



This is the print version of the [Skeptical Science](http://sks.to/acid) article '[Ocean acidification isn't serious](http://sks.to/acid)', which can be found at <http://sks.to/acid>.

Ocean acidification: global warming's evil twin

What The Science Says:

Ocean acidification threatens entire marine food chains.

Climate Myth: Ocean acidification isn't serious

'Our harmless emissions of trifling quantities of carbon dioxide cannot possibly acidify the oceans. Paper after paper after learned paper in the peer-reviewed literature makes that quite plain. Idso cites some 150 scientific sources, nearly all of them providing hard evidence, by measurement and experiment, that there is no basis for imagining that we can acidify the oceans to any extent large enough to be measured even by the most sensitive instruments.' ([Christopher Monckton](#))

Not all of the CO₂ emitted by human industrial activities remains in the atmosphere. Between 25% and 50% of these emissions over the industrial period have been absorbed by the world's oceans, preventing atmospheric CO₂ buildup from being much, much worse.

But this atmospheric benefit comes at a considerable price.

As ocean waters absorb CO₂ they become more acidic. This does not mean the oceans will become acid. Ocean life can be sensitive to slight changes in pH levels, and any drop in pH is an increase in acidity, even in an alkaline environment.

The acidity of global surface waters has increased by 30% in just the last 200 years. This rate of acidification is projected through the end of the century to accelerate even further with potentially catastrophic impacts to marine ecosystems.

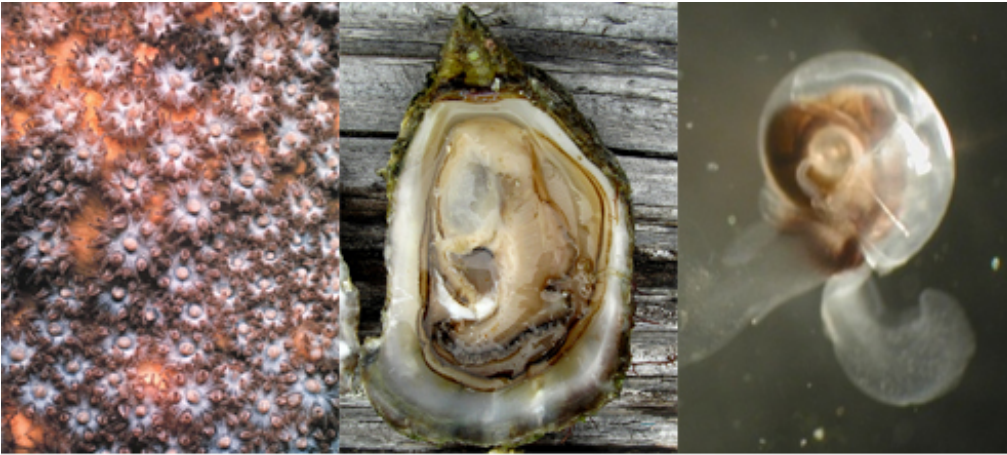
Endorsed by seventy academies of science from around the world, a [June 2009 statement](#) from the InterAcademy Panel on International Issues (IAP) stated the following.

"The current rate of change is much more rapid than during any event over the last 65 million years. These changes in ocean chemistry are irreversible for many thousands of years, and the biological consequences could last much longer."

- The InterAcademy Panel, June 1, 2009

As surface waters become more acidic, it becomes more difficult for marine life like corals and shellfish to form the hard shells necessary for their survival, and coral reefs provide a home for more than 25% of all oceanic species. Tiny creatures called pteropods located at the base of many oceanic food chains can also be seriously impacted. The degradation of these species at the foundation of marine ecosystems could lead to the collapse of these environments with devastating implications to millions of people in the human populations that rely on them.

The IAP also stated that, if atmospheric CO₂ were to reach 550 parts per million (ppm) along its current rapid ascent from its pre-industrial level of 280 ppm, coral reefs around the globe could be dissolving.



Species at Risk

Image: Coral polyps (Dr. James P. McVey, NOAA Sea Grant Program);
Olympia oyster (Feet wet (Flickr)); Pteropod (Matt Wilson/Jay Clark, NOAA
NMFS AFSC)

Basic rebuttal written by Michael Searcy

Update July 2015:

Here is a related lecture-video from [Denial101x - Making Sense of Climate Science Denial](#)



Skeptical Science explains the science of global warming and examines climate misinformation through the lens of peer-reviewed research. The website won the Australian Museum 2011 Eureka Prize for the Advancement of Climate Change Knowledge. Members of the Skeptical Science team have authored peer-reviewed papers, a [college textbook on climate change](#) and the book [Climate Change Denial: Heads in the Sand](#). Skeptical Science content has been used in university courses, textbooks, government reports on climate change, television documentaries and numerous books.



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