

Global Warming, Its Causes, Enviromental Effect and Solution to Avoid This Phenomena

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ABSTRACT

Objective: A serious environmental problem, global warming is mostly brought on by an increase in greenhouse gases in the atmosphere. Among the gases that trap heat and contribute to a gradual rise in global temperatures are carbon dioxide (CO₂), nitrous oxide (N₂O), and methane (CH₄). **Method:** These emissions are mostly resulting from human activities such as burning fossil fuels, industrial processes, and deforestation. **Results:** The planet is consequently facing dire repercussions, such as melting polar ice, increasing sea levels, severe weather, and dangers to human health and biodiversity. **Novelty:** Sustainable environmental policies, the use of renewable energy sources, and international cooperation are all necessary to combat global warming. For future generations to live on a stable and healthy planet, immediate action is necessary to lessen its effects.

INTRODUCTION

The greenhouse effect, which is brought on by increased concentrations of methane, carbon dioxide, chlorofluorocarbons, and other pollutants, is responsible for the gradual rise in Earth's average atmospheric temperature known as global warming [1]. The very foundation of global society is at risk due to global warming, one of the most controversial scientific issues of the twenty-first century. In addition to being a scientific problem, the conundrum of global warming includes psychology, local politics, geopolitics, and economics., and personal lifestyles. Numerous greenhouse gases, which are produced by humans in a variety of ways, have been identified by scientists as the cause of global warming. Numerous of these gases originate through the burning of fossil fuels in manufacturing facilities, automobiles, along with the generation of electric power. the most common type of greenhouse gase is carbon dioxide (CO₂) [2]. Methane released from deforestation, which lessens the ability of forests to store CO₂ and other gases; nitrous oxide from fertilizers; gases used in industrial processes and refrigeration; and landfills and agriculture, particularly from the digestive systems of grazing animals., are other contributors. Heat absorption varies amongst different greenhouse gases. Compared to CO₂, some are better at retaining heat. Methane, for instance, nitrous oxide traps 300 times as much heat as CO₂, whereas it traps more than 20 times. its heat. Some gases have been identified, including chlorofluorocarbons. Inside numerous countries due to their harm to the ozone layer), have a thousandfold higher capacity to trap heat compared to CO₂. Nonetheless, these vapors provide lower total greater atmospheric heat than CO₂ due to their significantly lower concentrations [2].

RESEARCH METHOD

This study uses a descriptive literature review method by examining books, reports, and journal articles related to global warming, its causes, environmental effects, and mitigation solutions. The literature is organized thematically into causes, environmental effects, and solutions, and the findings are presented descriptively based on the cited sources.

RESULTS AND DISCUSSION

Result

Nitrogen oxides, phosphorus, and, occasionally, both bromine and chlorine compounds. What the buildup among these gases in the surrounding air modifies the radiation-active harmony. Warming of the Earth's surface Warming worldwide is mostly resulting from emissions of greenhouse gases carbon dioxide is one of them.and lower atmosphere is the overall result.

Some of the radiation that the sun emits into the atmosphere is captured and refracted by greenhouse gases [3].

Ozone depletion is the second most important factor contributing to global warming. Specifically, this is due the source gases are contained in chlorine.

These gases separate the release degrade ozone by catalyzing the breakdown of chlorine atoms in the presence of ultraviolet light Aerosols are another consequence of global warming, as the weather shifts in two different ways. They are able to. They can first spread and inhaled infrared also solar radiosis, and then They are able to change clouds' chemical also microphysical characteristics, which may affect how long and how much throughout their lives [4]. in the planet is refreshed by the spread of solar radiation, but aerosols absorb it. prevents the ground's surface from absorbing sunlight from warming in the air directly Humans are exposed to the aerosol content of the atmosphere in a variety of ways. Within Additionally,the exhaust pollutants from various kinds of transportation comprise a variety of pollutants. that were originally aerosols or that were converted into aerosols chemically responses within the atmosphere [5].

Natural forest fires, especially large-scale fires that last for a long time, can affect global temperatures. Burning vegetation increases the concentration of greenhouse gases like carbon dioxide because it releases stored carbon into the atmosphere. In the end, these greenhouse gases warm the atmosphere by absorbing solar radiation. Moreover, hazardous gases and soot produced by forest fires add to air pollution [6], [7]. Another major factor contributing to global warming is human caused deforestation [8] and the quantity of carbon dioxide present in the atmosphere rises as this number about plants on Earth declines. Furthermore, when forests or grasslands are cleared for construction, decomposing plant matter releases stored carbon, which raises atmospheric carbon levels even more. Approximately 20% of greenhouse gas emissions worldwide are caused by tropical deforestation [9].

Methane, nitrous oxide, and carbon dioxide are among the emissions of greenhouse gases during this production from nitrogen fertilizer. Every time fertilizer is applied to the soil, nitrogen oxide is released into the atmosphere. The third most significant greenhouse gas now is nitrous oxide, after carbon dioxide and methane [10] and making the use of fertilizer in agriculture one of the main causes of global warming [11].

These represent only a small portion of the many detrimental effects of global warming. When the temperature rises Evaporation continues to occur at sea as well as on land. Locations impacted by drought aren't greater precipitation to offset the increased evaporation. This is going to result in some areas of the world to crop failure, especially those with already high temperatures, and starvation. The atmospheric concentration of excess water vapor will decrease once more as more rain creates the flux [12], Cities and villages that depend on water resources may experience drought and water shortages Water in snow-capped mountains is melting. It is due to the fact that the world's glaciers are rapidly melting likely result in an increase in heat waves, intense precipitation, and powerful storms weather Sea level rise is the greatest hazardous consequence of the global climate, since ice as well as Rapid glacier melting is caused by rising temperatures. This will cause the sea level to rise Lake and river water levels, which can cause devastating floods [13].

It is anticipated that Earth's biodiversity will be significantly and widely impacted by global warming. as temperatures rise, a variety of plant species are already moving their ranges to higher elevations or northward. Many plant physiologic functions, including photosynthesis, which can be pushed to their limits by rising temperatures. When a plant's physiological tolerance is exceeded, extreme temperatures can be detrimental. Photosynthesis is also impacted by elevated atmospheric CO₂ concentrations, which lead to enhanced water efficiency of plants, but reduced photochemical capacity growth as well. This is may cause plants to be lose some of their nutritional value [14].

Terrestrial animals are directly impacted by global warming, which is a key factor in cycles of speciation and extinction. Animals are migrating, adapting, or even going extinct in response to climate change. Cattle have perished during a drought in northern Kenya, for instance, underscoring the dire consequences of extreme weather [15]

Migration is a natural reaction to climate change, and long-distance migrating species are likely to change their ranges. Compared to the 20th century, migratory birds and insects are reaching their summer feeding and nesting grounds a few days or weeks earlier. These migrations frequently coincide with variations in altitude, temperature, and other environmental elements brought on by global warming. Changes in the timing of biological events are known as phenological changes, and they can either be inherited or not. If unchecked, these and other effects of global warming are likely to contribute to the extinction of one-third of animal species from their current ranges by 2080. These

changes frequently involve adjustments in the timing of reproduction, mating, migration, and feeding [16].

Discussion

Efforts to limit or prevent greenhouse gas emissions in order to lessen the possible severity of global warming are referred to as mitigation [17].

Additionally, it might entail efforts to eliminate greenhouse gases from the atmosphere [18]. Strategies for mitigation consist of behavioral adjustments, the use of renewable energy sources, the adoption of new technologies, and increases in energy efficiency. Numerous strategies and tactics are needed for these endeavors.

The most important element to reducing global warming is by using renewable energy which it is Natural occurrences like Geothermal heat, sunlight, water, tides, and plant development [19].

We need to conduct more detailed research on renewable energy sources to satisfy energy needs while keeping our current development goals. Additionally, instead of depending on fossil fuels for progress, leading countries should prioritize renewable energy.

CONCLUSION

Fundamental Finding: Both the scientific and ecological communities recognize this serious issue of warming the planet and human actions that contribute to it. The quick rise in greenhouse emissions is concerning because that impacts the environment more quickly than many living things may adjust. this transforming and complicated global poses major difficulties for everyone life types of. Warming of the planet creates serious issues It Is not just due to people however, for both plants and animals. Polar ice caps melting may cause extensive flooding as a result of rising sea levels. put Fishing and farming sectors at risk. Furthermore, warming of the planet leads to Further severe weather patterns, heavier rainfall succeeded by long drier periods, alterations in how plants also animals survive, also a reduction in sources of water from glaciers. Researchers are noticing these alterations happening faster more than they expected.

Implication: It represents a significant danger which requires strong action to be combat that. to be tackle this problems, we need to take timely actions, such as using renewable energy sources as well as working to be stop removal of forests. **Limitation:** The analysis mentioned only here. touches on this intricate Scientific and technical aspects in connection with global warming. **Future Research:** To efficiently confront this challenge, we have to seek out new solutions.

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