Training Slide Show

“Because every drop counts!”

What is CoCoRaHS?

CoCoRaHS is a national
grassroots,
non-profit, community-based,
high-density precipitation network .



. . . made up of volunteers of
all ages and backgrounds



. . . who take daily measurements of
<u>precipitation</u> right in their own
backyards

Once trained, our volunteer observers collect data using low-cost measurement tools . . .

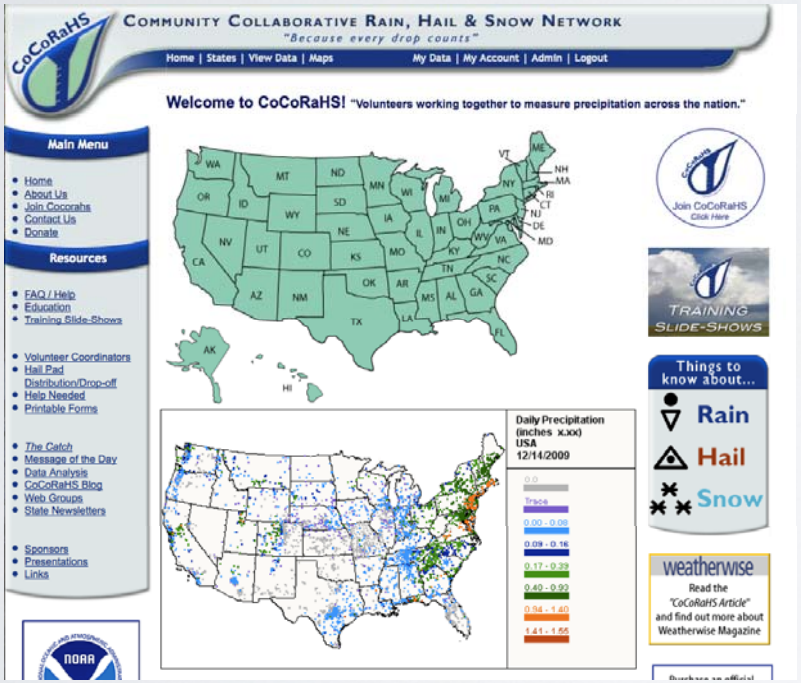
4-inch diameter high capacity rain gauges

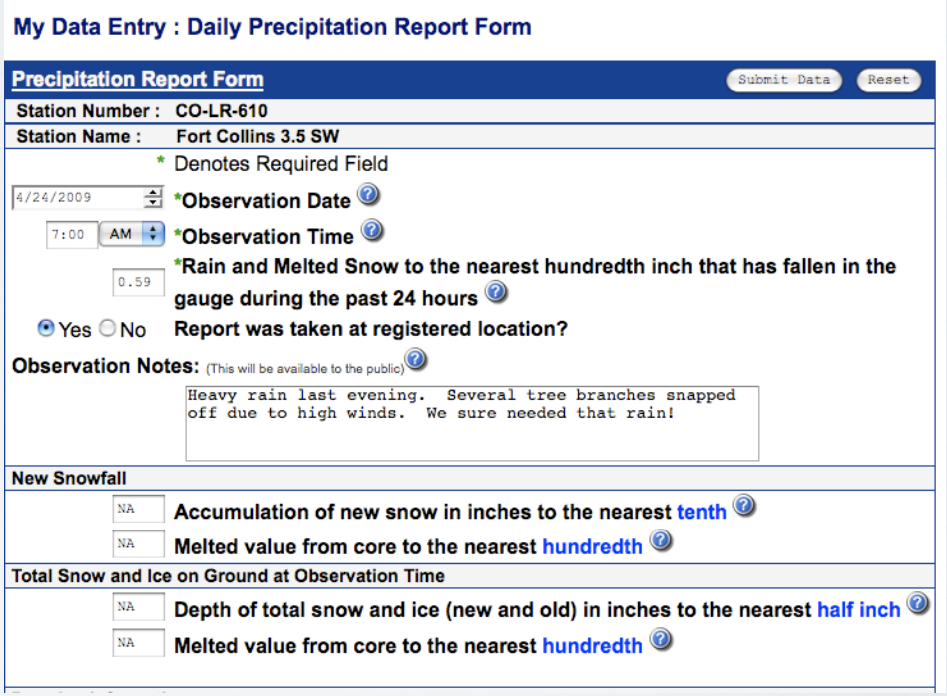
Aluminum foil-wrapped Styrofoam hail pads

Training is important to assure accurate, high quality data

www.cocorahs.org

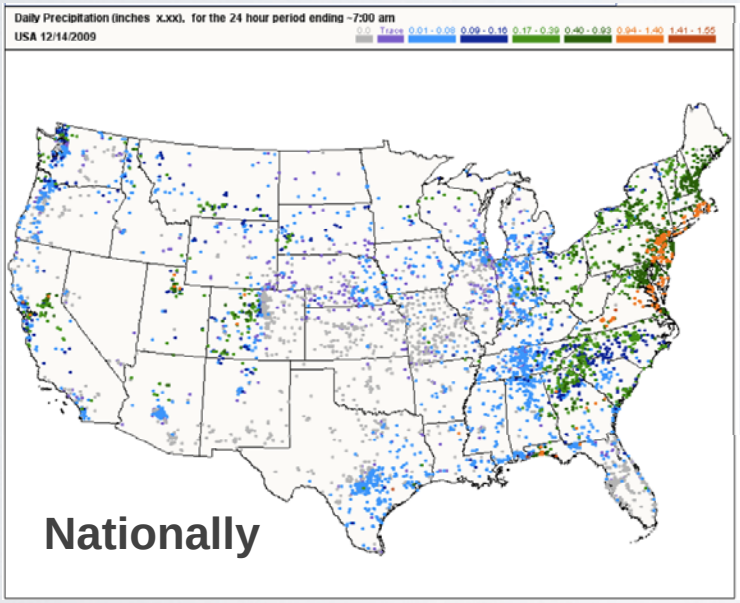
Volunteers report their daily observations on our interactive Web site

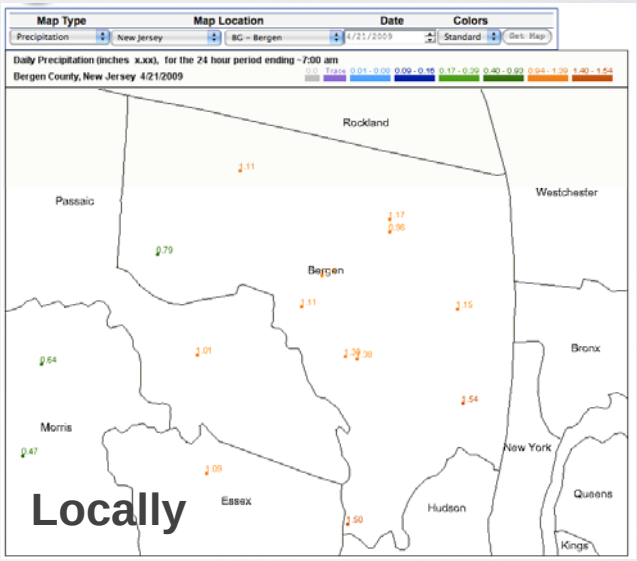




Immediately viewable

Volunteers observations are viewable in both map and table form within a few minutes



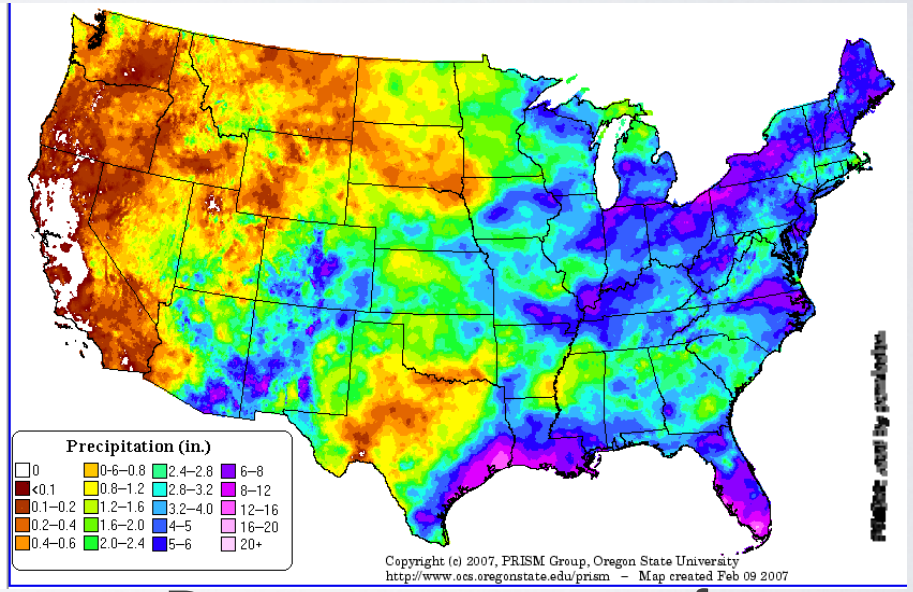


Date	Time	Station Number	Station Name	Total Precip .ins	New Snow .in	Total Snow .in	State	County	View
4/21/2009	7:00 AM	NJ-HD-1	Harrison 0.3 N	1.86	NA	NA	NJ	Hudson	
4/21/2009	7:00 AM	NJ-OC-4	Little Egg Harbor Twp 0.4 SSW	1.78	NA	NA	NJ	Ocean	
4/21/2009	6:10 AM	NJ-MN-10	Eatontown 1.2 NE	1.57	NA	NA	NJ	Monmouth	
4/21/2009	8:00 AM	NJ-OC-12	Stafford Twp 2.1 NW	1.56	NA	NA	NJ	Ocean	
4/21/2009	9:00 AM	NJ-BG-18	Palisades Park 0.2 WNW	1.54	NA	NA	NJ	Bergen	
4/21/2009	7:20 AM	NJ-BG-15	North Arlington 0.7 WNW	1.50	NA	NA	NJ	Bergen	
4/21/2009	7:00 AM	NJ-MN-6	Red Bank 1.3 NW	1.48	0.0	NA	NJ	Monmouth	
4/21/2009	7:00 AM	NJ-CM-5	Ocean City 1.6 NW	1.41	NA	NA	NJ	Cape May	
4/21/2009	7:20 AM	NJ-BG-8	Saddle Brook Twp 0.3 NNE	1.39	NA	NA	NJ	Bergen	
4/21/2009	7:20 AM	NJ-MD-18	Highland Park 0.2 S	1.39	NA	NA	NJ	Middlesex	

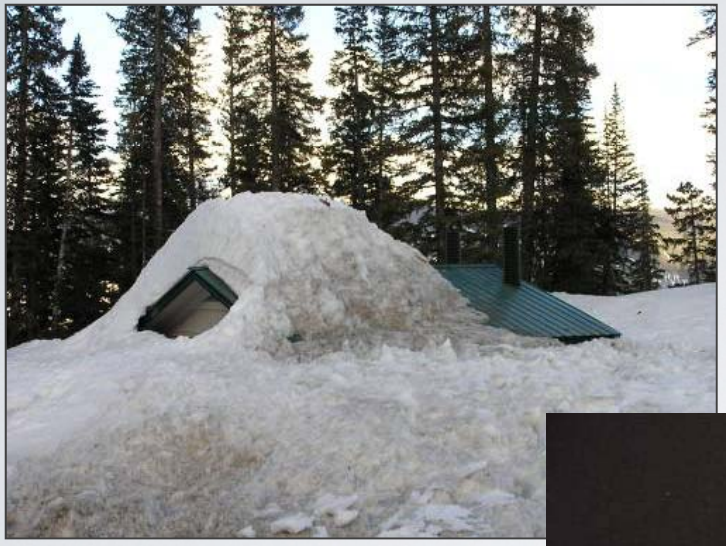
Why CoCoRaHS?

Great question!

Precipitation is important and highly variable



Data sources are few and rain gauges are far apart



Measurements from many sources are not always accurate (especially snow)

There is almost no quantitative data being collected about hail

Storm reports can save lives

CoCoRaHS's main focus is to provide:

CoCoRaHS observations are used by many

- National Weather Service
- Other Meteorologists
- Hydrologists
- Emergency Managers
- City Utilities
  - Water supply
  - Water conservation
  - Storm water
- Insurance adjusters
- USDA -- Crop production
- Engineers
- Scientists studying storms
- Mosquito Control
- Farm Service Agency
- Ranchers and Farmers
- Outdoor & Recreation

- Teachers and Students

Geoscience education tool
Taking Measurements
Analyzing data
Organizing Results
Conducting Research
Helping the Community

- Emergency Managers
- City Utilities
  - Water supply
  - Water conservation
  - Storm water

Section One

Setting up your equipment and measuring precipitation

In this section we will:

a) Show how/where to place your gauge and hail pad

b) Explain how to measure rainfall

c) Illustrate how to observe hail

d) Show how to measure snow depth and water content

Placement of your gauge

“Location is the key to good data”

Places not to place your gauge

The #1, all time worst place to put your rain gauge is to leave it in the box!

Using your gauge to hold up your gutter downspout is not a wise choice either!

Avoid placing it under trees or any structure

Although convenient, the deck is still too close to the house

Also avoid placing your gauge near:

Sprinklers both big and small

Any steep slopes (a bit exaggerated)

Animals (dogs, birds . . . mountain lions!)

Avoid anything that would artificially increase or decrease your catch gauge

This can cause updrafting during strong winds, which may reduce your gauge catch.

Ideal placement for your gauge

Distance from Obstacles

In open areas strive to be twice as far from obstacles as they are high.

In developed areas strive to be as far from obstacles as they are high.

Distance between Trees

Ideally, place your gauge equidistant from the nearest trees

Height above the ground

In open areas place the gauge top approx. 2 feet off the ground

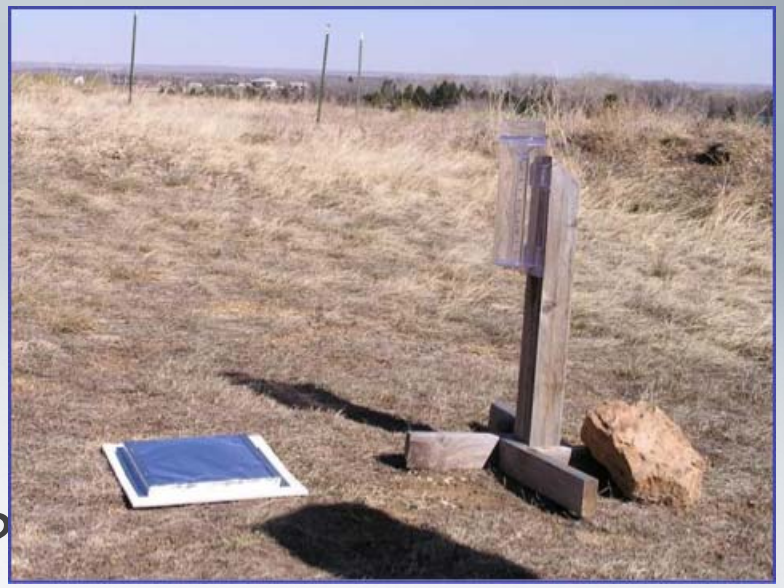
In developed areas place the gauge top approx. 5 feet off the ground

Level and Bevel

Make sure that your gauge is level

Bevel the top of the post to reduce rain splashing into the gauge

HAIL PAD PLACEMENT



Where should I place my hail pad?

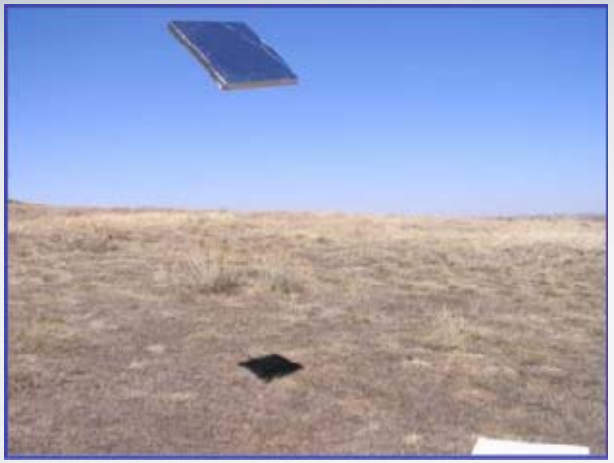
When you have found a good place for your rain gauge, that should be good enough for your hail pad as well.

Elevate and Attach your Hail Pad

The pad must be horizontal. It is best, but not necessary to elevate the hail pad.

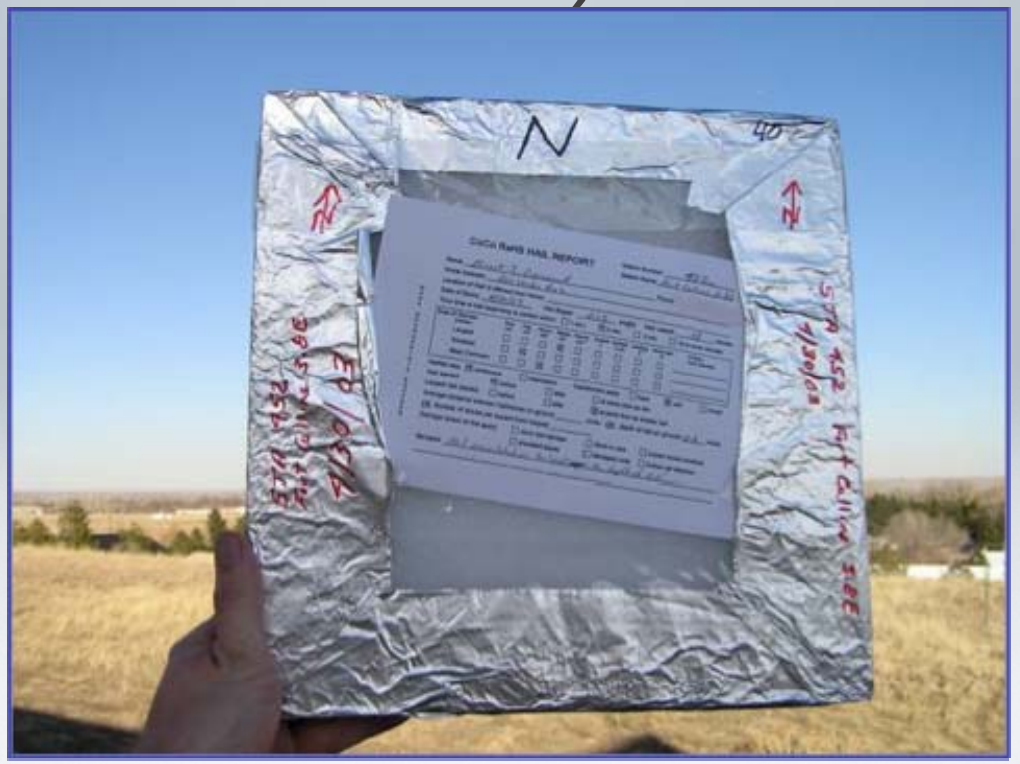
It should be firmly attached so that . . .

. . . it doesn't blow away!



"when last seen, our hail pad was headed north at 3rd and Elm"

Write the direction the pad is facing on the pad's back, as well as your station number (CO-LR-284)

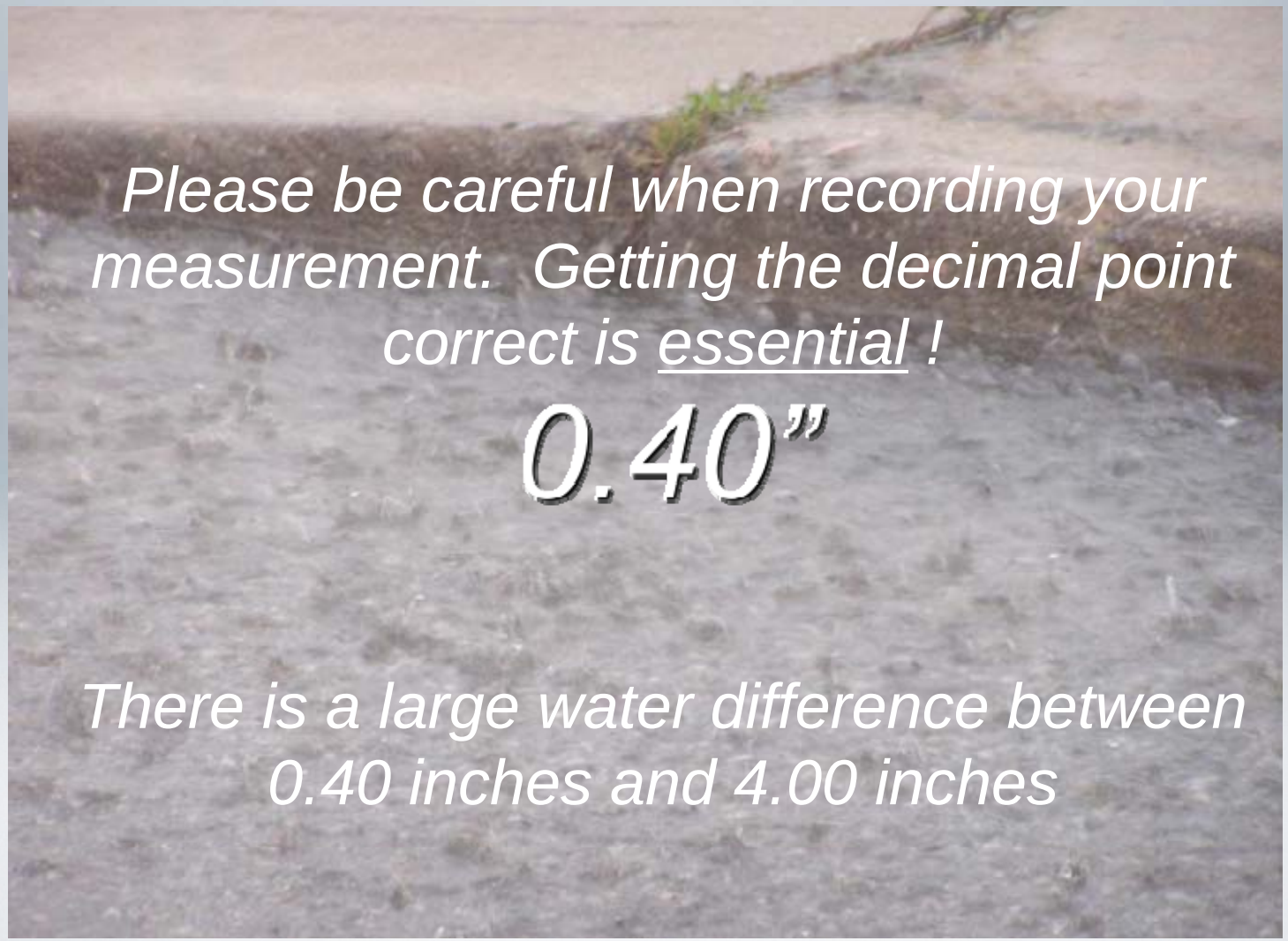


This example shows an "N" for North

Measuring Rainfall with your Gauge

"Accuracy and consistency are very important"

A Word about Decimals



Please do not round up

It is very important to record as accurately to the nearest hundredth of an inch.

*Please **do not** round up to the nearest tenth!*

If you measured 0.98” please record that amount. Do not record it as 1.00”

When should we take our observations?

Reading your Gauge

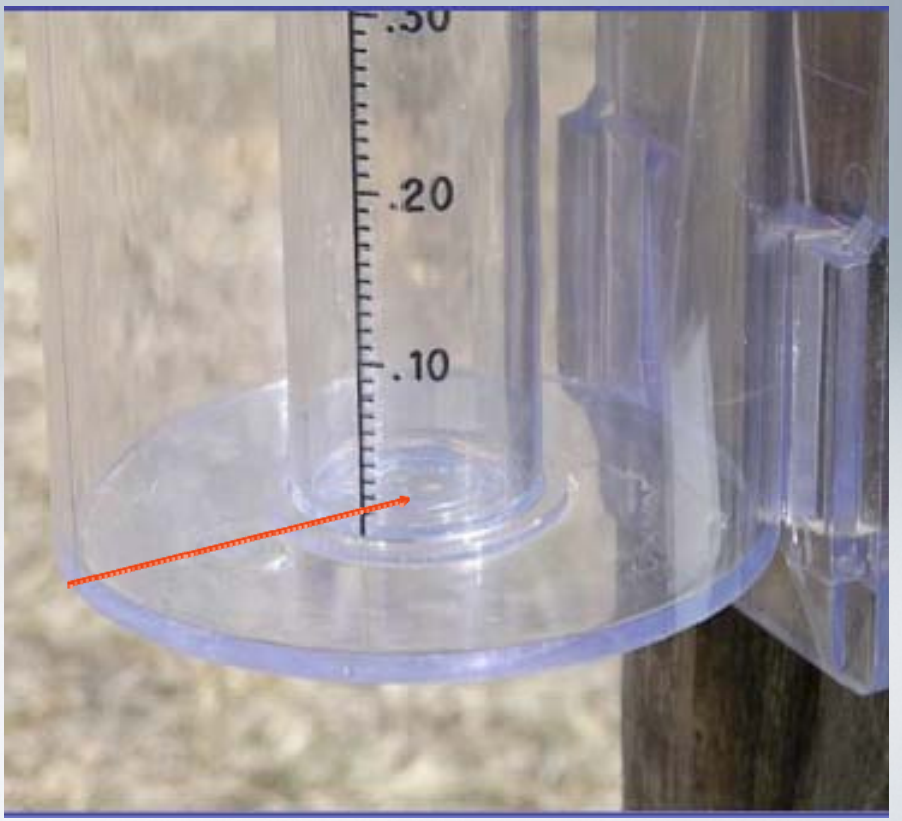
Here are the most common situations you will encounter

YOUR MOST COMMON OBSERVATION WILL BE . . .

ZERO **0.00”**

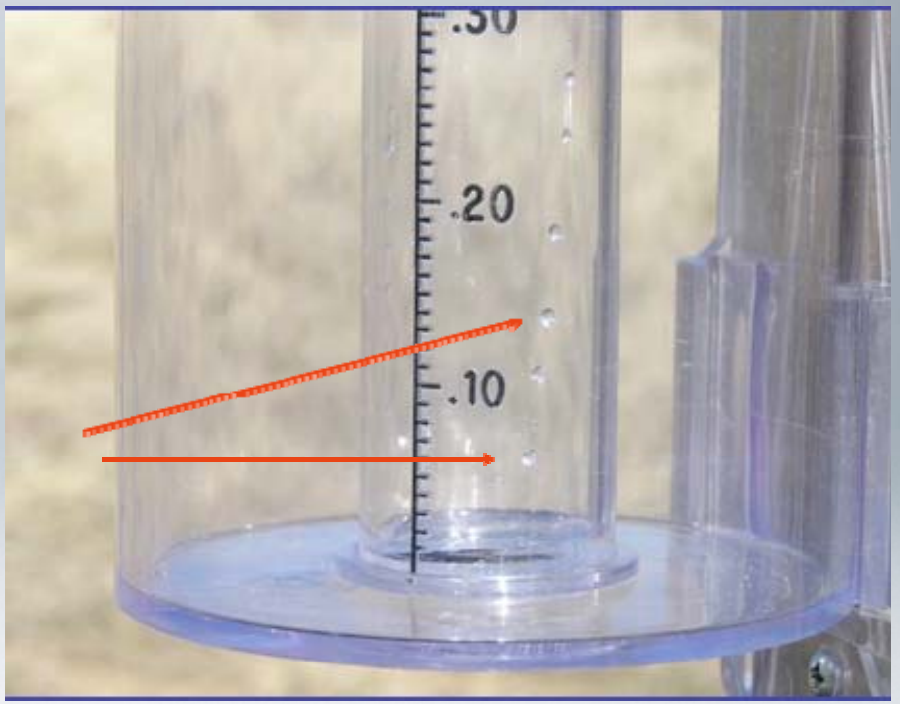
It is important to know where it did <u>NOT</u> rain.

Please report zeros!



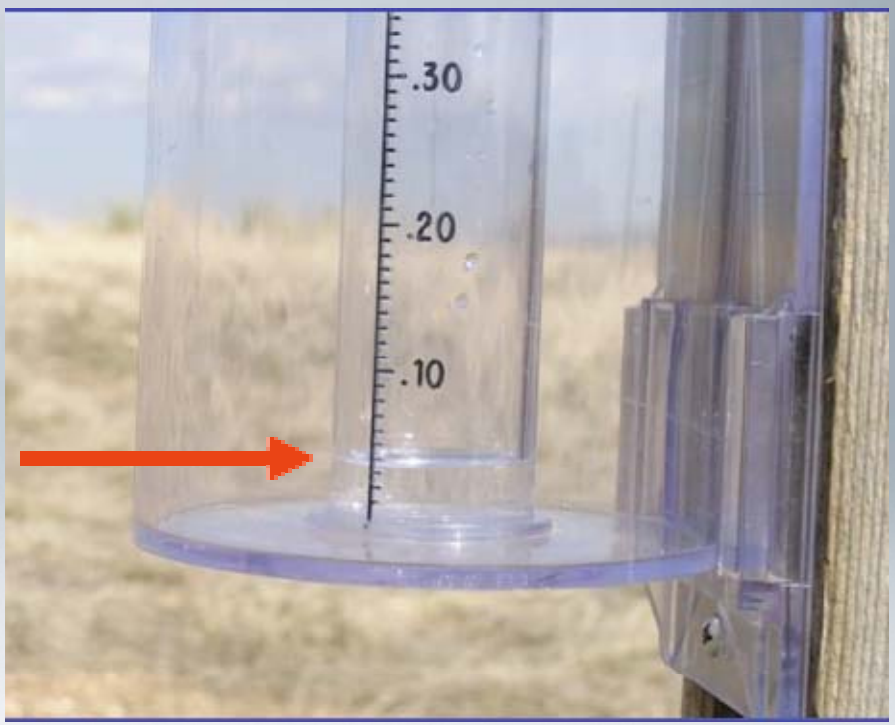
Trace “T”

“When only a drop or two wet the gauge record “T” for Trace



Between “***T***”
and
“***one tenth***”
of an inch

*“That’s **0.04**” or four hundredths*



The Meniscus

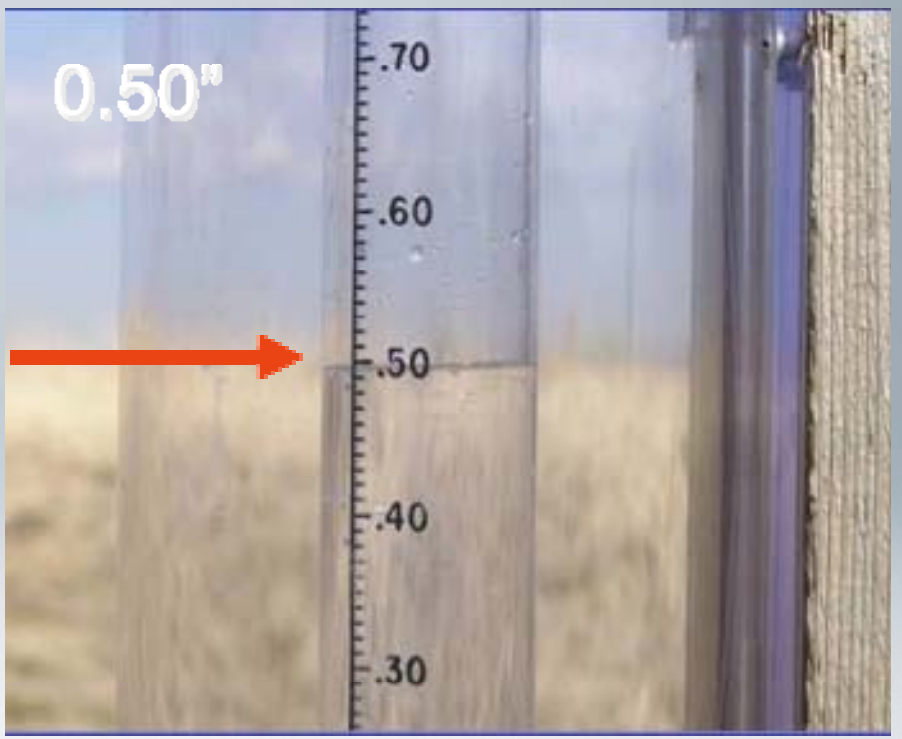
The surface of the water in the gauge looks curved.
How do I know where to read?

As water fills up the measuring tube, a curved surface is formed called a meniscus. It is formed by the surface tension of a liquid in contact with the sides of the tube.

Always read the bottom of the **meniscus**, when the making your daily rain measurements.

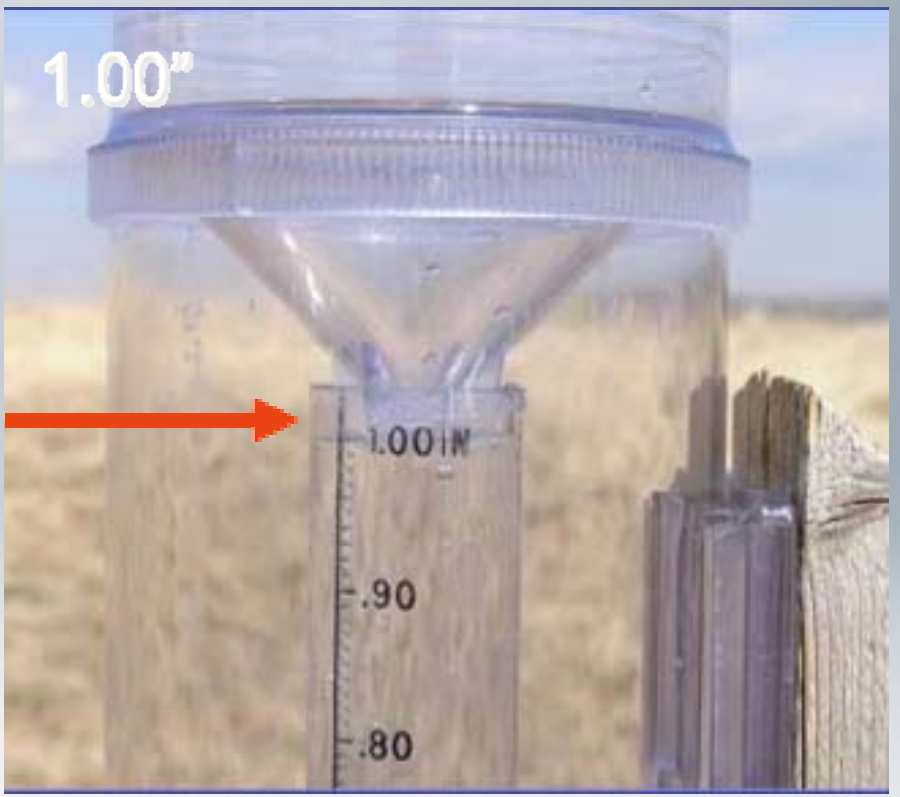
A nice soaking rain

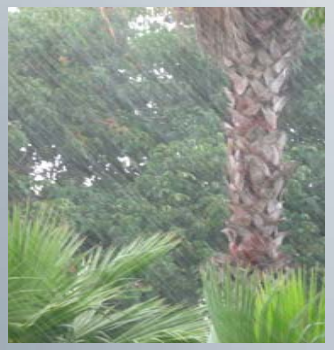
“This is “one half” inch and is recorded as 0.50”



A really good rain !

“This is “one inch” and is recorded as 1.00”





IF THERE IS VERY HEAVY RAIN OR SNOW FALLING

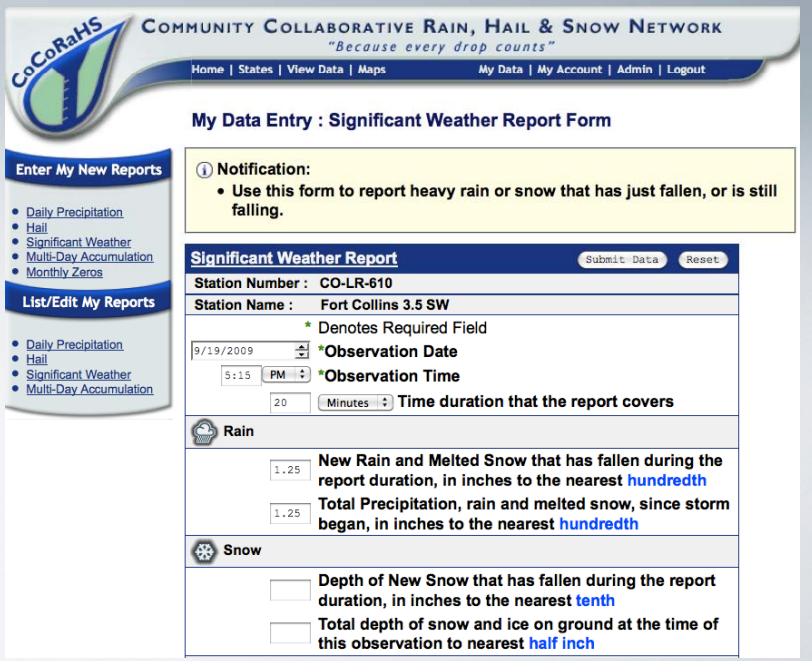
PLEASE submit a

"Significant Weather Report"

via the CoCoRaHS website -- ASAP

Your report immediately goes to your National Weather Service Office

Your report provides them with much needed information to issue severe weather statements such as flash flood warnings and these can save lives!



Lot’s of rain !!

When more than an inch of rain falls the precipitation will overflow into the outer cylinder.

The whole gauge has a capacity to hold eleven inches.

To measure greater than one inch . . .

Pour out the first inch from the inner tube and write it down.

Pour the remaining water into the funnel and measure the inner tube.

Continue until all of the water has been measured. Make sure you keep track of your measurements along the way.

Finally add up all of your measurements

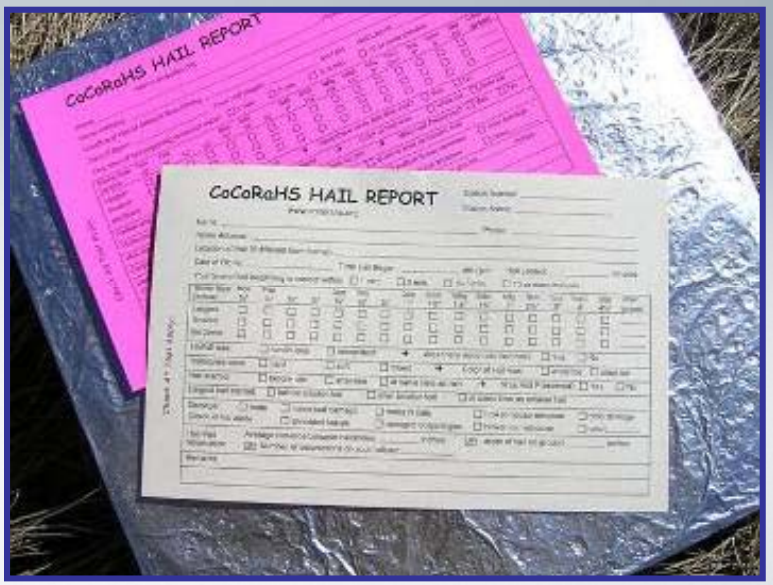
1.00 inch
0.97 inches
0.88 inches
+ 0.92 inches
Total = 3.77”

Observing Hail

As hail is falling

Fill out your "CoCoRaHS Hail Report Card"

After the storm is over attach it onto the back of the pad



If possible submit an

“On-Line Hail Report”

as soon as possible

(a hail pad is not required to submit a report)

Your report goes right to the National Weather Service.

It provides them with much needed information to issue severe weather statements.

National Weather Service

weather.gov

Watches, Warnings & Advisories

Local weather forecast by "City, St" or zip code City, St Go

Special Weather Statement

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SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE HOUSTON/GALVESTON TX
225 PM CDT SAT OCT 3 2009

TXZ226-235-032015-
JACKSON-WHARTON-
225 PM CDT SAT OCT 3 2009

...SPECIAL WEATHER STATEMENT...

AT 222 PM CDT...NATIONAL WEATHER SERVICE DOPPLER RADAR INDICATED A
STRONG THUNDERSTORM OVER EXTREME NORTHWESTERN JACKSON COUNTY...MOVING
EAST SOUTHEAST AT 15 MPH.

HAIL UP TO ONE HALF INCH IN DIAMETER...BRIEF HEAVY DOWNPOURS...ARE
POSSIBLE WITH THIS STORM.
```

After the storm if you have a hail pad

Drop off or send in your hail pad for analysis

In several states you can pick-up a new hail pad at one of our drop-off locations in your community.

If your state is not participating in the hail pad portion of the program you can still order a pad on-line through one of our rain gauge distributers.

Measuring Snow

“Snow is good”

- Nolan Doesken

Two ways in which snow is measured

Our observers measure:

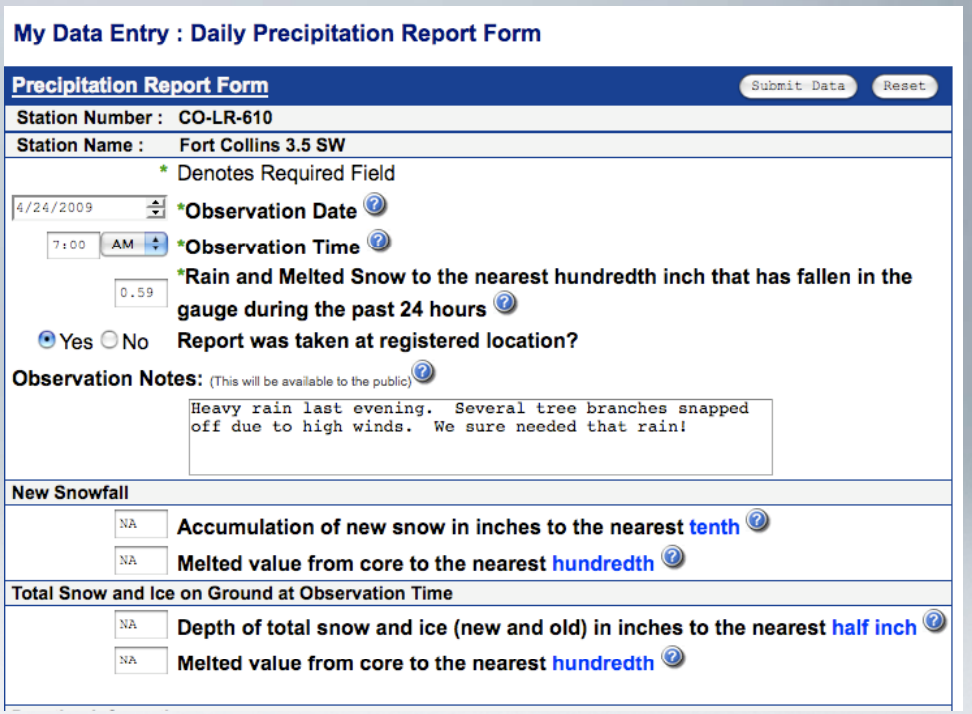
1. Liquid water content of snow
   - from the gauge
   - from a core sample

2. Depth of snow
   - 24 hour snowfall accumulation
   - existing snow depths

YOU CAN LEARN MORE ABOUT SNOW MEASUREMENT BY VIEWING OUR "IN DEPTH" SLIDESHOW ON THE WEB

Section Two

Reporting Observations



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

4/24/2009 *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)

Heavy rain last evening. Several tree branches snapped off due to high winds. We sure needed that rain!

New Snowfall

NA Accumulation of new snow in inches to the nearest tenth

NA Melted value from core to the nearest hundredth

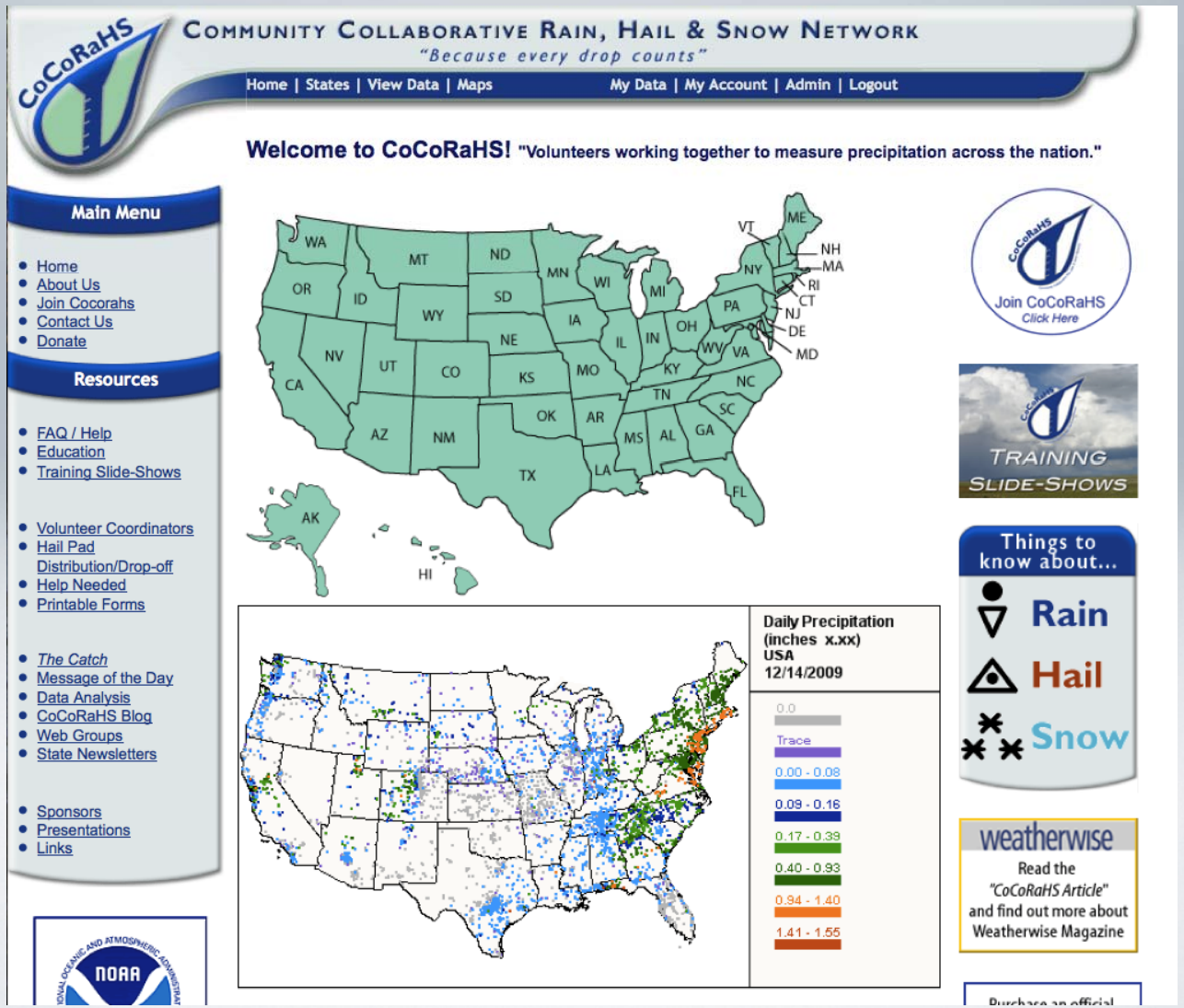
Total Snow and Ice on Ground at Observation Time

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

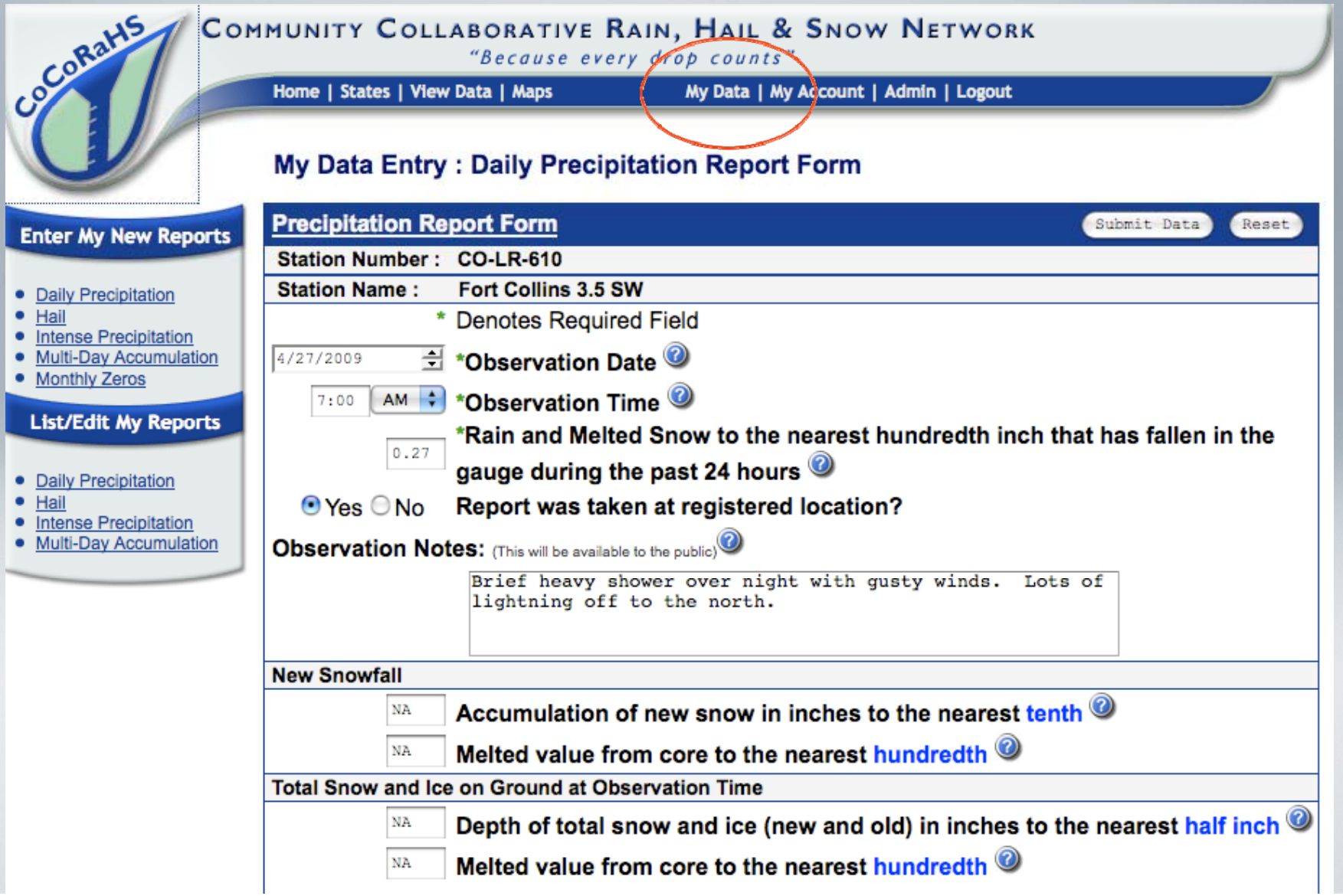
www.cocorahs.org

The CoCoRaHS Web site

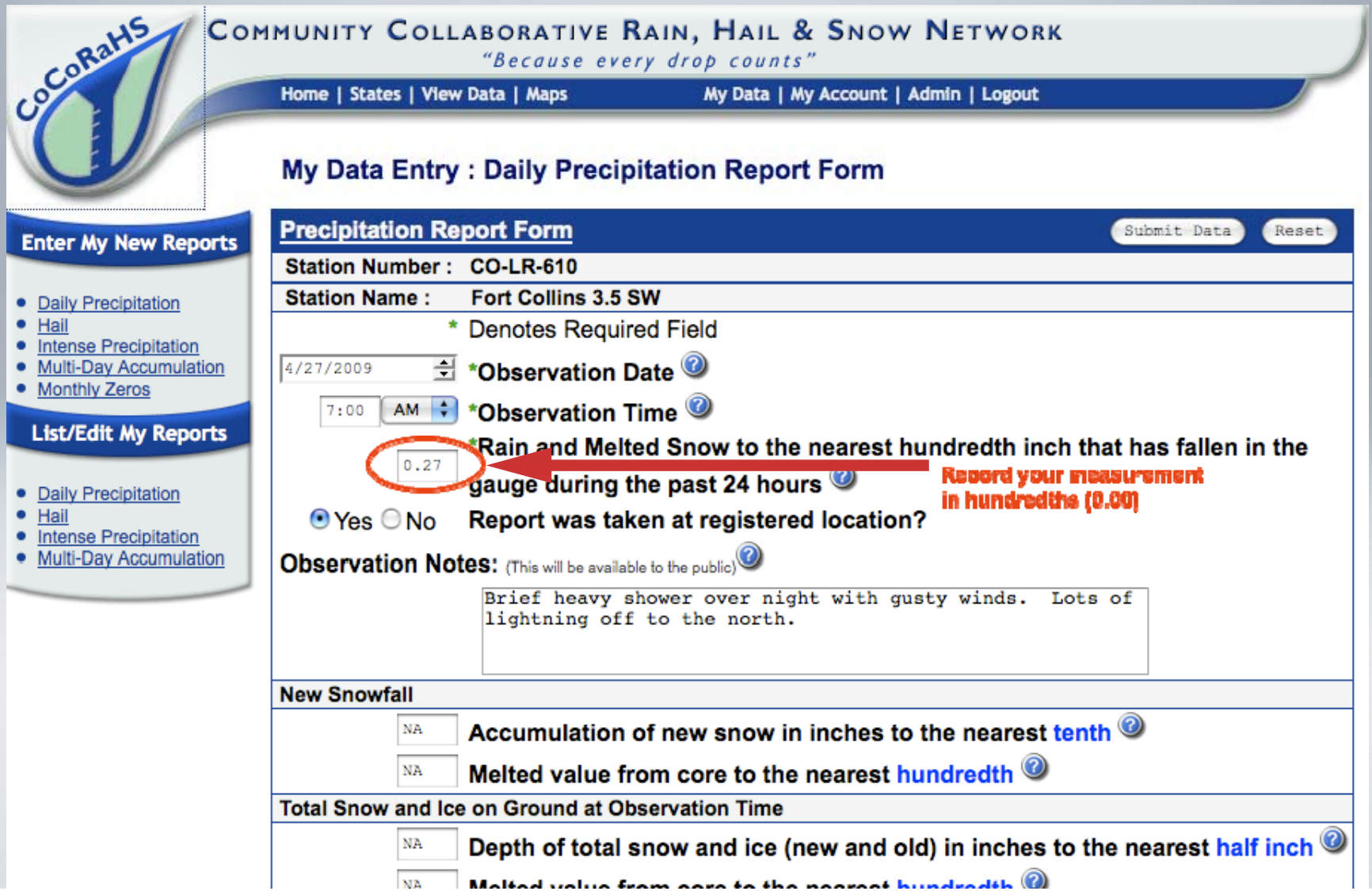


YOUR DAILY “24 HOUR” OBSERVATION

Click on “My data” from the top menu bar

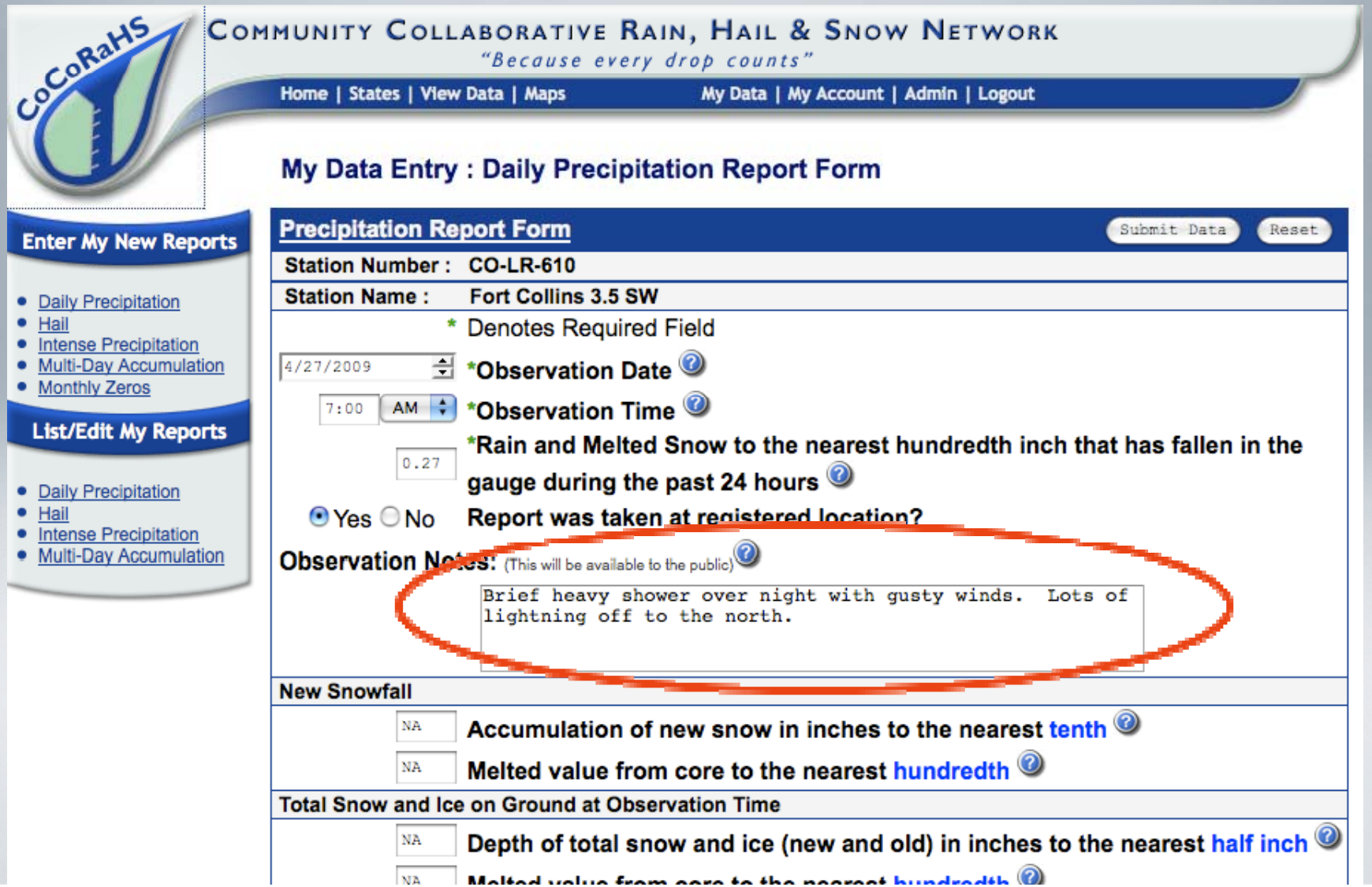


Enter the total precipitation measured in your gauge. Record your measurement in hundredths (0.00”)



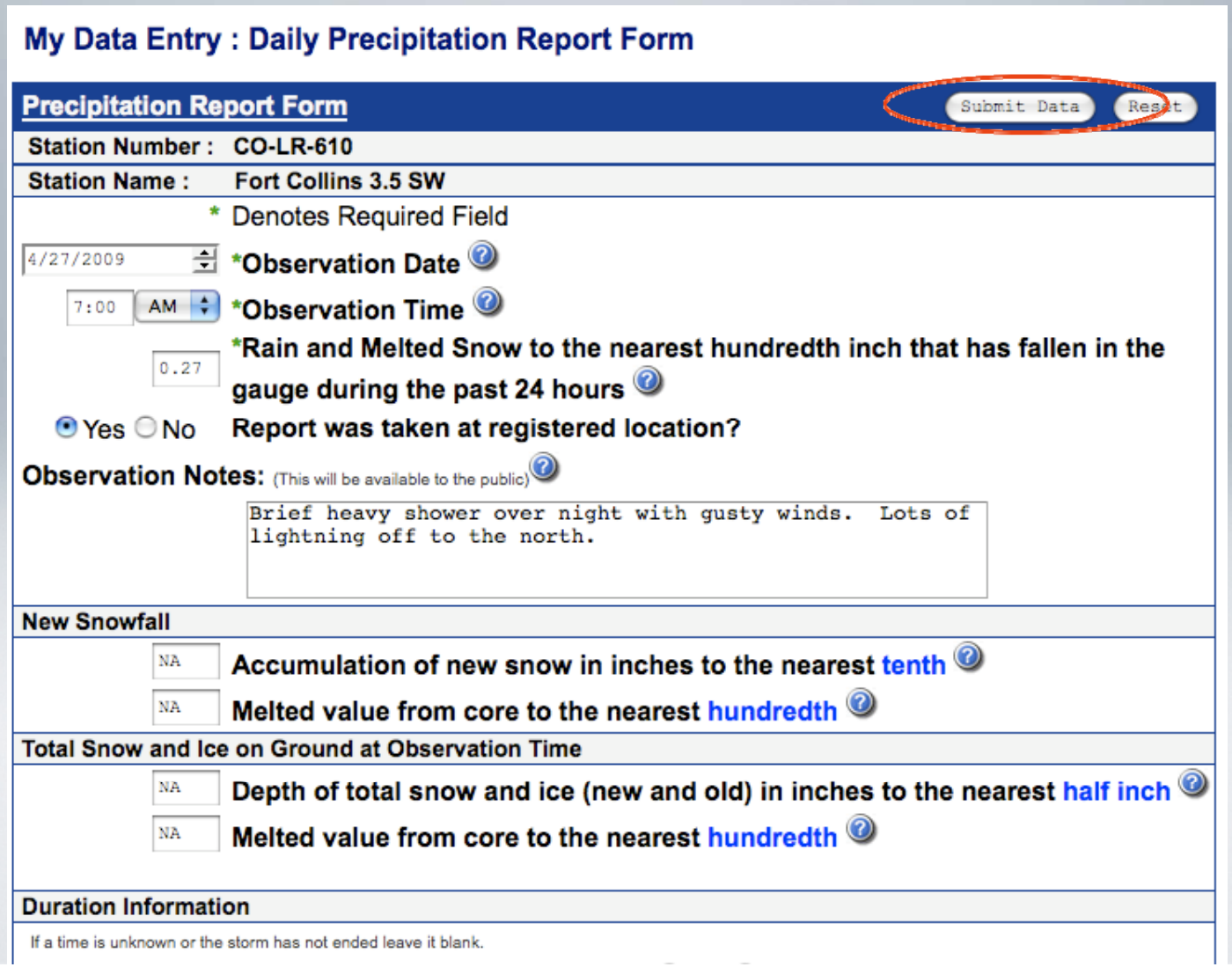
You can enter comments under “notes”

These are very helpful to augment your observation



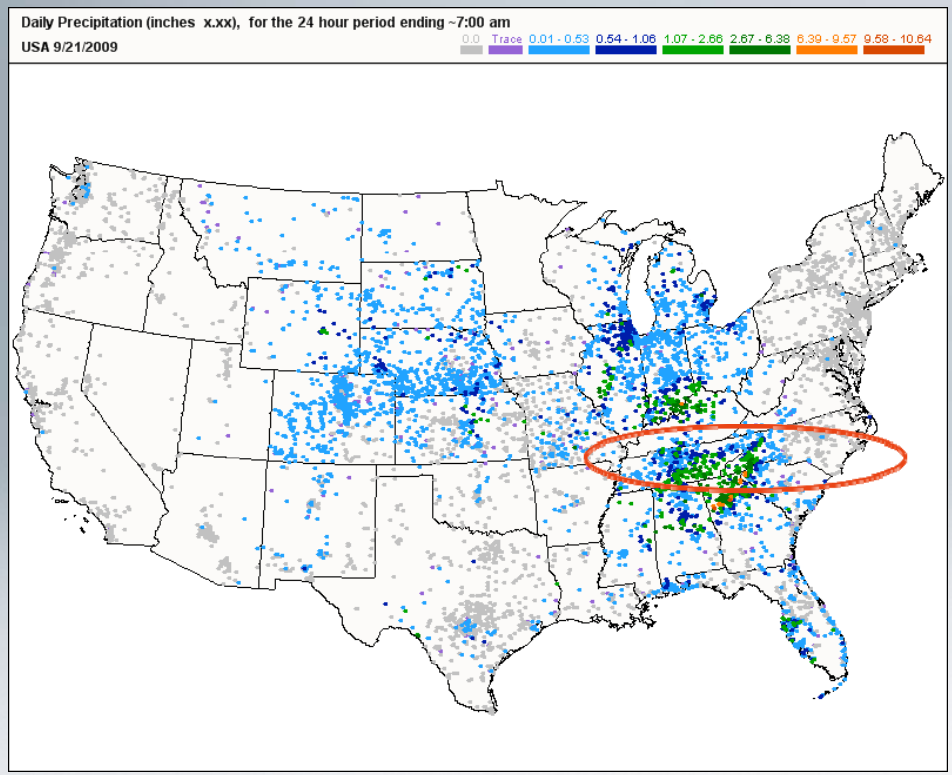
Submit your report

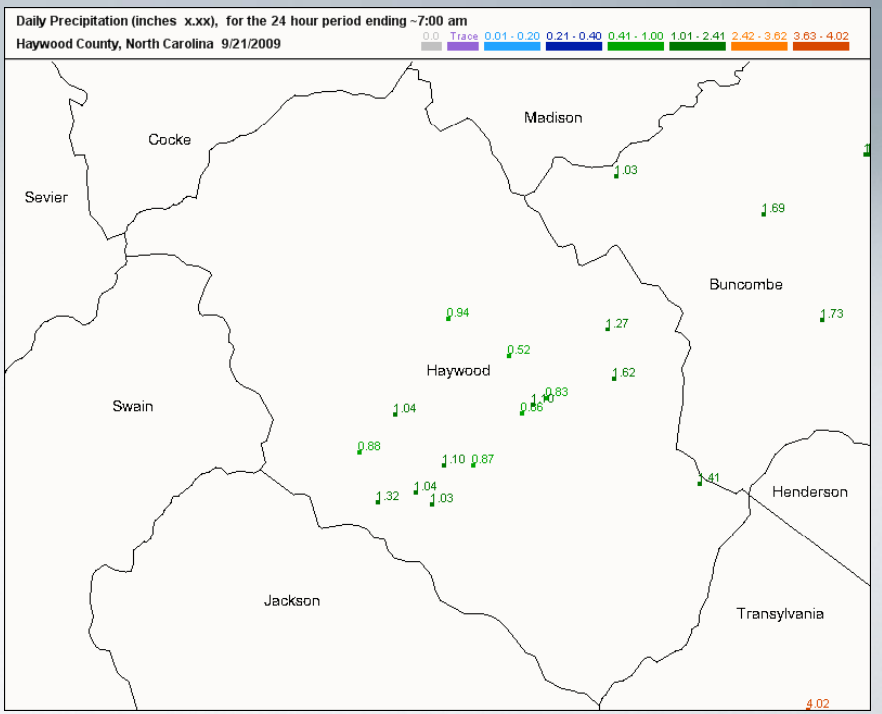
Click “Submit Data” and your observation is recorded on our site



To see your Observation on our maps

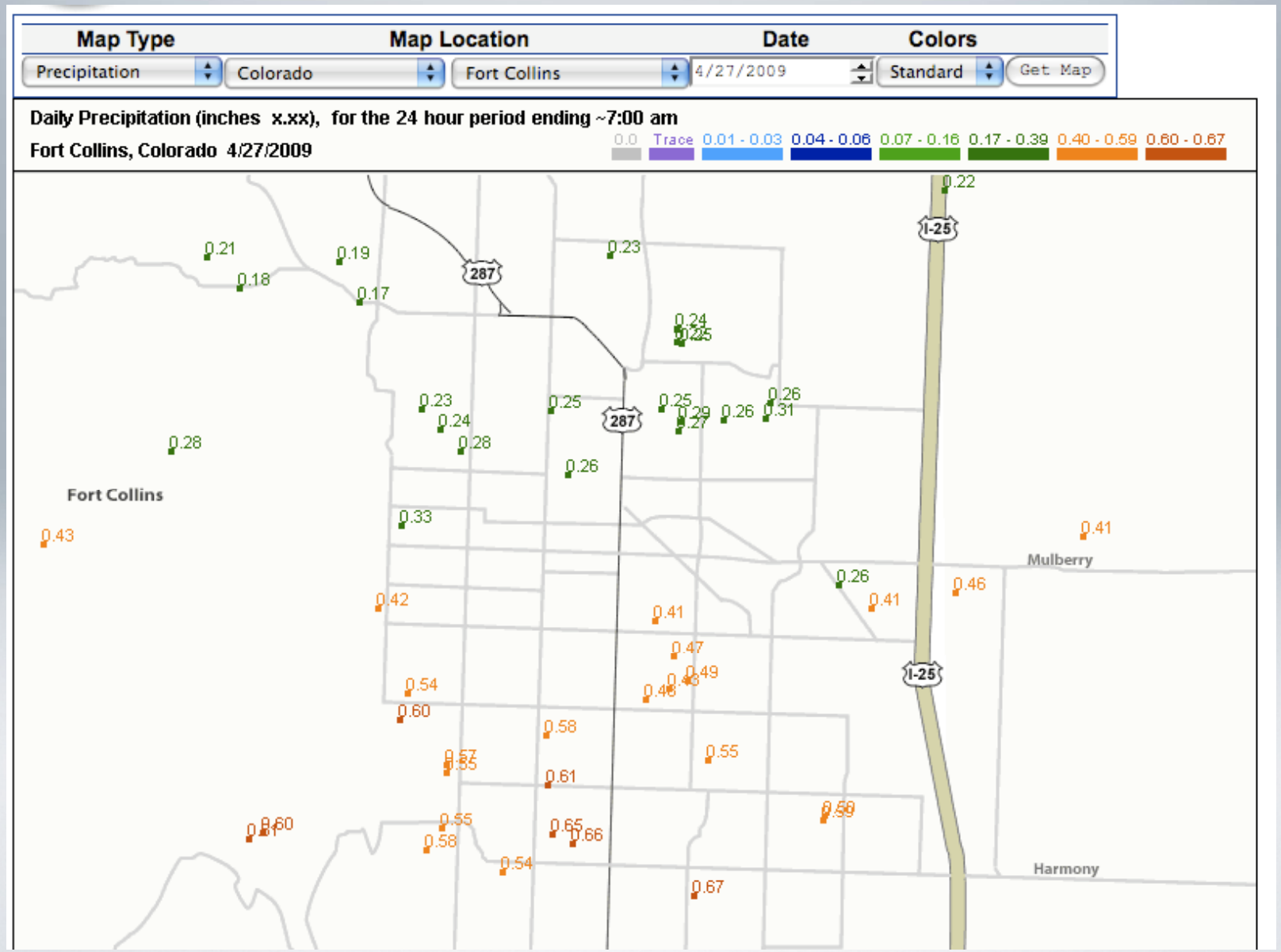
Click on your state from our main page and then click on your county



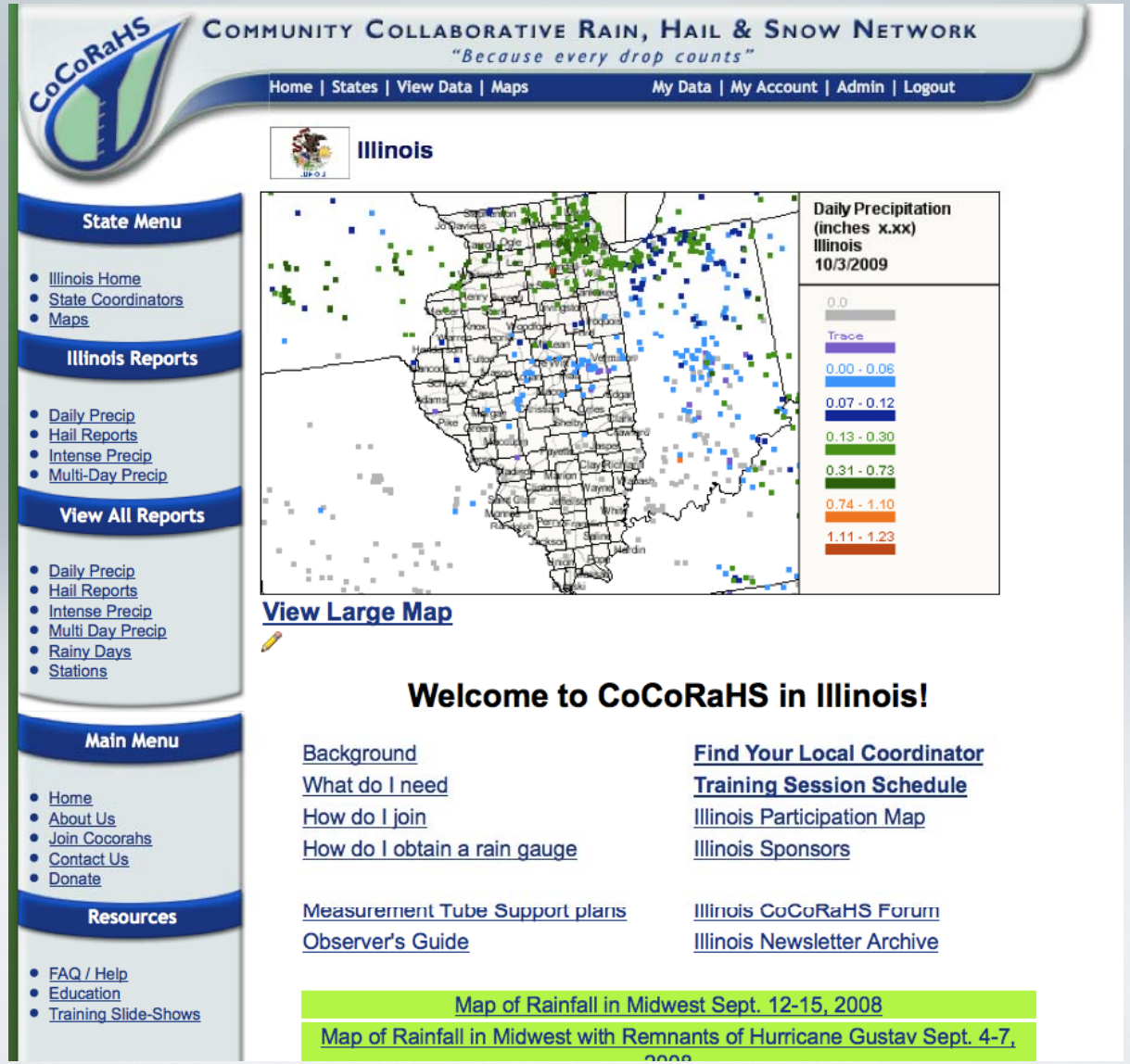


Observations are available (and sortable) in table form by clicking on “View Data” from the main menu.

A sample map from Fort Collins, Colorado



For Info on what is happening in your state visit your state page



Other Important Reports

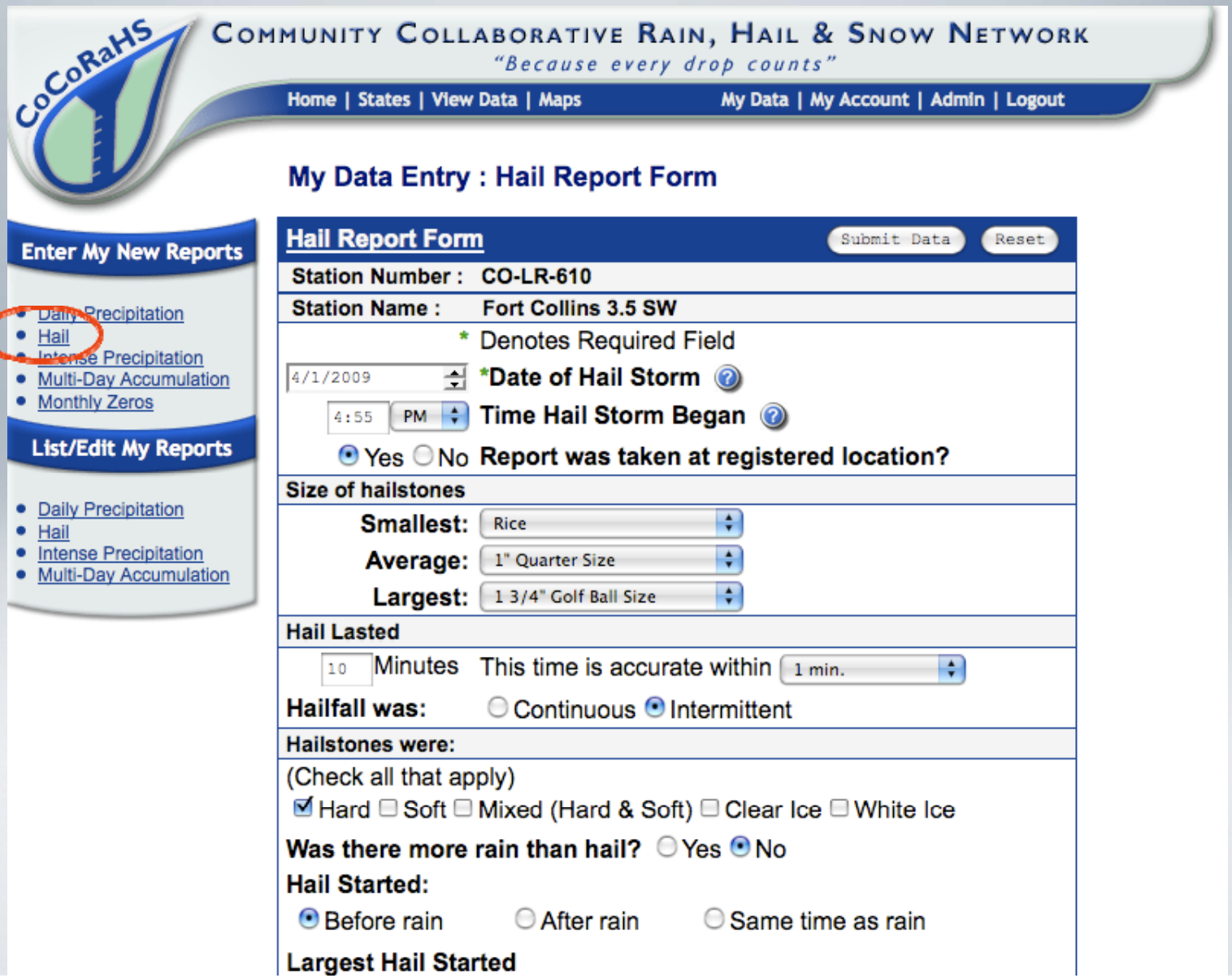
Hail Report

Intense Precipitation Report (Rain and Snow)

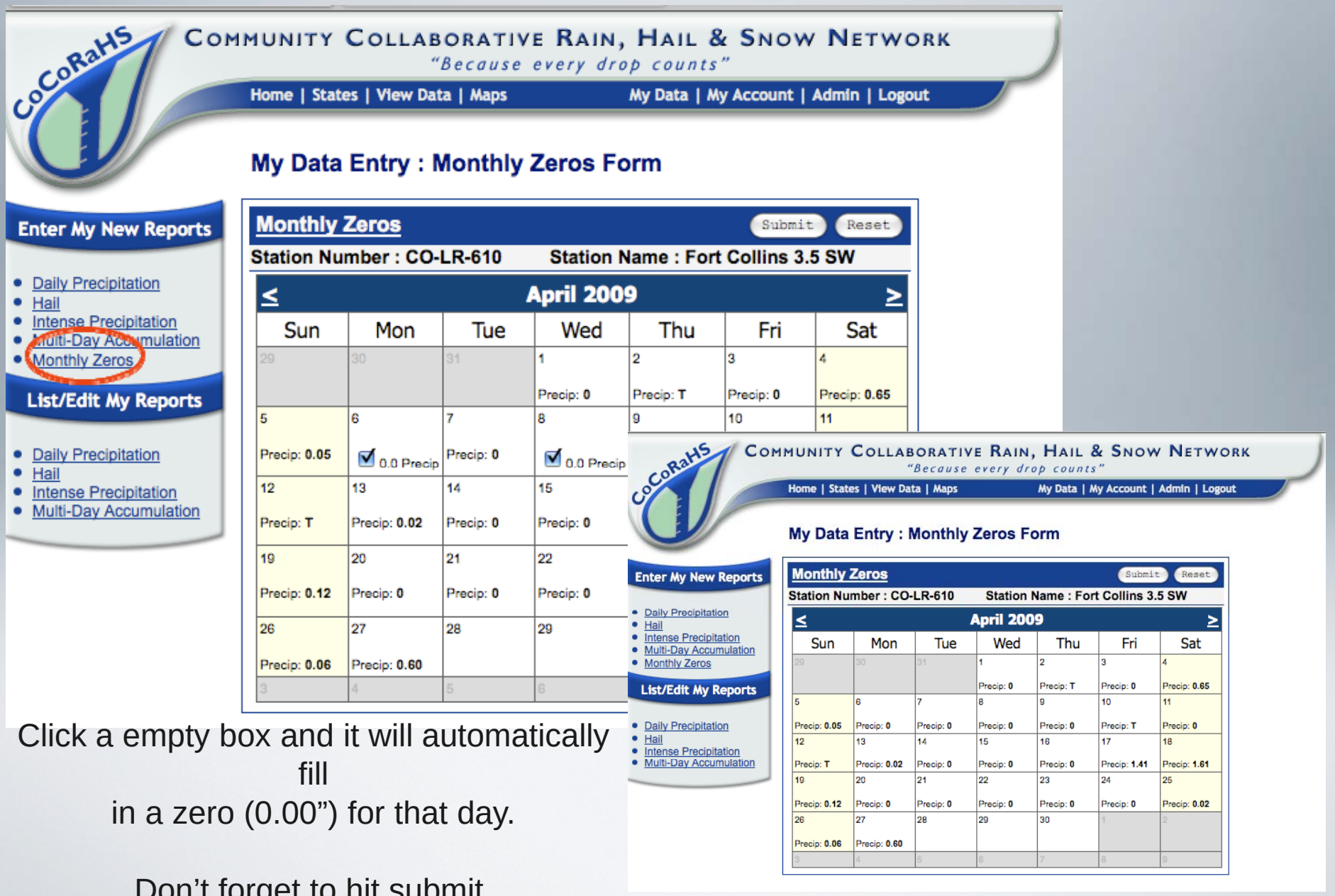
Monthly Zeros

Multi-Day Precipitation Report

Hail Report


CoCoRaHS
Community Collaborative Rain, Hail & Snow Network
"Because every drop counts"
Home | States | View Data | Maps
My Data | My Account | Admin | Logout
My Data Entry : Hail Report Form
Enter My New Reports
Daily Precipitation
Hail
Intense Precipitation
Multi-Day Accumulation
Monthly Zeros
List/Edit My Reports
Daily Precipitation
Hail
Intense Precipitation
Multi-Day Accumulation
Hail Report Form
Submit Data
Reset
Station Number : CO-LR-610
Station Name : Fort Collins 3.5 SW
* Denotes Required Field
4/1/2009
*Date of Hail Storm
4:55
PM
Time Hail Storm Began
Yes
No
Report was taken at registered location?
Size of hailstones
Smallest:
Rice
Average:
1" Quarter Size
Largest:
1 3/4" Golf Ball Size
Hail Lasted
10
Minutes
This time is accurate within
1 min.
Hailfall was:
Continuous
Intermittent
Hailstones were:
(Check all that apply)
Hard
Soft
Mixed (Hard & Soft)
Clear Ice
White Ice
Was there more rain than hail?
Yes
No
Hail Started:
Before rain
After rain
Same time as rain
Largest Hail Started

Monthly Zeros Report

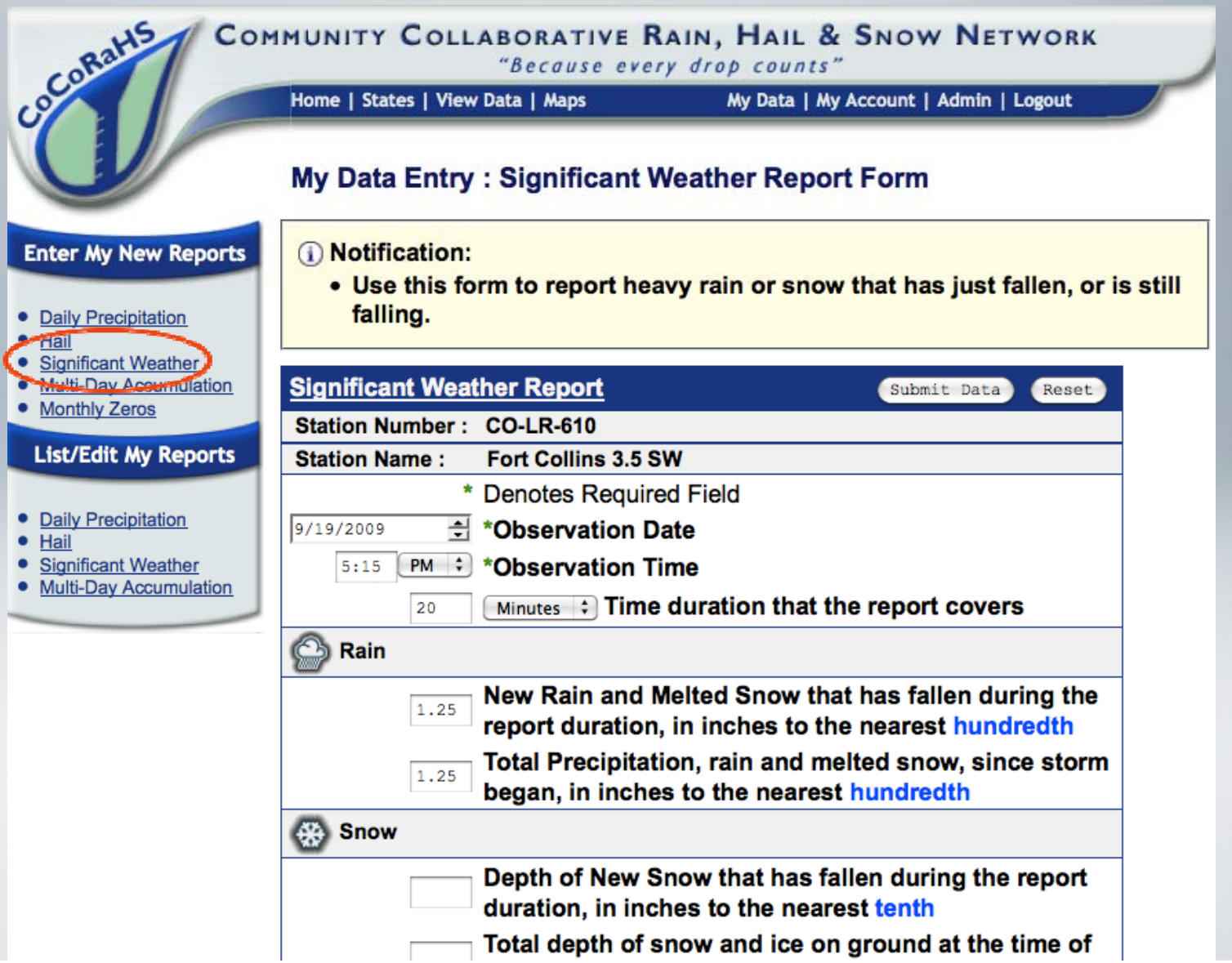


Click a empty box and it will automatically fill
in a zero (0.00”) for that day.

Don’t forget to hit submit.

Significant Weather Report

(both rain and snow)

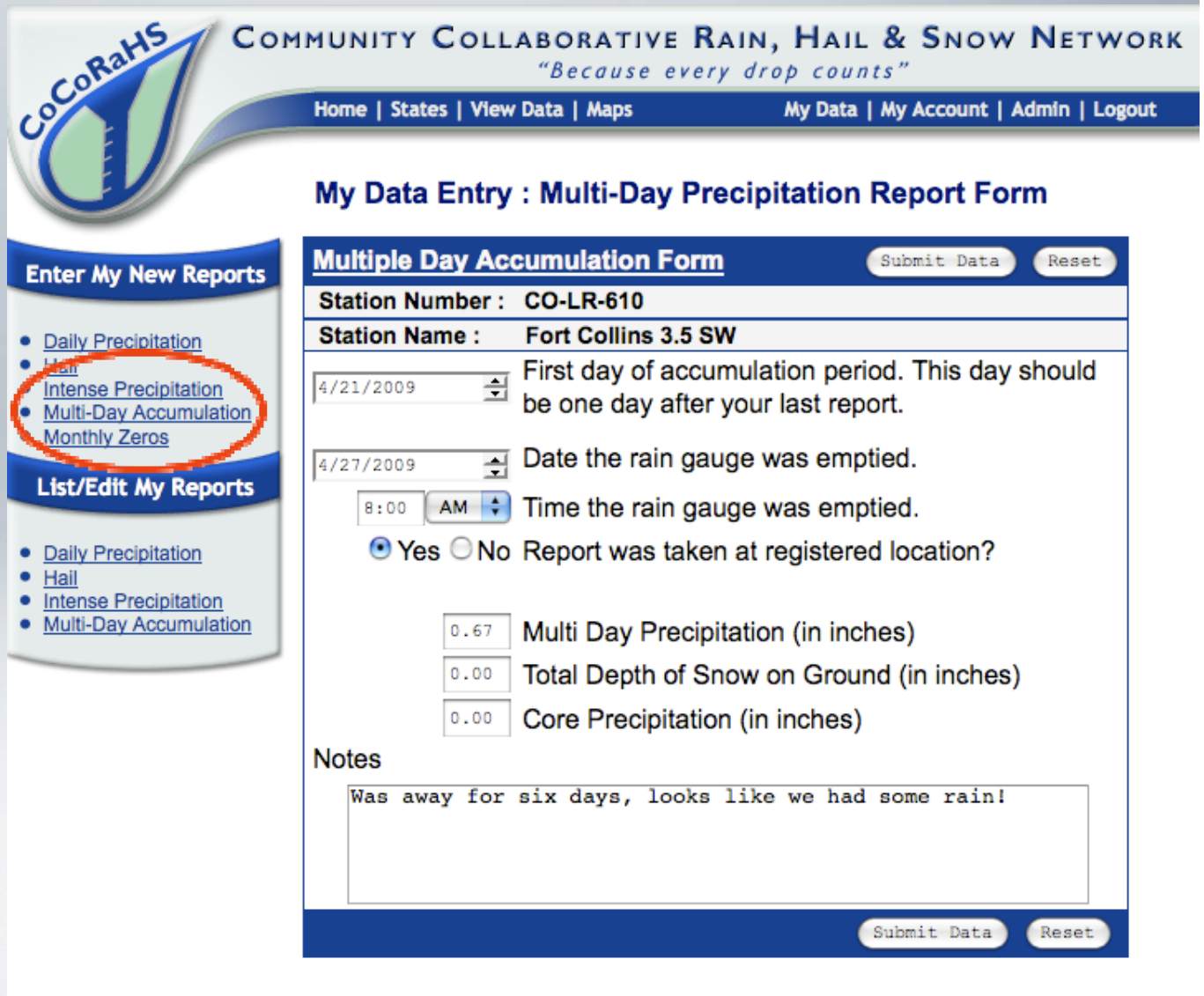


Multi-Day Precipitation Form

If you are away on vacation or out of town this is the form for you.

Just put in the dates that you were gone and record what you found in the gauge.

There is no need to file an additional daily report.



Section Three

Frequently asked questions

Do I have to be home everyday to participate in CoCoRaHS?

Answer: *No. Report when you are able. If you are gone, you may leave your gauge outside and report a multi-day total when you return*

What if Ii don’t have a good place to put my gauge?

Answer: *Few people have ideal locations. do your best. Send site photos if possible to help interpret the results.*

What if it hails when I’m not home ?

Answer: *We still would like your hail pad. Report as much info as you can find out from friends and neighbors.*

Do I report morning dew that has collected in my rain gauge?

Answer: *No. Dew is not precipitation, but you may note the dew in the comments*

How long is my commitment to CoCoRaHS ?

Answer: *Ideally, at least one season, but the longer you contribute, the more valuable the data become.*

I have an automated weather station with a rain gauge. Can I use that instead of the CoCoRaHS gauge ?

Answer: *In order to accurately compare CoCoRaHS reports, all observers must use the 4-inch CoCoRaHS gauge. Automated rain gauges tend to underestimate a heavy rainfall and do not accurately measure water content of snow. You are welcome to place the automated gauge beside the 4-inch gauge to compare measurements, but report what falls in the 4-inch gauge.*

You are now Ready to measure precipitation for the CoCoRaHS Network

Thanks for being one of our volunteer observers!


Just 5 minutes a day!
It's easy and fun!
We're Cuckoo For CoCoRaHS!
www.cocorahs.org