COCORAHS

"BECAUSE EVERY DROP COUNTS"







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!

Rain

Snow

Hail

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



4-inch diameter high capacity rain gauges



Aluminum foil-wrapped Styrofoam hail pads



CORaHS

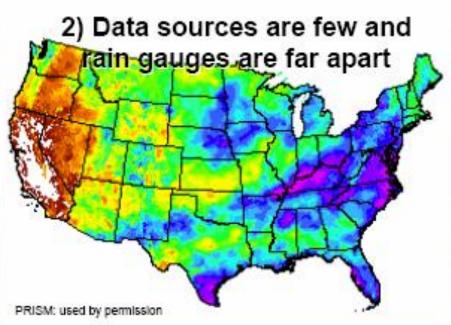
and report their daily observations on our interactive Web site: www.cocorahs.org



WHY CoCoRaHS?









5) Storm reports can save lives

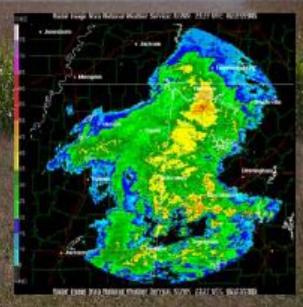


Who uses CoCoRaHS Data?

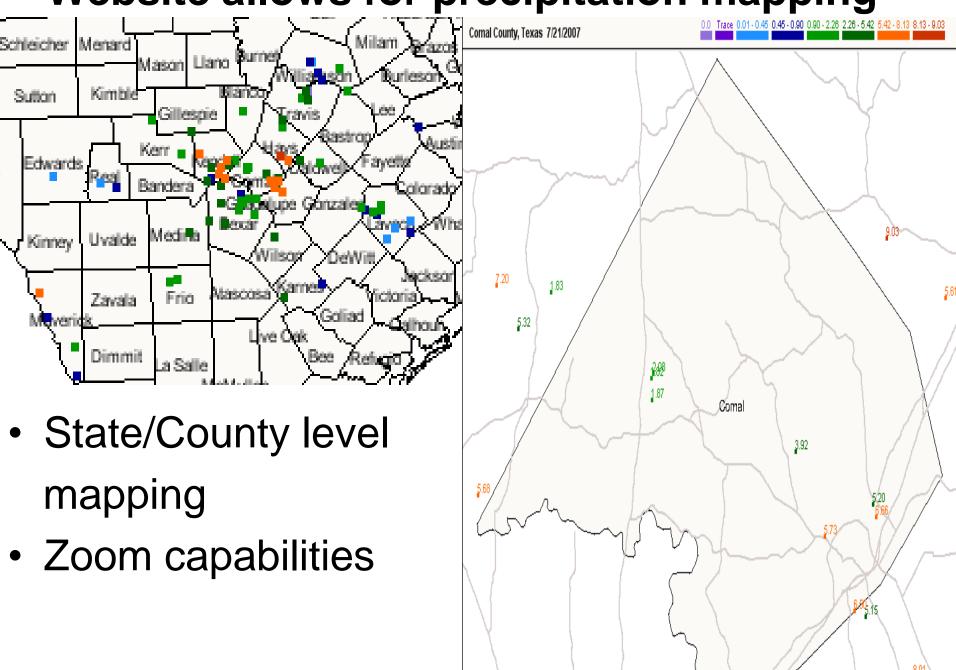
- National Weather Service
- Other Meteorologists
- Hydrologists
- Emergency Managers
- City Utilities
 - -Water supply
 - -Water conservation
 - -Storm water
- Insurance adjusters
- USDA—Crop production
- Engineers
- Scientists studying storms
- Mosquito control
- Ranchers and Farmers
- Outdoor & Recreation

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

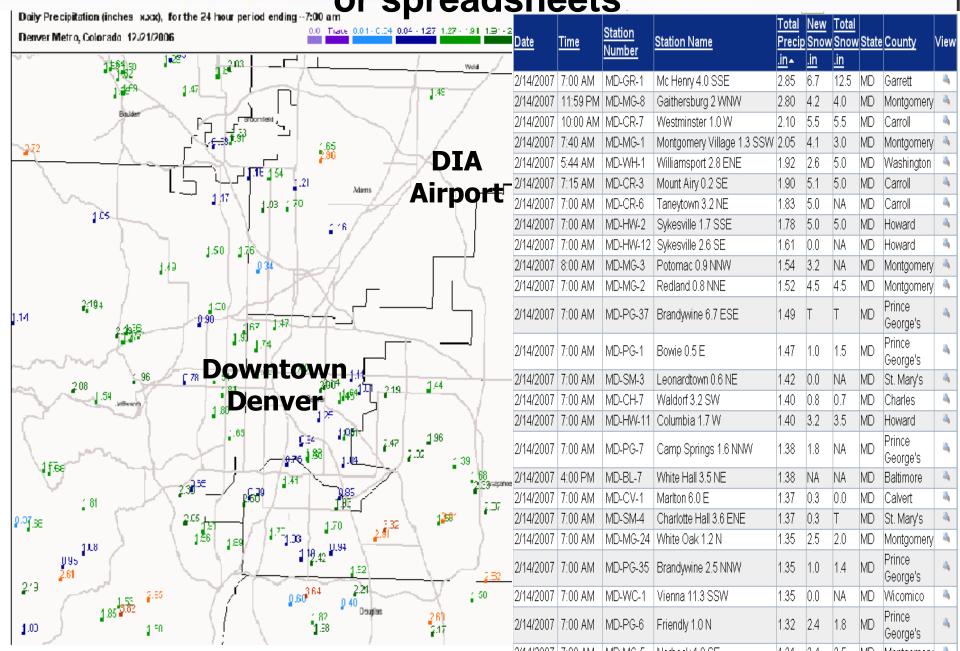




Website allows for precipitation mapping



Precipitation totals are available through maps or spreadsheets



Observers are also encouraged to submit intense rainfall/flooding reports...

COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK
"Because every drop counts"

Home | States | View Data | Maps

My Data Entry | Login

View Data: View Intense Precipitation Report

Intense Precipitation Report

Station Number: TX-GP-2

 Station Name:
 Mcqueeney 1.8 N

 Date:
 7/20/2007 6:20 PM

 Submitted
 7/20/2007 7:10 PM

Notes: Main streets in Las Brisas subdivision flooded with water

in some houses

Taken at Registered

Location:

True

Precip Duration Minutes: 228 New Precip Amount: 1.97

Total Precip Amount: 7.19 inches

New Snow Depth: NA
Total Snow Depth: NA

Flooding: Severe

<u>(6MB)</u>

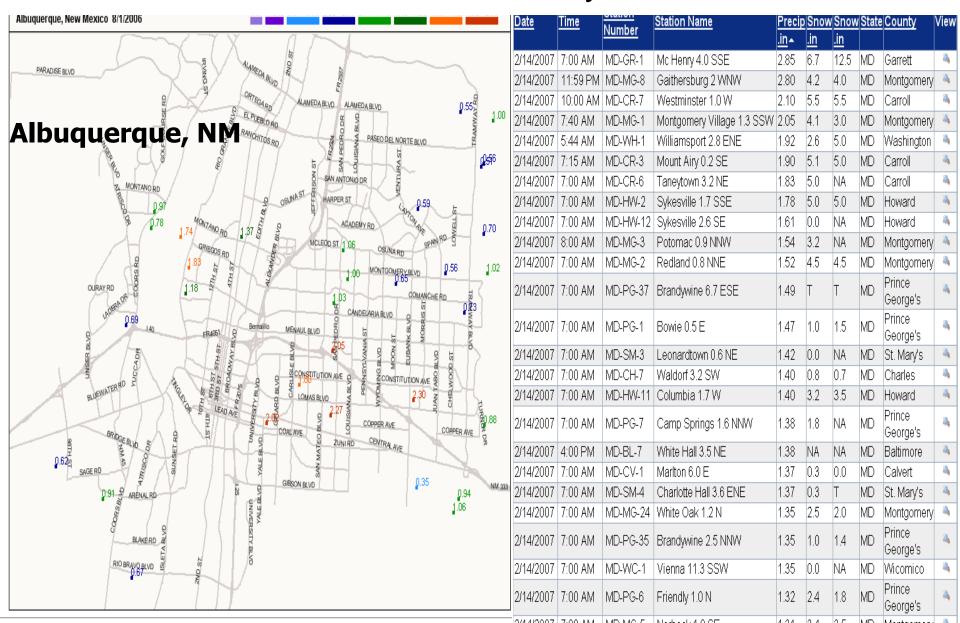
ors

And hail reports that occur at/near your observation site

UDSELVATION SILE							
Hail Report							
Hail Report Information							
Station Number: Station Name: Date: Submitted Taken at registered location	TX-TN-7 Watauga 2.4 WNW 4/13/2007 6:03 PM 4/13/2007 9:43 PM n: True Wind gusts estimated to at least 40 mph occurred with the storm. About 3 mi south						
	baseball hail fell and a tornado struck about 6 mi south.						
Hailstone Information							
Largest Size:	1 1/2" Ping Pong Ball Siz	1 1/2" Ping Pong Ball Size					
Average Size:	1" Quarter Size						
Smallest Size:	3/4" Penny Size						
Stone Consistency:	Hard, Clear Ice, White Ice						
Hail Storm Information							
Duration Minutes:	5						
Duration Accuracy:	3min	3min					
Timing:	Continuous						
More Rain than Hail:	False						
Hail Started:	Same time as rain						
Largest Hail Started:	After smaller hail						
Damage:	minor leaf damage	minor leaf damage					
Hail pad information							
0	20.40						

Angle of Impact:

This data allows CoCoRaHS to supplement existing networks and provide many useful results to scientists, resource managers, decision makers and other end users on a timely basis.







SECTION ONE: Observer Information

In this section we will:

a) Explain what we will need from you before you become an observer



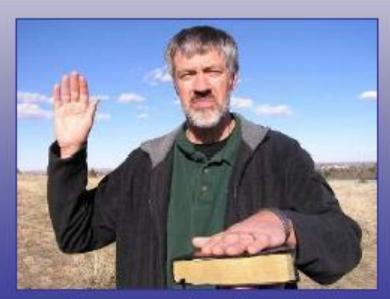
a) What <u>we will need from you</u> before you can participate as an observer:





A completed application form (on-line or paper)





Your commitment to collect accurate scientific data



(spam blocking off)



info@cocorahs.org cocorahsgc@msn.com nolan@atmos.colostate.edu

Obtaining Latitude/Longitude Coordinates

The following procedure should allow you to obtain acceptable latitude/longitude coordinates for your gauge if you do not have a GPS device:

1) Open your web browser and go to the site:

http://www.getlatlon.com

A map of the Northern Hemisphere should appear on your screen. You will notice crosshairs at the center of the screen. Latitude/Longitude coordinates for the crosshairs will be beneath the map (43.834526782236814,

- -37.265625)
- 2) Move the location of your gauge under the crosshairs by clicking and holding your left mouse button to drag your gauge location under the crosshairs (initially this will be the State of Louisiana or Texas).
- 3) Zoom in on your location by pressing the "+" icon located in the navigation section located at the left edge of the browser window.
- 4) Repeat steps #2 and #3 until you can identify your specific gauge location. Use the "Map", "Satellite", and/or "Hybrid" map views to help you navigate and locate your gauge location.
- 5) When you are satisfied that you have located your site, read the latitude and longitude coordinates under the map and record these as your CoCoRaHS site information coordinates. A resolution of 4 digits after the decimal point should be sufficient for identifying your site.

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





I

A sincere desire to help study and learn about storms



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

COMMUNITY C	York New Edition	No Executory Code	_
Login			
Login:	-0.5 %		
ticestone	se e mase		
Passwork	******		
	ElSavy1.com		
***	[Log In]		
	ur legio into. s be a Cacoraha obos	DOM.	



Hail pads (some states may not be participating)



#7

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 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



Obtaining a Rain Gauge

Ordering a rain gauge is a simple process. They are available for sale online from "WeatherYourWay" and "Ambient Weather". You can order the gauge for \$22 plus shipping (normally \$8-\$10). The website addresses are:

www.weatheryourway.com/cocorahs/store.html www.ambientweather.com/strgloteprra.html



Where can I place my rain gauge??

Location is the key to good data!!!





Helpful Tips in Locating Your Rain Gauge

- 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



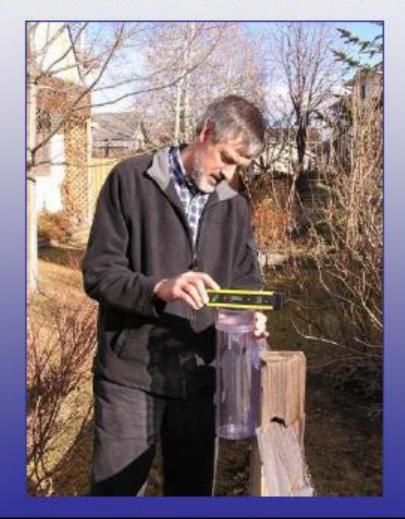
In developed areas place the gauge top approx. 5 feet off the ground

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.

When should we read our gauges?





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



Water! Water! Everywhere!





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

To measure greater than one inch . . .





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

Now pour the remaining water into the funnel & measure using the inner tube.

If snow is anticipated . . .





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

There are two ways in which snow is measured:

- 1. Liquid water content
 - From the gauge
 - From a core sample
 - 2. Depth of snow
 - 24 hour snowfall accumulation
 - Existing snow depths



What falls in gauge we measure



We will disregard the snow that lands outside the gauge.



Go ahead and clear away the snow from the gauge

Measuring the Water Equivalent

- Add a known amount of tap water to the inner cylinder.
- Next, add the water to the snow within the outer cylinder, and swirl/mix until the snow has melted.
- Lastly, pour the liquefied water into the inner cylinder, and take your measurement.
- REMEMBER...subtract the known amount of water you just added before melting from the total water equivalent you measured!!!

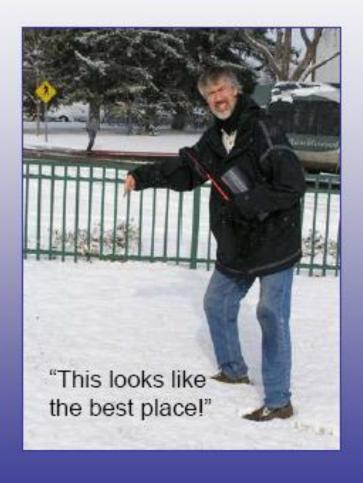
Measuring liquid water content from a core sample



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First find a representative location



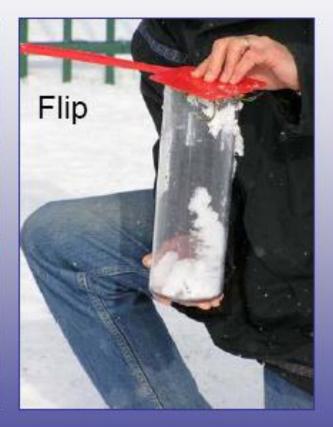


The location should have not drifted, melted, or blown clear

Capturing the core







Slide snow-swatter under gauge

Carefully lift and get ready to flip the gauge

Bring the sample inside to melt

Measuring snowfall



Snow Network



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.

How do I measure Freezing Rain?



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

Do <u>NOT</u> 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 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.

The CoCoRaHS Web site

www.cocorahs.org



COMMUNITY COLLABORATIVE RAIN, HAIL & SNOW NETWORK

"Because every drop counts"

Home | States | View Data | Maps

My Data Entry Login

Welcome to CoCoRaHS

CoCoRaHS

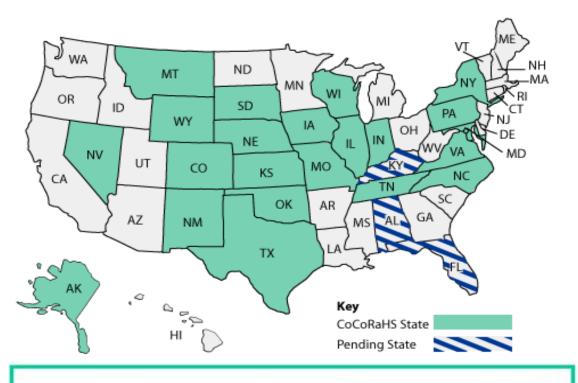
Coming to Florida

Main Menu

- Home
- About Us
- Join Cocorahs
- Contact Us

Resources

- FAQ / Help
- Education
- Training Slide-Show(вмв)
- Volunteer Coordinators
- Hail Pad Distribution/Drop-off
- Help Needed
- Printable Forms
- CoCoRaHS Store
- Calendar
- The Catch
- Message of the Day
- CoCoRaHS Blog

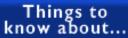






weatherwise

Read the "CoCoRaHS Article" in the July/August 2007 Issue of Weatherwise Magazine





Rain

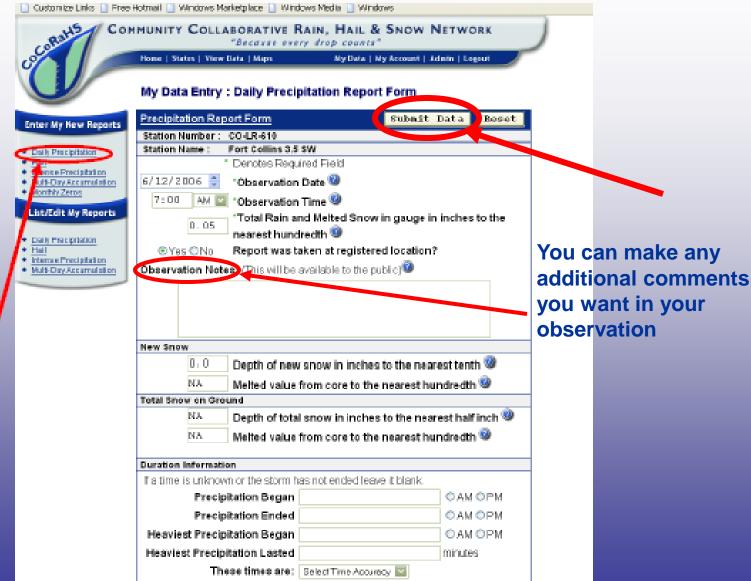


Hail



* Snow

Recording your Daily Precipitation



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

Observers can submit comments/observation notes when entering their daily observations



About Us
 Join Cocorahs
 Contact Us
 Donate

Search Daily Report Comments						
Location: Louisiana ALL COUNTIES						
Date: 1/26/2008 🕏						
Search						
Searched: Stations in Louisiana. Observation Date on 1/26/2008.						

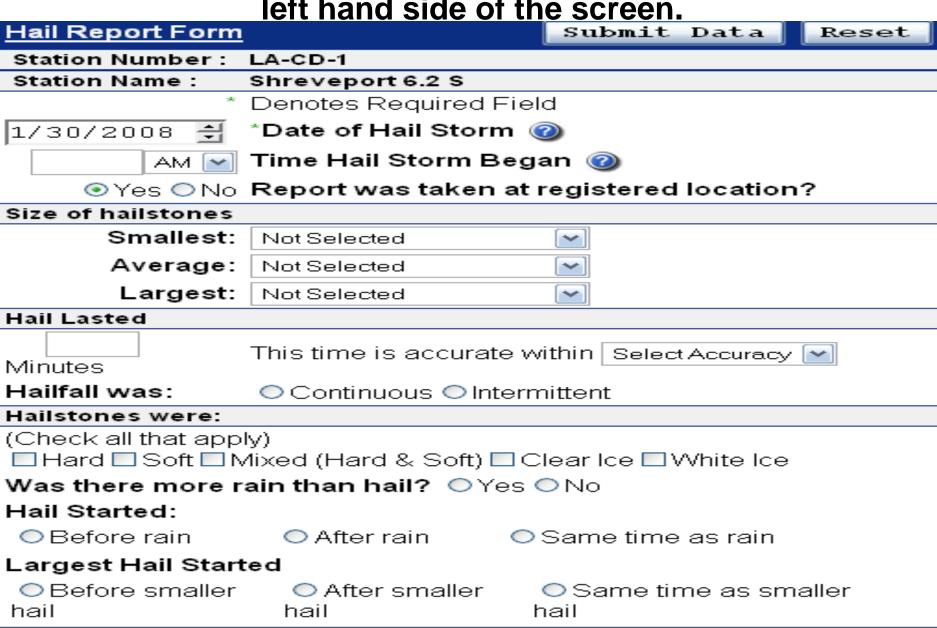
Showing 7 Records.

<u>Station</u> Number ▲	Station Name	Comments	
LA-CD-1	Shreveport 6.2 S	-FZRA fell at the beginning of the observation on the 25th, but changed over to -RA by noon, melting any residual iceRA ended around 2AM, with periods of -DZ/FG until the observation time.	<u>View</u>
LA-EB-9	Brownfields 5.8 NE	Rain over last 26 hours,	<u>View</u>
LA-EB-23	Brownfields 4.0 E	Rain started at about 11 a.m. on 1/25/08 and ended about 2 a.m. on 1/26/08. All afternoon and evening rain.	<u>View</u>
LA-EB-29	Monticello 4.2 NNE	The rains were fairly steady after 10 a.m., and there was an area of scattered thunderstorms that passed thru the area during the late afternoon. 1.21 of inches of rain fell befroe midnight, and .15 fell after that time, on the 26th, before 7 a.m.	<u>View</u>
LA-NT-2	Natchitoches 0.9 NE	Jan. 25: periods of rain,drizzle and blowing mist observed moving ENE; Jan. 26: morning fog observed.	
LΔ ST 1	Ahita Springe () 8 WSW	3SM drizzle and mist at ob time. Thunder at	View

If very heavy rainfall/flooding develops over/near your observation site, you can submit those reports at any time from the menu on the upper left hand side of the screen.

Intense Precipita	Submit	Data	Reset				
	LA-CD-1						
Station Name :	Shreveport 6.2 S						
*	Denotes Required Field						
1/30/2008 ჭ	*Observation Date						
AM M	*Observation Time						
	Minutes Minutes Minutes	that the re	port cov	/ers			
Rain							
	New Rain and Melted Snow that has fallen during the report duration, in inches to the nearest hundredth						
	Total Precipitation, rain a began, in inches to the n			ince storm			
∰ Snow							
	Depth of New Snow that has fallen during the report duration, in inches to the nearest tenth						
	Total depth of snow and this observation to neare	_		ne time of			
Additional Information							
⊙Yes ○No	Report was taken at regis	stered loca	ation?				
Was There F	looding?						
○ No							
If Yes, how se	evere?						
Minor (typ	ical). Street or field flooding.						
Ot Inusual street or field flooding (only see this every few years)							

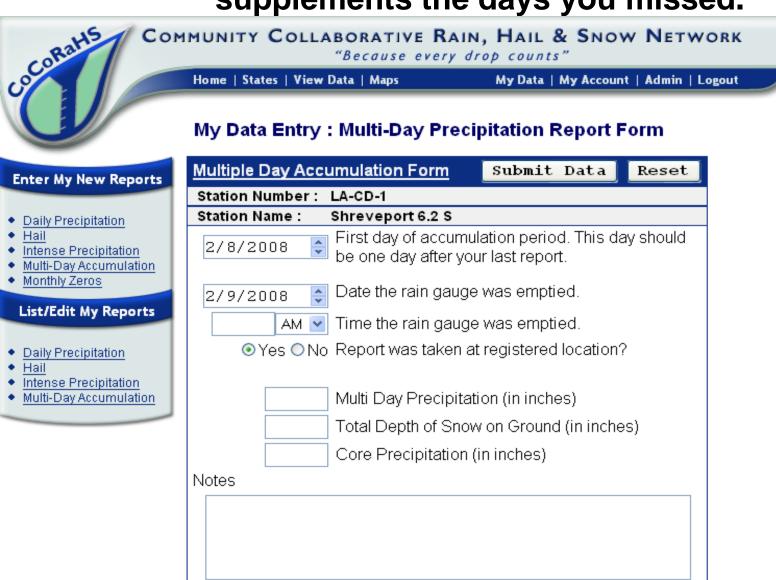
If hail falls over/near your observation site, you can also submit those reports at any time from the menu on the upper left hand side of the screen.



If you are out of town/unable to take your observation each day, you can submit a multi-day precipitation report which supplements the days you missed.

Submit Data

Reset



Questions???

Ark-La-Tex Regional Coordinators: <u>Jason.Hansford@noaa.gov</u> <u>Aaron.Stevens@noaa.gov</u>

