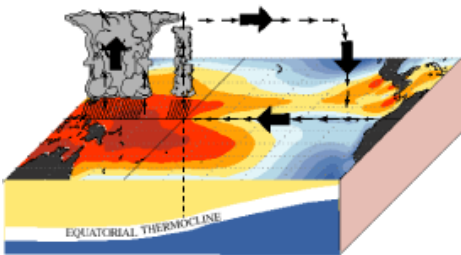


**El Niño Southern Oscillation (ENSO): what is it?** The El Niño Southern Oscillation (ENSO) describes the variable surface temperatures and atmospheric conditions in the Pacific Ocean near the equator. ENSO is the most significant source of seasonal climate variability in the Southeastern U.S., and information about ENSO is the leading factor in many seasonal climate forecasts. Based largely on sea surface temperatures, ENSO is divided into 3 phases:

(figures of Pacific Ocean between southeast Asia and South America; NOAA Climate Prediction Center)

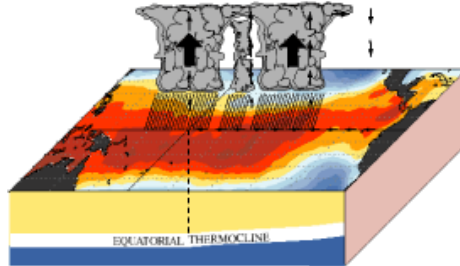
- **Neutral:** The neutral phase occurs about 50% of the time
- **El Niño:** the warm\* phase occurs about 25% of the time
- **La Niña:** the cold\* phase occurs about 25% of the time

December - February Normal Conditions



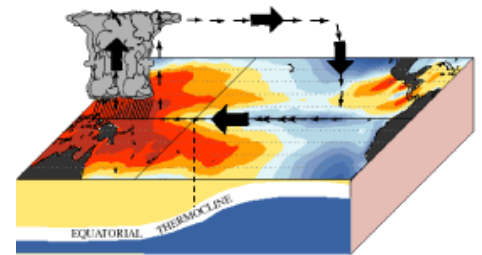
Ocean temperatures and rainfall are greatest in the western Pacific and the ocean surface winds travel from east to west (these winds are called easterlies)

December - February El Niño Conditions



Ocean temperatures are warmer than average in the central and eastern Pacific, easterlies are less strong, the area of heaviest rainfall moves east

December - February La Niña Conditions



Ocean temperatures in the eastern Pacific are cooler than average; the easterlies become stronger, and the area of heaviest rainfall moves west

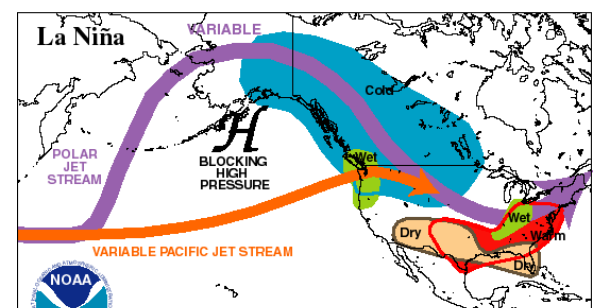
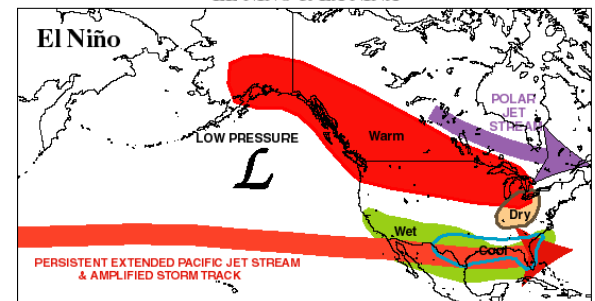
\* warm and cold phases here indicate Pacific Ocean surface temperatures, not air temperatures in the southeast U.S.

## How does ENSO impact climate in the southeast U.S.?

Why do we care what the ocean and atmosphere is like in the tropical Pacific? This information plays a very important role in forecasting seasonal climate. A forecast of seasonal climate is the best prediction of what our climate will be like in the next few months. Seasonal climate forecasting using ENSO information gives a better outlook of climate than just using 30-year climate averages to predict the coming months' climate.

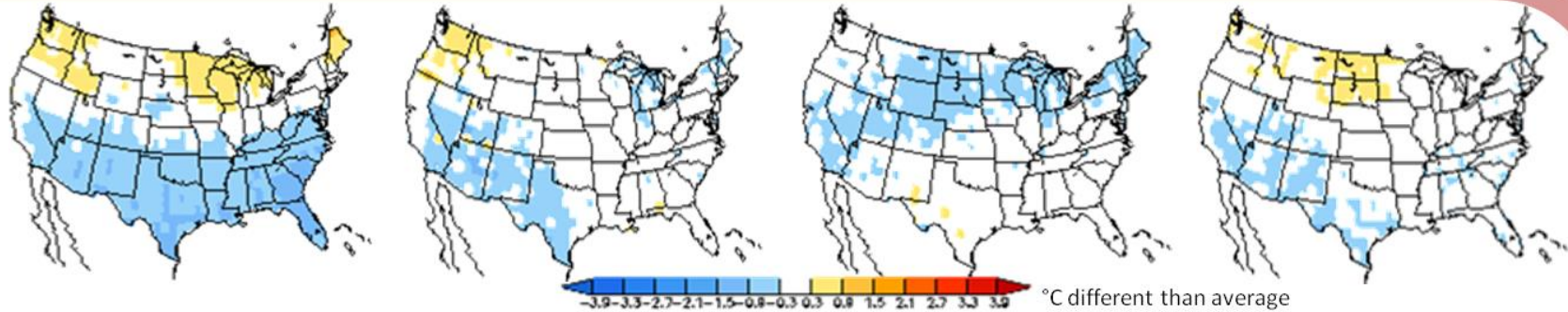
The strongest impacts of ENSO on climate in the Southeast are during the winter months. Typically for much of the Southeast U.S., **El Niño** conditions result in a **cool, wet winter/spring**, and **La Niña** conditions usually result in a **warm, dry winter/spring**. However, the northern parts of GA and AL are usually wetter than average during a La Niña winter. La Niña winters can sometimes trigger droughts that persist into the coming seasons. Wet conditions during an El Niño year may delay planting dates due to excessive soil-water. The following figures from NOAA show the average impacts of El Niño and La Niña in the U.S.

TYPICAL JANUARY-MARCH WEATHER ANOMALIES AND ATMOSPHERIC CIRCULATION DURING MODERATE TO STRONG EL NIÑO & LA NIÑA

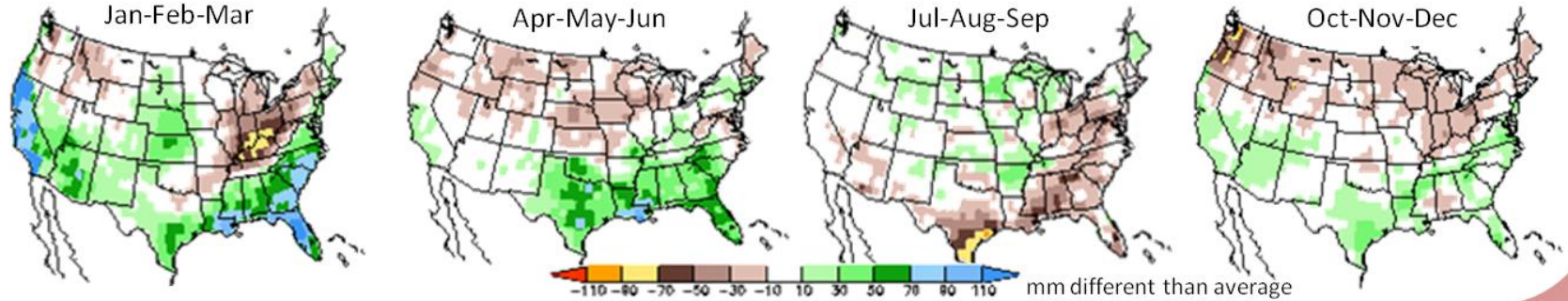


Climate Prediction Center/NCEP/NWS

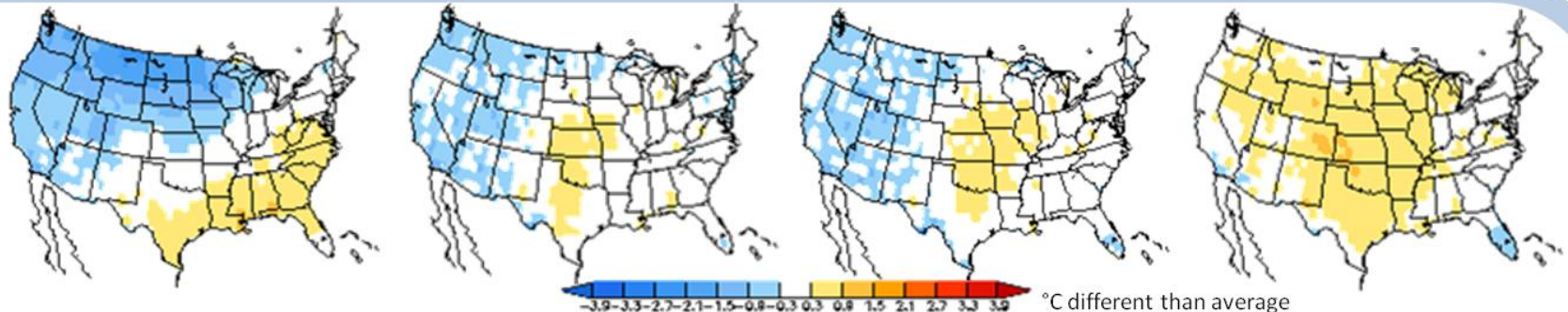
changes from average  
Temperature



El Niño  
Precipitation



changes from average  
Temperature



La Niña  
Precipitation

