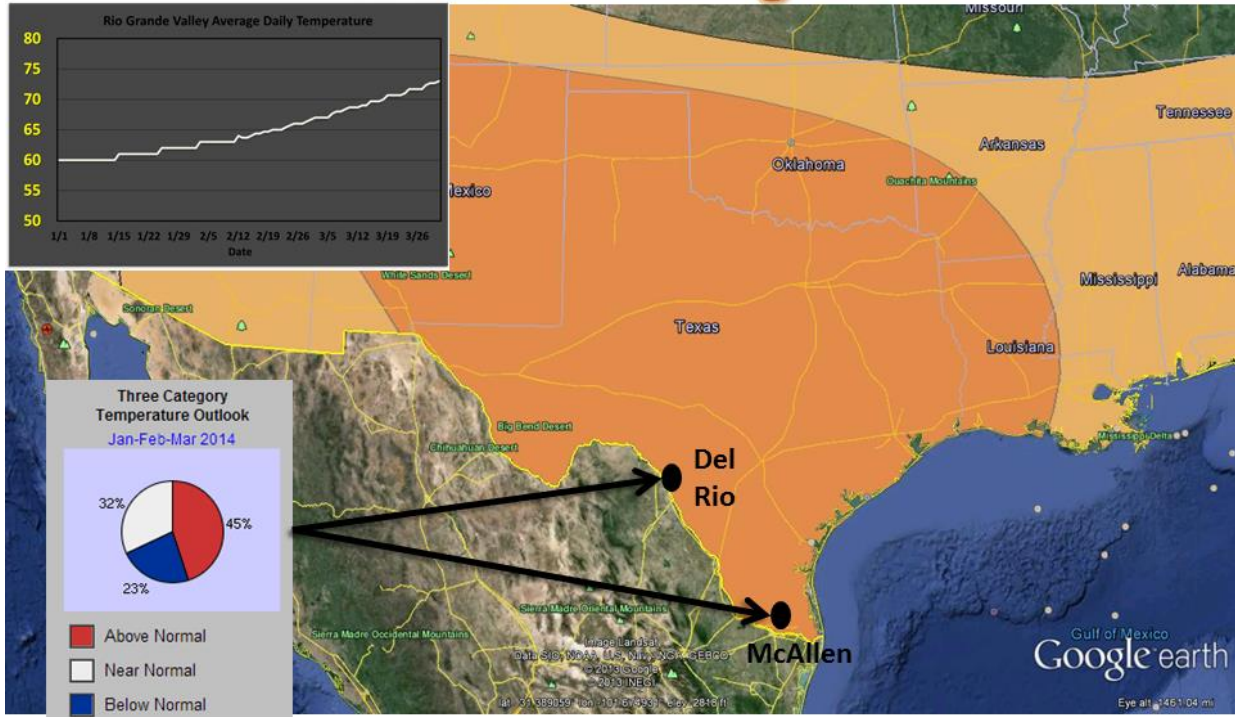
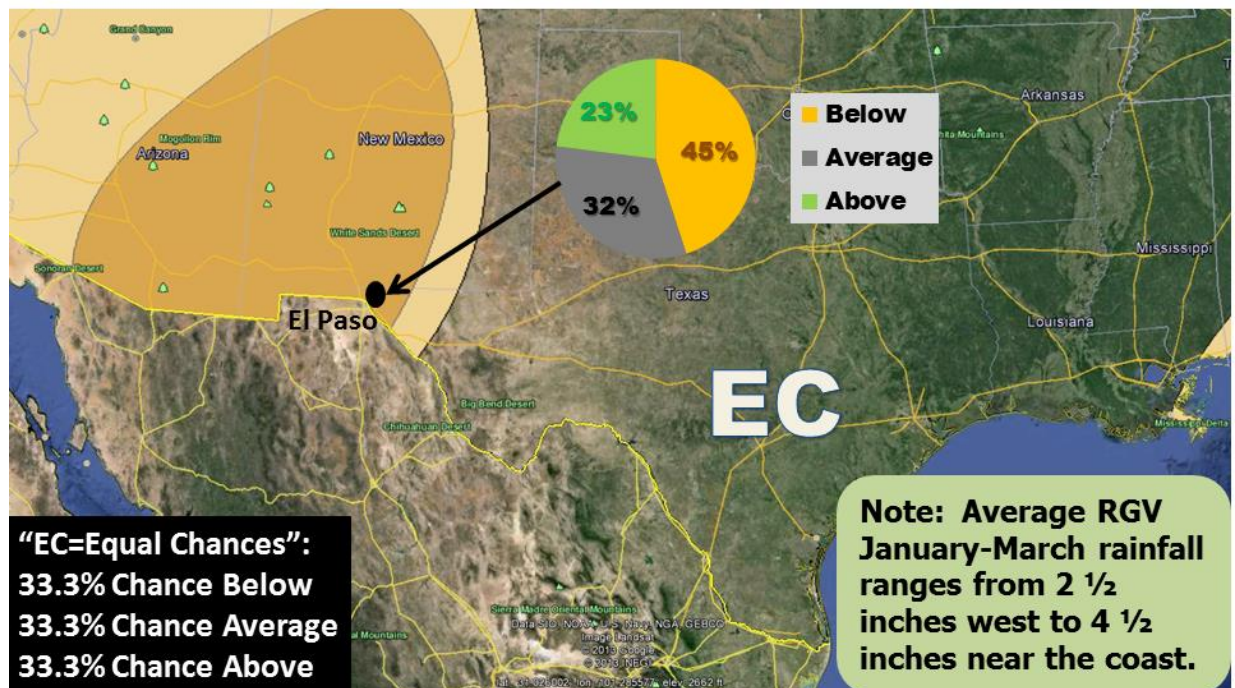


January-March 2014 Temperature Outlook: Warm Texas...Again?



January-March 2014 Rainfall Outlook: Texas: The Edge of Drought?



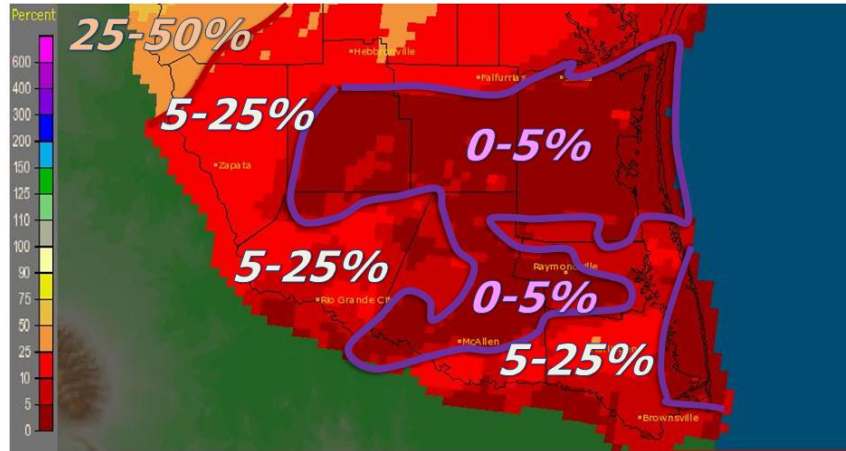
Return of the Warmer and Drier than Average? Signs Point Toward Drought/Wildfire Growth Potential in early 2014

After an autumn (September-November) of hopeful rains and a two month close-out (November-December) of statistically significant below average temperatures – the first time this had occurred since February and March of 2010, or nearly four years - a return to above average temperatures and a potential new trend of below average rainfall that began in December (right) was becoming more likely as winter turns to spring in the Rio Grande Valley and Deep South Texas. As hinted at in a summary of a recent “roller coaster” of warm and cold temperature swings during the first half of December, the most recent temperature outlook (top of first page) from the NOAA’s Climate Prediction Center is increasingly confident for generally warm conditions, with “equal chances” of above, average, or below average precipitation. Those “equal chances” may really be leaning toward “dry”; in addition to the expected below average December rainfall*, January’s forecast has become more confident to be dry as well. Should this occur, the winter average (December-February) could end dry.

***December 24th Update:** A series of fairly vigorous upper level disturbances was forecast to affect the populated Rio Grande Valley between Christmas Day and December 27th. The forecast rainfall for the period is shown below; should these values occur, on average, the monthly totals from McAllen through Port Isabel would quickly rise toward the 30 year average, which generally is around 1.5 inches. A sharp edge to the notable rainfall is expected across the region; Deep South Texas ranchlands were forecast to receive a fraction of the rain (below).

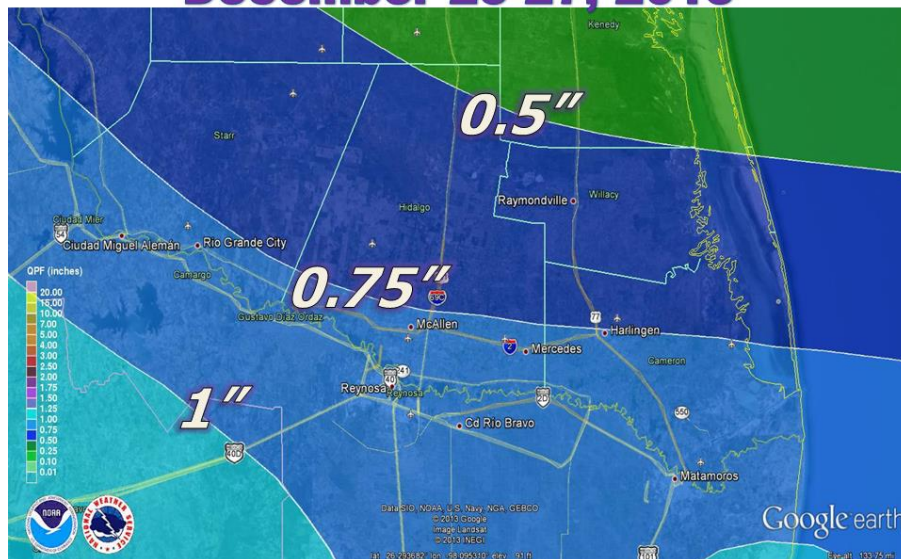
Dry December 2013?

Brownsville, TX (BR0): Current Month to Date Percent of Normal Precipitation
Valid at 12/23/2013 1200 UTC- Created 12/23/13 21:43 UTC



- Normals: 0.5 to 1", except 1 to 1.5" along/east of Highway 77 in Cameron, December 1-23 2013 (based on 1981-2010 sample)
- Totals were <0.10" in most areas through December 23 2013

Forecast Rainfall December 25-27, 2013



The “Valley Wind Machine”: Repeatedly Active?

From [December 19 through 21](#), a rather strong bout of the [Valley’s Ceaseless Wind](#) occurred. The wind machine typically doesn’t crank up until late winter and early spring. Was the December event a harbinger of winds to come, particularly in February and March? Will events such as [February 5th](#) and [March 17-18](#) occur in 2014? Time will tell. One critical difference is the status of El Niño/Southern Oscillation (below), which was firmly in La Niña which has been a contributor to stronger spring winds than neutral. That said, should near shore waters remain cooler than average, the difference between these temperatures and the warming land could make up some of the difference. Persons planning outdoor events later this winter and early next spring should be prepared for potentially stronger winds, which could be problematic for outdoor event setups such as tents.

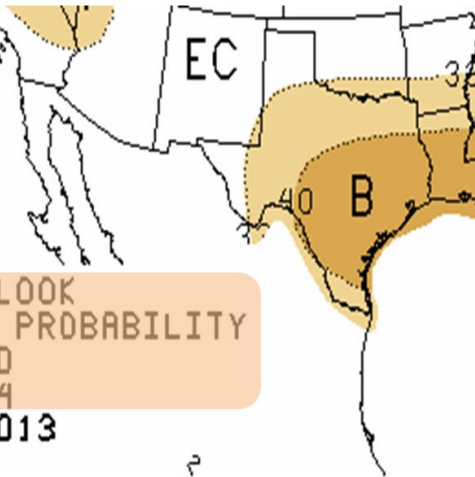
Drought, In Context

Drought remained a factor across the region, with most of the Valley and northern Ranchlands in Moderate to Severe Drought as of mid-December. The return of dry fronts during the middle two weeks of the month degraded conditions across portions of Jim Hogg, Brooks, Zapata, and Starr Counties, increasing the area of Severe and Extreme Drought. The trend could be a sign of things to come, especially come February and March.

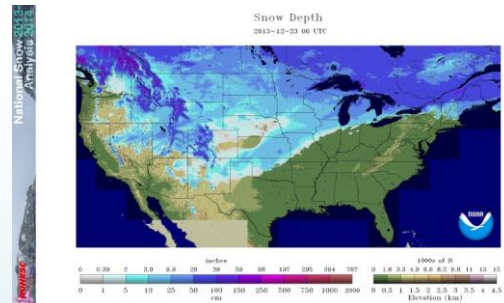
Dry January Ahead?



ONE-MONTH OUTLOOK
PRECIPITATION PROBABILITY
0.5 MONTH LEAD
VALID JAN 2014
MADE 19 DEC 2013

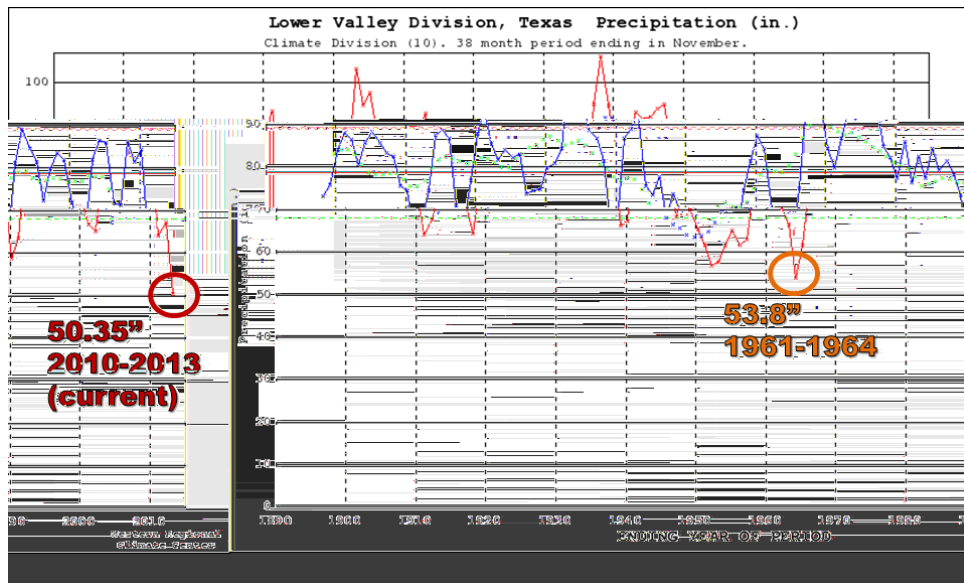


Winter’s Wild Card?



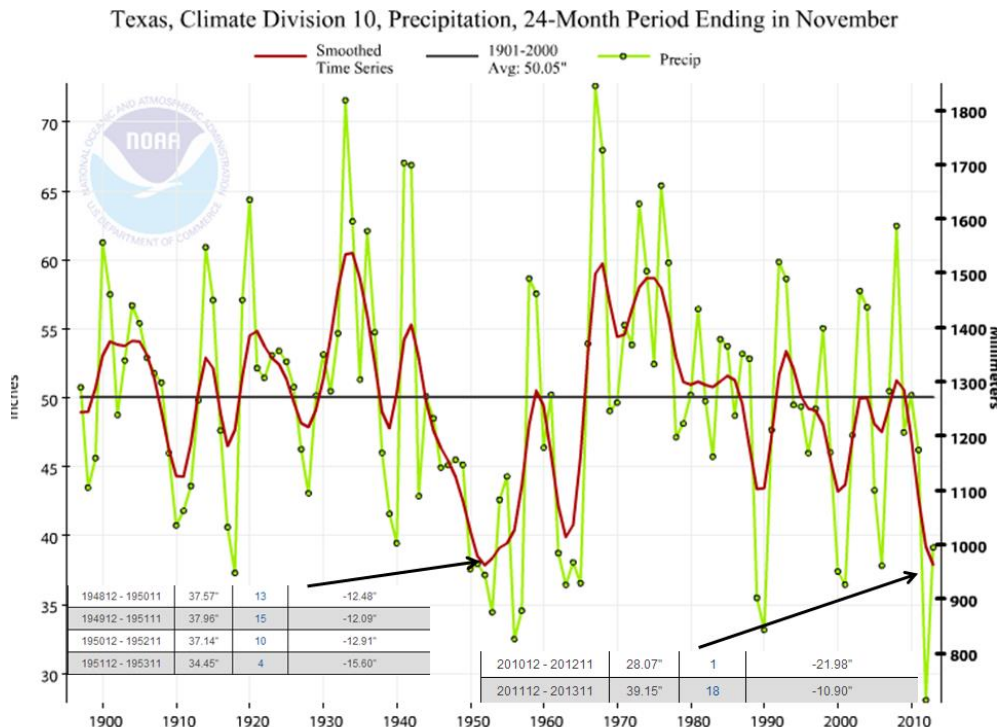
Perhaps there’s an asterisk (*) for the January-March temperature forecast. While the confidence for the 90-day warmer than average number is increasing, the region should still be prepared for a ‘monkey-wrench’, just in case. That wrench could come in the form of a notable freeze or unusual event like [February 2011’s ice storm](#). January-March 2011 was a warm period punctuated by a ten day period of chilly to very cold temperatures to begin February. The image above shows the snow pack just before Christmas 2013; should the pack increase and “thicken” across the Great Plains and Rocky foothills, a buildup of arctic air that was unleashed southward would modify little, if the atmosphere can develop a pattern that could allow it to dive southward toward Texas. Stay tuned.

RGV Precipitation: 38 Month Periods October through November (from Oct. 1895)



Drought, In Context (continued)

The welcome rains of autumn put a solid dent into the short term (one year) drought, but a lesser dent into the two-year drought (below) and almost no dent into the current drought period of record, which began in October 2010. November's rains slimmed the difference between the most recent 38 month dry period (2010-2013) and the former record (1961-1965), now a little more than 3 inches separating the two periods. The difference had been more than 8 inches at the 33 month mark (October to June). Despite a sharp rise from all time driest 24 month period (December 2010-November 2012) to a more "reasonable" 18th driest (out of 117 periods) between December 2011-November 2013, the smoothed trend remained virtually tied with the four period trend in the late 1940s/early 1950s. The "off the chart" dry record 24 months from December 2010-November 2011 still dominates the trend of the current decade, and much more rainfall is needed to recover.



Above: 24 month rainfall totals for the Lower/Mid Rio Grande Valley, since 1897. Even with the rise to #18 (Dec. 2011- Nov. 2013), the two year running total remained below all but one (Dec. 1954-Nov. 1957) – just barely (0.18" more rainfall).

Reservoirs Stabilize – But Levels Still Low

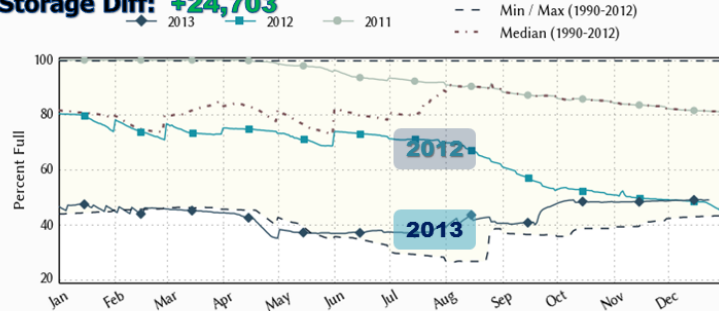
The autumn rains (September-November) brought a reprieve to the Valley from what would have been a water emergency rather than a water crisis. Even with the welcome rains, which temporarily replenished local water sources, [at least 32 Valley jurisdictions](#) that rely on water releases from the Rio Grande remained in shortage in early December. The images below show late December levels and statistics at Amistad and Falcon International Reservoir. Simply put, these levels – slightly ahead of those in late December, 2012 – ensure at least some water will be available for irrigation during the middle of growing season (late March/early April).

Percentages continue well below long term averages, which are above 80% at Amistad and near 50% at Falcon (Texas share).

Amistad Reservoir is 49.0% full as of 2013-12-23

2013-2012 Reservoir Storage Diff: -31,038

Conservation Storage Diff: +24,703

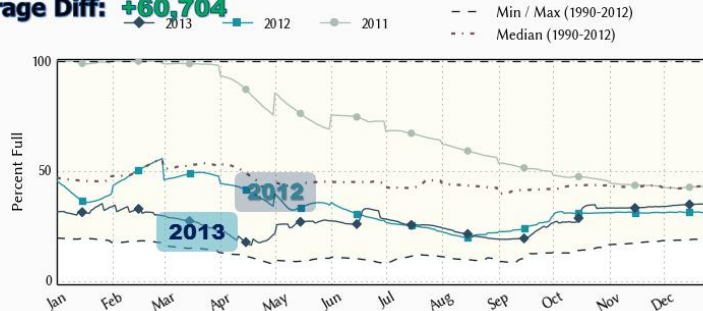


| | Date | Percent Full | Water Level (ft) | Height Above Conservation Pool (ft) | Reservoir Storage (acre-ft) | Conservation Storage (acre-ft) | Conservation Capacity (acre-ft) | Surface Area (acres) |
|--------------|------------|--------------|------------------|-------------------------------------|-----------------------------|--------------------------------|---------------------------------|----------------------|
| Today | 2013-12-23 | 49.0 | 1,081.11 | -35.89 | 1,488,388 | 901,510 | 1,840,849 | 36,733 |
| Yesterday | 2013-12-22 | 49.0 | 1,081.10 | -35.90 | 1,488,295 | 901,454 | 1,840,849 | 36,731 |
| 2 days ago | 2013-12-21 | 48.9 | 1,081.09 | -35.91 | 1,487,644 | 901,059 | 1,840,849 | 36,717 |
| 1 week ago | 2013-12-16 | 49.0 | 1,080.92 | -36.08 | 1,481,593 | 902,053 | 1,840,849 | 36,591 |
| 1 month ago | 2013-11-23 | 48.6 | 1,080.33 | -36.67 | 1,460,595 | 894,992 | 1,840,849 | 36,148 |
| 3 months ago | 2013-09-23 | 45.4 | 1,075.70 | -41.30 | 1,304,422 | 835,573 | 1,840,849 | 32,779 |
| 6 months ago | 2013-06-23 | 37.8 | 1,057.71 | -59.29 | 827,047 | 696,196 | 1,840,849 | 21,637 |
| 1 year ago | 2012-12-23 | 47.6 | 1,081.95 | -35.05 | 1,519,426 | 876,807 | 1,840,849 | 37,379 |

Falcon Reservoir is 35.2% full as of 2013-12-23

2013-2012 Reservoir Storage Diff: +328,854

Conservation Storage Diff: +60,704

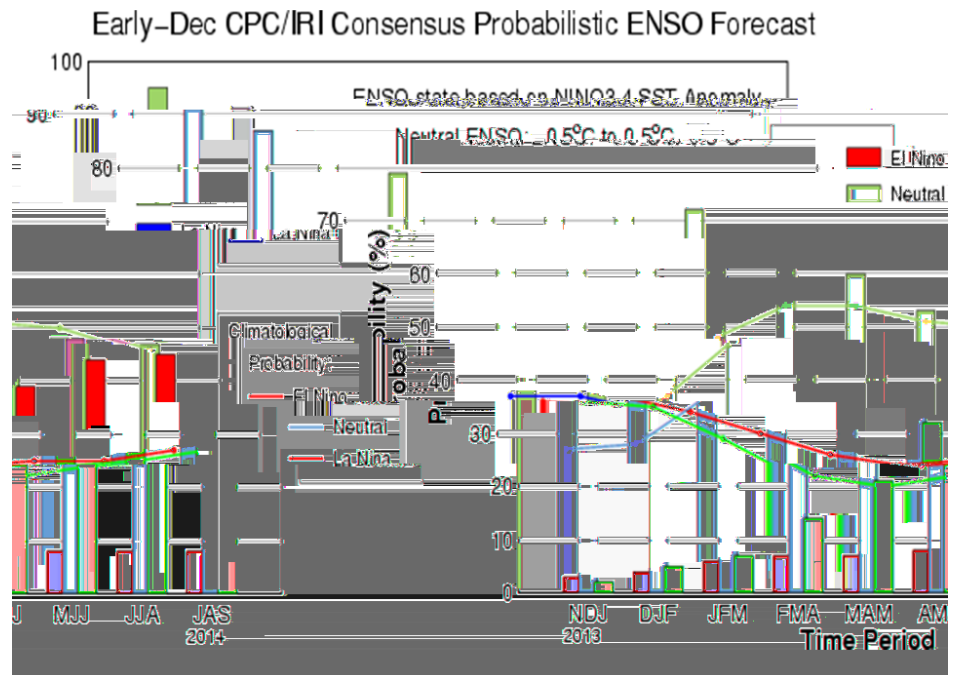


| | Date | Percent Full | Water Level (ft) | Height Above Conservation Pool (ft) | Reservoir Storage (acre-ft) | Conservation Storage (acre-ft) | Conservation Capacity (acre-ft) | Surface Area (acres) |
|--------------|------------|--------------|------------------|-------------------------------------|-----------------------------|--------------------------------|---------------------------------|----------------------|
| Today | 2013-12-23 | 35.2 | 274.67 | -26.43 | 970,828 | 546,574 | 1,551,007 | 44,219 |
| Yesterday | 2013-12-22 | 35.2 | 274.65 | -26.45 | 970,301 | 546,277 | 1,551,007 | 44,205 |
| 2 days ago | 2013-12-21 | 35.2 | 274.64 | -26.46 | 969,820 | 546,007 | 1,551,007 | 44,191 |
| 1 week ago | 2013-12-16 | 35.0 | 274.57 | -26.53 | 966,517 | 543,017 | 1,551,007 | 44,098 |
| 1 month ago | 2013-11-23 | 34.0 | 273.89 | -27.21 | 936,732 | 526,730 | 1,551,007 | 43,270 |
| 3 months ago | 2013-09-23 | 23.6 | 263.93 | -37.17 | 567,539 | 366,805 | 1,551,007 | 31,863 |
| 6 months ago | 2013-06-23 | 32.8 | 266.81 | -34.29 | 662,954 | 509,294 | 1,551,007 | 35,083 |
| 1 year ago | 2012-12-23 | 31.3 | 266.21 | -34.89 | 641,974 | 485,870 | 1,551,007 | 34,412 |

Looking Down The Road

El Niño/Southern Oscillation (ENSO), one key predictor for subtropical U.S. and Mexico rainfall potential during the winter months and still a factor in late summer and early autumn Atlantic tropical cyclone formation and growth, *could* portend more trouble through 2014. The index continues to be neutral – even “leaning” ever so slightly toward La Niña – and is forecast to remain right through spring 2014. Thereafter, model consensus is pointing toward the development of El Niño. Should El Niño take shape by late spring/early summer, it would arrive too late to enhance the wintertime subtropical jet, as it last did in 2009/2010. It *could*, however, arrive in time to disrupt the 2014

Atlantic Hurricane season. The key word is *could*. Though long range ENSO forecasts continue to improve, they are far from perfect; an early lean toward a developing El Niño prior to the winter of 2012/2013 was quickly eliminated when the waters of the eastern tropical Pacific Ocean cooled.



Be Firewise!

Earlier this year, our autumn outlook suggested that dry fronts could dominate the [October-December 2013 period](#). In reality, a mix of dry and “wet” fronts have occurred thus far – November 22nd added 2 to 6 inches of rain to the monthly totals, and the series of fronts between December 5-11 were memorable for gray skies, raw north winds, and periods of light rain or drizzle. Dry fronts passed on December 14th and 21st. If dry fronts become more dominant through late winter and early spring, the availability of much more ample fine fuels (grasses on ungrazed rangeland and farmland from the Lower/Mid Valley through the King Ranch, in particular) could become a much more significant concern than during the past two winters, when dominant dry weather held back late season rangeland growth. While most Jim Hogg and Brooks County ranches missed the lion’s share of rainfall between September and November, most others did quite well.

Now is the time to prepare for the possibility for a busy late 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 early 2014 should dry weather continue into late winter/early spring 2014.