

The Catch

COCORAHS – LATE SUMMER WEATHER

FORT COLLINS, CO — Saturday, August 15, 2009

Greetings CoCoRaHS volunteers

If you're not sure what CoCoRaHS is, then you must be one of the many who have signed up this summer to help measure rain. Welcome aboard. But you may not be exactly sure what you signed up for or what CoCoRaHS really is. CoCoRaHS (the Community Collaborative Rain, Hail and Snow network) is a bunch (over 10,000 nationally) of people just like you -- all ages and pretty much any background you can imagine -- who like and care about the weather and how it affects our lives and livelihoods. We are curious about how much rain (and hail, and snow) fell in our neighborhoods. We're also curious about how our measurements compare to those around us both in our town, our county, our state and our region. The remarkable variation in precipitation is what attracts and holds our attention.

After working in the field of climatology now for 35 years, the fascination never fades for me. Every day, as the CoCoRaHS national map lights up with new data from volunteers across the country, I am amazed yet again by how storms traverse the atmosphere and water our land. Some places get more, some places get less, a few places get flooded, some face drought (south central Texas still can't pull out of the dreadful drought they're in). Yet somehow, over time, things manage to even out. Through our backyard measurements, we can watch the seasons (California is in the core of their dry season, Florida and New Mexico are in their wet seasons). We can see how the desert compares to the mountains, and how the Gulf Coast compares to the Great Lakes. Through our simple measurements we slowly but steadily draw a picture of our climate -- one day at a time. Being a part of watching, measuring and reporting is what CoCoRaHS is all about.

The origin of CoCoRaHS

We recently passed the anniversary of a particular storm that deeply affected my life and which was the impetus for starting CoCoRaHS. Some of you remember this storm. On the evening of July 28th , 1997 a small, localized, unimpressive (based on radar, satellite and lightning detection) storm developed a few miles from my home here on the west side of Fort Collins, Colorado. The storm formed at the base of the first foothills along the Front Range of the Rocky Mountains. This location was only about 15 to 20 miles from the center of the giant storm back on July 31, 1976 that spawned the infamous Big Thompson Canyon flood that claimed about 140 lives on the eve of Colorado's centennial statehood celebration. While smaller in area, our Fort Collins storm was equally prolific in producing rain. In less than 5 hours over 10" of rain fell over a small portion of our city. In just over 24 hours, over 14" fell. Regrettably, radar underestimated the amount of rain reaching the ground, and potential "weather spotters" like me were busy dealing with household flooding and failed to notify the National Weather service. The roof of our old farmhouse had huge leaks then and we filled 17 five-gallon buckets that night in our kitchen before the storm subsided. I had the type of rain gauge that we use in CoCoRaHS, but it had a leak (I'll tell that embarrassing story another time). I failed to report the heavy rain to the National Weather Service because I didn't have an accurate reading -- plus I assumed they already knew. That was a bad plan. The NWS did issue a flash flood warning that night as the flood waters began to rage through our university campus and through many neighborhoods. But had I called in when the first two inches of rain had fallen, that warning might have been sounded 90 to 120 minutes earlier. Five people died that night in our own town and dozens others barely escaped -- and I will never forget it.

So if you wonder why I keep encouraging and reminding you to get involved in CoCoRaHS and to send in "Intense Precipitation" and "Hail" reports as well as your regularly daily precipitation measurements - hopefully you'll appreciate why. The fact of the matter is our measurements are important and they CAN and WILL help save lives.

Even when weather is not life threatening, our daily reports help tell the story of our amazing climate and water cycle. So stick with it if you can, and if you've never gotten around to getting a gauge set up, this would be a good time.

How wet and where?

Using the "View Data" features on our website, I just did a quick analysis to find out where the heaviest rains have been falling in recent weeks. Here are the highlights. Keep in mind that since most of us report each day around 7 AM, that when I say "August 15th " this is actually the 24 hours from 7 AM on the 14th to 7 AM on the 15th -- our standard reporting period.

CoCoRaHS Maximum Daily Precipitation amount and location -- August 2009

Date Max. daily rainfall (in.) County/State

August

- 1th -- 3.40" Polk County, Texas
- 2nd -- 3.84" Van Zandt County, Texas
- 3rd -- 3.63" Wicomico County, Maryland
- 4th -- 4.68" Shelby County, Indiana
- 5th -- 5.62" Clark County, Indiana
- 6th -- 3.38" Clay County, Florida
- 7th -- 3.43" Brown County, South Dakota
- 8th -- 6.57" Jackson County, Wisconsin
- 9th -- 4.06" Genesee County, Michigan
- 10th -- 4.06" Barry County, Michigan
- 11th -- 3.68" Logan County, Oklahoma
- 12th -- 3.49" Williamson County, Tennessee
- 13th -- 8.98" Craven County, North Carolina
- 14th -- 7.34" Pepin County, Wisconsin
- 15th -- 5.39" Clay County, Florida

What does this tell us? Well, heavy summer rains are common and are often very localized. At least 3.00 inches of rain fell somewhere in the country every single day this month. Maximum daily rainfall has surpassed 5.00" on five out of fifteen days this month even without any tropical storms around. In fifteen days, ten states took their turn in getting the heaviest rain. Also, it's a near certainty that for each of these days, even more rain fell somewhere where there wasn't a gauge or a person to report it. You can see that the western U.S. doesn't compete well for heavy rains this time of year. In fact, California CoCoRaHS reporters have only had four reports of over 0.25" of daily rainfall anywhere in the state since July 1st. (Hats off to you who keep reporting your zeros, even during your dry season.)

Days getting shorter -- already!

I love summer evenings and having time and light to come home from the office and still have a few hours to work outside. That's changing already, though. We're getting close to 2 months since the summer solstice, and the mornings are already darker (good for extra sleep) and the sunset comes earlier. That's worked out OK since the mosquitoes are so vicious this year that by 8 PM it's time to run for cover. But this also means evenings will soon be cooler and in just a few short weeks the aspen leaves up in our mountains will begin changing from green to gold. Weather patterns will also begin to change as afternoon thunderheads will give way to flatter, humbler cloud types, and skies will get deeper blue (at least for our part of the country). Temperatures will cool quickly at night. I was just up in Fraser, Colorado this week and they already have had a few days with frost and lows in the 20s. Our CoCoRaHS volunteers up in Alaska (we have about 25 who report regularly - MANY THANKS!!) see seasonal changes most dramatically due to the rapid change in day length at high latitudes as the fall equinox approaches.

Will there be Atlantic Hurricanes this year?

We've made it into August without an Atlantic hurricane, but this morning I heard that the first tropical storm has been named - Ana. As many of you know in the southeast part of the country, tropical storms can contribute a good fraction of the late summer/fall precipitation. They can even help alleviate drought. But with the benefits of rain come the high risk of flooding. Those of you who live in hurricane country, be prepared. But also know that if you are able to stay home, your rainfall reports will be very helpful. High winds accompanying rain can make accurate observations difficult so take precaution and have your gauge in a good

place. Also, it's possible to receive more rain in 24 hours than the CoCoRaHS rain gauge can hold (11.3"). This means you may need to check and empty your gauge more than once per day to get a complete reading.

CoCoRaHS Reporting if your power is out

We have a system in place but still being tested so that you could "text message" your rainfall reports directly to CoCoRaHS. Let me know if you'd like to help text this system. This may help in areas that lose power (assuming you still have cell phone coverage -- no guarantees). Also, you can always use the CoCoRaHS voice mail box to call in your report (970) 491-6300 Hit the # key to bypass the lengthy local climate report and then leave a voice message with your station name, station number, date and time of your report and the amount (plus any pertinent comments). Volunteers check those phone messages and enter them on the computer, so if your power is out but you still have phone service, you can still report.

We'd love to offer toll-free calling, but we'll need a sponsor to cover the cost of that service. If you know a potential sponsor, let me know.

Wish you had a CoCoRaHS rain gauge?

Some people sign up for CoCoRaHS thinking we'll be sending them a nice new gauge - for free. I so wish we could, and maybe someday we'll find more sponsors. Some states and some counties do have sponsors that help pay for gauges for volunteers (so please ask). But most of us need to buy our own. We have links on our main webpage <http://www.cocorahs.org> to two companies that offer a significant price reduction to CoCoRaHS participants on the 4" diameter, high capacity (and high resolution) rain gauge we require. You can place an order online and the gauge is usually shipped the next day. WeatherYourWay.com also sells separate replacement parts if your funnel, inner tube or bracket happens to break. A recent severe hail storm in Denver broke a whole lot of our funnels.

Some may wonder why we want everyone using the same type of gauge? Ongoing studies show that not all rain gauges report equally, so to maintain accuracy and consistency we should all be using the same type of gauge. (Several dozen of you have helped by conducting your own experiments and sharing your results - Thanks) Some of you use the larger 8" diameter National Weather Service "Standard Rain Gauge" That's

fine. The 4" and 8" gauge compare very well. But the many available home electronic gauges sometimes differ a lot from the CoCoRaHS gauge. Studies have shown that the CoCoRaHS gauge is usually more accurate.

Next CoCoRaHS state

As of this morning, Delaware volunteers can now begin to sign up for CoCoRaHS. Delaware, the first colony to become a state, will be the 49th to join CoCoRaHS -- September 1. Welcome aboard! Interestingly, Arizona was the 48th to join the United States and the 48th to join CoCoRaHS (now that's trivia). If you happen to have friends or family in Delaware (only three counties -- Kent, New Castle and Sussex), invite them to join.

Do Tell -- There may be a story

We appreciate the effort some of us have made to type in notes to go with your daily precipitation report. The "Comments" are especially helpful to accompany severe or unusual weather events. It was amazing to see the CoCoRaHS comments some time ago when that earthquake struck Indiana and Illinois. Using the "View Data" and "Daily Comments Reports" you can easily skim through the narrative comments from volunteers by state and by county. <http://www.cocorahs.org/ViewData/ListDailyComments.aspx>

Comments add a lot - and also add historic significance to our reports.

We will be adding a special feature to our forms soon so that you can report the impacts from drought in your community when you are experiencing unusually dry weather.

Survey in September

Some weeks ago we mentioned that we will be sending out a survey (on-line) to all CoCoRaHS participants. We are doing final editing on the survey now and will post it on September 1st. We'll share the results when we're done.

Will our garden recover?

Our garden was pummeled by hail twice in June and lightly damaged two other times. Then we were gone to Michigan much of the month of July and the weeds (and mosquitoes) took over. Still, the garden is giving its best efforts. The green beans are coming on strong -- and the zucchini and cucumbers are out of control. Our eggplant (I used to hate eggplant, but in my maturer years I'm starting to develop a taste for it) is doing pretty well, and the strawberries are looking good after being totally wiped the first time around when they were loaded with berries in June. As soon as I send off this note, I'll be out in the garden the rest of the day.

Lily, the Doesken puppy

Lily had a great time on her vacation to Michigan. She's on her way to being a good dog. She's only chewed up four of my leather work gloves -- and that was obviously my fault for letting her reach them. At least I have a plan now for what to do with all those unmatched gloves I have. As best we can tell, she doesn't mind chewing either a left or a right. Lily has chewed up only one rain gauge so far -- again, my fault for leaving it where she could reach it. Angel (the Great Pyrenees) escaped down the irrigation ditch a couple times this summer when the water was low (she wades through the culvert). Both times our son caught up with her before the Dog Catcher did (whewwwww!)

Filling more gaps

Some of you have recruited friends and family to fill gaps in our rain gauge network. Nearly half of our new volunteers are finding out about CoCoRaHS by word of mouth. This is a big country, and our goal of finding one volunteer per square mile over highly populated areas, and every 36 square miles over rural areas seems bold and unrealistic. It may take years, but for many parts of the country it is achievable. Nebraska has lead the way in rural recruiting by 1) asking people directly in particular rural areas to help and 2) providing gauges to those who agree to report regularly. I guess I better go looking for more sponsors :-)

Enjoy the weekend

Summer is winding down. Make the best of it. Thanks again. I'm headed to the garden.

Nolan Doesken

Colorado State University
Colorado Climate Center
CoCoRaHS Office