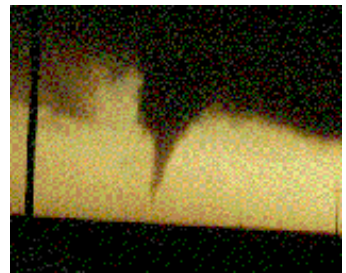




The West Texas

TWISTER



SPRING 2001 NATIONAL WEATHER SERVICE FORECAST OFFICE LUBBOCK TEXAS



Major Winter Storm Strikes the South Plains

By Ed Calianese, WCM and Shawn Ellis, Meteorologist Intern

A strong upper level disturbance translated into the southern Rockies on Dec. 25th and across West Texas on the 26th. A shallow cold air mass was in place over the Southern Plains well ahead of this system. Widespread precipitation developed over the region as the system approached as warm and moist air was drawn over the shallow cold air near the surface. Freezing rain produced a layer of glaze on exposed surfaces that was one quarter to three quarters of an inch thick. The freezing rain became mixed with sleet and snow during the early morning hours on Dec. 26th as the cold air deepened and eventually changed to snow over most of the area shortly before daybreak. The snow continued into the early morning hours of the 27th as the upper low moved across the Permian Basin. Eight to twelve inches of

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snow fell across the South Plains and extreme southern Panhandle with up to sixteen inches reported in the extreme southwestern Panhandle. Two to four inches of snow were reported across the Rolling Plains.

This very heavy snow fell on top of the thick layer of ice resulting in a crippling impact to the region. Most flights into and out of the Lubbock International Airport were canceled for the better part of four days. Many roads were impassable and a number of vehicles were stranded in deep snow. Many traffic accidents were reported with at least two fatalities occurring as a result. Many businesses, including those in the South Plains Mall in Lubbock, were closed for two to three days due to the weather. Hundreds of power poles and power lines were downed resulting in power outages across the region and at least \$1 million in damage; most of these outages only lasted a few hours but some lasted up to nine days in Lynn County. The storm also interrupted mail service for up to three days in some locations of the South Plains.

Officially, eight inches of snow were recorded at Lubbock International Airport on December 26th, with 8.2 inches for the month. This event heavily contributed to making December 2000 the 5th snowiest December on record dating back to 1914. Normally, the city of Lubbock averages 1.9 inches of snow in December and 11.3 inches for the winter season (October-April). The snowiest December on record was in 1942 when 10.5 inches of snow fell. Lubbock has already seen 14.9 inches of snow this winter season, including 4.4 inches from November 2000 and 2.3 inches from January 2001.

Some additional snowfall records for Lubbock (dating back to 1914) include:

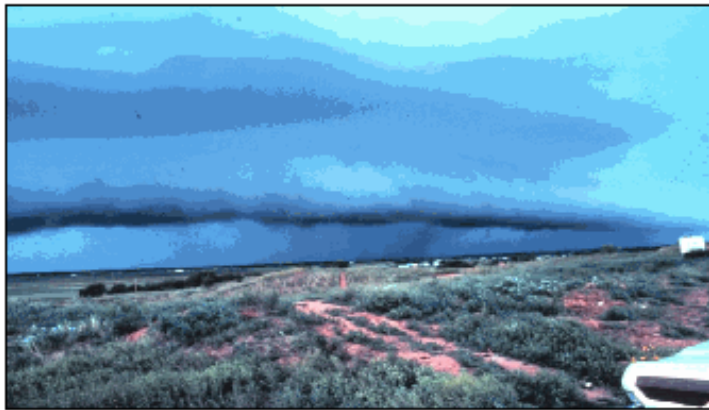
- ◆ For a 24-hour period: 16.3 inches January 20-21, 1983
- ◆ For a single storm: 16.9 inches January 20-21, 1983
- ◆ For one month: 25.3 inches January 1983
- ◆ For a winter season: 41.2 inches 1982-1983
- ◆ Earliest snow recorded - October 8, 2000.
- ◆ Latest snow recorded - May 6, 1917.



Early, accurate warnings don't mean anything if they aren't received by those in harms way. Be prepared and listen to NOAA Weather Radio. The newest models of NOAA Weather Radio receivers can sound an alert for the county in which you live, and give you a warning even if you are asleep!

Severe Weather Awareness Week

Governor Rick Perry has proclaimed the week of March 4th through the 10th as Severe Weather Awareness Week in Texas. During this week, the National Weather Service in coordination with the Texas Division of Emergency Management will highlight various aspects of severe weather and discuss safety rules in an attempt to focus public attention on severe weather preparedness. Severe Weather Awareness Week is a perfect time to review and fine tune your severe weather safety plans. Every Texan should know where to go and what to do when severe weather threatens. The NWS in Lubbock will man a booth in the South Plains Mall March 7-10, from which we will provide free material on all aspects of severe weather safety. Stop by and see us!



Approaching thunderstorm with lead gust front. Rain-cooled air from the storm moves out ahead of the storm. It ploughs under the warm moist air forming a flat "shelf cloud."

Location: Brookhaven, New Mexico

Photo Date: 1982

Credit: NOAA Photo Library, NOAA Central Library, OAR/ERL/National Severe Storms Laboratory (NSSL)

Strides Continue for the West Texas Mesonet

By Wes Burgett, Texas Tech University and Ed Calianese

Over the past year, great strides have been made in building the West Texas Mesonet. As of February 9th, there were nine stations operational and collecting data in the mesonet. By the end of February 2001, twelve stations are expected to be complete. The team from Texas Tech will construct an additional two to three stations per month until the network is completed sometime in 2002.

When finished the West Texas Mesonet will consist of 35 surface observing stations covering a 28 county area across the South Plains. Each station will measure temperature, relative humidity, wind speed and direction, barometric pressure, soil temperature and wetness, solar radiation, and rainfall. Up to three wind profilers will also be in place by the end of 2002. These profilers will measure wind speed and direction through a vertical column above the instrument allowing users to get a sense of changes in the low-level vertical wind shear, placement of strong wind currents aloft, and movement of upper level disturbances.

There will be a minimum of one station in each county across the South Plains area with two stations in several counties to aid in the completion of the communication network. Stations will collect data every 5 and 15 minutes (depending on the sensor) and transmit the data back to the base station at Reese Center. The data will eventually be posted on the Internet for everyone to use free of charge and will be available directly to the NWS Lubbock office through an ftp server at Reese Center. We expect to begin using this information in the composition of our severe weather product suite and short-term forecasts this spring. We are very excited about the potential usefulness of such a dense observing network in our region of the state.

For additional information about the West Texas Mesonet, visit their website at:

<http://www.mesonet.ttu.edu/>

...Co-op News...

By Johnny S. Wallace, DAPM

Travel was slowed during December due to the wintry precipitation events. The staff will be back in the field soon as there are plans to relocate stations at both Littlefield and Childress during the next month. The Littlefield Observer, Radio Station KZZN, has moved from their old location to a new site in downtown Littlefield. The Childress Observer has also moved to a new residence.

We have not been able to find a new observer for the Muleshoe area. This problem is high on our list of priorities to eliminate. Muleshoe is one of our oldest stations and the loss of data leaves a large void while the search for a new observer continues.

The National Weather Service continues to develop new Internet web-based programs that will serve the Coop program over the next several years. There is a new Cooperative Station Service Accountability program that will go into effect in February that improves the ability to make changes to Coop Station data very easy and much faster. There are plans to have a new PC-ROSA web site that will allow coop observers to make their daily reports online via a computer instead of by telephone.

All of our coop observers were visited during the past year. Lubbock's coop observers continue to be some of the best, ranking high on the list in the National Weather Service Southern Region for fewest missing forms and reports each month. The dedication of our coop observers makes the entire staff at Lubbock very proud to be associated with them.



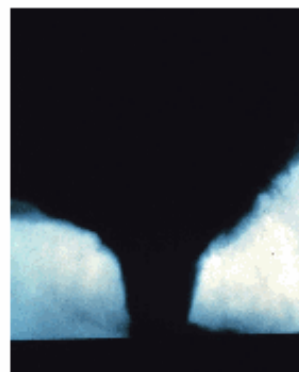
The NWS has initiated a new program to help communities prepare themselves to handle hazardous weather. The program is called **StormReady** and consists of a series of steps that will help the community respond to tornadoes, floods, winter storms, etc. Larger cities need to accomplish many steps to be StormReady. However, medium and smaller towns with fewer resources do not need to do quite as much to be given StormReady status.

Any community that earns StormReady certification will be part of a press briefing and media event to announce their accomplishment. Also, the NWS will supply two StormReady road signs that the community can use to proudly show off their accomplishments. If you are interested, please contact Ed Calianese at 806-745-3916 ext. 223 for more details.

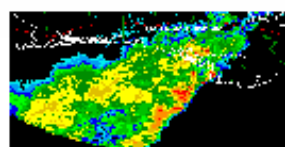
How do we classify tornadoes?

Tornadoes are classified by wind damage according to the Fujita Scale.

Classification	Wind Speed	Damage
F0	72 MPH	LIGHT
F1	73-112 MPH	MODERATE
F2	113-157 MPH	CONSIDERABLE
F3	158-206 MPH	SEVERE
F4	207-260 MPH	DEVASTATING
F5	260-318 MPH	INCREDIBLE



FUJITA WIND DAMAGE SCALE

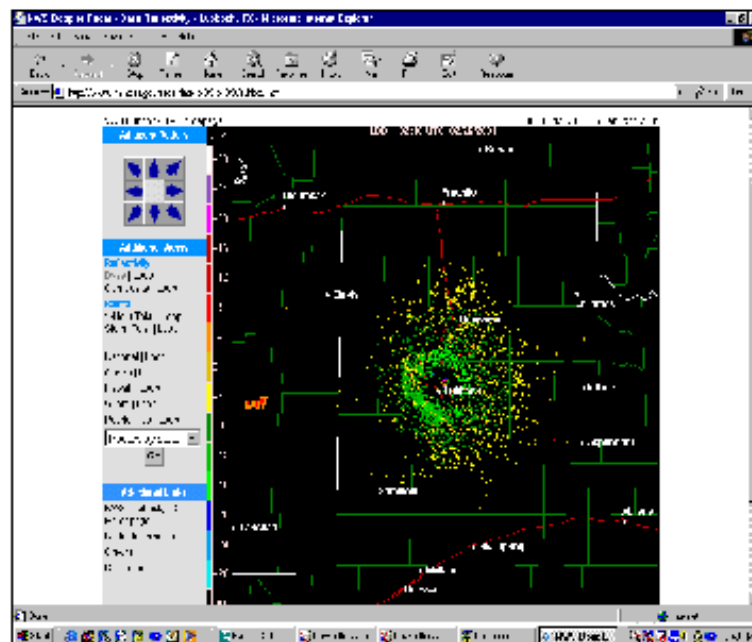


Timely Radar Data Now Available Directly From the NWS

By Anthony Cavallucci - Webmaster

The National Weather Service made current radar data available directly to its customers via the Internet in January 2001 after the expiration of a private vendor contract. If you have web access, then you may have already seen the welcomed addition to our website. You can gain access to every radar in the U.S., including Alaska, Hawaii, Guam, and Puerto Rico. This is all FREE!! Now, on the Internet, we do not have to link to images up to 30 minutes old from other companies. Our customers can now get the most up-to-date radar images available directly from the NWS.

There are currently four radar products available for viewing: Base Reflectivity, Composite Reflectivity, One-hour Precipitation, and Storm Total Precipitation. When the new radar pages are viewed, the latest available radar images will be displayed and the user will be given the



option to run these data in loops. Remember to refresh your browsers occasionally to ensure that you have the most up-to-date data available in your browser. The new radar pages contain links to surrounding radars as well as useful background information about the radar and the radar products themselves. These links are collocated with the latest radar image. Finally, you can get timely radar data online directly from your local National Weather Service office. Reference links:

www.srh.noaa.gov/radar/latest/DS.p19r0/si.klbb.shtml	Lubbock radar page
www.srh.noaa.gov/radar/national.html	National radar page



Spotter Training—2001

Feb 26 Aspermont 700 pm Fire Dept.
 Feb 28 Levelland 700 pm Police Dept.
 Mar 1 Jayton 700 pm Community Center
 Mar 5 Matador 700 pm Fire Dept.
 Mar 8 Silverton/Quitaque 700 pm Quitaque Community Center
 Mar 12 Crosbyton/Ralls 700 pm Crosbyton Fire Hall
 Mar 13 Denver City 700 pm Fire Dept.
 Mar 15 Dimmitt 730 pm Fire Dept.
 Mar 19 Post 700 pm Fire Dept.
 Mar 20 Hart/Olton 700 pm Hart Fire Dept.
 Mar 21 Childress 700 pm Fire Dept.
 Mar 22 Dickens/Guthrie/Spur/McAdoo 700 pm Dickens Community Center
 Mar 26 Memphis 700 pm Fire Dept./City Hall
 Mar 27 Lynn County 700 pm The Center, Tahoka
 Mar 28 Muleshoe 700 pm Fire Dept.
 Mar 29 Ransom Canyon 700 pm Fire Dept.
 Apr 2 Littlefield 700 pm Fire Dept.
 Apr 3 Brownfield 700 pm Fire Dept.
 Apr 5 Happy/Tulia/Wayside 700 pm Happy Fire Dept.
 Apr 9 Shallowater 700 pm Fire Dept.
 Apr 10 Wolfforth/Ropesville 700 pm Wolfforth Fire Dept.
 Apr 12 Paducah 700 pm Fire Dept.
 Apr 16 Floydada 700 pm Fire Dept.
 Apr 18 Plainview 700 pm Fire Dept.
 Apr 19 Parmer County 700 pm Farwell Fire Dept.
 Apr 23 Morton 700 pm Fire Dept.



The potential killer in all thunderstorms is lightning. In fact, in the average year, 100 to 200 people die from the effect of a lightning strike. In most years this is more than tornadoes kill. Lightning is sometimes useful in storm spotting because it can illuminate funnels, tornadoes, or other cloud features at night.

South Plains Severe Weather Climatology

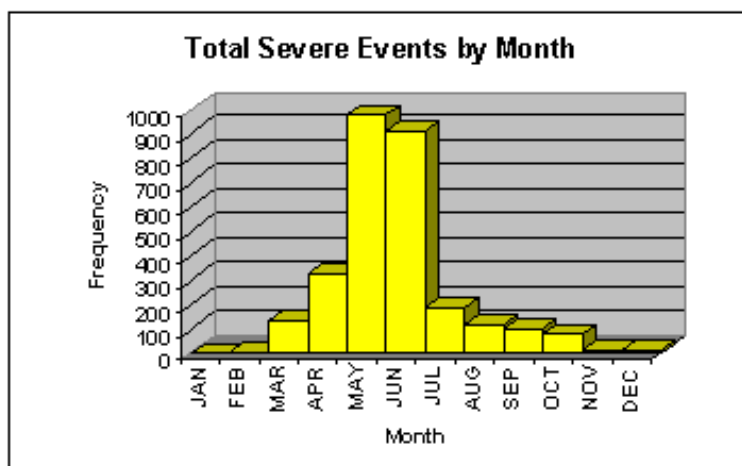
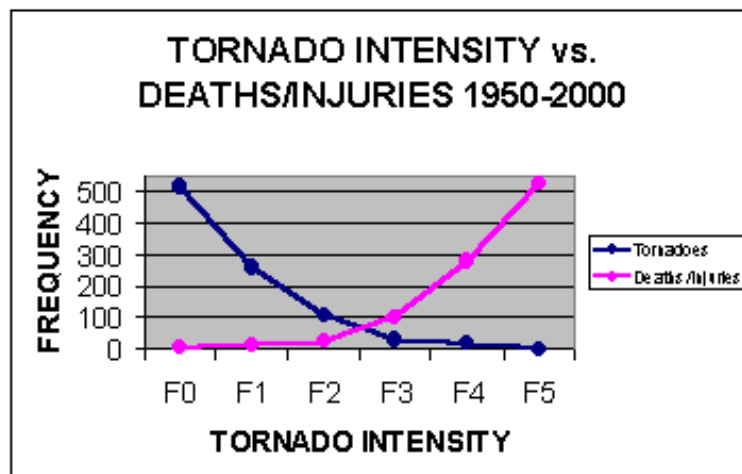
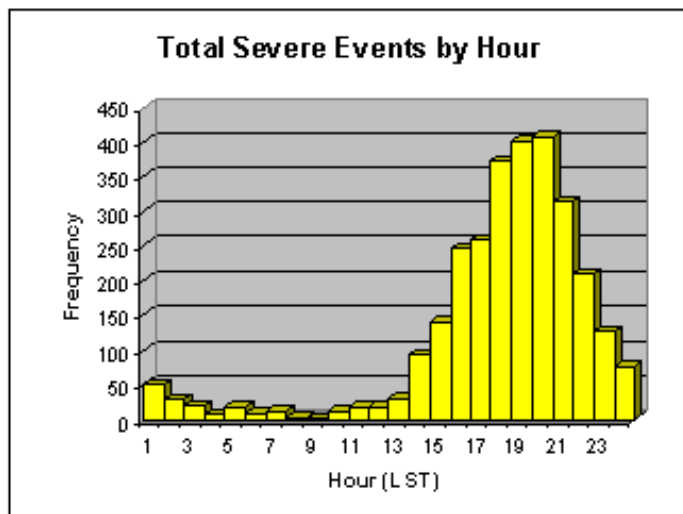
By Ed Calianese

More than 40 years of severe weather data were compiled and analyzed for the 24 counties that make up our County Warning Area in the South Plains, extreme Southern Panhandle, and Rolling Plains. A severe weather event is defined as a tornado, straight line wind that produces damage or is measured or estimated at 58 mph or more, or hailstones with diameters of 3/4 of an inch or more (about the size of a dime). More than half (52%) of all the reported severe weather in this region was hail while wind events accounted for 19% and tornadoes made up 29% of the total reports.

Based on these data, some of which is presented here in graphical form, it is apparent that the necessary ingredients for the development of severe weather (low level moisture, instability, a lifting mechanism, and wind shear) can come together in this portion of West Texas during any month of the year and at any time of the day. Even so, the most likely time of year for severe weather in this area is late spring and during the late afternoon through evening. Sixty-six percent of the severe weather events reported to the NWS occurred in the months of May and June while seventy-seven percent occurred from 400 pm through 10 pm.

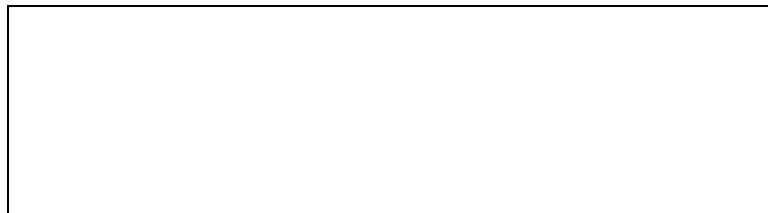
The graph of tornado intensity versus the number of fatalities and injuries showed an interesting trend. Weak tornadoes (producing F0 and F1 damage) accounted for 83 percent of all tornadoes reported but were only associated with 2 percent of the tornado related injuries and fatalities. Strong tornadoes (producing F2 and F3 damage) accounted for 15 percent of the tornadoes reported across the area and resulted in 13 percent of the tornado related injuries and fatalities. Violent tornadoes

(producing F4 and F5 damage), though relatively rare and accounting for only 2 percent of all tornadoes reported, were associated with a disproportionate percentage of the total tornado related injuries and fatalities in our region (85 percent).

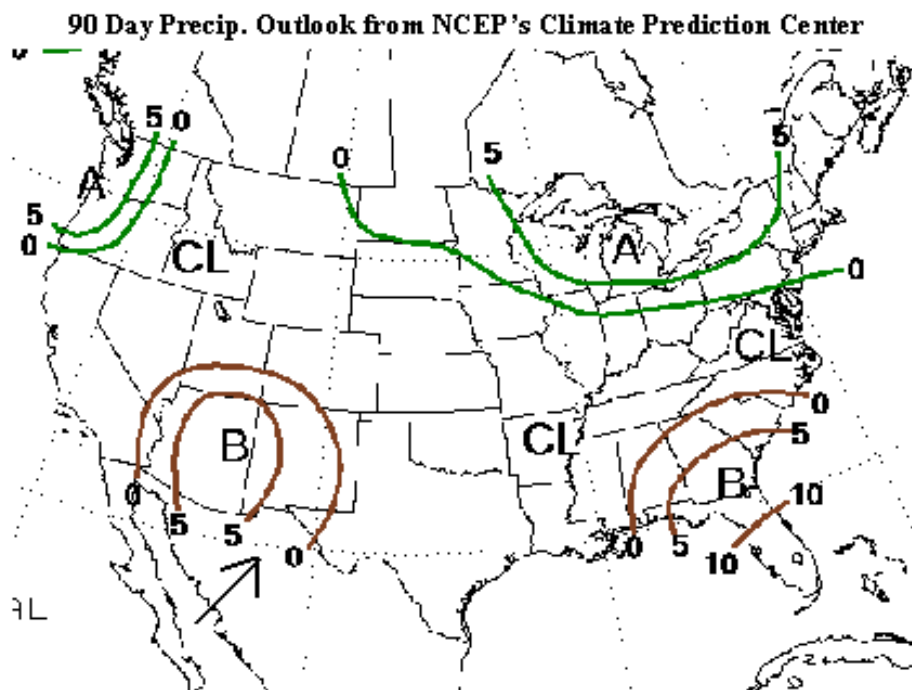




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In This Issue... NWS Radar Data Now Available, West Texas Mesonet, Spotter Training schedule, and more...



Outlook for Precipitation for March, April, and May from the Climate Prediction Center. Below average rainfall is forecast just to our west with near normal amounts across West Texas, and wetter than normal weather over the upper Midwest.

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