



Commonwealth CoCoRaHS

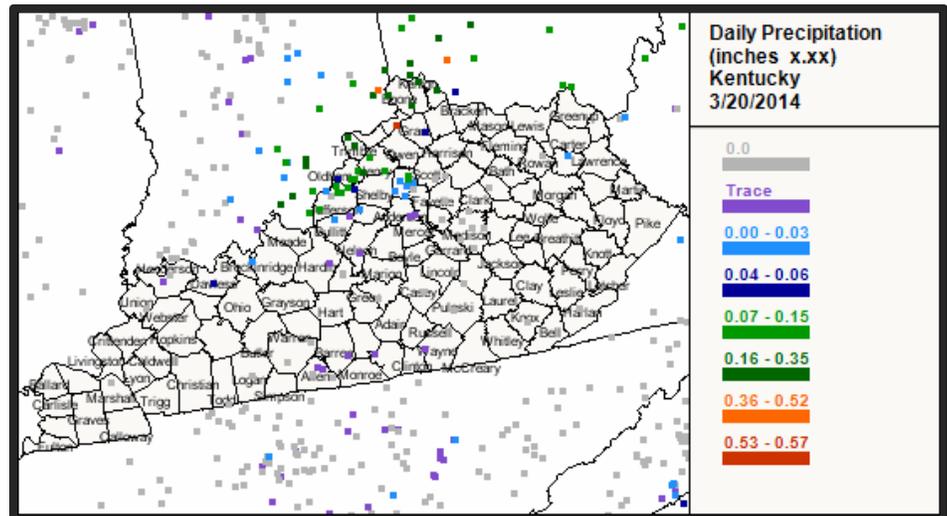
“Because every drop counts”

Spring
2014

First Issue of the Commonwealth CoCoRaHS

Welcome to the Spring 2014 issue of the Commonwealth CoCoRaHS newsletter! This will act as a quarterly newsletter to update the Kentucky CoCoRaHS community on any new happenings across the Network and for any people looking to become an observer.

For anyone that doesn't know what CoCoRaHS provides or wants to join, here is a brief overview. CoCoRaHS stands for the Community Collaborative Rain, Hail, and Snow Network. It is currently and always looking for more observers across the nation. Observers are asked to record daily measurements of rain and/or snowfall accumulations. 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. The picture above displays all the current observer locations across the state of Kentucky, which now stands over 500. More are always needed! More information about this organization and how to join can be found here at:



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

Spotter Classes

To determine if tornadoes are on the ground, the National Weather Service relies on trained Kentucky weather spotters for immediate assistance.

The effects of severe weather are felt every year by many Kentuckians. To obtain critical weather information, NOAA's National Weather Service (NWS), established SKYWARN® with partner organizations. SKYWARN® is a volunteer program to train new severe weather spotters. These volunteers help keep their local communities safe by providing timely and accurate reports of severe weather to the National Weather Service. Spotters generally report significant events such as damaging winds, heavy rain, tornadic activity, ice and snow, along with other events that have an impact on the forecast or the safety of the community.

To become a trained SKYWARN® spotter, spotters will need to attend a SKYWARN® Weather Spotter class. NWS Offices in KY will typically hold several classes across Kentucky throughout the year. A schedule of upcoming classes can be found below. Unless otherwise stated, these classes are open to the public, are free of charge, and require no registration. If you or your clientele are interested in becoming a trained weather spotter in Kentucky, see the links below for upcoming spotter classes around Kentucky:

[West](#)

[Central](#)

[East](#)

[Northern most counties](#)

[Northeast counties](#)

CoCoRaHS March Madness

CoCoRaHS will be doing their own version of March Madness throughout the month with a friendly recruiting contest among all 50 states. The goal is to have the most new volunteer observers through the end of month. More observations are always needed due to the variability of precipitation.



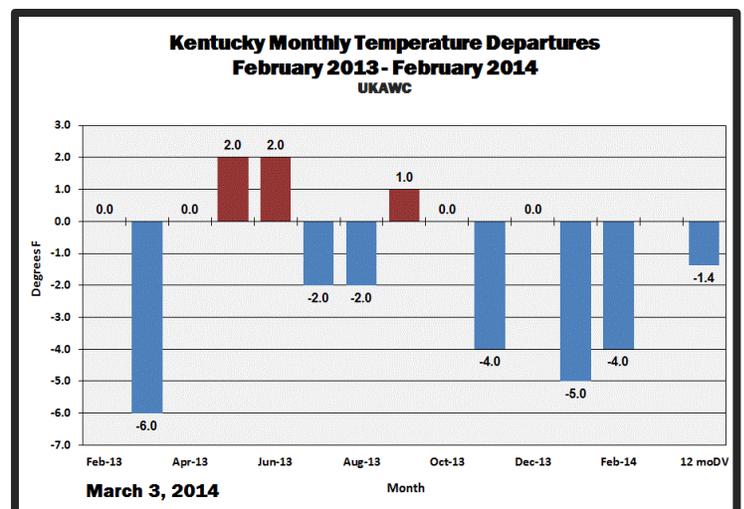
Amounts can vary quite drastically even a couple miles down the road. More observations paint a much clearer picture when it comes to understanding where it did and did not rain.

The contest is broken down into two categories. The first is the "Traditional Count", which is the state that recruits the greatest number of new observers in March. The second is "Per Capita" or weighted by taking population in account. This award would go to the state with the greatest number of new observers per one million of its total population.

The winning state in each category receives the "CoCoRaHS Cup" to keep and exhibit for a year until the contest starts up again in March of 2015. The cup usually travels around the state during the year, so check with your state coordinator for its whereabouts at any certain time.

Kentucky Winter 2013-2014 Summary

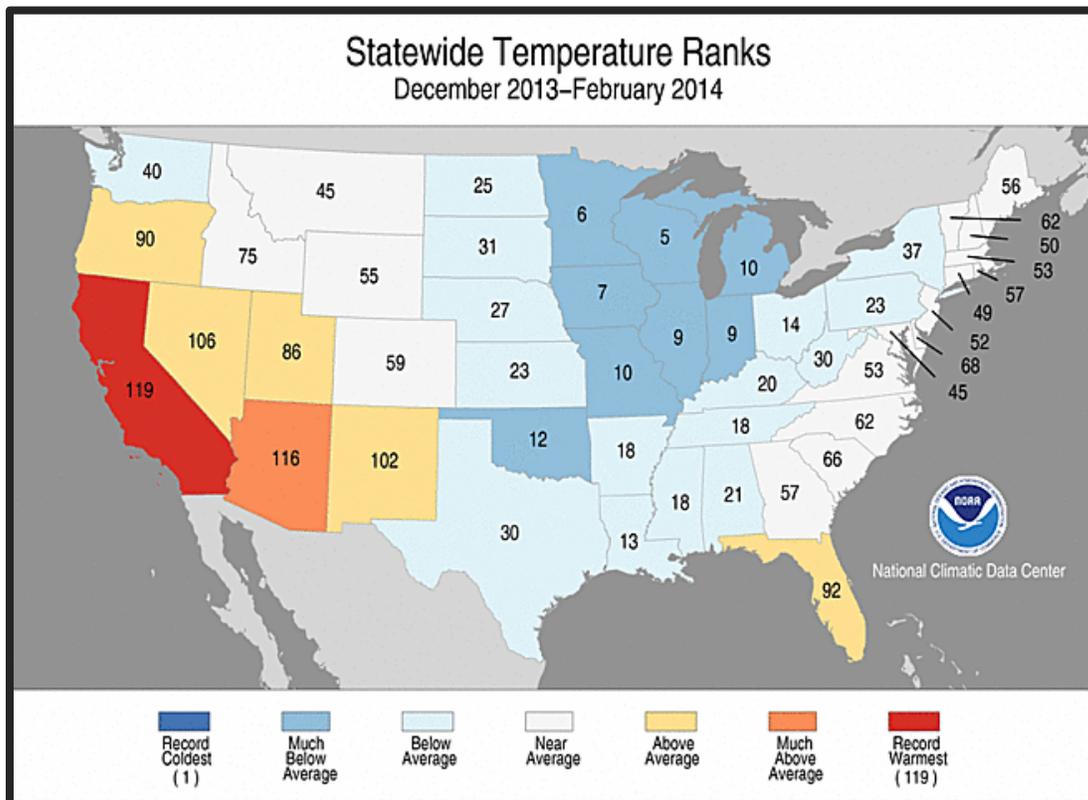
Depending on whom you talk too, spring may or may not have officially started. Going by the astronomical calendar, the season begins on March 20th, but in the meteorological world, the 3 coldest months of the year are taken into account. In this aspect, winter came to a close on March 1st with December, January, and February making up the coldest 3 month period. As such, we'll go with March 1st and outline the cold and snowy winter of 2013-2014. Looking back, this was definitely one of the coldest winter's the Commonwealth has experienced in some time. The mercury dropped below zero multiple times and over a widespread area. In fact, the city of Lexington saw low's drop below zero 4 times within the month of January.



The coldest was on January 22nd, when a -6 was observed at Bluegrass Airport. After the month of December in which temperatures hovered around normal, January and February followed with temperatures below normal by 5 and 4 degrees, respectively. This can be seen in the monthly temperatures departures above.

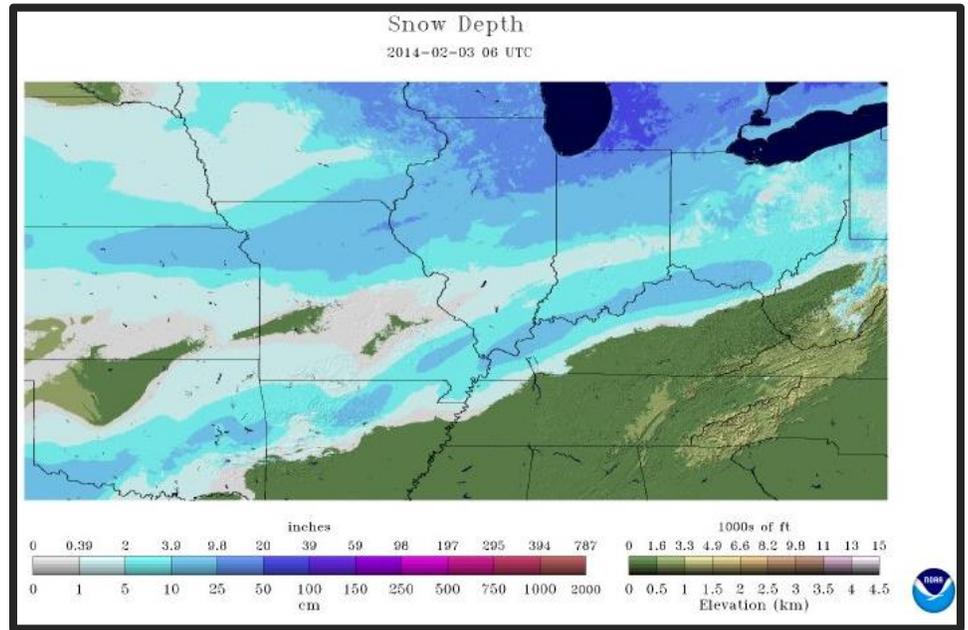
While it was cold, the month of January ended as the 12th coldest on record with an average temperature of 27.1 degrees. It was still quite a ways off from 1977, where it was a cool 18.4 degrees, which was over 14 degrees below normal. On multiple occasions throughout the month, Arctic air was forced into the Bluegrass State through a break-down in a high-latitude area of low pressure. In the end, this was the coldest January since 2003. The most significant round of bitterly cold temperatures came on January 6th. Highs only got into the single digits with lows later that night dropping between 0 and -10 across much of the state. One exception was in Pikeville where a low of -13 was recorded. It didn't help matters that breezy northwesterly flow was forcing wind chills below -20 at times. This pushed the livestock cold stress index into one of the many emergency situations seen across the season. When it was all said and done, the Bluegrass State experienced a cold winter, but nowhere near the coldest. As seen in the map below, developed by the National Climatic Data Center, the winter of 2013-2014 still only ranks as the 20th coolest season on the 119 year record.

Rank	Year *	Avg.	Normal	Dep.
1	1977	18.4	32.9	-14.5
2	1918	19.5	32.9	-13.4
3	1940	20.0	32.9	-12.9
4	1978	23.0	32.9	-9.9
5	1912	24.8	32.9	-8.1
6	1985	25.5	32.9	-7.4
7	1979	25.7	32.9	-7.2
8	1948	26.1	32.9	-6.8
9	1905	26.4	32.9	-6.5
10	1970	26.9	32.9	-6.0
10	1963	26.9	32.9	-6.0
★ 12	2014	27.1	32.9	-5.8



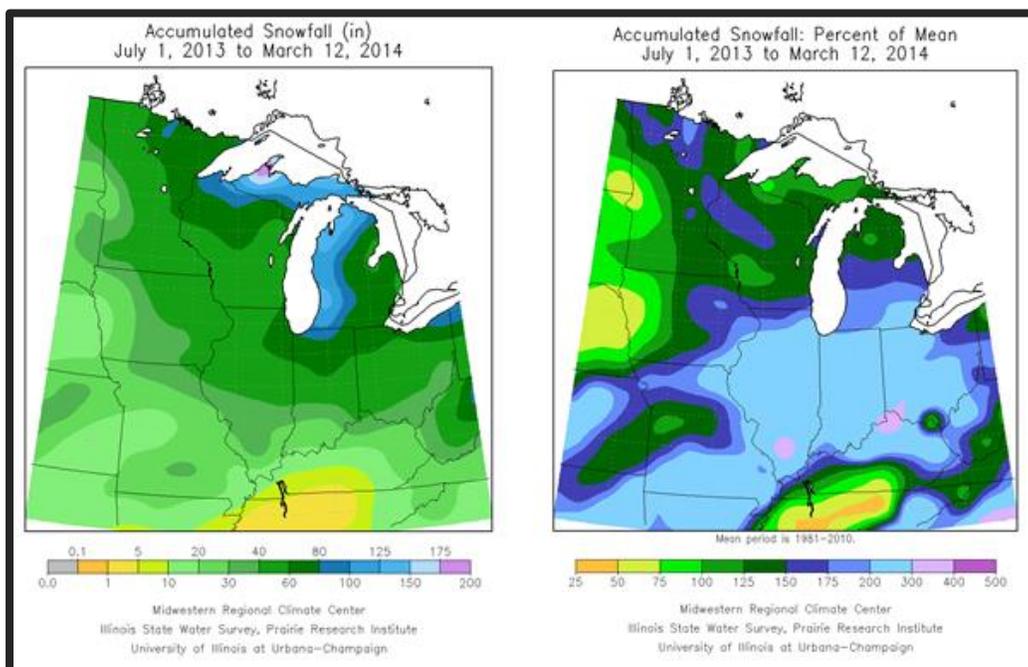
Now, let's move on to snow. Looking at some statistics provided by the National Weather Service in Louisville, the northern half of the state was the clear-cut winner's when it came to snowfall totals.

Lexington came in at a total of 17.9 inches of snow, which was nearly 7 inches above normal. Louisville even came in with a bit more at 21.3 inches, which was over 10 inches above normal. These totals then tapered greatly to the south. Most of the snow fell over the course of 3 events, which just so happened to occur once every month. The first came on the night of December 6th. Snowfall ranged from 3 to 5 inches through Western Kentucky, the Louisville metro and up into the northern Bluegrass. These amounts tapered farther southeast, but most areas still



got some freezing rain. The most came in western portions of the state where more than a quarter inch of ice accumulated. Many upper level disturbances passed through the month of January, with each laying another 1 to 2 inches on the ground, but the brunt of snow came on the 21st. An Alberta Clipper laid 3 to 6 inches of fresh powder over the northern fringes of the state. The 3rd and last major system for the winter season came on Groundhog Day where Central Kentucky and the Bluegrass Region were blanketed with snow. Some areas saw 5 to 7 inches with this event. This event can be seen above. This image displays the snow depth, which was generated through the National Operational Hydrologic Remote Sensing Center of the National Weather Service.

When it was all said and done, snowfall was excessive, especially across the northern half of the state. The images below were taken from the Midwestern Climate Center and display how much snow the Commonwealth has actually seen over the winter season and beyond. It can be seen that some areas saw anywhere from 200 to 400% of average snowfall over the course of the period.



CoCoRaHS in the Global Historical Climatology Network

The National Climatic Data Center (NCDC) is now including CoCoRaHS data as part of the nation's long-term climate record. This official record, known as the Global Historical Climatology Network (GHCN), is an integrated database of climate summaries from global land surface stations. Initially, this network only consisted of observations obtained from weather stations that met National Weather Service (NWS) standards, which were usually located at airports.

The current majority of GHCN observations come from the NWS Cooperative Observers Network (COOP) — volunteer weather observers using NWS-provided equipment that also take daily observations at a specific time. Unlike CoCoRaHS, COOP observers also record maximum and minimum temperature, and sometimes other variables. The advent and inclusion of CoCoRaHS has provided the opportunity to collect even more data giving scientists a better understanding of smaller scale climate variations and the extent of specific precipitation events. Another benefit of adding CoCoRaHS stations to the ever-expanding national database is that it provides data in areas where there are no COOP observers. Once you have recorded at least 100 daily observations, your station data will become a part of the GHCN. Therefore, if there is no rainfall, entering zeroes is very important because not only does it allow for a better account of precipitation in your area; it also gets your data into the GHCN faster if you are a new observer. Once in the GHCN, your data can be used in larger scale regional analysis products such as maps showing precipitation totals and departures. These maps can be useful in determining the regional climate of an area for a period of months to years.



Below is a snapshot of the GHCN weather stations for our region. Light blue dots show COOP weather stations that are part of the GHCN and purple dots show CoCoRaHS observers. Notice how many more of South Carolina's GHCN weather stations are from CoCoRaHS observers! This really illustrates how valuable observers like you are to our national climate record. The GHCN mapping tool can be accessed here:

<https://gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=cdo&theme=precip&layers=000111>
