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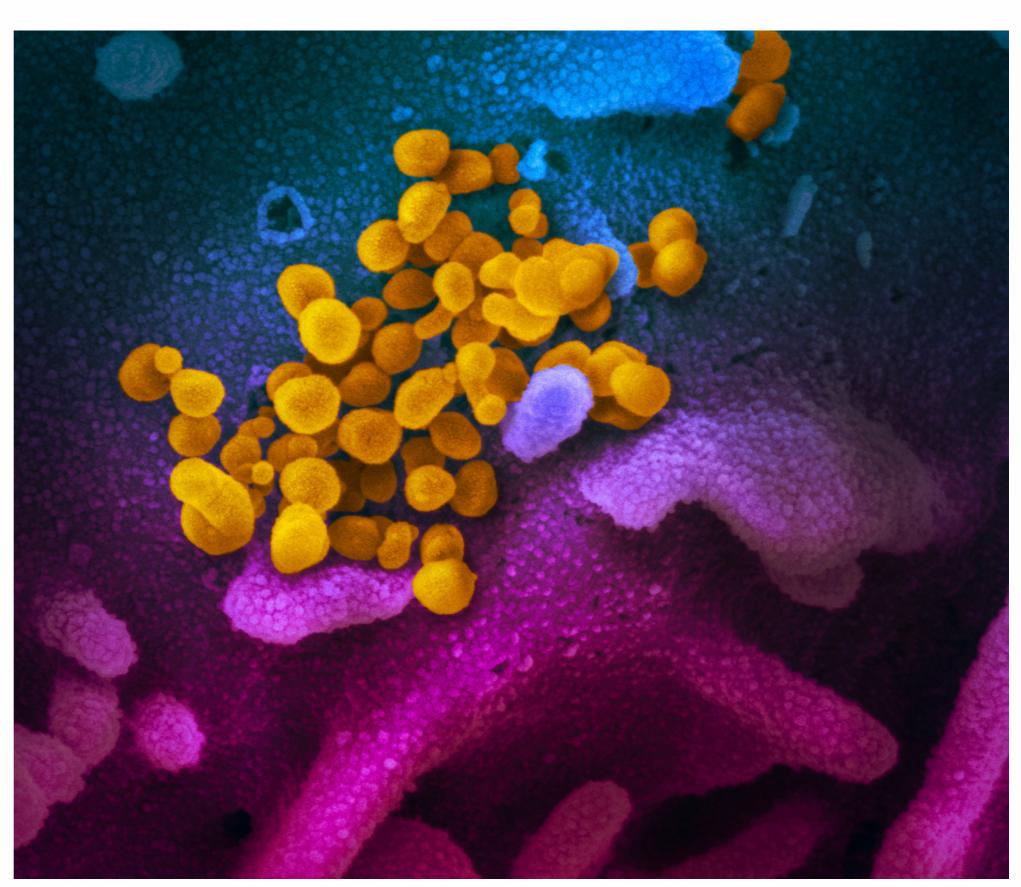




Coronavirus News

Coronavirus Pandemic: A Symptom of Our Mass Extinction

UCSB Professor Says Ecological and Human Health Are Inseparable



Ultraviolet light is one of the antagonists that works against the virus SARS-CoV-2 responsible for COVID-19. | Credit: NIAID Rocky Mountain Laboratories (RML), U.S. NIH

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Deer, monkeys, coyotes, wild boars, mountain goats, pumas, and, of course, lots and lots of rats. In recent weeks, photographs of wild animals wandering through deserted cities have circulated widely in the press and on social media. At once haunting and reassuring, these images – rooted in film and literature - remind us that even in a moment of global crisis, nature is resilient. Life goes on.

Yet they are profoundly misleading.

Some, like the now-famous photograph of dolphins frolicking in a crystal-clear Venice canal, were fakes. But even the unaltered photographs distract from a larger truth.

> The Santa Barbara Independent is providing all coronavirus stories for free so that all readers have access to critical information during this time. Get the top stories in your inbox by signing up for our daily newsletter, Indy Today.

The coronavirus pandemic is not an example of nature's resilience. It is a direct consequence of the mass extinction that is sweeping over our planet, decimating life on Earth and making it a more dangerous place for humans. To protect people, we must conserve nature.

Recent studies have painted a grim picture of the state of the natural world.

In October 2018, the World Wildlife Fund reported that over the past 50 years, wild animal populations have declined by a global average of 60 percent. In April 2019, the International Union for the Conservation of Nature announced that one million species are threatened with extinction. In May, a review of the scientific literature found that 40 percent of all insect species could soon disappear. In September, a study led by Cornell University concluded that since 1970, the United States and Canada have lost 3 billion, or 30 percent, of their birds. In October, fires ignited in Australia that would burn more than 46 million acres and kill an estimated one billion wild animals. In December, the American Association for the Advancement of Science published an article warning that the Amazon Basin was approaching a "tipping point," beyond which vast swaths of rainforest could disappear forever. Science, one of the world's most prestigious academic journals, capped off 2019 with a chilling, feature-length article entitled "Pervasive human-driven decline of life on Earth points to the need for transformative change."

Facing this deluge of grim news, one could be forgiven for forgetting about the plastic pollution crisis now facing global ecosystems, or that last summer, Greenland lost an estimated 329 billion tons of ice a rate of melting seven times greater than in the 1990s.

2019 may have been the worst year for life on Earth since the last mass extinction, 66 million years ago.

Habitat loss, climate change, pollution, and overharvesting are laying waste to ecosystems around the world. These same problems also pose grave threats to human health and well-being.

Habitat loss dredges up pathogens, like the Borrelia bacterium that causes Lyme disease, while eliminating predators that control pathogen hosts and bringing people into closer contact with diseasebearing creatures. Climate change harms people during disasters, but it also kills in stealthier ways. It enables insect vectors - including the mosquitos that carry Zika, dengue, malaria, and West Nile virus to colonize new areas. It amplifies water and air pollution, which together account for more than 5 million premature deaths annually. And it exacerbates mental-health disorders among disaster victims, first responders, and young people who fear that environmental crises are diminishing their futures.

Ecological destruction also led to our current pandemic.

Viruses probably have been around as long as life itself, and epidemics have affected people since we've been gathering in large groups. But by destroying ecosystems and abusing animals on a grand scale, we are dramatically increasing our exposure to dangerous pathogens.

The novel coronavirus that causes COVID-19 got its start at a wet market in China, where animals bred in farms or harvested in the wild are packed into cruel and unsanitary conditions for sale as exotic

delicacies. Genomic research suggests that this virus emerged in a bat. In the market, it appears to have jumped to a pangolin, a scaly anteater native to Africa and Asia, before infecting a human.

Viruses rarely jump from one species to another, but placing animals in these cramped, stressful conditions greatly increases the chances of interspecies transmission. And when viruses do make this jump, they can wreak havoc in their new hosts. Around 75 percent of the emerging diseases that afflict humans also inhabit other animals. Many of the world's nastiest viruses – including coronaviruses that cause SARS and MERS, filoviruses that cause Marburg and Ebola, the retrovirus that causes AIDS, and the lyssavirus that causes rabies - reached humans through wildlife.

The best way to prevent these pathogens from reaching humans is to keep them in the ecosystems where they evolved. In healthy, diverse ecosystems that contain different kinds of animal hosts and vectors interacting in complex ways, pathogens tend to have a tougher time spreading. In ecology, this is called the "dilution effect." But when we degrade ecosystems, persecute wildlife, or harvest and transport live animals for sale on the open market, we erode this natural defense, placing people in greater danger.

The illicit wildlife trade, in particular, poses enormous risks. The world's fourth most lucrative trafficking industry – after the smuggling of drugs, weapons, and people – with annual revenue of as much as \$23 billion, the illicit wildlife trade threatens hundreds of species, from tigers and rhinoceroses to birds and reptiles. The world's most trafficked animal is the same pangolin from which humans contracted COVID-19.

Governments, universities, foundations, and conservation groups are working to curb the trade in exotic species, implement early warning systems for new pathogens, coordinate emergency responses, and develop new vaccines and therapies. Their vital work has been underfunded and undervalued. But even if it were better supported, it would only begin to address the human health challenges of living through a mass extinction.

Predictably, the Trump Administration is undermining efforts to keep us healthy by slashing environmental programs and regulations. But liberals have not done much better. The Green New Deal, for example, introduced as a resolution in the House of Representatives last year, contains just two vague sentences about "restoring and protecting threatened, endangered, and fragile ecosystems." This contrasts with the New Deal of the 1930s, which leveraged conservation projects to create tens of thousands of jobs, establish dozens of parks and refuges, and build thousands of miles of roads, bridges, and trails. The Green New Deal's authors also seem to have forgotten that it will be nearly impossible to control climate change without preserving and restoring nature.

The time has come for a bold new approach: a Marshall Plan for Nature to rebuild our world's shattered ecological infrastructure. This new effort must go beyond preserving token scraps of wild nature, treating the symptoms of a global catastrophe, or waiting until the next disaster to react. We must stop this tragedy in its tracks.

To do this, we will need to spend trillions of dollars, recruit millions of workers, and hold every government of every nation - most of all, our own - accountable for healing ecosystems devastated by decades of reckless indifference. We must enact far more powerful rules that prevent corrupt regimes including, again, our own – and corporations from plundering the natural world. And we must build lasting programs that enable local communities to thrive without destroying the ecosystems in their backyards.

For the hundreds of millions of people who have seen their lives upended by this pandemic, there will be a deep desire to return to normal. But as we cope with our grief, survey the wreckage, and begin to rebuild our lives, we must remember that a healthy economy does not destroy the ecosystems that sustain it. There is nothing normal about a mass extinction.

We now have a choice: Will we choose a symbiotic world where humankind dedicates itself to nurturing the ecosystems on which all species depend? Or will we choose a parasitic world, in which we demolish our host planet while it wreaks havoc on us?

This is not a war because there is no enemy. We created this crisis. Only we can spare future generations from more of the same.

Peter S. Alagona is an associate professor of Environmental Studies at the University of California, Santa Barbara.

At the Santa Barbara Independent, our staff is working around the clock to cover every aspect of this crisis – sorting truth from rumor. Our reporters and editors are asking the tough questions of our public *health officials and spreading the word about how we can all help one another.* The community needs us – now more than ever – and we need you in order to keep doing the important work we do. Support the Independent by making a direct contribution or with a subscription to Indy+.

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