



**British Oceanographic
Data Centre**

NATURAL ENVIRONMENT RESEARCH COUNCIL

www.bodc.ac.uk

Experience and Expertise

BODC deals with biological, chemical, physical and geophysical data, and its databases contain measurements of nearly 10,000 different variables. Many of the staff are scientists with direct experience of marine data collection and analysis. They work alongside information technology specialists to ensure that data are documented and stored for current and future use.



Pioneering approach

BODC is at the forefront of developments in marine data management. It was one of the first data centres to work alongside scientists during multidisciplinary research projects to provide a service during the life of the project, as well as in the future. It produces innovative marine data products and digital atlases. It is also involved in real-time data management and initiatives intended to increase the accessibility of environmental data.

Storage solutions

One of the challenges of data management is to ensure that data collected now can still be used well into the future without reference to the originator. BODC stores data in formats that should be unaffected by changes in technology. Included, is information detailing how the data were collected, analysed and processed so that users understand the quality of the data. As well as present day projects, BODC is also involved in 'data archaeology' exercises, collating data sets that are in danger of being lost.

Developing technologies

Best value from data can only be achieved if they are easily accessible. BODC is committed to technological development to improve the process of searching for data and their delivery in a form required by the user. Central to this is the assembly of an internationally agreed data dictionary and the adoption of the latest e-Science techniques to join together distributed data.

Fig.1

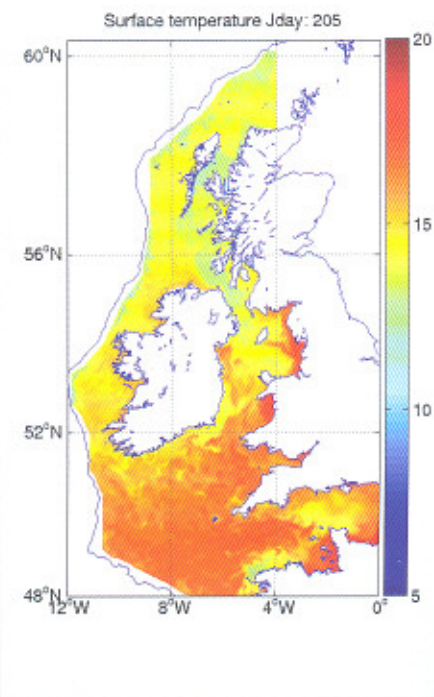
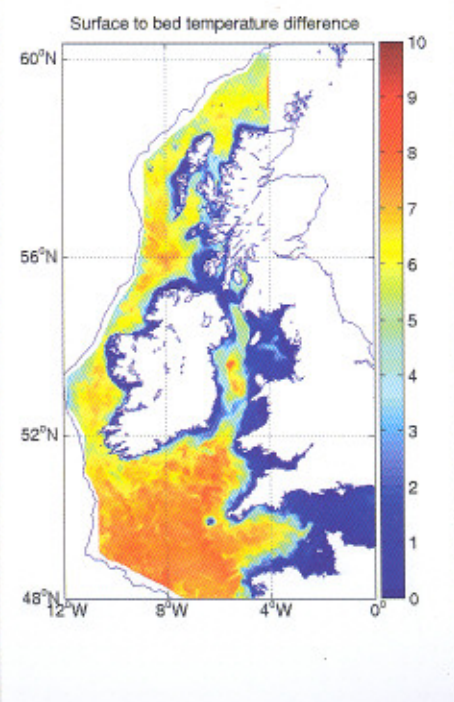




Fig.1



Maximising the use of marine data

The wealth of publicly accessible data held at BODC was collected using a wide variety of instruments and samplers and collated from many sources, for example:

- Water bottle samples
- shipboard underway measurements
- moored instrument
- optical instruments
- biological trawl
- CTDs
- core x-ray images
- drifting buoys and floats
- sediment trap
- biological production measurements
- benthic fauna trawls
- bottom landers
- zooplankton and phytoplankton analyses
- towed undulator
- camera images
- moored and shipboard current profilers
- atmospheric and oceanographic chemistry measurements
- sediment cores
- wave recorders
- biogeochemical analyses
- tide gauge and bottom pressure recorders
- HF radar data.

National and international collaboration with a range of Public Bodies, Universities, Industry and Intergovernmental organisations means that if BODC does not itself hold data, it is generally able to provide assistance in sourcing it elsewhere.

Fig.1 Model results from the Proudman Oceanographic Laboratory Coastal Ocean Modelling System for the shelf seas west of UK at a ~1.8km resolution, shown for 24 July 1957.



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The British Oceanographic Data Centre is a national facility for storing and distributing data concerning the marine environment. We are part of the Intergovernmental Oceanographic Commission's network of data centres. The centre provides a resource for science, education and industry, as well as the wider public.



BODC Products

BODC has been involved in the end-to-end management of many projects and has had the responsibility of collating and checking the data collected and making it available to a wider audience. Usually at the end of a project, a CD-ROM is produced and a selection of these CDs is listed.

ARABESQUE

ARABESQUE was a study of upper ocean microbial biogeochemistry in the Arabian Sea. Its focus was carbon and nitrogen cycling processes linked to climate change. The field programme consisted of two cruises of RRS Discovery. Cruise 210 (from 27 August to 4 October 1994) was timed to coincide with the South West Monsoon, whilst cruise 212 (from 16 November to 19 December 1994) took place during the intermonsoon period through to the onset of the North East Monsoon.

Data management support was provided by BODC, and over 90% of the data collected during the field programme are assembled on this CD-ROM along with associated documentation and software interface.

AUTOSUB

The Autosub Science Missions were a Thematic Programme of the Natural Environment Research Council. The broad aims of the Thematic Programme were the collection of interdisciplinary data sets that cannot be obtained by research ships and demonstration to the scientific and wider user community of the usefulness of an Autonomous Underwater Vehicle (AUV).

The Autosub Thematic Programme consists of 6 Science Missions:

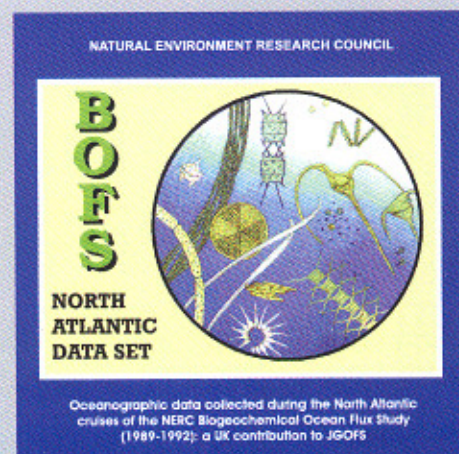
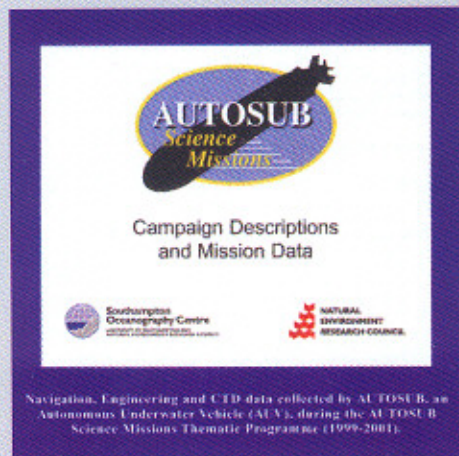
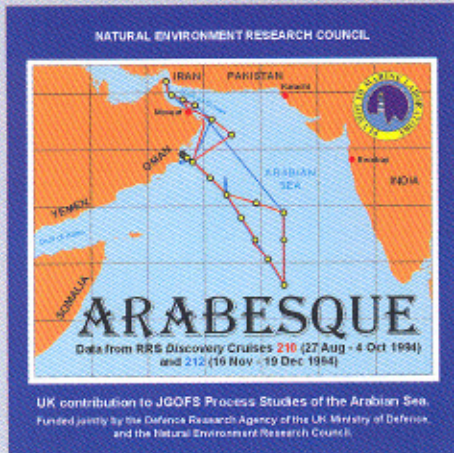
- Novel measurements using an AUV in the Strait of Sicily
- Measurements of dissolved and particulate manganese and oxygen concentrations using Autosub in hypoxic basins
- Under sea-ice and pelagic surveys
- Subsurface Single Cell and Particle Analysis
- Spatial variability of bottom turbulence over a linear sandbank
- Sonar and turbulence studies in the upper ocean

As well as descriptions of the campaigns, the CD-ROM also contains navigation, engineering and CTD data collected.

BOFS

The Biogeochemical Ocean Flux Study (BOFS) was a Community Research Project of the Marine and Atmospheric Sciences Directorate of NERC. It was hosted by the Plymouth Marine Laboratory from April 1987 to April 1992, with a bridging to April 1993 for cruises to the Southern Oceans. The North Atlantic field programme was conducted between May 1989 and July 1991.

Data collected include Meteorology and positioning, CTD, oxygen probes and fluorometry, Nutrients, Optics, Carbon dioxide, Particulate organic carbon and nitrogen, Dissolved organic carbon, Pigments, Bacteria biomass and production, Plankton biomass, composition and grazing, Oxygen production and Sediment traps.





Bristol Channel Project

The Bristol Channel Project was a study coordinated by the NERC Institute for Marine Environmental Research (now Plymouth Marine Laboratory). An extensive field programme was conducted between 1970 and 1983. The data set was selected for restoration and archival at BODC as part of the NERC SEEDCORN programme.

The dataset includes Station Profiles, Water samples (34 parameters measured), Net hauls (>400 parameters measured), Secchi disk depths and production experiments.

INDIA

INDIA was an EU Marine Science and Technology (MAST) funded project to study complex interactions between wind and waves, tidal flow, sediment movement and related phenomena which determine the morphodynamic behaviour and stability of tidal inlet entrances, flood/ebb deltas and adjacent coastlines.

The field programme was conducted during January to March 1999, although some elements of data collection began prior to this period, at the Ria Formosa National Park on the Algarve, primarily on the Praia de Faro side of the New Inlet.

CD1 contains bathymetry, Moored instrument and Tidal prediction data. CD2 has data from Radar systems, ADCP surveys, Jack-up barge and Beach experiments. CD3 contains video tower images and CD4 consists of Aerial Survey, Seabed photographs and Field campaign images.

LOIS RACS

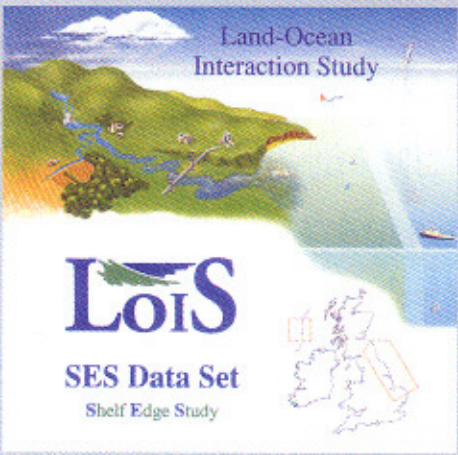
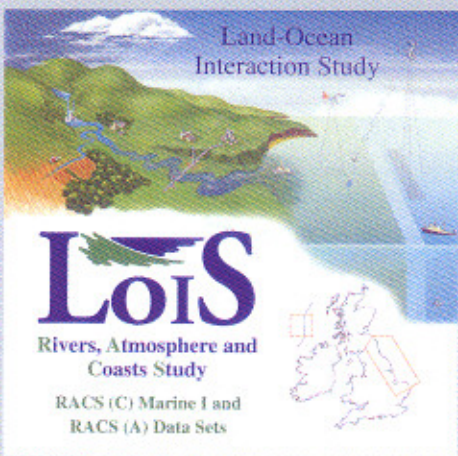
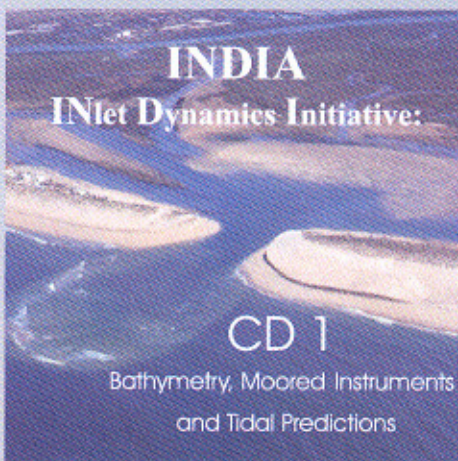
The Land-Ocean Interaction Study 1992-2000 was an interdisciplinary NERC Thematic Programme designed to understand processes in the coastal zone. The Rivers, Atmosphere and Coasts Study (RACS) was a major component of LOIS that looked at rivers and river catchments, estuarine systems, coastal seas and the interactions between such seas and the atmosphere, with a spatial focus on the east coast of the UK from the Wash to the Tweed.

Data collected include CTD profiles, Surface water samples, In-situ SPM particle size profiles, Core samples (both from the sea floor and from mudflats) and Production experiments.

LOIS SES

The LOIS Shelf-Edge-Study (1992-98) was an interdisciplinary NERC research programme designed to understand coastal processes. Investigations covered river catchments, estuaries and coastal seas and their long-term evolution, air-sea interaction and shelf edge interactions with the open ocean. The data were collected during an intense field experiment and there is a rich diversity of physical, chemical, biological and geological data from moorings, drifters, cores and shipboard operations.

The dataset includes CTD and SeaSoar profiles, XBT profiles, ADCP profiles, Water samples, Core profiles, Turbulence profiles, Sediment trap samples, Production experiments, Marine snow camera profiles, Tidal analyses, Radiometer profiles, Drifting buoy tracks and SVT experiments.





MAIA

The overall objective of MAIA (Monitoring the Atlantic Inflow toward the Arctic) was to develop an inexpensive, reliable system based on coastal sea-level data for monitoring the inflows of Atlantic Water to the northern seas. Available observation systems, including standard tidal stations, were used to obtain transport estimates with a time resolution of less than a week and show that the method is generic and can be applied to a similar monitoring of other regions.

The CD contains data from CTDs, current meters, ADCPs, Bottom pressure recorders, Inverted echo sounders and drifting floats.

North Sea Project

The North Sea Project was a Community Research Project of the Marine and Atmospheric Sciences Directorate of the Natural Environment Research Council and was hosted by the Proudman Oceanographic Laboratory from April 1987 to April 1992. The field programme was conducted between May 1988 and June 1991.

The ultimate aim of the project was the development of a suite of prognostic water quality models to aid management of the North Sea.

The data set includes surface underway data, CTD casts and water bottle samples.

OMEX - I

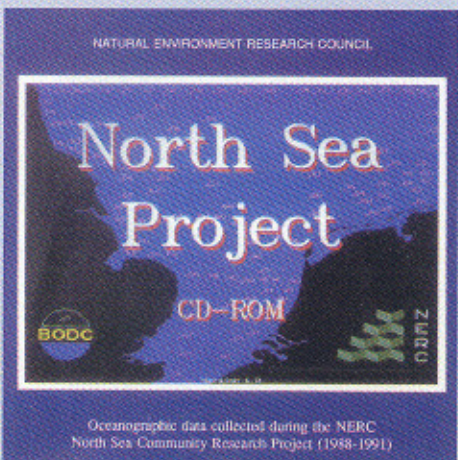
OMEX-I was a multidisciplinary project to study the physical, chemical and biological processes at the ocean margin of the Northwest European continental shelf. The field programme was conducted between April 1993 and December 1995 and comprised 47 research cruise legs involving vessels from 9 European countries.

The CD ROM includes data from CTD and SeaSoar profiles, XBT profiles, ADCP profiles, Water and Air samples, Core profiles, Benthic fauna determinations, Sediment trap samples, Production experiments, Marine snow camera profiles, Pelagic fauna determinations, Radiometer profiles and Drifting buoy and trap tracks.

OMEX - II

The second phase of the Ocean Margin EXchange Experiment (OMEX II) ran from June 1997 until May 2000, with fieldwork between June 1997 and October 1999. The project studied processes at the Iberian continental margin, with the main focus from the coast to the base of the slope between 42 and 43 degrees north.

Data collected include CTD profiles, FLY turbulence profiles, Radiometer profiles, XBT profiles, ADCP profiles, Water samples, Core profiles, Net hauls, Sediment trap samples, Production experiments, Benthic fauna samples and drifting buoy tracks.





PRIME

PRIME (Plankton Reactivity in the Marine Environment) was a NERC funded thematic project to study the role of plankton in oceanic biogeochemical fluxes which have implications in climate regulation. The PRIME field programme consisted of a mesocosm experiment in the fjord waters of Espeyrend Marine Biological Field Station, Bergen, from 6 June to 5 July 1995, and a research cruise in the Northeast Atlantic from 11 June to 23 July 1996.

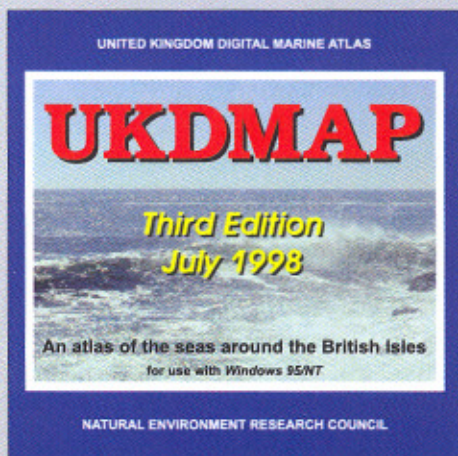
Data collected include CTD and SeaSoar profiles, Water samples, Net hauls, Secchi disk deployments, Multisizer samples, Production experiments, Drifting buoy tracks and Weather observations.



PROCESS

PROcesses of Vertical Exchange in Shelf Seas (PROCESS) was a joint European project with the objectives to model and study the vertical fluxes of properties through the water column, particularly the surface and benthic boundary layers, and to explore the mechanisms of physical-biological coupling in regions of turbulence and vertical exchange. PROCESS fieldwork consisted of two interdisciplinary experiments at two sites in the North Sea: the northern North Sea experiment and the southern North Sea.

The dataset includes data from CTD profiles, SeaSoar profiles, Water samples, FLY and MICSOS microturbulence profiles, Radiometer profiles, LISST laser particle size profiles, Fluorometer profiles, Secchi disk deployments, Zooplankton net tows, SVT experiments and Sediment core deployments.



UKDMAP

The United Kingdom Digital Marine Atlas (UKDMAP) has been developed by BODC for NERC as a wide-ranging reference source for information relating to the coasts and seas around the British Isles.

It contains over 1600 thematic charts which are displayed via a variety of presentation methods, including contoured plots of physical, chemical and geological parameters; colour-coded distribution charts of sea use; biological and fisheries information; oceanographic data catalogues; geo-referenced directories which present detailed information on demand.

If you would like to order any of these CD-ROMS,
 please e-mail enquiries@bodc.ac.uk
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