

## 2004 in Review for Central Kentucky and South-Central Indiana

By John Denman

2004 will be long remembered as quite an eventful year weather-wise. Most people across northern Kentucky and southern Indiana will mention 2004 as being exceptionally rainy. Below are some statistics that will bear that out. Other highlights of 2004 include back to back tornado outbreaks during late May, a widespread damaging wind event in July, and a record breaking snowstorm in December.

The table below summarizes precipitation, snowfall totals, and extreme temperatures in 2004 for Louisville (Weather Service Office), Lexington, and Bowling Green.

	<b>Louisville</b>	<b>Lexington</b>	<b>Bowling Green</b>
2004 Total Precipitation	65.41 inches	62.36 inches	54.62 inches
Normal Precipitation	44.5 inches	45.91 inches	51.63 inches
Departure from Normal	+ 20.91 inches	+ 16.45 inches	+ 2.99 inches
Total Snowfall for 2004	15.0 inches	5.0 inches	4.0 inches
Normal Snowfall	16.4 inches	16.0 inches	10.2 inches
Departure from Normal	- 1.5 inches	- 11.0 inches	- 6.2 inches

	<b>Louisville</b>	<b>Lexington</b>	<b>Bowling Green</b>
Highest Temperature	92 (Aug 19)	89 (Aug 19)	92 (July 13)
Lowest Temperature	- 5 (Jan 31)	- 6 (Jan 31)	+ 6 (Jan 31)
Greatest 24-hr Rainfall	5.07 (Oct 18)	3.73 (July30-31)	2.53 (May25-26)
Highest Wind Gust	64 mph (July 13)	46 mph (27 May)	46 mph (13 July)

Note the rainfall totals for Louisville and Lexington. With 65.41 inches of rain measured at the NWS office, 2004 became the wettest year on record. This amount surpasses the old record of 63.76 inches set in 1996. The 62.37 inches of rain that fell this year in Lexington made 2004 the second wettest year recorded. Only 1935, with 65.76 inches measured, proved wetter. Even with so much rain across northern Kentucky, no major river flooding occurred.

### *Winter season....January and February*

Unlike the other seasons of 2004, these first two months proved relatively benign. What snow fell occurred in January. Temperatures for both January and February didn't stray too far from normal. The only real storm of the winter arrived on January 25<sup>th</sup>. This brought freezing rain across central and northern Kentucky, with sleet and snow across southern Indiana. Ice and snow accumulations reached 1 to 3 inches across the north.

	Temperatures Compared to Normal		Total Snowfall	
	January	February	January	February
Louisville	-0.6 deg	-1.2 deg	6.4 in	0.7 in

Lexington	-1.7 deg	0.0 deg	4.7 in	T
Bowling Green	+0.5 deg	-0.4 deg	3.0 in	T

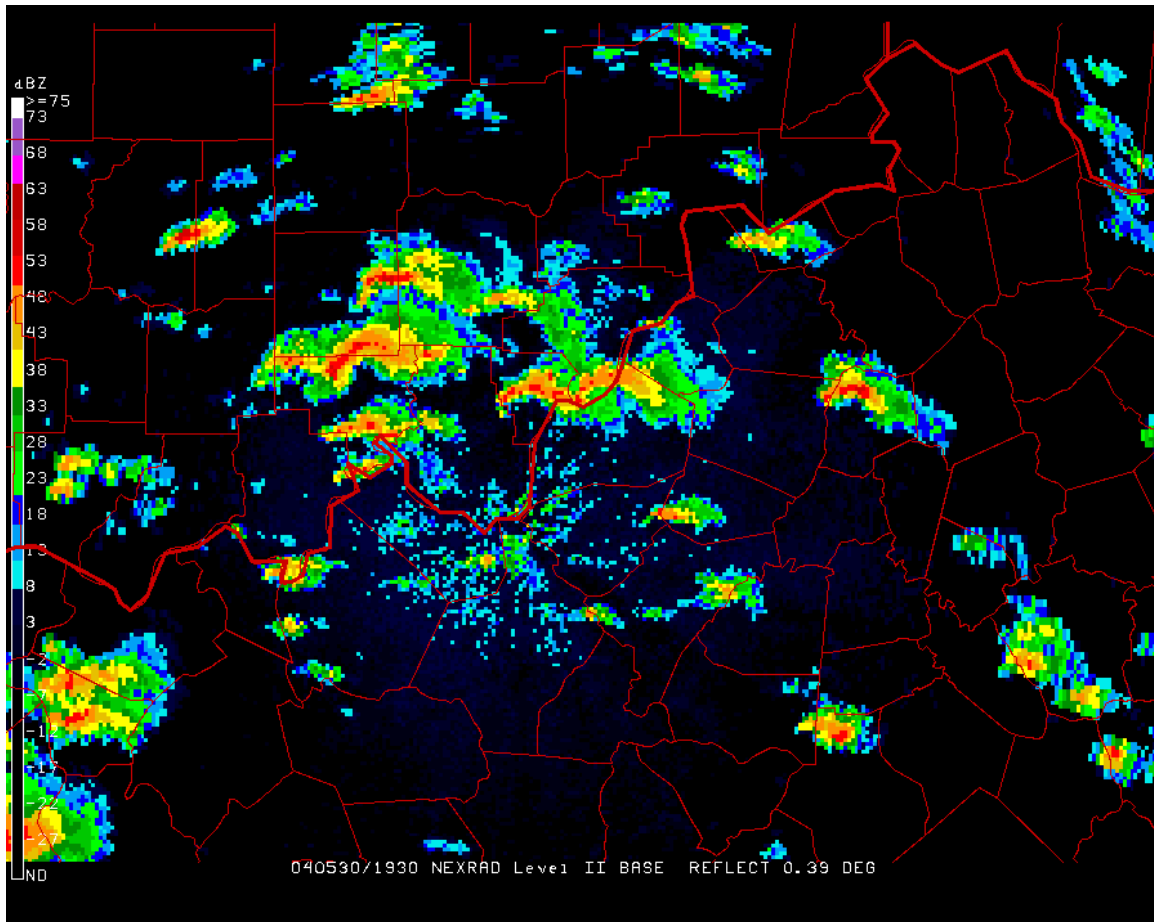
***Spring season.....March, April and May***

Spring of 2004 proved warm and wet across the entire region. Severe weather was limited to only isolated reports, until the last week in May. Tornado outbreaks on both the 27<sup>th</sup> and the 30<sup>th</sup> spawned a total of 10 tornados; 5 on each day. The most destructive of the tornados on the 27<sup>th</sup> was rated an F-3. It affected the Masterson Station subdivision in Lexington. At least 50 homes suffered moderate or severe damage. Overall, this was 2004's most costly tornado with an estimated 7.5 million dollars in damage. Marengo, Indiana was severely damaged May 30<sup>th</sup> by an F-3 tornado. 80 percent of the buildings in Marengo were damaged. Overall, this strong tornado stayed on the ground for 15 miles and caused around 5 million dollars damage. A weak tornado struck the Glenmary subdivision just south of Louisville on the 30<sup>th</sup>. May was especially wet. Louisville and Lexington had their 3<sup>rd</sup> and 1<sup>st</sup> wettest May on record respectively.

**Temperatures Compared to Normal**

**Total Precipitation**

	March	April	May	March	April	May
Louisville	+2.1 deg	+0.2 deg	+3.9 deg	4.80 in	5.48 in	10.66 in
Lexington	+2.2 deg	+0.4 deg	+5.0 deg	4.31 in	3.74 in	10.91 in
Bowling Green	+2.8 deg	+0.5 deg	+4.9 deg	4.03 in	5.68 in	8.27 in



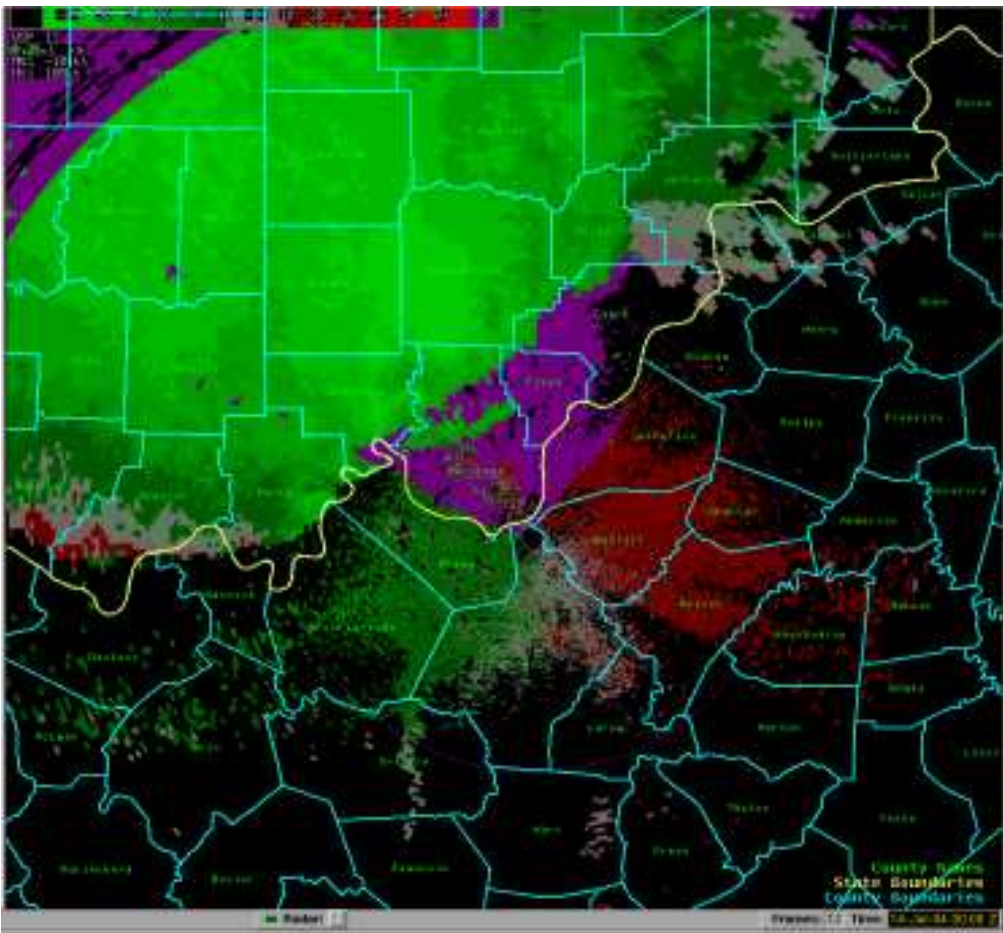
The above radar image shows numerous small supercells across southern Indiana and northern Kentucky during the afternoon of May 30<sup>th</sup>. At the time of this image, the storm that spawned the Marengo tornado was located in extreme northern Crawford County. At one point, most of these storms shown across southern Indiana had some rotation.

### *Summer season....June, July, and August*

The summer of 2004 will be remembered as cool, with ample rain spread throughout June July and August. For the second year in a row, temperatures averaged well below normal across southern Indiana and central Kentucky, averaging from 2 to 3 degrees below normal for the three month summer period.



The above radar image shows the derecho as it crossed the Ohio River just northwest of Fort Knox. Note the hot temperatures and very high dewpoints located in both Louisville and Evansville ahead of this line of storms.



The above radar image shows velocities associated with July 13<sup>th</sup> derecho. The radar is located in Fort Knox. Green colors show the velocities of raindrops moving toward the radar. Red shows velocities moving away. In the case above, north winds of above 60 mph can be noted at the leading edge of the gust front northwest of Louisville.

During August, an anomalously deep trough persisted across the eastern United States. Repeated intrusions of Canadian air kept temperatures across Kentucky as much as 8 degrees below normal through the 20<sup>th</sup> of the month. From the 11<sup>th</sup>...to the 17<sup>th</sup> of August...Lexington had 7 straight days with high temperatures below 80 degrees. During the entire summer, Lexington never reached 90 degrees. The last year without a 90 degree high temperature was 1974. Overall, August became the 4<sup>th</sup> coldest on record for Louisville, Lexington, and Bowling Green.

***Fall season...September, October, and November***

	Temperatures Compared to Normal			Total Precipitation		
	September	October	November	Sept	Oct	Nov
Louisville	-0.2 deg	+1.5 deg	+2.2 deg	0.18in	8.72in	8.31in
Lexington	+0.3 deg	+2.3 deg	+3.2 deg	3.22in	6.97in	7.32in
Bowling Green	-0.2 deg	+3.9 deg	+4.3 deg	1.09in	5.69in	5.60in

The fall of 2004 will be remembered for record breaking dryness across some areas in September, followed by an extremely wet October and November. Almost no rain fell in September along and west of Interstate 65, while counties along and east of Interstate 75 recorded near normal amounts of rainfall. Only 0.18 inch of rain fell during September at the National Weather Service office. This amount set the record for the driest September ever, and the 5<sup>th</sup> driest month in history. Basically, the only sources of rain during September across Kentucky were brought by the remnants of two hurricanes, which brought flooding rains to the eastern part of the state. Surprisingly, Lexington - only 60 miles east of Louisville - totaled a near normal 3.22 inches.

The weather during October and November proved a great contrast to that of September. Record, or near record rainfall fell across much of northern Kentucky and southern Indiana. In October, 8.72 inches and 6.97 inches fell in Louisville and Lexington. These totals gave Louisville the wettest and Lexington the 3<sup>rd</sup> wettest Octobers ever recorded. Louisville and Lexington then recorded their 3<sup>rd</sup> and 2<sup>nd</sup> rainiest Novembers ever, totaling 8.31 and 7.32 inches respectively.

***Winter season...December***

December will be known for an historic winter storm that brought some of the greatest snow totals across southern Indiana ever recorded. Two bursts of heavy snow...separated only by a few hours...brought over two feet of snow across several counties north of the Ohio River. The image below shows snow and ice totals across the region. Snow totals of 30 inches or more were

measured across portions of Washington, Jefferson, and Crawford counties. Farther southeast, sleet and freezing rain limited accumulations. An amazing 6 inches of sleet fell in one location across Henry County. Across central Kentucky, freezing rain brought up to one inch of ice across an area from Bowling Green through Nelson County. Ice accumulations caused considerable tree damage to Hardin and Nelson counties.

The graph below shows total ice and snow accumulations for the winter storms of Dec 22<sup>nd</sup> and the 23<sup>rd</sup>.

