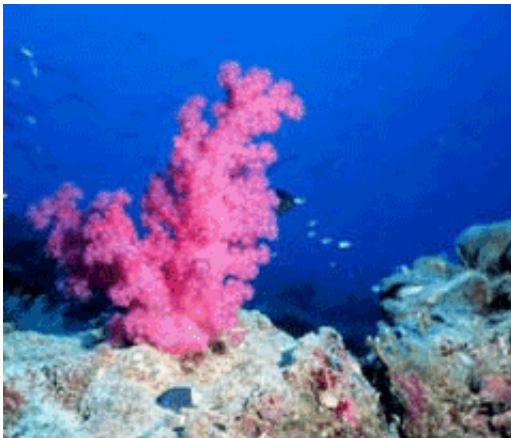


Coral growth in Western Australia found to be thriving in warmer water

February 3 2012, by Bob Yirka



(PhysOrg.com) -- As most people are well aware, global warming isn't just about the atmosphere, it's about rising ocean temperatures as well. And like increases in the atmosphere, scientists aren't really clear on what impact such temperature increases will have on the oceans. One such impact most researchers thought was well understood was the bleaching of coral reefs. As ocean temperatures rise and become more acidic, coral reefs tend to slough off the algae that grows on them, causing them to slowly die. Now however, new research by a team from the Australian Institute of Marine Science, has found that coral reefs off the western shores of the Australian continent are not only not suffering from the increased temperature, but are apparently thriving, as the study

they've published in *Science* describes, they have actually been growing faster in the past hundred years than prior to that time.

Research has shown as air temperatures rise, so too do ocean temperatures and as more carbon dioxide is released into the air, more of it is soaked up by oceans the world over, where it reacts to make carbonic acid. That in turn causes the water to have lowered pH levels which causes lowered levels of dissolved carbonate, which is what corals use to create their skeletons. The result seen thus far has been slowed coral growth.

It was those skeletons that the team looked at in the waters off Australia's west coast, specifically those of Porites. As corals grow over time, they create layers of skeleton material that can be read like tree rings to discern not just their age, but how much the coral grew each year. By drilling into some of the larger [coral reefs](#), the team was able to trace the corals back hundreds of years. But it was the record of the last hundred that surprised them. Rather than finding slowed growth, such as has been seen with the Great Barrier Reef on the eastern part of the country, the growth in some areas of the southern sections had actually been growing at a faster rate than prior to the start of global warming.

After more thought, the team has come to the conclusion that what they've found makes sense. The increased growth rates were found only in the more southern corals where water temperatures are generally cooler than in the north, thus, an increase in temperature would be more conducive to coral growth. But only up to a point. They believe once temperatures reach those of the north, the same slowed growth patterns seen elsewhere will appear.

Interestingly, the team did not sample the ocean water at the sites where the coral samples were taken, and because of that, it's not known if acidity levels in those areas that saw high growth rates had higher acidity

levels or not.

More information: Growth of Western Australian Corals in the Anthropocene, *Science* 3 February 2012: Vol. 335 no. 6068 pp. 593-596.
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ABSTRACT

Anthropogenic increases of atmospheric carbon dioxide lead to warmer sea surface temperatures and altered ocean chemistry. Experimental evidence suggests that coral calcification decreases as aragonite saturation drops but increases as temperatures rise toward thresholds optimal for coral growth. In situ studies have documented alarming recent declines in calcification rates on several tropical coral reef ecosystems. We show there is no widespread pattern of consistent decline in calcification rates of massive *Porites* during the 20th century on reefs spanning an 11° latitudinal range in the southeast Indian Ocean off Western Australia. Increasing calcification rates on the high-latitude reefs contrast with the downward trajectory reported for corals on Australia's Great Barrier Reef and provide additional evidence that recent changes in coral calcification are responses to temperature rather than ocean acidification.

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