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The Atlantic Meridional Transect Programme

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The Atlantic Meridional Transect (AMT) programme [www.amt-uk.org] is a time series of stations along a 13,500 km transect in the Atlantic Ocean. The programme began in 1995, utilising the passage of the Royal Research Ship James Clark Ross between the UK and the Falkland Islands (50^oN to 52^o) southwards in September and northwards in April each year. Marine and atmospheric data are collected from a range of ecosystems from sub-polar to tropical and from eutrophic shelf seas and upwelling systems to oligotrophic mid-ocean gyres. AMT therefore provides a means to assess biodiversity trends in relation to environmental change, to improve understanding of the structure and functioning of marine ecosystems including the interactions between physical and ecological processes and the impact of climate change on the ocean. AMT provides a sustained open ocean *in situ* observing system to enable early warning of any fundamental change in ecosystem functioning and to better forecast the marine environment for society's needs.

Eighteen cruises have been completed so far, involving $\sim$ 180 scientists from 11 countries, and the data collected have contributed to 150 peer reviewed publications and 68 PhD theses. This unique spatially extensive, internally consistent decadal dataset continues to be deposited and made available to the wider community through the British Oceanographic Data Centre (http://www.bodc.ac.uk/projects/uk/amt/). Through development of the website, we aim to construct a "basin scale observatory" with web-based data visualisation, and delivery and analysis of *in situ* and earth observation data.

This presentation will describe the scientific questions addressed and summarise the

results obtained thus far in relation to the seasonal, inter-annual and latitudinal distributions of biogenic gases and plankton functional biodiversity. Funding has recently been secured for five further cruises between 2007 and 2012, and this presentation will outline the present and future scientific rationale and describe how international colleagues can participate.