The Catch

COCORAHS—AUTUMN TRANSITIONS

FORT COLLINS, CO — Saturday, September 23, 2006

Welcome weather folks --

Unsubscribe?? Just let us know you want to be removed from the list.

Having trouble reading our messages?? You have options.

We heard back from a few of you last time that our e-mail messages are badly formatted and hard to read. If this is the case on your computer, wait a couple of days and then go to the CoCoRaHS website and look at the menu on the left side of the homepage and click "The Catch". That's where we keep and display previous letters. Today's letter may not show up for a few days as Henry just left on vacation. But it will appear in early October. By the way "The catch" is terminology used by climatologists and refers to how much precipitation lands in the gauge for any give storm.

What you catch in the gauge is not necessarily what actually fell, depending on gauge location and weather conditions. For example, we tend to "under catch" wind driven snow, which means that our gauge does not capture all the snow that actually falls. That's why we will encourage you to take core samples of new snow accumulation during the winter months. Sometimes we experience "over catch". An example would be if your gauge is close to your house and you get a heavy rain with big drops splashing off your sloped roof, your gauge may catch more rain than actually fell. If you are in an area with lots of overhanging trees, you can experience either over catch or under-catch -- and never really know and furthermore it can very from one storm to the next depending on rainfall intensity and wind. Now that's more than you bargained for.

Seasons changing, storms raging:

Cold, dreary and very windy here in Northern Colorado today but, as usual this year, the moisture is skipping us. Meanwhile, storms are pounding the Ohio River Valley (and elsewhere) and snow is flying in the Rockies.

We've received two dozen reports of at least 2" of rain in the past day over southern Indiana including 3 reports of 5" or more. The greatest so far is 5.11" from Corydon in Harrison County. Of the 826 reports received so far this morning (and they are still streaming in), 55 stations have reported snow including a maximum of 10" of fresh snow and a total depth of 13" at our station up in Summit County, Colorado 3.4 miles SSE from Breckenridge.

Since I sent the last message in early Sept, the weather has been distinctly fallish here in Colorado. Clouds have taken on a different appearance, and the winds have changed from their summer doldrums to very determined (i.e. the jet stream up thousands of feet above us is strengthening, and surface pressure gradients -- differences between high and low pressure -- have been getting stronger. For you barometer watchers, the ups and downs have become much more obvious and dramatic of late. Here, our foliage is changing color already and several areas had their first killing freeze. We've kept our garden going, but its' days are numbered. If it wasn't so windy I could consider raking leaves today, as the leaves are starting to tumble. I'm not sure I'm ready for this. The mountain peaks in Colorado and Wyoming are already snow covered, and while it is early enough that much of that snow will probably melt off, it is still pretty obvious what's ahead -- WINTER. Maybe it will even snow in southern New Mexico and Texas this winter.

Water Year ending -- check and complete your data!

If you are new to CoCoRaHS you're probably wondering what I'm talking about, but here in the West we track precipitation on a water year basis. The Water Year is defined as the period that begins October 1 and ends Sep. 30. It coincides with the Federal fiscal year, but was selected because it matches up nicely with the cycle of mountain snow accumulation, spring snow melt, and summer growing season. We accumulate water supplies in the cool half of the year and then we consume that water through high rates of evapotranspiration during the growing season.

Today is September 23, so the 2006 water year has just one week to go. We will be doing many data analyses in October summarizing the 2006 water year. If you have time, could you please review your data reports for the past year. If you find any errors or omissions, this is a good time to fix them. It is never too late to send in previous reports that you forgot or never got around to sending. Also, if you have not been entering 0.00 for the many dry days that we've had, it's not too late to fill those in. Remember, you can use the "Monthly Zeros" report to quickly and easily fill in zero values for all your dry days.

To check the completeness of your data, I suggest you use the "Station Precipitation Summary Report"

http://www.cocorahs.org/ViewData/StationPrecipSummary.aspx

or the "Station Snowfall Summary Report" (has both daily precip, snowfall and total depth summarized).

http://www.cocorahs.org/ViewData/StationSnowSummary.aspx

Even if you have only been participating for part of the year, this is a good time to summarize monthly and seasonal totals. So please review your data to make sure it is ready for use in our research.

Make sure we use your data

If you want to make sure we utilize your data, we appreciate water year summary reports in approximately the following format. Count only those days with measurable (0.01" or greater) precipitation.

Month	Total precip.	No. of days	Total Snowfall	No. of Days
Oct 2005	0.42"	4	0.0"	0
Nov 2005	1.68"	9	6.4"	2
Dec 2006				
Jan 2006				
Feb 2006				
Mar 2006				
Apr 2006				
May 2006				
Jun 2006				
Jul 2006				
Aug 2006				
Sep 2006				
Total				

If you missed some days and your totals are not complete, please mark it with an "i" or "inc". If the entire month was missing, then put "M"

I realize that we can perform these computations here without your help, but you know your own data much better than we do. Close scrutiny catches mistakes and produces better data for all of us to use. It also helps you gain a better appreciation for your local climate and how you compare to other areas. SO THANKS in advance!! Also, remember that the "Total Precipitation Report" does not include multi-day accumulated values, so please use the "Station Summary Report" to make sure accumulations are included properly.

Send these to me by e-mail by mid October at the latest if you would like us to use your WY2006 data in our summaries. In fact, as an incentive, we will send a CoCoRaHS t-shirt to the first volunteer from each state with complete data (no missing values) to send in their completed WY summary. We realize that MO, IN, OK, MD, VA, and PA have only been participating for part of the year, so we will adjust accordingly.

send to: nolan@atmos.colostate.edu

Location, Location, Location

Also, check to make sure we are plotting your data on the CoCoRaHS maps in the right location. You know where you live, but sometimes our software for finding addresses and giving latitudes/longitudes plots you in the wrong county -- and sometimes even in the wrong state. This is BAD, and we're not proud of this, but it happens. So check the CoCoRaHS maps and make sure we've got you in the right place. If not, let us know right away, and we'll fix it.

Does any one else look at your precipitation reports??

Probably the most asked question by CoCoRaHS volunteers is "Does anyone actually use the data I send in?" The answer is an emphatic "YES!!". We look at the precipitation, intense precipitation, and hail reports from every state almost every day. But we are not the only ones. Perhaps the greatest user of current and recent data is the National Weather Service. In fact, several dozen National Weather Service employees are volunteers for CoCoRaHS and some are local and state coordinators. Accurate and timely precipitation data is very important for weather forecasting and also for issuing and verifying severe weather and flood warnings.

But there are many more uses of your data. For some applications, your daily reports are important, but for others total monthly, seasonal and annual totals are most critical. Many people involved in agriculture and natural resources management use CoCoRaHS data to identify drought-affected areas. A number of water utilities help sponsor CoCoRaHS since localized data help show changes in both water supply and user demand. From my last message, you also got a glimpse of some of the many ways engineers benefit from CoCoRaHS. Aircraft materials and the management of aircraft on the ground in hail prone areas is very much affected by the size, hardness and frequency of hail and we are fast becoming the best source of quantitative hail information available anywhere in the country. Insurance companies come to CoCoRaHS looking to confirm the presence or absence of hail at a particular time or place.

I think we could write a good-sized book on the uses and value of precipitation data -- and I haven't even mentioned SNOW. But for now please realize that your data ARE USED and ARE USEFUL. When someone types in 10.00" of precipitation when they meant to report 0.10" I assure you we hear about it. In fact, the most common question we get from scientists when they learn about this project is "How can we be sure the data are of good quality?" Once they are comfortable with our data quality, they too become users and CoCoRaHS data have already been used in many weather, water, and agricultural and ecological research. The longer we collect data, and the closer together our observation sites are, the more useful the data become.

Thanks for asking, and thanks for reporting! I will provide more examples of how data are used in upcoming newsletters.

If you want to make NWS happy, report early.

I, like many of you, eagerly (relatively) check my gauge each morning. Sometimes I immediately enter the data on the computer, but many times I don't get around to it until later in the morning, afternoon or evening. Sometimes I don't even get my report in until the next day. From a climatology point of view, the timing doesn't matter as long as the data are entered eventually. But some of our users have a different attitude.

The National Weather Service, media and emergency managers are among the least patient of our users. If we check our gauges at 7 AM, they would like to see our maps and reports by 7:05. Right now about 15% of us get our reports in by 7:15 or so. Maybe 50% of us have reported by 9:30 or 10 AM, and maybe 75% of us have reported by 5 PM. On weekends we're even slower. The remainder trickle in over the next day, week and sometimes several months. Again, from my point of view as a climatologist, this is OK.

BUT . . . . if you want the National Weather Service to make full use of your data, report as quickly as you can. NWS is also the group most eager to get your intense rain reports. Later this fall we will be adding the "Heavy snow report" so you can send in updates during this coming winter's snowstorms.

If you want to get our attention, report an even 1.00, 2.00, etc.

Whenever we see a precipitation report that comes out exactly as 1.00", 2.00", 3.00", 4.00", 5.00" (there was one of these in southern Indiana this AM) or more, we immediately become skeptical. Just by statistical probabilities, there is less than a 1 in 100 chance that your gauge will read exactly to the whole inch. Did you mean 0.04, or 0.40"?? Did you accidentally record your snowfall in the

precipitation column?? Are you not using the recommended CoCoRaHS gauge and instead rounding to the nearest inch or tenth? Have you not been trained in how to read the gauge properly? All of these questions run through our heads. We have found, for example, that some observers have never measured a rainfall greater than 1.00" since getting the high capacity 4" diameter double-cylinder gauge and when they finally get a heavy rain, they don't know how to use the gauge. If you fall into this category, refer to the "Reading my rain gauge" instructions on our website.

If you look at your gauge after a very heavy rain and find that the inner tube is full (that will be 1.00" or sometimes a little more) and the water in the outer tube is up to the 0.40" mark on the inner cylinder, that DOES NOT Equal 4.00 inches or 5.00" of rain. To be precise, you need to incrementally pour the contents of the outer cylinder into the inner cylinder WITHOUT SPILLING and then add up each increment to get the total. In the example above, it would work out to about 4.50 or 4.60".

So if BY CHANCE your total does come out to exactly 1.00, 2.00, etc. then I strongly suggest you make mention of this in your notes and say something like "Heavy rain fell overnight. Total was exactly 2.00" Inner tube was full and outer cylinder contained an additional 1.00." Then we will nod our head and say "Yes, we believe!"

Notes are VERY HELPFUL!!

I know it takes more time, and you are already donating time to this project, but your notes describing your weather observations are always appreciated. We don't have time to read every note every day, but when we go back to study individual storms, your notes become incredibly valuable. Also, these data are being archived and will be available for years and probably decades to come. Your notes add considerably to the historic value of your reports. So WRITE AWAY!

CoCoRaHS music?!?

Perhaps I'm going off the deep end now, but there is more to life than science. Some of you are very creative and very musical. For years I have been trying to come up with a unique CoCoRaHS theme song that is totally original, not an adaptation of some other music, and captures our sense of awe, respect, and enthusiasm for the weather and also brings out the "community spirit" of friends, neighbors, relatives and total strangers all working together. I might stumble into something eventually, but I've had little inspiration so far. We've had great photographs contributed to CoCoRaHS, and a few poems have been written -- but no theme song. Sooooo, if you happen upon a musical inspiration, please let

me know. I can play a few chords on a guitar and play a decent electric bass. Some day I would love to assemble "The CoCoRaHS Band" to perform this wonderful and forthcoming and much anticipated work. I await your reply.

Automated rain gauges are great for some things, but not CoCoRaHS

We get lots of questions about using home electronic rain gauges for measuring daily precipitation. I will give a more complete answer soon and explain why I feel the way I do. We will post this on our FAQ webpage. For now, please know that we encourage people to have and use electronic gauges for observing rainfall timing and rainfall rates, but for your daily precipitation total we would like this to come from the 4" diameter dual-cylinder gauge (or the NWS 8" diameter standard rain gauge for those who are lucky enough to have one). Not all gauges are created equal and side by side gauges may not read identically. For the purpose of our research and comparisons, it is best that we all use the same gauge. You can use a recording gauge as backup when you are away and we always appreciate folks noting the results from different gauges in their notes. We all learn from this. But do refrain from using the automated gauge for all daily reports. If this is your only option, we will accept the data from your gauge IF you always note this in your remarks. That way data users will be able to interpret the data appropriately.

450 people read the last e-mail -- to the end

I'll save this bit of news until the end, but I was delighted to hear back from almost 450 of you who read the last e-mail all the way to the end. 200 of that 450 read and responded the very first day and nearly 40 in the first 1-2 hours -- which was sort of amazing to me. While 450 is only 15% of our total mailing list, folks that conduct surveys tell me that a 15% response rate is very high -- even for much shorter documents.

Interestingly, several people replied who are not even CoCoRaHS participants. There was one reply from a meteorologist in Europe. So, based on this positive response, I will continue to send out messages now and then, share a bit of what we are learning, and try to steer this strange and wonderful ship we call CoCoRaHS.

And FINALLY -- 3 MORE YEARS!!!!

Yesterday we got confirmation from the NOAA (National Oceanic and Atmospheric Administration) office of Education that our CoCoRaHS project was selected for funding. This is GREAT NEWS! as it means we will have partial salary support for the next three years for our two very important people -- Henry

our "National Coordinator" and Julian our "web, database, education and customer service master and jack of all trades". We will still need to do some additional fund raising, but this assures a lively future for CoCoRaHS. This also means that we can begin to expand into new states. The next CoCoRaHS state will likely be Illinois (tell your IL friends). Henry will also be traveling to Montana in two weeks to give a pitch for the program. Several of you have written about MT, so we'll see what happens. We can always find volunteers willing to measure and report precipitation, but we also have to find leaders willing and able to support the effort on a state and local level. Thanks for pulling for us!

Sincerely and enthusiastically,

Nolan Doesken