

## Oceans develop acidity, thanks to fossil fuels

Oceans have mitigated the effects of climate change by absorbing a third of total carbon dioxide emissions worldwide -- but this intake, caused largely by fossil fuel burning, is turning this vast carbon sink acidic.

Because of the increased acidity, less carbonate ions are available, which means the calcification rates of the organisms are decreasing and thus their shells and skeletons thinning.

Most calcifying organisms such as corals, mussels, algae and plankton investigated so far, respond negatively to the more acidic ocean waters.

The chemistry is simple. Ocean acidification is related to the amount of CO<sub>2</sub> we produce. CO<sub>2</sub> dissolves in the ocean, reacts with seawater and decreases the acidity.

"Under a 'business as usual' scenario, predictions for the end of the century are that oceans will become 150 percent more acidic - and this is a 'hell of a lot'," said Jelle Bijma, chairwomen of the EuroCLIMATE programme Scientific Committee.

"Ocean acidification is more rapid than ever in the history of the earth and if you look at the pCO<sub>2</sub> (partial pressure of carbon dioxide) levels we have reached now, you have to go back 35 million years in time to find the equivalents," continued Bijma.

"Ocean acidification is happening today and it's happening on top of global warming, so we are in double trouble" stated Bijma. Only a serious cut of CO<sub>2</sub> emission can reduce ocean acidification.

Research on ocean acidification is a newly emerging field and was one of the major topics at this year's European Geosciences Union (EGU) General Assembly held in Vienna in April.

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