

# The Catch



NOLAN DOESKEN'S MONTHLY COCORAHS E-MAIL MESSAGE

## CoCoRaHS -- Now 18 Years Old!

Fort Collins, Colorado -- June 17th, 2016

Dear CoCoRaHS rain gauge team,

18 years ago today the CoCoRaHS website was turned on for the first time. A few dozen volunteers in and around our local Fort Collins community began sending in rainfall reports for the first time. CoCoRaHS was born, and three local high school students, Luke (web developer), Tom (strategic thinker and computer programmer) and Daphne (outreach coordinator) had helped make it happen.

CoCoRaHS would likely never have been started -- or at least not by us -- were it not for a devastating local storm here which happened the previous summer (July 28, 1997). That flash flood producing storm dumped nearly a year's worth of rain (over 14" at the center) in a few hours, claimed 5 lives and did extensive damage to our campus and nearby neighborhoods. We had only been living in our old farmhouse on the edge of town for two years. Our house was surrounded by flowing water that evening but our barn was on higher ground and was the only spot on our property that was not flooded. "Hope", our white Arabian horse, somehow seemed unbothered. Our nearest neighbor, my mother-in-law, was intent on leaving early the next morning for the family reunion and slept through the whole thing even as we were moving furniture and boxes out of her basement and bailing water out of her window wells. So much of what happened that night is still etched in my mind and the mind of others that were here. You all probably have similar keen memories of weather events that affected your lives.

[Click here to view a video that documents some of what happened that night.](#) The power of moving water spoke loudly. [Here is a link to our animation which briefly tells this story.](#) And, yes, my rain gauge I was using then really did have a leak in it, so I did not call in a storm report to the National Weather Service -- something I regret to this day.

In the early days of CoCoRaHS, the website was much more simplified. Many of the early volunteers called in their reports by phone as they did not yet have internet access. At that time, CoCoRaHS stood for "Colorado Collaborative Rain and Hail Study" as we were focusing on studying local intense storms just in Colorado and didn't think volunteers would be interested in doing measurements of winter snow, too. Little did we know. Interestingly about two dozen of the initial team of volunteers are still reporting every day -- and a couple still call in by phone. If we would have asked them then to spend each morning for the next 18 years reading a rain gauge and sending in their reports, most (not all) would have thought I was crazy.

Thanks to all of you -- those that have just joined recently as well as those who have been doing CoCoRaHS for a long time. Each day as the [CoCoRaHS maps](#) light up with data points, you are helping tell very important weather stories. And, as we've seen many times in just the past few months, your reports help describe and sometimes help predict and warn for major floods. Likewise, our reports of little or no rain are so important for [tracking the emergence of drought](#). Thanks so much for helping, and happy birthday to CoCoRaHS!!

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### **Welcome Bahamas!**

There is nothing like rainfall maps to help teach geography. The Bahamas just formally joined CoCoRaHS a few weeks ago and already I've learned more about that area than ever before. We've got over 25 new stations signed up already and many have reported. [Please explore the new data](#) -- as we prepare for another Atlantic hurricane season.

### **How Many Dots are Enough?**

I'm talking about the dots our rainfall reports make on our CoCoRaHS maps. Obviously, the more dots the better to define the always-variable precipitation patterns we experience. But the spatial variability of precipitation is greatest in summer when much of the rain falls from thunderstorms. A few years ago, we had a storm form nearly overhead. Our nearest CoCoRaHS volunteer is only about 200 yards away and they got nearly one inch more rain than us. That's an extreme example, of course, but by no means unique.

### **Reporting Zeros**

It is sometimes hard to be motivated to send in precipitation reports on days with no rain

-- especially during long dry spells. But as the many users of our data keep telling us, your data are most valuable when we know both the days when it rained and when it didn't. Now that we're almost to summer solstice, vegetation can dry out quickly. Just a week or two without rain, and our yards and gardens start wilting or turning brown. So keep those zeros coming -- and don't forget you can catch up with past zeros using the ["Monthly Zeros" report](#).

### **Improving our Apps**

A whole lot of us now use the CoCoRaHS apps ([iPhone](#)) ([Android](#)) to enter daily data. They are convenient for sure. The more we use them, the more we notice they need improving. For example, if you make a typo, you can't correct it on the app. And if you need to enter a multiday report, hail report, or a significant weather report, it won't let you. Also, on the iPhone app, many folks haven't realized they need to click on "more details" in order to enter their snow data or their comments. It took us awhile to realize that our apps were causing some problems but now we're working on it. If there are simple additions or changes to the apps that you think would be helpful, please let me know.

### **One More Reminder - Hail Reports are Special**

This is an all-too-familiar reminder to experienced CoCoRaHS observers, but maybe new to others. The CoCoRaHS "Hail Report" form allows you to enter and report hail details that are very important for scientists studying hail storm characteristics, or studying how to estimate hail from radar signatures. Did the hail start before, at the same time, or after the rain? When did it start and how long did it last? Was there more rain than hail? Was the hail clear, white, or a combination? Was the hail hard, soft or mixed? What was the range of sizes of the hail stones and which was most common? Did the larger hail fall before or after the smaller hail? Did enough hail fall to cover the ground -- and if so, how deep? What angle did the hail fall at -- straight down, sideways, or somewhere in between? What type of damage did the hail do, if any? And if you're in Colorado, or nearby areas, we really encourage you to set out a hail pad so we can actually measure the number of stones, their density and their size distribution. All of this information helps scientists deduce what may be going on in the clouds.

Obviously it takes a watchful eye and you may not be able to answer all of the questions. But answer what you can, and you can still fill out a report even if you don't have a 'hail pad' set up. So if you have hail at your station, please fill out a ["Hail report"](#). Thanks. [Click here to view hail reports for your county, your state or the nation](#).

### **A Farm(er) Story --**

What had been a cool, damp May has quickly transitioned to a hot, dry June. Already, every step the horses take kicks up dust, and when we open the gate to let them out in the pasture, they gallop off in a cloud of dust. But for now, irrigation water supplies are good, although the irrigator (that would be me) isn't doing his job very well.

Turns out back in early May when we were cleaning our "lateral" (that's the smaller ditch that brings our irrigation water from the main ditch about 1.5 miles west of here), my right

foot started to hurt a little. I didn't pay much attention at first, but after a couple long days on my feet I realized that none of my shoes or boots were comfortable any more and some really made my feet hurt. I tried my summer sandals and they felt much better.

I thought I was on the mend until Monday of this week. I was at a conference in Colorado Springs -- the annual meeting of the Colorado Cattleman's Association. I had given a short talk on climate - and worked in, as usual, an appeal for volunteers to join CoCoRaHS to help measure precipitation. Several folks expressed interest, and some signed up right on the spot. I had some rain gauges with me but I left two in the car. Meanwhile, a raucous thunderstorm was in progress with hail and intense rain directly overhead. I told a couple of the new volunteers to wait a minute while I went out to bring in the other rain gauges.

When I got to the parking lot, it was raining hard but not as hard as before, so I figured I could make a dash for it. Then I noticed the fast flowing water. Hmm. What do do? I walked upstream towards the high end of the parking lot to see if I could find a place to cross -- but nothing was obvious. The river of storm-water runoff crossed the entire parking lot. I had my dress shoes on (which were starting to hurt my feet again). I was getting wet but I didn't want to soak the leather shoes. Another wave of heavy rain with thunder and lightning was about to move in so I decided to make a dash hoping the water was only a couple inches deep. I was wrong. The first step I was already over my ankles so I tried to push off and jump over the rest. Pop, ouch and yow!

Something in the arch of my foot felt like it had ripped. I could barely walk -- but I knew there were two people inside, both who lived in interesting cattle-ranching areas. I needed to get them their gauge (that was my regular CoCoRaHS logic, of course). I limped back, ignored the flowing water since I was already soaked, and pretended to be fine as I delivered those last two gauges. I then limped back to the car in now pouring rain and pondered, "Did I break something? Did I tear a tendon? Could I do the three hour drive home?"

Well, four days later as I write this, I'm now the proud owner of a handicapped parking permit. My foot is wrapped and I'm wearing an orthopedic boot securing my foot for the next couple of weeks. X-rays showed no breaks, and tendons were OK. Two to three weeks in my "boot" and I should be back to normal. It's just funny that this happened in the rain, delivering rain gauges. Sighhhh.

Thanks again for participating in CoCoRaHS, and keep the rain gauge reports coming. If you haven't gotten your gauge set up yet and started to report, there's no time like today (or this weekend). If you have any questions or need any help, just let us know ([info@cocorahs.org](mailto:info@cocorahs.org)) I sure would like to see us get up to 13,000 daily reports per day on a regular basis. We did that once last year. So far, this year, our greatest number of daily reports has been 12,734 back in late April...(you can view these statistics via our ['Rainy Days Report'](#)).

We'll be in touch again -- hopefully soon.

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