Kentucky Weather and Climate

What WAS, What IS, and What WILL BE

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NOAA National Weather Service
Louisville, Kentucky
What do Weather and Real Estate have in common?
Key Location Variables

- Latitude
- Elevation
- Proximity to Moisture Source
Geography
Geography AND Terrain
Geography AND Terrain

- 260.6 ft
- 4131.6 ft
Thunderstorm Ingredients

What you need for storms to form

1. Moisture

humidity
How Location Affects

- Wind
- Tornadoes
Supercell Tornadoes
Squall Line
Breaks and Bulges
Quasi Linear Convective System
QLCS Tornadoes
How Location Affects

- Wind
- Tornadoes
- Floods
River Floods
Major Kentucky Rivers
How Location Affects

- Wind
- Tornadoes
- Floods
- Flash Floods
Flash Floods
Flash Floods
Flash Floods
Flash Floods
Dammed River!
Dammed River!
Normal Precipitation
Average Annual Precipitation
Kentucky

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Oregon State University

For information on the PRISM modeling system, visit the
SCAS website at http://www.ore.sted.edu/prism

The latest PRISM digital data sets created by the SCAS can be obtained from the Climate Source at http://www.climatesource.com

Legend (in inches)
- Under 42
- 42 to 44
- 44 to 46
- 46 to 48
- 48 to 50
- 50 to 52
- 52 to 54
- 54 to 56
- 56 to 58
- Above 58

This is a map of annual precipitation averaged over the period 1961-1990. Station observations were collected from the NOAA Cooperative and USDA-NRCS SNOTEL networks, plus other state and local networks. The PRISM modeling system was used to create the gridded estimates from which this map was made. The size of each grid pixel is approximately 4x4 km. Support was provided by the NRCS Water and Climate Center.
How Location Affects

- Wind
- Tornadoes
- Floods
- Flash Floods
- Snowfall
Location, Location, Location

Average Annual Snowfall in the Contiguous U.S.
(based on NOAA NCEI 1981 - 2010 climate normals data)
Location, Location, Location

Annual Snowfall
Kentucky

Legend

<table>
<thead>
<tr>
<th>Inches</th>
<th>Color</th>
</tr>
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<tbody>
<tr>
<td>8-10</td>
<td>Lightest Blue</td>
</tr>
<tr>
<td>10-12</td>
<td>Light Blue</td>
</tr>
<tr>
<td>12-14</td>
<td>Medium Blue</td>
</tr>
<tr>
<td>14-16</td>
<td>Dark Blue</td>
</tr>
<tr>
<td>16-18</td>
<td>Darker Blue</td>
</tr>
<tr>
<td>18-20</td>
<td>Darkest Blue</td>
</tr>
<tr>
<td>20-22</td>
<td>Darkest Blue</td>
</tr>
</tbody>
</table>

Source: National Climatic Data Center
That Was Then - This is Now

2018
“Normal” Temperatures

Daily Temperature Data – Louisville Area, KY (ThreadEx)

Sine Wave Vs. Step Wave

Daily Temperature Data – Louisville Area, KY (ThreadEx)

Sine Wave Vs. Step Wave
Rainfall Rates
The Threats of the Future

Weather Fatalities 2017

- **Flood**: 116 (2017), 93 (10-Year Average), 85 (30-Year Average)
- **Lightning**: 16 (2017), 27 (10-Year Average), 44 (30-Year Average)
- **Tornado**: 35 (2017), 69 (10-Year Average), 101 (30-Year Average)
- **Hurricane**: 43 (2017), 47 (10-Year Average), 107 (30-Year Average)
- **Heat**: 134 (2017), 97 (10-Year Average), 134 (30-Year Average)
- **Winter**: 14 (2017), 28 (10-Year Average), 40 (30-Year Average)
- **Cold**: 26 (2017), 33 (10-Year Average), 30 (30-Year Average)
- **Wind**: 59 (2017), 50 (10-Year Average), N/A (30-Year Average)
- **Rip Currents**: N/A (2017), N/A (10-Year Average), N/A (30-Year Average)
Past Performance Does Not Guarantee Future Results
Weather/Climate CYCLES

Mean Avg Temperature – Lexington Area, KY (ThreadEx)

Use navigation tools above and below chart to change displayed range

Temperature (degrees F)

Year


1875 1900 1925 1950 1975 2000
Weather/Climate CYCLES

Mean Avg Temperature – Evansville Area, IN (ThreadEx)

Use navigation tools above and below chart to change displayed range
Parable of the 5 blind men

What does YOUR elephant look like?
Welcome to CoCoRaHS! "Volunteers working together to measure precipitation across the nations."

Who uses CoCoRaHS Observations?

Reports received today 9/19/2018 as of 1:19 PM EDT

<table>
<thead>
<tr>
<th>Daily</th>
<th>Multi-day</th>
<th>SigWx</th>
<th>Hail</th>
<th>Condition</th>
<th>ET</th>
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<tbody>
<tr>
<td>8,676</td>
<td>95</td>
<td>2</td>
<td>0</td>
<td>10</td>
<td>113</td>
</tr>
</tbody>
</table>

Daily Precipitation (inches x.xx)
USA
9/19/2018

Things to know about...

Rain
Hail
Snow

Download on the App Store
We Can’t Do It Alone!

weather.gov/wrn