

**PRESS RELEASE – FINAL**  
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## **Ocean acidification: an underwater time-bomb**

- Alarming progression of ocean acidity posing major threat to marine ecosystems

Ocean acidity has increased by 30 per cent since the beginning of the Industrial Revolution and the rate of acidification will accelerate in the coming decades, according to a new guide launched at the UN Copenhagen Climate Change summit today (10 Dec 09). The results could spell disaster for critical parts of the marine food chain, with knock-on consequences for fishing communities and the global fishing industry, and wide-scale destruction of marine reefs.

Sponsored by Natural England, the European Project on Ocean Acidification's (EPOCA) guide called '*Ocean Acidification: The Facts*' highlights the severity of an underwater time-bomb that could have massive implications for marine wildlife and the health of the marine environment.

Dr Helen Phillips, Chief Executive of Natural England, said: "Acidification of our seas is being directly linked to the growing levels of carbon dioxide in the atmosphere and our oceans are struggling to cope. The threat to the delicate balance of the marine environment cannot be overstated - this is a conservation challenge of unprecedented scale and highlights the urgent need for effective marine management and protection."

The EPOCA guide to '*Ocean Acidification: The Facts*' reveals that:

- The current rate of ocean acidification is many times faster than anything experienced over the last 55 million years.
- Underwater reefs – a vital habitat for marine wildlife – may be severely affected. More acidic sea water harms the ability of many ocean animals and plants to build skeletons or shells, disrupting their role as reef builders and removing essential primary food sources for marine wildlife. By 2050, conditions for warm water coral reefs will be marginal, compromising the reefs' ability to protect low-lying areas from erosion and flooding.
- Acidic sea water may be corrosive enough to kill oyster larvae in hatcheries and other shallower marine habitats and species closer to the coast.
- Economic interests and food security are at risk, particularly in regions especially dependent on seafood protein.

Natural England's Professor Dan Laffoley, co-editor of the guide and also Marine Vice-Chair of IUCN's World Commission on Protected Areas, said: "Ocean acidification only really came to the fore about five years ago, and yet already an amazing number of scientific statements are being published worldwide, showing a real depth of concern about this issue. As acidity and sea temperature increase, the ocean's ability to absorb atmospheric CO<sub>2</sub> will be reduced, exacerbating the rate of climate change. Much is unknown about the impacts but one possible consequence is that this could trigger a chain reaction that reverberates throughout the marine food web ... starting with vulnerable species such as larval fish and shell fish, and ending with detrimental effects to the global fishing industry and the food security of many of the world's poorest people."

The EPOCA ocean acidification guide draws on the experience of the Ocean Acidification Reference User Group (RUG), coupled with the knowledge of some of the world's leading experts on ocean acidification, to provide an introduction for policy advisers and decision makers on this urgent issue. It has been translated into five languages to highlight the global nature of the problem and the need for urgent international action to address it.

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### Notes to Editors:

1. The EPOCA guide is called '*Ocean Acidification: The Facts. A special introductory guide for policy advisers and decision makers*' (12pp) co-edited by Professor Dan Laffoley and John Baxter. The guide was produced with financial support from Natural England and EPOCA and is based on best practice communication approaches pioneered by the UK's Marine Climate Change Impacts Partnership. Leading scientists and organisations worldwide freely gave their time and expertise.

A PDF of the guide, with embedded hyperlinks to relevant material, is available on:  
<http://www.epoca-project.eu/index.php/Outreach/RUG/>.

2. The guide is published in five languages: English, French, Spanish, Arabic and Chinese.

3. About EPOCA:

The EU FP7 large-scale integrating project EPOCA (European Project on Ocean Acidification) was launched in May 2008 with the overall goal to fill the numerous gaps in our understanding of ocean acidification and its consequences. The EPOCA consortium brings together more than 100 researchers from 27 institutes and 9 European countries. The research of this four-year long project is partly funded by the European Commission.

<http://www.epoca-project.eu/>

4. About RUG:

RUG is the ocean acidification 'Reference User Group' established in 2008 to support EPOCA's work by drawing on UK, European and international experience in fast-tracking the exchange of information between scientists and end-users.

[www.epoca-project.eu/index.php/Outreach/RUG/](http://www.epoca-project.eu/index.php/Outreach/RUG/)

5. The first time many policy advisers became aware of ocean acidification was through the 2005 conference on '*Avoiding Dangerous Climate Change: A Scientific Symposium on Stabilisation of Greenhouse Gases*'. This took place under the United Kingdom's presidency of the G8. The first major publication on this issue followed rapidly with The Royal Society's 2005 policy document '*Ocean acidification due to increasing atmospheric carbon dioxide*'.

6. About Natural England:

Natural England is the government's independent advisor on the natural environment. Established in 2006 our work is focused on enhancing England's wildlife and landscapes and maximising the benefits they bring to the public.

- We establish and care for England's main wildlife sites, ensuring that over 4,000 National Nature Reserves and Sites of Special Scientific Interest are looked after and improved.



- We work to ensure that England's landscapes are effectively protected, designating England's National Parks, Areas of Outstanding Natural Beauty, and Marine Conservation Zones, and advising widely on their conservation.
- We run England's Environmental Stewardship green farming schemes that deliver over £400 million a year to farmers and landowners, enabling them to enhance the natural environment across two thirds of England's farmland.
- We fund, manage, and provide scientific expertise for hundreds of conservation projects each year, improving the prospects for thousands of England's species and habitats.
- We promote access to the wider countryside, helping establish National Trails and coastal trails and ensuring that the public can enjoy and benefit from them.

#### 7. About IUCN:

IUCN, the International Union for Conservation of Nature, helps the world find pragmatic solutions to our most pressing environment and development challenges. IUCN works on biodiversity, climate change, energy, human livelihoods and greening the world economy by supporting scientific research, managing field projects all over the world, and bringing governments, NGOs, the UN and companies together to develop policy, laws and best practice. For more information about IUCN, visit: [www.iucn.org](http://www.iucn.org)