

Belgian marine monitoring data at the BMDC

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The Belgian Marine Data Centre (BMDC, www.mumm.ac.be/datacentre) serves as national repository and processing centre for marine and environmental data, collected by different research institutes and university laboratories in the framework of national and international research and monitoring programmes. In the frame of the monitoring activities developed by the Belgian federal administration, like those bound to the OSPAR Convention, to the Water Framework Directive and to the environmental monitoring of the offshore windfarms, the BMDC gathers, disseminates and reports the required data in a predetermined format to the competent authorities.

Systematic monitoring in the Belgian Continental Shelf started already in 1978 in the frame of OSPAR. Nowadays, measurements are also performed for the Water Framework Directive. Contamination in different compartments, seawater, sediment, biota are measured as well as eutrophication parameters in the water column.

A specific monitoring programme to assess the potential impacts of the wind farm project on the marine environment in the Belgian Continental Shelf (BCS) (Degraer *et al.*, 2013) started in 2005. The programme involves the study of hydrodynamic and sedimentological (turbidity, currents, bathymetric evolution), and biological (epifouling community, macro- and epibenthos, plankton, seabirds and marine mammals) aspects of the marine environment. To cover all necessary scientific expertise, MUMM collaborates with several institutes.

The results are stored in IDOD, 'the integrated database on the quality of the marine environment'. This database contains the results of in situ measurements, observations and laboratory analyses of the different marine compartments as well as the metadata referring to high-frequency data series (e.g. time series, trajectories). Most of the datasets relate to the Belgian Continental Shelf, the Scheldt estuary and its surrounding areas.

Historical data collected during the first phases of modern Belgian oceanography, Project Sea (1970-1976) and the Concerted Research Actions (1977-1982), have been digitized and imported during the Belspo project PMPZ-DBII. Long time series, with the focus on contamination, eutrophication and acidification are the subject of the recently started project 4DEMON ('4 Decades of Belgian Marine Monitoring: uplifting historical data to today's needs', BRAIN-be programme of Belspo). These data will be extended, intercalibrated and valorised in cooperation with 4 experienced partners, namely ILVO, VLIZ, UGent-Laboratory of Protistology and Aquatic Ecology, and ULg-Chemical Oceanography Unit.

Data are disseminated via www.mumm.ac.be/datacentre, but are also distributed via the European portals Seadatanet (www.seadatanet.org) and Geoseas (www.geo-seas.eu). As partner of the European FP7 project Geo-Seas, MUMM archives geological and geophysical data (e.g. BCS related multibeam data) according to international standards with regards to vocabularies and formats.

As National Oceanographic Data Centre (NODC), the BMDC is partner of the SeaDataNet infrastructure. This infrastructure (now supported by the EU FP7 'SeaDataNet 2' project) has the aim to make marine data easily accessible via a unique interface, at a pan-European level. The data is made discoverable, and then retrievable, via the Common Data Index (CDI) service which is interlinked to the other metadata services, like Cruise Summary Reports (CSR), Marine Research Organizations (EDMO) and Marine Data Sets General Descriptions (EDMED).

References

Degraer S., R. Brabant and B. Rumes (Eds.) 2013. Environmental impacts of offshore wind farms in the Belgian part of the North Sea: Learning from the past to optimise future monitoring programmes. Royal Belgian Institute of Natural Sciences, Operational Directorate Natural Environment, Marine Ecology and Management Section. 239pp.