

The Catch

COCORAHS -- PRESIDENT'S DAY WEEKEND

FORT COLLINS, CO — Thursday, February 17, 2011

Good evening,

Just got back from a quick work trip to Steamboat Springs, CO. It was amazing traveling there yesterday in warm sunshine, southerly winds and melting snow, followed by a mild evening and a bright moon -- only to awake to a furious blizzard and wind tumult when the cold front hit around 3:30 this morning. Our drive back to Denver by way of Rabbit Ears Pass and the Eisenhower tunnel brought the experiential lesson of winter weather in the West with snow tumbling down and piling up along and west of the crest of the Rocky Mountains quickly turning to strong, gusty dry downslope winds as we crossed the Continental Divide and dropped down the east (lee) side of the Rockies towards Denver. After all these years, it never ceases to amaze me what a range of mountains in the path of a strong jet stream can do.

Climate and Colorado's Water Future Friday, March 11

For all of you who are far away from Colorado, please forgive me and skip over this section. But if you are in or near Colorado or plan to be on Friday March 11, I want to bring to your attention a special program hosted by the Colorado Foundation of Water Education called "Climate and Colorado's Water Future". I'll be one of the speakers at this event and it will include a unique and "chilling" tour of the National Ice Core Laboratory in Lakewood, Colorado. While it is geared for science teachers (and you can even get course credit for your participation), it is open to the public and especially for CoCoRaHS volunteers. The program runs all day, but the afternoon sections are optional. If you possibly can, please consider this opportunity. It will also include a CoCoRaHS training session. Go to the Colorado Foundation of Water Education website to learn more and to register for this awesome program. Enrollment is limited, so sign up soon.

<https://www.cfwe.org/>

Your suggestions for measuring Snow Water Equivalent (SWE) in deep and/or icy snow

After my recent pleas for more measurements of the water content of the total snowpack (both old and fresh snow) and my comments about the challenges of getting a good measurement with our regular CoCoRaHS rain gauge, a bunch of you wrote back with your own suggestions. It turns out that many CoCoRaHS volunteers are already overcoming these challenges with a variety of "off the shelf" devices. A few of you are using 4" diameter metal pipe, and quite a few have devised ways of using 4" diameter thin or thick walled PVC pipe sections. Here are a couple of the many suggestions I received. Thanks to all of you who took the time to write and share your ideas.

Here's one

"I have a simple, cheap and pretty efficient cutter that serves well. I use a simple length of four inch galvanized metal flue pipe. With a little care in the crimping and making sure the end is smooth it cuts very nicely through the crusty ice and snow all the way to the snowboard. Using a large masonry trowel I can slip it under the end of the tube and slide it out and lift a clean sample. The flue pipe I use is only about 18" inches long, but it comes in three or four foot sections at the Hardware store. I haven't needed anything longer here but this last week I was beginning to wonder because we got more snow in this area than we have had since I was a kid in high school. It was fun then. We are having record cold as well today. -16°F."

Have a good day.
MO-NW-4

Here's another

"My suggested approach to measuring SWE every Monday is as follows:

Items required: 3-4 ft lengths of PVE (Sch 40?) one 4 inches in Dia, one 3 inches, shovel, bucket or large Pyrex measuring cup, std rain gauge.

Process:

Shovel to edge of snowboard and slide shovel under snow to be measured at snow board level.

Slide 4" PVC vertically down through snow to shovel surface. Tap top of PVC pipe, as required.

Pull shovel and 4" PVC to shoveled area using shovel to trap snow core inside PVC Pipe. Clear all snow/ice off all surfaces (shovel&pipe)

Slide pipe end off shovel to allow snow core to drop into bucket or measuring cup. Insert 3" PVC inside 4" PVC and slide inside to force all snow/ice out into bucket.

Melt snow/ice and measure using rain gauge inner tube. I use a large Pyrex glass measuring cup which I microwave until snow/ice is all water. If bucket is used pour snow/ice into measuring cup, a small amount at a time, and heat in microwave. Hot water in measuring cup can be used to all core snow/ice is captured and melted.

Record total water from core measured using rain gauge. Measuring cup markings can be used to estimate water amount expected. Record all water measured as it may take many readings on rain gauge inner tube.

Developing a inch per cup or ounce table may help simplify this process. Our CoCoRaHS input form says to record SWE to nearest hundredth but this accuracy is suspect as the process and large melted amount makes this accuracy unlikely. I suggest a more reasonable level of accuracy may result to more reports being submitted.

I found PVC is safer than metal pipe and easier to handle. Most Hardware/Home improvement stores offer PVC pipe in various lengths and a CoCoRaHS member can use a length appropriate for the area. I suggest using PVC at least one foot longer than the expected max. snow on the ground depth for the area."

Just my NH suggestion!
Danbury, NH 03230

And there were many others. Some of you are even cutting some teeth and beveling the edge of the PVC or metal to better cut through ice layers. All I can say is GOOD JOB and keep it up. Over 400 of us reported our total SWE this past Monday and a few of you had over 5" of water content in your core samples. Let's have even more SWE reports this next Monday.

Hail Pad Party Success

We had a nice turnout on Saturday morning at the 4-H building at "The Ranch" near Loveland, Colorado for our nth annual CoCoRaHS Hail Pad Party (I'm forgetting how many we've had). We made over 500 fresh new hail pads to get ready for the upcoming hail season and we enjoyed a "science interlude" with Pat Kennedy -- CoCoRaHS volunteer and radar scientist who demonstrated the theory and practice of dual polarized radar and how it can be used to improve radar estimates of rainfall rates and the presence of hail. Keep a watch out for dual polarized radar as this technology is scheduled to begin to be upgraded into some of the NWS radar systems later this year.

Noticeably more daylight

Yes -- we're nearly two full months past the winter solstice now and everywhere in the country -- especially Alaska -- the greater day length is apparent. CoCoRaHS observations get a little easier now when most of us can do them in broad daylight instead of winter dark or half light.

Speaking of Alaska, we don't give near enough credit or visibility to our CoCoRaHS volunteers up there. We don't have hundreds, but we do have a few dozen hard working volunteers measuring in the dark to send in precipitation data. The two wettest sites so far this calendar year are our Edna Bay and Juneau 11.9 WSW stations -- both of which have had nearly 18" of rain and melted snow since January 1.

Did you see that?

We're still marveling at the cold wave that hit southern Kansas, northern Oklahoma and western Arkansas last week. The folks in Oklahoma are working to verify this measurement, but there was a credible report of a low temperature of -31F. If that verifies that will be the all time coldest temperature ever measured in OK. And that's COLD!!!!

March Madness

Prepare to help us and your state in the annual CoCoRaHS March Madness competition. This "friendly" competition is to see which state can sign up and engage the most new CoCoRaHS volunteers. New recruits have only

been trickling in lately, but I have the feeling we're about to see a huge surge in March. So go out and start recruiting new volunteers.

Thanks, and enjoy what's left of winter. We're coming down the home stretch and spring is just around the corner. All over the country, NWS "Warning Coordination Meteorologists" are scheduling and conducting severe weather spotter training classes. Participate if you can.

Best regards,

Nolan Doesken
Colorado State University