**The Impact of Climate Change**

Katrina Cruz

South Piedmont Community College

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Calvin Jones

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**Abstract**

This essay explores the implications of climate change on society as a whole. Many individuals are unaware of their own effects on climate change as well as how it impacts them. Due to human activity like burning fossil fuels and deforestation, climate change has not only become more severe but has also accelerated recently. Even though climate change is a natural occurrence, research indicates that human activity is a contributing factor. This report explains to the audience how human activity is contributing to climate change through a variety of studies and scholarship pieces. It also talks about how some at-home solutions, like greenhouses, can help mitigate climate change. Although there is no known way to completely stop climate change, these natural solutions can help reduce the consequences. The forces of climate change are unstoppable.

 Keywords: climate change, deforestation, society, future

 Climate change describes long-term shifts in temperature and weather patterns. While certain effects of climate change may be inevitable, people have magnified them throughout time, posing a real threat to humanity. Studies and research have refuted the common belief held by people that they are not vulnerable or impacted by this. In *"Food, Water, and Climate Change”,* AngelaLeeper discusses how climate change is “negatively affecting desert, ocean, freshwater, prairie, woodland forest, rain forest, grassland, and tundra ecosystems” (Leeper, 2016). These are areas all around the world that are being affected by this issue, not just one place. However, because they happen slowly, many individuals are unaware of the implications of climate change.

# The concept of climate change has existed since the late 1800s and the early 1900’s. In the scholarly article, “Climate Change and the Need for Future Research”, the author states, “Climate Changes have impacted our planet since the beginning of time. These were manifested by cyclic Ice Ages and Warm Periods ever since” (Adamo, 2022). However, many people disregard it as absurd and do not seriously consider the concerns associated with climate change. But as time passes, it is undoubtedly gaining more attention.

#  There are many different leading causes to climate change. In a review of Climate Change 1995: The Science of Climate Change, Lawrence C Nkemdirim states,” Unlike the past, when climate change was externally driven and evolved slowly, this anticipated change is being blamed on human activities specifically, the emission of carbon dioxide and other trace gasses through the burning of fossil fuels, cement manufacturing, deforestation and a variety of land-use practices” (Nkemdirim, 1997). And the world is changing drastically as a result of carbon emission staying on the same course. Compared to previous years, the summers are significantly hotter. Beginning in the early 1900s, there has been a continuous increase in the temperature of winters as the years have gone by. This is a change that is evident not just in the US but also throughout the world.

Deforestation has been a significant cause of climate change for many generations, and it is only getting worse. Because trees absorb carbon dioxide, after they are cut down for products, carbon dioxide will still be present in the troposphere. This is changing the makeup of gasses in the atmosphere. Another major contributor to the carbon dioxide issue is the burning of fossil fuels. In the scholarly journal “*Keeping a closer eye on fossil fuel CO2”*, Peter Nelson states, “If that increase in emissions persists then temperature increases of 4 ◦C by 2060 have been predicted” (Nelson, 2009). These fossils release carbon when they burn, and carbon dioxide is created when carbon combines with oxygen in the troposphere. Although there are other factors contributing to the acceleration of climate change, deforestation and fossil fuel consumption are the two main contributing factors, with deforestation accounting for 17% of gas emissions. Furthermore, because neither of these processes is renewable, they must be carried out at mass rates.

This can be compared to the food chain. Large fish prey on smaller fish, but if the population of large fish declines, you'll find yourself overpopulated with small fish, who will then devour the tiny fish. However, ten years later, there are no longer any tiny fish, and the small fish that still exist are starving to death and maintaining an unhealthy equilibrium. The atmosphere is changing in this way. These gasses are unrestricted and undisposed of, so they are free to travel around and eventually become harmful gasses. Although essential for maintaining the stability of our atmosphere, they must be restricted to keep balance.

As the carbon dioxide rates increase so does the temperature. Droughts and other erratic weather patterns may result from this. This can be highly detrimental to farming and crops since plants have little chance of surviving in these unpredictable weather patterns. Additionally, this may impair food quality, restrict access to food, and disturb food availability, all of which could have detrimental impacts on the economy. Global weather patterns are changing, and this could have a bad impact on our civilization. There are several instances of this, including the destruction of property and the financial instability brought on by severe storms, natural catastrophes, etc.

In *“Investigating Whether the Ensemble Average of Multi-Global-Climate-Models Can Necessarily Better Project Seasonal Drought Conditions in China”* a group of researchers performed a study where they “selected five GCMs with historical (1961–2014) and future (2015–2100) periods, namely CNRM-CM6-1, GFDL-ESM4, MPI-ESM1-2-HR, MPI-ESM1-2-LR, and NorESM2-MM, as well as their ensemble mean ENS-CGMMN” (Lui et al., 2023). They conducted this study because they observed that regions with complicated topography and substantial seasonal fluctuation, like China, were difficult for global climate models to accurately anticipate in terms of precipitation and drought features. It was determined that the greatest amount of change would occur between 2015 and 2100, with China's moisture levels rising significantly. It also states that, “This study’s findings can provide significant support for future research on climate change and drought, which can help improve the accuracy of future climate projections and serve as a reference for drought risk management and policy formulation” (Lui et al., 2023,). Even though the temperature is not rising, there has been a considerable change in precipitation, which can be very significant for studies focusing on climate change. It's critical to keep in mind that climate change encompasses more than just global warming. Furthermore, these predictions can also be crucial because they could have a wide range of consequences for people: "China has historically experienced frequent drought disasters, causing severe damage to agriculture, the environment, the economy, and people's livelihoods."

There is no true solution to climate change, only ways to slow it down. It is a natural process that will take place whether or not people are around. Certain human activities, however, intensify the changes and have a greater impact than they did initially. Most of the damage, like using fossil fuels, are permanent. There are numerous strategies to reduce the magnifications, such as composting and the use of renewable energy sources. Living a greener lifestyle is the main focus of most solutions. While they will make some difference, it won't be enough to reverse the effects of climate change. Many scientists think there is no way to foresee climate change. Multiple researchers performed a study where they, “tested several one-dimensional (1D) lake models' robustness for long-term variations based on up to 63 years of limnological data collected by the French Observatory of Lakes (OLA)” in “Hydrology and Earth system sciences” (Copernicus GmbH, 2023). They concluded after conducting this analysis that "However, observations spanning several decades are rarely used to challenge such assumptions. Additionally, there are a number of drawbacks to using global-scale forcing factors in lake models, including the requirement for substantial downscaling (Copernicus GmbH, 2023).

Climate change is a worldwide problem that poses a very real threat. Researchers and scientists have been trying to alert humanity to the dangers of climate change for years. Furthermore, by the time they find a remedy, it may be unstoppable. The ice caps will continue to melt, the temperature will rise over time, and eventually the weather will be utterly random. We might have been able to adjust to a safer way of life if more people had paid attention and acted sooner. However, it is too late; the effects of climate change have already set in.

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