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The Catch



NOLAN DOESKEN'S MONTHLY COCORAHHS E-MAIL MESSAGE

CoCoRaHS -- Updates on the Fundraiser and the Farm

Fort Collins, Colorado -- February 12, 2016

Greetings, fellow rain (and snow) gaugers.

We're overdue for a CoCoRaHS update. There is a lot to cover today so I'll try to be brief (not my strong point).

Let's start with a big welcome to all of you who have joined the CoCoRaHS rain gauge team in the past month. We're delighted to meet you and we look forward to seeing your "dots on the maps" if they aren't already. If you have any questions or need any help getting started, please let us know by sending an e-mail to info@cocorahs.org

Some quick logistics:

Have you recently moved or changed your email address? -- or planning to soon? Please let us know by contacting: info@cocorahs.org

[Huge Thanks](#)

[A Little Encouragement!](#)

[Who's Looking at My Data? - It's QC -- Quality Control](#)

[Snow Measuring Instructions](#)

[Important Reminders and Upcoming Events!](#)

[CoCoRaHS Theme Song Webinar - Postponed](#)

[Farm Story](#)

Huge Thanks

Thanks again for the very generous help we got during our CoCoRaHS year-end fundraiser. The final numbers are in. We ended up with 3019 donations totaling

\$104,923. Wonderful! That's enough to carry the whole project for several (three) months. It also sent a powerful signal about the commitment of our volunteers to all the users of CoCoRaHS data and other potential sponsors. We've had some favorable responses already. THANK YOU!!!

A Little Encouragement



We have found in previous years that mid February is the low point for CoCoRaHS data collection. Sure enough, just as in past years, we're seeing fewer daily rain gauge reports than anytime other than Christmas morning. We're still over 9,000 reports per day, but that's a big dip from the 12,000 or more we get from mid spring to fall.

Why the lull now? Ice and snow is a big reason -- and appropriately so. We don't want anyone taking the risk of a slip and fall, just to get a precipitation report. Cold, dark weather takes a toll on enthusiasm -- and February is a time that some of our northern states volunteers take vacations to warmer places. Also, we tend to see colds and flu simply ebb the desire for an early morning walk to check that blasted gauge.

Recognizing these late winter issues, let me now encourage you to think warm thoughts of a soon-coming spring. For those of us who are taking a break, or haven't started yet -- be advised that as soon as you feel comfortable going out, we are all very excited about seeing your precipitation reports coming in again (or coming in for the first time.) Let's dot

those maps with beautiful data!

Who's Looking at my Data? -- It's QC -- Quality Control

Despite our best efforts, some funny looking rain and snow reports show up on our CoCoRaHS maps. Sometimes they are typos -- like typing in 1.00" when we meant 0.01" or 0.10" Sometimes, it's a multiday accumulation mistakenly reported as a 24-hour total. Maybe it's a zero typed in prematurely or a correct value entered on the wrong date. Sometimes it's a brand new observers -- maybe a student -- typing in their first-ever daily report. Sometimes it is wildly variable localized precipitation that looks fishy, but is actually correct, or rain that was falling right at 7 AM so that volunteers who reported earlier had much less rain than those who waited until 8 AM to take their measurements. These are all issues we face nearly every day.

Each day, some of our volunteer coordinators across the country and our data quality intern (we have a recently graduated meteorology student working part time for CoCoRaHS checking all the data each day) look at the maps and reports to spot "questionable data". Sometimes the errors are obvious and we correct them immediately -- like a 7.00" daily report that was actually the 7 AM observation time typed in mistakenly. Or a report of 23.00 that was supposed to be 0.23. But more often, we

temporarily change the questionable report to "NA" and then contact the observer to verify what they measured and intended to report. This type of personal verification is time consuming, but we do it because we want to be sure that all the many groups who use our data -- the National Weather Service, the media, the US Dept of Agriculture, State Climatologists, other agencies, utilities, businesses and individuals -- have reliable and trustworthy data. Many of us are pros and rarely make errors, but we also encourage schools, families with young children, older adults who's eyes aren't as good as they once were, people with disabilities (we know at least three of our volunteers are totally blind), and many individuals who have never done this before. So mistakes happen. Interestingly, the number and kind of errors have increased since we deployed the smart-phone apps, probably because of smaller screens and hastier typing.

I'm telling you this is so you aren't surprised if you get a call or an e-mail sometime from one of our volunteers or staff -- just checking to verify your report. We're not criticizing you -- but we are trying to make sure that the data we collect and share with the public are as accurate and consistent as possible.

You can help with QC, too. Always double check your report before you submit it. You can also check and edit your report after submitting it. And if you spot something lingering on our maps that you think might be a mistake, let us know by sending a quick e-mail to qc@cocorahs.org

Did You Notice the Snow?



A lot happens in a month (since I last wrote). There have been periods of mostly quiet weather, but there have also been some notable winter storms -- the greatest of which hit the big cities from Washington DC to New York and up to southernmost New England. Totals for Jan 23-24th exceeded two feet in parts of Virginia, West Virginia, Maryland, Pennsylvania, New Jersey and New York. Over 30 CoCoRaHS volunteers totaled 30" or more with water content of the snow in the 2-3" range. If you were in the path of this storm, thanks for your efforts to collect the best data you could under the circumstances. Some of you threw up your hands and said "this is too much". I can understand that, too.

[Here are just a few tips on measuring snow \(and click here to download a one-page data-entry tip sheet\).](#) They may come in handy during the next storm.

A complete observation of snow includes the five items below, but keep in mind that 2-5 are optional, and "NA" can be entered in any field if the measurement is not made:

1) The measure of "precipitation" which includes any rain, freezing precipitation plus the melted water content of snow that has fallen in the past 24 hours. In the case of really big snows exceeding 8-12", the outer cylinder of our gauge will fill to the top and spill

over. If

that happens, your gauge catch may be invalid so it might be best to report NA for your precipitation amount and describe the situation in your comments. Better yet, don't let that happen. Anytime you get at least 6-8" of snow and more is expected, please empty the gauge into a container for later measurement or compress the contents of your outer cylinder so there is room for more. Also, wind-driven snow does not collect well in our gauges. Snow tends to blow around or over the gauge due to aerodynamics. If what falls in the gauge is less than what has actually fallen, you can get a much better measure by taking a representative core sample of the new snow on the ground or on your snow board. Use this value, instead, for your precipitation amount.

2) Measure the new snow depth that has accumulated in the past 24 hours -- specifically the maximum accumulation of fresh snow (in inches and tenths) since your last observation (ideally measured on a snow measurement board or other representative surface). If there is drifting, you may need to take multiple readings to get a good average. Measure, if possible, prior to melting and settling. For example, if it snows hard in the morning, accumulates to a depth of 6.2" but then stops and the sun comes out. By the next morning when you do your 7 AM observation there may only be 4.0". However, you should still report 6.2" for your daily snowfall -- the maximum accumulation prior to melting, settling, redistribution, etc. Any notes or comments always help!

3) If you have time, measure the water content of a core sample of the new snow and see how that compares to what was in your gauge.

4) Measure the total depth of snow on the ground at the time of observation. This should include both old and new snow. Report this every day that you have snow on the ground-- even if no new snow has fallen. In cold, snowy parts of the country some observers just mount a stake in their yard that they can see from the house. Measuring the snow depth may require averaging, especially as melting and drifting change the landscape of the snow. The total depth of snow on ground needs only be to the nearest whole or half inch. This is a surprisingly important and very useful measurement. It is really fascinating to watch how snow compacts over time. If you haven't tried this measurement, please do.

5) SWE (snow water equivalent). We've been promoting "SWE Mondays", but you are welcome to take this measurement any time you have snow on the ground and a little extra time. It's the process of taking a core sample at a representative location where your snow depth equals the average for your area. Then either melt or weight that sample to get the water content. SWE is extremely important for hydrologists and others who need to know what water is available in the snowpack to add to ground water or stream flow levels when it melts.

Remember, if you use the iPhone app to enter your daily data, you have to click "details" on the main screen to take you to the snow data entry page (The Android app is more clear about where to report snow). And if possible, please add comments too.

We offer all sorts of training materials on our website ([FAQ's](#), [slide shows](#), [webinars](#), [animations](#)) to help you learn and gain confidence in your snow measurements. But best of all, just do it -- that's the best training of all.

Important Reminders and Upcoming Events!

A belated "Happy Groundhog Day" -- always a fun day with a colorful folklore past in our world of meteorology. I spent about four hours shoveling snow that day -- fourth largest snowstorm for the month of February in the 128 years we've been measuring here.

There is always plenty more winter to come, but it does mark a very visible turning point in terms of accelerating longer days, shorter nights and a sense of "spring is coming soon".

- **Like Taking Photos? We Do Too!**

And furthermore, we're involved in a research project where your photos could really help. It's called "Field Photo Weekends" and we're helping the University of Oklahoma study how landscapes respond visually to variations in precipitation and temperatures. We'll be focusing on drought, too, and if there are visual indicators that relate to the [U.S. Drought Monitor](#) drought classification.

President's Day weekend (February 13-15) will be the first of four holiday weekends this year (also Memorial Day, 4th of July, and Labor Day) where we encourage you to snap a few pictures. Please make sure to send the photos to them, not us. [Click here for more information](#). Thanks!!

- **WxTalk Webinar - Register Now**

If you've never attended one of our almost-monthly CoCoRaHS "Weather-Talk Webinars" you might want to consider it. Our January webinar with the founder of [Weather Underground](#) drew a record number of attendees. If you missed it, you can [watch it on YouTube here](#).

Coming up next, on February 25th at 1:00 PM EST, "Evolving Outdoor Safety through Preparedness Programs", by Charlie Woodrum - the National Decision Support Services Program Manager at NOAA/National Weather Service Headquarters. He'll be talking about outdoor weather safety at large public events. There's a lot more thought and planning there than you may realize -- and a great deal at risk. I'll never forget the college football game I attended a few years ago where we were promoting CoCoRaHS with a rain gauge and hail pad game during pre-game activities. Suddenly, vicious cloud-to-ground lightning began striking all around, and hail (not our pretend ice cubes and marbles) began pelting everyone. Where do we go? -- the car?, the stadium restrooms, or the refreshment tents? What do we do? -- stand still, run, scream?

Situations like this, including tornadoes, come up nearly every year. Find out how the National Weather Service is helping event planners prepare for these possibilities to keep the public safe. [Click here to register](#).

- **March Madness**



On March 1, we begin our 11th annual CoCoRaHS March Madness recruiting contest. We hope to add over 1000 new volunteers in March to bolster our ranks, fill our gaps, and improve our maps.

But we could do even better. If each of us found just one friend, family member or co-worker to join our rain gauge team -- we would double in size (that would be AMAZING!). The states that sign up the most new volunteers win the "CoCoRaHS Cup". We'll again have our total winner and our per capita winner. I'd also like to give extra points (if I can figure out a simple and fair strategy) to the states that sign up the most new volunteers from remote areas and blank areas on our maps. While over 20,000 of us have sent in at least a few rainfall reports in the past year, we still have a few hundred counties with not a single reporter. So let's get out and find some more weather watchers!

CoCoRaHS Theme Song Webinar - Postponed

I'm sorry to do this, but our upcoming first-ever musical webinar, where we will feature original compositions as well some of our all-time rainy musical favorites, needs to be delayed until later this spring. Our very own DJ, Henry Reges (CoCoRaHS National Coordinator) is putting this together but needs more time. We'll let you know as soon as we've found a date that works better for our musicians.

Farm Story - The Mud and Ice Aren't So Nice

I much prefer mud to dust. Mud is a sign of good water supplies -- which, around here, are a blessing. But add ice with the mud, and then we have an untenable mess. That's what we've had now, off and on much of the winter, it seems. This won't be ending soon either, as we still have piles more of snow to melt and our snowiest climatological month yet ahead of us -- March.

It first snowed at Thanksgiving, melted in early December, snowed again in mid December, started melting the next week. then snowed again at Christmas, was thinking about melting in early January but then snowed a good one which carried us to late January when it nearly melted. Then came our 13" snow on the first day of February -- plenty cold yet rich in water. This week the temperature soared to 65F even with the ground still frozen and covered with snow, but at night it drops back into the 20s.

What does this leave us with? Depending on the time of day and the location of sun and shade, we have mud and/or ice. With each warm day, the ice retreats some but the mud is getting deeper as the ground below begins to thaw. But there are still ice layers below keeping the moisture from soaking into the ground.

I volunteer to do the chores in the morning -- when the ground is most likely frozen and icy but easier to walk on (but harder to land if you slip). My wife, on the other hand,

prefers the evening chores when the air is warmer, the surface is still thawed, and fewer ice patches remain -- but she sinks down to the top of her boots in the mud. We make quite a pair. No one has fallen yet, but watching horses slipping on ice and thrashing in mud is not a pleasant pursuit.

Some of our more adventurous hens are sensing spring. They are sick of their chicken yard and ready to fly the coop. The most nimble of the flock fly first to the top of the trash can, then up onto the rabbit hutch. From there they can fly up on the chicken coop roof from whence they can run and jump into the horse corral -- to chicken freedom!! In previous years, the first hens to venture out were the first to become dinner for the fox den. So far the predators have been absent this year -- empowering the chickens to venture farther each day. Will this last? I don't know, but I'll keep you posted.

As I suspected, I wrote way too much. Thanks for your contribution to the CoCoRaHS effort. I'll write again in a few weeks.

Sincerely,

Nolan Doesken and the CoCoRaHS team
NOAA's Weather Ready Nation Ambassador Program
Colorado State University

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