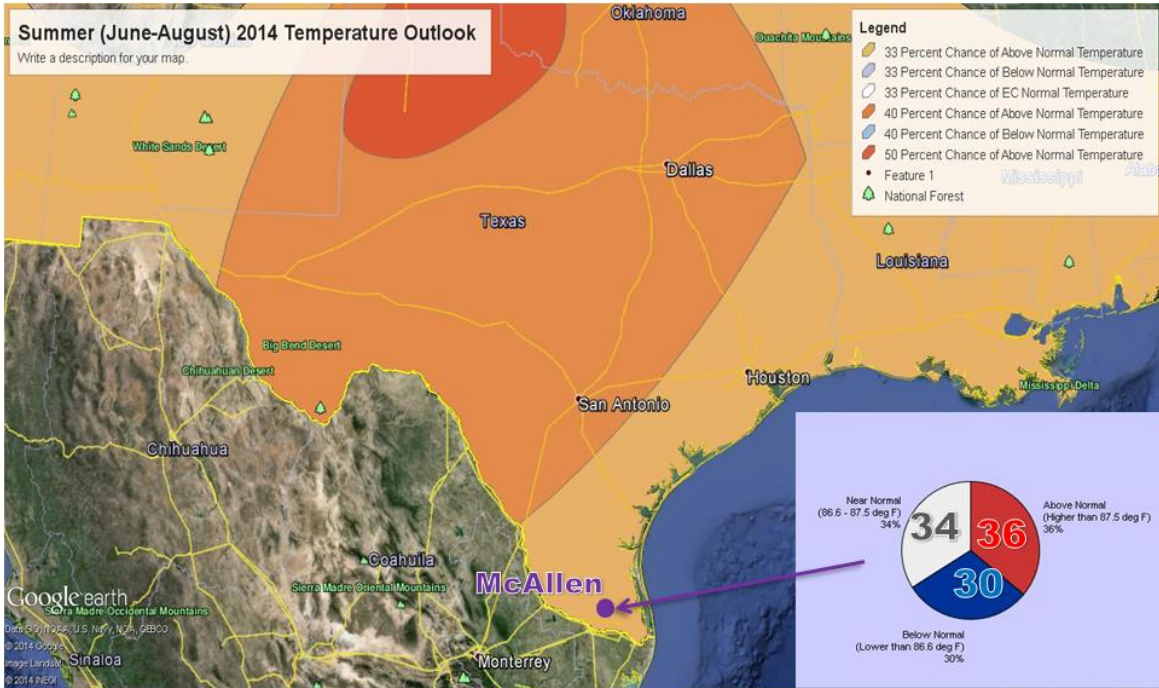
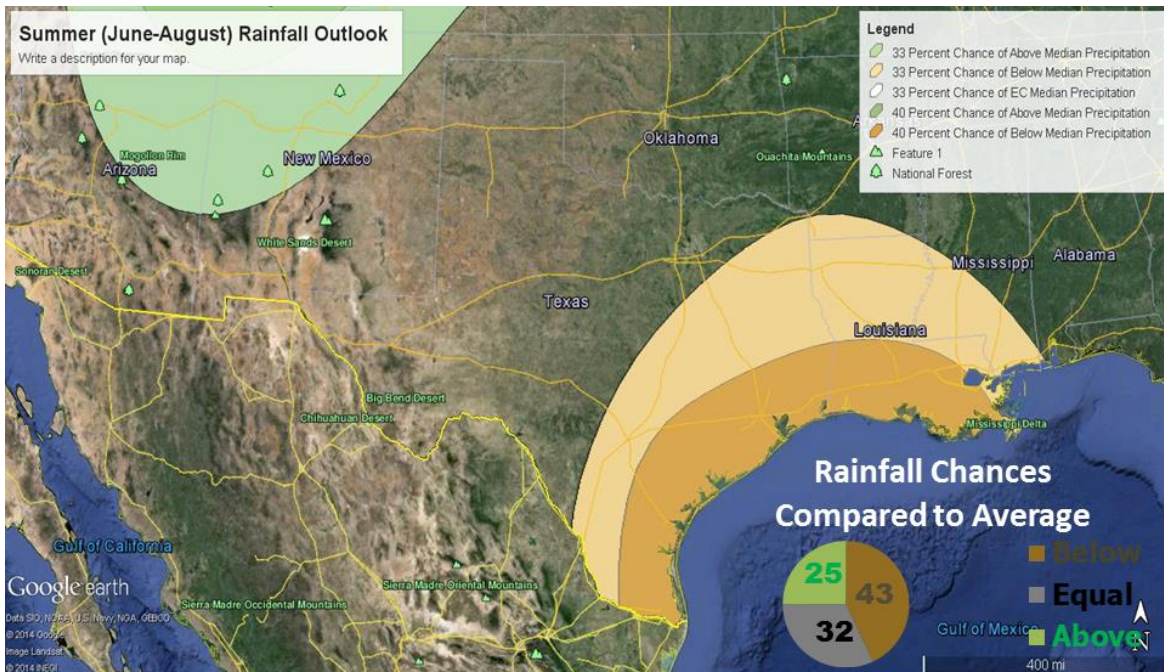


Summer 2014 Outlook



Average High: ~90° Beaches, 95° Lower Valley, 97-99° Mid-Upper Valley
Average Low: ~78° Beaches, 74-77° Elsewhere
Average All Hours: 85-87°



Average Rainfall: 6 to 7 Inches, Valley-Wide

Hell Before Heaven?

Will El Niño Bring Summer Heat and Drought Before A Possible Wet Winter?

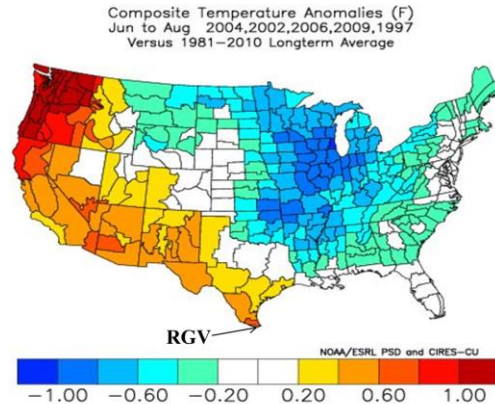
Cool May and Possibly June Give Pause to Summer Heat Potential

1997? 2002? 2004? 2006? **2009?**

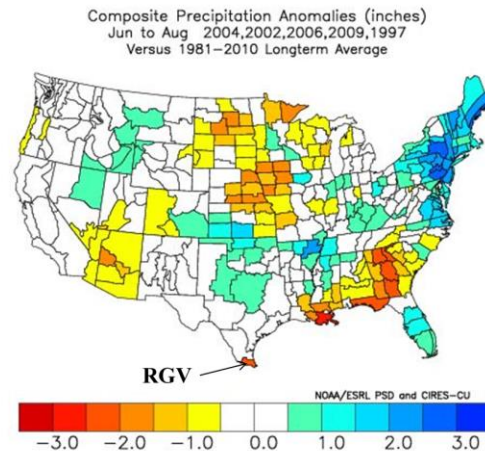
That is the question for the summer (June-August) 2014. In each of these summers, El Niño developed quickly. For the Rio Grande Valley, that typically meant above average temperatures with a “lean” toward below average precipitation (right). However, each season, El Niño or not, is different. With a recent track record that has been rather poor – above average temperatures have been forecast for nearly all of the period between November 2013 and May 2014 – confidence on exactly how summer’s trends ultimately shape up is moderate at best. That said, periodic “signs” in short term patterns (such as the hot end to a [bone-dry April 2014](#)) combined with the El Niño analogues since the late 1990s offer a bit more confidence, particularly for the drier outcome. “Dry” is relative; the mid-July through mid-August “La Canícula” pattern drops average rainfall to a measly ~1 inch; any less rainfall is practically nil. June through early July, and the tail end of August, will determine how the summer will be remembered.

The table below (left) shows similar El Niño developments during the 21st century; notice the change from neutral (or, in the case of 2009, La Niña conditions (blue shade)) prior to the El Niño development (red squares) during the latter half of the calendar year. Below right shows the current Climate Forecast System version 2 forecast through the end of 2014.

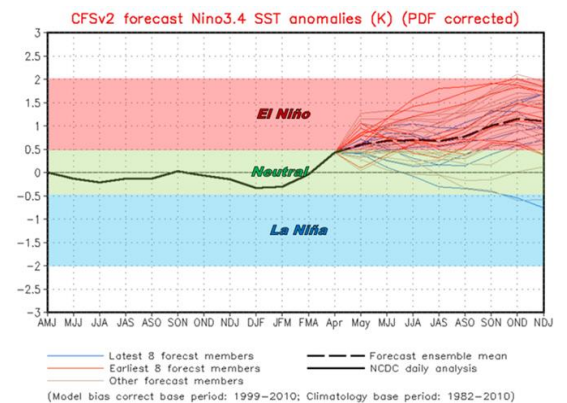
The NOAA/NCDC Climate Division Dataset has been updated to a newer version



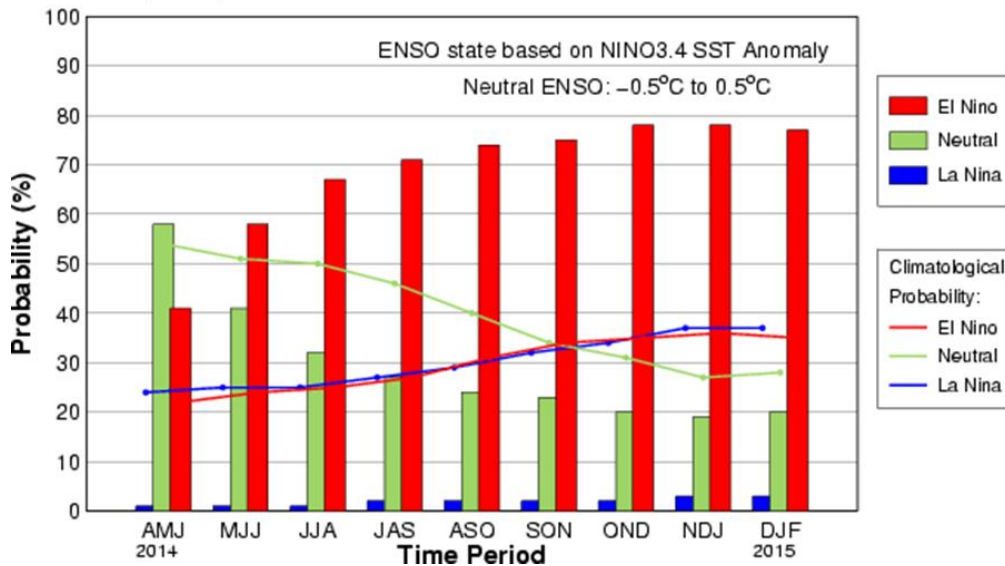
The NOAA/NCDC Climate Division Dataset has been updated to a newer version



Year	DJF	JFM	FMA	MAM	AMJ	MJJ	JJA	JAS	ASO	SON	OND	NDJ
2002	-0.2	0.0	0.1	0.3	0.5	0.7	0.8	0.8	0.9	1.2	1.3	1.3
2003	1.1	0.8	0.4	0.0	-0.2	-0.1	0.2	0.4	0.4	0.4	0.4	0.3
2004	0.3	0.2	0.1	0.1	0.2	0.3	0.5	0.7	0.8	0.7	0.7	0.7
2005	0.6	0.4	0.3	0.3	0.3	0.3	0.2	0.1	0.0	-0.2	-0.5	-0.8
2006	-0.9	-0.7	-0.5	-0.3	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.0
2007	0.7	0.3	-0.1	-0.2	-0.3	-0.3	-0.4	-0.6	-0.8	-1.1	-1.2	-1.4
2008	-1.5	-1.5	-1.2	-0.9	-0.7	-0.5	-0.3	-0.2	-0.1	-0.2	-0.5	-0.7
2009	-0.8	-0.7	-0.5	-0.2	0.2	0.4	0.5	0.6	0.8	1.1	1.4	1.6
2010	1.6	1.3	1.0	0.6	0.1	-0.4	-0.9	-1.2	-1.4	-1.5	-1.5	-1.5
2011	-1.4	-1.2	-0.9	-0.6	-0.3	-0.2	-0.2	-0.4	-0.6	-0.8	-1.0	-1.0
2012	-0.9	-0.6	-0.5	-0.3	-0.2	0.0	0.1	0.4	0.5	0.6	0.2	-0.3
2013	-0.6	-0.6	-0.4	-0.2	-0.2	-0.3	-0.3	-0.3	-0.3	-0.2	-0.3	-0.4
2014	-0.6	-0.6	-0.5									



Early-May CPC/IRI Consensus Probabilistic ENSO Forecast



Unlike the El Niño that failed to launch in the late summer and autumn of 2012, the coming El Niño has solid forecast backing from climate and long range dynamical models in the U.S., Europe, and Canada; the probability for an El Niño has climbed to near 80% by autumn 2014 (above).

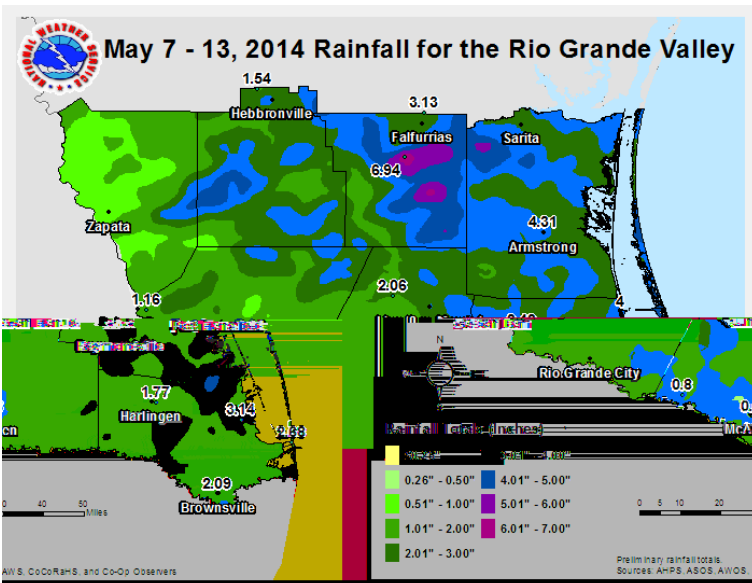
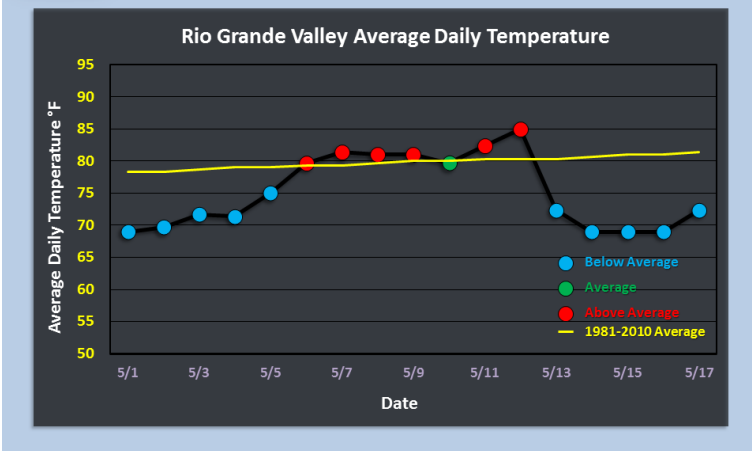
Easing into Summer

After nearly two thirds of May (through the 17th), and with little indication for searing heat to arrive prior to the end of the month, May 2014 was headed solidly below average for temperature. Combined rain events on [May 9th](#) and May 12-13 put a temporary halt to the worsening drought conditions in many areas.

Sunny and pleasant weather would dominate the middle two weeks of May 2014, allowing modest drying to begin once again. The rainfall, followed by cool nights and sunshine allowed grasses to grow quickly across ranches from the King Ranch (Kenedy/eastern Brooks) through Jim Hogg, northern Hidalgo, and northern Starr County. The forecast for below average rainfall, particularly during the hottest part of the summer (July/August), could become a wildfire spread concern if accompanied by very hot daytime temperatures which would lead to low afternoon humidity, similar to 2009. Time will tell, but we remind all ranchers and growers to remain [firewise](#) through the summer.

Should the hot and dry forecast pan out, drought conditions will quickly worsen. Such is the current long range drought forecast (next page).

May 2014 (through 17th): Chamber of Commerce Temperatures?



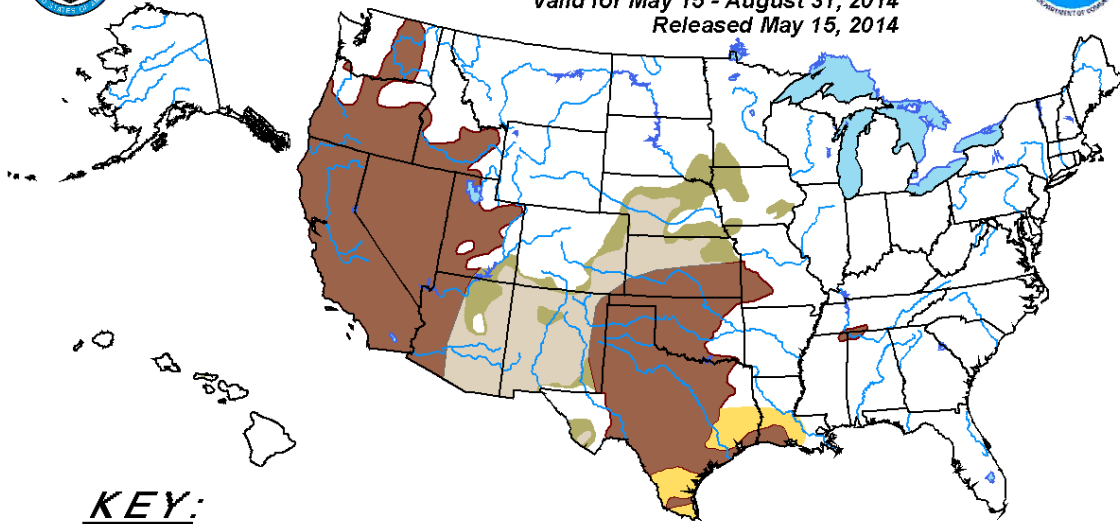


U.S. Seasonal Drought Outlook





Drought Tendency During the Valid Period

Valid for May 15 - August 31, 2014

Released May 15, 2014



KEY:

-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: Rich Tinker, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

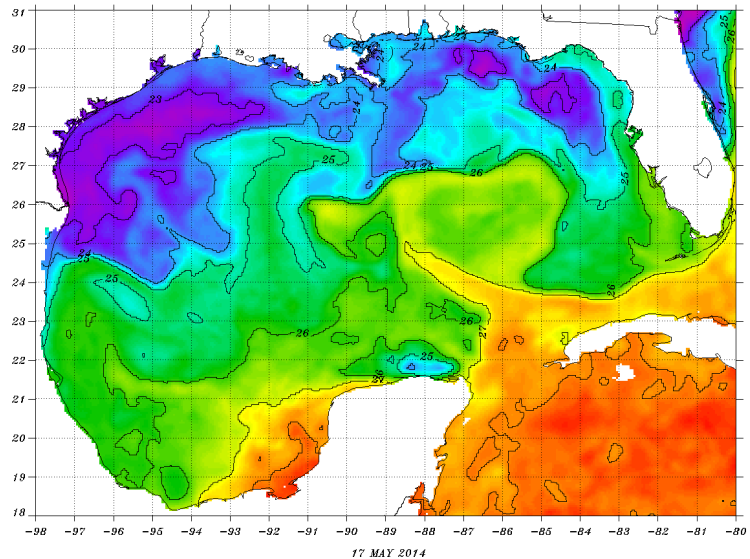
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

Above: Note the areas in yellow, covering all of South Texas including the Rio Grande Valley.

Eye on the Tropics

Atlantic hurricane season officially begins on June 1. How will the season shape up, and what might it mean for the Rio Grande Valley? El Niño and the apparent weak phase of the Atlantic Multidecadal Oscillation will play a significant role; as of May 18th, a number of [seasonal forecasts](#) suggest notably fewer cyclones than in recent years. Still, no matter the seasonal forecast, it only takes one landfall to make someone's season. One only has to recall 1992, when there were "only" seven named storms, three hurricanes, and one major hurricane. That "major" was Andrew, which wiped out portions of south Florida with 200 mph wind gusts and left more than \$26 billion (1992 US Dollars; likely \$50 billion today) in damage from south Florida to Louisiana. Rio Grande Valley residents should be ready for the next Andrew; [prepare here](#).

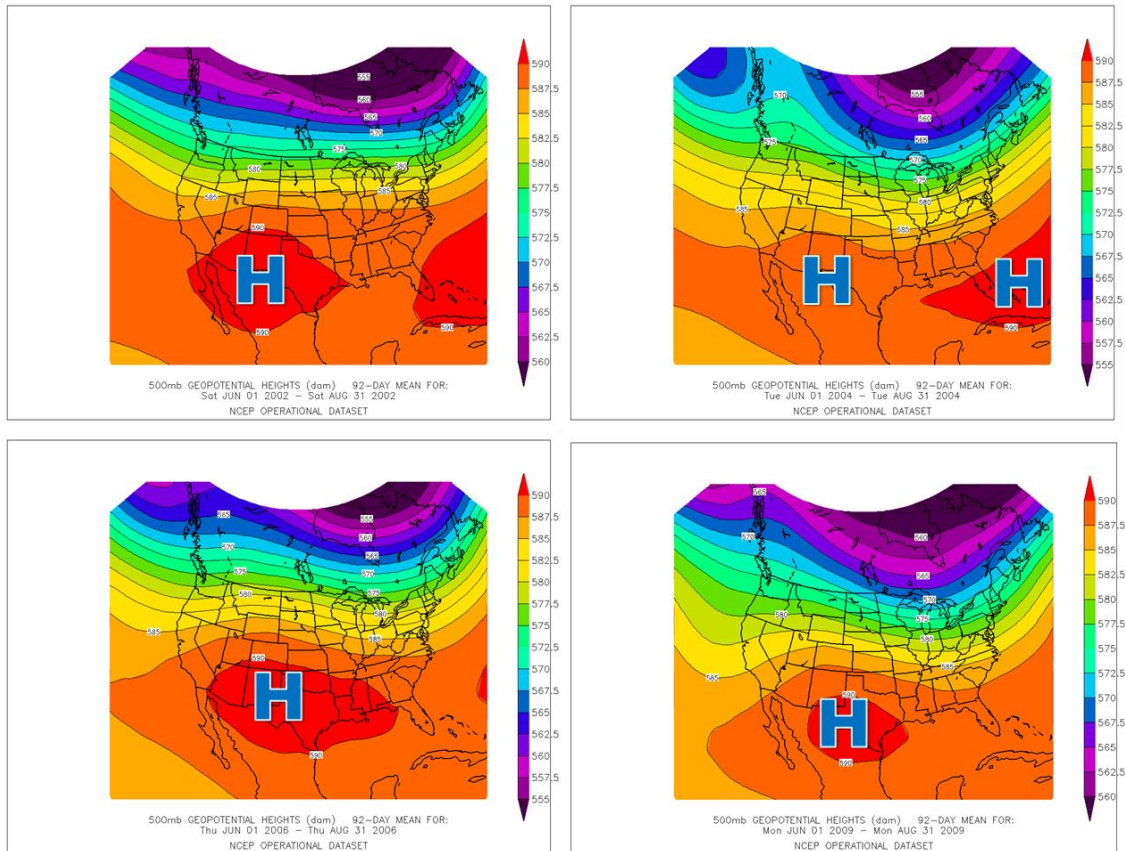
NOAA/NESDIS GEO-POLAR BLENDED 5 km SST ANALYSIS FOR THE GULF OF MEXICO



sea surface temperature in degrees Celsius
21.9 22.8 23.7 24.5 25.4 26.2 27.1 28.0 28.8

The Texas season (western Gulf) is likely to get off to a slow start. The cool winter and mixed spring has left water temperatures some 3 to 6°F below average; to significantly intensify a tropical cyclone in June, surface water temperatures in the 82-84°F range are preferred, which generally implies depth of 80°F water to 50 meters (~165 feet). Though the Gulf is capable of

warming fairly quickly in June, general atmospheric circulation patterns to close May strongly suggest a very slow rise to the Gulf water temperatures, especially west of 90°W longitude (or a line from New Orleans to the Yucatan Peninsula). Sea surface temperatures on May 17th are shown at right (22-24°C = 72-76°F, dark blue/purple). It is quite likely that if any cyclones form in June, they'll quickly scoot into the eastern Gulf; July is typically a quiet month for the Texas coast as strong high pressure typically dominates the southern Great Plains. Analog seasons of 2002, 2004, 2006, and 2009 (below) suggest a stronger (and longer) than average “La Canícula” (blue “H”), which would tend to keep tropical cyclones from the Texas coast well into August. Late August to late September would offer the best potential for a cyclone to “sneak into the crack in the window/door”, even as El Niño intensifies.



Average steering pattern during rapidly forming El Niño summers (clockwise from upper left): 2002, 2004, 2009, and 2006. The location of the upper ridge (blue H) puts a “stop sign” on north or westward push of any cyclone that might form, and often provides dry air sufficient to “kill” the cyclone.

Summer, in Summary

The main story will be heat, likely once again to be above the long term average. This means more than the usual number of 100°F afternoons between June 1 and August 31 [The average ranges from fewer than days near the coast to more than 50 days across the Rio Grande Plains; 10 to 30 in the mid Valley]. With the heat should come worsening drought, which may reach extreme levels. Similar to 2009, a few periods may be both breezy to windy and hot with low humidity, especially in June and July.

Learn about [heat safety here](#); if going to the beach to seek relief from the heat, learn how to avoid and be safe from [rip and longshore](#) currents. Finally, take precautions to [prevent wildfires](#).