

The Catch

A COCORAHS ODE TO FREEZING RAIN

FORT COLLINS, CO — Thursday, November 30, 2006

Greetings:

Good evening from cold and snow covered northern Colorado. Our mild November weather has ended and winter is upon us. I greatly enjoyed our 8" of fresh snow (with 0.59" of water content) which fell here in our yard Tuesday evening and Wednesday morning. For a change, the snow fell nearly straight down, did not melt and did not drift. It was not a wet snow by any means, but with little wind it deposited several inches deep even on small branches and twigs -- GORGEOUS. There was the issue of settling to complicate my observations, but with very cold temperatures and a fairly dense snow, the settling rates were slowed. All in all, it was an easy snow to measure -- relatively. Core samples were a little tough since the snow was loose and did not stick together. The spatula method worked OK, but some loose snow stayed in the grass.

With the glorious whiteness reflecting sunlight and radiating thermal energy back up to space, temperatures dropped like a brick last night when skies cleared. Our official low was -4 F this AM in Fort Collins, the first subzero reading of the winter. Some outlying areas dropped below -10. It is winter! and it's probably good that we don't really know how much more cold weather lies ahead. Based on "El Nino" we'd be tempted to believe there won't be much subzero cold here in Colorado -- but there are always surprises and exceptions.

Freezing Rain

Living here in Colorado for the past 29 years, I have nearly forgotten what freezing rain is like. We rarely experience it. Likewise, sleet is something we see very little of. Either it rains or it snows -- not much in between. But in my almost 26 years growing up in the Midwest, I experienced my share of many forms of ice. I especially recall a storm in January 1967 in central Illinois when it rained hard for hour after hour -- maybe an entire 24 hour day -- with the temperature hovering between 28 and 31 F. Chicago was buried beneath an incredible snow -- but we were glazed from head to toe. I recall the sound of

trees cracking and breaking all night -- occasionally scraping the edge of our roof. I remember the crystal wonderland when the sun broke through a day later casting a million sparkles where just the day before was dark grey rainy darkness. And I remember missing a whole week of school as we waited for power lines to be repaired. As a teenager in a basketball-crazed part of the country, I didn't let a little freezing rain slow us down. We played outdoor basketball almost every day -- slipping, sliding, falling and having a rousingly good time. When our shots went through the rim, the ball would stick in the ice-covered net. To get it out we would have to jump up to knock the ball back out through the rim so we could keep playing.

I've realized this past year as CoCoRaHS has spread to Kansas, Oklahoma, Texas, Missouri, Indiana, Pennsylvania, Maryland, Virginia and now to Illinois, that we spread to ICE COUNTRY. However, we have never really given instructions on how to measure and report freezing rain. Today the inevitable happened. I got an e-mail this morning with few words -- but important ones. The message was short and to the point: "How do I measure ice?"

So, How do I measure ice??

Freezing rain is precipitation that reaches the ground in liquid form and then freezes on contact. The deposits of ice are called glaze. Glaze is not snow or sleet. If you receive freezing rain only, then you melt what lands in your gauge and report that as your daily precipitation amount. You report the new snow amount to be 0.0. However, the entry for "Total Depth of Snow" includes the depth of both snow (new and old) AND ice. So if the glaze has accumulated to a depth of about 1/2 inch, you report 0.0 for your snowfall but 0.5 as your total depth of snow (and ice) on the ground.

Freezing rain can make it nearly impossible to remove your gauge from its mounting bracket for melting and measuring. If freezing rain is anticipated, it may be a good idea to remove the gauge from its' bracket and set it securely on the ground. Warm water can be used to melt the ice on the bracket to free the gauge, if necessary.

There is no perfect fast way to melt the ice inside and along the rim of your gauge. You only want the ice that has accumulated inside the beveled rim of your gauge to end up in your measurement for the day. Bring the gauge inside and let the ice melt. Adding a measured amount of warm water to the inside of the gauge can hasten the melt, if necessary. Use of microwaves to melt the ice inside the gauge is not recommended as we do not know how well these gauges hold up to microwaves.

If you can afford it, winter is the time to splurge and get a second gauge. You can order extra outer cylinders from the company that makes them up in

Minnesota. There is a parts list inside your rain gauge box. It is really great to be able to bring in one gauge and set out another so you don't have to rush melting and measuring the precipitation. I've heard from a few of you, that you've collected three or even four gauges to make winter measurements, including core sample measurements, quicker and easier.

In the event of freezing rain, there is a very useful measurement that you can make. All you need are your eyes and a simple ruler. Engineers for utility companies, power transmission lines, communications towers, etc need to be able to compute the weight of ice buildup so they can better design and build structures to withstand heavy ice loads. Using a ruler, measure the RADIAL THICKNESS of ice that has accumulated on objects above ground. Straight twigs and fence wires provide good surfaces for radial ice thickness measurements. The radial thickness is the average thickness of the ice sticking out in all directions from the center of the collection surface. It is the RADIUS of that ice that we are interested in, NOT the diameter. Use a ruler to measure the radial thickness to the nearest 1/8 or 1/10th inch. Report that information along with any other useful remarks in your "Observation Notes"

Speaking of "Observation Notes", we greatly appreciate the notes you record about your weather conditions. There were some great and very useful comments recorded today from our Midwest observers which help describe this complex storm. Check it out at:

<http://www.cocorahs.org/ViewData/ListDailyComments.aspx>

What about Sleet?

The term "sleet" typically refers to ice pellets or a combination of rain, freezing rain, ice pellets and snow. More recently, meteorologists have been calling this a "Wintry Mix". Precipitation that is already frozen before it reaches the ground -- including ice pellets -- is measured and reported the same way you would measure and report new snow. I see some of our Kansas and Missouri volunteers reported accumulations of sleet in their reports this AM -- good job!

Some comments about ice?

When I was in college, I recall walking home from class during a freezing rain storm carrying my engineering and meteorology books. Just as I got to the entry to my dorm everything became a blur. Apparently, I slipped on the glazed sidewalk, my feet went out in front of me, I fell backwards and landed mostly on my head. When I woke up I was leaning against the wall of the dorm, propping myself up and trying not to vomit. My books and papers were scattered about -- beginning to be covered with a slippery film of ice. I had nearly been knocked

unconscious and had a mild concussion -- all from freezing rain. And what did my dorm mates do? They laughed! Being young and agile, I had broken no bones. If I had a similar encounter with freshly deposited glaze I probably would end up a broken hip, elbow, and who knows what else.

So why do I tell you this? I want you to know that as much as we appreciate your weather reports, PLEASE do not hurt yourself. I would rather see missing data for your station for an important storm than to find out that you broke a bone and ruined your whole winter. There are probably dozens of you who can share stories about close encounters with freezing rain -- and that doesn't even include the encounters you've had with your and other cars. So please be careful. (Those of you who have moved to southern TX and New Mexico are probably smiling as they read this -- realizing that while the rest of us are freezing you're still playing golf. Bahh Humbug to you!)

Send Photos

If you want to share your freezing rain experiences with us, and bring back my childhood memories of Midwestern ice storm, then feel free to send your favorite photos.

New Record

CoCoRaHS set a new record today. It was not the snow, sleet, freezing rain or rainfall totals, although there were some impressive precipitation reports today, especially in Missouri and Indiana. The new record came from Illinois. With the help of a new volunteer recruiting campaign, 50 new volunteers have signed up since Wednesday evening. Another dozen or so signed up in the St. Louis, Missouri area and several more in NW Indiana. Never before have this many volunteers joined the project in a single day. The National Weather Service at several Forecast Offices in the Midwest all posted links to CoCoRaHS. The results have been phenomenal. If you are one of these many new recruits -- welcome aboard!! It will be a fun ride, wherever Mother Nature may lead us in the months ahead.

Stay warm!

As temperatures drop and we head into winter, stay warm and stay in touch. The darkest and coldest days of winter lie just ahead, but only 12 weeks from now (and you know how fast time flies) we'll be seeing spring just around the corner. Hang on! We'll make it! Please, no teasing from you southerners -- you suffer in different ways :-)

Best wishes to all.

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