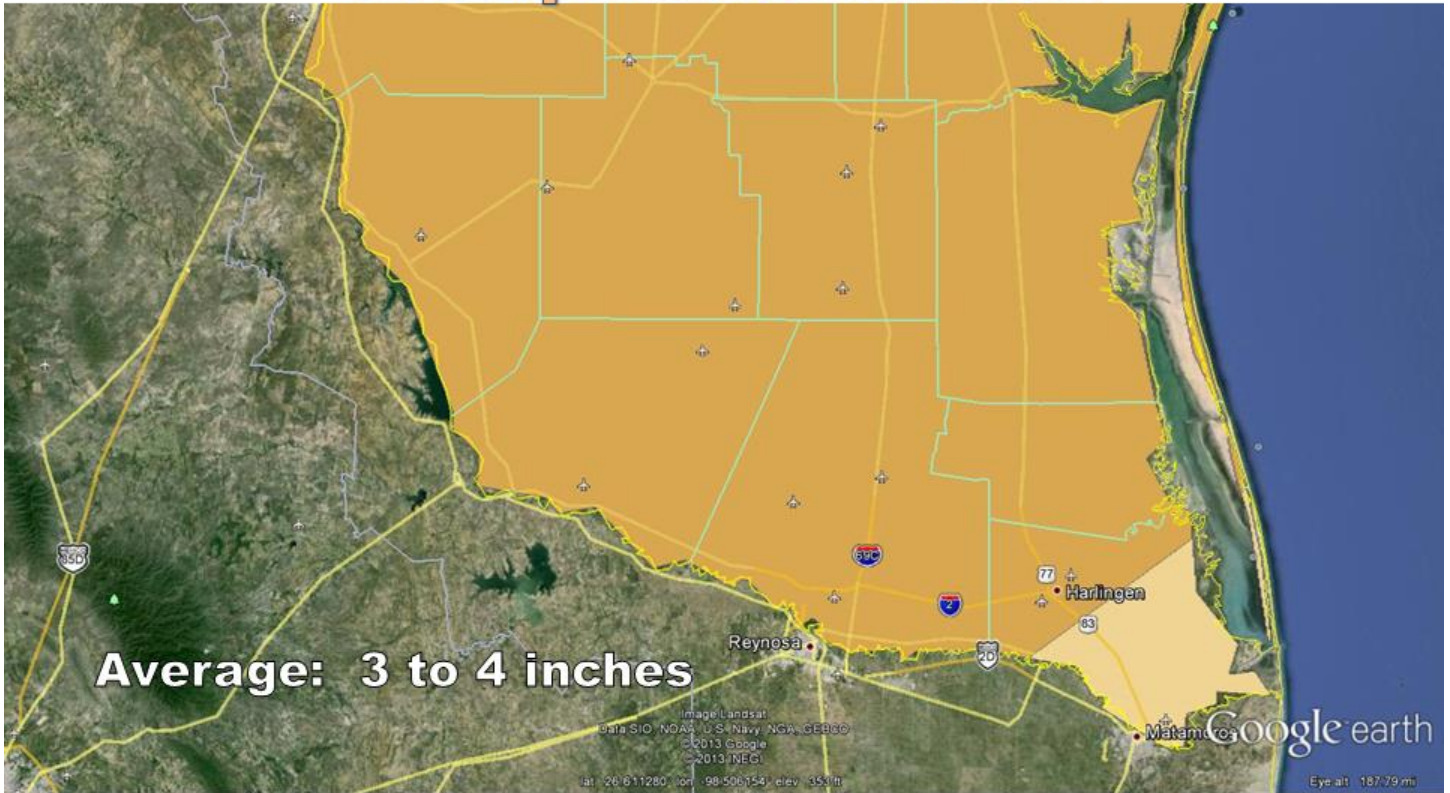


Nov. 2013 – Jan. 2014 Precipitation Outlook



Average: 3 to 4 inches



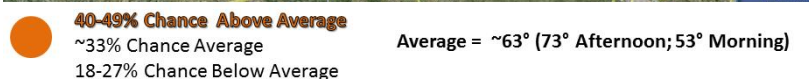
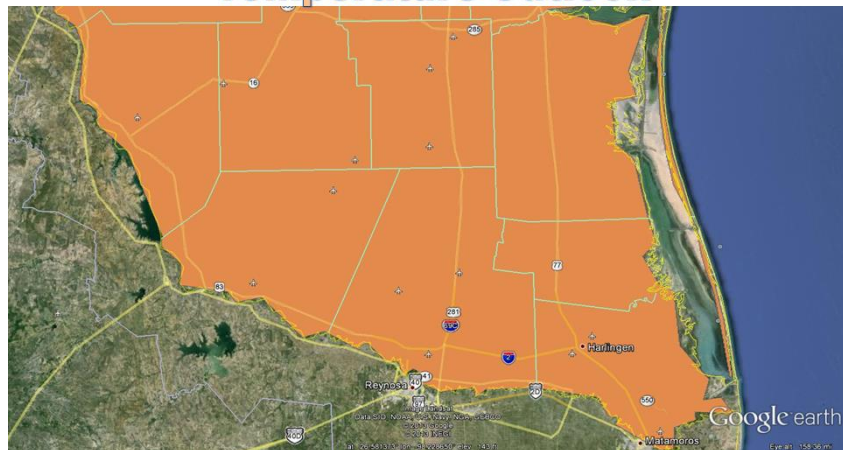
Return of the Warm and Dry?

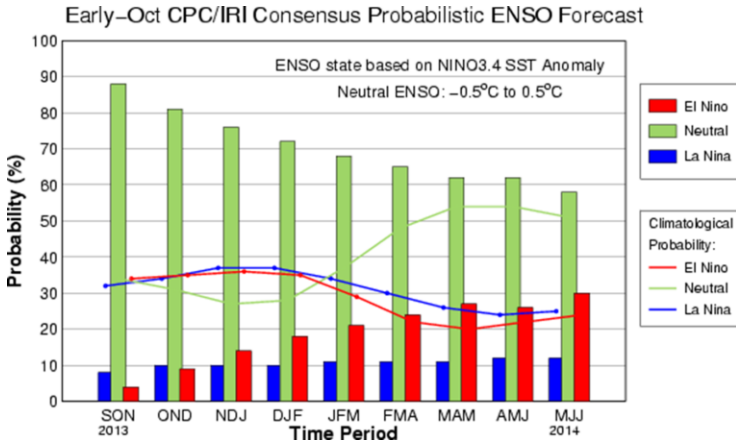
Neutral El Niño/Southern Oscillation, Other Factors Favor Such for RGV

The close of 2013 and beginning of 2014 look to continue the trend of the past three years: lower than average rainfall during one of the driest parts of the year climatologically, and above average temperatures (right). Primary reasons for the drier than average forecast include:

- **El Niño/Southern Oscillation (ENSO) Parked in Neutral** (top left, next page). Perhaps even “leaning” toward La Niña. Either way, ENSO-Neutral (leaning La Niña) strongly correlates toward a [dry](#), [warm](#) late autumn and early winter based on data collected since 1950.
- **Recent Trend of the North Atlantic Oscillation (NAO)** (next page, middle right). Relatively strong negative phase of the NAO returned in October, and began a

Nov. 2013 – Jan. 2014 Temperature Outlook





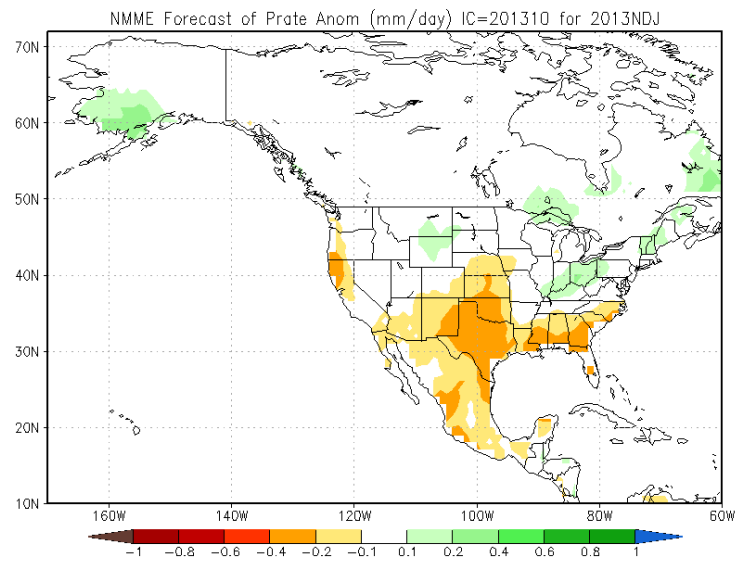
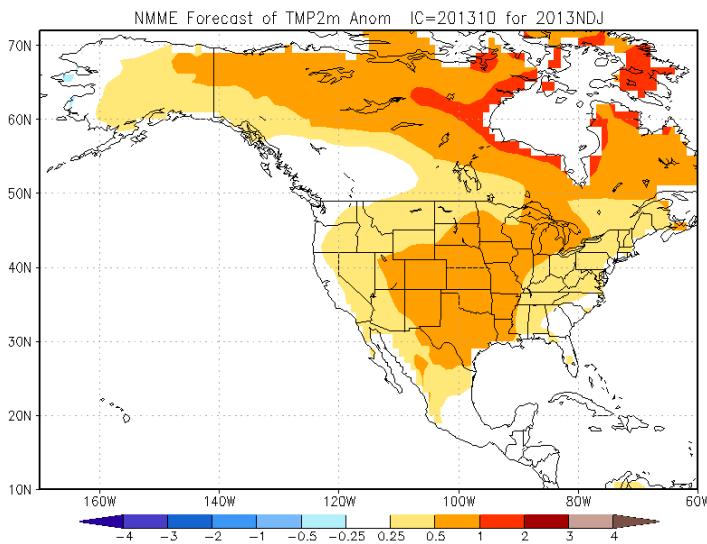
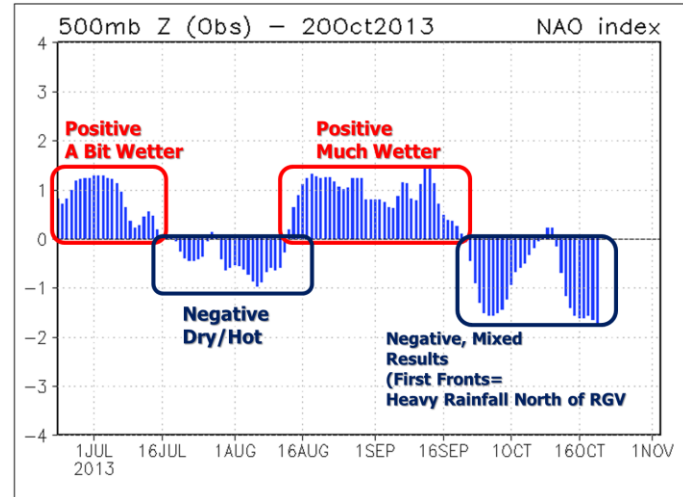
ENSO continues to be “leaning” negative, or toward La Niña, confidence in the November 2013-January 2014 period for dry, warm weather overall is increased.

trend of increasing atmospheric flow out of the west or northwest stretching back to the lee of the Rockies. As the mid-latitude jet stream continues to march southward with the cooling of the northern hemisphere, this flow will favor faster moving systems that bring dry air toward the surface rather than the slower, drizzly/rainy fronts that are more common in other winters.

- **Persistent Negative Phase of the Pacific Decadal Oscillation (PDO).** [The PDO](#), in a negative (positive) phase, can [enhance the climate signal of La Niña \(El Niño\)](#). Since

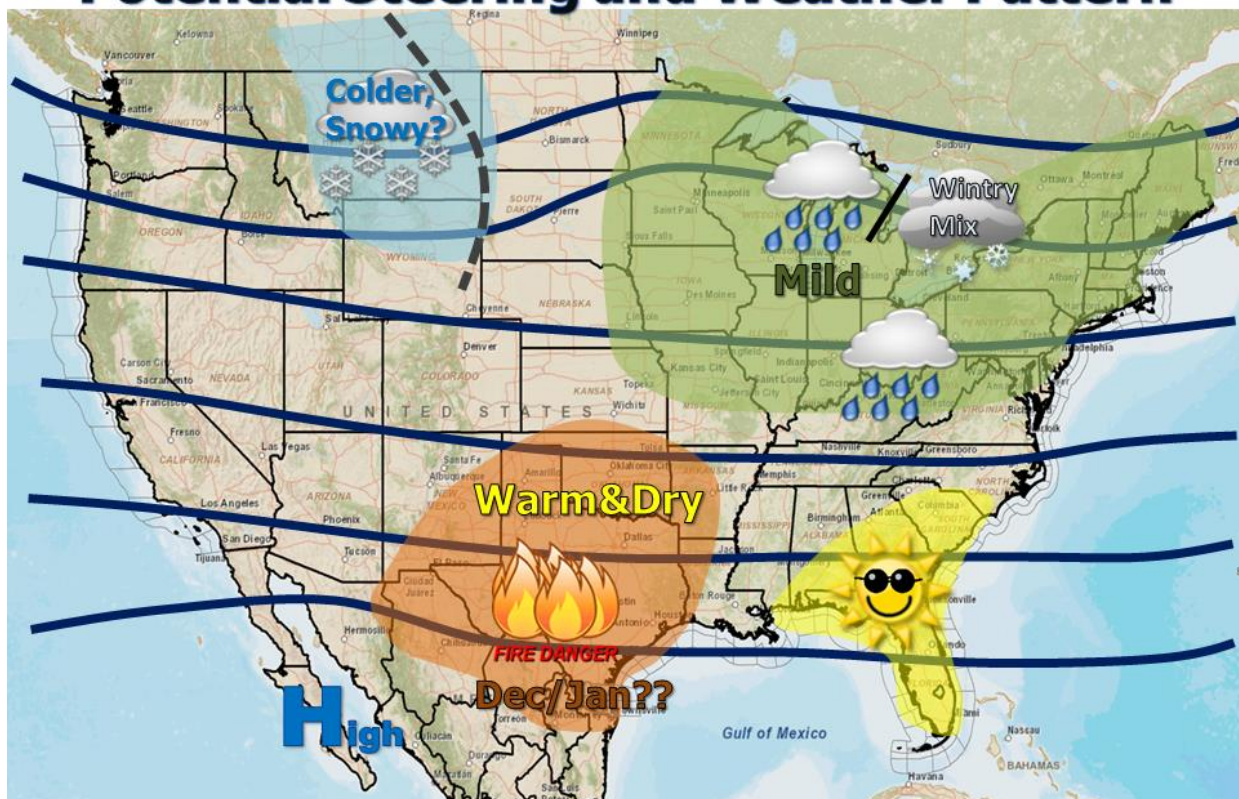
The combination of these three factors, and a similar trend on the [National Multi-Model \(Climate\) Ensemble Model](#) (NMME, below), offers increased confidence for the warm, dry forecast. The potential steering pattern, along with “sensible” weather trends, is shown at the top of the next page.

North Atlantic Oscillation Jul – Oct



Above: NMME forecast of eye-level temperature departure from average (left, in °C), and precipitation departure from average (right, in mm/day), for November 2013 to January 2014. The model forecasts temperature to be up to 1 °C (~2.5°F) above average in Texas, with daily precipitation between 0.2 and 0.4 mm (0.01 to 0.02 inch) below average in most of Texas.

Nov. 2013-Jan. 2014 Potential Steering and Weather Pattern

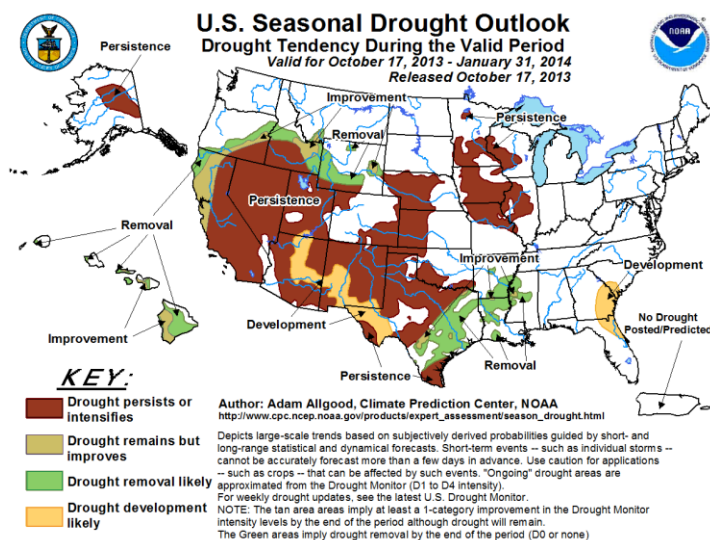


Above: Forecast steering pattern and potential weather conditions across the U.S., November 2013 to January 2014. Precipitation indicated in the green shaded area is forecast to be “equal chances” (33.3%) for above, average, or below average; data suggest near average in these areas with a lean toward rain (vs. snow) south half, with rain or snow/mixed precipitation north half.

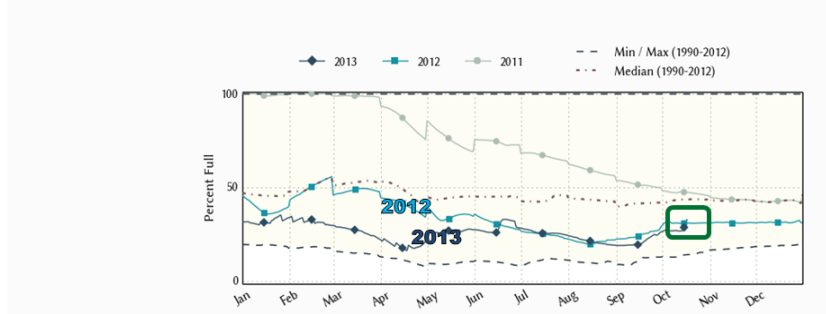
Water Recovery...to a Point

September’s rains in South Texas and the Rio Grande Valley, and early October’s rainfall in South and Central Texas, improved or removed drought from many areas by mid-October. The heaviest rainfall in late September and early October bypassed the Rio Grande Valley, and Severe to Exceptional Drought continued in many areas. The dry forecast for November to January will expand or degrade drought conditions in many of these areas, and could erase some of the gains to soil moisture levels especially if weather after fronts is very dry/breezy.

A series of heavy rain events, including the outer bands from Hurricane Ingrid (September 14-17), the remains of (eastern Pacific) Tropical Storm Manuel (September 20), and torrential rains that fell when [deep tropical moisture ran into a slow moving front \(October 13-14\)](#) brought water levels at Falcon International Reservoir in late October 2013 slightly above those of late October 2012 (below). Levels at Amistad recovered to just shy of the levels in October 2012. The increased lake levels were only enough to avert a dire water crisis or water emergency in the Valley next spring; available water for spring planting **may be similar or less than in 2013**, especially if soil moisture turns dry by the end of January.



Falcon Reservoir is 32.9% full as of 2013-10-17



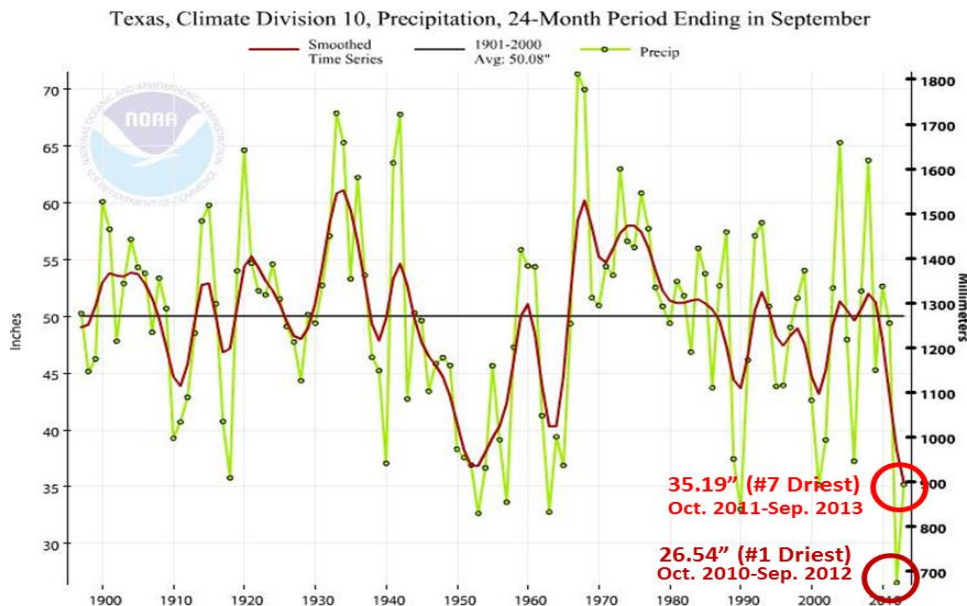
	Date	Percent Full	Water Level (ft)	Height Above Conservation Pool (ft)	Reservoir Storage (acre-ft)	Conservation Storage (acre-ft)
Today	2013-10-17	32.9	272.05	-29.05	857,243	510,499
Yesterday	2013-10-16	31.6	271.17	-29.93	822,459	489,783
2 days ago	2013-10-15	28.8	269.31	-31.79	751,143	447,312
1 week ago	2013-10-10	27.2	267.81	-33.29	697,803	421,390
1 month ago	2013-09-17	20.2	261.56	-39.54	494,228	313,321
3 months ago	2013-07-17	25.7	264.62	-36.48	589,610	397,974
6 months ago	2013-04-17	16.8	258.59	-42.51	410,703	261,327
1 year ago	2012-10-17	31.0	266.59	-34.51	655,225	481,223

* Percent Full is based on Conservation Storage and Conservation Capacity.

Drought, Still Standing?

The Valley was thankful for the [September 2013 soaking](#). However, reservoir recovery *only* to levels seen prior to the winter of 2012/2013, when a number of communities invoked mandatory conservation and some neared or reached crisis point. Another way to look at where we are, and how far we have to go, is indicated on the chart below. Shown is the [24-month precipitation accumulation](#) across Cameron, Hidalgo, and Willacy County, for the period ending in September dating back to 1897. Though the September 2013 rains boosted the ranking from a second record 2-year total in a row, the 7th place number, combined with the incredibly dry record value from October 2010-September 2012, left the smoothed trend at an *all-time low*, besting the prior record 2-year period of the early 1950s. The 24-month rainfall between October 1951-September 1953 now ranks #2; the 24-month rainfall between October 1952 and September 1954 ranks #9.

Future impact from prolonged drought will depend on whether the remainder of the 2010s see higher rainfall, equal rainfall, or lower rainfall than the 1950s. Climate models suggest that the 2010s may be similar to the 1950s at best, which would ensure a greater impact on a community with a population that will be four times greater in the 2010s than in the 1950s, as well as a billion dollar farming and livestock industry. Continue to monitor drought information for the Rio Grande Valley and Deep South Texas [here](#).



Wildfire Season 2013/2014: Problems Ahead?

In October 2010, the spigot literally turned off after [a record to near record water year](#) (October – September) ended at the end of September that year. Abundant fine and coarse fuel turned from lush green to tinder in only two months, and large grass and brush fires burned more than 10,000 acres from the King Ranch to other ranches in the Brush Country. Warm to hot, breezy, and dry weather brought extreme to exceptional drought to nearly all of Texas by June, and one of the largest wildfires in recent [memory burned over 30,000 acres in northwest Brooks County](#). Now is the time for ranchers, farmers, and others to consider the potential for abundant cured fuels to burn later this year and in early 2014:

- Trim or cut grass and overgrown brush now, before curing begins in November or December.
- When fronts pass through windy and very dry, be sure to keep tractors and welding/grinding equipment away from tall grass or brush. Continue this practice a day or two after the front, as fires have started and spread rapidly two days after a front when winds are less but humidity is very low
- Be sure to park on dirt or paved surfaces. Hot undercarriages can spark a fire that can destroy a vehicle before spreading rapidly
- Be [firewise!](#) Remember, the best wildfire is the one that never starts. [Only you can prevent wildfires;](#) now is a good time to review safe practices.