WHAT IMPACT HAS CLIMATE CHANGE HAD ON CORAL REEF?

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Abstract: This article will discuss impact of climate changes to the coral reefs. Atmospheric concentration of greenhouse gases such as carbon dioxide and ocean acidification is altering the environment dramatically as a result of 95 % of human activities such as burning fossil fuels to power homes, factories, airplanes, and cars. This climate change is the greatest global threat to coral reef ecosystems which are very important to provide 500 million people with food or resources. The coral reef ecosystems have played crucial role in our understanding how our surrounded atmosphere may respond to climate change. However, the main purpose of this research is to discuss causes of climate change (a warming ocean, ocean acidification and changes in storm patterns) on marine environment such as coral reefs which are likely to change over the next decades.

Key words: climate change, global warming, coral bleaching, acidification, algaes, ecosystem

Marine ecosystems incorporate coral reefs as one of the highest levels of biodiversity providing valuable products and services. They are highly vulnerable to natural factors like ocean warming. Due to effects of ocean warming, it will lead to coral bleaching, which is a very huge problem (Great Barrier Reef in Japan). Changes in temperature and mineral levels in the water cause coral bleaching. These changes are considered as destructible for the tiny algae living in the coral. That is mainly because algaes are forced to abandon their coral host, leaving without any color or food when they are stressed. Alternatively, if they will not return after some time, corals will be died from lack of food.

Changing storm patterns damage on coral reefs is extremely varying. If there is intensity in tropical storms, then coral reefs will take a lot of time to recover. This is because that the direct physical impact from storm events include erosion and removal of reef framework. However, increasing number of storms are also likely to cause species to decline rapidly, resulting in low structural complexity on reefs. In addition, smothering of corals stems from increased flooding events, lack of fresh water. Given the crucial role that ocean water and storms play in limiting reef development in many parts of the world today, the prospect of reduced reef health on account of these factors remains likely.

Ocean acidification is expected to influence coral reef's future. This could change food chain in ocean and also supplement of food for humans, which are provided by reef-building corals. In such

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cases, people are regarded as guilty since they emitted more than 150 billion metric tons of carbon dioxide on average. This poisonous carbon dioxide emissions related to human activities are absorbed by the oceans. It is estimated that water surface would be more acidic by the end of this century due to the fact that such alterations will effect ocean’s ability to store future carbon emissions. Besides, “If you protect the coral reef, you protect the ocean ecosystem”.(Lin,1997)

Changes in storm patterns can be also contributory factor to the coral reefs. This is mainly because that coral reefs need longer time to recover from effects of storm conditions. The storms are directly impacted on erosion of reef framework and death of many corals by consuming debris. Increasing number of storms are likely to cause to decline rapidly in the number of reef species.

Conclusion

While causes and changes in climate change increases, it is becoming clear that coral reefs are among the most threatened by this phenomenon. Marine ecosystems which include coral reefs are on the verge of extinct as a result of current and future rates of change in ocean warming, acidity and storm can negatively influence. Because of these circumstances, the corals will become rare organisms when most of the marine species depend on reef-building corals.

References

1. Haw, J.(2013). The Effects of Climate Change on Coral Reef Health. Scientific American. https://blogs.scientificamerican.com/expeditions/the-effects-of-climate-change-on-coral-reef-health/.
2. Heron, S.(2017). Impacts of Climate Change on World Heritage Coral Reef. A first scientific Assessment. Paris, UNESCO World Heritage Centre.
3. Hoegh-Guldberg, O.(2011). The impact of climate change on coral reef ecosystems. Coral reefs: an ecosystem in transition. Dordrecht, Netherlands
4. Rosane, O.(2022). Climate crisis puts half of coral reefs at risk by 2035. World Economic Forum. https://www.weforum.org/agenda/2022/10/climate-crisis-puts-half-of-reefs-at-risk-by-2035.
5. (2022). *Changes in Storm Patterns. Reef Resilience*. https://reefresilience.org/stressors/climate-and-ocean-change/changes-in-storm-patterns/.
6. (2022). US Department of Commerce, National Oceanic and Atmospheric Administration. *NOAA’s National Ocean Service*. https://oceanservice.noaa.gov/about/welcome.html#cite

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