

Above left: Rainfall estimated for the Rio Grande Valley and Ranchlands for the week ending June 14th, 7 AM. **Right:** Torrential rains flowing from the Rio Grande Plains and Big Bend into the river produced moderate flooding near Laredo early on June 17th.

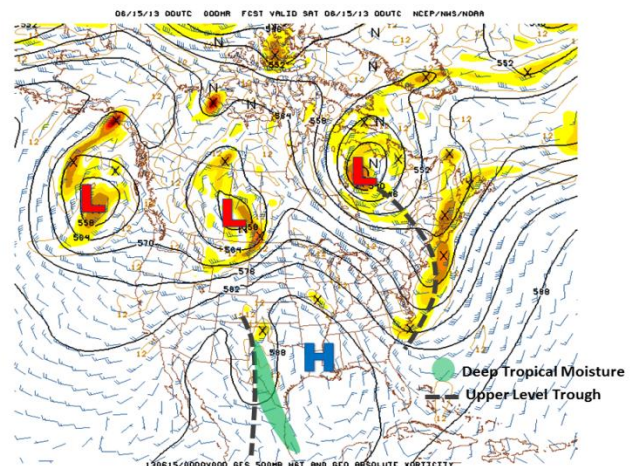
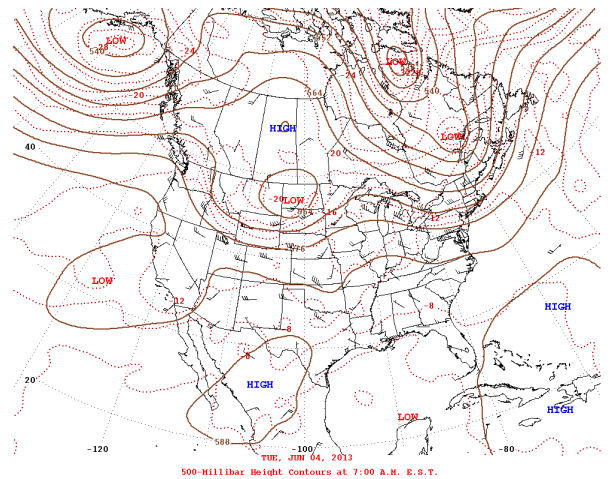
Periodic Rainfall Lets Drought Take a “Breather” Torrential Rains in Big Bend, Rio Grande Plains Provide Temporary Relief

Much More Rainfall Needed for Long Term Water Needs Across the Valley

Summary

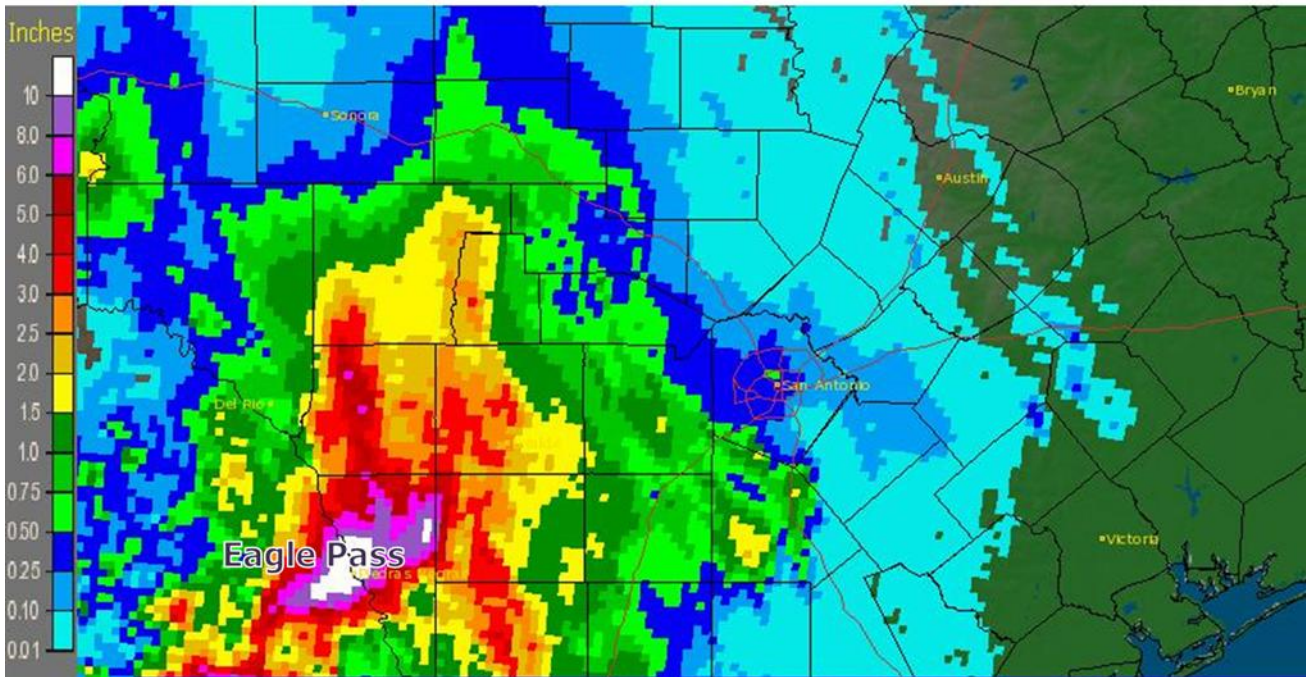
The first half of June provided a mixed bag of weather conditions to the Rio Grande Valley. Much of the first week featured the expected hot, dry weather, as a high pressure ridge at around 18,000 feet parked between northern Mexico and west Texas (right, top), providing a dry atmospheric flow from the northwest. This upper flow helped park a surface ridge across the Rio Grande Valley and adjacent Gulf waters, with perfect beach weather but hot and dry conditions inland. Between June 3rd and June 6th, temperatures soared into the 90s to lower 100s and humidity fell below 30 percent mainly west of Highway 281. By Friday, June 7th, an upper trough dented the ridge and opened the door for a round of thunderstorms, some with hail and damaging wind, to surge from the South Texas brush country into portions of the Rio Grande Valley. 60 mph or greater wind gusts caused damage to carports, trees, and power lines near the Mission Country Club golf course; a second storm knocked down large limbs near San Manuel and Linn at around the same time.

As the main trough hooked up with Tropical Storm Andrea and brought torrential rainfall to much of the eastern seaboard on the 7th, a remnant weak disturbance undercut the ridge soon after, and would stick around northeast Mexico and south Texas through most of the workweek beginning June 9th. Plenty of clouds and isolated to scattered showers and thunderstorms kept daytime temperatures a little below average. By June 13th, the



disturbance strengthened; locally torrential rain dumped between 3 and 4 inches in a small area of southwest Zapata County near the base of Falcon Dam. Channeled southerly flow between a bubble of weak high pressure in east Texas and the wave over west Texas (bottom right, previous page) would feed a persistent band of torrential rains along and near the Rio Grande from Webb County through the Big Bend; estimated rainfall of 10 to 17 inches by early on June 15th pumped up flow into the river and eventually created moderate flooding near Laredo. The flood wave at Columbia Bridge, north of Laredo, was second only to that which followed Alex's remains in 2010 (31.38 on June 16, 2013 vs. 49.42 on July 8, 2010). The flood wave dissipated into Falcon International Reservoir, pushing much-needed water into the reservoir during the week of June 16th.

Austin/San Antonio, TX (EWX): 6/15/2013 1-Day Observed Precipitation
Valid at 6/15/2013 1200 UTC- Created 6/17/13 17:33 UTC

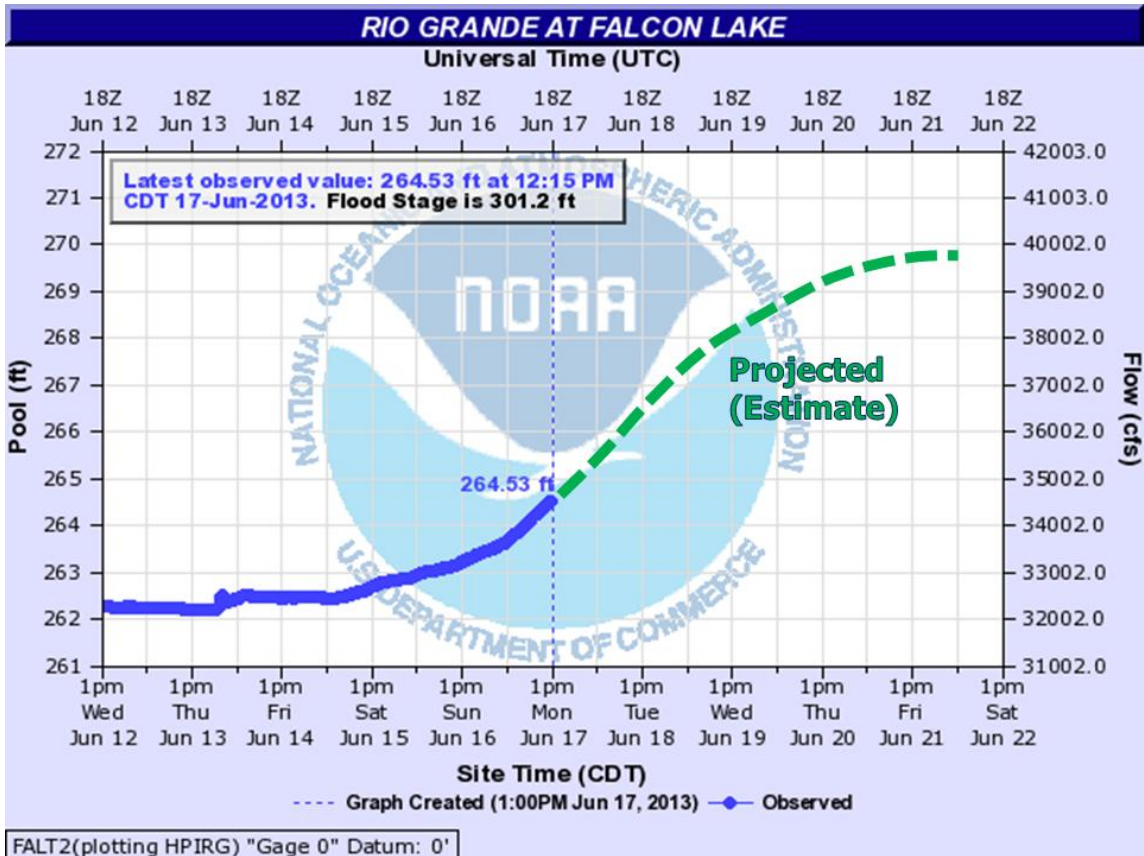


Above: Storm total rainfall across the Rio Grande Plains and the Big Bend. Measured and estimated rainfall near Eagle Pass ranged from 10 to 17 inches for the 24 hour period ending 7 AM June 15th.

Hits and Misses

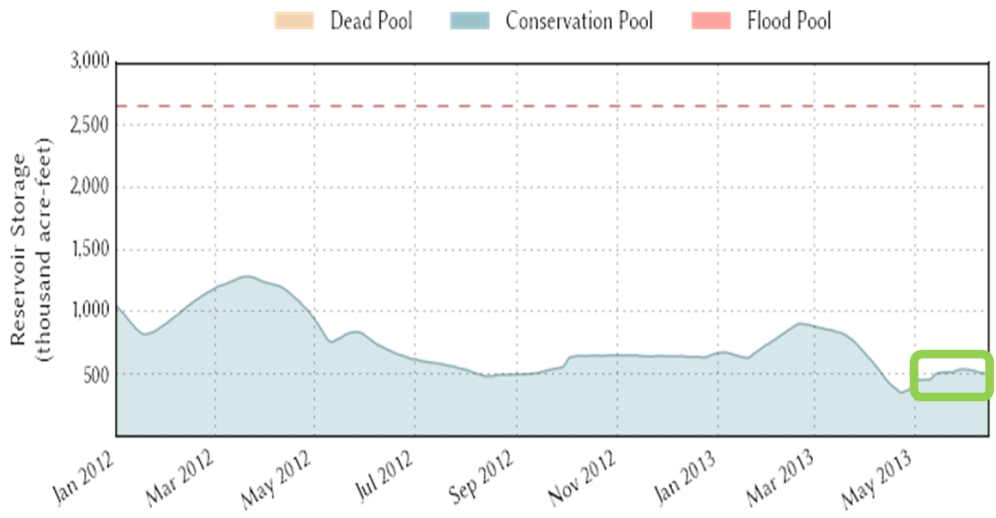
For Lower Valley residents the nature of the sporadic showers and thunderstorms determined if one was lucky or not. While most received some rain, amounts often depended on if the storm(s) tracked over them. The onset of the cloudier, wetter period dropped some of the heaviest rain in a long time on western Hidalgo County (June 7th). Thereafter, rains generally fell in the mid to late morning near the coast when high moisture levels linked up with the disturbance, some heating, and the sea breeze; clouds from these rains often held down potential for more welcome assistance to mid and upper Valley areas still in Exceptional Drought (below). The onset of the channeled tropical moisture created a local dumper between Falcon Heights (southwest Starr) and Lopeño (extreme south Zapata) on June 13th, with flash flooding along Highway 83 by mid-evening.

That channel became very active from June 14th through the 15th; total rainfall exceeded 10 inches in some areas of the South Texas Brush Country through the Big Bend (below), including 17 inches near Eagle Pass. These rains will ultimately flow into Falcon Dam, and bring values up a few notches, perhaps edging to or above 30% of capacity by late June. As of June 17th (AM), Falcon Dam levels were at 28% capacity, Texas share. Levels could reach 270 feet by June 21st; conservation percentage would likely reach 34% or higher, depending on how water ultimately is allocated between Mexico and the United States.



Total water levels (in feet) at Falcon International Reservoir, from June 12 through midday June 17. Green dashed line is rough estimate based on upstream rainfall and strength of flood “wave” that impacted Laredo on June 16th and 17th.

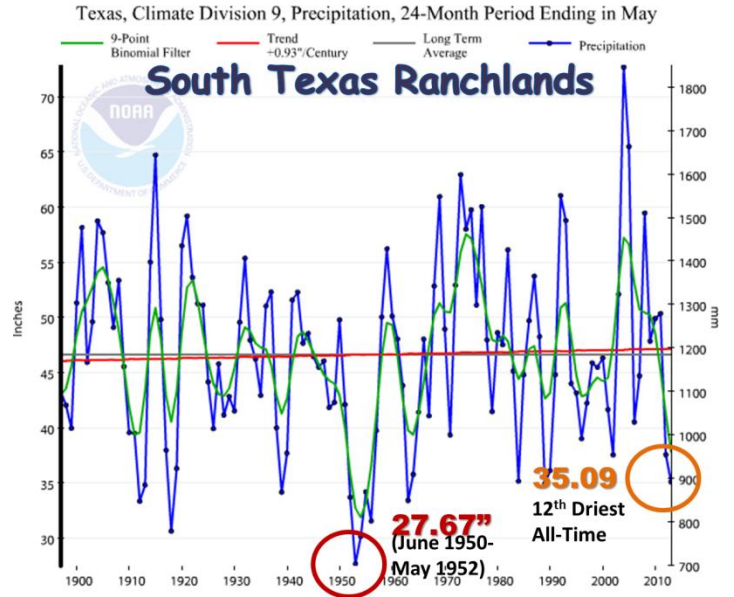
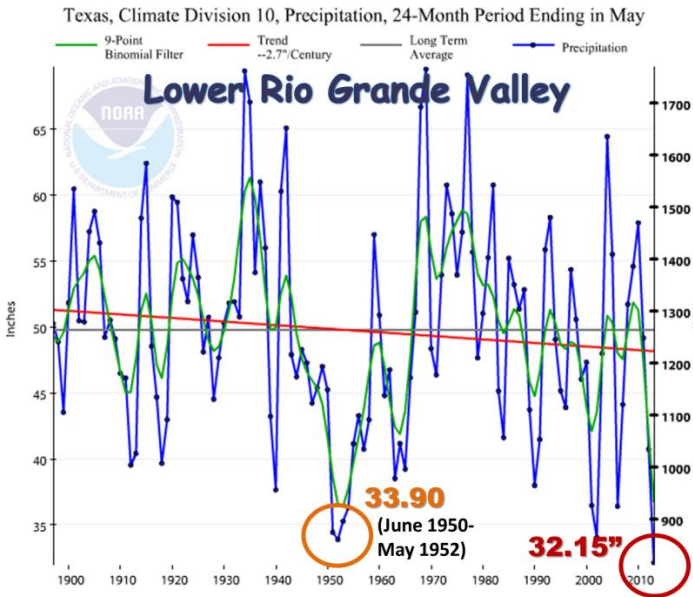
Falcon Dam Since 2012



The green area shows levels since mid May; occasional burst of heavy rain have largely kept lake values level. Recent falls due to high evaporation rates in early June will reverse during the week of June 16th-22nd.

Keeping the Eye on the Drought Ball

Periodic rainfall has been a staple of each June since the current drought/dry period began in October 2010. In 2011, ferociously hot and dry weather was tempered during the last week of June by [more than six inches of rain in some Valley locations](#). In 2012, more than six inches fell in Brownsville, and additional flooding was reported at the other corner of the Valley (once again near the Falcon Dam at the bottom of Falcon Lake), [on June 30th](#). Dry weather returned in July of each year. Even with the initial rains that fell in [late April](#) and [early May](#) the 24 month period ending on May 31st (June 2011-May 2013) continued to be an all-time record low for the Lower Rio Grande Valley (bottom left); locally torrential rains in the drier semi-arid region of the Rio Grande Plains and South Texas Brush Country erased their 24 month record, but values were still ranked #12 with more than 100 years of record (bottom right).



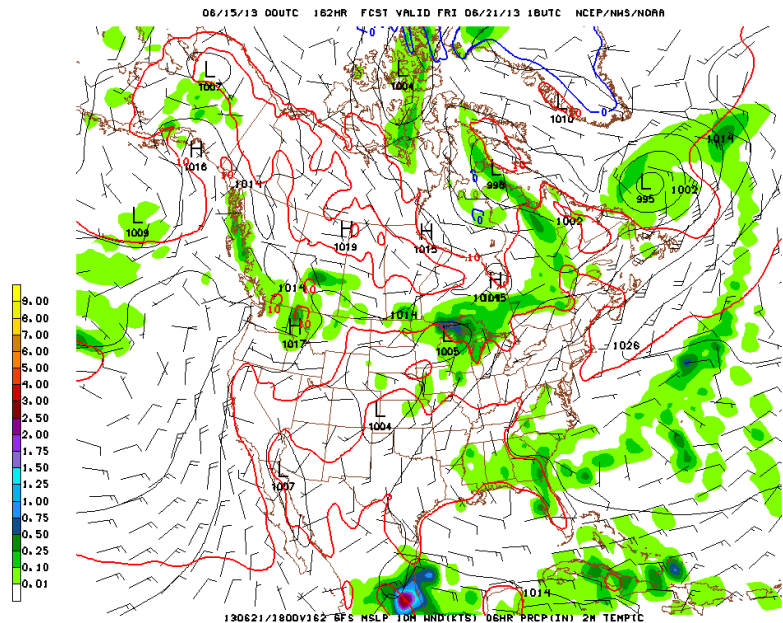
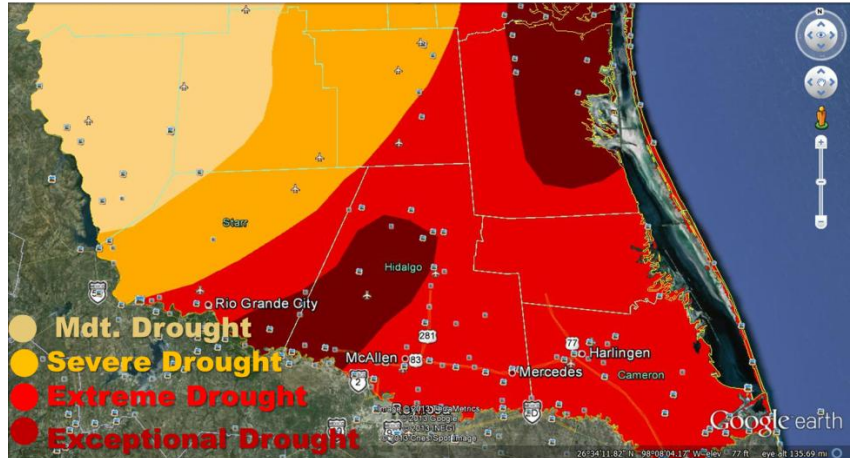
Where We Are, What's To Come

The US Drought Monitor on June 11th continued to show Extreme to Exceptional Drought across the Rio Grande Valley, with Moderate to Severe conditions across the Brush County and Rio Grande Plains. Recent rains may trim levels further across the Ranchlands by mid to late June, but little change is expected for the Valley. Long range projections through July and August suggest a hot, generally dry, summer as “La Canícula” High pressure is expected to dominate from northern Mexico through the southern Plains. The bottom line still applies: Only a tropical cyclone, or series of tropical waves, will make a true dent in the current drought which is edging toward three years in length.

For a text update on the current drought and forecast, click [here](#).

As long as sporadic rainfall keeps grass and garden green, you can continue to conserve water by limiting watering during times of rain. Keep the grass long enough to allow moisture to work into the roots and plant gardens in shady areas.

Rio Grande Valley Drought Monitor June 11th, 2013



Deep Tropical moisture (green, blue, and red area well south of the border) takes a pass on the Rio Grande Valley/Rio Grande Basin on June 21st, based on this forecast from the U.S. Global Forecast System model.