



December 6, 2012

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November 2012 Monthly Summary

Extremely dry conditions took control of the Bluegrass State through the month of November. After a moist start to the fall season, where drought conditions were significantly improved upon, this past month seemed to give us a shot back to the past. Over the course of the month, weak upper level disturbances and surface cold fronts provided the Commonwealth with only minimal amounts of precipitation. Not once did Kentucky witness any good soaking rains and this led the state to its 5th driest November dating back to 1895. The state only saw an average of 1.27 inches of rainfall, which was over 2.5 inches below normal. This is the largest below normal deviation since June when the state became entrenched in a drought after being about 3.5 inches below normal. Nearly 70 percent of the state has now sunk back into abnormally dry conditions. Figure 1 to the right displays how extensive this dry period has been with some areas across the state only witnessing 12% of normal rainfall totals.

extremely cool temperatures and others that had

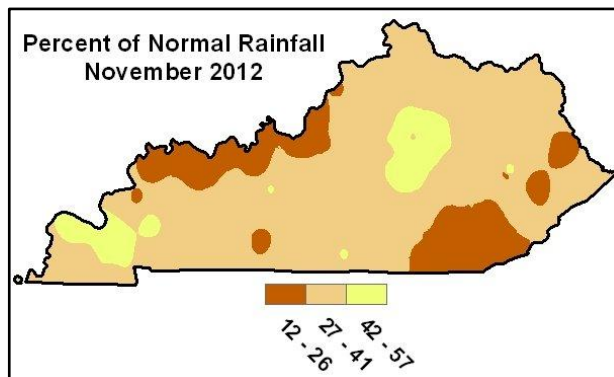


Figure 1

Temperatures were a bit wavering throughout the month. While there were times when Kentucky was around normal, the state did see periods of

a feel of an Indian summer. Some cold fronts passing through Kentucky only put highs into the upper 30s to lower 40s on multiple occasions. Under clear sky overnight periods, lows dropped all the way into the teens, with one station recording a low of 16. On the other end of the spectrum, surface high pressure to our east allowed for southerly winds to pump mild temperatures into the region, which was at times into the lower 70s. Highs even rose into the 60s for Thanksgiving Day. The month ended with a state average of 3 degrees below normal, which acted to send Kentucky to its 4 straight month of near to below normal temperatures.

Summarized and averaged data for the period 20121101 to 20121130 (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)	57	-2	34	-4	46	-2	1.55	-3.03	34	76	18
CENTRAL (CD2)	56	-2	33	-4	44	-3	1.26	-2.90	30	74	19
BLUEGRASS (CD3)	54	-2	32	-4	43	-3	1.30	-2.14	38	75	17
EAST (CD4)	56	-2	33	-1	44	-2	0.97	-2.65	27	76	16
STATE	56	-2	33	-3	44	-3	1.27	-2.68	32	76	16

Two Week Forecast

After an extremely dry November, the pattern has shifted to support a wet first half of December. Short term models indicate an abundance of significant rainfall producers moving through the lower Ohio Valley. The first is expected to arrive tonight as a warm front lifts north through the Commonwealth. A stationary frontal boundary will then form over the weekend allowing for good shots at rainfall over Friday night and into Saturday. Over the course of Sunday, an area of low pressure will track northeast and slide a cold front through the area early on Monday morning. Showers will be likely both days, which makes for an extremely wet weekend. The 5 day rainfall forecast as seen in figure 2 below demonstrates that the Bluegrass State will see abundant rainfall totals with a swath of rainfall greater than 3 inches running through central Kentucky. Dry weather will then move in soon after as high pressure builds into the area.

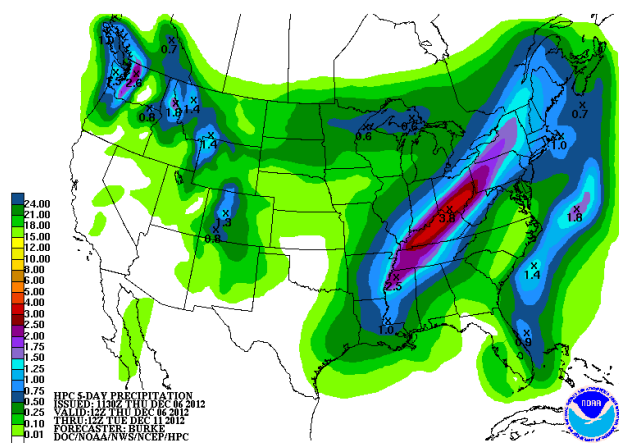


Figure 2

Temperature wise, highs don't look to drop tremendously until next Monday and Tuesday when the cold front has exited the region. Through the weekend most areas will stay in the upper 50s in northern portions of Kentucky and increase to the mid 60s farther south. After the front's departure on Monday, highs are only expected raise into the 40s. Farther out into the 8 to 14 day period, above normal temperatures and rainfall are both predicted.

2012 Winter Outlook

The question on everyone's mind seems to be what is going to happen this winter. Will it be mild or is the Arctic coming down for a visit? Are we going to see an extension to this year of drought or will we actually see quite a bit of snow? You may have not noticed, but forecasts have wavered a bit this year as we have progressed through the fall season. The latest winter outlook calls for near normal temperatures and above normal rainfall. As a meteorologist, this year has been a bit puzzling when it comes to determining at a general sense, what the winter will bring us this year. Usually there are common signals that we can look toward that can help point us toward the right forecast.

One of these is [ENSO](#) or the El Niño-Southern Oscillation. In a basic sense, a forecaster is looking at how warm or cool sea surface temperatures are in the equatorial Pacific Ocean. This will help give an indication of how the jet stream is expected to evolve in upcoming months. Above normal temperatures depict that a period of El-Niño conditions is anticipated and this is exactly what numbers were pointing at earlier this fall. What does this mean for our region? When El Niño is present; climatologically, the state of Kentucky tends to witness dry winters. After a very dry season in which we experienced the worst drought we have seen since the late 80's, a strong El Niño pattern is definitely one we wouldn't want to see going into next planting season. Fortunately, this oscillation has become less significant over the past 2 months. The above normal readings are starting to subside and are now leaning toward neutral conditions through spring of 2013. This would indicate that the state has an equal chance of seeing above, below, or near normal precipitation and temperature patterns, but just like any other weather event; you cannot rely on only one source of information.

Winter Outlook (DJF)
Above Normal Rainfall and Near Normal
Temperatures

Another major resource of insight is that of the climate prediction models. These are basically used to visualize the behavior of the atmosphere in the extended future. Just as stated earlier, a meteorologist wants to use multiple sources of information or in this case, models, to generate the best forecast. In comparing models, a forecaster is looking for agreement between them. Nothing much can be drawn upon if three different models have three different outcomes, but a conclusion could be generated if all three showed the same result. The Climate Prediction Center (CPC) is one organization that analyzes these trends and generates a number of products. Just recently, the CPC has come out with their latest 3 month outlook for the months of December, January, and February. Making use of their own Climate Forecast System, in addition to other factors, including the ENSO oscillation and other models, agreement is made that our region should see above normal precipitation this winter (figure 3).

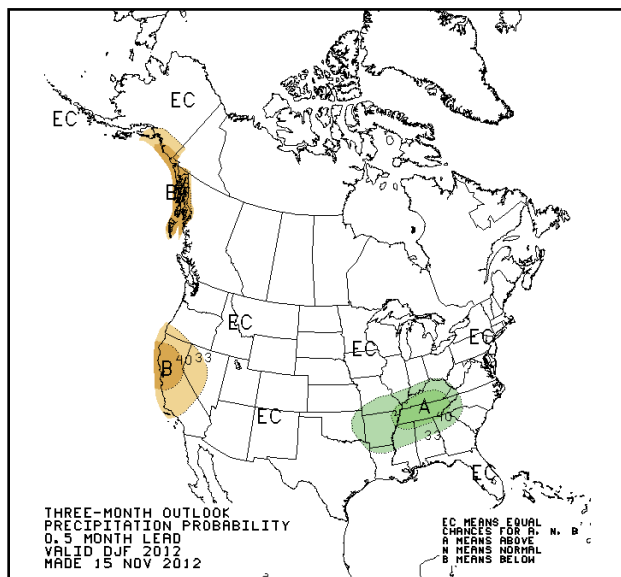


Figure 3

So in conclusion, what can be said about the upcoming winter? Coupling the above 2 sources of information, the Commonwealth may very well be in for a wet winter. We cannot say exactly whether "wet" means rain or snow, but rather that above normal precipitation is probable. Just in the case of weather in general and especially here in the Ohio Valley, the weather can change in an instant. Just

like the past 2 months; models and the ENSO oscillation can always change. It will be up to the short-range models, observed conditions, and other oscillation patterns to bring things more in perspective as we move into the winter season. The above normal rainfall would be particularly beneficial to Kentucky's agricultural sector. 4 of the past 5 years have been dry across the state. Above normal precipitation could add much needed moisture deeper in the ground as we head into next planting season. You can always look at the UK Ag weather synopsis [here](#), for more information on the near future weather conditions.

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>.

Click [here](#) for UKAWC's Point Agriculture, Lawn, & Garden Forecast...NOW for any farm in the lower 48! (Based on NWS Digital Forecast Database)

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.