

Smiley face for accurate science emojis

A team of ecologists says a lack of fungi and bug icons creates a biodiversity crisis in our communication.

By CORINNE PURTILL

Earth has millions of fungi species, but the official emoji library has only one: *Amanita muscaria*, the red-capped, white-spotted mushroom found in fairy tale picture books and Super Mario Brothers.

A staggering 180,000 species of butterflies and moths flit about this planet, yet their lone emoji avatar is a generic blue butterfly that looks like a spring break tattoo.

There is a biodiversity crisis in our phones, according to a team of ecologists who have undertaken the most comprehensive survey to date on the flora and fauna of Emojipedia, the global directory of pictograms recognized by the international Unicode Standard.

Those little pictures power an enormous amount of global conversation. And when emoji biota are limited, the ecologists argue in a new paper, so is the scope of the natural world that we can talk about, advocate for and ultimately protect.

“The conservation of biodiversity can only progress with the participation and support of the society at large,” said co-author Stefano Mammola, an ecologist who focuses on subterranean biology. “You need effective communication.”

In other words, if the world speaks in emojis, emojis should reflect the world.

In their report published Monday in the journal *iScience*, the authors identify 112 distinct types of living organisms among the 214 images in the “Animals and Nature” section of Emojipedia. (Unlike Carl Linnaeus’ scientific classification system, emoji taxonomy is a fuzzy thing. “Animals and Nature” is an expansive category that includes the unicorn, a heart on fire, two snowmen and four kinds of umbrellas.)

In the emoji lexicon, the planet’s tens of thousands of tree species are reduced to four measly symbols: a palm, a cactus, a nondescript deciduous and an evergreen. (A version decorated for Christmas appears under “Events and Celebrations” in the “Activity” section.)

The vast unicellular [See [Emojis](#), A7]



MYUNG J. CHUN Los Angeles Times

GRANADA HILLS resident Erick Fefferman and his family live near the Sunshine Canyon landfill where odors are a constant irritant.

Living in shadow of leaky landfills

Hundreds of feet underground, in a long-dormant portion of Chiquita Canyon landfill, tons of garbage have been smoldering for months due to an enigmatic chemical reaction.

Although operators of the Castaic landfill say there’s no full-blown fire, temperatures within the dump have climbed to more than 200 degrees, and area residents have complained of a burned garbage odor wafting through the neighborhoods.

Meanwhile, 12 miles to the southeast, Sunshine Canyon landfill has suffered water intrusion from torrential storms earlier this year. That seepage has fueled bacteria growth within the Sylmar landfill, giving rise to putrid odors that have nauseated students and staff at a local elementary school.

The highly unusual reactions at Los Angeles County’s two largest landfills have raised serious

Unusual chemical reactions at L.A. County’s two largest waste disposal facilities plague residents with sickening odors

By Tony Briscoe

questions about the region’s long-standing approach to waste disposal and its aging dumps. These incidents have impaired pollution control systems, allowing toxic gases and polluted water to migrate into unwanted areas.

They have also triggered thousands of odor complaints, dozens of environmental penalties and renewed calls to shutter the landfills.

Both facilities remain operational and each continues to accept more than 7,000 tons of trash a day. However, many residents who live nearby fear the potential of even greater problems and say that government officials and landfill operators need to take the problems more seriously.

“If temperatures get to a certain point, there isn’t going to be much that can be done,” said Sarah Olaguez, a Val Verde resident whose family [See [Landfills](#), A7]

Fukushima weighs on Japan’s carbon goals

Nation would need to restart more nuclear plants to cut fossil fuel use, but 2011 disaster poses a major hurdle.

By STEPHANIE YANG

NAMIE, Japan — A quarter-mile inland from the eastern Japanese coastline, a sprawling complex of solar panels, robotic lawnmowers and the world’s largest hydrogen power plant stands as a monument to the country’s zero-carbon aspirations.

But surrounding the site are reminders of the biggest challenge Japan faces in realizing those ambitions: abandoned build-

ings, empty lots, roadside Geiger counters — the grim aftermath of one of the world’s worst nuclear disasters.

As climate change worsens, nations around the globe have ramped up efforts to reduce fossil fuel use and reach carbon neutrality by 2050. But for Japan to achieve that goal, the government says it must turn back to the country’s now-idled nuclear power plants, reigniting a painful debate over the necessity and safety of nuclear energy.

On March 11, 2011, the largest earthquake in Japan’s recorded history triggered a tsunami that killed more than 18,000 people and knocked out power for the cooling systems at the Fukushima Daiichi power [See [Japan](#), A4]

ARMING AMERICA

She wanted to open a gun store. They wanted to shut one down. Local laws got in the way



JOHN GASTALDO For The Times

AT THE San Diego Gun Show, hosted by the San Diego County Gun Owners PAC, Duy Nguyen, left, looks at a sight accessory next to friend Tinh Hoang.

By CONNOR SHEETS AND GABRIELLE LAMARR LEMEE
REPORTING FROM IMPERIAL BEACH, CALIF.

When Stephanie Gilreath set out to open a store in Imperial Beach, she figured she might face opposition and have to fill out a stack of extra paperwork.

After all, at Outdoor Woman she planned to sell camping equipment, boots, other adventure gear — and guns.

She filed an application in May for a license to operate as a commercial retailer in the sunbaked San Diego County town just north of the Mexico border. The Imperial Beach City Council responded by instituting a 45-day moratorium on gun sales.

In Culver City, when a longtime gun store with a history of federal violations — and of selling firearms later used in crimes

— announced it was closing, local gun control advocates faced an uphill battle to keep another dealer from replacing it.

They explored finding a wealthy benefactor to purchase the Martin B. Retting gun shop’s hulking white building or rezoning it to entice developers. In the end, the city purchased the property for \$6.5 million. Retting has until the end of the year to move out.

In Southern California, it’s as difficult for a would-be retailer to open a gun store as it is for a city to keep one out.

Nationwide, there were nearly 79,000 firearms dealers as of January, a 20-year peak, according to an L.A. Times analysis. Some states saw 70% or 80% increases in [See [Guns](#), A10]



JACQUELYN MARTIN Associated Press

SPECIAL COUNSEL’S MOVE

Jack Smith asks the Supreme Court for a quick ruling on ex-President Trump’s claim. **NATION**, A5

Tesla rejects DMV’s claims

The automaker says the agency took too long to allege its Full Self-Driving is false advertising. **BUSINESS**, A6

Judge rules against bail suit

Cities object to new standards on use of cash bonds in criminal cases. **CALIFORNIA**, B1

Weather

Lots of sunshine. L.A. Basin: 70/50. **B6**



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