National Weather Service
Tallahassee, Florida

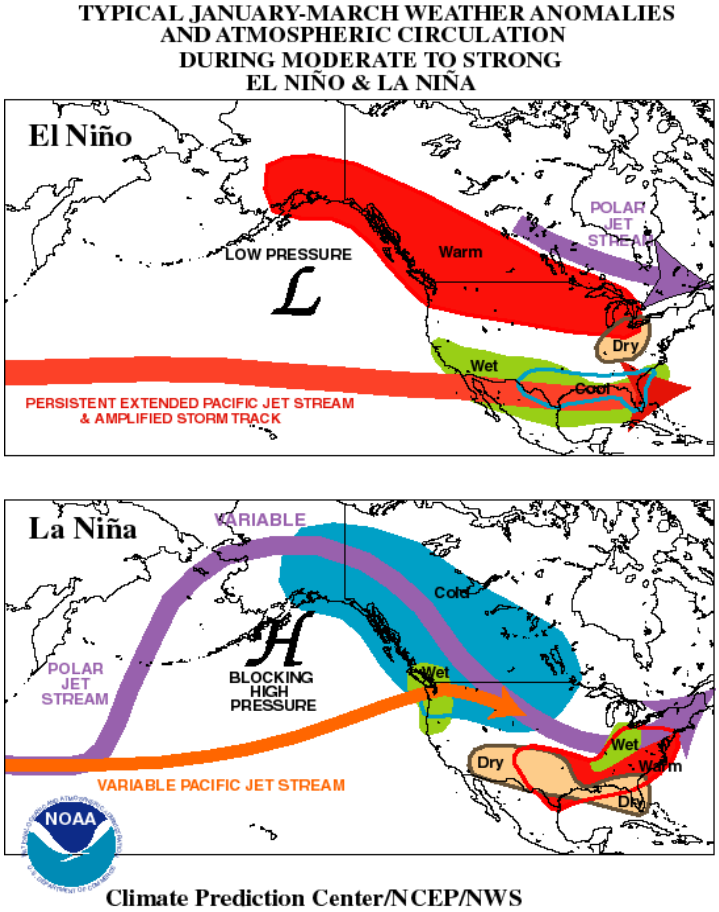
Drought Conditions Expected to Continue through Winter 2008 as La Nina Returns

Much of the Southeastern United States has been experiencing significant drought conditions dating back to Spring 2007. With many locations across the Florida Panhandle, Southwest Georgia, and Southeast Alabama experiencing rainfall deficits as great as 20 inches below normal, significant agricultural and hydrological impacts already exist. These conditions have the potential to worsen as atmospheric conditions and observations from the equatorial Pacific indicate a return to moderate La Nina Conditions that may continue through March 2008. In this month's newsletter, we are going to focus on the upcoming weather patterns as we head into the winter months along with looking at the latest drought conditions across the region and how those impacts may change by Spring 2008.

La Nina and the more familiar El Nino, are part of the El Nino Southern Oscillation, or ENSO. ENSO is a circulation pattern across the equatorial Pacific that impacts weather patterns around the globe. The warm phase of this circulation, El Nino, generally creates more moist conditions across the Southeastern US in the winter months. The cold phase of this circulation, La Nina, typically yields drier conditions for the Southeast.

Changes in ENSO between La Nina and El Nino are detected by a series of buoys along the equator in the Pacific Ocean. When these buoys detect cooler than normal sea surface temperatures along the equator, the beginnings of La Nina are suspected. Based on how large the deviation from normal these sea surface temperatures are, defines the strength of the La Nina event.

The graphic below offers an overview of how ENSO affects the weather patterns over North America during the winter months.

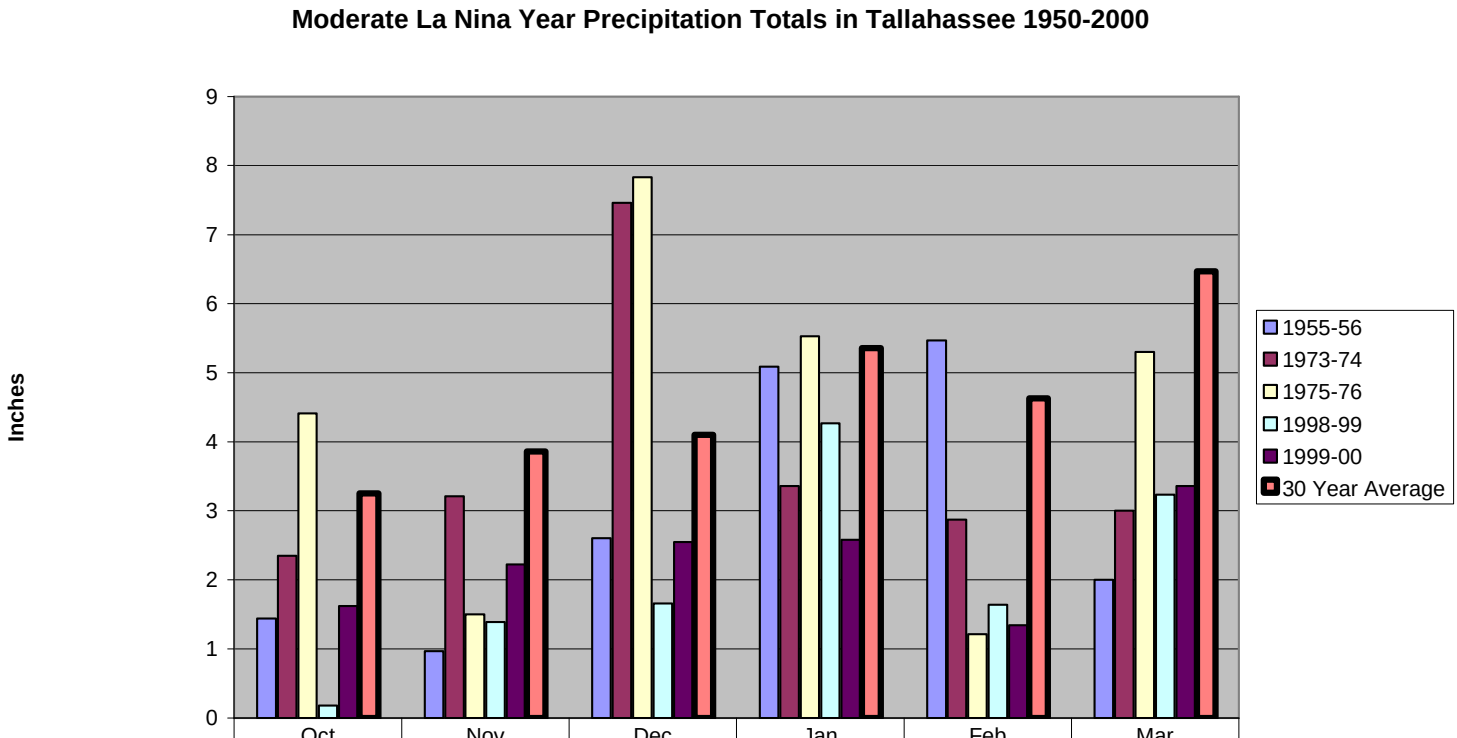


Given the ongoing drought across the region, the expected moderate La Nina event may further worsen these conditions. In addition to catastrophic agricultural and hydrologic impacts, a dangerous fire weather season could ensue across the region this coming Spring.

The last moderate La Nina to affect our region was in the winter of 1999-2000. During the winter months of this period, defined as December through February, a rainfall deficit of nearly 9 inches was observed at the Tallahassee Regional Airport. 30 freezes were recorded in Tallahassee, which is near the normal value of 31.

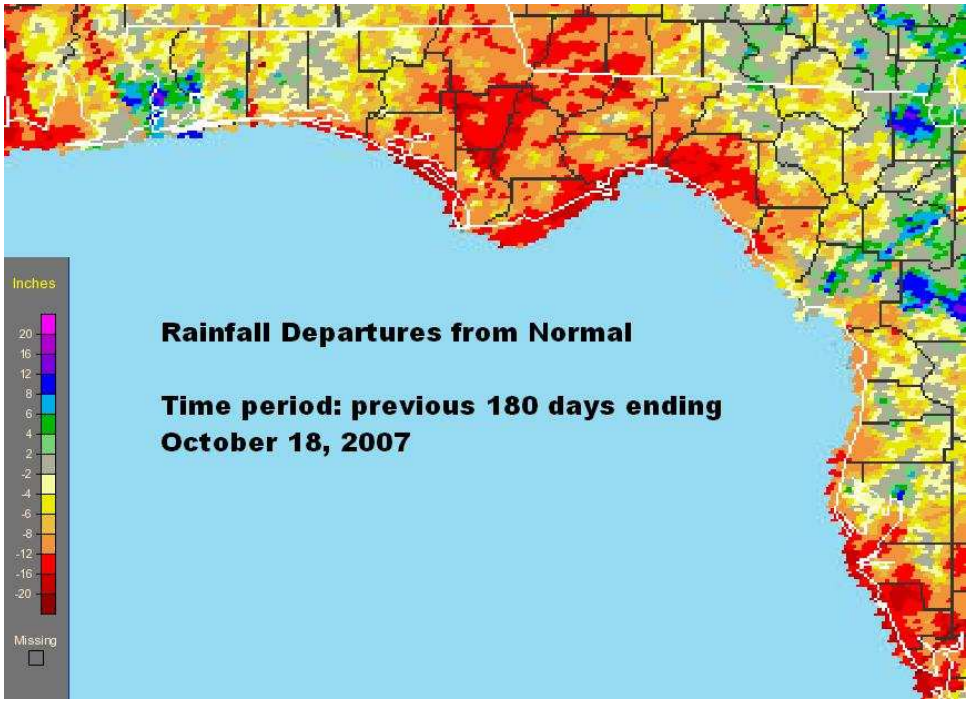
Precipitation during Moderate La Nina Years

Looking back through the climate database to 1950, our region was affected by five moderate La Nina events. These events shared similar impacts in that overall precipitation for a 6 month period between October and March was below normal. The chart below is precipitation totals at Tallahassee for each of these La Nina years. The 1971-2000 climate average for Tallahassee is also provided for comparison. While there are some notable exceptions (December 1973 and 1975), precipitation on average runs a few inches below normal each month for moderate La Nina years.

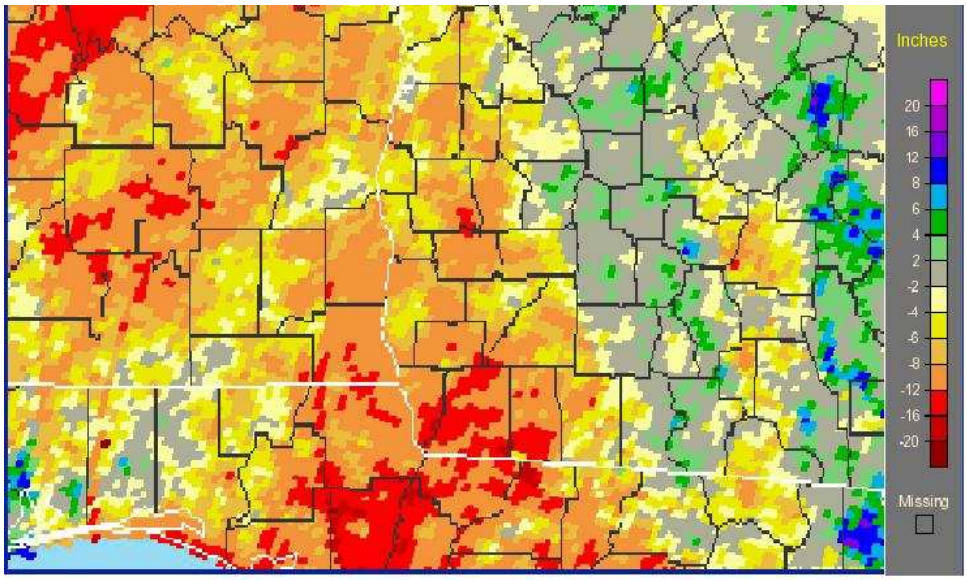


	Oct	Nov	Dec	Jan	Feb	Mar
1955-56	1.44	0.97	2.6	5.09	5.47	2
1973-74	2.35	3.21	7.46	3.36	2.87	3
1975-76	4.41	1.5	7.83	5.53	1.21	5.3
1998-99	0.18	1.39	1.66	4.27	1.64	3.23
1999-00	1.62	2.22	2.55	2.58	1.34	3.36
30 Year Average	3.25	3.86	4.1	5.36	4.63	6.47

Drought Conditions across the Region

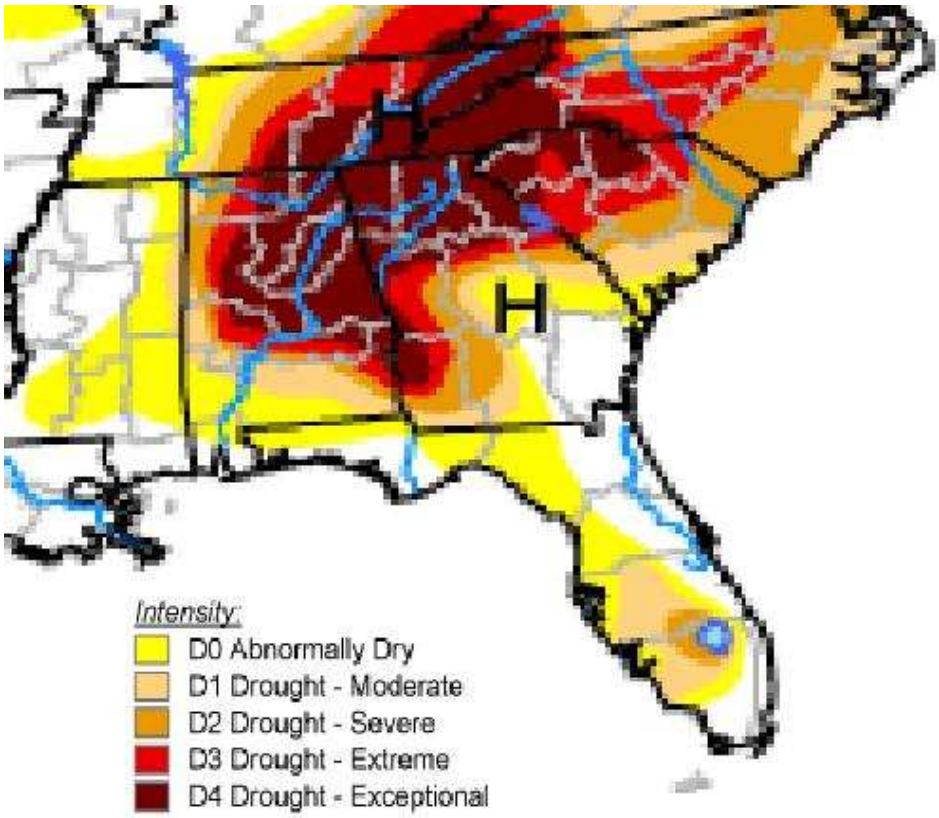


Rainfall departures for North Florida have been significant across the Apalachicola River basin. Deficits in this area have been as great as 20 inches in places over the past 180 days. Significant rainfall was received around the middle of October across the Western Florida panhandle which has diminished the magnitude of the deficit.



Rainfall Departures from Normal
Time Period: previous 180 days ending October 18, 2007

Rainfall deficits in Southeast Alabama and Southwestern Georgia, while not as extreme as in Florida, are significant along the Alabama, Georgia border. Rainfall late in the summer months brought much needed relief along the Interstate-75 Corridor yielding near normal precipitation for this region for the 180 day period.



The US Drought Monitor has indicated for some time that extreme to exceptional drought has continued across portions of the southeast. Due to recent rains, especially across the Florida Panhandle, the latest drought monitor update, ending November 6th, shows the highest drought intensities in our region are mainly from Early County in Georgia northward.

With conditions predicted to be drier than normal, worsening of drought conditions are expected to continue through the winter season.

Future spotter newsletters will focus on the ongoing drought conditions. Next month we'll look at how the drought conditions have changed as well as focus on the upcoming severe weather season that occurs in the late winter months.

Finally, please send Kelly Godsey (Kelly.Godsey@noaa.gov) any questions you may have along with any updates on your email addresses or contact information. As always, thank you for being part of our spotter program. We hope you have a Happy Veterans Day!