

New method of measuring ocean CO₂ uptake could lead to climate change 'early warning system'

December 3 2009

An international team of scientists led by the University of East Anglia (UEA) has developed a new method of measuring the absorption of CO₂ by the oceans and mapped for the first time CO₂ uptake for the entire North Atlantic.

Published tomorrow in the journal *Science*, the peer-reviewed study will greatly improve our understanding of the natural [ocean](#) 'sinks' and enable more accurate predictions about how the global climate is changing.

The new technique could also lead to the development of an 'early-warning system' to detect any weakening of the ocean sinks - seen by some scientists as the first signal of more pronounced [climate change](#).

Led by Prof Andrew Watson of UEA's School of Environmental Sciences, the researchers used a network of commercial ships carrying chemical sensors in their engine rooms - combined with other information such as [satellite observations](#) of [sea surface temperature](#) - to map the uptake of [atmospheric CO₂](#) by the entire North Atlantic Ocean.

The results suggest that the North Atlantic absorption of CO₂ varies substantially over periods of several years and is sensitive to regional changes in climate.

"These exciting results from our new co-ordinated network represent the

first time scientists have observed CO₂ uptake over any large region of the world - either land or ocean - with such accuracy," said Prof Watson.

"Our new method estimates the flux and how it varies from year to year and season to season, showing patterns of uptake with a detail never before realised."

It is hoped that similar networks could be established in other major ocean basins well-covered by shipping, making it possible to observe carbon uptake over most of the world's oceans. The networks could be used to give early warning of any weakening in the uptake of carbon dioxide by the global oceans. This uptake is very important in slowing the rise of CO₂ in the atmosphere, and some scientists have warned that such a weakening of the sink could be beginning to occur as climate change becomes more pronounced.

Source: University of East Anglia

Citation: New method of measuring ocean CO₂ uptake could lead to climate change 'early warning system' (2009, December 3) retrieved 30 April 2024 from <https://phys.org/news/2009-12-method-ocean-co2-uptake-climate.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--