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The Topeka Tiller

National Weather Service
Topeka, KS

Fall 2015 Volume 8, Issue 2

Winter Weather Preparedness: Are You Ready?

By Brian Barjenbruch, Lead Forecaster, and Chad Omitt, Warning Coordination Meteorologist

Are you ready for winter? This can be interpreted in more than one way. First, there is the ever important question of whether you are mentally prepared for the onslaught of snow, wind, and bone-chilling temperatures. But another question exists: Are you ready...or better yet, prepared...to minimize the impacts that hazardous winter weather may bring to you and your family?

Winter weather hazards are quite different from those of the summer. Winter time will rarely send a tornado, hail storm, or wind storm (although it does happen) to your house to impact it directly with only a moments notice. Rather, winter storms are often predicted hours, or even days in advance, providing ample time to make preparations for the incoming weather. Even with advanced notice the hazards remain, but we can prepare for these situations and minimize the risk that comes with them.

There are more winter weather-related driving fatalities in Kansas each year than those related to tornadoes, lightning, and floods combined. Sub-freezing temperatures and wind combine with precipitation, fog, and even frost to create slick, low-visibility, and generally dangerous conditions on area roads. These hazards can not always be seen in advance, but must be respected, and should be expected to occur around every corner in order to be truly prepared. Thus, the first step to winter safety is to be a cautious driver. Buckle up. Put two hands on the wheel. Bring a phone (but don't use it while driving!). Keep the gas tank more than half full. Share your planned route with someone else. Never use cruise control in a winter driving scenario. High speeds make it easy to lose control on ice and snow.. Take it slow. Slowing down to below 45mph when icy roads are a threat is one of the best ways to avoid an accident. Utilize the thermometer with which most newer vehicles are equipped, and as the temperature approaches and falls below freezing, expect slick conditions to develop. Be aware that bridges and overpasses are often the first to freeze into a sheet of ice, even when the rest of the road may only be wet.

Continued on Page 5

Inside this issue:

Summer of 2015 Statistics

By Jenifer Bowen, Forecaster

This past summer's weather was quite active compared to previous years. From several rounds of severe weather to periods of high heat and humidity, forecasters at WFO Topeka kept busy monitoring the changing weather patterns. To begin, in June, several inches of rainfall (about 5 inches to be exact) fell in Topeka within the first several days of the month! A few severe thunderstorms accompanied the heavy rainfall, causing flash flooding to occur near the Topeka area. In addition there were reports of 60 to 70 mph wind gusts and large hail up to half dollar size in diameter. Temperatures throughout June averaged between 1 and 3 degrees above normal values (at Topeka and Concordia respectively).

The intense heat and rainfall increased into July as two particular events brought the majority of the total precipitation for the month- ranked 7th highest at 9.33 inches (Topeka Billard Airport). The second event broke a record for the highest precipitation at Topeka where 2.09 inches fell. Not surprisingly, the heat was also a contender. It's interesting to note that the average maximum and minimum temps were at or below normal, however, high humidity values resulted in an average peak heat index of 104 degrees for nearly two weeks consecutively. At times in August, the dew point managed to reach the lower 80s, holding the average temperatures slightly cooler than normal.

Several severe weather events occurred during the summer months, producing a few tornadoes, damaging straight line winds, and large hail. The largest hail stones fell on September 10th, with sizes ranging from baseball to softball size across several areas in northeast Kansas! The most damaging tornadoes occurred on May 6th with a tornado outbreak over north central Kansas into south central Nebraska. There were several weak tornadoes reported with the strongest two occurring near Courtland and Belleville areas in Republic County (Pictured Below). Trees were uprooted or debarked, several homes were damaged or destroyed, and an ethanol plant sustained damage as well. Winds were in upwards of 150 mph.

Tornado that occurred in Courtland, Kansas

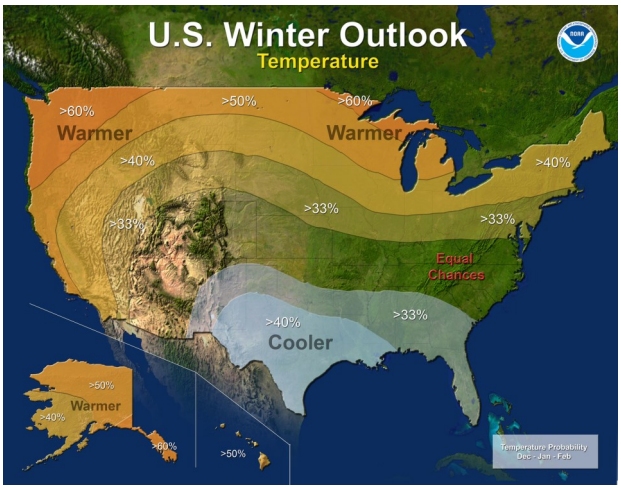
Did you know the Topeka National Weather Service's history of observations and reports goes back as far as the 1850s?

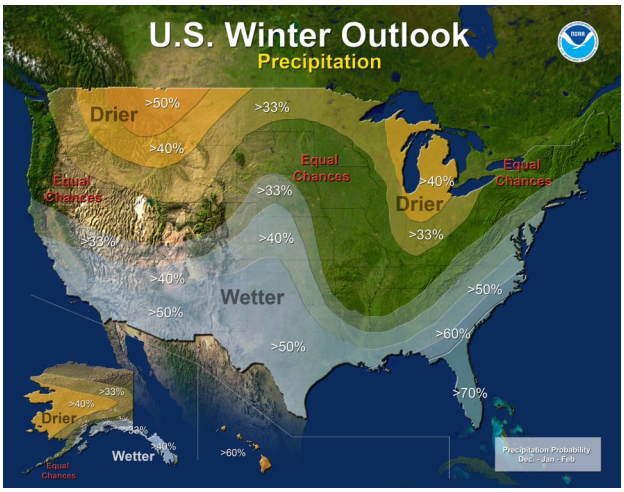
In May of 1993, the radar was updated to the most advanced Doppler system, WSR-88D.

The earliest weather records for our area span back to 1858 taken by volunteer observers. These records were intermittent until 1878 when daily temperature and precipitation records were kept in cooperation with the U.S. Army Signal Service. On June 1, 1887, a First Order Station of the U.S. Army Signal Service was established on the Washburn College campus. This establishment was the very beginning of the modern day Weather Service here in Topeka, Kansas.

In 1890, Congress passed the Organic Act, and established the U.S. Weather Bureau as a civilian agency under the Department of Agriculture. Eighty years later, the Weather Bureau was renamed the National Weather Service, an agency of the National Oceanic and Atmospheric Administration under the U.S. Department of Commerce.

For more information about the Topeka office and a look at a timeline of some milestone events, please visit: www.weather.gov/top/history





Winter 2015-2016 Outlook

By Kyle Poage, Forecaster

As the nights get shorter and the heat and humidity wanes, questions about the upcoming winter naturally arise. Recent winters in Kansas have varied dramatically. For example, in Topeka, in the winter of 2011-2012 only two inches of snow fell, but in 2012-2013 and 2013-2014, the total snowfall measured was 36 and 35.5 inches respectively.

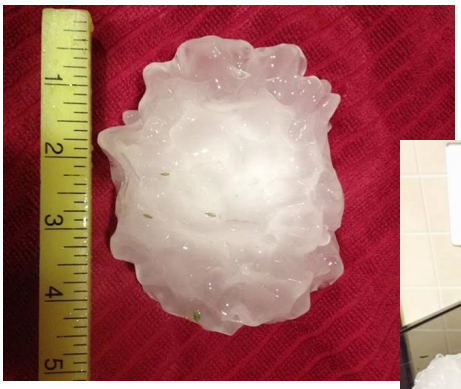
The Climate Prediction Center issued the nation's NOAA Winter Outlook in mid-October. The outlook was greatly influenced by the presence of El Niño, a phenomenon characterized by very warm water in the Pacific Ocean along the Equator. This water causes weather patterns that typically favor warmer than normal winters in the Pacific Northwest, cooler than normal winters in much of Texas and the Southeast, drier than normal winters in the Northern Rockies and Great Lakes, and wetter than normal winters across much of the southern states. In this description, you may notice there is no mention of Kansas. Although there have been winter seasons that have been abnormal during past El Niño events, there is no clear signal that El Niño produces a consistent type of winter here. Also, other ocean and atmospheric patterns could develop that complicate long term outlooks. For much of the local area, the outlook includes equal chances for the winter to be near, above, and below normal in terms of both temperature and precipitation. In other words, the Climate Prediction Center sees no clear signal for our winter to be either normal or abnormal.

A Severe Weather Event: September 10, 2015

By Kris Sanders, Forecaster

A severe weather outbreak pummeled Northeast Kansas on September 10, 2015. Over 60 reports of large hail, damaging thunderstorm wind gusts, or flooding rains were reported. The storms began as supercells across north central Kansas around 5pm. These storms were responsible for producing very large hail across Washington and Riley Counties where baseball to softball size hail was documented. In fact, a hailstone the size of a softball was recorded in Randolph in Riley County, Kansas northwest of Manhattan, Kansas. The photos to the right are from Randolph and are courtesy of WIBW and KSNT TV.

Continued on Page 6



COOP Corner

Special Recognition

Every year it is our honor to be able to present awards for exemplary and dedicated service to our CO-OP observers. They are the backbone of the Nation's climate record, and we are so very thankful for their service! Lengths of Service awards were presented to the following people over the past year:

Individual Awards

Frank Nelson	35 Years of Service	White City, KS
Martha Caffrey	25 Years of Service	Lillis, KS
Kim and Von Kramer	15 Years of Service	Longford, KS
Jim Yarrow	15 Years of Service	Wakefield, KS
Gary Robinson	15 Years of Service	Miller, KS
Rebecca Wassom	10 Years of Service	Wamego, KS

Rebecca Wassom, Wamego, KS

Institution Awards

Horton Water Plant	75 Years of Service	Horton, KS
USACE Milford Lake	50 Years of Service	Milford Lake, KS

The Caffrey's, Lillis, KS

Jeff Johnson, Meteorologist in Charge WFO Topeka, presents 75 year Institutional Award to Dawn Succi of the City of Horton Water Plant.

Continued on Page 5

Winter Weather Preparedness (continued)...

Don't forget that your decisions on the road will not only affect you, but everyone driving near you...and vice versa. Finally, if you **DO NOT NEED TO DRIVE** during adverse road conditions, simply **DON'T GO** anywhere. Although numbers are largely underreported, here in Kansas at least 15 to 20 people lose their lives in automobile accidents where ice and snow played a role and that number may be much higher.

In the event that you must travel during winter weather, it is a good idea to keep a kit of basic supplies in your vehicle through the winter months, as you will be thankful you did should you find yourself unintentionally off-road. One such kit may contain several bottles of water, a space blanket, a small supply of non-perishable food, a flashlight with extra batteries, and other items such as jumper cables and a roadside visibility kit of either reflectors or flares. (visit www.ready.gov/kit for more information). It is a good idea to stay in your car until help arrives as opposed to leaving the security (and relative warmth) of the vehicle in an attempt to find help. Try to occasionally run the car just long enough warm the interior while also conserving gas. If completely stranded, a small shovel and bag of sand are must-haves.

Staying safe at home in winter weather is also important. Carbon monoxide poisoning from home heating devices is one of the most common winter-time issues. Always make sure that heating equipment is intended for indoor use, functioning properly, and well-ventilated. If you notice any symptoms of carbon monoxide poisoning, immediately move to a well-ventilated area and get fresh air. In advance of particularly strong storms that involve ice and/or powerful winds, plan for the possibility of prolonged power outages. Falling trees, limbs, and power lines also become a hazard in these situations and should be avoided if at all possible. In advance of any large storm that will impact travel, make sure that you are prepared to be stuck at home for a prolonged time, keeping an adequate supply of food, water, and medication on hand well in advance of the storm.

Start your winter preparations now, and when your friend or neighbor asks, "Are you ready for winter?", you can say "Yes!" with confidence. Then explain to them just how ready you are as it might raise their own awareness and urge them toward a different type of "readiness" than they had initially been considering.

Visit this site for more great information on getting ready for winter. http://www.ready.gov/winter-weather

COOP Corner (continued)...

Winter is coming!

As we enter the Fall season, colder weather will soon be upon us. As a reminder, if snow if expected in the forecast or any other wintry precipitation, please make sure you remove the funnel and inner measuring tube from the rain gauge, and place it indoors. The outer overflow can will remain outside. This is to ensure that the opening is large enough to catch the snowfall, and to prevent freezing of liquid precipitation inside the inner measuring tube, which can crack the tube allowing it to leak. As always, any questions, please email Shawn Byrne, Observing Program Leader, shawn.byrne@noaa.gov

2015 Observational Site Visits

We at the National Weather Service want to thank each and every Cooperative Observer in the field, and what they do to enhance the forecast skill of our office in Topeka, but also continuously add to the Nation's climate record as well! Your contributions to our Nation are very much appreciated. We are winding down our annual 2015 visits. We still have a few more to do, which she be completed by the end of October. We will start the 2016 visits likely starting in November.

A Severe Weather Event: September 10, 2015 (continued…)

Figure 1

The storms retained their supercell characteristics which included a rotating updraft called a mesocyclone. If viewed from the east or southeast these mesocyclones can be quite impressive visually. Figure 1 (courtesy of WIBW TV) is an image of a supercell from near Linn in Washington County that went on to produce softball size hail.

The storms retained their supercell structure into Wabaunsee County. In fact, one supercell was able to generate low level rotation and NWS Topeka issued a tornado warning for the storm as it moved into far southeast Wabaunsee and southwest Shawnee County. The supercell thunderstorm in the image below (Figure 2, courtesy of WIBW TV) moved southeast and did end up producing a brief weak tornado in extreme southeast Wabaunsee and southwest Shawnee County. The photo was taken of the supercell as it moved across Wabaunsee County.

Shortly thereafter the storms transitioned into more of a line where damaging straight line winds became a greater risk as the hail threat diminished. At the same time areas to the north of the bowing line found themselves under the nearly stationary pivoting area of torrential rains along the I-70 corridor, including Topeka. Areas along Interstate 70 including the City of Topeka were on the north side of the developing line of storms where torrential rains ended up dumping over 3 inches in one hour. In fact, Topeka Billard Airport ASOS recorded 3.41 inches in one hour between 9 pm and 10 pm. One hour rainfall rates of 3.41 inches are considered to be a 50 to 100 year event for Topeka. Numerous water rescues ensued across the city of Topeka due to the incredible rainfall rates resulting flash flooding. The image labeled Figure 3 is the storm total rainfall map for this event. Many areas around Topeka received 2-4 inches of rain.

Figure 2

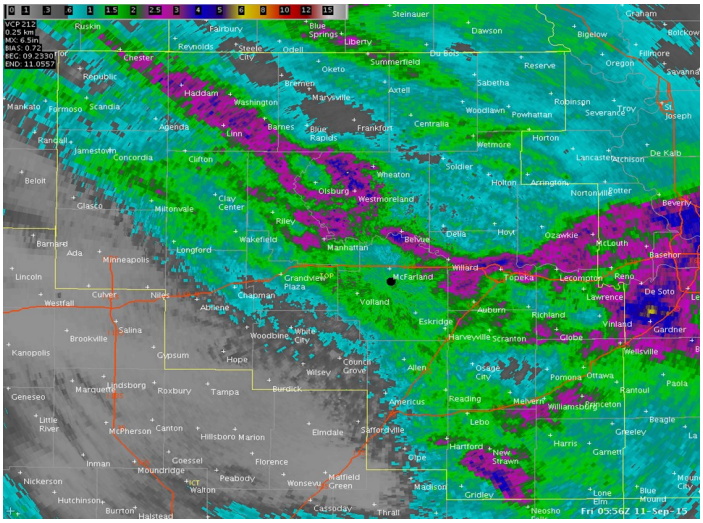


Figure 3

National Weather Service

Topeka, Kansas

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Local Forecast Phone: 785-234-2592

E-mail: w-top.webmaster@noaa.gov

Editor: Emily Heller, Meteorologist Intern

Winter Weather Spotting Tips:

Weather to Report:

Snowfall depth >= 1 inch

Any ice accumulation (including roads)

Precipitation type changes (i.e. rain to freezing rain, snow to sleet, etc.)

What to Include in your Report:

Your Name and/or Call Sign (Spotter Number)

Your Location

Time and Date of Event

Location and Duration of Event

Visit the following website for more information:

http://www.erh.noaa.gov/iln/spotters/measuringsnow.php

Tips to lower your risk when driving on ice and snow:

1 . Know what to expect on your trip and plan accordingly. If you know you need to travel through especially bad wintery conditions, be sure to check the weather forecast along your trip by visiting www.weather.gov. Visit Kansas Dept. of Transportation website to access information about your road conditions including webcams.

2. Slow down and relax. This is the most important rule to driving in bad conditions of any kind. And we're not just talking about speed — you want to do everything more slowly and more lightly than you normally would. Hitting your gas pedal, slamming your breaks or cranking your wheel too quickly is a surefire way to lose traction on an icy or wet road.

3. If you start sliding, turn slightly into the skid and pump your breaks. Once you're already sliding, your tires have lost traction with the road. It seems counterintuitive, but in order to avoid a spinout you need to turn slightly into the skid, slowly let off the gas and start pumping the breaks. Yanking the wheel in the other direction and locking the brakes will stop your tires from turning, but you'll lose all hope of regaining traction with the road surface.

4. Know when to quit. Sometimes road conditions are simply too dangerous to drive in. If you can't see or you keep losing control, pull over. Never push your luck if you're unsure. It's not worth it to drive if you're jeopardizing yourself, your passengers or other drivers on the road.