



Week ending Friday, January 8, 2021

Baked-In Warming

A new report warns that the amount of global warming already “baked in” to the atmosphere due to surging greenhouse gases is now enough to warm the planet more than the 2.0-degree Celsius cap outlined in the Paris climate agreement. Writing in the journal *Nature Climate Change*, a team from Texas A&M University, California’s Lawrence Livermore National Lab and China’s Nanjing University says the atmosphere is now set to warm to about 2.4 degrees Celsius above preindustrial levels. But they say that amount of warming can be delayed for centuries if the world quickly stops spewing extra greenhouse gases from the burning of carbon fuels.

Earthquakes

Croatia was hit on Dec. 29 by a magnitude 6.4 temblor that killed at least seven people and inflicted extensive damage.

- Earth movements were also felt in Indonesia’s Sulawesi Island, eastern Taiwan, southeastern Idaho and around Southern California’s Salton Sea.

CO2 Fuel

Oxford University researchers say they have found a way to cheaply and simply convert the greenhouse gas carbon dioxide into jet fuel. The technique uses heated citric acid, hydrogen and an iron-manganese-potassium catalyst to turn the CO₂ into a fuel that would power jet aircraft. Even though the process would include capturing carbon emissions, the Oxford team says the process could be the most viable option for many commercial airline fleets to go carbon neutral until they can convert to electric propulsion or other greener options.

Shorter Days

Planet Earth was spinning on its axis during 2020 more rapidly than at any other point in modern history, and experts believe it could rotate even faster during 2021. Scientists at the International Earth Rotation Service, based in Paris, say the spin peaked last year on July 19, with Earth completing its rotation 1.4602 milliseconds faster than the average daily rate of 86,400 seconds. They say the previous shortest-day record, which occurred in 2005, was beaten 28 times during 2020. The rate of Earth's rotation is not constant and is affected by quakes, tropical cyclones and other factors.

Please Help Me

Kangaroos have shown they can use body language to ask humans for help, busting earlier beliefs that only domesticated animals have such an ability. Alan McElligott and colleagues at the City University of Hong Kong tested 16 roos living in captivity with the same methods used to study horses, dogs and goats. After blocking food from the kangaroos with a transparent box door that made it impossible for the marsupials to get it, they observed the animals' behavior. The roos almost always turned to a nearby human for help. "They'd look straight up at my face, like a dog or a goat would do, and back at the box, and some even came up and scratched my knee like a dog pawing [for attention]," McElligott said.

Tropical Cyclones

At least seven people died from severe weather that Tropical Storm Chalane brought to Madagascar, Mozambique and Zimbabwe during the closing days of 2020 and the beginning of 2021.

- Tropical Storm Imogen swamped parts of far northern Queensland after spinning up over Australia's Gulf of Carpentaria.
- Cyclone Danilo briefly attained Category-1 force as it churned the open waters of the central Indian Ocean.

Caribbean Rumble

Officials in St. Vincent and the Grenadines warned its residents living near La Soufrière volcano to be prepared to evacuate. The volcano produced strong tremors as it began forming a new lava dome and spewed gas emissions for the first time in years.

- Martinique's Mount Pelée began rumbling in December, prompting French territorial officials to issue a yellow alert.

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