

December 5, 2013

BAE

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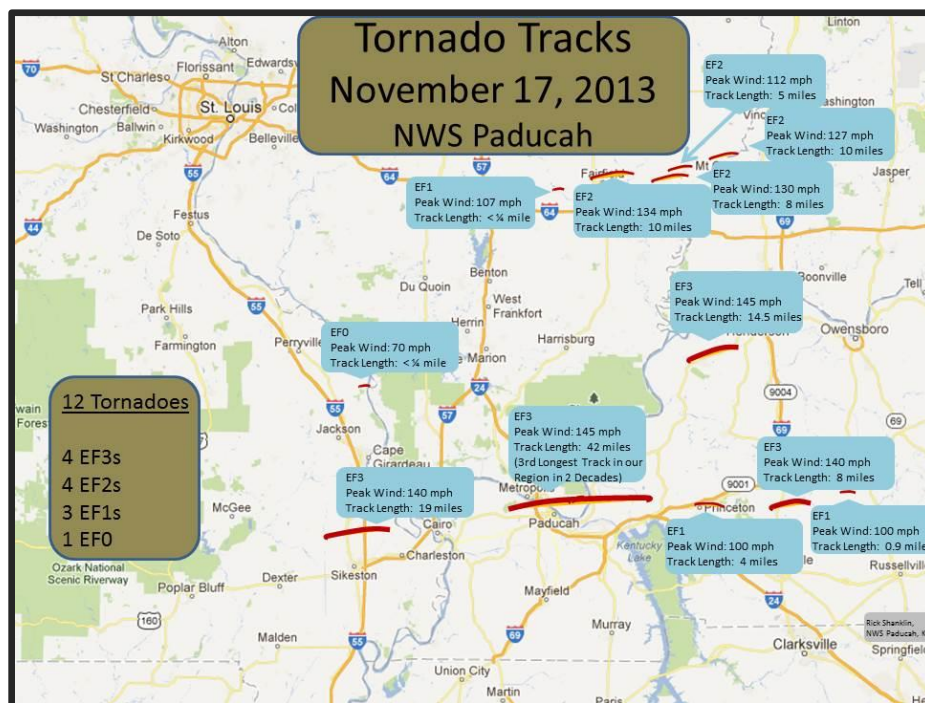
Major Winter Weather Event Tonight (12/5) and Tomorrow (12/6) Details in the Forecast Section Below

November 2013 Monthly Summary

Severe weather, very cold temperatures, and even some snow gave the Commonwealth a taste of everything through the month of November. The month started off with dry conditions in place as surface high pressure sat over the southeastern United States. The first week ended with most locations only getting around a half inch of rainfall. For the month, precipitation was below normal by 0.77 inches, which was the highest below normal deviation since February. The pattern then became a bit more amplified heading into the middle of the month. An Arctic cold front dove through the Ohio Valley with rain slowly transitioning to snow as temperatures became sub-freezing. Following the front, high pressure worked into the region with

skies clearing and lows dropping into the upper teens to low 20s.

A very strong storm system then dragged a cold front through Kentucky on the 17th. This produced a severe weather outbreak with numerous reports of damaging winds and even some isolated tornados. Multiple EF3 tornados tore through western portions of the state with the strongest passing near Paducah. This tornado had peak winds of 145 mph and a track length of 42 miles. According to the National Weather Service in Paducah, this was the 3rd largest track observed in the area over the past 2 decades. The image below was developed by their office and shows the 12 tornados that were surveyed across the area.



Conditions then became fairly quiet for the remainder of the month with each week remaining mostly dry and very cold. After a cool third week of the month in which highs were on average 5 degrees below normal, the Commonwealth got an early glimpse of winter going into the Thanksgiving holiday. Low pressure passing to the southeast of the state combined with cool temperatures to make for the first significant snow of the season. Anywhere from 0.5 to 2 inches blanketed Bluegrass and eastern portions of the state. According to the National Weather Service office in Jackson, there was still 1 inch of snow on the ground on

Thanksgiving Day, which made for the greatest snow depth ever recorded by the station on the holiday.

High pressure of Arctic origin then moved into the region following the snowfall event with some of the coldest temperatures of the season. Highs on the 27th didn't get out of the upper 20s to low 30s for much of the state with lows that night dropping into the low to mid-teens for many locations. This kept the state locked into a rather cool trend with 6 out of the past 7 weeks having average temperatures below normal.

Summarized and averaged data for the period 20131101 to 20131130 (Last 30 Days) (Not for Legal purposes. Departure from Norms based on climate divisional Averages)											
STATION	AIR TEMPERATURE						PRECIPITATION			ExtremeTemp	
	MAX	DEV	MIN	DEV	AVR	DEV	TOTAL	DEV	%NORM	HI	LO
WEST (CD1)	54	-5	35	-3	44	-5	2.44	-2.08	54	72	11
CENTRAL (CD2)	54	-4	34	-3	44	-4	3.48	-0.63	85	75	12
BLUEGRASS (CD3)	51	-6	33	-4	42	-5	3.35	-0.06	98	73	11
EAST (CD4)	54	-5	33	-1	44	-3	3.24	-0.34	91	77	11
STATE	53	-5	34	-2	44	-4	3.13	-0.77	80	77	11

Data obtained from KY Mesonet and NWS Stations

Forecast

The Commonwealth is entering into an active pattern heading into the weekend with everything from heavy rain, snow, and ice accumulations in the forecast. The focus will be centered on an Arctic cold front and multiple disturbances riding across the area over the next couple days. As this frontal

boundary passes through today (12/5), much cooler air will begin to filter into the region. This will make for a slow transition to a wintry mix tonight and into tomorrow. Impacts across the state will vary based upon the region.

Initially, temperatures will be warm enough this evening to support an all-rain scenario across the entire state, but cooling will continue through the overnight hours from northwest to southeast. The transitional period will hold off until tomorrow morning for much of the state. Freezing rain and sleet will both be possible before moving to snow later in the day. The highest accumulations of snow will be situated in the northern Bluegrass where over 4 inches is expected.

The focus for freezing rain and corresponding ice accumulations will be across the western half of the state. There is the potential for some areas to witness more than a quarter inch of ice through the day Friday. A transition to snow will then occur later in the day with most areas only getting around an inch or two. Below is an image (Figure 1) showing the probability of more than a quarter inch of ice accumulation. It can be seen that focus will be in southwestern portions of the state where there is over a 70% chance.

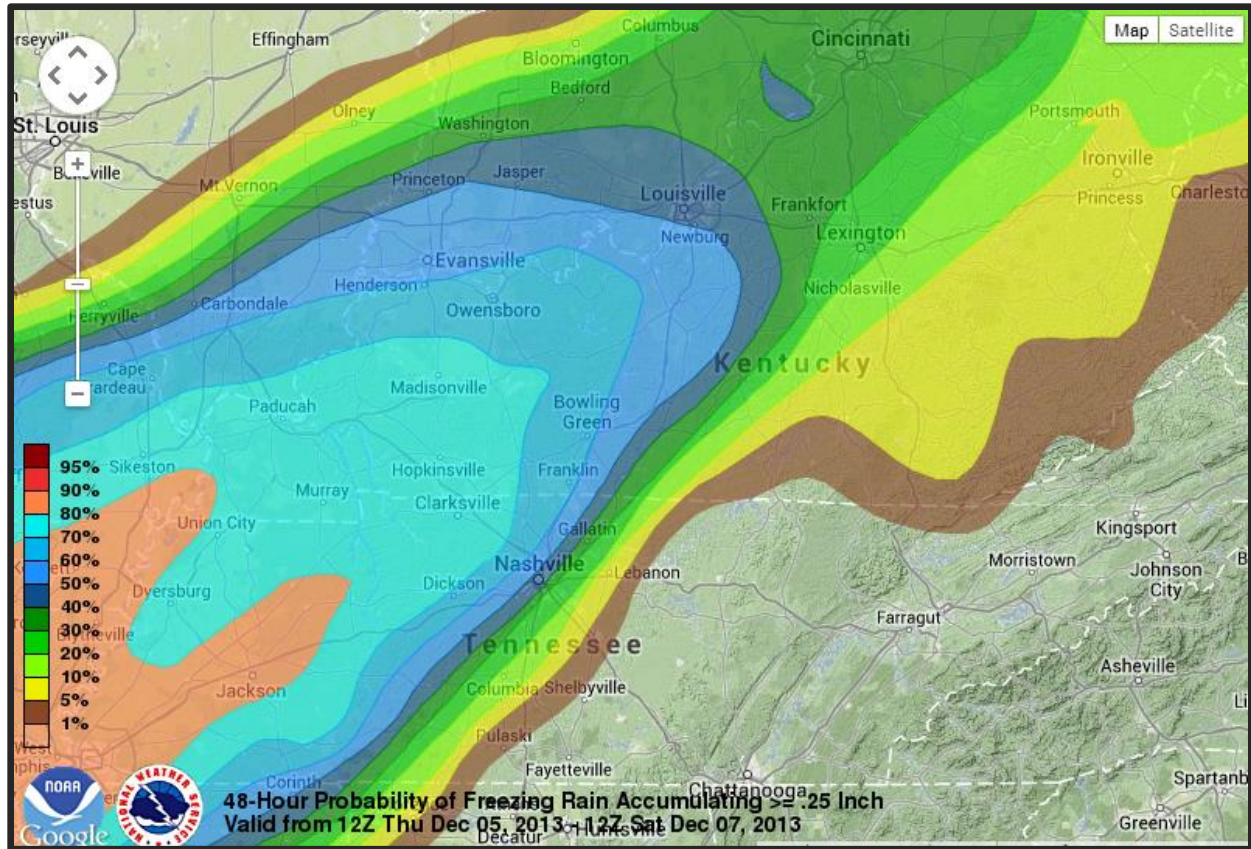


Figure 1

The rest of the Bluegrass, including the Lexington area will be situated in a zone where a wintry mix of precipitation will make for a wide variety of conditions. Rain will ensue through the overnight and into tomorrow morning. It isn't until the afternoon when a potential freezing rain event will unfold. This area will not see the ice accumulations like western portions of the state will see, but the

potential is still there for up to a tenth of an inch. Nonetheless, this will still make for deteriorating road conditions. Precipitation will then turn to snow by the end of the day, but accumulations look to be minimal with only around an inch. Below (Figure 3) is an image from the Weather Prediction Center showing the estimated snowfall through Sunday morning.

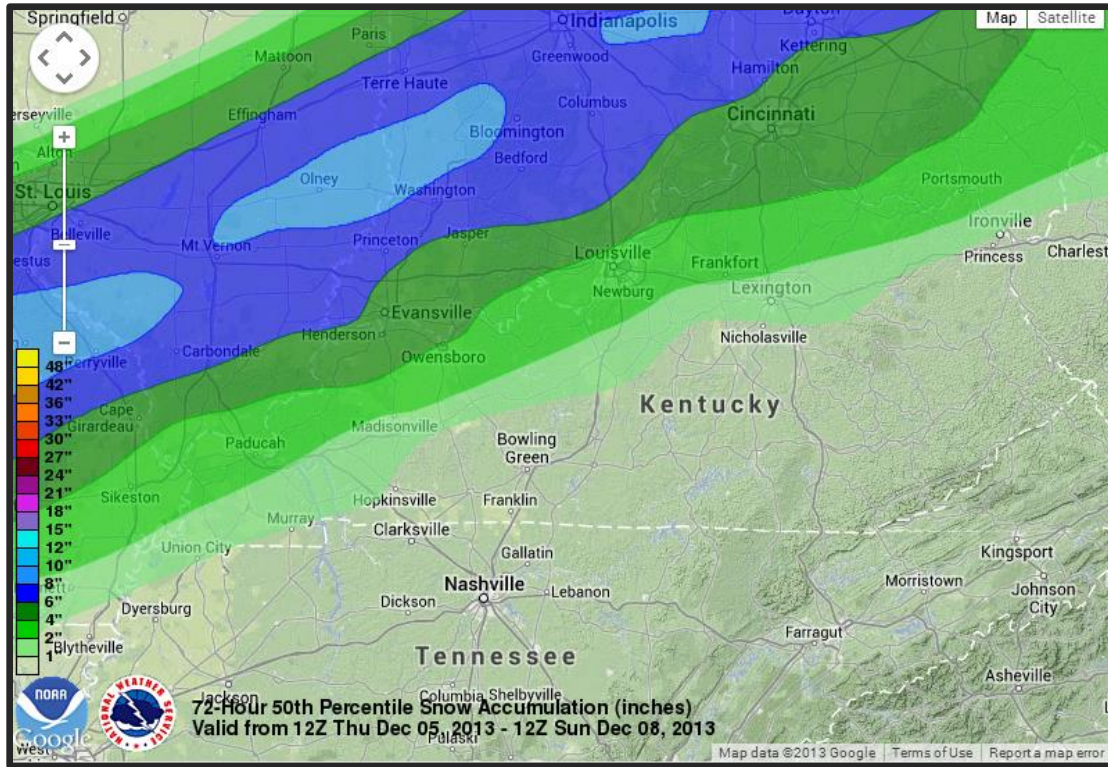


Figure 3

Locations in the southeastern portion of the state will primarily see a rain event, but rainfall totals are very excessive. Figure 4 below shows the

estimated rainfall equivalent over the next 5 days across the state, most of which will come today and tomorrow.

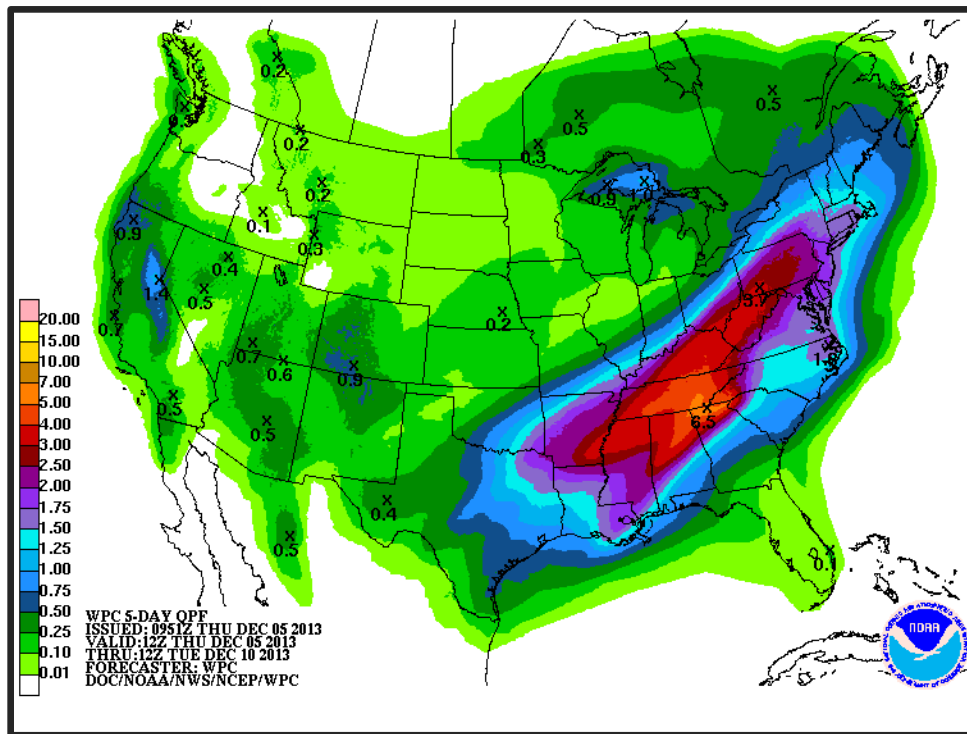


Figure 4

While precipitation will wane going into the overnight Friday, another system will take aim Saturday night and into Sunday. This will feature another round of wintry weather with snow and freezing rain possible once again. This system looks to lay a bit more in the way of ice accumulations with a half inch in south central portions of the state not out of the question. This will slowly taper to a quarter inch farther north, but once again, this still presents the problem of dangerous driving conditions.

Following this system, much cooler temperatures and dry conditions will filter into the Ohio Valley going into next work week. Highs by Tuesday will only be in the mid 20s to low 30s with lows that night dropping to the coldest of the season. Temperatures in the single digits and teens will be common across the region, which can be seen in Figure 5 below. A breezy wind will allow for much of state to see the livestock cold stress index enter into the emergency category.

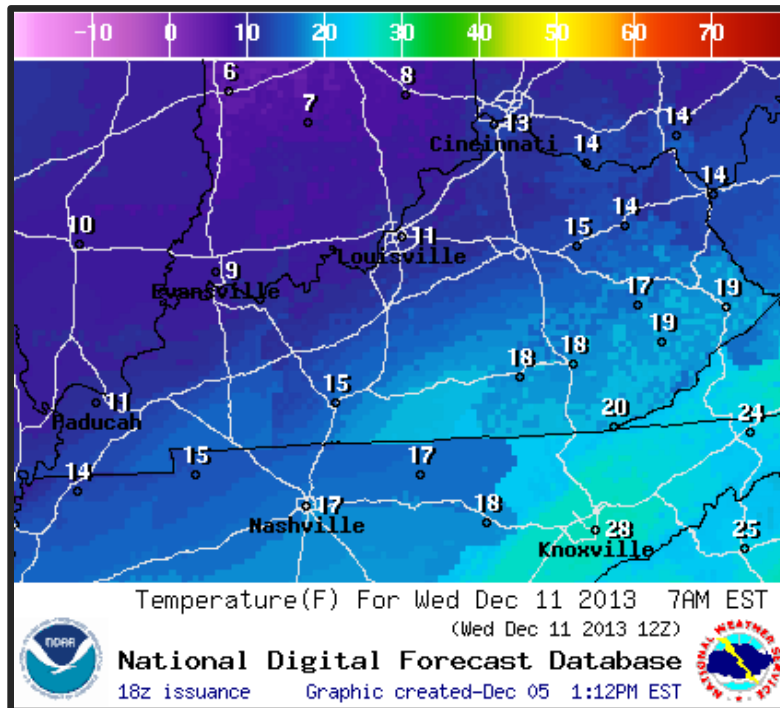


Figure 5

Looking a bit farther out, temperatures and precipitation will remain near normal for both the month of December and 3 months out into February. Highs are normally in the upper 40s to around 50 at the start of the month and decreases to the low to mid 40s by the end. Low temperatures will generally hover in the mid 20s to low 30s. Precipitation-wise, the Bluegrass State averages

around 4 to 4.5 inches for the month of December, with 2 inches of snowfall.

3 Month Outlook (DJF)
Near Normal Temperatures and Near Normal Precipitation

Other News

The Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) is currently looking for more observers across the state of Kentucky. Observers are asked to record daily measurements of rain or snowfall accumulations. New to 2012, observers can now take readings of evapotranspiration. Kentucky observers provide a great volunteer service to the community, the county and the state by providing information on precipitation, snowfall, and snow depths. The information is used by government and

university scientists, community officials, farmers, county emergency managers, watershed managers, drought monitors, and by your friends and neighbors. More information about this organization and how to join can be found here at:

<http://www.cocorahs.org/state.aspx?state=ky>

December Weather-Related Ag Operations

Field Activities	Field activities vary during the non-growing season from feeding livestock, completing harvest of corn/soybeans in some years, to working fields in preparation for spring. Short periods of rainy weather provide interruptions to getting in the field. Extended wet periods make for a muddy mess and make even the minor field activities postponed. Lengthy dry periods are particularly important for fields to dry out.
Grain Bin Management	The key in grain bin management is to get moisture out of the bin without adding too much or too little heat. Significant changes in daily air and dew-point temperatures are extreme important for grain bin management. On dry days, grain bin fans pump moisture out of bins, but producers need to maintain a bin core temperature very close to the monthly average temperature.
Equipment Maintenance	Extended wet or extremely cold weather periods are good times to schedule equipment maintenance.
Livestock Management And Cold Stress	During periods of extended cold outbreaks (cP air), especially during windy conditions providing serious wind chill (less than zero (F))... livestock must have access to windbreaks, unfrozen water, extra dry bedding, and access to dry shelter. This is especially true for very young (newborn) and old livestock.
Soil Temperatures	Typically during the extended cold weather, if soils are wet or snow-covered, soil temperatures stay right around 32 degrees.
Replanting Conditions	<ul style="list-style-type: none"> • Very wet conditions...a week or 2 with above normal liq. precip. and soils become saturated....causes serious problems with winter wheat and barley stands. • Extremely cold temperatures (cP) air after a very mild (5 to 10 degrees above normal) period can do serious damage to stands of winter wheat and barley. However, snow-cover reduces this damage. The more snow-cover, the better! • Several days of undulating temperatures, above and below freezing, can do serious damage to winter wheat and barley stands. The freeze/thaw cycle can cause heaving.

December Beef Operations

Spring Calving Herd	<ul style="list-style-type: none"> • Begin winter feeding
Fall Calving Herd	<ul style="list-style-type: none"> • Breeding season continues.
All Cattle	-----
Forages	<ul style="list-style-type: none"> • Continue utilization of stockpiled tall fescue and crop residues as available. • Begin hay feeding, minimize wastage. • Continue testing hay for nutrient content.