

El Niño

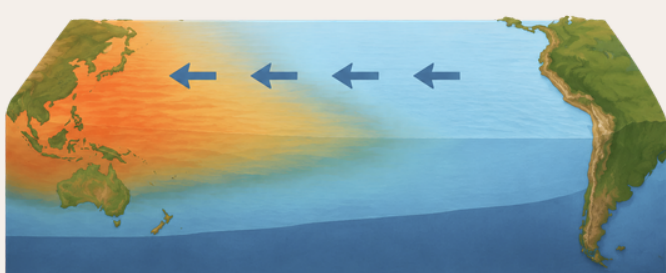
When ocean heat modifies global climate

El Niño is a natural climate phenomenon that occurs when sea surface temperatures in the central and eastern equatorial Pacific Ocean become warmer than average, causing changes in weather patterns across many regions of the world

How does it occur?

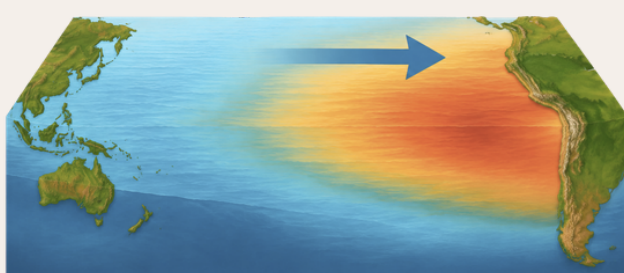
1 Trade winds weaken

The persistent easterly **winds** that normally push warm Pacific waters toward Asia **become weaker**



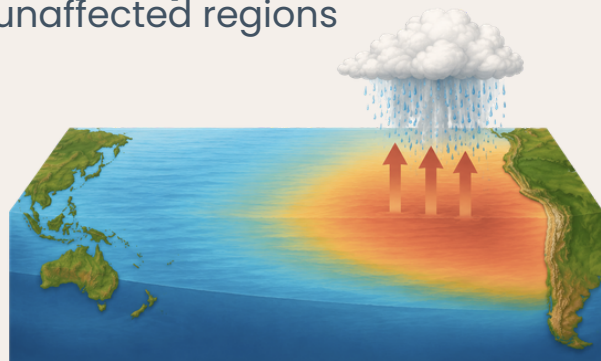
2 Warm water moves eastward

Warm subsurface waters spread towards the **central and eastern Pacific**, rising to the surface near South America



3 The ocean transfers heat to the atmosphere

As water temperatures increase, the **air above warms** and rises, promoting the formation of **clouds and precipitation** in otherwise unaffected regions



4 The global climate is changing

These changes are transmitted through the **atmospheric circulation** and can influence temperatures, precipitation patterns, and the frequency of extreme weather events globally



Worldwide implications



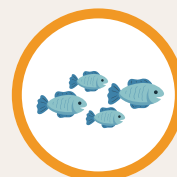
Increased rainfall and flooding

This is especially the case along the western coast of South America



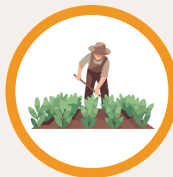
More heat and droughts

Indonesia and Australia often experience droughts and higher temperatures



Effects on the oceans

Variations in sea temperature can alter marine ecosystems and affect fishing activities



Social and community impacts

Extreme events disrupt agriculture, water supply, health systems, and infrastructure



Spread of infectious diseases

Greater transmission of infectious diseases due to rising temperatures and increased precipitation



El Niño occurs every **2 to 7 years** and can have significant impacts on a global scale. In addition, **global warming** may increase the strength, frequency, and duration of these events