NODC Report: United Kingdom

1. Name of Data Centre:
   BRITISH OCEANOGRAPHIC DATA CENTRE (BODC)

2. National IODE Co-ordinator:
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3. Data Centre Address
   Same as above

4. Data Centre URL: www.bodc.ac.uk

5. IODE Data Centre Designation Date:
   NODC 1969

6. Data Centre Description:
   The British Oceanographic Data Centre (BODC) is a component of the UK Natural Environment Research Council's (NERC's) environmental data centre network and has designated responsibility for marine data. It is also part of the Intergovernmental Oceanographic Commission's (IOC's) network of national oceanographic data centres.
   BODC's mission is to operate a world class data centre in support of UK marine science by:
   • providing data management support for UK marine science projects
   • maintaining and developing the UK's national oceanographic database
   • developing innovative marine data products and digital atlases
   • collaborating, on behalf of the UK, in the international exchange and management of oceanographic data
7. **Brief History:**

BODC was established in April 1989 by the Marine Science Directorate (now the Science and Technology Board) of the Natural Environment Research Council (NERC). It grew out of the data banking section of the Marine Information and Advisory Service (MIAS), set up in 1976 and which in turn developed from the British Oceanographic Data Service (BODS), first established in 1969. BODC is hosted by and located at the Proudman Oceanographic Laboratory (POL).

In April 1999, BODC celebrated a decade of achievement since its establishment. During this period, the Data Centre has earned an international reputation for managing data from large-scale field experiments. It has pioneered a unique end-to-end approach to marine data management, sometimes being involved with the initial collection of data at sea, invariably assisting in the working up, calibration and quality control of data and assembling the project data set for use by principal scientists. The process ends with the publication on CD-ROM of a comprehensive and fully documented final version of the project’s data and the incorporation of the data within centralised databases for further synthesis and dissemination.

Over the past decade, BODC has successfully provided data management support to the field programmes of six major marine science projects and has brought 95% of all the data collected on these projects through to publication on CD-ROM. Over 200 scientists from 50 laboratories in 10 countries were involved in the collection and supply of these data to BODC. The projects were:

- NERC North Sea project
- NERC Biogeochemical Ocean Flux Study in the Northeast Atlantic
- NERC Arabesque project in the Arabian Sea
- NERC LOIS Shelf Edge Study on the Hebridean Shelf
- EU Ocean Margin Exchange (OMEX-I) project

Collectively, these projects undertook, 117 cruise legs involving some 1750 days of sea time on 10 different research vessels. The resultant data sets encompass 8000 oceanographic stations, over 1000 net hauls, and some 400 cores, in addition to almost 200000 nautical miles of underway measurements and 590 time series from moored instruments. The data sets also include the results of the chemical and biological analyses of more than 30000 water samples as well as many other types of data.

8. **Roles and Responsibilities of the Data Centre:**

BODC’s primary role is that of NERC’s Designated Data Centre for marine data. It also has a special role as the Data Centre for the UK National Tide Gauge Network. In addition, BODC is the host centre for the UK Inter-Agency Committee on Marine Science and Technology (IACMST) National Marine Environmental Data Co-ordinator, who in collaboration with an Action Group, operates the National Marine Environmental Data Network.

BODC is recognised within the Intergovernmental Oceanographic Commission (IOC)’s International Oceanographic Data Exchange System as the UK’s National Oceanographic Data Centre. Its roles include:

- IOC/IHO Digital Atlas Centre for the General Bathymetric Chart of the Oceans (GEBCO)
• International WOCE Data Assembly Centre for Sea Level Data
• Co-ordinating centre for IOC’s Global Sea Level Observing System (GLOSS) Handbook
• Co-ordinating centre for IOC’s International Current Meter Inventory

BODC collaborates with other oceanographic data centres in Europe, and in particular, it is the UK Partner in the EU Sea-Search Network (www.sea-search.net), and within this co-ordinates the European Directory of Marine Environmental Data (EDMED). EDMED currently includes over 2300 data sets from more than 500 organisations across Europe. The database was redesigned in 1999, and it is now accessible via an improved web interface. In addition, EDMED is currently being updated and extended. BODC also acts as the project data centre for several EU funded projects which are noted below.

9. Data Centre Projects and Activities during the Intersessional Period:

Marine scientists from over 170 organisations world-wide have contributed data to BODC’s databases. Of the 1700 data submissions of data to BODC over the past decade, 72% came from laboratories within the UK, 20% from some 62 European laboratories, with the remainder being submitted by 60 centres in 25 countries further afield. Most of these data are screened and documented by BODC to a common standard, a considerable achievement considering that data have been delivered in well over 300 formats and in various stages of processing and assembly.

As well as assembling multi-disciplinary project orientated data sets, BODC is responsible for compiling major national collections of tide gauge data, CTD data, instrumentally collected wave data, moored current meter data, and met/ocean data from buoys, weatherships and oil rigs. In addition, over the past two years, a review of NERC’s marine data has been carried out with a view to rescuing valuable data sets, which might otherwise be lost.

Marine environmental data are widely distributed throughout the UK amongst many government departments and laboratories, universities and commercial companies. This wide distribution results from the great diversity of data types and of organisations responsible for making and using marine observations. In 1996, the IACMST set up a Marine Environmental Data Action Group which includes representatives from government departments and users groups. This group, together with the Marine Environmental Data Co-ordinator, form the UK Marine Environmental Data Network. The main activities are:

• to develop, maintain and make available inventories of data
• to improve mechanisms to facilitate data exchange (including contributing UK data to global databases)
• to develop guidelines for data management

To promote the UK Marine Environmental Data Network, the OceanNET web site (www.oceannet.org) has been set up to act as a portal to data and information about the marine environment.

Nationally, BODC is currently the project data centre for the following:

• Marine component of NERC’s Land-Ocean Interaction Study (LOIS)
• UK component of World Ocean Circulation Experiment (WOCE)
• NERC AUTOSUB Science Missions
• Hydrographic component of NERC’s Atmospheric Chemistry Studies in the Oceanic Environment (ACSOE)
• UK Digital Marine Atlas Project
Within the EU, BODC also acts as the project data centre for the following:

- EU Ocean Margin Exchange (OMEX) project
- EU Inlet Dynamics Initiative – Algarve (INDIA) project
- EU Processes of Vertical Exchange in Shelf Seas (PROVESS) project
- EU’s European Directory of Marine Environmental Data (EDMED)

Further information about all of these projects can be found on the BODC web site at: www.bodc.ac.uk

10. Data Centre Products and Services Developed and/or Made Available during the Intersessional Period:


**OMEX-I Project Data Set CD-ROM** – covering over 550 data sets collected on 47 cruise legs during the First Phase of the EU Ocean Margin Exchange Project.

1998  **Arabesque Project Data Set CD-ROM** – upper ocean microbial biogeochemistry data from two cruises of RRS Discovery to the Arabian Sea (1994).

**WOCE Global Sea Level Data Set (Version 1.0) CD-ROM** – hourly sea level data from over 160 sites world-wide that comprise the WOCE global tide gauge network.


1999  **LOIS Shelf Edge Study Data Set CD-ROM** – data from moorings, drifters, cores and shipboard operations on 19 cruise legs on the Hebridean Shelf during the NERC LOIS Project (1995-96).

**PRIME Project Data Set CD-ROM** – mesocosm experiment and cruise data collected during the NERC Plankton Reactivity in the Marine Environment Project.

2000  **OceanNET web site (www.oceannet.org)** – In addition to providing a comprehensive set of links to national sources of marine data, OceanNET also includes national inventories of data such as the UK Directory of Marine Environmental Data Sets, UK Moored Current Meter Inventory, Inventory of UK Marine Monitoring Observations, and the Directory of UK Research Cruises.

**New BODC web site (www.bodc.ac.uk)** - In addition to providing information about BODC, and the current projects, the web site includes information about BODC products (i.e. CD-ROMs), searchable inventories (e.g. UK Moored Current Meter Inventory, UK Research Cruise Directory, EDMED), maps showing UK tide gauge data and instrumentally measured wave data held by BODC, together with other data holdings.

**WOCE Global Sea Level Data Set (Version 2.0) CD-ROM** – hourly sea level data from over 160 sites world-wide that comprise the WOCE global tide gauge network, plus the Permanent Service for Mean Sea Level (PSMSL) monthly and annual mean sea level data set, and the most recent version of the IOC GLOSS Station Handbook.