



**Week ending Friday, December 17, 2021**

### Arctic Alarm

A new NOAA report warns that the loss of sea ice, thawing permafrost and the melting of Greenland's ice cap due to human-caused climate change are part of an "alarming and undeniable" trend in climate change. The Arctic is warming two to three times faster than the rest of the planet. The report coincided with the UN World Meteorological Organisation's confirmation that the previous summer's all-time record Arctic heat of 38 degrees Celsius was accurate. The reading at the Siberian community of Verkhoyansk on June 20, 2020, was the result of an exceptional and prolonged Siberian heat wave, which was accompanied by expansive wildfires.

### Earthquakes

Islands around Indonesia's Flores Sea were rocked by a powerful undersea quake that injured one person. • Earth movements were also felt on far southern South Korea's Jeju Island, greater Tokyo and along the Ohio-Kentucky border.

### Plastic Eaters

Scientists say they have found evidence that microbes in the soil and sea are evolving to eat plastic. Scientists at Sweden's Chalmers University say the evolution is occurring most rapidly in places containing the most plastic pollution. The global proliferation of plastic over the past 70 years has given the microbes enough time to evolve and to produce enzymes to degrade different plastics. "Currently, very little is known about these plastic-degrading enzymes, and we did not expect to find such a large number of them across so many different microbes and environmental habitats," systems biologist Alek-sej Zelezniak said. He added that further research could potentially create new, powerful microbial enzymes designed to eat specific types of plastic.

### Rodent Resistance

Efforts to entirely eradicate invasive mice from a remote South Atlantic island appear to have failed, causing the project's leader to say he is "heartbroken." Gough Island is roughly midway between the southern tip of Africa and South America, and is home to one of the world's largest seabird nesting colonies. Mice brought there by sailors in the 19th century have since eaten untold numbers of eggs and chicks. Early this year, scientists targeted the mice with poison. But footage from a remote camera recently revealed that at least one mouse had survived.

### Light Pollution

A new survey of the world's coastal waters has found that up to 1.8 million square km are being exposed to "biologically significant" levels of artificial light at night.

While many species are accustomed to the regular changes in light that occur naturally through the day, the researchers say light from coastal developments can scatter a long way out to sea, and its colour temperatures are quite different from those of the stars, moon and sun.

They say the intensity of the artificial light offshore is "alarming" in the Mediterranean, Persian Gulf, and South China Sea. Previous studies found the light harms the ability of some species to use the moon and stars to find food, but the study says further research is needed.

### **Volcanic Record**

La Palma's Cumbre Vieja volcano suddenly fell silent only two days after its nearly three-month eruption broke the record as the longest running on the Spanish Canary island since records began in 1500. Experts caution that the lack of tremors and only minimal lava flows do not necessarily mean the eruption has ended. Lava flows have damaged or destroyed nearly 3,000 homes and other structures since Sep. 19. Large areas of farmland have also been blanketed with lava.

### **Tropical Cyclones**

Former Category-5 Typhoon Rai slammed into the southern Philippine island of Siargao as a Category-4 storm. Tens of thousands of people were evacuated before one of the world's strongest storms of the year made landfall. • Category-1 Cyclone Ruby weakened to tropical storm force over the Coral Sea just before soaking New Caledonia.

## Earthweek: Diary of a Changing World

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