Impacts of Climate Change: Coral Reef Biodiversity

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Introduction

The world’s oceans are suffering from increased pH and temperature, which results in the degradation of coral reefs. These novel conditions endanger the life of coral reefs, because they are unable to harden their skeletons, otherwise known as calcification. Coral reefs have also started to bleach due to this increase of temperature.

Changes in the Water

Recent impacts on coral reefs:
- Decline in coral reefs in African, Asian tropical waters.
- Increased coral bleaching in the Great Barrier Reef, western Australian reefs, western Caribbean, and near many small tropical islands.
- Changed coral disease patterns at the Great Barrier Reef.
- Coral reef calcification has slowed due to the extreme acidification of oceans globally.
- Coral cover in the Great Barrier Reef dropped from 28% to 13.8% (-14.2%) from 1985 to 2012.
- Coral bleaching accounts for 48% to 10% of coral loss over different areas of the Great Barrier Reef.

As CO2 rises, the pH of the ocean becomes more acidic. Temperature of ocean water has also increased.

Bibliography:

Impacts on Wildlife

Warming has caused changes in the abundance, geographic distribution, migration patterns, and timing of seasonal activities of marine species.

Impacts on Humans

- Negative impact on economies relying on fishing near coral reefs, and tourism of coral reefs.
- Increased chance of flooding in islands positioned on coral reefs.
- Decreased protection from natural disasters, Tsunami, for islands with reef barriers.

Future Changes

In the future, exploitation through fishing, global warming from CO2 emissions, and poor water quality, among other factors, will increase, causing coral reefs to deteriorate. It is predicted that by 2035, the ocean will be warmer than any oceans previously. In the Great Barrier Reef, if degradation continues at .53% per year, by 2022 coral cover will decrease to 10%.