

The European Marine Observation and Data Network (EMODnet):

A public EU operational marine in situ data service

EU GREAT project webinar on Biodiversity Data, 10 May 2023

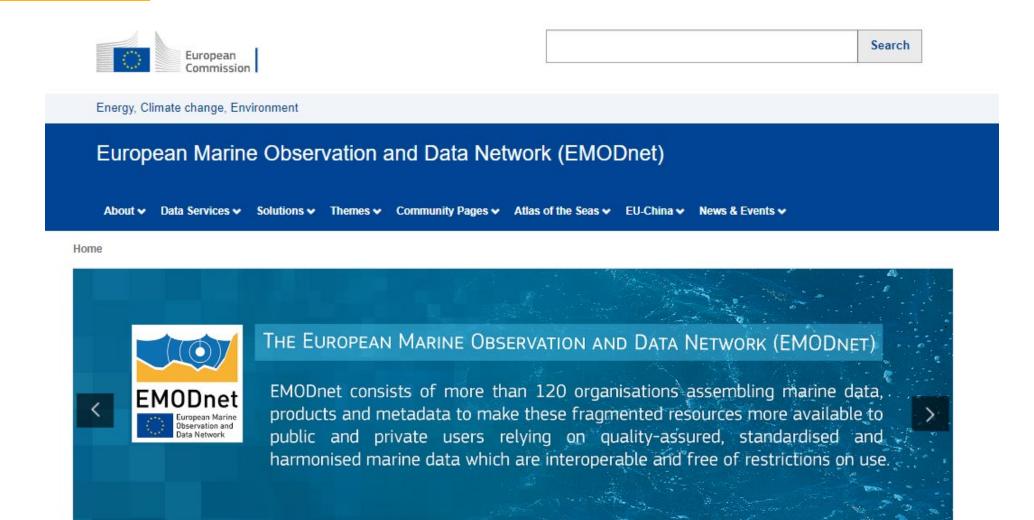
Kate Larkin, EMODnet Secretariat

With input from:

Conor Delaney, EMODnet Secretariat

Joana Beja, EMODnet Biology, VLIZ, Belgium

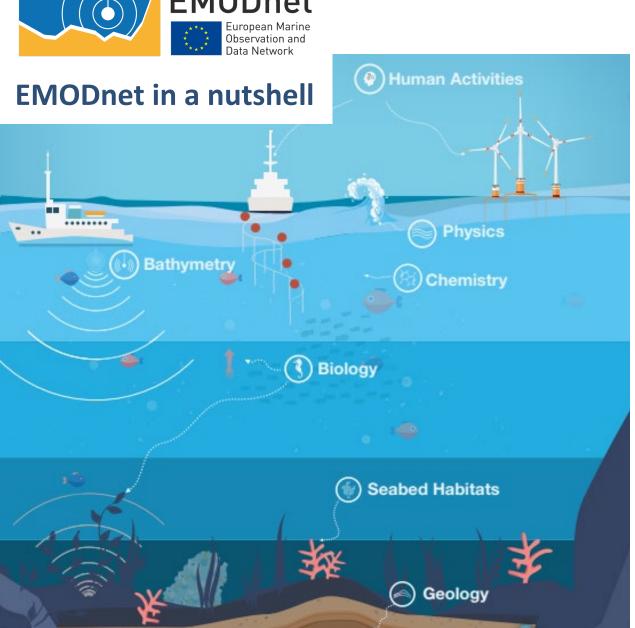
Helen Woods, EMODnet Seabed Habitats, JNCC, UK



EMODnet is the operational *public* marine *in situ* data service and marine knowledge initiative of the European Commission (DG MARE)







- *In situ* marine data (field data)
- Seven thematics (bathymetry, biology, chemistry, geology, human activities, physics, seabed habitats);
- Hundreds of data parameters from diverse sources and added value data products;
- A **community** of > 120 organisations many more thematic data experts;
- **European authority and regional practice** in the marine data domain;

EMODnet provides open and free access to marine *in situ* (field) data, data products and information and together with Copernicus Marine Service provides the back-bone for the European Digital Twin Ocean (with associated data lake). This is a key component of the wider European marine data space and EU Green Deal Data Space ensuring that the European marine knowledge base is interoperable and accessible to meet the ambitious targets of the EU Green Deal, EU 2030 Biodiversity Strategy, EU Mission Restore our Ocean and Waters, and more.



























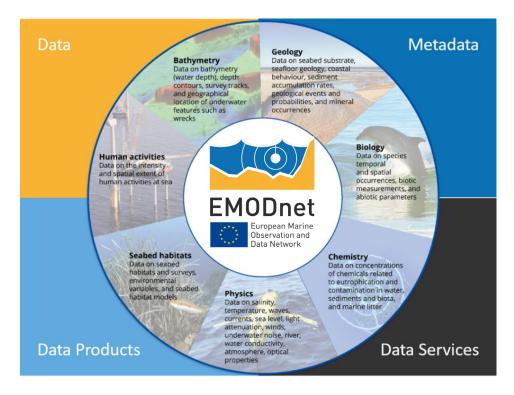


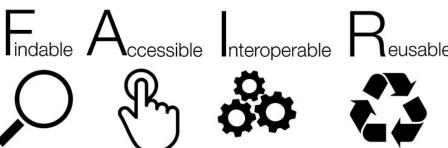




EMODnet | Interoperable marine data, data products and metadata, standardised and harmonised to EU and International standards

- INSPIRE (EU) and FAIR (International) data standards and principles
- Aggregated, harmonized multiparameter data sets
- Searchable metadata (ISO standards)
- Data services (maps, query)
- Integrated data products
- Data and web services e.g. OGC, machine-machine readability e.g. WMS, WFS, WCS and use of APIs
- Adheres to CC BY 4.0 data policy and

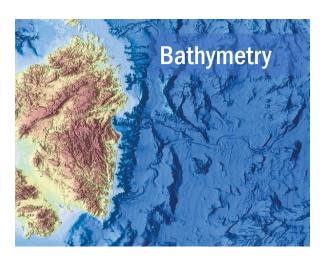


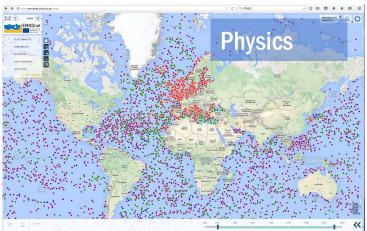


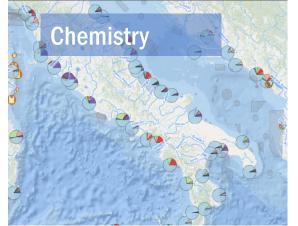


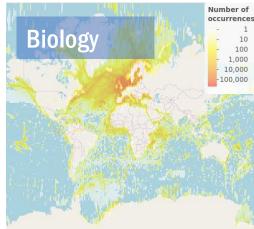
EMODnet | The results of data sharing and working together *Unlocking and democratising marine data from diverse sources*

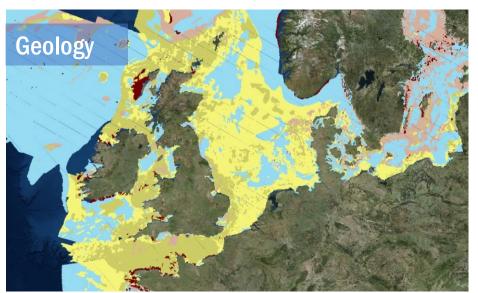


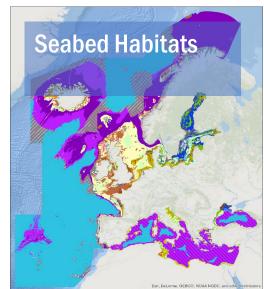








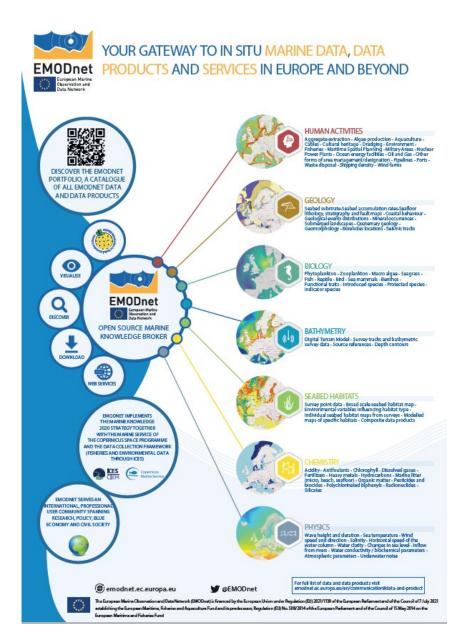








EMODnet | Service offer



Examples of EMODnet biodiversity-relevant parameters from Biology and Seabed Habitat thematics:



BIOLOGY

Phytoplankton - Zooplankton - Macro algae - Seagrass -Fish - Reptile - Bird - Sea mammals - Benthos -Functional traits - Introduced species - Protected species -Indicator species



SEABED HABITATS

Survey point data - Broad scale seabed habitat map -Environmental variables influencing habitat type -Individual seabed habitat maps from surveys - Modelled maps of specific habitats - Composite data products



EMODnet | Collaborations and partnerships for marine biodiversity data













European Environment Agency European Topic Centre Biodiversity and ecosystems





EMODnet thematic experts from across Europe work together with EMODnet Data Ingestion and wider stakeholders to **find, ingest and make available integrated, interoperable data**. This is conducted in direct dialogue with data collectors and data providers from research, private sector, policy and NGOs, Marine Research Infrastructures, National and Regional data centres, other marine data services, Regional Sea Commissions, EU projects, organisations and networks. For marine biodiversity data this includes the above examples together with IPBES, GEBON, MBON, BiodivERsA, iAtlantic, AtlantECO, Mission Atlantic, MARCO-BOLO, etc. emodnet.ec.europa.eu

One central map viewer

to visualise all EMODnet data

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HUMAN ACTIVITIES

140 partners 1 OCEAN 1 EMODnet

One single portal

One central metadata catalogue

to enhance data search and discovery

+100 use cases

Discover, visualise and download marine data and products across 7 thematics and hundreds of parameters



PHYSICS





SEABED HABITATS





BIOLOGY

BATHYMETRY

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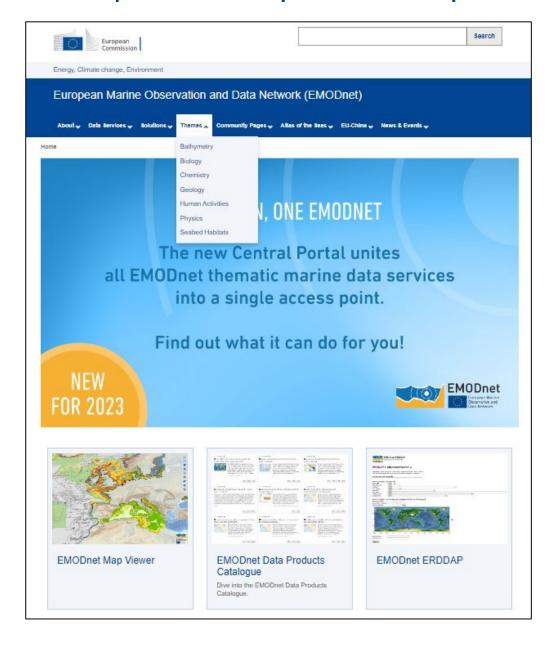
EMODNET.EC.EUROPA.EU





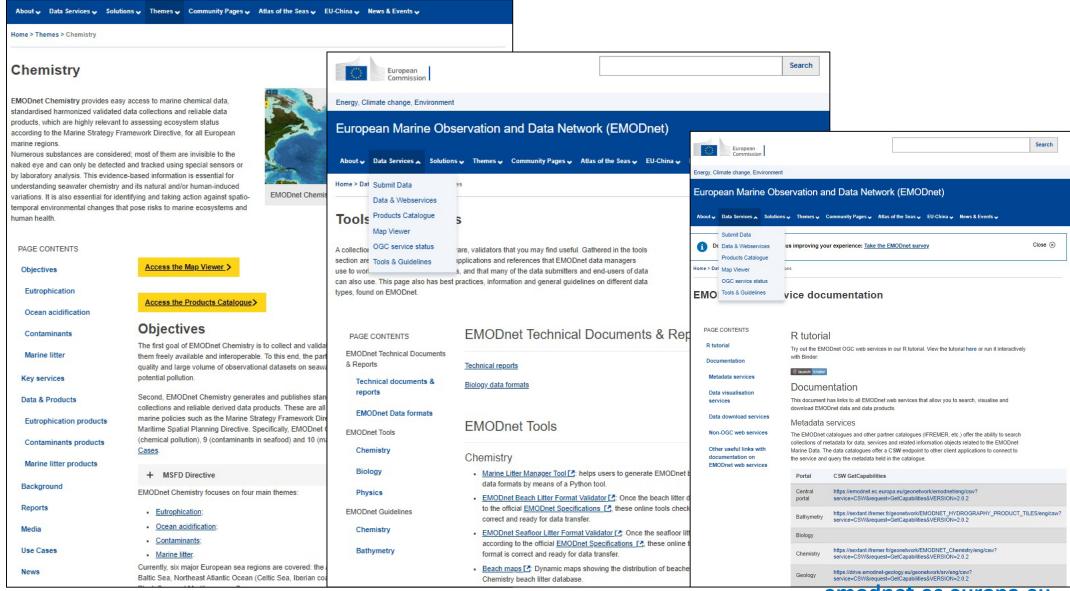


EMODnet | One new portal to replace all thematic portals



- One EMODnet website
- One EMODnet map viewer
- One EMODnet catalogue
- One EMODnet ERDDAP
- Thematic portals are gone
- Striving for **consistency** across **themes** in:
 - Metadata
 - File formats
 - Download APIs
 - Web Services

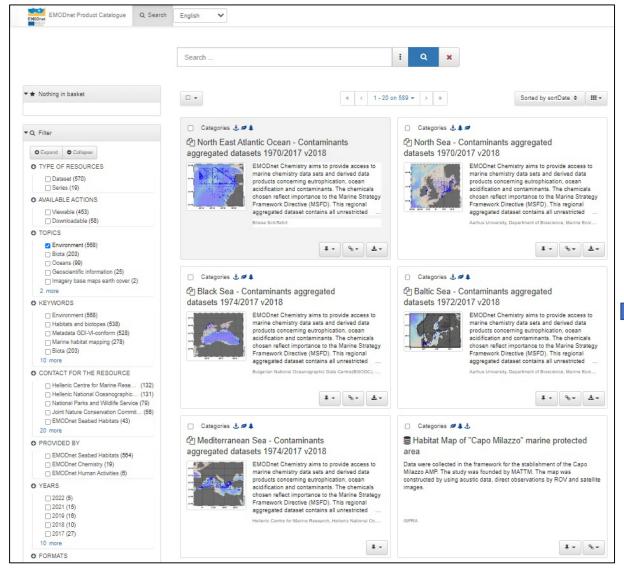
EMODnet | One website – thematic pages – common information pages

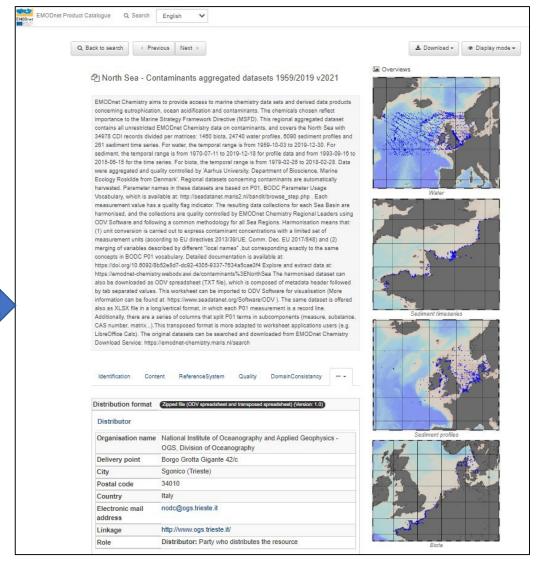






EMODnet | One central catalogue

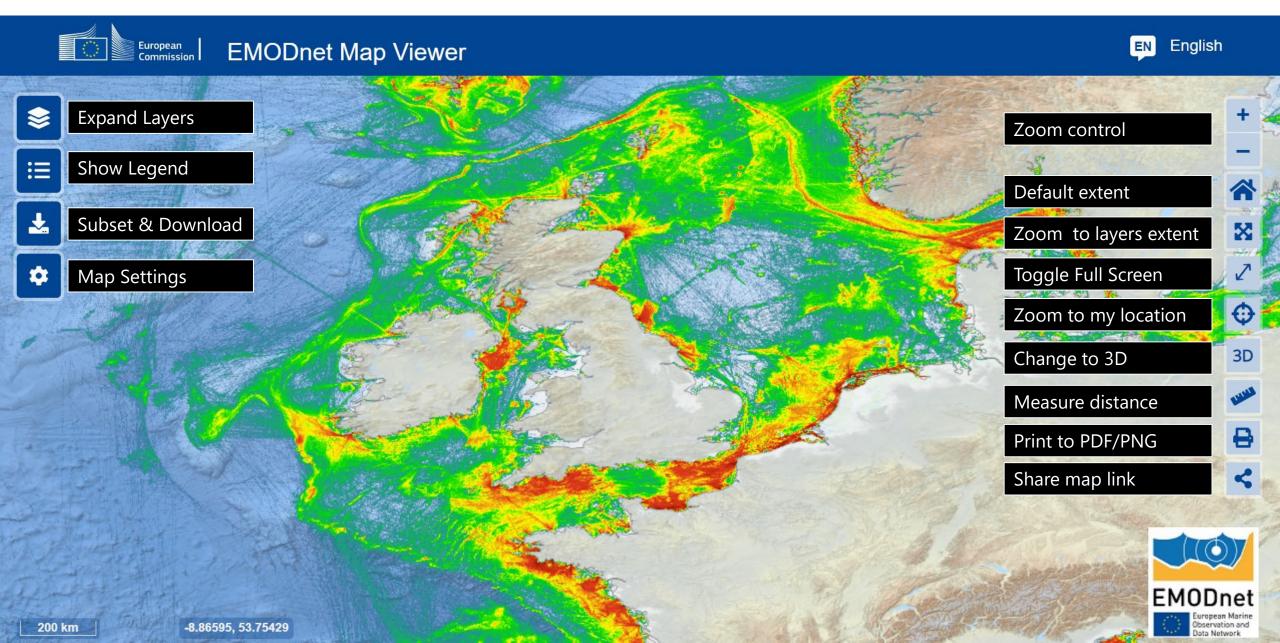




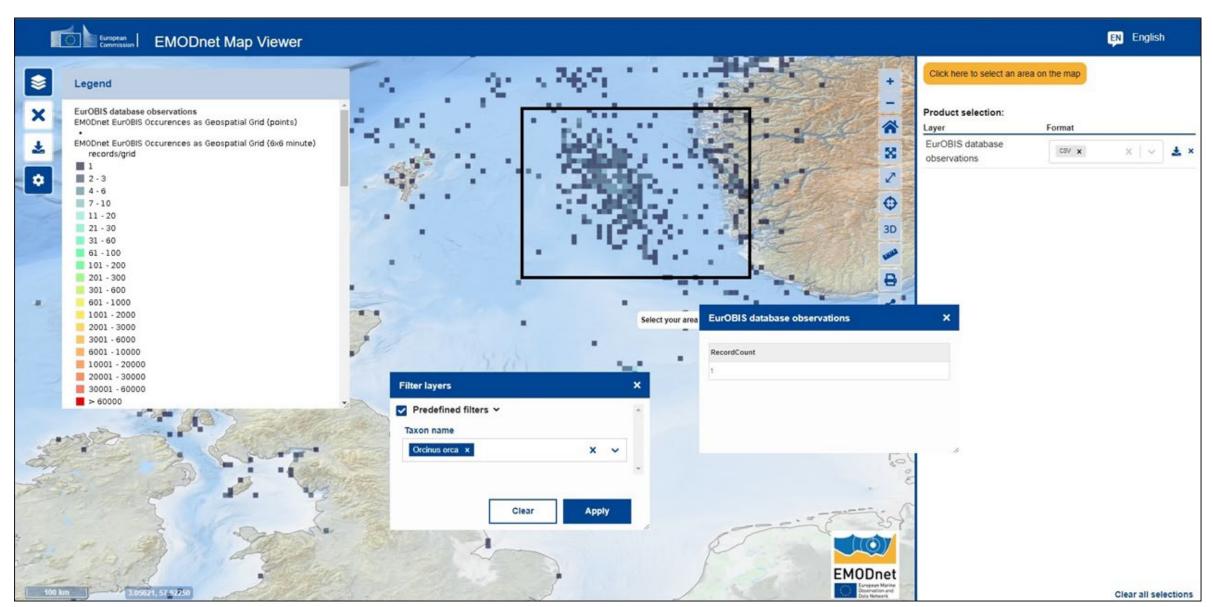
Users can access metadata and data service information in the catalogue



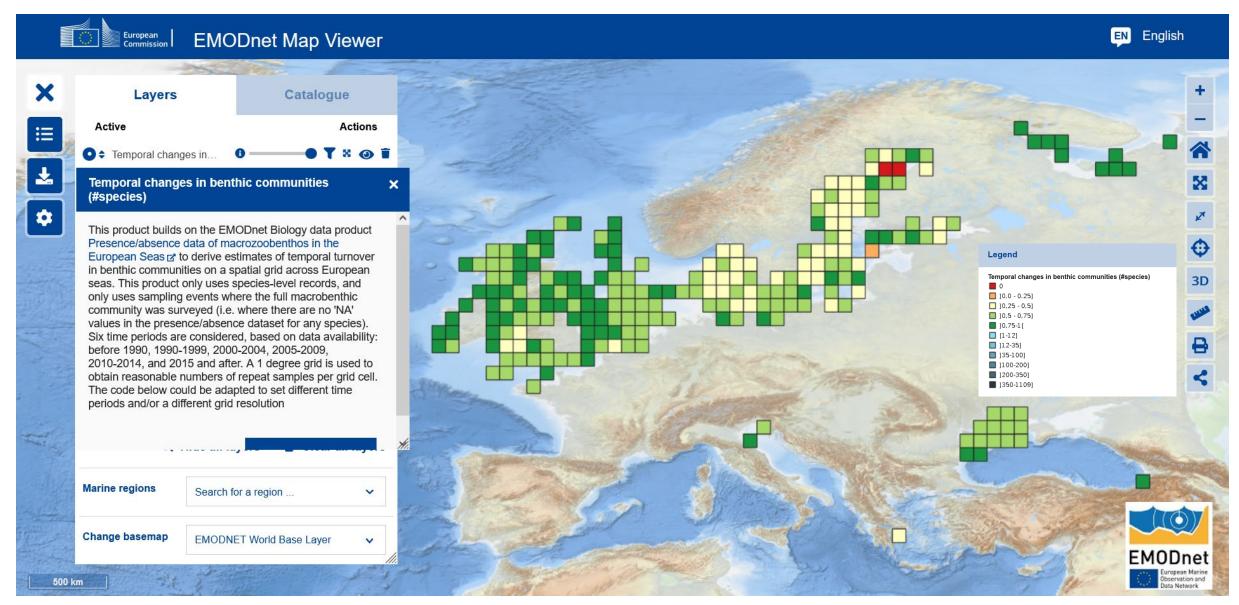
EMODnet | One map viewer - controls



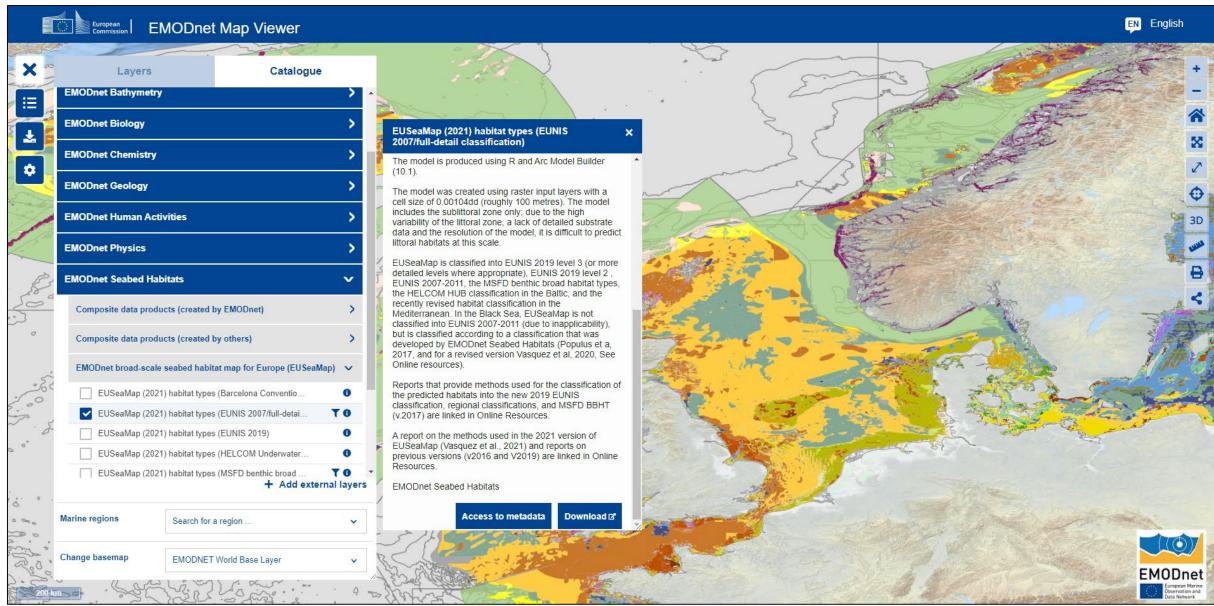
EMODnet | One map viewer – subset and download e.g., species occurrence data



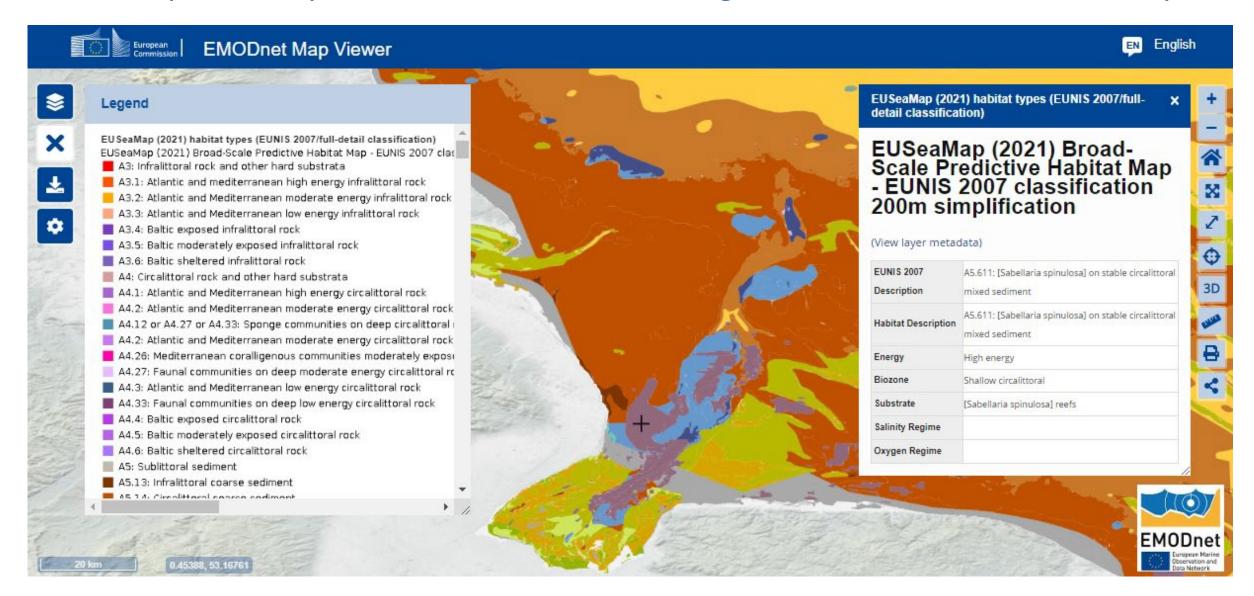
EMODnet | One map viewer – subset and download e.g., Biology data product



EMODnet | One map viewer – full download e.g., Seabed Habitats EUSeaMap

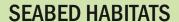


EMODnet | One map viewer – full download e.g., Seabed Habitats EUSeaMap

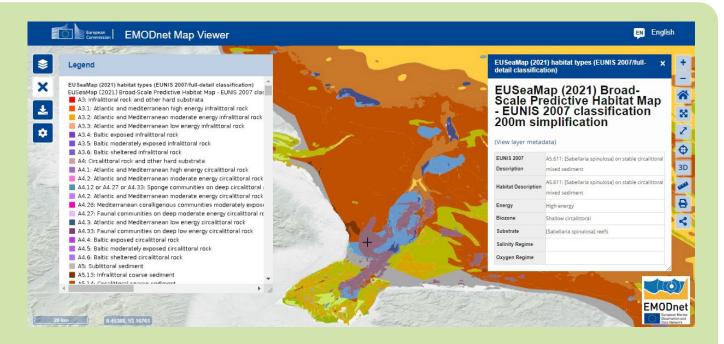


EMODnet | Use case: EMODnet biodiversity data for Regional Sea Assessments





EMODnet Seabed Habitats data and habitat maps used to inform Regional Sea Assessments e.g., OSPAR



"EUSeaMap 2021 has filled in the gaps between the patchy array of habitat maps from surveys to allow us to estimate the potential extent of physical damage to the seabed due to human activities in the Northeast Atlantic. Without it the data gaps would be too huge to allow any meaningful assessment."

L. Matear - OSPAR Intersessional Correspondence Group on the Co-ordination of Biodiversity Assessment and Monitoring

https://emodnet.ec.europa.eu/en/use-case/ospar-intermediate-assessments-evaluation-ecological-status-marine-environment-ne-atlantic

EMODnet | Use case: EMODnet biodiversity data for National marine management

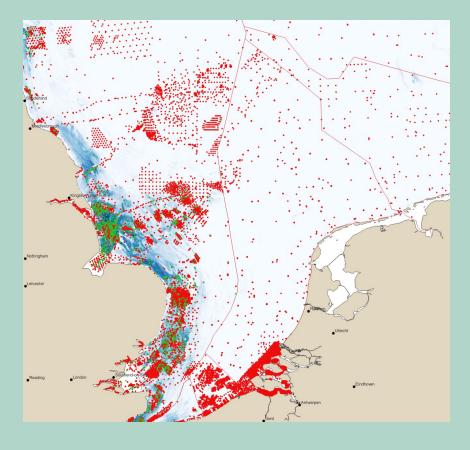




BIOLOGY

Distribution of reef-building benthos in the North Sea

The request to Deltares by the Dutch Ministry of Infrastructure and Transport was to chart the actual distribution of four reef-building species (*Sabellaria*, *Modiolus*, *Lanice*, *Ostrea*) in the Dutch EEZ, and to estimate the probability for restoring populations of these species in the same area.



https://emodnet.ec.europa.eu/en/use-case/distribution-reef-building-benthos-north-sea

EMODnet | Use case: EMODnet biodiversity data interoperability





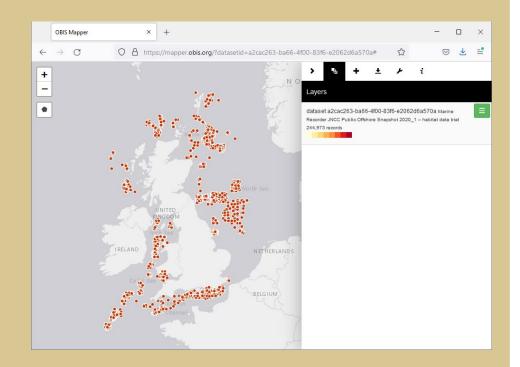




SEABED HABITATS & BIOLOGY

Holistic, standards-based access and interoperability for marine biodiversity data

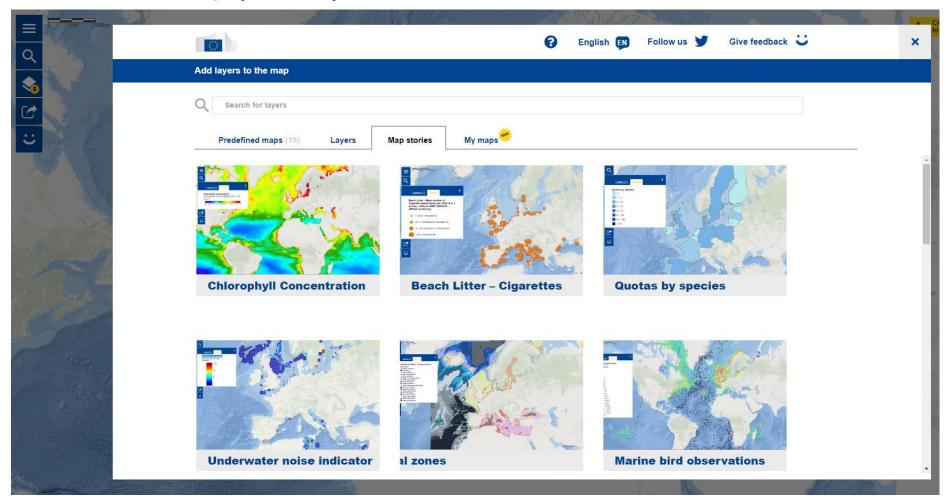
Collaboration between EMODnet Biology (via EurOBIS) and both EMODnet Seabed Habitats and OBIS (Ocean Biodiversity Information System) has facilitated richer dataset publication and ensured the greatest volume of high-quality species and habitat data are available for reporting, assessments and informed decision making.



https://emodnet.ec.europa.eu/en/use-case/holistic-standards-based-access-and-interoperability-marine-biodiversity-data



EMODnet for Society | European Atlas of the Seas



EMODnet and other open source data are also made available for society via the EC Communication Tool European Atlas of the Seas, available in 24 EU languages



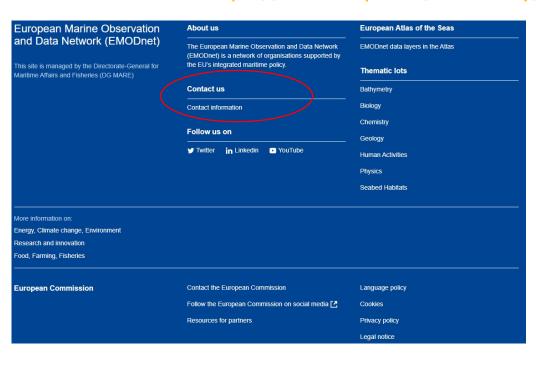
Thank you for your attention!

Contact us to learn more about EMODnet data services, data use and data sharing, and to provide feedback on the Central Portal:

Email: secretariat@emodnet.ec.europa.eu

Twitter and LinkedIn: @EMODnet

Feedback form: https://ec.europa.eu/eusurvey/runner/EMODnetFeedbackForm

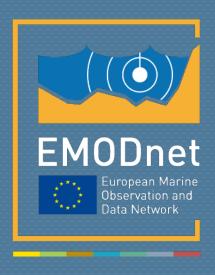




Submit your marine data to EMODnet Data Ingestion!

Save-the-date: EMODnet Open Conference, 29-30 November 2023, Brussels





@EMODnet www.emodnet.eu

Your gateway to marine data in Europe