How Will Technicians Research the Ocean Deserts?

Last week the RRS *Discovery* sailed from Southampton (UK) to Punta Arenas, in Chile, as part of the annual Atlantic Meridional Transect (AMT) research expedition. National Oceanography Centre (NOC) technicians are on board using sediment traps to capture particles of sinking material within a large system of circulating water in the Atlantic. These systems, or gyres, occupy 40% of the Earth's surface and are characterised by a relatively low level of marine life. So much so, they are often referred to as 'ocean deserts'.

Global Carbon Cycle

The sheer size of these gyres means that carbon cycling within them plays a significant role in the global carbon cycle. These gyres are likely to be growing larger as the climate changes, therefore this research expedition presents an excellent opportunity to record and monitor the movement of carbon in this region.

The Atlantic Meridional Transect (AMT) is a multidisciplinary programme which undertakes biological, chemical and physical oceanographic research during an annual voyage between the UK and destinations in the South Atlantic.

Reporting to the ESA

During this expedition the team will be reporting back to the European Space Agency (ESA) to validate measurements made by their state-of-the-art satellites; will be reporting on long-term trends in biodiversity and CO_2 concentrations of the water and atmosphere; and will investigate the impact of Saharan dust on biological processes in the North Atlantic.

Dr Andy Rees, PML Senior Scientist and AMT Principal Investigator, said: "Not only has AMT delivered sustained observations of ocean processes over approximately 100°latitude for over two decades but also provides the unique opportunity for researchers to access the infrequently sampled waters of the North and South Atlantic Ocean."

Atlantic Ecosystem

AMT is funded through NERC National Capability and hosted by the Plymouth Marine Laboratory in collaboration with the NOC. The AMT programme informs on changes in biodiversity and function of the Atlantic ecosystem during this period of rapid change to our climate and biosphere. This work is part of the CLASS programme (Climate Linked Atlantic Sector Science) which aims to increase our understanding of how the ocean will evolve under a changing climate and increased human exploitation, with the objective to support sustainable marine management.