u>Tony.Merriman@noaa.gov</u>. Thanks again for all your hard work and dedication! We at the National Weather Service in Corpus Christi really appreciate it!

# CoCoRaHS March Madness 2009

March 1-31, 2009

How many new volunteers can you recruit in your state!



# 2009 Coop Rainfall Totals to Date (Jan — Feb)



Alice Intl Arpt	0.05"
Aransas Wildlife Refuge	0.84"
Beeville 5 NE	0.18"
Benavides #2	0.00"
Bishop	0.32"
Calliham	0.09"
Choke Canyon Dam	0.17"
Coleto Creek Reservoir	0.26"
Corpus Christi Intl Arpt	0.17"
Cotulla	0.14"
Cross	0.20"
Encinal	0.11"
Fowlerton	0.26"

George West 2 SSW	0.14"
Goliad	0.28"
Kingsville	0.41"
Laredo #2	0.26"
Loma Alta	Trace
Los Angeles 4 WSW	0.11"
Mathis 4 SSW	0.33"
Padre Island Seashore	0.29"
Point Comfort	0.34"
Port Aransas	0.42"
Port Lavaca	0.39"
Port O'Connor	2.94"
Refugio 3 SW	0.36"

Refugio 2 NW	0.38"
Robstown	0.21"
Rockport	0.31"
Sinton	0.12"
Three Rivers 8 NE	0.35"
Tilden 10 S	0.10"
Tilden 4 SSE	0.05"
Victoria Fire Dept #5	0.28"
Victoria Regional Arpt	0.32"
Welder Wildlife Refuge	0.57"
Whitsett	0.20"



# **SERVING OUR COMMUNITY**





Above and left: NWS Forecasters Katie Roussy and Jason Runyen and Interns Jennfier Chase and Roger Gass pose with Prescribed Burn Manager Lynn Drawe at the King Ranch during a prescribed burn in January.

Right: Forecaster Katie Roussy talks to students at the Seashore Learning Academy about the weather in





Left: NWS Forecaster Jason Runyen hosts a South Texas Fire Weather Partner's Meeting at NWS Corpus Christi in December.

Right: WCM John Metz showcases on-site weather briefing capabilities at the Region 6 LEPC Conference held in Corpus Christi during January.





Left: WCM John Metz speaks to HAM radio operators at the Annual SKYWARN Recognition Day held in December at NWS Corpus Christi.

Right: HAM radio operators at NWS Corpus Christi contact other NWS offices via HAM radio during the SKYWARN Recognition Day.





Bottom Left: WCM John Metz speaks about the ongoing drought to area farmers and ranchers at an agricultural workshop in Robstown held in January.

Bottom Right: Forecaster Katie Roussy speaks at the Ella Barnes Elementary Science Day held in March.

Center: Intern Jennifer Chase launches a weather balloon during a Boy Scout troop visit in November.







# **SCIENCE SCOOP**

# A Day in the Life of a NWS Forecaster

By Alex Tardy-Science and Operations Officer

Meteorologists work around the clock at the National Weather Service monitoring and predicting the weather out to 7 days. The weather forecaster is responsible for numerous routine duties that are required to be completed and transmitted at regularly scheduled times regardless of the weather conditions. When the weather becomes more active and certain criteria is expected to be met there are many additional products that are issued by the forecast office. The meteorologists work in a central operations area which consists of several computer workstations equipped with modern technologies and various monitors (Figure 1).



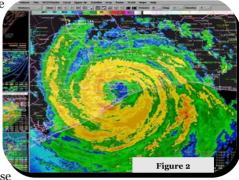
On a daily basis there are three forecast shifts that will have two meteorologists on duty along with a technician or meteorologist intern. Additional staffing is common during anytime of the day or night when the weather is

severe or is anticipated to become hazardous. At the start of the shift the meteorologist will obtain a weather and equipment briefing which includes what might expected during the upcoming shifts. This is also when the forecaster will learn whether there have been changes in the forecast and weather guidance, as well as get a feel of the level of confidence. This type of briefing usually takes 10 to 15 minutes to complete and then the new forecaster will take over the operations.

At most Weather Forecast Offices, the meteorologist duties are split between short term (Today through Day 2) and long term (Day 3 through Day 7) responsibilities. During active periods the duties may be altered because watches, advisories and warnings will be issued. There are 4 primary areas of service that the Weather Forecast Office in Corpus Christi focuses on for weather support: general public; aviation; marine; and fire weather. The forecast that most people are used to seeing is the public forecast which can be found on the internet or used by TV or print media.

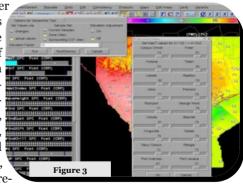
The majority of time during a normal forecast shift is spent analyzing the current weather conditions and interpreting computer model information. The primary tool used for these duties is the Advanced Weather Interactive Processing System as shown in

Figure 2. The data for this system separate from the Internet and is received by satellite and land-line ser-Howvices. ever, the forecasters do use



the Internet and also monitor TV stations and amateur radio networks when needed. The information that is gathered from analyzing the data in AWIPS is then used to produce a high resolution (5-km or 3 miles) gridded forecasts for a variety of parameters. The meteorologist will use a set of graphical editing tools to modify or create these products (Figure 3).

These weather parameters include the depiction of maximum and minimum temperatures, humidity, wind speed and direction, chance of pre-



cipitation, type of weather and sky conditions. The entire set of forecasts is updated at least twice a day and as often as needed with changing conditions. Examples of these graphical forecasts are found at <a href="http://www.nws.noaa.gov/">http://www.nws.noaa.gov/</a>. During imminent hazardous weather conditions, a meteorologist will devote the majority of their time monitoring Doppler Radar and satellite imagery in order to provide the necessary advisories and warnings for the protection of life and property. In real-time operations the weather forecaster depends on accurate and timely



# **SCIENCE SCOOP**

# Up, Up and Away! Measuring our Atmosphere with Balloons.

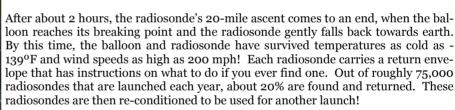
By Christina Barron-Intern

The National Weather Service Forecast Office in Corpus Christi is one of 92 NWS Upper-Air Observation sites across the United States and the Pacific islands, and is one of over 800 sites worldwide. Launches are held twice daily at nearly the exact same time at all of the observation sites. For Corpus Christi, our launch times occur at 5 AM CST and 5 PM CST. For a launch an instrument known as a radiosonde, which collects measurements of pressure, temperature and relative humidity, is tied to a large balloon. Wind speed and direction are also calculated with the help of a GPS tracking device located in the instrument that keeps track of the location of the radiosonde. Once all the data is collected, it is graphed into a vertical profile of the atmosphere known as a sounding.

Here at the Corpus Christi office, the upper air observer begins the first launch of the day at 4 AM CST by preparing the weather balloon and a train that consists of an 85-foot string attached to a radiosonde and parachute. The balloon is made of a synthetic rubber and is filled with hydrogen gas to nearly 8 feet in diameter. While in

flight, it can expand to 20 feet in diameter, the size of a small house! All the prep work usually takes about an hour to complete. At 5 AM the balloon is released and the data begins arriving. During special occasions, balloons will be launched every 6 hours rather than every 12 hours. Situations where six

hour releases are important are when there are hurricanes in the Gulf of Mexico or severe storms expected across South Texas.



Collecting upper-air data is a great way to help us understand the atmosphere, not only for forecasting this week's weather, but also helping in atmospheric research. So the next time you're outside, stop and take a look in the sky and see if you can spot the weather balloon your local weather office has launched. Don't forget to bring some binoculars!



Above: Intern Christina Barron prepares to launch a weather balloon.

(Continued from page 8)

weather reports from the public and trained weather spotters.

In addition to the routine weather forecast, the forecaster is responsible for coordinating with other National Weather Service offices and media, answering a variety of phone calls, and providing specific weather support or services. These services include providing weather briefings, Internet graphics, past event summaries and TV or print media interviews.

When the meteorologist is not working a shift, or during down-time and in between forecast products, they often engage in training, teams, research and specific program activities (e.g., computer programming) that strive to improve the forecast operations. Often meteorologists will get a chance to work outside the office and be in-

volved with outreach efforts geared to support specific user needs. These outreach activities would include giving presentations and training and working with emergency managers, schools, local and state agencies, as well as weather spotters. Much of the success at the office depends on the interactions with those that use the weather information for planning and decision making.

Above: Intern Christina Barron

launches a weather balloon at

**NWS Corpus Christi** 



# **WEATHER SAFETY**

## Is Your School or Business Ready for Severe Weather Season?

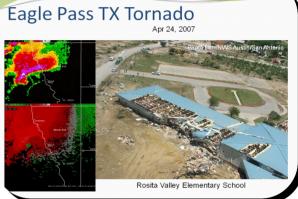
By John Metz-Warning Coordination Meteorologist

Severe weather season is quickly approaching. Are your severe weather readiness plans in place and well practiced? Each year dozens of schools and/or businesses are impacted by severe storms across the country and South Texas is no exception. In the past couple seasons damaging wind storms and torna-

does have impacted several schools and businesses in the Coastal Bend. Fortunately there have been no direct fatalities. If a storm approaches your location will you be ready?

Between 1992 and 2004...

NOAA's weather services
prevented over 330 fatalities and
7800 injuries from tornadoes,
resulting in a socioeconomic
benefit of over \$3 billion.



### Here are simple steps to take to ensure you are prepared for this season.

- Identify Shelter areas within your facility
- Designate a Weather Watcher to Maintain Weather Awareness
- Make sure you have a NOAA Weather Alert Radio
- Establish an emergency response team
- Have emergency supplies on hand
- Conduct regular drills
- Delay arrival or departure of students/employees if storms threaten
- Postpone outdoor events before storms strike

Following through with these simple steps could be the difference between life or death!



A third of the nation's GDP (\$4 trillion) is reliant on accurate weather and climate information.



# DID YOU KNOW? SEVERE WEATHER EDITION



Above: Corpus Christi F2 tornado on October 24, 2002

South Texas Averages Almost 7 Tornadoes Per Year.

In 1902, one of the most deadliest tornadoes in Texas struck Goliad. This F4 tornado killed 114 people.

In 1905, a tornado killed 21 people in Laredo and Nuevo Laredo, Mexico. The tornado collapsed two spans of the International Bridge into the Rio Grande River

In 2002, an F2 tornado struck Corpus Christi killing one person and causing over \$75 million in damage.

Below: Grapefruit size hail that fell in Oilton, TX on April 30, 2007

On June 2, 2003 a supercell struck Laredo, producing golfball size hail and 95 mph winds, and causing \$33 million in damage.

On May 8, 2005 a severe thunderstorm produced 2" hail in Corpus Christi. This was only the third time since 1950 that hail 2" or greater has been reported in Nueces County.

The largest hail stone ever recorded in the U.S. fell in Aurora, NE and measured 7" in diameter!





# FIRE WEATHER HOT SPOT

### **New Fire Weather Products Now Available!**

By Jason Runyen-Forecaster / Fire Weather Program Leader

In December of 2008, several key South Texas Fire Weather Partners met at NWS Corpus Christi to discuss the active 2008 Fire Season and build off lessons learned for the 2009 Fire Season. In addition, several new fire weather products that are being produced by NWS Corpus Christi were introduced at the meeting.

NWS Corpus Christi is now pro-

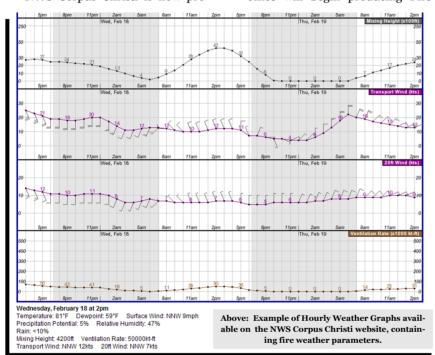
ducing a Fire Weather Planning Forecast twice a day during the South Texas Fire Season. Beginning on March 20th, a Haines Index forecast will be available to fire weather partners. The Haines Index is used to predict wildfire growth based on the stability and dryness of the atmosphere.

In addition, the Corpus Christi office will begin producing Fire Weather Point Matrices on March 20th for four sites in South Texas which have fire weather observing equipment. These sites include George West, Victoria, Matagorda Island and the Aransas NWR. These point matrices forecasts will better help fire managers predict how fire will behave through seven days.

Another new product that is available, and that has received very favorable reviews, are fire weather elements forecasted on an hourly graph out to seven days. (pictured left)

Also, NWS Corpus Christi is now issuing Fire Danger Statements for elevated fire weather days. NWS Corpus Christi continues to issue Red Flag Warnings for days when the fire weather danger is expected to be critical (Winds over 25 mph and Relative Humidity below 30%).

Finally, a new looked to the Fire Weather webpage will be launched on March 20th, which will include several enhanced features.



# **SCIENCE SCOOP CONTINUED**

New! Weather Research Link on the NWS Corpus Christi web page...

By Jim Reynolds-Forecaster

Especially for those with an interest in learning more about the science of weather, a link was recently added to the Corpus Christi web page to show-case weather research completed by staff members at the office. If you would like to learn more about tropical systems, tornadoes, severe thunderstorms and snowstorms in the local area, please visit:

http://www.srh.noaa.gov/crp/research/research.html



# **SOUTH TEXAS SNAPSHOTS**

# DO YOU HAVE ANY COOL SOUTH TEXAS WEATHER PHOTOS THAT YOU WOULD LIKE TO SHARE IN OUR NEXT NEWSLETTER? SEND THEM OUR WAY!

### EMAIL PHOTOS TO JASON.RUNYEN@NOAA.GOV



Above: Sunset behind a towering cumulus cloud at the Corpus Christi International Airport on January 4, 2009. Picture taken by Forecaster Jason Runyen



Above: Shallow ground fog at sunrise near the upper air inflation building at NWS Corpus Christi



Above: Shelf Cloud along a cold front approaching the Corpus Christi International Airport on January 4, 2009. Picture taken by Forecaster Jason Runyen



Above: Rainbow and thunderstorm in 2008 near Fowlerton, TX. This thunderstorm produced hail damage to a vehicle and punched holes through cacti. Pictures courtesy of Johnny Gomez (Storm Spotter)



### National Weather Service WFO Corpus Christi, TX

300 Pinson Drive Corpus Christi, TX 78406

Phone: 361-289-0959 Fax: 361-289-7823

Newsletter Comments & Suggestions: E-mail: jason.runyen@noaa.gov







Above: Staff of the NWS Corpus Christi Weather Forecast Office

Pictured left to right: Front Row...Christina Barron, Jennifer Chase, Katie Roussy, Mike Gittinger, Greg Wilk, Alex Tardy, Larry Maifeld, Tawnya Evans, Mani Medrano. Back row:...Scott Cordero, Tim Tinsley, Richard Martinez, Bill Harrison, Joel Venneman, Tony Merriman, Jim Reynolds, John Metz, Jason Runyen, Alan del Castillo