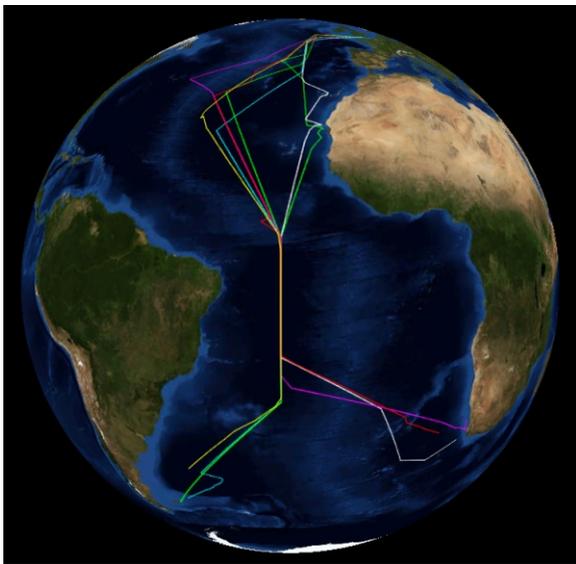


Atlantic Meridional Transect

The AMT programme provides a unique set of repeated measurements along a series of Atlantic meridional transects, covering a distance of almost 13,500km and a wide range of ecosystems. The programme received funding through NERC's Oceans 2025 programme as a Sustained Observatory, to be co-ordinated and led by Plymouth Marine Laboratory in collaboration with the National Oceanography Centre, Southampton. Following Oceans 2025, the programme is to be funded as part of NERC's National Capability, extending the time series for at least another three years.



AMTs 19 and 20 took place aboard the RRS James Cook



AMT historic cruise tracks

The main deliverable for Oceans 2025 was a unique time series (1995-2011) of spatially extensive and internally consistent observations on the structure and biogeochemical properties of planktonic ecosystems in the Atlantic Ocean. These measurements are required to validate models addressing questions related to the global carbon cycle. Data sets will include:

- Vertical CTD profiles & continuous underway data
- Optical characteristics of the water column
- Biogeochemical measurements on water samples including nutrients, pigments, dissolved gases and particulate carbon and nitrogen
- Primary, new production and respiration measurements
- Plankton community structure

The earlier phases of the AMT programme took place between 1995 and 2006 and consisted of 17 cruises during the annual return passage of the RRS James Clark Ross. Oceans 2025 funded a further four cruises that took place from 2008 to 2011. BODC has been integrating the data that resulted from the physical, chemical and biological measurements made on these cruises by the AMT scientists to answer key AMT objectives:

1. How does the structure, function and flow of food within planktonic ecosystems vary in space and time?
2. How do physical processes affect the supply of nutrients, including dissolved organic matter, to the planktonic ecosystem?
3. How do ocean-atmosphere exchanges and sunlight affect the formation and breakdown of organic matter?

More detail on these may be found on the official AMT website: www.pml.ac.uk/amt/index.htm

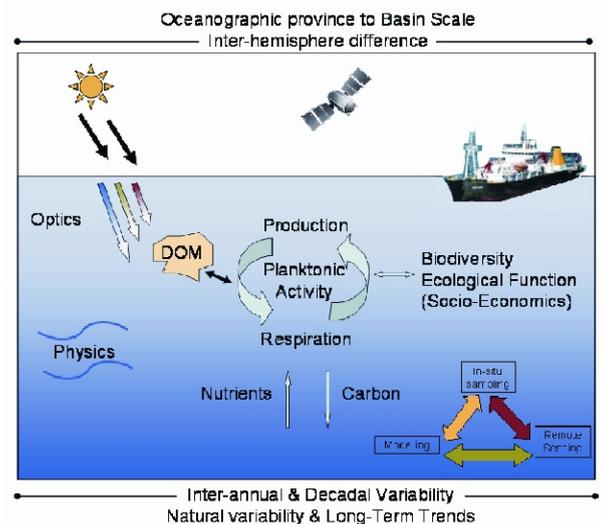
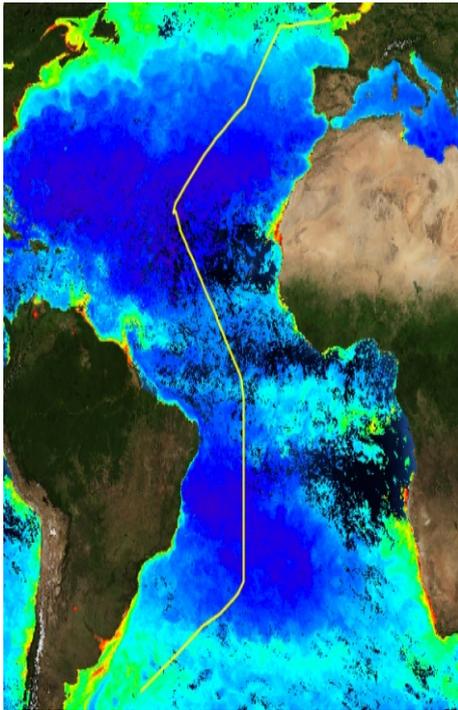


Diagram representing the foci of AMT research



AMT19 monthly composite SeaWiFS image with cruise track

Since 2002 the range of work covered by the programme has expanded to include cross-disciplinary studies of ocean plankton ecology and biogeochemistry, and links to atmospheric processes.

The location of the transect allows for a basin-wide perspective on the cross-disciplinary measurements made during the cruises, providing integrated knowledge on the physical, chemical and biological behaviour of both the North and South Atlantic.

The expanded data sets collected during the AMT cruises between 2002 and 2011 include:

- Aerosol and rainwater composition
- Along-track surface-water time series
- Profiles of biological, chemical and physical parameters
- Optical characteristics of the water column
- Primary, new production and respiration measurements
- Satellite imagery
- Plankton community structure

BODC maintains the AMT data inventory and is working to collate any outstanding data sets. BODC also provide advice on data management to future cruise participants.

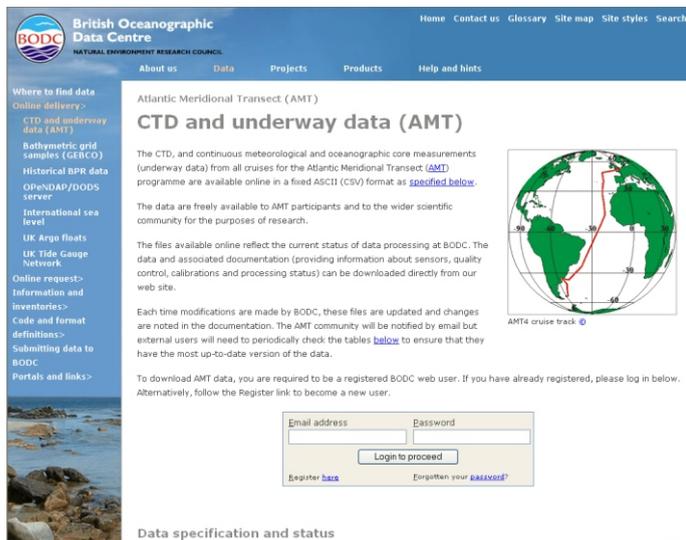
BODC loads the data sets into a quality-controlled, integrated database, with samples linked by time and position. This ensures that data are readily available for temporal and spatial studies.



CTD deployment



Zooplankton nets



The screenshot shows the BODC website interface. The main heading is "Atlantic Meridional Transect (AMT) CTD and underway data (AMT)". Below this, there is a globe showing the AMT cruise track. A sidebar on the left lists various data services. At the bottom, there is a login form with fields for "Email address" and "Password", a "Login to proceed" button, and links for "Register here" and "Forgotten your password?".

All data sets from the 1995-2005 cruises are publically available, with the CTD profiles and underway surface time series available online (www.bodc.ac.uk/projects/uk/amt/). The remaining AMT data sets are available upon request to BODC, with future web delivery under development.

The Oceans 2025 data policy has been designed to make the data from the AMT cruises since 2007 available to the Oceans 2025 community 1 year after a cruise and then after 2 years to the wider scientific community. The aim being that maximum use may be made of this valuable data resource.