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Versatility of marine geological databases in view of MSFD related assessments

To ensure harmonised seabed mapping over large areas and to facilitate the exchange of information, a common geological knowledge base is being developed for the southern part of the North Sea. Data, sustaining this marine geological database, originate from a variety of sources, including the industry.

Related to the seabed and its subsurface, two main databases are being compiled: one comprising all available lithological descriptions and one with all numerical grain-size information. To enable standardisation of the data and make them easily queryable, non-numerical descriptions are being coded to an international standard (EU FP7 Geo-Seas), of which the Udden-Wentworth scale is the main classifier. Several other parameters were derived, such as percentages mud, sand, gravel, shells and organic material. For the second database, cumulative grain-size distribution curves were compiled, enabling calculations of any desired granulometry parameter, such as percentages of the grain-size fractions (fine, medium, coarse sand) and percentiles that are relevant in seabed-habitat mapping or sediment-transport modelling (D35, D50, D84). To quantify data uncertainty in the derived data products, metadata on sampling and coring techniques, analytical methods, horizontal and vertical positioning accuracy and the exact timing of data acquisition were included. These metadata fields are also crucial in the quantification of habitat changes, a key issue in the assessment of good environmental status within Europe's Marine Strategy Framework Directive.

The newly developed database and its associated data products contribute to the objectives of the projects TILES (Belspo Brain-be), EMODnet-Geology (EU DG MARE), and ZAGRI (private revenues from the marine-aggregate industry).

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