

Earthweek: Diary of a Changing World

Week ending Friday, December 11, 2015

By Steve Newman

Meltdown Legacy

Trace amounts of radiation from Japan's 2011 nuclear disaster have increased at some locations in the Pacific off North America.

Samples collected by the Woods Hole Oceanographic Institution and citizen scientists were found to contain traces of cesium-134 in some coastal areas of Alaska, Oregon, Washington and California during recent months.

It was also detected in samples taken farther off-shore and off Canada's Vancouver Island.

The isotope can be directly linked to the Fukushima nuclear power plant meltdowns that occurred on the coast of northeastern Japan.

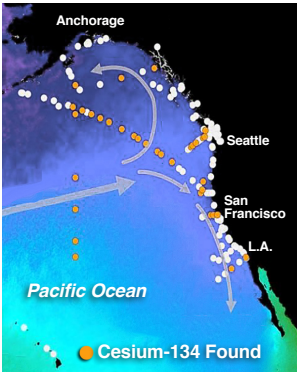


Image: Woods Hole Oceanographic Inst.

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Greenland Melt

Greenland's glaciers are retreating under climate change at least twice as fast as at any other time in the past 9,500 years, according to new research.

Scientists from Columbia University made the discovery after examining sediment cores from the bottom of a glacier-fed lake in southeastern Greenland.

They then compared the findings to analyses of similar cores from Iceland and Canada's Baffin Island, and with recent satellite observations.

The study revealed that before the 20th century, the fastest rate of glacier retreat occurred about 8,500 years ago, when the Earth's position relative to the sun resulted in more summer sunlight warming the Arctic.

Etna Eruption

Sicily's Mount Etna produced its most dramatic eruption of the past two decades, with fountains of lava and columns of ash.

The most spectacular element of the eruption was a rare "dirty thunderstorm" that resulted in lightning bolts flashing in the ash above the mountain.



Image: Marco Restivo - @marcorestivo

Carbon Peak

Global carbon dioxide emission growth appears to have nearly leveled off from an average annual rise of about 2 to 3 percent since the start of the 21st century, according to a new study.

University of East Anglia researcher Corinne Le Quéré told reporters that much of the decline is due to China's decreased use of coal.

But experts at the Global Carbon Project caution that China's reductions could be offset by plans in India to double the country's burning of coal in power plants.

Rhino Extinction

Only three northern white rhinos are left in the world after the death of Nola, a female that died at the San Diego Zoo in November. The three survivors, one male and two females, now live in Kenya's Ol Pejeta Conservancy.

The East African reports that the survival of the subspecies now depends on the development of in vitro fertilization techniques and stem cell technology, which have never before been attempted in rhinos.

A GoFundMe campaign called "Make a Rhino" is attempting to raise \$1 million toward such a project.

Canine Conscience

Russian researchers say that dogs and other animals are self-aware and have a sense of their own identity.

Earlier research suggested that since dogs have no interest in looking at themselves in a mirror, it proves they don't have a consciousness of self.

But Roberto Cazzolla Gatti of Toms State University says the canine "mirror test" failure is due to the animals being less sensitive to visual stimuli than primates.

But their acute sense of smell allows them to easily differentiate between the smell of their own urine and that of other canines.

Gatti says this proves the dogs are self-aware.

Earthquakes

A 7.2 magnitude temblor centered in southern Tajikistan was also felt widely across neighboring Afghanistan, Pakistan and parts of northern India.

• Earth movements were also felt in Indonesia's Banda Sea, eastern Taiwan, southern Guatemala, western Montana and the California desert resort of Palm Springs.

