

“Boiling Point: The Great Issue of Climate Change”

By Alivia Laird

“We have to recognize that every breath of air we take, every mouthful of food we take, comes from the natural world. And if we damage the natural world, we damage ourselves...”

-David Attenborough

As generation Z slowly matures and grows, the responsibilities of the world fall into their laps. Every issue created and ignored by past generations is now in the hands of generation Z to address and solve, one of the most vital being climate change. Since 1981, the average rise in temperature of land and ocean combined is 0.32° Fahrenheit (Lindsey and Dahlman). Though the small number does not seem to be very significant, this change in temperature holds a severe impact over agriculture, ecosystems, and a variety of different species. If it were not for the oceans taking up over 70% of the planet, temperatures would likely have risen to 100°, leaving Earth uninhabitable. This is not an issue that can be taken lightly or ignored any longer being that the oceans are already losing the ability to absorb as much heat as previously shown (Pink). The rapidly growing issue of climate change needs to be acknowledged immediately and generation Z must work together towards solutions through reducing carbon emissions, supporting green energy, and speaking out on the topic.

Climate change is a term used often but rarely understood. Many have grown up hearing the phrases “Climate change” and “Global warming” spouted on the news and in scientific

articles at school, but just simply hearing these words does not allow anyone to hold a firm understanding of their meaning and intensity. *The Oxford English Dictionary* defines climate change as “a change in global or regional climate patterns, in particular a change apparent from the mid-to-late 20th century onwards and attributed largely to the increased levels of atmospheric carbon dioxide produced by the use of fossil fuels.” At first glance, this definition is easily understood. Yes, the Earth is warming, everyone knows that, but what most people don’t understand is the rapid rate at which the global temperature is rising, what is causing the temperature to rise, and what that means for the planet we call home.

As we know, the Earth has gone through warming and cooling periods since its formation, such as the Cretaceous period and various ice ages. These times are attributed to natural climate change forces: sun intensity, volcanic eruptions, and changes in naturally occurring greenhouse gas concentrations. Though these natural forces do still play a part in the Earth’s current warming, the main factors are *anthropogenic*, meaning they are attributed to humans. Actions such as the burning of fossil fuels (coal, oil and gas), deforestation, fertilizer use, livestock production and certain industrial processes are major contributors to the rising levels of greenhouse gasses (Denchak).

Most are unaware of the severe damage these rising temperatures have on the different aspects of life on our planet. Rapid changes in weather intensity, ocean temperature, acidity, and human health risks are just the beginning. The unnatural rate at which the Earth is warming is putting immense pressure on a multitude of species to adapt to their changing environments much faster than ever before, leading to endangerment and extinction. These changes not only affect the vast number of animals and plants inhabiting our planet, but also humans themselves.

The number of fatalities and illnesses from heat stress, heatstroke, and cardiovascular and kidney disease rise as the temperatures do (Pink).

Although the human health consequences are not widely discussed, the melting of polar ice caps are more extensively publicized. In the summer of 2019, 586 billion tons of glacier ice melted. In September of 2020 alone, a 42.3 square mile portion of ice broke away from Greenland's ice caps, where it now is melting away in the ocean (Beer). Both instances displayed record breaking levels of melting, and they do not stand alone. The rate of glacial ice melting has rapidly increased in the last 10 years, making the severity of our warming climate staggeringly obvious. Over the years the water content of our planet in the form of oceans has largely helped to absorb the excess heat, which is the reason the average temperature rise has remained as low as it has. Though this does sound great, it is not permanent nor is it a solution to the growing issue. Through all the years of abuse, the ocean is slowly losing its ability to absorb heat as the temperature rises (Lindsey and Dahlman), making the urgency of finding a solution even greater.

A multitude of anthropogenic factors contribute to our planet's rising temperatures, the greatest being carbon emissions. Carbon emission is the release of carbon into the air, which, in turn, adds to a phenomenon known as the Greenhouse Effect. Simply put, the Greenhouse Effect is the trapping of the sun's warmth in the lower atmosphere of the Earth by greenhouse gases (ex. carbon). Carbon emissions are outputted through the burning of fossil fuels such as coal or natural gas. Besides carbon, other greenhouse gases are emitted into the atmosphere through simple actions like driving a car or agricultural practices (Osmanski). Now what do all these scientific terms mean for the planet's climate?

In a world without an excess of greenhouse gasses, the heat from the sun would warm the surface of the Earth and excess radiation would bounce back and escape into space. In the

current state of our atmosphere, the greenhouse gasses present trap the extra radiation, effectively blocking it from leaving the Earth and traveling back into space. This is what makes carbon emissions such a large part of the planet's rising temperature. If the gasses cannot exit, they only sit and continuously escalate the temperature levels. As we continue to take part in what most people would consider everyday activities like driving their car to work and burning fossil fuels to create the energy required to turn our lights on, we only add to the amount of carbon and other greenhouse gasses, leading to the capture of more and more excess radiation (Article 6). While there is no method for removing the trapped heat or greenhouse gasses, there is a solution to minimizing our carbon emissions. This solution is known as green energy and renewable resources. Green energy is taken from renewable sources such as sunlight, wind, water and geothermal heat (Boyle 456). The benefits of these sources are extensive, the most important of which being their cleanness and sustainability. Nonrenewable resources like coal are finite, meaning they are not able to regenerate on the human time scale. Once we have used all of it, that is it, there is no way to get it back. Due to the nature of renewable resources, obtaining energy from them is limitless. They will never run out or be used up. Additionally, these resources do not produce harmful gasses or leave behind toxic chemicals in the process of harvesting them (Rogers).

An extraordinary example of the use of renewable energy in its prime is the country Iceland. After spending years relying on imported peat, wood, and fossil fuels for energy, the resources were quickly reaching the point of exhaustion. Recognizing the issue and the country's opportunity to make a change, Iceland turned to the use of hydroelectricity and geothermal heat. Today the country has limited its use of peat and wood to miniscule amounts, gaining energy almost completely from its renewable sources (Denchak). This change Iceland brought about is

admirable, and quickly becoming a necessary action to be taken by others if we wish to change the drastic increases in the Earth's temperature. The answer is simple: we derive our energy from resources that are renewable but don't emit harmful gasses. Though this idea is straightforward, complications arise with the heavy influence of politics and commonly known tragedies like Chernobyl. Change of this magnitude is never widely accepted, but in our current state, we do not have time for acceptance if we want to continue to call the Earth our home. The fight for the use of green energy is one that must be fought with commitment and intensity. If it is not, carbon emissions will continue to grant excess heat to the environment until it is left uninhabitable and the generations that follow are deprived of a home.

Though reducing carbon emissions and supporting green energy are incredibly important parts of working towards a solution to climate change, these actions cannot be completed unless they are supported by the government. Speaking up is vital in a world run by politics. Voicing personal opinions and participating in actions like signing petitions may seem small and pointless, but they are some of the most effective methods of provoking change in the world around us. The state of the Earth is demanding change, and this change must start with the people. Making personal opinions known through social media, petitions, voting, and even speaking directly to political representatives influences the actions of leaders. This type of influence must take place in order to create real and productive change, for the good of the Earth (Denchak).

Some argue that the current rise in the Earth's temperature is due to the natural cycles of warming and cooling the planet has experienced since its formation. Though it is true that the Earth does experience these natural cycles, the time scales show evidence that this is not a part of the cycle. In the past, the period of increasing or decreasing temperature happened over a length

of time that does not fit into the human time scale, unless otherwise caused by an outside factor such as an impact event (Gale). This means that the temperature change took place gradually over such a long time that it is unable to be documented in the time humans have spent on the Earth. The rate at which the current changes in climate are occurring is great evidence for saying the shift is anything but natural. Scientists have easily documented the rising temperatures, displaying that they are, in fact, taking place within a human time scale.

No matter individual political beliefs or other personal opinions, climate change is real and human actions are great contributors to the issue. The Earth's drastically increasing temperature is affecting a variety of different species and global weather patterns but the health of the human population. The oceans are losing the ability to absorb the excess heat being trapped in the atmosphere by greenhouse gasses, making it critical that action is taken now before it is too late. The rapidly growing issue of climate change needs to be acknowledged immediately and generation Z must work together towards solutions through reducing carbon emissions, supporting green energy, and speaking out on the topic.

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