

UK Ocean acidification programme

Observations to establish trends and variability in ocean pH

Partners: UEA, CEFAS, NOC, PML

Associates: Marine Scotland

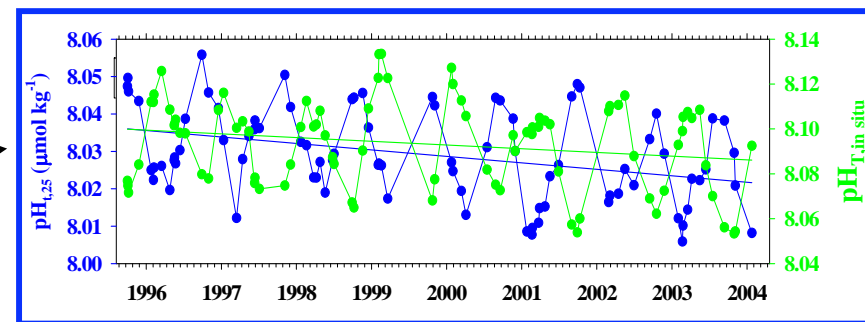
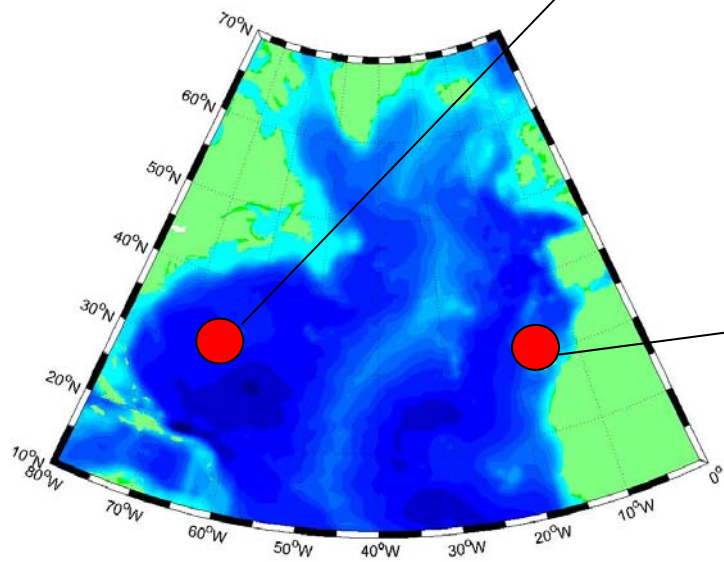
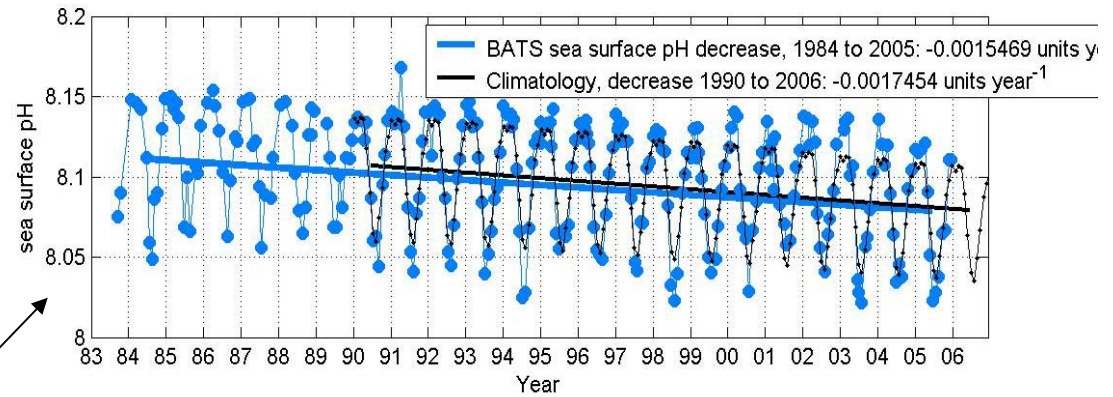
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Aim 1.1 To quantify the rate of progression of ocean acidification in the Atlantic (including European shelf and slope), Southern Ocean, including identification of when/where CaCO_3 undersaturation will occur first.

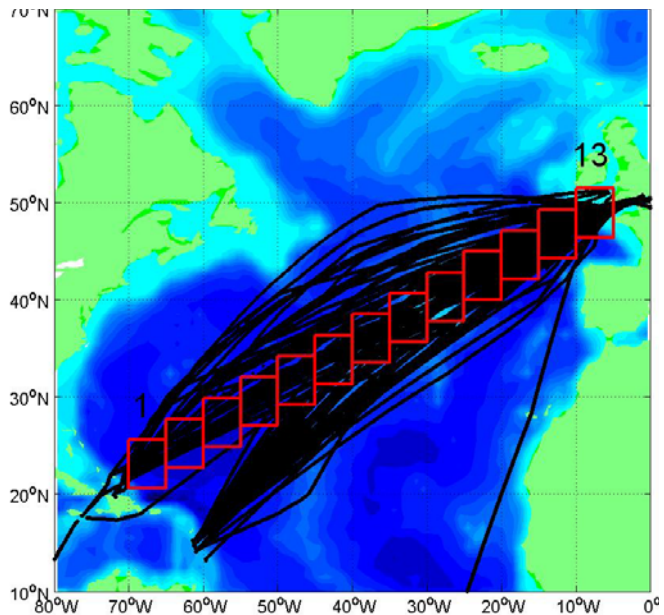
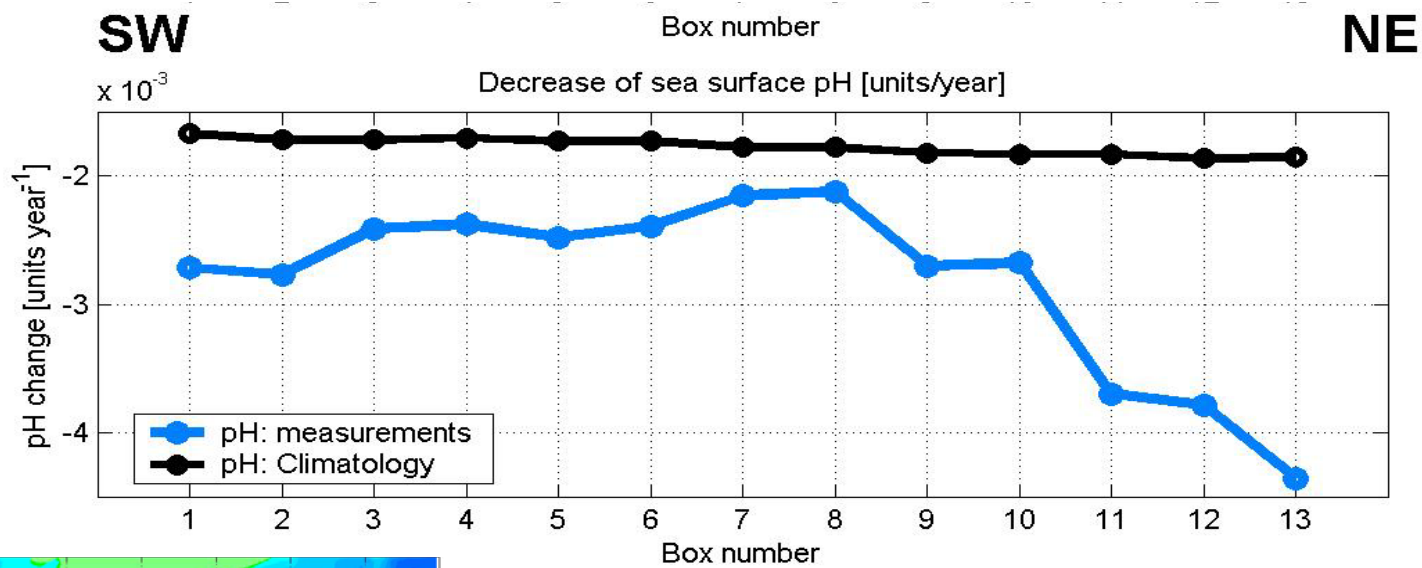
Aim 1.2 To quantify spatial and/or seasonal variability of carbonate system parameters in these areas.

Aim 1.3 To improve quantification of the rate of oceanic CO_2 uptake in these areas.

Time series of pH from Bermuda and Canary Islands follow the expected decline



pH change in the NE. Atlantic is faster and variable



pH trend 1995- 2007

–pH is affected by climate, ocean circulation and biology as well as atmospheric CO₂.

Objectives

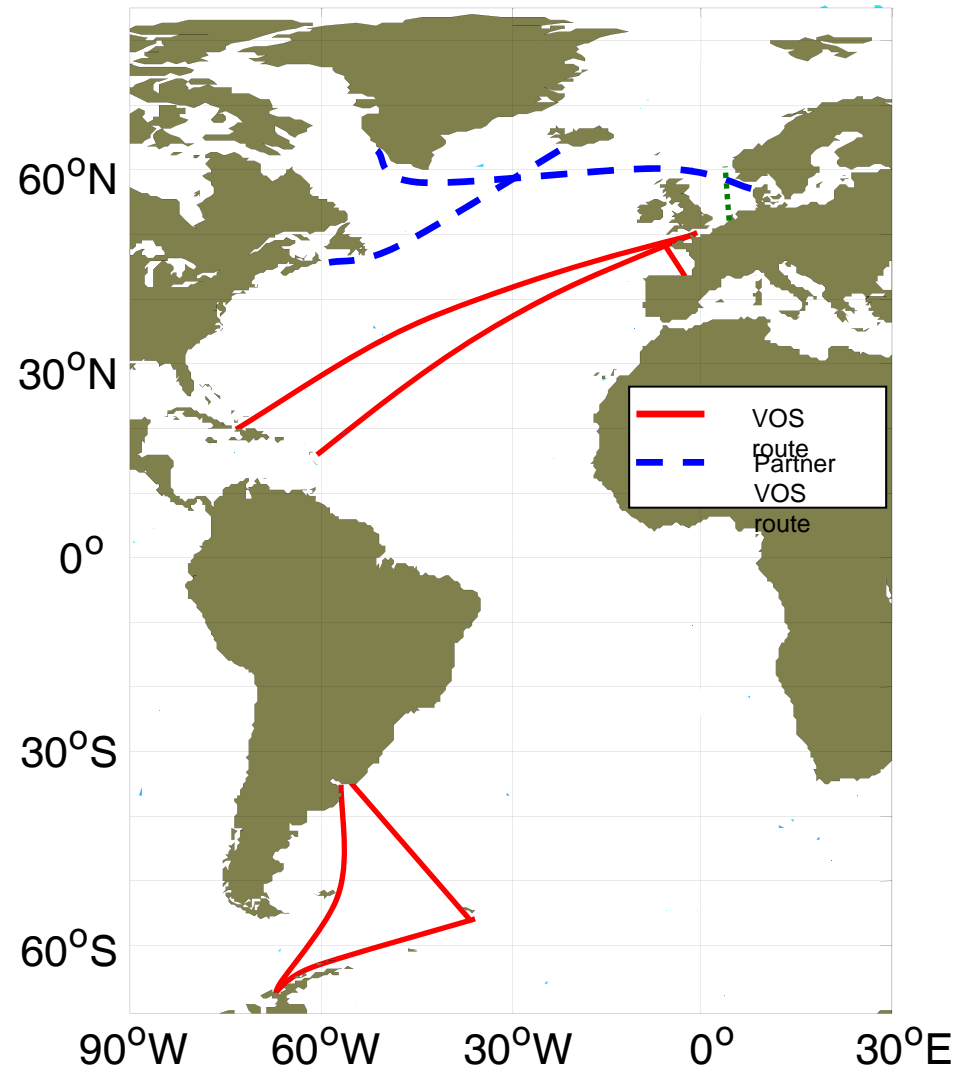
- 1. Inception of an integrated carbonate system observation program in UK waters, joining with a wider international programme, including underpinning of existing ongoing time series (Expand sampling protocol to monitor full carbonate system).***
- 2. Provide the capability for CEFAS and Marine Scotland to monitor pH in UK waters***
- 3. Analysis of pH trends and variability, linkages to climate change and climate indices (NAO, ENSO etc)***

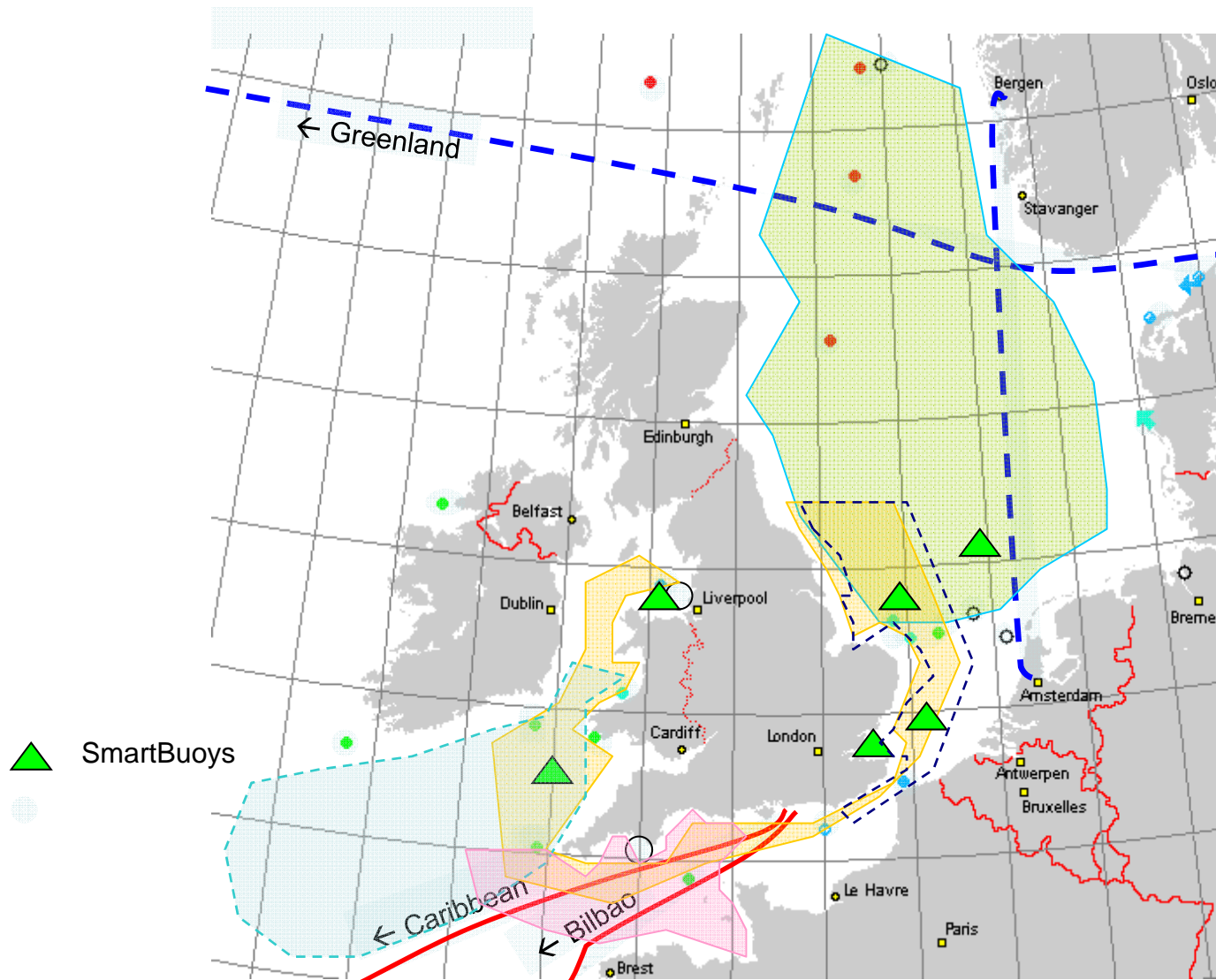
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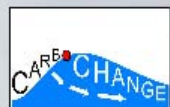
WP1: *Maintain/upgrade existing observations: UK / Caribbean, UK – Spain, Western Channel observatory, RRS James Clark Ross*

WP2: *New observations: Rothera Time series, CEFAS Endeavour, Scotia, Servicing smartbuoys.*

WP3: *analysis of ongoing trends and variability – using our own measurements, and in combination/contribution to the international efforts (SOCAT, GCP)*







A Collection of Underway Ocean CO₂
Observations Quality Controlled
by the Science Community



Welcome to the SOCAT Data Access System



SOCAT Data Products:

Cruise Data Viewer

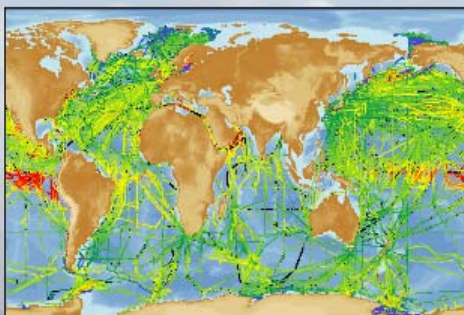
Gridded Data Viewer

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Benguela Stream: UK – to Caribbean

- Currently instrumented for pCO₂, T, S.
- TA and TC samples will be collected routinely during 2012 on at least four voyages per year

