

Earthweek: Diary of a Changing World

Week ending Friday, April 26, 2024

By Steve Newman

Hot-Cold Paradox

The outbreaks of unusually cold and even unseasonable Arctic blasts that have recently chilled people living in the middle latitudes of the Northern Hemisphere are predicted to intensify for the remainder of this decade, despite the ongoing record warming of the Arctic.

Scientists at China's Gwangu Institute of Science and Technology say these Warm Arctic-Cold Continent (WACC) events are "merely the start of a drastic shift" in climate that will only strengthen in the decades ahead.

Climate expert Jin-Ho Yoon says models predict the WACC events will decline sharply after the 2030s, but they will still cause "more severe consequences when they do occur."

Earthquakes

Dozens of aftershocks of eastern Taiwan's destructive magnitude 7.2 quake on April 3 rocked buildings and rattled nerves in the quake-weary region.

• Earth movements were also felt in New Zealand's North Island, northwestern Iran and central Turkey.

Marine Life Slump

Record-breaking ocean heat of the past year appears to have brought an unprecedented decline in phytoplankton, algae and bacteria, which many marine species depend upon for food.

A study by Marshall Bowles at Louisiana Universities and colleagues elsewhere studied 21 years of satellite data and found that by April 2023, there had been a 22% drop in the microorganisms compared to the 21-year average.

The study found that almost three-quarters of the global ocean surface saw such a decline.

Zoe Jacobs at Britain's National Oceanography Centre, who was not involved in the study, told *New Scientist* that marine ecosystems can usually recover from brief drops, but she says the findings are "very concerning."

Dream Songs

Argentine scientists say they have been able to extract songs from the minds of sleeping birds and generate audible versions of them in the lab.

Based on how vocal muscles move when birds are sleeping, it has long been thought that they are dreaming about singing during their slumber.

Physicist Gabriel Mindlin at the University of Buenos Aires and colleagues converted the muscle movements of several great kiskadees into songs, and were shocked at how similar they were to real birdsongs.

Penguin Peril

Climate change is occurring faster than some emperor penguin colonies in Antarctica can permanently adapt, and a new study says that record-low sea ice levels last year contributed to the second-worst year for chick mortality on record.

Researchers at the British Antarctic Survey say last year's penguin chick deaths followed a "catastrophic breeding failure" in 2022.

While some colonies fled to icebergs, ice shelves or more stable sea ice to survive, lead researcher Peter Fretwell says this is only a temporary solution and the birds can adapt only so much to a warming climate.



Experts say that if greenhouse gas emissions continue at current levels, the emperor penguin population will plunge by 99% by 2100. Photo: NOAA

Sinking China

Chinese researchers warn that a quarter of their country's coastal land will sink below sea level within the next century, putting hundreds of millions of people at risk of flooding.

Writing in the journal *Nature*, they say the subsidence is the result of unbridled groundwater pumping and the sheer weight of buildings being constructed as urbanization increases.

The report also says that nearly half of all major Chinese cities are sinking.

Deadly Heat

Extreme heat of up to 48.5 degrees Celsius that has caused numerous deaths from the Sahara to Nigeria in recent weeks was made more acute by greenhouse gas emissions warming the climate, experts say.

"Heat waves with the magnitude observed in March and April 2024 in the region would have been impossible to occur without the global warming of 1.2 degrees Celsius to date," the World Weather Attribution academic collaboration said in a report.

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