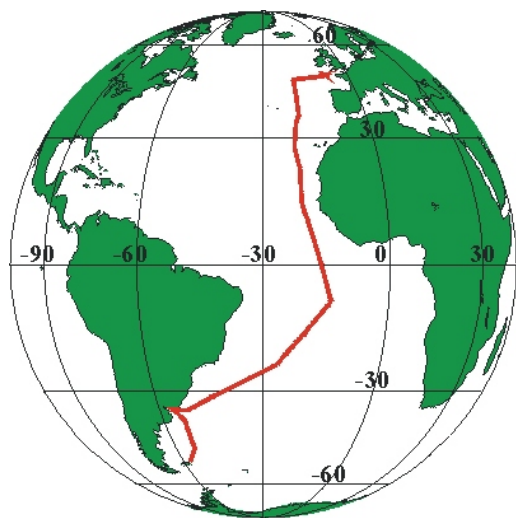


Atlantic Meridional Transect

The AMT programme conducts research during the annual return passage of the Royal Research Ship (RRS) James Clark Ross between the UK and the Falkland Islands. The ship leaves England in September and takes about one month to reach Port Stanley in the Falklands. The return trip takes place in May and follows the same route, a distance of almost 13,500 km.



RRS James Clark Ross



AMT8 cruise track

Phase 1 of the AMT programme took place between 1995 and 2000, and included 12 cruises. BODC is integrating data from the physical, chemical and biological measurements made on the earlier cruises. When the work is complete, data sets will include:

Vertical CTD profiles

Optics casts

Continuous underway data

Biogeochemical measurements on water samples e.g. nutrients, pigments, phytoplankton taxonomy, primary production, dissolved gases

Zooplankton net hauls and continuous plankton recorder data

The new AMT programme (2002-2006) involves 45 investigators, researchers and students from 6 partner UK institutions (Universities of Newcastle, Plymouth, Liverpool, Southampton and East Anglia, together with Southampton Oceanography Centre and Plymouth Marine Laboratory) as well as other national and international collaborations.

Objectives:

1. How does the structure, function and the 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?

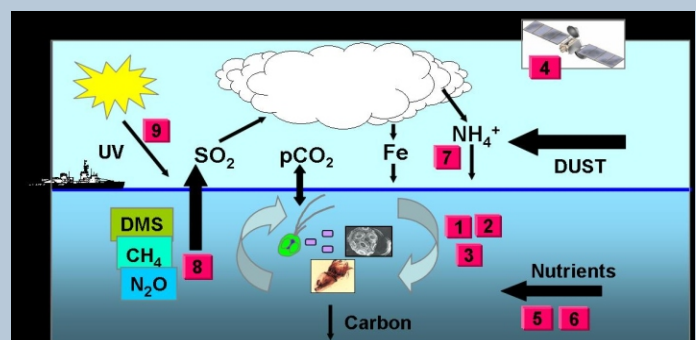
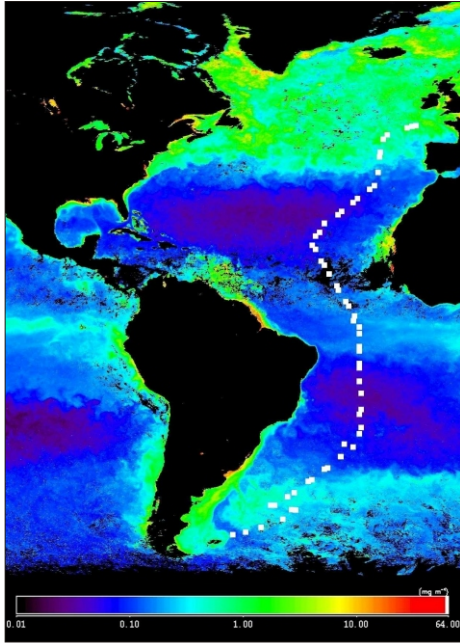


Diagram representing the foci of AMT research

These questions are being researched through the testing of nine hypotheses. More detail on these may be found on the official AMT website, <http://www.amt-uk.org>



AMT12 monthly composite SeaWiFS image with cruise track

In the new phase of AMT, work will focus on cross-disciplinary studies of ocean plankton ecology and biogeochemistry, and links to atmospheric processes.

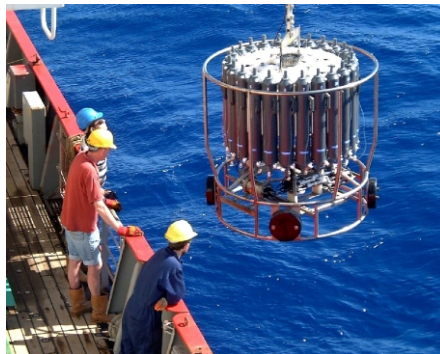
When added to the observations from the 1995-2000 phase of the AMT programme, the work will provide a unique ten-year time-series of data, allowing some of the first detailed comparisons to be made of how ecosystems function in the North and the South Atlantic gyres (circular current systems in the ocean).

The data sets being collected during the AMT cruises between 2003 and 2006 include:

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

BODC's work involves collating all of the AMT data sets from both phases into a quality-controlled integrated database.

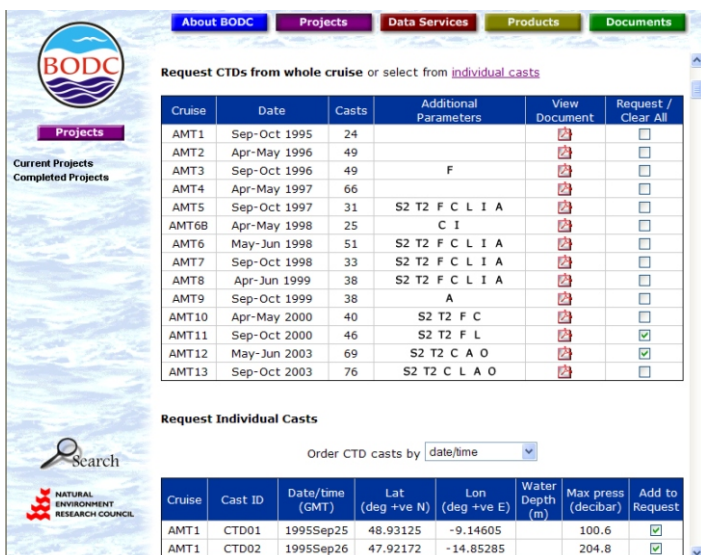
The data will be stored in a relational database which links all samples through their time and position. This ensures that data are readily available for temporal and spatial studies.



CTD deployment



Zooplankton nets



The screenshot shows the BODC website interface. It includes a navigation menu with 'About BODC', 'Projects', 'Data Services', 'Products', and 'Documents'. Below the menu, there are two tables. The first table, 'Request CTDs from whole cruise or select from individual casts', lists various AMT cruises with columns for Cruise, Date, Casts, Additional Parameters, View Document, and Request / Clear All. The second table, 'Request Individual Casts', lists individual casts with columns for Cruise, Cast ID, Date/time (GMT), Lat (deg +ve N), Lon (deg +ve E), Water Depth (m), Max press (decibar), and Add to Request.

Cruise	Date	Casts	Additional Parameters	View Document	Request / Clear All
AMT1	Sep-Oct 1995	24			<input type="checkbox"/>
AMT2	Apr-May 1996	49			<input type="checkbox"/>
AMT3	Sep-Oct 1996	49	F		<input type="checkbox"/>
AMT4	Apr-May 1997	66			<input type="checkbox"/>
AMT5	Sep-Oct 1997	31	S2 T2 F C L I A		<input type="checkbox"/>
AMT6B	Apr-May 1998	25	C I		<input type="checkbox"/>
AMT6	May-Jun 1998	51	S2 T2 F C L I A		<input type="checkbox"/>
AMT7	Sep-Oct 1998	33	S2 T2 F C L I A		<input type="checkbox"/>
AMT8	Apr-Jun 1999	38	S2 T2 F C L I A		<input type="checkbox"/>
AMT9	Sep-Oct 1999	38	A		<input type="checkbox"/>
AMT10	Apr-May 2000	40	S2 T2 F C		<input type="checkbox"/>
AMT11	Sep-Oct 2000	46	S2 T2 F L		<input checked="" type="checkbox"/>
AMT12	May-Jun 2003	69	S2 T2 C A O		<input checked="" type="checkbox"/>
AMT13	Sep-Oct 2003	76	S2 T2 C L A O		<input type="checkbox"/>

Cruise	Cast ID	Date/time (GMT)	Lat (deg +ve N)	Lon (deg +ve E)	Water Depth (m)	Max press (decibar)	Add to Request
AMT1	CTD01	1995Sep25	48.93125	-9.14605		100.6	<input checked="" type="checkbox"/>
AMT1	CTD02	1995Sep26	47.92172	-14.85285		204.8	<input checked="" type="checkbox"/>

AMT data management is tailored to meet the needs of AMT scientists where possible. Core oceanographic data sets, including profiles and time series, are processed and quality-controlled as soon as possible after a cruise, and made available to AMT participants and the wider scientific community via the BODC web pages.

The AMT data policy has been designed to make the data available to the wider scientific community as quickly as possible, so that the maximum use may be made of this valuable data resource.

The AMT data collection will be completed in 2006 and all data will be published on DVD.