A rapidly declining insect population spells trouble for humans

Climate Crisis | January 12, 2021

Apart from bug-loving entomologists and innovative roboticists, most humans regard insects with a mixture of disdain and disgust.

Our aversion to insects means we neglect to consider these tiny critters' fate in the climate crisis. Instead, we give attention to starving polar bears and other awe-inspiring megafauna affected by environmental disasters.

They are deserving of it, but a special publication in the Proceedings of the National Academy of Sciences gives us a new reason to think about how human-driven climate change and environmental damage has affected the world's insect population.

Hailing from a variety of scholarly backgrounds, the experts on the issue's 12 papers all share one thing in common: growing concern over insect biodiversity, which is declining in some populations at an alarming rate of **1-2 percent each year**.

What's new — In his introduction to this special feature, David Wagner, a professor of Ecology & Evolutionary Biology at the University of Connecticut, summarizes the "insect apocalypse" in a simple statement: **"Nature is under siege."**

No surprise: humans are to blame, largely due to our growing population, which has rapidly exploited Earth's natural resources, used up nearly all arable land for agriculture, and pushed the planet to the brink with the climate crisis.

"It is clear that 7.8 billion [people] are already using more resources annually than the world can yield annually," Wagner tells Inverse. "Nature is being cut, rended, burned, despoiled—tortured by a thousand cuts."

Wagner calls out **three factors** that have particularly contributed to the insect's decline:

- Climate change
- Habitat loss
- Degradation

Wagner focuses particularly on the role our lavish lifestyles in the developed world have played in contributing to agricultural intensification:

"Overconsumption demands greater agricultural production--achieved by increasing yields, industrializing agriculture, increasing pesticide usage, manufacturing and adding unprecedented

amount of nitrogen to the earth’s geological nitrogen budget, and, worst, deforesting the planet to make yet more croplands."

Increased agricultural activity since World War II can be directly linked to insect biodiversity loss, accord to Wagner."Agriculture threatens insects and nature on many axes: foremost through loss of habitat, but also by exacerbating global warming, elevating exposure to pesticides, nitrification of lands and waters that have been geologically nitrogen limited, and more," Wagner says.