Earthweek: Diary of a Changing World

By Steve Newman

Week ending Friday, July 16, 2021

Earth's Hottest Day

The deadly and destructive heat wave baking much of the western U.S. and Canada this month also caused the mercury to soar to record levels in the recurrent hot spot of Death Valley, California.

Not only did the desert hellhole reach a blistering 54 degrees Celsius on the afternoon of July 9, but two days later it also saw the hottest 24-hour period ever measured reliably.

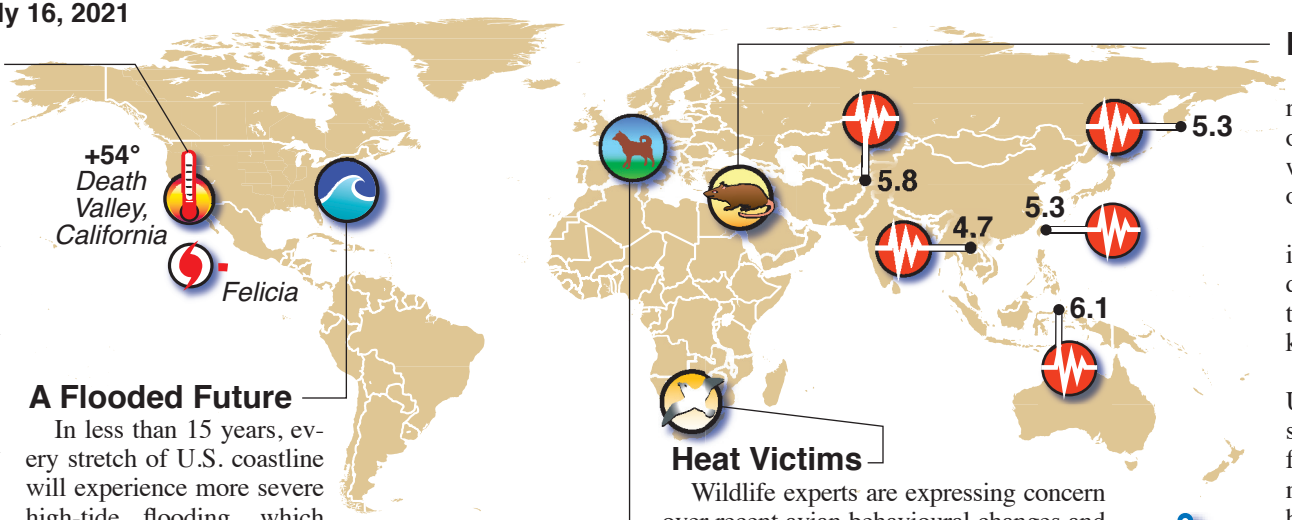
A combination of a morning low of 42.0 degrees and a maximum of 53.7 degrees on that date produced the highest daily average temperature ever recorded on the planet — 47.8 degrees.

Earthquakes

At least five people were killed when a magnitude 5.8 temblor wrecked dozens of homes in central Tajikistan.

• A swarm of tremors in quake-prone eastern Taiwan caused scattered damage around Hualien County.

• Earth movements were also felt in Russia's Kamchatka Peninsula, northwestern Laos and Indonesia's North Sulawesi Province.



A Flooded Future

In less than 15 years, every stretch of U.S. coastline will experience more severe high-tide flooding, which a new NASA report says will be amplified by climate change and the moon.

Nuisance floods of lesser magnitudes are already swamping parts of some coastal cities, especially around Miami.

But as sea level continues to rise and the moon moves into a part of an 18.6-year cycle that elevates high tides, NASA warns that coastal flooding will be far more severe in the mid-2030s.

While the planet is now experiencing such a peak in the moon's gravitational influence on ocean tides, most U.S. coastlines have not yet seen enough of a sea level rise to suffer significant tidal flooding.

Canine Altruism?

Dog owners who believe their pets might toss them a treat if they could would likely be disappointed, according to a new study.

Researchers at the University of Veterinary Medicine in Vienna trained 37 dogs to operate a food dispenser by pressing a button.

They found there was no difference in the dogs's tendency to press the button for humans who had earlier given them treats and for those who had not.

Previous studies have found dogs will help other dogs that have helped them. However, that "reciprocal altruism" apparently doesn't extend to humans.

Heat Victims

Wildlife experts are expressing concern over recent avian behavioural changes and the deaths of birds due to excessive heat.

The international organisation Hot Birds Research Project says that in Australia, the southern U.S. and Africa's Kalahari Desert, the mounting episodes of excessive heat are having profound effects on birds.

Record heat in South Africa's KwaZulu-Natal state last November saw scores of birds fall dead, the country's first reported bird fatalities from heat.

Ornithologist Susan Cunningham of the Hot Birds Research Project says, "Some bird species are spending more time trying to stay cool as they deal with increased numbers of hot days. Birds are forced to shelter in the shade when they should be foraging."

-72°
Vostok, Antarctica

Rats feel empathy for other rats of their own kind. Photo: Inbal Ben-Ami Bartal

Rodent Empathy

A new study finds that rats undergo the same type of brain activity as humans when they rescue a member of their own social group.

Scientists say the finding may bring a better understanding of why humans tend to help people they know over strangers.

Researchers at Tel Aviv University placed rats of the same kind, as well as different kinds of rats that had never met, in cages with one being trapped.

Brain activity was monitored and showed the rats that helped their fellow group members seemed to demonstrate "an empathetic response" to their friends' distress.

The study concludes that similar brain activity in other animals may drive comparable social biases to help their own over others.

Pacific Cyclone

Hurricane Felicia reached Category-2 force late in the week as it churned the open waters of the Pacific between Mexico and Hawaii.

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