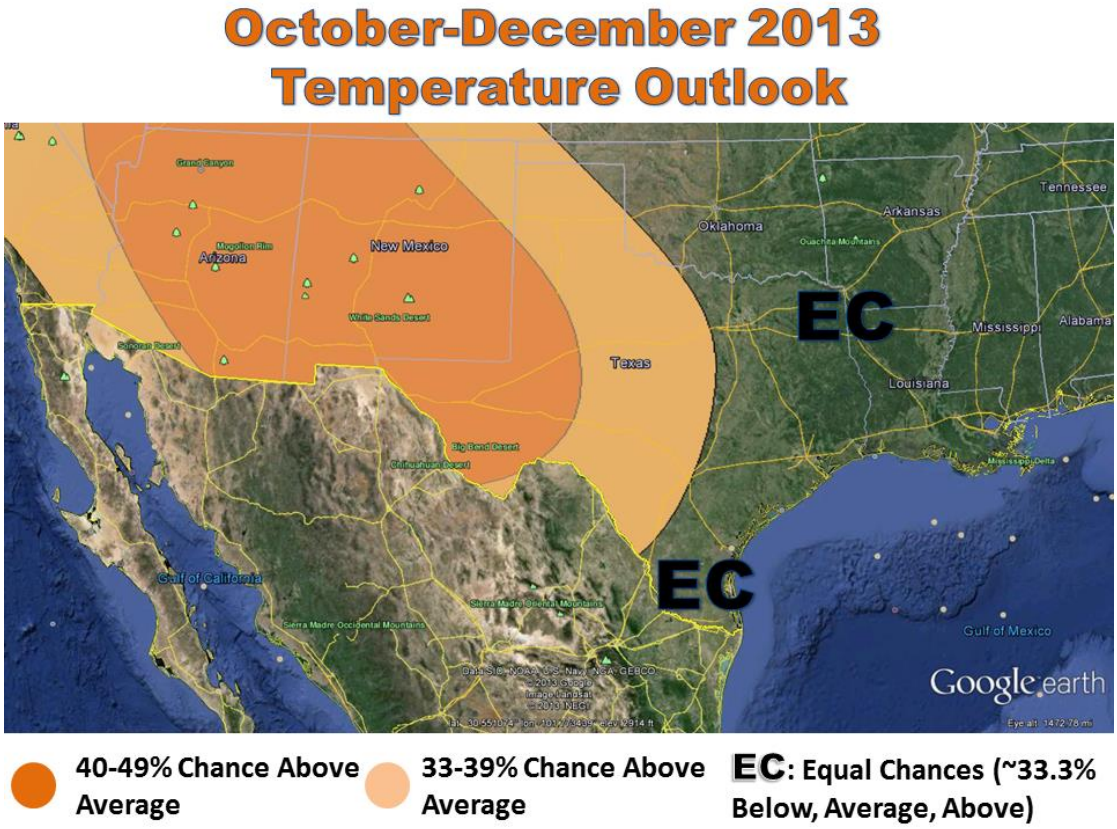
Autumn 2013 Outlook



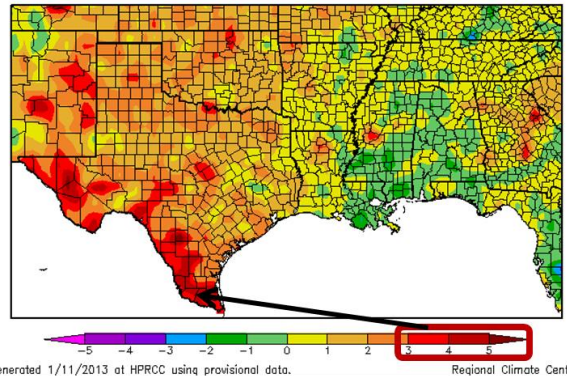
October-December 2013: Leaning Warm and Dry?

RGV's Wet September Likely Drying Up In Autumn

The Lowdown

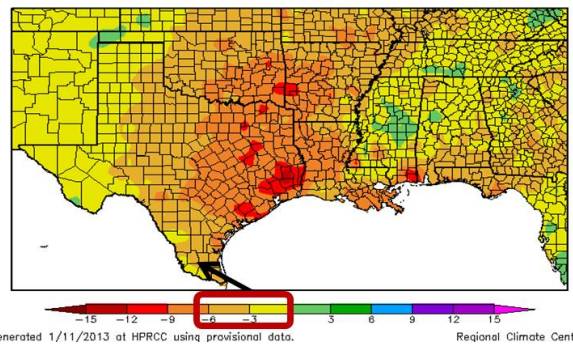
After a persistent pattern of juicy tropical air masses for the balance of September 2013 across the Valley, the seasonal forecast for the balance of Autumn and into early meteorological winter (December) suggests that "typical" neutral El Niño/Southern Oscillation (ENSO) conditions will play the dominant role in the region's sense of the weather, and "lean" toward slightly warmer than average temperatures and lower than average precipitation. Both outlooks from the Climate Prediction Center indicate "EC", or Equal Chances, for any category, but past similar seasonal trends in 2012 (right) suggest the "lean" may be a good bet.

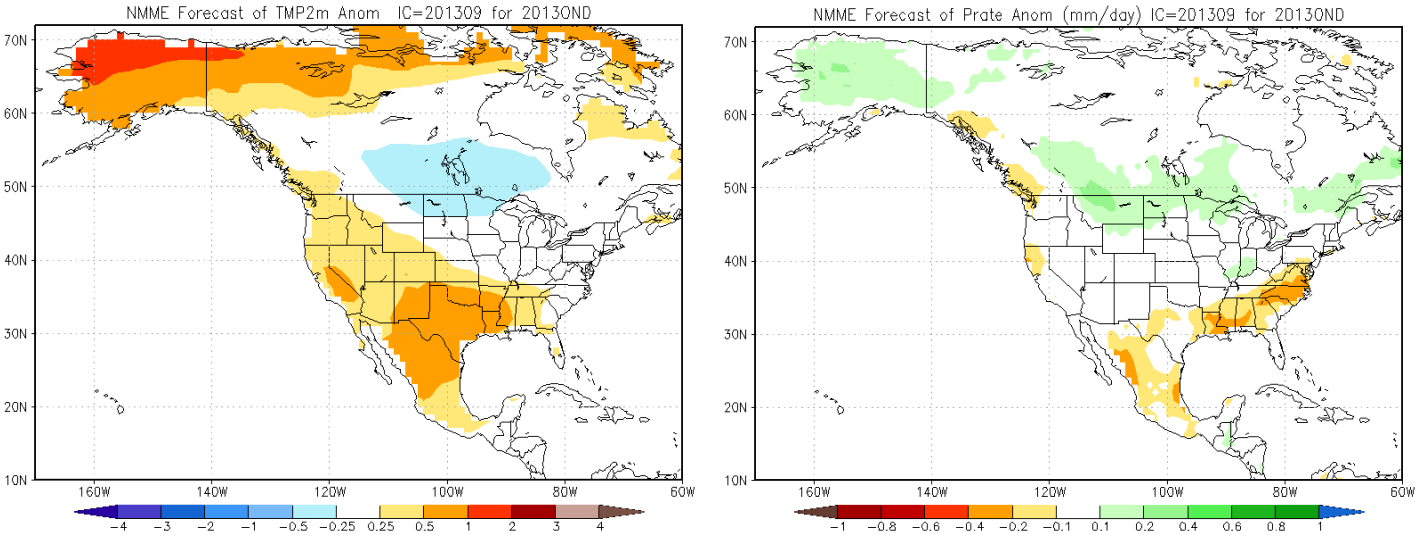
Departure from Normal Temperature (F)
10/1/2012 – 12/31/2012



A reliable consensus of forecast information, known as the US National Multi-Model Ensemble, or NMME, suggests a similar outcome to that which occurred in 2012 (top of next page). The atmospheric pattern may return to a "junior" version of "La Canícula", which typically dominates mid-summer across the Rio Grande Valley and northern Mexico, and has been a recurring pattern throughout the past three years of record drought.

Departure from Normal Precipitation (in)
10/1/2012 – 12/31/2012

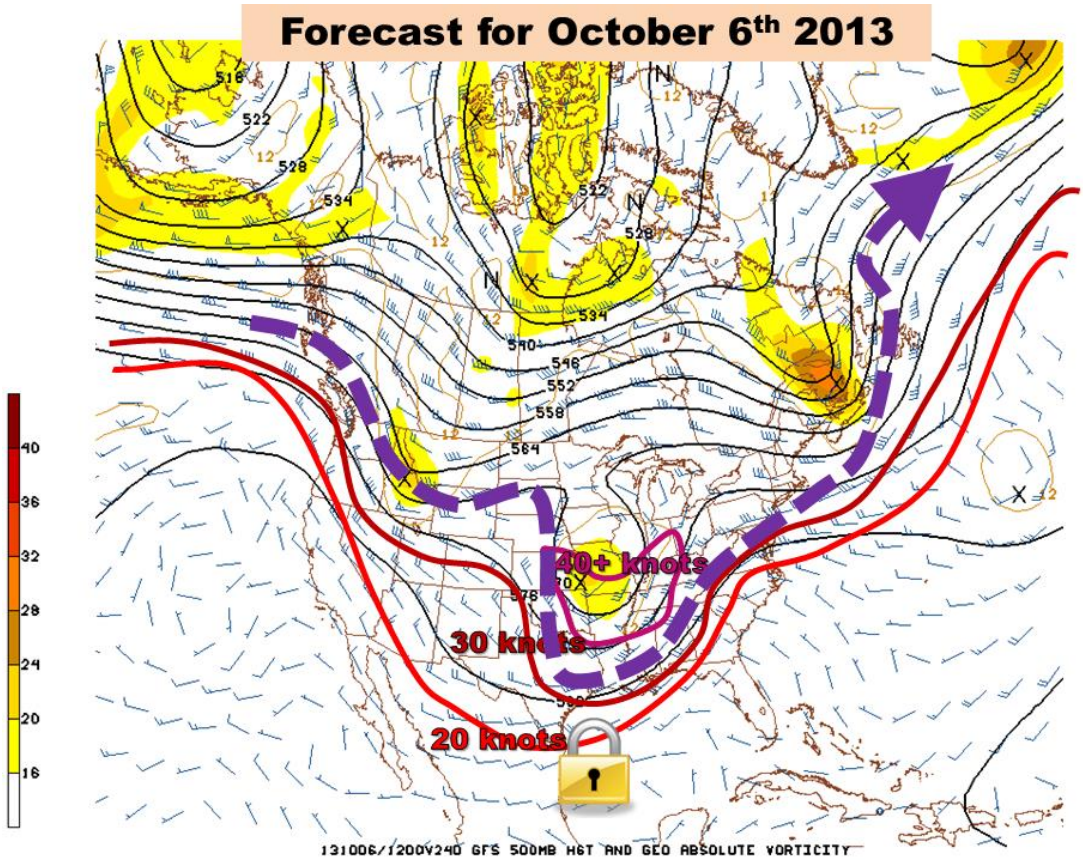




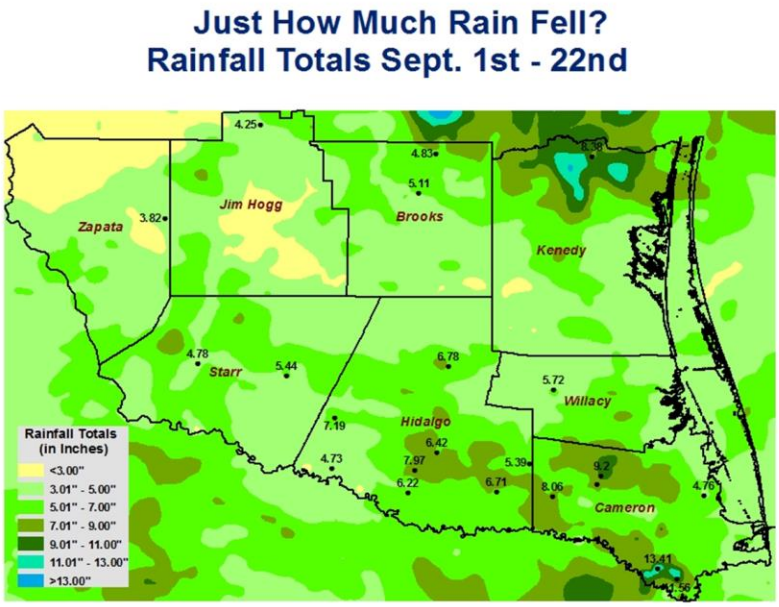
Above: NMME October-December forecast departure in temperature (left) and precipitation (right). Note the positive (yellow/orange) departure over Texas for temperature, and the neutral to negative (yellow) departure in precipitation over or near the Rio Grande Valley and northern Mexico.

2013 Texas Hurricane Season: Kaput?

The "open door" pattern for potential significant tropical activity which dominated the first three weeks of September closed down in the wake of the combination of an upper level disturbance and the remnant of eastern Pacific Tropical Storm Manuel during the final full week of the month. Some semi-tropical precipitation was expected to close out September, but increasing atmospheric westerly flow combined with the first true cooling fronts of the young autumn looked to be on deck in early October across Texas. In past years, the first "good" front each autumn signified the end of the hurricane season in Texas; 2013 should be no exception.

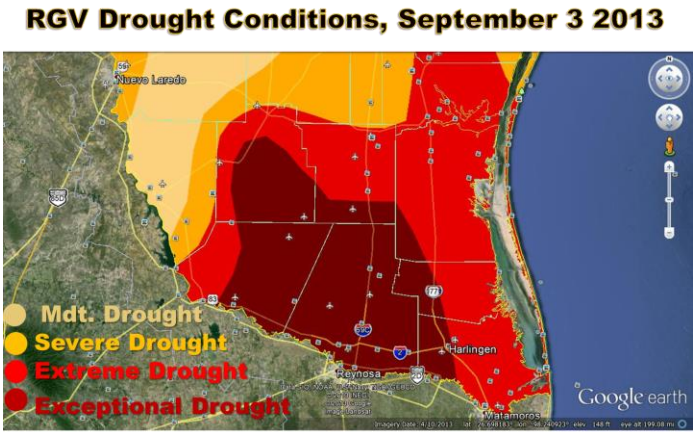


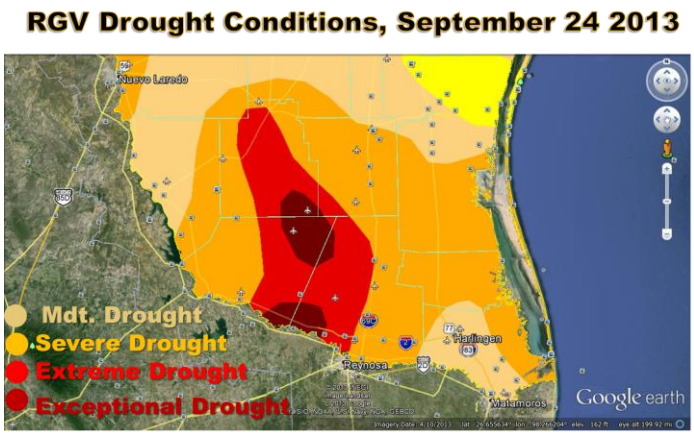
Above: Possible steering flow forecast at ~18,000 feet above the surface. Main jet stream shown by purple arrow; red and magenta lines indicate increasing shearing and steering westerly winds at 20, 30, and 40 knots. This projected pattern and associated surface front would effectively kill off the 2013 Hurricane Season in Texas.



How Now, Drought?

There was no doubt that September's rainfall (right, through the 22nd) did wonders for short term soil moisture across the Valley, especially in Cameron County, where 8 to 13+ inches fell along the US 77 corridor between Harlingen and Brownsville. However, as we've mentioned throughout summer, the departure from long term averages of 24 and 36 months was so far below prior records that we needed another Alex, Dolly, or Beulah to make a significant impact on long term moisture deficits and water supply issues from the Rio Grande. Overall, the welcome September rainfall from tropical showers (early), the periphery of Ingrid (early-middle), and the remnants of Manuel (middle to late, Rio Grande Basin) pushed Amistad and Falcon reservoir levels *toward* those of late September 2012, but as of late September 2013, combined storage values were ***still*** below those in 2012 (next page).

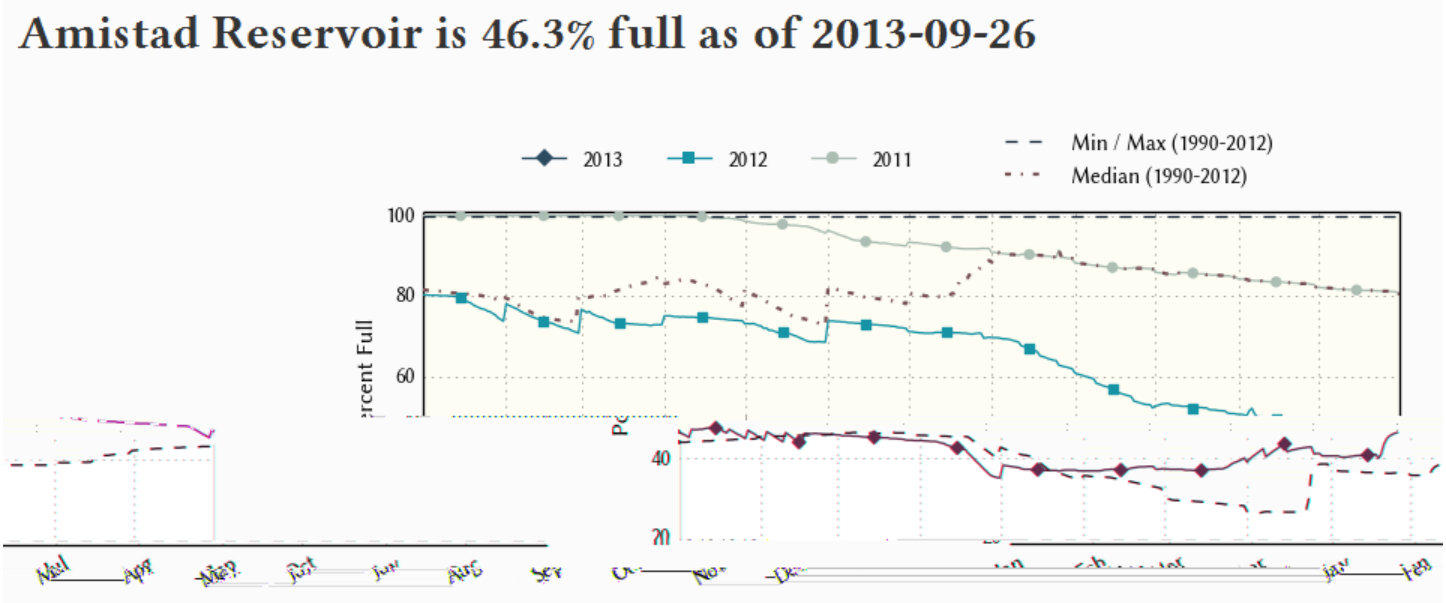




Above: RGV Drought Monitor improvements from September 3rd (just as repeated rain began) and September 24 (just after repeated rain ended). Portions of Cameron County that received a foot or more of rain improved from Extreme/Exceptional to Moderate (2 to 3 categories) in only three weeks, as rains that fell were efficient deep soil moisture producers and were nearly 300% of the three week average in the wettest period of the calendar year. Parts of western Hidalgo and eastern Starr County missed the big action – again. Click for details on what the categories mean.

The Long View: Returning Drought, Wildfire Potential?

September 2010 ended the wettest water year on record for many in the Valley. Rainfall in September 2010 was a shade higher than in 2013, but impacts were the same for pastures, lawns, and gardens: Thick, lush, and ***high*** growth, particularly on ranches along the US 77 corridor north through the King Ranch. Longer term fuels such as brush and trees also benefited from the copious rains. The "lean" toward a warm and somewhat dry autumn could lead to a resurgence of severe to extreme drought toward the end of the year in some areas, highly dependent on whether inevitable fronts come through windy, mild, and dry versus chilly, cloudy, and drizzly.

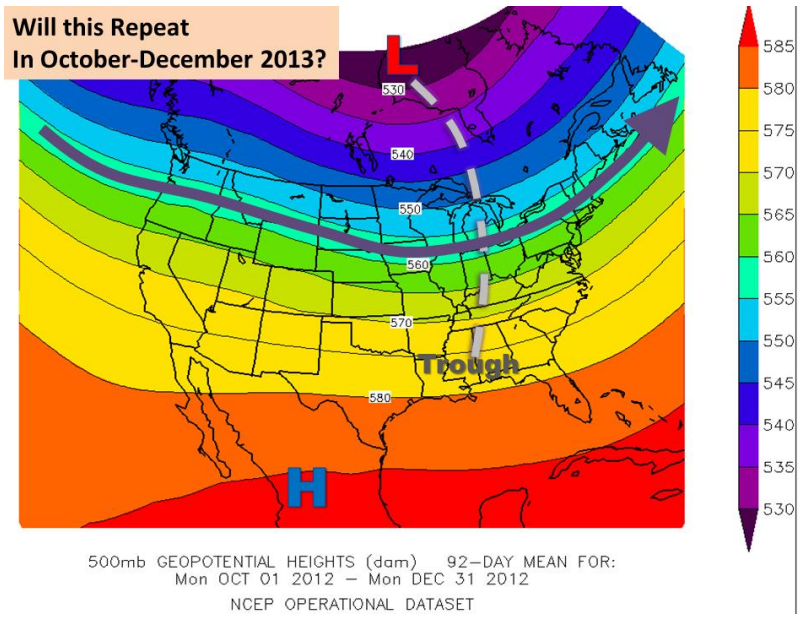


Height Above Conservation Pool (ft)	Reservoir Storage (acre-ft)	Conservation Storage (acre-ft)	Conservation Capacity (acre-ft)	Surface Area (acres)
-40.46	1331600	852982	1840849	33374
-40.64	1325859	849305	1840849	33248
-40.93	1316442	843272	1840849	33043
-46.53	1145440	733734	1840849	29217
-47.32	1123143	755388	1840849	28705
-59.23	828430	697360	1840849	21671
-51.58	1008440	820917	1840849	26029
-32.60	1611530	985002	1840849	39241

	Date	Percent Full	Water Level (ft)
Today	2013-09-26	46.3	1076.54
Yesterday	2013-09-25	46.1	1076.36
2 days ago	2013-09-24	45.8	1076.07
1 week ago	2013-09-19	39.9	1070.47
1 month ago	2013-08-26	41.0	1069.68
3 months ago	2013-06-26	37.9	1057.77
6 months ago	2013-03-26	44.6	1065.42
1 year ago	2012-09-26	53.5	1084.40

Above: Amistad reservoir capacity on September 26, 2013. Note the uptick in late September following remnants from Tropical Storm Manuel (dark blue line) and the leveling off by the end of the period. Red boxes indicate reservoir storage on September 26, 2013 (top) and September 26, 2012 (bottom). The 2013 level was nearly 280,000 below the 2012 level. Click here **for Falcon Reservoir Data.**

The "droughtlook" through the end of the year indicates "continued drought with some improvement" for the Lower and Mid Valley, but much of the improvement may have already occurred by late September. Lowering sun angle and decreasing temperatures should delay the onset of worsening conditions, but only if frequent, fast-moving drying fronts are not the dominant players as we go deeper into autumn.



Should dry fronts dominate the pattern, the impact of September's "fuel loading" will be a significant concern. Just two months after the record setting 2010 Water Year ended, multi-thousand acre wildfires raged at the Encinitos Ranch in Hidalgo/Brooks/Jim Hogg/Starr County (December), and up to 8,000 acres

burned a month later on the King Ranch in Kenedy County (January 2011).

October is the time to prepare for the possibility of a busy late autumn, winter, and spring wildfire season:

- Cut grasses and pastures to manageable levels
- Clear dead brush from fields, particularly in areas where grass has grown tall
- Trim back live brush
- Remember to park tractors, trucks, and other vehicles on dirt or paved areas
- Plan to use grinding or welding equipment away from grasses and brush

Above: King Ranch, Kenedy County, January 2, 2011. Let's do our best to prevent this in late 2013/early 2014 should dry weather return after a wet September 2013.