



Marine Climate Change Impacts Partnership

Dear MCCIP news subscriber,

MCCIP website has recently been updated with new marine climate change news and events. Below is a brief summary of the new items that have been added. For more details on all of the items listed below, simply go to www.mccip.org.uk and go to the relevant links in the 'news and events' box on our homepage. Please note that the material presented in MCCIP news does not necessarily reflect the views of MCCIP.

- **[Mid-Term Review of MCCIP](#)**

MCCIP is currently in the process of drawing together evidence and feedback from its stakeholders in preparation for a Mid-Term Review led by an independent consultant. The consultant will be developing a survey and contacting some of our stakeholders for in-depth interviews to gain information about MCCIP's processes and outputs. If you are keen to participate in this process, please email office@mccip.org.uk to register your interest.

- **[MCCIP Report Card 2013](#)**

The 2013 MCCIP Report Card summarises the current state of scientific understanding on UK marine and coastal climate change impacts. Based upon 33 peer-reviewed scientific reports, it focuses on how climate change is affecting UK seas and combines contributions from over 150 scientists from more than 50 leading science organisations.

- **[Oceans are acidifying at a rate faster than any time in the last 300 million years](#)**

The ocean continues to acidify at an unprecedented rate in Earth's history. Latest research indicates the rate of change may be faster than at any time in the last 300 million years. This key message is one of a number presented by the new

version of the summary for policy-makers reports on the state of scientific knowledge on ocean acidification, based on the latest research presented at The Third Symposium on the Ocean in a High-CO₂ World, held in Monterey, California, in September 2012.

- **[Ocean's carbon dioxide uptake can impair digestion in marine animal](#)**
Ocean acidification impairs digestion in marine organisms, according to a new study. Researchers have studied the larval stage of green sea urchins *Strongylocentrotus droebachiensis*. The results show that the animals have problems digesting food in acidified water. ([Stumpp, M., et al., 2013, *Nature Climate Change*, doi: 10.1038/nclimate2028](#))
- **[Climate change is creating anxious fish](#)**
Juvenile rockfish have been shown to display a similar behaviour in response to increased CO₂ (equal to the expected pH level by the end of the century) as when medicated with an anxiety-provoking drug. The investigation uncovered a "potential negative effect of ocean acidification on fish behaviour," according to the press people at the Scripps Institution of Oceanography at UC San Diego, "that can possibly affect normal population dynamics and maybe even affect fisheries." ([Hamilton, T.J. et al. \(2013\) *Proceedings of the Royal Society B: Biological Sciences*, doi:10.1098/rspb.2013.2509](#))
- **[Global precipitation directly linked to human activity](#)**
A new study shows that observed changes in global (ocean and land) precipitation are directly affected by human activities and cannot be explained by natural variability alone. Increasing temperatures will lead to an intensification of the hydrological cycle and changes in atmospheric circulation patterns will lead to poleward displacement of the storm tracks and subtropical dry zones and to a widening of the tropical belt. The work demonstrates that both these changes are occurring simultaneously in global precipitation and that the observed trends result from human activities. ([Marvel, K. and Bonfils, C. \(2013\), *PNAS*, doi: 10.1073/pnas.1314382110](#))
- **[New generation of micro sensors for monitoring ocean acidification](#)**
The first step in developing a cost-effective micro sensor for long-term monitoring of ocean acidification has been achieved by a team of scientists and engineers. The new technology, that will measure pH levels in seawater, was developed by

engineers from the National Oceanography Centre, in close collaboration with oceanographers from University of Southampton Ocean and Earth Science, which is based at the centre.

News stories: If there are any relevant news items or events that you would like to highlight on the MCCIP website please contact Georgia Bayliss-Brown at office@mccip.org.uk. New items will be added to the website next month.

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