Climate Change: It's Real And We're Responsible

In Brief

There is a scientific consensus regarding man-made climate change; however, there's quite a lot of hype surrounding this phenomenon. Here's what's really happening and a look at humanity's role.

Earth has a problem. And to be frank, the problem is us.

Although our planet goes through regular cycles of warming and cooling, human actions have been dramatically accelerating these natural processes. This has led to a host of things that are not-so-fantastic…the gradual warming of the planet, a decrease in Earth's ice sheets, and a significant increase in the rate of extinction. And that's just the beginning.

But! Fear not.

There is a serious problem, but the world isn't going to end tomorrow (or in a decade or even in half a century). Although there is a scientific consensus regarding manmade climate change, there's quite a bit of sensationalism surrounding this phenomenon.

To that end, in order to get a comprehensive understanding of what's really going on with our planet (and how humanity is influencing these changes), I recently sat down with Lauren Kuntz, a PhD student at Harvard University in Earth and Planetary Science, to talk about Earth, climate change, and the role that humans play.

An Introduction to the Issue

Most of us probably know a little bit about how humans are causing the warming of planet Earth—something about carbon and the atmosphere and greenhouse gases.

Lauren summarizes how all of this works, noting that the primary issue is humanity's carbon emissions: "Greenhouse gases trap excess heat in Earth's atmosphere, and one of the leading contributors to that is carbon dioxide. Unfortunately, human emissions of carbon dioxide have started to accumulate in the atmosphere, and that's trapping more heat, warming the Earth, and moving Earth's climate to a different state than what we've seen historically."

In short, there are certain gases that block heat from leaving the planet and radiating out into space. We are putting more of those gases into the atmosphere, and that's making Earth warm.

"What you emit today will be in the atmosphere for hundreds of years."

It's so simple, it seems like this issue should be easy enough to solve: Stop putting carbon dioxide into the atmosphere. But that, of course, is much easier said than done. Lauren clarifies, stating that we emit carbon to provide electricity for our homes, fuel for our cars, and power for our industry. We emit carbon by clearing forests and fields for agriculture and lumber. In truth, basically all of modern society is built upon the combustion of fossil fuels and carbon emissions.

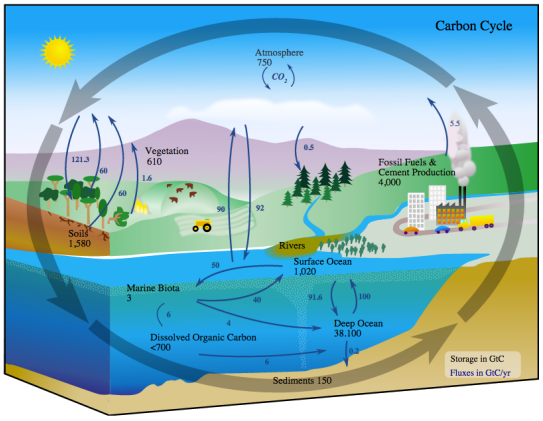
In order to fix this, we need to utterly transform our way of life.

But remarkably, even if we stopped all manmade carbon emissions today, our planet would still feel the impact of our use of fossil fuels for centuries. Lauren notes, “The big challenge with carbon dioxide emissions is their lifetime in the atmosphere. What you emit today will be in the atmosphere for hundreds of years. Yeah, so it’s a really long time.”

And We’re Impacting the Whole Planet

However, the major concern isn’t the (to date) minor warming of the planet, but the way that human activity is altering the fundamental balance in the carbon that is stored in the biosphere as a whole—in the ocean, soil, *and* atmosphere. In just a few decades, we’ve started to alter the planet’s natural systems, systems that evolved over the course of vast millennia.

Lauren sums by noting the expansive nature of these changes: “We’re starting to change what that natural balance of steady-state atmospheric carbon dioxide is. So even though that carbon pools in the atmosphere for hundreds of years, if we put so much carbon in the atmosphere, then we change the balance of everything—how much is in the atmosphere, how much is in the ocean, how much is stored in our soils.”



Carbon Cycle: Image Credit: NASA (click image to enlarge)

Lauren is also quick to acknowledge the alarming rate of our impact. Asserting that, “just 200 years of human emission will be seen down the road a hundred thousand years from now.”

And notably, all life has evolved to fit *this* particular environment and a very particular ecological niche within it. So rapid changes (the kind of changes that we are seeing as a result of human carbon emissions) are not a very good thing—the planet simply can’t keep up.

So. Where to From Here?

The quick and nitty gritty is that human carbon emissions are altering (have already altered) the planet in ways that are decidedly negative for both the environment and the various species that live on this planet. If we continue our current practices, we are going to continue to have a negative impact.

But we haven’t reached the “point of no return” yet.

Indeed, as the 2014 Intergovernmental panel on Climate Change notes, “The precise levels of climate change sufficient to trigger tipping points (thresholds for abrupt and irreversible change) remain uncertain,” however, we know that, if changes aren’t made, such a point will assuredly come—whether it is in two decades or two dozen decades.

So what can be done to reverse this trend?

As was noted, there is no easy answer. A true solution will require an overhaul of the whole of modern life. But, as Lauren states, the first step is simply being informed: “There’s a huge benefit we get from, first of all, understanding where you use energy, and how that energy leads to carbon emissions.”

Ultimately, knowledge is the key for a number of reasons, but primarily, being informed means that you aren’t being misled and (most notably) that you can make informed choices about how *you* want to live.

“If you know the impact you’re having, and you understand it, you can make conscious decisions about where you could cut emissions, where you could make these little choices that actually have a big impact.”

If you want to learn more about climate change and global warming, see NASA’s online database of information. There is also an extensive database by John Cook, a Climate Communication Fellow for the Global Change Institute at the University of Queensland, that refutes common myths and debunks various claims related to global warming/climate change. And to learn about how you can reduce your carbon footprint, see a list of recommendations by the Environmental Protection Agency. Also, see this interactive resource by the Department of Energy and Climate Change. Share This