



## Media Release

Embargoed

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### Tsunami Protection May Go as Ocean's Acidify

Britain's peak scientific body, the Royal Society today released a report that warns that the protection of tropical coastlines by coral reefs may disappear as early as 2050 due to acidification of the world's oceans by increased atmospheric carbon dioxide.

Prof. Ove Hoegh-Guldberg, an Australian expert involved in the Royal Society study and Director of the Australasian Centre of Excellence for the global Coral Reef Targeted Research & Capacity Building for Management (CRTR) Project says this could have major ramifications for coastal societies, where much of the world's poorest people live.

'Coral reefs reduce the energy of waves breaking on tropical coastlines and hence protect homes and lives. In the case of tsunamis—this can mean the difference between surviving and perishing', he said

'Dramatic examples of this,' he said, 'were demonstrated in the massive tsunami that hit southern Asia six months ago on Boxing Day 2004'.

'We know there is a problem, but now we need to take steps to find solutions, and the CRTR Project is an excellent vehicle to fill the gaps in the science and identify solutions so management and policy decisions can be strengthened around the world'.

The CRTR Project is a global program involving more than 70 scientists and four Centres of Excellence in Australia, Mexico, Philippines and Tanzania. It has funding of more than AUD\$23m in cash and AUD\$70m in-kind support, including from the Global Environment Facility, World Bank and the University of Queensland,

The Royal Society report *Ocean acidification due to increasing atmospheric carbon dioxide* shows that rising levels of carbon dioxide are rapidly acidifying the world's oceans. This in turn is threatening to stop corals from growing and could potentially dissolve existing reef structures.

Corals face two problems from rising carbon dioxide. The first is the warming caused by the greenhouse effect and the second is the acidification of seawater by carbon dioxide, which will eventually stop them forming their limestone skeletons.

Prof. Hoegh-Guldberg said this is 'like a double whammy for coral reefs and you have to wonder if they will be able to survive these changes'.

Hoegh-Guldberg also emphasized that we need to act fast, 'Let's face it, with no action on carbon dioxide our beautiful coral reefs are destined to be relics of the past, which has implications for a wide range of issues including coastal protection against large waves like tsunamis.'

Professor John Raven, Chair of the Royal Society Working Group on Ocean Acidification said in the Royal Society's release on the report that 'The rising acidity of our oceans is yet another reason for us to be concerned about the carbon dioxide we are pumping into the atmosphere.'

'Our world leaders meeting at next week's G8 summit must commit to taking decisive and significant action to cut carbon dioxide emissions. Failure to do so may mean that there is no place in the oceans of the future for many of the species and ecosystems that we know today'.<sup>1</sup>

The Royal Society's working group called for evidence last year on how this change in the acidity of the ocean will affect the function of the world's oceans. It has been working on this evidence and has come to conclusion that there are some serious issues facing the world's marine life as the oceans acidify.

As well as reducing tsunami protection, the extensive global decline of coral reefs now risks contributing to the environmental and economic instability of many coastal nations, many of them developing countries.

Coral reefs directly support an estimated 100 million people worldwide and are also responsible for tourist income to countries like Australia, where The Great Barrier Reef alone is responsible for over \$2.5 billion tourism dollars to the Australian economy each year.

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<sup>1</sup> Royal Society Media Release *Cuts in Carbon Dioxide Emissions vital to stem rising acidity of oceans says Royal Society*, 11AM BST Thursday, 30 June 2005

**For more information:**

**General Information on the CRTR Project:** [www.gefcoral.org](http://www.gefcoral.org)

The Coral Reef Targeted Research & Capacity Building for Management Project is a 15-year project to be run in three phases. The first phase, which commenced in December 2004, will run for five years.

The initial aim of the program will be to fill the knowledge gaps about coral reefs by focusing on six targeted research themes:

1. Bleaching and Local Ecological Factors
2. Connectivity and Large-Scale Ecological Processes
3. Diseases
4. Restoration and Remediation
5. Remote Sensing
6. Modelling and Decision Support

The impetus for the project was a particularly bad bleaching event in 1998 that saw 16% of the world's coral wiped out.

**Call for Evidence:** <http://www.royalsoc.ac.uk/page.asp?tip=1&id=2557>

**Royal Society:** <http://www.royalsoc.ac.uk/>

**Photographs for use with this article:** [www.marine.uq.edu.au/ohg/acid/](http://www.marine.uq.edu.au/ohg/acid/)

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