

Storm Data and Unusual Weather Phenomena - December 2012

| Location | Date/Time | Deaths & Injuries | Property & Crop Dmg | Event Type and Details |
|----------|-----------|-------------------|---------------------|------------------------|
|----------|-----------|-------------------|---------------------|------------------------|

TEXAS, South Panhandle

(TX-Z021) PARMER, (TX-Z022) CASTRO, (TX-Z023) SWISHER, (TX-Z024) BRISCOE, (TX-Z025) HALL, (TX-Z026) CHILDRESS, (TX-Z027) BAILEY, (TX-Z028) LAMB, (TX-Z029) HALE, (TX-Z030) FLOYD, (TX-Z031) MOTLEY, (TX-Z032) COTTLE, (TX-Z033) COCHRAN, (TX-Z034) HOCKLEY, (TX-Z035) LUBBOCK, (TX-Z036) CROSBY, (TX-Z037) DICKENS, (TX-Z038) KING, (TX-Z039) YOAKUM, (TX-Z040) TERRY, (TX-Z041) LYNN, (TX-Z042) GARZA, (TX-Z043) KENT, (TX-Z044) STONEWALL

| | | |
|--------------------|-----|---------|
| 12/01/12 00:00 CST | 0 | Drought |
| 12/31/12 23:59 CST | 50M | |

Drought conditions on the South Plains and Rolling Plains of West Texas during the month of December remained unchanged. Exceptional (D4) drought was observed across the western South Plains and a portion of Stonewall County. Extreme (D3) drought covered the rest of the South Plains with mostly Severe (D2) drought observed across the Rolling Plains.

December saw a mix of warm, cool, dry and wet weather. The beginning of the month was characterized by well above seasonal average temperatures however the final two weeks saw much below normal temperatures. By the end of the month, departures from normal were +2.4 and +2.3 degrees at Lubbock and Childress, respectively. The year of 2012 was the warmest on record for both Lubbock and Childress. Precipitation ended up being just below normal at Lubbock with higher deficits generally over the Rolling Plains. This was due to two significant snow storms during the month as well as a squall line of thunderstorms. On Christmas day, one of these snow storms brought up to six inches of snow in Friona and Littlefield. Keetch-Byram Drought Index values were also unchanged during December. Highest values were observed across the western South Plains between 500-600. The rest of the South Plains saw values between 400-500 while the Rolling Plains were observed at 300-500.

Despite the precipitation events throughout the month, there was one day which brought high winds and significant blowing dust. These storms become more typical during the dry season in West Texas although the peak occurs in late winter. By the end of the month, fire weather levels dropped due to cooler weather. Additionally, available fuels were below average for December. The snowfall provided some improvement to winter wheat crops and rangelands but amounts were not sufficient to improve deep soil moisture and long term drought conditions.

Economic losses due to drought through December since the drought began were estimated near \$2.6 billion.

(TX-Z027) BAILEY, (TX-Z035) LUBBOCK

| | | |
|--------------------|---|----------------|
| 12/09/12 21:55 CST | 0 | Winter Weather |
| 12/10/12 09:32 CST | 0 | |

Following a strong cold front early on the 9th, a fast-moving upper trough in northwest flow passed over the South Plains late on the 9th and early on the 10th accompanied by a very narrow, but impressive band of moderate to occasionally heavy snow. Even with mild ground temperatures and the fast movement of the snow band, the season's first snow resulted in accumulations around 1/2 inch over much of the South Plains. Muleshoe received the most snow at 1 inch. From midnight through the early morning of the 10th, very cold temperatures in the lower teens and single digits above zero led to hazardous road conditions. Several vehicle accidents were reported by DPS officials, particularly in Lubbock. A fatal vehicle rollover occurred west of Reese Center on Highway 114 after a minivan encountered an icy patch and slid off the road.

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A burst of moderate to occasionally heavy snow deposited at least 1 inch of snow in Muleshoe, TX. Photo courtesy of KCBD news.

BAILEY COUNTY --- 1.5 SSW MULESHOE [34.20, -102.74]

| | | |
|--------------------|---|------------------------------|
| 12/14/12 14:50 CST | 0 | Thunderstorm Wind (MG 56 kt) |
| 12/14/12 14:50 CST | 0 | Source: Mesonet |

Measured by a Texas Tech University West Texas mesonet site.

PARMER COUNTY --- 0.9 NE LAZBUDDIE [34.39, -102.61]

| | | |
|--------------------|---|------------------------------|
| 12/14/12 14:59 CST | 0 | Thunderstorm Wind (MG 57 kt) |
| 12/14/12 14:59 CST | 0 | Source: Broadcast Media |

Measured by a KVII-TV schoolnet station in Lazbuddie.

LAMB COUNTY --- 1.1 E AMHERST [34.02, -102.40]

| | | |
|--------------------|---|------------------------------|
| 12/14/12 15:10 CST | 0 | Thunderstorm Wind (MG 50 kt) |
| 12/14/12 15:10 CST | 0 | Source: Mesonet |

Measured by a Texas Tech University West Texas mesonet site.

PARMER COUNTY --- 0.9 NE FRIONA [34.64, -102.72]

| | | |
|--------------------|---|------------------------------|
| 12/14/12 15:12 CST | 0 | Thunderstorm Wind (MG 56 kt) |
| 12/14/12 15:12 CST | 0 | Source: Broadcast Media |

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| Measured by a KVII-TV schoolnet at the Friona High School. | | | | |
| CASTRO COUNTY --- 0.6 E DIMMITT [34.55, -102.31], 1.7 E DIMMITT MUNI ARPT [34.57, -102.29] | | | | |
| | 12/14/12 15:16 CST | | 0 | Thunderstorm Wind (MG 64 kt) |
| | 12/14/12 15:20 CST | | 0 | Source: Mesonet |
| A Texas Tech West Texas Mesonet site located two miles northeast of Dimmitt recorded a 74 mph wind gust at 1520 CST. At 1516 CST, a weather station at the Dimmitt High School measured a 59 mph gust from the same thunderstorm gust front. | | | | |
| LAMB COUNTY --- 4.2 N BECK [34.01, -102.53] | | | | |
| | 12/14/12 15:25 CST | | 1K | Thunderstorm Wind (EG 52 kt) |
| | 12/14/12 15:25 CST | | 0 | Source: Trained Spotter |
| A trained spotter reported downed power lines at the intersection of FM Road 303 and FM Road 37. | | | | |
| HOCKLEY COUNTY --- 2.1 SSE LEVELLAND MUNI ARPT [33.52, -102.36] | | | | |
| | 12/14/12 15:30 CST | | 0 | Thunderstorm Wind (MG 54 kt) |
| | 12/14/12 15:30 CST | | 0 | Source: Mesonet |
| Measured by a Texas Tech University West Texas mesonet site. | | | | |
| CASTRO COUNTY --- 0.9 NE HART [34.39, -102.11] | | | | |
| | 12/14/12 15:32 CST | | 0 | Thunderstorm Wind (MG 55 kt) |
| | 12/14/12 15:32 CST | | 0 | Source: Broadcast Media |
| Measured by a KVII-TV schoolnet at Hart Elementary. | | | | |
| LUBBOCK COUNTY --- 3.0 S LUBBOCK [33.54, -101.84] | | | | |
| | 12/14/12 16:04 CST | | 0 | Thunderstorm Wind (MG 53 kt) |
| | 12/14/12 16:04 CST | | 0 | Source: Broadcast Media |
| Measured by the KCBD weather station. | | | | |
| LUBBOCK COUNTY --- 2.6 NW LUBBOCK [33.61, -101.88] | | | | |
| | 12/14/12 16:05 CST | | 0.50K | Thunderstorm Wind (EG 52 kt) |
| | 12/14/12 16:05 CST | | 0 | Source: Broadcast Media |
| Broadcast media reported a large tree was blown over and a property fence damaged near Grinnell Street and Detroit Avenue. | | | | |
| LUBBOCK COUNTY --- 3.0 WNW LUBBOCK [33.60, -101.90], 1.9 E DOUD [33.57, -101.90] | | | | |
| | 12/14/12 16:05 CST | | 0 | Thunderstorm Wind (MG 67 kt) |
| | 12/14/12 16:05 CST | | 0 | Source: Mesonet |
| Measured by a Texas Tech University West Texas mesonet site. About two miles south of the mesonet station, a large tree was blown over. | | | | |
| LUBBOCK COUNTY --- 1.8 W LUBBOCK [33.58, -101.88] | | | | |
| | 12/14/12 16:06 CST | | 2K | Thunderstorm Wind (EG 61 kt) |
| | 12/14/12 16:06 CST | | 0 | Source: Broadcast Media |
| Broadcast media relayed a report of 13 shattered vehicle windows at Texas Tech University. | | | | |
| LUBBOCK COUNTY --- 2.4 NW SLIDE [33.45, -101.93], 2.8 NNW SLIDE [33.45, -101.93] | | | | |
| | 12/14/12 16:06 CST | | 2.50K | Thunderstorm Wind (EG 61 kt) |
| | 12/14/12 16:06 CST | | 0 | Source: Broadcast Media |
| A house at 3308 County Road 7540 (about 2.5 miles southwest of Vintage Township) had a small portion of its roof removed by downburst winds. Farther south along Woodrow Road, a few power lines were blown down. | | | | |
| (TX-Z021) PARMER | | | | |
| | 12/14/12 16:10 CST | | 0 | High Wind (MAX 53 kt) |
| | 12/14/12 16:10 CST | | 0 | |

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| LUBBOCK COUNTY --- 1.3 ENE SHALLOWATER [33.69, -101.96] | | | | |
| | 12/14/12 16:11 CST | | 3K | Thunderstorm Wind (EG 61 kt) |
| | 12/14/12 16:11 CST | | 0 | Source: Amateur Radio |
| An amateur radio operator and broadcast media reported downed power lines and snapped utility poles near the corn maze along FM Road 1294. | | | | |
| BRISCOE COUNTY --- SILVERTON [34.47, -101.30] | | | | |
| | 12/14/12 16:25 CST | | 0 | Thunderstorm Wind (MG 63 kt) |
| | 12/14/12 16:25 CST | | 0 | Source: Broadcast Media |
| Measured by a KVII-TV schoolnet in Silverton. | | | | |
| CROSBY COUNTY --- 0.9 SE RALLS [33.67, -101.37] | | | | |
| | 12/14/12 16:35 CST | | 0 | Thunderstorm Wind (MG 56 kt) |
| | 12/14/12 16:35 CST | | 0 | Source: Mesonet |
| Measured by a Texas Tech University West Texas mesonet site. | | | | |
| CHILDRESS COUNTY --- 3.0 S TELL [34.33, -100.38] | | | | |
| | 12/14/12 17:20 CST | | 2K | Thunderstorm Wind (EG 61 kt) |
| | 12/14/12 17:20 CST | | 0 | Source: COOP Observer |
| A NWS CO-OP observer reported moderate damage to a carport three miles south of Tell. A few sheds nearby had sheet metal torn from their roofs. | | | | |
| MOTLEY COUNTY --- 0.7 S NORTHFIELD [34.27, -100.60] | | | | |
| | 12/14/12 17:20 CST | | 0 | Thunderstorm Wind (MG 50 kt) |
| | 12/14/12 17:20 CST | | 0 | Source: Mesonet |

Measured by a Texas Tech University West Texas mesonet site.

After the South Plains saw its first snow of the season earlier this week, a powerful and fast-moving line of thunderstorms plowed across the South Plains this afternoon ahead of a vigorous upper storm system. The day began with abundant low clouds and moisture from the Gulf of Mexico on stiff southerly winds. These clouds parted by late morning followed by even stronger southerly winds with frequent gusts over 40 mph, areas of blowing dust, and abundant sunshine that would further destabilize the atmosphere. As a negatively-tilted upper trough and Pacific cold front began exiting eastern New Mexico shortly after 1300 CST, showers expanded in coverage near the state line and rapidly intensified into thunderstorms as they encountered an increasingly moist and unstable airmass. These storms solidified into a narrow, but intense squall line that raced eastward at highway speeds for the next four hours accompanied by several severe wind gusts measured between 58 and 77 mph. Scattered wind damage was reported throughout the South Plains and in some instances commercial power was disrupted. Well behind the thunderstorms, very strong winds developed a few thousand feet above the ground. Near Friona, these winds briefly mixed to the surface behind the cold front and produced a severe, non-convective wind gust.

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One of several large trees blown over in northwest Lubbock by downburst winds measured as high as 77 mph. Photo credit KCBD news.

(TX-Z023) SWISHER, (TX-Z027) BAILEY, (TX-Z028) LAMB, (TX-Z029) HALE, (TX-Z034) HOCKLEY, (TX-Z035) LUBBOCK, (TX-Z040) TERRY

| | | |
|--------------------|----|------------|
| 12/19/12 11:30 CST | 1M | Dust Storm |
| 12/19/12 18:38 CST | 0 | |

(TX-Z021) PARMER, (TX-Z022) CASTRO, (TX-Z024) BRISCOE, (TX-Z025) HALL, (TX-Z028) LAMB, (TX-Z029) HALE, (TX-Z030) FLOYD, (TX-Z031) MOTLEY, (TX-Z035) LUBBOCK, (TX-Z036) CROSBY, (TX-Z039) YOAKUM, (TX-Z041) LYNN

| | | |
|--------------------|---|-----------------------|
| 12/19/12 12:50 CST | 0 | High Wind (MAX 57 kt) |
| 12/19/12 22:10 CST | 0 | |

A historic dust storm engulfed much of the South Plains this afternoon resulting in dust storm conditions (visibilities at or below 1/2 mile in blowing dust) at the Lubbock International Airport for the longest duration since December 16, 1977. The culprit for this exceptional dust storm was a surface cyclone rapidly deepening in far southwest Kansas ahead of a vigorous upper level trough exiting the southern Rockies. Along the southern periphery of this trough, a deep layer wind maximum overspread the Texas South Plains during the afternoon behind a Pacific cold front. Initially, a layer of thick high clouds prevented these winds from mixing to the surface behind the front, but as the late morning and afternoon wore on, these clouds departed and allowed high winds with frequent gusts around 60 mph to stir up extensive blowing dust on the Caprock. The highest wind gusts as measured by the Texas Tech University West Texas Mesonet developed in Lubbock and Floyd Counties where peak wind gusts of 66 and 72 mph were recorded, respectively. Visibilities fell abruptly to 1/2 mile or less in many rural areas, with near-zero visibility at times as documented by TV news reporters along Interstate 27 in southern Hale and northern Lubbock Counties. These conditions contributed to a deadly 25-vehicle pileup on I-27 just south of New Deal. One man was fatally injured and at least 17 others suffered injuries of varying severity. Law enforcement promptly closed the interstate in both directions for several hours. Also, a mobile triage unit from UMC Hospital was dispatched for the first time ever to assist with accident victims as flight-for-life helicopters were grounded due to the high winds. Several flights at

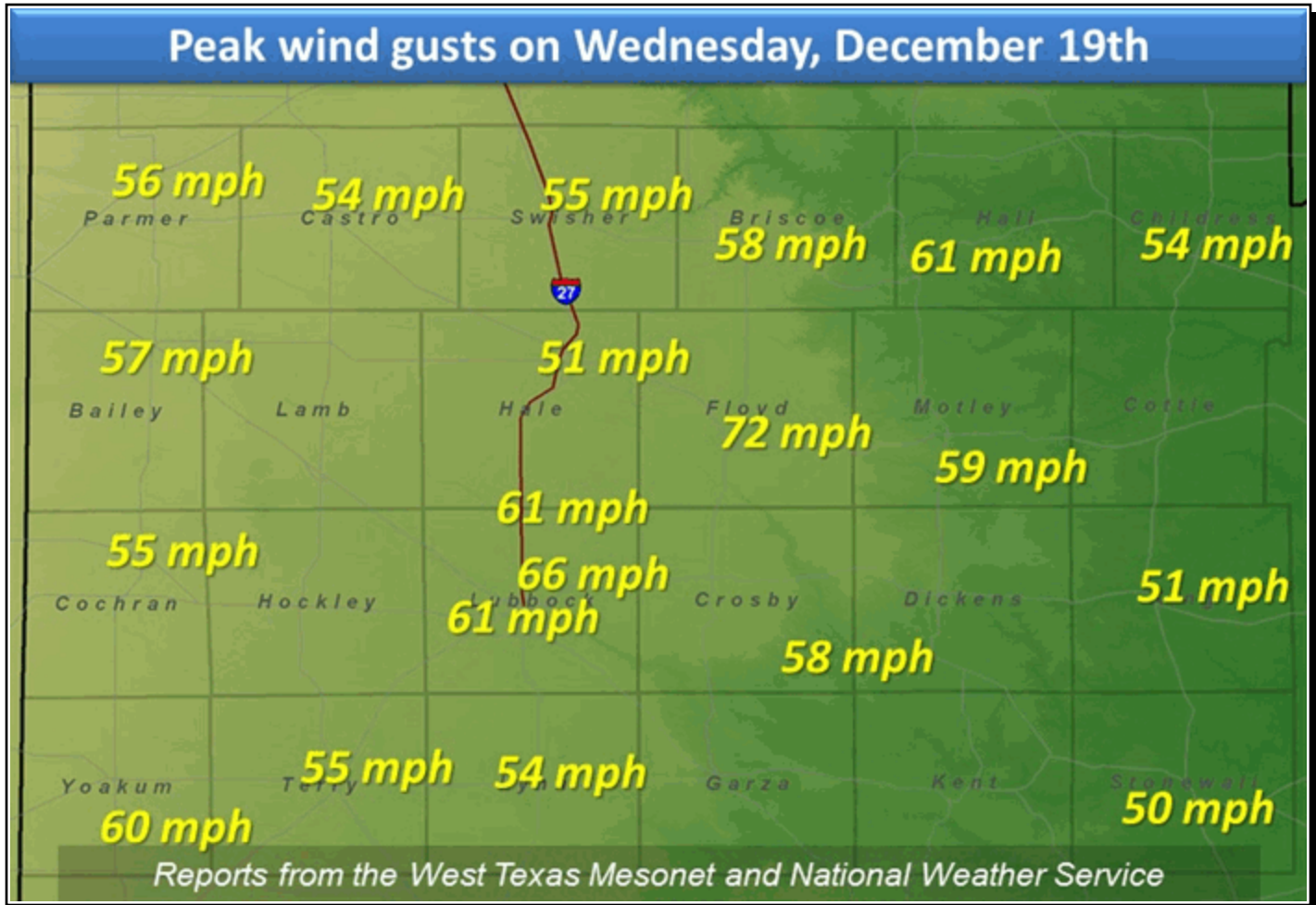
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Lubbock International Airport were grounded until wind and visibility improved by early evening. This significant dust storm was forecast exceptionally well by meteorologists at the Lubbock NWS who provided residents with just over seven hours notice that dangerously low visibilities from blowing dust were inevitable by midday. For some cell phone users in the region, the newly-developed Commercial Mobile Alert System alerted them for the first time of life-threatening weather.

A list of severe wind gusts measured by the Texas Tech University West Texas Mesonet and Automated Surface Observing Systems follows:

66 mph at Lubbock International Airport (Lubbock County)...62 mph at Wolfforth (Lubbock County)...61 mph at Reese Center (Lubbock County)...60 mph at Denver City (Yoakum County)...59 mph at Lubbock (Lubbock County), O'Donnell (Lynn County), Roaring Springs (Motley County), and Memphis (Hall County)...58 mph at Abernathy (Hale County), Floydada (Floyd County), Turkey (Hall County), Silverton (Briscoe County), Olton (Lamb County), and White River Lake (Crosby County).



A plot of peak wind gusts during the December 19, 2012 significant dust storm.

(TX-Z021) PARMER, (TX-Z027) BAILEY, (TX-Z028) LAMB

| | | |
|--------------------|---|--------------|
| 12/25/12 00:00 CST | 0 | Winter Storm |
| 12/25/12 12:00 CST | 0 | |

(TX-Z022) CASTRO, (TX-Z023) SWISHER, (TX-Z033) COCHRAN, (TX-Z034) HOCKLEY, (TX-Z035) LUBBOCK, (TX-Z038) KING, (TX-Z040) TERRY, (TX-Z041) LYNN, (TX-Z042) GARZA

| | | |
|--------------------|---|----------------|
| 12/25/12 01:00 CST | 0 | Winter Weather |
| 12/25/12 12:00 CST | 0 | |

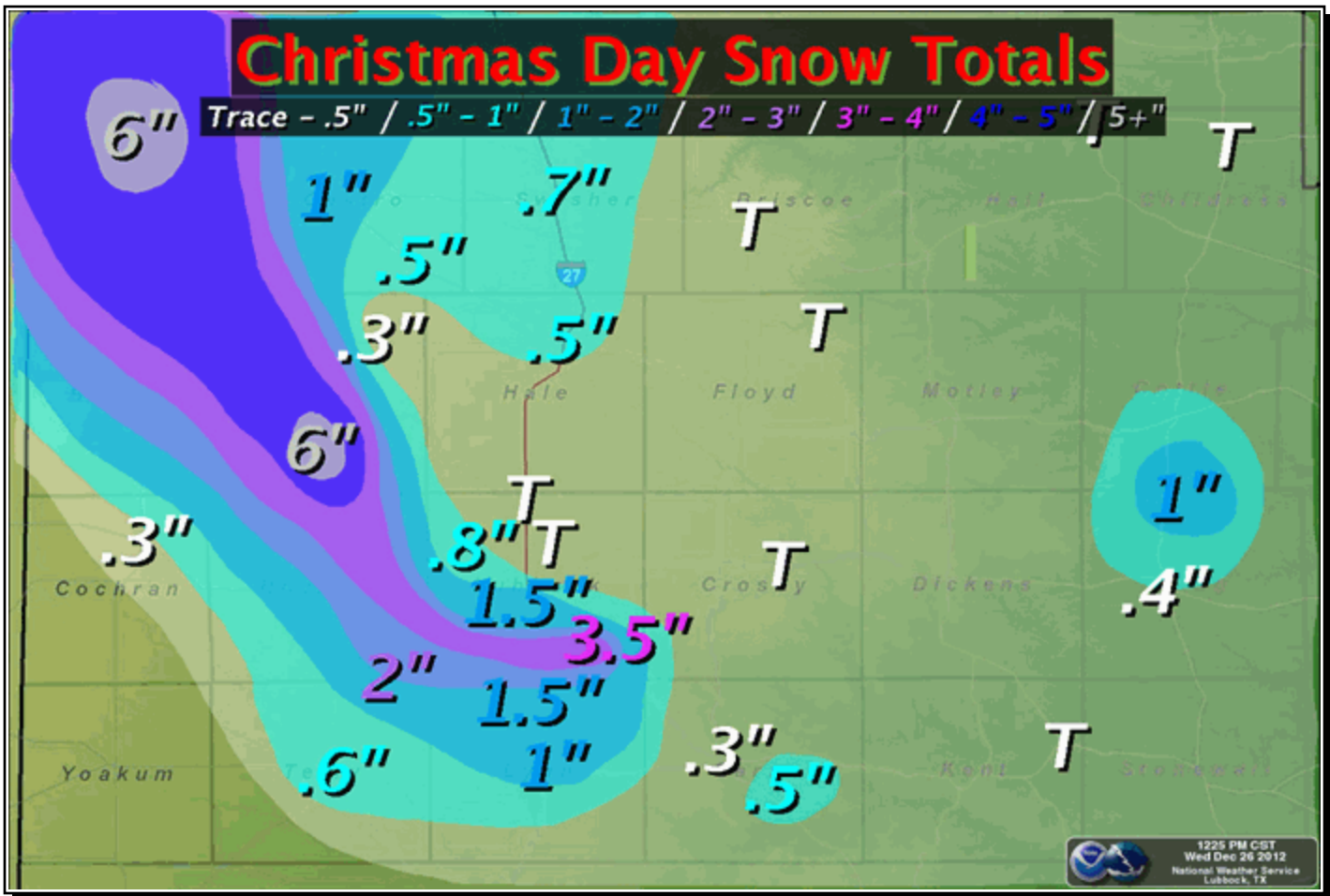
After a rare White Christmas for much of the South Plains the year prior, Christmas of 2012 saw portions of the South Plains blanketed by a swath of mostly light snow; however, a narrow corridor of heavy snow between 4 and 6 inches took aim from Littlefield northwest to Friona. During the overnight hours of Christmas Eve and early Christmas Day, a strong upper trough moved across New Mexico and

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into West Texas by Christmas morning. At the surface, an intensifying low pressure system developed across eastern New Mexico and pushed into Central Texas during the morning hours. This brought a strong cold front through the extreme southern Texas panhandle, South Plains, and Rolling Plains by mid-to-late morning on Christmas Day. Ahead of the front, a light to moderate band of snow impacted much of the extreme southern panhandle, South Plains and Rolling Plains. The snow began diminishing in coverage and intensity by late morning and resulted in a broad snow cover roughly centered along U.S. Highway 84 from Farwell southeast to Post. Within this snow field, a very narrow band of moderate to heavy snow deposited 3 to 6 inches from Parmer County southeast to southern Lubbock County. This welcome snow did lead to a few dozen minor traffic accidents throughout the South Plains region, most of which were focused along Highways 60 and 214 in Parmer County where some of the heaviest snow fell. Reports of injuries, if any, were not available.

Snow totals included: 6 inches at Friona (Parmer County) and Littlefield (Lamb County), 5 inches in Muleshoe (Bailey County), 3.5 inches at Slaton (Lubbock County), 2 inches at Woodrow 3WNW (Lubbock County) and Ropesville 6NNW (Hockley County), 1.5 inches at New Home (Lynn County), and 1 inch at Dimmitt (Castro County), Lubbock 7SW (Lubbock County), Shallowater (Lubbock County), Ropesville 6NNW (Hockley County), Tahoka (Lynn County), and also at Paducah 15S (Cottle County). Remaining counties throughout in the NWS Lubbock forecast area generally measured a trace to a few tenths of an inch of snow. At the Lubbock Airport, just 0.1" of snow was measured, failing to qualify for an official White Christmas unlike the year prior.



Snow totals throughout the NWS Lubbock forecast area during the 2012 Christmas Day snow fall.