

El Niño

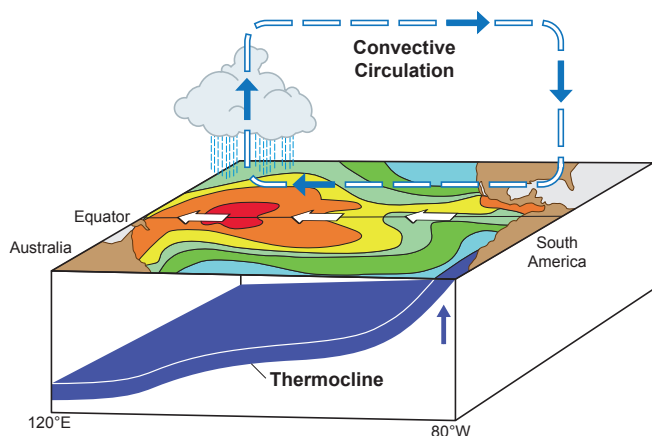
El Niño events affect freshwater supply

PacIOOS
Pacific Islands Ocean Observing System

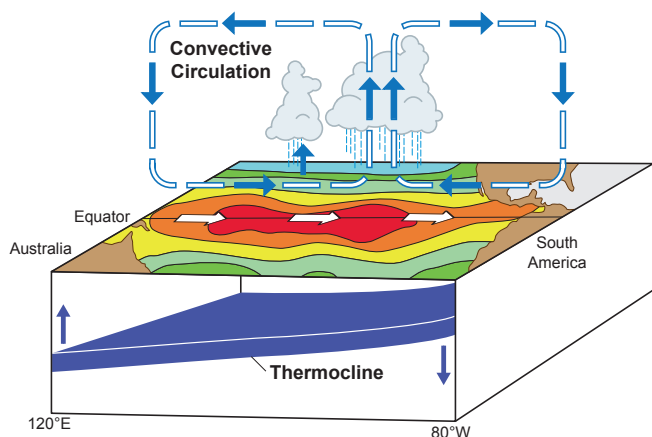
What is El Niño?

- Disruption in the ocean-atmosphere system in the Pacific Ocean that has important consequences for weather and climate around the globe.
- Unusually warm ocean temperatures in the Equatorial Pacific Ocean.

Normal Conditions



El Niño Conditions



Changes in the Pacific

During normal conditions (top), trade winds blow towards the west causing warm water to pile up in the western Pacific and cold water (blue area) to upwell in the eastern Pacific. During El Niño conditions (bottom), trade winds weaken in the central and western Pacific causing reduced upwelling and warmer surface temperatures in the east. Rainfall follows the warm water eastward — decreasing rainfall in the western Pacific. (redrawn from NOAA)

How does El Niño affect Pacific Islands?

- Decreased rainfall and drought in the Western Pacific.
- During El Niño years, drought is most likely in the Pacific Islands during January to March.
- Can cause a reduction sea level by one (1) foot or more in the Pacific Islands.

Drought

Rainwater and groundwater supply most of the freshwater for island communities. Decreased rainfall during El Niño years makes island communities more vulnerable to short supplies of freshwater. (Photo credit: Ship Bright)



How often are there El Niño events?

- El Niño events occur irregularly, about every 2–7 years.
- Effects can last from 12–18 months.

How is El Niño detected?

- A network of buoys maintained by NOAA monitors changes in temperature, currents, and winds in the Pacific Ocean.
- Monitoring allows more accurate predictions of an El Niño event months or a few seasons ahead.

Look for other PacIOOS & Sea Grant factsheets to find out how you can prepare for El Niño!

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