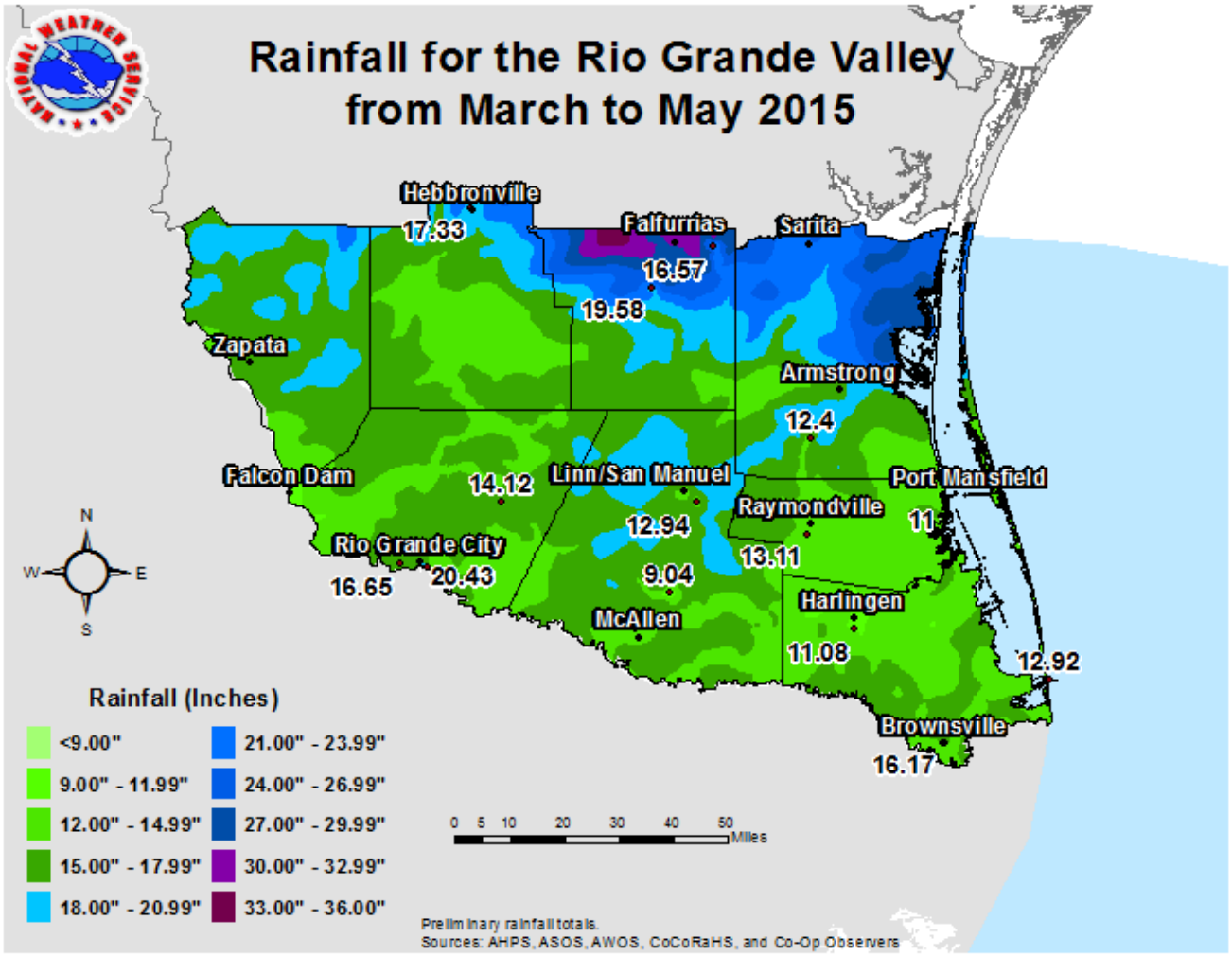
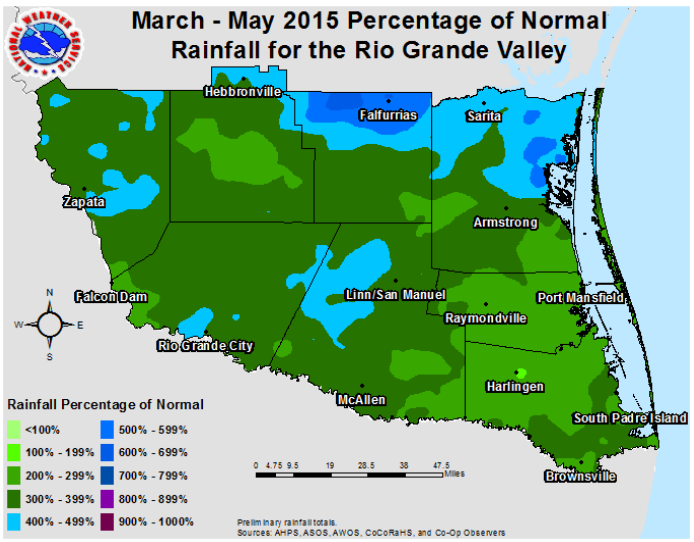
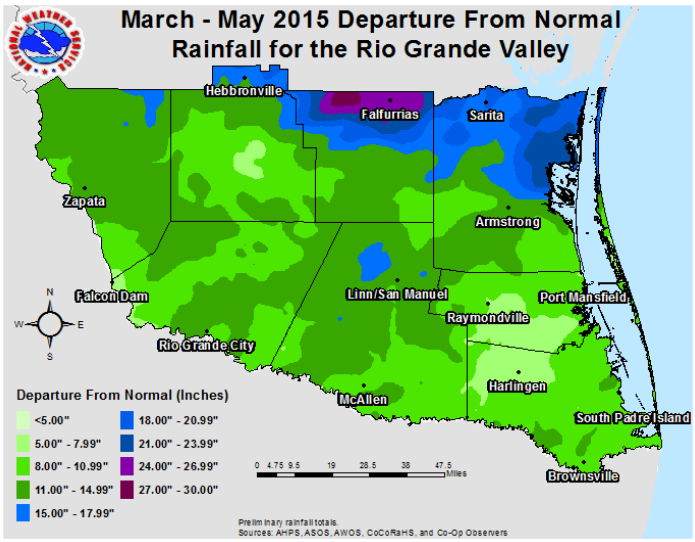
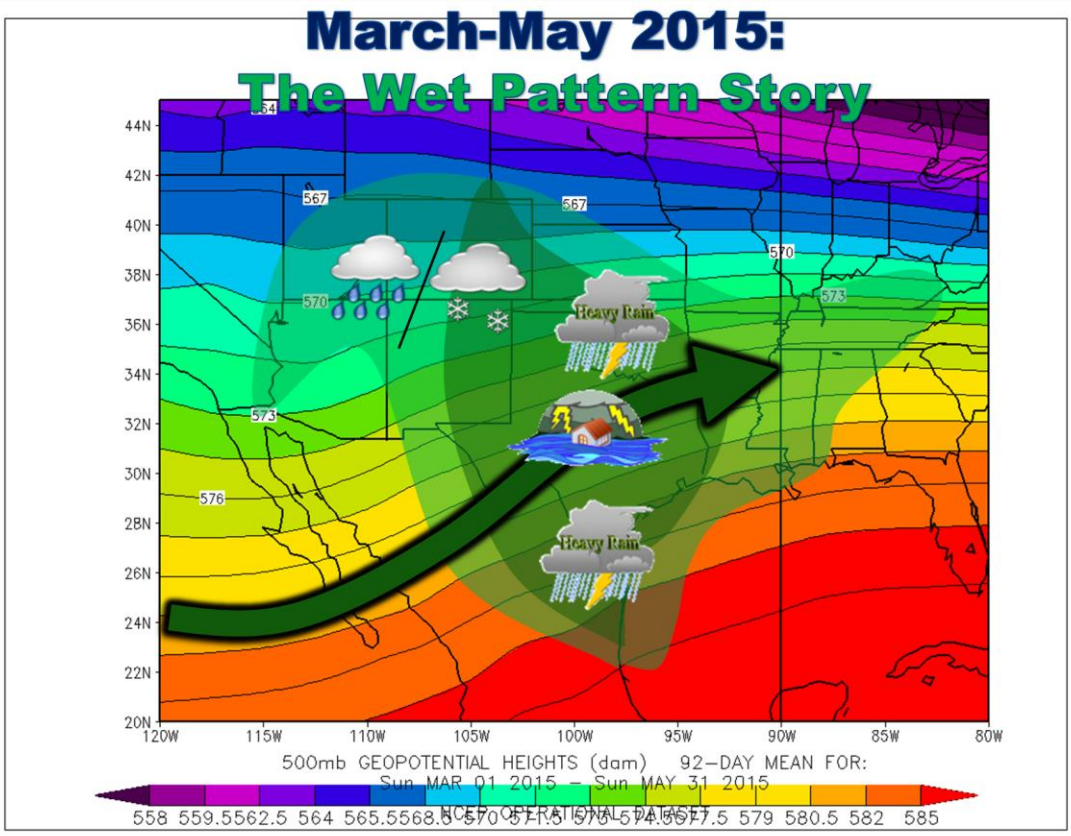




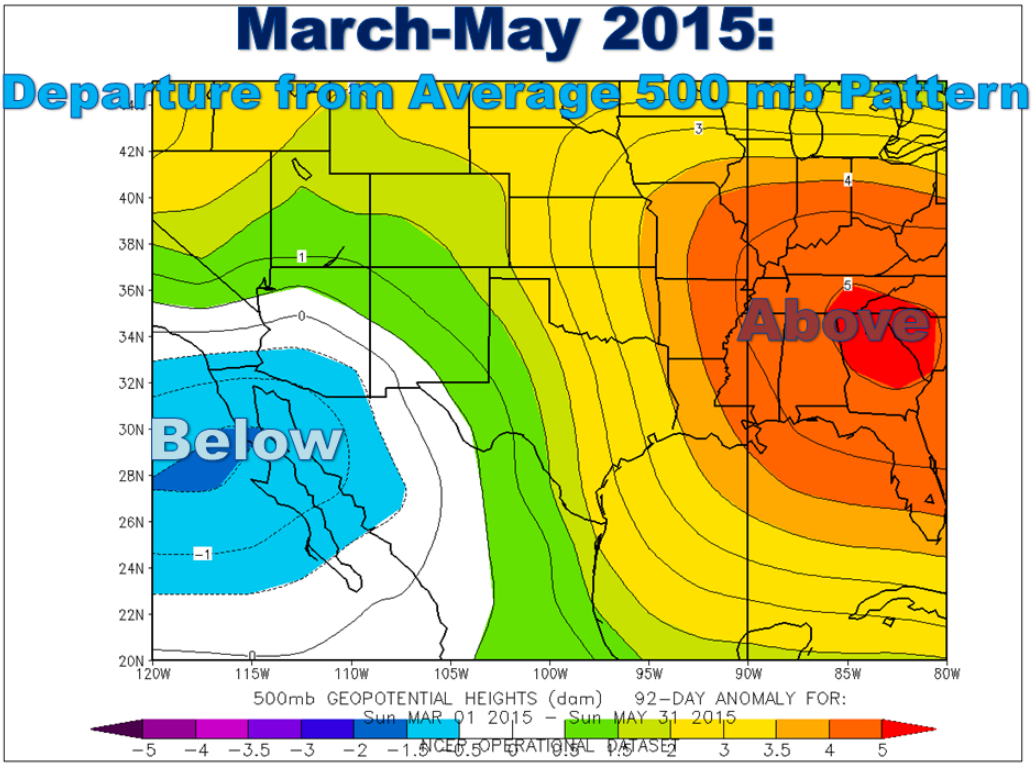


Spring Super Soaker!!

Records Fall as Texas, Including the Rio Grande Valley, Sees Frequent Flooding Rainfall



Above: The wet pattern of spring 2015. Dark green arrow shows mean flow at around 18,000 feet, which brough persistent moisture from the tropics in the form of multiple disturbances above the surface which combined with nearly non-stop low level moisture to produce record rainfall in parts of the southern plains from March to May 2015. This pattern was a clear indication of a robust El Niño developing.



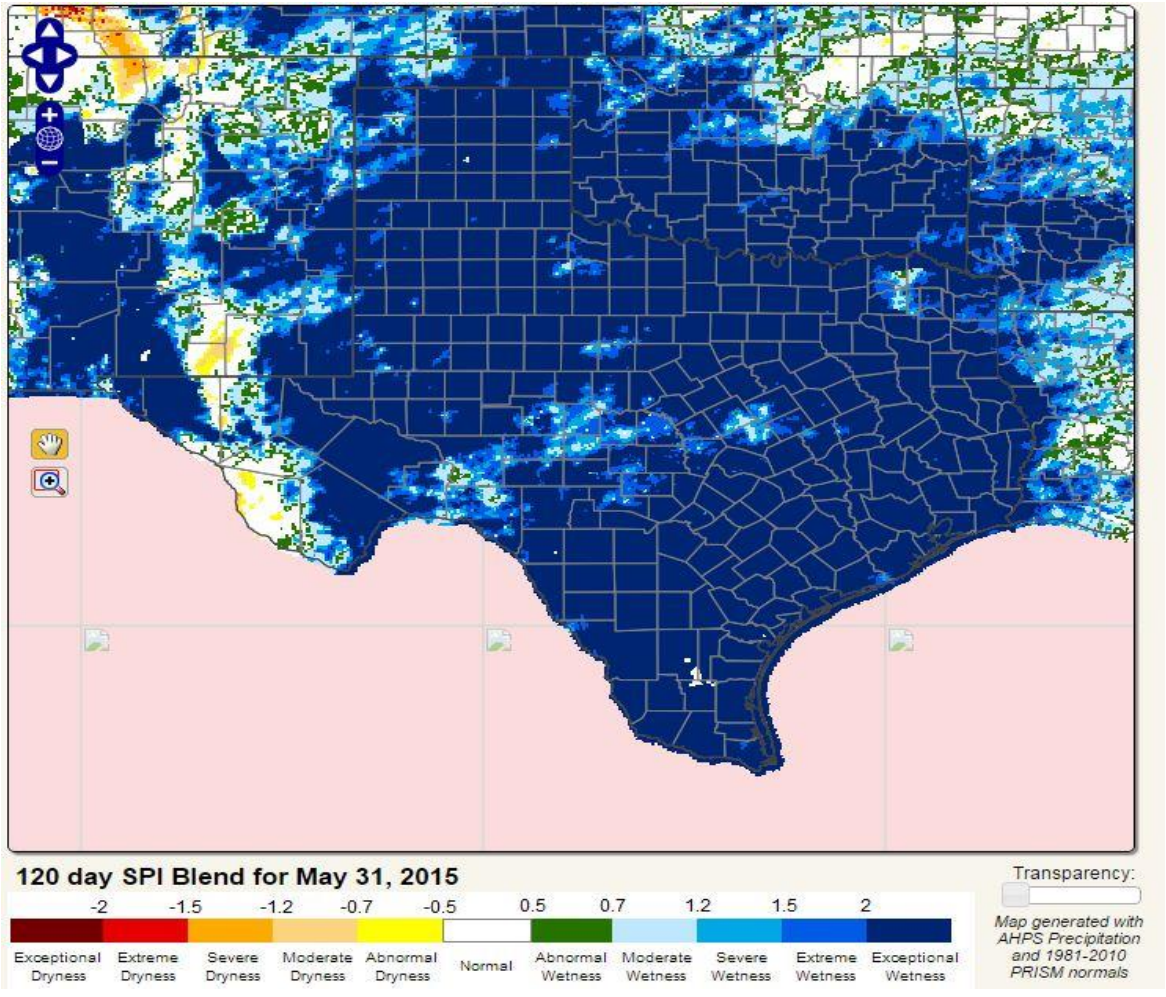
Above: Below normal heights at 500 mb across Baja California and above normal levels across the southeast U.S. for spring 2015 were the recipe for persistent rains across Texas. One can imagine a flow of deep tropical moisture between the two departure from normal centroids which created rains that ended the drought but created devastation in May with too much water too soon for many.

Quick Summary

Spring 2015 in the Rio Grande Valley – and all of Texas – will be remembered simply this way: **Texas, a state of perpetual drought, was broken by the devastating flood**. After four years of drought (late 2010 through early 2015) set multi-year records parts of the state, including the Rio Grande Valley plagued Texas, the combination of favorable weather patterns during the fall of 2014 and winter of 2014/2015 that began erasing drought (especially in South Texas) with the onset of atmosphere/ocean coupling of El Niño that began in March and dominated through May produced record rainfall state-wide, including many locations across the Rio Grande Valley (see table below). Unfortunately, the torrents came with a dark side for portions of south and southeast Texas, primarily between Austin and San Antonio along the Blanco River and in Houston, which was swamped with several feet of water after an overnight deluge. As of this writing, two dozen persons had perished in Texas, with eleven still missing as of May 30th. Many of those who died were swept away near Wimberley during the weekend of May 23/24; (in the Hill Country southwest of Austin); others perished in Houston a few days later. A review of the flooding and tornadoes in these areas can be found here.

The pump was primed for spring records by above average rainfall in March and April across Texas and the Rio Grande Valley, but it was May 2015 that put everyone over the top. By month's end, nearly all of the state indicated "exceptional wetness" (below), and only pockets of abnormally dry/moderate drought remained in portions of the Panhandle and west Texas.

Some rainfall amounts in the Valley, as well as Texas, reached or **exceeded the yearly average** during the three month period (March-May) based on the 1981-2010 thirty-year averages for Deep South Texas and the RGV. Averages range from 17 to 22 inches west and 22 to 27 inches east.



Location	Spring 2015 Rain	Rank (standing/previous)	Records Since
Rio Grande City	**20.44**	**1 (Prior: 13.02, 1997)**	**1893**
Brownsville	**16.17**	**1 (Prior: 13.39, 1982)**	**1878**
La Joya/ Mission	**17.13**	**1 (14.49, 1941)**	**1911**
McAllen/Water Plant	12.71	4 (14.41, 1992)	1942
McAllen/Miller	10.88	4 (12.76, 1992)	1961
Port Mansfield	11	6 (14.57, 1997)	1958
Harlingen/Coop	11.08	12 (16.62, 1941)	1911

Above: March to May 2015 rainfall and comparisons with prior records for available climate stations across the RGV and Deep South Texas.

32 Stations with 1917 Reports over 92 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-CMR-93	Harlingen 4.4 W	14.48	3.61	18.09
TX-CMR-61	Brownsville 6.4 WNW	16.70	0.77	17.47
TX-CMR-50	Brownsville 5.0 NW	16.67		16.67
TX-CMR-98	Brownsville 4.0 E	15.51		15.51
TX-CMR-13	Brownsville 2.2 W	14.69	0.69	15.38
TX-CMR-94	Brownsville 12.6 E	14.80		14.80
TX-CMR-70	San Benito 0.6 SSE	14.35		14.35
TX-CMR-43	Brownsville 4.1 ENE	13.79	0.45	14.24
TX-CMR-51	Brownsville 0.1 SSE	14.10	0.00	14.10
TX-CMR-90	Brownsville 1.5 WNW	14.07		14.07
TX-CMR-1	Rancho Viejo 0.7 E	14.06		14.06
TX-CMR-89	Brownsville 1.7 NNE	13.69		13.69
TX-CMR-8	Brownsville 6.4 SE	13.62		13.62
TX-CMR-36	Harlingen 4.7 WSW	12.75		12.75
TX-CMR-16	Brownsville 3.5 N	7.79	4.95	12.74
TX-CMR-21	Los Fresnos 0.3 NE	12.54		12.54
TX-CMR-85	Harlingen 0.4 N	12.27		12.27
TX-CMR-6	Brownsville 1.0 N	8.49	3.66	12.15
TX-CMR-12	Harlingen 2.6 ESE	8.03	3.88	11.91
TX-CMR-92	San Benito 8.7 ENE	1.52	10.27	11.79
TX-CMR-84	Brownsville 2.2 WNW	1.17	10.26	11.43
TX-CMR-97	Rio Hondo 7.9 E	11.41		11.41
TX-CMR-99	San Benito 5.4 SSE	11.00		11.00
TX-CMR-58	Laguna Vista 0.3 N	10.69		10.69
TX-CMR-35	Rio Hondo 9.4 NE	6.85	3.18	10.03

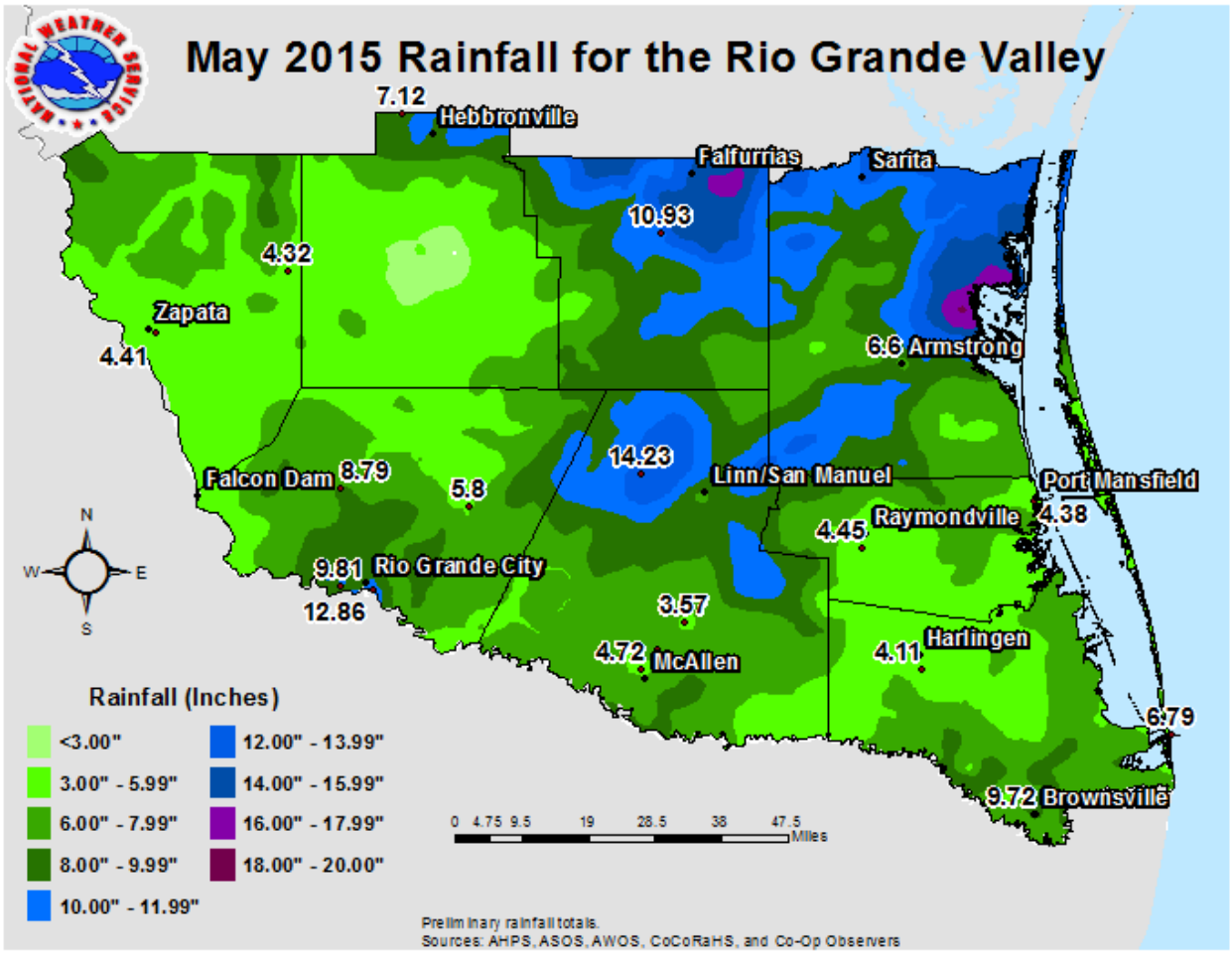
9 Stations with 379 Reports over 92 Days

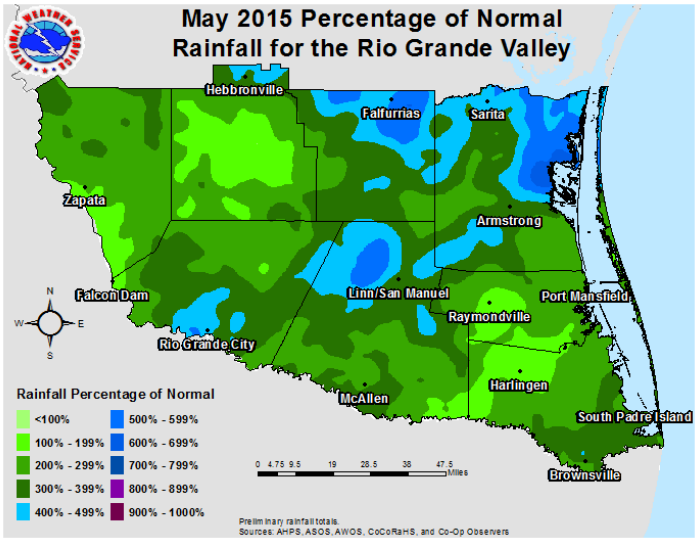
Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-HDL-32	Linn 8.4 WNW	16.97	2.58	19.55
TX-HDL-21	McAllen 2.4 NE	14.41		14.41
TX-HDL-34	Mission 3.1 NE	11.78	1.91	13.69
TX-HDL-9	Mission 1.9 ENE	13.47		13.47
TX-HDL-5	La Joya 11.1 N	12.15		12.15
TX-HDL-19	Mission 4.3 WSW	11.35		11.35
TX-HDL-6	Alamo 1.5 NNE	5.56	4.18	9.74
TX-HDL-37	La Joya 11.0 N	7.35		7.35
TX-HDL-16	Pharr 5.1 N	3.19		3.19

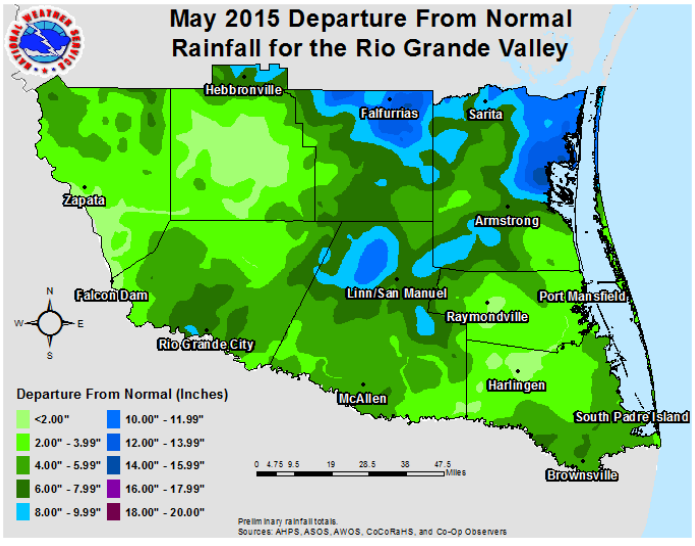
4 Stations with 196 Reports over 92 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-ST-1	Rio Grande City 2.8 W	16.65		16.65
TX-ST-2	Rio Grande City 17.7 NE	14.12		14.12
TX-ST-3	Rio Grande City 13.8 NNW	12.22		12.22
TX-ST-5	Roma 0.6 ESE	10.23		10.23

Above: Selected Community Collaborative Rain, Hail, and Snow network (CoCoRaHS) three month reports from Cameron (left), Hidalgo (top right), and Starr (bottom right) Counties for ***March-May, 2015***. Note the "Total Precipitation Column" for comparative purposes. **Note: Stations near bottom of each list likely missing critical rain days.**


May 2015 Rainfall for the Rio Grande Valley
7.12
Hebbronville
Falfurrias
Sarita
10.93
4.32
Zapata
4.41
6.6 Armstrong
14.23
Falcon Dam
8.79
5.8
Linn/San Manuel
Port Mansfield
4.38
Raymondville
4.45
9.81
Rio Grande City
12.86
3.57
4.72
McAllen
4.11
Harlingen
6.79
9.72 Brownsville
N
W
E
S
Rainfall (Inches)
<3.00"
3.00" - 5.99"
6.00" - 7.99"
8.00" - 9.99"
10.00" - 11.99"
12.00" - 13.99"
14.00" - 15.99"
16.00" - 17.99"
18.00" - 20.00"
0 4.75 9.5 19 28.5 38 47.5
Miles
Preliminary rainfall totals.
Sources: AHPS, ASOS, AWOS, CoCoRaHS, and Co-Op Observers


May 2015 Percentage of Normal
Rainfall for the Rio Grande Valley
Hebbronville
Falfurrias
Sarita
Zapata
Armstrong
Falcon Dam
Linn/San Manuel
Port Mansfield
Raymondville
Rio Grande City
Harlingen
McAllen
South Padre Island
Brownsville
N
W
E
S
Rainfall Percentage of Normal
<100%
100% - 199%
200% - 299%
300% - 399%
400% - 499%
500% - 599%
600% - 699%
700% - 799%
800% - 899%
900% - 1000%
0 4.75 9.5 19 28.5 38 47.5
Miles
Preliminary rainfall totals.
Sources: AHPS, ASOS, AWOS, CoCoRaHS, and Co-Op Observers


May 2015 Departure From Normal
Rainfall for the Rio Grande Valley
Hebbronville
Falfurrias
Sarita
Zapata
Armstrong
Falcon Dam
Linn/San Manuel
Port Mansfield
Raymondville
Rio Grande City
Harlingen
McAllen
South Padre Island
Brownsville
N
W
E
S
Departure From Normal (Inches)
<2.00"
2.00" - 3.99"
4.00" - 5.99"
6.00" - 7.99"
8.00" - 9.99"
10.00" - 11.99"
12.00" - 13.99"
14.00" - 15.99"
16.00" - 17.99"
18.00" - 20.00"
0 4.75 9.5 19 28.5 38 47.5
Miles
Preliminary rainfall totals.
Sources: AHPS, ASOS, AWOS, CoCoRaHS, and Co-Op Observers

Location	May 2015 Rain	Rank (standing/previous)	Records Since
Rio Grande City	**12.86**	**1 (Prior: 10.3, 1985)**	**1893**
Brownsville	**9.72**	**1 (Prior: 9.12, 1982)**	**1878**
La Joya/ Mission	7.21	2 (7.51, 1981)	1911
Edinburg/Water Plant*	3.57**	2*(4.56, 1950)	*
McAllen/Water Plant	4.72	9 (8.67, 1992)	1942
McAllen/Miller	4.90	10 (7.91, 1966)	1961
Port Mansfield	4.78	11 (8.60, 1991)	1958
Harlingen/Coop	4.11	25 (8.65, 2007)	1911

Above: May 2015 rainfall and comparisons with prior records for available climate stations across the RGV and Deep South Texas.

29 Stations with 656 Reports over 31 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-CMR-61	Brownsville 6.4 WNW	9.83		9.83
TX-CMR-50	Brownsville 5.0 NW	8.85		8.85
TX-CMR-98	Brownsville 4.0 E	8.21		8.21
TX-CMR-99	San Benito 5.4 SSE	8.08		8.08
TX-CMR-94	Brownsville 12.6 E	8.05		8.05
TX-CMR-43	Brownsville 4.1 ENE	7.77		7.77
TX-CMR-1	Rancho Viejo 0.7 E	6.74		6.74
TX-CMR-13	Brownsville 2.2 W	6.42		6.42
TX-CMR-8	Brownsville 6.4 SE	6.21		6.21
TX-CMR-70	San Benito 0.6 SSE	5.95		5.95
TX-CMR-90	Brownsville 1.5 WNW	5.67		5.67
TX-CMR-89	Brownsville 1.7 NNE	5.58		5.58
TX-CMR-93	Harlingen 4.4 W	5.51		5.51
TX-CMR-51	Brownsville 0.1 SSE	5.20		5.20
TX-CMR-6	Brownsville 1.0 N	3.28	1.90	5.18
TX-CMR-21	Los Fresnos 0.3 NE	5.05		5.05
TX-CMR-31	Brownsville 7.0 NW	5.01		5.01
TX-CMR-58	Laguna Vista 0.3 N	4.97		4.97
TX-CMR-16	Brownsville 3.5 N	4.91		4.91
TX-CMR-92	San Benito 8.7 ENE	0.81	3.78	4.59
TX-CMR-85	Harlingen 0.4 N	4.56		4.56
TX-CMR-12	Harlingen 2.6 ESE	3.15	1.29	4.44
TX-CMR-36	Harlingen 4.7 WSW	4.06		4.06
TX-CMR-97	Rio Hondo 7.9 E	3.59		3.59
TX-CMR-100	Harlingen 6.2 WSW	3.22		3.22

8 Stations with 101 Reports over 31 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-HDL-32	Linn 8.4 WNW	13.43	0.80	14.23
TX-HDL-37	La Joya 11.0 N	6.75		6.75
TX-HDL-21	McAllen 2.4 NE	6.56		6.56
TX-HDL-9	Mission 1.9 ENE	6.19		6.19
TX-HDL-34	Mission 3.1 NE	3.54	1.82	5.36
TX-HDL-5	La Joya 11.1 N	5.32		5.32
TX-HDL-19	Mission 4.3 WSW	5.03		5.03

4 Stations with 67 Reports over 31 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in.
TX-ST-1	Rio Grande City 2.8 W	9.81		9.81
TX-ST-3	Rio Grande City 13.8 NNW	8.79		8.79
TX-ST-2	Rio Grande City 17.7 NE	5.80		5.80
TX-ST-5	Roma 0.6 ESE	4.70		4.70

Above: Selected Community Collaborative Rain, Hail, and Snow network (CoCoRaHS) three month reports from Cameron (left), Hidalgo (top right), and Starr (bottom right) Counties for ***May, 2015***. Note the "Total Precipitation Column" for comparative purposes. **Note: Stations near bottom of each list likely missing critical rain days.**