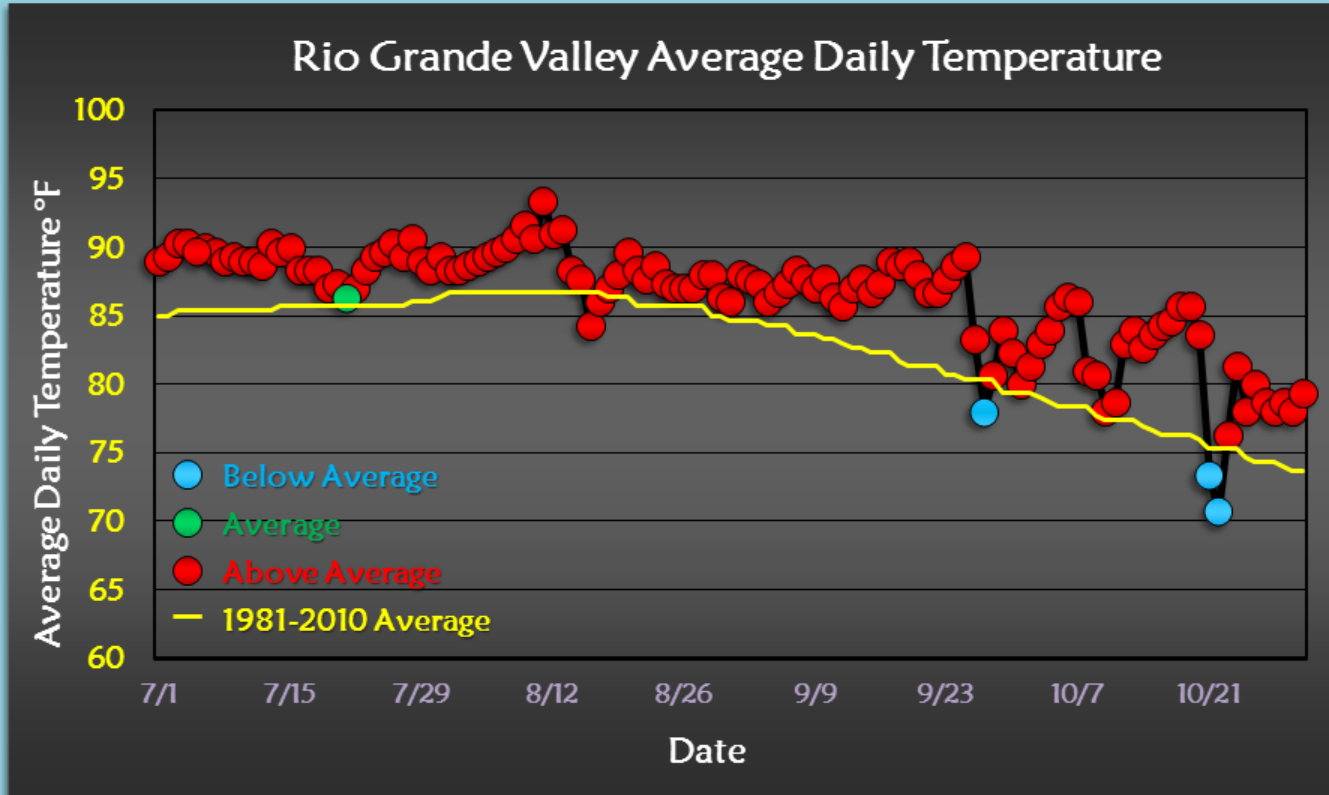




July to October 2016

NWS Brownsville/Rio Grande Valley



Above: Record, indeed! In a region known for oppressive heat, the period from July to October was ridiculously so. All but three days (of 123 total) were below the 30 year average (for day and night combined). In total, the 2016 July-October average shattered prior records across most of the Rio Grande Valley.

Endless Summer, Indeed!

Heat, Low Rainfall (Overall) Meant No Perceptive Change of Season

It just. Didn't. End!

The summer and early/mid-autumn of 2016 in the Valley won't be remembered for oppressive searing heat like in July and August 2009, which still holds for the longest 100°F streak in McAllen (49 days) and featured a number of days of 104°F or higher between July 1 and August 29 that year. But it *will* be remembered for more than four months (and counting, as of November 2nd) with nary a break (above). And, while there was no record for consecutive 100°F days, the two streaks that did occur ranked #4 (July 22-August 13) and #5 (June 29-July 20), and we'll never forget the "round number" of total 100°F afternoons in McAllen – **90 days** which shattered the former mark of 78 days set in 1998 and 2009. For the three primary Rio Grande Valley climate record locations, July to October 2016's temperature average not only broke the prior record – it **destroyed** the record by at least one full degree. While one degree may not sound like much, consider the "closeness" of the former record and those in the top ten. For Brownsville (below, left), the total difference between the now-second-ranked temperature and tenth-ranked temperature is 0.7 degrees, with more than 135 years of data!

Maximum 123-Day Mean Avg Temperature for Brownsville Area, TX (ThreadEx)

Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date	Missing Days
1	84.9	2016-10-31	0
2	83.9	1906-10-31	31
3	83.7	1900-10-31	0
4	83.7	2004-10-31	0
5	83.7	2005-10-31	0
6	83.4	2012-10-31	0
7	83.4	1982-10-31	0
8	83.3	1998-10-31	0
9	83.2	2009-10-31	0
10	83.2	2014-10-31	0

Period of record: 1878-01-01 to 2016-10-31

Maximum 123-Day Mean Avg Temperature for HARLINGEN, TX

Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date	Missing Days
1	85.6	2016-11-01	5
2	83.8	2009-11-01	7
3	83.8	1946-11-01	2
4	83.7	1959-11-01	2
5	83.7	1950-11-01	0
6	83.6	2012-11-01	4
7	83.6	1998-11-01	5
8	83.5	2005-11-01	3
9	83.5	2004-11-01	2
10	83.3	1931-11-01	0

Period of record: 1912-02-07 to 2016-11-01

Maximum 123-Day Mean Avg Temperature for MCALLEN MILLER INTL AP, TX

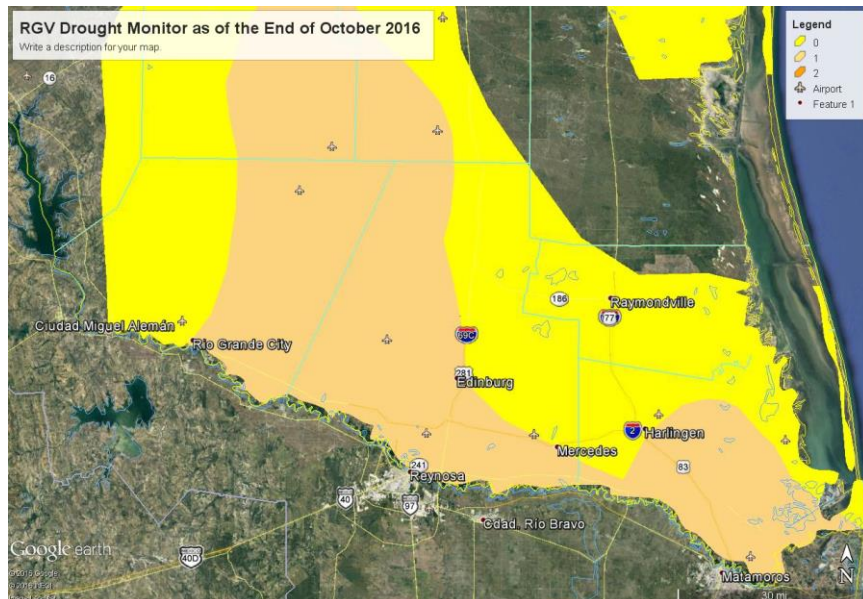
Click column heading to sort ascending, click again to sort descending.

Rank	Value	Ending Date	Missing Days
1	88.4	2016-10-31	0
2	87.3	2009-10-31	0
3	87.0	1997-10-31	31
4	86.4	2015-10-31	0
5	86.1	2012-10-31	0
6	85.8	2011-10-31	0
7	84.9	1998-10-31	0
8	84.8	2005-10-31	0
9	84.7	1986-10-31	0
10	84.6	2004-10-31	0

Period of record: 1961-01-14 to 2016-10-31

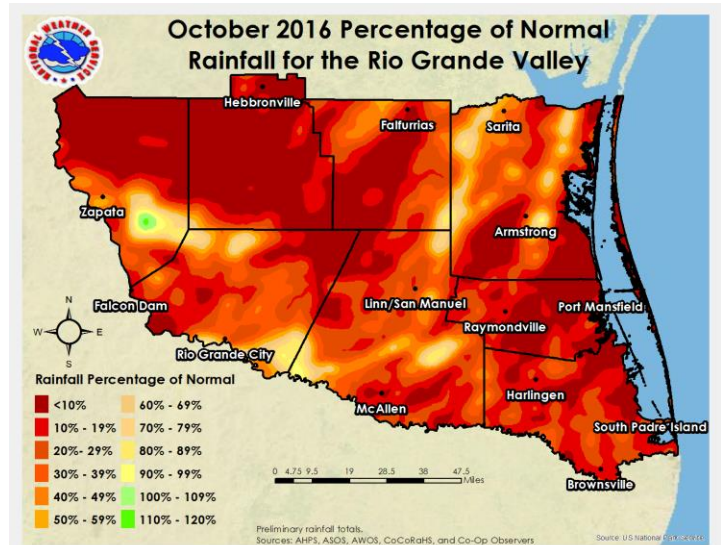
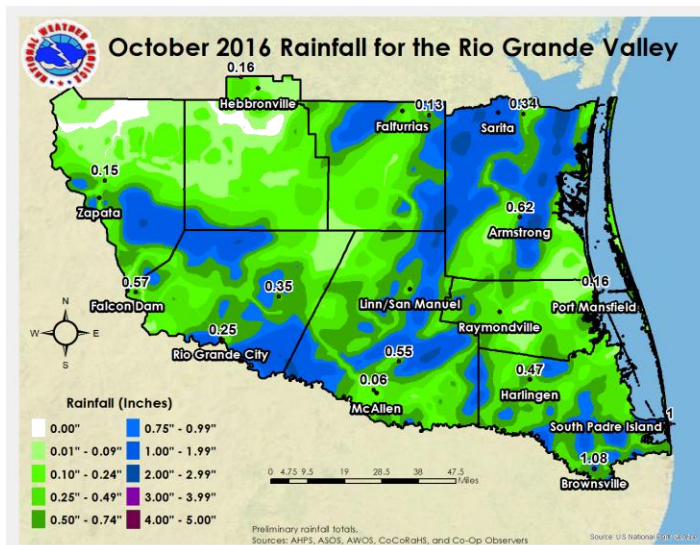
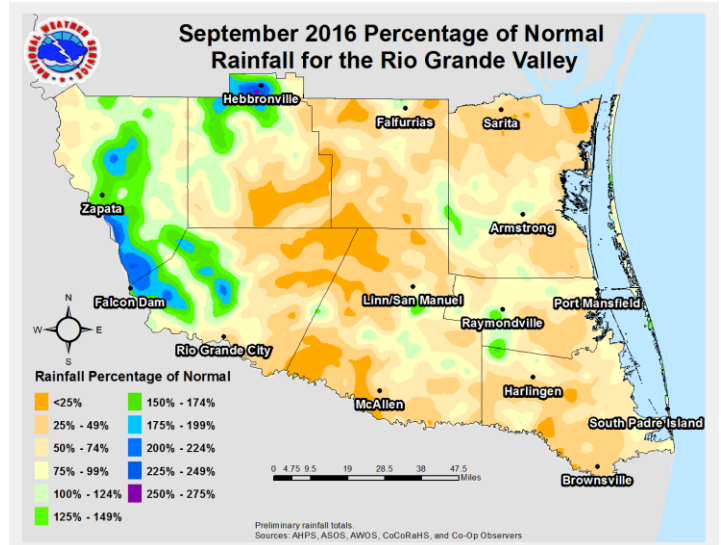
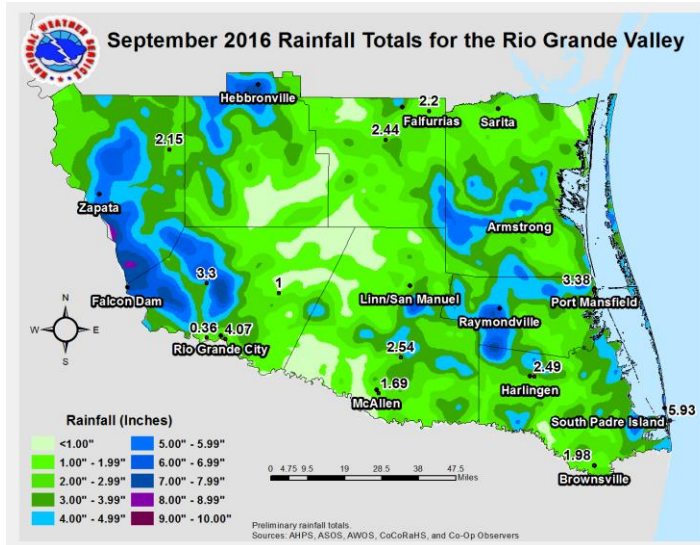
Lack of Rainfall Adds to Woes

While pockets of rain fell between September 1 and October 31 across the populated Rio Grande Valley, they were only enough to slow the rate of drought worsening. By month's end, all of the large agricultural and population centers were listed as "abnormally dry" (Level 0) or in "moderate drought" (Level 1). After three "big" Septembers in a row with above-to-much above normal rainfall, as well as the [top five October rainfall in 2015](#), 2016 turned back to dry conditions which fed the narrative of endless summer. By the end of October, many fields and lawns without irrigation were crispy and brown – and hoping for some temporary relief in November.



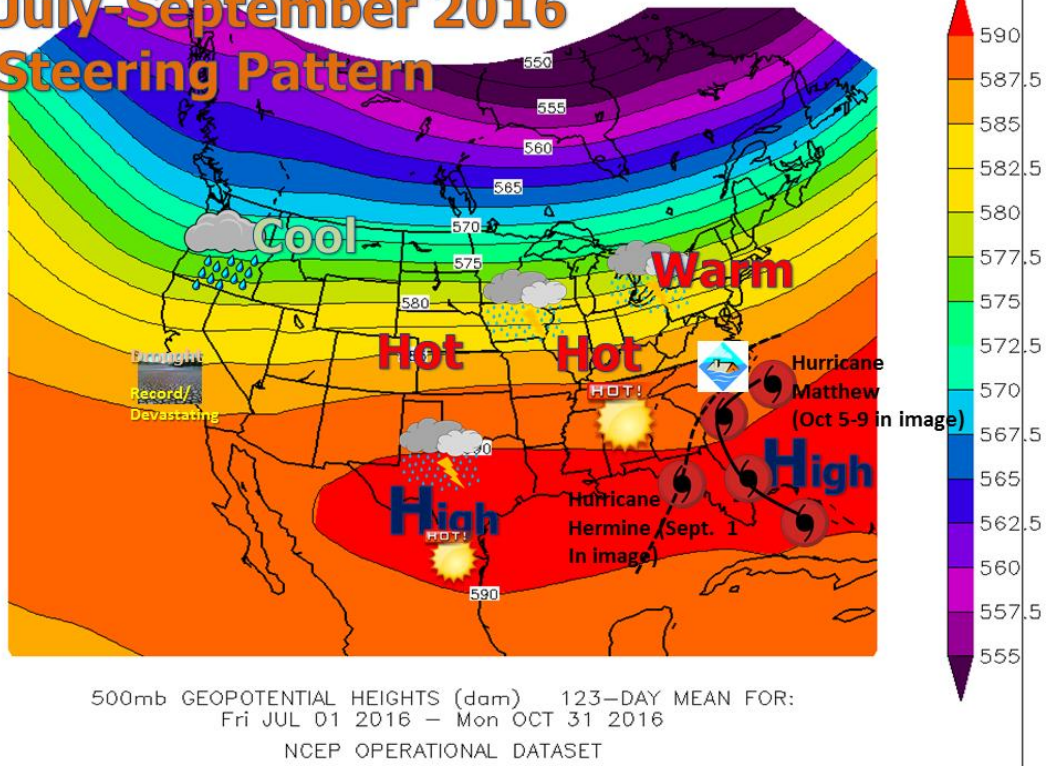
Pattern Matters

The upper level pattern (below the rainfall map) and departure from average tells the tale: A flat ridge of high pressure was displaced farther south than usual, even though it was *stronger* than usual – centered from east of Florida through the northern/central Gulf and extending across most of northern Mexico. This ridge position did two things well: 1) locked down “deep” tropical moisture in the Caribbean and southern Mexico, and 2) the western extent acted as an early autumn continuation of “La Canicula” that typically dominates early July to mid-August – but never really ended for a good chunk of meteorological autumn (September-November). The presence and position of the ridge, combined with the strength as indicated by the above average values (shown in the anomaly chart below the mean values), fed the warm atmosphere which in turn fed the warmer surface. Drying ground, even with lowering sun angle, in this pattern also fed the non-stop heat.



Above: Typically wet September (top left) failed to materialize, except along the river in the Upper Valley and Rio Grande Plains (Zapata) where fields and grasses stayed green. October rainfall (bottom left; note color scale “tuned” to lower values) was even worse, with many areas across the Valley and ranchlands below 20 percent of average values.

July-September 2016 Steering Pattern



July-September Departure from Average Steering Pattern

