

Effects of Climate change on Biodiversity.

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ABSTRACT

Global Climate change is the most severe environmental threat in the 21st century. Today climate change is a global challenge for humankind. Climate change is having significant effects and is a major threat not only for mankind, but also for life on earth as a whole. Climate change represents one of the most important threats to our planet's biodiversity. There is a two way relationship between biodiversity and climate. Biodiversity is threatened by human-induced climate change and climate change is already forcing biodiversity to adopt either through shifting habitat or changing life cycles. Plants and animals are endangered due to global warming resulting from increasing concentration of carbon dioxide released into atmosphere through different human activities. Climate has played a critical role in fluctuations of biodiversity levels. There is some evidence that plants and animals are already responding to warmer temperatures. The basic objective of this paper is to analysis impact of climate change on biodiversity and global warming strategy.

Keywords: climate change, global warming, biodiversity, green house gases.

INTRODUCTION

Climate is an important environmental influence on ecosystems. Changing climate affects ecosystems in a variety of ways. For instance, warming may force species to migrate to higher latitudes or higher elevations where temperatures are more conducive to their survival. Similarly, as sea level rises, saltwater intrusion into a freshwater system may force some key species to relocate or die, thus removing predators or prey that are critical in the existing food chain.

Global warming is a serious issue, and it's a term that means the planet is experiencing a gradual warming of temperatures due to an increase in gasses and pollutants like carbon monoxide and CFCs. These pollutants are causing what is popularly known today as "the Greenhouse Effect". Whatever we call it, global warming is impacting every living being on planet earth including plants and animals, in addition to ice caps melting, increasing sea levels and the extinction of plant and animal species.

As climate change alters temperature and weather patterns, it will also impact plant and animal life. Scientist expect the number and range of species, which define biodiversity, will decline greatly as temperature continue to rise. The loss of biodiversity could have many negative impacts on the future ecosystem and humanity worldwide.

CLIMATE CHANGES IMPACT ON ENVIRONMENT

Greenhouse gases, such as carbon dioxide, absorb heat from sunlight, preventing it from escaping back into space. As the level of greenhouse gases rises, so will temperatures. The Intergovernmental Panel on Climate Change predicts that by 2100, temperatures may rise as much as 6 degrees Celsius (11 degrees Fahrenheit). Though the Earth's climate has changed in the past, the rapid severity of this change will directly affect ecosystems and biodiversity.

Effects on Land Biodiversity

Rising temperatures already affect the world's polar regions. Diminishing ice packs reduce the habitats of polar bears, penguins, puffins, and other Arctic creatures. As the ice melts, it increases the sea level, which will affect and perhaps destroy ecosystems on coastlines. Changes in temperatures will also cause shifts in mating cycles, especially for migratory animals that rely on changing seasons to indicate their migration and reproductive timing.

Effects on Ocean Biodiversity

Rising sea levels will also cause changes to ocean temperatures and perhaps even currents. Such changes would have a strong impact on zooplankton, an essential part of the food chain in the ocean. Shifts

in where plankton live and how big the size of their populations could upset the biodiversity in the Earth's waters. Whales, especially, could bear the brunt of this, as many whale species require mass amounts of plankton to survive. In addition, increased carbon dioxide causes acidification of the ocean, affecting creatures and plants that are sensitive to pH imbalances.

Lack of Biodiversity

As biodiversity decreases, there will be far-reaching effects. Disruptions in the food chain may greatly affect not only ecosystems but also humanity's ability to feed an ever-growing population. For example, losing diverse insect species will decrease plant pollination. Additionally, this may decrease humanity's ability to produce medicine, as extinction claims more and more key plant species. Biodiversity also protects against natural disasters, such as grasses that have evolved specifically to resist the spread of wildfires.

STRATEGIES TO REDUCE GLOBAL WARMING

Reduce Fossil Fuel Use

Burning fossil fuels increases the levels of greenhouse gases in the atmosphere. There are two ways to reduce fossil fuel use: Use less energy, or use alternative, non polluting energy sources like solar and wind power. At home, this translates to saving electricity by using energy-efficient appliances and compact fluorescent light bulbs, as well as reducing gasoline use and buying green power from your electricity provider, if available (Environmental protection energy).

Plant Trees

Because carbon dioxide is the most important greenhouse gas, planting trees and other plants can slow or stop global warming. Plants take in carbon dioxide and release oxygen. They use carbon to build their own tissues and return some of it to the soil in a process called sequestration. Deforestation of rain forests is a large contributor to global warming and CO₂ emissions, but planting new trees, even in your own backyard, can help to offset this (Environmental protection agency)

Reduce Waste

The production of garbage contributes to global warming both directly and indirectly. Decomposing waste in landfills produces methane and other greenhouse gases. Waste also requires energy to manufacture in the first place. Reducing your consumption patterns and reusing items whenever possible minimizes your carbon footprint, since fewer new items need to be made. Recycling metal, plastic, glass and paper lowers greenhouse gas emissions, since recycled items take far less energy to manufacture than items produced from scratch. (Environmental Protection agency).

Conserve Water

Cities consume significant amounts of energy when purifying and distributing water, which contributes to greenhouse gas emissions. Saving water reduces the amount of energy used. At home, turn off water immediately whenever you're not using it, and repair or replace leaky faucets and toilets. In your yard, landscape with plants and grasses that require less water, and capture rainwater in barrels for irrigating (Environmental Protection Agency).

CONCLUSION

Most plants and animals live in areas with very specific climate conditions, such as temperature and rainfall patterns, that enable them to thrive. Any change in the climate of an area can affect the plants and animals living there, as well as the makeup of the entire ecosystem. Some species are already responding to a warmer climate by moving to cooler locations. For example, some North American animals and plants are moving farther north or to higher elevations to find suitable places to live. Climate change also alters the life cycles of plants and animals. For example, as temperatures get warmer, many plants are starting to grow and bloom earlier in the spring and survive longer into the fall. Some animals are waking from hibernation sooner or migrating at different times, too. As the Earth gets warmer, plants and animals that need to live in cold places, like on mountaintops or in the Arctic, might not have a suitable place to live. If the Earth keeps getting warmer, up to one-fourth of all the plants and animals on Earth could become extinct within 100

years. Every plant and animal plays a role in the ecosystem (for example, as a source of food, a predator, a pollinator, a source of shelter), so losing one species can affect many others. Just like people, plants and animals will have to adapt to climate change. Many types of birds in North America are already migrating further north as the temperature warms. People can help these animals adapt by protecting and preserving their habitats.

The scientific and environmental community is on the same page regarding the bitter reality of global warming and the involvement of human factor in it. The paper discussed here has only dented the surface of what is a very intricate line of scientific and engineering exploration. Global warming is a big hazard and appropriate measures must be taken to tackle this serious problem. This problem is not only causing trouble to the human beings but also to animals and plants. Melting of polar ice caps will lead to floods which can cause mayhem everywhere. Rise of sea levels will devastate agricultural and fishing activities. To embark upon these problems, some remedial steps must be timely taken which include but are not limited to the use of renewable sources of energy and stopping deforestation. Innovative solutions must be brought forward to end this hazard once and forever.

Conflicts of interest: The authors stated that no conflicts of interest.

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