CoCoRaHS Training Slide-Show

toRaHS

"Because every drop counts!"

Picture: Paul W. Locke

What Is CoCoRaHS??

"CoCoRaHS is a grassroots, non-profit, community-based, high-density precipitation network made up of volunteers of all backgrounds and ages . . .







... who take daily measurements of *"just precipitation" right in their own backyards.*







We just measure precipitation!



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





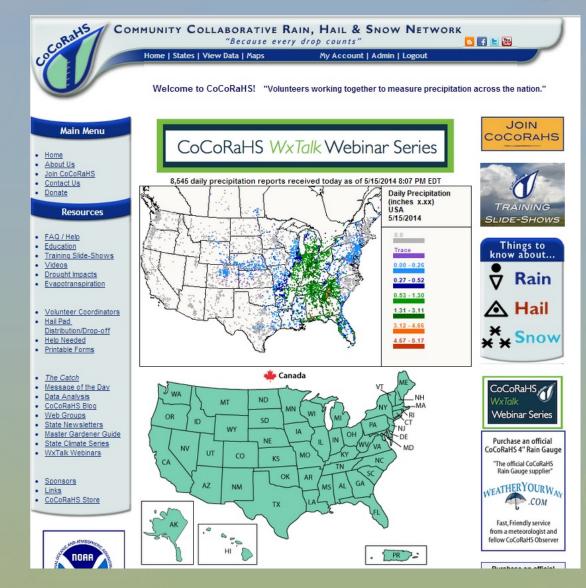
4-inch diameter high capacity rain gauges



Aluminum foil-wrapped Styrofoam hail pads



...and report their daily observations on our interactive Website: <u>www.cocorahs.org</u>



Our aim is to provide the highest quality data for natural resource, education and research applications.

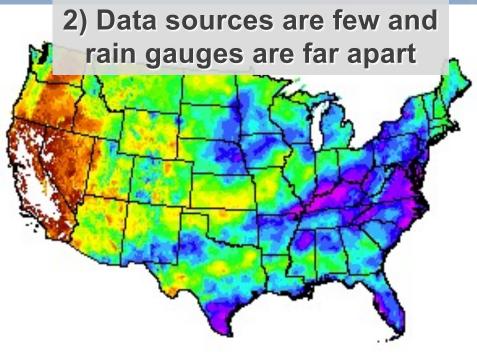
WHY CoCoRaHS ?

5 Important Reasons



1) Precipitation is important and highly variable







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



4) There is almost no quantitative data being collected about hail

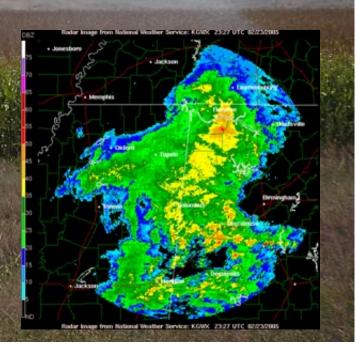
5) Storm reports can save lives



Who uses CoCoRaHS Data?

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

- Teachers and Students
 - Geoscience education tool
 - Taking measurements
 - Analyzing data
 - Organizing results
 - Conducting research
 - Helping the community



Who Sponsors CoCoRaHS?

The National Oceanic and Atmospheric Administration

Colorado State University

USDA

US Bureau of Reclamation

National Weather Service Local Offices

Individual Contributors

As well as many others

SECTION ONE: Observer Information

In this section we will:

a) Explain what <u>we will need from you</u> before you become an observer

b) Explain <u>what you will need</u> before you can participate



a) What <u>we will need from you</u> before you can participate as an observer:

Community Collaborati

oRa



A completed noiteoilqqe mrot (reqeq ro enil-no) Your location, so we can produce accurate maps. Just having your address may not be good enough. We have to pinpoint it just as close as we can.





Your commitment to collect accurate scientific data

Your willingness to receive CoCoRaHS emails

(spam blocking off)

- info@cocorahs.org
- <u>cocorahsqc@msn.com</u>
- <u>nolan@atmos.colostate.edu</u>

b) What you will need before you can participate as an observer

Community Collaborati

oRa



#1

A sincere desire to help study and learn about storms.



#3

A unique station number and name (we will assign you one)



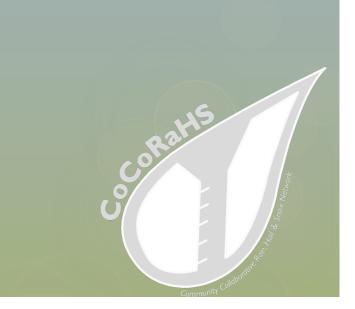
A CoCoRaHS "4-inch" rain gauge installed in a good location

#4



#5 A login ID and password to enter data

COMMUNITY	n View Data Maga	My Data Entry Logie
Login		
Henu Log In:		
UserNam	g username	
Password	*******	
8	Save Login	
63	Log In	
+ Find	your login info.	



#6

Internet or telephone capabilities

The ability to gather accurate data and transmit it in a timely fashion







SECTION TWO:

Setting Up Your Equipment and Observing Precipitation

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Community Collaborative Rolfs

In this section we will:

a) Show how/where to place your gauge

b) Explain how to measure rainfall

a) Placement of your rain gauge



Location! Location! Location!



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 <u>trees</u> or <u>any structure</u>





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

Also avoid placing your gauge near:



Sprinklers (both big and small)



Steep slopes (a bit exaggerated)

oRa



And finally avoid anything that would artificially increase or decrease your gauge catch

Note that a solid fence

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



Ideal placement of your rain gauge



Distance from obstacles

 In <u>open areas</u> strive to be <u>twice as far</u> from obstacles as they are high.

 In <u>developed areas</u> strive to be <u>as far</u> 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

This is to improve gauge catch by reducing wind speed



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

This is to improve gauge catch by reducing the impact of nearby obstacles



LEVEL and BEVEL

Make sure your gauge is level

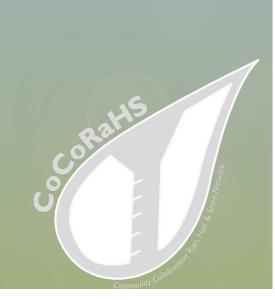




Bevel the top of the post to reduce rain splashing into the gauge.

b) Measuring Rainfall





When should we read our gauges?



7:00AM is preferred.

Between 5:00AM and 9:00AM is OK

Other times are accepted, but they will not appear on CoCoRaHS Maps

Reading your rain gauge

 Reading the rain gauge is easy but accuracy & consistency are important.

• Here are the most common situations you may encounter when reading your gauge.

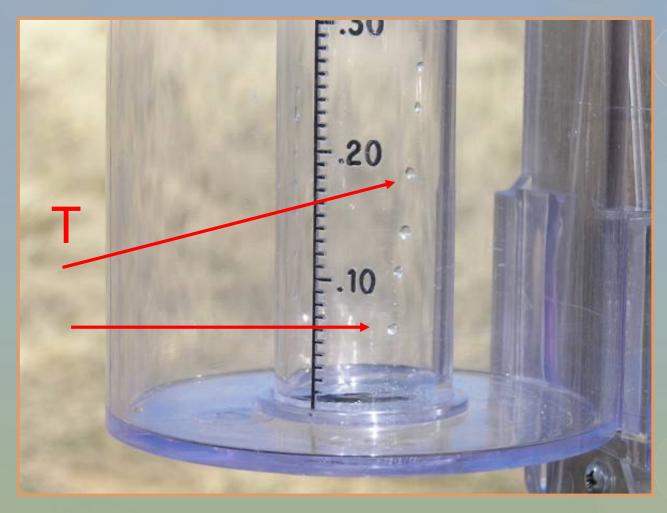


Your most common observation



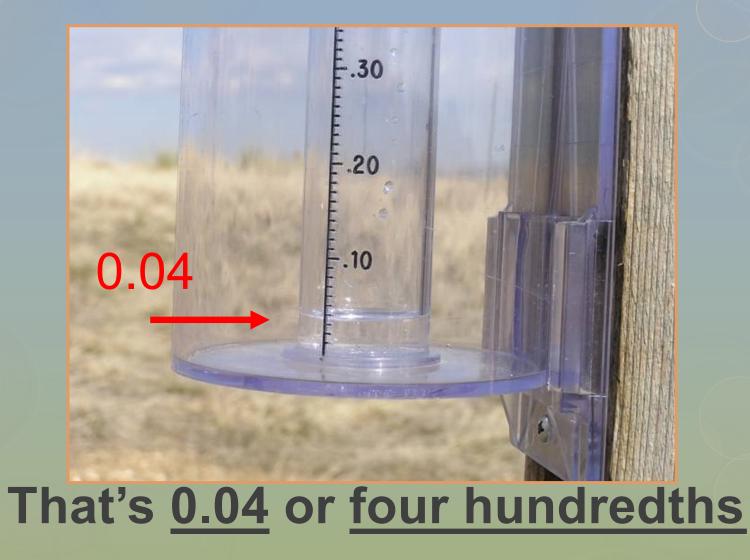
. . . will be <u>zero</u>, (0.00), nada, nothing, zilch! It is important to know that it did <u>NOT</u> rain. Please report zeros!

Trace "T"



When only a drop or two wet the Gauge, record a "T" for Trace

Between "T" and "one tenth" of an inch



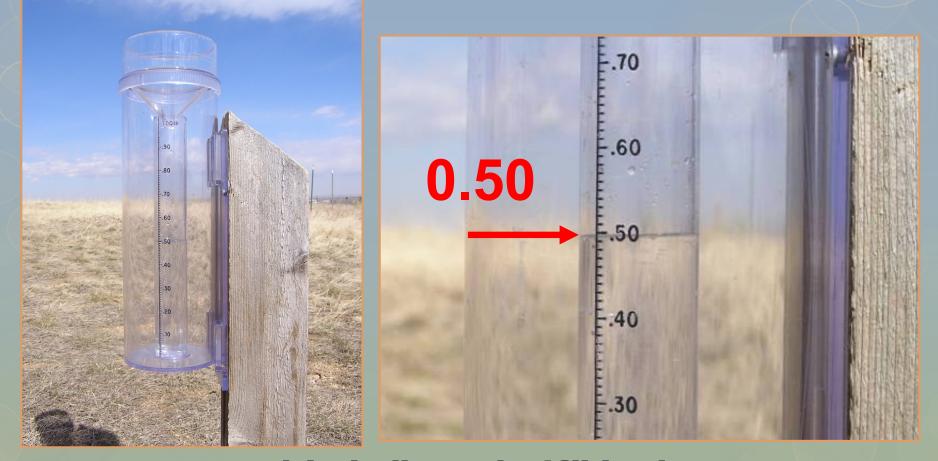
The surface of the water in the gauge looks curved. How do I know where to read?

As water fills up the measuring tube, a curved surface is formed called a **meniscus**. This meniscus 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 making your daily rain measurements.



A nice soaking rain



This is "one half" inch. It's NOT 5.0, nor 0.05, but <u>0.50</u> (kind of like 50 cents out of a dollar)

A good rain



The inner tube holds 1.00 inch

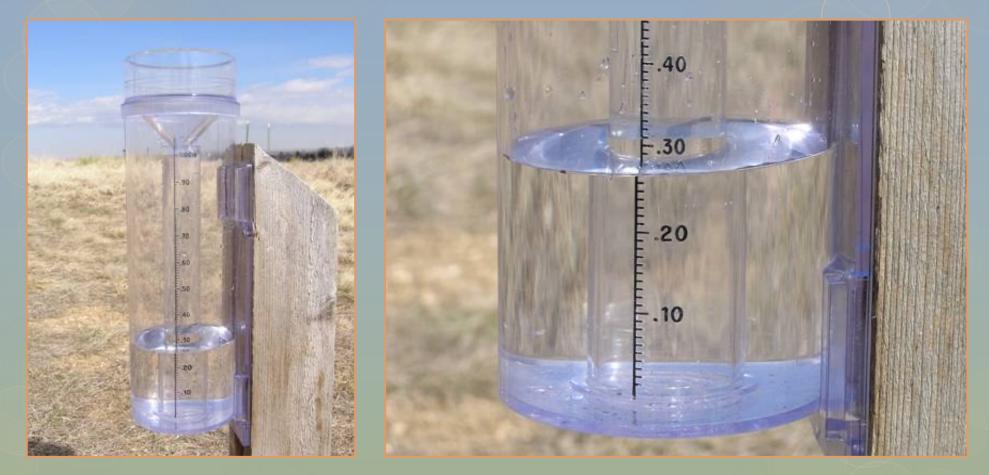
DECIMALS

Getting the decimal point correct is ESSENTIAL

0.40"

There is a large water difference between 0.40 inches and 4.00 inches

Water! Water! Everywhere!



When more than an inch of rain falls, the water will overflow into the outer cylinder. The whole gauge has a capacity to hold 11 inches.

To measure greater than one inch . . .



1) Pour out the first inch from the inner tube and write it down. 2) Now pour the remaining water into the funnel & measure using the inner tube.



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



Then add up all of your measurements 1.00 inch + 0.97 inches + 0.88 inches +0.92 inches = 3.77 inches

Total = 3.77"

SECTION THREE:

Reporting Observations

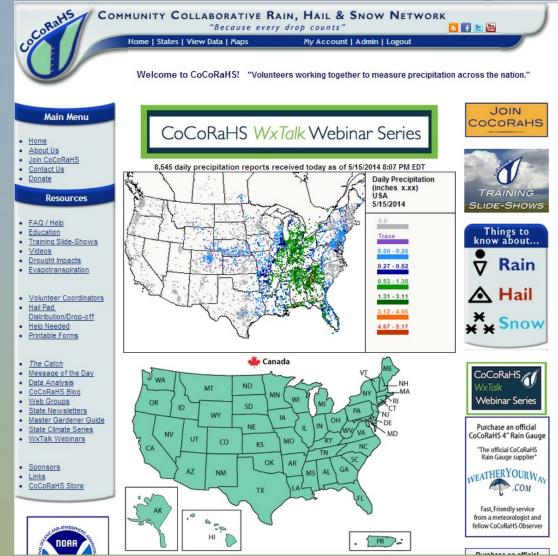
In this section we will:

- a) Introduce you to the Web-site
- b) Show you how to record your observations



The CoCoRaHS Web site

www.cocorahs.org



Our Web site is informative and easy to use. Here's how to begin \rightarrow

Login to CoCoRaHS

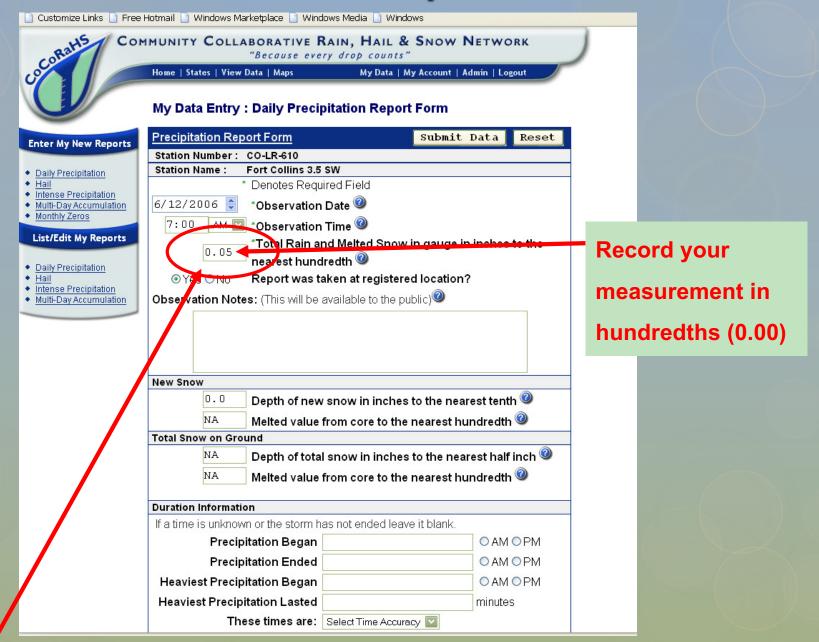
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Join Cocorahs Contact Us	Password:	******				
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	<u>Apply to</u>	be a Cocorahs observer,				
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Recording your Daily Precipitation

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	My Data Entry : Daily Precipitation	Report Form					
Enter My New Reports	Precipitation Report Form	Submit Data Reset					
	Station Number: CO-LR-610						
Daily Precipitation	Station Name : Fort Collins 3.5 SW * Denotes Required Fiel	ld					
Intense Precipitation	6/12/2006 Choservation Date						
<u>Multi-Day Accumulation</u> <u>Monthly Zeros</u>							
List/Edit My Reports	7:00 AM 🖾 *Observation Time @						
Eistredit my Reports		ed Snow in gauge in inches to the					
Daily Precipitation	nearest hundredth						
 <u>Hail</u> Intense Precipitation 	● Yes ○ No Report was taken at registered location?						
Multi-Day Accumulation	Observation Notes: (This will be available to the public)						
	New Snow						
	0.0 Depth of new snow in inches to the nearest tenth @						
	NA Melted value from core to the nearest hundredth @						
	Total Snow on Ground						
		n inches to the nearest half inch @					
	 NA Depth of total snow in inches to the nearest half inch MA Melted value from core to the nearest hundredth 						
	MA Meited value from co	re to the hearest hundredth 🥯					
	Duration Information						
	If a time is unknown or the storm has not ended leave it blank.						
	Precipitation Began						
	Precipitation Ended						
	Heaviest Precipitation Began						
	Heaviest Precipitation Lasted	minutes					
	These times are: Select T	ime Accuracy					

After you login, the screen will automatically take you to the Daily Precip. Report

Enter Your Report



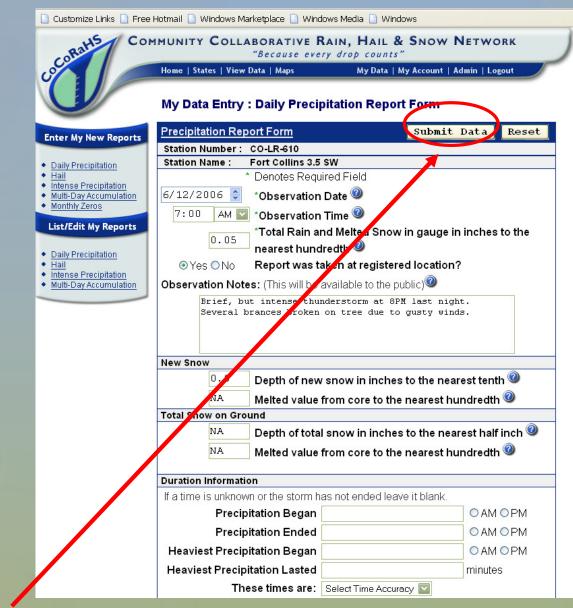
Here you will enter the total precipitation measured in your gauge

Recording Comments

	Hotmail 📋 Windows Marketplace 🗋 Windows	s Media 📋 Windows							
COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK "Because every drop counts" Home States View Data Maps My Data My Account Admin Logout									
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Enter My New Reports	Precipitation Report Form	Submit Data	Reset						
	Station Number: CO-LR-610								
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Hail Intense Precipitation	* Denotes Require	d Field							
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<u>Monthly Zeros</u>	7:00 AM 💟 *Observation Ti	me 🞯							
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 Della Dessiellation 	0.05 nearest hundred	dth 🥝							
Daily Precipitation Hail	NUMPERATE STREAM AND THE STREAM AND	n at registered location?							
Intense Precipitation Multi-Day Accumulation	Observation Hotes: (This will be available to the public)								
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Brief, but intense thunderstorm at 8PM last night. Several brances broken on tree due to gusty winds.									
	New Snow								
	0.0 Depth of new snow in inches to the nearest tenth @								
	NA Melted value from core to the nearest hundredth @								
	Total Snow on Ground								
	NA Depth of total snow in inches to the nearest half inch @								
		m core to the nearest hundredth							
	mented value no	in core to the nearest number	•						
	Duration Information								
	If a time is unknown or the storm has not ended leave it blank.								
	Precipitation Began OAM OPM								
	Precipitation Ended	O AM (O PM						
	Heaviest Precipitation Began	OAM	OPM						
	Heaviest Precipitation Lasted	minutes							
		elect Time Accuracy 🔽							

Feel free to enter comments about the day's weather under "Notes"

Submit your Report



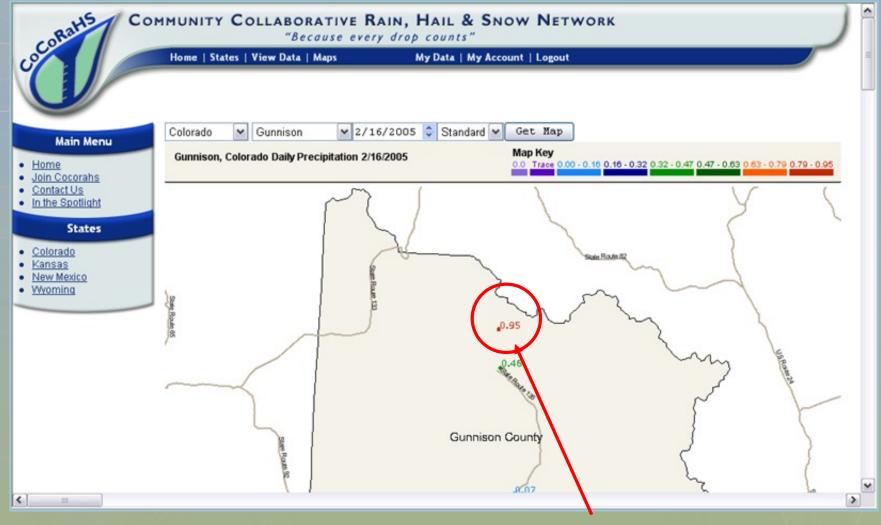
Click "Submit" and your data is recorded on our site

To See Your Report on the Map



Go to your state page and then click on your county

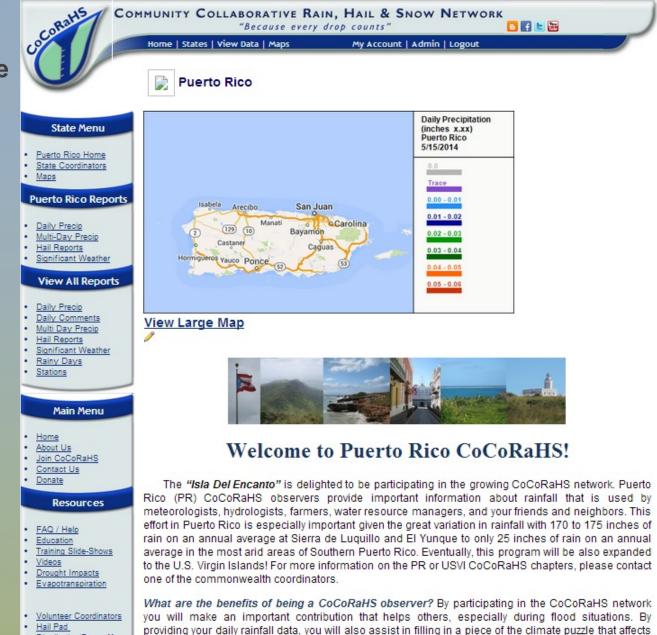
Your Report on our Daily Map



The amount of precipitation you entered shows up at your location on the map

Your state's Page

Each CoCoRaHS State has it's own page



Distribution/Drop-off

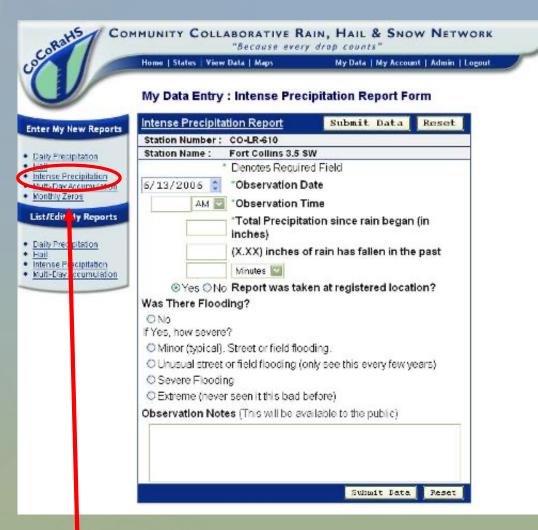
the Caribbean area.

Help Needed

Other Reports

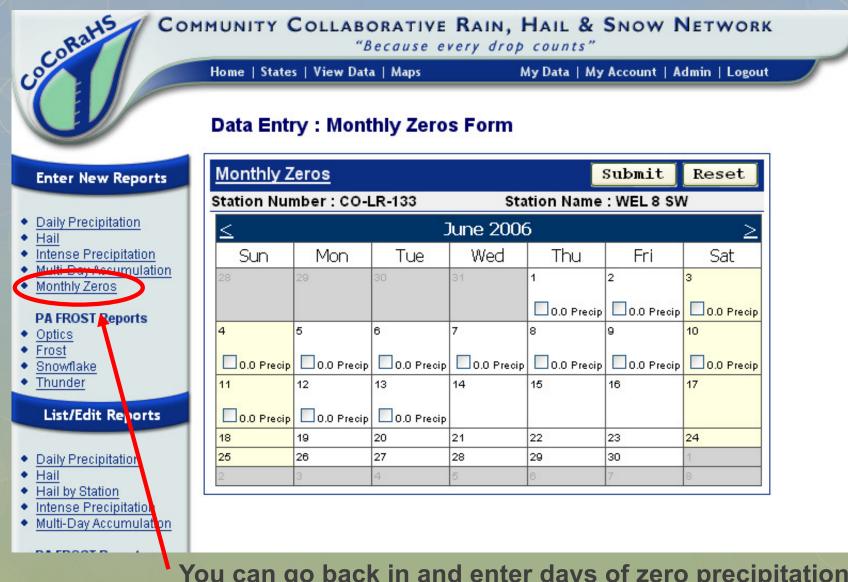
OHail Report
OIntense Precipitation Report
OMonthly Zeros
OMulti-Day Precipitation Report
ODaily Precipitation Report

Intense Precipitation Report



Click here to access the Intense Precipitation Report

Monthly Zeros



You can go back in and enter days of zero precipitation on one "simple to use" page

Multi-Day Precipitation

CocoRaHS Co	MMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETW "Because every drop counts"	ORK
0	Home States View Data Maps My Data My Account Admin L	ogout
	My Data Entry : Multi-Day Precipitation Report Form	
Enter My New Reports	Multiple Day Accumulation Form Submit Data Reset	
Enter My New Reports	Station Number: CO-LR-610	
 Daily Precipitation 	Station Name : Fort Collins 3.5 SW	
Hail Intense Precipitation	6/1/2006 First day of accumulation period. This day should	0
Multi-Day Accumulation	betene day after your last report.	
Monthly Zeros	6/7/2006 Pate the rain gauge was emptied.	"I
List/Edit My Reports	8:45 AM Time the rain gauge was emptied.	-"I was away for a week and read
		the accumulation in my gauge
 <u>Daily Precipitation</u> Hail 		
Intense Precipitation		when I returned."
Multi-Day Accumulation	0.75 Multi Day Precipitation (in inches)	
	Total Depth of Snow on Ground (in inches)	
	Core Precipitation (in inches)	
	Notes	
	Submit Data Reset	
You	can even enter information after yo	u've been away for several days

Daily Precipitation Reports

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SECTION FOUR:

Frequently Asked Questions

In this section we will try to answer common questions asked by observers.



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 I don't have a good place to put my gauge?

<u>Answer</u>: Few people have ideal locations. Do your best. Send site photos if possible to help interpret results.

What if it hails when I'm not at home?
<u>Answer</u>: 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.

Cesar Cabrera Photography

How long is my commitment to COCORAHS? Answer: Ideally, at least one season, but the longer you contribute, the more valuable the data become.

Thanks for joining us today!

You can find out more about the CoCoRaHS Network by visiting our web site or speaking with your local coordinator:

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www.cocorahs.org

