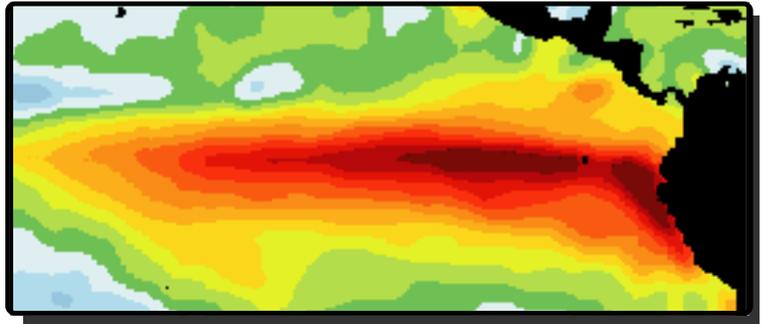


North Carolina Weather and El Niño / La Niña

For North America and much of the globe, the phenomenon known as El Niño is a dominant force causing variations in regional climate patterns. While initially thought to only impact areas in the eastern Pacific, recent research has shown that El Niño and its counter part La Niña impact weather and climate patterns thousands of miles away.



El Niño is the abnormal warming of ocean temperatures in the eastern tropical Pacific Ocean. La Niña is the opposite - the cooling of ocean temperatures in the tropical Pacific. These patterns, which occur every 2- 7 years, affect the climate in North Carolina.

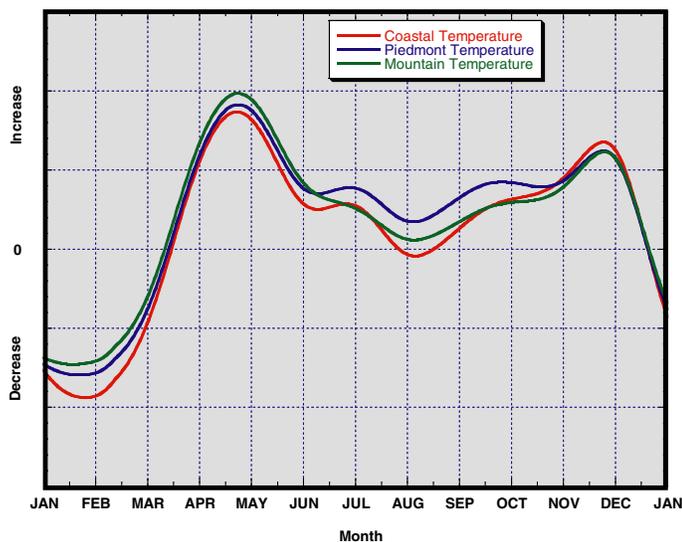
In 1997, just prior to the onset of a large El Niño event in the Pacific Ocean, the State Climate Office completed a three-part study to investigate the impacts of the El Niño and La Niña phenomena on the climate of North Carolina. Even though the waters of the Pacific Ocean are thousands of miles away, they impact North Carolina weather, and discoveries of such global teleconnections are dramatically shaping the way in which we look at regional climate prediction.

Research conducted at the SCO indicates more storms and increased winter precipitation during El Niño events. In contrast, decreased summer rainfall occurs during El Niño events, partly due to a decrease in the number of tropical cyclones that develop in the North Atlantic Basin. Climatic conditions in North Carolina during La Niña conditions tend to be opposite those seen during El Niño events, including an increase in the number of tropical cyclones that develop in the North Atlantic Ocean.

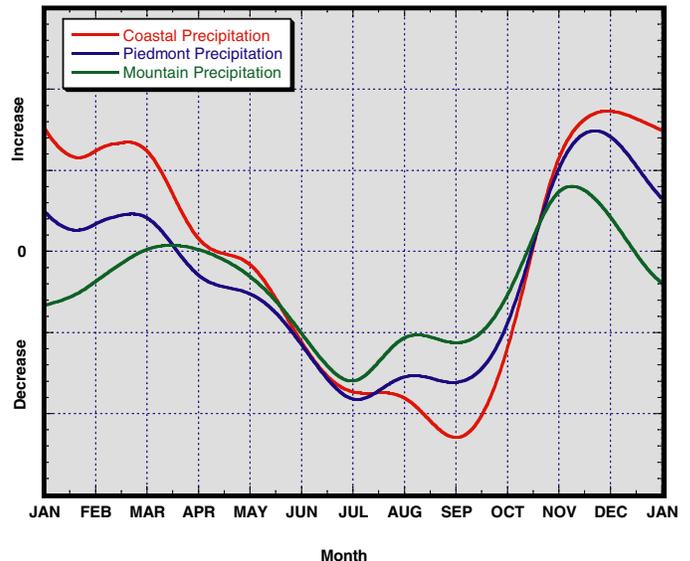
The State Climate Office has also studied the relationship between severe weather, such as tornadoes, and El Niño / La Niña. In North Carolina, it appears that there are more tornadoes during La Niña events.

Research into regional and global weather and climate patterns continues to guide and improve our understanding of the complexities of local climate and is crucial for improved seasonal and long-term forecasts.

Change in Temperature during El Niño Events



Change in Precipitation During El Niño Events



Using long-term climatic records, we see that El Niño conditions tend to produce increased precipitation in the winter and decreased precipitation during the summer and autumn. El Niño conditions also tend to discourage the formation of tropical cyclones in the Atlantic Ocean.