

After El Niño, Now What?

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The weather phenomenon that dominated the news this winter was El Niño. For that matter, El Niño also dominated Texas weather this winter. Typically during a moderate to strong El Niño year, precipitation from fall to spring is either near normal or above normal. In the high plains this year, precipitation was near to above normal in most areas, though some spots were unlucky for much of the winter. Conversely, some areas were too wet for extended periods, as late October saw some of the wettest weather statewide on record.

El Niño impacts will continue for the next few months. During March through May, moderate to strong El Niño years average about 30 % wetter than normal in the southern high plains, with only about one in four moderate to strong El Niños being drier than normal. The El Niño enhancement is weaker farther north. Curiously, the two strongest El Niños of the past were both drier than normal in the springtime, so just because this El Niño is especially strong doesn't mean that the chances of a wet spring are especially high.

While El Niño is still going strong, and ranks among the three strongest ever recorded, its demise is imminent. The official forecasts from NOAA's Climate Prediction Center call for conditions in the tropical Pacific Ocean to transition to neutral sometime in the summer. That means that sea surface temperatures in the central and eastern tropical Pacific will be within a degree Fahrenheit of their normal values, compared to the present 3 - 4 degrees Fahrenheit above normal.

El Niño and La Niña are caused by a *sloshing* of the warm water at the surface of the tropical ocean from west to east, and back again. That *sloshing* plays out over a few years, and can be interrupted or otherwise affected by weather in the tropical atmosphere. This El Niño has been strong for so long that we are due for a *slosh back*. Historically, about half of all El Niños end with a bang, not a whimper, meaning that the tropical conditions overshoot the near-normal values and drift into La Niña cooler-than-normal territory.

The potential development of La Niña doesn't mean much for the high plains this summer. The summer season is notoriously difficult to forecast anyway, and the effect of El Niño and La Niña on the United States is weakest in summer. But if a full-blown La Niña develops in the fall, the odds shift toward a drier than normal winter in the Texas high plains.

Meanwhile, we continue to watch whether the period of frequent droughts in the southern plains since 1996 is coming to an end. Both the Atlantic and Pacific Ocean are now in patterns that are favorable for long-term rainfall. It remains to be seen whether these patterns hold, but it's worth crossing one's fingers. In any case, the chances of drought are still slightly elevated next year because of the likelihood of La Niña. After that, there is hope that the longer-term drought cycle will be over. I, for one, will believe it when I see it!

RESOURCES

Climate Prediction Center seasonal forecasts:

http://www.cpc.ncep.noaa.gov/products/predictions/long_range/

Climate Prediction Center El Niño monitoring:

<http://www.cpc.ncep.noaa.gov/products/precip/CWlink/MJO/enso.shtml>

El Niño forecasts from around the world:

<http://iri.columbia.edu/our-expertise/climate/forecasts/enso/current/>

A good Youtube summary of how El Niño works, from the Brits:

<https://www.youtube.com/watch?v=WPA-KpldDVc>

On the lighter side:

<http://www.independent.co.uk/news/mr-a-nino-weather-a-storm-of-protest-1148017.html>