



The European Marine Observation and Data Network (EMODnet):

A public EU marine data service

EMODnet Secretariat

One central map viewer

to visualise all EMODnet data

1 OCEAN 1 EMODnet

One single portal

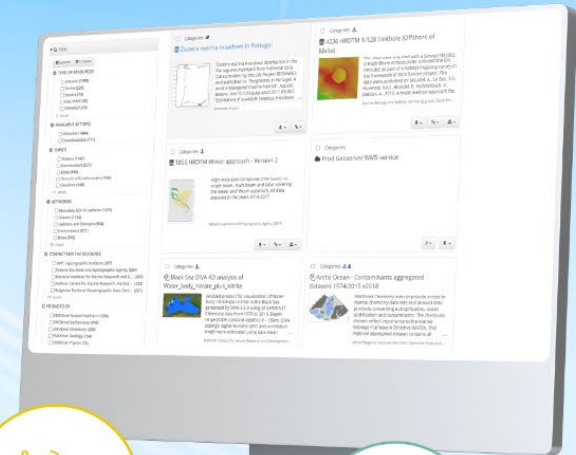
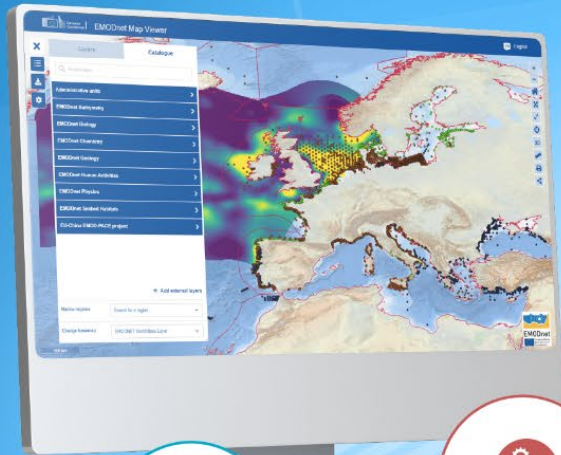
One central metadata catalogue

to enhance data search and discovery

140
partners

+100
use cases

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



BATHYMETRY



HUMAN ACTIVITIES



PHYSICS



GEOLOGY



SEABED HABITATS



CHEMISTRY



BIOLOGY

EMODNET.EC.EUROPA.EU



The European Marine Observation and Data Network (EMODnet) is financed by the European Union under regulation (EU) No 508/2014 of the European Parliament and of the Council of 15 May 2014 on the European Maritime and Fisheries Fund

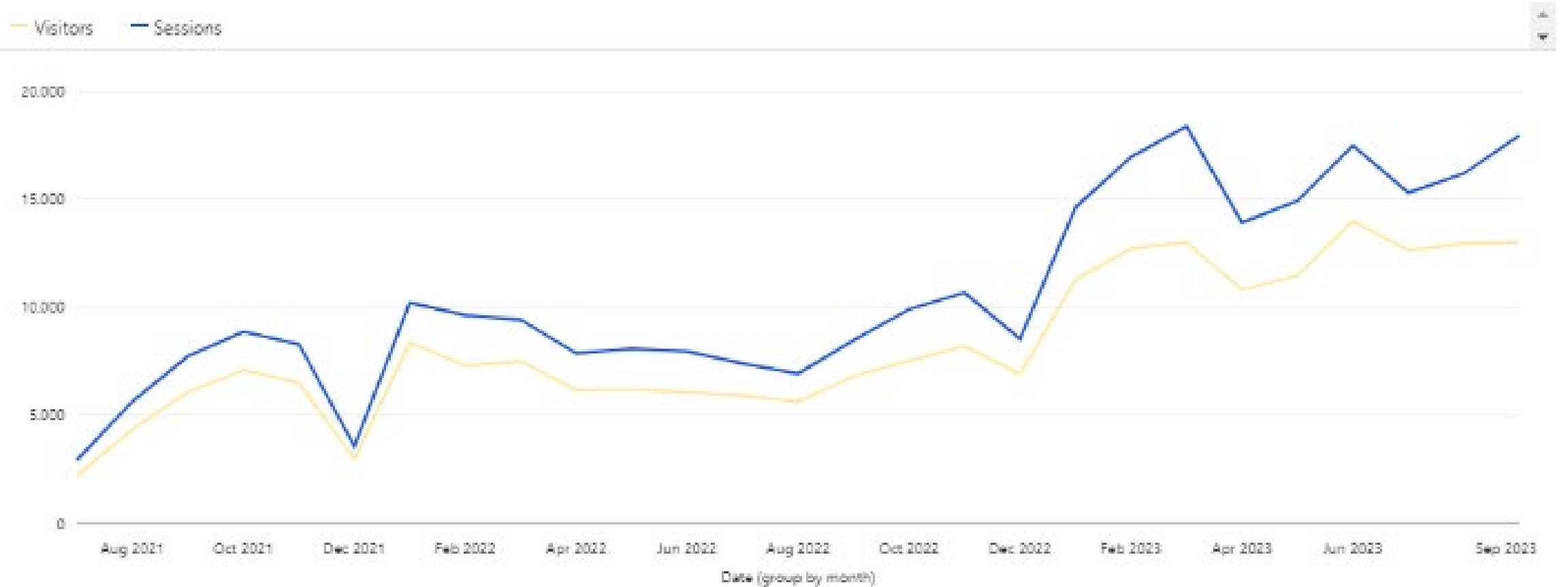
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YOUR GATEWAY TO *IN SITU* MARINE DATA IN EUROPE AND BEYOND



EMODnet
European Marine
Observation and
Data Network

EMODnet | One Portal statistics



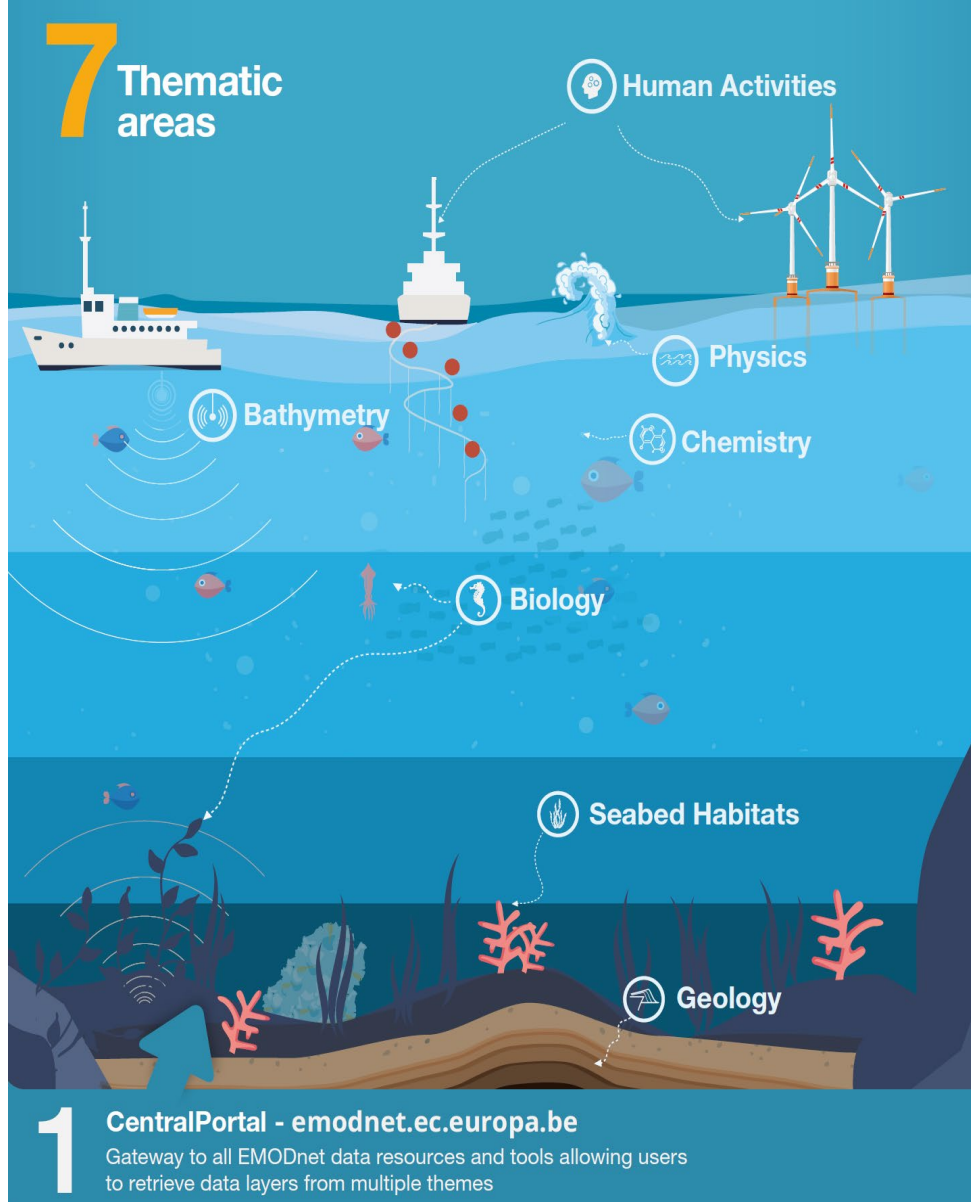
EMODnet Portal Unique Visitors

2023: >90,000

2023: Increase from January 2023 (post-centralization) estimate > 130,000 unique visitors in 2023*

***based on 10,000 – 15,000 unique visits per month for January – September 2023 so far**

EMODnet | Scope and coverage



- **EMODnet is an operational EU marine data service**, a flagship marine knowledge initiative of EC DG MARE, funded by the EMFAF, implemented by > 120 partners across EMODnet thematics, data ingestion, Central Portal and Secretariat
- **EMODnet offers pan-European (and beyond) FAIR data and metadata of *in situ* marine environmental and human activities, spanning 100's of parameters, crucially via data and web services**
 - ✓ Aggregated from > 610 unique data providers* (research/academia & research infrastructures, operational oceanography (some via CMEMS), hydrographic offices, geological surveys, regulatory monitoring, private sector, NGOs, citizen science, data infrastructures e.g., SeaDataNet, regional initiatives e.g., ICES)
 - ✓ Standardised to EU/International standards; Harmonised into integrated data layers
 - ✓ Open data: open access and open source
 - ✓ Data and web services, including for machine-machine harvesting
- **EMODnet produces pan-European marine data products** e.g., Bathymetry Digital Terrain (DTM), Seabed Habitats EUSeaMap, Vessel Density composite map, all fully open access, data policy CC BY4.0

*<https://emodnet.ec.europa.eu/en/data-providers-list>

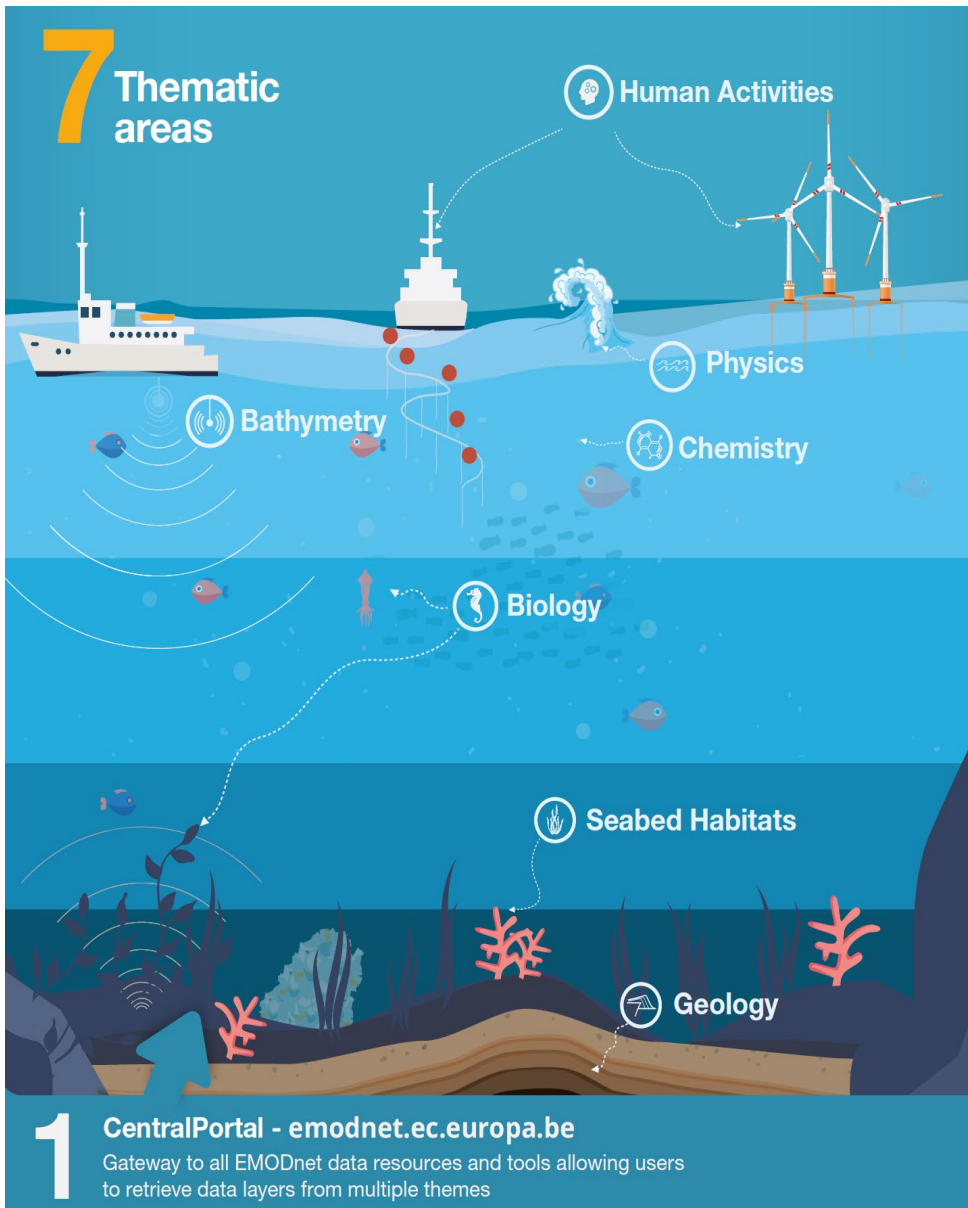
EMODnet | Coastal offer

EMODnet has a diverse offer of surface – seafloor; coast to open ocean; across seven broad thematics and 100s parameters.

For the coastal area, examples of EMODnet pan-European FAIR data/data products based on *in situ* ocean observations and resulting marine data include:

- Coastal behaviours (EMODnet Geology)
- Riverine inputs (EMODnet Physics)
- Coastal pollutants & marine litter (EMODnet Chemistry)
- Coastal blue economy operations, sittings and shipping/vessel transportation & Maritime Spatial Plans (EMODnet Human Activities)
- Coastal bathymetry (EMODnet Bathymetry)
- Sea level: Absolute and Relative Trends and Anomalies (EMODnet Physics)
- Coastal biodiversity (EMODnet Biology)
- Coastal Seafloor/Benthic Habitats (EMODnet Seabed Habitats)

EMODnet | Service evolution



EMODnet content evolution: maintain & optimize existing data streams, expand coverage, parameters, resolution & sources

User-driven front-end: map viewer, metadata catalogue, data and web service evolution

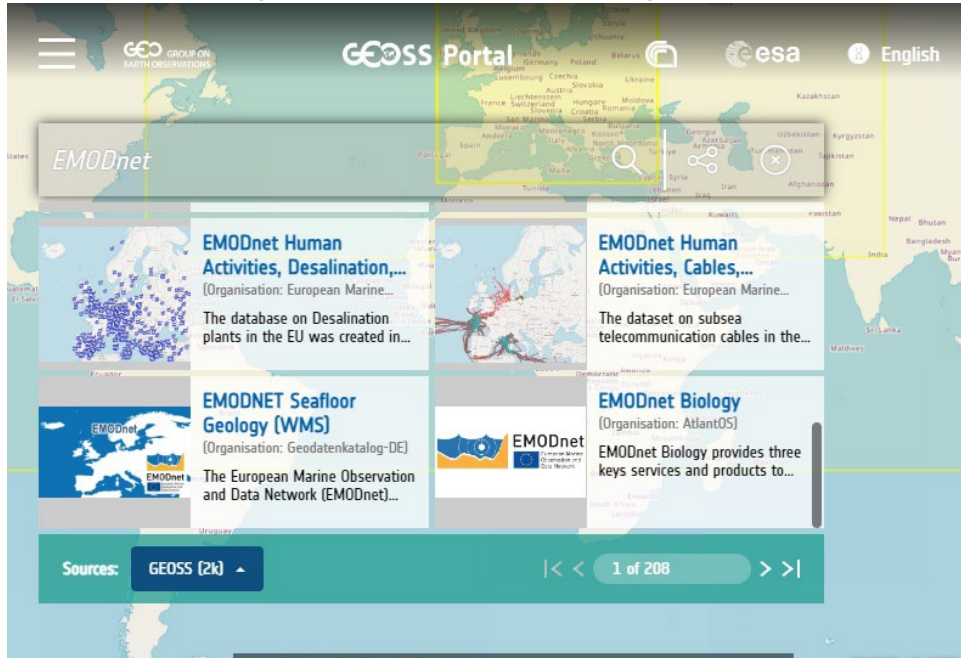
- User-driven service evolution: map viewer, metadata catalogue, data and web services
- Infrastructure developments and common data lake with CMEMS/MO*i* for the EU Digital Twin Ocean (DTO)
- Coastal and land-sea interface parameters and data products
- Filling geographical, resolution and parameter gaps, e.g., biodiversity in pan-Mediterranean
- Expanding the diverse sources of data provision to EMODnet and emerging parameters e.g., citizen science, NGOs
- Data integration from European Overseas territories e.g., Caribbean Sea and polar regions (Arctic & Southern Ocean)
- Regional partnerships worldwide e.g., EU-China (NMDIS)
- Global partnerships e.g., OceanInfoHub, GEOSS and more

*<https://emodnet.ec.europa.eu/en/data-providers-list>

EMODnet | Interoperable data/metadata, harvested by global ocean data catalogues

GEOSS Portal

International portal,
implemented by ESA



Ocean InfoHub

Implemented by IODE of
IOC/UNESCO



EMODnet's FAIR common metadata catalogue is the backbone for EMODnet's contribution to the the **global ocean data digital ecosystem**, the UN Decade of Ocean Science for Sustainable Development, Sustainable Development Goals (SDG) agenda and OeanData 2030, via **machine-machine data harvesting**.

EMODnet: Data Ingestion service

The screenshot shows the EMODnet Data Ingestion Portal website. At the top, there is a header with the EMODnet logo, the text "DATA INGESTION PORTAL", and the tagline "Wake up your data - set them free for Blue Society". A search bar and a "CONTACT US" link are also present. Below the header is a navigation menu with links for "ABOUT", "DATA SUBMISSION", "OPERATIONAL DATA", "SUBMISSIONS", "GUIDELINES", "HELP", "PROMOTION", and "CENTRAL PORTAL". The main content area starts with a "Home" link and a "Welcome to the EMODnet Data Ingestion portal" heading. A paragraph describes the EMODnet service. Below this are several featured sections, each with a "READ MORE" button: "WAKE UP YOUR DATA" (with a video icon), "YOUR DATA WORK IT" (with a video icon), "Join our success stories" (with an image of people), "Submit your data files" (with an image of a keyboard and a "submit" button), "Ingest operational data" (with an image of data streams), "View submissions" (with an image of "DATA ACCESS"), "Check guidelines for formatting data" (with an image of a "GUIDELIN" sign), and "Help" (with an image of a lightbulb).

EMODnet
DATA INGESTION PORTAL
Wake up your data - set them free for Blue Society

Search CONTACT US

ABOUT DATA SUBMISSION OPERATIONAL DATA SUBMISSIONS GUIDELINES HELP PROMOTION CENTRAL PORTAL

Home

Welcome to the EMODnet Data Ingestion portal

The European Marine Observation and Data Network (EMODnet) consists of more than 160 organisations that together work on assembling, harmonising and making marine data, products and metadata more available to public and private users. This Data Ingestion portal facilitates additional data managers to ingest their marine datasets for further processing, publishing as open data and contributing to applications for society.

[READ MORE](#)

WAKE UP YOUR DATA

YOUR DATA WORK IT

Join our success stories

Submit your data files

The online Data Submission service facilitates you to submit marine datasets by completing a form and uploading your data as a file package. The service also provides long term stewardship and publishing for your datasets.

[READ MORE](#)

Ingest operational data

We are also interested in (Near) Real-Time ((N)RT) data streams from fixed and autonomous ocean observing platforms. This section explains how you can connect your operational stations to the European operational oceanography data exchange.

[READ MORE](#)

View submissions

View, search and download datasets that have been submitted by data providers using the Data Submission service.

[READ MORE](#)

Check guidelines for formatting data

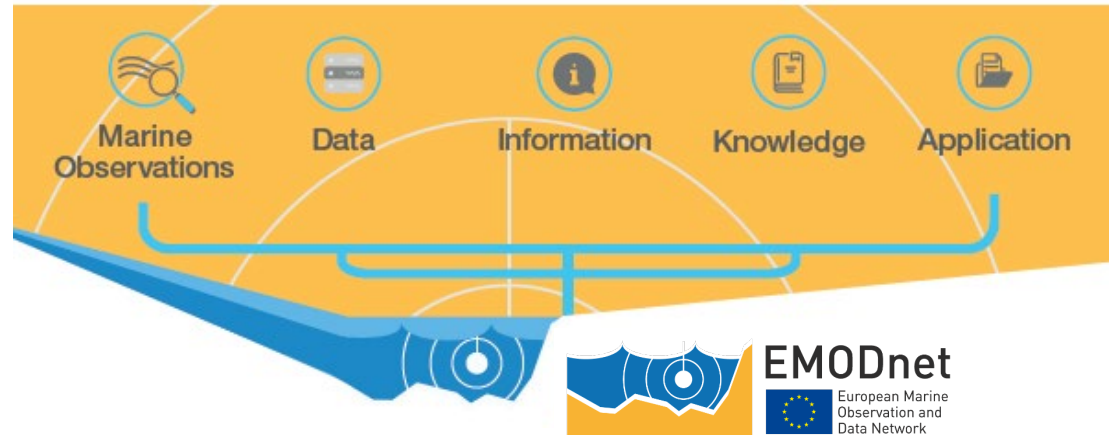
Help

The Help desk can provide you assistance and

- EMODnet service supporting data collectors and providers in data curation, management and ingestion into EMODnet
- Key data submitters include private sector
- Centralising into EMODnet Central Portal in Spring 2024 (work ongoing)

EMODnet supports EU Policy implementation, offering FAIR marine data / data products as a key component of the marine knowledge base to meet the ambitious targets of the EU Green Deal (including MSFD, MSP), EU Climate Pact, EU 2030 Biodiversity Strategy, EU Mission Restore our Ocean and Waters, and global policy initiatives.

From raw data to real-life applications



emodnet.ec.europa.eu



EMODnet is working together with **Copernicus Marine Service** to provide the **back-bone** for the **European Digital Twin Ocean** (with associated data lake by Spring 2024) that will lead to a step change in capability for big (ocean) data analyses, ocean prediction and scenario-setting with Climate Change and broader societal applications.

VLIZ, EMODnet Secretariat and MOi are key stakeholders in the Digital Twin Ocean Forums since the first edition in 2022 and will co-organize the Digital Twin Ocean Forum 2024.



emodnet.ec.europa.eu



EMODnet: Key partnerships with Copernicus Marine Service

Data flows:

- Some physical parameters flow CMEMS INSTAC to EMODnet Physics
- Some CMEMS outputs are used by EMODnet thematics e.g., bottom-water currents used by Seabed Habitats for EUSeaMap
- EMODnet Chemistry supply EMODnet FAIR eutrophication and acidification datasets for Copernicus Marine biogeochemical products
- EMODnet Physics providing FAIR in situ data to CMEMS INSTAC for a new CMEMS product on sea level

Marine *In Situ* Coordination Working Group: cross-service CMEMS, EMODnet, EuroGOOS (*in situ* data flows; harmonisation of citizen science data)

European Digital Twin Ocean: EDITO-Infra technical infrastructure and common data lake

European Atlas of the Seas: Increasing the offer of EMODnet and CMEMS in EU Atlas

Other joint activities

- joint training and events in 2024 e.g., UN Ocean Decade Conference
- joint use cases

EMODnet | Contributions to wider initiatives

EMODnet: Working with other key actors in the Marine Knowledge Value Chain, supporting EC DG MARE's activities related to Ocean Observation

Are marine data fit for purpose?
A user perspective

Initiated in 2013, the EMODnet Sea-basin Checkpoint data stress test¹ was the first of its kind to adopt a user perspective to assess if the current ocean observation monitoring data were fit for purpose. In each case, the availability and suitability of open access marine data were tested against 11 specific end-user challenges at the level of 6 European sea-basins (see image below). Each challenge was designed to simulate a real-life application e.g. tracking an oil spill, sizing of a wind farm, or assessing environmental impact of fisheries on the sea floor. The requirements for each challenge, including the diversity of datasets required, depended on the application. Each Checkpoint had to demonstrate how well the current monitoring systems and data collection frameworks provide data to meet the needs of users. In doing so, data gaps and duplications as well as significant bottlenecks could be highlighted.



Overview of the 6 EMODnet Sea-basin Checkpoints and the 11 end-user challenges (stress tests)

EVOLVING EUROPEAN OCEAN OBSERVING: CONNECTING COMMUNITIES FOR END-TO-END SOLUTIONS

CONFERENCE
21-23 NOVEMBER 2018
THE EGG, BRUSSELS

Conference Report and Call to Action

WWW.EOOS-OCEAN.EU WWW.EOOSCONFERENCE2018.EU
#EOOS #EOOSCONFERENCE18

EC OCEAN OBSERVATION: SHARING RESPONSIBILITY

Report & Community Recommendations from the virtual event on 18 June 2021

Compiled and edited by: Kate Larkin, Nathalie Tonné and Jan-Bart Calewaert (EMODnet Secretariat); Angel Muñoz-Piniella, Britt Alexander and Sheila JJ Heymans (EMB) October 2021

Community recommendations on marine technology and ocean observing gaps and requirements

EC Ocean observation: sharing responsibility virtual event on 18 June 2021

Ocean Observation and Marine Data for the Blue Economy

STAKEHOLDERS WORKSHOPS

🕒 13:15-14:30
📍 Virtual session on Zoom
👥 503 participants signed up for this session

DESCRIPTION:

For EMD Den Helder we have selected 20 high-quality workshops. They will run in parallel in 5 time slots. This slot includes 4 virtual workshops taking place on Zoom.

>> We are pleased to announce you that the registration for the fourth parallel virtual workshop at this slot, on the theme of Ocean Observation and Marine Data for the Blue Economy, is open !

It is organized by the European Marine Observation and Data Network (EMODnet) Secretariat.

EOOS European Ocean Observing System

<https://webgate.ec.europa.eu/maritimeforum/en/node/6188>

Connecting Open Data, Delivering Marine Knowledge: A Vision for 2030.

EMODnet Open Conference 14-16 June 2021

Hybrid event in Ostende (BE) and online

OCEAN OBS'19

EMODnet European Marine Observation and Data Network

European MARINE BOARD Advancing Seas & Ocean Science

EuroGOOS European Global Ocean Observing System

Copernicus Marine Service

MERCATOR OCEAN INTERNATIONAL

EMODnet: Ongoing contributions to coastal related initiatives



JPI Oceans Sea Level Rise Knowledge Hub as:

- Presenter/participant at kick-off meeting, April 2020
- Co-Chair of Task Group 4 on Communication and Outreach, member of the Steering Committee
- Editor of first assessment
- Contributor to Sea Level Rise event, Venice, October 2022 and the Assessment Report



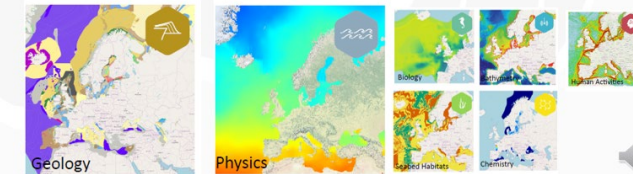
UN Ocean Decade activity as:

- COAST Predict-CORE Advisor
- Collaborative Centre on Ocean Prediction Advisor
- DITTO on digital Twins + TURTLE & many more



What can EMODnet contribute to the European Knowledge Hub on Sea Level Rise?

- **Open & free access to integrated marine datasets & data products for knowledge-creation** for science, business and policy to:
 - reduce uncertainty through evidence-based operations & decisions;
 - increase productivity and cost-effectiveness;
 - add value and impact to data;
 - stimulate innovation.



CoastPredict - Observing and Predicting the Global Coastal Ocean

EMODnet | global ocean data initiatives and regional partnerships worldwide

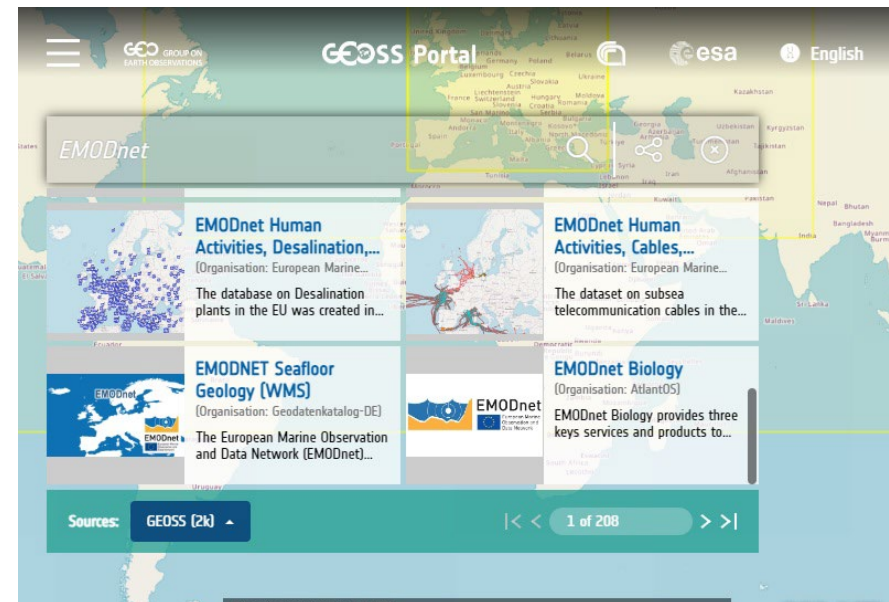
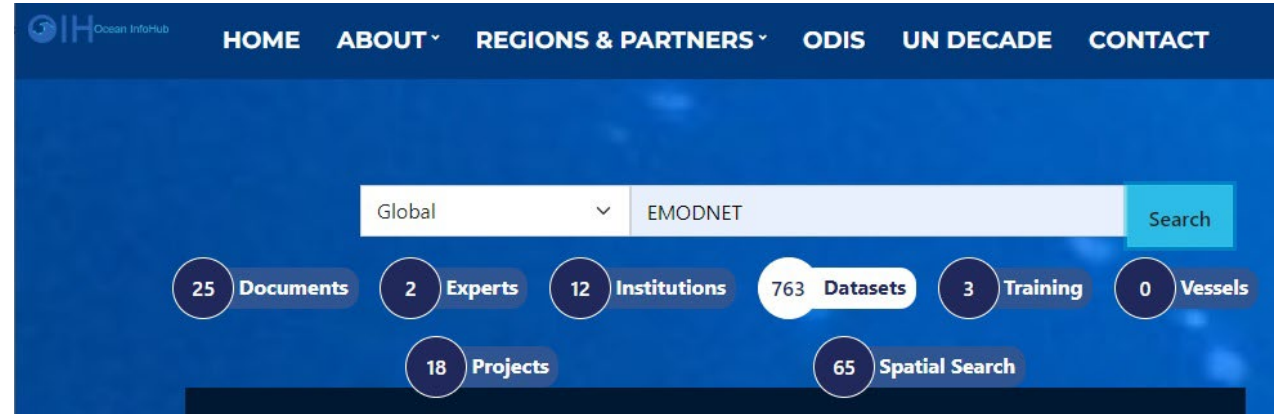
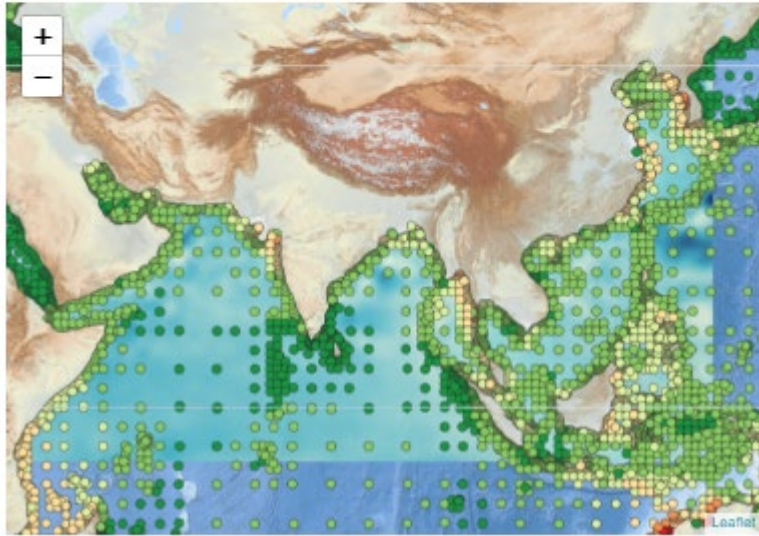
EMODnet Partnership for China and Europe (EMOD-PACE)

China-EU Marine Data Network Partnership (CEMDnet)

In support of EU and China Blue Partnership

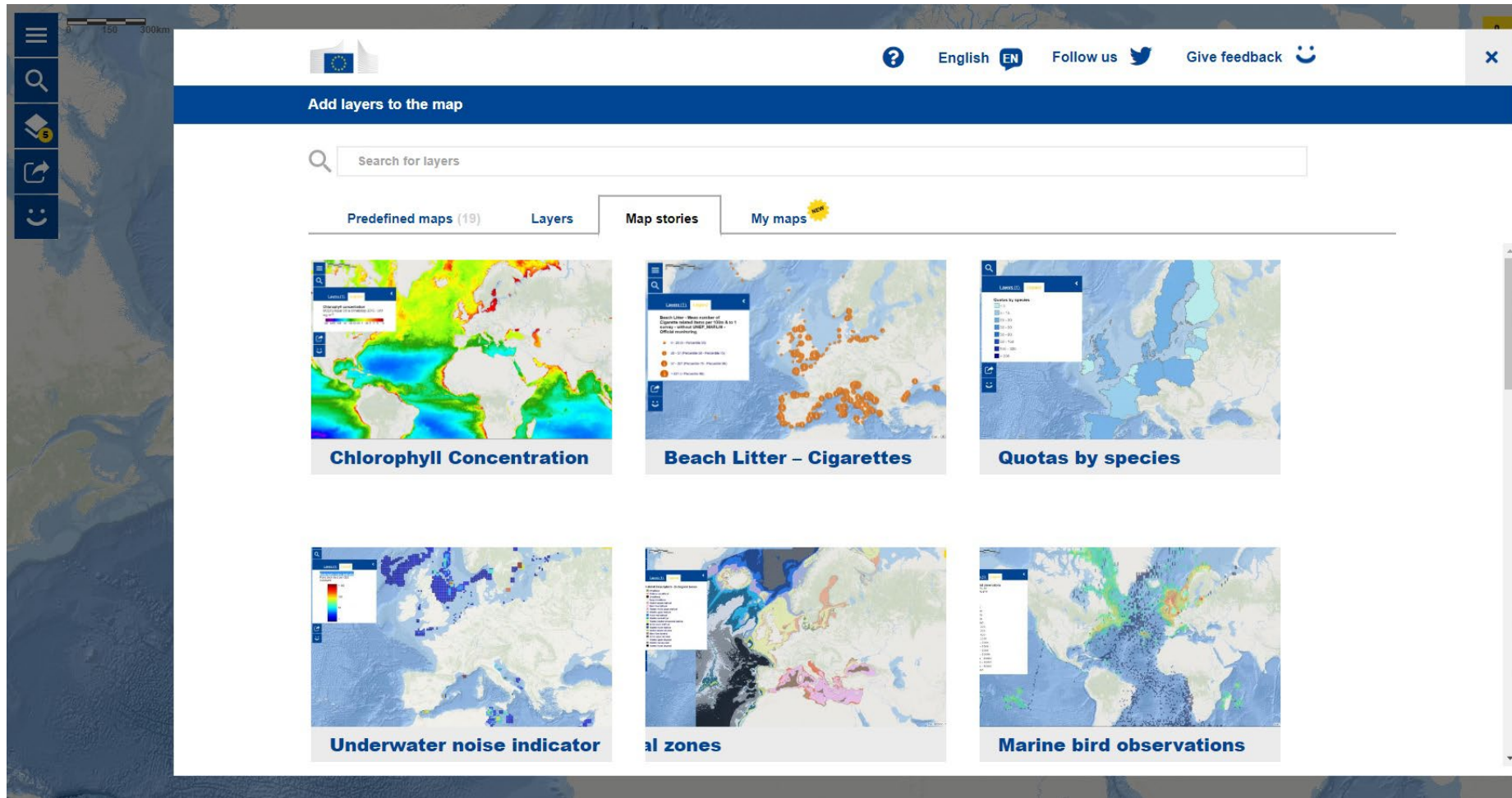


Explore the EMOD-PACE map viewer



EMODnet | European Atlas of the Seas

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

https://ec.europa.eu/maritimeaffairs/atlas/maritime_atlas/

European Atlas of the Seas | Key figures

24 languages

Select your language

English EN Follow us Close X

български	latviešu
čeština	lietuvių
dansk	magyar
Deutsch	Malti
eesti	Nederlands
ελληνικά	polski
English ✓	português
español	română
français	slovenčina
Gaeilge	slovenščina
hrvatski	suomi
italiano	svenska



en de fr

Choose a map...

Maritime Europe Tourism Nature Passenger transport

Energy Wind Security Sea level rise

Edit profile

European Atlas of the Seas

@EuropeAtlasSeas

@EU_Commission tool to explore, collate & create marine maps in 24 languages! Learn more about seas & coasts. Account managed in cooperation with @EU_MARE.

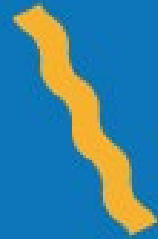
ec.europa.eu/maritimeaffair... Joined September 2013

1,433 Following 2,770 Followers

European Atlas of the Seas | Key figures

Key achievements/facts in 2022

275
map layers



Published **50** maps of the week
and **12** maps of the month



Over 2,600
Twitter followers by the end of 2022



83,000
visits in 2022



2023: Expect > 100,000 unique visits, based on current statistics

EMODnet data for society: The European Atlas of the Seas

The image displays three overlapping screenshots of the European Atlas of the Seas website, showing the interface in English, Dutch, and French. Each screenshot shows the website's header with the European Commission logo, navigation links, and a search bar. The main content area features a map of Europe and the Mediterranean Sea, with a search bar and a list of predefined maps. The English version shows the title "European Atlas of the Seas" and a prompt to discover new functions. The Dutch version shows "Europese Zeeatlas" and a similar prompt. The French version shows "Atlas européen des mers" and a search bar with the text "Rechercher des couches".

- A tool for education and ocean literacy with a teachers' corner with resources developed with education professionals;
- Contributing to the EU4Ocean European Ocean Literacy Network;
- User tutorial:

<https://www.youtube.com/watch?v=QdsZUIqAlns>



<https://webgate.ec.europa.eu/maritimeforum/en/frontpage/1482>

European Atlas of the Seas | Current Copernicus Marine Service map layers

- Global mean sea level regional trend (Year: 1993-2019)
- Global sea surface temperature regional trend (Year: 1993-2018)
- Land cover (Year: 2012-2018)
- Global Ocean Chlorophyll (daily)
- Global Ocean Chlorophyll (monthly-mean)



Implemented by

Climate change

Global mean sea level regional trend



The Global mean sea level regional trend (Millimeters per year) is provided by the Copernicus Marine Service. Sea level is rising as a result of ocean heating and land ice -mass loss. Water expands when heated and about 30% of contemporary global mean sea level rise can be attributed to this thermal expansion alone. Sea level rise can seriously affect human populations in coastal and island regions as well as natural environments such as marine ecosystems.

The [time series](#) shows that the average global sea level has risen by more than 8 cm since the early 1990's and it continues to rise at a rate of 3.3 mm each year. New calculations reveal that global mean sea level rise is accelerating, with this rate increasing by 0.12 ± 0.073 mm each year.

Sea levels do not rise homogeneously and thus some regions are more threatened than others. The map shows the spatial distribution of sea level trends since 1993. It reveals that sea level is rising for the vast majority of the global ocean but there is large-scale variation with regions like the western tropical Pacific Ocean reaching amplitudes of up to +8 mm/year. In this area, the regional trends are mainly due to thermal expansion. The regional sea level trend uncertainty is on the order of 2-3 mm/year with values as low as 0.5 mm/year or as high as 5.0 mm/year depending on the region.

This sea level ocean monitoring indicator is derived from the DUACS delayed-time (DT-2018 version). These products are distributed by the Copernicus Climate Change Service and also available in the [Copernicus Marine Service catalogue](#).

Global sea surface temperature regional trend



The Global sea surface temperature regional trend (degree Celsius (°C) per year) is provided by the Copernicus Marine Service. Sea surface temperature is one of the Essential Climate Variables, defined by the Global Climate Observing System, required for monitoring and characterizing the state of the global climate.

The [time series](#) shows that the average global sea surface temperature has risen by more than 0.3 °C since the early 1990s and continues to rise at an unprecedented rate of 0.014 ± 0.001 °C per year. The past four years we observed the warmest ocean surface temperatures since records began.

Sea Surface Temperature does not rise homogeneously and thus some regions are more threatened than others. The map shows the spatial distribution of the mean sea surface temperature trends over the Global Ocean since 1993. It reveals that warming is occurring for the vast majority of the globe between 1993 and 2018. One of the exceptions to this trend is the North Atlantic, particularly the region south of Greenland where a cooling trend is observed.

This sea surface temperature ocean monitoring indicator is based on daily, global climate sea surface temperature (SST) analyses generated by the European Space Agency (ESA), SST Climate Change Initiative (CCI) and the Copernicus Climate Change Service (C3S) and is available from the [Copernicus Marine Service catalogue](#).

European Atlas of the Seas | Potential for future integration 2024 onwards?

Copernicus Marine Service

- Global ocean acidification - mean sea water pH trend map from Multi-Observations Reprocessing
- Surface partial pressure of carbon dioxide in sea water
- Surface downward mass flux of carbon dioxide expressed as carbon
- Mole concentration of dissolved inorganic carbon in sea water



EMODnet | Events

EMODnet: Business events and dialogues



In addition to attending industry-led events, EMODnet organizes its own Blue Economy dialogues:

e.g., Offshore Renewable Energy (2022); Coastal Tourism (2023)



- Data use, needs and requirements
- Data sharing and ingestion to EMODnet



20-21 SEPT 2022

EMODNET Marine data for the offshore renewable energy sector in the Northeast Atlantic, North Sea and Baltic Sea

BY INVITATION ONLY #MarineData4OffshoreEnergy



SAVE-THE-DATE
20-21 OCTOBER 2022

EMODnet Marine data for the offshore renewable energy sector in the Mediterranean Sea and Black Sea

BY INVITATION ONLY #MarineData4OffshoreEnergy



Get value from ocean data

EMODnet for business:

A wealth of marine data, products and services to support your company

emodnet.ec.europa.eu

26-27 SEPTEMBER 2023



ONLINE EVENT



EMODnet for Business:
Marine Data for the coastal tourism sector

#MarineData4CoastalTourism



EMODnet: Open Sea Lab 3.0

OPEN SEA LAB 3.0 HACKATHON Virtual



**One Ocean.
One EMODnet:**
Surf a brand new
Marine Data & Innovation wave!

Ideation & Team Formation:
6-24 March 2023
HACKATHON:
27-28 March 2023
Pitching & Award Event:
30 March 2023



EMODnet: External events Q3-4 2023 and forward look Q1-2 2024

Summer - Autumn 2023: EMODnet as speaker and/or co-organiser:

- Ocean Race Finale: Ocean Data Week
- Sustainable Blue Economy Partnership
- Fish-X
- EuroGOOS 2023
- EurOCEAN 2023
- Ocean Best Practices System

Upcoming events in 2024

- Ocean Sciences 2024 (NOAA – EMODnet ERDDAP session)
- UN Ocean Decade Conference 2024 (Joint side event & physical exhibition on EU marine data services: EMODnet and Copernicus Marine Service)
- IMDIS 2024
- European Maritime Day 2024
- Digital Ocean Forum 2024

Join us at the EMODnet Open Conference 2023!

Powering the European Marine Data Ecosystem

For a digital and green future



OPEN CONFERENCE

29-30 November 2023
Brussels | NHow

#EMODnetConference2023

Registration is open now!
Full programme coming in September 2023

<https://emodnetconference2023.eu/>

Powering the European Marine Data Ecosystem

For a digital and green future



OPEN CONFERENCE

29-30 November 2023

Brussels | NHow

#EMODnetConference2023

EMODnet Open Conference = Public event 29 (PM) – 30 November 2023

EMODnet Jamboree = EMODnet partnership, 27-28 and 29 (AM) November 2023

- Plenary Panels and Presentations
- Townhall Break-out discussions
- EMODnet partner dialogues
- Virtual Exhibition: Call for abstracts community (e-)posters by 14th September 2023!

<https://emodnet.ec.europa.eu/en/emodnet-open-conference-2023>

Powering the European Marine Data Ecosystem

For a digital and green future



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- EMODnet innovations in data, data products and services
- EMODnet, Mission Ocean and Wider Society
- EMODnet, EU Policy and regulatory monitoring data
- EMODnet, Ocean Best practices and Interoperability
- EMODnet and the Blue Economy
- EMODnet, Ocean Observation and the marine knowledge value chain
- EMODnet and the Digital Era
- EMODnet for Global and the UN Ocean Decade

Powering the European Marine Data Ecosystem

For a digital and green future



OPEN CONFERENCE

29-30 November 2023

Brussels | NHow

#EMODnetConference2023

EMODnet Open Conference = Public event 29 (PM) – 30 November 2023

Participants

- EMODnet (> 120) Partners (including Marine data centres, hydrographic offices, other)
- EMODnet Associated Partners (Private sector, wider data providers and users)
- EU Policy makers (EC, multiple DGs)
- Marine knowledge value chain stakeholders: EU / regional Marine data services, Marine research community, Blue Economy, NGOs

Powering the European Marine Data Ecosystem

For a digital and green future



OPEN CONFERENCE

29-30 November 2023

Brussels | NHow

#EMODnetConference2023

Copernicus Marine Service / DG DEFIS invited contributions

- **Opening Session:** Pierre Bahurel, MOi / CMEMS (TBC)
- **Session 2 EMODnet and Digital Ocean:** Marina Tonani, MOi / CMEMS
- **Session 4 EMODnet, Ocean Observation and the Marine Knowledge Value Chain**
 - **Panel 1:** Dominique Obaton, Ifremer, CMEMS INSTAC
 - **Panel 2:** Pierre-Yves Le Traon, MOi / CMEMS
- **Session 6:** Enrique Alvarez, MOi / DCC Ocean Predict (video)
- **Closing Session:** Tim Lemmens / Richard Gilmore, EC DG DEFIS

Powering the European Marine Data Ecosystem

For a digital and green future



OPEN CONFERENCE

29-30 November 2023
Brussels | NHow

#EMODnetConference2023

Call to Action (to be launched at Closing Session)

EMODnet community statement on:

- EMODnet achievements
- Opportunities for EMODnet evolution
- Challenges and barriers
- Calling community to action

2024 wider consultation with CMEMS and other key actors for a EMODnet Vision

Thank you for your attention, and in advance for your inputs!

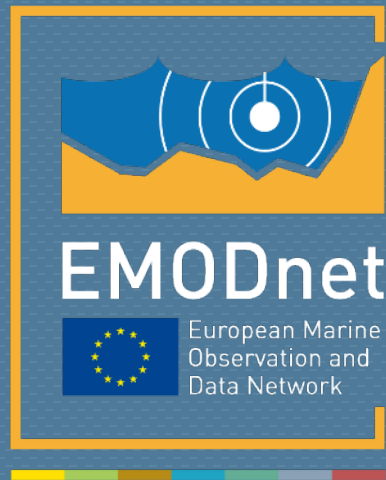
Contact us to learn more about EMODnet data services, data use and data sharing (via EMODnet Data Ingestion).

Email: secretariat@emodnet.ec.europa.eu

Twitter and LinkedIn: @EMODnet

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

emodnet.ec.europa.eu



@EMODnet
www.emodnet.eu

Your gateway to marine data in Europe



Extra slides

EMODnet Copernicus Marine Service Coastal Meeting, 22 September 2022

Actions

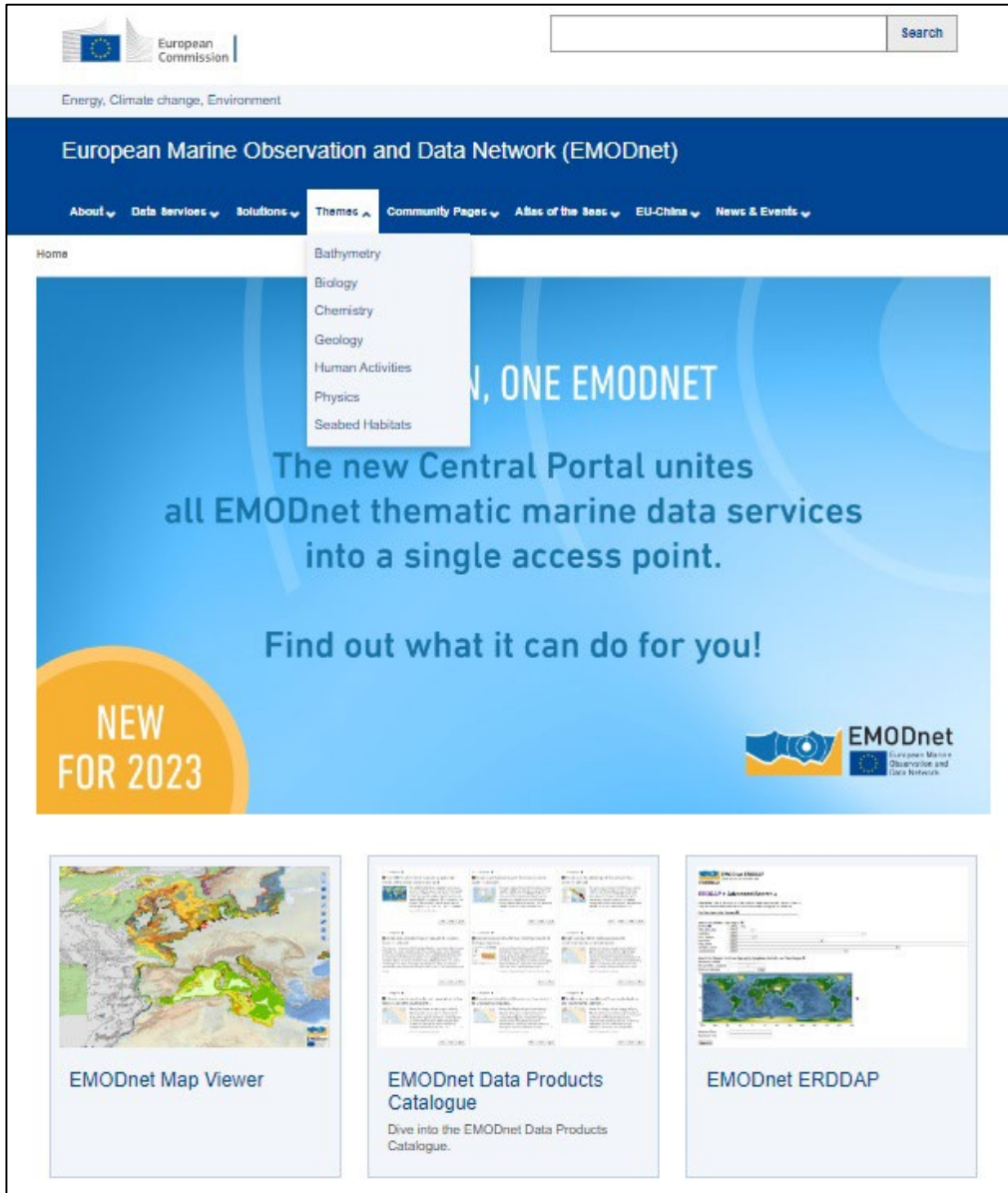
- 1- Organise a follow up meeting between **EMODnet Chemistry and Copernicus Marine INSITU TAC**. The first meeting was considered very fruitful.
- 2- Organise a meeting between **Copernicus Marine coordination and EMODnet Bathymetry** project coordinator. Copernicus Marine aims at developing a global bathymetry product from S2 data, first static, then a dynamic version. An interaction is much needed between Copernicus Marine and EMODnet bathymetry to discuss the details and the synergies between the different approaches. See also the different user requirements/analyses/surveys on bathymetry that have also recently been published (Copernicus Marine, EMODnet Checkpoints) (e.g. <https://www.frontiersin.org/articles/10.3389/fmars.2021.740830/full>).
- 3- Organise a meeting with **Copernicus Land, Marine coordination and EMODnet Geology project coordinators for coastline monitoring activities** shared between the two groups.

Additional points / gaps raised:

- 1- **Citizen science data:** the activity needs to be structured as data are currently not quality controlled. A data structure as to be set up to better answers user needs for qualified data.
- 2- **Rivers:** there are different initiatives in different Copernicus Services (Marine, Emergency, Land) and in EMODnet Physics. Those activities need to be well aligned.
- 3- **Sea level:** products already exist in Copernicus Marine INSITU TAC and through EMODnet physics. A new reprocessed product is planned in Copernicus Marine catalogue in November 2022. A good understanding of the different initiatives, the different processing steps applied is necessary. These activities need also to be well aligned to ease the user experience.

EMODnet | Latest features and functionalities

EMODnet: One new portal to replace all thematic portals



European Commission

Energy, Climate change, Environment

European Marine Observation and Data Network (EMODnet)

About Data Services Solutions Themes Community Pages Atlas of the Seas EU-China News & Events

Home

Bathymetry
Biology
Chemistry
Geology
Human Activities
Physics
Seabed Habitats

NEW FOR 2023

The new Central Portal unites all EMODnet thematic marine data services into a single access point. Find out what it can do for you!

EMODnet

EMODnet Map Viewer

EMODnet Data Products Catalogue
Dive into the EMODnet Data Products Catalogue.

EMODnet ERDDAP

Since January 2023:

- **Unification of all EMODnet thematics** and the shutting down of individual portals
- One EMODnet **website**
- One EMODnet **map viewer**
- One EMODnet **catalogue**
- One EMODnet **ERDDAP**
- Striving for **consistency** across **themes** in:
 - Metadata
 - File formats
 - Download APIs
 - Web Services

EMODnet: One central catalogue

EMODnet Product Catalogue

Search ...

English

Search ...

Nothing in basket

Filter

TYPE OF RESOURCES

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FORMATS

Categories

North East Atlantic Ocean - Contaminants aggregated datasets 1970/2017 v2018

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted ...

North Sea - Contaminants aggregated datasets 1970/2017 v2018

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted ...

Black Sea - Contaminants aggregated datasets 1974/2017 v2018

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted ...

Baltic Sea - Contaminants aggregated datasets 1972/2017 v2018

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted ...

Mediterranean Sea - Contaminants aggregated datasets 1974/2017 v2018

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted ...

Habitat Map of "Capo Milazzo" marine protected area

Data were collected in the framework for the establishment of the Capo Milazzo AMP. The study was founded by MATTM. The map was constructed by using acoustic data, direct observations by ROV and satellite images.



EMODnet Product Catalogue

Search ...

English

Back to search

Previous

Next

Download

Display mode

North Sea - Contaminants aggregated datasets 1959/2019 v2021

EMODnet Chemistry aims to provide access to marine chemistry data sets and derived data products concerning eutrophication, ocean acidification and contaminants. The chemicals chosen reflect importance to the Marine Strategy Framework Directive (MSFD). This regional aggregated dataset contains all unrestricted EMODnet Chemistry data on contaminants, and covers the North Sea with 34978 CDI records divided per matrices: 1460 biota, 24740 water profiles, 8090 sediment profiles and 281 sediment time series. For water, the temporal range is from 1959-10-03 to 2019-12-30. For sediment, the temporal range is from 1970-07-11 to 2019-12-18 for profile data and from 1993-09-18 to 2015-06-15 for the time series. For biota, the temporal range is from 1979-02-26 to 2018-02-28. Data were aggregated and quality controlled by 'Aarhus University, Department of Bioscience, Marine Ecology Roskilde from Denmark'. Regional datasets concerning contaminants are automatically harvested. Parameter names in these datasets are based on P01, BODC Parameter Usage Vocabulary, which is available at: http://seadatanet.maris2.nl/bandit/browse_step.php. Each measurement value has a quality flag indicator. The resulting data collections for each Sea Basin are harmonised, and the collections are quality controlled by EMODnet Chemistry Regional Leaders using ODV Software and following a common methodology for all Sea Regions. Harmonisation means that: (1) unit conversion is carried out to express contaminant concentrations with a limited set of measurement units (according to EU directives 2013/39/UE, Comm. Dec. EU 2017/848) and (2) merging of variables described by different "local names" but corresponding exactly to the same concepts in BODC P01 vocabulary. Detailed documentation is available at: <https://doi.org/10.8092/8b52e8d7-dc92-4305-9337-7634a5cae3f4>. Explore and extract data at: <https://emodnet-chemistry.webodv.awi.de/contaminants%3ENorthSea>. The harmonised dataset can also be downloaded as ODV spreadsheet (TXT file), which is composed of metadata header followed by tab separated values. This worksheet can be imported to ODV Software for visualisation (More information can be found at: <https://www.seadatanet.org/Software/ODV>). The same dataset is offered also as XLSX file in a long/vertical format, in which each P01 measurement is a record line. Additionally, there are a series of columns that split P01 terms in subcomponents (measure, substance, CAS number, matrix...). This transposed format is more adapted to worksheet applications users (e.g. LibreOffice Calc). The original datasets can be searched and downloaded from EMODnet Chemistry Download Service: <https://emodnet-chemistry.maris.nl/search>

Overviews

Water

Sediment timeseries

Sediment profiles

Biota

Identification

Content

ReferenceSystem

Quality

DomainConsistency

Distribution format

Zipped file (ODV spreadsheet and transposed spreadsheet) (Version: 1.0)

Distributor

Organisation name	National Institute of Oceanography and Applied Geophysics - OGS, Division of Oceanography
Delivery point	Borgo Grotta Gigante 42/c
City	Sgonico (Trieste)
Postal code	34010
Country	Italy
Electronic mail address	nodc@ogs.trieste.it
Linkage	http://www.ogs.trieste.it/
Role	Distributor: Party who distributes the resource

Users can access metadata and data service information in the catalogue

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

The screenshot displays the EMODnet Map Viewer interface. At the top left, the European Commission logo and the text "EMODnet Map Viewer" are visible. The top right corner shows a language selector set to "English".

On the left side, there is a "Legend" panel with two main categories: "EurOBIS database observations" and "EMODnet EurOBIS Occurrences as Geospatial Grid (points)". Below these, a color-coded legend for "EMODnet EurOBIS Occurrences as Geospatial Grid (6x6 minute) records/grid" is shown, with values ranging from 1 to > 60000.

The central map shows a satellite view of the North Atlantic region, overlaid with a grid of points. A black rectangular box highlights a specific area of interest in the central part of the map.

On the right side, there is a "Product selection" panel with a table:

Layer	Format
EurOBIS database observations	CSV x

Below the table, there is a "Click here to select an area on the map" button. At the bottom right of the map area, there is a "Clear all selections" button.

Overlaid on the map are two interactive panels:

- Filter layers:** A panel with a "Predefined filters" dropdown menu. The "Taxon name" field is set to "Orcinus orca". There are "Clear" and "Apply" buttons at the bottom.
- EurOBIS database observations:** A panel with a "Select your area" label and a "RecordCount" field containing the value "1".

At the bottom left, there is a scale bar for "100 km" and coordinates "3.05621, 57.92250". At the bottom right, the EMODnet logo and the text "European Marine Observation and Data Network" are displayed.

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

European Commission | EMODnet Map Viewer

EN English

Layers | Catalogue

Active | Actions

Temporal changes in...

Temporal changes in benthic communities (#species)

This product builds on the EMODnet Biology data product Presence/absence data of macrozoobenthos in the European Seas to derive estimates of temporal turnover in benthic communities on a spatial grid across European seas. This product only uses species-level records, and only uses sampling events where the full macrobenthic community was surveyed (i.e. where there are no 'NA' values in the presence/absence dataset for any species). Six time periods are considered, based on data availability: before 1990, 1990-1999, 2000-2004, 2005-2009, 2010-2014, and 2015 and after. A 1 degree grid is used to obtain reasonable numbers of repeat samples per grid cell. The code below could be adapted to set different time periods and/or a different grid resolution

Marine regions: Search for a region ...

Change basemap: EMODNET World Base Layer

500 km

Legend

Temporal changes in benthic communities (#species)

- 0
- [0.0 - 0.25]
- [0.25 - 0.5]
- [0.5 - 0.75]
- [0.75-1]
- [1-1.2]
- [1.2-35]
- [35-100]
- [100-200]
- [200-350]
- [350-1109]

EMODnet
European Marine Observation and Data Network

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

European Commission | EMODnet Map Viewer | EN English

Layers | **Catalogue**

- EMODnet Bathymetry
- EMODnet Biology
- EMODnet Chemistry
- EMODnet Geology
- EMODnet Human Activities
- EMODnet Physics
- EMODnet Seabed Habitats

Composite data products (created by EMODnet)

Composite data products (created by others)

EMODnet broad-scale seabed habitat map for Europe (EUSeaMap)

- EUSeaMap (2021) habitat types (Barcelona Conventio...)
- EUSeaMap (2021) habitat types (EUNIS 2007/full-detai...)
- EUSeaMap (2021) habitat types (EUNIS 2019)
- EUSeaMap (2021) habitat types (HELCOM Underwater...)
- EUSeaMap (2021) habitat types (MSFD benthic broad ...)

[+ Add external layers](#)

Marine regions: Search for a region ...

Change basemap: EMODNET World Base Layer

EUSeaMap (2021) habitat types (EUNIS 2007/full-detail classification)

The model is produced using R and Arc Model Builder (10.1).

The model was created using raster input layers with a cell size of 0.00104dd (roughly 100 metres). The model includes the sublittoral zone only; due to the high variability of the littoral zone, a lack of detailed substrate data and the resolution of the model, it is difficult to predict littoral habitats at this scale.

EUSeaMap is classified into EUNIS 2019 level 3 (or more detailed levels where appropriate), EUNIS 2019 level 2, EUNIS 2007-2011, the MSFD benthic broad habitat types, the HELCOM HUB classification in the Baltic, and the recently revised habitat classification in the Mediterranean. In the Black Sea, EUSeaMap is not classified into EUNIS 2007-2011 (due to inapplicability), but is classified according to a classification that was developed by EMODnet Seabed Habitats (Populus et al, 2017, and for a revised version Vasquez et al, 2020, See Online resources).

Reports that provide methods used for the classification of the predicted habitats into the new 2019 EUNIS classification, regional classifications, and MSFD BBHT (v.2017) are linked in Online Resources.

A report on the methods used in the 2021 version of EUSeaMap (Vasquez et al., 2021) and reports on previous versions (v2016 and V2019) are linked in Online Resources.

EMODnet Seabed Habitats

[Access to metadata](#) [Download](#)

200 km

EMODnet
European Marine Observation and Data Network

EMODnet: Recent (summer 2023) upgrades to the EMODnet map viewer

1. Map projections

NEW in August 2023:
Range of map projections to cater for various analytical needs:

- EPSG:3857 (Pseudo-Mercator),
- EPSG:4326 (Web Mercator - WGS 84),
- EPSG:3034 (Continental Europe - Lambert Conic Conformal), and
- EPSG:3035 (Continental Europe - Lambert Azimuthal Equal Area).

EMODnet: Recent (summer 2023) upgrades to the EMODnet map viewer

2. Customised parameter exploration e.g. Bathymetry Digital Terrain Model

Now, when you're sub-setting and downloading the Bathymetry Digital Terrain Model (DTM) for your specific area of interest, you have the opportunity to select parameters and customize your exploration. This option is available if you're choosing to download the DTM in the esriAscii or GeoTIFF file format. With this upgrade, you can tailor the data you receive to match your analytical requirements precisely. See an example of the power of parameter selection in Figure 2.

