

“In Depth” Snow Measuring



MEASURING SNOW



Casey Mayfield

- **Snowfall measurement is typically more difficult than rainfall**
- **Snowfall measurement takes a little more time**

Accurate and timely snowfall measurements can be extremely important to your local National Weather Service office, public works departments, media outlets, climatologists, and other scientists.



TOOLS OF THE TRADE



- **4" Diameter CoCoRaHS Rain Gauge**
 - **Outer Cylinder for winter weather**



TOOLS OF THE TRADE



- **Snow measuring board**
 - 16" x 16" piece of $\frac{1}{2}$ or $\frac{3}{4}$ " plywood painted white



TOOLS OF THE TRADE



- **Snow ruler or Yardstick**
 - Measure in 10th's of an inch



TOOLS OF THE TRADE



- **CoCoRaHS “Snow-Swatter” and spatula**
 - Helps with taking core samples



WHERE TO MEASURE

- Before it snows, put your snow measuring board outside.
- Your snow measuring board should be on the ground in an area not subject to drifting



WHERE TO MEASURE



- It's a good idea to mark the location of your snow board with a flag or reflector



IF SNOW IS ANTICIPATED . . .



Remove the funnel AND inner tube, otherwise snow will clog the funnel



TAKING MEASUREMENTS OF SNOW



THE FOUR CoCoRAHS SNOW MEASUREMENTS ARE:

1. The depth of new snow (new snowfall)
2. Liquid water equivalent of new snow (either in the gauge or on the snowboard)
3. The total depth of new snow and old snow and ice at observation time
4. Snow Water Equivalent (SWE) of total snow on the ground (optional)



DEPTH OF NEW SNOW

1. The depth of new snow (new snowfall)
2. Liquid water equivalent of new snow (either in the gauge or on the snowboard)
3. The total depth of new snow and old snow and ice at observation time
4. Snow Water Equivalent (SWE) of total snow on the ground (optional)



MEASURING THE DEPTH OF NEW SNOWFALL



WHAT IS SNOWFALL ?



Snowfall is the accumulation of new snow and ice in the past 24 hours prior to melting or settling.



THE 10:1 MYTH

Do NOT estimate snowfall by converting the liquid in your rain gage to a snowfall amount!

- The adage that “*one inch of rain equals 10 inches of snow*” is a myth!
- The snow/water equivalent ratio is dependent on many factors, not just surface air temperature.
- Snow to water ratios can vary from 8:1 or less to 20:1 or more!



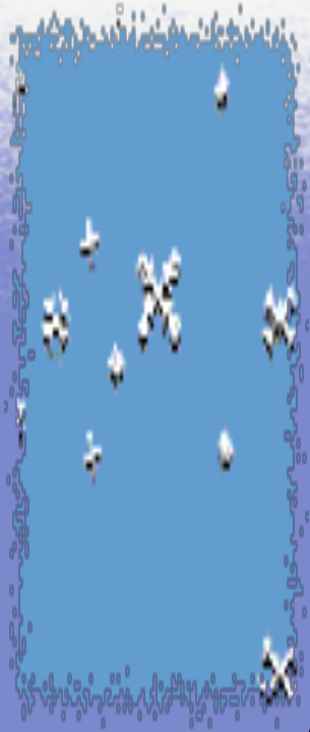
WHEN TO MEASURE NEW SNOW

- Measure new snowfall as soon as possible after it ends, before settling and melting occur.
- This often will not be at your regular observation time.

Note that we never measure the depth of the snow in the rain gauge itself. Any frozen precipitation in the rain gauge must first be melted, then measured.



A SNOW EVENT



2.4 inches of snow

Some melting and settling occurs

1.2 inches

Monday
7:00 am

Snow begins
9:00 a.m.

Snow ends
1:00 p.m.

Measure snow as close to 1:00 p.m. as possible

Tuesday
7:00 am



WHERE TO MEASURE NEW SNOWFALL

1. Find a nice, level place to measure where drifting or melting has not occurred (like a snow board).
2. Slide your snow ruler into snow until it reaches the ground/board surface.
3. Read value on snow ruler (value is always to nearest tenth of an inch, like 3.4 inches).
4. If using snowboard, sweep it clean after taking a snow core. Place the board on top of the new snow.



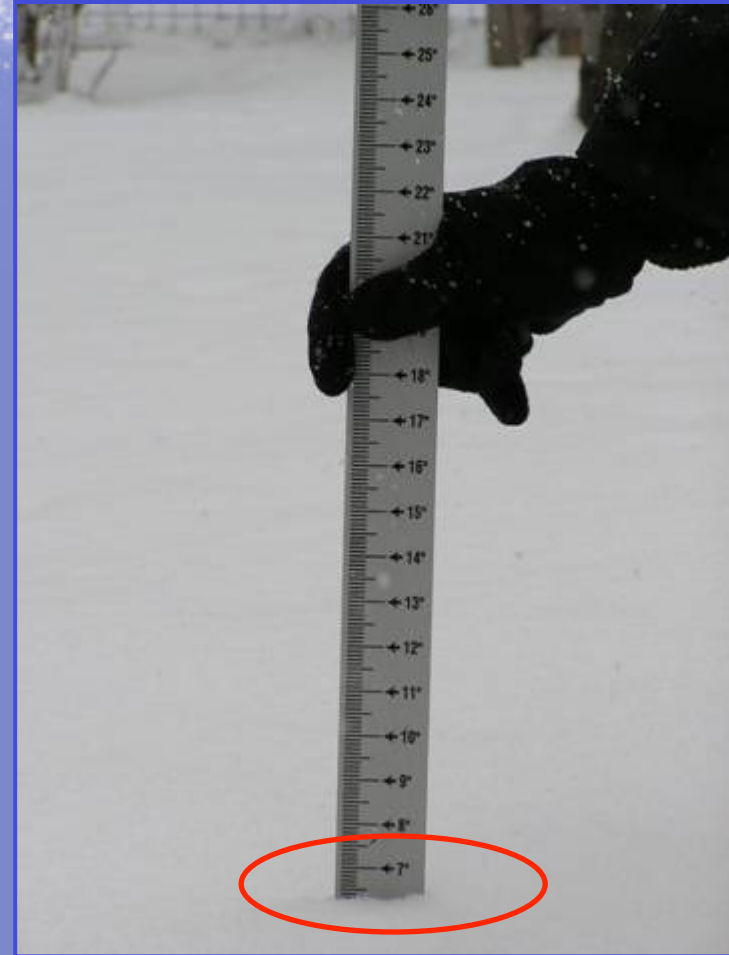
SNOW MEASURED UNDER A TREE



Notice that only 3.0 inches of snow has accumulated here



SNOW MEASURED IN THE OPEN



Whereas 6.5 inches has fallen in the open



ANGLE OF MEASUREMENT



Measure at eye level, as an angle will give you an inaccurate measurement



REPLACE THE BOARD



After you have measured the snow on your board and taken a core sample, clean it off and replace it on top of the newly fallen snow. Be sure to mark its location. Now you are ready for the next snowstorm.



REPORTING THE DEPTH OF NEW SNOW

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

11/9/2011 *Observation Date ?

7:00 AM *Observation Time ?

0.59 *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?

Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?

Precipitation is amount from snow core. Poor gauge catch - not representative of what fell. Amount melted from gauge 0.29"

New Snowfall

6.5 Accumulation of new snow in inches to the nearest **tenth** ?

0.59 Melted value from core to the nearest **hundredth** ?

Total Snow and Ice on Ground at Observation Time

7.0 Depth of total snow and ice (new and old) in inches to the nearest **half inch** ?

0.63 Melted value from core to the nearest **hundredth** ?

Report your measurement of new snowfall to the nearest tenth of an inch



IMPORTANT!

PLEASE DO NOT PUT YOUR SNOWFALL AMOUNT IN THE 'RAIN AND MELTED SNOW' BOX !!!!

Don't be tempted to put your snowfall amount here! It's a common mistake.

It should go here instead.

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

11/9/2011 *Observation Date ?

7:00 AM *Observation Time ?

~~6.59~~ *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?

Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?

Precipitation is amount from snow core. Poor gauge catch - not representative of what fell. Amount melted from gauge 0.29"

New Snowfall

6.5 Accumulation of new snow in inches to the nearest tenth ?

0.59 Melted value from core to the nearest hundredth ?

Total Snow and Ice on Ground at Observation Time

7.0 Depth of total snow and ice (new and old) in inches to the nearest half inch ?

0.63 Melted value from core to the nearest hundredth ?

LIQUID WATER EQUIVALENT OF NEW SNOW

1. The depth of new snow (new snowfall)
2. **Liquid water equivalent** of new snow
(either in the gauge or on the snowboard)
3. The total depth of new snow and old snow
and ice at observation time
4. Snow Water Equivalent (SWE) of total
snow on the ground (optional)



MEASURING THE WATER EQUIVALENT OF NEW SNOW



1. MEASURING SNOW WATER CONTENT OF WHAT FELL IN THE GAUGE



YOU MAY HAVE AN ACCUMULATION OF SNOW ON THE RIM OF YOUR GAUGE



HOW DO I KNOW WHAT TO MEASURE AND WHAT NOT TO??



Take your snow-swatter and tap gently on the rim of the gauge



WHAT FALLS IN THE GAUGE WE MEASURE



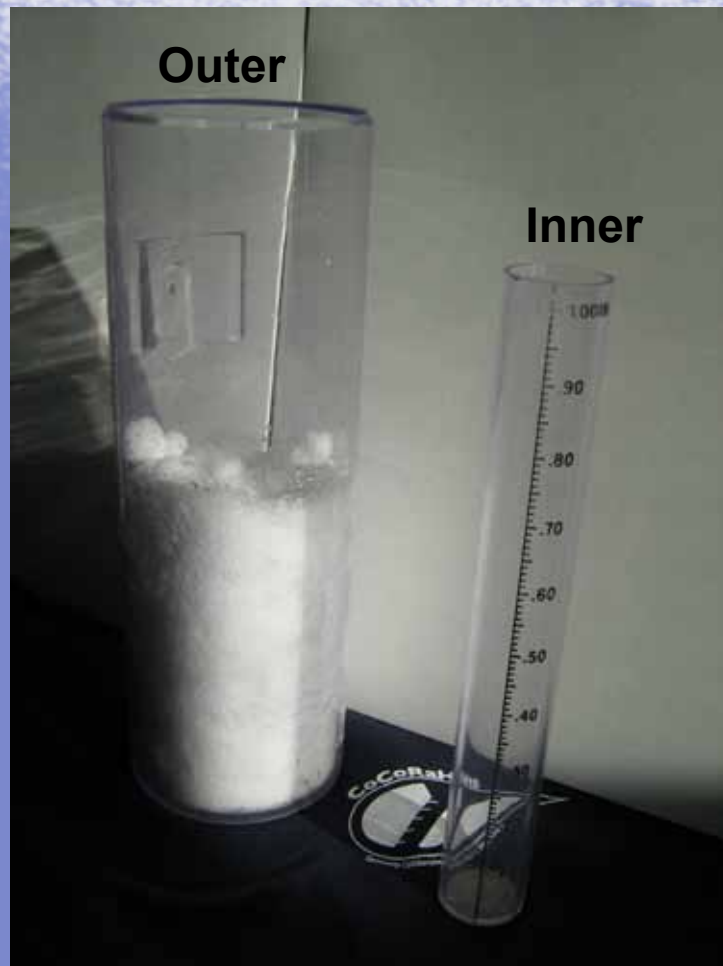
We will disregard the snow that lands outside the gauge.



Go ahead and clear away the snow from the gauge



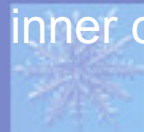
MELTING SNOWFALL



Notice that you have two cylinders



Add some warm water to the inner cylinder



CAREFULLY MEASURE YOUR TAP WATER BEFORE ADDING TO OUTER CYLINDER



Be sure to measure to nearest hundredth of an inch



ADD THE WARM WATER TO THE SNOW SAMPLE



Pour water directly into sample



Allow sample to completely melt



MEASURE THE LIQUEFIED SNOWFALL SAMPLE

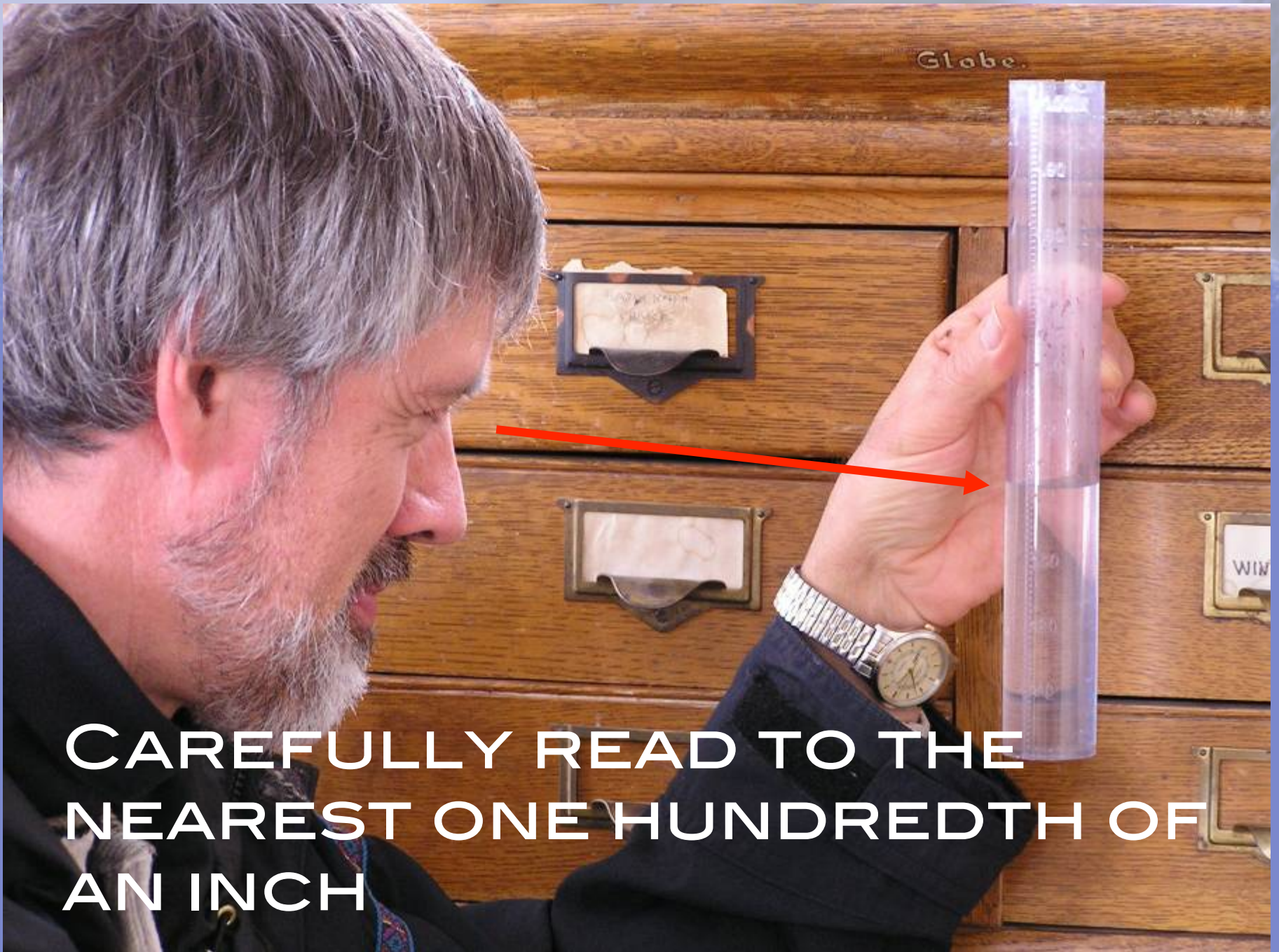


Pour snow sample into smaller tube



Remember "Every drop counts!"





CAREFULLY READ TO THE
NEAREST ONE HUNDREDTH OF
AN INCH

REMEMBER TO SUBTRACT THE AMOUNT OF WARM WATER THAT YOU'VE ADDED TO THE TUBE

Reading of 0.79 inches of water minus 0.50 inches of water added gives a final reading of 0.29 inches

Tube full	0.79
- Water added	0.50

Final reading	0.29



THE GAUGE MAY NOT ALWAYS GIVE AN ACCURATE MEASURE OF SNOW WATER CONTENT IN NEW SNOW . . . IT MAY BE NECESSARY TO TAKE A SNOW CORE SAMPLE OFF YOUR SNOWBOARD



2. WATER CONTENT FROM A SNOW CORE OF NEW SNOW

- Use your snow board or other hard surface.
- Take core after you have measured snow depth, but before you have cleared the board or surface of snow.
- For example, if you determined the total depth of the new snow is 4 inches, then take your core sample from an area where the depth of new snow is 4 inches.



TAKING A SNOW CORE OF NEW SNOW

Capture a core by inverting the outer cylinder and pushing straight down into the snow



Use something thin and sturdy to slide under the cylinder (spatula, snow swatter)



TAKING A SNOW CORE OF NEW SNOW

Like in the previous example melt and measure the snow



REPORTING LIQUID WATER EQUIVALENT OF NEW SNOW

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

11/9/2011 ***Observation Date** ?

7:00 AM ***Observation Time** ?

0.59 ***Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours** ?

Yes No **Report was taken at registered location?**

Observation Notes: (This will be available to the public) ?

Precipitation is amount from snow core. Poor gauge catch - not representative of what fell. Amount melted from gauge 0.29"

New Snowfall

6.5 **Accumulation of new snow in inches to the nearest tenth** ?

0.59 **Melted value from core to the nearest hundredth** ?

Total Snow and Ice on Ground at Observation Time

7.0 **Depth of total snow and ice (new and old) in inches to the nearest half inch** ?

0.63 **Melted value from core to the nearest hundredth** ?

Water melted from core is reported as the daily precipitation

Include amount melted from gauge in comments



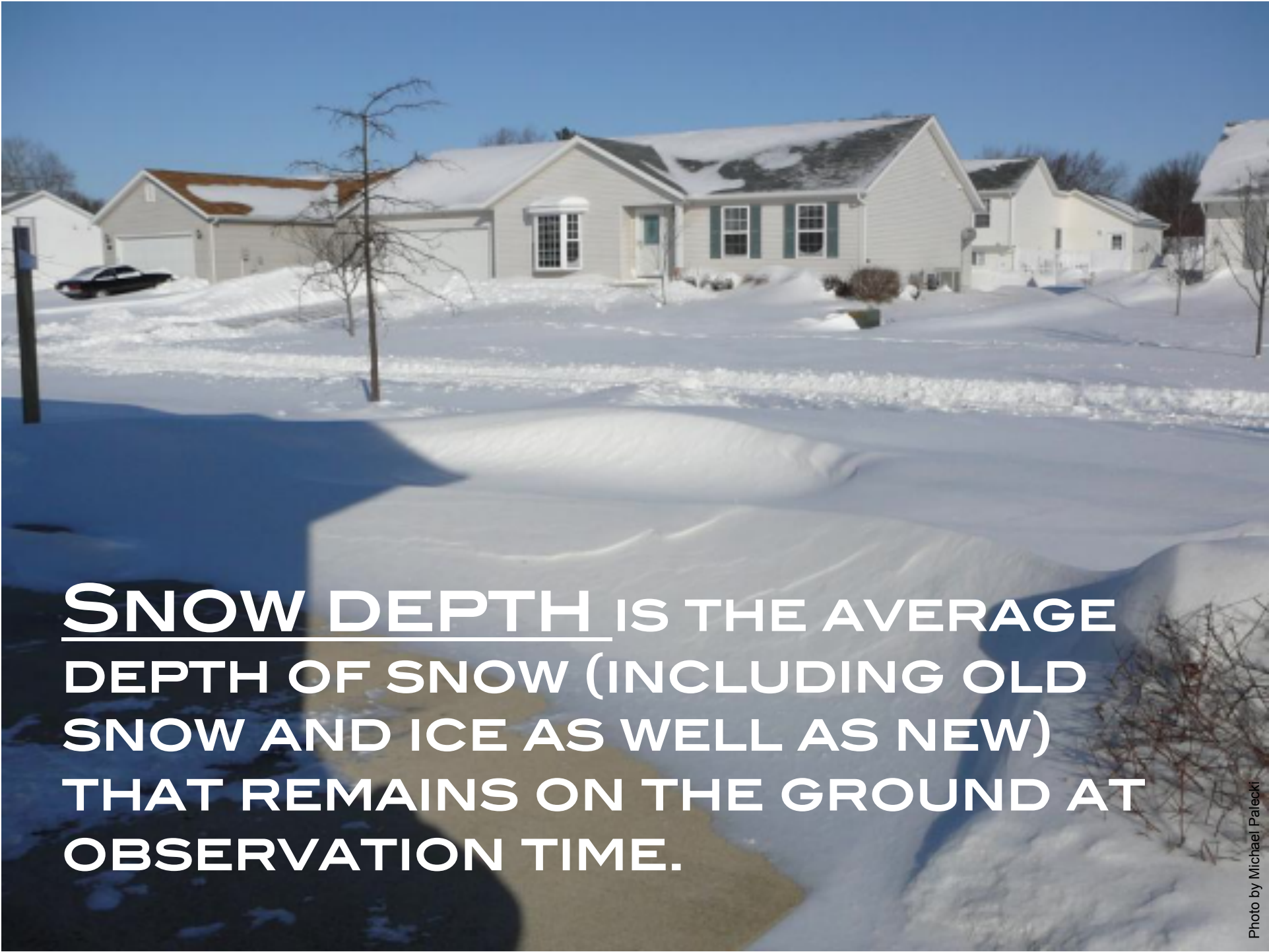
TOTAL DEPTH OF NEW AND OLD SNOW

1. The depth of new snow (new snowfall)
2. Liquid water equivalent of new snow (either in the gauge or on the snowboard)
3. The **total depth** of new snow and old snow and ice at observation time
4. Snow Water Equivalent (SWE) of total snow on the ground (optional)



MEASURING THE TOTAL DEPTH OF SNOW ON THE GROUND





SNOW DEPTH IS THE AVERAGE DEPTH OF SNOW (INCLUDING OLD SNOW AND ICE AS WELL AS NEW) THAT REMAINS ON THE GROUND AT OBSERVATION TIME.

MEASURING TOTAL SNOW ON THE GROUND

- Snow is rarely uniform in coverage, so take several measurements and average them to obtain your total depth of snow.
- Slide snow ruler through all layers of snow (new and old).
- Read value on snow ruler and record (values are to the nearest $\frac{1}{2}$ " like 4.5" or 5.0").
- Don't measure "artificial accumulations", such as plowed piles, large drifts, or shoveled snow.



SNOW ON THE GROUND



On some days snow will only partially cover the ground. To record this take an average of both covered and bare areas.





←

If half the ground has 2.0" and half the ground is bare, report 1.0" as your total depth.

→

If more than half the ground is bare report "T" (trace) and mention the range of depths in your comments.



IF POSSIBLE



Please report
“Total Snow Depth”
EVERY day that there is
any snow on the ground!



REPORTING TOTAL DEPTH OF OLD AND NEW SNOW

Precipitation Report Form		Submit Data	Reset
Station Number : CO-LR-610			
Station Name : Fort Collins 3.5 SW			
* Denotes Required Field			
<input type="text" value="11/9/2011"/>	* Observation Date		
<input type="text" value="7:00"/> AM	* Observation Time		
<input type="text" value="0.59"/>	* Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours		
<input checked="" type="radio"/> Yes <input type="radio"/> No	Report was taken at registered location?		
Observation Notes: (This will be available to the public)			
<input type="text" value="Precipitation is amount from snow core. Poor gauge catch - not representative of what fell. Amount melted from gauge 0.29"/>			
New Snowfall			
<input type="text" value="6.5"/>	Accumulation of new snow in inches to the nearest tenth		
<input type="text" value="0.59"/>	Melted value from core to the nearest hundredth		
Total Snow and Ice on Ground at Observation Time			
<input type="text" value="7.0"/>	Depth of total snow and ice (new and old) in inches to the nearest half inch		
<input type="text" value="0.63"/>	Melted value from core to the nearest hundredth		

Report the total depth to the nearest half inch



SWE

SNOW WATER EQUIVALENT

1. The depth of new snow (new snowfall)
2. Liquid water equivalent of new snow (either in the gauge or on the snowboard)
3. The total depth of new snow and old snow and ice at observation time
4. Snow Water Equivalent (SWE) of total snow on the ground (optional)



MEASURING SNOW WATER EQUIVALENT (SWE)

In parts of the nation where snow stays on the ground for a long period of time we ask our volunteers to take a SWE measurement only once a week. Monday seems to be a good day to do so!

SWE MONDAYS

What's your Snow Water Equivalent?

Report the water content of your "snow on the ground" each Monday

- This is a measurement that is useful to hydrologists and river forecasters.
- It provides an estimate of how much water is “on the ground” that can potentially run off into rivers and streams.



SOMETIMES SNOW ON THE GROUND CAN BE VERY DEEP



“Measure what you feel comfortable with”



HOW TO MEASURE “SWE”

- Take a “core sample” from the snow on the ground (not on your snow board).
- Melt the core sample
- Measure the amount of water in the core



FIRST FIND A REPRESENTATIVE LOCATION

- The location should have not drifted, melted, or blown clear
- For example, if you determined the total depth of the snow is 7 inches, then take your core sample from an area where the depth of snow is seven inches



“This looks like the best place!”



STEPS TO CUTTING A CORE SAMPLE



Place gauge upside down and push down into the snow



Clear snow from around the gauge



CAPTURING THE CORE

Slide



Slide snow-swatter
(spatula works, too)
under gauge

Lift



Carefully lift and get
ready to flip the gauge

Flip



Bring the sample inside
to melt



SNOW CORES IN DEEPER SNOW



IN WETTER SNOW, THE CORE WILL COME OUT IN ONE PIECE



SNOW WATER EQUIVALENT (SWE)

- Melt and measure
- Report this on your Daily Report form



REPORTING SWE

Precipitation Report Form		Submit Data	Reset
Station Number : CO-LR-610			
Station Name : Fort Collins 3.5 SW			
* Denotes Required Field			
<input type="text" value="11/9/2011"/>	*Observation Date ?		
<input type="text" value="7:00"/> AM	*Observation Time ?		
<input type="text" value="0.59"/>	*Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?		
<input checked="" type="radio"/> Yes <input type="radio"/> No	Report was taken at registered location?		
Observation Notes: (This will be available to the public) ?			
<input type="text" value="Precipitation is amount from snow core. Poor gauge catch - not representative of what fell. Amount melted from gauge 0.29"/>			
New Snowfall			
<input type="text" value="6.5"/>	Accumulation of new snow in inches to the nearest tenth ?		
<input type="text" value="0.59"/>	Melted value from core to the nearest hundredth ?		
Total Snow and Ice on Ground at Observation Time			
<input type="text" value="7.0"/>	Depth of total snow and ice (new and old) in inches to the nearest half inch ?		
<input type="text" value="0.63"/>	Melted value from core to the nearest hundredth ?		

Report the melted value to the nearest hundredth



SPECIAL SITUATIONS



WINDY CONDITIONS MAY CREATE A SITUATION WHERE THE AMOUNT OF SNOW IN THE GAUGE IS NOT REPRESENTATIVE OF WHAT FELL ON THE GROUND.

- In this case, we need to take a “core sample” from the snowboard or an area representative of the average new snow depth.
- Melt and measure the core sample.
- If you feel this is more representative of the actual precipitation, then report this amount as your Daily Precipitation and make a note in the comments. Include the melted amount from the snow that actually fell in the gauge in your comments.

**WHAT IF'S:
SOME ADDITIONAL SITUATIONS
YOU MAY ENCOUNTER**



WHAT IF'S: THERE'S VERY HEAVY SNOW FALLING. CAN I LET SOMEONE KNOW?

Indeed! File a “*Significant Weather Report*” at any time. This report goes directly to the National Weather Service in ‘real-time’ and helps out greatly.

Report the time duration that the report covers

Indicate the depth of the new snow that has fallen during this time

List the depth of the total snow on the ground

Add notes to paint a fuller picture.

The screenshot shows a web form titled "Significant Weather Report" for station CO-LR-610 (Fort Collins 3.5 SW). The form includes fields for observation date (11/28/2011), time (2:00 PM), and duration (60 minutes). It has sections for "Rain" and "Snow" with checkboxes and input fields for precipitation and snow depth. There is also an "Additional Information" section with radio buttons for "Report was taken at registered location?" and "Was There Flooding?". A text area at the bottom is labeled "Observation Notes" and contains the text: "Heavy snow, white-out conditions. Snow continues to fall. If conditions continue will file another report at 3PM." Arrows from the text boxes on the left point to the duration field, the "New Snow" field, the "Total depth of snow" field, and the "Observation Notes" text area.

Significant Weather Report		Submit Data	Reset
Station Number :	CO-LR-610		
Station Name :	Fort Collins 3.5 SW		
	* Denotes Required Field		
11/28/2011	*Observation Date		
2:00 PM	*Observation Time		
60	Minutes	Time duration that the report covers	
<input checked="" type="checkbox"/>	Rain		
<input type="checkbox"/>	New Rain and Melted Snow that has fallen during the report duration, in inches to the nearest hundredth		
<input type="checkbox"/>	Total Precipitation, rain and melted snow, since storm began, in inches to the nearest hundredth		
<input checked="" type="checkbox"/>	Snow		
2.1	Depth of New Snow that has fallen during the report duration, in inches to the nearest tenth		
4.0	Total depth of snow and ice on ground at the time of this observation to nearest half inch		
Additional Information			
<input checked="" type="radio"/>	Yes	<input type="radio"/>	No
Report was taken at registered location?			
Was There Flooding?			
<input type="radio"/> No			
If Yes, how severe?			
<input type="radio"/> Minor (typical). Street or field flooding.			
<input type="radio"/> Unusual street or field flooding (only see this every few years)			
<input type="radio"/> Severe Flooding			
<input type="radio"/> Extreme (never seen it this bad before)			
Observation Notes (This will be available to the public)			
Heavy snow, white-out conditions. Snow continues to fall. If conditions continue will file another report at 3PM.			
		Submit Data	Reset

WHAT IF: SNOW MELTS AS IT LANDS AND NEVER ACCUMULATES

- Report the precipitation in your gauge (melted) as the Daily Precipitation
- Report a Trace of new snow
- In your comments write: *"Snow melted as it landed"*



WHAT IF: I TAKE MY SNOW MEASUREMENT, BUT DON'T HAVE TIME TO MELT THE CORE ON MY WAY OUT THE DOOR?



Put NA in the 'Rain and Melted Snow' box, as well as the melted core boxes and add an observation note

My Data Entry : Daily Precipitation Report Form

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610
Station Name : Fort Collins 3.5 SW

* Denotes Required Field

11/29/2011 *Observation Date ?
7:00 AM *Observation Time ?

NA *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?
 Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?
Core measurement has been taken. Is currently melting and we will report it shortly.

New Snowfall

5.4 Accumulation of new snow in inches to the nearest tenth ?
NA Melted value from core to the nearest hundredth ?

Total Snow and Ice on Ground at Observation Time

5.4 Depth of total snow and ice (new and old) in inches to the nearest half inch ?
NA Melted value from core to the nearest hundredth ?



When you come back later, go to edit and put the liquid amount in the 'Rain and Melted Snow' box, as well as the 'Melted Core' box.



HOW DO I MEASURE FREEZING RAIN?



“Freezing rain” is rain that falls in liquid form but freezes on contact with a surface.

Do NOT report freezing rain as "Snow". Melt and measure the moisture that has accumulated inside your gauge and report that as your daily precipitation amount.

Report ZERO for your new snow amount (assuming that it all fell as rain, and no sleet or snow fell or accumulated).

Report the total depth of freezing rain remaining on the ground at time of observation and enter that in the "Total Snow on Ground" column. Make a note in your comments section so that we know it's freezing rain.



SNOW MEASUREMENT REVIEW

Melt any snow/ice in your rain gauge, and report this as your daily precipitation

Measure the accumulation of new snow on your snowboard

Take a core from your snowboard, melt and report in the “*New Snowfall*” section. (optional)

Measure the total snow on the ground (new snow plus old snow and ice).

Report the water equivalent of total snow on the ground (SWE). (once a week if possible)

My Data Entry : Daily Precipitation Report Form

Precipitation Report Form

Submit Data

Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

11/9/2011

*Observation Date

7:00

AM

*Observation Time

0.59

*Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours

New Snowfall

6.5

Accumulation of new snow in inches to the nearest tenth

0.59

Melted value from core to the nearest hundredth

Total Snow and Ice on Ground at Observation Time

7.0

Depth of total snow and ice (new and old) in inches to the nearest half inch

0.63

Melted value from core to the nearest hundredth



SNOW ZEROS

There's no zero's like 'snow zeros'!

If you are in the winter season and you have not had new snow in the past 24 hours, please fill in those 'snow zeros'!

Here are three cases

Case number one:

- No new snowfall
- No snow currently on the ground

0.0

0.0

My Data Entry : Daily Precipitation Report Form

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

12/7/2011 *Observation Date ?

7:00 AM *Observation Time ?

0.00 *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?

Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?

No new snow in the past 24 hours. Sunny and dry!

New Snowfall

0.0 Accumulation of new snow in inches to the nearest tenth ?

0.0 Melted value from core to the nearest hundredth ?

Total Snow and Ice on Ground at Observation Time

0.0 Depth of total snow and ice (new and old) in inches to the nearest half inch ?

0.0 Melted value from core to the nearest hundredth ?

SNOW ZEROS

There's no zero's like 'snow zeros'!

Case number two:

- No new snowfall
- Snow already on ground
- You have taken a snow core of the snow on the ground

17.5	0.0	0.0
1.3		

New Snowfall	
0.0	Accumulation of new snow in inches to the nearest tenth
0.0	Melted value from core to the nearest hundredth

Total Snow and Ice on Ground at Observation Time	
17.5	Depth of total snow and ice (new and old) in inches to the nearest half inch
1.3	Melted value from core to the nearest hundredth

My Data Entry : Daily Precipitation Report Form

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

12/7/2011 *Observation Date

7:00 AM *Observation Time

0.00 *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours

Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public)

No new snow in the past 24 hours. Sunny and dry!

New Snowfall

0.0 Accumulation of new snow in inches to the nearest **tenth**

0.0 Melted value from core to the nearest **hundredth**

Total Snow and Ice on Ground at Observation Time

17.5 Depth of total snow and ice (new and old) in inches to the nearest **half inch**

1.3 Melted value from core to the nearest **hundredth**

SNOW ZEROS

There's no zero's like 'snow zeros'!

Case number three:

- No new snowfall
- Snow already on ground
- You have not taken a snow core of the snow on the ground

0.0

NA

My Data Entry : Daily Precipitation Report Form

Precipitation Report Form Submit Data Reset

Station Number : CO-LR-610

Station Name : Fort Collins 3.5 SW

* Denotes Required Field

12/7/2011 *Observation Date ?

7:00 AM *Observation Time ?

0.00 *Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours ?

Yes No Report was taken at registered location?

Observation Notes: (This will be available to the public) ?

No new snow in the past 24 hours. Sunny and dry!

New Snowfall

0.0 Accumulation of new snow in inches to the nearest tenth ?

0.0 Melted value from core to the nearest hundredth ?

Total Snow and Ice on Ground at Observation Time

NA Depth of total snow and ice (new and old) in inches to the nearest half inch ?

NA Melted value from core to the nearest hundredth ?

ADDITIONAL WINTER TRAINING

The screenshot shows the CoCoRaHS website homepage. At the top left is the CoCoRaHS logo. The main header reads "COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK" with the tagline "Because every drop counts". Below this is a navigation bar with links for Home, States, View Data, Maps, My Data, My Account, Admin, and Logout. A welcome message states: "Welcome to CoCoRaHS! 'Volunteers working together to measure precipitation across the nation.'" A central section reports "6,439 daily precipitation reports received today as of 11/9/2011 3:19 PM EST" and features a map of the United States with precipitation data points. To the right of the map is a legend for "Daily Precipitation (inches x.xx) USA 11/9/2011" with color-coded bars for trace, 0.00 - 0.20, and 0.21 - 0.40. On the left is a "Main Menu" with links for Home, About Us, Join CoCoRaHS, Contact Us, and Donate, and a "Resources" section with a link for FAQ/Help. On the right are two buttons: "JOIN COCORAHS" and "TRAINING SLIDE-SHOWS".

← Click here

The thumbnail shows a clear plastic cylinder mounted on a wooden post outdoors. The cylinder is filled with snow, and a thick layer of ice has accreted on the bottom edge, with water dripping from it. The CoCoRaHS logo is in the top right corner. The text "ICE ACCRETION" is centered at the bottom.

[HTML](#) [PDF](#) 

The thumbnail shows a person in a white sweater sitting at a wooden table, holding a clear plastic cylinder filled with snow. The cylinder is placed on a digital scale. The text "MEASURING THE WATER CONTENT OF SNOW BY WEIGHT" is centered at the bottom.

[HTML](#) [PDF](#) 

A photograph of a car completely covered in a thick layer of snow. The words "CoCoRaHS" are written in large, hand-drawn letters across the top of the car's roof. Above this, the words "THE END" are written in a smaller, serif font. The background shows a residential area with houses and a fence under a clear sky.

THE END

**For more information
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