

RGV Winter Locks In

Sweaters, Coats, and Rain Gear Are Featured Fashion, January 1-11, 2015

The first third of January 2015 has been among the coldest on record across the Rio Grande Valley (see table, below), with persistent low clouds and cool weather punctuated by several much colder, and rather wet, periods. New Year's Day set the picture with daytime temperatures stuck in the 40s, "feels like" temperatures in the 30s to around 40, and a nuisance drizzle that made additional celebrations just as miserable as the night before. A mass of arctic air originating from near the North Pole surged across the northern Great Plains and eastward into the Midwest and Northeast from the 4th through the 11th, plunging temperatures into the single digits and "feels like" temperatures between 10 and 20 below zero on several occasions. The back edge of the plunge oozed through the entire Great Plains and reached the Rio Grande Valley late on the 7th, bringing the coldest temperatures and "feels like" temperatures since [November 13, 2014](#), during the morning of the 8th (above left). After minimal moderation on the 9th, a second surge combined with a vigorous upper level disturbance to produce some of the most miserable weather conceivable during the morning of the 10th, especially for the Lower Valley. From eastern Hidalgo through all of Cameron County, moderate to heavy rain combined with mid 30s temperatures and winds gusting to 30 mph at times from the north; "feels like" temperatures bottomed out in the 20s across all of Deep South Texas (above, right), the lowest since [February 6-7, 2014](#). Temperatures across the northern ranchlands (Zapata through Kenedy County) on the 8th remained above 32°F, keeping any precipitation to rain.

January 2015's Legacy: Below Normal Temperature, Above Normal Rainfall?

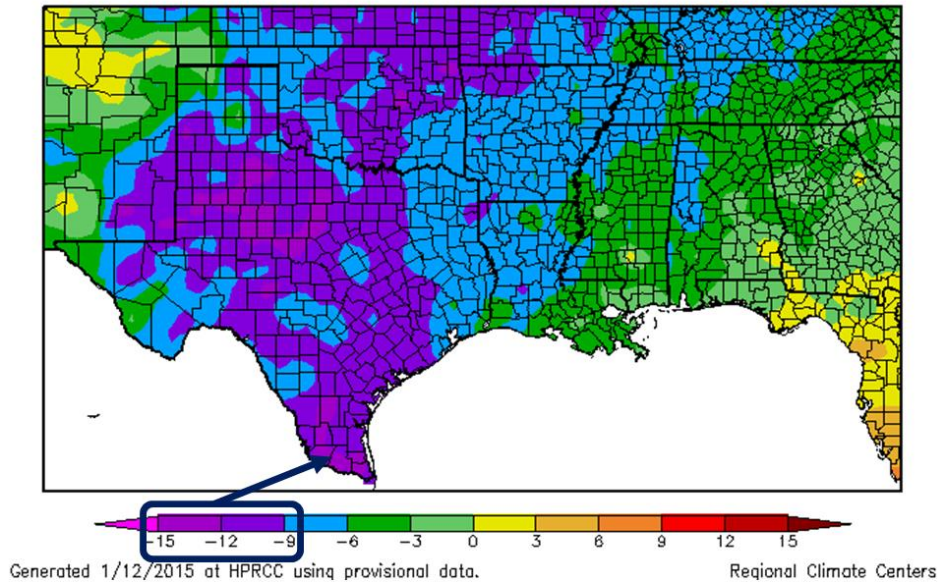
Temperature: As of this writing, average temperatures ranged from 10 to 14°F below the 1981-2010 benchmark. Overcast skies influenced daytime temperature departures severely; afternoon high temperatures were some 14 to 17°F below the 1981-2010 normals, ranging through the 50s across the region (vs. the "normal" upper 60s to around 70°F). The insulating clouds held late night and early morning temperatures above freezing, keeping grass and brush green but eliminating the [growth rates seen in a warm December](#).

How Cold? We checked records for the first eleven days of January in history. For nearly the entire region, the chill ranked among the top ten coldest all-time, dating back to the late 1800s. Selected locations below.

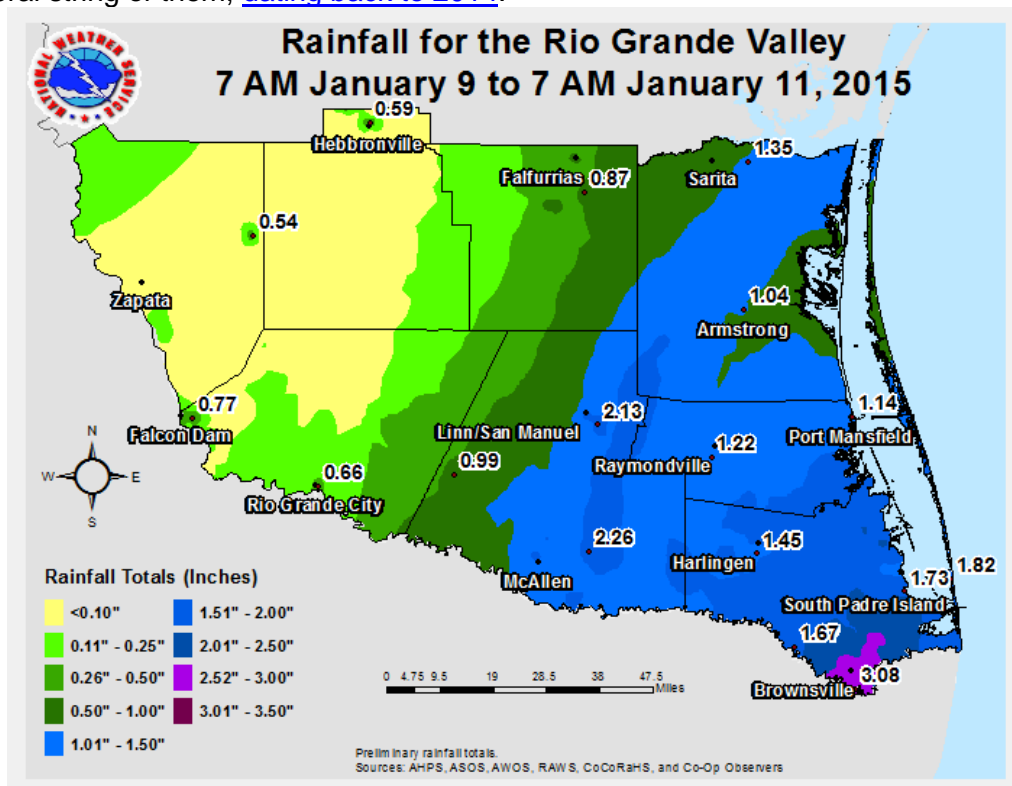
Location	Avg. Temp (°F)	Rank (records since)	Record (year)
Harlingen/Cooperative	46	3 (1912)	44.3 (1942)
Port Mansfield	45.9	3 (1958)	44.5 (1979)
McAllen/Miller	48.7	5 (1962)	47.5 (1970)
Rio Grande City	45.4	6 (1897)	43.3 (1970)
Falcon Dam	49.7	8 (1963)	42.3 (1979)
Brownsville	49.5	10 (1878)	43.6 (1881)

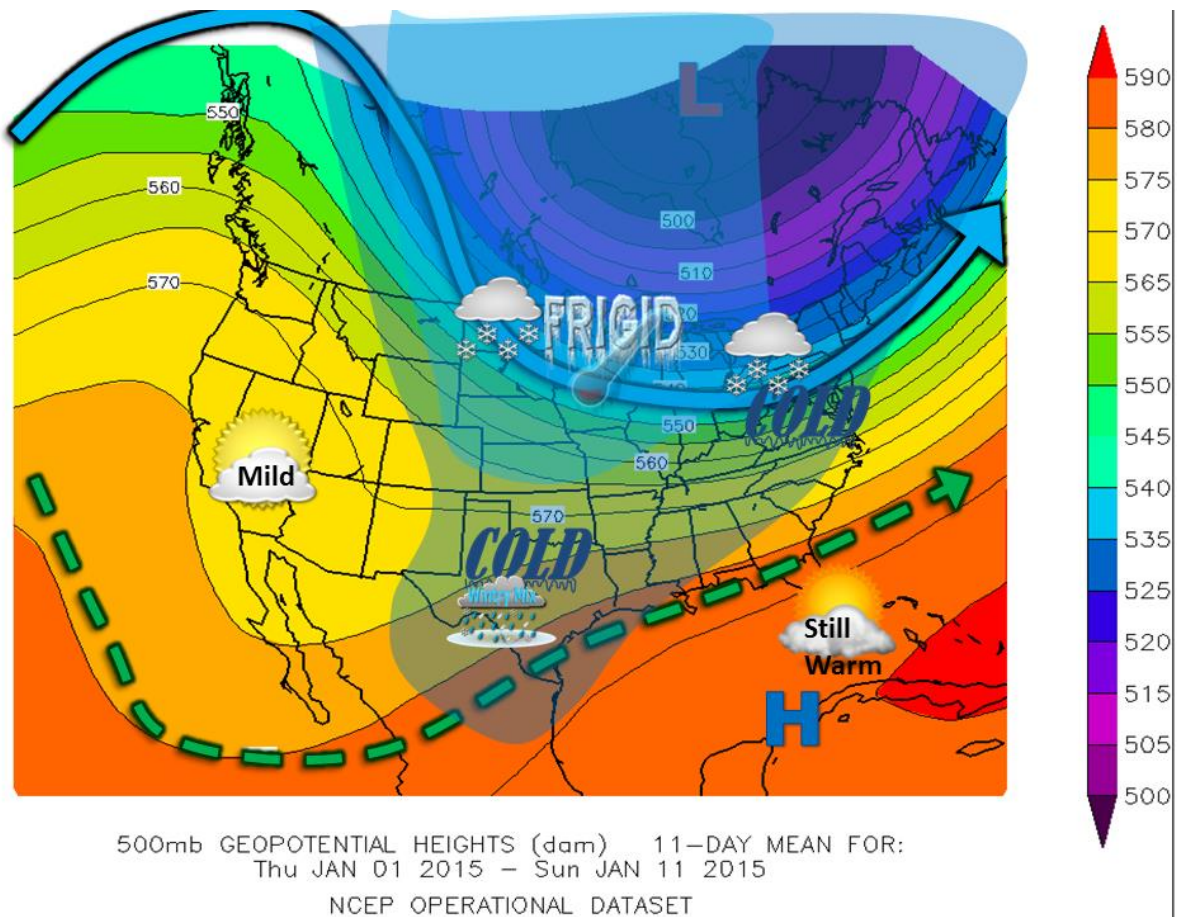
The substantially below average temperatures through the 11th, which were expected to be reinforced by a chilly shot for the 13th through 15th and a more “roller-coaster” pattern to close out the month, would lock up January 2015 as a below average month. Exactly how cold remained to be seen as of this writing (January 12).

Departure from Normal Temperature (F)
1/1/2015 – 1/11/2015



Rainfall: Light rains kept the ground saturated between the 1st and 3rd, followed by a generally rain-free but still cloudy and humid period between the 4th and 7th. The initial polar surge brought lower surface humidity for the 8th before the approach of a fairly vigorous upper level disturbance in the subtropical jet (top of next page) cranked up the rain machine, especially east of US 281 (IH-69C, central Hidalgo County). Event totals of 1 to 3 inches in these areas provided one to nearly three time the monthly rainfall for most of the population of the RGV in 24 hours (Noon January 9th through noon January 10th), ensuring another above-average rainfall month in a general string of them, [dating back to 2014](#).



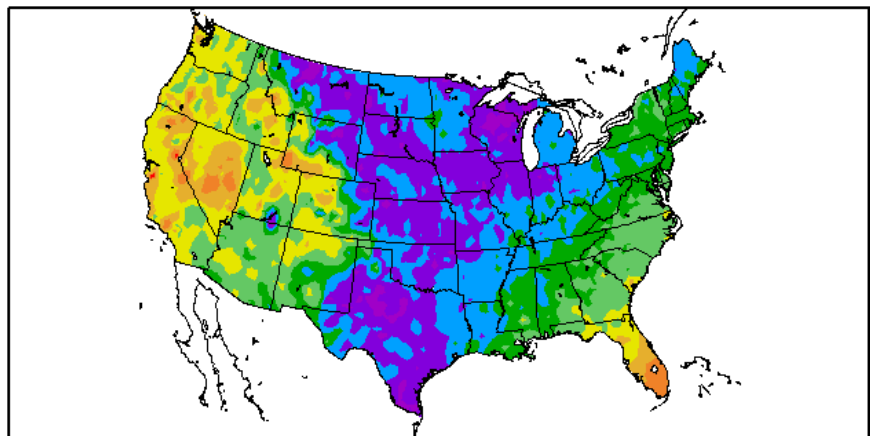


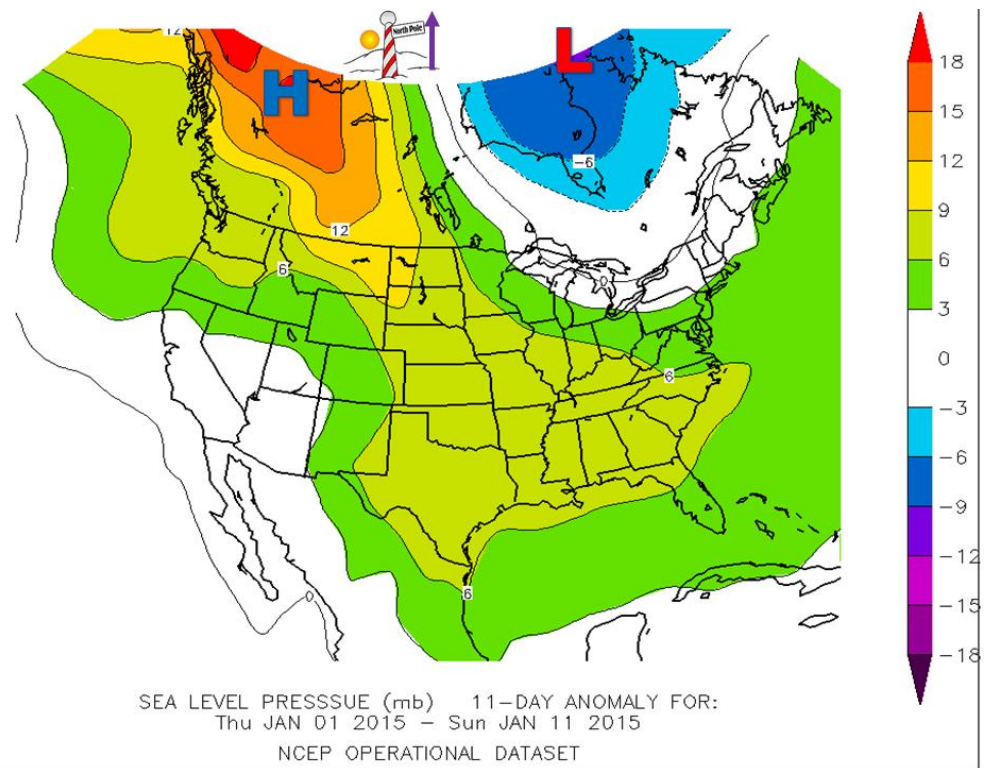
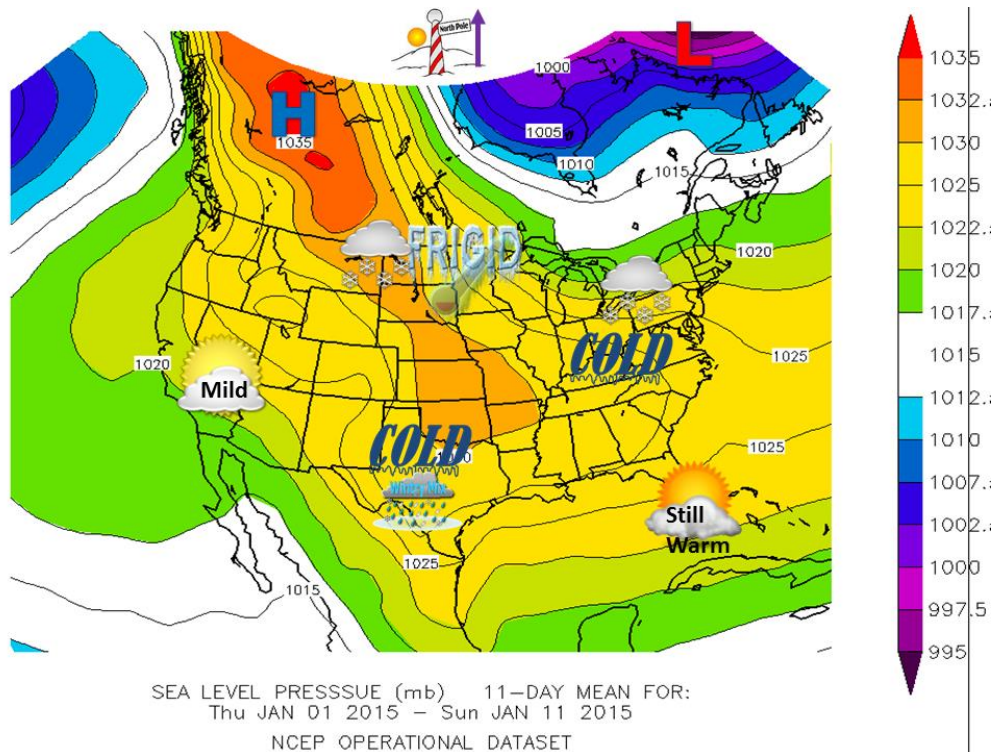
Above: Atmospheric steering pattern across North America for January 1-11, 2015. Light blue arrow indicates the northern “jet”, which pulled air from the polar region deep into U.S. Meanwhile, upper level energy along the subtropical “jet” (dashed green arrow) aided a generally cloudy period, punctuated by a disturbance that dropped more than the January average rainfall in 24 hours on the 9th and 10th.

Pattern Matters

The pattern which buckled to close December 2014 and brought winter’s chill for the second straight New Year’s Eve (Dec. 31) continued to pay cold dividends across most of the U.S. east of the Continental Divide through the first half of January 2015 (right). The high amplitude northern jet developed a series of strong and near-record surface high pressure cells, with frigid, dense air underneath them, across western Canada. Heavy, cold, dense air associated with each ridge, starting with the New Year’s Eve event and reinforced on January 8th and again on the 10th, easily pushed aside any relatively “warmer” air ahead of them, all the way into northern Mexico. The subtropical jet, meanwhile, was [activated by a disturbance riding along it](#) on the 10th, which aided the heavy rainfall in the Lower Valley and dominated the mean pattern (above).

Departure from Normal Temperature (F)
1/1/2015 - 1/11/2015





Above: High Pressure! Top – Average sea level pressure across the North America for January 1-11, 2015. **Bottom:** Sea level pressure anomalies for the same period. Note the highest values for each chart in western Canada. To the east of the core of the high, northerly winds plunged air from near the North Pole directly into the Great Plains and Midwest. The cold/frigid air tracked into the Northeast and Mid Atlantic Region for most of the first third of the month.

What it All Means

For the critical crop growing regions of the Valley, the concern shifted from drought to *too much water!* Evaporation rates near zero combined with rainfall since the spigot turned *on* in September (see rankings table, below) have left “exceptional” moisture across nearly all of these regions, just two scant years after extreme to exceptional drought was keeping parts of the crop growing region on edge. With a weak El Niño underway, there remains high confidence that the cool and moist pattern will continue through February and

March, ensuring plenty of soil moisture to begin the spring growing season. One should always remember the Rio Grande Valley, like much of Texas, is typically in a “state of drought except when it floods” and the return of hot and dry/rain free conditions is never out of the question later in spring and into early summer. Time will tell!

133-Day Precipitation (September 1 2014 through January 11, 2015) and rankings compared with other periods.

Location	Total Precipitation	Rank (records since)	Record (year)
Port Mansfield	25.50	3 (1958/59)	28.13 (1967/8)
Rio Grande City	18.88	5 (1892/93)	31.78 (1967/8)
Falcon Dam	12.66	8 (1962/63)	19.19 (2003/4)
Brownsville	22.25	9 (1878/79)	36.61 (1887/8)
McAllen/Miller	13.38	11 (1961/62)	19.85 (1967/8)
Harlingen/Coop	19.28	11 (1911/12)	28.11 (1967/8)

