

# EMODnet



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## About

The European Marine Observation and Data network (EMODnet) was initiated in 2008 and it is a long-term marine data initiative funded by the European Maritime and Fisheries Fund (managed by EU DG MARE).

EMODnet, together with the Copernicus Earth Observation programme and the Data Collection Framework for fisheries, implements the EU's Marine Knowledge 2020 strategy. The EMODnet network connects to over 150 organisations supported by the EU's Integrated Maritime Policy who work together to observe the sea, process the data according to international standards, and make that information freely available as interoperable data layers and data products. For this purpose, EMODnet works closely together with other existing infrastructures, such as the EuroGOOS ROOS's for operational oceanography data exchange, the ICES international data centre, and European research infrastructures, such as SeaDataNet, EurOBIS, EGD, and others to bring together data sets from hundreds in-situ data collectors from science, government, and industry. A major added value of EMODnet is the generation and free publishing of a range of European wide derived data products that serve many user communities. Moreover, the EMODnet initiative has and is mobilising many data collectors to get connected to the data exchange infrastructures for sharing their data with EMODnet, contributing to better data products. To that end, EMODnet also operates EMODnet Ingestion as a service and network of experienced data centres to identify, convince, and provide support to data collectors to join the European marine data exchange, both for Near Real-Time and delayed mode data types. It has been estimated that this kind of integrated marine data policy will save off-shore operators at least one billion Euro per year, as well as opening up new opportunities for innovation and growth. EMODnet provides easy and free access to marine data, metadata and data products and services spanning seven broad disciplinary themes: bathymetry, geology, physics, chemistry, biology, seabed habitats and human activities. The aim of EMODnet is to increase productivity in all tasks involving marine data, to promote innovation and to reduce uncertainty about the behaviour of the sea. This will lessen the risks associated with private and public investments in the blue economy, and facilitate more effective protection of the marine environment.

## Type & number of data sets

EMODnet develops interoperable services that simplify the interaction between different machines and promote the exchange of European seas and ocean data and metadata. EMODnet offers more than 800.000 datasets and registered more than 140.000 manual data download requests and more than 1.300.000 web services transactions in the last 2 years.

## The EMODnet offerings

EMODnet develops interoperable services that simplify the interaction between different machines and promote the exchange of European seas and ocean data and metadata. Both data and data products are available. The data products are free to download and are published under Open Data licences. These data products are derived from the data that is also available through EMODnet. Much of this data is also freely available. However, in some situations, restrictions to access and use may apply. EMODnet makes data and data products available via web services, which enable machine to machine communication. In general, the web services conform to two architectural approaches:

- ⇒ Geospatial web services that conform to Open Geospatial Standards (OGC):
  - ⇒ Web mapping services (WMS), widespread usage in EMODnet
  - ⇒ Web feature services (WFS), limited usage in EMODnet
  - ⇒ Web catalogue service (CSW), limited usage in EMODnet
- ⇒ Restful web services for subsetting and downloading data. These Restful web services conform to the OpenDAP standard. They are mainly used with gridded data (NetCDF files) and data from sensors. These web services also offer data conversion via web processing services.

## Core Services

EMODnet offers the following data and products via web services:

- ⇒ Temperature and Salinity in the water column
- ⇒ Sea Surface Currents
- ⇒ River Runoff Data
- ⇒ Total Suspended Matter
- ⇒ Impulsive Noise Event Registry
- ⇒ Sound Maps
- ⇒ Ice Extent and Ice-type
- ⇒ Wave and winds – Sea State
- ⇒ Water quality data collections and derived maps
- ⇒ Marine Litter data collections and derived maps
- ⇒ Bathymetry by means of a Digital Terrain Model of the European seas
- ⇒ Geology by means of a series of geological maps
- ⇒ Human activities with topical maps
- ⇒ Seabed habitat maps
- ⇒ and many more

Recently, all thematic portals have been migrated and become part of one central EMODnet portal, where all products and services can be found by users. While, the thematic groups continue to be responsible for the product developments and running the web services which are underpinning the user interface services in the central EMODnet portal.

## Function in Blue-Cloud

Some EMODnet portals are already exploring the use of Virtual Research Environments for speeding up product generation chains, for validating and harmonising the processing of large collections of data sets and for generating derived data products. Therefore, EMODnet has an interest in the VRE activities of the Blue-Cloud, next to providing access to its harmonised data collections through the Blue-Cloud Data Discovery & Access Service and for use in the Blue-Cloud Virtual Research Environment (VRE) and its Virtual Labs.

In particular, Blue-Cloud Virtual Labs are integrating diverse data from EMODnet. For example, biodiversity and environmental data (relevant for Plankton Genomics), physics, biology, chemistry data (relevant for Marine Environmental Indicators), biology and coastlines data (relevant for Fish, a matter of scales), and in-situ environmental data for ground-truthing and European marine topography (relevant for Aquaculture Monitor). Moreover, the EMODnet potential is exploited to create a bridge between Blue-Cloud and the other EU-funded projects the consortium has established synergies with (e.g. AQUA-LIT, ENVRI-FAIR).

URL: [www.emodnet.eu](http://www.emodnet.eu)

Partners involved: MARIS, IFREMER, SSBE, VLIZ



Factsheet available at <https://www.blue-cloud.org/data-infrastructures/emodnet-central-portal>



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