

Topsy-Turvy Month Features A Little Bit of Everything

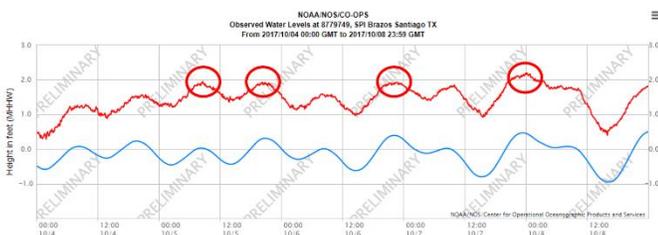
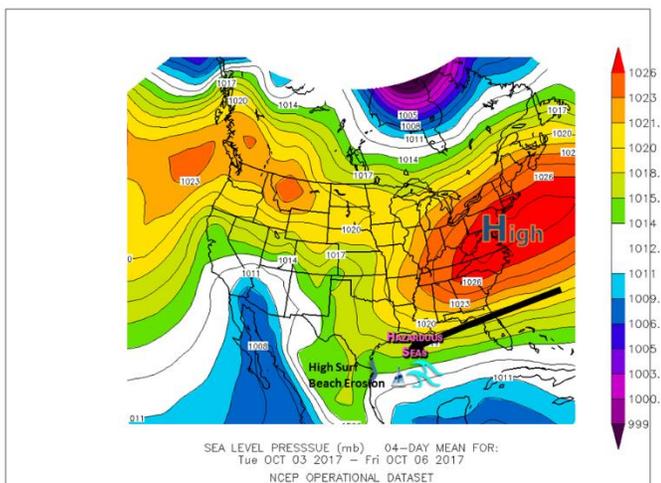
On the Whole, October 2017 Ends Up “Average” for Temperature, but Mixed for Rainfall

Early: Tide ru(i)n beaches

The first autumnal combination of strong high pressure across the eastern third of the U.S. with broad low pressure in the southern Gulf and northwest Caribbean, and astronomically high tides (below) brought a several day period of tidal “run-up” and ultimately beach erosion as South Padre Island was roughed up by high surf that ran up to or into the dunes, from October 4 through 7. Even as the high pressure ridge weakened on the 7th, Hurricane Nate spinning quickly north through the central Gulf kept the surf going before conditions finally settled down a bit on the 8th. The continuous run-up flattened the beach, which could become an issue through November for lesser potential as above predicted tides would have less resistance from the typical sloped beach seen during most of the spring and summer.

Circled values were just under 2 feet above Mean Higher High Water (MHHW), an equivalent value to the height of the water where the shoreline typically meets the edge of the surf at the gauge location. At 2 feet (knee to thigh height overall), the momentum from wave set-up runs into dunes where the distance from the typical shoreline, about 35 yards or so.

High surf, peaking at an estimated 5 to 9 feet (highest near the Isla Blanca jetty and at the most distant sandbar on South Padre) generated by the hazardous offshore seas and swells was a bit rough for surfers, but settled into smoother sets (still over 6 feet at times) by the 8th. The peak of water into the dunes occurred on Friday, October 6th (below).



Above: Top – Surface pressure (mean) for October 3-6, 2017. High pressure dominated the mid Atlantic coast, with clockwise strong easterly flow stretching across the entire northern Gulf between the ridge and broad low pressure in the southern Gulf. Bottom: Astronomical high tides (blue, predicted) superimposed with actual tides (red), from late October 3 through midday October 8. Peak tides and run-up occurred at high tide during the afternoon/evening of October 5-7 (circled).

Above: Top – peak surf running into the dunes just north of Isla Blanca Park during the early afternoon of Friday, October 6, 2017. Bottom – peak surf running up to the dunes at the thinner beaches of the north resort areas on South Padre during the early afternoon of Thursday, October 5, 2017. Photo credit (top): Gene Gore of spadre.com.

October 1-10: September-like pattern ends with downpours, minor flooding, and the season's first front

September was drier than average for most, with rainfall in all but a few lucky pockets of the Valley running one-third to two-thirds of average (average for the month is about 4.5 to 6 inches of rain), largely due to the disruption from the multiple tropical cyclones in the Gulf and along/near the eastern U.S. seaboard. October, however, began as September typically would be remembered, with deep flow of tropical moisture from the southern Gulf and Caribbean providing scattered to numerous showers and thunderstorms from the populated Valley northward through the King Ranch.

October typically is a month that begins with carryover pattern from September – and the possibility of a passing tropical event to add to the rainfall – before a front generally turns off the waterworks. Average daily rainfall drops by one-half through the month (example: McAllen/Miller from 0.10 to 0.5”; Brownsville from 0.17” to 0.08”), and for 2017, that “drop” came with a culminating “blast” of torrential rainfall in the highly populated IH-2 corridor of Hidalgo County, where 3 to an estimated 6 inches of rain fell on the 10th. McAllen/Miller torched records with 5.07” that day, more than double the *monthly* total! Near La Joya, 3.5” fell, and a location near Mission recorded nearly 4” (below). Minor flooding accompanied the rainfall in parts of Hidalgo County that day. On October 11, temperatures under a low canopy of clouds and additional light rain failed to reach 70 in McAllen – though, as mid October goes, recovery began in earnest by the 12th.

The periodic rains prior to the drenching chipped away at drought, with southern Hidalgo improving from moderate/severe to abnormally dry. The drenching finished off the dryness in Hidalgo – but much less rain fell farther west (Starr and Jim Hogg) and dry to moderate drought conditions would continue for these ranching areas.

7 Stations with 14 Reports over 3 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in. ▼
TX-HDL-9	Mission 1.9 ENE	3.79		3.79
TX-HDL-44	Weslaco 3.0 SSE	2.31		2.31
TX-HDL-39	Mission 3.9 WSW	2.25		2.25
TX-HDL-5	La Joya 11.1 N	1.52		1.52
TX-HDL-19	Mission 4.3 WSW	1.37		1.37
TX-HDL-40	Mission 9.6 N	0.67		0.67
TX-HDL-41	Edinburg 2.4 N	0.50		0.50

26 Stations with 64 Reports over 3 Days

Station Number	Station Name	Daily Precip Sum in.	Multi-Day Precip in.	Total Precip in. ▼
TX-CMR-67	San Benito 7.8 E	2.72		2.72
TX-CMR-92	San Benito 8.7 ENE	2.44		2.44
TX-CMR-101	San Benito 0.9 SSE	2.27		2.27
TX-CMR-61	Brownsville 6.4 WNW	1.85	0.00	1.85
TX-CMR-85	Harlingen 0.4 N	1.80		1.80
TX-CMR-93	Harlingen 4.4 W	1.77		1.77
TX-CMR-100	Harlingen 6.2 WSW	1.77		1.77
TX-CMR-58	Laguna Vista 0.3 N	1.74		1.74
TX-CMR-36	Harlingen 4.7 WSW	1.67		1.67
TX-CMR-43	Brownsville 4.1 ENE	1.67		1.67
TX-CMR-105	Los Fresnos 2.1 NNE	1.67		1.67
TX-CMR-45	Bayview 2.9 N	1.66		1.66
TX-CMR-21	Los Fresnos 0.3 NE	1.57		1.57
TX-CMR-16	Brownsville 3.5 N	0.00	1.54	1.54
TX-CMR-84	Brownsville 2.2 WNW	1.53		1.53
TX-CMR-94	Brownsville 12.6 E	1.53		1.53
TX-CMR-96	San Benito 6.3 ENE	1.51		1.51
TX-CMR-98	Brownsville 4.3 NW	1.47		1.47
TX-CMR-90	Brownsville 1.5 WNW	1.46		1.46
TX-CMR-103	Brownsville 1.5 SW	1.44		1.44
TX-CMR-89	Brownsville 1.7 NNE	1.38		1.38
TX-CMR-51	Brownsville 0.1 SSE	1.29		1.29
TX-CMR-13	Brownsville 2.2 W	1.20		1.20
TX-CMR-97	Rio Hondo 7.9 E	1.05		1.05
TX-CMR-22	Brownsville 0.4 WSW	0.90		0.90

Above: Top - Community Collaborative Rain, Hail, and Snow (CoCoRaHS) network rainfall for Hidalgo County observers the period October 9 through 11, 2017. Bottom: Same as top, except for Cameron County.

Late: Halloween Weekend Feels Like it Should

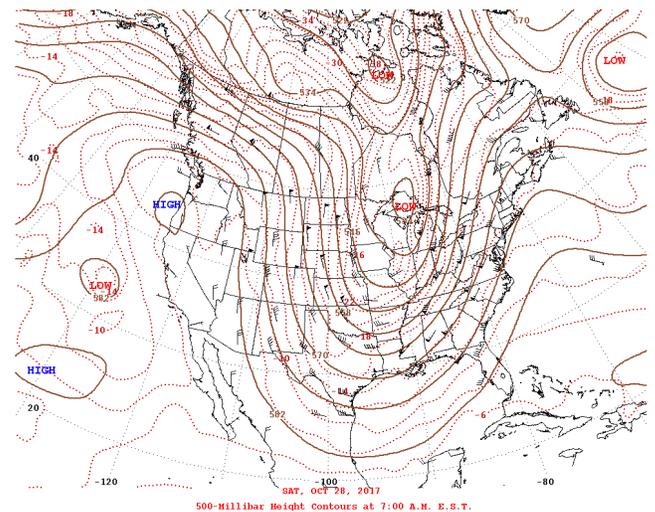
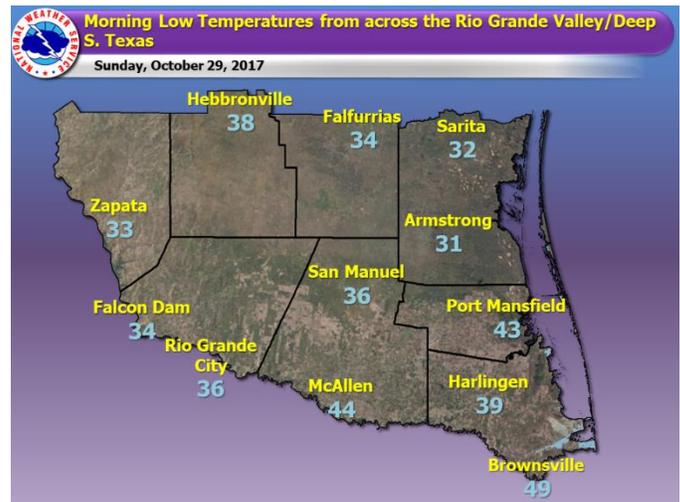
The season's first “true” cold front whipped through the Valley on Friday October 27, bringing temperatures into the 60s to around 70 for the ranchlands and Rio Grande Plains for most of the day, and tumbling values from the mid 80s to the

upper 60s for much of the populated Rio Grande Valley in time for Friday Night Lights. Low clouds held temperatures in the low to mid 60s during those games, but the punch of very dry and cool air surged in overnight, with morning temperatures ranging from the upper 30s in wind protected ranchlands to the 40s/50 across the Valley. A crisp and perfectly clear Saturday brought highs only back into the 60s in most areas under very dry and breezy conditions (favorable for some wildfire spread which fortunately did not occur) before clear calm conditions brought lows in the 30s for many, including a few spots that touched freezing on October 28. New daily records were broken at Harlingen and McAllen. For Halloween weekend revelers, the cool evenings were more similar to events held from the Midwest to the Mid Atlantic – as temperatures on the weekend were closer to beautiful *January* weather than the end of October.

For both the 27th and 28th, temperatures were 10 to 15 degrees or more below the average (typically lower 80s by afternoon and lower 60s by daybreak).



Above: Top – Shelf cloud signifying autumn’s first “big” cold front as it whips across South Padre Island with 40 mph gusts around 5 PM October 27. Bottom – Crystal clear “Canadian” blue skies (the source of the chill) early on Saturday, October 28.



Above: Deep (full latitude, or “meridional”) trough at around 18,000 feet (500 millibars) across the central U.S. North to northwest atmospheric flow originating in northwest Canada came surging all the way to the Rio Grande Valley, helping clear out moisture at all levels and leaving the pure blue sky shown in the bottom photo at left.

Overall

At the primary three Valley locations, the following preliminary statistics:

- Brownsville (since 1878): Avg. Temperature: 76.6, 0.3 degrees above the 1981-2010 value. Precipitation: 3.25 inches, 0.49 inches below the 1981-2010 average.
- Harlingen (since 1912): Avg. Temperature: 75.3. 0.3 degrees below the 1981-2010 value. Precipitation: 3.81, 0.7 inches above the 1981-2010 average.
- McAllen/Miller (since 1961): Avg. Temperature: 77.6, 0.4 degrees above the 1981-2010 average. Precipitation: 6.14, 4.06 inches above the 1981-2010 average.