



Week ending Friday, December 10, 2021

Orca Intrusion

Decreasing sea ice around the North Pole and a rapidly warming Arctic climate appear to be driving orcas, also known as killer whales, deeper into the Arctic Ocean, where they could be a threat to the region's ecosystem. While a common sight in many of the world's oceans, orcas have historically not ventured to ice-covered waters most of the year, because of the danger of becoming trapped. But using underwater microphones to record and date orca vocalisations, Brynn Kimber at the University of Washington and her colleagues found that the marine mammals are now arriving early in summer near the Bering Strait.

Earthquakes

A wide area of Kansas was jolted for a few seconds by a magnitude 4.3 tremor that was centred near Salina. • Earth movements were also felt in far eastern Turkey's Van province, a wide stretch of South Asia's Hindu Kush region, northeastern Taiwan, and islands of southern Japan.

Ice-Free Hunger

Winter sea ice has re-formed off Siberia so rapidly this year that it has trapped ships and blocked supplies to Russian cities, but Canada's Hudson Bay now has an extreme lack of ice, threatening the region's polar bears. The massive Arctic bay typically begins to freeze in November, but temperatures about six degrees above normal have left it virtually ice-free into December. Peter Convey, an ecologist at the British Antarctic Survey, says this is not good for the polar bears, which need the ice to hunt seals. "The longer they don't have sea ice, they get a gradual loss in (health) condition. Fewer will survive." Bears are now left standing along the Hudson Bay shores in a season that is second only to 2010 for the lack of ice in early December.

Volcanic Misery

The area around Java's Mount Semeru suffered devastation as the volcano spewed searing ash and gas that killed at least 34 people and left 16 others missing. Ash up to 1 metre deep from the explosive eruption covered homes, roads, and farmland. The force of the volcanic debris cascading down Semeru's slopes destroyed homes, as well as downing trees and power lines. The volcano, also known as Mahameru, has produced numerous eruptions during the past two centuries of recorded history.

Dead Forests

A combination of the drought and heat waves that led up to the massive wildfires that ravaged southeastern Australia in 2019 and 2020, have left up to 60 percent of the trees that escaped the blazes dead. Western Sydney University researchers, along with a vast team of citizen scientists, found that even species that are “superbly adapted” to Australia’s harsh conditions had died. They say that the record heat and drought of 2019 were just too much for many common varieties. If the trees don’t grow back, experts say their absence threatens the availability of food and other resources for insects, birds, and other species.

Plastic Resistance

Broken-down microplastics from discarded food containers are not only providing a cozy home for microbes and chemical contaminants, but researchers say they also attract free-floating genetic material that can deliver antibiotic resistance to bacteria. An international team says it found that microplastics broken down by the sun’s ultraviolet light make perfect homes for antibiotic-resistant microbes that can be passed on to people, lowering their ability to fight infections. Writing in the *Journal of Hazardous Materials*, the scientists say this can happen even in the complete absence of antibiotics. “Enhanced dissemination of antibiotic resistance is an overlooked potential impact of microplastics pollution,” civil and environmental engineer Pedro Alvarez said.

Tropical Cyclone

Tropical Storm Teratai became the third such cyclone to form in the same area of the northeastern Indian Ocean in as many weeks.

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