Effect of climate change on the Great Barrier Reef

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**Introduction**

The Great Barrier Reef situated at the coast of Australia is the world's largest coral reef system that spreads over more than 1,400 miles off the coast of Australia (Kennedy, 2018). This century has witnessed the damage caused to it due to climate change. During two years, two enormous blanching occasions have triggered extensive die-off around the corals. Marine heatwaves cause instant death of corals and destroy the ecosystem. Scientists are considering higher water temperatures, one of the main reasons for this severs damage (Kennedy, 2018). Great Barrier Reef carries great diversity and among all these specific corals are not high temperature tolerant. This is exacerbated with any change in water temperature such as bleaching event. This paper will discuss the effect of climate change on the Great Barrier Reef and will suggest some measures that can be taken to make this ecosystem survive for the future.

**Discussion**

Bleaching events are the results of the disappearance of symbiotic algae that provide nutrients to coral cells, and can be now be seen frequently compared to the past. There are consecutive episodes of severe bleaching in 2016 and 2017 (Kennedy, 2018). Bleaching corals is not only killing corals but also making remaining reefs more susceptible to disease and other extortions. Consequently, scientists are also expecting this kind of impairment to these reefs as more marine heatwaves are expected and all temperature-sensitive corals will dimish soon (Dennis, April 3). Thus, the Great Barrier Reef is relentlessly in danger and some 3,863 reefs already have died (Kennedy, 2018). This has also made scientists curious as all reefs are dying at a lesser level of rising temperatures. Higher water temperatures jolt the reefs and make all-important algae to suffer (Wolff, Mumby, Devlin, & Anthony, 2018). This results in simpler coral reefs from diverse coral communities having more and more fish, shrimps, crabs and worms. The other factor is the elevated levels of nitrogen due to untreated manure, enrichers, and topsoil. These cause phosphorus shortage in the corals and limit their capacity of temperature brink for bleaching. This nitrogen accumulation also causes the global warming and presents a risk to coral life.

Generally, after any impairment due to adverse happenings, enduring adult corals in the reef produce tons of larvae each year. These then spread to other places and new corals are born. However, in these deaths due to bleaching, no more corals are producing. Conversely, new larval corals must have favorable conditions to repopulate the species that once breathed there (Wolff et al., 2018). However, these prospects for retrieval are tedious and this recovery might take 10 to 15 years to recover. While the longer time can be even in decades or centuries. Recent bleaching events have caused 89 percent of reefs to decline and now a decade or longer would be required by reefs to restore to their previous states (Dennis, April 3). Corals deaths, due to higher temperature also leave their skeleton that start decaying within weeks of a marine heatwave. This causes further complications for other animals and put them at the risk of extinction. Thus, low temperature will revive the coral reefs and increase their number in the ecosystem.

**Conclusion**

Coral reefs can be saved and can continue their survival if the climate stops getting more warmer. The world is now warmer as compared to pre-industrial levels and scientists are still projecting this increase if there is no cut off of carbon dioxide emissions. All efforts must be put to make the temperature keep constant. Firstly, governments’ inititives matter a lot and efforts are needed at a broader level. Then, these efforts must be at all levels that include regional and local scales. There is also a need to control the amount of nitrogen in the water and for this, sewage must be treated properly before its release into marine environment (Dennis, April 3). Furthermore, greenhouse gases must also be checked so that global temperature may not rise above the limit. The decrease in temperature is the surety of the survival of reefs.

References

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