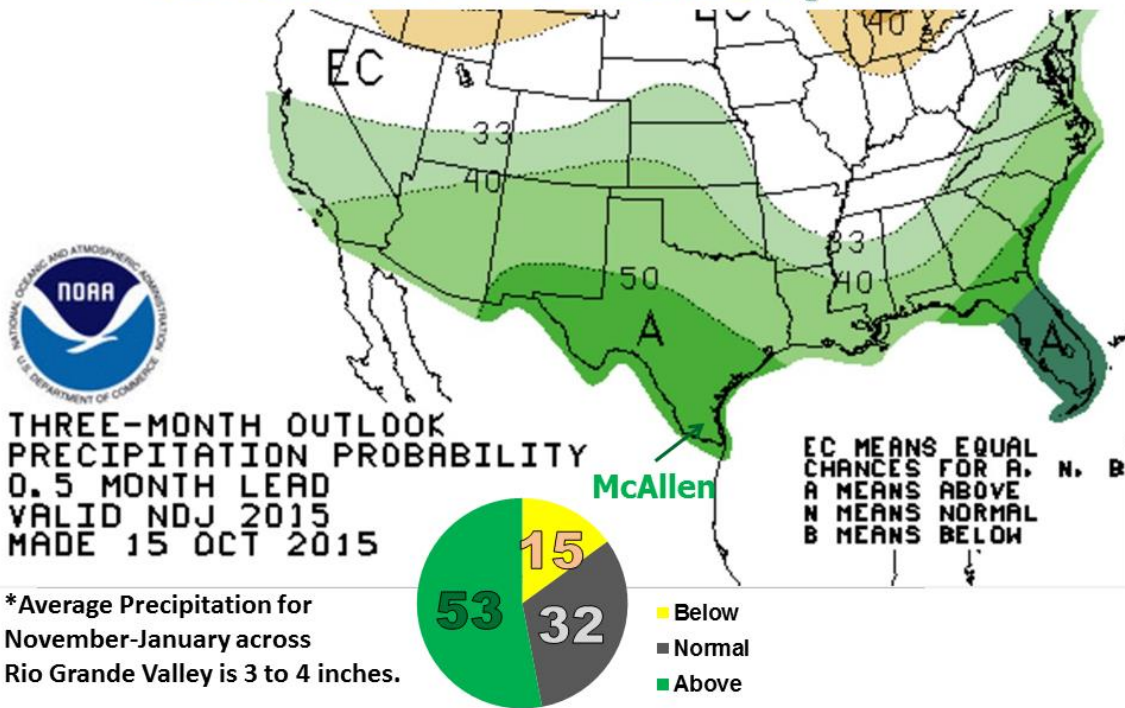


## Precipitation Outlook, November 2015 – January 2016



### If You Like Rain Every So Often, You'll Like This Super Soaker October Won't Repeat, but More Rain Will Keep RGV Green

El Niño continued well into the “strong” category in October, 2015, and – as hinted at in the [autumn 2015 outlook](#) at the end of August – the “wild card” of wetness ultimately won the day. For the Lower Valley, the month ranked among the top five wettest on record, with Willacy County hitting the unfortunate jackpot for rainfall accumulation, with 14 to 18 inches estimated mainly from the 22<sup>nd</sup> to the end of the month, up to five times the average in some locations.

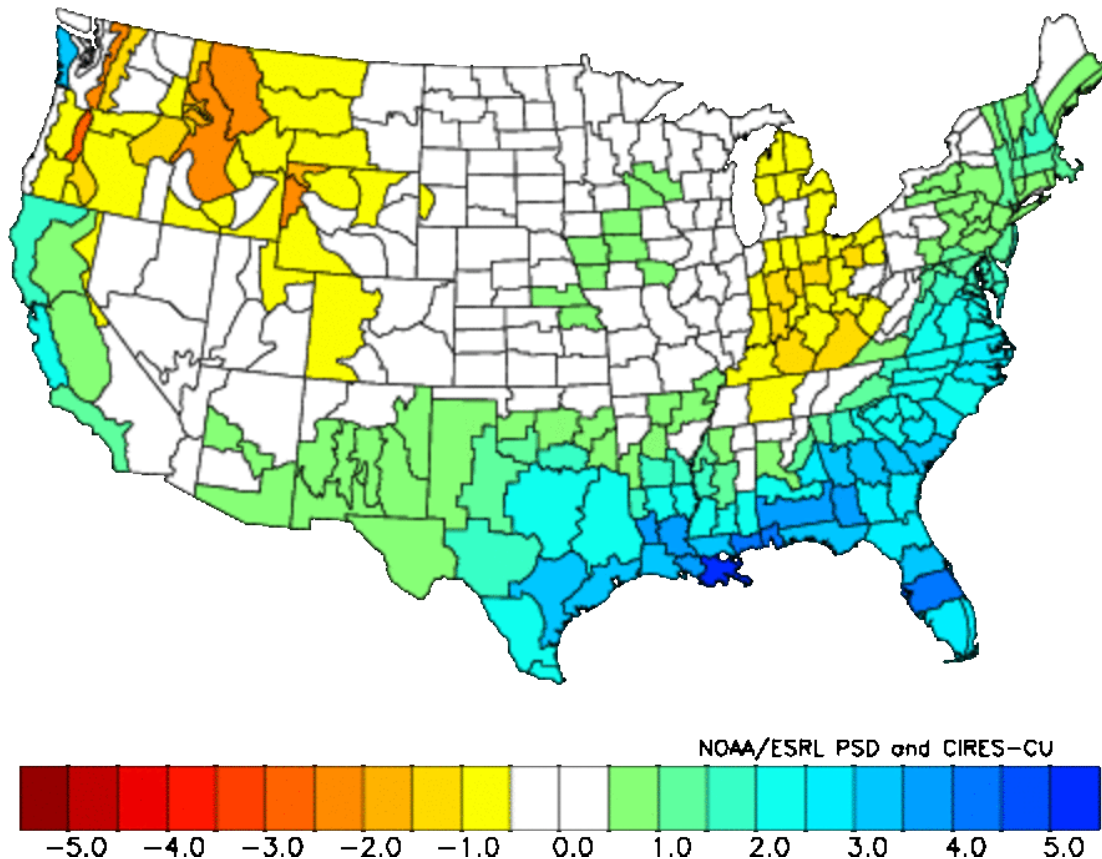
Will November through January bring more of the same for the Lower/Mid Valley and beyond? The short answer? **Maybe**. Though comparisons with prior moderate to strong El Niños indicated precipitation averaging 2 to 4 inches above the relatively light 3 to 4 inches that typically falls between November and January, 1997 gives some pause: October 2015's rainfall was actually higher than October 1997, which on its own covered the above average “cool” season (October-March) with 10 to 15 inches for Texas Climate District 10 (Hidalgo, Cameron, Willacy Counties)! The rainfall, compared with the 20<sup>th</sup> Century normal, for Climate District 10 from November to January 1997/1998 is shown below.

PERIOD	PRECIP	20 <sup>TH</sup> CENTURY AVERAGE	DEPARTURE	RANK	WETTEST/DRIEST SINCE	RECORD
Nov 1997 - Jan 1998 3-month period	2.10" (53.34 mm)	4.02" (102.11 mm)	-1.92" (-48.77 mm)	28 <sup>th</sup> Driest	Driest since: 1997	1918
				93 <sup>rd</sup> Wettest	Wettest since: 1996	1941

In late Autumn through mid Winter 1997/98, additional heavy rain events failed to materialize. While frequent fronts brought cooler weather and cloud cover to the Valley, the remainder of the strong El Niño and positive Pacific-Decadal Oscillation (PDO) period was relatively benign. Could the same thing happen in 2015/16? This is very hard to predict. Sneaking above average for the November-January time frame is a low bar to hurdle since average three month rainfall totals range from 3 to 4 inches. Just one [“Texas Nor’easter”](#) that drops 3 to 5 inches in 24 hours or so would ensure above normal rainfall. Unlike in autumn 1997, the water temperatures along the U.S. and Canadian Pacific coast started much above average; should this continue into early to mid-winter, upper level systems could form along the southwest Canada and Gulf of Alaska region and “dive” southeast into the southwest U.S. and northwest Mexico, which would be very favorable for the development of rain-producing systems that cross Texas. Whether those systems produce heavy rains from West Texas through East Texas, bypassing the Rio Grande Valley, or drop far enough south to intensify western Gulf lows along the Mexican/Deep South Texas coast is impossible to predict in early November.

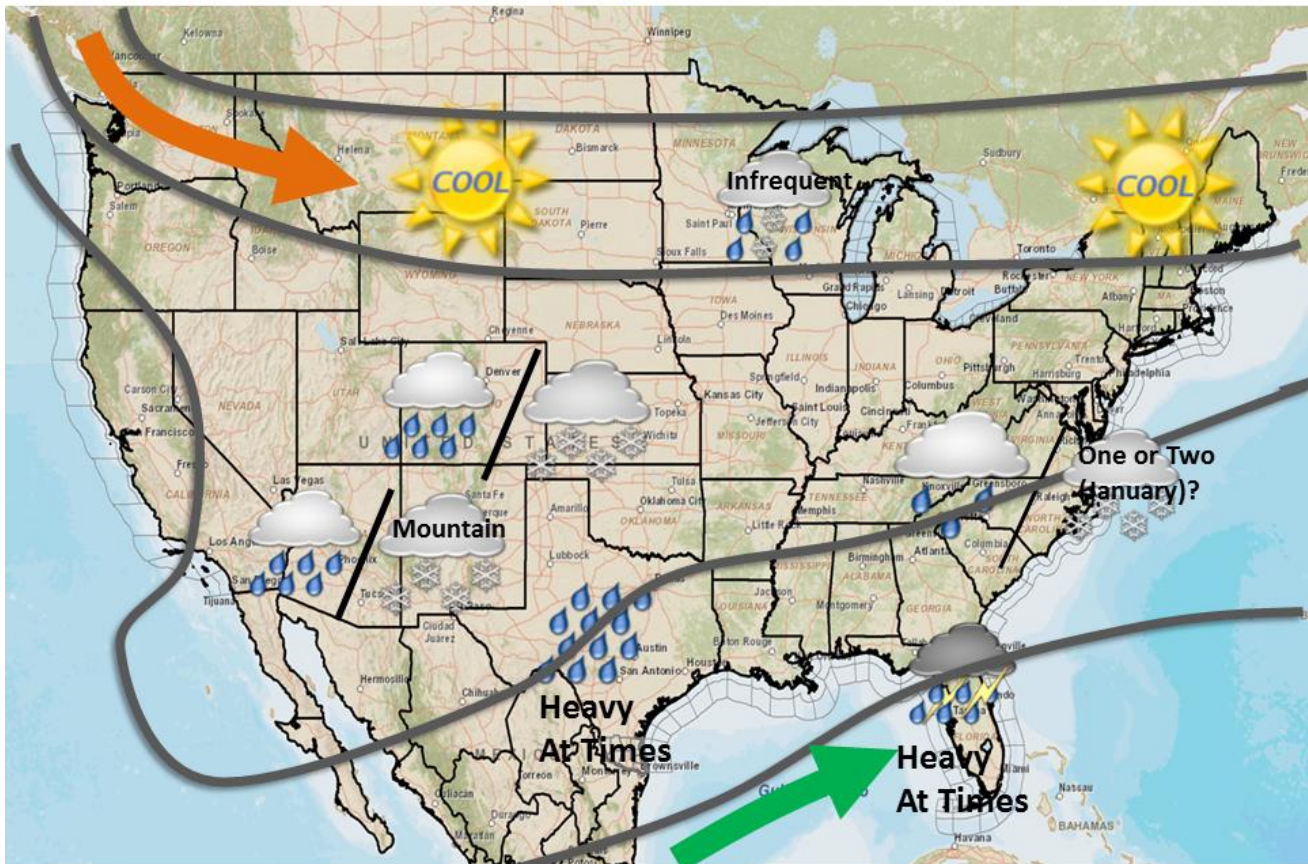
All things considered, the atmospheric “tea leaves” do favor above average rainfall, on top of the October deluges. Unlike October, when deep tropical moisture hooked up with the remnants of Hurricane Patricia to [dump 6 to 12+ inches from Weslaco to Willacy](#) on the 24<sup>th</sup>, the availability and access to such moisture will be limited as the oceans and atmosphere cool with the lowering sun angle and dip into Northern Hemisphere winter. Rainfall will tend to be more gradual than rapid, except in cases when slow moving cold fronts may help pool moisture in an above average temperature and humidity environment – most likely in November than in December or January. The pattern evolution suggests El Niño’s influence will ultimately embed tropical moisture into upper level disturbances that either dive into the southwest U.S. or eject out of the tropical eastern Pacific tropics and link up with occasional southwestern U.S. troughs that move in from California or points south in the subtropical Pacific.

NOAA/NCDC Climate Division Composite Precipitation Anomalies (in)  
 Versus 1950–1995 Longterm Average  
 Nov to Jan 1957–58,1963–64,1965–66,1972–73,1982–83,1991–92,1997–98,2002–03  
 2009–10,



Above: Precipitation departures for analogous El Niño (moderate to strong) development years when compared with 2015. For the Rio Grande Valley, one would expect 2 to 2.5 inches above average for November-January; average is 3 to 4 inches.

## November 2015-January 2016 Pattern Possibilities



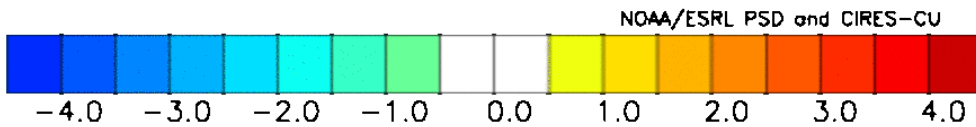
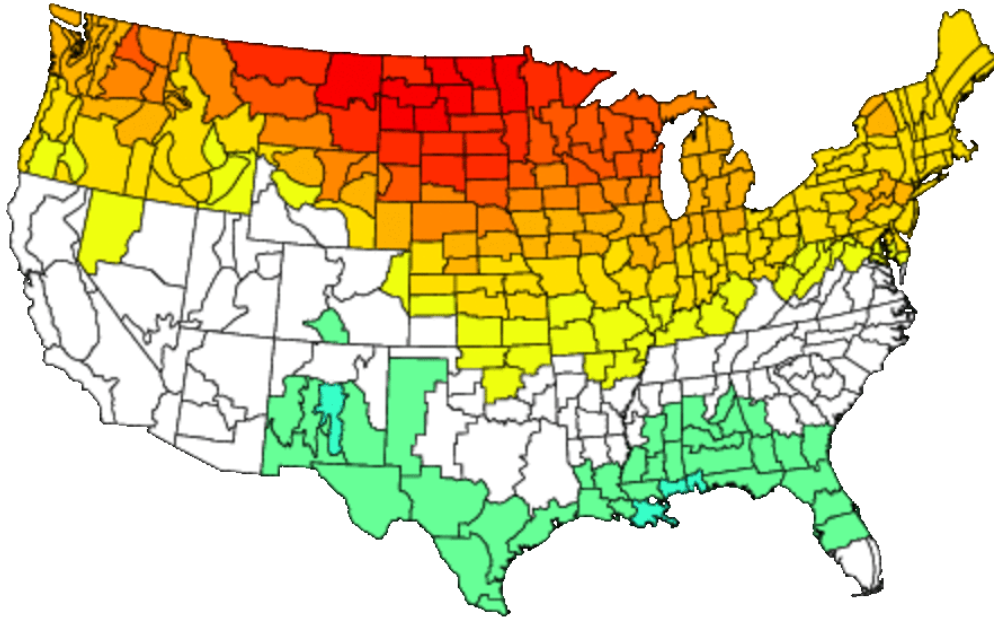
**Above:** Is wet still the word? The “puzzle pieces” favor a continuation of the October pattern of “diving” troughs from western Canada and Alaska into the Southwest U.S. where they’ll draw up tropical moisture (green arrow) toward Texas and especially the Southeast U.S. and Florida. The Rio Grande Valley may see several more locally heavy rain events, or just as easily “wave” to energy that drops the heavy precipitation across West, Central/North, and East Texas. Time and future pattern development will unlock the answer.

### ***Will Cooler than Average Weather Arrive?***

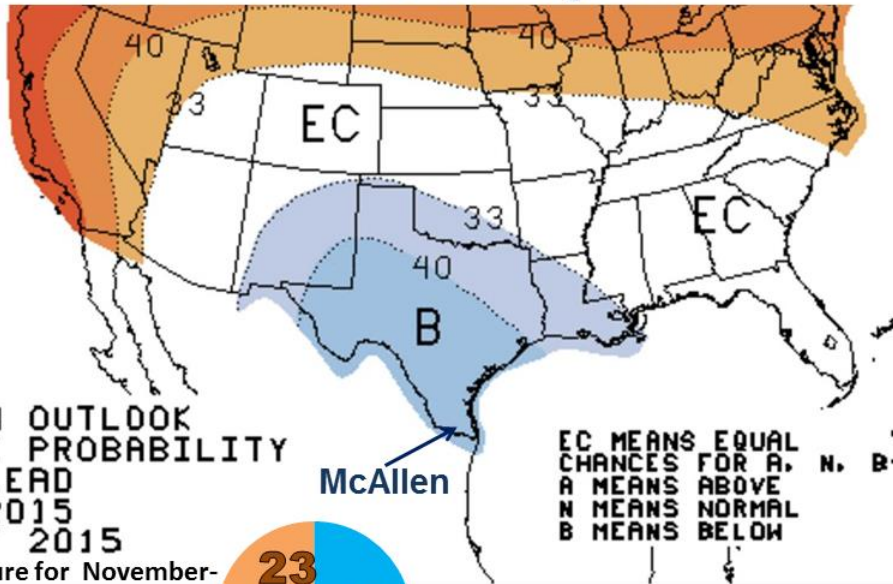
While October 2015’s second half pattern was close to “classic” for El Niño for rainfall, temperatures did not respond accordingly. This is not too surprising, considering the influx of deep tropical moisture which kept overnight conditions very sultry on days prior to fronts that cleared out the mess. However, recent moderate to strong El Niños that developed at similar times to the 2015 version each had a cooler-than-average November through January period; this fits with all the similar El Niño episodes dating back to 1950, with temperatures about 1 to 2°F below average, which matches with the forecast expectations (below). The cooler than average forecast does not necessarily translate into a better chance for a freeze or any freezing/frozen precipitation. In fact, the chance for a hard freeze is slim to none based on prior El Niño episodes, largely due to the dominance of the injection of eastern Pacific tropical moisture into the systems that dive south and tap this source.

One cannot rule out a late December or January freeze. The key puzzle piece would be the development of a persistent negative phase North Atlantic or Arctic Oscillation (NAO/AO). Such was the case in January 2010, when a [hard freeze struck much of the Valley](#) on the 9th and 10<sup>th</sup>. As of early November, the NAO was tending toward a positive trend; such a trend into December and January would guarantee no freezes for the Valley. The NAO, however, only has predictability out about two weeks. A pronounced and prolonged shift during the heart of winter would increase the threat for a freeze/hard freeze. Stay tuned!

NOAA/NCDC Climate Division Composite Temperature Anomalies (F)  
 Versus 1950–1995 Longterm Average  
 Nov to Jan 1957–58, 1963–64, 1965–66, 1972–73, 1982–83, 1991–92, 1997–98, 2002–03  
 2009–10.

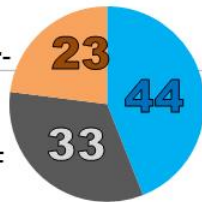


## Temperature Outlook, November 2015 – January 2016



**THREE-MONTH OUTLOOK  
 TEMPERATURE PROBABILITY  
 0.5 MONTH LEAD  
 VALID NDJ 2015  
 MADE 15 OCT 2015**

\*Average Temperature for November-January across Rio Grande Valley is around 65°F (generally, 75°F by afternoon and 55°F at sunrise).



- Below
- Normal
- Above

EC MEANS EQUAL CHANCES FOR A, N, B-  
 A MEANS ABOVE  
 N MEANS NORMAL  
 B MEANS BELOW

## Preparedness, Awareness

October 2015 reminded us of the flood producing power of tropical moisture during an El Niño. While the short term intensity of rains will dip through January, it wouldn't take much to regenerate floods in areas like Willacy County and Weslaco who will remain near saturation..

- **Flooding Rain.** Downpours could accompany thunderstorms along slow moving cold fronts through November. Later November and December could see widespread moderate to heavy rainfall events, which combined with additional cloud cover and limited evaporation rates, could pile up water across the Rio Grande Valley, more likely toward the coast.

It's always a good time to check roofs and walls for leaky areas and repair, and remove any debris from gutters and downspouts. Speaking of debris - after trimming brush and cutting grass, be sure to remove it and never clog drainage ditches or canals!! More here:

- [Flood Safety Awareness](#)

- **Lightning.** Lightning has been a common hazard during most big rain makers from March through October, and contributed to more than 100,000 total residential and business power outages through the period. 2015 continues to be "our" year for lightning, with more events in Brownsville and Willacy County in late October. The transition from early fall warmth and humidity to cooler and generally less humid (though still moist-feeling) air as autumn progresses may provide the contrast that allows for one or two more "squall lines" of lightning-producing storms during November. Lightning likely has caused well over \$1 million in damage through August 2015, and any cloud to ground strike can be a killer. Check safety tips and learn much more at <http://www.lightningsafety.noaa.gov>.
- **Chill.** Each fall and winter, sharp changes in air masses from balmy breezes to biting chill are a hallmark for the Valley. While the number of very sharp changes (dipping 40 to 60 degrees lower from one day to the next) probably won't rival that of the [fall/winter of 2013/2014](#), to see one or two such events anytime from late November through January would not surprise. Be ready to change from spring/summer clothes into winter jackets, sweaters, and the like in a matter of hours when the season of "gray 'northers" begins. If you have a space heater and plan to use it later this fall, October is the time to service it to ensure sparks don't ignite into a house fire.
- **Freezes and Winter Weather (ice/snow)?** We can't discuss December and January without the outside chance. That said, past moderate to strong El Niños have tended to keep the coldest of air locked up well north of the Rio Grande Valley, and the influence of tropical moisture on the atmosphere favors chilly, but not frigid, weather during December. There are no certainties, however; atmospheric "teleconnections" such as the North Atlantic/Arctic Oscillation could become a player in cold air intrusion by late December, especially if a significant negative phase develops by November or early December.