

# Why do corals compete for space on the reefs? The ocean is big!

By:

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## Abstract:

Corals are one exotic attraction for many people they are associated with clear and warm water, and its not hard to see the competition that goes on on the reefs all over the world. So what do they compete about? The light the right temperature and clear waters and that to give them the best place location to live on. The fact they are competing about from the beginning is the right living space. That is more and more difficult now for the corals to compete, because of the big changes that are happening in the oceans. So to help them the oceans need to go back to a colder stage and a more stabile climate.

## Introduction:

Corals and the big coral reef are well known in the world, they are seen as exotic and for many people something they want to have seen. They are associated with clear and warm water in the tropics. The ones that come in to the closes contact with reef are the marine life and also the divers that see it as their second home. One thing that are clear to any diver is that there is a lot going on there, fishes moving about but also the quiet competition all over. Corals compete all the time on the reefs, in both indirect and direct competition. What do they compete about on the reef? Light, temperature and clear water (Connell et al. 2004).

The light is the biggest factor what the corals compete about. Since they have are living in a in a mutualism relationship with a zooxanthellae. The zooxanthellae photosynthesis and the energy is used by the coral how give the zooxanthellae protection. But this relationship is also an factor to compete because, the zooxanthellae can be free living as well, but when the zooxanthellae leaves the coral the coral get bleach (and eventually dead) (Glynn, 1996). This bleaching occurs when the water temperature is 1 degree colder or warmer then what the corals can handle (Hughes et al 2003). If this is only for a short time the zooxanthellae will come back to the corals, but if it is for more than a week the zooxanthellae will not come back and the coral will die. What also can affect the corals are the turbulent of the water, how much sediment it is in it, and that block out the light from the corals (Wilkinson 1996).

All of these factors is more or less natural ones that humans have increased the past century but that is what the corals always have been competing about and for, the living space the need to survive. One new problem that has been see the last 10 years for the corals are acidification.

The corals built their skeleton out of calcium and now one of the factors that come in to play about where they can live. The last century the oceans have become warmer so the first problem scientists were concerned about was the temperature rising. But now the biggest problem for the coral reef seems to be the pH and acidification (Kleypas and Eakin 2007) in combination with warmer temperatures. Acidification is that the pH drops and there for the corals cannot keep their calcium skeleton intact and dies. This happens because of all the CO<sub>2</sub> in the atmosphere, that have released due to burning of fossil fuel and land clearing (Fabricius 2008), before the ocean could help and take care of some of this extra CO<sub>2</sub> and buffer it up in the ocean, but now it instead it makes the ocean have a lower pH and changes where the corals can compete for space. The factors that was important before with the temperature and

light is not the biggest problem for them. But still a contribution factor because, the pH is decreasing the most in colder parts of the ocean, but the warmer parts are getting to warm for the corals so the span on where the corals can live is decreasing drastically (Hoegh-Guldberg et al 2007).

Conclusion:

So then why do the corals compete for space on the reef? One factor is the temperature as proven above. They have their preferred span of temperature where they can live so there is only a small part of the worlds oceans they can live. What all this gives is that the reason that coral compete is for the living condition they need to survive. And the acidification is giving a higher competition threshold for them. for the corals to survive they need to compete even more to get the upper hand with the changes that are happening to them. So what can be done for coral competition? That they compete cannot be helped and that have been giving the corals today that all can compete out some of the others to get some space on the reef, but what need to be done to help the corals to keep on competing is that they have a ocean with the conditions to compete in.

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