

Preliminary Abstract: MARLIN – a large-scale/high resolution information system as a backbone for marine management

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Summary

Large-scale/high-resolution integrated marine ecological information systems combine diverse ecological and environmental data in space, time and ecological data (such as biodiversity and trophic relationships). This holistic approach facilitates new directions for the analysis and modeling of ecological patterns and processes, creating a platform for the development and the application of advanced marine management and regulation tools.

Funded by the German Federal Ministry for Economic Affairs and Energy (BMWi) / Project Management Jülich (PtJ) FKZ 0325921 a web-based information system on benthic invertebrates, demersal fish, seabirds and marine mammals from environmental impact assessments (EIA) and research projects is now under development by the German Federal Maritime and Hydrographic Agency (BSH). The information system aims to reduce the financial costs of assessments and to increase the efficiency of monitoring data surveys for offshore projects.

Furthermore, our web-based information system can effectively support marine management and regulation activities. Within the scope of MARLIN (Marine Life Investigator), use cases, user stories and products for different stakeholders and decision makers (e.g. OWF industries, regulators, authorities) were developed. The products of MARLIN include but are not limited to species distribution maps, biodiversity maps, temporal comparisons of offshore windfarm and references areas for different parameters and many more. Products are available at a web service for the public and provide long-term supply as a service for the different stakeholders.

Here, we present MARLIN as a powerful tool for an example of management purposes in the context of assessing regulation issues such as the temporal and spatial variability of species diversity, abundance and biomass. We argue that large-scale/high-resolution information systems constitute a sound scientific base for improved monitoring assessments and ultimately for a sustainable ecosystem management.