Advanced Master in Sustainable Blue Economy

OGS National Institute of Oceanography and Applied Geophysics

UNIVERSITÀ DEGLI STUDI DI TRIESTE

Trieste, March 17, 2023

From “good” data …. To good decisions

From data to knowledge for sustainable blue growth

Faculty Member Name: Marina Lipizer

Organization: Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS

Email: mlipizer@ogs.it

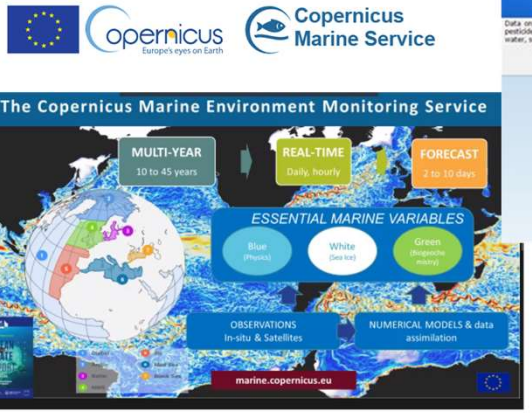
Where to find data

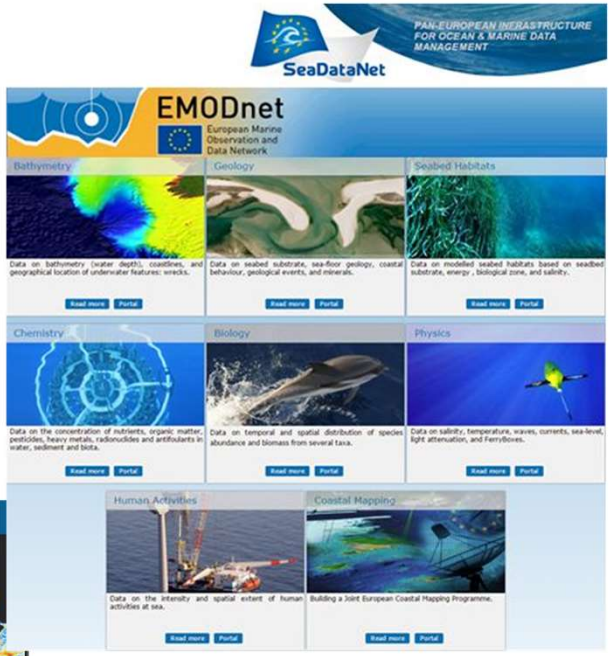
EU and global initiatives on marine data

to assemble,…., facilitate use and re-use of marine data for research AND environmental management.

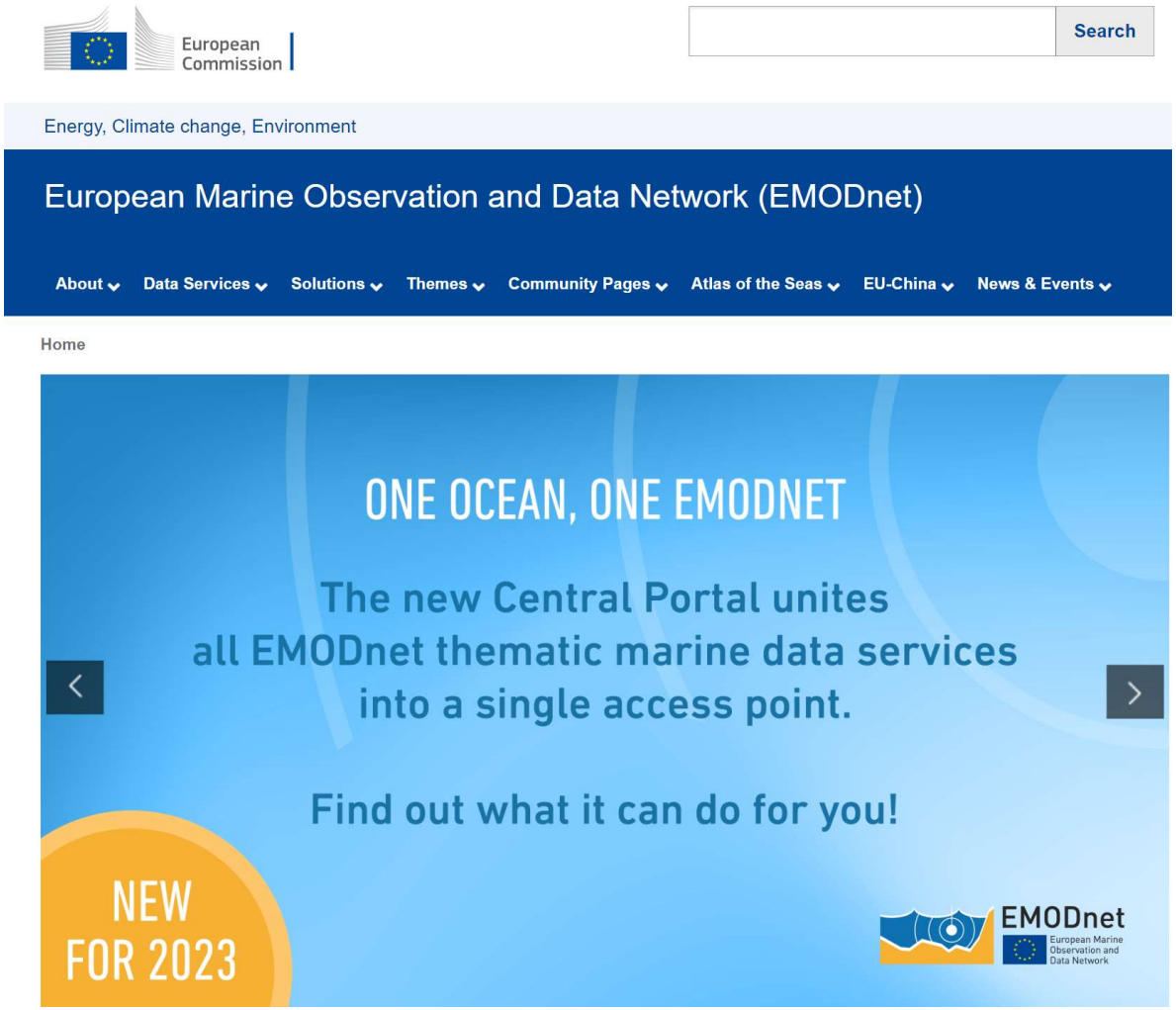
- SeaDataNet (now SeaDataCloud)
- EMODnet
- Copernicus
- World Ocean Database

https://marine.copernicus.eu/





https://www.emodnet.eu/en



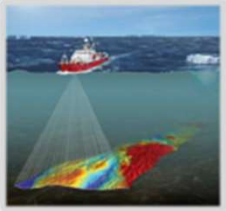
https://emodnet.ec.europa.eu/en

The European Marine Observation and Data Network (EMODnet) is a **network** of organisations supported by the EU's integrated maritime policy. These organisations 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.

This "**collect once and use many times**" philosophy benefits all marine data users, including policy makers, scientists, private industry and the public.

Thematic DATA coveraged by the portals

Bathymetry



Survey tracks

Water depth and depth profiles

Undersea features

Wrecks

High resolution bathymetry in coastal areas

Geology

Seabed substrate

Sediment accumulation rates

Seafloor lithology

Seafloor stratigraphy

Coastal behaviour

Geological events and probabilities

Mineral occurences

Seabed habitats

Seabed habitat maps (broad-scale and specific per basin)

Individual seabed habitat maps from surveys

Environmental variables influencing habitat type (depth, salinity, currents, light, ...)

Physics

Wave height and duration

Sea temperature

Wind speed and direction

Salinity

Horizontal speed of the water column

Water clarity

Changes in sea level

Inflow from rivers

Water conductivity / biochemical parameters

Atmospheric parameters

Underwater noise

Chemistry

Acidity

Antifoulants

Chlorophyll

Dissolved gases

Fertilisers

Hydrocarbons

Marine litter (micro, beach, seafloor)

Heavy metals

Organic matter

Polychlorinated biphenyls

Pesticides and biocides

Radionuclides

Silicates

Biology

Occurrences and abundances of species of:

Phytoplankton

Zooplankton

Macro-algae

Angiosperm

Fish

Reptile

Benthos

Bird

Sea mammal

Human activities

Aggregate extraction

Aquaculture

Cultural heritage

Dredging

Fisheries

Hydrocarbon extraction

Traffic in main ports

Ocean energy facilities

Pipelines and cables

Protected areas

Status of bathing sites

Vessel density

Waste disposal (solids)

Wind farms

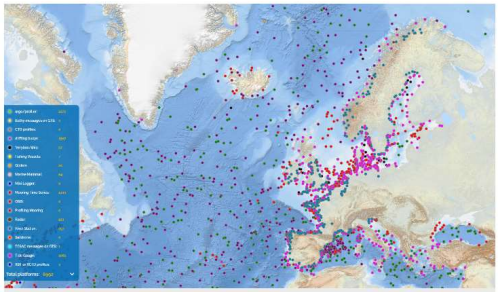
Other forms of area management/ designation

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

https://emodnet.ec.europa.eu/en

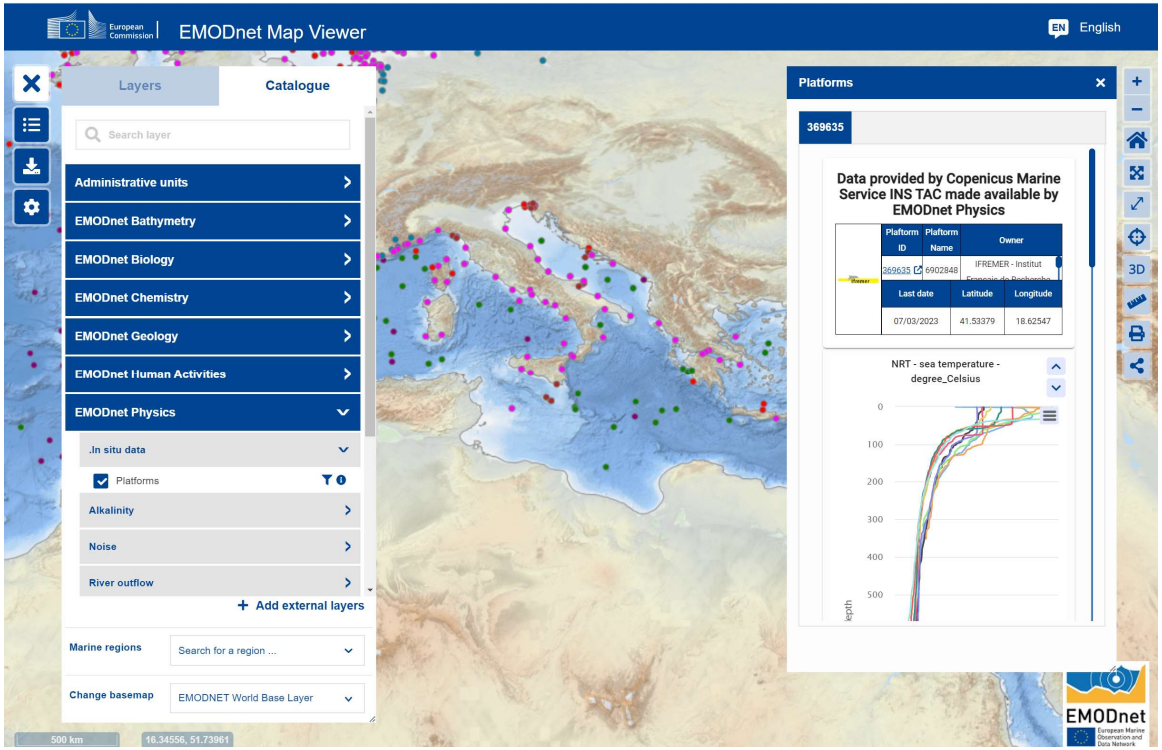
Physics

EMODnet-Physics provides a single point of access to in situ ocean physics data, data products and metadata built with common standards, free of charge and no restrictions.
The available parameters cover temperature, salinity and currents profiles, sea level trends, wave height and period, wind speed and direction, water turbidity (light attenuation), underwater noise, river flow, and sea-ice coverage.



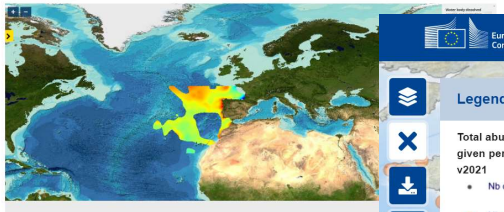
Data on temperature, salinity and currents in the water column, sea level trends, wave height and period, wind speed and direction, water turbidity (light attenuation), underwater noise, river flow, and sea-ice coverage.

- EMODnet Physics
  - .In situ data
  - Alkalinity
  - Noise
  - River outflow
  - Salinity
  - Sea level

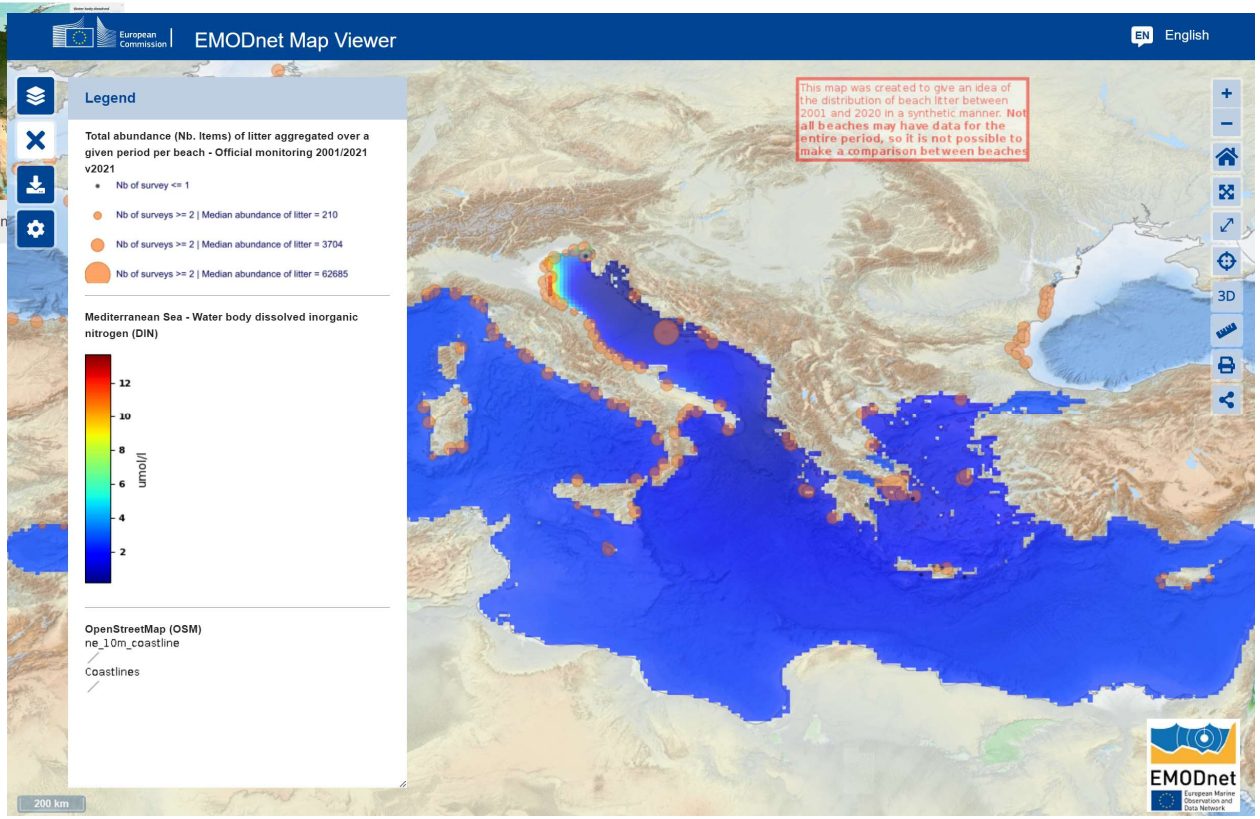


Chemistry

EMODnet Chemistry provides easy access to marine chemical data, standardised harmonized validated data collections and reliable data products, which are highly relevant to assessing ecosystem status according to the Marine Strategy Framework Directive, for all European marine regions.
Numerous substances are considered; most of them are invisible to the naked eye and can only be detected and tracked using special sensors or by laboratory analysis. This evidence-based information is essential for understanding seawater chemistry and its natural and/or human-induced variations. It is also essential for identifying and taking action against spatio-temporal environmental changes that pose risks to marine ecosystems and human health.

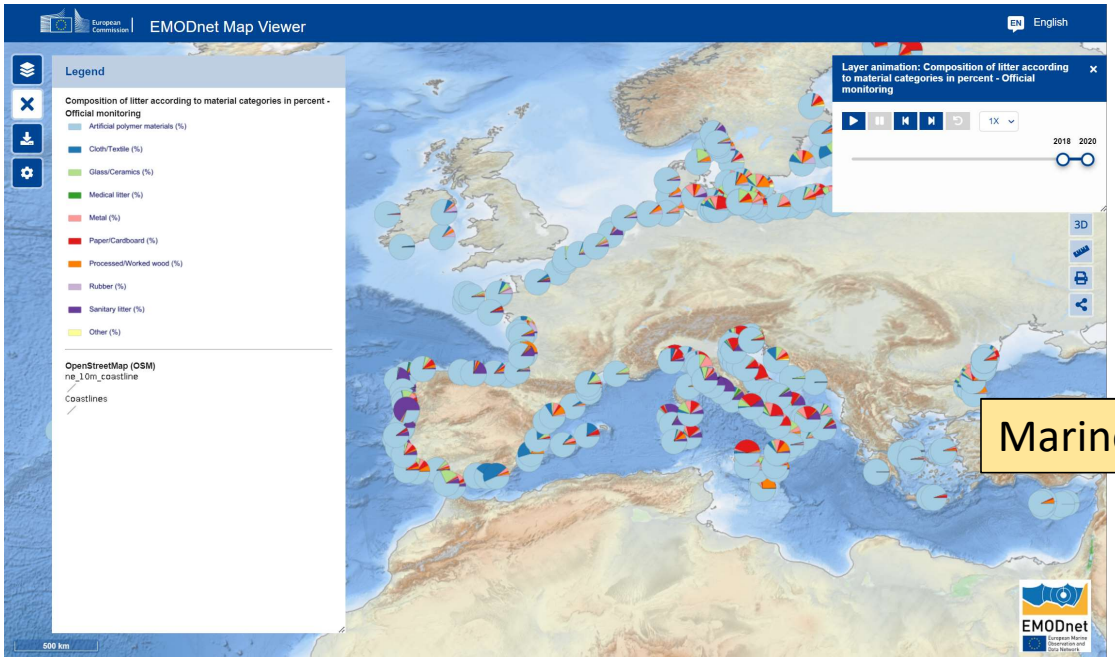


EMODnet Chemistry - Water body dissolved oxygen con

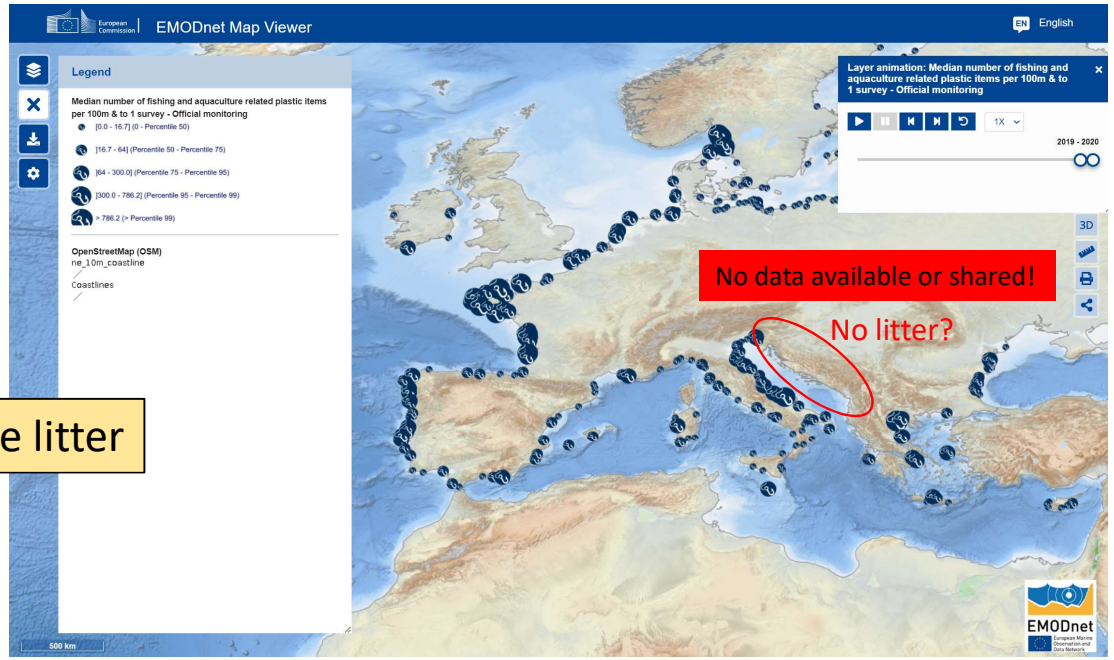


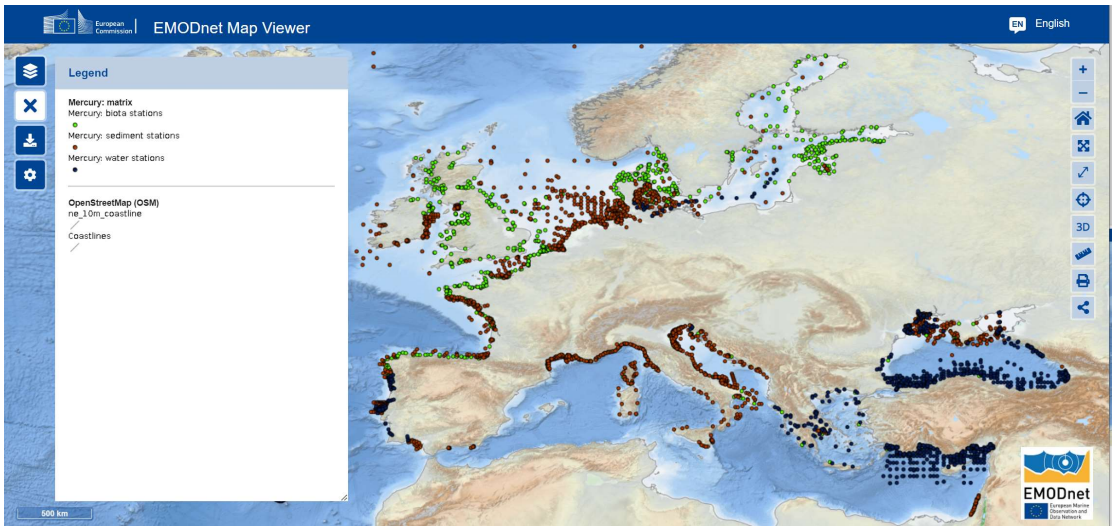
EMODnet Chemistry

- Beach Litter
- Contaminants
- Distribution of observations (CDI records) per data category (P36) and MSFD sea regions
- Eutrophication (all European seas)
- Eutrophication (by sea regions)
- Eutrophication (coastal regions)
- Seafloor Litter



Marine litter





Chemical pollution

European Commission

Search

Energy, Climate change, Environment

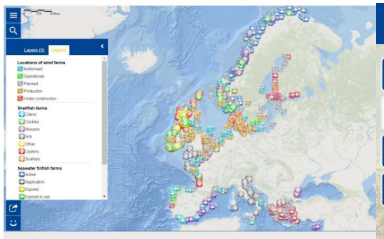
European Marine Observation and Data Network (EMODnet)

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

Home > Themes > Human Activities

Human Activities

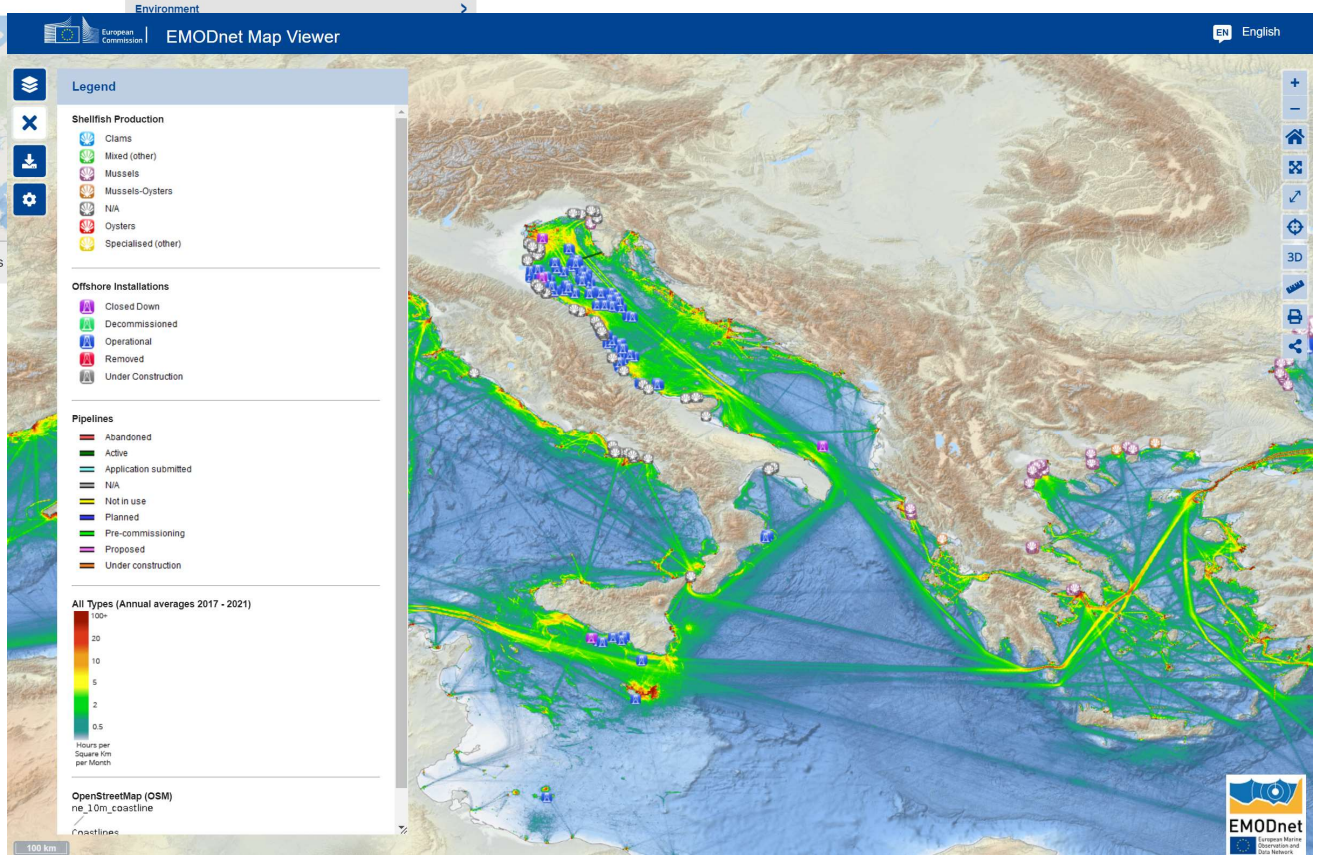
EMODnet Human Activities aims to facilitate access to existing marine data on activities carried out in EU waters, by building a single entry point for geographic information on 20 different themes.
Data on marine and maritime human activities are essential for effectively managing our seas and oceans in a sustainable way. This is becoming increasingly necessary due to growing population size and greater demand for resources, combined with advances in technology, resulting in a huge increase in the number and extent of marine and maritime human activities. These range from established activities such as fisheries and shipping to more recent activity such as construction of offshore energy facilities. Whilst there is considerable data available on these activities it is often only available on a per country, regional or sector-by-sector basis.



EMODnet Human Activities - Aquaculture and Wind farms

EMODnet Human Activities

- Aggregate Extraction
- Algae Production
- Aquaculture
- Cables
- Cultural Heritage
- Desalination
- Dredging
- Energy
- Environment



Administrative units

EMODnet Bathymetry

EMODnet Biology

EMODnet Chemistry

EMODnet Geology

EMODnet Human Activities

EMODnet Physics

EMODnet Seabed Habitats