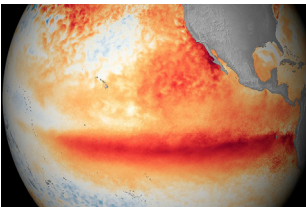


# Earthweek: Diary of a Changing World

Week ending Friday, December 4, 2015

By Steve Newman



The tropical Pacific warmed to 5.6 degrees Fahrenheit above normal on Nov. 18, the highest ever observed. Image: NASA

## El Niño Peak

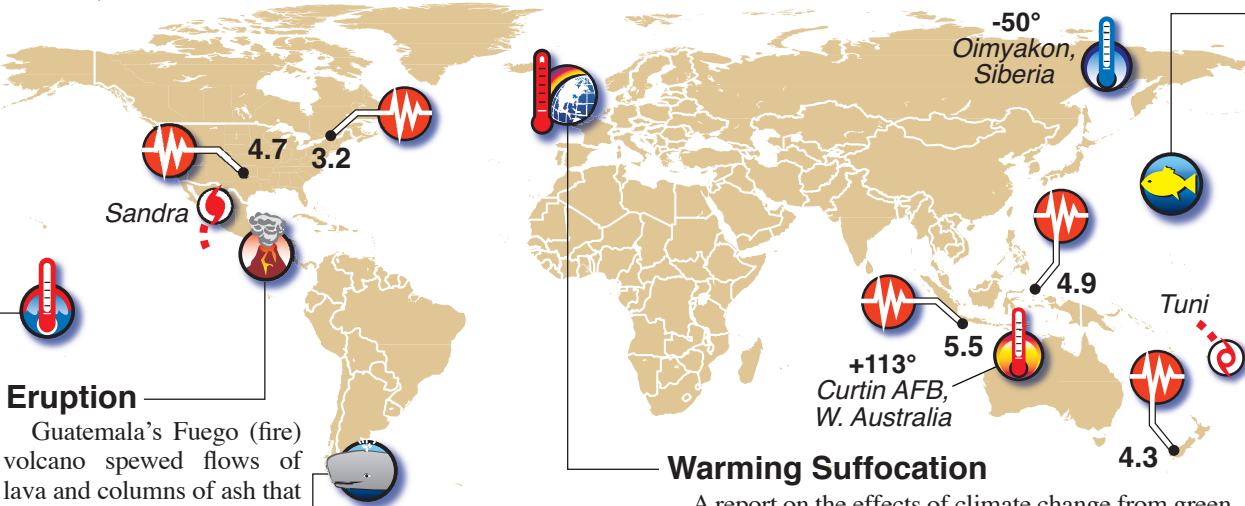
The El Niño ocean warmth appeared to peak in intensity during the third week of November at the hottest level ever measured.

The phenomenon is already wreaking havoc around the world and causing what some meteorologists are describing as the most “chaotic” global circulation they’ve ever seen.

The pattern of warming across the tropical Pacific is quite different from the previous record occurrence in 1997-98, thus creating somewhat different weather shifts.

East Africa and parts of India have so far taken the brunt of El Niño-induced stormy conditions, with floods disrupting life and commerce in Kenya as well as India’s Tamil Nadu state.

The warming is also contributing to 2015 becoming the hottest year on record.



## Eruption

Guatemala’s Fuego (fire) volcano spewed flows of lava and columns of ash that soared high into sky.

At least three lava flows were reported by the country’s emergency agency.

Spokesman David de Leon told reporters the volcano has erupted more than 10 times so far this year.

The latest eruptions created explosions that nearby residents described as “moderate or loud.”



Beached sei whales in southern Chile. Photo: Huinay Scientific Center

## Whale Deaths

An aerial scientific survey in southern Chile’s Patagonia region found 337 dead whales in a remote fjord.

The discovery was made in June, but Chilean press broke the story before the scientists could present the conclusions of their site study.

The researchers say they don’t know exactly what caused one of the largest whale die-offs on record, but red tide or algal blooms have caused such fatalities in the past.

Based on their size and location, it’s believed they were sei whales.

The species numbers about 80,000 worldwide.

## Warming Suffocation

A report on the effects of climate change from greenhouse gas emissions warns that failure to curb the pollution could allow warming to become so intense that it would suffocate life on the planet.

Scientists from Britain’s University of Leicester say that should warming reach 10.8 degrees Fahrenheit above pre-industrial levels, microscopic phytoplankton in the sea would lose their oxygen-generating abilities.

The sea plants produce about two-thirds of the world’s atmospheric oxygen. “Should it happen, it would obviously kill most of life on Earth,” said the researchers.

The U.N. predicts a 7.6-degree Fahrenheit warming by 2100 under the worst-case emissions trends.

## Tropical Cyclones

Category-4 Hurricane Sandra became the strongest such storm in the Pacific to form so late in the season off Mexico.

• Tropical Storm Tuni churned the South Pacific between Samoa and the island nation of Niue.



Hurricane Sandra’s rainfall totals. Image: NASA

## Fish Fear

Fish have been observed exhibiting “emotional fever” when placed under stress, leading researchers to suggest that the creatures may experience emotions and consciousness.

Emotional fever, or the tendency to have higher body temperatures when stressed, had been thought confined to more complex animals.

A University of Barcelona team placed zebrafish in a tank with compartments at various temperatures.

The group that was exposed to stress, then released, mainly moved toward warmer water, increasing their body temperature by 3.6 to 7.2 degrees Fahrenheit.

## Earthquakes

Hundreds of tremors up to magnitude 4.9 damaged buildings in Indonesia’s North Maluku province, prompting the evacuation of nearly 10,000 people.

• Earth movements were also felt in West Java, far southern New Zealand, the Oklahoma-Kansas border region and on each side of the New York-Quebec border.