Nebraska

Severe Weather Awareness Week

March 22 - 26, 2010

Tornado Safety Drill

Wednesday, March 24th
Between 10 & 11 a.m. CDT

Nebraska Weather Awareness Committee Partners:

National Weather Service

Nebraska Emergency Management Agency

Nebraska Association of Emergency Management

KRVN 880 Rural Radio

American Red Cross

Omaha World-Herald
Omaha.com

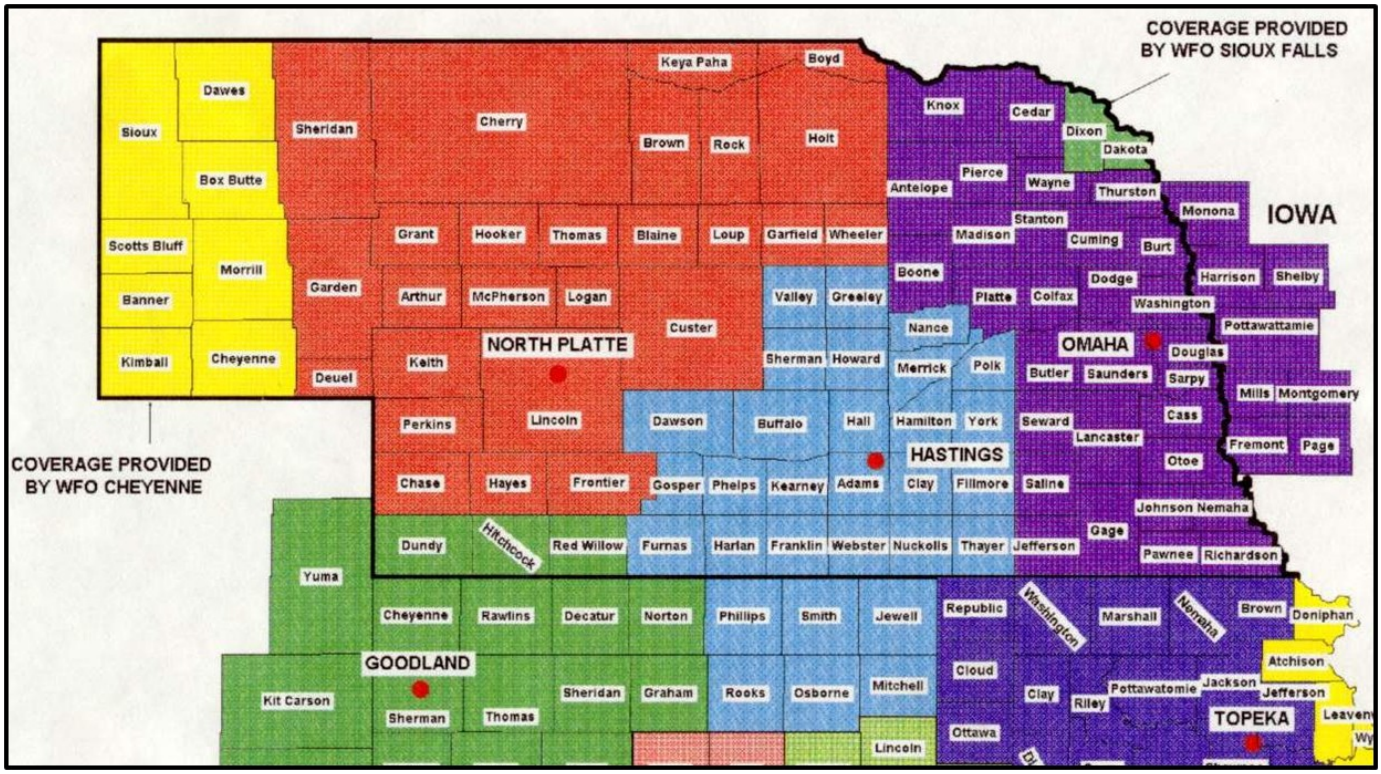
NDOR
Nebraska Department of Roads

CPSWS
Central Plains Severe Weather Symposium

University of Nebraska Lincoln

National Weather Service Offices Serving Nebraska

Severe Weather Awareness Week March 22 - 26, 2010



Far West	West and North Central	Southwest
National Weather Service 1301 Airport Parkway Cheyenne, Wyoming 82001 (307) 772-2468 http://www.weather.gov/cys	National Weather Service 5250 E. Lee Bird Drive North Platte, Nebraska 69101 (308) 532-4936 http://www.weather.gov/lbf	National Weather Service 920 Armory Road Goodland, Kansas 67735 (785) 899-7119 http://www.weather.gov/gld

South Central	East	Far Northeast
National Weather Service 6365 North Osborne Drive West Hastings, Nebraska 68901 (402) 462-4287 http://www.weather.gov/gid	National Weather Service 6707 North 288th Street Valley, Nebraska 68064 (402) 359-5166 http://www.weather.gov/oax	National Weather Service 26 Weather Lane Sioux Falls, South Dakota 57104 (605) 330-4247 http://www.weather.gov/fsd

2009 Severe Weather Summary

Severe Weather Awareness Week March 22 - 26, 2010

2009 Nebraska Tornado Facts

Tornadoes: **39** (2 below the 1950-2009 average of 41, 12 below the 30 year average of 51 & 16 below the 10 year average of 55)

Deaths: **0** **Injuries**: **8** (Cass County - March 23rd)

Longest Track: **10.82 miles** (Lancaster County (7.58), Otoe (1.36), & Cass (1.88) – March 23rd) (Start - 2.6 W of Bennet, End - 1.1 SSW Eagle)

Strongest: **EF2** (March 23rd (2), June 17th, June 24th, & July 13th)

Most in a county: **4** (Buffalo and Lincoln Counties)

Days of occurrence: **16**

Most in one day: **8** (March 23rd & June 17th)

Most in one month: **24** (June)

First tornado of the year: **March 23rd** (EF0 - Cherry County)

Last touchdown of the year: **September 24th** (EF0 - Furnas County)

---------- 2009 Monthly Tornado Totals ----------

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	
Total	0	0	8	3	2	24	1	0	1	0	0	0	39	100 %
EF5	0	0	0	0	0	0	0	0	0	0	0	0	0	0 %
EF4	0	0	0	0	0	0	0	0	0	0	0	0	0	0 %
EF3	0	0	0	0	0	0	0	0	0	0	0	0	0	0 %
EF2	0	0	2	0	0	2	1	0	0	0	0	0	5	13 %
EF1	0	0	5	0	0	2	0	0	0	0	0	0	7	18%
EF0	0	0	1	3	2	20	0	0	1	0	0	0	27	69%

2009 Season Peak...

Hail Size - 4.25" (Softball size) on March 23rd (Seward County)
June 26th (Keith)
July 20th (Dundy)

Wind Gust - Estimated: 90-100 mph on March 23rd (Cass County)
Measured: 78 mph on August 15th (Thomas County)

NEBRASKA TORNADO STATISTICS

by County

1950 - 2009

TORNADOES, FATALITIES, AND INJURIES

County	Tor	Fat	Inj
Adams	46	2	21
Antelope	36	0	0
Arthur	8	0	0
Banner	23	0	0
Blaine	7	0	2
Boone	21	4	55
Box Butte	36	0	0
Boyd	10	0	8
Brown	28	0	3
Buffalo	80	0	6
Burt	14	0	35
Butler	33	0	5
Cass	39	0	9
Cedar	23	1	6
Chase	23	0	3
Cherry	72	0	6
Cheyenne	55	0	2
Clay	39	0	3
Colfax	25	0	0
Cuming	23	0	4
Custer	89	0	18
Dakota	8	0	1
Dawes	33	0	0
Dawson	50	0	13
Deuel	27	0	2
Dixon	22	0	1
Dodge	23	0	12
Douglas	16	3	148
Dundy	22	0	2
Fillmore	31	0	3
Franklin	24	0	1
Frontier	28	0	2

County	Tor	Fat	Inj
Furnas	26	1	0
Gage	49	0	26
Garden	21	0	1
Garfield	13	0	0
Gosper	17	0	5
Grant	14	0	1
Greeley	19	0	12
Hall	73	5	198
Hamilton	51	0	1
Harlan	18	0	0
Hayes	15	0	0
Hitchcock	25	0	1
Holt	67	0	4
Hooker	14	0	0
Howard	43	0	27
Jefferson	17	0	1
Johnson	17	0	0
Kearney	24	0	0
Keith	44	0	1
Keya Paha	11	0	1
Kimball	39	0	0
Knox	45	1	107
Lancaster	39	1	35
Lincoln	85	0	9
Logan	16	1	5
Loup	15	0	0
McPherson	9	0	0
Madison	38	6	55
Merrick	25	0	0
Morrill	40	0	1
Nance	23	0	0
Nemaha	19	1	9

County	Tor	Fat	Inj
Nuckolls	36	0	10
Otoe	26	0	3
Pawnee	15	0	1
Perkins	33	0	1
Phelps	29	1	5
Pierce	27	0	2
Platte	28	0	0
Polk	30	0	3
Red Willow	33	0	0
Richardson	17	0	0
Rock	18	0	1
Saline	22	0	8
Sarpy	10	2	38
Saunders	37	0	22
Scotts Bluff	52	2	48
Seward	30	1	17
Sheridan	49	0	8
Sherman	28	1	14
Sioux	17	0	0
Stanton	21	0	1
Thayer	57	6	93
Thomas	8	0	2
Thurston	13	0	0
Valley	33	12	4
Washington	17	0	2
Wayne	16	0	1
Webster	31	0	0
Wheeler	11	0	2
York	39	2	33

2009 North Central and Western Nebraska
Severe Weather Summary

Although western and north central Nebraska would stay in a cool and wet pattern the entire year, the area saw an early start to the thunderstorm season. The first thunderstorms developed ahead of a powerful cold front that marched across north central Nebraska on March 23rd. The first tornado in Nebraska touched down south of Brownlee in southeast Cherry County during the early afternoon hours on March 23rd. Luckily, the EF0 tornado, with wind speeds of 65 to 85 mph, only damaged a lean-to on a barn. Later that afternoon, another tornado, an EF2 with wind speeds of 111 to 135 mph, touched down north of O'Neill in Holt County destroying an old school house, snapping off trees, breaking power poles, overturning grain trailers, and destroying a metal wind break on its nearly quarter mile long path. Meanwhile, blizzard conditions were occurring behind the cold front across Sheridan, Cherry, and Grant Counties. Before spring was over, two more blizzards hit western and north central Nebraska ensuring a late start to warmer weather.

The next tornado occurred on May 12th in central Hooker County near the Dismal River. The EF0 tornado, with wind speeds of 65 to 85 mph, initially touched down over open rangeland and but then demolished a metal windbreak, destroyed a wind mill, snapped off trees, knocked down a tower, and carried a pickup cab 100 feet as it passed a ranch. The tornado was on the ground for approximately 3 ½ miles. On May 23rd, another tornado touched down briefly east of Maxwell in Lincoln County. This EF0 tornado was over an open area and didn't do any damage.

The month of June was a very active one with numerous tornadoes, large hail, strong winds, and flash flooding. On June 5th, a tornado, rated an EF0, touched down north of Paxton in eastern Keith County destroying a 20 foot section of a calving shed and snapping off fence posts. That same evening a bowing line of thunderstorms produced very strong winds in Arnold in western Custer County. The winds uprooted and snapped off numerous large trees. A brief EF0 tornado touched down during the afternoon in south central Cherry County on June 9th. Two ranchers saw the touchdown over open rangeland where no damage occurred. On June 15th, very strong thunderstorms developed rapidly during the afternoon hours over southwest Nebraska with numerous funnels and large hail. Hail dented cars and damaged roofs. Imperial in Chase County had baseball size hail. One hailstone even went through the roof of a home. A nearly stationary storm near Sutherland in western Lincoln County produced torrential rain with flooding and a tornado, which a trained storm spotter caught on video. Only two days later on June 17th, strong thunderstorms formed again producing large hail that broke windows and damaged siding on homes, heavy rain, funnels, and a brief EF0 tornado in southeast Custer County. As the evening progressed, the storms produced strong straight-line winds across north central Nebraska. The next night, June 18th, strong thunderstorms produced large hail and strong winds mainly across southwest Nebraska. The wind and hail uprooted and snapped off trees, damaged buildings, overturned pivot irrigation systems, and destroyed crops. An intense thunderstorm developed across the central Sandhills on June 23rd and produced two

brief EF0 tornadoes as it moved across Logan and western Custer Counties. As the storm weakened, it produced torrential rain which washed out roads in western Custer County. Late in the evening on June 24th, a tornadic thunderstorm dropped south out of South Dakota and produced an EF2 tornado, with wind speeds of 111 to 135 mph, near Newport as well as strong straight-line winds and large hail. On its 4 ½ mile track, the tornado destroyed grain bins, snapped power poles, damaged buildings, broke off tree limbs, and picked up and spun around a grain truck traveling on Highway 20. Then on the evenings of June 25th and 26th, a bowing line of thunderstorms moved from southwest Nebraska northeastward producing up to softball size hail and tremendous wind damage along the way. In addition to the straight-line winds, the storms also produced 2 brief tornadoes: an EF0, with winds of 65 to 85 mph, southwest of North Platte and an EF1, with winds of 86 to 110 mph, over the rail yard in North Platte. The tornadoes damaged roofs, snapped off trees, overturned a semi, and derailed empty coal cars.

On July 13th, a very intense thunderstorm moved south out of south central South Dakota producing a brief tornado south of Crookston in eastern Cherry County. The tornado destroyed an abandoned trailer home, moved farm equipment, snapped off trees, destroyed a metal wind break, and damaged a metal building. In addition to damage from the tornado, the storm produced straight-line winds that broke off trees, snapped power poles, damaged buildings, and overturned center pivot irrigation systems in eastern Cherry County and far western Brown County. Thunderstorms formed once again during the early morning hours of July 17th and intensified after sunrise producing large hail across much of southwest Nebraska. The hail, up to baseball size, damaged homes and vehicles and destroyed crops. More large hail fell with thunderstorms on the afternoon and evening of July 20th, 22nd and 23rd. Up to baseball size hail damaged homes, broke windows, and destroyed crops in western Nebraska.

More large hail and strong winds occurred with thunderstorms across north central Nebraska on August 3rd where the hail broke windows and damaged roofs. Finally on August 15th, winds of up to 78 mph occurred with thunderstorms across northern Nebraska and the central Sandhills.

Thunderstorms activity came to an abrupt halt as winter weather settled into the area by early October.

Be Red Cross Ready

American Red Cross

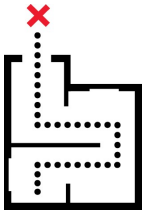
Three Actions

1 Get a Kit

Have at least 3 days of supplies in an easy-to-carry evacuation kit, with additional supplies on hand. Remember to check your kit and replace the stock every 6 months.

- Water & Food
- Flashlight
- First Aid Kit
- Medications
- Radio
- Batteries
- Tools
- Clothing
- Personal Items
- Money
- Map
- Contact Information
- Pet Supplies
- Sanitary supplies

2 Make a Plan



Planning ahead will help you have the best possible response to an emergency. Talk with your family and establish responsibilities. Learn how and when to turn off utilities. Practice evacuating your home twice a year. Include your pets.

3 Be Informed

Learn what emergencies may occur where you live, work or play. Know how your local authorities will notify you, and the names of surrounding towns and counties. Check the weather forecast before heading outdoors, and be aware of the signs of an approaching storm. Know where to get updated weather information, whether it be from NOAA Weather Radio, AM/FM radio, or television. Share what you have learned with your family, friends, and neighbors and encourage them to be informed too.

When we come together,
we become something bigger than us all.

For more information contact your local chapter or go to www.redcross.org

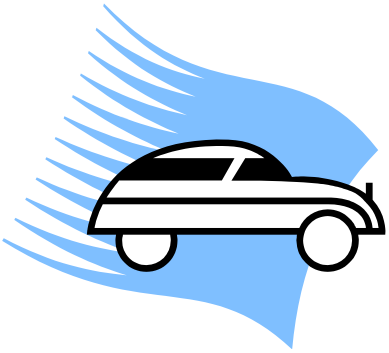
Create a Disaster Kit

For Your Home Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Prescription and Non-prescription Drugs
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants, Children and Pets
- Entertainment (books and games)
- Blankets
- Important Family Documents

For Your Car Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants, Children and Pets
- Entertainment (books and games)
- Blankets
- Small Shovel and Kitty Litter for Slippery Roads
- Flares so That Others Can See You on the Road



For Work Include...

- Battery Operated Radio
- Flashlight
- Extra Batteries
- Water and Food
- First Aid Kit
- Tools and Supplies
- Supplies to Maintain Sanitation
- Clothing
- Necessities for Infants and Children, if applicable
- Blankets

Suggestions and Reminders...

- Store the kit in a convenient place known to all family members and employees
- Keep items in air tight plastic bags
- Change the stored water and food every six months
- Re-think/Update the kit and family needs at least once a year
- Ask a physician or pharmacist about storing any prescription medications

American Red Cross

For more information contact your local chapter or go to www.redcross.org

Thunderstorm Safety

Severe Weather Awareness Week March 22 - 26, 2010

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 one inch in diameter (quarter 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 many dangerous aspects of thunderstorms, severe or not, that pose a threat to life and property.

Lightning – Occurs with ALL thunderstorms.

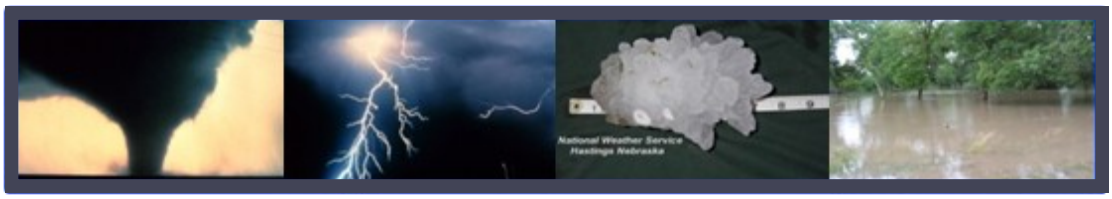
Floods – Kills more people on average than any other severe weather hazard.

Straight-Line Winds – Can exceed 100 miles per hour with damage comparable 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.

Each year, many people are killed or seriously injured by tornadoes and severe thunderstorms despite advance warning. Some did not hear the warning, while others heard the warning but did not believe it would happen to them. The following preparedness information, combined with timely severe weather watches and warnings, could save your life. Once you receive a warning or observe threatening skies, **YOU** must make the decision to seek shelter before the storm arrives. It could be the most important decision you will ever make.



Did you know…

- The average forward speed of a tornado is 30 miles per hour, but can also be nearly stationary or roar through at close to 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.

Severe Weather Terminology

Severe Weather Awareness Week March 22 - 26, 2010

SEVERE THUNDERSTORM — A thunderstorm is considered severe when it produces any of the following: Hail 1" (quarter size) or larger in diameter, winds which equal or exceed 58 MPH, or a tornado.

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.

HAZARDOUS WEATHER OUTLOOK — A product which is issued daily, highlighting any potential significant weather in the area for the next 7 days.

WATCH — Issued when conditions are favorable for the development of severe weather 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 weather safety rules and be prepared to move to a place of safety if threatening weather approaches.

WARNING — Issued when severe weather 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. Remember that severe thunderstorms can produce tornadoes with little or no advance warning. Warnings can be issued without a watch already in effect.

SIGNIFICANT WEATHER ADVISORY — Issued for "near" severe thunderstorms. Typically issued for storms with 3/4" (penny sized) hail and wind gusts near 50 MPH, but can also be issued for large amounts of small hail covering the ground. It is used as a "heads up" for ongoing severe storms which may move into the area.

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.

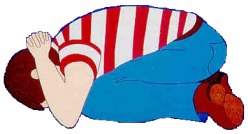
Tornado Safety

Severe Weather Awareness Week March 22 - 26, 2010

Tornadoes can happen at any time of the year, and at any time during the day or night. Though more common in the afternoon and evening hours, tornadoes can happen and have been reported at 2 or 3 o'clock in the morning! Many people think a tornado is always visible, but there are times, in storms which have high amounts of precipitation, it can be completely wrapped in rain, making it indistinguishable from surrounding clouds. Contrary to what some may believe, tornadoes can and do cross rivers, mountains, and big cities. For these reasons, it is very important to have a plan of action in case of a tornado.

What should I do when a tornado is approaching or a 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 an interior area on 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 should I do if I am located…

- **Outdoors** – If you cannot quickly walk to a shelter, immediately get into a vehicle, buckle your seat belt and try to drive to the closest sturdy shelter. If flying debris occurs while you are driving, pull over and park. *You do have the following options as a last resort:* 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. 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. **NEVER** seek shelter under a bridge or overpass.

Your choice should be driven by your specific circumstances!

The important thing to understand is that if you find yourself outside or in a car and you are unable to get to a safe shelter, you are at risk from a number of things outside your control, such as the strength and path of the tornado and debris from your surroundings. This is the case whether you stay in your car or seek shelter in a depression or ditch, both of which are considered last resort options that provide little protection. The safest place to be is always an underground shelter, basement or safe room.

- **In a Mobile Home** – Evacuate immediately! 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.
- **At School, Work, Shopping or in Other Buildings** – Stay indoors! Avoid cars, buses, or any other vehicle. Follow plans made in advance to go to a basement, an interior room or hallway on the lowest floor. Avoid the end of any hallway that opens to the outside as well as rooms with windows or outside walls. Stay out of auditoriums or any other structure with wide free-span roofs, as these types of structures are quite vulnerable to tornadic winds. Once you are in shelter, crouch down and cover your head!

Lightning Safety

http://www.lightningsafety.noaa.gov

One dangerous aspect of weather that sometimes is not taken as seriously as others is lightning. Summer is the peak season for one of the nation's deadliest weather phenomena, but don't be fooled, lightning strikes happen at all times of the year. In the United States, an average of 58 people are killed each year by lightning. In 2008, 28 people have died due to lightning. In 2009, 34 people were struck and killed, while hundreds of others were permanently injured. Of the victims who were killed by lightning in 2009:

- 100% were outside
- 82% were male
- 71% were males between the ages of 10 - 50
- 21% were doing yard work
- 18% were heading toward a safe shelter

When Thunder Roars, Go Indoors!

The reported number of injuries is likely far lower than the actual total because many people do not seek help or doctors do not record it as a lightning injury. People struck by lightning suffer from a variety of long-term, debilitating symptoms, including memory loss, attention deficits, sleep disorders, and numbness.

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 frame of the building or of a metal car body will allow the charge to be conducted away from you.
- Outdoor activities such as golfing and baseball can present a risk to those in attendance, as these take place 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.
- Get out of boats and away from water, as water is an electrical conductor. On the open water, you may become the tallest object and a prime target.
- When indoors, avoid using any corded and electrical appliances. Also stay away from pools, tubs, showers, or any other plumbing. Electricity can travel through wiring and plumbing, posing a risk to those in contact.
- If someone is struck by lightning, get medical help immediately. With proper treatment, including CPR if necessary, most lightning victims survive.

Did you know…

Thunderstorms do not have to be large in size or severe in nature to create potentially fatal lightning strikes!!

As a thunderstorm grows, areas of rising and descending air cause a 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.

Flash Flood Safety

http://www.floodsafety.noaa.gov

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 it is more difficult to recognize flood dangers, and when people are trapped in vehicles. Do you and your family know what to do in case of a flood?

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.
- **DO NOT** 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 the National Weather Service website, your NOAA Weather Radio All-Hazards, or favorite local television or radio stations.

Why is "Turn Around - Don't Drown" so important?

Each year, more deaths occur due to flooding than from any other severe weather related hazard. The main reason is people underestimate the force and power of water. More than half of all flood related deaths result from vehicles being swept downstream. Of these, many are preventable.

NOAA Weather Radio All Hazards

http://www.weather.gov/nwr

NOAA Weather Radio All Hazards (NWR) is a nationwide network of radio stations broadcasting continuous weather information directly from the nearest National Weather Service office. NWR broadcasts official Weather Service warnings, watches, forecasts and other hazard information 24 hours a day, 7 days a week.

Working with the Federal Communication Commission's (FCC) Emergency Alert System , NWR is an "All Hazards" radio network, making it your single source for comprehensive weather and emergency information. In conjunction with Federal, State, and Local Emergency Managers and other public officials, NWR also broadcasts warning and post-event information for all types of hazards , including natural (such as tornadoes or floods), environmental (such as chemical releases or oil spills), and public safety (such as AMBER alerts or 911 Telephone outages).

Known as the "Voice of NOAA's National Weather Service," NWR is provided as a public service by the National Oceanic and Atmospheric Administration (NOAA), part of the Department of Commerce. NWR includes 1000 transmitters, covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Broadcasts are found in the VHF public service band at these seven frequencies (MHz):

162.400	162.425	162.450	162.475	162.500	162.525	162.550

Coverage information and SAME Codes for every county in Nebraska can be found at:

http://www.weather.gov/nwr/Maps/PHP/nebraska.php

Severe Weather Facts & Myths

Severe Weather Awareness Week March 22 - 26, 2010

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.

Myth: Thunderstorms and tornadoes always move from west to east.

Fact: More often than not, thunderstorms move from west to east. Conditions in the atmosphere dictate how and where storms will move, and it can be in any direction. Tornadoes have been known to act erratic, and can change directions and speed very quickly. Never try to outrun a tornado in a vehicle.

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

Myth: Large and heavy 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.

Is Your Community StormReady?

Severe Weather Awareness Week March 22 - 26, 2010

Nearly 90% of all presidentially declared disasters are weather related, leading to around 500 deaths per year and nearly $14 billion in damage. To help Americans guard against the ravages of severe weather, NOAA's National Weather Service designed the StormReady program. StormReady helps arm America's communities with the communication and safety skills they need to save lives and protect property.

Many laws and regulations exist to help local emergency managers deal with hazardous material spills, search and rescue operations, medical crises, etc., but there are few guidelines dealing with the specifics of hazardous weather response. The National Weather Service recognized this need and designed StormReady to help communities of all kinds implement procedures to reduce the potential for disastrous weather-related consequences. To be recognized as StormReady, communities must meet guidelines established by the National Weather Service in partnership with federal, state, and local emergency management professionals.

Benefits of Your Community Becoming StormReady

The StormReady program encourages communities to take a proactive approach to improving local hazardous weather operations. The program is a "win" situation for everyone involved: community leaders; the NWS; emergency managers; and, the general public. Here are just a few of the benefits your community will realize once you become StormReady:

- Improves the timeliness and effectiveness of hazardous weather warnings for the public.
- Provides detailed and clear recommendations which will help local emergency managers establish and improve effective hazardous weather operations. It can also help justify costs and purchases needed to support hazardous mitigation and emergency response plans.
- Rewards local hazardous weather mitigation programs that have achieved a desired performance level.
- Provides a means to possibly acquire additional Community Rating System points assigned by the National Flood Insurance Program (NFIP).
- Provides an image incentive to communities, which once recognized, can identify themselves as being StormReady.
- StormReady can help ensure your community is prepared for other civil emergencies.

What it Takes to Become StormReady

StormReady is a voluntary program with no cost to apply. Your community may need to upgrade your emergency preparedness operations to meet StormReady program guidelines. Established emergency management programs should incur little or no additional expense. The Warning Coordination Meteorologist at your local NWS forecast office will gladly help you with the process. Here is what needs to get done:

- Incorporate your community's severe weather threats into your community's hazard mitigation and emergency response plans.
- Establish a 24-hour Warning Point and Emergency Operations Center.
- Establish multiple ways to receive severe weather warnings and forecasts and to alert the public.
- Create a system that monitors weather conditions locally.
- Promote the importance of public readiness through community seminars, severe weather spotter training and by conducting emergency exercises.

CPSWS

Central Plains Severe Weather Symposium

WEATHERFEST

Saturday, March 27th
9:00 a.m. - 4:00 p.m

School of Natural Resources

University of Nebraska–Lincoln

CPSWS Mission:
To provide Severe Weather Preparedness Information to the Public

Organized By

National Drought Mitigation Center, School of Natural Resources, University of Nebraska – Lincoln

High Plains Regional Climate Center

Lancaster County Office of Emergency Management

National Weather Service

Applied Climate Sciences Group, School of Natural Resources, University of Nebraska – Lincoln

Contact

http://cpsws.unl.edu

Symposium Chair - Dr. Ken Dewey
Applied Climate Sciences
School of Natural Resources, UNL
715 Hardin Hall, 3310 Holdrege Street
Lincoln, NE 68583-0997
402-472-2908

Central Plains Severe Weather Symposium and Family Weatherfest

History

The Central Plains Severe Weather Symposium (CPSWS) began in Lincoln in 2000, and is a free public event open to the public with information for all ages. CPSWS events are organized by the High Plains Regional Climate Center, UNL's School of Natural Resources and the Lancaster County Office of Emergency Management as a combined effort to increase severe weather awareness. It is the commitment of CPSWS to create an outlet that puts severe weather information into as many homes and businesses in the region as possible.

The CPSWS has been able to bring together broadcast meteorologists from all major local network broadcast stations on an annual basis. CPSWS encourages the media's responsibility to the public in disseminating severe weather information.

The CPSWS is closely tied to the efforts associated with Nebraska Emergency Management's Severe Weather Awareness week.

The underlying theme for all CPSWS events is: "Surviving the Storms". Exhibitors and Severe Weather Experts are brought in each event to touch upon this theme and its varying aspects. One unique aspect of the CPSWS has been its ability to bring together different organizations and agencies under one roof to promote its underlying theme.

In an effort to keep the event a free event, the CPSWS has been sponsored by several businesses and organizations since its beginning. CPSWS has always been, and will always remain, a free public event in order to reach as many people as possible.

Recent Sponsors

Department of Geosciences, UNL
High Plains Regional Climate Center, UNL
Lancaster County Office of Emergency Management
Midland Radio
National Drought Mitigation Center, UNL
School of Natural Resources, UNL
State Farm Insurance

Weatherfest - Weather for Everyone

The CPSWS has always been a family-friendly event, filled with interactive displays full of information on severe weather and severe weather safety. While speakers are presenting in the auditorium, an annual 'Weatherfest' for families is taking place both indoors and outdoors. Past events have included weather-balloon launches, tornado generators, search & rescue teams with equipment on-site, interactive displays for question/answers about weather, all with the common purpose of educating children and parents alike about the many aspects of severe weather and severe weather preparedness.

Participants

American Red Cross

Blue River REACT

Gage County REACT

Good Neighbor Community Center

Heartland REACT

Institute of Agriculture and Natural Resources

Lancaster County Office of Emergency Management

Lancaster County Citizen Corp – CERT
(Community Emergency Response Teams)

Lincoln Amateur Radio Club

Lincoln Camera Club

Lincoln Weather and Climate

National Weather Service

Nebraska Emergency Management Agency

Nebraska Stratospheric Amateur Radio

NeRain

PawsUp! Canine Crisis Support Team

Public Policy Center

Region V Systems/Mental Health

School of Natural Resources, UNL

SKYWARN Amateur Radio Association

Television Broadcast Stations:
KLKN,KOLN/KGIN,KPTM, KMTV,KETV

UNL American Meteorological Society Student Chapter

Urban Search & Rescue Team

Volunteer Partners

Objectives

To Increase Severe Weather Awareness

To Assist in the Mitigation of Storm Related Property Loss

To Assist in the Mitigation of Storm Related Injuries

To educate the public of available Local, State and National Resources following a severe weather event

To educate the public about severe weather

To encourage family discussion of severe weather preparedness

To encourage face-to-face interaction of Local, State and National level emergency management agencies

To provide annual storm spotter training

To create a public forum for public interaction with meteorologists from broadcasting, institutional and public service sectors

Mission of the CPSWS and Family Weatherfest:

Our mission is two-fold:

To provide severe weather education and preparedness information to the public through

- An annual symposium which brings severe weather experts to our community
- The Family Weatherfest, which provides K-12 weather and educational exhibits.

The underlying theme for all CPSWS and Family Weatherfest events is: "Surviving the Storms". Exhibitors and Severe Weather Experts are brought in to each event to touch upon this theme, and its varying aspects. One unique aspect of the CPSWS and Family Weatherfest has been its ability to bring together different organizations and agencies under one roof to promote its underlying theme.

FREE to the Public:

The CPSWS and Family Weatherfest are both brought to the public as a free educational outreach event. It is the commitment of CPSWS and Family Weatherfest to create an outlet that puts severe weather information into as many homes and businesses in the region as possible, and this is accomplished by making this a "no admission charge" family activity. Recognizing that we should not charge the public when it comes to learning about severe weather safety, we have in the past and will in the future continue to bring this event to the public FREE of charge.

The Origin of the CPSWS:

The first Central Plains Severe Weather Symposium was held in 1999 at the Peter Kiewit Conference Center in downtown Omaha. The original planning committee members represented Omaha REACT, the National Weather Service in Omaha, local television weathercasters and the University of Nebraska-Lincoln meteorology faculty. The CPSWS planning committee moved the event the following year to Lincoln, Nebraska where it remains to this day. In 2000, the organizing committee invited the High Plains Chapter of the National Weather Association to hold their annual meeting immediately preceding the CPSWS. A banquet held that year to honor the distinguished career of storm researcher Dr. Chuck Doswell served as a lead-in to the first CPSWS held in Lincoln, NE. The UNL Student Local AMS Chapter joined with the Omaha Offutt Local AMS Chapter on this evening to have their first ever joint meeting. Several of the speakers who participated in the NWA meeting during the week remained in Lincoln and spoke at the CPSWS Symposium on the following day.

The Origin of the Family Weatherfest:

The Chair of the CPSWS Program Committee attended the national American Meteorological Society (AMS) Annual meeting in Orlando, FL, in January 2002 and participated in the first ever AMS public Weatherfest. After learning about the success of the AMS Weatherfest in Orlando, FL, the CPSWS Planning Committee decided to include some weather education exhibits and to start a Family Weatherfest at our CPSWS events. The Weatherfest component of the CPSWS started in 2002 and continues to grow each year, attracting many families with K-12 students in their household. Weatherfest events have included weather-balloon launches, tornado generators, search & rescue teams with equipment on-site, interactive displays for question/answers about weather, weather science exhibits, etc., all with the common purpose of educating children and parents alike about the many aspects of severe weather and severe weather preparedness. It is anticipated that the CPSWS and Weatherfest will run alongside each other into the future.

The Scheduling of the CPSWS and Family Weatherfest:

The CPSWS has taken place each year since 1999, except in 2003 when there was a lack of funding. The planning committee decided to move this annual event to each spring so that it would coincide with the start of the severe weather season. A request was made by the Director of Lancaster County Emergency Management to have the CPSWS each spring to coincide with and incorporate the annual Spotter Training Workshop for Lancaster County. CPSWS 2004 included, for the first time, the Lancaster County Spotter Training Workshop and our first Weatherfest activities. CPSWS and the Weatherfest continue to be scheduled in the spring along with the annual spotter training and it is near the time of the annual spring Nebraska statewide Severe Weather Awareness Week. Other than first taking place in Omaha in 1999 and also being moved to 3 area high schools in Lincoln during renovation, Hardin Hall, which is located on the East Campus of UNL, is the home to the CPSWS and Weatherfest.

Partnerships:

The huge success of the CPSWS is the result of forming strong partnerships within the University, as well as in the community. The National Weather Service, Omaha-Valley, Nebraska was associated with the initial CPSWS event and continues to be a valuable partner helping us promote severe weather safety education. The High Plains Regional Climate Center, National Drought Mitigation Center and the School of Natural Resources at UNL have played an important role in supporting the annual CPSWS and Family Weatherfest. The Lancaster County Office of Emergency Management and the Lincoln Amateur Radio Club are valuable partners helped organize the annual Storm Spotter Training Workshops. The CPSWS has also been able to create a partnership with the Omaha and Lincoln television broadcast meteorologists on an annual basis with our "Meet the Weathercasters" event. The CPSWS recognizes the important media's partnership in disseminating severe weather information and severe weather safety education to the public.

Photography Exhibit and Contest:

The Lincoln Camera Club was brought onboard our planning committee in December 2007 with an invitation to organize a community photo exhibition and to conduct a photo contest during our CPSWS and Weatherfest events. The photography theme was not limited to just weather related photography but was instead broadened to include all of the natural resources. Their first photo exhibit and photo contest was a huge success during the March 29, 2008 CPSWS and Weatherfest. They then agreed to return on an annual basis.

Keynote Speakers at the CPSWS:

The CPSWS has a tradition of bringing in noted severe weather experts for this annual event, and this year is no exception. The number of speakers each year at the CPSWS varies with a variety of styles. For example, in 2005, the focus was on the Hallam, Nebraska, tornado that had occurred the previous year and we had more speakers than usual but much shorter presentation times. In 2007, we only had four presenters, however, Roger Edwards gave two one-hour presentations, one on the safety of large venues during severe weather and another presentation focusing on advanced spotter techniques.

Featured speakers for this year include Brain Smith and Barb Mayes - National Weather Service in Omaha, Scott Blair - National Weather Service in Topeka, KS. Greg Carbin - Storm Prediction Center, Vince Miller - Photographer, and Jack Williams - Author.