



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.

- [Global investigation reveals true scale of ocean warming, including poleward push of species at 4.4 miles per year](#)

Rising ocean temperatures are rearranging the biological makeup of our oceans, pushing species towards the poles by 4.4 miles every year, as they chase the climates they can survive in, according to new research. A new, comprehensive, global study, including researchers from the Scottish Association for Marine Science, has found that the world's marine systems are reacting to climate change on a scale greater than scientists previously thought. The report will be used by the Intergovernmental Panel for Climate Change as part of their Fifth Assessment. The project shows that complete shifts are widespread in a number of marine biological responses, including the distribution of species and phenology - the timing of nature's calendar. It also shows that these shifts are comparable to or greater than those observed on land. ([Poloczanska, E.S., et al., 2013. *Nature Climate Change*, doi:10.1038/nclimate1958](#))

- [Ocean acidification increases global warming](#)

It is common knowledge that fossil fuel emissions of CO₂ lead to global warming. The ocean, by taking up significant amounts of CO₂, lessens the effect of this anthropogenic disturbance. The "price" for storing CO₂ is an ongoing decrease of seawater pH (ocean acidification), a process that is likely to have diverse and harmful impacts on marine biota, food webs, and ecosystems. DMS is the largest, naturally-emitted source of atmospheric sulphur which lead to the formation of new

aerosol particles that impact cloud albedo and, hence, cool Earth's surface. As a result of ocean acidification, DMS emissions are reducing; leading to warming. ([Six, K.D., et al., 2013. *Nature Climate Change*, doi: 10.1038/nclimate1981](#))

- [Ocean acidification has a negative effect upon corals, crustaceans, molluscs, vertebrates and echinoderms](#)

Researchers from AWI surveyed all studies so far conducted which dealt with the consequences of ocean acidification for marine species from five animal taxa: corals, crustaceans, molluscs, vertebrates, such as fishes, and echinoderms, such as starfish and sea urchins. The study showed that all animal groups considered are affected negatively by higher carbon dioxide concentrations. Corals, echinoderms and molluscs above all react very sensitively to a decline in the pH value. By contrast, only higher concentrations of carbon dioxide would appear to have an impact on crustaceans such as the Atlantic spider crab or edible crab. However, the sensitivity of the animals to a declining pH value may increase if the sea temperature rises simultaneously. ([Wittmann, A.C. & Poertner, H.-O., 2013. *Nature Climate Change*, doi:10.1038/nclimate1982](#))

- [Plymouth's rare UK tsunami in 2011 was caused by a storm](#)

The meteotsunami, which reached around half a metre in height was originally thought to have been caused by a landslide. But a new report, published in *Weather*, suggests the origin actually lay with some thundery storm cells with a starting point over 300 miles away in the Bay of Biscay. The study concluded that the rising sea levels and more severe storms expected from global warming mean these events could become more common. ([Tappin, D. R., et al., 2013. *Weather*, 68: 144-152. doi: 10.1002/wea.2061](#))

- [New interactive climate trends tool](#)

How has the climate changed across Scotland over the last century? A new interactive web resource lets the user look at data for a range of variables across seasons or months and for different Scottish regions.

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.

Georgia Bayliss-Brown BSc (Hons) MSc

MCCIP Secretariat
The Centre for Environment, Fisheries and Aquaculture Science
Pakefield Road, Lowestoft, Suffolk, NR33 0HT, UK
Tel: +44(0)1502 524340 - Email: georgia.bayliss-brown@cefas.co.uk

[forward to a friend](#)

Copyright © 2013 Marine Climate Change Impacts Partnership All rights reserved.

Our mailing address is:
office@mccip.org.uk

Find more: For more stories on marine climate change, follow [@CefasGovUK](#)

[unsubscribe from this list](#) | [update subscription preferences](#)