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IODE NATIONAL REPORT FOR BELGIUM/FLANDERS
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1. Name of Data Centre:
Flanders Marine Data and Information Centre/Vlaams Marien Data- en Informatiecentrum (VMDC)

2. National IODE Coordinator:
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3. Data Center Address:
Same as 2

4. Data Center URL:
www.vliz.be

5. IODE Data Center Designation Date:
June 2000

6. Brief History:
The Flanders Marine Institute (VLIZ) was created on 2 April 1999 by the Government of Flanders, the Province of West Flanders and the Fund for Scientific Research - Flanders. It is an autonomous institute, with the legal status of a not-for-profit organisation. VLIZ supports the marine scientific research in Flanders and hereby integrates a number of important functional and operational tasks, one of which is to host the Flanders Marine Data and Information Centre. VLIZ has taken over all responsibilities from the former Institute for Marine Scientific Research (IZWO).

7. Roles and Responsibilities of the Data Centre:
The objectives of the Flanders Marine Data Centre are:

- To provide researchers, the government and those interested with marine data and information, in a suitable and prompt way
- To stimulate networking by maximally centralising information on availability of data of research groups and governmental authorities, also on international scale
- To detect needs; create series of data for interdisciplinary research, taking the accepted international standards into account.
- To integrate various types of data, including control on consistency and quality.
- To assist marine scientists and other organisations with expertise in data management, including development of databases and setting up computer infrastructure.

To accomplish these objectives, VMDC acquires, archives and processes oceanographic data and information, and redistributes these according to the users’ needs. It integrates various types of data, checks their consistency, and performs the quality control.

Agreements about data exchange are made with partners at the regional, federal and international level. VMDC actively participates in international networks, primarily through the Intergovernmental Oceanographic Commission of UNESCO, and the International Council for the Exploration of the Sea (ICES). Collaborative projects with ICES and IOC are described below.
8. Description of national data and information management coordination:

Being a federal state, Belgium deals with marine data management at different levels. The National Oceanographic Data Centre for Belgium is the ‘Belgian Oceanographic Data Centre, part of the Management Unit of the Mathematical Model North Sea and Scheldt Estuary (MUMM). The Ministry of the Flemish Community is co-founder of the Flanders Marine Institute (Vlaams Instituut voor de Zee, VLIZ), assigning the creation of a data- and information centre as one of its main tasks. A memorandum of understanding between VLIZ and MUMM, describing a framework for collaboration between the two organisations, is in preparation.

At the national level, VLIZ participates in several marine science projects. Through its involvement in these projects, which usually centres on data- and information management, VLIZ/VMDC is able to assist marine science development with its expertise in data management. VMDC also assists in several training programmes for marine data management (see below).

At the international level, VMDC is involved in several data and information management activities, and hosts several web sites. Details are given below. Since December 2001, VLIZ/VMDC is ASFA input centre for Belgium; the first batch of records was submitted in November 2002. VMDC is involved in several Groups of Experts and Working groups of IODE and ICES. VLIZ/VMDC is responsible for data management for the North Sea Benthos Project, which started out as an activity of the Benthos Ecology Working Group of ICES, and since September 2002 is recognised by ICES as a separate Working Group.

The VMDC primary area of interest is the Southern Bight of the North Sea, extending to the rest of the North Sea where relevant. Any data, information or publication pertaining to work carried out by Flemish marine scientists, also research based outside the primary geographical scope, is of interest. VMDC is interested in data from any subject matter. However, since most senior members of staff of VLIZ are biologists, this has obvious implications on the type of activities VMDC will be involved in, and the degree to which VMDC will be able to support data types.

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

VMDC has been developing several databases, web interfaces for existing databases, and web sites. Most database activities have been presented during international conferences, symposia and workshops, either as oral or poster presentations, or demonstrations. A detailed list of data available from the VLIZ web site is listed under item 10.

VLIZ hosts web sites for, a.o., the European Association of Aquatic Sciences Libraries and Information Centres (Euraslic), the Marine Research Stations Network (MARS), and for several projects in which VLIZ participates. Software developed in-house was used to organise e-conferences, in collaboration with members of the MARS network. Several databases, often resulting from project activities of Flemish institutions, are not only archived, but also brought on line after the end of the project. A web-based graphical interface for the World Ocean Database 98 was developed, both as a service to our users, and as an extensive exercise in SVG.

The Integrated Marine Information System (IMIS) was developed to capture information relevant to marine sciences in Flanders and Belgium. Several aspects are covered in separate modules of the database application: expertise, institutions, literature, datasets, projects… IMIS is inspired by an effort to extend normalisation beyond a typical application like library database, a metadatabase or a database of contacts, and to integrate information needs of the whole institute into one interlinked application. Several applications have been developed using IMIS as a backbone. Weekly ‘Library Acquisitions’ messages are mailed electronically to those interested. Through IMIS, we generate the VLIZ contribution to several union library catalogues…

Several biological databases have been developed at VMDC, input is ongoing. Data from the North Sea Benthos Survey, conducted in 1986, was made available through the VLIZ web site. Data from the
NSBP, with species records from 2000, will be made available at a later stage, after the initial analyses have been published as an ICES report.

Tisbe and Aphia are two related databases, with biogeographic and taxonomic information respectively, on the Belgian Continental Shelf. Aphia is available online, Tisbe will be so very soon. In line with recommendations of the first meeting of GE/BCDMEP and of the ICES MDM, taxonomic names are cross-referred to ITIS names. Both databases are developed taking into account lessons learned during development of the Marine Species Database for Eastern Africa (MASDEA), an IODE activity implemented jointly by the Kenya Marine and Fisheries Institute (KMFRI) and VLIZ.

VLIZ was asked to organize the research activities on the Zeeleeuw, a 55-m vessel belonging to the Ministry of Flemish Community. The ‘Marine Information and Data Acquisition System’ (MIDAS) was developed, that captures underway data and CTD data, allows planning cruises and record sampling activities during the cruise. The data are made available in semi-operational mode through the VLIZ web site.

‘Meetnet Vlaamse Banken’ (MVB, Monitoring network Flemish Banks) is a monitoring network developed and maintained by the Department of Waterways and Maritime Affairs of the Ministry of the Flemish Community. The primary objective of the network is to increase safety at sea for traffic approaching the Westerschelde and the harbour of Antwerp, and to collect data for meteorological predictions. Data from the network are made available through the web site of VLIZ in operational mode. Data from MVB is available also through the MIDAS interface, leading the user directly to MVB measurements taken at approximate time and location of a MIDAS station.

Several meetings were organised, some of them specifically pertaining to data management. The two most important ones in the framework of our collaboration with IOC were the

- 23-27 April 2001, Oostende: ‘First Meeting of the IODE Steering Group on MEDI’
- 29-31 May 2001, Brussels: ‘First session of the Intergovernmental Working Group on IOC Oceanographic Data Exchange Policy’
- 25-27 November 2002, Brussels: International symposium ‘Colour of Ocean Data: a symposium on oceanographic data and information management with special attention to biological data’

One of the recommendations of the ‘Colour of Ocean Data’ Symposium, organised in Brussels 25-27 November 2002, was that data management should be part and parcel of any scientific training programme. This is already the case in the Postgraduate programme ‘Ecology and Marine Management (ECOMAMA), where VMDC is responsible to teach data management. While waiting for a final and formal solution to be implemented in other programmes, VMDC will participate in activities to promote proper data management procedures with its partners. A first ‘Data Day’ is planned for beginning of February. Both for ECOMAMA and the Data Day, extensive use will be made of the IODE Resource Kit.

Expertise present in VMDC is made available to other projects/organisations that share objectives with VLIZ. Discussions about structure of databases have been held with several groups, outside the framework of formal projects, but as a service to the marine science community. Several groups have been assisted in setting up computer infrastructure, networks and internet connectivity, or are hosted at VLIZ and receive complete IT support.

10. Data Centre Products and Services Developed and/or made available during the Intersessional Period:

Integrated Marine Information System (IMIS)
- Database with information relevant to marine science; different components: expertise, institutions, literature, metadata, projects, infrastructure, conferences, URLs
A revised database structure is ready; user interfaces and web interface for the new structure have to be developed; not all components listed above are available under the old version of IMIS

Marine Information and Data Acquisition System (MIDAS)
- Data and information to manage cruise data; captures underway data and allows recording activities during a cruise

Meetnet Vlaamse Banken
- Data resulting from the ‘Meetnet Vlaamse Banken’, available in near-real time (delays of less than one hour). Data include oceanographic and meteorological measurements.

WOD98 – North Sea
- Graphical interface to World Ocean Database 98 data from the North Sea. The interface uses SVG, and allows selection of only those data that are needed

Ecotox
- Database of potential pollutants of the North Sea – harmful chemical substances most frequently transported over the North Sea
- The list was compiled at the Laboratory of Environmental Toxicology and Aquatic Ecology (then the Laboratory for Biological research of Water pollution), University Ghent. The work framed in a project, Definiëring en toepassing van ecologische criteria en economische indicatoren voor de effectstudie en kostenbepaling van diverse types van verontreiniging in de Noordzee, sponsored by the federal office for scientific, technical and cultural affairs of Belgium.

EDNorth
- Database of Endocrine Disruptors, pollutants of the North Sea
- Will be made available on line in the near future, through the ENDIS-Risks project website hosted by VLIZ
- The list was compiled at the Laboratory of Environmental Toxicology and Aquatic Ecology. The work framed in a project sponsored by the federal office for scientific, technical and cultural affairs of Belgium.

Aphia
- Marine species register for the North Sea. Used to support other biological database activities on the North Sea currently undertaken at VLIZ, like NSBS and Tisbe.
- Some information available in Aphia is not yet visible through the web interface, like vernacular names. Substantial data contributions have been made by the University Ghent, Section Marine Biology

Tisbe
- Biogeographic information on the North Sea, with a focus on the Belgian Continental Shelf.
- Will be made available on line in the near future
- Data structures and interfaces exits. As soon as a reasonable coverage of all taxonomic groups present in the North Sea is achieved, Tisbe will be brought on line.

North Sea Benthos Survey
- The data presented here is the result of the 1986 North Sea Benthos Survey, an activity of the Benthos Ecology Working Group of ICES
North Sea Benthos Project 2000
- Data contributed by a consortium of 12 organisations. Data are collected in the framework of other projects, and made available for inclusion in an integrated database.
- VLIZ is responsible for data management of the project. Data will be made available after publication as an ICES report.

MASDEA
- Biogeographic/taxonomic database of marine species in the Western Indian Ocean/East Africa. Developed originally at the RECSCTIX-WIO project in Mombasa, and now maintained as a collaborative venture between the Kenya Marine and Fisheries Research Institute and VLIZ.

11. List of Activities that were undertaken during Intersessional Period to promote IODE:

VLIZ has participated in several IODE activities: GE/TADE, GE/BCDMEP, Steering Group XML, Steering group MEDI, IOC Data Policy. For several of these, VLIZ took an active part in organisation of meetings.

VLIZ participates in teaching in ‘Ecology and Marine Management (ECOMAMA)’ postgraduate programme, and is responsible for the course on data management. For this course, the IODE Resource Kit is used as teaching aid. Also the IOC/IODE network of NODCs is discussed using material on the Resource Kit.

12. Future Plans:

- Continue with ongoing activities
- Develop a formal system to assist Belgian marine scientists with archiving of their data sets
- Development of IMIS v2; increase level of documentation and user support in the form of help files, to make the application useable outside VLIZ
- Continue to develop MIDAS, making the applications available under the conditions of the GNU licensing system.