

## Acidifications effect on coral reefs and the coral reef fishes

Corals are the lungs of the ocean. They have the most diverse habitat on the planet, with most species in the water some way associated to it. The corals on the reef built their skeleton out of calcium as do the crabs, mussels, oysters, crayfish, prawns, starfish and sea urchins. The coral reefs are under a lot of stress made by humans, the water gets murky by runoff and less sun light penetrating the water column down to them. Pollutants, overfishing and an increase in the water temperature that can lead to bleaching of the corals. In the last century, the oceans have become much warmer all around the world. But now the biggest problem for the coral reef seems are pH and acidification in combination with warmer temperatures. Acidification is that the pH drops and therefore the corals cannot keep their calcium skeleton intact and this will also affect other marine animals that have calcium skeletons. This happens because of all the carbon dioxide in the atmosphere, that we have released due to burning of fossil fuel and land clearing. When the carbon dioxide was less in the atmosphere the ocean could help and take care of some of this extra carbon dioxide and buffer it up in the ocean. But now instead, it makes the ocean have a lower pH that breaks down the calcium in the corals and other calcium dependant animals. Most of them can move long distances to less acidic waters (where water is warmer), the corals and mussels cannot. Even if they could, the waters that are less acidic is not tolerated by all fish species. So the liming factors, temperature and light, is not the biggest problem for them anymore.

How does this affect the fishes of the ocean? Well as written before, most marine animals are associated with the reef one way or another. Young fish live on the reef for protection, most big fish like red roman are territorial and live on the reefs their entire lives. Sharks hunt of the reefs, sea turtle rest on the reefs and the people love to come and dive or snorkel them. So now not even the marine protected areas can help the animals, because the problem is the water,

not the humans taking the recourses away. This will affect the fishing in and away from the protected areas, if the reefs are lost they have nowhere to breed and no more fish will utilize the areas. So one of the most important things to save the reefs and the future of fishing is to decrease the acidification of the ocean and that is done on land by not consuming massive amount of fossil fuel and plant trees to decrease the carbon dioxide release in to the environment.