

CoCoRaHS

Counting Drops

2017 Hydro Report

Special points of interest:

- CoCoRaHS aids in observation of floods and isolated storms
- 2016-2017 Winter was warmer than average
- Two new CoCoRaHS coordinators for Indiana

The first seven months of 2017 were the wettest at the Indianapolis International Airport in 135 years. From April through July, the monthly precipitation totals exceeded 10 inches at one or more CoCoRaHS stations. During this active weather period, a historic flash flood event occurred on the evening of May 19th in Salem, IN, and an isolated storm in the late afternoon of July 13th

on the north side of Indianapolis dumped higher amounts of precipitation than the surrounding areas. For both situations CoCoRaHS reports were invaluable in documenting these events.

The CoCoRaHS report from the Salem area stated that a thunderstorm stalled over the Salem area on the afternoon of May 19th. This caused record flash flooding that

damaged roads and bridges and downed power lines in the town. The observer reported over 6 inches of rainfall. The U.S. Geological Survey arrived on the scene that evening to document the highest level of the flood.

This CoCoRaHS report aided to document one of the worst flash flood events in the history of Indiana. [>Continued on pg. 3](#)

Inside this issue:

| | |
|--------------------------|---|
| 2017 Hydro Report | 1 |
| Helpful Apps | 1 |
| 2017: A Year in Review | 2 |
| The Extremes | 3 |
| Thank You! | 4 |
| 365 Reports | 4 |
| New Indiana Coordinators | 4 |

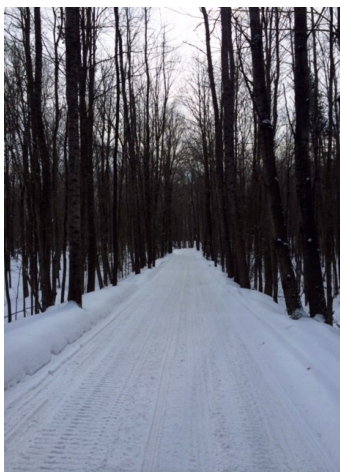
CoCoRaHS App

Do you have a smartphone? CoCoRaHS apps are now available for free on both Android and Apple products. Just search for CoCoRaHS Observer in either the Google Play Store or the Apple iTunes store. The app is a great solution for those who check their gauge on the run or those to get up just to take their observation

and want to go back to bed on their days off. The easy log on allows you to put your observations in without having to boot up a computer. The app has most of the functionality of the website with regard to normal daily precipitation reporting for rainfall, snow fall, snow depth, snow cores, flooding, and observation notes.

The screenshot shows the 'CoCoRaHS Observer' app interface. At the top, it says 'CoCoRaHS Observer'. Below that is the 'Precipitation Report' section with the following details: 'IN-MR-13 (english)' and 'Speedway 6.2 SSW'. The form includes input fields for 'Observation Date' (2018-01-08), 'Observation Time' (07:00), and 'Rain/Melted Snow (in)' (0.00). There are checkboxes for 'Trace' and 'NA'. Below the form is a link 'Click To Specify Snow & Flooding Info' and a text area for 'optional notes'. At the bottom is a 'SUBMIT' button.

2017: A Year in Review



*“In Indianapolis,
2017 was tied
for the 7th
warmest...”*

2017 ended up as one of the warmest years on record. In Indianapolis, 2017 was tied for the 7th warmest over the period of record extending back to 1872, the first full year records were kept for Indianapolis.

The winter of 2016-2017 was the third straight warmer than normal winter with only short periods of colder temperatures through January and February. Snow was limited through the winter with the warmer temperatures coming with greater frequency, with many areas receiving only well below average on snowfall for the winter season.

Warmer weather continued into the spring, with a wetter and stormier pattern developing from mid-April into the summer. Many locations received nearly half of their annual average precipitation in the period from late April through July. The pattern would flip from late July into the fall as much drier conditions developed across central Indiana.

Temperatures would remain warm through September and October, with the longest stretch of 90°+ temperatures experienced in late September. Colder and wetter weather finally arrived by late October into November, with many areas seeing their first trace of snowfall. A more persistent blast of colder air would hold off until December, highlighted by the coldest end to a year since late December 1983. 2017 wrapped up with one of the coldest New Year's Eves on record. Indianapolis reached a high of only 11°, matching the record coldest high from the final day of the year in 1976.

-Mike Ryan, NWS Indianapolis

| | Average Temperature | Total Precipitation | Total Snowfall | Highs of 80/90 or hotter | Lows of 0 or colder |
|------------------------------------|--|--------------------------------|---------------------------------------|--------------------------|---------------------|
| 2017 | 55.6 | 47.45 | 8.7 | 107/14 | 3 |
| NORMAL | 53.2 | 42.44 | 25.9 | 99/18 | 5 |
| 2017 Difference from Normal | +2.4 | +5.01 | -17.2 | +8/-4 | -2 |
| All-Time Rank | Tied for 7th Warmest | 25th Wettest | 22nd Least Snowiest | | |

2017 Hydro Report Continued

This flash flood struck quickly during the late afternoon and early evening of the 19th in south central Indiana. Heavy to torrential rains began to fall in the Salem area shortly after 4pm EDT and continued to after 7pm EDT. In less than 4 hours, rains of more than 6 inches had fallen. The West Fork Blue River at Salem rose over 16.5 feet in less than 7 hours from 3:30 pm EDT to crest at 10:15pm EDT. The rate of rise approached 9 feet per hour just before the USGS equipment maxed out at 7:30pm EDT. This catastrophic flash flood caused millions of dollars of damage.

The CoCoRaHS report from the north side of Indianapolis on the morning of July 14th indicated that nearly 5 inches had fallen at their location on

the afternoon of July 13th. The local creek overflowed its bank to surround the neighbor's house and flood the street in front of the observer's home. The flooding was gone by the morning of the 14th.

The Indianapolis office concluded a downpour occurred around 6pm on the 13th over a small area on the north side of Indianapolis. Rains of up to 5 inches fell in less than 3 hours and were partially to blame for a large sinkhole in southern Hamilton County. The entire White River in the City of Indianapolis, elevated from the recent rains, rose and fell 2 to 3 feet in less than 12 hours.

Both of these heavy rain events demonstrate the importance of the Indiana CoCoRaHS Programs. Participants

are encouraged to report flash floods and severe weather as soon as noticed via the "Significant Weather Reports" feature. This report is sent to the appropriate weather office in real time.

Some observers overlook this feature and place very useful information only in the "Daily Comments Report". These reports document the event, but don't send the information directly to the National Weather Service. E-mail or call us to learn more.

-Al Shipe, NWS Indianapolis

The Extremes

Highest daily precipitation

IN-MG-11

5.66 inches

7.12.17

Highest total precipitation

IN-MR-55

69.21

Highest daily snowfall

IN-CL-14

6.6 inches

12.30.17

Highest total snowfall

IN-TN-1

23.2



365 Reports

These are the sites that reported every day of 2017! Thanks for your commitment!

| | | |
|----------|----------|----------|
| IN-BN-35 | IN-HM-29 | IN-MN-8 |
| IN-CL-14 | IN-HS-8 | IN-MG-21 |
| IN-DV-1 | IN-HS-21 | IN-OW-9 |
| IN-HM-5 | IN-MR-3 | IN-TP-22 |
| IN-HM-19 | IN-MT-3 | IN-RN-9 |

Thank You!

On behalf of Indiana CoCoRaHS we would like to thank each and every observer for all you contribute to this program. We received 114,809 reports in 2017 and would love to see even more in 2018.

-Andrew White and Kacie Hoover, NWS Indianapolis



New Indiana Coordinators

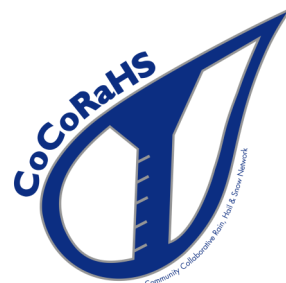
During 2017, central Indiana gained two new CoCoRaHS coordinators. They are Kacie Hoover and Andrew White; both based out of the National Weather Service office in Indianapolis.

Kacie is originally from Texas and received her bachelor's degree in Geophysics from Texas Tech University as well as a master's degree in Atmospheric Science from The University of Alabama in Huntsville. While in grad school, she participated in the VORTEX-SE project which set out to better understand tornado genesis and wrote her thesis on how ocean surface wind speed data from the CYGNSS satellite could be used to observe global patterns (such as the Madden-Julian Oscillation). Her

favorite aspect of the job is participating in outreach and STEM events across central Indiana to teach people about weather safety and how NWS relies on spotters and CoCoRaHS observers. When not working, she likes to spend time outdoors, watching TV, and baking.

Andrew White has spent most of his life in the state of Indiana having grown up in Terre Haute and attending college at Purdue University. After graduation he spent two years working at the NWS office in Dodge City, Kansas before returning back to his home state in January 2017. Weather has always been a passion for him, and he can remember sitting on the front porch watching the

storms move in even at a very young age. When he is not watching the weather, he likes to go hiking and spend time outdoors. When the weather isn't quite as nice, he enjoys reading and spending time with friends. He has had a great experience working with the CoCoRaHS program so far. Andrew enjoyed getting to know Indiana better and the people that volunteer their time to help NWS provide the best information possible.



Because every drop counts