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MEDIA RELEASE

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Acid Oceans - Warning to Copenhagen Negotiators

A scientific summary on ocean acidification, written by a team of researchers from France, Germany, the UK, the USA, and Australia, and coordinated by the European Project on Ocean Acidification (EPOCA), was released today in Copenhagen.

The guide aims to increase understanding of the science of ocean acidification and shows in clear and simple terms how the ocean is being made more acidic by human-produced carbon dioxide emissions. The guide, written for policymakers worldwide, illustrates the double impact of climate change and ocean acidification on our seas, both caused by increasing atmospheric carbon dioxide. It sets out the basic facts about the progressive acidification of the ocean and its impact on marine ecosystems.

The 30% increase in ocean acidity since the Industrial Revolution represents a pace of chemical change faster than any in the past 55 million years. "We now have data from nature that ocean acidification is already having an impact on some marine organisms," says guide contributor Dr Will Howard of the Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC) in Hobart, Tasmania. "Until recently the impact on marine life had only been predicted from computer models and laboratory experiments; now we have demonstrated the effect in the ocean itself."

The broader implications for ocean ecosystems are still poorly understood, says guide co-editor Dr John Baxter of Scottish Natural Heritage and the UK Marine Climate Impacts Partnership. "Ocean acidification impacts may ripple up through food webs, affecting fisheries and the benefits we derive from the marine environment," according to Dr Baxter, who is participating in an Antarctic voyage with ACE CRC researchers to gather data on the vulnerability of Southern Ocean plankton to ocean acidification.

The guide also stresses that polar oceans are among the most vulnerable to ocean acidification, and the current voyage seeks to gather baseline data on plankton there. "We urgently need data on the current state of organisms affected by ocean acidification to give a benchmark for assessing future changes," notes ACE CRC researcher and guide contributor Dr Donna Roberts, who will be leading the team on the voyage.

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The guide distinguishes between climate change and ocean acidification. Acidification is largely independent of climate as it is driven by carbon dioxide's chemical behaviour in seawater rather than its activity as a greenhouse gas. The long time lags between CO_2 emissions and the ocean's buffering capacity also put a premium on early emissions cuts and a penalty on delay. Dr Howard says "We are committing ourselves to further acidification of the oceans as we continue emissions, and policymakers need to be aware of the broader implications of carbon dioxide beyond the risks posed by climate change."

- **Dr Will Howard can be contacted on +61 437 662 656**
- **High-quality vision and images available.**

***Ocean Acidification: the facts. A special introductory guide for policy advisers and decision makers* was produced by the European Project on Ocean Acidification (EPOCA). Australian advisers on the development of the guide were Drs Donna Roberts and Will Howard of the Antarctic Climate and Ecosystems Cooperative Research Centre (ACE CRC).**

The Antarctic Climate & Ecosystems Cooperative Research Centre (ACE CRC) is a collaborative partnership dedicated to the study of atmospheric and oceanic processes of the Southern Ocean, their role in global and regional climate change, and their impact on sustainable management of Antarctic marine ecosystems. The ACE CRC's core partners are the Australian Antarctic Division, the Australian Bureau of Meteorology, CSIRO Marine and Atmospheric Research, and the University of Tasmania. Supporting partners are the Alfred Wegener Institute for Polar and Marine Research (Germany), the Australian Government's Department of Climate Change, the Australian National University, the National Institute of Water and Atmospheric Research (New Zealand), Silicon Graphics International, and the Tasmanian Department of Economic Development. Established and supported under the Australian Government's Cooperative Research Centre Program.

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