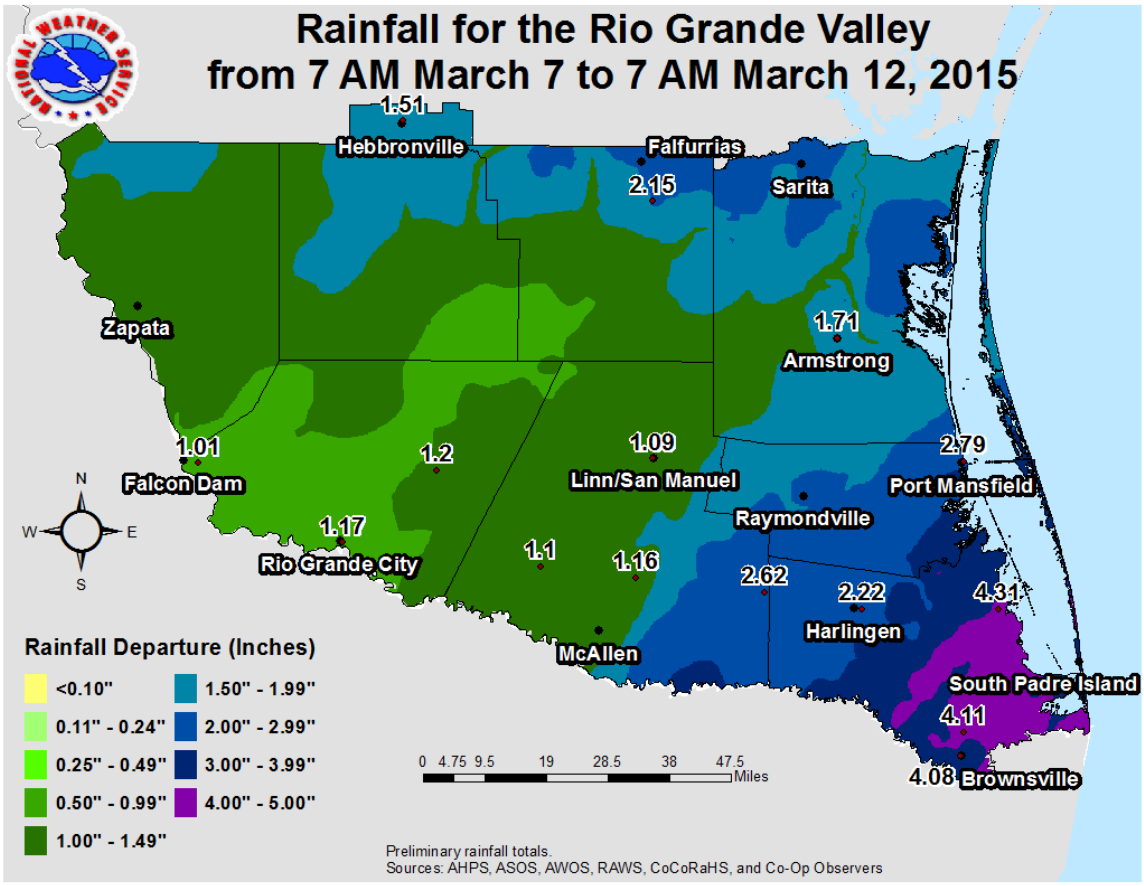
March 2015 Wetness



Too Much of a Good Thing?

Soaking Rains, Chilly Temperatures Slow RGV Spring Planting

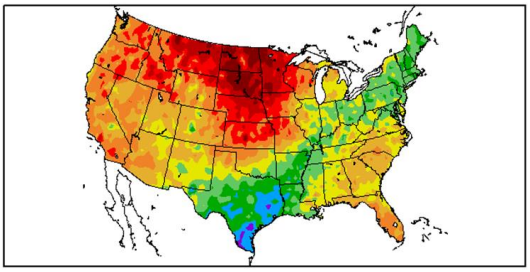
Resacas near bank full, standing water in fields, and plenty of green were featured in Brownsville on March 11, 2015. Photo credit: Michelle Straub

Overview

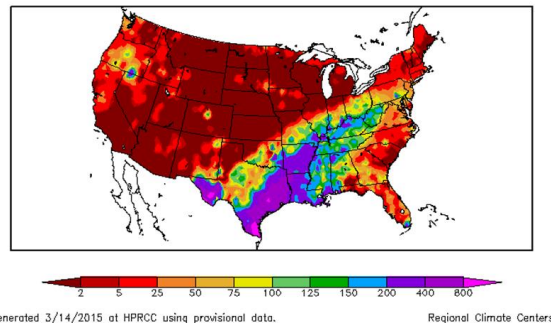
We call it Rio Grande Valley, but perhaps a temporary name change was in order: Rio ***Green*** Valley. Beginning in September 2014, when heavy rainfall pushed monthly totals to top fifteen levels, grasses grew and brush turned lush. Since then, the green never really left; December's warm, humid nights coupled with ample rainfall fooled some flora into an April-like growth spurt. Chilly January and February weather combined with numerous gray, damp, drizzly days but no widespread freezing temperatures locked in the green despite slowed growth. Rain that wet the ranchlands and Valley on March 8th and 9th persisted across the Lower Valley on the 10th, and redeveloped on the 11th – again across the Lower Valley, leaving more than 4 inches in spots and bringing the monthly totals to nearly four times the *total monthly average* with half the month left as of this writing (March 14th)!

The first half of March wasn't just wet, it was downright cool as well. All areas were within their top twenty coolest starts to the month (through March 13th) and several were near or at their coolest starts ever. Cool is relative, of course; the 1981-2010 first half averages range from wake-up temperatures in the upper 50s to mid afternoon temperatures near 80. At 7 to 8°F below these long term averages, the 2015 values were still mild enough to bring plants and trees to life (photo, bottom of page 1). Anecdotally, the prolonged chilly, wet winter, followed by a less chilly but still wet start to March turned the Valley as green as ever for a month that typically sees greening trees and some brush, but brown grasses underneath. Rio Green Valley, indeed!

Departure from Normal Temperature (F)
3/7/2015 – 3/13/2015



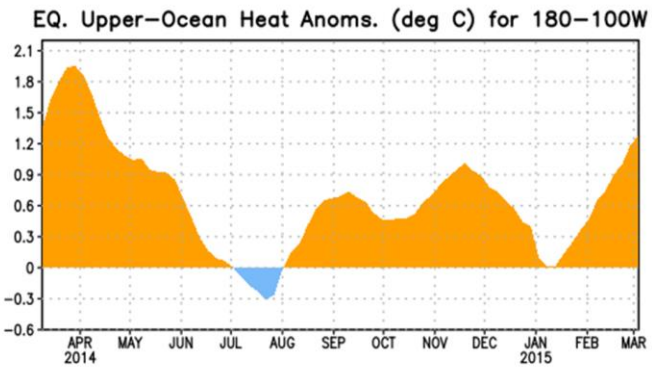
Percent of Normal Precipitation (%)
3/7/2015 – 3/13/2015

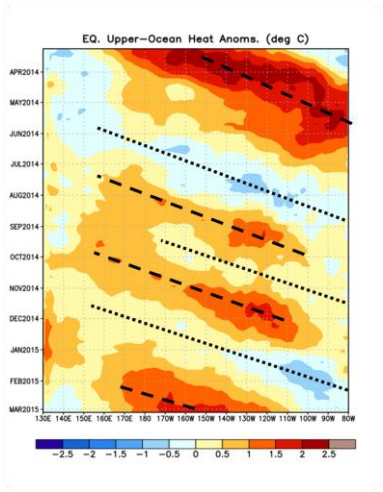


El Niño Taking Control?

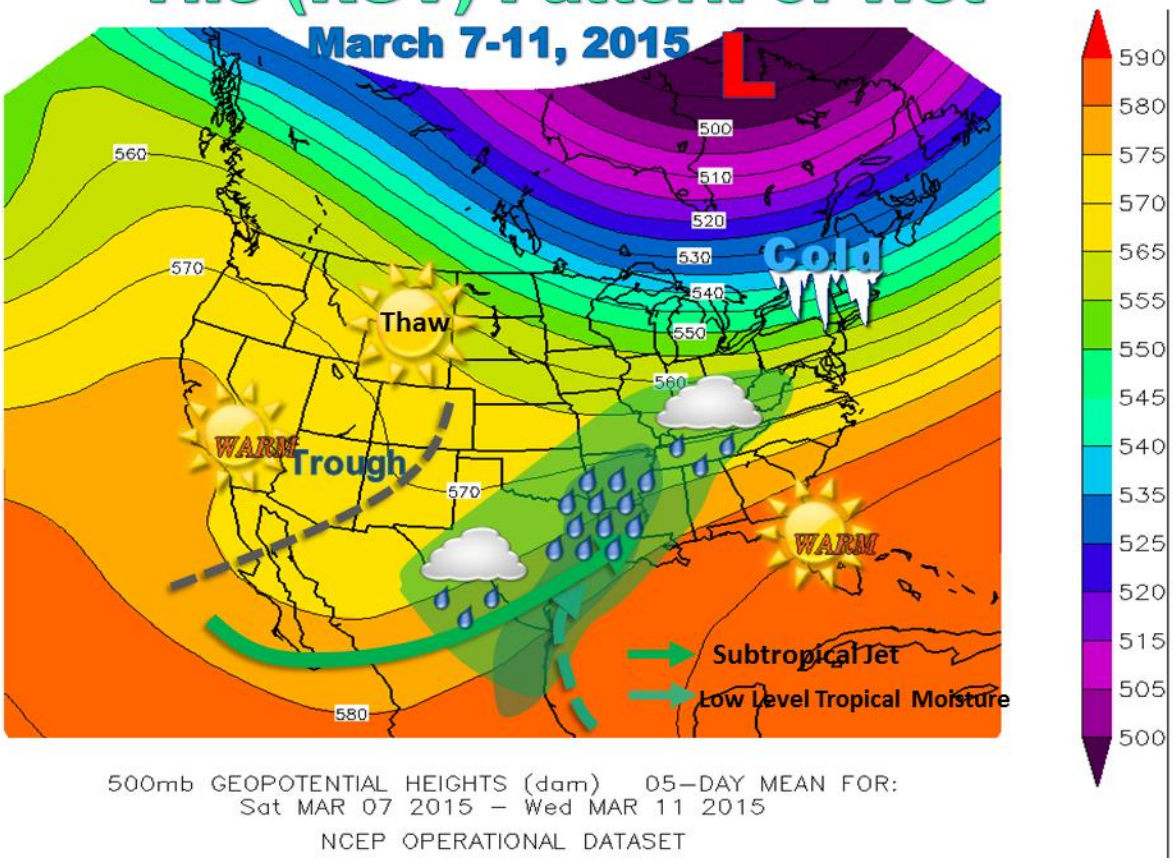
After many fits and starts, El Niño gained official footing at the end of February 2015. The pattern (top of next page) that led to the steady, field-wetting rains from March 8th through 11th better matched what one would expect from El Niño – warmer and drier conditions across the Rockies, Great Plains, and Upper Midwest but cool and wet across Texas and parts of the Deep South (right).

Critical data from the week of March 7th indicated a resurgence of upper ocean heat content in the "El Niño Zone" (International Date Line to around 100 Degrees west longitude in the Tropical North Pacific Ocean, bottom left), driven by a robust "downwelling" Kelvin Wave (bottom right, red/orange colors at bottom of chart), which favors continued increasing warming of the eastern Tropical Pacific and solidifying of the weak, perhaps edging into moderate, El Niño, through spring. Such a pattern would add more confidence to the current forecast of a wetter, and relatively cooler, spring (through May).



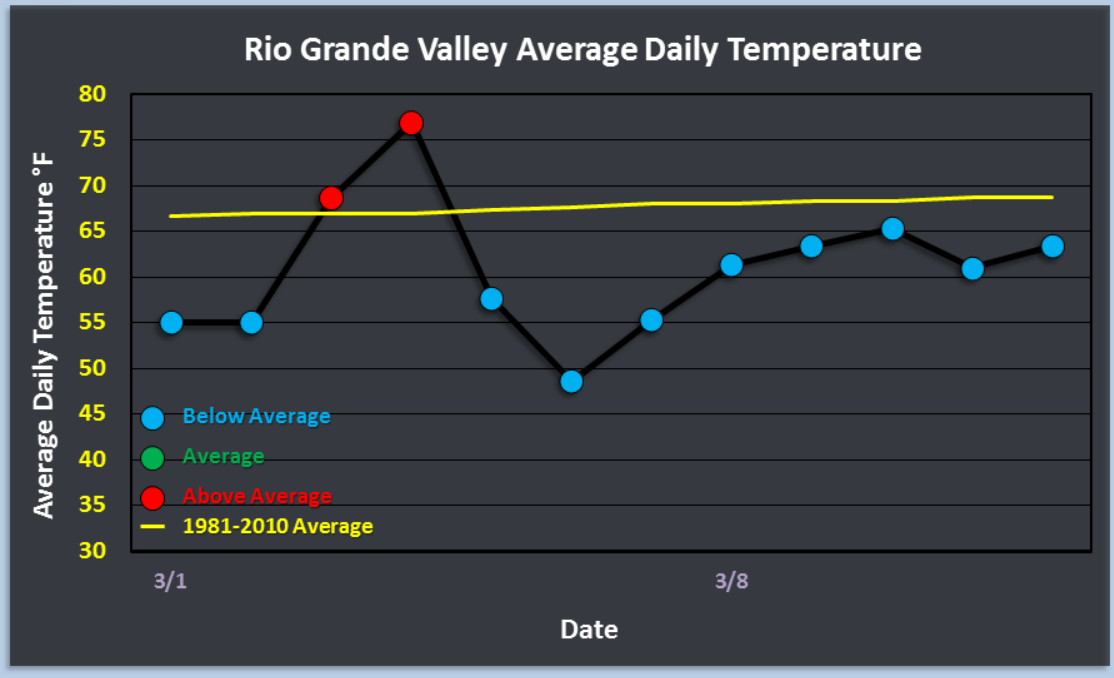


The (RGV) Pattern of Wet



500mb GEOPOTENTIAL HEIGHTS (dam) 05-DAY MEAN FOR:
Sat MAR 07 2015 – Wed MAR 11 2015
NCEP OPERATIONAL DATASET

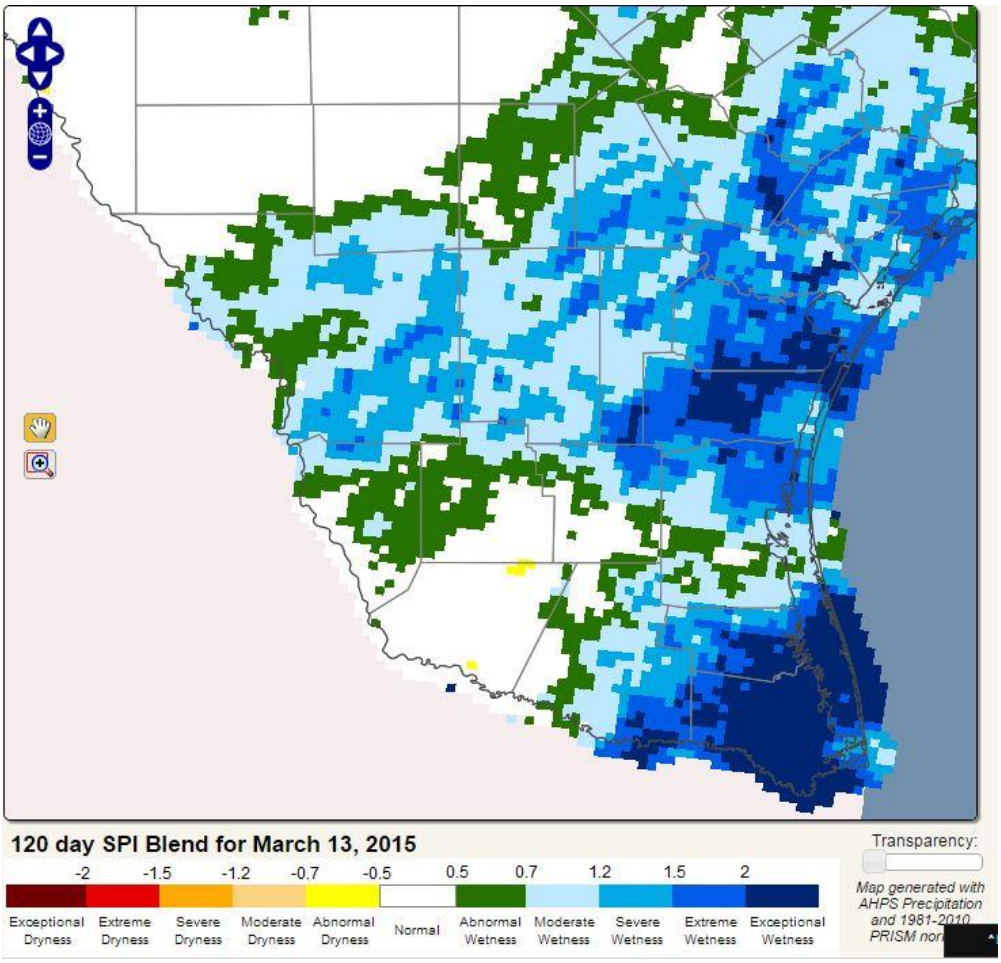
March 2015: Lion Roars Early



Stat Pack
Note: Compared data are for March 1-13, 2015.

- Brownsville's 4.12 inches *ranked 5th all time* (data back to 1878) for the entire month of March, with eighteen days to go! Number one? 6.46" in 1903.
- Brownsville's five-day event total (March 7th through 11th) of 4.08" ranked 4th all-time for March. Number one? 5.38" in 2007
- Other Lower Valley/Coastal locations overperformed as well: Port Mansfield (since 1958), at 2.87, ranked second; Harlingen (since 1912) ranked 3rd (2.66 inches).
- Brownsville's 61.0 degree average for March 1-13 was 11th coldest ranked all time. This represented "back to back" lion-like starts to March; March 1-13, 2014 was ranked 13th at 61.2 degrees.
- McAllen/Miller was similar: March 1-13, 2015 was 5th coldest (dating back to 1961) at 61.2 degrees; March 1-13 2014 was 4th coldest at 60.5 degrees.
- Harlingen, on the other hand, was several degrees colder in 2014 than 2015; March 1-13, 2014 ranked 7th (58.7 degrees) while March 1-13, 2015 ranked 20th (62.7 degrees).
- At least one Upper Valley location was top ranked; Falcon Dam (since 1963) was first at 55.6 degrees. March 2014 was not far behind at 59.2 degrees (4th). Rio Grande City (since 1897) ranked 2nd (57.2 degrees); March 2014 was also close by (8th, 58.6 degrees)
- Closer to the coast, Port Mansfield (since 1958) also finished first, at 55.9 degrees. March 1-13, 2014, ranked 6th (57.7 degrees).

Drought? Waaay Out (for now)
The recent rains only added to the exceptionally *moist* conditions, shown by the Standardized Precipitation Index for the Lower Valley (below). The expectation for the current weather pattern to continue through spring 2015 ensures that drought has no chance to become reestablished through May – and ensures *no spring wildfire season for the Lower and Mid Valley*, and only minimal opportunity for the Rio Grande Plains of Starr, Jim Hogg, and Zapata County.



And More to Come?

The subtropical jet, a feature common to El Niño, appeared to be well in hand through the middle of March 2015 and perhaps beyond. Several more rainy periods were anticipated, favoring the Lower Valley, from March 15th through at least March 22nd. Beyond then, additional upper level disturbances were forecast to "drop" into the mean trough position along the southwest U.S. coast then move gradually east, which would keep temperatures from rising too much (average afternoon temperatures range from 80 to 85 by late March) and maintain a threat for more showers and eventually thunderstorms.

Preliminary forecast scenario for March 14th (night) through 16th, 2015.