

Study finds alarming decline in biodiversity worldwide

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A recently released United Nations-supported study presents a grim picture of the accelerating decline in biodiversity (the variety of plant and animal species) across the globe and its dire implications for the not-too-distant future of life on Earth, including humans.

The study, composed of multiple reports by over 550 researchers, was conducted by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). It contends that the increasingly rapid loss of plant and animal species due to habitat degradation, invasive species, and pollution is happening in tandem with climate change. Together, these processes, if not halted, will soon have catastrophic environmental consequences, amounting to a sixth mass global extinction, which will threaten the very survival of humanity.

Biological ecosystems are a complex, dialectical interaction of plant, animal, and microbial life forms with each other and their physical environment, evolving over millennia. These systems are not static. They change over time due to the dynamic of unity and conflict of opposites of their myriad biological and physical constituents. In general, the greater the species diversity (number of different species) within an ecosystem, the more stable it is, barring external perturbations (e.g., the impact that caused the mass extinction, including dinosaurs, about 66 million years ago) and the more slowly change takes place.

By contrast, the lower the species diversity, the greater is the tendency toward instability and the more vulnerable an ecosystem is to catastrophic collapse. High diversity will generally buffer the degree to which changes in any particular constituent of the system will affect the system as a whole. The role of one species, known as its ecological niche, may gradually be filled

by one or more other species, leading to gradual change.

With lower diversity, however, ecosystems tend to be more fragile. The loss of any one species will likely have a much greater impact on the system as a whole, creating instability and possible catastrophic collapse. It is less likely that another species will evolve or adapt with sufficient rapidity to fill the “gap” in the system, potentially resulting in a cascading series of disruptions. If the trends documented in the IPBES reports continue, the world’s biological systems are likely to go into this kind of severe crisis within the next few decades.

Humans have had a significant impact on natural ecosystems, especially since the Industrial Revolution. However, in no way are we “decoupled” from the natural environment. Such systems remain a vital part of our survival—affecting weather and climate, food resources, potable water and breathable air.

The authors of the IPBES study provide a range of examples to illustrate both the variety and rapidity of species loss and environmental degradation, which are occurring across the globe.

Among the direct and substantial impacts of species decline and extinction, the study found that exploitable fisheries in the Asia-Pacific region are on track to be exhausted by 2048. This will result in severe economic losses as well as dietary privation for millions.

In Africa, where more than 60 percent of the human population depends directly on natural resources, the study projects that half of some bird and mammal species could be lost by 2100. Of the continent’s historically recorded species, more than 20 percent are threatened, endangered, or already extinct. The recent effective extinction of the northern white rhinoceros, which received much media attention, is just one iconic

example.

In Europe, 42 percent of land species have suffered notable declines during the past decade alone. Half of existing wetlands have been lost since 1970.

The destruction of wetlands and their associated plant and animal communities around the world, both inland and along coastlines, results in accelerated erosion, pollution, and loss of protection against flooding, as seen, for example, during last year's Atlantic hurricane season.

Over the last 500 years, since Europeans began colonizing the Americas, 30 percent of the hemisphere's biodiversity has been lost. The study projects that over the next decade, if present trends continue, that figure will rise to 40 percent, indicating its rapid acceleration. Nearly one quarter of the existing species that were studied are threatened.

Trees are key to the production of atmospheric oxygen, essential for the survival of humans and other animals. However, since 1990, over 130 million hectares of rainforest have been lost. In northeastern Brazil, part of the Amazon rainforest, which is often referred to as the "Lungs of the Earth," between 2003 and 2013 alone, the area under cultivation more than doubled to 2.5 million hectares.

The reports' authors highlight the combined effects of direct human-caused landscape modification and of climate change on the decline in biodiversity. By 2050, climate change may equal or surpass landscape modification as the primary cause of species decline. In either case, the planet is well on its way to becoming a biological wasteland. These findings are not new, only confirming and re-emphasizing the critical urgency of the situation. Previous studies have painted a similar picture (see: "Scientists warn of 'biological annihilation' as Earth's mass extinction accelerates").

While the IPBES study documents the growing danger posed by the rapid and accelerating global decline in biodiversity, it presents only general notions as to what might be done to halt the process and avert catastrophe, without any mechanisms for implementation aside from the good will of business and political leaders. As with other such studies, the researchers can only lament the complete inadequacy of response to their dire warnings so far. Robert Watson, the chair of the IPBES, stated, "The time for action was yesterday or the day before. Governments

recognize we have a problem. Now we need action, but unfortunately the action we have now is not at the level we need."

Mass extinctions have happened five times previously during the existence of life on earth (see: "The Sixth Extinction by Elizabeth Kolbert"). In each of those instances the causes were natural. The currently developing sixth mass extinction differs in that it is directly related to human activity. However, contrary to statements in the report and in numerous other pronouncements in the media and elsewhere, the cause is not human moral failure, overpopulation, or the need to eat less red meat.

The poor farmer in Brazil who is forced to clear more land in order to eke out an existence, the factory worker in China or the US whose plant spews out toxic chemicals, etc., are not responsible for the resulting environmental degradation.

The responsibility lies with the anarchic and profit-driven capitalist system that disdainfully ignores the consequences of its actions and prevents the development and implementation of rational, scientifically based solutions to the problems of climate change and environmental degradation. As the world capitalist crisis deepens and inter-imperialist rivalries intensify, environmental concerns will increasingly be swept aside, as is already the case under the Trump administration in the US.

If, on the other hand, the vast resources now hoarded by the world's elites or squandered in wars were instead used to eradicate poverty, end pollution, develop and expand clean energy, and generally organize society for the benefit of the many rather than the few, the developing crisis could be halted and reversed. That can only happen under the democratic control of the working class implementing the socialist reorganization of society.

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