

Earthweek: Diary of a Changing World

Week ending Friday, May 21, 2021

By Steve Newman

Psychedelic Frenzy

Some of the billions of Brood X cicadas that are emerging from the soil in the eastern United States for the first time in 17 years are infected with a fungus that eats away at their abdomens as it increases their sex drive.

The *Massospora cicadina* fungus lies dormant until the 17-year periodical cicadas begin to stir. It's laced with the same chemical as in psychedelic mushrooms and causes the males to emit the mating sounds of both males and females. This attracts more potential partners and spreads the fungus.

Since the fungus effectively castrates the males as it eats away at their bodies, it acts as a natural population control, making it impossible for the infected insects to mate successfully.

Earthquakes

Six people were injured and two dozen homes damaged by a strong central Nepal temblor.

- Earth movements were also felt in Costa Rica, southern Wales, northwestern Sumatra, northern Japan's Hokkaido Island and around Lake Tahoe.

Methane Surge

Concentrations of the powerful greenhouse gas methane increased more last year than since records began in 1983, and scientists say they aren't sure why.

After plateauing in the early 2000s, atmospheric methane has been increasing steadily since 2007. The gas is 28 times more potent in causing global warming than carbon dioxide and is responsible for about 16% of the planet's temperature rise.

"2020's increase was double the 2007 growth. It's even higher than the early 1980s, when the gas industry was going crazy. It's really scary," geophysicist Euan Nisbet of Royal Holloway, University of London told *New Scientist*.

The increase is far greater than atmospheric scientists had earlier predicted.

Mobile Monitors

Smartphones could soon help scientists measure how solar activity is affecting Earth's magnetic field and determine where navigation devices may be most affected by solar storms.

Writing in the journal *Space Weather*, researchers say that an app using the magnetometers in most Android and iOS mobile phones could create a vast global observatory.

Solar storms can affect compass readings and have been observed degrading the accuracy of GPS navigation systems.

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Human Domination

A new study finds that human activities have transformed nearly a fifth of the planet's land surface since the 1960s, roughly equivalent to the areas of Europe and Africa combined.

During that period, Earth's forest cover alone has been reduced by nearly a million square kilometers, with farmland and grazing pastures increasing by about the same amount.

While forests have actually expanded in the Northern Hemisphere during the past 60 years, they have been disappearing at an alarming rate to the south.

This is because of the growing production of beef, sugar cane and soybean in the Amazon, palm oil in Southeast Asia and cocoa in Nigeria and Cameroon.



More than 16 million square miles of Earth's land surface have been transformed by human activity since the 1960s. Photo: WWF

Zombie Fires

The relatively new and rare fires that have been observed smoldering over the winter months in the peaty soil across some Arctic regions are predicted to become more frequent and potentially catastrophic as global heating becomes more pronounced.

Writing in the journal *Nature*, researchers from Alaska and the Netherlands say these "zombie" fires accounted for just 0.8% of the total burned areas between 2002 and 2018.

But the percentages swung widely, depending on how hot the summers were, rising to 38% in one region.

The researchers say the fires will become more ferocious as the landscapes dry out due to climate change.

Tropical Cyclone

The worst cyclone to strike western India in three decades left more than 100 dead as the region also battled COVID-19.

Cyclone Tauktae was one of a growing number of Arabian Sea cyclones that meteorologists say are also increasing in intensity because climate change is rapidly warming the sea.

