



SeaDataNet

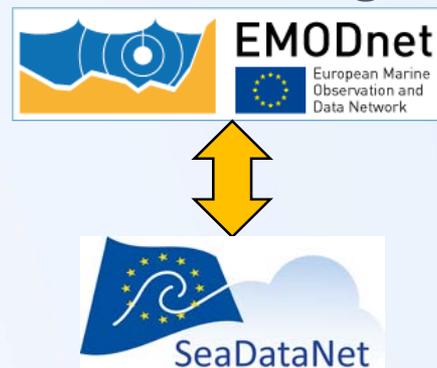
EMODnet – Special contributions by BODC

Dick Schaap (MARIS), presented by Michèle Fichaut (IFREMER)

BODC 50th anniversary, Liverpool, 8 May 2019
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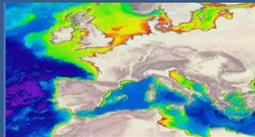
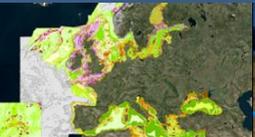
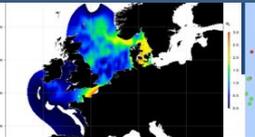
SeaDataNet and EMODnet

- EU initiative for an overarching **European Marine Observation and Data Network (EMODNet)** driven by Marine Knowledge 2020 and Blue Growth
- SeaDataNet qualified as a leading infrastructure for the EMODnet data management component and is driving several thematic portals from the start in 2008

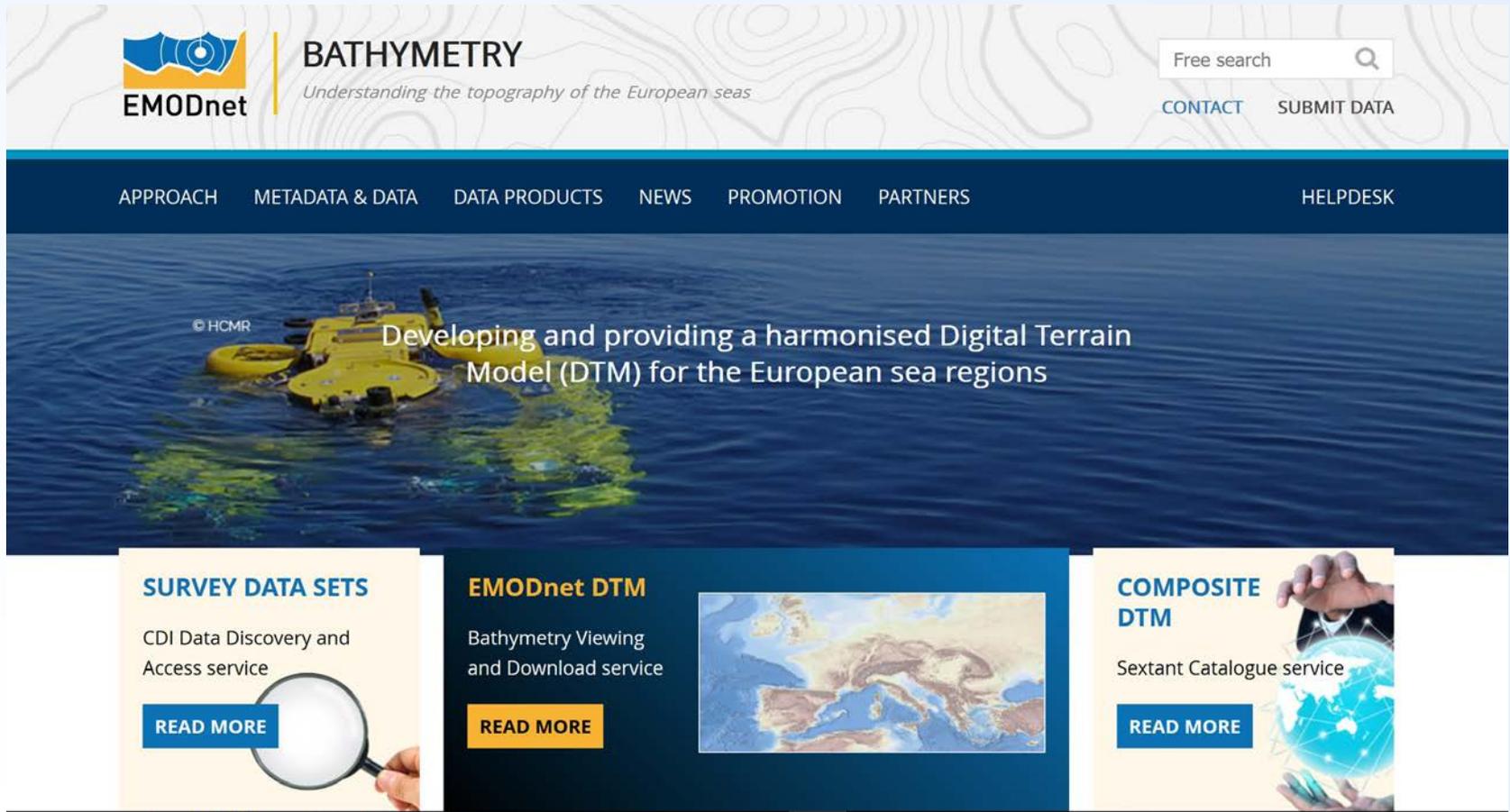


- This synergy has resulted in many more data centres adopting SeaDataNet standards and connecting to the CDI Data Discovery and Access service while it gave a flying start to EMODnet

EMODnet thematic portals

Bathymetry	Geology	Seabed Habitats	Chemistry	Biology	Physics	Human activities
						
<p>Minimum cell water depth</p> <p>Maximum cell water depth</p> <p>Average cell water depth</p> <p>Standard deviation of cell water depth</p> <p>Number of values used for interpolation of cell water depth</p> <p>Horizontal coordinate reference system</p> <p>Depth reference system</p> <p>Lowest Astronomical Tide</p>	<p>Seabed substrate</p> <p>Sediment accumulation rate</p> <p>Sea-floor geology</p> <p>Seabed lithology</p> <p>Stratigraphy</p> <p>Coastline migration</p> <p>Aggregate resources</p> <p>Geological events</p>	<p>Data on modelled seabed habitats (depth, seabed substrate, broad scale biological zone, T, S, light, oxygen, energy due to waves & current)</p> <p>Broad-scale physical habitat map</p> <p>Detailed habitat maps from surveys</p> <p>Individual habitat modelling outputs</p> <p>Habitat point data</p>	<p>Pesticides & Biocides</p> <p>Antifoulants</p> <p>Pharmaceuticals</p> <p>Heavy Metals</p> <p>Hydrocarbons</p> <p>Radionuclides</p> <p>Fertilizers</p> <p>Acidity</p> <p>Dissolved Gasses</p> <p>Plastics</p> <p>Marine Litter Beach litter Seafloor litter Micro litter</p> <p>Chlorophyll Silicates Organic Matter</p>	<p>Biomass</p> <p>Abundance</p> <p>Gridded Abundance maps</p> <p>species groups:</p> <ul style="list-style-type: none"> • phytoplankton • zooplankton • angiosperms • macro-algae • invertebrate bottom fauna • birds • mammals • reptiles • Fish 	<p>Waves</p> <p>Water temperature</p> <p>Water salinity/conductivity/density</p> <p>Currents</p> <p>Light attenuation/fluorescence</p> <p>Sea level</p> <p>Atmospheric parameters</p> <p>Wind</p> <p>Underwater noise</p> <p>Rivers</p> <p>Ice</p>	<p>Aggregate Extraction Dredging</p> <p>Fisheries</p> <p>Hydrocarbon Extraction Main Ports</p> <p>Mariculture</p> <p>Ocean Energy Facilities</p> <p>Pipelines and Cables</p> <p>Protected Areas</p> <p>Waste Disposal</p> <p>Wind Farms</p> <p>Other Forms of Area Management / Designation</p>

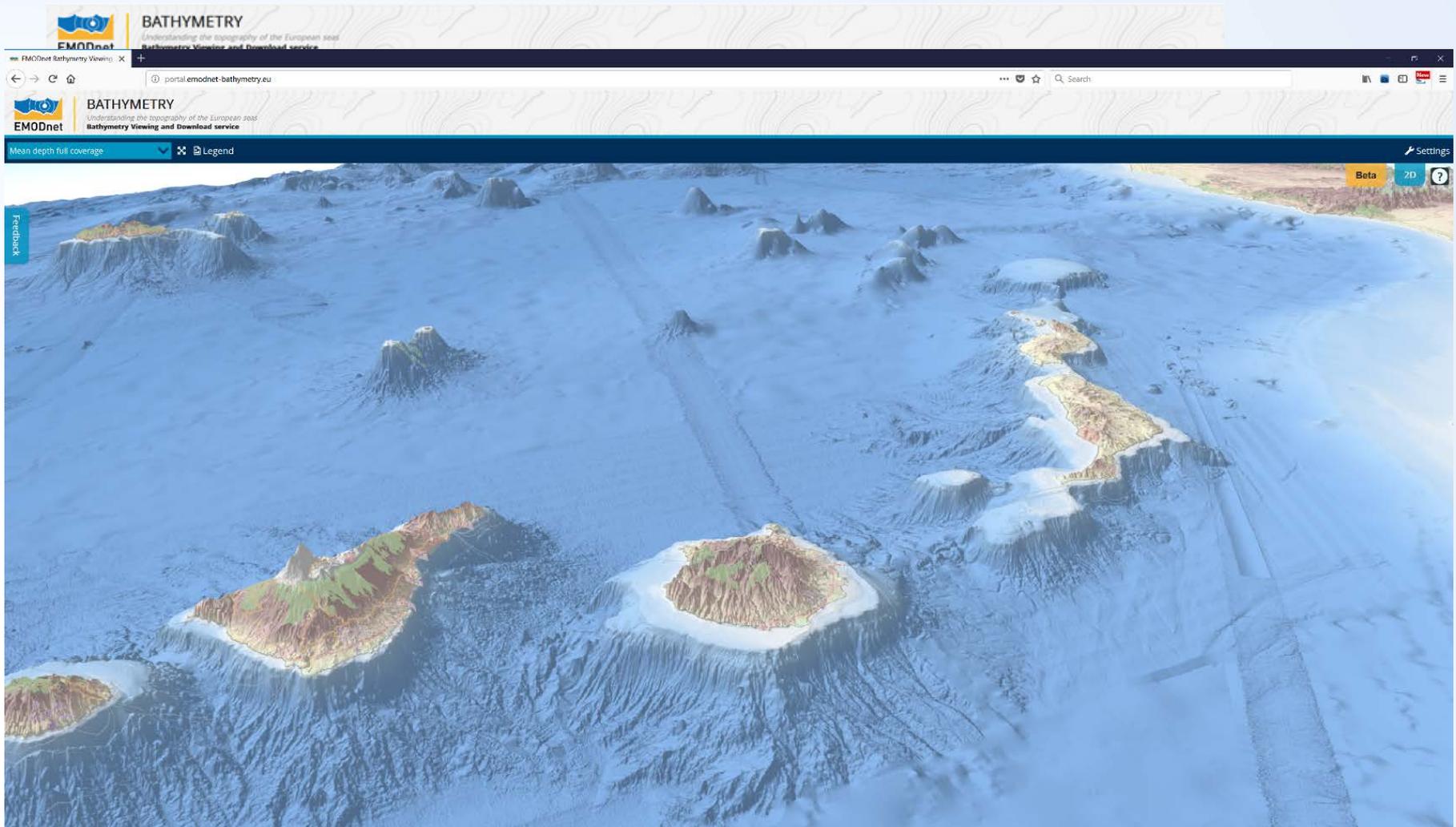
EMODnet Bathymetry portal



The screenshot shows the EMODnet Bathymetry portal homepage. At the top left is the EMODnet logo, a stylized blue and yellow wave. To its right is the word "BATHYMETRY" in large blue letters, with the tagline "Understanding the topography of the European seas" below it. On the right side of the header, there is a search bar labeled "Free search" with a magnifying glass icon, and two links: "CONTACT" and "SUBMIT DATA". Below the header is a dark blue navigation bar with white text links: "APPROACH", "METADATA & DATA", "DATA PRODUCTS", "NEWS", "PROMOTION", "PARTNERS", and "HELPDESK". The main content area features a large blue background image of a yellow autonomous underwater vehicle (AUV) on the surface of the ocean. Overlaid on this image is the text "© HCMR" and "Developing and providing a harmonised Digital Terrain Model (DTM) for the European sea regions". Below this main image are three promotional cards. The first card, titled "SURVEY DATA SETS", describes a "CDI Data Discovery and Access service" and includes a "READ MORE" button with a magnifying glass icon. The second card, titled "EMODnet DTM", describes a "Bathymetry Viewing and Download service" and includes a "READ MORE" button. The third card, titled "COMPOSITE DTM", describes a "Sextant Catalogue service" and includes a "READ MORE" button with an icon of hands holding a globe.



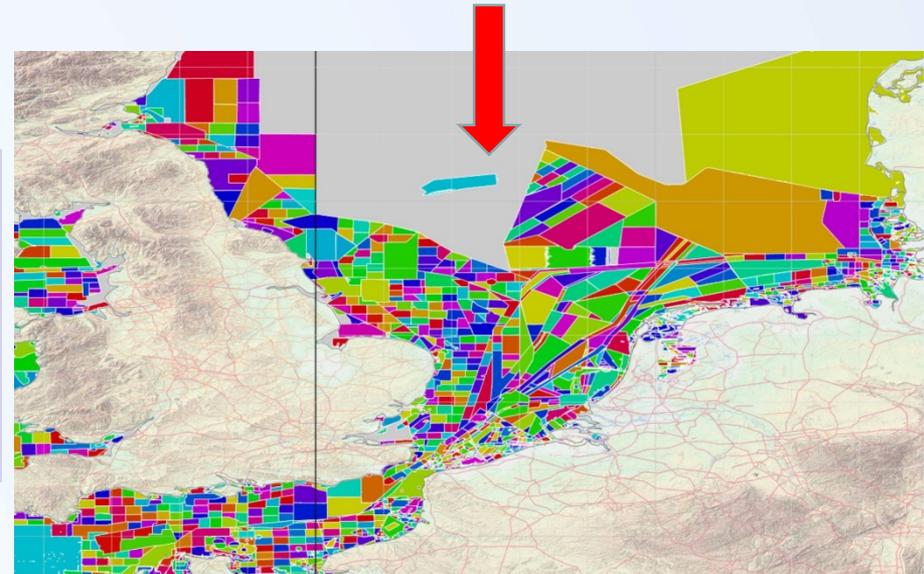
The best Digital Terrain Model (DTM) for the European seas with a resolution of 115 * 115 m (incl 3D viewer)



Bathymetry: input by BODC

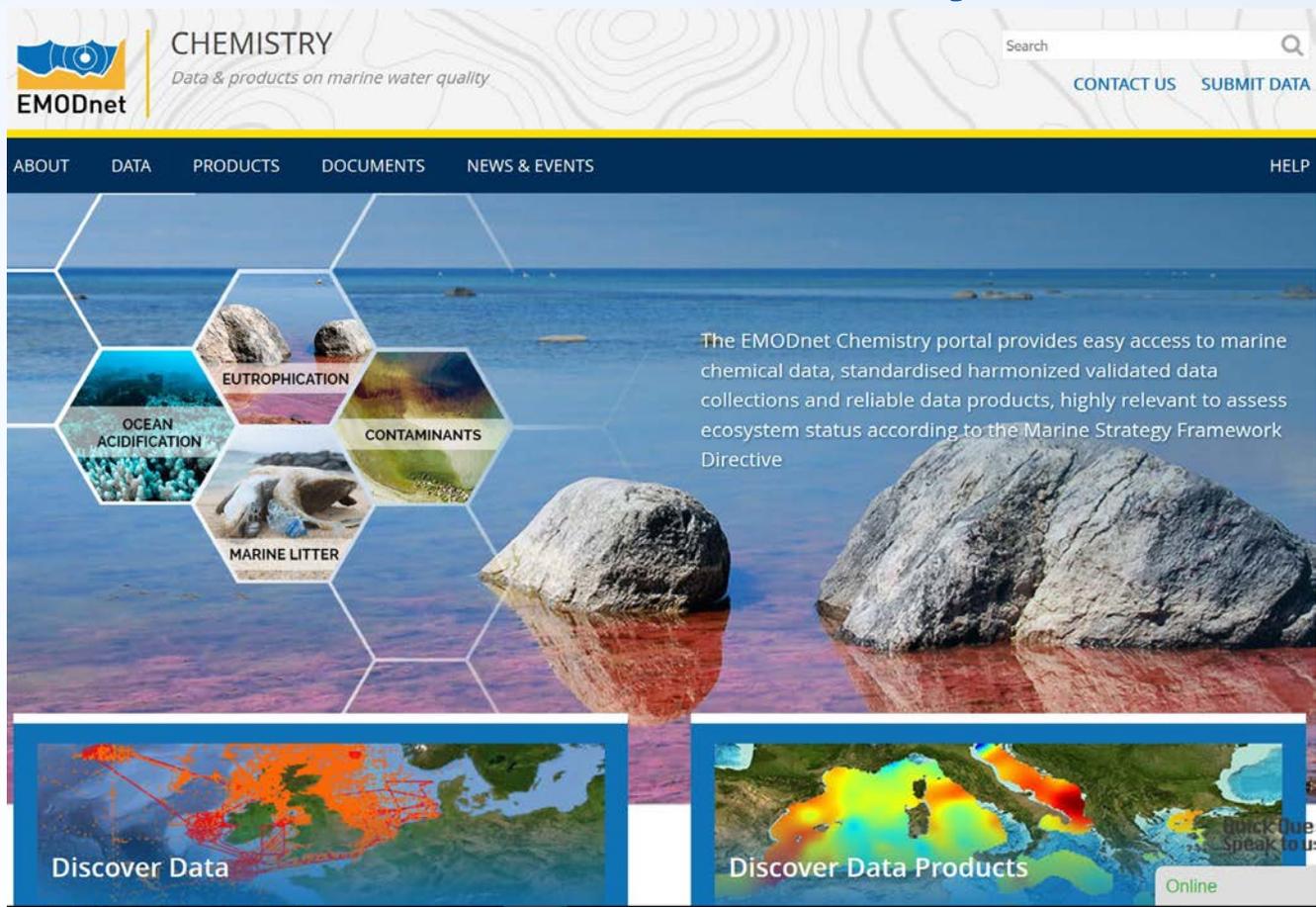
- The EMODnet DTM is built upon > 9.400 bathymetric survey data sets which have been gathered and fully described in the SeaDataNet CDI service
- However there is no full coverage of the European seas with surveys. For example see the source references map below which shows no data (=grey) in the central North Sea.

- This is solved by using **GEBCO** data in those uncovered areas.
- BODC is editor of GEBCO and with the EMODnet Bathymetry team have arranged a merging process.



- While EMODnet DTM is used to improve GEBCO => win-win situation

EMODnet Chemistry



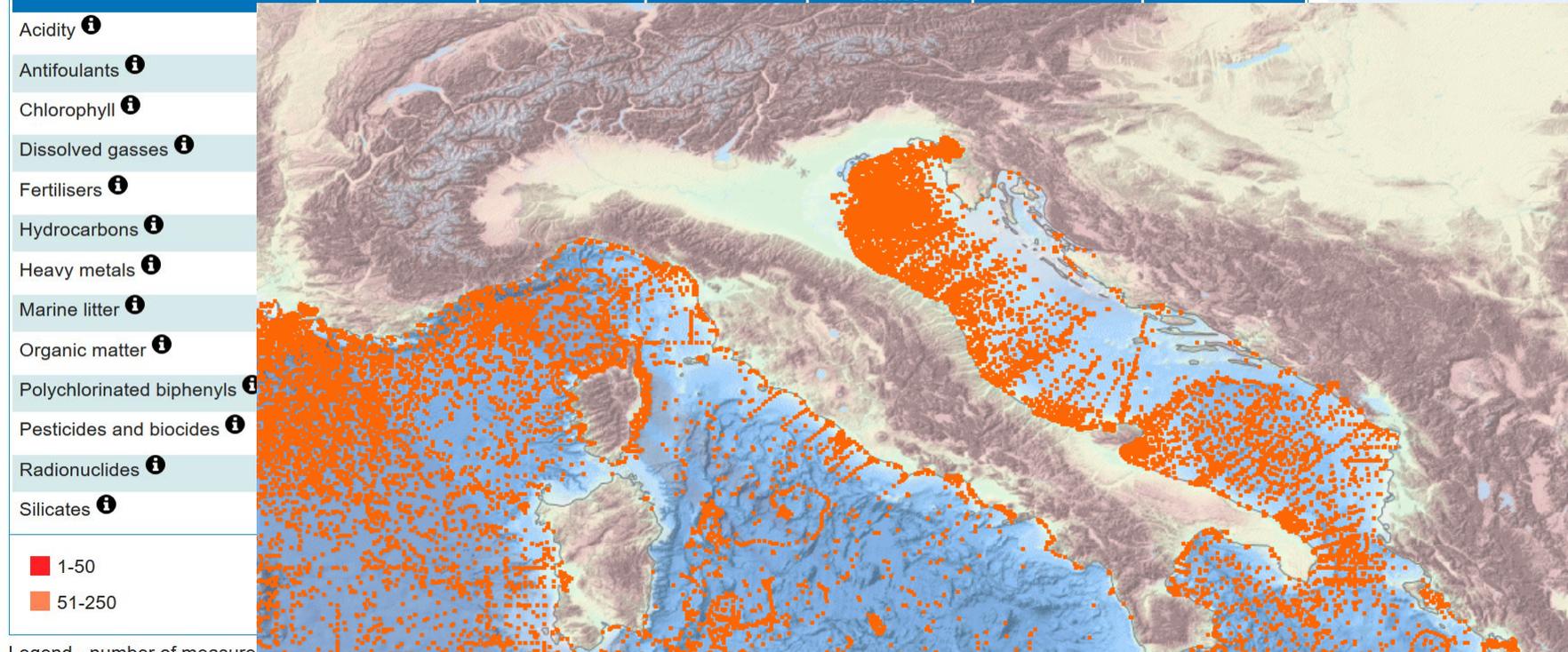
The screenshot shows the EMODnet Chemistry portal. At the top left is the EMODnet logo with the tagline "Data & products on marine water quality". To the right is a search bar and navigation links for "CONTACT US" and "SUBMIT DATA". Below this is a dark blue navigation bar with links for "ABOUT", "DATA", "PRODUCTS", "DOCUMENTS", "NEWS & EVENTS", and "HELP". The main content area features a large background image of a rocky coastline with a red tide. Overlaid on this are four hexagonal tiles: "OCEAN ACIDIFICATION", "EUTROPHICATION", "CONTAMINANTS", and "MARINE LITTER". To the right of these tiles is a text block: "The EMODnet Chemistry portal provides easy access to marine chemical data, standardised harmonized validated data collections and reliable data products, highly relevant to assess ecosystem status according to the Marine Strategy Framework Directive". At the bottom, there are two map-based tiles: "Discover Data" showing a map of Europe with red data points, and "Discover Data Products" showing a map of Europe with a color-coded data overlay. A small "Quick-View" button is visible in the bottom right corner of the "Discover Data Products" tile.

Portal with data and products for eutrophication, contaminants and marine litter

EMODnet Chemistry

MSFD regions

Group of Variables	Baltic Sea	Iberian peninsula - Macaronesia - Bay of Biscay	Greater North Sea - Celtic Sea - Faroes	Arctic Ocean - Norwegian Sea - Greenland Sea - Barents Sea - Icelandic Waters	Mediterranean Sea	Black Sea - Sea of Azov - Marmara Sea
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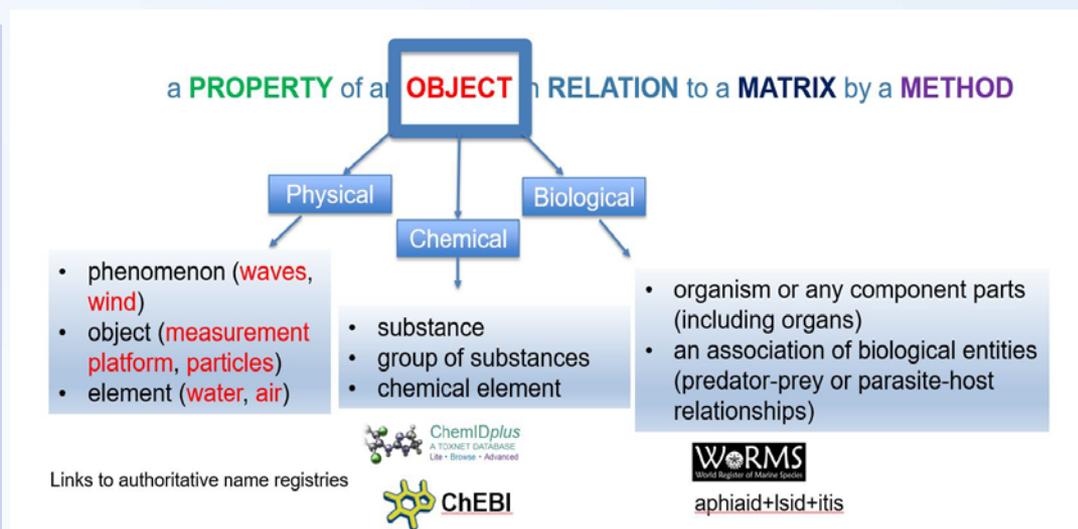


Almost 1 Million data sets (CDIs) divided over 13 chemistry groups
In water, biota and sediment

Chemistry: input by BODC

The data are gathered from more than 70 data centres from 32 countries and many different methods were used for gathering and analyzing parameters => **this implicates a highly heterogeneous situation.**

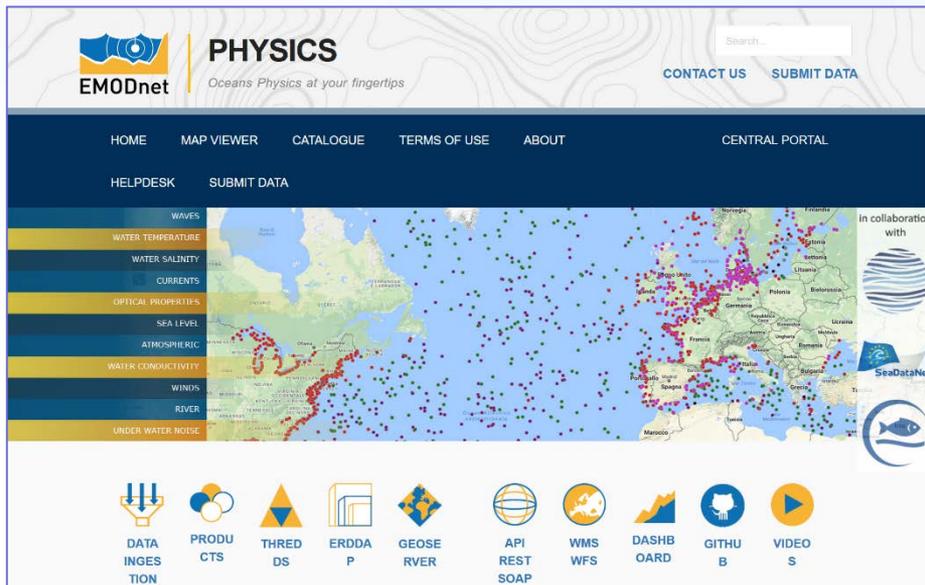
- BODC build a model for the P01 parameter vocabulary. Together with a Vocabulary Builder and Browser we were able to describe and use all necessary parameters in a systematic way



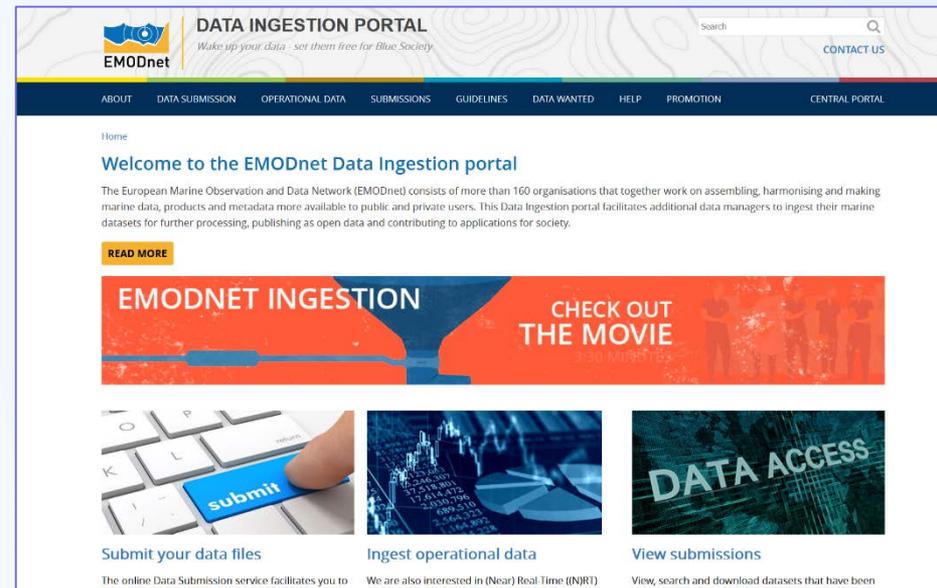
- Moreover BODC set up the P35 vocabulary which allows to aggregate several P01 entries in one P35 which facilitates generating harmonized European data collections for eg eutrophication

BODC also involved in other EMODnet lots

- **EMODnet Physics** which provides a shop window for platforms and time series of physics parameters
- **EMODnet Ingestion** which identifies, encourages and gives guidance to data owners that are not yet organized, to make their data part of the European data exchange, using the Ingestion portal



The screenshot shows the EMODnet Physics website. At the top left is the EMODnet logo with the tagline "Oceans Physics at your fingertips". To the right is a search bar and "CONTACT US" and "SUBMIT DATA" links. Below the header is a navigation menu with "HOME", "MAP VIEWER", "CATALOGUE", "TERMS OF USE", "ABOUT", and "CENTRAL PORTAL". A "HELPDESK" and "SUBMIT DATA" link are also present. The main content area features a vertical list of data categories on the left: WAVES, WATER TEMPERATURE, WATER SALINITY, CURRENTS, OPTICAL PROPERTIES, SEA LEVEL, ATMOSPHERIC, WATER CONDUCTIVITY, WINDS, RIVER, and UNDER WATER NOISE. The central part of the page is a map of Europe and the Mediterranean region with numerous colored dots representing data points. To the right of the map is a "SeaDataNet" logo and a "collaboration with" section featuring logos for various organizations. At the bottom, there is a row of icons for "DATA INGESTION", "PRODUCTS", "THREDDS", "ERDDAP", "GEOSERVER", "API REST SOAP", "WMS WFS", "DASHBOARDS", "GITHUB", and "VIDEOS".



The screenshot shows the EMODnet Data Ingestion Portal website. At the top left is the EMODnet logo with the tagline "Wake up your data - set them free for Blue Society". To the right is a search bar and "CONTACT US" link. Below the header is a navigation menu with "ABOUT", "DATA SUBMISSION", "OPERATIONAL DATA", "SUBMISSIONS", "GUIDELINES", "DATA WANTED", "HELP", "PROMOTION", and "CENTRAL PORTAL". The main content area starts with a "Home" link and a "Welcome to the EMODnet Data Ingestion portal" heading. Below this is a paragraph of text: "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." Below the text is a "READ MORE" link. A large orange banner with a blue arrow graphic contains the text "EMODNET INGESTION" and "CHECK OUT THE MOVIE". Below the banner are three featured sections: "Submit your data files" with a keyboard icon and a "submit" button, "Ingest operational data" with a server rack icon, and "View submissions" with a "DATA ACCESS" icon. At the bottom, there are three short paragraphs of text: "The online Data Submission service facilitates you to", "We are also interested in (Near) Real Time (NRT)", and "View, search and download datasets that have been".

