



Prairie State Precip

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“...IL-CK-36 [is] situated on the roof of a 52-story apartment building less than a half-mile from the Chicago lakefront.”

A Gauge with a View

Our volunteers often go to great lengths to make sure they can participate in CoCoRaHS, searching for the best place to locate a gauge and enlisting family and friends to help make sure observations are regularly taken. One of the most unique locations for a rain gauge in Illinois, if not the entire country, is in the heart of downtown Chicago. Alison Jacobs maintains station IL-CK-36, situated on the roof of a 52-story apartment building less than a half-mile from the Chicago lakefront. Each day Alison makes the trip from her apartment to the roof to make her observation. On many days she is greeted with a spectacular view of Lake Michigan, Navy Pier, and the Chicago skyline.



The lakefront south of downtown Chicago is seen in this view from IL-CK-36.

Alison signed up as a CoCoRaHS observer in January 2007, soon after the program started in Illinois. Getting started, however, took a little more time and energy that most of us had to go through. It wasn't just a matter of obtaining a gauge and setting it up. She first had to convince the building maintenance staff that this was a worthy idea, and then enlist their help to find a suitable location to install the gauge. “I spoke to Cristian Dinca, one of our building maintenance staff, and at first he was skeptical,” says Alison. “However, he and the staff did help me find a location on the roof that would be suitable.”

Alison also had to obtain approval of the building's condo board. She made a presentation to the board, explaining what CoCoRaHS was and what she would be doing as an observer. When all was said and done, the board gave its approval, and Cristian helped install the gauge on the roof.



The IL-CK-36 rain gauge is mounted on a roof drain cover.

There are several concerns when siting a rain gauge on a 52-story building. One concern is the exposure to much higher winds than might be occurring 500 feet lower and its effects on gauge catch. You also can't just sink a post on which to mount the rain gauge into a building roof, so some way of mounting the gauge in an accessible location had to be found. The maintenance staff came up with a clever solution. They mounted a short piece of a 4 x 4 post to one of the roof drain covers and attached the bracket and gauge. They also had to secure the drain cover with cable ties so it would not flip over. This kept the gauge below the level of the roof wall, mitigating

the risk of damage to the gauge. Alison also had to obtain approval of the building's condo board. She made a presentation to the board, explaining what CoCoRaHS was and what she would be doing as an observer. When all was said and done, the board gave its approval, and Cristian helped install the gauge on the roof.

A Gauge with a View (continued)

some effects of the wind. The location is in a fairly open area, although there is a penthouse to the west that blocks the wind. Alison doesn't have to worry about trees, but there has been "growth" in the neighborhood. "Since I moved in, the Blue Cross building to the east has added 26 stories," states Alison. While it doesn't affect the gauge catch, it does affect the view.

Each day Alison takes the elevator to the 52nd floor and then climbs two flights of stairs to the roof of the penthouse. She steps out a door and walks across the roof to the gauge and takes her reading. Alison says that there really hasn't been a time when bad weather has kept her from getting to the rain gauge. "The building maintenance staff, especially Cristian, have been very supportive and enthusiastic about CoCoRaHS."

When asked why she went through all the trouble to become a CoCoRaHS observer, Alison said that she always interested in weather as a kid. "I thought about becoming a meteorologist, but I was not that great in math." Her studies led to Bachelor's degree in French and a Master's degree in English as a Second Language. She ended up teaching English in Thailand for two years, traveling in Europe and Southeast Asia during semester breaks. Alison eventually returned to Chicago where she taught at South Suburban Community College. When United Air Lines was hiring flight attendants she jumped at the chance to start traveling again. Alison has been flying with United for 26 years.

"I'm kind-of circling back to where I started. I can satisfy my inner meteorologist by volunteering for CoCoRaHS and I can use my French degree when I am in Paris five times a month," says Alison.



Alison Jacobs and building maintenance staff member Cristian Dinca.

"I'm kind of circling back to where I started. I can satisfy my inner meteorologist by volunteering for CoCoRaHS..."

Gearing Up for Winter

We are just into fall (which starts on September 1 for us meteorologists and climatologists), but it is a good time to be thinking about your cold weather observations. Winter observations bring their own set of challenges, even if you are just measuring daily precipitation and don't concern yourself with

snow. Measuring snow adds a whole new facet to your daily observations, one which many of our observers take very seriously and go out of their way to accomplish. Let's review what you need in terms of equipment and the procedures for measuring both precipitation and snowfall.

The Hardware

If you plan on measuring snow there are a couple of items that will make the job a lot easier.

- Extra outer measuring tube
- This is a good idea even if you aren't measuring snow. Once temperatures regularly

Gearing Up for Winter (continued)

start falling below freezing, it's a good idea to remove the funnel and inner measuring tube from your rain gauge. Water freezing in the inner tube can cause it to crack. That is not a problem with the outer tube. If rain accumulates and then freezes, you can take your extra outer tube and swap it with the one with ice. Bring in the outer tube with the frozen precipitation to let it melt. In the meantime, you don't have to worry about missing any precipitation since you have another gauge in place. An extra outer tube also lets you swap out gauges if it is still raining or snowing, so you can make your daily observation and not miss any falling precipitation.

- **Snow board**

A snow board is a nothing more than a $\frac{3}{4}$ inch piece of plywood, painted white, which provides a level surface for measuring snow depth. The dimensions aren't critical, but it should probably be no smaller than 24 x 18 inches. Some observers have more than one snow board deployed so representative measurements can be obtained from different locations in their yard. Some observers also leave one snow board out on which to measure total snow depth, that is, it is not cleaned off after every snowfall.

- **Flag or reflector to mark the location of the snow board**

When the white snow board is lying on the green (or brown) grass, it is easy to spot. It's not so easy to locate once an inch or two of snow has fallen. A driveway reflector, which you can purchase at most hardware or home improvement stores, is an easy way to mark the location. I use one reflector, which always marks one corner of the board. Just remember which corner!

- **Snow ruler, or yardstick**

A snow ruler is nothing more than an 18 inch or longer ruler with markings in tenths of an inch. Snowfall is reported to the nearest tenth of an inch, so this makes measurement easier. You can use any ruler marked in quarters and eighths, of course, but you will need to convert the measurement into tenths. There is a table of conversions in the Observer's Guide (you can download this from the Illinois CoCoRaHS web page).

- **CoCoRaHS Snow Swatter**

This is very handy when you are taking snow cores off of your snow board, or clearing snow from around your gauge. However, any wide thin piece of metal or plastic will do – many observers use wide spatulas. The nice thing about the snow swatter is that during the summer it doubles as a hefty fly swatter!



Winter precipitation measuring equipment: a rain gauge, extra outer cylinder, snow ruler, snow swatter, and snowboard.



Without something to mark the location of the board, you can easily lose it after an inch or two of snow.

An extra outer measuring tube is useful year-round

Gearing Up for Winter (continued)

- Notebook or clipboard

This is handy for writing down the multiple depth measurements from the snow board, and for writing down the depth measurements you make for total snow on the ground, as well as any other notes.

The Procedures

Be sure to review winter weather and snow measurement procedures before cold weather arrives. You can find snowfall measurement procedures outlined in the Observer's Guide, and you can review the online training program "In Depth" Snow Measuring on the CoCoRaHS web site [http://www.cocorahs.org/Content.aspx?page=training_slideshows]

If you have any questions about measuring snow, feel free to contact your county or regional coordinator.

"You Can't Have Too Many Rain Gauges..."

By Jim Angel, Illinois State Climatologist

As state climatologist, I regularly deal with the consequences of too much or not enough rainfall. Over the years, the traditional NWS Cooperative Observer Program (COOP) has been a great source of information on long-term rainfall. However, the CoCoRaHS reports are a much-needed addition for monitoring conditions in Illinois.

Our rainfall, especially in the middle of summer, can be highly variable. If you have lived in Illinois for any length of time, I am sure you have experienced this first hand. I often say, "you can't have too many rain gauges in Illinois" to capture this variability. The CoCoRaHS reports provide improved detail in these situations. Here is a recent example of the improvement through

CoCoRaHS. Figure 1 (next page) shows the monthly rainfall for August 2010 in northeast Illinois using the available NWS COOP data. Figure 2 shows the August rainfall using both NWS

CoCoRaHS reports are a much-needed addition for monitoring conditions in Illinois.

COOP and CoCoRaHS data. The two maps have the same general features – dry in the southern part of the region and very wet at the junction of DuPage, Kane, Kendall, and Will counties. However, with the added CoCoRaHS data, new features emerge. The wet area is more complex and includes amounts in excess of 6 inches not found on the COOP-only map. This is expected since much of the heavy rainfall was produced by fast-

moving thunderstorms. Other areas of localized heavy rains with totals over 4 inches are found in central Will County, along the Illinois-Iowa border, and a small area in South Chicago. CoCoRaHS also identified some dry areas including northeastern Lake County, eastern Iroquois, and northern McLean counties. While short-term dryness may not have affected water suppliers, there are indications of impacts on agriculture. By the way, farmers need to provide documentation of local rainfall for disaster declarations and insurance claims. Reporting a zero on days when you did not receive rain will help us confirm that areas were truly dry.

CoCoRaHS observations improve our understanding

"This information provides real economic values to the citizens of Illinois ..."

"You Can't Have Too Many Rain Gauges..." (continued)

of the size and magnitude of extreme rainfall events as well as determining long-term wet and dry conditions. This information provides real economic values to the citizens of Illinois as they deal with these events.

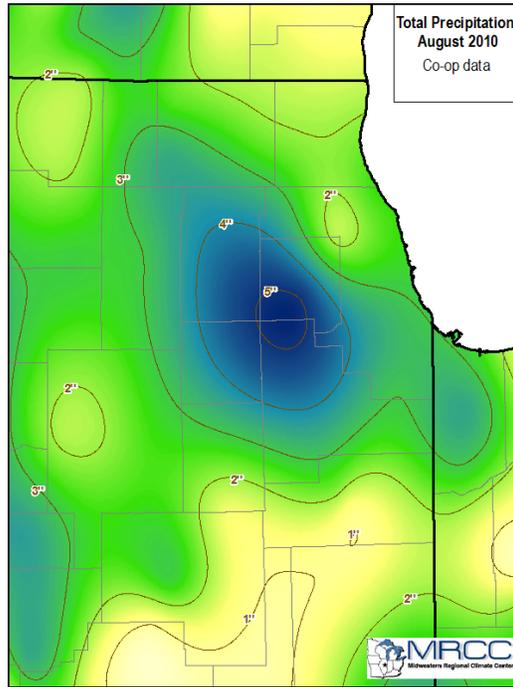


Figure 1. Rainfall totals from NWS Cooperative Observers (COOP) for August 2010 in northeast Illinois.

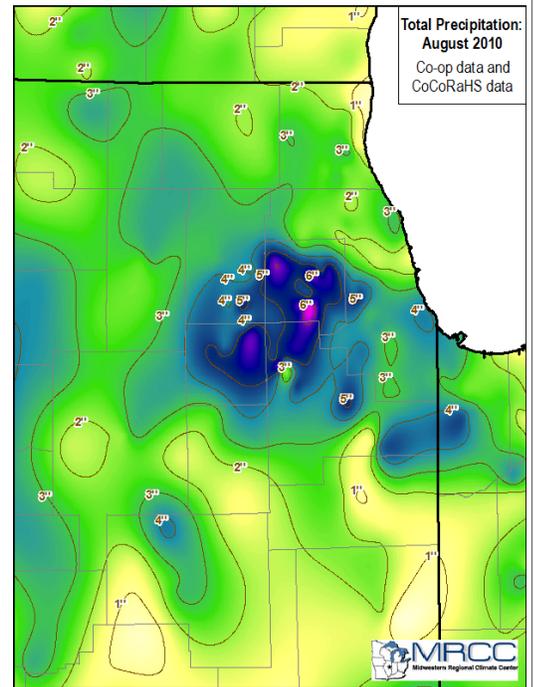


Figure 2. Rainfall totals from NWS COOP and CoCoRaHS sites for August 2010 in northeast Illinois.

Maps prepared by Zoe Zaloudek, Midwestern Regional Climate Center.

Customized Climate Calendars

Climate data for more than 1000 Midwestern locations, including daily means and extremes, are now available in a printable and "suitable for framing" calendar format on the Midwestern Regional Climate Center web site:

<http://mrcc.isws.illinois.edu>

To access the calendar generator, select Climate of the Midwest in the left-hand menu, then Climate Calendars.

Station: 116753 - LA SALLE PERU, LA SALLE CO., IL		Lat: 41°20'0" Long: -89°0'0" Elev: 459 FT.		Period of Record: 19630001-99991231		
AVG	RECORD	AVG	RECORD	AVG	RECORD	
71	80/1971	71	88/1978	71	88/1978	
SD	48	32/2074	SD	24/2474	SD	48
PR	0.11	1.35/1977	PR	0.11	1.54/1991	
WD	7	WD	7	WD	8	
CD	1	CD	1	CD	1	
AVG	RECORD	AVG	RECORD	AVG	RECORD	
69	82/2007	69	84/1963	67	84/1971	
SD	43	25/1981	SD	23/1964	SD	42
PR	0.12	1.00/2004	PR	0.10	0.80/1979	
WD	9	WD	10	WD	11	
CD	0	CD	0	CD	0	
AVG	RECORD	AVG	RECORD	AVG	RECORD	
66	86/1999	65	82/1999	64	84/1963	
SD	41	24/1970	SD	25/1970	SD	40
PR	0.10	0.95/1964	PR	0.10	1.00/1980	
WD	12	WD	12	WD	13	
CD	0	CD	0	CD	0	
AVG	RECORD	AVG	RECORD	AVG	RECORD	
62	84/1963	61	84/1963	61	82/1963	
SD	38	23/1976	SD	24/1969	SD	37
PR	0.09	1.00/1977	PR	0.09	1.00/1977	
WD	13	WD	13	WD	14	
CD	0	CD	0	CD	0	
AVG	RECORD	AVG	RECORD	AVG	RECORD	
59	82/1999	57	81/1971	57	80/1968	
SD	36	23/1968	SD	16/1988	SD	35
PR	0.09	0.82/1974	PR	0.09	1.15/2009	
WD	13	WD	13	WD	19	
CD	0	CD	0	CD	0	

Midwestern Regional Climate Center
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 a cooperative program of the Illinois State Water Survey
 and the National Climatic Data Center

Climate Statistics for the Month:
 Avg. Temp: 53° Warmest: 64.1° (1963) Coldest: 46.9° (1987)
 Avg. Precip: 2.84" Wettest: 7.8" (1984) Driest: 0.06" (1964)
 Avg. Snow: 0.1" Snowiest: 3.2" (1987) Snow: 2.96"

National Climatic Data Center This information from data generated by the National Climatic Data Center. The Illinois State Water Survey is a department of the Institute of Natural Resource Sustainability at the University of Illinois, Urbana-Champaign.

Climate calendar for LaSalle-Peru.

A climate calendar can be generated for many NWS Cooperative Observer locations in Illinois

Curtis Williams, St. Clair County Coordinator



Curtis Williams is the local coordinator for St. Clair County in southwestern Illinois.

Despite being retired, Curtis keeps very busy with a number of public service activities in addition to CoCoRaHS. Curtis lives in Belleville, and is station IL-SC-9. He also maintains station IL-SC-11 located about four miles from his home location at the local fire station, and at times is assisted by the Fire Chief there.

How did you find out about CoCoRaHS and when did you get started?

As the SKYWARN activity was winding down in late 2007, I was searching for other opportunities to make a contribution to public service activities and found a link on the NWS web site to CoCoRaHS. I have always been interested in weather and keeping records since I received a gift of an indoor/outdoor thermometer as a kid, more than a few years ago.

What about the program do you enjoy the most?

I enjoy looking at the maps each morning and see how variable the rainfall amounts can be, even over a small distance. Amateur radio operators talk about the weath-

er all the time. It can be almost like a contest to see who has the "most".

Why did you decide to volunteer as coordinator?

It appeared the program was doing something really worthwhile, so I decided to become a county coordinator to help recruit others and help fill in the gaps on the map. Sort of self-serving, to get the map filled in with more reports in our area. Also, I noticed the radar rain estimates were often not very accurate and it would be nice to help in a small way to advance the science.

Helping NWS with flash flood warnings also is a rewarding activity. Our volunteer fire department [*the Signal Hill Fire Dept. -ed*] which I support, was recently dispatched to cars submerged under a viaduct nearby with a report two

children were trapped in one car. Fortunately the children were rescued before the water got too deep, proving once again, TURN AROUND, DON'T DROWN.

Tell us a little more about yourself.

I am a retired communications engineer and live on a miniature horse farm with my family. I have been an active amateur radio operator (W5DTR) involved in emergency communications just over 50 years. I serve in a number of volunteer communications activities both for emergency management, volunteer fire departments, and as District Emergency Coordinator for the 17 Illinois counties served by the St. Louis NWS office. Our number one challenge is finding a way to attract and recruit more volunteers to help out.

“Helping NWS with flash flood warnings also is a rewarding activity.”



The Signal Hill Fire Dept. rescue at a flooded viaduct in St. Clair County after a storm on August 14.



**Community Collaborative
Rain, Hail, and Snow Network**

www.cocorahs.org

Illinois web page
<http://www.cocorahs.org/state/illinois>

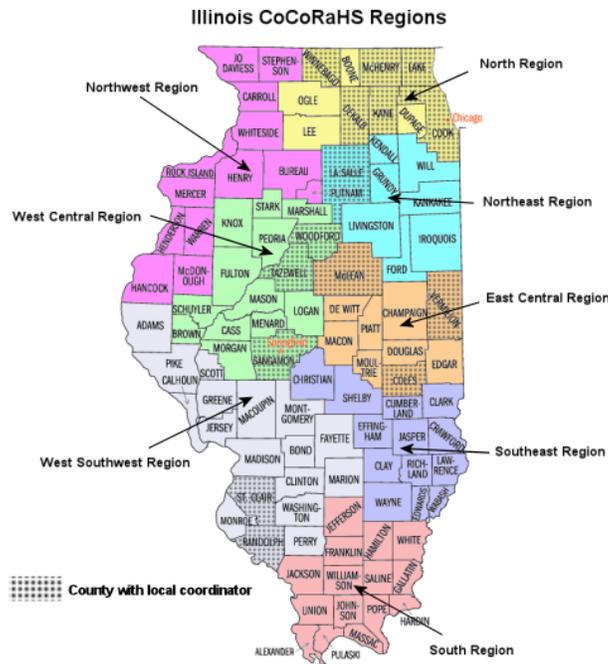
"Because Every Drop Counts!"

Illinois State Coordinator

Steve Hilberg
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We're on
Facebook!

Join the group
Illinois CoCoRaHS



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Local County Coordinators

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