

Wilhelm Gymnasium

English

Mr. Bartelt

El Niño

Oliver Gobin

Va

EL NINO AND LA NINA

A REPORT BY OLIVER ABOUT EL NINO

TABLE OF CONTENTS

1. Introduction and history of El Nino
2. Description of the phenomena El Nino in contrast to La Nina
3. Global consequences of El Nino
4. Global heating-up in contrast to El Nino

INTRODUCTION AND HISTORY OF EL NINO

The term El Nino (Spanish: “the Christ Child”) was originally used by fishermen along the Pacific coast of South-America to refer to a warm ocean current. The warm current typically appears around Christmastime. That’s why it was named Christ Child.

Fish are less abundant during these warm current periods, so fishermen often take a break to repair for example their equipment. In some years the water is especially warm and the fishermen’s breaks are longer then usual. Over the years the term El Nino has been reserved for these exceptionally strong intervals.

During the past 40 years, nine El Ninos have affected the South American coast. Most of them raised the water temperature not only along the coast, but also in a belt of 5000 miles beyond the Pacific equator.

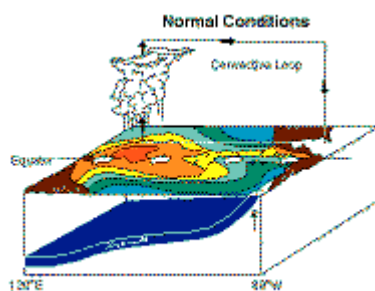
Strong El Ninos can raise the sea temperature for more than 5 degrees and the consequences of those “Super El Ninos” are global.

The last “Super El Nino” appeared during the wintertime of 1982-1983. It raised, for example, the temperature up to 7 degrees and it was the main reason for the world economy crash in 1982-1983. The crash and the El Nino impact amounted to over \$8 billion damages.

DESCRIPTION OF EL NINO

To understand how El Nino affects the climate it is needful to know what the normal conditions (so called “La Nina”) are like.

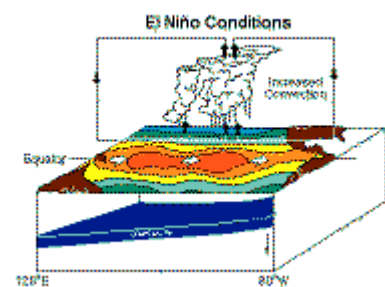
In a La Nina period, the trade winds are blowing westward and are dragging the hot surface water with them. Where the surface water moves away the cold ground water which is rich in nutrients and in fish comes up. The main rain area is centered over Indonesia.



In El Nino years (every 2 to 7 years) the trade winds slowdown so the hot surface water is dragged eastward over the cold water along the entire equatorial pacific. The rain is centered over south America.

The waves determine the position of the monsoons and of the “jet streams” which is the main reason why it is one time raining over America and another time over Indonesia.

El Nino causes the trade winds to ease off so the hot surface water is getting a warming up (by the sun).



The present El Nino developed about as strongly and rapidly as the last super El Nino in 1982-1983. The first symptoms of hotter water than normal appeared in January 1997. A rapid development could be observed after March.

GLOBAL CONSEQUENCES OF EL NINO

Not every El Nino must have global consequences but at least every Super El Nino influences the world. The impacts of El Nino on the temperate climate can be show up. Other climate regions are affected as well, but they are not marked by “typical” El Nino impacts. During wintertime the climate in temperate latitudes is mostly influenced by El Nino (even during wintertime, El Nino is only one of many factors that influence temperate climates). For example, most El Nino winters are mild over Canada and parts of the northern United States and wet over the southern United states (from Texas to Florida).

The last Super El Nino took place in 1982-1983. It is another good example to show how El Nino affects the whole world.

At least 2000 men died and El Nino amounted to \$8.1 billion damages. The temperature of the Pacific increased up to seven degrees.

In Peru for example the economy is highly sensitive to climate fluctuations. Warm (El Nino) years tend to be bad for fishing and some of them are damaging the coastal plains by floods. Cold years are welcomed by fishermen, but not by farmers because they are frequently marked by drought and crop failures. Such cold years often come after strong El Nino years.

Every country on the other hand of the Pacific like Africa and Indonesia are marked by drought. America is marked by floods, storms, rain and storminess of the weather, and more hurricanes are disturbing Hawaii.

But El Nino also has one positive consequence: less hurricanes are blowing over Florida and over the Atlantic. Because of this fact one scientist named James O'Brien says that El Nino is a “good guy”.

GLOBAL HEATING-UP IN CONTRAST TO EL NINO

During the last century people on the earth have increased the temperature of the world by 0.7 degrees. In the 20th century there have been about 20 El Ninos that means many more than in the last centuries. Statistically such “pile of El Ninos” is only possible every 2000 years.

So the question is, are we increasing the warming-up and is El Nino at the same time increasing the temperature of our earth?

Some scientists think this thesis is true others not. It is not clear which factors are necessary to cause an El Nino. One factor could be the interdependence of El Nino and the rainfalls over Indonesia and America. In years where the average rainfall is higher in Indonesia and lower in America more El Ninos are formed. Another factor could be the climatic situation of the Himalaya combined with the geographical shift in clouds over the Pacific ocean. But apart from the natural factors it is unclear if the rising global temperature is also a factor.

I think that El Nino and the temperature of the earth are interdependent, but it is not true to say that El Nino is the one decisive factor for the rising of the global temperature. The human race has polluted the earth and the result of such a pollution is that the temperature increases more and more and that ever stronger El Ninos are formed. The problem of this mechanism is that El Nino and pollution are mutually raising the global temperature. That means, that the rise in temperature is about two times higher than at usual times.

VOCABULARY LIST

El Nino	a hot water current
La Nina	opposite of El Nino
Super El Nino	strong El Nino with global consequences

fish are less abundant	fish are rare
to amount to	sich belaufen auf
equatorial winds	Passatwinde
nutrient	something to eat / Nahrung, nährend
storminess	really bad weather / Unwetter, Gewitter
coastal plain	Küstenprärie / Küstenebene
drought	Dürre
crop / to crop	Die Ernte / ernten
failure	comes from: to fail / scheitern, versagen
flood	Überschwemmung
average	durchschnitt
shift	Bewegung, Veränderung, Verschiebung