

Biodiversity and carbon dioxide - A media interpretation of two scientific papers

John Murphy, January 2021

Scientists describe an 'ecological Ponzi scheme' in a scathing paper

The world faces a ghastly future, threatening the survival of all species, unless urgent and decisive action is taken to slow climate change and biodiversity loss, an international group of 17 leading scientists says.

The group has looked at 150 studies to produce a "perspective paper", published yesterday, which outlines future trends in biodiversity decline, mass extinction, climate disruption and planetary toxification.

It says all these events are tied to human consumption and population growth and demonstrate the near certainty that these problems will get worse over the coming decades, with negative impacts for centuries to come.

Professor Paul Ehrlich of Stanford University says no political or economic system, or leadership, is prepared to handle the predicted disasters.

"Stopping biodiversity loss is nowhere close to the top of any country's priorities, trailing far behind other concerns such as employment, healthcare, economic growth, or currency stability," he said.

"Humanity is running an ecological Ponzi scheme in which society robs nature and future generations to pay for short-term economic enhancement today."

The study's lead author Professor Corey Bradshaw of Flinders University in Adelaide said humanity was causing a rapid loss of biodiversity and, with it, the earth's ability to support complex life.

But he said most people had difficulty grasping the magnitude of the losses and the dangers ahead.

"In fact, the scale of the threats to the biosphere and all its life forms is so great that it is difficult to grasp for even well-informed experts," he said.

"The problem is compounded by ignorance and short-term self-interest, with the pursuit of wealth and political interests stymieing the action that is crucial for survival."

Professor Dan Blumstein from UCLA said the scientists were choosing to speak boldly and fearlessly because "life literally depends on it".

"What we are saying might not be popular, and indeed is frightening," he said.

"But we need to be candid, accurate, and honest if humanity is to understand the enormity of the challenges we face in creating a sustainable future."

Another scientific study published yesterday in Environmental Health Perspectives showed increased atmospheric carbon dioxide levels can inflict structural damage on the lungs of young mice.

The study examined the impact of a carbon dioxide concentration of 900 parts per million (ppm) on mice.

The earth's current CO₂ concentration is around 400 ppm.

Although mice are better able to tolerate higher CO₂ levels due to their burrowing habits, the study found the 900 ppm concentration had a “direct impact” on the mice’s lung functioning.

“The lung damage included altered alveoli, which is the critical part of the lung that helps with gas exchange – meaning they could have had more difficulty breathing,” the study’s lead author Associate Professor Alexander Larcombe said.

“We also saw some changes in the actual physical structure of the lungs and both of these changes meant the lungs weren’t functioning as they should.”

Larcombe urged for more research into the phenomenon, given the earth’s CO₂ levels are projected to rise to 800 ppm “within our lifetimes”.

References

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