



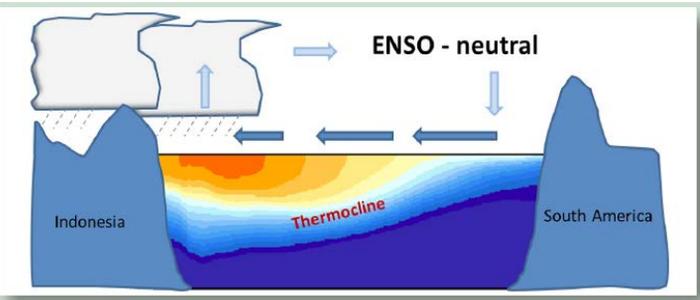
El Niño and its Impacts on the Republic of the Marshall Islands



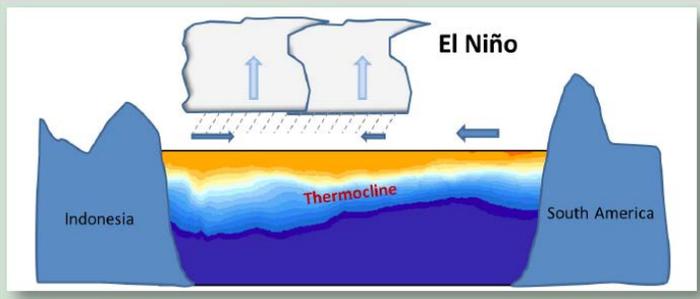
What is El Niño?

The El Niño – Southern Oscillation (ENSO) is a recurring climate pattern involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean and the patterns of sea level pressure, lower- and upper-level winds, and tropical rainfall across the Pacific basin. On periods ranging from about two to seven years, the surface waters across a large swath of the tropical Pacific Ocean warm or cool by anywhere from 1°C to 3°C, compared to normal. This irregular oscillation between warm and cool patterns, referred to as the ENSO cycle, directly affects rainfall distribution in the tropics and can have a strong influence on weather across the Pacific basin. **El Niño** and **La Niña** are the extreme phases of the ENSO cycle; between these two phases is a third phase called **ENSO-neutral**.

ENSO-neutral: Under normal conditions strong trade winds blow from the east along the equator, pushing warm water into the western Pacific Ocean.



El Niño conditions occur when abnormally warm waters build in tropical region of the central and eastern Pacific Ocean and are usually associated with a weakening of the easterly trade winds, sometimes even reversing to westerlies. Consequently, tropical rains that usually fall over Indonesia move eastward; sea level decreases in the western Pacific; and the vertical, thermal structure of the ocean and coastal and upwelling currents are changed.



The **Thermocline** is a layer of water in which there is an abrupt change in temperature separating the warmer surface water from the colder deep water.

El Niño in the RMI	
Rainfall	Less
more at first, but then much less	↓
Trade Winds	Less
weaker, with occasional westerly winds	↓
Tropical Cyclones	More
increased risk, as more storms form closer to the islands	↑
Sea Level	Less
lower at first, then gradually recovering	↓
Ocean Conditions	More
warmer in the year after El Niño	↑
See back page for more details	

Every El Niño is a little bit different!

El Niño conditions can start to develop as early as May or June and typically reaches maximum strength during December; the conditions then subside towards normal conditions by June of the following year. However, the evolution and duration, strength and impacts of individual El Niño events can vary, in some cases greatly. This makes constant monitoring and awareness extremely important for decision makers across multiple sectors.

