

February, 2019 Newsletter

President's Message



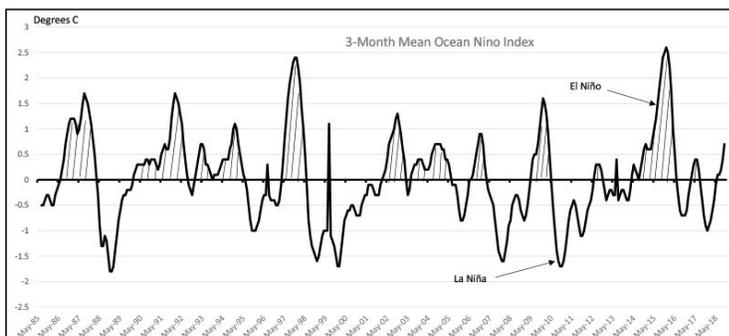
We're all interested in what affects our weather patterns here on the Big Island, and one of the factors is the presence – or absence – of an “El Niño” (warmer than usual sea temperatures at the equator, reversing normal direction and flowing eastward). Strong El Niño conditions can wreak havoc on weather patterns across the globe. What might happen here on our islands and in our neighborhoods?

Every month the National Oceanic and Atmospheric Administration (NOAA) publishes their “El Niño/Southern Oscillation (ENSO) Diagnostic Discussion” which talks about the likelihood of the development of El Niño conditions in our Pacific Ocean. The latest report is available at http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/.

This report indicates that there is a good chance of a mild El Niño developing this winter and continuing into the spring. It is not yet clear whether it is likely to continue into the summer and fall, but it is well known that El Niño conditions affect the number and strength of the tropical storms that form in the eastern Pacific Ocean in the later months of the year and which can then track westward towards Hawai‘i.

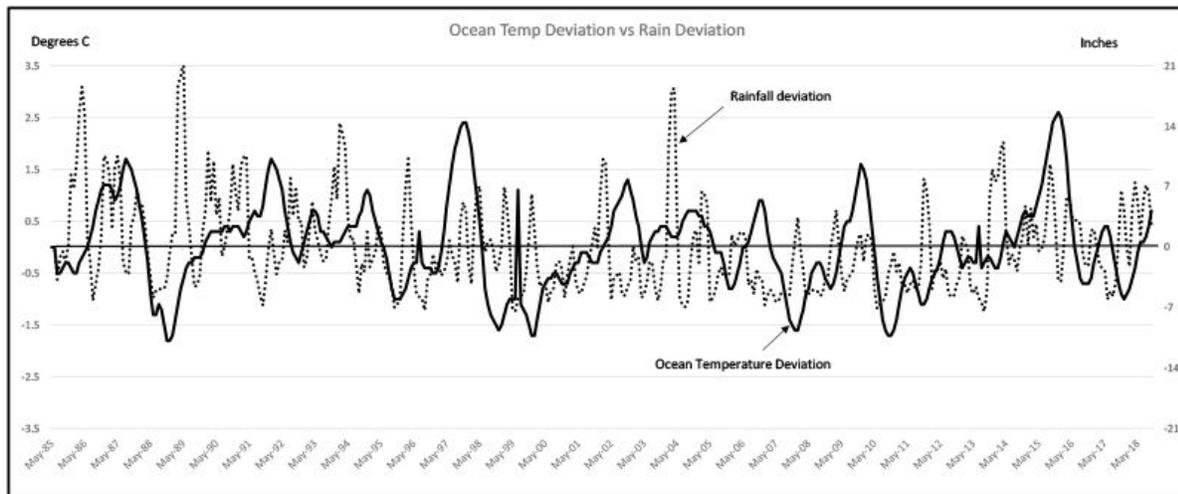
But what about the effect of an El Niño on our day-to-day weather and ocean conditions? NOAA publications list a number of impacts on Hawai‘i from an El Niño....

- Rainfall: More rain in the beginning of season; then rapidly less rain - a drier wet-season.
- Tradewinds: Weaker winds, with occasional westerly “Kona” winds.
- Sea Surface: Near to slightly above normal



The data points shown in the 3 Month Mean Ocean Niño Index chart are running three-month averages.

Back to correlating El Niño years to rainfall amounts in our part of (the) Hāmākua: To see whether local rainfall was affected by an El Niño I averaged our monthly rainfall over running three-month periods and normalized those averages to the long-term average, which reveals periods of above average rainfall and below average rainfall. (Thank you, Jim Millar for the rainfall data!) The chart below shows the comparison of the two factors.



It is easy to see that there is not much correlation between the ocean temperature changes that accompany an El Niño or La Niña and the rainfall in our area. High sea temperatures (El Niño) are not matched to high – or low - rainfall amounts.

Correlation between two sets of data can range from -1.0 (perfectly inversely correlated) to +1.0 (perfectly correlated). If the correlation is zero, it means that there is no correlation at all. The correlation between rainfall and ocean temperature is 0.11, which means that there is only a very tiny correlation between El Niño conditions and rainfall, at least here in Pa`auilo

