

March 7, 2013

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February 2013 Monthly Summary

Dry conditions took control of the Bluegrass State through the month of February. The states average departure of 1.54 inches below normal marked the 9th month of below average precipitation going back to last February. The only week of this past month that did see above normal precipitation occurred over the 1st week when a strong storm system moved through the Ohio Valley. This was in addition to an Alberta Clipper bringing 1 to 3 inches of snowfall across much of the state. Most of the month was dominated with high pressure in place or just minor accumulations with numerous frontal passages. The third week was the driest with a state average of only 0.13 inches, making it the driest period going back to November 2012. Toward the end of the month, temperatures fluctuated greatly and resulted in a mix of wintery precipitation falling across the state as a low pressure system moved through. Freezing rain and sleet were evident from the Purchase area and up around the northern periphery of the state.

Temperatures ended the month right around normal. Saying this, there were times throughout the month when Kentucky saw extremely cool temperatures. The first came over the first night of the month when temperatures dropped well into the single digits. Lexington got down to 5 degrees, in addition to Paducah dropping to 13, and Jackson to 9 degrees. The second cool down came the last

week of the month as an upper level low pressure system kept us in a northwesterly flow pattern for much of the week. Overcast skies kept temperatures in the 30s, which were well below normal for this time of the year. Normal highs run in the low 50s.

The end of February also signaled the end of meteorological winter. Although February was very dry; the months of January and December were exceptionally wet and resulted in precipitation totals well above normal for the season. The Jackson NWS saw its 8th wettest winter on record with 14.03 inches of precipitation. Saying this, the station was over 10 inches below normal in snowfall. Temperatures were also well above normal with December leading the way at a state average of 6 degrees above normal. Figure 1 below is from the NWS in Louisville and shows snowfall in Bowling Green on February 3rd.



Figure 1

Summarized and averaged data for the period 20130201 to 20130228 (Last 28 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)	47	-2	31	2	39	0	3.25	-0.83	80	68	10
CENTRAL (CD2)	47	-1	30	2	39	1	1.95	-2.02	49	67	7
BLUEGRASS (CD3)	44	-2	27	1	36	0	1.73	-1.44	55	64	5
EAST (CD4)	47	-2	29	4	38	1	1.61	-1.83	47	65	3
STATE	46	-2	29	2	38	0	2.13	-1.54	58	68	3

Data obtained from KY Mesonet and NWS Station

Two Week Forecast

In the short term, it is expected that we will see mostly dry conditions through the upcoming weekend under high pressure at the surface and ridging aloft. In addition, after going through a substantial period of witnessing below normal temperatures, highs will rebound to the low to mid 60s by Sunday. It isn't until Sunday night and into Monday when a surface trough transverses the Ohio Valley and give the Commonwealth its next significant chance of widespread rainfall. The 5 day rainfall map shows a range of rainfall totals from over an inch in the west to around a half inch to the east. Following its passage, temperatures look to cool back to seasonal norms through Thursday under mostly dry conditions.

3 Month Outlook (MAM) Above Normal Rainfall and Temperatures

Looking a bit farther into next week, the 8 to 14 day outlooks are expecting below normal temperatures and precipitation across the state. Looking farther out into the next 3 months and going into the planting season, the outlook is for above normal temperatures and precipitation. High temperatures for the month of March tend to hover around the mid to upper 50s with low dipping into the mid 30s. Precipitation generally averages around 4 to 5 inches statewide. The latest ENSO outlook suggests neutral conditions are favored through the summer of 2013.

Kentucky Tornadoes

March is severe weather awareness month for the state of Kentucky. In relation; this article was meant to give the Commonwealth a more in-depth perspective of the powerful nature and occurrence of tornadoes, in addition to a brief description of last year's tornado outbreak.

Since the year 2000, there has been 418 tornado touchdowns in the Bluegrass State. These happened over the course of 112 days through the period. During this time span, there has been over 400 million dollars estimated in property damage, in addition to 1.8 million in crop damage. Between

these years, there were 37 with magnitudes of EF3 or F3, while 2 were estimated as having EF4 or F4 intensity (March 2012 and November 2005).

According to the Enhanced Fujita Scale (EF), which will be described below, the F4 in Hopkins County of 2005, would actually now be described as an EF5. It has been estimated that these 2 alone have accounted for just over 50 million in property damages. Unfortunately, there have also been a number of injuries and deaths reported over this time span. 570 injuries were reported with 37 fatalities. On a longer scale, from 1991 to 2010, Kentucky has averaged 21 tornadoes per year, with an average of 1.4 each year having an intensity of EF3 for greater. The oldest tornado on record for Kentucky happened in June of 1830 in Louisville. April has been known as having the greatest chance of a touchdown, but just like last year with a tornado outbreak on March 2nd, they can happen at any time.

One item that I have noticed is that some don't have a clear understanding of the difference between a tornado watch and a warning. A watch is stating that conditions are favorable for the development of tornadoes in and close to the watch area, while a warning demonstrates that a tornado has been indicated on radar or seen by a spotter. Just recently, the National Weather Service has shifted to issuing warnings by polygons and no longer by the county. This in turn, reduces the warning area to only those at risk to the approaching system. It is important to follow these guidelines and protect yourself from harm's way. Also, another misinterpretation is that of classifying the severity or magnitude of tornadoes based on damage. For years, the Fujita Scale (F) was used in this aspect, but research has found that wind estimates for the Fujita Scale were too high, and thus the Enhanced Fujita Scale (EF) was made operational in 2007. This scale is based on a number of damage indicators from small barns, motels, high-rises, trees, and many more. Below (figure 2) is a table from the Storm Prediction Center summarizing and comparing the 2 scales.

FUJITA SCALE			DERIVED EF SCALE		OPERATIONAL EF SCALE	
F Number	Fastest 1/4-mile (mph)	3 Second Gust (mph)	EF Number	3 Second Gust (mph)	EF Number	3 Second Gust (mph)
0	40-72	45-78	0	65-85	0	65-85
1	73-112	79-117	1	86-109	1	86-110
2	113-157	118-161	2	110-137	2	111-135
3	158-207	162-209	3	138-167	3	136-165
4	208-260	210-261	4	168-199	4	166-200
5	261-318	262-317	5	200-234	5	Over 200

Figure 2

March 2nd of last year was one of the strongest outbreaks of tornados the state has seen in an extended timeframe. It all started through the morning hours as a low pressure system approached from our east and sent a warm front through the area. We were placed in the warm sector of the system, which aided in raising instability in the atmosphere. In addition, shear was also quite high in the environment, which can be seen as the change in wind speed and direction with height. Temperatures were well above normal with readings well into the 70s and even the lower 80s farther south. Putting this into perspective, normal high temperatures for this time of the year are only in the lower 50s. As the afternoon approached, a cold front began moving in from our west. Severe thunderstorms erupted all along and ahead of this line.

In general over the course of the day, there were 18 tornados across the state of Kentucky, with unfortunately, over 200 injuries and 24 fatalities. The 2 most prominent were an F4 passing through northern portions of the state (Kenton County) and an F3 that struck West Liberty, KY. In northern Kentucky, wind speeds were estimated at 175 mph, with the tornado having a width at one point of almost a half mile. In comparison, the West Liberty tornado was weaker with peak winds around 140 mph, but it had an estimated width of 1 mile as it tore through the town. Below is a picture, provided by the NWS office in Jackson displaying the location of tornados over the course of March 2nd. It is urged that everybody has some source of information of knowing the threat of severe weather, in addition to having safety guidelines in place as the state heads into severe weather season.

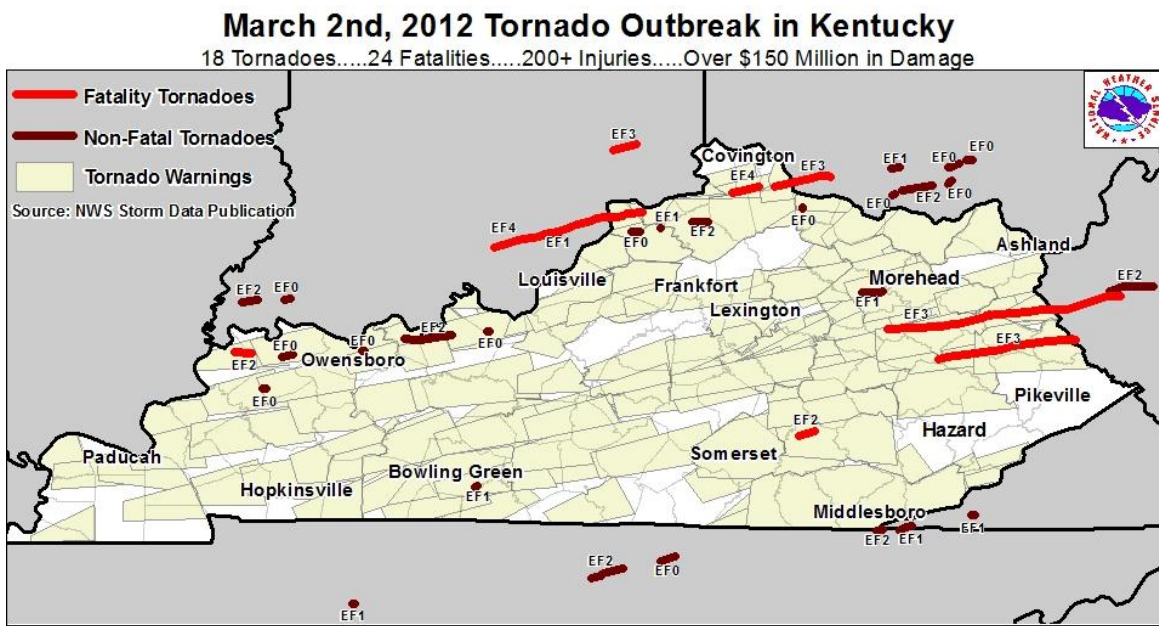


Figure 3

Other News

New to the UK Ag Weather Center is our own handout to demonstrate what we offer. Aspects include our own Point Ag Cast, Rainfall at your Farm, Kentucky Insect/Disease Models, EDEN Next 48, and Ag Weather at your County, among others. Feel free to print out the hand out at the link below and pass on to whomever. The UK Ag Weather Center is free to use from the Biosystems and Engineering Department of the College Agriculture. The mission of the UK Agricultural Weather Center is to provide educational resources through the development of agricultural weather products that minimize weather – related surprise to Kentucky residents. If you have any questions, need help, or are just looking for some information, feel free to contact us at the information contained in the footer. The link to the hand out is as follows:

http://weather.uky.edu/AgWeather_brochure.pdf

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>

March Garden Safe Planting Dates

	Earliest Safe Planting		Latest Safe Planting	
	Date	Area of KY	Date	Area of KY
Asparagus (crowns)	March 10 th March 15 th March 20 th	Western Central Eastern Mt.	Spring Only	All
Beets	March 10 th March 15 th March 20 th	Western Central Eastern Mt.	----	----
Broccoli (plants)	March 30 th	Western	----	----
Brussell Sprouts (plants)	March 30 th	Western	----	----
Cabbage	March 15 th March 25 th	Western Central	----	----
Carrots	March 10 th March 20 th	Western Central	----	----
Cauliflower (plants)	March 30 th	Western	----	----

Chard	March 15 th March 20 th	Western Central	----	----
Collards	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	----	----
Kale	March 10 th March 20 th	Western Central	----	----
Kohlrabi	March 15 th March 20 th March 25 th	Western Central Eastern Mt.	----	----
Lettuce (leaf)	March 15 th March 25 th	Western Central	----	----
Lettuce (bibb plants)	March 15 th March 25 th	Western Central	----	----
Lettuce (head plants)	March 15 th March 25 th	Western Central	----	----
Onions (sets)	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	Spring Only	All
Onions (plants)	March 15 th March 25 th	Western Central	----	----
Onions (seed)	March 10 th March 20 th	Western Central	----	----
Parsley	March 10 th March 20 th	Western Central	----	----
Parsnips	March 10 th March 20 th	Western Central	----	----
Peas	March 1 st March 15 th	Central Eastern Mt.	Spring Only	All
Irish Potatoes	March 15 th March 15 th March 20 th	Western Central Eastern Mt.	----	----
Radishes	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	----	----
Rhubarb (crowns)	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	Spring Only	All
Rutabaga	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	----	----

Snow Peas	March 1 st March 15 th	Central Eastern Mt.	-----	-----
Spinach	March 1 st March 10 th	Central Eastern Mt.	-----	-----
Turnips	March 1 st March 10 th March 15 th	Western Central Eastern Mt.	-----	-----

March Vegetable Gardener's Calendar for Western KY

March 1st	Start seeds outdoors for SPINACH, MUSTARD, BEETS, PEAS, and EDIBLE PODDED PEAS
March 15th	<ul style="list-style-type: none"> - Start seeds indoors for PEPPERS, TOMATOES, EGGPLANT, and SWEET POTATO SLIPS - Start seeds outdoors for ASPARAGUS and RHUBARB (crowns), BEETS, CARROTS, COLLARDS, KALE, MUSTARD, SPINACH, PEAS, EARLY POTATO SEED PIECES, RADISHES, TURNIPS, GREEN ONIONS, ONION SETS, and ENDIVE - Move transplants to garden for CABBAGE and KOHLRABI - Dig and divide any 4-year-old RHUBARB PLANTS - Fertilize ASPARAGUS and RHUBARB with 1 lb. 5-10-10 per sq.ft.
NOTE: Add 10 days for Central KY and 15 for Eastern KY to these dates for spring and summer crops.	

March Crop Operations

	First Week	Second Week	Third Week	Fourth Week
Tobacco	-----	-----	-----	50% of beds seeded
General Farm Operations	-----	-----	-----	Fertilizer applied

March Beef Operations

Spring Calving Herd	<ul style="list-style-type: none"> • Spring calving continues • Continue grass tetany prevention.
Fall Calving Herd	<ul style="list-style-type: none"> • Pre-weaning period
All Cattle	<ul style="list-style-type: none"> • Repair fences, equipment, and handling facilities • Plan new working facilities, if needed.
Forages	<ul style="list-style-type: none"> • Continue renovation • Control competition from grasses with young clover plants by grazing or mowing as needed. • Prepare for spring seeding of alfalfa and begin grazing if growth permits • Plan and implement grazing system and rotation