



Week ending Friday, February 5, 2021

Net Zero

California scientists say the goal of reaching zero net emissions of carbon dioxide from industry and energy production in the U.S. can be accomplished by 2050 by shifting energy infrastructure to operate mainly on renewable energy. The team says the transition would cost about \$1 per day for each U.S. resident, but it is crucial to averting the worst effects of climate change. "It means that by 2050 we need to build many gigawatts of wind and solar power plants, new transmission lines, a fleet of electric cars and light trucks, millions of heat pumps to replace conventional furnaces and water heaters, and more energy-efficient buildings," lead researcher Margaret Torn said.

Java Eruptions

Indonesia's highest volcano spewed hot ash down its slopes in eastern Java. Residents around Mount Semeru were warned of possible slides of wet debris should heavy rains arrive. Java's Mount Merapi shot out a river of lava and clouds of ash a week earlier.

Rising Faster

Scientists warn that sea level rise for the remainder of this century is likely to be far greater than current models are predicting. Writing in the journal *Ocean Science*, a team from the University of Copenhagen says that rises are likely to be faster and greater, possibly reaching 3.3 feet higher by 2100. Using a technique called “hindcasting,” or comparing the predictions of different models against what actually happened in the past, the researchers found that many of the models are underestimating current and future rates of sea level rise. Oceans are expected to rise significantly due to the melting of ice caps, as well as thermal expansion due to the warming oceans. This would swamp many coastal areas around the world.

Tropical Cyclones

At least one person was left dead and five others missing in Fiji by Cyclone Ana. It was the second strong tropical cyclone to hit the island nation within a month. The remnants of Tropical Storm Bina drenched Fiji two days after Ana.

- Cyclone Lucas briefly attained hurricane force over the Coral Sea, then drenched parts of Vanuatu and southern New Caledonia as a tropical storm.

Squared Off

Researchers say they have finally solved the mystery of why the poop of Australia’s iconic wombats comes out in cubes rather than in rounded forms. The fecal phenomenon has long puzzled scientists. Writing in the journal *Soft Matter*, a team from the U.S. and Australia found the cubes are formed within the last section of the intestines as the dung dries out in the extremely long wombat colon. The sculpting of the poop into cubes happens as stiff and flexible regions of the colon contract in tandem. “Our research found that ... you really can fit a square peg through a round hole,” said Scott Carver of the University of Tasmania.

Shark-Ray Decline

A new study reveals overfishing has decimated the populations of sharks and rays in the world's oceans, with numbers dropping more than 70 percent on average between 1970 and 2018. Oceanic whitetip sharks are now near extinction, dropping in numbers by 98 percent in 60 years. Sharks and rays take years to reach sexual maturity and have few offspring, contributing to their dwindling numbers. Scientists say the loss of the top predators leaves a "gaping hole" in the marine food web. Those predators have been described as the lions, tigers and bears of the sea, keeping its ecosystem in balance.

Earthquakes

An aftershock of a temblor that killed 105 people in Indonesia's western Sulawesi Island on Jan. 15 caused residents to again flee their homes.

- Earth movements were also felt in southern Tibet and eastern Nepal, southern Iran, western Turkey, northwestern Argentina, the Guyana-Brazil border area and the Big Island of Hawaii.

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