Severe Weather Awareness Week

March 27—31st, 2006

With springtime right around the corner, it is never too early to start preparing for the severe weather season. **Monday, March 27th through Friday, March 31st, has been chosen as Severe Weather Awareness Week for the entire state of Nebraska.** As long as no severe weather is occurring or expected that day, the statewide tornado drill will be conducted by the National Weather Service on Wednesday, March 29th. The purpose of the drill is to ensure that Nebraskans can adequately receive a tornado watch or warning and to practice any actions which would be taken to protect your life in the event of a real tornado. The test warning will be sent through all communication channels which are normally used for severe weather dissemination.

This tornado drill presents an excellent opportunity for everyone at work, school, or at home to practice their safety measures, and we hope all will participate. The tornado drill for North Central and Western Nebraska has been scheduled for the following time:

Wednesday, March 29th at 10:35 AM CST (9:35 AM MST)

In addition to Severe Weather Awareness Week, the National Weather Service will also concentrate on flood safety during Flood Safety Awareness Week. **Monday, March 20th through Friday, March 24th, has been chosen as Flood Safety Awareness Week.** Due to the fact that on average more deaths are caused by flash floods than by tornadoes and hurricanes, it is very important to highlight safety measures of which all people need to be aware. More information on flood safety can be found at the following web page: http://www.weather.gov/floodsafety

Severe Weather Awareness Week and Flood Safety Awareness Week provide the National Weather Service with the opportunity to test communication systems and get life saving safety information out to the public. Each day during both of these awareness weeks, the National Weather Service will concentrate on one safety topic and have this information available on our web page as well as on NOAA Weather Radio All-Hazards.

We hope that you will find the enclosed information useful and please stress to others the importance of tuning into a local radio or television station or NOAA Weather Radio All-Hazards when severe weather strikes. Emergency sirens are designed for outdoor notification and people may not receive the warning due to indoor noise or equipment malfunctions. If you have any questions about the information given here, please do not hesitate to contact us.

National Weather Service
5250 East Lee Bird Drive
North Platte, Nebraska 69101
(308) 532-4936
1-800-603-3562
http://www.weather.gov/northplatte

Reminder…

Emergency Managers,

Do you have this season's storm spotter training set up? If not, please contact our Warning Coordination Meteorologist, Deb Blondin, to set up your training. Deb can be contacted via the phone numbers above or by email at debra.blondin@noaa.gov. To view any training sessions already planned, please visit the site below.

http://www.weather.gov/northplatte/?n=northplattestormspottertrainingschedule

Terminology

Severe Weather Awareness Week — March 27-31,2006

SEVERE THUNDERSTORM — A thunderstorm is considered severe when it produces any of the following: Hail 3/4 of an inch (penny size) or larger in diameter, winds which equal or exceed 58 miles per hour, or a tornado.

SEVERE THUNDERSTORM WATCH — Issued when conditions are favorable for the development of severe thunderstorms in and close to the watch area. The size of the watch can vary depending on the weather situation and is usually issued for a duration of 4 to 8 hours. During the watch, people should review severe thunderstorm safety rules and be prepared to move to a place of safety if threatening weather approaches.

SEVERE THUNDERSTORM WARNING — Issued when a severe thunderstorm is detected by radar or reported by storm spotters. Information in this warning will include the location of the storm, what areas will be affected, and the primary threat associated with the storm. People in the affected area should seek safe shelter immediately. Severe thunderstorms can produce tornadoes with little or no advance warning. Severe Thunderstorm Warnings can be issued without a Severe Thunderstorm Watch already in effect.

FUNNEL CLOUD — A funnel shaped cloud, usually extending from a convective cloud, which is associated with a violently rotating column of air that is NOT in contact with the ground.

TORNADO — A violently rotating column of air that extends from a convective cloud and is in contact with the ground. The entire column of air associated with a tornado is not always visible. A tornado may only be visible once it has picked up enough dirt and debris.

TORNADO WATCH — Issued when conditions are favorable for the development of tornadoes in and close to the watch area. The size can vary depending on the weather situation and is usually issued for a duration of 4 to 8 hours. During the watch, people should review tornado safety rules and be prepared to move to a place of safety if threatening weather approaches.

TORNADO WARNING —Issued when a tornado is detected by radar or reported by storm spotters. Information in this warning will include the location of the tornado and what areas are in its path. People in the affected area should seek safe shelter immediately as tornadoes can strike with little to no warning. Tornado Warnings can be issued without a Tornado Watch already in effect.

SEVERE WEATHER STATEMENT — A product issued which provides follow-up information on any severe weather warnings in effect and conditions which have occurred or are occurring. This information includes updated storm paths and any storm reports, such as hail size or damage, received from spotters.

FLASH FLOOD — A rapid rise in water that occurs with little or no advanced warning, usually as the result of intense rainfall over a relatively small area in a short amount of time. Flash Floods can also be caused by dam or levee failures, ice jams, and topography.

FLASH FLOOD WATCH — Issued to indicate current or developing hydrologic conditions that are favorable for flash flooding in and close to the watch area. When a watch is issued, be aware of any potential flood hazards. Those in the affected area are urged to be ready to take quick action if a Flash Flood Warning is issued or flooding is observed.

FLASH FLOOD WARNING — Issued when flash flooding is in progress, imminent, or highly likely. Those in the affected area should evacuate immediately or move to higher ground if possible. Information in this warning will include the locations in the flood and any areas which may be impacted. Flash Flood Warnings can be issued without a Flash Flood Watch in effect.

FLASH FLOOD STATEMENT — A product issued which provides follow-up information on any flooding which has occurred or is occurring.

Severe Thunderstorm Safety

Severe Weather Awareness Week — March 27-31,2006

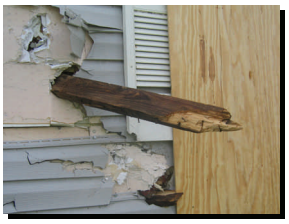
Thunderstorms are a common occurrence across Nebraska, and if the right conditions exist, some will become severe. Recall that if a thunderstorm produces hail equal to or greater than 3/4 of an inch in diameter (penny size), winds equal to or greater than 58 miles per hour, or a tornado, it is considered severe. Even though thunderstorms can and do occur at any time of the year, the most common time for thunderstorms, and especially severe thunderstorms, is during the spring, summer, and early fall.

There are a number of dangerous aspects of thunderstorms, severe or not, that pose a threat to life and property.

- Lightning – Occurs with ALL thunderstorms.
- Floods – Kills more people on average than any other weather hazard.
- Straight-Line Winds – Can exceed 100 miles per hour and cause damage equivalent to a tornado.
- Large Hail – Causes millions of dollars each year in crop and property damage.
- Tornadoes – Nature's most violent storm, with winds over 200 miles per hour possible.

What do I do before the storm?

- ***Develop a plan of action!*** Know where to go when severe weather strikes. Prior to severe weather season, make sure to identify a safe place to take shelter at home, work, school, and outdoors. Once you have a plan of action and a shelter identified, have frequent drills to ensure everyone knows what to do at all times.



- Know the name of the county where you live and the names of surrounding counties and cities. Warnings are issued on a county basis and cities will be named within the warning when possible.
- Check weather forecasts before leaving for extended periods outdoors.
- Keep an AM/FM radio or NOAA Weather Radio All-Hazards with you to get the latest weather information.
- Watch for signs of approaching storms, such as darkening skies, increasing winds, flashes of lightning, thunder, and static on your AM radio.

Did you know…

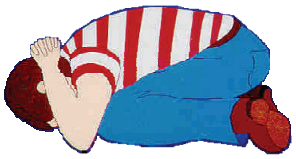
- The average forward speed of a tornado is 30 miles per hour, but may vary from nearly stationary to near 70 miles per hour.
- Lightning can occur from cloud-to-cloud, within a cloud, cloud-to-ground, or cloud-to-air.
- A downburst is a small area of rapidly descending air beneath a thunderstorm. Once this air hits the ground, it spreads out, causing potentially damaging straight-line winds. Downbursts present an extreme danger to aviation.

- Large hail stones can fall at speeds greater than 100 miles per hour.
- The largest hailstone ever recorded in the United States fell in Aurora, Nebraska, on June 22, 2003. This hailstone had a 7 inch diameter and a circumference of 18.75 inches.
- The "100 year flood" is a climatic average; there is a 1% chance that a 100 year flood will occur in any given year.

Tornado Safety

Severe Weather Awareness Week — March 27-31,2006

What do I do when a tornado is approaching or a Tornado Warning has been issued?



- **SEEK SHELTER *IMMEDIATELY!* Once in shelter, take the protection position.**

Where do I go?

- **Reinforced shelters** – A basement or underground shelter is the best option. Protect your head and eyes from deadly flying debris. If no basement is available, go to the interior part of the lowest floor – such as a bathroom or closet. If possible get under something sturdy like a bench or table. *Stay away from windows*.

What about if I am located in…

- **Mobile Homes** – Mobile homes are particularly vulnerable to overturning and destruction from strong winds and tornadoes. Tie-downs generally will not protect a mobile home from tornadoes. If possible, leave the mobile home and go to a community shelter. If none is available, a ditch, culvert, or other low lying area may offer better protection. Have a plan of action prepared before a storm hits.

- **Schools** – Follow plans made in advance to go to a basement or an interior hallway on the lowest floor. Restrooms in the middle of buildings can also offer some shelter from flying debris. Avoid the end of any hallway that opens to the outside as well as classrooms with windows or outside walls. Stay out of auditoriums, gymnasiums, or any other structure with wide free-span roofs, as these types of structures are quite vulnerable to tornadic winds. Do **NOT** board or stay on school buses in a tornado warning! School buildings offer more protection and safety.

- **Office buildings, hotels, and shopping malls** – Go to a basement, designated shelter, or to the center of the building on the lowest level. Never stay in the upper levels of buildings, they are unsafe. Always stay inside of the building, do not seek shelter inside of cars in the parking lot. Avoid large open rooms and windows, remember buildings with large free-span roofs are vulnerable to tornadic winds. Occupants should leave these areas and move to smaller interior areas.

- **Automobiles and other vehicles** – Abandon your vehicle and seek cover in a basement, shelter, or sturdy building. As a last resort, if no shelter is available, lie flat in a low lying area such as a ditch or culvert. Remember to protect your head by using your arms.

- **Open country** – If possible and if time permits, seek shelter inside. If this is not possible, lie flat in the nearest low lying area such as a ditch or culvert. Remember to protect your head by using your arms.

KNOW THE FACTS!

Myth: Highway and interstate overpasses are safe shelters against a tornado.

Fact: Overpasses can concentrate the tornado winds, causing them to be significantly stronger. This places the people under them in an even more dangerous situation. In recent years, several people seeking shelter beneath overpasses have been killed or severely injured. Being above ground level during a tornado is dangerous.

Myth: The low pressure with a tornado causes buildings to explode. Opening the windows will equalize the pressure, saving the building.

Fact: Opening the windows in an attempt to equalize pressure will have no effect. It is the violent winds and debris that cause most structural damage. It is more important for you to move to a safe area away from windows and exterior walls. With a tornado, every second counts, so use your time wisely and take cover.

Lightning Safety

Severe Weather Awareness Week — March 27-31,2006

One dangerous aspect of weather that sometimes is not taken as seriously as others is lightning, also known as the Underrated Killer. In the United States, an average of 67 people are killed each year by lightning, with many more who survive strikes but suffer long lasting injuries and symptoms.

Avoid getting caught in a dangerous situation, if you can hear thunder, you are close enough to be struck by lightning!

- Move into a sturdy building or an automobile with a metal top. The metal car body will allow the charge to be conducted away from you. An open vehicle will not offer this protection.
- Golfers and ball players are at risk by wearing metal cleats and handling golf clubs and metal bats which can act as lightning rods. These people and any fans present are especially vulnerable because they are usually on a fairway or ball field, both of which are wide open. Those attending rodeos or concerts in open arenas, sitting on metal bleachers or under a metal overhang, are also at risk. When thunderstorms approach, head for shelter.
- Get out of boats and away from water, as water is an electrical conductor. On the open water, you become the tallest object and a prime target.
- If lightning is close, and there is no immediate shelter, crouch down onto the balls of your feet. Do NOT lie down and give lightning more surface area to strike. By crouching down you are as low to the ground as possible with the minimum amount of contact with the ground.

Did you know…

A thunderstorm does not have to be massive in size or severe in nature to create potentially fatal lightning strikes.

- As any thunderstorm grows, areas of rising and descending air cause a buildup and separation of positively and negatively charged particles within the storm. At the same time, oppositely charged particles are gathering on the ground below. The attraction between the particles in the cloud and at the ground quickly grows, and once the force is strong enough to overcome the air's resistance, lightning occurs.

Lightning can rapidly reach a temperature near 50,000 degrees Fahrenheit.

- The rapid expansion of heated air causes the sound one hears as thunder. Since light travels faster than sound through the atmosphere, the sound will be heard after the lightning is seen.

For safety, use the "30-30 Rule".

- Count the seconds between the time you see a lightning strike and hear thunder. If that time is less than 30 seconds, you should already be in a safe location. If you are not in a safe location, you should be heading to one immediately.
- You may go outside and resume activities after 30 minutes have passed since you last heard thunder.

To estimate your distance from lightning, use the "Flash to Bang Method".

- If you observe a lightning strike, count how many seconds pass before you hear thunder. Take that number and divide it by five to estimate your distance from the lightning in miles.

  Example: After a strike, you count to 15 before you hear thunder. 15 divided by 5 gives you an estimated distance of 3 miles.

KNOW THE FACTS!

Myth: It's not raining here, and skies above me are clear, therefore I am safe from lightning.

Fact: Lightning can strike many miles away from the thunderstorm. If storms are in your area, but skies happen to be clear above you, that certainly does not imply you are safe from lightning. Though these "Bolts from the Blue" are infrequent, lightning strikes 10 to 15 miles away from the storm are not out of the question.

Myth: Since I am inside my house and out of the storm, I am completely safe from lightning.

Fact: Just because you have taken shelter inside, you are not automatically safe. While inside waiting out a storm, avoid using the telephone or electrical appliances and do not take showers or baths. Also stay away from doors and windows. Telephone lines, cords, plumbing, even metal window and door frames are all lightning conductors and pose a threat.

Flash Flood & Flood Safety

Severe Weather Awareness Week — March 27-31,2006

Quick Quiz…

True or False *– On average, the highest number of people killed from weather hazards are by tornadoes.*

Did you answer "True"? If so, you are **incorrect**! On average, more people are killed by flooding than by any other single severe weather hazard, including tornadoes, lightning, and hurricanes. Most of these deaths occur at night, when is it more difficult to recognize flood dangers, and when people are trapped in vehicles.

Remember…

- DO NOT drive onto a flooded roadway.
- DO NOT drive through flowing water.
- If you approach a roadway that is flooded, TURN AROUND - DON'T DROWN.
- Drive with extreme caution if roads are even just wet or it is raining. You can lose control of your vehicle if hydroplaning occurs, which is when a layer of water builds up between your tires and the road causing there to be no direct contact between your vehicle and the road.

If a Flash Flood Warning is issued for your area…

- If advised to evacuate, do so immediately! Act quickly to save yourself, you may not have much time.
- Get out of areas that are subject to flooding and move to a safe area before access is cut off by flood waters. Low spots such as dips, canyons, and washes are not the places you want to be during flooding!
- Do not camp or park your vehicle along streams and washes, particularly during threatening conditions.
- Do not drive if not necessary. If driving is necessary, do **NOT** attempt to drive over a flooded road, as the depth of the water is not always obvious, and the roadway may no longer be intact under the water. Never drive around a barricade, they are placed there for your protection! If your vehicle stalls, leave it immediately and move to higher ground before water sweeps you and your vehicle away.
- Never try to walk, swim, or play in flood water. You may not be able to determine if there are holes or submerged debris, or how quickly the water is flowing, and you may be swept away. If water is moving swiftly, as little as 6 inches of water can knock you off of your feet! There is also a danger of hazardous materials polluting the water. Also remember that water is an electrical conductor, if there are power lines down, there is a possibility of electrocution.
- Always continue to monitor the situation through your NOAA Weather Radio All-Hazards, local television or radio stations.

KNOW THE FACTS!

Myth: Larger vehicles, such as SUVs and pickups, are safe to drive through flood waters.

Fact: It is a common belief that the larger the vehicle, the deeper the water it can drive through. Many people do not realize that two feet of water can float most vehicles, including SUVs and pickups. If the water is moving rapidly, vehicles can be swept away.

Myth: Flash floods only occur along flowing streams.

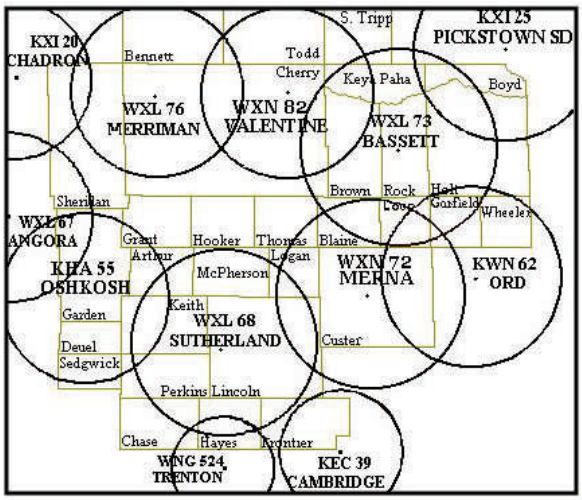
Fact: Flash floods can and do occur in dry creek or river beds as well as urban areas where no streams are present.

NOAA Weather Radio All-Hazards

Severe Weather Awareness Week — March 27-31,2006

NOAA Weather Radio All-Hazards (NWR), also known as the "Voice of the National Weather Service", is a nationwide network of radio transmitters which broadcasts continuous weather information from a nearby National Weather Service Forecast Office. It is one of the best and easiest ways to get weather information for your area. NWR broadcasts National Weather Service watches, warnings, statements, and forecast information 24 hours a day. Along with weather, other information including Hazardous Material Warnings, Civil Emergency Messages, and Amber Alerts will be broadcast over each transmitter. Anyone can purchase a NWR receiver, which come in a variety of styles and prices, and can be found in electronics stores across the country.

The National Weather Service Forecast Office in North Platte, Nebraska, operates six of the NWR Transmitters which serve the residents of North Central, West Central, and Southwest Nebraska. The image below shows locations of the transmitters which serve residents in this area, including transmitters which are operated by neighboring National Weather Service Forecast Offices. The circles around each transmitter represent the optimal range of reception, which is approximately 40 miles. Reception of the broadcast depends on numerous factors, including the type of receiver used, terrain, weather, and distance from the transmitter.



WXL 68 - Operates at a frequency of 162.550 megahertz from tower facilities near Sutherland, Nebraska. Counties in the coverage of this transmitter include portions of Arthur, McPherson, Logan, Keith, Lincoln, Perkins, Chase, Hayes, and Frontier Counties in Nebraska. All weather information for Hayes County is also broadcast on Transmitter WNG 524. This transmitter is located near Trenton, Nebraska, and operates at a frequency of 162.500 megahertz. All weather information for Frontier County is also broadcast on Transmitter KEC 39. This transmitter is located near Cambridge, Nebraska and operates on a frequency of 162.525 megahertz.

WXL 73 - Operates at a frequency of 162.475 megahertz and transmits from tower facilities near Bassett, Nebraska. Counties in the coverage of this transmitter include portions of Keya Paha, Boyd, Brown, Rock, Holt, Blaine, Loup, Wheeler and Garfield Counties in Nebraska. All weather information for Boyd and Holt Counties in Nebraska is also broadcast on Transmitter KXI 25. This transmitter is located near Pickstown, South Dakota and operates at a frequency of 162.425 megahertz. All weather information for Custer, Garfield, Loup, and Wheeler Counties in Nebraska is also broadcast on Transmitter KWN 62. This transmitter is located near Ord, Nebraska and operates at a frequency of 162.525 megahertz.

WXL 76 - Operates at a frequency of 162.400 megahertz and transmits from tower facilities near Merriman, Nebraska. Counties in the coverage of this transmitter include portions of Sheridan and Western Cherry County in Nebraska as well as Bennett County in South Dakota. All weather information for Sheridan County is also broadcast on Transmitters KXI 20 and WXL 67. KXI 20 is located near Chadron, Nebraska and operates at a frequency of 162.525 megahertz. WXL 67 is located near Angora, Nebraska and operates at a frequency of 162.475 megahertz.

WXN 72 - Operates at a frequency of 162.500 megahertz and transmits from tower facilities near Merna, Nebraska. All weather information for Blaine and Custer Counties is broadcast over this transmitter.

WXN 82 - Operates at a frequency of 162.450 megahertz and transmits from tower facilities near Valentine, Nebraska. Counties in the coverage of this transmitter include portions of Eastern Cherry County in Nebraska and Todd and Tripp Counties in South Dakota.

KHA 55 - Operates at a frequency of 162.525 megahertz and transmits from tower facilities near Oshkosh, Nebraska. Counties in the coverage of this transmitter include portions of Garden, Deuel, Keith, and Perkins Counties in Nebraska as well as Sedgwick County in Colorado. All weather information for Garden County is also broadcast on Transmitter WXL 67. This transmitter is located near Angora, Nebraska and operates at a frequency of 162.475 megahertz.

2005 Severe Weather Summary

Severe Weather Awareness Week — March 27-31,2006

The 2005 storm season across the state of Nebraska was a bit calm compared to 2004. The 2005 season had 40 tornadoes reported across the state, compared to the 2004 season, when there was a record-setting 110 tornadoes reported. May was again the busiest month with 18 tornadoes reported, and June was a close second with 13 tornadoes reported. The first tornado of the season was reported on March 30th near Scottsbluff, and the final tornado of the season was reported on September 18th south of Ewing. The strongest tornado of the year was a F2, reported in Banner County. This tornado tied with a F0 tornado in Cheyenne County for the longest track, at 17 miles.

Severe weather wasted no time moving into North Central and Western Nebraska during the spring of 2005, with tornadoes, strong winds, hail and flooding all paying a visit to the region. During the severe weather season of 2005, there were 14 tornadoes reported. This was down significantly from the number reported in 2004 of 44 and in 2003 of 36, but near the amount from 2002 and 2001 of 13. Most were harmless, crossing open rangeland, but there were a few events where damage did occur. Along with the numerous tornado reports, the region was subject to a few damaging high wind events.

Tornado Events:

- April 19th – A F0 tornado touched down in Southwestern Cherry County over open rangeland, causing no damage.
- May 11th – A F1 tornado touched down in Frontier County, southeast of Maywood. Grain bins, barns, and a hog confinement building were among the things destroyed by the tornado.
- May 17th – A storm in Lincoln County produced two F0 tornadoes, near Hershey and North Platte, causing no damage.
- June 4th – A F0 tornado touched down in Keith County, east of Ogallala, causing no damage. McPherson County had two F0 touchdowns, west and north of Tryon. Both crossed open rangeland, causing no damage.
- June 6th – Another day of multiple reports, with 5 touchdowns. Arthur County had some damage reported from a F1 tornado northeast of Arthur. Trees were uprooted, a shed was destroyed, and a roof was ripped off of an outbuilding. A F0 tornado was also reported in Arthur County, but caused no damage. A F0 tornado was reported southwest of Tryon in McPherson County, as well as two F0 touchdowns southwest of Mullen in Hooker County. All were over open rangeland and caused no damage.
- September 6th – A F0 tornado touched down south of Ainsworth in Brown County, causing no damage.
- September 18th – A F0 tornado touched down south of Ewing in Holt County, causing no damage.

Wind Events:

- March 10th – A strong low pressure system and passing cold front brought strong northwesterly winds to the region, with gusts near 60 miles per hour. These strong winds caused low visibilities from blowing dust in isolated areas, and this low visibility caused a multi-vehicle pile-up on Interstate 80 west of North Platte. This pile-up claimed 3 lives and closed east bound lanes for 10 hours.
- July 20th – A supercell which evolved into a bow echo marched across portions of Cherry, Brown, Keya Paha, Rock, Boyd, and Holt Counties. Many trees and power poles were broken, and a number of buildings had roofs blown off. The city of Valentine was hit hard, as the Cherry County Courthouse and United Methodist Church had sustained damage, along with 15 homes and the high school. Wind gusts near 70 miles per hour were recorded near Ainsworth and O'Neill, and a storm damage assessment estimated winds near 100 miles per hour had hit the north side of Valentine.
- July 2nd – A thunderstorm passing over Lake McConaughy produced outflow winds of approximately 75 miles per hour, which overturned campers, capsized and damaged boats, and broke numerous large tree limbs. 3 injuries were reported, caused by the thunderstorm winds.