TEXAS CoCoRaHS OBSERVER

Spring 2015

"Because every drop counts, as do all Zeros."

Welcome to the Texas Co-CoRaHS Observer newsletter.

The purpose of this newsletter is to keep observers informed of the latest news, events and happenings related to the Co-CoRaHS program here in Texas, as well as news about the latest weather patterns affecting each region of Texas.

If you have questions, comments or suggestions, feel free to contact us via the emails listed on the back page.

Inside this issue:

Record rains for many areas of Texas

The warming of the tropical Pacific Ocean water temperatures, also known as El Nino, supplied continuous moisture and disturbances, bringing severe weather, record rainfall and flooding to many areas of Texas.

Most of the state's largest cities had their wettest spring season's (March, April and May) ever, including Austin, Brownsville and Houston.

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March-May 2015 Rainfall Totals

City	2015 Total	All-time ranking
Austin	24.73"	1st
Brownsville	16.17"	1st
Corpus Christi	26.81"	1st
Dallas	24.21"	2nd
Houston-Hobby	28.85"	1st
Laredo	17.86"	1st
San Antonio	19.08"	2nd
Waco	16.61"	7th

Importance of CoCoRaHS Program

Observers will frequently ask, "Who uses our data?" or "Why is Co-CoRaHS important?"

During the recent heavy rains and floods, the CoCoRaHS program was considered CRITICAL by the National Weather Service.

Jon Zeitler, Science and Operations Officer at the National Weather Service Austin/San Antonio, said it like this: "CoCoRaHS is CRITICAL (my emphasis) to hazardous weather operations at the NWS Austin/San Antonio. We utilize the daily reports to produce daily rainfall maps, which are used extensively by the media (directly shown on TV broadcasts), our emergency management partners (for briefing officials and planning recovery operations), and the general public."

During hazardous weather,

CONTINUED PAGE 2—>

Data Entry : View Significant Weather Report US Units

Significant Weather Report	Edit
Station Number:	TX-KN-95
Station Name:	Boerne 2.2 WNW
Date:	5/23/2015 6:45 PM
Submitted	5/23/2015 7:05 PM
Notes:	Lighter rain at time of observation.
Taken at Registered Location:	True
Precip Duration Minutes:	60
New Precip Amount:	2.37 in.
Total Precip Amount:	6.30 in.
New Snow Depth:	NA
Total Snow Depth:	NA
Flooding:	Extreme

Significant Weather Report submitted by an observer during recent heavy rain event, containing critical info for forecasters at the National Weather Service.

IMPORTANCE..FROM PG1—->

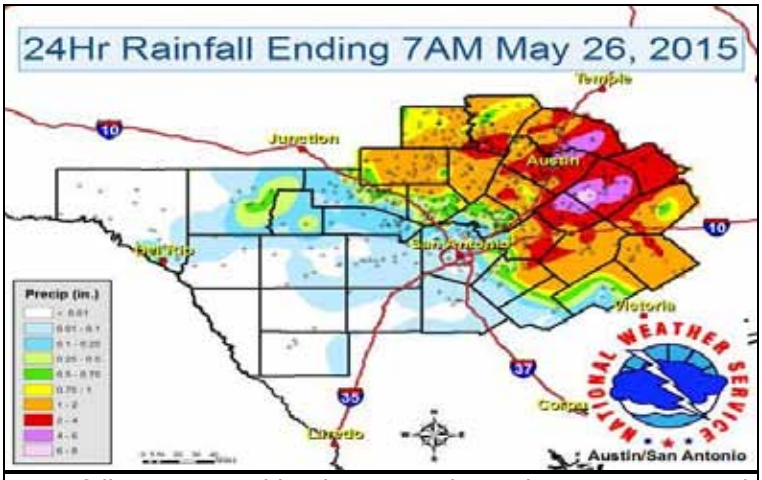
Operations, the NWS receives additional real-time significant weather reports from observers, which will directly sound an alarm at forecasters workstations. Observers can enter reports for heavy rain, flooding, snow or hail.

The graphic on page 1, shows a significant weather report from an observer in Kendall County during the recent Blanco River flooding. The observer submitted how much rain was received in a specified time frame and how bad flooding was (circled data). This information provided the NWS with immediate and clear validation of other unofficial reports and radar rain estimates.

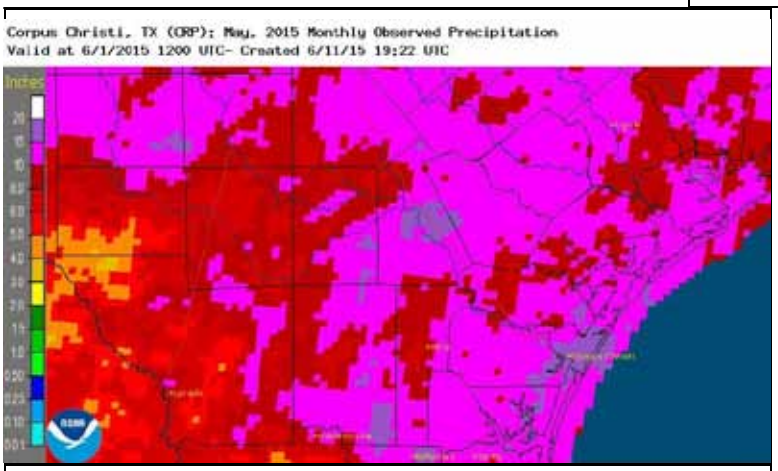
These reports raise forecaster confidence in issuing weather warnings and help in determining whether a flash flood emergency needs to be issued.

CoCoRaHS reports and data are also used by NWS River Forecast Offices, the National Hurricane Center, state climate and agricultural agencies, among others.

Observers, your reports are vital and can help save lives and property. The CoCoRaHS program is an excellent example of citizen involvement toward reaching the goal of a Weather Ready Nation.



A rainfall map created by the National Weather Service Austin/ San Antonio based on rainfall reports submitted by CoCoRaHS observers.



Coastal Bend/Brush Country Rain— May 2015

Las Tiendas Ranch	TX-WB-4	6.29"
Laredo 1.8 N	TX-WB-12	10.69"
El Cenizo 0.2 W	TX-WB-43	7.01"
Corpus Christi 6.4 WSW	TX-NU-9	13.46
Flour Bluff 1.6 SW	TX-NU-10	13.75"
Orange Grove 3.3 NW	TX-JW-6	6.60"
Kingsville 6.5 SSE	TX-KL-2	7.77"
Victoria 2.1 NNW	TX-VC-17	10.78"
Beeville 9.0 S	TX-BEE-	12.39"
George West 2.9 E	TX-LO-11	12.97"
George West 8.0 NE	TX-LO-12	15.40"
Hebbronville 13.6 E	TX-DV-0,7	38.18"

PRECIP FROM PAGE 1——>

Many areas recorded a high number of days with measurable rain.

Austin for example, recorded 19 days with measurable rainfall during the month of May, with 13 of those having at least .10" or more, topped of by the 5.20" deluge on May 25th.

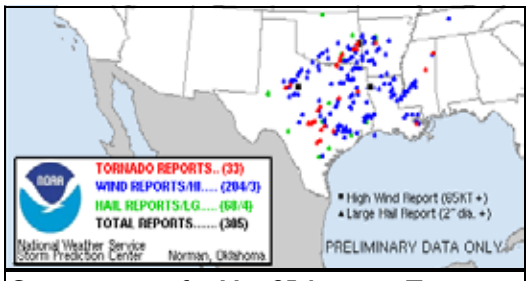
San Antonio recorded 15 days with measurable rainfall with 4 of those days recording at least an inch or more.

Houston had 18 days with measurable rainfall including 5 days with an inch or more.

The Houston suburbs of Bellaire and Sugarland recorded over 20 inches of rain for the month of May.

May 23rd-25th will be a day remembered by many in Central Texas, as Mother Nature packed a one-two punch...literally, dumping flooding rains while at the same time, spawning tornadoes, hail and damaging winds. In all 16 tornadoes were confirmed across central Texas. No deaths due to the tornadoes, but 11 dead due to flooding.

And in Houston, fans at Rockets playoff game were stranded at the Toyota Center due to flooding outside the building. In all, 7 to 10 inches fell that night.



Storm reports for May 25th across Texas, the same day heavy rain flooded many areas.

Flooding hits South Texas and Coastal Bend Region

Laredo, a city more known for high heat and dry weather was swamped with rain in May. For the month, the city had 10 days with rainfall, including to episodes of heavy flooding rains, 2.29" on May 11th and 3.68" on May 30th. In fact, at 17.86" of rain for the year, it would only need to rain 3" the rest of 2015 for it to be a normal year.

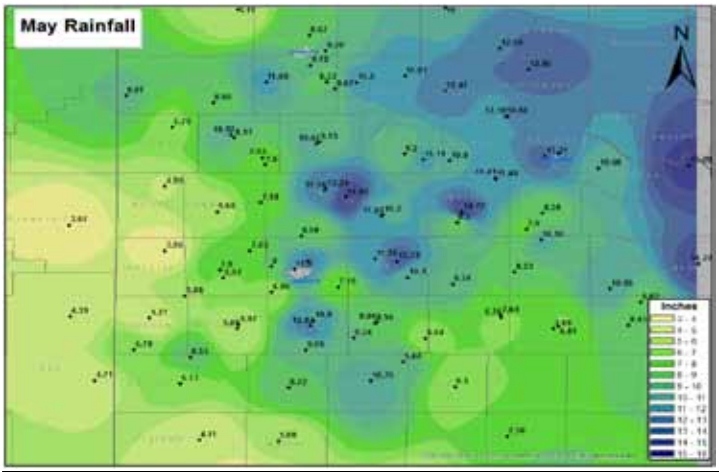
The rain of May 30th, caused major flooding along Interstate 35 in north Laredo and adjacent shopping centers such as Mall Del Norte and NorthCreek Center. A CoCoRaHS observer in north Laredo reported flood waters entering homes.

To the east, Corpus Christi recorded two episodes of flooding rains, on the 12th and the 21st. In each case, nearly 4.5 inches of rain fell, causing major flooding in many streets and subdivisions of Corpus Christi. Schools were forced to delay classes due to widespread flooding. Since January 1st, the city has received nearly 30 inches of rain, the most ever recorded for that time period.

Major flooding also in areas of the Rio Grande Valley as Rio Grande City recorded 20.44" from March to May, almost a year's worth of rain.

Heavy rains cause major flooding at Laredo's Northcreek Shopping Center and adjacent Interstate 35 frontage road. Observer TX-WB-12, just east of this location, reported 4.30 inches of rain.

Texas Panhandle also very wet in May



Storms hit heavy and often across the South Plains during the month of May 2015. The map at left highlights the extraordinary rainfall totals that were recorded. Even in the western South Plains, where rainfall was less than five inches in some areas, the totals represented over double the normal May rainfall! The heaviest rainfall of 10 to 15 inches fell in a swath from the central South Plains into southwest Oklahoma. Although the rainfall almost wiped out a multi-year drought across the area, it also caused quite a bit of flooding and delayed spring planting. At Lubbock, at least a trace of rain was reported on 21 of May's 31 days, with a total of 12.12 inches falling. Normal rain for May at Lubbock is 2.30". Childress recorded 13.21 inches in May, setting a new record for it's all-time wettest month ever, breaking the old record of 12.05" in June 1941.

State's Lake and Reservoir levels greatly improved

Lakes and Reservoirs across Texas have benefitted greatly from the rains of May.

Austin's Lake Travis has gone up nearly 35 feet, while nearby Lake Buchanan has gone up 9 feet.

Other reservoirs have also shown dramatic increases. Medina Lake outside of San Antonio was 4.4% full on May 7th, now after the rains, it stands at 56.4% full. Lake Corpus Christi went from 74.4% full on May 7th to 96.4% on May 31st, based on data from the Texas Water Development Board.

Lake Hubbard near Dallas is now at 100% full after being at only 69.3% prior to the start of the heavy spring rains in March. Despite the rise in levels, many cities, such as Austin, are maintaining water restrictions as we head into the hot summer days.. Check your local water utility for local restrictions.

May's heavy rainfall helped to raise the water level in Austin's Lake Travis nearly 35 feet for the month, causing "Sometimes Island" to almost disappear.

Training Section: Installing your gauge

When installing the rain gauge it is important to consider its location. Location is the key to good data. The gauge should be placed in an area that is protected from strong winds but is not bothered by obstacles that could either block precipitation from reaching the gauge (a tree) or cause precipitation to splash towards it. Avoid an obstacle such as a fence (solid or wired). Wood fences cause updrafting which will reduce rain catch (Fig.1) and wired fences cause wind turbulence around the gauge. The best location would be a small open meadow surrounded by forest, or an open back yard not too close to buildings or trees. For example, if a tree is 40 feet tall (taller than a two-story house), the gauge should be placed at least 80 feet downwind from it. This will help avoid potential blockage of the rain gauge. It is not always possible to find a perfect location. **When in doubt, do your best.**

Figure 1: Updrafting over the fence

The gauge should be installed 2-5 feet above the ground, mounted on the side of a single 4X4 post. In an open area, place the gauge top 2 feet off the ground to improve gauge catch by reducing wind speed (Fig.2). A 3-foot 4X4 post will be needed to mount a post extending 2 feet above ground. In developed areas, place the gauge top 5 feet off the ground to improve gauge catch by reducing the impact of nearby obstacles. A 7-foot 4X4 post will be needed to mount a post extending 5 feet above ground. Bevel the top of the 4X4 post to reduce rain splashing into the gauge. This can be done by cutting the top of a 4X4 post at a 45 degree angle (Fig. 3). Make sure the 4X4 post is level as you set it into the ground to fill and pack solid. Attach the mounting bracket at the top of the tallest side of the beveled mounting post, and make sure to level your gauge. Install both measuring and overflow tubes, with the funnel attached on top of the overflow tube (Fig. 4 and Fig. 5). The top of the rain gauge should extend several inches above the top of the mounting post (Fig.3 and Fig.4). The top funnel should be level (Fig.4 and Fig.5).

Figure 2: Picture of rain gauge two feet above the ground.

Things to Remember:

- Avoid large obstacles that could block precipitation such as trees or buildings.
- Avoid mounting the rain gauge where sprinklers or other sources of artificial precipitation can affect the data.
- Make sure to bevel and level a 4X4 mounting post in the ground.
- Make sure the top of the rain gauge is level.
- Mount the rain gauge so that heavy rain could not splash into the gauge from any nearby surfaces.
- Mount the rain gauge in an area protected from strong wind, if possible.

Items and Hardware Needed:

- CoCoRaHS rain gauge with mounting bracket, inner measuring tube, outer overflow tube, funnel, and mounting hardware included.
- A 4X4 post, 8 feet in length
- A hand-held posthole digger
- A dirt-packing stick or rod of at least 3 feet in length
- A flathead or Phillip's screwdriver, depending on hardware screws provided
- A carpenter's hand saw.
- A carpenter's level and 45-degree angle
- A shovel
- A marking pencil, pen and paper

Training Section: Installing your gauge (cont)

Figure 3: Beveled post with rain gauge.

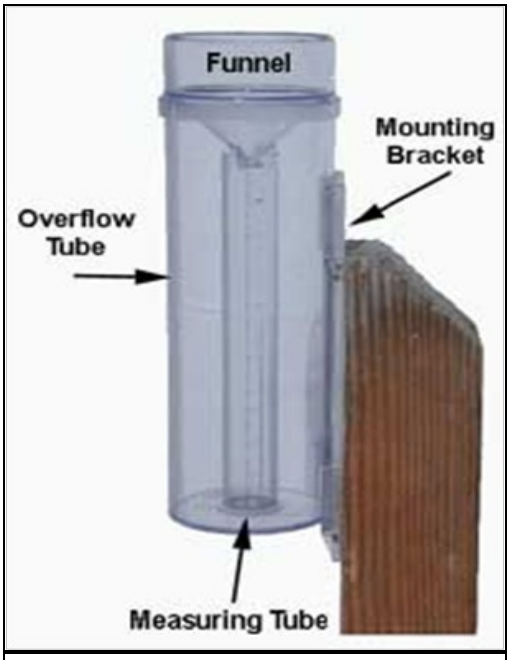


Figure4: Description of rain gauge item on post.

Figure 5: Leveling the rain gauge.

Why do we measure precipitation?

- ***Many different reasons***

– Input to weather and climate forecasting models

– Aviation and transport needs and planning

– Business and individual needs and planning

– Climatology records

– Hobby/interest

– Educational for all ages

– And many more!

• Well-kept precipitation records – *by organizations and individuals alike* – contribute to scientific evaluation of all types of weather and climate phenomena, on scales from seconds to millennia.

Observer Training:
Observing procedures and measuring standards

In order to measure precipitation accurately, and to take measurements of value for forecasting and climatological purposes, proper observing procedures and standards must be followed. Accuracy and consistency are very important in making your daily observations.

Always use the CoCoRaHS 4-inch diameter rain gauge to ensure measurements of scientific value. Please be careful when recording your measurement. Getting the decimal point correct is *essential*. It is very important to record as accurately to the *nearest hundredth* of an inch. The suggested observation time is 7 a.m. each day, to coincide with all National Weather Service Cooperative Observer times. This standard has been used for well over 100 years. Reports with observation times from 5 a.m. to 9 a.m. each day are accepted and will be included on the daily map display for that day. If a report with an observation time outside of 5 a.m. to 9 a.m. is made, it will not be included on the daily maps. However, if you make your observation at an earlier or later time than the "standard" time you chose, be sure to enter that actual observation time. This is especially important when rain is falling at the time of observation. A difference of 30 minutes can make a big difference when compared to measurements of surrounding stations. Please report days without precipitation as they are just as important as days when precipitation falls. CoCoRaHS daily zeros data is the single largest data source for the Drought Monitor Maps produced by the National Drought Mitigation Center.

Accurately reading your gauge daily is extremely important. Knowing how to read the meniscus in your gauge is the first step to taking an accurate reading (Fig.1). The meniscus, or curved upper surface of liquid in a tube, is formed by the surface tension of the precipitation in contact with the sides of the gauge tube. Always read the bottom of the meniscus, when making your daily rain measurements. The reading can be 0.03" to 0.05" lower than the curved surface on the sides of the tube. This can be critical when you are measuring rainfall values under 0.10".

The inner tube will hold exactly 1.00" of rainfall. Any rainfall over 1.00" will overflow into the overflow outer cylinder. The whole gauge has the capacity to hold eleven inches. One of the most time- consuming tasks of reading the amount of rainfall is for totals over 1.00. (Figures 2 and 3 go into detail on how to measure out additional rainfall by first recording and emptying out the inner tube, and then pouring the remaining water through the funnel and into the inner tube, repeating as many times as it takes to measure and record all the precipitation.) Please be careful not to over-pour into the funnel, as this will spill out some of the water. Finally, add up all of your measurements to get the total rainfall for the observation.

Figure 1: Reading of the meniscus

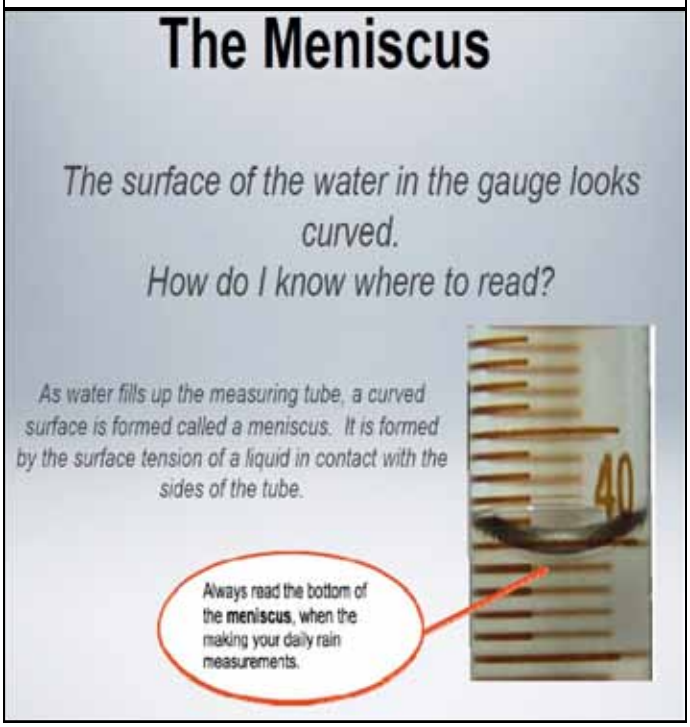


Figure 2: Measuring over 1.00" of rainfall

Observer Training:
Observing procedures and measuring standards (cont)

The next step after making your observation each day is reporting on the CoCoRaHS website. After logging in on the login box, you will end up at the "Precipitation Report Form" for your station on "My Data Entry": "Daily Precipitation Report Form" (Fig.4). Always check that the observation date and time that you are entering are correct. Enter your daily precipitation amount to the nearest hundredth of an inch (Fig.5). Please indicate any comments about the precipitation that occurred, fill in the time boxes when rainfall occurred, and fill in any additional data about flooding or other data. This is a description of a simple daily report that you probably will do each day. Total amount of time from reading gauge to submitting report is usually about 3-5 minutes daily.

Figure 3: Adding up total of measurements when over 10.0"

Things to Remember:

- When observing daily, always place the decimal in the proper place.
- Record accurately to a hundredth of an inch.
- Try to observe each day at 7 a.m.
- Make sure to report actual observation time, if different from 7 a.m.
- Always report your daily zeros.
- Read the meniscus properly.
- Please be careful when making readings over 1.00" of rain, so as not to spill any water.
- Make sure to add up all your amounts correctly when making measurements over 1.00" for total rainfall.
- Always check the observation date and time when reporting
- Always make sure you enter the correct amount of precipitation on the webpage

Figure 4:
Daily 24 hr observation MY DATA page on Co-CoRaHS website

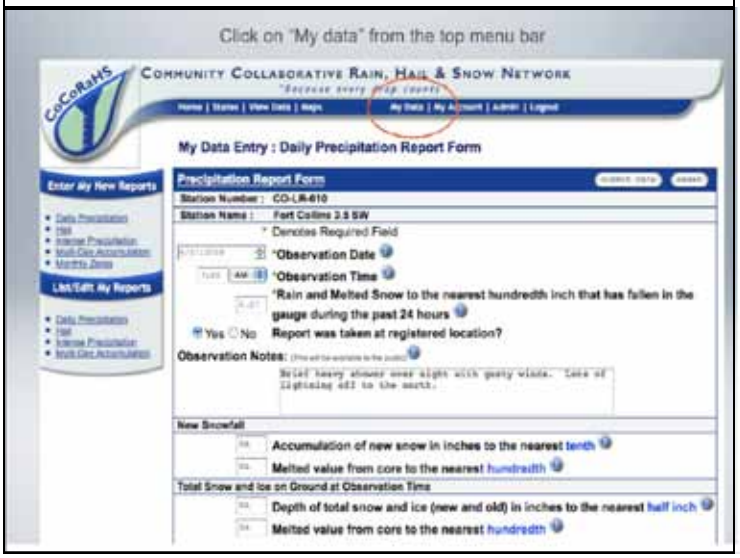


Figure 5:
Reporting amount of precipitation on Co-CoRaHS website

March-May 2015 Rainfall Totals

Austin County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-AS-4	Bellville 0.4 NE	**8.82**	**5.94**	**16.19**	**30.95**
TX-AS-5	Sealy 0.3 WNW	**8.48**	**6.64**	**8.14**	**23.26**
TX-AS-6	San Felipe 1.0 WNW	**8.05**	**5.90**	**9.46**	**23.41**
TX-AS-7	Sealy 1.9 NNE	**8.43**	**6.43**	**7.95**	**22.81**
TX-AS-12	Cat Spring 1.4 N	8.42	5.80	12.62	26.84
TX-AS-14	Bellville 7.6 ESE	9.99	9.17	11.52	30.68
TX-AS-15	Bellville 6.5 NNE	**8.71**	6.86	**15.11**	30.68
TX-AS-16	Bellville 5.1 NNW	**10.10**	4.95	13.97	29.02
TX-AS-17	Wallis 1.1 NE	**Began 3/18**	**5.37**	**9.10**	NA
Brazoria County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-BRZ-21	Angleton 1.3 E	**8.46**	**6.72**	8.95	24.13
TX-BRZ-25	Pearland 4.4 W	**5.95**	**9.91**	13.38	29.24
TX-BRX-27	Lake Jackson 1.6 E	7.59	**8.56**	4.56	20.71

Chambers County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-CHM-8	Mont Belvieu 1.5NNW	10.23	14.26	**14.23**	38.72

Colorado County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-CLR-6	New Ulm 7.2 S	**9.67**	**5.44**	**12.59**	**27.70**
TX-CLR-9	Columbus 3.2 WSW	10.60	6.97	9.78	27.35
TX-CLR-10	New Ulm 5.1 S	9.94	5.63	11.86	27.43

Fort Bend County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-FB-5	Sugarland 0.5 SE	6.31	10.65	**21.22**	38.18
TX-FB-12	Sugarland 1.0 W	6.19	10.09	**21.54**	37.82
TX-FB-22	Richmond 4.6 SE	5.50	9.09	20.13	34.72
TX-FB-27	Sugarland 2.6 SSW	5.92	7.69	18.75	32.36
TX-FB-28	Missouri City 7.5 SSE	5.92	10.72	**16.79**	33.43
TX-FB-32	Fulshear 2.7 WNW	6.05	5.08	**9.02**	20.15
TX-FB-40	Sugarland 3.8 SSW	5.55	8.90	**17.71**	32.16
TX-FB-44	Missouri City 1.3 SE	**Station began 5/1/15**		**18.51**	NA

March-May 2015 Rainfall Totals

Galveston County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-GV-5	Friendswood 1.9 SSW	**8.83**	13.71	10.35	32.89
TX-GV-22	League City 2.1 NNE	**9.45**	**6.17**	11.95	27.57
TX-GV-25	League City 1.5 NNE	**8.87**	**6.67**	12.55	28.09
TX-GV-29	Kemah 0.2 WNW	10.93	6.44	12.54	29.91
TX-GV-41	League City 2.6 SSE	8.90	8.49	9.33	26.72
TX-GV-44	Bacliff 0.5 SSE	11.37	8.13	15.44	34.94
TX-GV-46	League City 3.6 ENE	10.12	**7.10**	**13.17**	30.39
TX-GV-49	La Marque 3.9 SE	9.42	**8.18**	3.14	20.74
TX-GV-51	La Marque 1.8 E	10.74	**9.72**	**6.85**	27.31
TX-GV-52	League City 3.5 W	**9.97**	**6.27**	8.45	24.69

Harris County Spring Rainfall					
Station #	Station Name	March	April	May	Total
TX-HRR-15	Kingwood 3.9 S	6.76	5.24	**11.20**	23.2
TX-HRR-27	Bunker Hill Village 3.6 NNW	**6.61**	**6.60**	**18.02**	**31.23**
TX-HRR-28	Webster 0.4 NW	9.64	6.89	**17.78**	34.31
TX-HRR-31	Friendswood 2.5 NNE	8.12	**7.93**	16.35	32.40
TX-HRR-32	South Houston 4.0 SSW	7.22	8.30	14.12	29.64
TX-HRR-44	La Porte 1.3 W	9.99	10.06	17.88	37.93
TX-HRR-52	Nassau Bay 1.6 NNW	9.62	6.99	18.19	34.80
TX-HRR-58	Spring Valley 2.7 NW	6.21	6.05	18.58	30.84
TX-HRR-74	Cypress 3.2 ESE	**5.85**	**4.58**	**13.88**	**24.31**
TX-HRR-89	Friendswood 1.4 NNE	7.86	7.02	13.16	28.04
TX-HRR-93	Pasadena 4.4 WNW	**7.36**	**8.09**	**14.64**	**30.09**
TX-HRR-117	Tomball 2.7 ENE	6.61	**6.66**	11.08	24.35
TX-HRR-119	W Univ Place 0.4 WNW	**6.70**	**8.34**	18.15	33.19
TX-HRR-122	Mission Bend 0.8 N	5.56	**8.66**	14.09	28.31
TX-HRR-124	Spring 7.1 WSW	6.74	6.81	12.69	26.24
TX-HRR-139	Cloverleaf 1.7 W	6.30	9.12	**16.73**	32.15
TX-HRR-147	South Houston 3.0 S	**7.70**	**7.22**	**14.79**	**29.71**
TX-HRR-159	Jersey Village 3.0 N	5.06	5.69	16.17	26.92
TX-HRR-162	Bellaire 4.2 W	**5.95**	8.63	**20.53**	35.11
TX-HRR-165	Houston 1.4 NE	5.45	9.28	18.51	33.24
TX-HRR-168	Pearland 4.0 ENE	**6.55**	**9.19**	**15.31**	**31.05**
TX-HRR-170	Friendswood 1.6 NE	5.31	7.40	15.13	27.84
TX-HRR-176	Houston 4.7 WNW	**6.06**	6.82	**16.97**	29.85
TX-HRR-199	Spring 9.8 WNW	**7.12**	6.94	11.14	25.20
TX-HRR-203	Hedwig Village 1.1 NNW	**6.39**	**6.79**	17.86	31.04
TX-HRR-208	Katy 5.0 ESE	5.20	5.51	13.31	24.02
TX-HRR-209	Houston 2.1 NNE	6.51	**9.03**	**18.68**	34.22
TX-HRR-211	Houston 6.2 W	6.20	**7.01**	21.91	35.12

March-May 2015 Rainfall Totals

Jackson County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-JK-1	Edna 4.6 SSE	**8.90**	**4.04**	4.67	17.61
TX-JK-5	Ganado 1.5 W	**7.68**	**6.79**	8.42	22.89

Liberty County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-LR-7	Dayton 1.5 NE	9.11	5.61	8.41	23.13

Montgomery County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-MNG-4	Montgomery 4.0 N	7.88	7.01	15.33	30.22
TX-MNG-14	Montgomery 2.6 NE	6.24	**6.78**	14.64	27.66
TX-MNG-20	Montgomery 3.8 ESE	6.56	**4.74**	15.65	26.95
TX-MNG-21	Montgomery 0.4 N	6.20	**7.18**	**14.72**	28.10
TX-MNG-23	The Woodlands 4.4 NNW	6.92	4.31	10.76	21.99
TX-MNG-26	The Woodlands 2.8 N	4.65	4.29	7.86	16.8
TX-MNG-30	The Woodlands 1.8 SE	7.16	**7.27**	12.67	27.1
TX-MNG-31	Conroe 1.7 E	6.21	2.58	**15.26**	24.05
TX-MNG-35	Pinehurst 3.8 SE	7.12	4.53	13.04	24.69
TX-MNG-45	Montgomery 11.6 SE	6.23	4.05	18.08	28.36

Polk County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-PL-3	Onalaska 0.6 SSE	7.95	7.32	12.41	27.68
TX-PL-10	Onalaska 1.8 SSE	**9.01**	5.68	10.60	25.29
TX-PL-18	Livingston 8.4 W	7.59	8.89	**12.34**	28.82
TX-PL-20	Ace 2.4 S	8.37	6.12	9.16	23.65
TX-PL-24	Livingston 2.6 SSW	8.37	5.65	8.38	22.4
TX-PL-27	Onalaska 0.6 WSW	**8.03**	**6.67**	**12.96**	**27.66**
TX-PL-35	Livingston 13.4 NW	8.00	**5.86**	**11.28**	25.14

San Jacinto County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-SJ-10	Point Blank 5.8 N	8.19	8.85	14.44	31.48
TX-SJ-11	Point Blank 0.7 ESE	7.54	6.04	14.34	27.92

Waller County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-WL-9	Brookshire 6.9 NNW	8.39	6.45	10.91	25.75

Wharton County Spring Rainfall					
Station #	Station Name and Location	March	April	May	Total
TX-WH-1	Wharton 0.3 E	5.31	**7.47**	**8.76**	21.54
TX-WH-9	Wharton 3.1 NE	**5.63**	9.27	10.47	25.37
TX-WH-10	EL Campo 0.5 ENE	5.71	**4.94**	4.86	15.51
TX-WH-11	EL Campo 2.7 NW	5.66	6.55	5.46	17.67
TX-WH-16	Wharton 1.4 ESE	6.44	8.65	8.97	24.06

Note: **Bold** totals are stations which entered a daily report every day for a month and 3 month timeframe.

March-May 2015 Rainfall Totals

WEST TEXAS/PERMIAN BASIN		
TX-EP-17	El Paso 6.0 N	2.09"
TX-EP-17	El Paso 3.3 ENE	2.17"
TX-EP-44	El Paso 3.8 SSW	1.74"
TX-MDL-6	Midland 3.0 WSW	7.31"
TX-MDL-18	Midland 12.1 S	6.74"
TX-EC-2	Odessa 8.3 WSW	5.62"
TX-PS-1	Marfa 1.0 NNE	4.37"
RIO GRANDE VALLEY		
TX-CMR-1	Rancho Viejo 0.7 E	13.93"
TX-CMR-8	Brownsville 6.4 SE	13.31"
TX-CMR-12	Harlingen 2.6 ESE	12.03"
TX-CMR-21	Los Fresnos 0.3 NE	12.65"
TX-CMR-70	San Benito 0.6 SSE	14.35"
TX-HDL-19	Mission 4.3 WSW	14.70"
TX-HDL-21	McAllen 2.4 NE	13.55"
TX-HDL-32	Linn 8.4 WNW	19.64"
TX-ST-1	Rio Grande City 2.8 W	19.42"
TX-ST-2	Rio Grande City 17.7 NE	14.12"
TX-WC- 5	Raymondville 2.0 SSW	13.12"
CENTRAL TEXAS		
TX-HYS-1	San Marcos 5.8 N	24.64"
TX-HYS-3	Wimberley 4.4 E	20.37"
TX-HYS-17	Dripping Springs 8.4 W	24.31"
TX-HYS-117	Kyle 7.8 ENE	23.16"
TX-TV-2	Austin 2.8 N (Allendale)	23.86"
TX-TV-14	Austin 2.9 NE (Lamar & Airport)	25.31"
TX-TV-27	Leander 1.9 WSW	28.51"
TX-TV-43	Pflugerville 2.6 N	23.05"
TX-TV-53	Austin 4.2 NW (Lp 360/Penneb)	25.53"
TX-TV-87	Austin 3.9 NNE	26.58"
TX-BLC-6	Blanco 5.5 E	29.63"
TX-BLC-12	Blanco 1.8 ESE	26.65"
TX-BLC-20	Johnson City 7.9 WNW	18.19"
TX-BXR-8	Hollywood Park 4.7 E	19.70"
TX-BXR-28	Leon Valley 1.6 N	20.64"
TX-BXR-95	Helotes 3.7 SSE	16.51"
TX-BXR-121	San Antonio 3.0 S	22.02"
TX-CML-4	New Braunfels 2.4 SSW	20.01"
TX-CML-8	New Braunfels 7.2 NW	21.15"
NORTH TEXAS		
TX-DA-13	Dallas 7.2 SW	28.69"
TX-DA-39	Dallas 6.6 NE	29.42"
TX-DA-45	Duncanville 0.9 SE	28.09"
TX-DA-57	Irving 5.6 NNE	27.30"
TX-TN-39	Fort Worth 5.4 SSW	26.06"
TX-TN-55	Fort Worth 11.8 NW	25.85"
TX-TN-85	Southlake 1.7 NE	24.03"
TX-MCL-1	Waco 6.8 NW	16.83"
TX-MCL-14	Waco 1.9 SW	18.60"
TX-BEL-1	Temple 8.5 SE	23.14"
TX-BEL-8	Belton 3.9 N	16.45"
TX-CLL-8	Plano 2.4 WSW	28.05"
TX-CLL-11	McKinney 3.1 SW	32.81"
TX-CLL-40	Frisco 1.9 N	31.44"
TX-CLL–33	Richardson 2.2 NW	28.65"

Meet a Regional Coordinator

Ronald Havran is the CoCoRaHS Regional Coordinator for the Houston/Galveston Region in Texas. He is a Hydrologic Technician in Houston with the Harris County Flood Control District. He is an associate member of the American Meteorology Society, a member of the National Weather Association, and the National Hydrological Warning Council, and a certified Advanced Skywarn Spotter for the Southeast Texas region. Ronald has been a weather hobbyist since the late 1970's.

Some other personal interests include severe storm photography, storm spotting and chasing, and nature photography

N. Lamar Blvd at 15th Street in Austin on May 25th after thunderstorms dumped nearly 5 inches of rain across the city, on top of the previous 14 inches for the month of May.

Zero and Trace Reports appreciated

Many of you report your data when its rains and of course, we thank you for doing so.

However, it is just as important to submit your report of "zero" rainfall. Your "zero" report will verify that it truly did not rain at a specified observation point. If there is no report, we are not sure if you meant no rain or simply did not report. These reports of "zero" can be critical in terms of tracking drought and how extreme a drought may be.

If you are unable to enter your "zeros" each day, then you can go to the "monthly zeros" report page and click on the days that had no rainfall.

We also want your "Trace" reports. What is a "Trace?" A trace can be just a few drops on your gauge or on the ground. Basically, a "trace" is when raindrops fall, but not enough to reach the first mark in your gauge at 0.01 inches.

And while "Trace" amounts may not seem significant, it does verify that some moisture did fall from the clouds at that location. This data can be very important for agricultural interests and for monitoring droughts.

To report a "trace", simply type "T" in the box for precipitation.

It must be noted that you must actually observe the rain drops falling or see the drops in your gauge in order to be able to report a "trace".

Plus if there was moisture in your gauge from dew or frost, then this would not be reported as it was not precipitation that originated from clouds.

CoCoRaHS en español

Quiere usted ser parte de la red CoCoRaHS pero no habla ingles? No problema. La oficina del Servicio Nacional de Meteorologia en El Paso tiene un video en español Ya esta disponible en la internet en **https://www.youtube.com/watch?v=gMW6Sg-1EXY.**

El video tiene informacion sobre la historia de CoCoRaHS, la importancia de la program y como reporter lluvia, granizo y nieve. Ser parte de CoCoRaHS...porque cada gota cuenta!

CoCoRaHS wants you!!

Texas is a very large state, as a result, rainfall amounts can vary greatly. Therefore, CoCoRaHS is always accepting more volunteer observers. If you have a love of weather, internet access, a few minutes each day to submit a report, and be willing to purchase an official rain gauge, then go to www.cocorahs.org and click on "join CoCoRaHS" to sign up as a volunteer. Despite the many millions of people in Texas, there are many counties that have no observers. If you have family or friends in the following counties, spread the word about CoCoRaHS: Matagorda; Camp; Delta; Loving; King; Oldham; Roberts; Moore; Parmer; Crosby; Cochran; Donley; Reagan; Cottle; Ochiltree; and Martin.

Plus there are many others that have only one observer, including Zapata, Baylor, Foard, Wilbarger, Hansford, Hemphill; Jim Hogg, Kenedy and Motley Counties.

Join today and help make "every drop count." For more information on CoCoRaHS go to www.cocorahs.org or contact a local coordinator.

Texas CoCoRaHS Observer

The official newsletter of Texas CoCoRaHS

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