# Hottest Summer for Some; Top Ten For the Rest

## Average Temperature (day/night combined) , June-August

### Maximum 92-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 | 87.9 | 2019-08-31 | 0 |
| 2 | 87.5 | 2018-08-31 | 0 |
| 3 | 86.9 | 1998-08-31 | 0 |
| 4 | 86.4 | 1980-08-31 | 0 |
| 5 | 86.3 | 1982-08-31 | 0 |
| 6 | 86.1 | 2012-08-31 | 0 |
| 7 | 86.0 | 2005-08-31 | 0 |
| 8 | 86.0 | 2001-08-31 | 0 |
| 9 | 85.9 | 2016-08-31 | 0 |
| - | 85.9 | 1900-08-31 | 0 |

Period of record: 1878-01-01 to 2019-09-01

### Maximum 92-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 | 88.0 | 2019-09-01 | 8 |
| 2 | 87.9 | 1998-09-01 | 4 |
| 3 | 87.1 | 2016-09-01 | 5 |
| 4 | 86.9 | 2018-09-01 | 11 |
| 5 | 86.8 | 2017-09-01 | 7 |
| 6 | 86.8 | 2009-09-01 | 5 |
| 7 | 86.5 | 2005-09-01 | 0 |
| 8 | 86.5 | 2012-09-01 | 6 |
| 9 | 86.4 | 1958-09-01 | 0 |
| 10 | 86.4 | 1953-09-01 | 0 |

Period of record: 1912-02-07 to 2019-09-02

### Maximum 92-Day Mean Avg Temperature for McAllen Area, TX (ThreadEx)

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

| Rank | Value | Ending Date | Missing Days |
|---|---|---|---|
| 1 | 90.8 | 2009-08-31 | 0 |
| 2 | 90.1 | 2017-08-31 | 0 |
| 3 | 90.0 | 2018-08-31 | 3 |
| 4 | 89.9 | 1998-08-31 | 2 |
| 5 | 89.6 | 2016-08-31 | 0 |
| 6 | 89.3 | 2019-08-31 | 0 |
| 7 | 88.8 | 2012-08-31 | 0 |
| 8 | 88.5 | 2015-08-31 | 0 |
| 9 | 88.1 | 1980-08-31 | 1 |
| 10 | 88.0 | 2014-08-31 | 0 |

Period of record: 1941-06-01 to 2019-09-02

### Maximum 92-Day Mean Avg Temperature for RIO GRANDE CITY, TX

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

| Rank | Value | Ending Date | Missing Days |
|---|---|---|---|
| 1 | 89.5 | 2009-09-01 | 2 |
| 2 | 89.2 | 1996-09-01 | 5 |
| 3 | 89.1 | 1901-09-01 | 0 |
| 4 | 88.8 | 2019-09-01 | 2 |
| 5 | 88.8 | 1999-09-01 | 5 |
| 6 | 88.8 | 1928-09-01 | 0 |
| 7 | 88.7 | 1902-09-01 | 2 |
| 8 | 88.6 | 2017-09-01 | 3 |
| 9 | 88.4 | 2000-09-01 | 5 |
| 10 | 88.4 | 1948-09-01 | 1 |

Period of record: 1897-01-01 to 2019-09-02

# Several RGV Heat Records Broken/Shattered This August

## Average Temperature (day/night combined)

### Maximum 31-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 | 89.3 | 2019-08-31 | 0 |
| 2 | 87.8 | 2018-08-31 | 0 |
| 3 | 87.3 | 2011-08-31 | 0 |
| 4 | 87.1 | 2010-08-31 | 0 |
| 5 | 86.8 | 2016-08-31 | 0 |
| 6 | 86.7 | 2005-08-31 | 0 |
| - | 86.7 | 1900-08-31 | 0 |
| 8 | 86.7 | 2017-08-31 | 0 |
| 9 | 86.6 | 2014-08-31 | 0 |
| 10 | 86.6 | 2012-08-31 | 0 |

Period of record: 1878-01-01 to 2019-09-02

### Maximum 31-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 | 89.7 | 2019-09-01 | 2 |
| 2 | 88.2 | 2016-09-01 | 3 |
| 3 | 88.1 | 1958-09-01 | 0 |
| 4 | 87.7 | 1940-09-01 | 0 |
| 5 | 87.7 | 2011-09-01 | 0 |
| 6 | 87.5 | 2005-09-01 | 0 |
| 7 | 87.5 | 2002-09-01 | 2 |
| 8 | 87.5 | 2017-09-01 | 3 |
| - | 87.5 | 1998-09-01 | 3 |
| 10 | 87.4 | 2012-09-01 | 0 |

Period of record: 1912-02-07 to 2019-09-02

### Maximum 31-Day Mean Avg Temperature for McAllen Area, TX (ThreadEx)

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

| Rank | Value | Ending Date | Missing Days |
|---|---|---|---|
| 1 | 91.5 | 2019-08-31 | 0 |
| 2 | 91.4 | 2009-08-31 | 0 |
| 3 | 91.2 | 2018-08-31 | 0 |
| 4 | 90.7 | 2017-08-31 | 0 |
| 5 | 90.7 | 2016-08-31 | 0 |
| 6 | 90.4 | 2012-08-31 | 0 |
| 7 | 90.2 | 2011-08-31 | 0 |
| 8 | 90.1 | 2015-08-31 | 0 |
| 9 | 89.3 | 1998-08-31 | 0 |
| 10 | 89.2 | 2014-08-31 | 0 |

Period of record: 1941-06-01 to 2019-09-02

### Maximum 31-Day Mean Avg Temperature for RIO GRANDE CITY, TX

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

| Rank | Value | Ending Date | Missing Days |
|---|---|---|---|
| 1 | 92.9 | 1901-09-01 | 0 |
| 2 | 90.7 | 1997-09-01 | 1 |
| 3 | 90.5 | 2019-09-01 | 0 |
| 4 | 89.7 | 1964-09-01 | 0 |
| 5 | 89.6 | 1958-09-01 | 0 |
| 6 | 89.5 | 1905-09-01 | 0 |
| 7 | 89.5 | 2011-09-01 | 3 |
| 8 | 89.3 | 1957-09-01 | 0 |
| 9 | 89.2 | 1999-09-01 | 1 |
| 10 | 89.2 | 2009-09-01 | 1 |

Period of record: 1897-01-01 to 2019-09-02

# Summer 2019 Breaks (Another) Heat Record in RGV

## August Culminates the Heat with New All Time Calendar Month Records

**Overview**

For yet another summer season in an already hot decade, Rio Grande Valley reporting stations set new records in 2019. For August, particularly across the heavier population locations (McAllen, Brownsville, and Harlingen), the new records broke those previously set this decade, including Brownsville (2018) and Harlingen (2016). Most notable was the ***departure*** from prior records, equivalent to a horse winning the Kentucky Derby by "pulling away" by 20 lengths. Each side broke their prior records by 1.5 degrees, which is more than a standard deviation along the bell-shaped curve (a standard deviation typically includes 68% of all possible outcomes; two standard deviations closer to 90% of all possible outcomes).

The August heat, combined with below to much below average rainfall, erased all benefits provided by the Great June Flood, Sequel, of June 24, 2019 when 8 to more than 15 inches of rain fell in portions of eastern Hidalgo, western Cameron, and western Willacy County. By month's end, moderate drought to abnormally dry conditions were observed in these areas. Farther west in the South Texas Brush Country, the oppressive heat and lack of rainfall combined to ramp up drought to Extreme Levels (Jim Hogg and Zapata), with Jim requesting a state of emergency for livestock management as cattle were in crisis with water and feed supplies dwindling.

The summer heat, which followed a warming spring that itself followed a alternating mild and frequent chilly winter, brought average temperatures for much of the populated Rio Grande Valley back into the top ten all-time for the first eight months of the year.

- Brownsville: Ranked number 3 (78.0 vs. 78.8, number 1, in 2017). Data from 1878.
- Harlingen: Ranked number 9 (77.5 vs. 78.8, number 1, also in 2017) Data from 1912.
- McAllen: Ranked number 9 (79.0 vs. 81.9, number 1, also in 2017). Data from 1941.

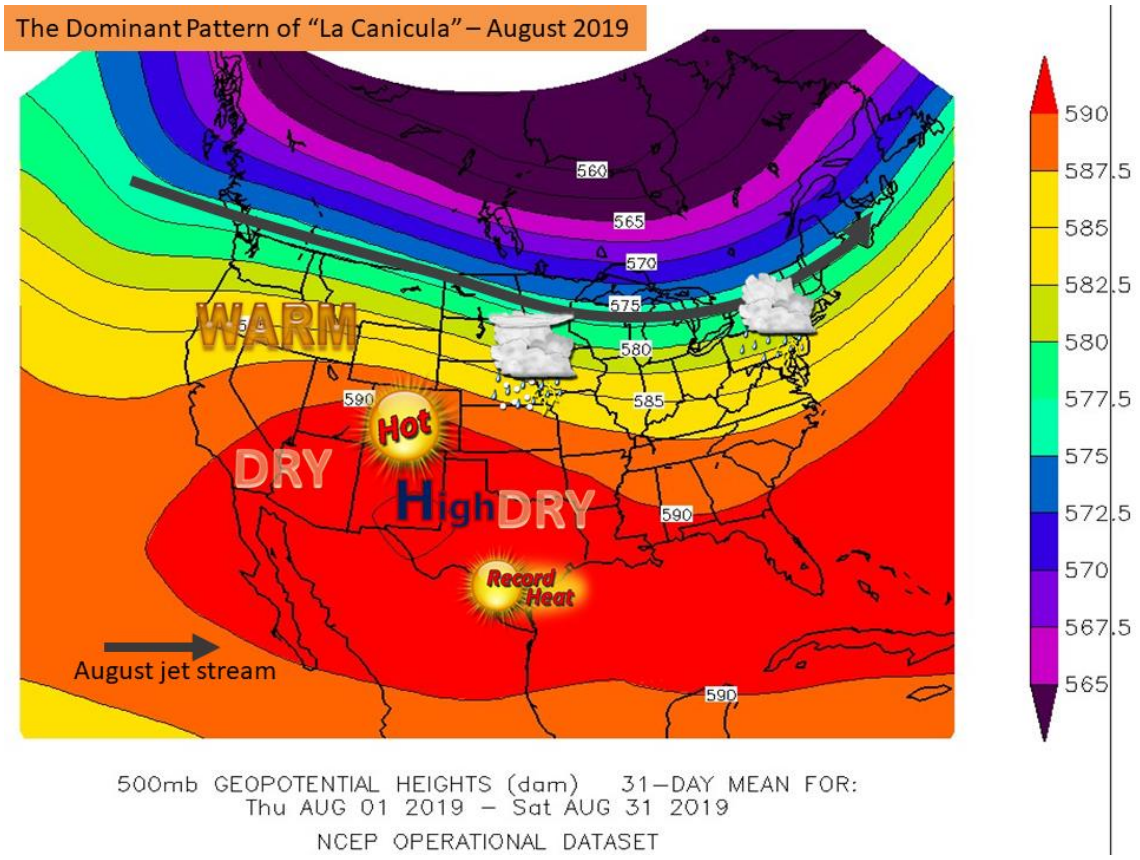
**La Canícula: The Reason for the Season**

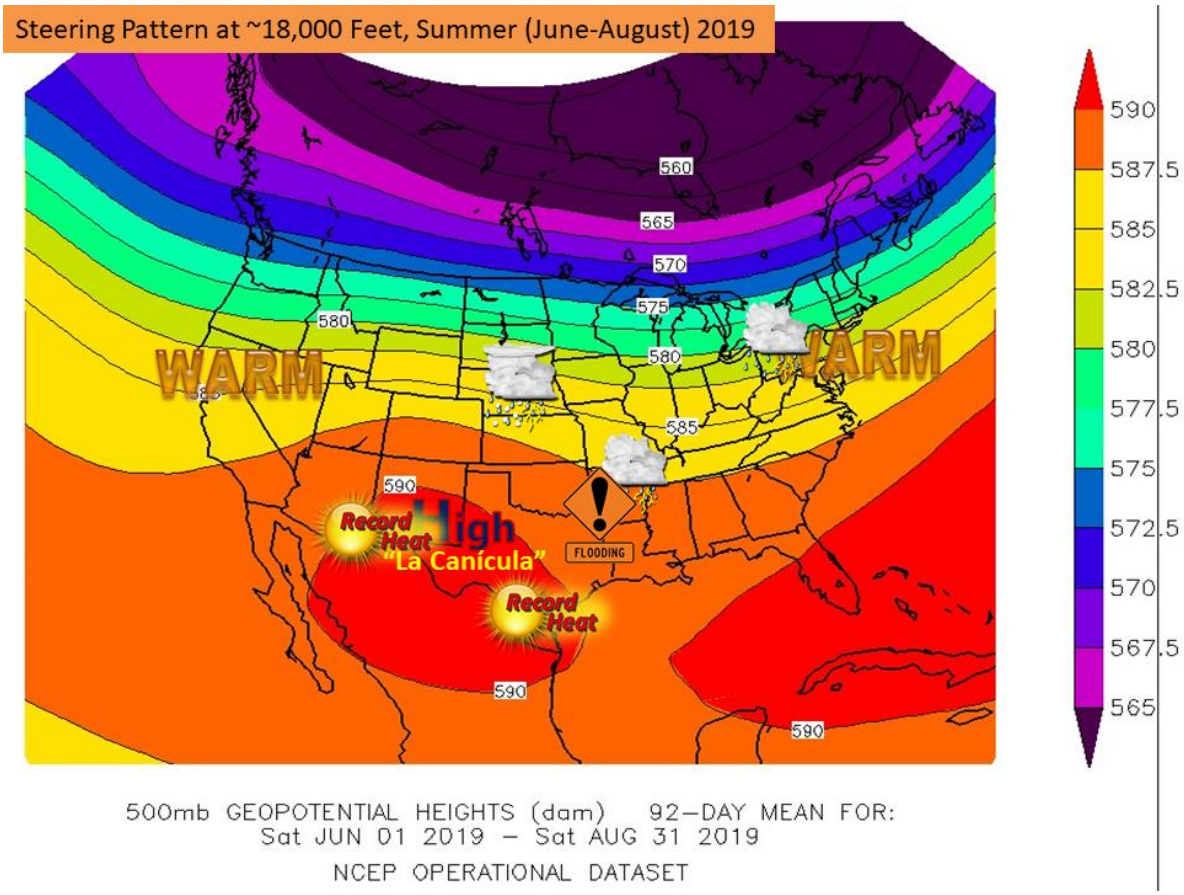
The "Dog Days of Summer" barked – rather, howled – in 2019. La Canícula, the period when Sirius Canis (dog star) rises with the sun during the heart of summer (July 3 to August 11), is typically matched with a hot, dry upper level pattern across the Rio Grande Valley and northern Mexico which has deep roots in historical lore. In recent summers, La Canícula has been even stronger than average, and has lasted longer – beginning in May and continuing sometimes as long as October.

In 2019, one of the most intense "Canícula" steering patterns ever seen occurred at the start of June and led to both record high temperatures and very rare "feels like" temperatures – for three days in a row (June 7 to 9) – between 115 and 125, with 120+ values at McAllen, Brownsville, and Harlingen. "Feels like" temperatures between June 17 and 24 reached 111 or higher in many areas, with some readings near 120 on the 23rd and 24th which help feed the instability that led to the "Great Flood, Sequel" later that afternoon and evening. Following the flood, and through most of July, a more "typical" Canícula dominated with temperatures closer to average by day but still well above average at night; July finished in the top third hottest in most areas despite the near "normal" pattern.

September began fairly "normal"; after a blazing start on the 1st, a tropical wave gradually developed into Tropical Storm Fernand on the 2nd and 3rd, which made landfall near La Pesca, Tamaulipas, around noon on the 4th. Welcome rainfall likely took a bit of a "bite" out of the drought and dryness, but not enough to eliminate it. Long range forecasts suggested a good part of September would be hot and largely rain-free, which is critical in a month where totals range from 4.5 to more than 6 inches, Valley-wide.

Stay tuned.




Above: The classic atmospheric pattern of "La Canícula", or the "Dog Days" of summer that stretched, with only brief breaks, from June through August. The pattern was even stronger than expected, leading to record to near record temperatures for both August (top image) and summer (bottom image) 2019.

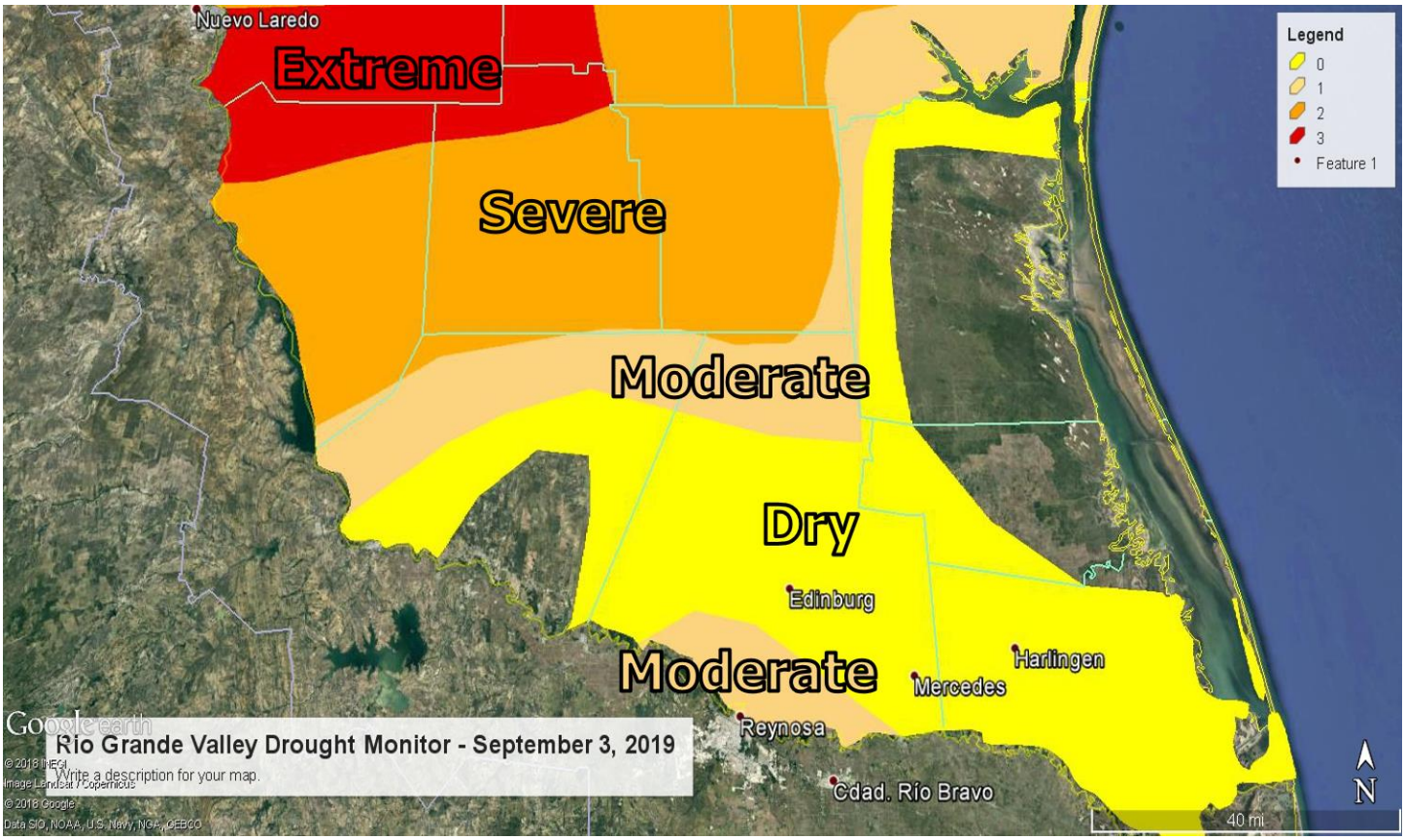


Figure 1. Drought monitor, not including some of the heavier rain bands on the periphery of Tropical Storm Fernand. While rainfall was helpful, it will not be enough to remove drought or dryness from most of the Valley and Deep South Texas. Additional dry weather in September could return dryness, as the month is by far the wettest on average.