



**UK Ocean Acidification
Research Programme**

Press release: 21 June 2010

UK science spotlights ocean acidification

The UK's first research programme to investigate the impacts of ocean acidification has been launched involving 101 scientists from 21 of the UK's top scientific institutions. The UK Ocean Acidification Research Programme consists of several projects working together to investigate different aspects of this global issue.

The world's seas are absorbing high levels of carbon dioxide (CO₂) mainly produced by human activities, such as fossil fuel burning. The absorbed CO₂ fundamentally changes the chemistry of oceans which results in a rise in ocean acidity. Since the start of the Industrial Revolution ocean acidity has risen by about 30%. Ocean acidification is estimated to be currently occurring at a rate faster than has been experienced during the last 20 million years. If CO₂ emissions continue to rise and the acidity of the World's oceans and seas continues to increase at this rate this could have serious consequences for important cycles that drive the climate as well as marine life (e.g. corals, shellfish, algae and the plankton that form the base of the food chain) within this century. Such impacts could reach far beyond the marine environment, to that of climate, food provision and human health and well-being.

Richard Benyon, Parliamentary Under-Secretary for Natural Environment and Fisheries, said:

"The effects of climate change on land have been well documented yet we are only just beginning to explore the damage that rising CO₂ levels could have on our marine ecosystems."

"The UK is the world leader in marine science and it is projects such as this that will help us understand the effects of ocean acidification on the world's seas and oceans. This research programme is vital to help us meet the challenges ocean acidification presents."

The need for more knowledge about ocean acidification and how it will impact upon the oceans environmentally, socially and economically is recognised as a key issue, and the six new projects have been designed to answer some of the most pressing questions. They are funded by the Natural Environment Research Council (NERC), the Department for Environment, Food and Rural Affairs (Defra) and the Department of Energy and Climate Change (DECC) under the auspices of the Living with Environmental Change partnership.



UK Ocean Acidification Research Programme

Knowledge Exchange Office

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Six research projects have now been funded, each delivering a key part of the £12 million UK Ocean Acidification Research Programme, designed to answer the following questions:

- How much variability is there in oceanic CO₂ uptake and what are the trends for the future? Led by **Professor Andrew Watson, University of East Anglia.**
- What are the impacts of ocean acidification on key benthic (seabed) ecosystems, communities, habitats, species and their life cycles? Led by **Dr Stephen Widdicombe, Plymouth Marine Laboratory**
- How will ocean acidification affect the biology of surface ocean communities and biogeochemistry, and how that might feedback to climate? Led by **Dr Toby Tyrrell, National Oceanography Centre**
- What are the potential impacts of ocean acidification on the ocean and how it might amplify rising CO₂ and climate change? Led by **Dr Andy Ridgwell, University of Bristol**
- How will ocean acidification impact ecosystems and chemical cycling in UK and Arctic regional seas? Led by **Dr Jerry Blackford, Plymouth Marine Laboratory**
- What were the effects of rapid ocean acidification events in the Earth's past? Led by **Professor Paul Pearson, Cardiff University**

These projects are supported by a national analytical facility led by Professor Eric Achterberg, National Oceanography Centre.

NERC Chief Executive, Professor Alan Thorpe, said

"Ocean acidification is an important scientific priority in NERC's Strategy as well as in the recently published UK Marine Science Strategy. I am very pleased that we have been able to address this critical science and policy issue with Defra and DECC, as part of the Living with Environmental Change programme. This initiative, one of the first to be funded by any nation, ensures that the UK will remain at the forefront of ocean acidification research."

Professor Robert Watson, Defra's Chief Science Adviser, commented:

"Ocean acidification may be a relatively recently identified phenomenon but its potential impact is likely to have wide ramifications through the ocean. We need to understand how much of a problem it might be, how quickly we will start to feel its effects and how we might mitigate any impacts. The UK has been at the forefront of ocean acidification research and this Programme will ensure the excellent work continues. By following a multi-disciplinary approach, looking at a range of aspects of ocean acidification, we can bring together scientists across disciplines in order to gain as complete a picture of how the ocean will react to increasing acidity and how its diverse life forms will cope or adapt in the future."

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779 words



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Notes for editors:

For more information about the UK Ocean Acidification Research Programme please contact: Dr Carol Turley, Knowledge Exchange Coordinator (oa@pml.ac.uk or +44 (0)1752 633100) or Dr Phil Williamson, Science Coordinator (p.williamson@uea.ac.uk or +44 (0)1603 593111).

For information on the individual projects please contact Kelly-Marie Davidson (kdav@pml.ac.uk) or Dawn Ashby (daas@pml.ac.uk), tel: +44(0)1752 633401.

- The £12M, 5 year UK Ocean Acidification Research Programme is funded by the Natural Environment Research Council (NERC), the Department for Environment, Food and Rural affairs (Defra) and the Department of Energy and Climate Change (DECC). Outputs from the programme will feed into the cross Government Climate Change Adaptation programme and it will make a significant contribution to the Living with Environmental Change (LWEC) programme. The UK programme will collaborate with international colleagues – primarily with the German BIOACID programme, the European research programme EPOCA, and the emerging US Ocean Acidification research programme.
- A website is currently being developed, which will contain details of and links to all projects, new developments and discoveries from the UKOARP, as well as links to related sources of information: <http://www.oceanacidification.org.uk>

Funding partners:

The Natural Environment Research Council (NERC) is the UK's main agency for funding and managing world-class research, training and knowledge exchange in the environmental sciences. It coordinates some of the world's most exciting research projects, tackling major issues such as climate change, environmental influences on human health, the genetic make-up of life on earth, and much more. NERC receives around £400 million a year from the government's science budget, which it uses to fund independent research and training in universities and its own research centres. <http://www.nerc.ac.uk>

Defra is the UK government department responsible for policy and regulations on the environment, food and rural affairs. <http://www2.defra.gov.uk/>

The Department of Energy and Climate Change (DECC) was created in October 2008, to bring together: energy policy (previously with BERR, which is now BIS - the Department for Business, Innovation and Skills, and climate change mitigation policy (previously with Defra - the Department for Environment, Food and Rural Affairs). <http://www.decc.gov.uk/>



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Living with Environmental Change (LWEC) represents an unprecedented partnership of organisations funding, undertaking and using environmental research, including the Research Councils, government departments, devolved administrations and delivery agencies. The ten-year programme will connect world-leading natural, engineering, economic, social, medical, cultural, arts, and humanities researchers with policy-makers, business, the public, and other key stakeholders. For more information on the Living with Environmental Change partnership contact Ruth Welters tel: +44 (0)1603 593906, email: ruth.welters@lwec.org.uk, <http://www.lwec.org.uk>.



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