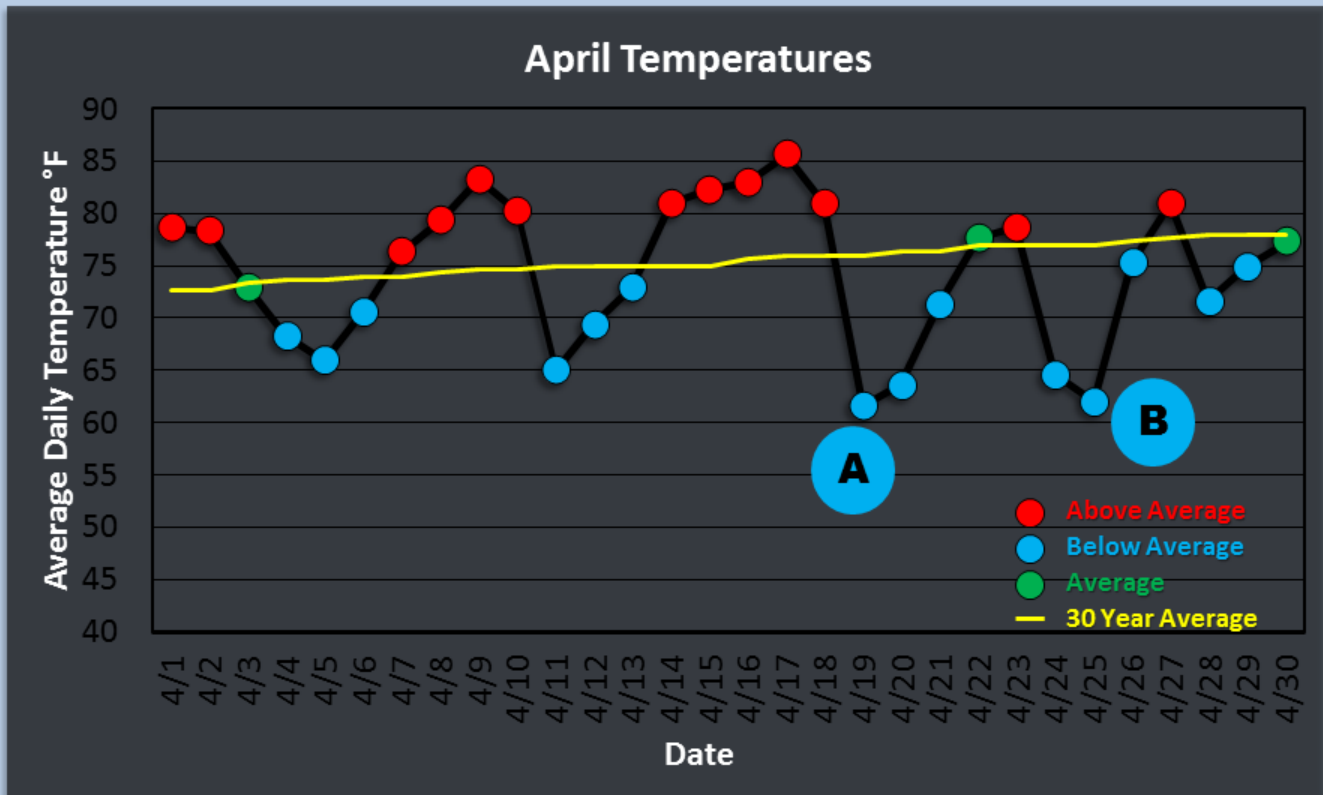




Warmer, Cooler, or Average?



The roller coaster of temperatures continued from March into April 2013 across the Rio Grande Valley. Frequent cold fronts kept temperatures from warming too much too fast at the beginning, middle and near the end of the month. Strong fronts pushed temperatures down between the 18th-20th (A) and 24th-25th (B), ensuring below average temperatures for the first time in more than a year.

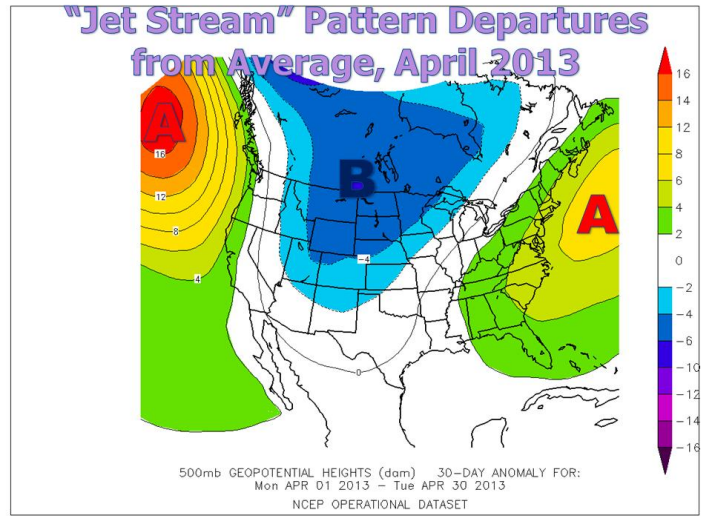
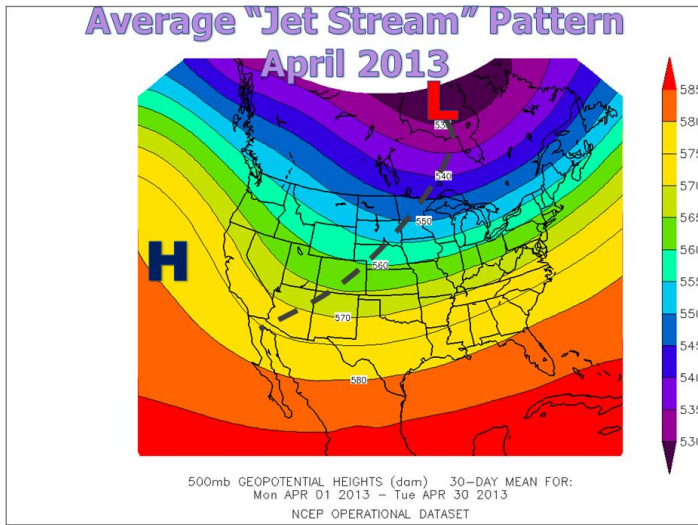
All Streaks Were Meant to End

Temperamental April Brings Below Average Temperatures to RGV

Extreme to Exceptional Drought Continues Despite End of Month Rain

It had to happen sometime, right?

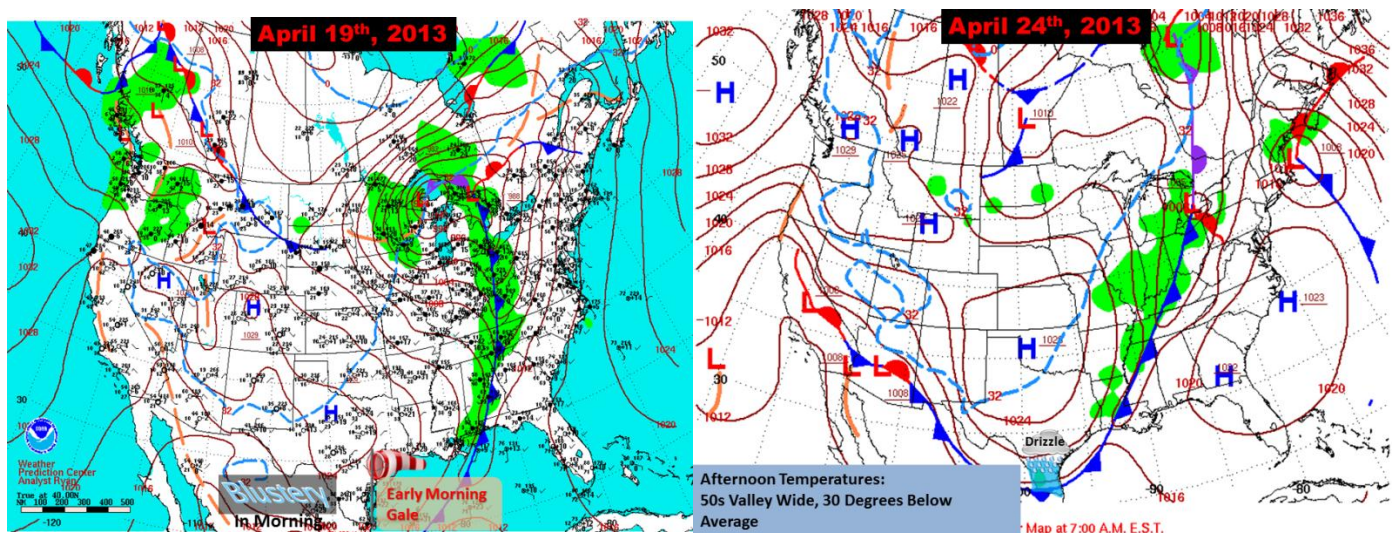
After impressive streaks of 25 months above average at Brownsville, 15 months at Harlingen (Valley Airport and Cooperative), and 36 of 37 months at McAllen/Miller (with the one month just a hair below average), April 2013 definitively moved the temperature needle below the 1981-2010 average at each location, and across the Rio Grande Valley as a whole. At Brownsville, temperatures dipped 1.4°F below average (73.4°F vs. 74.8°F), the first below average value since February, 2011 and only a hair below average (0.0) itself. At Harlingen/Valley, temperatures fell 1.2°F below average (74.1°F vs. 75.3°F), for the first time since December 2011. At McAllen/Miller Airport, temperatures also fell 1.2°F below average (75.3°F vs. 76.5°F) for the first time since December 2011 – and broke the 36 of 37 month streak of above average temperatures that began in April, 2010!



Left: 500 mb (~18,000 feet) pattern for April, 2013. Trough axis extended from the Polar Low (L) over Hudson Bay southwest through the U.S. Four Corners region, with typically warmer high pressure ridge (H) anchored west of the U.S. Pacific coast. **Right:** Anomalies of the 500 mb pattern for April, 2013. The below average area (B) matched the area behind the trough axis.

Why the Break, Why Now?

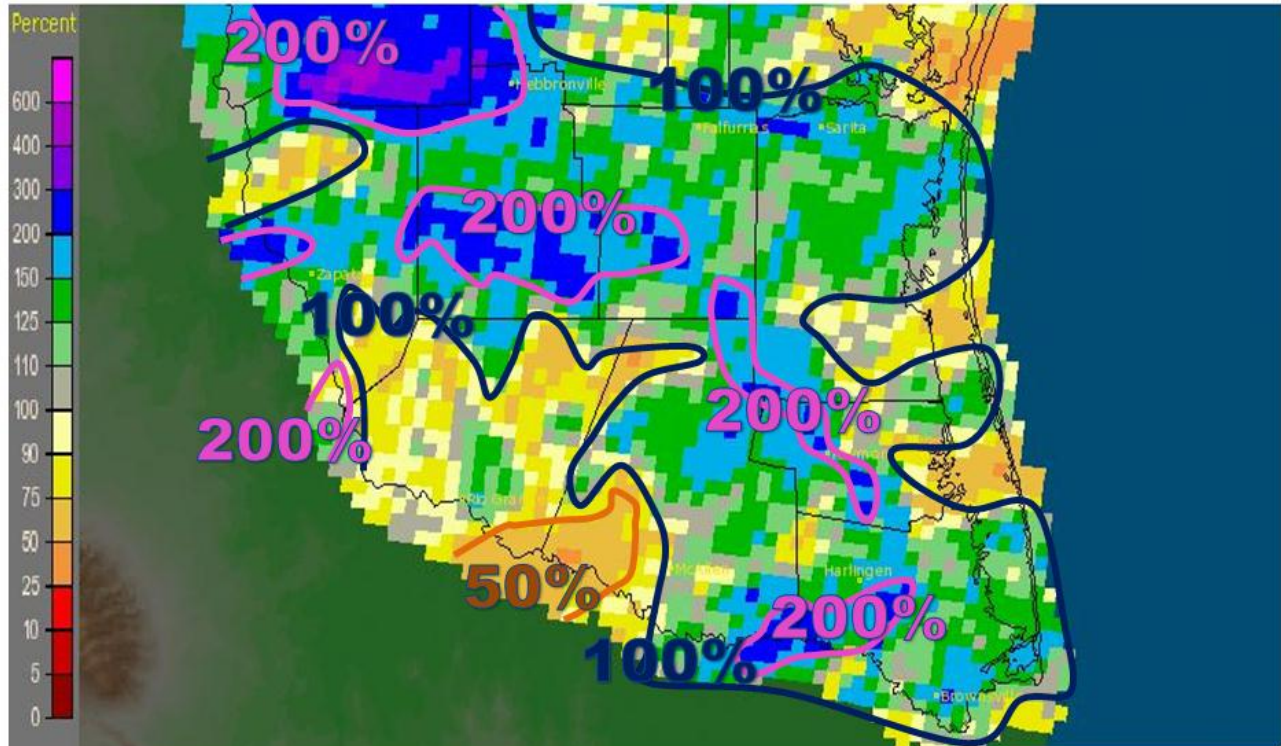
A persistent storm track, which began in the Gulf of Alaska and plunged through the Pacific Northwest into the Central and Southern Rockies, was key to the frequency of vigorous cold fronts. Each front brought Canadian air masses of varying intensity into the western U.S. and Great Plains. The fronts brought little rainfall, and more dry air, to the Rio Grande Valley through most of the month; by April 16th, Exceptional Drought (D4 – the worst category) had covered all but the Cameron County coast. Two fronts were critical to locking down the first below average month in more than a year. On April 18th, a fairly deep front swept across the Valley, bringing wind gusts above 40 mph, more blowing dust, and an overnight Gale to the Laguna Madre and Gulf. Temperatures plunged from near 100°F during the early afternoon into the 60s by mid-evening. Readings would drop into the upper 50s to lower 60s on the 19th, and barely recover to 70 or so by afternoon before crashing into the 40s to lower 50s by daybreak on a glorious Saturday, April 20th. On April 24th, a shallow but very noticeable front replaced early summer like morning warmth and humidity with January raw chill; early afternoon temperatures in most areas were in the lower 50s, a full **30 degrees below average**. Still north winds and a piercing drizzle made it feel even colder. The daily weather maps for each system are shown below.



Daily weather maps for 7 AM CDT on April 19th (left) and April 24th (Right), after significant late-season cold fronts swept the Rio Grande Valley. Blustery winds and steel gray clouds followed the April 18th front and continued through midday on the 19th, with a robust 'norther' Gale on the Lower Texas Coastal Waters. On April 24th, the front was also followed by brisk north winds and near Gale force gusts over the Gulf, but drizzle and low clouds made conditions miserable.

The drizzle and relative chill held through the 25th, and brought month-to-date readings close to 2°F below the 1981-2010 average. With only five calendar days remaining in April, only a record heat wave would be able to “save” the month from remaining below average. Alas, the atmosphere destabilized on the 27th and 28th; clouds and the [first locally heavy rainfall since early January](#) held temperatures near or just below average, sealing the cool month. The rainfall, which ranged generally from 1 to 3 inches across the Rio Grande Valley and Deep South Texas, pushed monthly totals in many areas above average (100% or higher, below) with a few pockets in southwest Hidalgo and southeast Starr County missing the action – *again*. A map of the monthly rainfall totals will be available soon.

Brownsville, TX (BR0): Current 30-Day Percent of Normal Precipitation
Valid at 5/1/2013 1200 UTC- Created 5/1/13 19:12 UTC



A Sign for the Future?

As May arrived, yet another norther was on the Valley’s doorstep – very unusual for early May. This front, like so many before, would bring a resurgence of very dry air to the region for the May 2nd through 5th period, and long range models suggested dry weather would be the rule into the middle of May. While the soaking rains of April 28th helped in the very short term, they appeared to be another “one-off” event as of this writing, joining periodic rain events in May and June 2011, December 2011, February 2012, May 2012, and January 2013, each which provided temporary relief during the record 24 to 30+ month Rio Grande Drought. On April 30th, the Drought Monitor for the Rio Grande Valley and Deep South Texas indicated only a trimming back of the Exceptional (D4) Drought; less than half of the area “improved” to Extreme (D3) conditions (next page).

Rio Grande Valley Drought Monitor

April 30th, 2013

