

May 20, 2019 Issue

Climate Change and the New Age of Extinction

People easily forget “last of” stories about individual species, but the loss of nature also threatens our existence.

By Elizabeth Kolbert

May 13, 2019

The first documented extinction of 2019 occurred on New Year’s Day, with the death of a Hawaiian tree snail named George. George, who was about an inch long, had a grayish body, grayish tentacles, and a conical shell striped in beige and brown. He was born in captivity, in Honolulu, and had spent his unassuming life oozing around his terrarium, consuming fungi. Researchers with Hawaii’s forestry department had tried to find a partner for him—George was a hermaphrodite, but he needed a mate in order to reproduce—and when they couldn’t they concluded that he was the last of his kind, *Achatinella apexfulva*. A few days after he went, presumably gently, into that good night, the

department posted a eulogy under the heading “farewell to a beloved snail . . . and a species.” “Unfortunately, he is survived by none,” it observed.

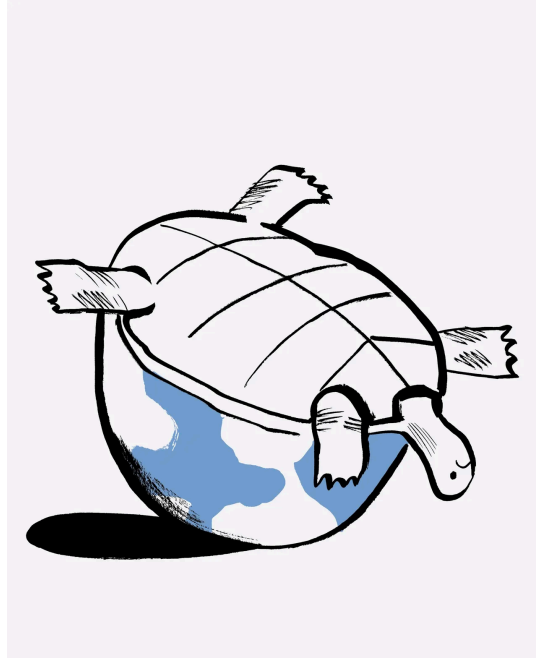


Illustration by João Fazenda

George’s passing prompted a spate of headlines, and then, it seems safe to say, was forgotten. Americans have, by now, grown inured to “last of” stories, which appear with the unsurprising regularity of seasonal dessert recipes. (George the snail was named for Lonesome George, a Pinta Island tortoise from the Galápagos, also the last of his kind, who died in 2012.) In February, the Australian government declared a ratlike creature known as the

Bramble Cay melomys to be extinct. The melomys, found on a single low-lying island between Australia and Papua New Guinea, appears to have been done in by climate change, which has shrunk its habitat and brought ever more damaging flooding. Then, in April, Chinese state media reported that the last known female Yangtze giant softshell turtle had died. “Her species might die with her,” the *Washington Post* noted.

Last week, an international group of scientists issued what the *Times* called “the most exhaustive look yet at the decline in biodiversity.” The findings were grim. On the order of a million species are now facing extinction, “many within decades.” “What’s at stake here is a liveable world,” Robert Watson, the chairman of the group, Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, told *Science*.

The U.N.-backed I.P.B.E.S. is to flora and fauna what the Intergovernmental Panel on Climate Change is to the atmosphere. Based in Bonn, it is funded by a

hundred and thirty-two member nations, including the United States. More than three hundred experts contributed to its latest assessment, which runs to more than fifteen hundred pages.

The authors trace two diverging trend lines: one upward-sloping, for people, and one sloping downward, for everything else. During the past fifty years, the planet's human population has doubled. In that same period, the size of the global economy has quadrupled, and global trade has grown tenfold. If hundreds of millions of people around the world are still mired in poverty, there are many more people living in prosperity today than ever before.

To keep nearly eight billion people fed, not to mention housed, clothed, and hooked on YouTube, humans have transformed most of the earth's surface. Seventy-five per cent of the land is "significantly altered," the I.P.B.E.S. noted in a summary of its report, which was released last week in Paris. In addition, "66 per cent of the ocean area is

experiencing increasing cumulative impacts, and over 85 per cent of wetlands (area) has been lost.” Approximately half the world’s coral cover is gone. In the past ten years alone, at least seventy-five million acres of “primary or recovering forest” have been destroyed.

Habitat destruction and overfishing are, for now, the main causes of biodiversity declines, according to the I.P.B.E.S., but climate change is emerging as a “direct driver” and is “increasingly exacerbating the impact of other drivers.” Its effects, the report notes, “are accelerating.” Watson wrote last week, in the *Guardian*, that “we cannot solve the threats of human-induced climate change and loss of biodiversity in isolation. We either solve both or we solve neither.”

How long can the two trend lines continue to head in opposite directions? This is the key question raised by the report, and it may turn out to be the key question of the century. Many documented species have already disappeared—to take the example of

Hawaiian tree snails, *Achatinella apexfulva* is just one of hundreds of species that have been lost—and probably even more vanished before they could be identified. Many others, like the Yangtze giant softshell turtle, are functionally extinct.

So far, it could be argued, the casualties haven't slowed us down. The I.P.B.E.S. report cautions, however, against assuming that this pattern will continue. Nature, it succinctly observes, "is essential for human existence." The report points to pollinators as one group of organisms that humans can't readily do without. Ninety per cent of flowering plants and seventy-five per cent of all types of food crops rely on pollination by animals—birds, bats, and (mostly) insects. Cash crops including coffee, cocoa, and almonds are pollinator-dependent. In many regions, important pollinators, like native bees, are in decline. It's not clear exactly why, but probably one of the major factors is an increasing reliance on synthetic

pesticides, which don't distinguish between insects that are useful and those that are unwanted. These chemicals are supposed to prevent crop failures; the danger is that they may end up causing them.

As much as six hundred billion dollars' worth of annual agricultural production "is at risk as a result of pollinator loss," the I.P.B.E.S. warned. In an earlier report, on pollinators and the food supply, the group predicted that "total pollinator loss" would decrease production of the most important dependent crops "by more than 90 per cent."

We would, it seems, be well advised to shift course, if only for our own, species-centric reasons. And, according to the I.P.B.E.S., there is still time for "transformative changes" in the "production and consumption of energy, food, feed, fibre and water." Regrettably, though, all signs point to more of the same. In 2018, carbon-dioxide emissions from the energy sector rose to a new high of thirty-six billion tons. Also in 2018, nearly thirty million acres of tropical forest were lost—an area the size of

Pennsylvania. As the Web site InsideClimate News noted, this destruction occurred “even as more corporations and countries made commitments to preserve tropical forests.” As long as we continue to tear through the biosphere, expect the losses to continue to mount. ♦

Published in the print edition of the May 20, 2019, issue, with the headline “Last Chances.”

Elizabeth Kolbert, a staff writer at The New Yorker since 1999, won the 2015 Pulitzer Prize for “The Sixth Extinction.” Her latest book is “Under a White Sky: The Nature of the Future.”