

COCORAHS POST-STORM UPDATE

FORT COLLINS, CO — Wednesday, October 12, 2005

Major storms—good observing

The 2006 water year (Oct. 1, 2005–Sep. 30, 2006) is off to a stormy start for many areas. Nearly all parts of our network have already received significant moisture. The wettest day so far has been Oct. 10. We've gotten 1091 precipitation reports for the 24-hour period ending Monday AM, and 1012 of those had measurable precipitation. 314 stations reported snow (Las Cruces—you'll get your turn :-). The average precipitation for all 1091 reports was 0.90". That's a lot of moisture considering our large multi-state area.

Here are a few interesting individual reports

Near Joes in SW Yuma County, Colorado, and over much of northwestern Kit Carson County, a total of 4 inches of rain has fallen since Sunday. That's a lot for that country. Let me know if water starts flowing in the Republican and Arickaree rivers out there. They are normally dry.

Here in Fort Collins, we had not a single flake of snow, but when the clouds lifted yesterday morning the ground was white both west and north of us. Also to our east, the higher grounds of northern and southern Weld County were also covered. Several of our volunteers are still without electricity (we haven't gotten their reports).

We had two stations up in Summit County who reported over 20" for the storm -- just south of Breckenridge. Our other greatest totals were in Elbert and Arapahoe Counties where several stations had well over a foot of wet snow. Our volunteer 14 miles ENE from Kiowa reported 24.5" of snow on the level yesterday morning.

We tend to think that summer thunderstorm rainfall is highly variable, but snow is not. This storm showed many examples of huge variations over short distances much of it associated with small temperature ranges near the freezing point.

Measurements not bad for our first major snowfall!

As we all know, it is much harder measuring snow and it's water content than simply measuring rain. I usually send out a snow measurement instruction

reminder before the snow season begins each year. This year, the weather beat me.

Checking the precipitation and snowfall maps, it's obvious that there were the normal struggles trying to sort out rainfall, melted snow, new snow accumulation, and total snow depth. But for the most part you who were in the path of this storm did a fantastic job.

Here are a couple of reminders

To get a reasonable measurement of the water content of snowfall, the funnel and inner tube of your gauge needs to be removed so that snow collects in the large outer cylinder.

Precipitation: Remember that this includes both the rain that fell PLUS the water content of all snow that fell in the gauge. The snow must be melted and measured in the inner cylinder to get complete data.

Snowfall: "Depth of New Snow" refers to the snow that has fallen in the past 24 hours. It is the amount that has ACCUMULATED, ideally measured in a representative area free of abnormal melting or drifting, and should be measured prior to melting or settling. Snowfall is reported to the nearest one-tenth inch (0.1"). If snow falls but melts on contact with the ground, that is only reported as a trace "T". If snow accumulates but then melts or settles by the 7 AM observation time, the snowfall should be reported as the greatest depth of new snow that HAD accumulated since the last observation -- prior to melting, settling or drifting.

For example—and this occurred in many areas near Denver on Monday—if snow falls during the day and accumulates to 3.0" but then melts so that none is left the next morning at 7 AM, then the correct report is 3.0" of snowfall. However, as shown below, the total depth on the ground would be reported as 0.0". That way we know that 3" had accumulated but melted by 7 AM

Snow Depth: "The Depth of Total snow" refers to the average depth of snow on the ground at 7 AM—including both new and old snow. So this morning, some of you who still have snow left on the ground should report 0.0 for the amount of new snow but you will have to measure and report the depth of the old snow remaining on the ground. Since it melts and settles unevenly, this measurement is an average. If half the ground has 5" left and half is bare, you should report 2.5" (we average to the nearest half inch in CoCoRaHS) but please mention in your comments that snow depth varies from 0 to 5"

Core samples: I won't take the time right now to talk about when, where and how to take core samples, but I recommend you review our online or printed instructional materials. Core samples are an excellent way to get an

independent measurement of the water content of snow on the ground. Sometimes they are critical for getting good data since our gauges don't catch wind-driven snow very well.

**** ** * SUGGESTIONS * ** ** ***

After a storm, I highly recommend you take a look at the maps and reports of precipitation and snowfall (just select "snow" or "precipitation" from the "Map Type" menu in the upper left hand side of the maps page). See how your data compare to others around you. Sometimes this may help you spot a problem with your observation that you can then correct. We do our best to check over data, but with so many volunteers reporting, we can't always keep up. Avoid mistakes and it helps all of us.

Virginia and Maryland have joined

Starting October 1, Virginia, Maryland and the District of Columbia are now active participants in CoCoRaHS. Already 12 observers from VA have signed up and 46 from Maryland. A handful of volunteers got their reports in from this past weekend and WOW what a rain they had. 4 to 10" of rain fell in just over 2 days back east. It was apparently widespread over several states which is why they have had such flooding. Anyway, let's send a rousing WELCOME to our new eastern CoCoRaisins.

Water Year summaries

Thanks to all of you who have compiled and checked your data for the past year and sent us your summaries. We can compute totals ourselves, but it is really helpful when our volunteers double check their data.

I will be compiling a Water Year 2005 summary on Thursday. It's never too late to send in your summary, but if you want me to include it in my report, please get it to me by tomorrow morning.

Tally for September 22

We set a CoCoRaHS record on Sept. 22 with 1223 daily reports (not counting Nebraska). A few more are trickling in. Good job and thanks for your interest in being part of the CoCoRaHS network.

Sincerely, and have a fine autumn.

Nolan