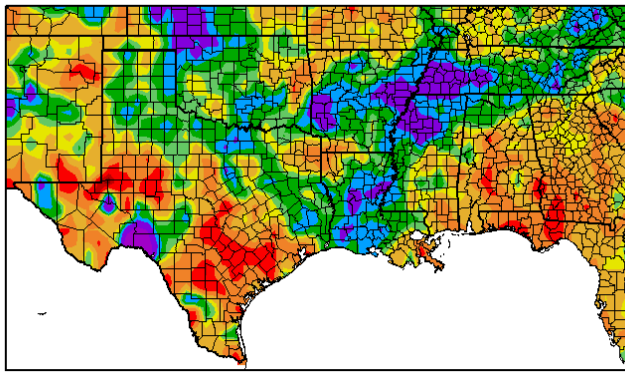
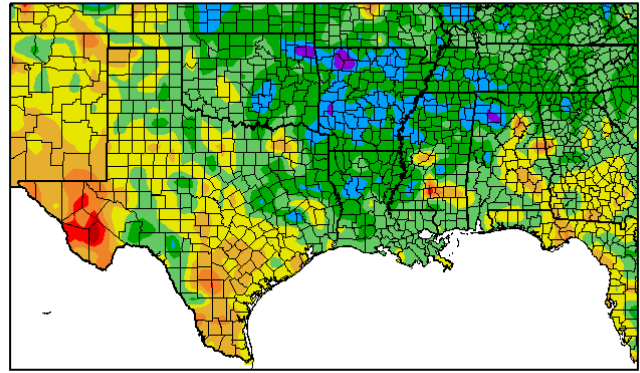


Summer 2014 Quick Review

Percent of Normal Precipitation (%)
6/1/2014 – 8/31/2014



Departure from Normal Temperature (F)
6/1/2014 – 8/31/2014



Generated 9/5/2014 at HPRDC using provisional data. Regional Climate Centers

Generated 9/5/2014 at HPRDC using provisional data. Regional Climate Centers

Above: Aside from a pocket of Kenedy County (King Ranch) which had more than 8 inches just before the end of August, most of the Rio Grande Valley and Deep South Texas were drier than average, with temperatures generally 1° to 3°F above average for meteorological summer (June-August 2014).

Wetness Came Late for Some...

...But Dry and Hot was the Rule for June through August 2014, Overall

Overview

As predicted (finally?), summer's [expected "hotter than h-e-double hockey sticks"](#) pattern indeed set up (next page), which led to days of sultry winds from the south that pushed temperatures above the century mark for a good number of days in the mid Valley, and into the mid or upper 90s toward the coast, particularly in July and August. Once again, many areas settled into the top ten hottest all-time, led by McAllen's Miller Airport and the nearby Cooperative Observation at the water plant.

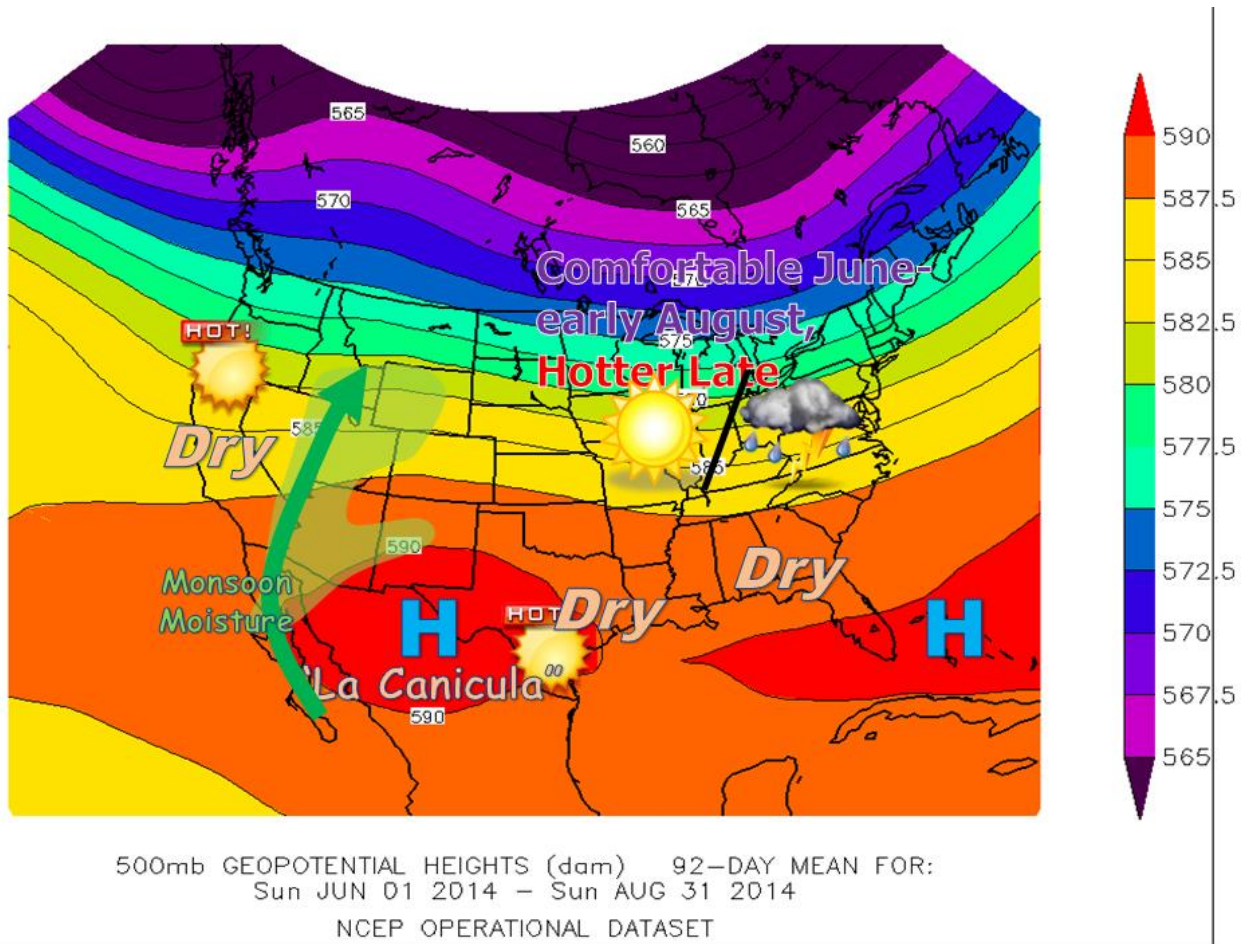
Location	Avg. Temp	Departure (Long)	Rank	Since
McAllen/Cooperative	88.4	+3.2	3	1941
McAllen/Miller	88.0	+2	5	1961
Falcon Dam	88.6	+1.9	7	1962
Harlingen/Cooperative	86.1	+1.7	10	1911
Port Mansfield	83.8	+0.9	11	1958
Brownsville	85.4	+1.3	13	1878*
Rio Grande City	87.4	+1	26	1897*

Departure (Long) based on period of record. *Missing several years in late 19th/early 20th century.

Rain totals were lowest across the Lower Valley, with generally 25 to 50% of expected values. Brownsville ranked 17th driest (4.19" vs. 7.23" long term average, or 3.04" below); Harlingen/Cooperative ranked 9th (2.51" vs. 7.21", or 4.7" below); Local variation in late-August thunderstorms caused differences between above and below average values, even within city limits. McAllen/Cooperative ranked 30th wettest (6.14 vs. 5.96, or 0.18" above) at the cooperative site while Miller airport ranked 16th driest (3.98 vs. 6.71, or 2.73 below).

Reason for the Season

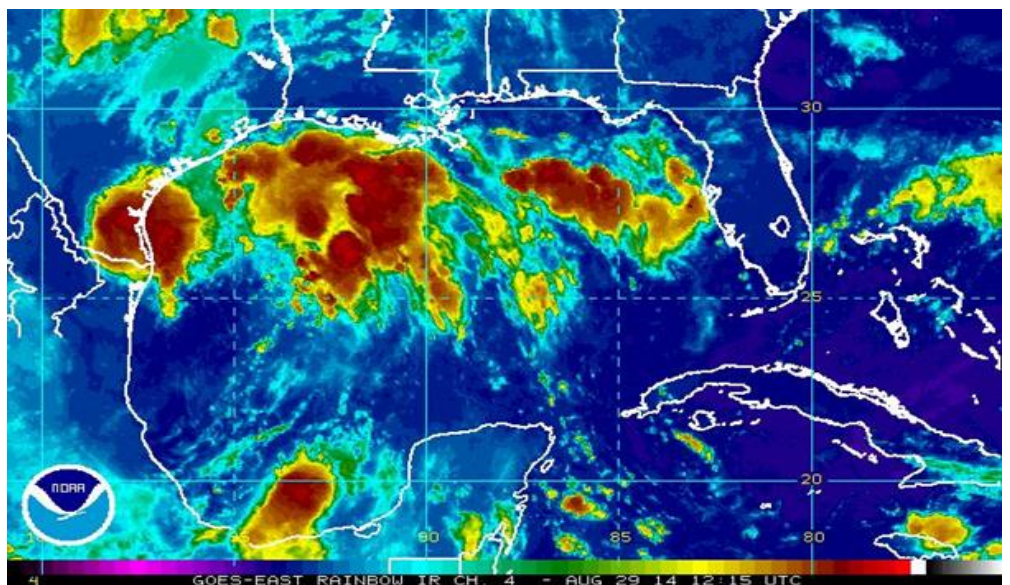
While we're still studying the conditions that favored the persistence of "[La Canícula](#)" for nearly the entire 90 days (top of next page), one possibility was the rapid warming of the eastern tropical Pacific from April through mid-June; this "flash El Niño" may have had enough lag time to allow the expectations of a "baby-2009" to be realized even through the warming faded through July into early August.

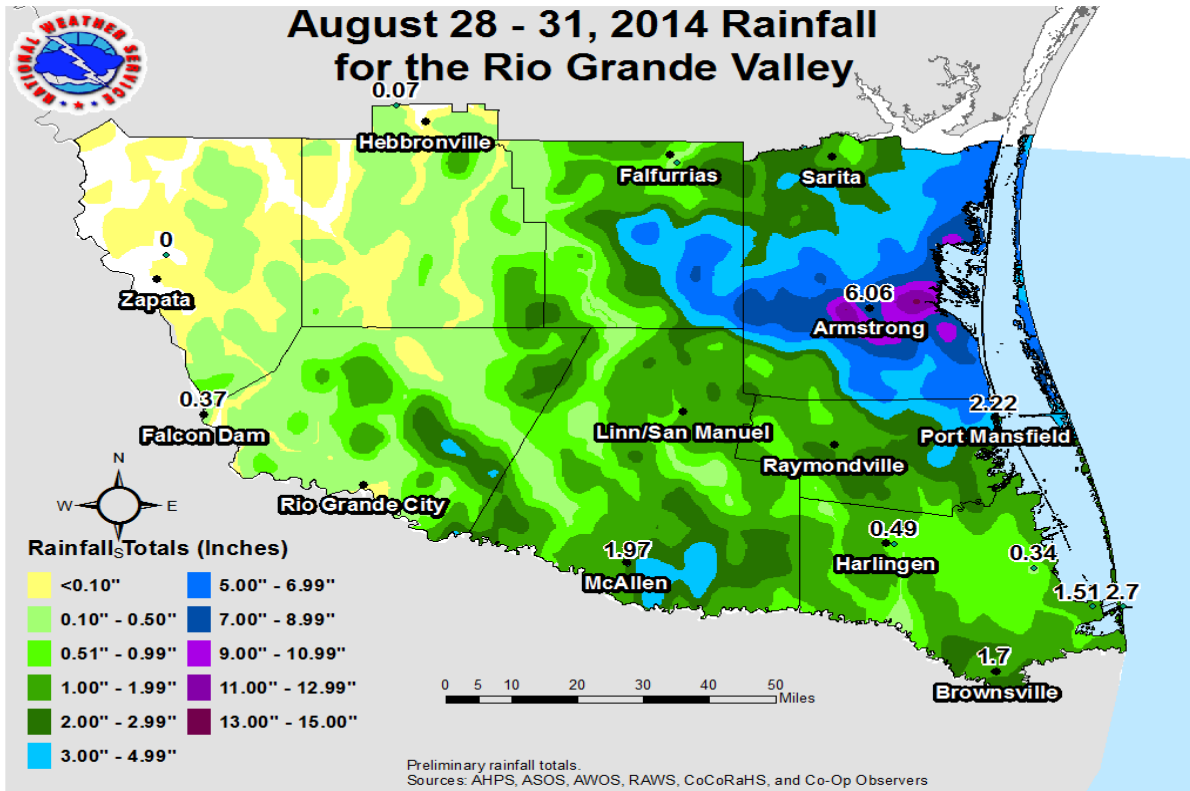


Above: June to August 2014 pattern. “Pancaked” high pressure across Texas and Florida maintained hot, generally dry conditions while keeping tropical cyclone potential at bay for most of the season. Slight overall dip in the steering pattern across the eastern U.S. kept changeable weather, with brief hot periods punctured by stormy fronts, followed by days of pleasant weather for most of summer.

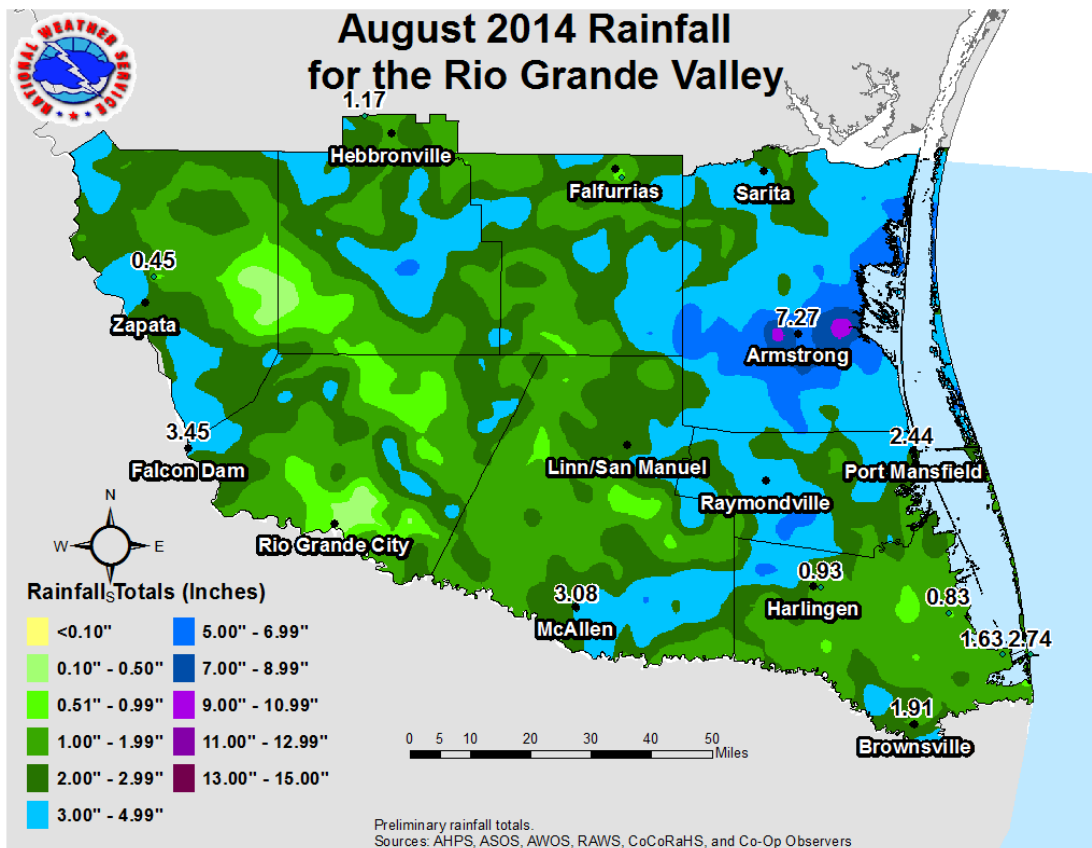
Late August Rains...

As if on cue, when climatology shows a [sharp rise in daily/monthly rainfall](#) for the second half of August into September, a cluster of old thunderstorms along the northern Gulf coast got a ‘nudge’ from the easterly flow around an upper high pressure ridge, which had (finally) spread north and east into the Mississippi Valley and toward the eastern U.S. This system had enough energy to percolate overnight/morning thunderstorms along the South Texas coast (right, at 715 AM August 29th), which eventually eased inland on the 29th and dumped at least 5” on parts of the Kenedy County King Ranch in the morning, with afternoon clusters feeding on old boundaries dropping pockets of 2 to 3 inches in northern and eastern Hidalgo County. Additional rain pockets on the 30th helped a start to drought improvement, which would be furthered by early September rains in feeder “arms” well north of Tropical Storm Dolly, circa 2014. A map of the late August rainfall, as well as total August rainfall, is shown on the next page.





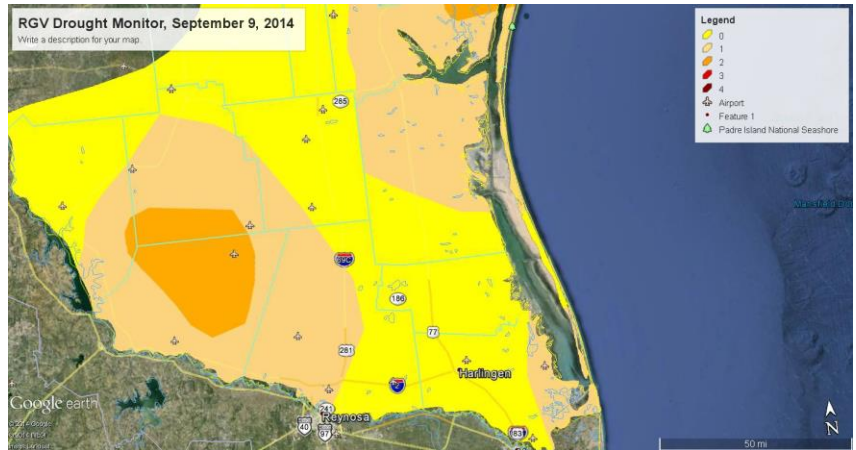
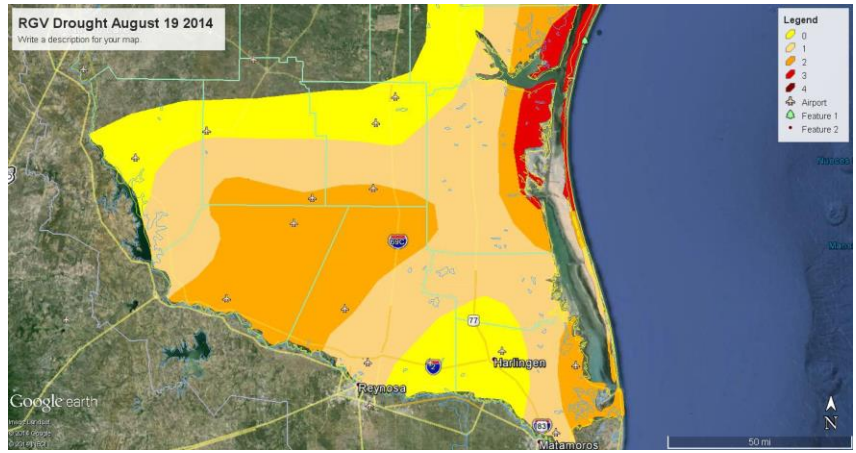
End of August rainfall that put a big dent in the drought across the King Ranch (near Armstrong). Tropical type rains dumped an estimated 9 to 11 inches in some pockets. Other lower and mid Valley locations received a healthy 1 to 2+ inches; much of the Upper Valley and western ranchlands missed the action.



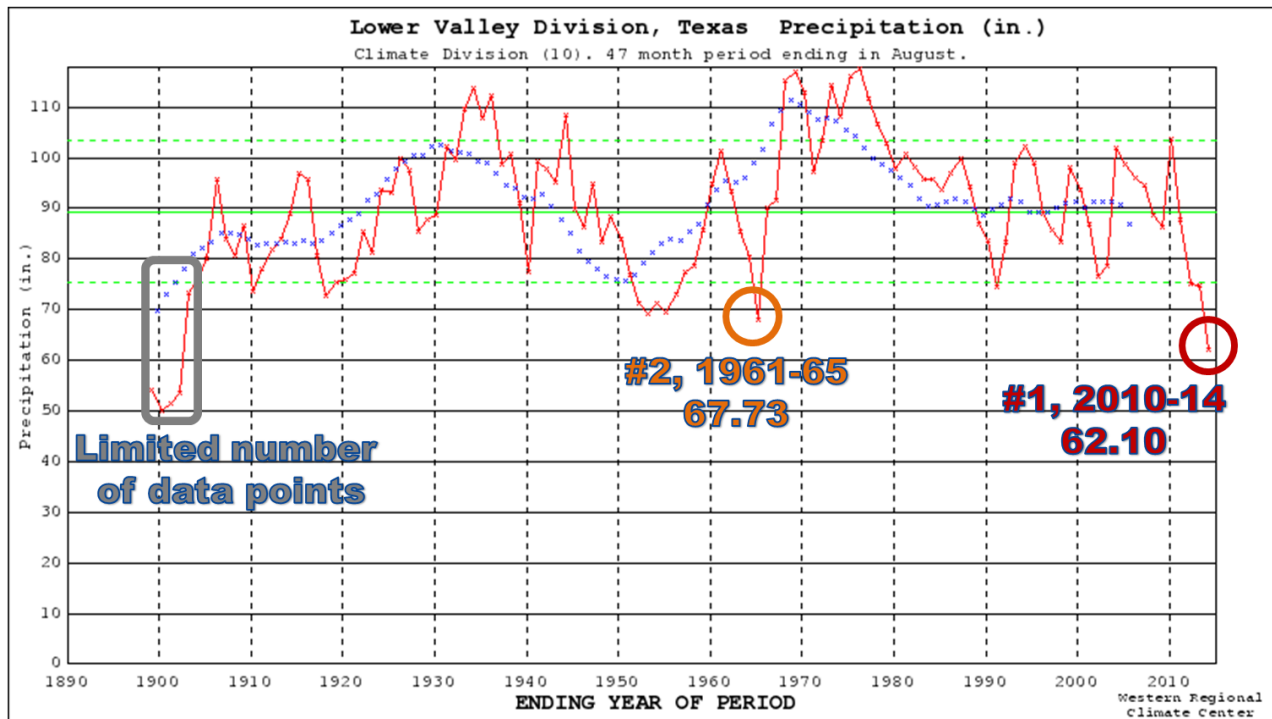
Above: Total August rainfall. Early month lightning-laden "gully-washer" thunderstorms doused the Rio Grande Plains, while end of month torrential but steadier rains helped soak into the soil. All areas except Starr and Jim Hogg County saw some drought improvement.

...Still a Long Way To Water Recovery

While short term drought and a few longer term agricultural drought conditions improved a touch near the coast by mid-September when compared with mid-August (right), water deficits since the current dry period began in October 2010 remain a long term concern. Total rainfall for the 47 month period from October 2010 through August 2014 remained nearly six inches *below the previous record*. Even a “normal” September (4 to 6 inches from west to east across the Valley and Ranchlands) would do little to improve the standing; an above normal September (i.e. 6 to 9 inches, on average, for the Valley) could bring the 4 year period to a tie with the *previous record* low 48 month period, dating back more than a century. The helpful rain that closed August was a mere drop in the bucket of Falcon Reservoir, which remained just above 20% of conservation capacity in Texas (top of next page).

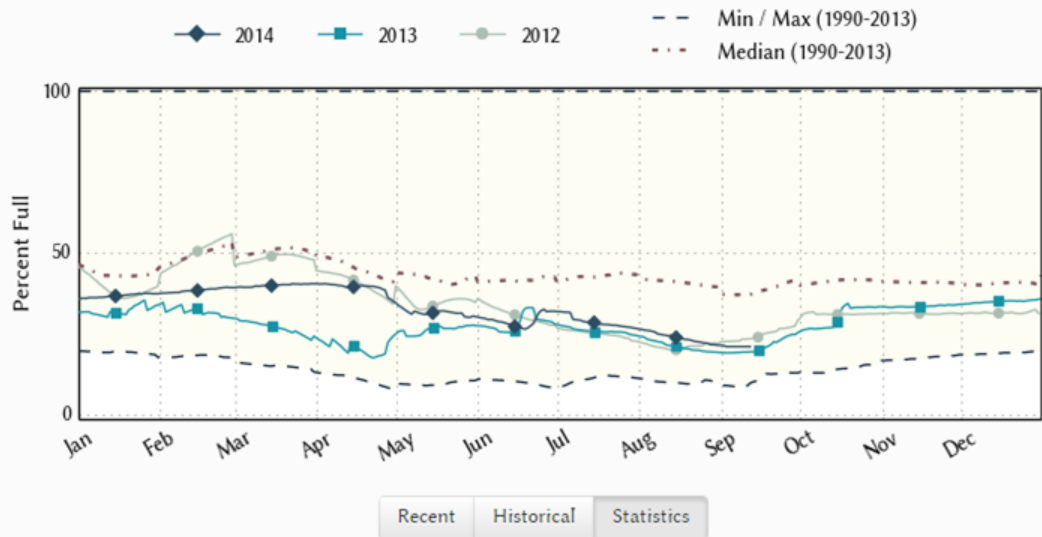


October 2010-August 2014 Rainfall



Hidalgo, Cameron, and Willacy Counties

Falcon Reservoir is 21.1% full as of 2014-09-12



	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	2014-09-12	21.1	267.54	-33.56	688,542	326,975	1,551,007	35,903
Yesterday	2014-09-11	21.1	267.53	-33.57	688,109	326,769	1,551,007	35,889
2 days ago	2014-09-10	21.1	267.55	-33.55	688,707	327,053	1,551,007	35,909
1 week ago	2014-09-05	21.1	267.60	-33.50	690,543	327,925	1,551,007	35,968
1 month ago	2014-08-12	24.4	269.57	-31.53	760,518	379,087	1,551,007	38,200
3 months ago	2014-06-12	28.2	269.47	-31.63	756,932	437,843	1,551,007	38,089
6 months ago	2014-03-12	39.9	276.83	-24.27	1,072,527	619,619	1,551,007	46,929
1 year ago	2013-09-12	19.5	260.97	-40.13	476,655	302,179	1,551,007	28,539

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

Above: Falcon Reservoir levels, Texas share. Orange shaded areas show values in 2014 and 2013, which are very close for Conservation Storage – though Reservoir Storage in 2014 remained about 200,000 acre feet above the level in 2013.