

# The Catch

## **COCORAHS SNOW!! LOVE IT, HATE IT, OR MEASURE IT!**

FORT COLLINS, CO — Saturday, December 8, 2007

### **Best weekend greetings to CoCoRaHS participants, friends, and family!**

IF YOU HATE SNOW OR LIVE IN AN AREA THAT DOES NOT TYPICALLY RECEIVE SNOW, THEN PLEASE DISREGARD THIS MESSAGE. IF YOU LIKE SNOW OR AT LEAST WANT TO DO A GOOD JOB MEASURING AND REPORTING IT, THEN PLEASE READ ON.

IF YOU ARE ALREADY EXPERT AT MEASURING SNOW, THEN FURTHER READING HERE IS OPTIONAL.

### **A Snowy Day**

It is cold, white and slippery here in Fort Collins today. We awoke to about 3" of snow yesterday AM -- the kind that sticks to everything and makes perfect snowballs. Nothing has melted since then, and today is still cloudy and cold with an icy coating of freezing drizzle on everything. Our chickens wisely refused to leave the coop this AM, and our cats were reluctant. I can't blame them. The dogs, on the other hand, were cautious at first and then exuberant. More flakes are floating down right now and more are expected. Indeed, it is "that" time of year.

Yesterday was a big day for CoCoRaHS. Nearly 30% of all our reporting stations across the country reported measurable snowfall (at least 0.1") on the Friday (Dec. 7) reports. It was a grand day for snow lovers in Crested Butte, Colorado, as one of our volunteers there reported over 18" of new snow between 8:30 AM and 6 PM during the day on Thursday -- that's an average of 2" per hour all day.

But with the snow have come many, many questions and a few curious and confused reports. So here is my annual reminder on how to measure and report precipitation that falls in the form of snow. Keep this as a reference when you need it. Yes, even Brownsville, TX can have snow. I will try to be clear and concise, but I HIGHLY RECOMMEND you view the Training Slide Show and also

the Snow Measurement Video available via the CoCoRaHS website. High speed Internet connections are recommended for both.

The Training Slide Show is accessed by clicking the on the right-hand side of our homepage on the small photo of pretty clouds that says "Training Slide Show." The video can be accessed by clicking just above that right on the word "Snow" in the box that says "Things to Know about Rain, Hail and Snow." That takes you to a new page where you then have to click on "Snow Video". Do not hesitate to explore the CoCoRaHS website. Click away -- you can't break it.

## **INSTRUCTIONS**

First of all, take a look at your daily precipitation report form as you read these instructions. We will follow that form and format as we describe each element and entry.

### ***Date***

The data automatically displays today's date. If you are going back to enter older data from previous dates, make sure you select the correct date.

### ***Time***

The time automatically displays your default daily time of observation. That was the preferred time that you selected when you first signed up. If it says 7 AM but you actually took your measurement at 8:10 AM, then type in the actual time you took your measurements.

### ***Daily Precipitation Amount***

The next field is your daily precipitation amount -- "Rain and melted snow (and ice) that have fallen during the past 24 hours." Here you report the water content of the rain, snow and/or ice that you have received in the past 24-hours. You must melt the contents of your gauge and then pour it (without spilling) into your inner cylinder for measurement. Remember that the water content is reported to the nearest 0.01" DO NOT report the depth of snow in this column -- DO report the water content after the snow has been melted. If you do not measure the water content or if you happen to spill it (it happens), then please type in NA (which stands for "Not Available"). If due to strong winds or other factors, the amount in the gauge is not representative of what actually fell, then enter the water content from your core sample of snow and/or ice pellets that have fallen in the past 24 hours. If you do use your core sample rather than your actual gauge catch as your daily precipitation entry, be sure to mention that in your "Observation Notes". If you add warm water to your snow to speed up melting (that's the way I prefer), then be sure to note the exact amount of warm water you added and then subtract that amount out to get the correct amount of water content from the new snow.

### ***Observation Notes***

Please take advantage of the "notes" to describe anything significant about the weather in the past day. Also describe any challenges or uncertainties you experienced in your observation. For example, you might say "Snow was accompanied by strong winds and considerable drifting. Measurements are uncertain." Try to be brief, but there is no limit on the length of your notes. It is useful to read the notes from other observers to learn how to effectively describe the situations you encounter. To view observation notes, click on: <http://www.cocorahs.org/ViewData/ListDailyComments.aspx> and select the states/counties you are interested in.

### ***New Snow—Depth of New Snow in inches, reported to the nearest 1/10 inch (0.1")***

New snow refers to the snow that has accumulated in the past 24 hours. Ideally measure on a snow board or other smooth, level surface where the snow is even and undisturbed. Use a ruler to measure the snow. If the snow is drifted and uneven, take an average of several measurements but avoid including the largest drifts. If all snow that fell melted immediately on contact with the ground and never whitened the ground, then report T (trace). If the snow accumulated to some depth, but then melted, settled or blew away, report the maximum accumulation prior to melting, settling, and/or blowing. If it snowed but you did not measure it, then please type in NA. Report 0.0" for the new snow amount only if it did not snow at all in the past 24 hours.

(We get many reports of 0.0" for snowfall when it is obvious from surrounding stations that snow has fallen. Please do not report 0.0" when new snow has fallen.)

### ***New Snow—"Melted Value from Core to nearest hundredth (0.01")"***

This is an optional but very useful measurement of the water content of new snow. Use procedures shown in our training materials to collect a representative core sample of the new snow that has accumulated in the past 24 hours. Melt this core sample and measure its' water content in the same manner that you measure what landed in your gauge. If this measurement gives a more accurate measure than what landed in the gauge, then enter this amount here and also in "Rain and melted snow" above. This will then become your stated precipitation total for the day. Please mention this in your "Observation Notes".

### ***Total Snow on Ground—Depth of Total Snow in inches to the nearest one-half inch***

This is the average depth of any snow on the ground (old, new or both) at the time of your daily observation. If there is no snow on the ground, then please type in 0.0". The computer defaults (automatically assumes) to NA -- not available. But PLEASE go ahead and enter your average total snow depth if you can, even when it is zero. If it snowed yesterday, but it all melted, then report 0.0. If there are only patches of snow left on the ground (such as in shaded areas),

then report T (trace). If appropriate, take an average of several measurements. When it is cold, and snow has been on the ground for several days, it may be possible to estimate the depth without having to tromp all over your yard every day. Snow depth information is important for many applications, so please measure and enter the total depth of snow on the ground even if it has not snowed recently.

### ***Total Snow on Ground—Melted value from core to the nearest 0.01"***

This is an optional but extremely useful measure of the total water content of the snow on the ground. Snow scientists and hydrologists call this SWE -- which stands for "Snow Water Equivalent". This is the melted water content of a core taken at a point where the depth is close to the average depth for your area. In deep snow conditions (more than about 18") special equipment may be necessary. This measure allows professionals to determine the weight and water content of the snow. This information is critical for engineering and water resources applications. Each year, somewhere in the country, buildings collapse under the weight of snow. Your measurements may prove to be extremely valuable.

### **Nearing the end**

Because there are several things to keep track of when we measure snow, it is easy to make mistakes. Always check your data before entering. Then, if you can spare 2 minutes later in the day, check the data for your state and county on the CoCoRaHS website to see how your observations compared to those around you.

### **Correcting errors**

At any time, you can go back and correct previous entries. Click "My Data" on the top of the CoCoRaHS webpage and then select from the menu on the left-hand side of the page where it says "List/Edit" my reports.

### **Did you read to the end??**

If you read to the end of this and have viewed the training show and video -- and if you still have questions or need clarification, please don't hesitate to ask. Skill comes with experience but also by getting timely assistance and answers to questions.

If you are experienced with snow observations and data, CoCoRaHS could use help each day in spotting potential observing and reporting errors. If you would like to be part of the CoCoRaHS data quality assurance team (we are in the

process of forming this group), then please contact Nolan Doesken at: [nolan@atmos.colostate.edu](mailto:nolan@atmos.colostate.edu). In the subject line of your message, please type "CoCoRaHS data quality assurance team". I can't guarantee that I will respond right away, but I will keep this information on file as we get our QC efforts more organized.

Finally, remember you don't have to be a hero when it comes to snow observations. We're not as young as we used to be. Snow and ice are slippery and hazardous. Do not put yourself at risk just to measure the depth and water content of snow. Let your younger and more agile friends and family members take the winter measurements while you enjoy the snow from the warm comfort of your home -- or your location in the sunny south.

Good luck!!

*Nolan*