

# PRIMER ON CLIMATE CHANGE

by Tom Kuennen

## 'Strange' Weather Due To Ocean Cycles, Not Global Warming

July 2000 -- If you think the weather has been strange, you're not alone.

Weather will always vary from "normal". But excessive heat spells, droughts, cold waves or flooding just about everywhere the past few years have got some people thinking that the unusual weather is humanity's fault and that it's caused by presumed man-made global warming.

Nothing could be further from the truth.

Instead, climate variation is normal and is caused by natural phenomena such as the El Nino, La Nina and the newly recognized PDO (Pacific Decadal Oscillation) movements in the ocean and atmosphere.

Under conventional conditions, along either side of the Equator, trade winds from the east blow westward across the Pacific, piling up warm surface water in the west. This allows cold, nutrient-rich water along the Pacific coast of South America to well upwards and enhance fishing there.

Under El Nino conditions, easterly trade winds diminish and warm water from the western Pacific flows eastward, overriding the colder water. The cold water -- which supports sea life better than warm water -- is blocked from upwelling along the coast of South America, making fishing less productive and provoking food shortages.

With El Nino, the warm surface water feeds tropical storms that soak normally drier regions in South America, while drought may rage in Asia. In North America, altered jet stream patterns keep the coldest air in Canada and cause mild winters in the United States.

Under La Nina conditions, strong easterly trade winds pile the warm water toward Asia, creating excessively rainy weather there. An abundance of upwelling cold water off South America takes its place, improving fishing

but with reduced evaporation and potential drought.

An ongoing La Nina pattern since May 1998 was blamed for drought and heat waves in the United States in 1999, but was waning in summer 2000.

While the ancient Inca of Peru knew of these vast movements of water and their effect on weather, modern science did not start studying the El Nino and La Nina phenomena until the last two decades.

Bolstered with vast amounts of satellite data and computers to compile the data, climatologists no longer look upon these events as aberrations, but as normal cycles of climate. And they are uncovering no evidence linking these cycles to presumed man-made global warming.

Now, in the past two years, another cyclic climate phenomenon -- the PDO - - has been identified. Sometimes called the "El Nino of the North", the PDO is a linked ocean/atmosphere shifting that is theorized to unfold in the north Pacific over 20- to 40-year periods. These massive shifts from "warm" to "cool" to "warm" Pacific Ocean conditions impact weather, ocean salinity and regional industries like salmon fishing.

The PDO may even affect average global temperatures. A slow rise in average global temperatures early in the 20th century leveled off from 1946 to about 1976, when the PDO was in a "cool" stage, reported the *New York Times* in January 2000.

When the PDO reversed to "warm" from the mid-70s through the 1990s, average global temperatures rose, the newspaper said. Now the PDO has entered a "cool" phase. This could mean colder and wetter winters for the United States in general, but more drought for the American Southwest, warmer weather in the Southeast, and more rain and snowpack for the Northwest and Rocky Mountain states, reported the *Washington Post* in January.

And if that sounds like weather as usual, you're right.

To learn more about climate change, contact The Greening Earth Society at (800) 529-4503, or visit their [web site](#).

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