

Global warming and ocean acidification research paper example

[Environment](#), [Water](#)



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Global warming together with ocean acidification has presented a great challenge in the balancing of different climatic parameters. The increased level of these incidents has resulted in from different practices that are practiced by human, as well as from other natural occurrences. There are also an increased number of the consequences that are being witnessed as a result of ocean acidification and global warming. This paper aims to provide more details on the causes and consequences of ocean acidification and global warming.

The Global warming is the continuous and an unequivocal increase in the average temperature of the climate system on earth (Haldar). The cause of global warming has been mainly due to the effect of greenhouse gases that absorb and give off infrared radiation coming from the sun increasing temperatures on the surface of the earth and the lower atmosphere. Global warming also occurs as a result of particulates that are released by volcanoes, as well as the pollutants that are made by humans. Global warming may also occur as a result of the increase in the solar energy that hitting the earth. Increased rate of deforestation has also resulted in increased levels of global warming (Haldar).

Global warming has resulted to a number of consequences that have changed the climate patterns significantly. Several changes have been observed on the environment such as the shrinking of the glaciers, breaking up of ice on rivers and lakes, range of plants and animals shifting, and the flowering of trees occurring sooner than it used to occur. There is also an accelerated rate of reduction of sea ice, increased rise in sea level and heat waves that are more intense. Global warming has also resulted in a steady

replacement of some of the tropical forest by savannah, loss of species diversity, and significant changes in the accessibility of water for consumption, energy production and agriculture. Flash floods and coastal flooding have increased, and reduction in food productivity in most areas has also been observed (NASA)

There are different ways that may help in reducing global warming. One of these ways is the reduction of fossil fuel use. This will bring down the quantity of greenhouse gases that are emitted into the atmosphere. One way to reduce the use of the fossil fuels is by using less energy or alternative energy that does not pollute the atmosphere. At home, saving energy may involve the use of energy saving light bulbs and reduction in use of gasoline (Steffan).

Another way to reduce global warming is through planting of trees. More trees translate in the reduction of the CO₂ as the trees use the CO₂ in making their own food while releasing oxygen. Planting trees also reverse the effect of deforestation which is also one of the causes of global warming. Reduction of consumption patterns and practicing reuse of different items whenever it is possible may also help in the reduction of carbon footprint. Recycling plastic, metal, and paper reduces the rate of releasing greenhouse gases (Steffan).

Conservation of water is the other way to stop global warming. A significant quantity of energy is used during the purification and supply of water leading to increased levels of greenhouse gases. Reduction in water usage may go a long way in reducing the amount of energy that is used in processing water for consumption (Steffan).

Ocean acidification, on the other hand, refers to the continuous reduction of the level of pH in the oceans (Caldeira and Wickett). The acidification results from the carbon dioxide that is released into the atmosphere being dissolved into lakes, rivers and oceans. Once absorbed, carbon dioxide reacts with water forming carbonic acid in order to equilibrate. The formed carbonic acid molecules may then dissociate to form hydronium ions and bicarbonate ions. The increased presence of the hydronium ions results in a reduction, in the level of pH in the ocean (Doney, Fabry and Feely).

The increased acidity in the ocean has a range of harmful consequences. The acidification may result in the reduction, in the rate of metabolism in a number of marine organisms. The acidification may also lead to coral bleaching, lower the immune responses of other organisms. It is also anticipated that there will be a reduction in the structures that are made of calcium carbonate since acidification increases the dissolution of these minerals. Reduction in the level of commercial fisheries, as a result, of the destruction of the calcifying organisms, has also been noted. In addition, Arctic economy and tourism reduction has also been observed and, as a result, affected the way most indigenous people live (NOAA).

Ways to stop ocean acidification include reduction of the carbon dioxide emission. This may be achieved through planting of trees and other ways that help to reduce carbon dioxide in the atmosphere. Ocean acidification may also be stopped through iron fertilization, which stimulates the phytoplankton to increase their photosynthetic process. The process converts the dissolved carbon dioxide forming carbohydrates and oxygen. Another way to stop ocean acidification is through the extraction of the

carbonic acid from the seawater to make synthetic fuel (Eisaman, Parajuly and Tuganov).

In conclusion, the causes of ocean acidification and global warming range from artificial to nature. The consequences are also many and most of them are yet to be discovered. Interventions from an individual level to international level may go a long way in reducing or ultimately stopping ocean acidification, as well as global warming.

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