Pacific turns acidic

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The tropical Pacific Ocean is getting acidic at a much faster rate than expected, a new study says.

The cause behind this rapid increase was carbon dioxide (CO2), the combination of its natural variability and human-caused emissions in the atmosphere.

"We assume that most of the carbon dioxide increase (in the tropical Pacific) is due to anthropogenic CO2," Adrienne Sutton, a research scientist with United States National Oceanic and Atmospheric Administration, NOAA's Joint Institute for the Study of the Atmosphere and Ocean at the University of Washington, told E&E news.

NOAA after monitoring CO2 levels at seven buoys in the tropical Pacific, starting in 1998 recently announced a new strategic plan guiding its monitoring and research on ocean acidification.

Global warming usually evokes images of a warmer atmosphere, but the phenomenon is having an equally large impact on the oceans.

Scientists have argued that emissions of CO2 due to human activities have changed the chemistry of the ocean faster than it did for millions of years.

Climate change will alarmingly increase CO2 in the atmosphere causing the oceans to absorb more and become acidic, said the UN's Intergovernmental Panel On Climate Change (IPCC) in a recent report.

It also warned of mass marine life extinctions that happened in the past, when CO2 levels changed more slowly than they are changing now.

In subtropical regions of the ocean north and south of the equator, the ocean syncs with whatever concentration of CO2 is in the atmosphere at that time to form carbonic acid.

The water is then pushed deep into the ocean, where it collects more CO2 due to natural biological processes before eventually upwelling back in the tropical Pacific.

BBC environment analyst Roger Harrabin recently took a trip off the remote eastern tip of Papua New Guinea to observe the effects of natural CO2 emissions.

The site where streams of volcanic CO2 bubbles emerge from the seabed shows the possible fate of the world's seas as 24 million tonnes of CO2 from industrial society is absorbed every day into the sea.

The tough boulder corals can survive the acidity, he writes, but the branching corals which play a vital role in the reef ecosystem by sheltering juvenile fish, can't.

Research at the volcanic vents shows that between 30-50% of coral types won't be able to cope.

Now the studies are spreading from corals to fish and tests already show that acidification makes some fish
lose their sense of smell and behave recklessly in the presence of predators.

“We are very concerned because the baby corals find it very hard to survive in high CO2 so reefs won’t be able to repair themselves,” Katharina Fabricius from the Australian Institute of Marine Science told the BBC. “It’s very, very serious.”