



Serving Residents of Northeast Kansas Since 1878

The Topeka Tiller

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National
Weather
Service
Topeka, KS

NWS Topeka Hosts the 7th Annual Integrated Warning Team Meeting

By Audra Hennecke, Forecaster

On October 17th, 2017, NWS Topeka hosted the 7th annual Integrated Warning Team (IWT) meeting in Topeka, Kansas. The IWT consists primarily of the National Weather Service, emergency managers, and broadcast media: three entities that play a crucial role in the preparedness and response efforts for high-impact weather events. These annual meetings provide an opportunity for these entities to discuss best practices and challenges during weather operations, and ways in which each group can improve their preparedness and response efforts to support a more unified message during high-impact weather events.



This year 49 people attended the meeting, with the following agencies/organizations being represented: state, county, local, and university emergency management; Kansas City and Topeka

media markets; KDOT; US Army; the Red Cross; and the National Weather Service. The annual IWT meetings help to continuously strengthen these valuable partnerships, and it allows everyone to gain a better understanding of the diverse needs that exist before, during, and after impactful weather events. By building these partnerships prior to hazardous weather, it improves the communication efforts between each agency and organization, which ultimately aids in providing better service to the community as we prepare and respond to high-impact weather events across northeastern Kansas.



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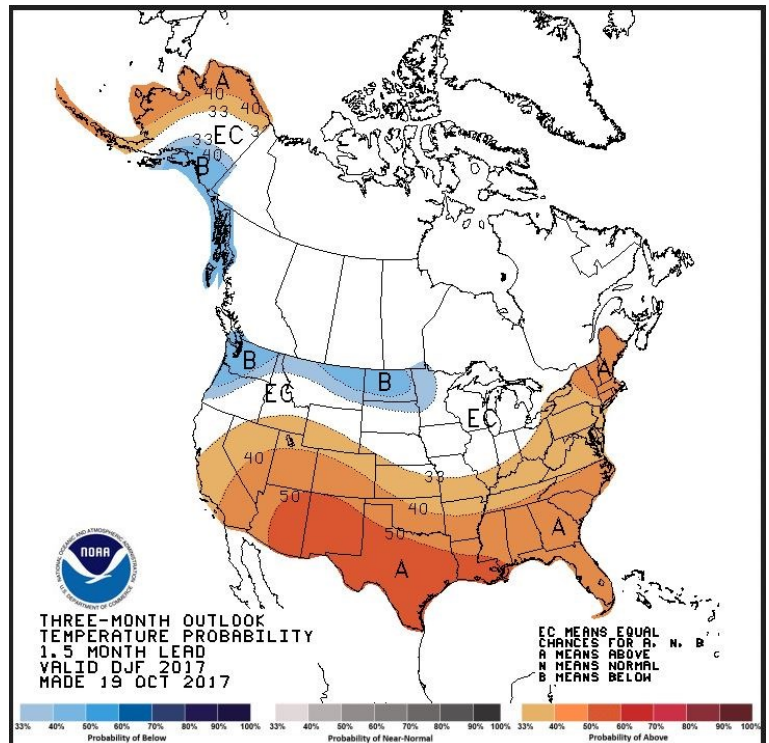
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Winter 2017-2018 Outlook

By Matt Wolters, Lead Forecaster

It's that time of year again when we get asked one question over and over. No, not the TV question. What will the winter be like this year? It is fun to ask whether a mild August means anything about the upcoming winter. But then September turned out to be quite warm, so does that mean anything? Much like the sports cliché that the previous game has no effect on the next one, it's hard to say what the winter will be like based on the past few months. Outlooks in general are just a broad expectation of what the season could be based on the current state of global circulations and how that may affect where storm systems tend to travel through the months of December, January and February. Regardless of the outlook, northeast Kansas has never gone through winter without having some snowfall. And you can pretty much count on there being some cold spells, because it is winter. But the outlook tries to give an idea of how cold or how snowy this year might be.

The temperature outlook for the three month period of December, January and February shows there is a 33% to 40% chance that the average temperatures end up being warmer than normal for much of the state. However, over parts of northeast and north central Kansas, the chance average temperatures for the three months is below normal, above normal, or ends up being normal are about the



The three month temperature outlook for December through February

same. So the outlook suggests that the cold spells that move through may end up being brief, and the winter season overall could be another mild one for temperatures. For reference, 4 of the last 6 winters ended up having warmer than normal average temperatures, including the last two seasons.

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Balloon Releases for Hurricane Irma

By Emily Heller, Meteorologist Intern

Here in northeast Kansas it would be pretty safe to say hurricanes are not usually a concern of NWS Topeka. However, during this past hurricane season while Hurricane Irma was on the move in the Atlantic, the Topeka office along with 69 other offices from across the country were helping to predict its movement. How? By the use of weather balloons and the vital instruments attached to them called radiosondes.

These weather instruments are attached to a balloon filled with hydrogen or helium and sent into the air to observe the vertical structure of the atmosphere at a given time.



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A Summary of the Summer of 2017

By Kyle Poage, Forecaster

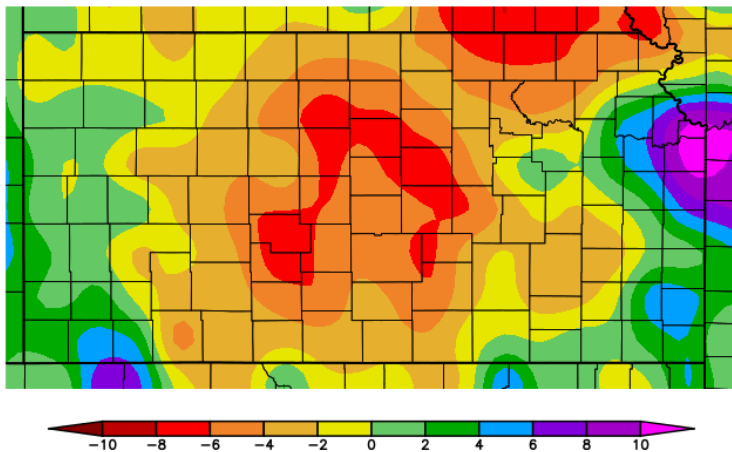
After warmer than normal winter and spring seasons, it would not have been surprising for the warmth to continue into the summer, but this was not the case for the season as a whole. For most of the area, temperatures in June and July averaged to be a little above normal, but a much cooler than normal August kept the average temperature for the summer quite close to normal. Heat index values still managed to reach very high values, with peak readings reaching around 103 on July 18, and from 105 to 110 from July 19 through July 22. Precipitation measured during the summer ranged from around three inches in portions of Marshall county to nearly 21 inches in central Douglas county. For the area as a whole however, precipitation was roughly two to six inches below normal for most locations, and with the warm spring and early summer, moderate drought conditions developed over portions of north central and northeast Kansas. Conversely, much of Douglas, Jefferson, and Franklin counties received precipitation of at least four inches above normal this summer. A large amount of this rainfall came on August 21 and 22 when persistent thunderstorms dropped five to nearly eight-and-a-half inches of rain resulting in flash flooding in southeastern Douglas and northeastern



Figure 1: Washed out railroad tracks near Ottawa, Kansas.
Picture via MidlandRailway.org

Franklin counties, including severely damaging railroad tracks between Baldwin City and Ottawa (See Figure 1). The two-day total of 5.68 inches that fell in Topeka was the seventh-highest two-day total on record for Topeka, where weather records data back to 1887. In addition to the heavy rain, scattered areas of wind damage occurred from severe thunderstorms on the evening of August 21 across east central Kansas. The greatest concentration of severe weather this summer was during the three-day period from June 15 to 17. Several counties in the area received wind gusts up to 70 miles per hour and hail up to an inch in diameter on June 15. On June 16, severe thunderstorms produced 60 to 75 mile per hour winds and several areas of very large hail, including hail from golf ball to baseball size from Washington to Randolph to Lyndon to Waverly. An EF-1 tornado also damaged several outbuildings a few miles west of Beattie around 11 PM that evening. Severe thunderstorms largely were limited to east central Kansas on June 17, but again produced large hail up to the size of golfballs from near Woodbine to near White City, and causing an outbuilding to be flipped a few miles south of Baldwin City. Thunderstorms produced winds estimated at up to 80 miles per hour northeast of Council Grove as a cold front passed through the area on July 22 to end that extremely hot period.

Departure from Normal Precipitation (in)
6/1/2017 – 8/31/2017



Winter Weather Travel Safety: Are You Prepared?

By Chad Omitt, Warning Coordination Meteorologist

Living in Kansas you may think that tornadoes pose the greatest risk to your safety from Kansas weather. However, the greatest risk to your safety actually comes from driving in snow and ice during the winter season. We're not talking about the traditional blanket of snow that you can see. The true road ice hazard is subtle and intermittent icing due to light winter precipitation, events that suffer from a lack of obvious visual cues and public awareness (see image right). It is these conditions that cause the biggest percentage of deaths and injuries and it doesn't take much to make roads icy enough for you to lose control!



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.](#) By comparison, tornadoes kill around 2 people each year in Kansas and injure far fewer than wintertime car accidents.

So what can you do 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.

Article continues on page 8...

2017 Outreach Events at the Topeka Forecast Office

By Jenifer Prieto, Forecaster

This past summer and fall seasons, the staff at Topeka have been busy with various opportunities to meet with the community, work with partners at local events, and attend outreach events in the local area. To highlight a few events and activities across the area, we attended the Haskell Indian University Safety Fair, provided on-site weather decision support for the Symphony in the Flint Hills and Luke Bryan Concert, and mentored several prospective students from middle school through college level.

The annual Safety Fair at the Haskell Indian University in Lawrence, Kansas was a perfect opportunity for meteorologists to discuss severe and winter weather hazards with professors and college students. While some familiar to the area may recognize the dangers of the various weather phenomena in Kansas, from tornadoes to snow storms, many students are from different parts of the country and may be unaware of the safety resources available to them. During the safety fair, the NWS Topeka in coordination with partners from FEMA shared important weather forecast resources and safety information to prepare for the upcoming winter season.

This past June and September, meteorologists were requested by our emergency management partners to assist with large outdoor events – particularly the Symphony in the Flint Hills and the Luke Bryan

Concert. Both events attracted in excess of 10,000 participants and were located in rural areas that can be more vulnerable to the impacts of severe weather. Meteorologists coordinated days in advance with emergency management on the forecast (particularly wind speeds, temperatures, and thunderstorm potential) leading up to and day of the event. During these particular events, meteorologists worked within the local incident command trailer to maintain a constant weather watch and timing of suspected hazards. Fortunately, both events were successful with weather playing no major role.

Lastly, our office had the privilege of hosting several students who were interested or studying to become a Meteorologist. Throughout the year, we received requests from talented and ambitious grade school students who want to learn more about the weather and the classes needed to study Meteorology in the future. We typically will give them a tour of the office, demonstrate a weather balloon launch, and have them job shadow a forecaster to observe the radar, satellite, and model graphics. As the students enter the University of Kansas or Missouri, we offer volunteer opportunities twice a year for a student to routinely work with our meteorologists. All topics related to operational and research Meteorology are discussed and demonstrated, from severe weather to aviation and hydrology. Volunteers also become proficient in launching the weather balloon and radiosonde package. Overall, these outreach opportunities are not only rewarding to the students, public, and our partners we serve, but also to the local staff who greatly enjoy working with our community and addressing partners' decision support needs.



Symphony in the Flint Hills in Geary County, KS—June 10th, 2017



NWS Booth at the Haskell University Safety Fair—September 2017

2017 Severe Weather Review

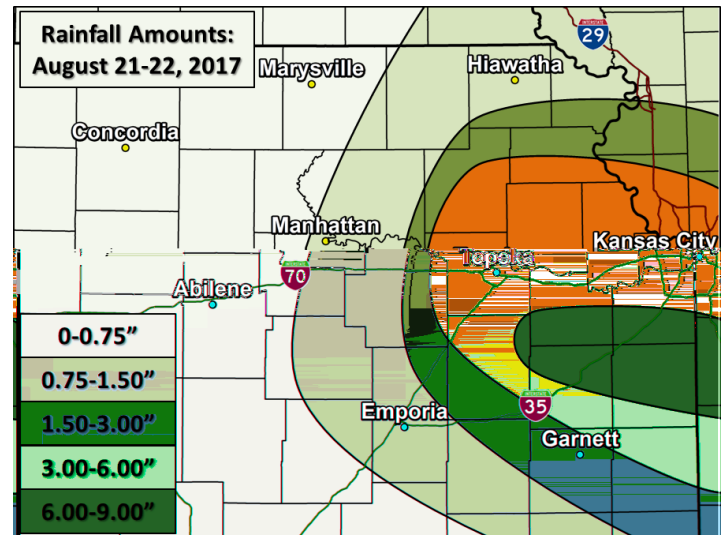
By Bryan Baerg, Meteorologist Intern

Continuing with the trend of past few years, the 2017 severe weather season was quite benign overall. Although, there were a few significant events scattered throughout the convective season. The first of which occurred early in the severe weather season on March 6th. A broken line of thunderstorms developed along Highway 77 during the afternoon hours. While radar and spotter indications suggested the thunderstorms were relative weak, persistent weak low level rotation was noted with several storms. All-be it weak, the rotation was strong enough to produce 7 weak tornadoes across portions of Geary, Wabaunsee, Pottawatomie and Franklin Counties. Visual confirmation of these tornadoes was tough at times as a few grass fires were ongoing in the Flint Hills. Wind gusts upwards of 50 mph ahead of the thunderstorms ushered smoke into the cloud base region of the thunderstorms, greatly reducing visibility to the tornadoes. Fortunately, damage was confined to mainly outbuildings and an irrigation system.

May 18th was poised to be a significant outbreak of severe weather across the central Plains. The Storm Prediction Center (SPC) had placed portions of south-central Kansas and adjacent portions of Oklahoma in a “high” risk, with areas in central Kansas in a “moderate” risk. An isolated supercell thunderstorm developed along a warm front during the late afternoon in Dickinson County. During it’s more than 4 hour lifecycle, it traversed portions of Morris, Geary, Wabaunsee, Shawnee, Douglas, Jefferson and Franklin Counties. Hail up to 2 inches in diameter was reported along with a brief tornado 2 miles southeast of Alta Vista. Wind damage was noted in Douglas and Jefferson County as widespread 70-80 mph winds pushed through the counties. Luckily, damage reports were mainly confined to trees and tree branches.



Hail from May 18th, 2017 in Topeka



After the May 18th severe weather event, the rest of May and the first half of June was mainly quiet across the area. The quiet weather pattern came to a screeching halt by the middle of the month. June 15th through 17th saw a combined 79 severe thunderstorm reports across the NWS Topeka area, ranging from very large hail to very strong winds to a brief tornadoes. June 15th produced numerous damaging wind gusts upwards of 70 mph. Although, radar estimated winds approaching 80-90 mph in portions of Dickinson County. The afternoon and evening hours of June 16th saw another round of severe weather. Several reports of tennis ball to baseball size hail were reported across the area, along with a brief tornado in Marshall County. The most widespread hazard was once again damaging wind, as numerous reports of winds greater than 70 mph stretched from the Kansas-Nebraska border, southward to Anderson and Coffey Counties.

The remainder of June and much of July and August were once again quiet in the severe weather department. Again, this came to an abrupt halt by August 21st. While many were focused on the total solar eclipse, NWS Topeka forecasters were intently focused on the heavy rain and subsequent flooding threat. Several rounds of thunderstorm activity trained over portions of east central Kansas during the late evening hours of August 21st and the early morning hours of August 22nd. By sunrise August 22nd, portions of southern Douglas County and northern Franklin County had received upwards of 9 inches of rainfall. Widespread flooding was reported across the counties, with numerous roads impassable, along with several creeks and streams out

Balloon Releases for Hurricane Irma (Continued...)

The radiosondes measure temperature, wind speeds, and humidity. The instruments are launched at the same time across the United States each day, and their data initialized into advanced weather models.

Normal operations are to launch weather balloons twice a day, but with Hurricane Irma making its way towards the US, the NWS upped this number to four times in order for models to be more accurate with their baseline of current atmospheric conditions. As the balloon rises as high as 100,000 feet into the air, the data from the attached radiosonde is transmitted back to the office until the balloon bursts. After termination, all the data collected is encoded into a message that is sent out and ingested into the computer models. More balloon releases mean models can more accurately track weather features like Irma.



A weather instrument called a radiosonde



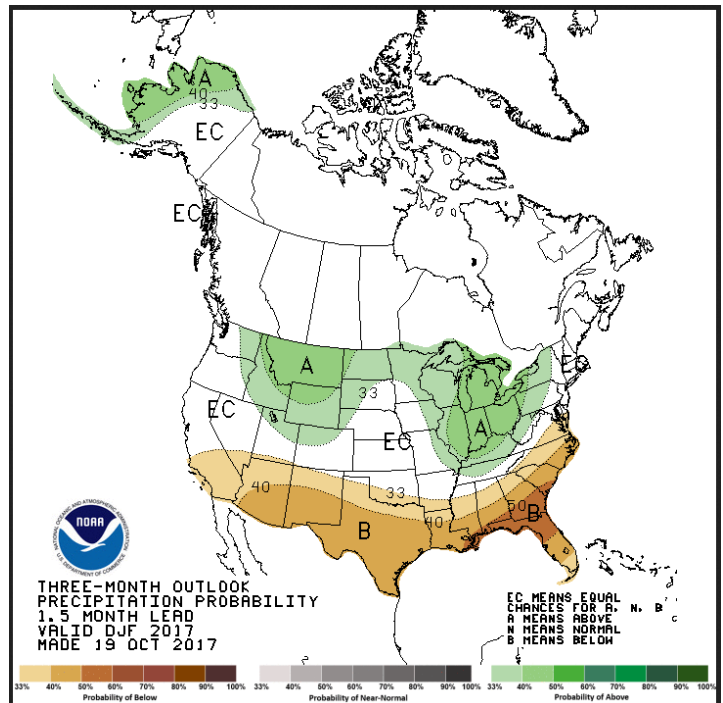
A weather balloon being launched at Billard Airport in Topeka

Hurricane Irma maxed out as a Category 5 storm and made United States landfall in the Florida Keys.

2017-2018 Winter Outlook (Continued...)

The outlook for precipitation is a little less clear with no strong indication for a wetter than normal or drier than normal year. Basically the chances for above normal, below normal or near normal precipitation are about the same. In an average year, Topeka will receive around 14 inches of snow during the months of December, January and February. But past records show that the snow totals can have a big swing from that average for any given year. The last three winters have seen below normal snow amounts. But it was not that long ago in 2012-2013 and 2013-2014 when Topeka had over 20 inches of snow for the three month period. Because of this large variability in precipitation, it is difficult to say whether it will be a snowy winter. And the outlook doesn't really provide any information to think it could be one or the other this winter.

So the expectation for this winter is for temperatures on average to be above normal. This doesn't mean every day of winter will be above normal. We likely will see cold air this season, but that cold air may not last very long over the region. As for precipitation, it is difficult to make any conclusions about how much snow there may be.



The three month precipitation outlook for December through February

Winter Weather Travel Safety: Are You Prepared? (Continued...)

Even the smartest and safest drivers get into accidents. That's why it's crucial to be prepared for the possibility of any kind of collision or accident that could leave you and your passengers stranded on the side of a cold and possibly dangerous road.

The first step is to build an emergency kit and place it in the trunk of your car.

Inside, you will want to include common car safety items like jumper cables, a flashlight and a roadside visibility kit of either reflectors or flares. If you are stranded, a small shovel and bag of sand are must-haves. Here's a full list of supplies you may want to include in your kit: A list can also be found at [Emergency supplies kit](#)

- Tools: jack, lug wrench, shovel
- Non-clumping kitty litter, sand or de-icer
- Flares, reflectors and flags
- Extra warm clothes, boots, hat and gloves
- Ice scraper and snow brush
- Cell phone and car adapter
- Rechargeable flashlight
- First aid kit
- Matches or lighter
- Battery jumper cables
- Extra food and water
- Blanket/sleeping bags



Points to remember:

- **Wear your seat belt!** Even though wearing your seat belt should already be a no-brainer at all times, during the winter it's even more critical. An alarming number of road ice fatalities occur with minor accidents where the vehicle occupants were not wearing seat belts.
- **Take it slow!** *You don't have the skill to drive at normal speeds on icy roads.* High speeds make it easy to lose control on ice and snow. Slowing down to below 45mph when icy roads are a threat is one of the best ways to avoid an accident.
- **Pay Attention!** Put your mobile device away and focus on the road with both hands on the steering wheel!

Know what to expect on your trip and plan accordingly. If you need to travel through 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.

By remembering these few important points we hope that you can help keep yourself, your family and fellow drivers safe this winter season. For more information on Winter Safety visit <http://www.nws.noaa.gov/os/winter/index.shtml>

COOP Corner

Fall is in the air once again as leaves will be turning soon, and cooler air begins to settle into the plains. It is once again time to think about removing the rain gauge covers and inner tubes as snow begins to fly this season. We do this for two reasons. 1. To allow a place for the snow to catch without piling up on the inside of the funnel to be potentially blown away as it reaches the lip. 2. We remove the inner tubes to prevent the water from freezing inside the plastic tube which causes the water to expand and the tube to crack. Typically we will remove these sometime in November as freezing temperatures at night become more likely.

<https://www.youtube.com/watch?v=3yNj1xCiqB4>

Recognition for your work!

I want to thank everyone for a wonderful job this spring and summer season! We had a fairly wet summer in the eastern sections of the state, and a dry one for the central sections. For the Topeka area, we have received 34.69 inches of precipitation so far for the year (ending September 20th). That is 5.67 inches above normal for this year, but 3.60 inches below the amount at this time last year.

Awards!



Pictured: Leo Pollard 35 years of service.

Nancy and Leo Pollard

Nancy and Leo Pollard have been providing observations for precipitation and river readings for 35 years! They took over for Leo's Father, Roland Kraft, in 1982, and Mr. Roland had performed the duty since November 1962. Therefore, the Polard family has been performing the observations in their family for the past 55 years. We thank you for your family's service for so length of time!

Other award recipients included:

Barry Finlayson for 65 years of service for the gauge located at the Washington Power Plant.

Debra Kruse, of Bremen, for 20 years of service.

Thank you one and all for all that you do! It does not go unnoticed or unappreciated. If you have any problems or questions, please do not hesitate to contact me at shawn.byrne@noaa.gov or 785-232-1493.!



Pictured: John Swinford and Jason Hurley, Perry Lake Project, US Army Corps of Engineers

USACE Perry Lake

The USACE Perry Lake Project received an Honored 50 year Institution Award for 50 years of service taking weather observations for the NWS Cooperative Program. Perry Lake observes the temperature, precipitation, both the standard rain gauge, and the Fischer Porter HPD rain gauge, and evaporation. We thank Jason and John for helping with this program through their tenure at the lake. Thank you!



National Weather Service

Topeka, Kansas

1116 NE Strait Ave

Topeka, KS 66616

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 \geq 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>



Six Basic Steps for Properly

MEASURING SNOW



Accurate and timely snowfall measurements are extremely important to your National Weather Service office, your community, local media, and many others. Here are the six steps you need to know for measuring snow:

1 Supplies

Ruler or yard stick
24" X 24" white board, flag

2 Planning

Find an open area away from tall objects, but sheltered from wind

3 Set-up

Set up before snow begins
Put your board out and mark it with the flag

4 Measuring Snow

Record your total to the nearest tenth of an inch
Wipe the board off after measuring
Measure once daily at the same time, after measuring place the board on top of snow

5 When Snow Stops

Measure as soon as the snow stops to avoid lower totals due to melting, settling and drifting

6 Reporting

weather.gov social media
SEND us your report!