The Earth is Going to Die and Take Us With It

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Emissions from a factory in China
Photo: iStock

Any competent member of today's society is likely to have heard about the devastating impact of excessive carbon dioxide emissions on our planet. It is a seemingly inescapable demise that looms in the not-so-far distance. Not too long ago, the United Nations issued a press release stating that the earth is nearing its point of no return. What this means is that if global powers do not band together to implement stricter guidelines that protect the planet, and enforce a transition to renewable energy, humans will be unable to stop the Earth's global temperature from rising 2 degrees Celcius, which is all that is required for a wave of cascading catastrophe and cataclysmic weather events to ensue (Loria). The most interesting, and possibly most infuriating thing about this entire ordeal, is that it can be prevented. There are countless solutions that scientists, activists, and ordinary people have come up with. Numerous ways of producing clean energy exist now, but sadly, they do not account for the majority when it comes to how humans produce their energy. Carbon dioxide emissions and global warming are scientifically factual occurrences, and they should not be ignored by anyone for a moment longer.

The largest source of human-caused carbon dioxide emissions is the burning of fossil fuels, which accounts for 87% of carbon dioxide emissions (What's Your Impact). These emissions come from the burning of coal, natural gas, and oil. This is something that began with the industrial revolution, and has since increased tenfold in our ever more demanding and industrialized world. The most devastating of the fossil fuels is coal, as it releases the most carbon dioxide into the air. For every one ton of coal that is burned, two and a half tons of carbon dioxide are released (What's Your Impact). For reference, the United States alone burns over one billion tons of coal each year. Some activities that account for the burning of fossil fuels are transportation, electricity generation, heat generation, and industrial activities. This means almost everything we do has some sort of negative impact on the planet, from driving to school or work, to heating our homes, to cooking your family dinner, to turning on a lamp, to hopping on a plane and taking a vacation, to charging your phone. When looking at the industrial sector individually, one will find that cement production is the most damaging industrial activity that takes place, releasing 90% of its total mass in carbon dioxide back into the atmosphere when undergoing industrial processes (What's Your Impact). Once again, for reference, 4.1 billion metric tons of cement were produced worldwide in 2018, and the numbers only increase as the years go on (Statista). When you begin to really look into anthropogenic climate change, natural emissions, pre-industrial age climate models, you will discover that there is a horrendous abundance of carbon dioxide emissions. They are truly everywhere, and are so deeply intertwined with what has become our standard way of living that they are now extremely difficult to eliminate.

So what are some of the tangible effects humans can expect to experience from their excessive carbon dioxide emissions? First of all, ocean acidification. It is a rising problem. A

carbon dioxide exchange exists between the earth's atmosphere and the ocean. Now that there is more carbon dioxide in the atmosphere, there is more carbon dioxide for the ocean to absorb. Carbon dioxide is released from the ocean at a slow, steady, and constant rate. This overload of carbon dioxide in the atmosphere means that it can no longer keep up with the exchange, and currently absorbs more carbon dioxide than it is able to release at a time, making the amount of carbon dioxide in the ocean steadily increase. Not to mention that this reaction is further accelerated by the rising temperatures of the oceans (Plumer). Carbon dioxide reacts with ocean water and forms carbonic acid. Carbonic acid is harmful to shellfish, whose calcium carbonate shells are eaten away at by carbonic acid (Dupont, et al). Sam Dupont, Emilie Hall, Piero Calosi and And Bengt Lundve conducted a study on the adult northern shrimp species, and their results showed that as little as three weeks of "exposure to decreased pH related to ocean acidification ... can lead to a 1.6 times increase in adult shrimp mortality" (Dupont, et al). So, apologies to any seafood lovers of future generations, but shrimp, crab, lobster, clams, mussels, oysters, and scallops will probably not be making an appearance on your plate.

2018 Camp Fire, California, U.S.
Photo: Gabrielle Lurie

What else? Well, as you've probably seen, weather events seem to keep becoming more and more severe, and that is because they are. Rising global temperatures causes weather extremes to become more severe. This means drier weather, extreme flooding, violent storms, roaring wildfires, and more. So if you live in California, get used to the

smell of bar-b-que. Or for those in the desert, where flash floods almost always follow the rain, consider a kayak. And for people in the tropics where storms are intense, batten down the hatches.

Extreme weather events are an especially dangerous and worrisome side effect of climate change. Once all of the conditions for a specific weather event to take place are present, there is no stopping it. Violent storms have torn through the southern United States, Carribbean islands, and the tropics of Asia in recent years, and this will only worsen as our planet gets warmer. It was previously believed that "individual climate events cannot be attributed to anthropogenic climate change," until an updated assessment from the National Academies of Science concluded that the claim was no longer true due to new evidence (Stott). Studies now show that as of recent, the range in severity, event type, and location of extreme climate events worldwide has greatly increased (Stott). This is possible because when the global temperature rises, a physical change is triggered in the atmosphere (O'Hare). All weather occurs within the atmosphere, so if the environment in which weather occurs changes, the weather itself will also change. All of this is solid evidence that there is, in fact, a direct link between anthropogenic carbon dioxide pollution and the worsening of extreme weather events.

With so much scientific evidence that climate change is undeniably real, and that human activity is now the dominating force driving global warming, skeptics remain. There is a small portion of the scientific community that does not "believe" global warming is real. And some of the only factual

Destruction caused by Hurricane Harvey
Photo: Rhina Guidos

scientific evidence they use to support their claims is that the temperature of the earth and the oceans were much higher hundreds of thousands of years ago than they are now (Fischer). What they fail to take into account is the delicate condition of our earth; the extreme rarity that a planet experiences the complex combination of conditions over millions of years that allow life to thrive to the extent it does on Earth. The earth's global temperature has only raised by about 6 degrees Celcius since the last ice age almost 12,000 years ago (NASA). Due to industrialization, Earth's global temperature has risen 1 degree Celcius in the last 100 years, which is 2000% faster than the normal rate. As earlier mentioned, it will only take an increased global temperature of 2 degrees Celcius to catapult the planet into its fall from grace.

Skeptical scientists also found their claims for disbelief in the widely-accepted scientific notion that change itself is the only constant in nature. And it is very true. Climate, weather, population trends, plate tectonics, ocean currents and so many more climate-affecting factors have remained ever-changing throughout earth's history. Earth has seen everything from ice ages to a blue planet. But, when the rate of change is highly accelerated by unnatural means, nature can no longer keep up. Now, in pre-industrial times there was still an enormous amount of carbon dioxide in the air. Humans have been exhaling it for as long as they have been around, the oceans never stop releasing it, and volcanoes have been spewing it into the air since the beginning of time. But the amount of carbon dioxide in Earth's atmosphere has increased by 20% since the start of the industrial revolution in 1750 (USGCRP). That is an anthropogenic change that directly affects the climate. To provide a point of reference as to the impact of a natural carbon dioxide source, humans now produce over 60 times as much carbon dioxide as volcanoes do annually (NOAA). Our planet simply can not naturally keep up with change on such an astronomically large scale. It desperately needs help.

While those disbelieving members of the scientific community are generally few and far between, their misinformation has a massive impact. Their opinions often fall into the wrong hands. These hands mostly include big corporations, political machines like Koch Industries' Americans for Prosperity, and many right-leaning politicians. Many of the people that fall into these categories take untrue information and run with it in order to keep their big businesses profitable, and their political campaigns likable to other misinformed people. It is imperative that every single person on earth understands the graveness of the situation. Societies and governments must work together. Governments and governments must work together. The Paris Climate Agreement was a great step in the right direction. President Trump's decision to pull the United States out of it was not. But that should not stop an entire country of people from trying to do their part on the small scale. Each day there are individuals and activists worldwide that work hard at getting the word out that change must happen. For the sake of ourselves, our children, and our grandchildren, we must fully understand the problem, and help our neighbors do the same. We must demand change, or we will perish with this planet.

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