

Study ties coral disease to warmer oceans



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MIAMI, Florida (Reuters) -- Warmer sea temperatures are linked to the severity of a coral disease, according to a study on Australia's Great Barrier Reef that offers a dire warning about global warming's potential impact on the world's troubled reefs.

The 6-year study released on Monday tracked the relationship between water temperature and the frequency of a coral disease called white syndrome across more than 900 miles of the world's largest coral reef.

"We've linked disease and warm water, which is one of the aspects of global warming," said John Bruno, the study's lead author. "Our study suggests as global warming warms the oceans more and more, we could see more disease outbreaks and more severe ones."

The results of the study, funded by the U.S. National Science Foundation, were to be published on Tuesday in the online journal PLoS Biology.

Researchers have suspected for years that warm sea temperatures were responsible for disease outbreaks on coral reefs. But Bruno said the study was the first to conclusively connect the two.

Reefs are undersea rock formations built by tiny animals called coral polyps. They are important habitats and nurseries for fish and other sea creatures.

Scientists estimate about a quarter of the world's coral has been permanently lost and another 30 percent could disappear over the next 30 years.

The study tracked the fate of 48 reefs across the Great Barrier Reef. They were resurveyed each year for six years and disease data were compared with data on ocean temperature taken from U.S. National Oceanic and Atmospheric Administration satellites.



Unusually hot water across the Caribbean Sea was blamed for a massive surge of coral bleaching, an ailment that turns corals white.

Hot water

Two years ago, unusually hot water across the Caribbean Sea was blamed for a massive surge of coral bleaching, an ailment that turns corals white, and a subsequent wave of deadly diseases that attacked reefs across the region.

In some locations, scientists found a 25 to 30 percent loss of coral and centuries-old corals were killed. Coral bleaching is a different phenomenon from white syndrome.

In the NSF study, scientists found white syndrome, an ailment that has appeared across the Pacific, flourished when the sea temperature rose. In 2002, for example, the frequency of the disease increased 20-fold after a year in which the region saw its second warmest summer.

The study found that the effect of temperature was "highly dependent" on the density of the coral cover. Outbreaks of white syndrome followed unusually warm temperature on reefs with greater than 50 percent coral cover.

The healthiest reefs suffered the most severe disease outbreaks, probably because they had the most dense concentrations of coral polyps.

"It's the same natural principle as what happens when humans are packed together in tight circumstances and they are more prone to disease," said Bruno, an assistant professor of marine ecology at the University of North Carolina.

A host of corals were affected, many of them the important "reef-building" corals that construct the limestone foundation on which coral polyps live.

Bruno said while the study focused on white syndrome, "there is no reason to suspect" that other coral diseases would not be similarly affected by warmer ocean temperatures.

"We are working on the same kind of experiments with yellow band disease," he said. "It's starting to look like there is a role of temperature in driving yellow band disease too."