

## Marine base maps: Making seabed sediment mapping relevant for all

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The majority of Norway's inhabitants live at or near the coast. The coastal zone accommodates a variety of economically important activities such as fisheries, aquaculture, tourism and industrial enterprises. With more and more interests competing for space, the need for marine spatial planning grows urgent. In most areas, however, decision-makers will not have access to detailed knowledge of seabed properties and other conditions of importance for the marine environment. Spatial planning consequently has to be carried out with little consideration of marine diversity, a fact that may lead to poorer management of coastal areas.

The Geological Survey of Norway (NGU) aims to provide much-needed knowledge of the seabed's spatial variation for managers and other interested parties alike. In cooperation with local and regional administration and with the Norwegian Mapping Authority, NGU produces *marine base maps* at large scales (1:10 000 to 1:50 000) based on multibeam echosounder data, video observations, physical sediment sampling and acoustic profiling. A set of base maps will generally include seabed topography, acoustic backscatter, interpreted seabed sediment distribution and derived thematic maps of e.g. slope, anchoring conditions, trenching properties (diggability) and sediment accumulation areas. The intention is to convey relevant geological information in a format accessible to end-users outside the geological community, and upon completion of a mapping project all results are made publicly available online. Marine base maps can be used directly for management or other purposes, or they can form basis for further research. Examples of additions to a set of base maps through multidisciplinary collaboration include pollution status, current and temperature regimes and benthic habitats.

At present, NGU carries out the production of marine base maps through a series of discontinuous local- to regional-scale projects. Completed projects have proven to be cost-effective and beneficial for local communities, and have been met with much enthusiasm. NGU and the Norwegian Mapping Authority now propose a national programme (MAGIN) dedicated to mapping bathymetry and seabed properties along Norway's entire coast, starting in 2017.