THE TEXAS THUNDERBOLT

NATIONAL WEATHER SERVICE -- FORT WORTH, TX
SERVING ALL OF NORTH TEXAS
WWW.WEATHER.GOV/FORTWORTH

Winter 2010

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NWS Fort Worth Leadership Team

Meteorologist-In-Charge
Bill Bunting

Science and Operations Officer
Greg Patrick

Warning Coordination Meteorologist
Mark Fox

Questions? Comments?
sr-fwd.webmaster@noaa.gov

Background image is courtesy of Alan Moller.
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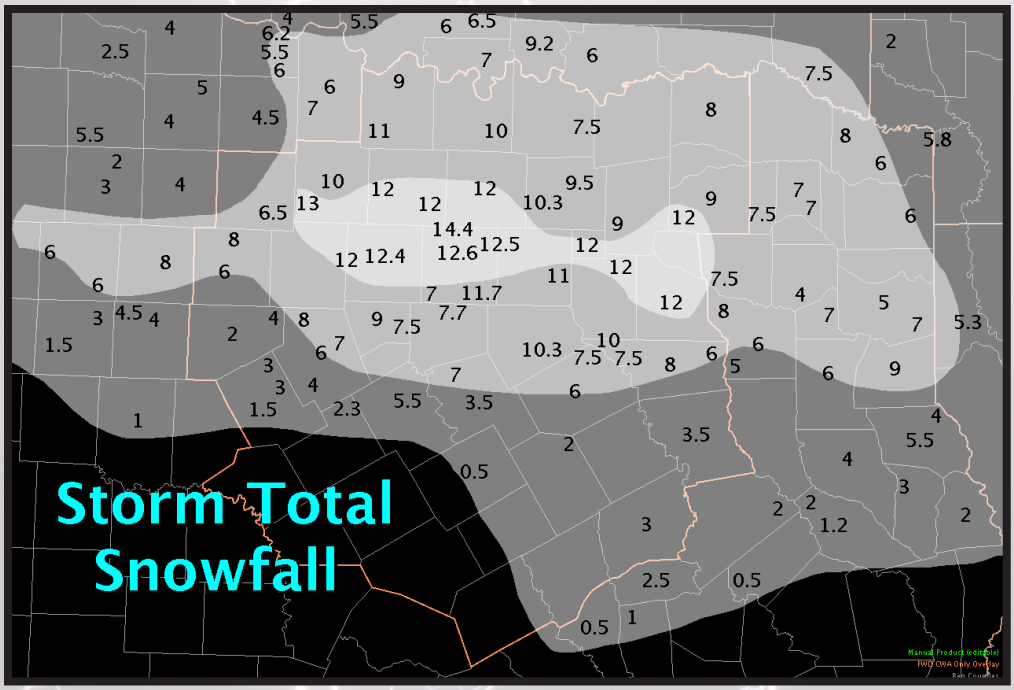
February 11-12, 2010 Snowfall

The graphic below depicts snowfall reports from the February 11-12, 2010 snow event. Note the highest snowfall accumulations generally along the I-20 corridor and in the DFW Metroplex. DFW International Airport officially recorded 12.5 inches, but the highest total in North Texas was 14.4 inches in Haslet.



March 28, 2000: 10th Anniversary

A look back on the Fort Worth/Arlington Tornadoes

See page 6 for more!

NWS Fort Worth Forecasters Receive Awards

by Bill Bunting, Meteorologist-In-Charge

Recently, two NWS Fort Worth forecasters were awarded for their hard work and dedication to specific program areas and projects.

Forecaster Daniel Huckaby received the Southern Region Director's Award for his outstanding leadership of the office's Climate Services Program in 2009.

The Southern Region Director's Award was presented to Dan Huckaby by WFO Fort Worth Meteorologist-In-Charge Bill Bunting during a ceremony on September 9, 2009. Dan was recognized for his outstanding service to the citizens of North Texas by providing timely climate assessments and outlooks focusing on the North Texas region. He also works to increase the data observation network and deliver public presentations on climate trends and NWS climate services.

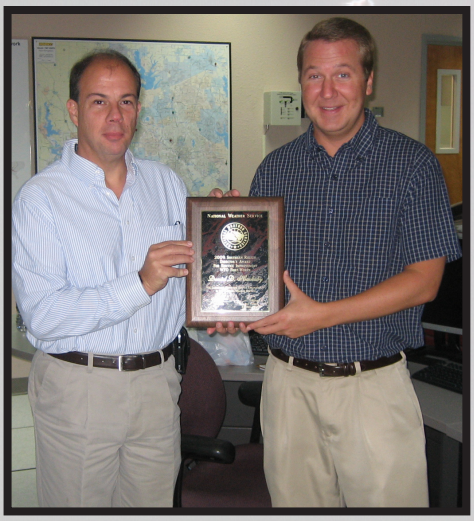
North Texas weather is often influenced by the development of El Nino or La Nina episodes. These periodic warming and cooling events in the equatorial Pacific Ocean affect jet stream patterns and storm tracks across the U.S. Dan takes the seasonal outlooks prepared by NOAA/NWS Climate Prediction Center for the next 12 months, and "downscales" those outlooks to highlight likely impacts across our area. One component of those downscaled services is the Drought Information Statements.

Those statements assess the current state of the drought conditions across Central and North Texas, including the impacts on water supply, recreational lake levels, and agriculture. The statements are often updated on a monthly basis and are widely used by local decision makers and the media.

Forecaster Jason Dunn received the American Meteorological Society's prestigious Reichelderfer Award at the Annual National Meeting in Atlanta, GA in January. Jason received the award "for his work in conception, execution, layout, and coordination for the Texas Hurricane Guide from 2005 to 2009". The award is named for Francis W. Reichelderfer (1895-1983), who presided over the most revolutionary era in the history of the National Weather Service. From 1938 to 1963, Reichelderfer guided the organization through World War II and brought modern technology to weather forecasting.

Jason began work on the Texas Hurricane Guide while working at the Corpus Christi NWS Office in 2005, and has continued his involvement after moving to Fort Worth. The guide was originally developed with a small team in Corpus Christi and focused on the Coastal Bend region, but it has since grown to include the Texas and Louisiana coasts and involves four NWS offices. "I have really enjoyed working with a group that was dedicated to making the guide an important tool in public preparedness", Jason said. "Seeing the interest it has generated in other parts of the Gulf Coast is even more rewarding." Jason plans to continue working with the team that is preparing the 2010 edition of the guide.

Congratulations, Daniel and Jason for your outstanding work!



Left:
NWS Fort Worth Meteorologist-In-Charge, Bill Bunting (left) with forecaster Daniel Huckaby.

Above:
Forecaster Jason Dunn with his Reichelderfer Award.

Meteorologists Provide Weather Support to Emergency Management Officials

Above:
NWS Fort Worth IMET/forecaster Joe Harris (left) with Warning Coordination Meteorologist Mark Fox at Texas Motor Speedway.

The NWS mission is to protect lives and property through timely and accurate forecasts, watches, and warnings. Meteorologists at NWS Fort Worth work closely with the Emergency Management community to disseminate life-saving weather information to the public.

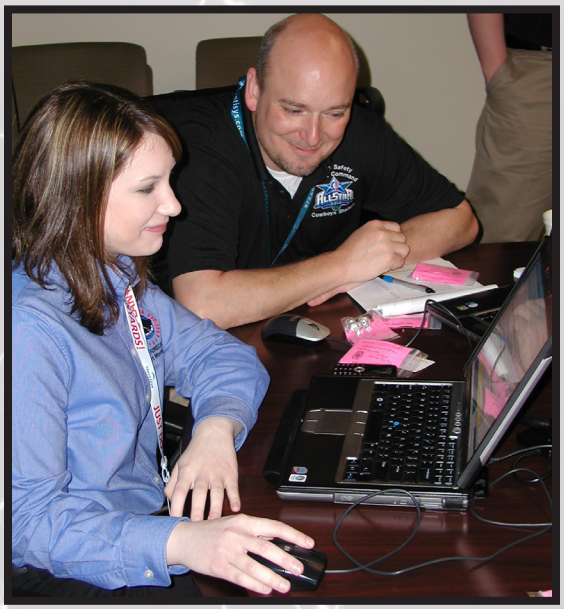
In support of our Emergency Managers and Homeland Security, NWS Fort Worth deployed 2 meteorologists to the Texas Motor Speedway NASCAR event on November 7th and 8th, 2009. Warning Coordination Meteorologist Mark Fox and forecaster Joe Harris brought laptops and worked alongside Emergency Management officials, first responders, and amateur radio operators in the stadium's Emergency Operations Center. The meteorologists provided a weather watch and alerted emergency officials of any impending hazardous weather.

The software on the laptops is similar to those programs used at the local NWS office in Fort Worth to prepare routine forecasts. The meteorologists on-site at TMS were also in contact with meteorologists at the Fort Worth office, and worked to collaborate potential storm threats and any changing conditions (such as wind speed and direction). In the event of a homeland security threat or hazardous weather, the on-site meteorologists would be able to quickly relay critical weather information to the Incident Commander and Emergency Management officials.

NWS Fort Worth also provided on-site weather support to the City of Arlington emergency management officials from February 13-14 for the NBA All Star Game. Warning Coordination Meteorologist Mark Fox and forecaster Jessica Schultz worked alongside city, state, and federal emergency management personnel in the Arlington EOC. Support included monitoring wind speeds, temperatures, and the movement/evolution of snowfall along the Red River.

March 28, 2000: 10th Anniversary

The 10th anniversary of the Fort Worth/Arlington tornadoes is quickly approaching. Read more about the event on Page 6!



Above:
NWS Fort Worth forecaster Jessica Schultz (left) discusses weather support with City of Arlington Emergency Management Administrator, Irish Hancock, for the NBA All Star Game on February 14.

Tornadoes Strike North Texas in January

Tornadoes touched down in Van Zandt, Hopkins, and Henderson counties on Thursday, January 20th. Preliminary information indicates 4 tornadoes impacted communities on that day, with the strongest tornadoes producing wind speeds up to 130 mph.

One tornado started on the northwest side of Canton in Van Zandt County, north of Highway 64 and just west of FM 859. The damage path ended in the Silver Lake area in extreme northeast Van Zandt County. A single family home lost the entire roof and part of the exterior walls. Several large trees were downed, and sheds and outbuildings were damaged to various degrees. A church was also destroyed in the community of Starr. This tornado was rated EF-2 on the Enhanced Fujita Scale with peak winds in the 110 to 120 mph range.

Above:
Tornado in Canton, TX on January 20, 2010.
Photo: Jessica Alvarado.

Above:
Tornado damage in Henderson County.
NWS Photos.

In Hopkins County, two tornado paths were discovered. The first tornado touched down approximately 4 miles southwest of Sulphur Springs, and tracked to the east-northeast for 1.5 miles. One mobile home was destroyed, resulting in 2 injuries. A pre-fabricated metal building on State Highway 19 also sustained considerable damage. This tornado was assigned an EF-0 rating with wind speeds estimated near 80 mph.

The second tornado in Hopkins County began one mile south of the central business district of Sulphur Springs. This damage path continued to the northeast for 1.5 miles. During the 10 minutes the tornado was on the ground, around 50 homes suffered some degree of roof damage, two of which sustained severe damage due to large tree branches. This damage was found to be consistent with wind speeds of 80 to 85 mph, resulting in an EF-0 rating for the tornado.

Two tornadoes were also observed in Henderson County. The first tornado began south of Larue and tracked to the east-northeast. Exterior walls on some structures collapsed. As a result, this tornado was rated an EF-2 with wind speeds up to 130 mph.

The second tornado in Henderson County first touched down near Poyner and tracked northeast toward Coffee City. A mobile home was dislodged and a wood-framed home sustained significant damage. Tree damage was also noted along a three mile path. This tornado was rated an EF-1 with peak winds from 90 to 100 mph.

DR. WEATHER'S WISDOM

Snow Development

Obviously for snow to develop inside a cloud, temperatures must be below freezing. However, snow formation also requires another special condition. There must be saturation (a relative humidity near 100%) at temperatures below 15°F, which is much colder than freezing.

Water droplets suspended within a cloud don't "know" how to spontaneously align their molecular structure to change into the solid phase with ice. Instead, these water droplets remain in the liquid phase at temperatures well below the freezing point, and are said to be super-cooled. In fact, a pure water droplet will stay in this super-cooled liquid state in temperatures as cold as -40°F.

However, inside a cloud there are naturally occurring substances that mimic the molecular structure of ice and provide a template to which a super-cooled water molecule can change into the solid phase. These substances are called ice nuclei, and include tiny suspended dirt particles, salts, and even some types of bacteria.

Ice does not form on ice nuclei until temperatures cool below 15°F. As soon as one water molecule bumps into an ice nuclei and changes into the ice phase, the process of converting numerous other water molecules to ice inside a cloud accelerates very rapidly.

Long, six-sided water molecule chains, or ice crystals, grow in size. These brittle ice crystals grow, break apart, and create an almost infinite number of surfaces for other water molecules to change to the solid phase, as well. These ice crystals become the new primary ice nuclei in the cloud, and allow water to change over to ice at the traditional freezing point of 32°F.

Because the whole process is dependent on saturation at temperatures less than 15°F, forecasters have to pay close attention to how cold temperatures are inside clouds where precipitation develops. Otherwise, the water droplets will stay in the super-cooled liquid state, and freezing rain or rain will fall in lieu of snow.

Above:
Snow in Decatur, TX. NWS Photo.

March 28, 2000: 10th Anniversary

A review of the March 28, 2000 tornadoes affecting Fort Worth and Arlington (from NWS Storm Data):

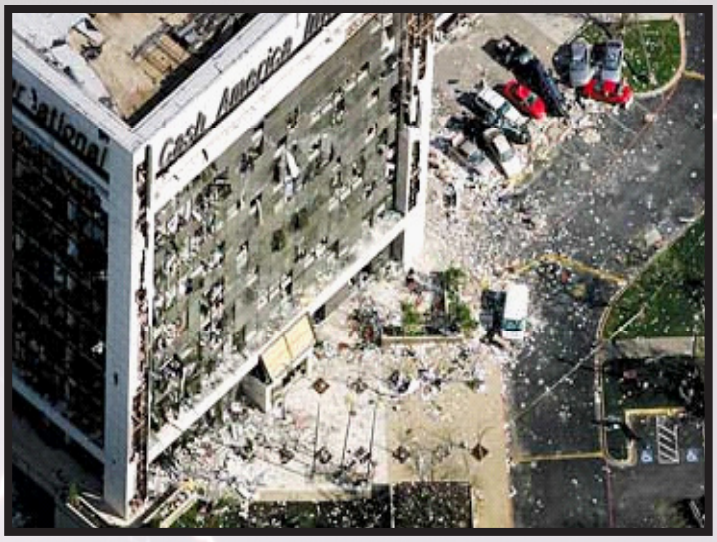
The first tornado damage was reported near Castleberry High School, about 4 miles west of downtown Fort Worth at 6:18 pm. Additional roof and tree damage occurred in the Monticello neighborhood of River Oaks. A number of businesses were then damaged or destroyed near the intersection of Camp Bowie and West 7th at 6:20 pm. The tornado then moved east along West 7th, striking the Montgomery Ward building and the adjacent Linwood neighborhood.

The tornado then extensively damaged the 6-story Cash America building, nearly destroying it. The Mallick Tower and Calvary Cathedral buildings are sustained significant damage at approximately 6:24 pm.

The tornado weakened as it entered downtown Fort Worth, but wind-borne debris broke thousands of windows in buildings and high rises. Particularly hit hard was the Bank One building, which had 80% of its windows broken. The Union Pacific Resources building sustained damage to 1,300 of its 5,000 windows. Numerous automobiles in the streets and parking lots were also damaged. The tornado dissipated as it moved east of downtown, although minor damage occurred to roofs, trees, fences, and billboards about 3 miles east of the city near I-30 and Brentwood Stair. Hail also severely damaged roofs and automobiles in Lake Worth and Saginaw.

Two people lost their lives as a direct result of the tornado. A man was killed while trying to reach shelter after warning others of the tornado, while a homeless man was killed by a wall that collapsed on him. Some 80 other people were injured, but only 6 required hospitalization.

In Arlington, the initial tornado damage occurred at a restaurant on South Cooper St. The tornado moved east, causing F-3 damage near Bardin and Matlock, south of I-20, at approximately 7:07 pm. The tornado then struck the Arlington Airport before it paralleled I-20, crossing the interstate about 1 mile west of Highway 360. The tornado then moved northeast, causing F-2 damage to a neighborhood just northeast of Grand Prairie airport. In spite of the damage, there were no deaths or serious injuries in Arlington or Grand Prairie.

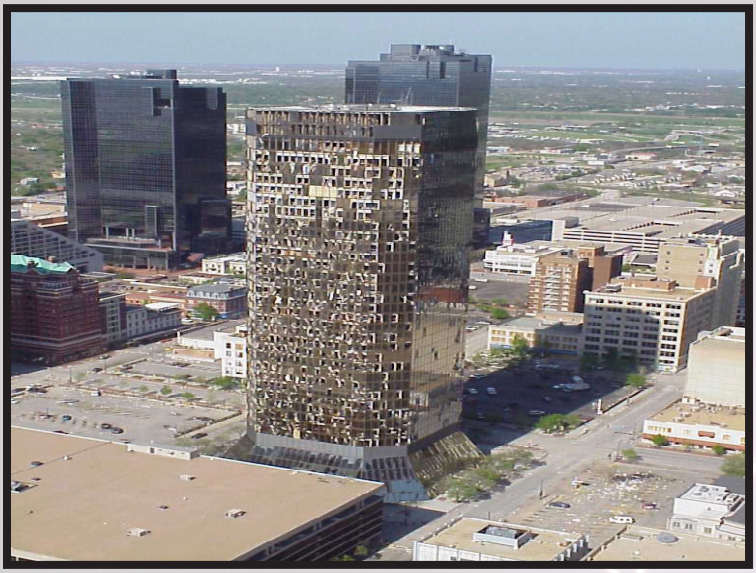


Above:
Damage to Cash America building in downtown Fort Worth.
Photo: City of Fort Worth

Above:
Damage to the residences next to the Montgomery Ward building. Photo: City of Fort Worth

More on Page 7!

March 28, 2000: 10th Anniversary



Above:
Damage to the Bank One building in downtown Fort Worth. The building lost 80% (3,000) of its windows. Photo: City of Fort Worth.

The 10th anniversary of the Fort Worth/Arlington tornadoes serves as a reminder to all of us to be prepared for severe weather at work, home, or school. Tornadoes can strike any time of year, any time of day or night. It is especially important to stay updated with the latest watches and warnings before leaving your home, school, or place of business. You do not want to be caught out on the roadways in the event of high winds, large hail, or tornadoes. Your car is not a safe place to be during severe weather, and it is never safe to seek shelter under bridges or overpasses.

Tornadoes affect North Texas every year. Whether we find ourselves in a downtown high rise, a suburban neighborhood, or rural community, we must all be prepared for severe weather!

Above:
Aerial photo of downtown Fort Worth. Photo: City of Fort Worth.

Co-op Observer Awards

Above:
Richard and Judy Van Meter of Bonita, Texas both received the 15 Year Individual Service Award presented by HMT Troy Marshall. Judy is the primary observer and Richard is the alternate observer.

Above:
From left to right are John and Wanda Ray from Bremond, Texas. Wanda was presented with a 30 year Individual Service Award by Gerry Shultz, Observing Program Leader.

Above:
From left to right are Justin Ferguson, Leisha Hopkins, James Hutchison, Carl Hopkins and Kerry Hansford from the Texas Department of Transportation in Paris, Texas. They were presented with the 50 Year Institution Service Award by Observing Program Leader Gerry Shultz.

Co-op Observer Awards

Above:
Nelda F. Ray from Youngsport, Texas was presented with a 40 year Individual Service Award by Observing Program Leader Gerry Shultz.

Above:
Marcus Holloway (left), Army Corps of Engineers at Joe Pool Lake, accepts a 25 Year Institution Service Award from HMT Troy Marshall. Also present was meteorologist Victor Corbelli.

Above:
Johnny Williams (left) from ONCOR Electric company in Gainesville accepts a 50 Year Institution award from HMT Troy Marshall. Also present was meteorologist Victor Corbelli.

Helen A. Long from Cresson, Texas was presented with a 20 Year Individual Service Award by HMT Troy Marshall. No picture was available.

Thanks to our Co-op Observers for your dedication and service!