CoCoRaHS Training Slide-Show "Because every drop counts!" Edited by Krizia Negrón, NWS San Juan 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

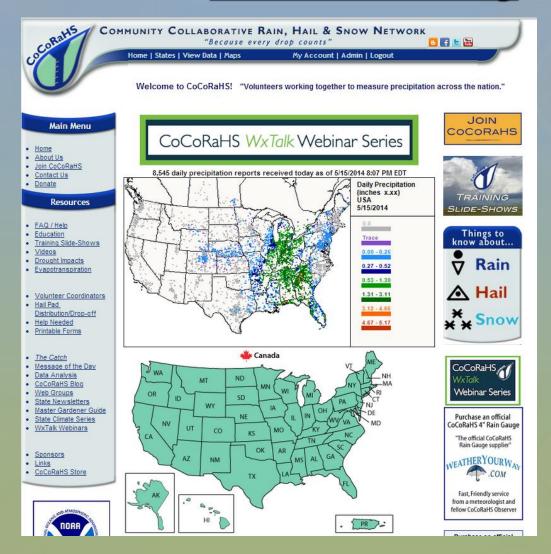


Aluminum foil-wrapped Styrofoam hail pads





...and report their daily observations on our interactive Website: www.cocorahs.org

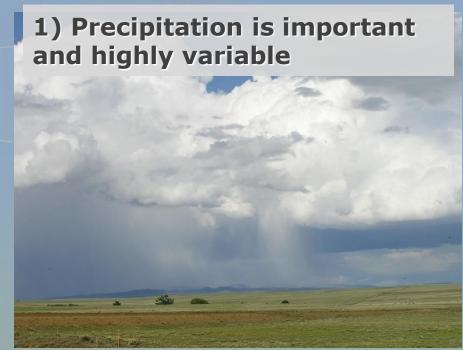


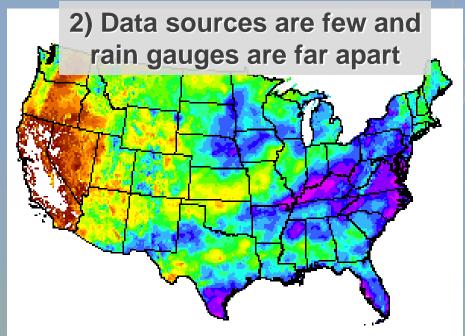


WHY CocoraHS?

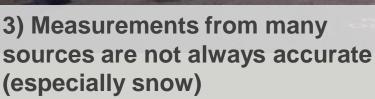
5 Important Reasons

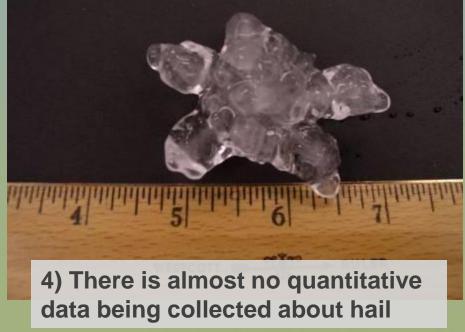












5) Storm reports can save lives



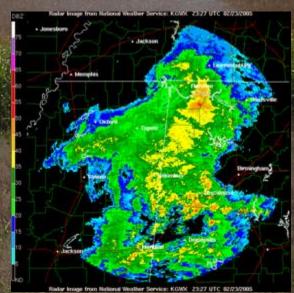


Who uses CoCoRaHS Data?

- 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 we will need from you before you become an observer

b) Explain what you will need before you can participate

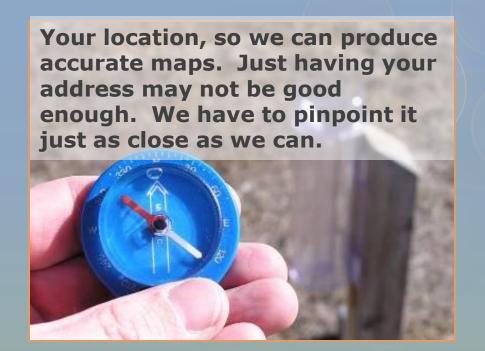


a) What <u>we will need from you</u> before you can participate as an observer:





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Your commitment to collect accurate scientific data

Your willingness to receive CoCoRaHS emails

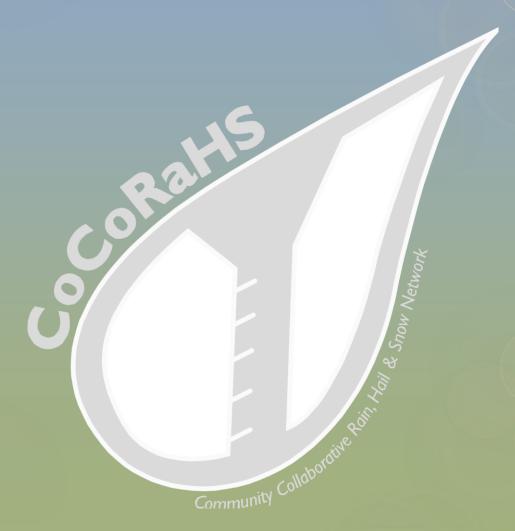
(spam blocking off)



- O info@cocorahs.org
 - cocorahsqc@msn.com
 - nolan@atmos.colostate.edu



b) What <u>you will need</u> before you can participate as an observer



#1



A sincere desire to help study and learn about storms.



#2

Training
(In person or on-line)

#3

A unique station number and name

(we will assign you one)





#4

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



#5

A login ID and password to enter data





#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

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!



Places <u>not</u> 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)





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



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.

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



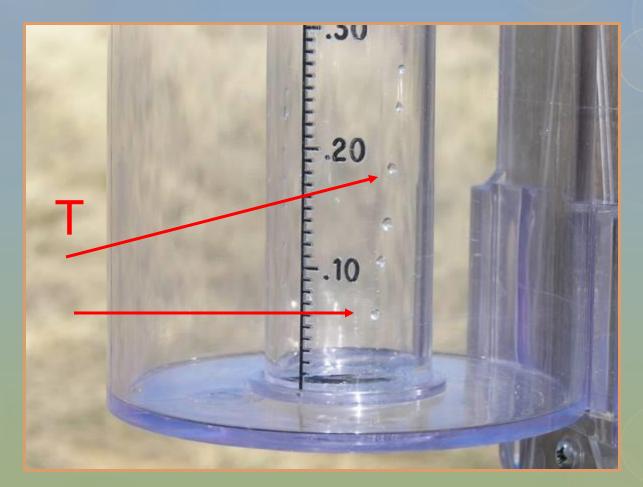
Your most common observation



... will be <u>zero</u>, (0.00), nada, nothing, zilch!

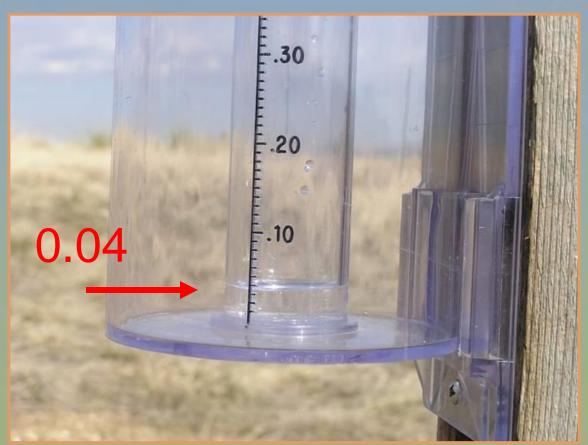
It is important to know that it did <u>NOT</u> rain. Please report zeros!

Trace "T"



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

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

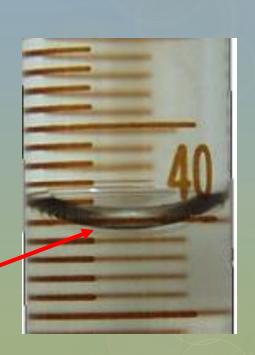


That's 0.04 or four hundredths

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

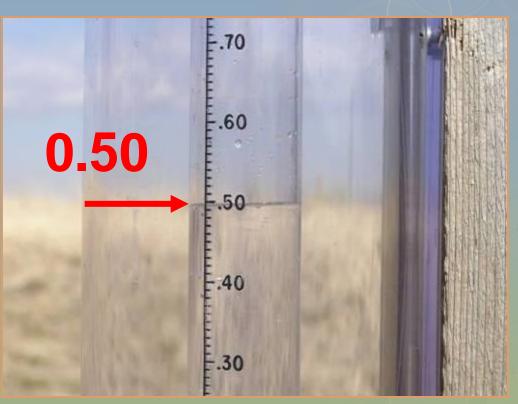
As water fills up the measuring tube, a curved surface is formed called a meniscus. This meniscus is formed by the surface tension of a liquid in contact with the sides of the tube.

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



A nice soaking rain





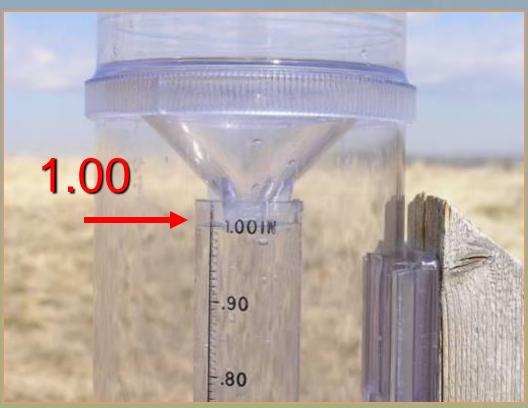
This is "one half" inch.

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 <u>ESSENTIAL</u>

0.40"

There is a large water difference between <u>0.40</u> inches and <u>4.00</u> 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

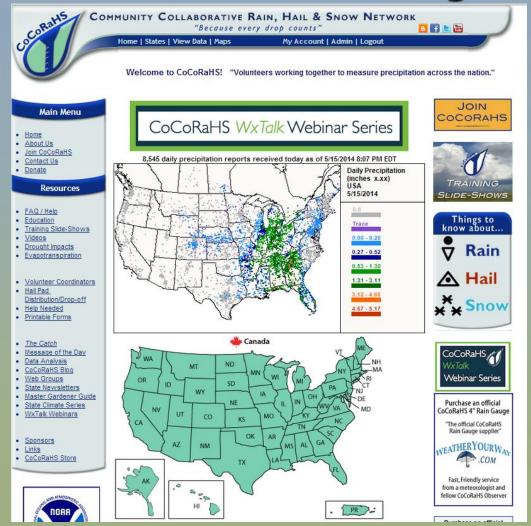
In this section we will:

- 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 ->

Login to CoCoRaHS

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CoCoRaHS Co	Home States	"Because ever View Data Maps	y drop counts" My Da'a Entry Login	
Main Menu Home Join Cocorahs Contact Us In the Spotlight	Log In: UserName: Password: • Eind you • Apply to	username Save Login Log In r login info. be a Cocorahs observer		
			page please contact the <u>webmaster.</u> e Center, <i>All rights reser d</i> . sed without express wil <mark>l</mark> en permision.	5

First, Click to Login

Recording your Daily Precipitation

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coRaHS Co	MMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK "Because every drop counts"					
01	Home States View Data Maps My Data My Account Admin Logout					
	My Data Entry : Daily Precipitation Report Form					
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After you login, the screen will automatically take you to the Daily Precip. Report

Enter Your Report

	Hotmail 📋 Windows Marketplace 🗋 Windows Media 📋 Windows						
COCORAHS COM	IMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK "Because every drop counts"						
0	Home States View Data Maps My Data My Account Admin Logout						
	My Data Entry : Daily Precipitation Report Form						
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	Station Number: CO-LR-610						
Daily Precipitation	Station Name : Fort Collins 3.5 SW						
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	Precipitation Ended OAM OPM						
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	These times are: Select Time Accuracy ☑						

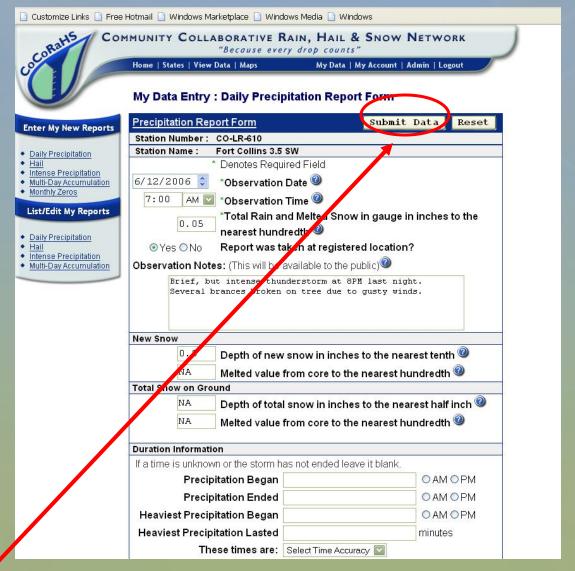
Here you will enter the total precipitation measured in your gauge

Recording Comments

	Hotmail 🗋 Windows Marketplace 🗋 Windows Media 🗋 Windows				
COCORAHS COM	HOME States View Data Maps My Data My Account Admin Logout				
	My Data Entry : Daily Precipitation Report Form				
Enter My New Reports	Precipitation Report Form Submit Data Reset				
	Station Number: CO-LR-610 Station Name: Fort Collins 3.5 SW				
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Monthly Zeros	7: 00 AM *Observation Time ®				
List/Edit My Reports	Observation Time				
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Intense Precipitation	4-197 - 3044 - 4074 - 754 - 54				
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	Brief, but intense thunderstorm at 8PM last night. Several brances broken on tree due to gusty winds.				
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	Heaviest Precipitation Lasted minutes				
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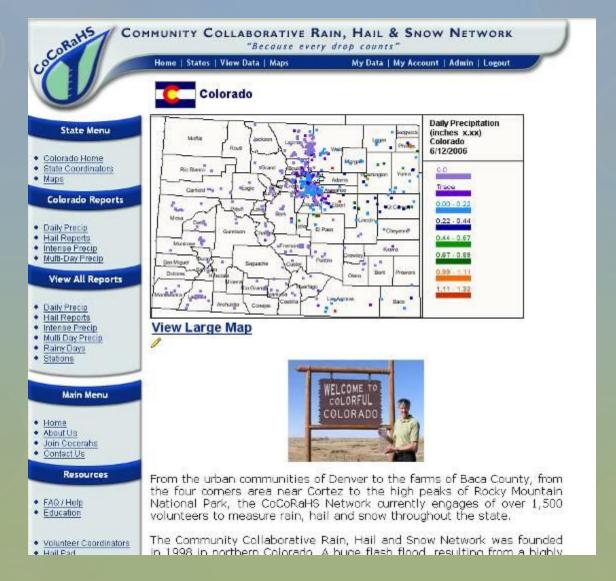
Feel free to enter comments about the day's weather under "Notes"

Submit your Report



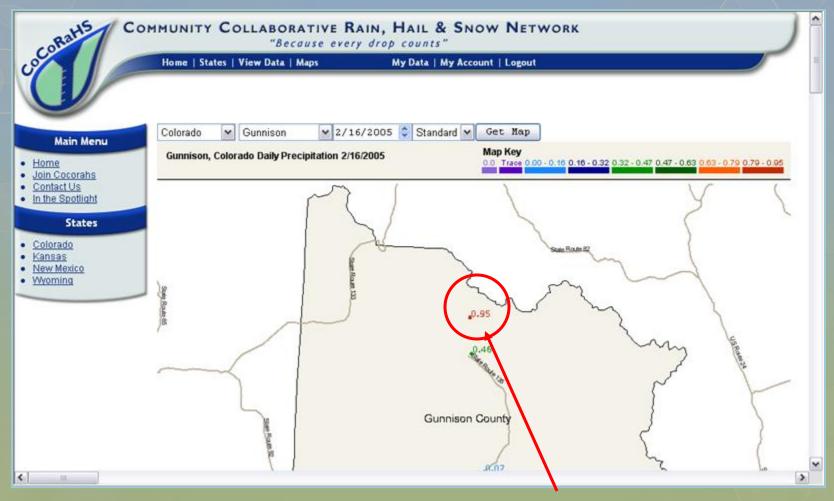
Click "Submit" and your data is recorded on our site

To See Your Report on the Map



Go to your state page and then click on your county

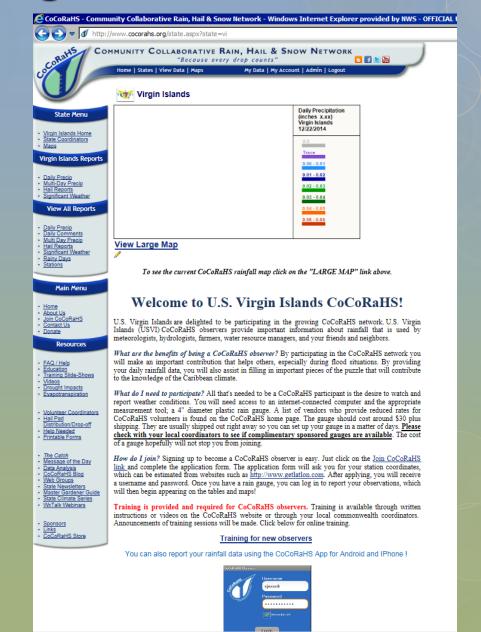
Your Report on our Daily Map



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

Your state's Page

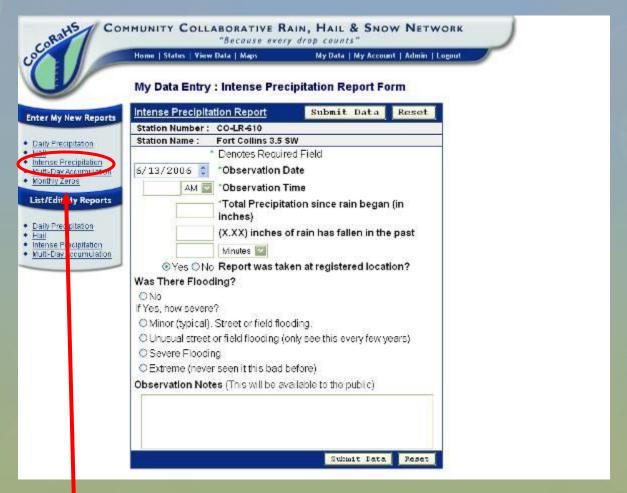
Each CoCoRaHS State has it's own page



Other Reports

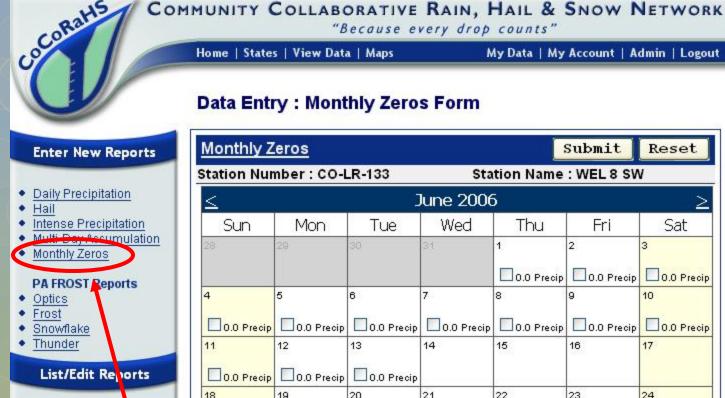
- OHail Report
- OIntense Precipitation Report
- OMonthly Zeros
- OMulti-Day Precipitation Report
- ODaily Precipitation Report

Intense Precipitation Report



Click here to access the Intense Precipitation Report

Monthly Zeros



Daily Precipitation

Hail by Station Intense Precipitatio Multi-Day Accumulation

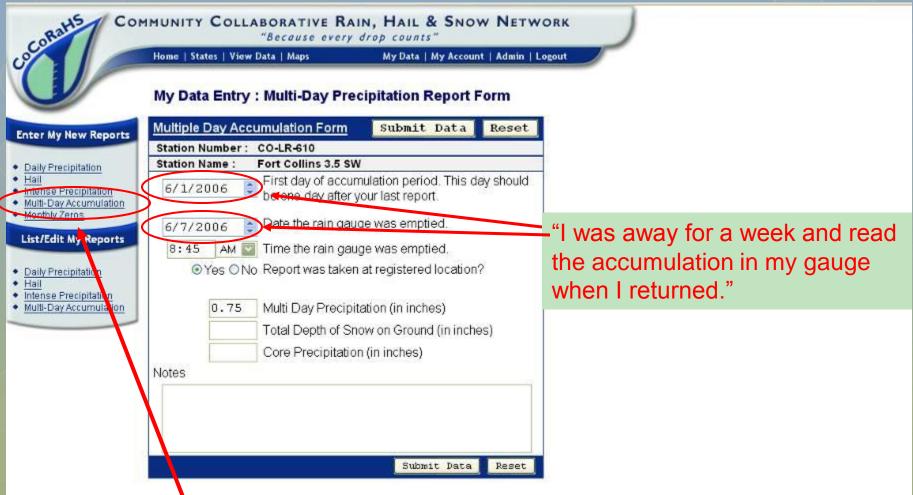
Hail

Monthly Z	eros				Submit	Reset		
Station Number : CO-LR-133				tation Name : WEL 8 SW				
<u>≤</u> June 2006 <u>≥</u>								
Sun	Mon	Tue	Wed	Thu	Fri	Sat		
28	29	30	31	1	2	3		
				0.0 Precip	0.0 Precip	0.0 Precip		
4	5	6	7	8	9	10		
0.0 Precip	0.0 Precip	0.0 Precip	0.0 Precip	0.0 Precip	0.0 Precip	0.0 Precip		
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0.0 Precip	0.0 Precip	0.0 Precip						
18	19	20	21	22	23	24		
25	26	27	28	29	30	1		
2	3	4	5	G	7	8		

My Data | My Account | Admin | Logout

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

Multi-Day Precipitation



You can even enter information after you've been away for several days

Daily Precipitation Reports



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?

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

Pic: Michael Cervoni

What if it hails when I'm not at 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.





