

NWS Lubbock

Severe Weather Safety Guide

2011

*“Failure to prepare is preparing
to fail”*

*- John Wooden (UCLA Men’s Basketball Head Coach
(1948-1975))*

Table of Contents

• <i>Message from the Staff</i>	<i>Page 3</i>
• <i>Awareness and Preparedness</i>	<i>Page 4</i>
• <i>Personal Emergency Information</i>	<i>Page 5</i>
• <i>NOAA Weather/All Hazards Radio</i>	<i>Page 6</i>
• <i>South Plains Severe Weather Stats</i>	<i>Page 7</i>
• <i>Thunderstorms</i>	<i>Page 8</i>
• <i>Lightning</i>	<i>Page 9</i>
• <i>Hail</i>	<i>Page 10</i>
• <i>Damaging Winds</i>	<i>Page 11</i>
• <i>Tornado</i>	<i>Page 12</i>
• <i>Tornado Safety</i>	<i>Page 13</i>
• <i>After the Storm</i>	<i>Page 14</i>
• <i>Our Website</i>	<i>Page 15</i>
• <i>Severe Weather Product Guide</i>	<i>Page 16</i>
• <i>Report Severe Weather</i>	<i>Page 17</i>
• <i>Contact Information</i>	<i>Page 18</i>

A message from the staff at NWS Lubbock

“Our thoughts and prayers are with all those who were impacted by the recent historic tornado outbreaks that caused horrific devastation and a large, tragic loss of life across much of the Deep South and Midwest. Since we are located in a region of the country that can be impacted by significant outbreaks of severe weather as well, we ask that you please review these safety rules so that you and your family know how to stay safe when hazardous weather threatens. It is absolutely vital that you have a plan in place to protect yourself and your family BEFORE severe weather threatens, and not be thinking about what you should have done after a storm has already impacted you!”



Tornado damage in Pleasant Grove, AL - courtesy of the Boston Globe

Awareness & Preparedness

The Southern Plains region can get a wide variety of hazardous weather including thunderstorms, lightning, hail, damaging winds, and of course, tornadoes! Although severe weather can strike at anytime of the year, it is most common in our area in the spring months (April-May-June). Though no one can prevent severe weather from occurring, we all can control our preparedness for such events. Make sure that you not only have a way to receive information of rapidly changing weather conditions, but also know what actions to take to keep you and your family or co-workers safe. Know where the best available “safe area” is located at home, work, school, or especially if you’re going to be outside for an extended period of time. Make a plan with your family or co-workers and practice it often!

Construct an emergency kit with supplies that you may need in case you are impacted by severe weather, including some of the items listed on the next page. Be sure that you have any medicines that you or your family may need, a first aid kit, pet supplies, and an ample food and water supply that will sustain you for several days. Make sure you know how to turn off the electrical system at the main circuit breaker or how to shut off your gas valve.



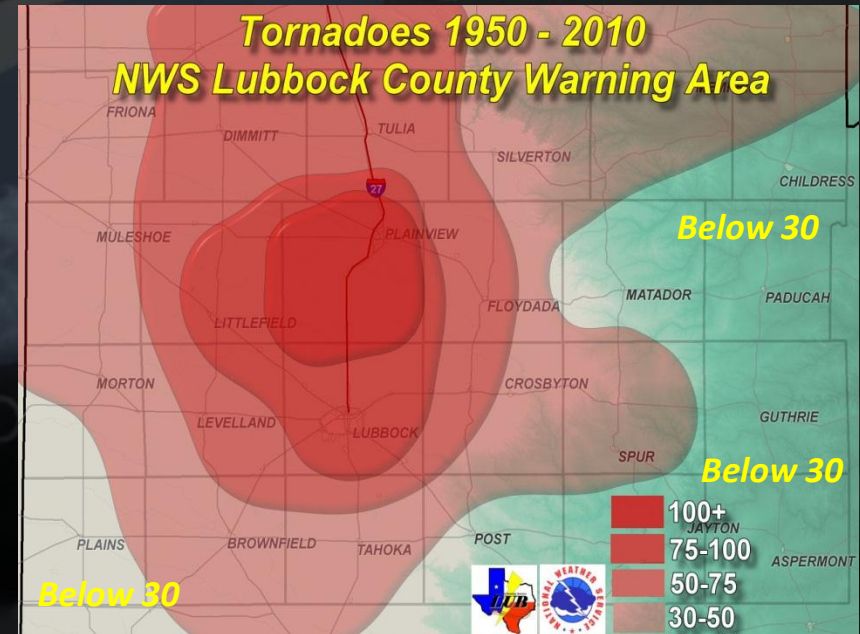
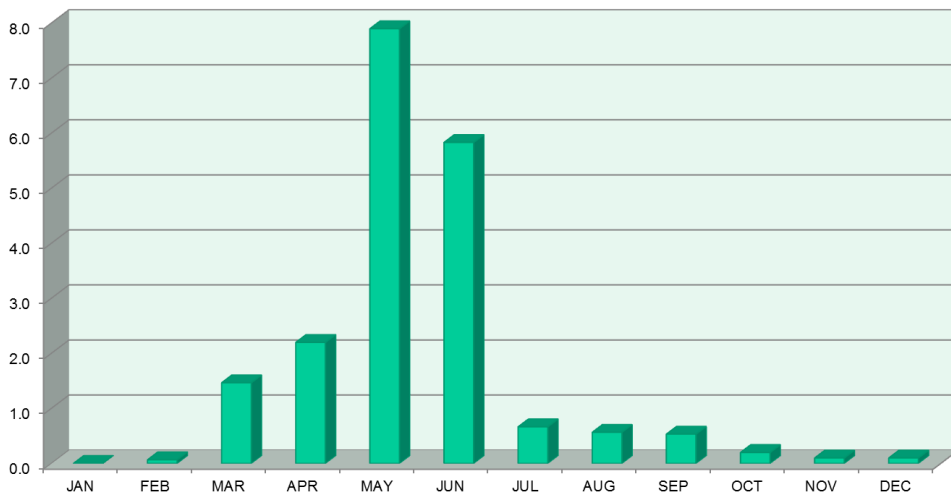
You should always have one or more reliable ways to get accurate weather information. The official policy of the NWS is to have as many ways of receiving and exchanging information as possible. This includes having a NOAA Weather/All Hazards Radio, monitoring local television or radio, using cellular phones/text message alerts, or other local warning systems such as weather sirens.



South Plains Severe Weather Statistics

- On average, the South Plains region will experience 30-50 thunderstorm days per year, with the peak of our severe weather season occurring in the spring (April-May-June).
- As you can see from the graphic below, tornadoes are most common in our area in May and June, though they can also be observed in the early spring and summer months too.
- Tornadoes are mostly likely to occur from the mid afternoon through the late evening from around 04:00 PM to 10:00 PM CDT.
- Over the past 60 years, tornadoes have occurred everywhere in our area. Statistically speaking, the most favored locations have been those along the Interstate 27 corridor.

Avg. Monthly Tornadoes In The Lubbock CWA (1979-2008)



Thunderstorms

Thunderstorms pose a significant threat to residents of the South Plains region each year because they are capable of producing one or more of the following significant weather threats: lightning, damaging winds, hail, flooding, and tornadoes.

What is a “severe” T-storm?

- Winds in excess of 58 mph (50 kts)
- One inch diameter hail (quarter size) or larger
- Tornado

Supercell near Silverton, TX - Courtesy of Mark Conder



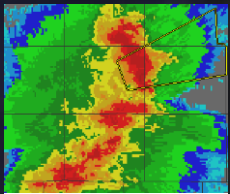
Pulse thunderstorms are usually fairly weak and may only last 30-40 minutes. The probability of severe weather is fairly low, but they are still capable of producing lightning, small hail, and gusty winds.

Pulse



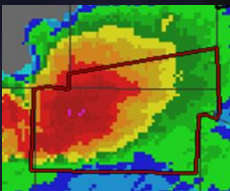
Multicell thunderstorms can become fairly strong and can last for 2-3 hours. They are certainly capable of producing multiple types of severe weather such as damaging winds, moderately large hail, weak tornadoes, and potentially significant flash flooding.

Multicell



Supercell thunderstorms are very intense and can persist for several hours. Because of their strong rotating updrafts, they pose a high risk of producing severe weather over a large area. They are capable of producing damaging winds, giant hail, strong to violent tornadoes and even flash flooding.

Supercell



Safety Tips

- *The best defense against thunderstorms is to stay inside a substantial building or shelter that will protect you from lightning, wind, hail, tornadoes, and heavy rain.*
- *When thunderstorms are expected, stay alert and be aware of rapidly changing weather conditions.*
- *For the latest up to date weather information, stay tuned to your NOAA Weather/All Hazards Radio. Recall your weather safety plan and be ready to take action!*

Lightning

“When Thunder Roars, Go Indoors!”

Lightning is nature’s most “underrated” killer !

- *Lightning kills more people each year on average than tornadoes and hurricanes, but is often overlooked as a significant weather threat.*
- *Unlike other hazards, lightning does not usually kill or injure multiple people at once or cause widespread damage. This often leads people to underestimate how significant the danger really is.*
- *From 1995 to 2010 in Texas, there have been 49 deaths from lightning!*

Safety points to remember!

- *NO PLACE outside is safe when thunderstorms are in the area!!*
- *When you hear thunder, immediately move to a safe shelter.*
- *A safe shelter is a substantial building or inside an enclosed, metal-topped vehicle.*
- *Stay in your safe shelter at least 30 minutes after you hear the last clap of thunder.*

Lightning Facts

- *Lightning will follow a path of least resistance to the ground, often striking the tallest object in an area. You DO NOT want that object to be you!*
- *Avoid seeking shelter under tall objects such as trees or standing next to utility poles, TV towers, or other prominent structures.*
- *Water is an excellent conductor of electricity, so get out bodies of water such as pools or lakes and avoid taking a shower until the storm has passed.*
- *Lightning can also travel great distances, striking several miles away from the parent thunderstorm. In other words, you are still in danger of being struck well before or after the other effects of a thunderstorm impact your location!*

If you can hear thunder, you are close enough to a storm to be struck by lightning!



Courtesy of Todd Lindley



Courtesy of Todd Lindley

Hail

Hail is a form of solid precipitation which consists of balls or irregular chunks of ice that form within thunderstorms. It is formed when updrafts in thunderstorms carry raindrops upward into extremely cold areas of the atmosphere (the stronger the updraft, the larger the hail size). Eventually, the hailstone will become too heavy for the updraft to support and it will fall to the surface. Large hail is most common in the South Plains region in the springtime when the mid to upper-level portions of the troposphere are colder.

Fast Facts

- Large hail can be very dangerous. It can cause damage to objects, such as cars, aircraft, homes, and trees. In some cases, they can cause bodily injuries, or in rare cases deaths.*
- Hail causes nearly \$1 billion in damage to property and crops annually.*
- Hail may take on many different sizes and shapes, ranging from the size of a pea up to the size of a softball or DVD. In extreme cases they can be even larger.*
- The National Weather Service deems hail one inch in diameter (quarter size) or larger to be severe.*
- The largest hailstone fell in Vivian, SD on July 23, 2010 (shown below). It was 8 inches diameter (about the size of a small volleyball) and weighed 1.93 pounds!*



Courtesy of Todd Lindley



Courtesy of NWS Aberdeen, SD

Severe Hail Size Examples

Hail Type	Diameter (in)
Quarter	1.0"
Ping Pong Ball	1.5"
Golfball	1.75"
Lime	2.0"
Tennis Ball	2.5"
Baseball	2.75"
Tea Cup	3.0"
Grapefruit	4.0"
Softball	4.5"
DVD	5.0"

Damaging Wind Events

A downburst is one type of damaging, straight-line wind event which typically occurs during the summer months in single-cell afternoon thunderstorms. They are generated when rain-cooled, dense air sinks inside a thunderstorm. As the air impacts the ground it is forced to spread out laterally causing the gusty winds associated with thunderstorms. Unlike a tornado, winds in a downburst are directed outwards from the point it strikes the earth's surface.



Childress, TX Downburst - Courtesy of Brian James

Fast Facts

- *Each year on the South Plains, damaging wind events occur fairly regularly and account for a large portion of damage caused by thunderstorms.*
- *These strong, straight-line winds are not associated with the rotation of a tornado, but can cause just as much damage as a weak tornado.*
- *Wind speeds from a thunderstorms reach speeds up to 120 mph, creating a large damage path that can extend for several miles.*
- *Trees and power lines can be knocked down, mobile homes are easily overturned or destroyed, and even well-built structures, such as homes or office buildings can be heavily damaged.*



Childress, TX Downburst damage – July 29, 2009

Tornadoes

A tornado is a violently rotating column of air that is connected to a thunderstorm and is in contact with the ground. Although a tornado could potentially develop within any type of thunderstorm, they are most commonly produced by supercells, which occur quite frequently across the South Plains region during the Spring.

Fast Facts

- Tornadoes can vary in size and shape from a few yards in diameter to over a mile wide.
- Winds in a tornado range from 60-70 mph to over 200 mph in extreme cases.
- Although tornadoes can occur anytime of the year and at any time of day, they are most common in South Plains from April through mid-June during the afternoon and evening hours.
- Between 1995-2010, there have been 61 tornado fatalities in the state of Texas!



Courtesy of Eric Nguyen

Tornado near Happy, TX

Tornado near Brice, TX



Courtesy of Bruce Haynie

Tornado Fiction and Fact

FICTION: Lakes, rivers, and mountains protect areas from tornadoes.

FACT: No geographic location is safe from tornadoes. A tornado near Yellowstone National Park left a path of destruction up and down a 10,000 foot mountain.

FICTION: A tornado causes buildings to "explode" as the tornado passes overhead.

FACT: Violent winds and debris slamming into buildings cause the most structural damage.

FICTION: Open windows before a tornado approaches to equalize pressure and minimize damage.

FACT: Virtually all buildings leak. Leave the windows closed. Take shelter immediately. An underground shelter, basement or safe room are the safest places. If none of those options are available, go to a windowless interior room or hallway.

FICTION: Highway overpasses provide safe shelter from tornadoes.

FACT: The area under a highway overpass is very dangerous in a tornado. If you are in a vehicle, you should immediately seek shelter in a sturdy building. As a last resort, you can either: stay in the car with the seat belt on. Put your head down below the windows, covering with your hands and a blanket if possible, OR if you can safely get noticeably lower than the level of the roadway, exit your car and lie in that area, covering your head with your hands. Your choice should be driven by your specific circumstances.

FICTION: It is safe to take shelter in the bathroom, hallway, or closet of a mobile home.

FACT: Mobile homes are not safe during tornadoes! Abandon your mobile home to seek shelter in a sturdy building immediately. If you live in a mobile home, ensure you have a plan in place that identifies the closest sturdy buildings.

Residents of the South Plains are encouraged to be prepared when there is any potential for tornadoes to occur!

Tornado Safety

Protect yourself from flying debris with pillows, heavy coats, blankets, or quilts! Use a bicycle or motorcycle helmets to protect your head!

In your home or office

- Go to a pre-determined shelter, such as a basement or storm cellar. If an underground shelter is not available, go to a small interior room, such as a closet, bathroom, or interior hallway, on the lowest level. Put as many walls between you and the tornado as possible. Stay away from windows and doors.

In Mobile Homes

- Leave well in advance of approaching severe weather and go to a strong building. If there is no shelter nearby, get into the nearest ditch, depression, or underground culvert and lie flat with your hands shielding your head.

In Vehicles

- The first option is to remain in your car and try to out run the tornado, accurately determining the path and speed of the tornado. You can pull off the road and protect yourself from flying debris and shattering glass, hoping the tornado is not strong enough to pick up your vehicle
- The second option is to abandon your vehicle and take shelter in a ditch. Take cover far enough away from your car, so it and other heavy debris does not wind up on top of you.



Courtesy of NWS Norman



Damage near Lake Alan Henry, TX – May 5, 2006



Bridge Creek, OK – May 3, 1999 (NWS Norman)

After the Storm

- *Be aware of hazards from exposed nails and broken glass.*
- *Do not touch downed power lines or objects in contact with downed lines. Report electrical hazards to the police and the utility company.*
- *If it is dark when you are inspecting your home, use a flashlight rather than a candle or torch to avoid the risk of fire or explosion in a damaged home.*
- *If you see frayed wiring or sparks, or if there is an odor of something burning, you should immediately shut off the electrical system at the main circuit breaker if you have not done so already.*
- *If you smell gas or suspect a leak, turn off the main gas valve, open all windows, and leave the house immediately. Notify the gas company, the police or fire departments, or State Fire Marshal's office, and do not turn on the lights, light matches, smoke, or do anything that could cause a spark.*
- *Do not return to your house until you are told it is safe to do so!*



Tornado damage near Ralls, TX – May 12, 2005



Tornado damage near Ralls, TX – May 12, 2005

Our Website

The NWS Lubbock website (www.weather.gov/lubbock) is the most complete and accurate source for weather information across the South Plains region. Here you can find up to the minute forecast information, satellite and radar imagery, climate data dating back for several years, aviation & fire weather forecasts, river and lake water level forecasts & information, storm data information about recent hazardous weather events that may have impacted our area, and various ways you can contact us.

Your National Weather Service forecast
Lubbock TX

Enter Your "City, ST" or zip code

NWS Lubbock, TX Mobile Weather Information | [En Español](#)
 Point Forecast: Lubbock TX Last Update: 4:01 am CDT May 21, 2011
 33.57°N 101.89°W Forecast Valid: 2pm CDT May 21, 2011-8pm CDT May 27, 2011

Forecast at a Glance

This Afternoon	Tonight	Sunday	Sunday Night	Monday	Monday Night	Tuesday	Tuesday Night	Wednesday
Hi 88 °F	Lo 60 °F	Hi 95 °F	Lo 61 °F	Hi 94 °F	Lo 59 °F	Hi 91 °F	Lo 58 °F	Hi 86 °F

Detailed 7-day Forecast [Move Down]

Hazardous weather condition(s): [view Yesterday's Weather](#)

Hazardous Weather Outlook

This Afternoon: Sunny, with a high near 88. Breezy, with a west wind between 20 and 25 mph.

Tonight: Mostly clear, with a low around 60. Southwest wind between 10 and 15 mph.

Sunday: Mostly sunny, with a high near 95. West wind 5 to 10 mph increasing to between 15 and 20 mph.

Sunday Night: Partly cloudy, with a low around 61. Southwest wind between 15 and 20 mph.

Monday: Mostly sunny, with a high near 94. West southwest wind between 15 and 20 mph.

Monday Night: Mostly clear, with a low around 59. Breezy, with a west wind between 15 and 25 mph, with gusts as high as 35 mph.

Tuesday: Sunny, with a high near 91. Breezy, with a west wind between 15 and 25 mph, with gusts as high as 35 mph.

Current Conditions [More Down]

Lubbock International Airport
 Lat: 33.66 Lon: -101.82 Elev: 3215
 Last Update on May 21, 12:53 pm CDT

Humidity:	14 %
Wind Speed:	W 20 MPH
Barometer:	29.86" (1006.4 mb)
Dewpoint:	27 °F (-3 °C)
Heat Index:	79 °F (26 °C)
Visibility:	10.00 mi.

'Fair'
81 °F
(27 °C)

[More Local Wx:](#)

Radar and Satellite Images

By entering your zip code on the upper left hand corner of our homepage, you can access an official seven day forecast for your specific location. The page will give you a quick pictorial view of the expected weather as well as a detailed text based forecast below. In addition links to near by observations sites, and up-to-date satellite and radar imagery is provided.

Click on the map below for the latest forecast.

[Read watches, warnings & advisories](#)

- Severe Thunderstorm Watch
- Flood Warning
- Red Flag Warning
- Fire Weather Watch
- Hazardous Weather Outlook
- Short Term Forecast

Last map update: Sat, May, 21, 2011 at 2:41:38 pm CDT

Our office webpage also has a clickable map that displays all current watches, warnings, statements, and advisories which will quickly inform you of any of the current hazardous weather that may be ongoing in your area!

Storm Chances Returning

After a break from storms, a dryline will settle across West Texas on Friday resulting in slight chances for P.M. thunderstorms thru the weekend.

4:34 AM CDT
 Thu May 20 2010
 National Weather Service
 Lubbock, TX

weather_briefing (08/17/11)

articulate®

1. National Weather Service Lubbock, Texas
 2. Current Conditions
 3. Regional Drought Conditions
 4. State
 5. Current Weather
 6. Today's Forecast
 7. State
 8. SPC Fire Weather Outlook/Sunday, May 8, 2011
 9. SPC
 10. SPC Fire Weather Outlook/Monday, May 9
 11. Red Flag Warning
 12. Red Flag Warning - Safety
 13. Be prepared to take action!
 14. Stay informed!
 15. Thank you for listening!

National Weather Service
Lubbock, Texas

Significant to Extreme Wildfire Danger
May 8-11, 2011!

Decision Support Briefing
 Sunday, May 8, 2011
 12:00 PM CDT

We have also worked to create a few new interactive products to help to convey the latest forecast information and help you, our costumers make informed decisions about what weather impacts to expect. Two of these products are our Graphics and Multimedia Decision Support Briefings shown above.

Severe Weather Product Guide

Tornado Watch (from the Storm Prediction Center):

A "Tornado Watch" is issued when conditions are favorable for the development of tornadoes and severe thunderstorms in and close to the watch area. Tornado Watches are normally issued well in advance of the actual occurrence of severe weather and have an average duration of 4 to 8 hours. If you are located within a designated watch area, take the time to review tornado safety rules and stay informed of the latest weather conditions. That way, you will be ready to take action and move to a place of safety if a warning is issued and threatening weather approaches. During the watch, NWS Lubbock will keep the public informed on what is happening in the watch area and let them know when the watch has expired or is cancelled. Our office will issue a list of the counties included in each watch - see "Special Weather Statement" below.

Tornado Warning (TOR):

A "Tornado Warning" is issued when a tornado is detected on radar or a reliable report of a tornado is received. Persons in the warning area should take immediate action to protect their lives and the lives of others. Tornado Warnings are "Storm-Based Warnings" and are issued as a "polygon" for the threatening tornadic storm. A typical duration for a tornado warning is usually between 30 minutes to an hour. Information provided in the warning includes the location of the tornado and what communities or locations are in the path of the storm. After a warning has been issued, our office will follow it up periodically with Severe Weather Statements.

Special Weather Statement (SPS):

A "Special Weather Statement" is issued to alert the public of hazardous weather situations that are "below" what is designated as severe. For instance, a thunderstorm that contains lightning, gusty winds to 40 mph, and dime sized hail could certainly be considered "strong" or "hazardous", but is not severe. Thus, an NWS meteorologist would issue a SPS to highlight the potential hazards of the storm without issuing a warning for an event that does not warrant one. Finally, it may also be used to inform the public of an impending large scale weather event expected to impact the region in the upcoming days (winter storm, tornado outbreak, etc) or to highlight other hazards such as dense fog, blowing dust, etc.

Severe Thunderstorm Watch (from the Storm Prediction Center):

A "Severe Thunderstorm Watch" is issued when conditions are favorable for severe thunderstorm development or when an organized episode of large hail and/or damaging thunderstorm winds of 58 mph (50 kts) or higher are expected (squall line or derecho). Watches are normally issued well in advance of the actual occurrence of severe weather and have an average duration of 4 to 8 hours. During the watch, persons should stay informed of the latest weather conditions and be prepared to move to a place of safety if a warning is issued. Like with a tornado watch, NWS Lubbock will keep the public informed on what is happening in the watch area and also let them know when the watch has expired or is cancelled. Our office will issue a list of the counties included in each watch. See "Special Weather Statement" below.

Severe Thunderstorm Warning (SVR):

A "Severe Thunderstorm Warning" is issued when a thunderstorm exhibits characteristics of producing large hail or damaging winds in excess of 58 mph (50 kts) on radar or when a reliable report of large hail or wind damage is received. It should also be noted that lightning frequency is not a criteria for issuing a Severe Thunderstorm Warning and that in some situations, severe thunderstorms can produce tornadoes with little or no advance warning. Thus, persons in the warning area should take action and seek safe shelter immediately. Severe Thunderstorm Warnings are "Storm-Based Warnings" and are issued as a "polygon" for the threatening thunderstorm. A typical duration for a Severe Thunderstorm Warning is usually between 30 minutes to an hour. Information provided in the warning includes the location of the storm or line of storms and what communities or locations are in the path of the storm(s). After a warning has been issued, our office will follow it up periodically with Severe Weather Statements.

Severe Weather Statement (SVS):

A "Severe Weather Statement" is used to refresh or update information contained in a Severe Thunderstorm Warning or Tornado Warning. The SVS is an "extension" of a warning that includes updated information on where the thunderstorm or tornado is located and if any severe weather (hail, wind damage, etc) has been reported. Most warnings issued by the NWS have at least one Severe Weather Statement issued to follow up on them. This product is also used to cancel warnings when severe weather has moved out of the warned area.

“Submit a Storm Report”

Reporting severe weather online

Or call:

(806)-745-4260

• **Severe Weather Reports**

(even next day)

• **Pictures**

• **Damage Summaries**

National Weather Service Weather Forecast Office

Lubbock, TX

Home Site Map News Organization Search for: NWS All NOAA

Submit a Storm Report

This interface is intended to be used solely for the relay of storm information to the NWS. Other comments or information should be sent to the [National Weather Service Lubbock, Texas](#).

Event Location

Enter date/time/location of event. Please reference to major roadway or intersection for events within towns/cities.

Event Time:	05	30	PM	<input checked="" type="radio"/> Central
Event Date:	Mar	14	2011	
County:	-- Select a County --			
Location (7 NW Mytown):	<input type="text"/>			

Event Type (Select all that apply)

Click box next to events you observed. Next, select appropriate sub-descriptor in pull down menus to describe event.

<input type="checkbox"/> Flood	--Select a flooding category--	
<input type="checkbox"/> Hail	--Select a Hail size--	
<input type="checkbox"/> High Wind Speed	--Select a Wind speed--	
<input type="checkbox"/> Tornado/Funnel Cloud	--Select a report--	
<input type="checkbox"/> Wind Damage	--Select a Wind Damage Desi	
<input type="checkbox"/> Snow	--Select a snow total--	--Select a duration--
<input type="checkbox"/> Freezing Rain/Icing	--Select an ice total--	--Select a duration--
<input type="checkbox"/> Heavy Rain	--Select a rainfall total--	--Select a duration--

Additional Details

Provide any additional information that you feel is pertinent to your submission (500 characters maximum).



Local forecast by "City, St" or Zip Code

[XML](#) [RSS Feeds](#)

Current Hazards
Local
Nationwide
Outlooks
Storm Prediction Center

Forecasts
Local
Forecast Discussion
Activity Planner
Graphical
Fire Weather
Aviation Weather

Current Weather
Observations
Satellite Images
Rivers/Lakes
West Gulf River
Forecast Center
Precip Estimate
Precip Analysis
Drought Information

Radar Imagery
Nationwide
Lubbock
Amarillo
South Plains
Pick a Radar

Climate
Local
National
More...

Weather Safety
Get Prepared
Weather Radio
SKYWARN
StormReady

Contact Information

- Feel free to contact us if you have any questions:
- National Weather Service
Lubbock, TX
Weather Forecast Office
2579 S. Loop 289
Suite 100
Lubbock, TX 79423-1400
(806)-745-4260
- Monday-Friday (8:00 am-4:30 pm)
excluding federal holidays.



We are located inside the Science Spectrum along South Loop 289 in Lubbock.