



NWS Looking for More Volunteer Observers

Join the Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS) Today!

Reason #1 to join:

→ Your reports are **used by meteorologists at the National Weather Service every single day.**

→ CoCoRaHS observations help us:

- ◆ Verify forecasts
- ◆ Calibrate radar rainfall estimates
- ◆ Forecast and warn for flash flooding and river flooding
- ◆ Understand local effects, such as those from terrain and lakes
- ◆ And MUCH MORE!



What is CoCoRaHS?

CoCoRaHS, or the Community Collaborative Rain, Hail, and Snow network, is a grassroots network of volunteers of all ages and backgrounds working together to measure and map precipitation.



Image courtesy Dave Johnson, MN-SL-18

CoCoRaHS Observers:

- Must use standard rain gauge equipment (~\$45)
- Report daily (ideally)
- Can be ANYONE!

Ready to join? Visit cocorahs.org for more information and an application!



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Reason #2 to join:

→ Your reports are **used by hydrologists!**

- ◆ Hydrologists predict streamflows, river levels, reservoir volumes, water supplies, and flood potential.
- ◆ **CoCoRaHS rain and snow observations are extremely valuable** because observers reports daily and use standard, NWS-accepted equipment.
- ◆ Your observations with standard equipment are more accurate than many automated weather stations!



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Reason #3 to join:

→ Your observations are **used by researchers!**

→ Examples of research using CoCoRaHS data:

- ◆ Precipitation observations can be used to understand and predict disease spread in humans, animals, and plants.
- ◆ Mosquito control operations use CoCoRaHS to track where and when mosquitoes will hatch.
- ◆ Some stations have been recording for long enough to be a part of climate change research.

The screenshot shows a Google Scholar search for 'cocorahs' with approximately 1,470 results. The results list several academic articles related to the CoCoRaHS network, including topics like the evolution of the network, precipitation extremes, drought impacts, and the network's role in citizen science and climate change research.

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Reason #4 to join:

→ Your reports are **used in the agriculture industry!**

◆ Farmers, ranchers, agribusiness, and commodities investors track weather predictions and observations. This influences:

- Crop deployment (when and what to plant)
- Crop yield prediction
- Track/predict disease and insects
- Soil moisture assessments



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Reason #5 to join:

→ Your reports are **used by state and federal climatologists!**

- ◆ Climatologists track longer-term patterns on seasonal, annual, and beyond annual time scales.
- ◆ CoCoRaHS reports, especially those with full datasets and “zeros” allow high-density tracking of these patterns.
- Daily reports when there is no precipitation (“zeros”) are especially important to track drought and fill in the data record!



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I ILLINOIS

Illinois State Climatologist



MRCC
Midwestern Regional Climate Center

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Reason #6 to join:

→ Your reports are **used by forensic scientists and the insurance industry**

- ◆ CoCoRaHS reports, as official NWS data, may be used to verify storms.
- ◆ CoCoRaHS data can be used to:
 - Prevent fraudulent claims
 - Verify hail, heavy rain/snow, or flooding
 - Provide meteorological reconstruction of past weather events for litigation purposes, especially from remarks section of daily reports



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Image courtesy Tessa Levens, WI-BY-29

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Reason #7 to join:

→ Your reports are **used by engineers who design homes, offices, roads, and more!**

- ◆ Roof drains, slopes, and gutter designs are based on rainfall and snowfall data.
- ◆ More reports help ensure the infrastructure in our communities are made to withstand the stress of our weather.
- ◆ This data is especially important for designing parking lots, culverts, storm sewers, drainage areas, bridges, etc.



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Photo courtesy of Jason Jensen, DNR Conservation Pilot

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Reason #8 to join:

→ You'll **provide valuable weather information for your community!**

- ◆ Across the Northland, other accurate precipitation data is far spread and does not capture all local variations in weather.
- ◆ A higher density observation network provides a clearer picture of what happened!
- ◆ This provides your local community with high-quality local data!



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CoCoRaHS snowfall observations on December 15, 2022 near Two Harbors, MN show the drastic change in snowfall away from Lake Superior

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Reason #9 to join:

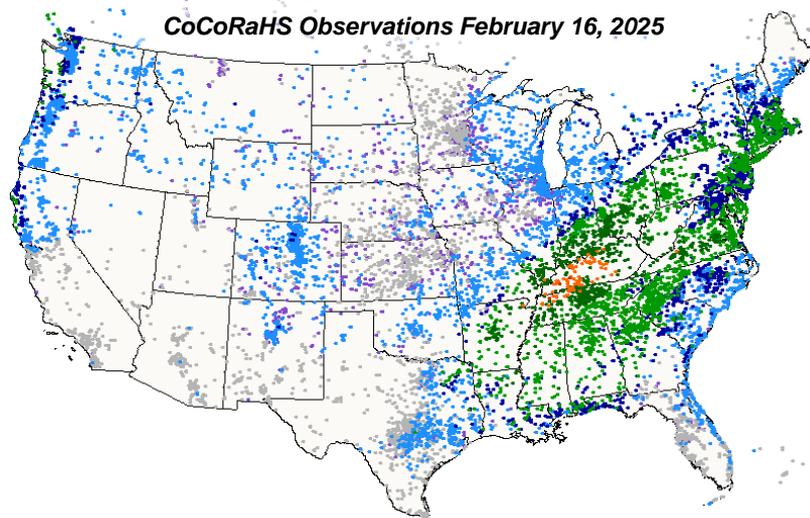
→ You're joining **a massive network of volunteers!**

- ◆ *There are currently over 20,000 active observers!*
- ◆ CoCoRaHS was founded in 1998 at Colorado State University after devastating flash flooding showed the need for high-density, high-quality observations.
- ◆ Sponsored by NOAA and the National Science Foundation.



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Reason #10 to join:

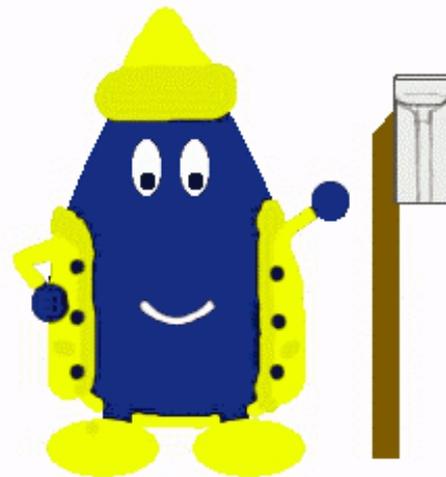
→ Taking daily weather observations is **a great way to teach kids science!**

- ◆ Kids of all ages learn about their environment, how to read a scientific instrument, do data entry, and then can use their own data to do scientific analysis!
- ◆ CoCoRaHS has lesson plans available for teachers to involve the program into their curriculum!
 - Classrooms can submit multi-day reports on Monday to cover weekend precipitation



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Reason #11 to join:

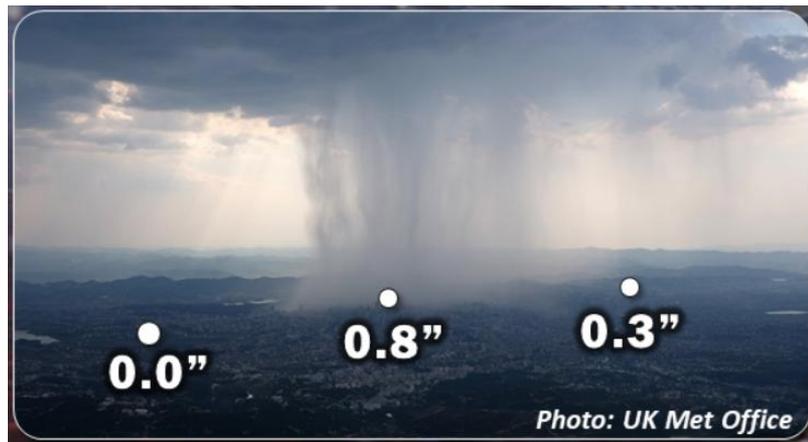
→ Your reports **provide pin-point accuracy we can't find anywhere else!**

- ◆ Showers and thunderstorms produce high variable rainfall!
- ◆ While our radar can estimate rainfall, your reports provide "ground truth"!
- ◆ Having this information can lead to better warnings and forecasts!



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Reason #12 to join:

→ Your reports are official National Weather Service data!

◆ We'll use your reports for official "local storm reports" - which are archived in the official weather record.



◆ Reports will be shared on our website and with the media - you might just see your report on TV!

...MINNESOTA...			
...AITKIN COUNTY...			
12 N ISLE	2.8 IN	0800 AM 03/06	COOP
TAMARACK 1.4 SW	1.4 IN	0700 AM 03/06	COCORAHS
...CARLTON COUNTY...			
4 W PLEASANT VALLEY	7.5 IN	0800 AM 03/06	PUBLIC
WRENSHALL 9.7 SSE	7.4 IN	0700 AM 03/06	COCORAHS
BARNUM	7.0 IN	0715 AM 03/06	PUBLIC
KETTLE RIVER	7.0 IN	0803 AM 03/06	PUBLIC
3 NNW MAHTOWA	5.9 IN	0845 AM 03/06	TRAINED SPOTTER
WRENSHALL	5.2 IN	0800 AM 03/06	UCOOP
1 NNE MOOSE LAKE	4.6 IN	0730 AM 03/06	PUBLIC
CARLTON 5.6 NE	4.2 IN	0900 AM 03/06	COCORAHS
1 N CLOQUET	3.5 IN	1112 AM 03/06	TRAINED SPOTTER
MOOSE LAKE 3.6 ESE	3.0 IN	0700 AM 03/06	COCORAHS
1 N CLOQUET	3.0 IN	0900 AM 03/06	NWS EMPLOYEE
3.3 W CLOQUET	2.9 IN	0830 AM 03/06	COOP
CLOQUET 3.4 ENE	2.4 IN	0700 AM 03/06	COCORAHS
SAWYER	1.5 IN	0516 AM 03/06	PUBLIC
...CASS COUNTY...			
2 N PILLAGER	1.9 IN	0132 PM 03/06	PUBLIC
PILLAGER 5.1 N	1.2 IN	0700 AM 03/06	COCORAHS
...CROW WING COUNTY...			
BRANERD 16.7 E	3.5 IN	0700 AM 03/06	COCORAHS
7 ESE BRANERD	3.0 IN	0850 AM 03/06	TRAINED SPOTTER
FORT RIPLEY	2.8 IN	0635 AM 03/06	PUBLIC
FORT RIPLEY 0.8 N	2.7 IN	0700 AM 03/06	COCORAHS
BRANERD 7.7 SSE	2.3 IN	0700 AM 03/06	COCORAHS
BRANERD 11.5 E	1.7 IN	0750 AM 03/06	COCORAHS
BRANERD	1.5 IN	0700 AM 03/06	COOP
CROSBY 1.1 SW	1.4 IN	0800 AM 03/06	COCORAHS
TROMMALD 6.1 NW	1.2 IN	0800 AM 03/06	COCORAHS
NISSWA 4.2 ENE	1.0 IN	0800 AM 03/06	COCORAHS
...LAKE COUNTY...			
TWO HARBORS 9.7 NNE	1.1 IN	0700 AM 03/06	COCORAHS
TWO HARBORS 19.8 N	1.0 IN	0700 AM 03/06	COCORAHS
TWO HARBORS 3.6 WNW	1.0 IN	0700 AM 03/06	COCORAHS
...PINE COUNTY...			
KERRICK 2.4 NNW	5.0 IN	1100 AM 03/06	COCORAHS
PINE CITY 0.7 SSW	4.0 IN	0700 AM 03/06	COCORAHS
6.5 SE DUQUETTE	4.0 IN	0800 AM 03/06	COOP
6 SW FINLAYSON	3.5 IN	0700 AM 03/06	TRAINED SPOTTER
2 SW HINCKLEY	3.5 IN	1042 AM 03/06	TRAINED SPOTTER
KERRICK 3.0 NNE	3.3 IN	0800 AM 03/06	COCORAHS
STURGEON LAKE 0.4 ENE	3.2 IN	0700 AM 03/06	COCORAHS
STURGEON LAKE 7.5 ESE	3.1 IN	0700 AM 03/06	COCORAHS
...ST. LOUIS COUNTY...			
DULUTH 7.9 SW	5.0 IN	0900 AM 03/06	COCORAHS
2 WNW DULUTH	3.2 IN	0700 AM 03/06	PUBLIC
DULUTH 2.2 WNW	3.2 IN	0700 AM 03/06	COCORAHS
1 SSW DULUTH	3.0 IN	0933 AM 03/06	TRAINED SPOTTER
NBS DULUTH	2.9 IN	0945 AM 03/06	COOP
DULUTH 4.6 NE	2.3 IN	0720 AM 03/06	COCORAHS
DULUTH 7.4 NNE	2.2 IN	0700 AM 03/06	COCORAHS
DULUTH 1.2 SE	2.0 IN	0600 AM 03/06	COCORAHS
DULUTH 3.0 NE	1.8 IN	0745 AM 03/06	COCORAHS

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Reason #13 to join:

→ It's easy and fun!

- ◆ Once the equipment (rain gauge) is installed, checking it daily takes just a few minutes.
- ◆ Tracking your backyard weather helps you better understand how the weather in your location varies from other places.
- ◆ There is a new Data Explorer to use to interrogate and interact with anyone's station data!



Station Activity

Period of Record

Mar 16, 2007 - Mar 4, 2024

Duration of Record

16 years 11 months 17 days

Pct of Days covered by Precip

Obs

99%

Observation Counts



Daily Precip

6,182



Multi-day Precip

4



Condition Monitori...

8



Significant Weather

72



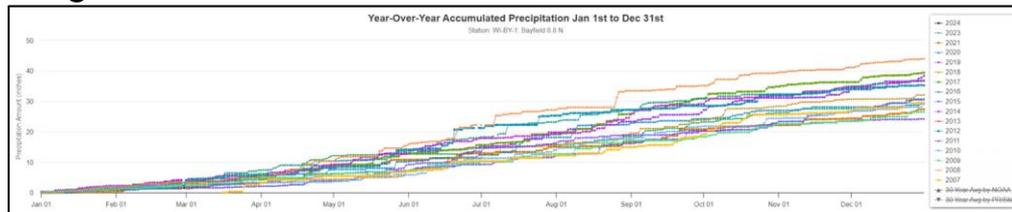
Hail

15



Total Obs

6,281



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