



NOAA, NATIONAL WEATHER SERVICE, WEATHER FORECAST OFFICE

Miami, Florida 33165

South Florida Dry Season Outlook 2011-2012

High Likelihood of Drier than Normal Conditions this Coming Winter and Spring

October 21st, 2011: After an exceptionally wet two-week period, the dry season has arrived in South Florida on the heels of the cold front which passed through the area late Wednesday. The 2011 rainy season, a trademark of South Florida summers, began on June 9th and ended on October 19th. The June 9th start was the latest on record (going back to 1956), with the end date of October 19th being very close to the historical median date of October 17th. The 2011 rainy season lasted a total of 133 days, 20 days shorter than the average of 153 days. Rainfall during the rainy season averaged around 36 inches over southeast Florida and 28 inches over the interior and southwest Florida (Figures 1 and 2). These amounts were generally near normal for the period between June and October, but due to the shorter-than-normal duration of the 2011 rainy season, ended up being 5-7 inches less than what is observed during a typical rainy season.

The relatively short rainy season and correspondingly low rainfall amounts came after a very dry beginning winter and spring of 2011. Yearly rainfall so far to date remain well below normal over most of southeast Florida and along the Gulf coast of southwest Florida, where 2011 rainfall is presently anywhere from 6 inches to as much as 24 inches below normal for the year. In contrast, portions of the Everglades and Big Cypress Preserve as well as areas west of Lake Okeechobee have observed above normal rainfall this year (Figure 3). The net effect of a dry 2011 over and north of Lake Okeechobee has resulted in a persistently low Lake Okeechobee level.

La Niña and Potential South Florida Impacts

After a brief break this summer, La Niña conditions have returned to the equatorial Pacific Ocean and the National Weather Service forecast for the upcoming winter and spring season of 2011-2012 is for La Niña conditions to persist. [La Niña is the cold water phase of the ENSO](#) (El Niño Southern Oscillation) cycle, and is characterized by a cooling of waters in the central and eastern equatorial Pacific waters. This cooling of the equatorial Pacific to below normal values affects large scale weather systems across North America. The main impact of La Niña in Florida is typically a very dry and less stormy winter and early spring. This often leads to water management issues as well as an increased risk of wildfires next spring.

The present La Niña developed in the summer of 2010 and is now in its second year. [Latest forecasts and outlooks from NOAA's Climate Prediction Center](#) indicate that this La Niña will probably reach weak to moderate levels during the 2011-2012 winter season. This scenario strongly favors drier-than-normal conditions during the south Florida dry season (November through April).

This high likelihood of drier-than-normal conditions can be attributed to a northward shift in the jet stream which normally occurs during La Niña episodes (Figure 4). This more northward position of the jet stream over the northern United States keeps winter storm systems north of Florida, while at the same time favoring high pressure over the western Atlantic and southeast United States (Figure 5). This pattern tends to increase atmospheric stability and decrease available moisture as frontal systems move through Florida. The end result is a strong tendency towards less storminess and overall rainfall during what is already a dry time of year in south Florida

Previous weak to moderate La Niña episodes resulted in South Florida dry season rainfall totals which were well below normal, averaging about 65-70% of normal for the six-month period from November to April. The average dry season rainfall over south Florida ranges from 12 to 15 inches over interior and western sections to 15 to 21 inches over eastern metro sections.

The second year of past multi-year La Niña episodes is associated with very dry yearly rainfall across South Florida. During the previous second year of multi-year events (1951, 1956, 1975 and 2000), calendar year rainfall amounts were among the lowest on record for many south Florida locations.

Winter and spring temperature trends are not as well defined for La Niña events as for precipitation. [The temperature outlook from the Climate Prediction Center](#) calls for an enhanced likelihood of below normal temperatures during the early part of the winter, followed by near to above normal temperatures in the February-April time frame. This is a fairly

typical La Niña pattern where a stronger-than-normal subtropical high pressure area from the Atlantic sets up near Florida later in the winter and results in the predominance of wind flow off the warm Atlantic waters as well as less cloud cover. However, many La Niña winters have been characterized by episodes of cold air plunging deep into Florida (similar to 2010-2011), especially in December and January. Therefore, a moderate to severe freeze is not out of the question for parts of south Florida.

A key variable, or wild-card, is the presence of intra-season regional and global weather patterns that either counteracts or enhances the prevailing La Niña pattern. Some examples of these variations, or oscillations, are the [Pacific-North American Pattern \(PNA\) and the North Atlantic Oscillation](#) (NAO, Figure 6). The average winter temperatures over south Florida range from 64 to 66 degrees over interior and western areas to 67 to 69 degrees over eastern metro areas. These oscillations are only predictable out to 2 weeks, therefore a reliable forecast of which phase will be present during the winter is virtually impossible.

The threat of wildfires increases substantially during very dry winter and spring periods, therefore the expectation of a drier than normal 2011-2012 dry season increases the risk of wildfires, particularly during the months of March, April and May. An additional concern is the decrease in water levels which occurs every dry season, but could be exacerbated this coming dry season by below normal rainfall. Therefore, South Floridians are urged to stay informed and heed the advice of local officials regarding the wildfire threat as well as issues relating to water management and conservation.

Stay tuned to local media outlets and NOAA Weather Radio for the latest weather information. For more information on the expected impacts of La Niña in south Florida, as well as for updated local weather information and outlooks, please visit the National Weather Service in Miami web site at weather.gov/southflorida. You can also visit our [South Florida Climate Page](#).

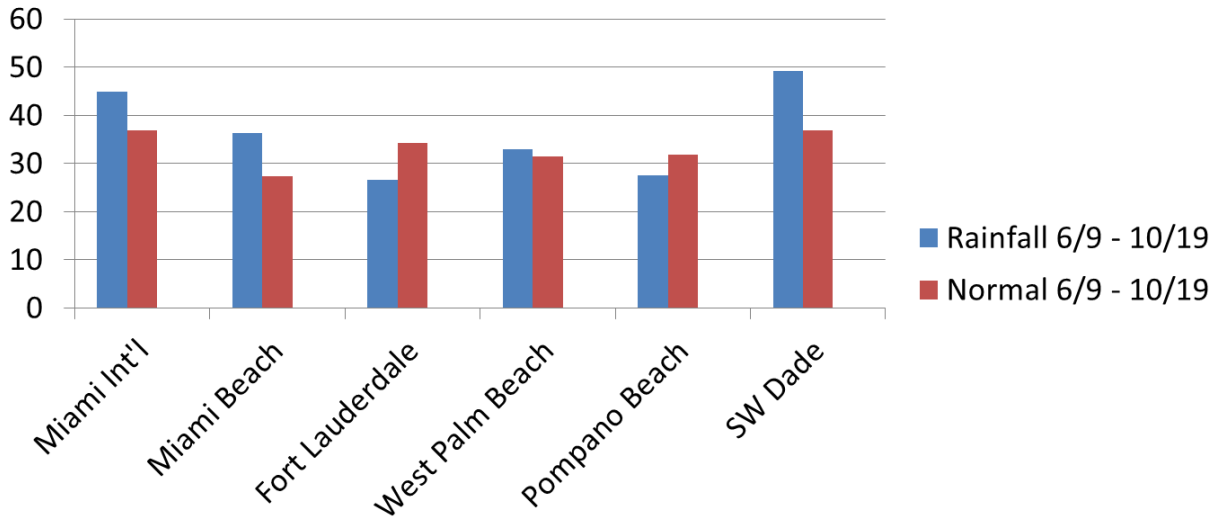


Figure 1: SE Florida Wet Season 2011 Rainfall (inches)

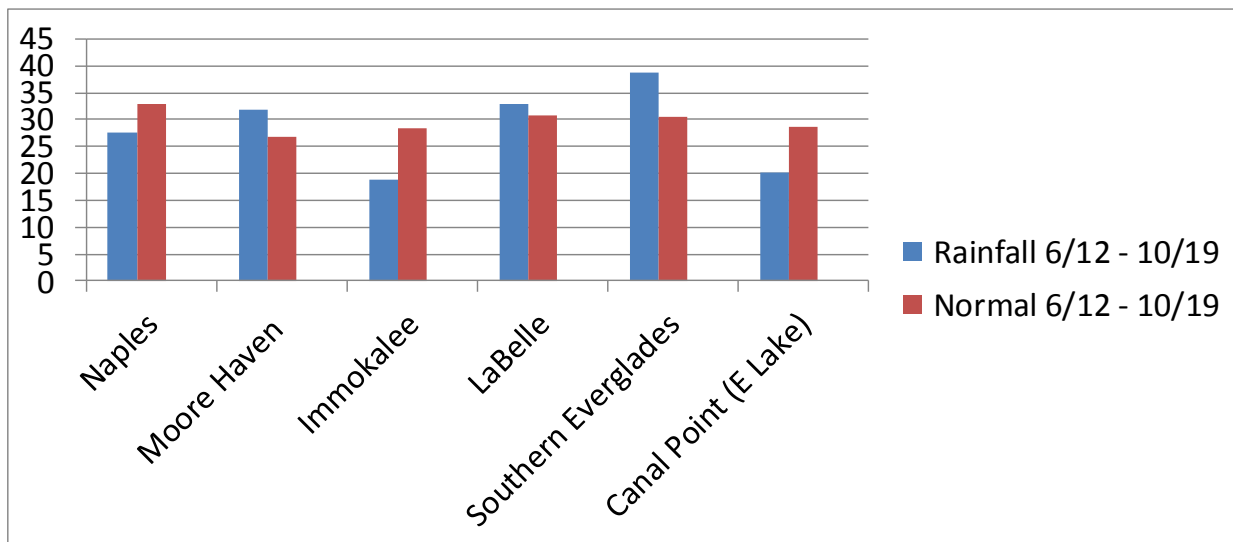


Figure 2: SW Florida Wet Season 2011 Rainfall (inches)

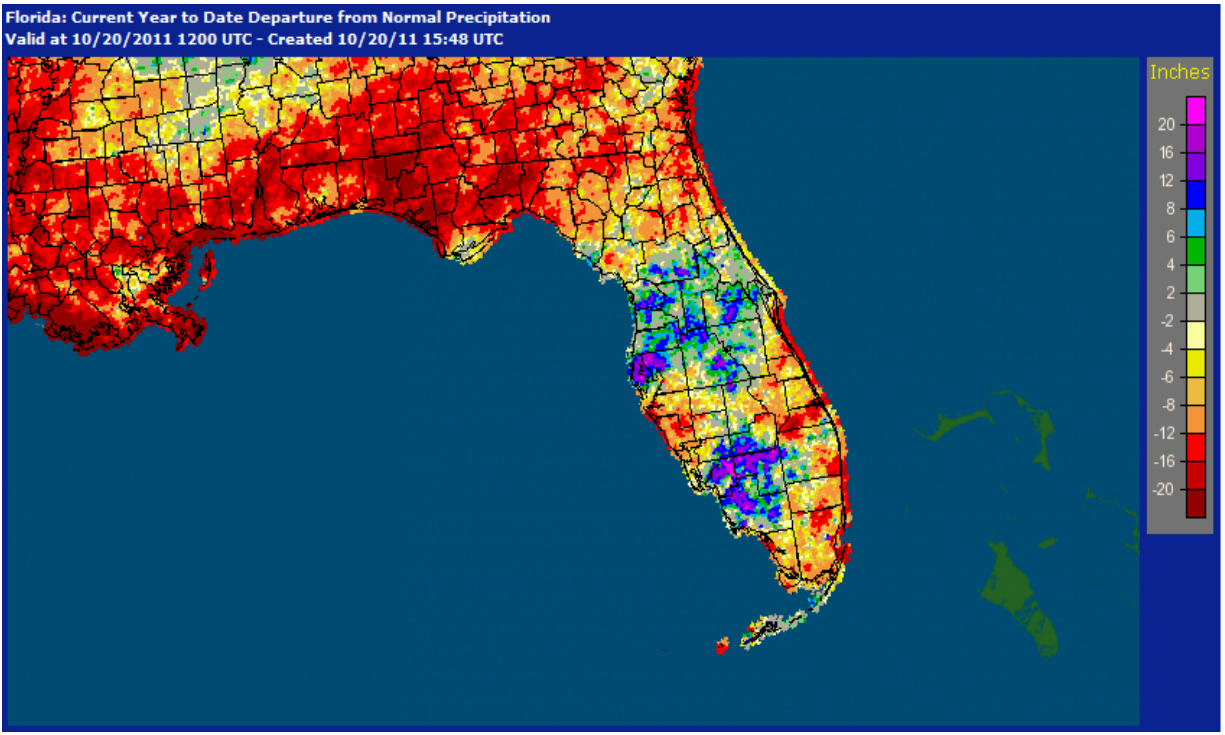


Figure 3: 2011 Year-to-date Rainfall Departure (inches) from Normal Ending 8 AM October 20th

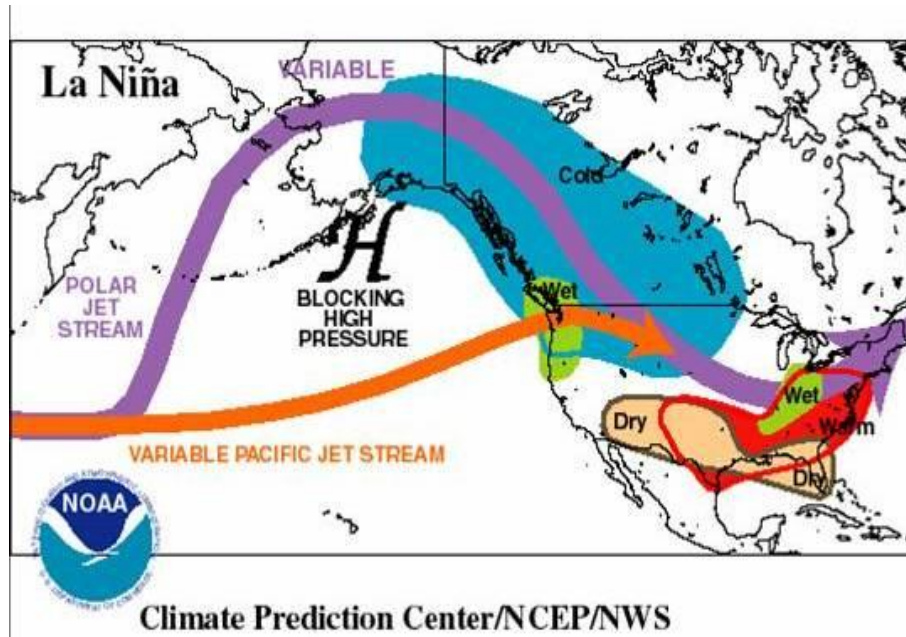


Figure 4: Typical weather pattern observed during La Niña winters.

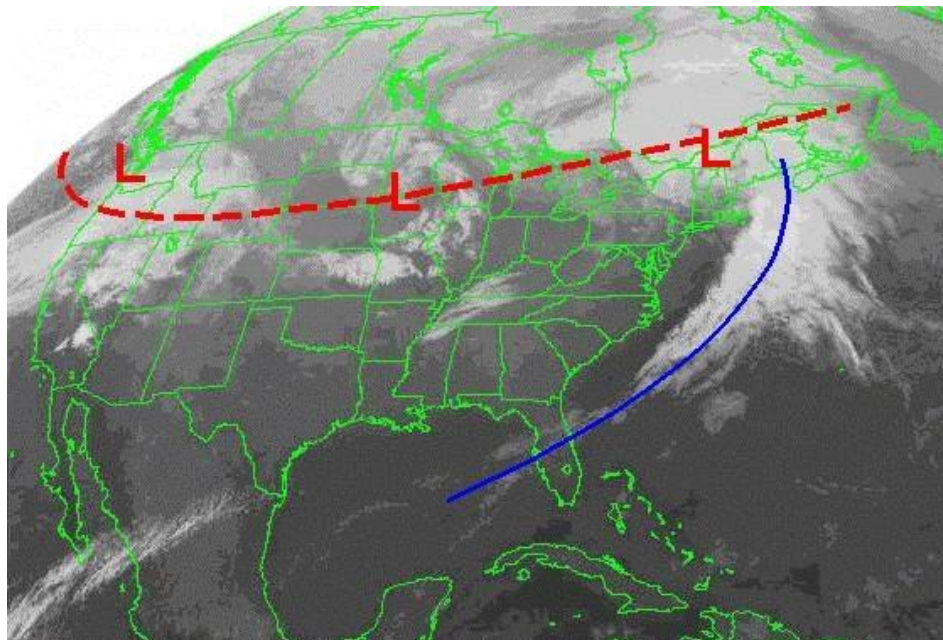


Figure 5: Storm Track during Strong La Niña Episodes (courtesy NWS Melbourne)

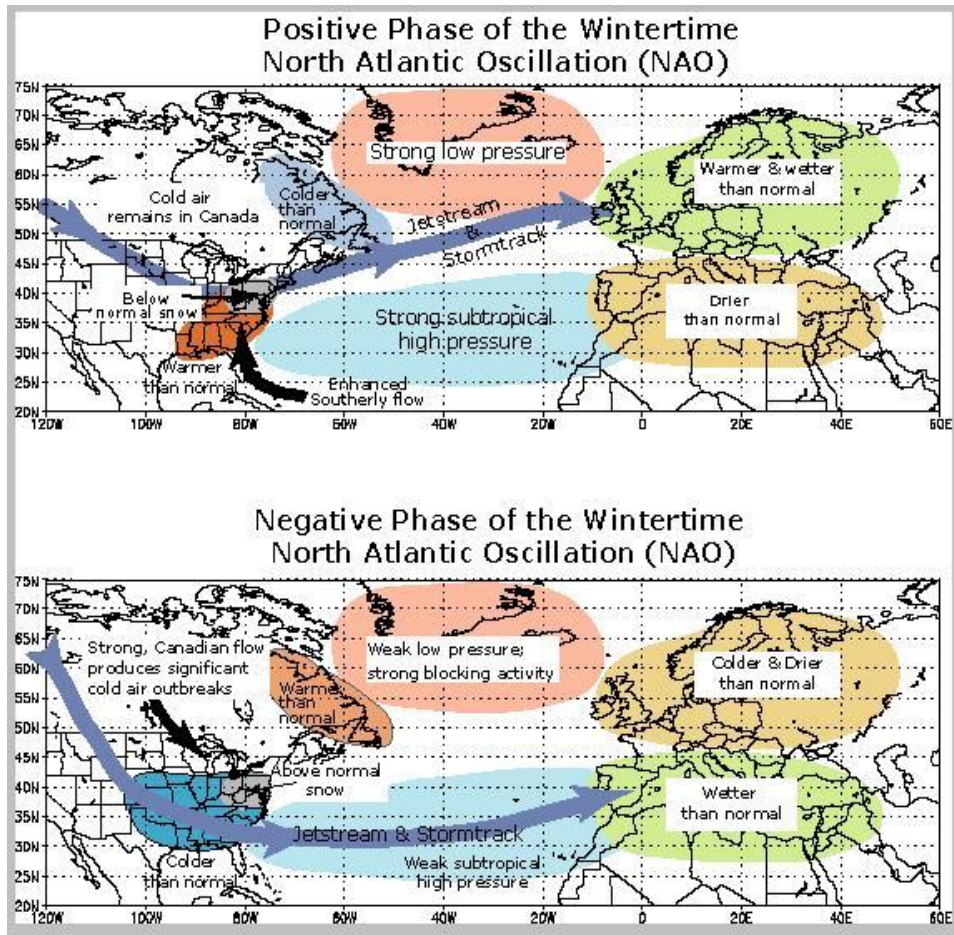


Figure 6: Positive and Negative Phases of the NAO

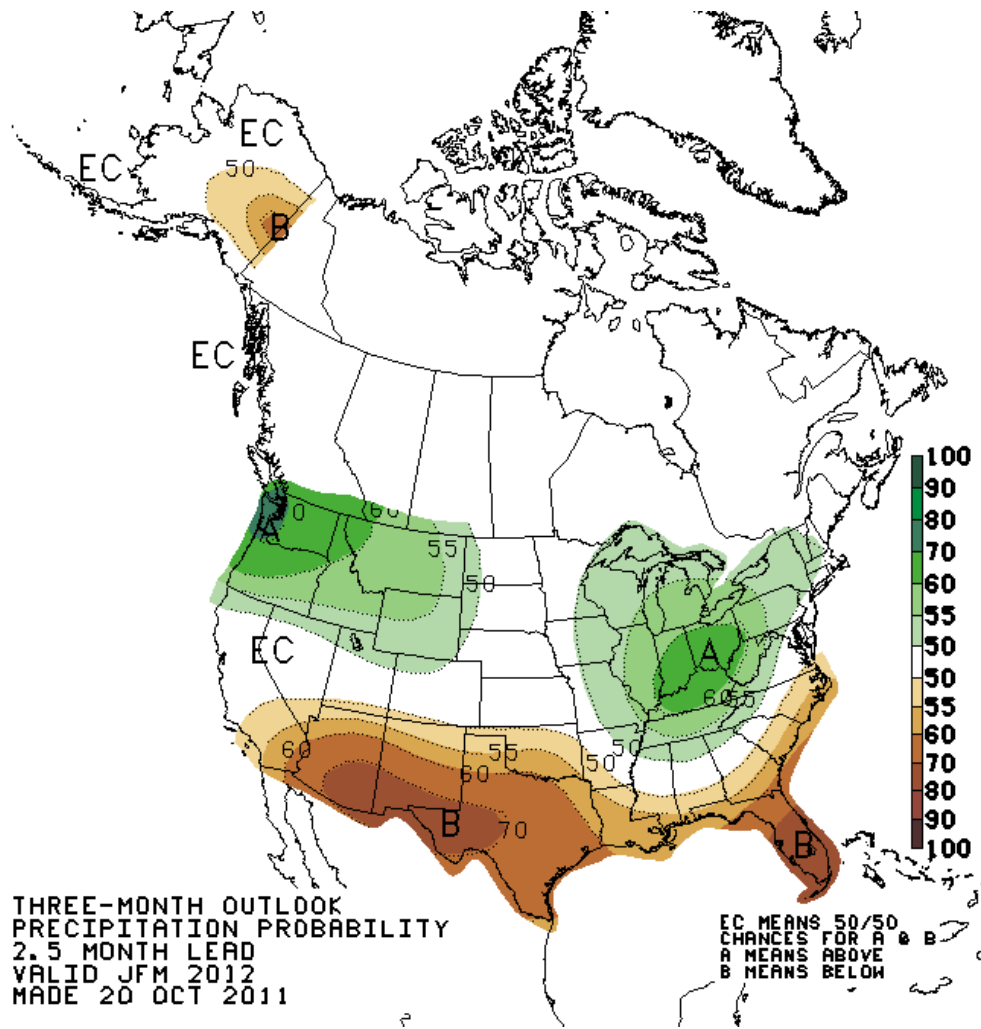


Figure 7: CPC Precipitation Outlook January-March. South Florida has a greater than 70% chance of drier-than-normal conditions.

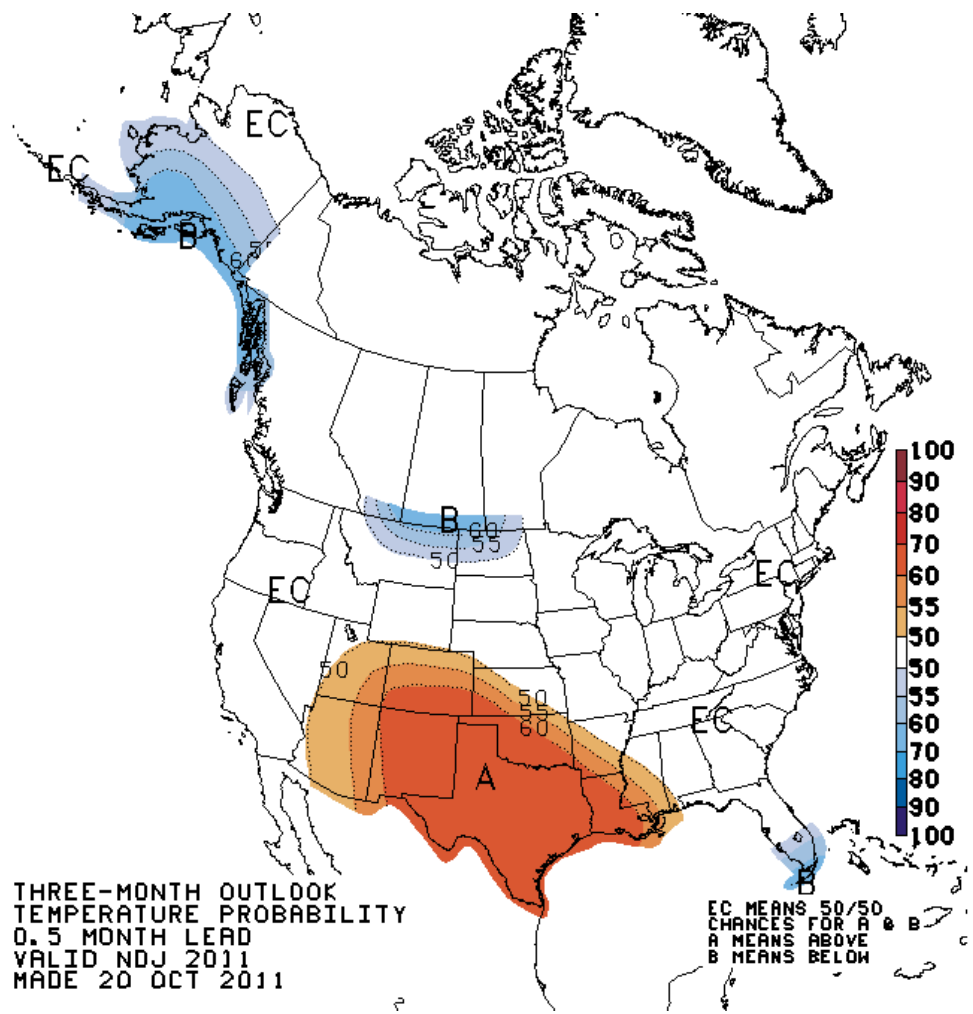


Figure 8: CPC Temperature Outlook November-January. South Florida has a 50 to 60% chance of below normal temperatures.